W.L.BLAKE&CO.

PORTLAND, MAINE

Catalogue H

PLUMBING AND STEAM MATERIAL

RAILROAD, STEAMSHIP AND MILL SUPPLIES

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Catalogue H

W. L. BLAKE & CO.

HIGH-GRADE PLUMBING FIXTURES

Supplies for

Plumbers, Water Works,
Steam and Gas Fitters, Engineers, and
Contractors, Mills, Railroads
and Steamships

MANUFACTURERS OF OILS AND GREASES

Office and Factory: 79-85 Commercial St.
Machinery Warehouse: Franklin St.

PORTLAND, MAINE

Hy-Tech Products

GENERAL INFORMATION

TERMS AND PRICES

The prices given in this catalogue, in nearly all cases, are list prices and are subject to discount. Owing to the constant fluctuation in prices, we do not issue a discount sheet but will be pleased at all times to quote prices on application. Our established policy is to maintain one price to our customers, based on a reasonable and legitimate margin of profit; so whether a special quotation is asked for or whether the order is sent to us open, you are assured the same equitable prices and fair treatment.

Our terms are 30 days net, 2% 10 days unless otherwise specified.

Prices subject to change without notice.

Contracts subject to strikes, accidents or other causes beyond our control.

Instructions as to route, etc., should accompany each order. Otherwise, the route is optional with us.

The carriers are responsible for goods lost or damaged in transit, and claim should be made against transportation company. But we are always willing to assist our customers in securing settlement for such damage or loss; and if expense bill with proper indorsement by agent as to damage or shortage, together with bill of lading, is promptly sent to us, we shall be glad to establish claim; but unless these papers are furnished we cannot do so.

Care should be taken in accepting shipments, and no receipt should be signed until it is ascertained that shipment is complete and that goods have not been damaged in transit.

SHIPPING

Heavy goods will be shipped by freight unless especially ordered by express. Please do not neglect to state how you wish us to ship.

RETURNING GOODS

If for any reason you should desire to return goods to us, please write us first, and do not ship any material back until you have received our reply and get our shipping directions and agreement for the return of same.

HOW TO RETURN GOODS

In cases where arrangements have been made for return, always notify us, mentioning each article, and state when (invoice date) and by whom purchased. Mark all goods with a tag bearing your name and address clearly. Use the same care in packing returned goods as we do in shipping to you. Always send us the bill of lading or express receipt covering the return shipment. Do not enclose letters of instruction with the goods. Send them separately. ***This to protect you.***

Special orders for cut lengths of manila and wire rope, belting, pipe, etc., cannot be returned for credit if we have filled your order correctly. We, however, aim to treat our customers liberally in such cases. Write us first and we will advise you what to do.

ERRORS

We make them—Who does not? But we will cheerfully correct them if the fault is ours. Do not let an error pass unnoticed. We want an early opportunity to make right any mistakes that may occur.

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Hy-Tech Products

PLUMBING FIXTURES IN *COLOR*

RECENT years have seen a remarkable increase in the use of color in interior decoration—and not alone for its mere decorative value, but for its effect upon happiness and well-being. Color in the world out-of-doors affects our moods, our outlook upon life. And properly employed within the house, it has a like effect.

The bathroom has, of course, shared in this growing use of color. Bright touches have appeared in towels and rugs and window hangings, and latterly, in shower curtains. Color has crept into walls and floor, and sometimes to the very rim of the bath tub.

But there, in most instances, the color stopped. The most important things in the bathroom — the plumbing fixtures — were white. We perhaps got to thinking that they *had* to be white.

And the like was true of kitchen and laundry.

So the announcement of Plumbing Fixtures in Color was really a major innovation. We had color in the bathroom; now we have the bathroom in color—a complete color ensemble, a new color charm, which puts at the command of the architect, decorator and home-builder a new medium for the expression of taste and the creation of beautiful effects.

The more interesting rooms thus achieved mean greater enjoyment of the home and also greater rental or sales value.

Kohler Fixtures are now available in six beautiful, permanent shades, of Horizon Blue, Spring Green, West Point Gray, Autumn Brown, Lavender, and Old Ivory.

These charming colors are illustrated in the following pages as faithfully as possible. But paper and ink cannot reproduce the texture, the lustre, and the delicate high-lights of the fixtures themselves, which really must be seen to be appreciated. Installed against well-chosen backgrounds in related or contrasting colors, they lend themselves to new and delightful decorative effects.

West Point Gray, which is available only on enameled ware, makes a harmonious combination with Horizon Blue. The other colors are furnished in both enamel and vitreous china.

In ordering colored ware, the plate numbers should be used and the color should be specified by name as shown on the following pages.

Kohler colored enamel fixtures can be had not only in the regular enamel but in the Kohler Flint-gloss acid-resisting enamel, which should be specified on the order if it is desired.

Kohler chromium-plated fittings, with no china parts, have been specially designed to harmonize with the colored fixtures. The handles, dials, and escutcheons are of chromium-plated brass, smart and modern in appearance, non-tarnishing, and durable. For the most pleasing effect, it is suggested that the fixtures be ordered complete with fittings.

It is advisable to use with the colored ware Kohler vitreous china accessories, which are available in the same colors. Chromium-plated accessories, or if the walls are of tile, harmonizing accessories made by various tile manufacturers are also appropriate.

Kohler fixtures in color are sold only on special non-cancellable order.

Hy-Tech Products



Bathroom KA

A PLEASANT, genial bathroom furnished with Kohler enameled and vitreous china fixtures in Autumn Brown. The floor is a rich brown with accents of more brilliant color. The wall tile of green affords a contrast, definite, but not too strong. Kohler chromium-plated all-metal fittings enhance the beauty of the installation.

This color scheme, and the many other beautiful combinations which can be worked out with the Autumn Brown fixtures, is adapted to almost any bathroom, large or small, and may be achieved with the use of tile, plaster, or other materials.

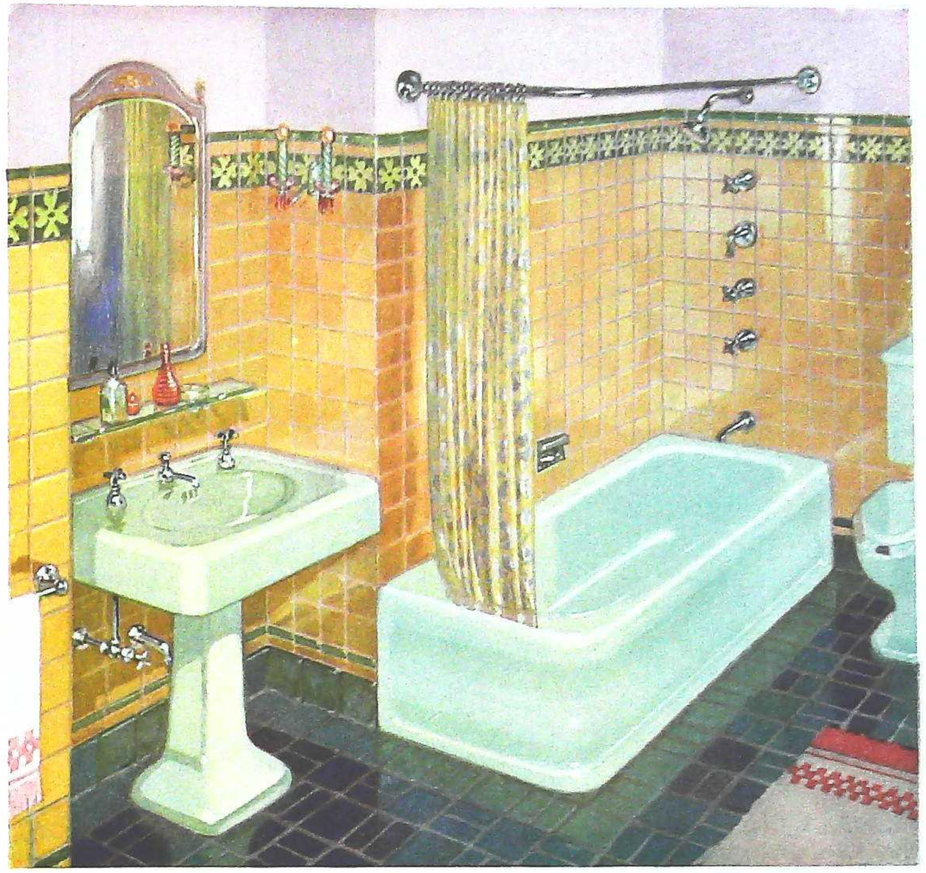
Bathroom KA includes the following Kohler fixtures and fittings:

IMPERATOR LEFT CORNER BUILT-IN BATH with combination built-in over rim supply, secret drain, shower with ½-inch Niedecken mixer, ½-inch compression valves, and curtain rod.

BELMORE LAVATORY with combination compression supply and lift drain fittings, ⅜-inch supply pipes, and 1¼-inch P trap.

ROCKBOURNE VITREOUS CHINA MASTER SYPHON JET CLOSET COMBINATION with vitreous china straight front 8-gallon tank complete with concealed rear supply and special tank fittings; Autumn Brown Japanese pearl finish open front seat and cover; straight flush connections with vitreous china flush pipe cover; vitreous china bolt caps; cast brass floor flange with bolts.

Hy-Tech Products



Bathroom KB

A PRACTICAL and livable bathroom with Kohler fixtures in Spring Green, in a contrasting setting of deep blue floor and warm buff walls. The brighter colors in the rug, shower curtain, and other articles add sparkle to the room.

A similar color scheme may be achieved with other materials, such as linoleum floor and tinted plaster or Keene cement walls.

Spring Green, a particularly pleasing color, fits into a variety of attractive color schemes. A background of warm color is preferable if the room gets a subdued light, while a predominance of green is appropriate for a sunny room, preserving the brightness but softening any tendency to glare.

The following Kohler products are included in the installation:

IMPERATOR RIGHT CORNER BUILT-IN BATH with combination built-in over rim supply, secret drain, shower with ½-inch Niedecken mixer, ½-inch compression valves, and curtain rod.

COLUMBIA LAVATORY with combination compression supply and lift drain fittings, ⅜-inch supply pipes, and 1¼-inch P trap.

ROCKBOURNE VITREOUS CHINA MASTER SYPHON JET CLOSET COMBINATION with vitreous china straight front 8-gallon tank complete with concealed rear supply and special tank fittings; Spring Green Japanese pearl finish open front seat and cover; straight flush connections with vitreous china flush pipe cover; vitreous china bolt caps; cast brass floor flange with bolts.



Bathroom KC

THE Kohler Horizon Blue fixtures and the entire color scheme of this bathroom are suitable for small installations no less than for spacious ones. The colors are pleasant, delicate, yet appropriate for every-day requirements. Stronger contrasts, if preferred, can be worked out with buff or other warm colors.

The bathroom here illustrated is of a size and arrangement not found in the average home, yet the color scheme is among the most adaptable and practical. Similar color effects are comparatively easy to achieve, whether for expensive installations or on a more modest scale. This color scheme is also suitable for the kitchen or laundry, with fixtures in either Horizon Blue or West Point Gray.

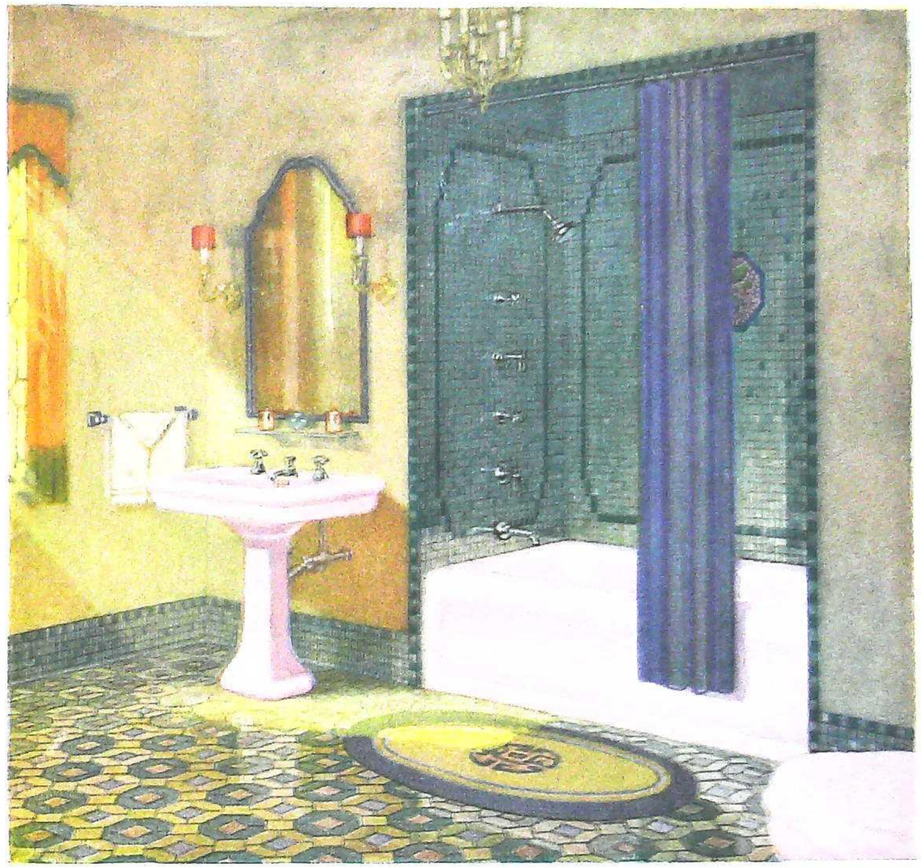
The bathroom illustrated contains the following Kohler fixtures:

IMPERATOR FREE STANDING BUILT-IN BATH with exposed top supply and secret drain fittings with ½-inch compression valves and supply pipes.

BELMORE LAVATORY with combination compression supply and lift drain fittings, ⅜-inch supply pipes, and 1¼-inch P trap.

ROCKBOURNE VITREOUS CHINA MASTER SYPHON JET CLOSET COMBINATION (recessed and not visible in the illustration).

Hy-Tech Products



Bathroom KD

A DELICATELY bright bathroom with Kohler enameled and vitreous china fixtures in Lavender, against a contrasting setting in which green and buff tones predominate. While this bathroom has certain unusual features, it is in a color scheme appropriate for almost any bathroom, small or large. The green, here used in the tub recess, can be introduced in other ways.

There is real inspiration in a bathroom such as this. The color effects, bright but not garish, are of just the right degree of warmth. Similar color schemes are available for bathrooms of various sizes and materials. The illustration brings out the beautiful possibilities of either tile or plaster walls.

The Kohler appointments are as follows:

IMPERATOR RECESS BUILT-IN BATH with combination built-in over rim supply, secret drain, shower with ½-inch Niedecken mixer, ½-inch compression valves, and curtain rod.

BELMORE LAVATORY with combination compression supply and lift drain fittings, ⅜-inch supply pipes, and 1¼-inch P trap.

ROCKBOURNE VITREOUS CHINA MASTER SYPHON JET CLOSET COMBINATION with vitreous china straight front 8-gallon tank complete with concealed rear supply and special tank fittings; lavender Japanese pearl finish open front seat and cover; straight flush connections with vitreous china flush pipe cover; vitreous china bolt caps; cast brass floor flange with bolts.



Bathroom KE

A BATHROOM colorful, unusual, yet practical and homelike, with Kohler enameled iron and vitreous china fixtures in Old Ivory. The attractiveness of the fixtures is enhanced by the Kohler chromium-plated fittings which reflect glints of the colors in the room. This bathroom will appeal strongly to people desiring something different from the ordinary.

Bathrooms such as these have a sunny atmosphere which is conducive to good spirits and, therefore, to good health. At the same time they are admirably practical.

This color scheme, or variations of it, can be worked out elaborately or in a simple, modest way.

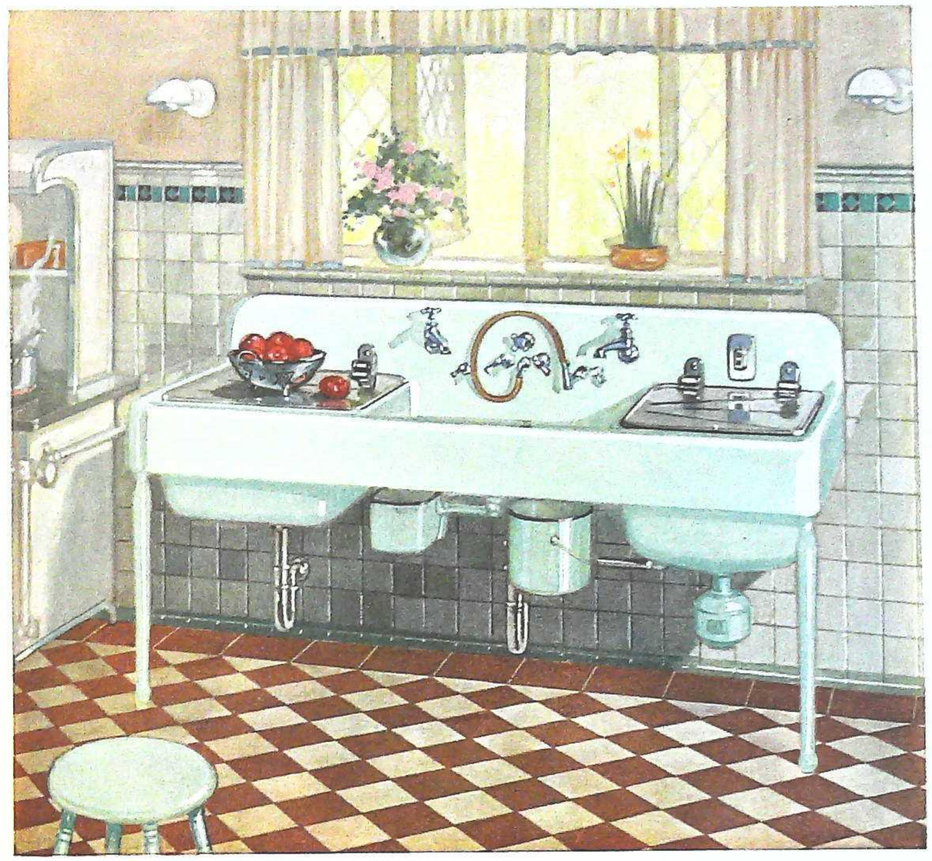
The Kohler fixtures included are as follows:

IMPERATOR RECESS BUILT-IN BATH with combination built-in over rim supply, secret drain, shower with ½-inch Niedecken mixer, ½-inch compression valves, and curtain rod.

STANDISH VITREOUS CHINA LAVATORY on pedestal with combination compression supply and lift drain fittings, ⅜-inch supply pipes, and 1¼-inch P trap.

ROCKBOURNE VITREOUS CHINA MASTER SYPHON JET CLOSET COMBINATION with vitreous china straight front 8-gallon tank complete with concealed rear supply and special tank fittings; Old Ivory Japanese pearl finish open front seat and cover; straight flush connections with vitreous china flush pipe cover; vitreous china bolt caps; cast brass floor flange with bolts.

Hy-Tech Products



Kitchen KF

The Kohler Electric Sink—Dishwasher Combination
"The Kitchen Sink Electrified"

SPRING GREEN

THE Kohler Electric Sink-Dishwasher Combination, greatest contribution of science to the fine art of housekeeping, consists of a Kohler patented electric dishwasher of the most efficient type, embodied in a Kohler one-piece kitchen sink with exclusive advanced features.

The Electric Sink is made in a variety of models and sizes, all of them fixtures of unusual beauty and dignity. They range from the Solo Model (dishwasher only) up to the 2 and 3-compartment combinations with various arrangements of sinks, laundry trays, and drainboards. There are patterns with 8-inch backs and aprons, with 12-inch backs and 6-inch aprons, and flat-rim patterns for building in. The sink compartments are in all cases 8 inches in depth.

Kohler Electric Sinks are available either with white enamel or in any of the colors in which other Kohler fixtures are made. They can be furnished with the regular Kohler enamel or with Flint-gloss acid-resisting enamel, in white or in color.

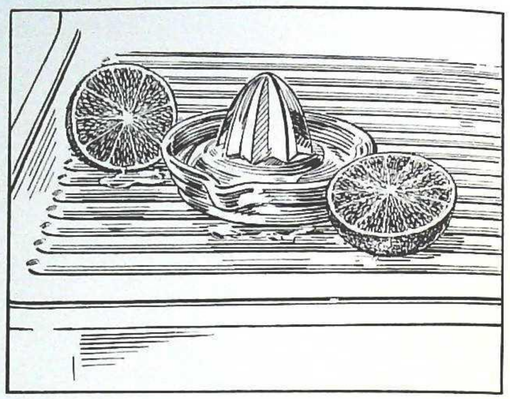
The Kohler Electric Sink-Dishwasher, washes dishes, pots, and pans, at the touch of a button—quickly, easily and thoroughly.

Simply arrange the dishes in the scientifically designed baskets, put in two gallons of scalding water and a little washing compound, lower the hinged drainboard-cover, and press the button. Through a thousand perforations in the spray tower, the impeller, driven at 1750 revolutions per minute, hurls stinging jets of hot water, loosening food particles, washing and sterilizing every dish, inside and outside.

In two or three minutes the washing is completed. Then with the handy spray nozzle the dishes and the dish-washing compartment are rinsed.

At no step in the process is it necessary to put the hands in hot, soapy, greasy water. Thus the Electric Sink-Dishwasher not only saves labor, but preserves womanly beauty, permitting the use of water of sterilizing hotness without injury to the hands.

Flint-Gloss Acid-Resisting Enamel



All Kohler enameled plumbing fixtures are available in Flint-gloss enamel, which is resistant to fruit and vegetable acids.

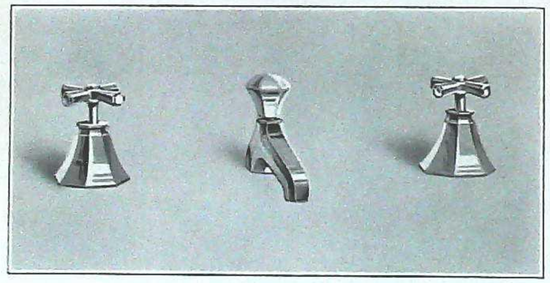
Because of its acid-resisting property, Flint-gloss is not easily roughened or discolored. It is readily cleaned and preserves its beautiful luster.

Flint-gloss is particularly serviceable on kitchen sinks, where fruit and vegetable acids, such as lemon juice, are likely to be present.

Fixtures finished in Flint-gloss bear a blue and gold label, "Kohler of Kohler Flint-gloss." They are permanently identified by the trade mark Kohler U.S.A. in the enamel, with the letters AR immediately beneath.

In ordering, Flint-gloss should be specified together with the regular plate number of the fixture.

Flint-gloss is available in the regular Kohler colors, as well as in white. If color is desired, specify by name as shown in the preceding pages.



Chromium-Plated Plumbing Brass

Chromium is a grayish white brittle metal, seven times as hard as nickel.

Kohler plumbing brass, chromium-plated, is remarkable for its durability and the permanence of its beautiful finish. Like Kohler Flint-gloss enamel, it has great ability to withstand damage.

Chromium is almost completely non-tarnishing and is highly resistant to ordinary acids. Occasional washing and wiping will keep it clean and lustrous.

Its finish, which can best be described as resembling platinum, stays bright and beautiful with little attention.

Chromium has astonishing wearing qualities, far outlasting nickel. Its durability is equal to the severe demands of hard every-day use.

In ordering, specify the regular plate number of the fitting and state if chromium-plating is desired.

Hy-Tech Products

Imperator Enameled All Over One-Piece Right Corner Apron Bath with slope end, for building 1½ inches into walls and ½ inch into floor, fitted with combination built-in over rim supply, poppet drain fitting, shower, ½-inch mixer and compression valves for iron pipe supply and riser connections, china handles and escutcheons, curtain rail and duck curtain, curtain hooks and holdback hook.

Outlet in tub at right end.

Width over rim 31 inches
Width of rim 4½ inches
Width inside 25 inches
Floor to top of rim 17½ inches
Depth inside at outlet 17 inches
Height over all 18 inches

Nominal Sizes ..... feet	5	5½
Length Over Rim ..... inches	62½	68½
Approx. Shipping Weight, Tub Only ..... pounds	675	750

Fittings can be furnished with ¾-inch mixer and valves.

Can be furnished with outlet at left end, and supply and drain fitting or shower as shown with any of these built-in apron baths.

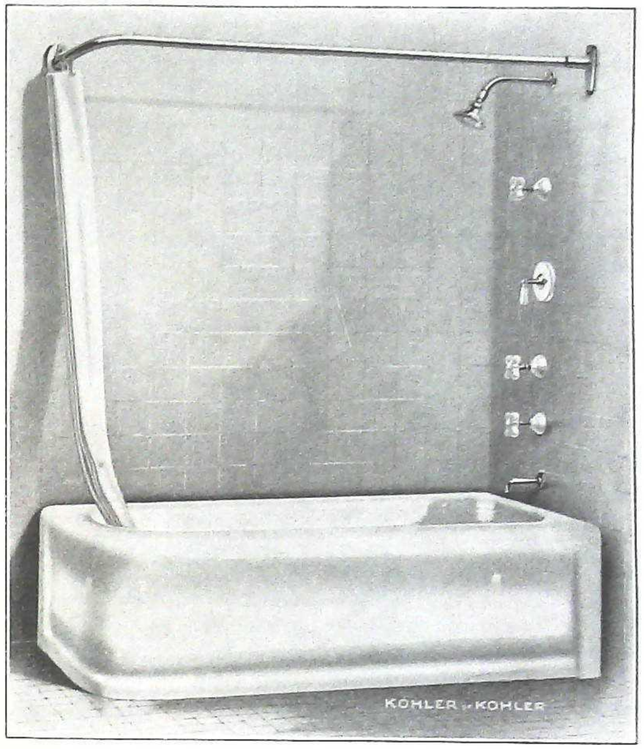


Fig. H-91

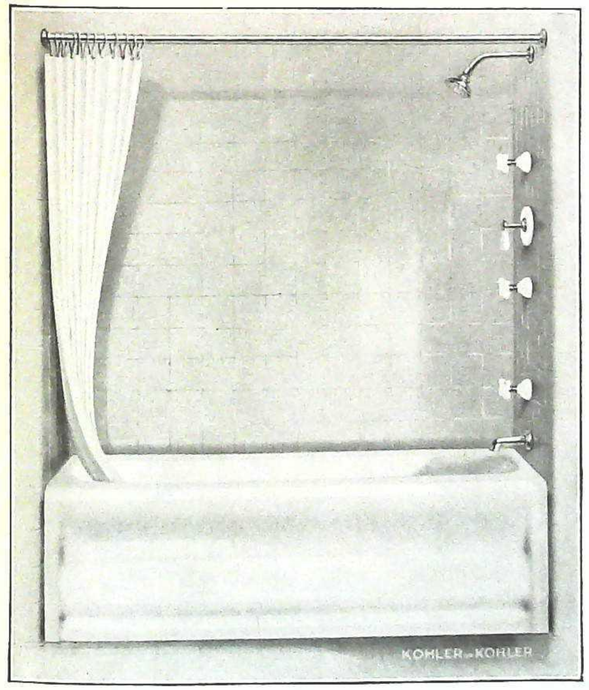


Fig. H-92

Imperator Enameled All Over One-Piece Recess Bath with slope end, for building 1½ inches into walls and ½-inch into floor, fitted with combination built-in over rim supply and connected drain and overflow, shower with ½-inch mixer and compression valves for iron pipe supply and riser connections, china handles and escutcheons, curtain rail and duck curtain.

Outlet in tub at right end.

Width over rim 34 inches
Width inside 25 inches
Width of rim 4½ inches
Depth inside at outlet 17 inches
Floor to top of rim 17½ inches
Height over all 18 inches

Nominal Sizes ..... feet	5	5½
Length Over Rim ..... inches	62½	68½
Approximate Shipping Weight, Tub Only ..... pounds	775	875

Can be furnished with outlet at opposite end and supply and drain fitting or shower as shown with any of these built-in apron baths.

Viceroy Enamel All Over One-Piece Apron Bath with slope end, for building ⅞-inch into wall and ½-inch into floor, fitted with combination built-in top supply, 2-inch secret drain, shower with 4-inch ball joint head, ½-inch mixer and compression valves for iron pipe supply and riser connections, china handles and escutcheons, nickel-plated curtain rail and white duck curtain.

Outlet in tub at right end.

Width over rim 30 inches
Width inside 24 inches
Width of rim 3½ inches
Depth inside at outlet 17 inches
Floor to top of rim 17½ inches
Height over all 18 inches

Nominal Sizes	feet	4½	5	5½	6
Length Over Rim	in.	55	61	67	73
Approx. Ship. Weight, Tub only...	lbs.	525	580	630	700

Can be furnished with outlet at opposite end and supply and drain fitting or shower as shown with any of these built-in apron baths.

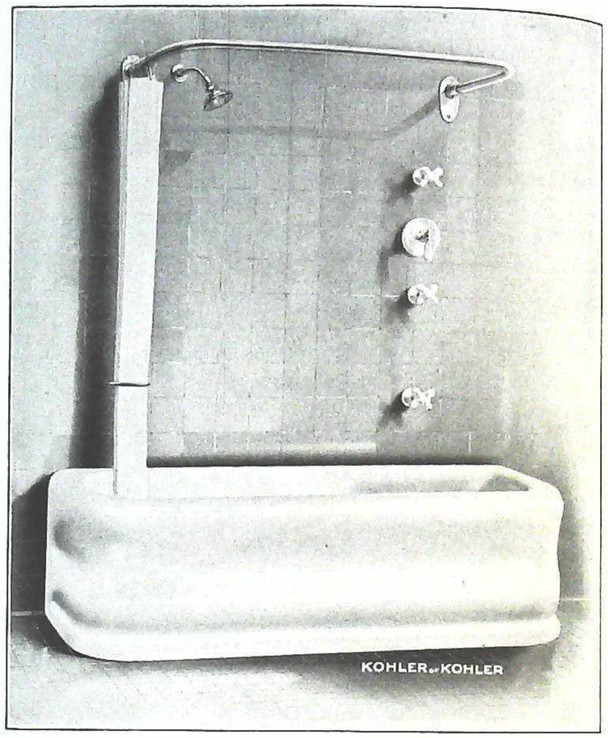


Fig. H-101

Enameled Iron Baths

Viceroy—Wall Pattern

NAME REGISTERED U.S. PATENT OFFICE

The views below show the various styles of installation for wall pattern Viceroy baths.

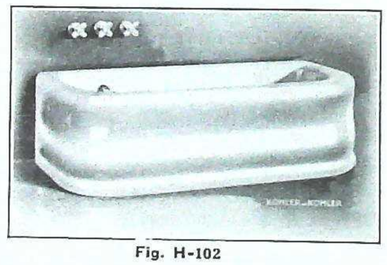


Fig. H-102

Left end drain, outlet, concealed compression top supply and secret drain fitting in back wall near left end.

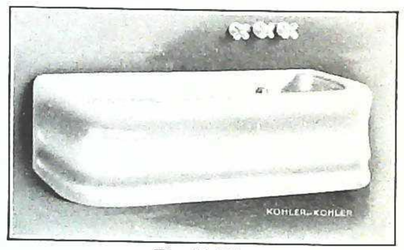


Fig. H-103

Right end drain outlet, concealed compression top supply and secret drain fitting in back wall near right end.

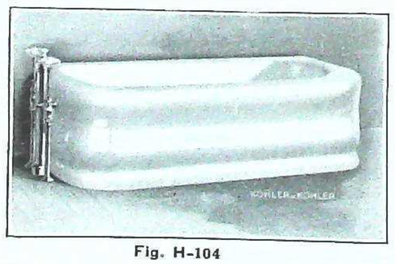


Fig. H-104

Left end drain outlet, exposed top supply and secret drain fitting at left end.

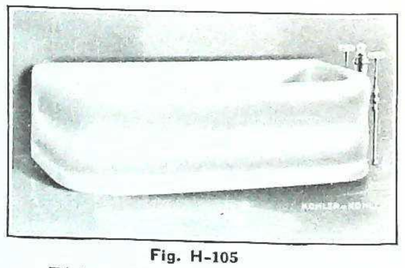


Fig. H-105

Right end drain outlet, exposed top supply and secret drain fitting at right end.

Hy-Tech Products

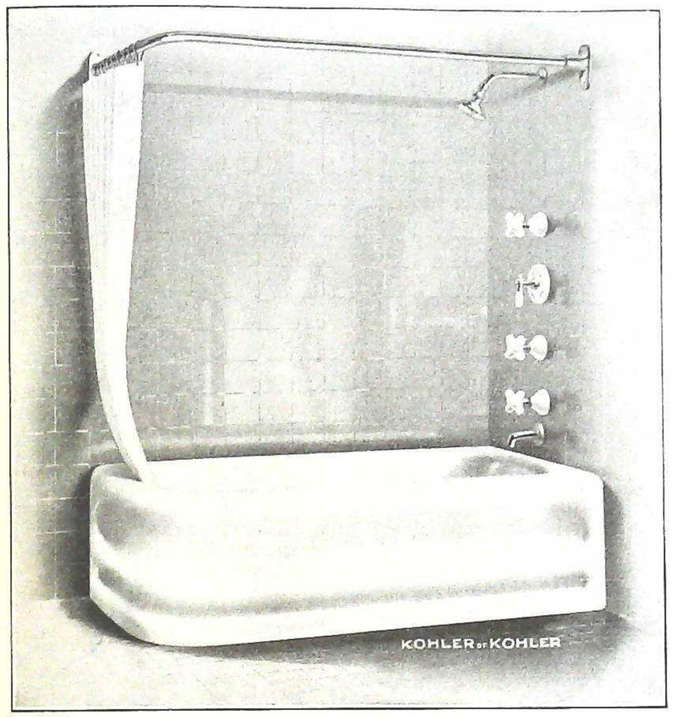


Fig. H-111

Viceroy Enameled All Over One-Piece Right Corner Apron Bath with slope end, for building ⅞ inch into walls and ½ inch into floor, fitted with combination built-in over rim supply, 2-inch secret drain, shower, ½-inch mixer and compression valves, for iron pipe supply and riser connections, china handles and escutcheons, curtain rail and duck curtain.

Outlet in tub at right end.

Width over rim 30 inches
Width of exposed rim 3½ inches
Width inside 24 inches
Floor to top of rim 17½ inches
Depth inside at outlet 17 inches
Height over all 18 inches

Nominal Sizes	feet	4½	5	5½	6
Length Over Rim	in.	54	60	66	72
Approx. Shipping Weight, Tub Only	pounds	465	520	570	660

Supply fittings can be furnished ¾ inch.

Can be furnished for opposite corner, with outlet at either right or left end, and supply and drain fitting or shower as shown with any of these built-in apron baths.

Enameled Iron Baths

Viceroy—Right Corner Patterns

NAME REG. U.S. PAT. OFF.

The views below show the various styles of installations for right corner Viceroy Baths.

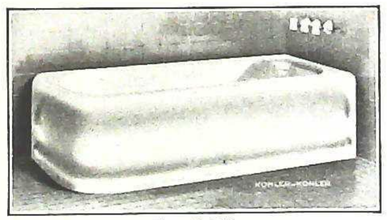


Fig. H-112

Right corner bath with drain outlet and supply drilling in right end, concealed top supply and secret drain, fitting in right end wall.

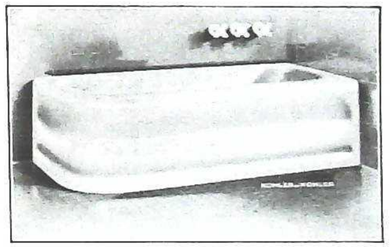


Fig. H-113

Right corner bath with drain outlet and supply drilling in right end, concealed top supply and secret drain fitting in back wall near right corner.

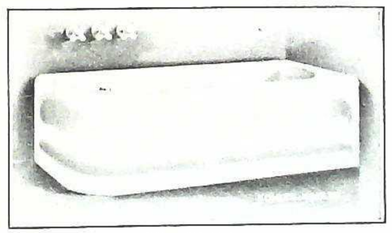


Fig. H-114

Right corner bath with left end drain outlet and supply drilling in back wall at left end.

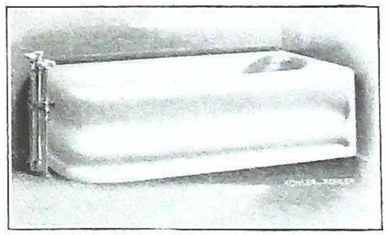


Fig. H-115

Right corner bath with left end drain outlet, exposed top supply and secret drain fitting at left end.

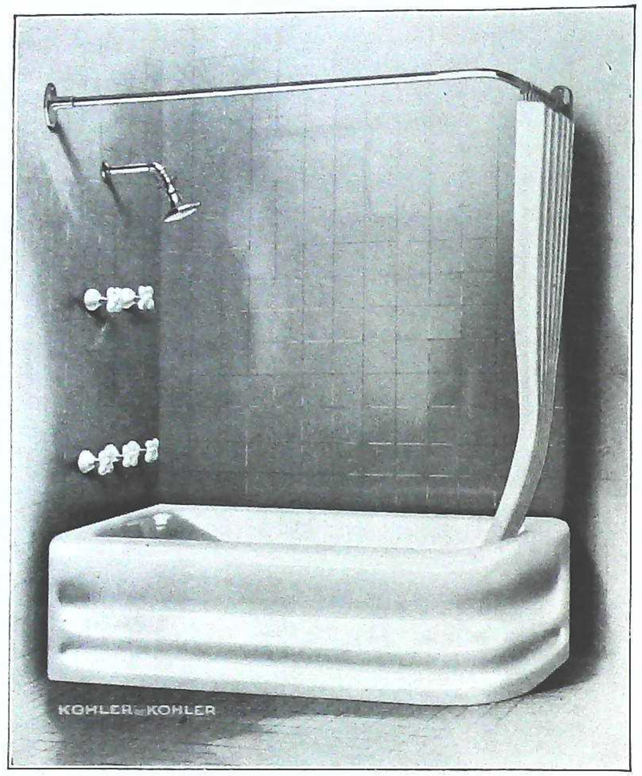


Fig. H-121

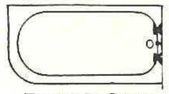
Viceroy Enameled All Over One-Piece Left Corner Apron Bath with slope end, for building 7/8 inch into walls and 1/2 inch into floor, fitted with built-in top supply and 2-inch secret drain fitting with 1/2-inch compression valves for iron pipe supply connections, shower with ball joint head and 1/2-inch concealed valves for iron pipe supply and riser connections, china cross handles and escutcheons, nickel-plated curtain rail and white duck curtain.

Outlet in tub at left end.

Width over rim 30 inches
Width of exposed rim 3 1/2 inches
Width inside 24 inches
Floor to top of rim 17 1/2 inches
Depth inside, at outlet 17 inches

Nominal Sizes.....feet	4 1/2	5	5 1/2	6
Length Over Rim.....in.	54	60	66	72
Approx. Shipping Weight Tub Only.....pounds	465	520	570	660

Can be furnished for opposite corner with outlet at either right or left end, and supply and drain fitting or shower as shown with any of these built-in apron baths.



For Right Corner
Fig. H-122

Enameled Iron Baths

Viceroy—Left Corner Patterns

NAME REG. U. S. PAT. OFF.

The views below show the various styles of installations for left corner Viceroy Baths.

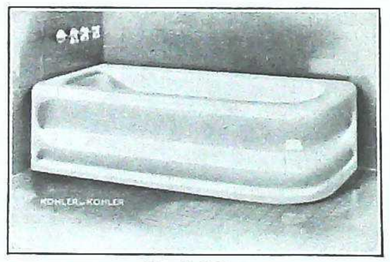


Fig. H-123
Left corner bath with drain outlet and supply drilling in left end, concealed top supply and secret drain fitting in left end wall.

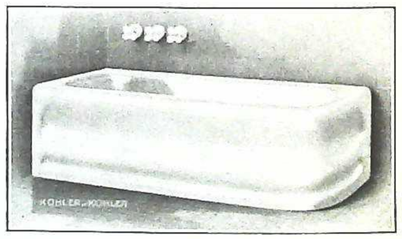


Fig. H-124
Left corner bath with drain outlet and supply drilling in left end, concealed top supply and secret drain fitting in back wall near left corner.

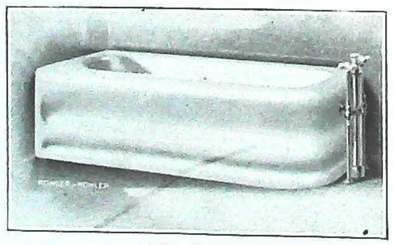


Fig. H-125
Left corner bath with right end drain outlet, exposed to supply and secret drain fitting at right end.

Hy-Tech Products

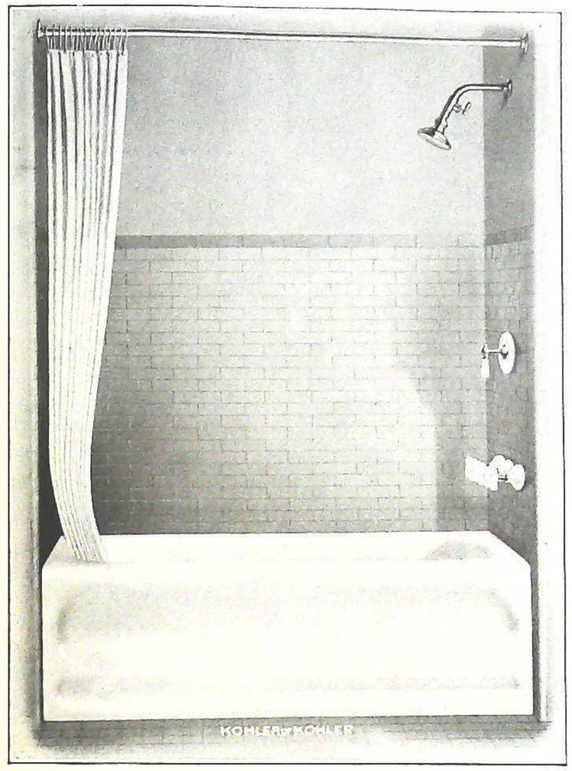


Fig. H-131

Viceroy Enameled All Over One-Piece Recess Apron Bath with slope end, for building 7/8 inch into walls and 1/2 inch into floor, fitted with built-in top supply and 2-inch secret drain fitting with 1/2-inch compression valves for iron pipe supply connections, china cross handles and escutcheons, shower with 1/2-inch concealed mixing valve for iron pipe supply and riser connections, with china lever handle and dial plate, nickel-plated shower arm with volume control and ball joint shower head, nickel-plated curtain rail, white duck curtain, curtain hook and hold back hook.

Outlet in tub at right end.

Width over rim 30 inches
Width of exposed rim 3 1/2 inches
Width inside 24 inches
Floor to top of rim 17 1/2 inches
Depth inside at outlet 17 inches

Nominal Sizes.....feet	4 1/2	5	5 1/2	6
Length Over Rim.....inches	54	60	66	72
Shipping Weight Tub Only.....pounds	465	495	550	640

Can be furnished with outlet at opposite end and supply and drain fitting or shower as shown with any of these built-in apron baths.



Fittings at Left End Wall
Fig. H-132

Enameled Iron Baths

Viceroy—Recess Pattern

NAME REG. U.S. PAT. OFF.

The views below show the various styles of installations for recess pattern Viceroy Baths.

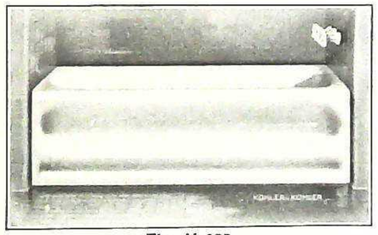


Fig. H-133
Recess bath with right end drain outlet, concealed top supply and secret drain fitting in right end wall.

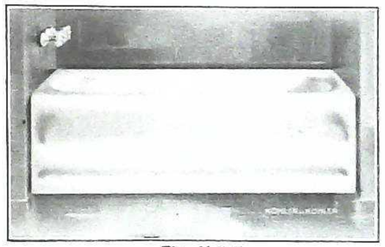


Fig. H-134
Recess bath with left end drain outlet concealed top supply and secret drain fitting in left end wall.

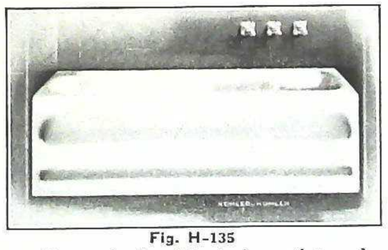


Fig. H-135
Recess bath with drain outlet and supply drilling in right end, concealed top supply and secret drain fitting in back wall near right corner.

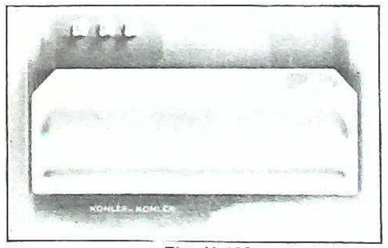


Fig. H-136
Recess bath with drain outlet and supply drilling in left end, concealed top supply and secret drain fitting in back wall near left corner.

Universal Enameled Iron One-Piece Bath tiled into recess, with slope end for building 1½ inches into walls and from floor to rim on front end, fitted with built-in over rim supply and secret drain fitting with ½-inch compression valves for ½-inch iron pipe and china cross handles and escutcheons.

Width over rim 30½ inches
Width of rim 3½ inches
Width inside 23½ inches
Bottom of bath to top of rim 18 inches
Depth inside at outlet 17 inches

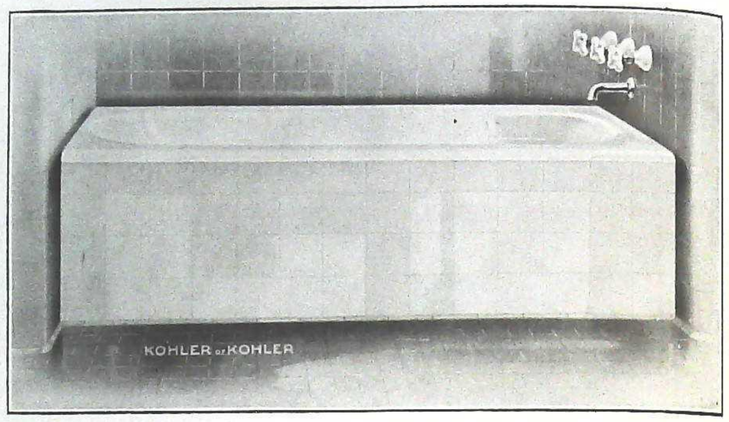


Fig. H-141

Can be installed as a corner, wall, recess or free standing bath as the rim all round is uniform in size, shape and finish and any or all four sides of bath may be built in from floor to rim only. No tile or other material is regularly supplied with bath.

Nominal Sizes ... feet	4½	5	5½	6
Length Over Rim ... inches	56½	62½	68½	74½
Approximate Shipping Weight, Tub Only ... pounds	300	350	385	430

Can be furnished with supply and drain fitting or shower as shown with any of these built-in baths.

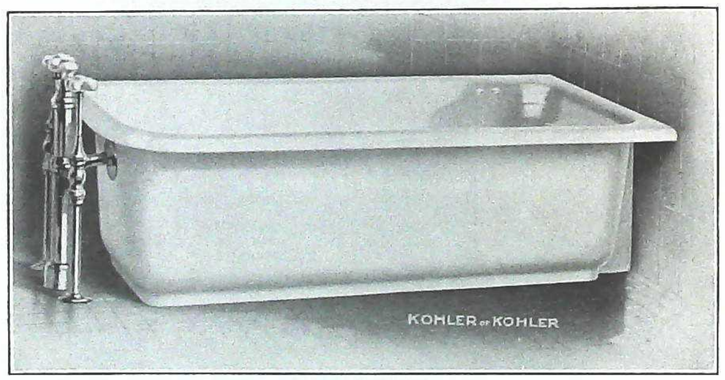


Fig. H-142

Cardinal Enameled Iron One-Piece Right-Corner Bath with No. 7775 exposed top supply and secret drain fittings with ½-inch compression valves and supply pipes. Inside only enameled, outlet at left end.

Specify if fittings are desired chromium plated.

Width over rim 29 inches
Width inside 24 inches
Depth inside 17 inches
Floor to top of rim 17½ inches
Height over all 18 inches
Width of rim 3 inches

Nominal Sizes ... feet	4½	5	5½
Length Over All ... inches	54	60	66
Length Inside ... inches	49	55	61
Approximate Shipping Weight, Tub only ... pounds	380	435	460

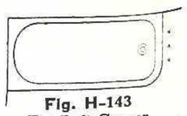


Fig. H-143
For Left Corner Fittings at Exposed End

Hy-Tech Products

Cardinal Enameled Iron One-Piece Right Corner Bath for building ⅞ inch into wall and ½ inch into floor, fitted with nickel-plated compression double bath faucet with china cross handles, ½-inch nickel-plated offset supply pipes and nickel-plated 1½-inch connected drain and overflow, chain and rubber stopper.

Outlet in tub at left end.

Width over rim 29 inches
Width inside 24 inches
Depth inside, at outlet 17 inches
Floor to top of rim 17½ inches
Width of exposed rim 3 inches

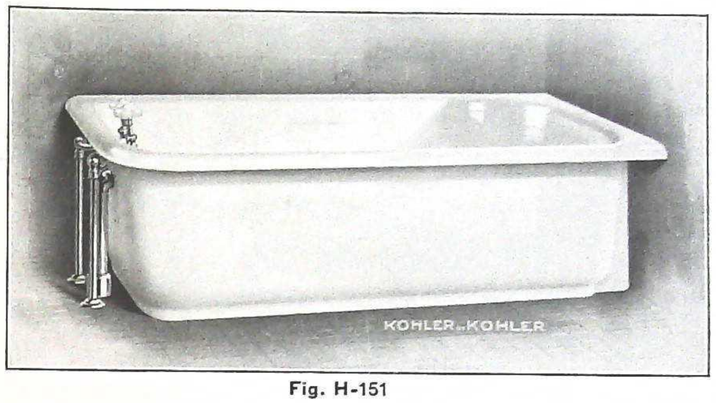
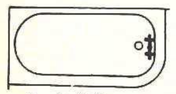


Fig. H-151



For Left Corner
Fig. H-152

Nominal Sizes ... feet	4½	5	5½
Length Over Rim ... inches	54	60½	66½
Approximate Shipping Weight, Tub Only ... pounds	405	455	480

Can be furnished for opposite corner, with outlet at either right or left end and with supply and drain fittings shown with any of these built-in baths.

Also can be furnished all over enameled. Regularly furnished enameled inside.

Cardinal Enameled Iron One-Piece Recess Bath for building ⅞ inch into wall and ½ inch into floor, fitted with built-in over rim supply fitting with ½-inch compression valves with connections for iron pipe, china cross handles and escutcheons and 1½-inch concealed connected drain and overflow with chain and rubber stopper.

Outlet in tub at right end.

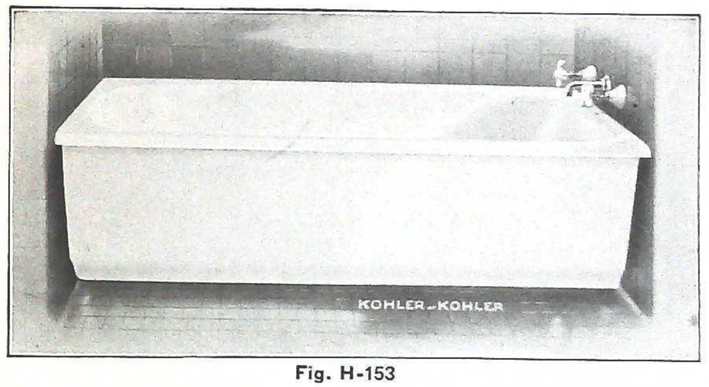


Fig. H-153

Width over rim 29 inches
Width inside 24 inches
Depth inside 17 inches
Floor to top of rim 17½ inches
Height over all 18 inches
Width of exposed rim 3 inches

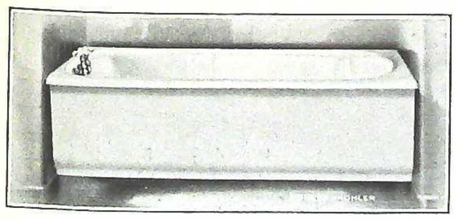
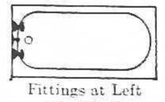


Fig. H-154

Nominal Sizes ... feet	4½	5	5½
Length Over Rim ... inches	53	60	66
Approx. Shipping Weight, Tub Only ... pounds	400	450	500

May be furnished with compression double bath faucet and concealed connected drain and overflow as shown.

Can be furnished with outlet at left end, and with supply and drain fittings shown with any of these built-in baths.



Fittings at Left End Wall
Fig. H-155

Regularly furnished enameled inside. Also can be furnished all over enameled.

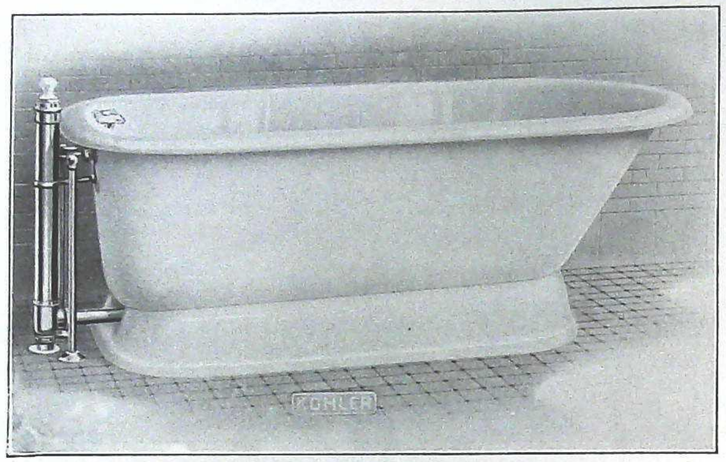


Fig. H-161

Baroness Enameled Iron Bath on painted base, fitted with nickel-plated brass compression double bath faucet with indexed china handles, ½-inch nickel-plated offset supply pipes, and 2-inch nickel-plated secret drain with indexed china knob.

Width over rim 30 inches
Width of rim 3 inches
Depth inside, at outlet 17 inches

Nominal Sizes ..... feet	4	4½	5	5½	6
Length Over Rim ..... inches	50½	54	60	66	72
Floor to Top of Rim ..... "	21¾	22½	22½	22½	21¾
Approximate Shipping Weight, Tub only ..... pounds	315	320	350	395	460

Can be furnished with zinc, ivory or plain white exterior finish.

Also can be furnished with enameled base.

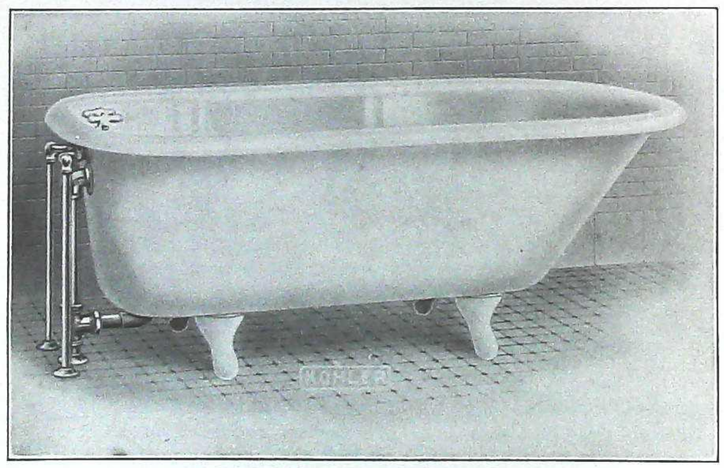


Fig. H-162

Colonna Enameled Iron Bath on legs, fitted with nickel-plated brass compression double bath faucet with indexed china handles, ½-inch nickel-plated offset supply pipes, and 1½-inch nickel-plated connected drain and overflow.

Width over rim 30 inches
Floor to top of rim 22½ inches
Width of roll rim 3 inches
Depth inside, at outlet 17 inches

Nominal Sizes ..... feet	4	4½	5	5½	6
Length Over Rim ..... inches	48	54	60	66	72
Approximate Shipping Weight, Tub Only ..... pounds	240	265	285	335	345

Can be furnished with zinc, ivory or plain white exterior finish.

Hy-Tech Products

Rival Enameled Iron Bath on legs fitted with nickel-plated brass compression double bath faucet with indexed china handles, ½-inch nickel-plated offset supply pipes and 1½-inch nickel-plated connected drain and overflow.

Width over rim 26 inches
Width of roll rim 2 inches

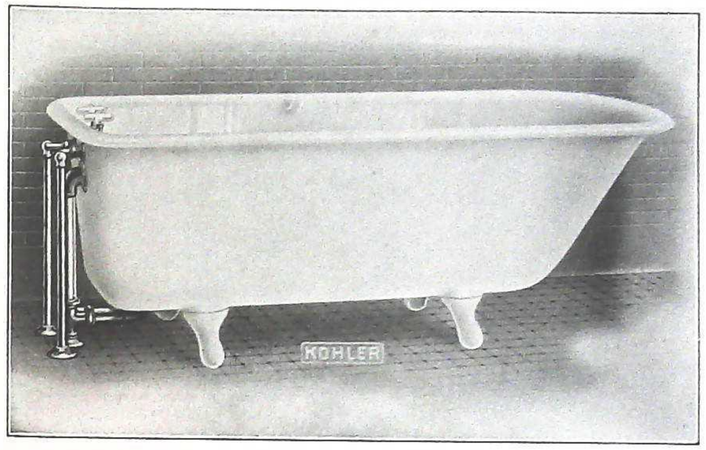


Fig. H-171

Nominal Sizes ..... feet	4	4½	5	5½
Length Over Rim ..... inches	48	54	60	67
Height to Top of Rim ..... "	22½	22½	22½	23
Depth Inside, at Outlet ..... "	17	17	17	17⅝
Approximate Shipping Weight Tub Only ..... pounds	240	255	295	325

Can be furnished with zinc, ivory or plain white exterior finish.



Fig. H-172

Combination Seat, Foot, and Child's Bath is an entirely new departure in the development of modern sanitary comforts.

For the usual purpose of bathing it is more convenient and comfortable than the ordinary bath tub, requiring less water and yet giving ample space.

In bathing the feet it is not necessary to remove all of the clothing, as sufficient water can be obtained in the foot bath without wetting the seat. The ledges on front and both sides enable one to massage or treat the feet conveniently, while the dimensions of the bath allow ample space for the feet when standing or sitting.

A children's bath has been an expensive luxury to be found only in the mansions of the rich. One is now presented in combination which is absolutely safe, most convenient and comfortable.

This bath is also much more adapted for the sick or invalid than the ordinary tub, affording a position without physical effort.

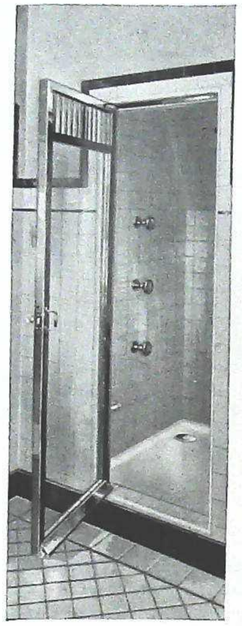
The combination bath is made of solid porcelain ware, with exposed end and sides glazed white, and may be tiled in a recess or in either right or left corner; or tiled in at the fitting end only.

Also made of enameled iron ware, to tile in a recess or in right or left corner; all exposed surfaces enameled.

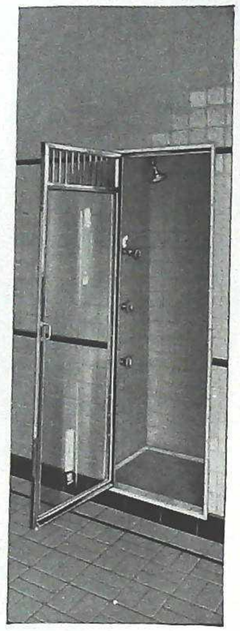
Style	Semi-Vitreous Porcelain	Enameled Iron
Length Over All ..... inches	44	44½
Length Inside ..... inches	38	39½
Width Over All ..... inches	30	30
Width Inside ..... inches	24	24½
Depth Outside at Seat ..... inches	17	17½
Depth Inside at Seat ..... inches	15	15½
Foot Receptor Inside ..... inches	16x18	16x17
Foot Receptor Depth ..... inches	9	9
Approximate Shipping Weight Tub Only ..... pounds	700	360

C & S Glass Shower Doors

PATENTED



Nonpareil Model
With Grille
Fig. H-181



Junior Model
With Grille
Fig. H-182

C & S Shower Doors are made in two models—the Nonpareil and the Junior. They are alike in construction except that the Junior Door has slightly smaller framing members. Both are absolutely watertight. Standard finishes are nickel silver, chromium plate, and brass nickel-plated. Doors can be furnished either with or without grille vents.

C & S Doors are glazed with best quality polished plate glass, imbedded in rubber to prevent breakage. Moisture proof mirrors or decorated glass can be had. All doors have heavy continuous hinges, and swing outward unless otherwise ordered.

An imported cut glass knob for the outside and an offset metal pull for the inside are furnished. A heavy double acting tumble catch keeps the door tightly closed, but releases it instantly when pressure is applied on the inside.

A water table on the bottom rail deflects dripping from the shower into the receptor. An adjustable metal bound rubber strip under the water table presses firmly against the sill, making a watertight joint.

All C & S Doors are furnished with heavy angle frames fitted with rubber cushions against which the doors strike. This patented construction insures a watertight installation.

All necessary fittings and hardware are included with each door.

C & S Shower Doors are standardized to fit finished openings 24x72 inches, 25x74 inches, 26x76 inches, and 27x78 inches. All allowances are made for fitting and clearance. Other sizes can be built to order.

When ordering specify:

Whether the Nonpareil or Junior Model Door is to be furnished.

The exact size of the finished opening to receive the door.

The finish of the exposed metal.

Whether door is to have grille vent or without.

Whether door is to be hinged on right or left jamb when facing stall.

Whether door is for tile or marble stall. Marble jambs should be at least 1½ inches thick.

Blue print drawings will be furnished upon request.

Approximate shipping weight 200 pounds.

C & S Shower Shields

PATENTED

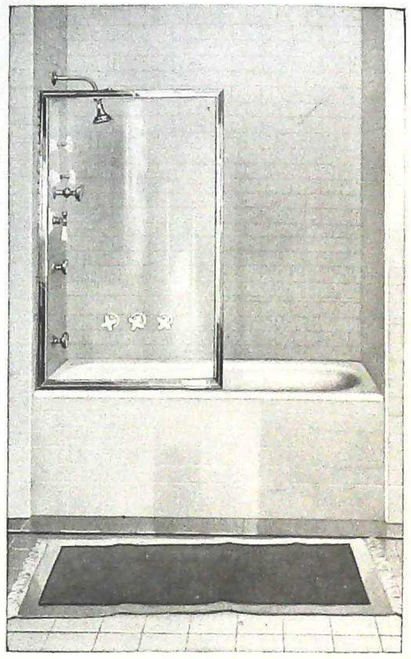


Fig. H-183

The C & S Shower Shield was designed to confine the spray of the shower within the tub, also to eliminate the use of the unsanitary and unsightly shower curtain.

When in use the C & S Shower Shield is held in place by a hook on the top rail, and is an absolute water shield. The water shed on the lower rail of the shield deflects all dripping into the tub.

The C & S Shower Shield is furnished with a continuous hinge on right or left hand side and can be swung out giving easy access to end of tub.

The shield is made with heavy nickel silver or chromium finished brass frame and polished plate glass panel, ¼-inch thick embedded in rubber.

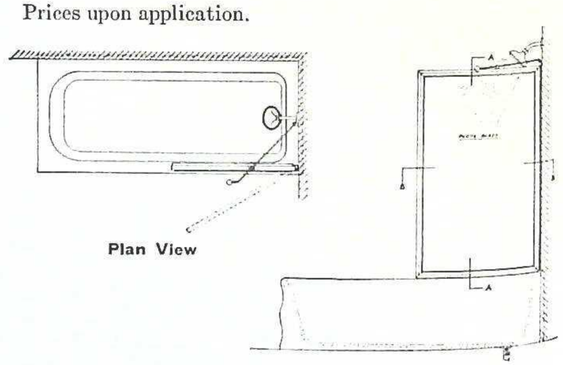
Specify if nickel silver chromium plated frame is preferred.

Specify whether shield is to be hinged on right or left side as you face tub.

The C & S Shower Shield is made in one size only, 32x52 inches. Other sizes made special.

Approximate shipping weight, 150 pounds.

Prices upon application.



Plan View

Elevation

Hy-Tech Products

Elkay Unit Shower Stalls

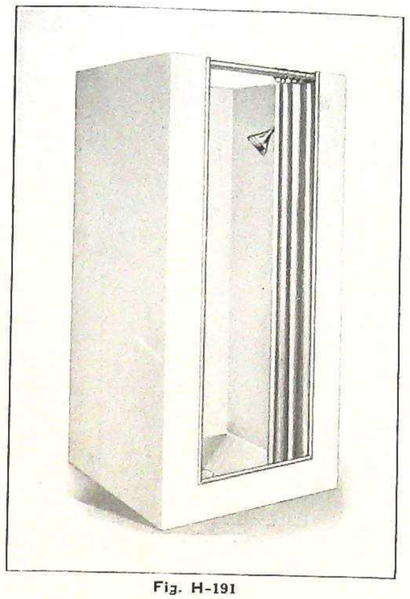
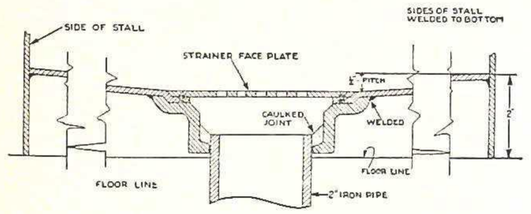


Fig. H-191

This shower stall is made of No. 11 gauge (⅛ inch thick) open hearth copper bearing sheet steel. Pilasters, sides and back are made of one continuous sheet, to which riser and receptor are welded, making a complete integral leakproof fixture. The receptor is pitched to drain to outlet. Vertical edge of pilasters and top of riser are finished with beaded molding, making sanitary edges and enhancing appearance.



Details of Stall Receptor
Showing Leakproof Waste Connection

Inverted type bottom, permitting stall to set on finished floor, no grotting of floor necessary. Nickel-plated cast brass strainer, also drain connection welded to stall forming leakproof construction. (See detail drawing.)

Nickel-plated ¾-inch o.d. curtain rod with nickel-plated flush type cast brass flanges. Can also be furnished in Crodon plate.

Curtain is 3 ft. x 5 ft. 10 in. and is made of 8-ounce Dry Duck Brand white bleached double filled duck, custom tailored, with all seams interlocked double stitched. Side and bottom hems double stitched. Top hem reinforced double stitched with nickel-plated brass washer, rolled grommets spaced approximately 6 inches apart. Furnished with necessary No. 3 curtain hooks.

All stalls given two coats of metal primer but must be finished after erection with waterproof enamel paint.

When ordering, specify size desired, location of shower drilling and whether compartment will set in right-hand or left-hand corner.

Standard height of all units is 6 feet over all.

No.	Width Inches	Depth Inches	Weight Pounds	Price Each
30	30	32	375	.....
32	32	32	400	.....
36	36	36	425	.....

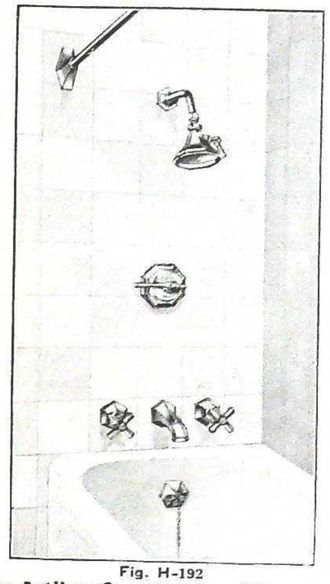


Fig. H-192

Speakman Artline Combination Mixometer Shower and Bath Fitting, ½-inch, high seat compression valves with renewable seats and unions, metal handles and escutcheons, bent arm with ball joint, 4-inch cast brass Anyforce shower head, Mixometer with metal wall plate. All exposed parts chromium-plated.

This shower gives a distinctive note to any bathroom. The finish has a silver-platinum appearance that will not tarnish. Does not require polishing. Drain fitting extra.

Approximate Shipping Weight. .....pounds 45

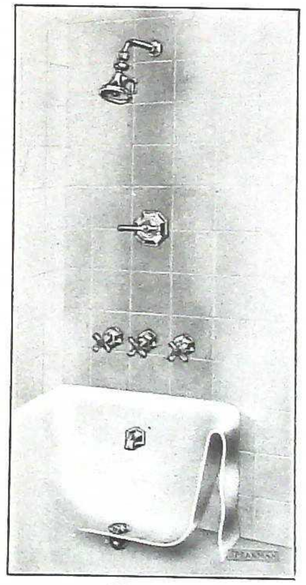


Fig. H-193

Speakman Artline Deshler Combination Mixometer Shower and Bath Fitting, ½-inch size, high seat compression valves with renewable seats and unions, metal handles and escutcheons, standing drain, bent-arm discharge pipe with ball joint, 5-inch cast brass Anyforce shower head, concealed Mixometer with metal wall plate. All exposed metal chromium-plated.

Approximate Shipping Weight..... pounds 65

Valves and Mixometer are connected with brass pipe and tested.

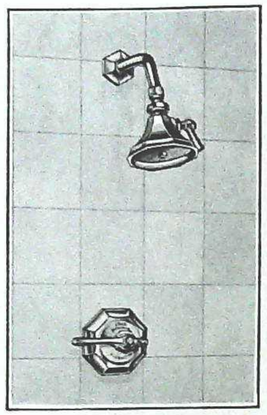


Fig. H-201

Speakman Artline Mixometer Shower, ½-inch size, with metal wall plate and handle, bent-arm with ball joint and 4-inch cast brass Anyforce head. All exposed metal parts are chromium-plated.

A heavy weight shower classic in design, and a finish that is silver-platinum in appearance and will not tarnish. No polishing needed; simply use a damp cloth.

The Anyforce shower head enables the bather to regulate pressure from as strong as the shower will give to as mild as desired.

Approximate Shipping Weight.....pounds 16

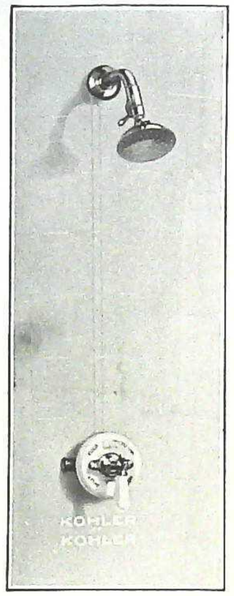


Fig. H-203

Built-In Shower Bath with ½-inch Niedecken mixer with china lever handle and wall plate, 4-inch adjustable ball joint cast brass shower head with removable face and volume regulator.

All connections furnished are brass. Exposed metal parts are nickel-plated.

Approximate Shipping Weight.....pounds 11

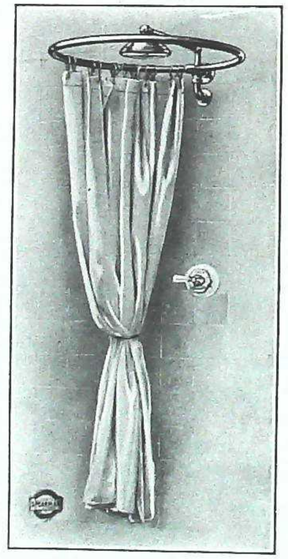


Fig. H-202

Speakman Built-in Mixometer Shower, ½-inch size, with china wall plate and china handle, 6½-inch nickel-plated shower head with nickel-plated supply arm to wall, 24x30-inch oval curtain ring, white duck curtain, curtain snaps and hook.

Approximate Shipping Weight.....pounds 50

Can be furnished with 24-inch diameter curtain ring.

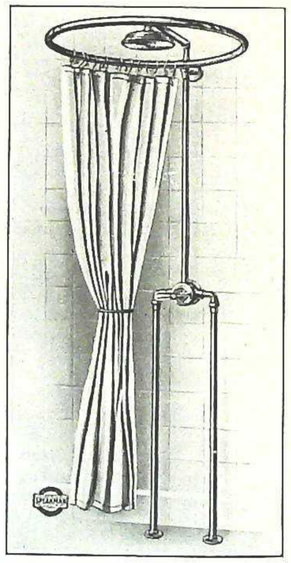


Fig. H-204

Speakman Mixometer Shower with 6½-inch shower head, supply pipes to floor, 24-inch curtain ring, white duck curtain, curtain snaps and hook.

Approximate Shipping Weight.....pounds 50

Made in ½ and ¾-inch sizes.

Hy-Tech Products

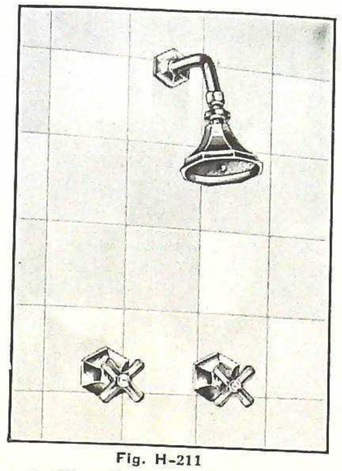


Fig. H-211

Speakman Artline Built-In Shower with ½-inch built-in high seat compression valves with renewable seats and unions, metal escutcheons and handles, bent arm with ball joint and 4-inch cast brass shower head with removable face.

A heavy weight shower with special art design. Chromium-plated exposed parts. This finish has a silver-platinum appearance, does not tarnish and requires no polishing.

The valves have the seat set high up in the body of the valve, making it easy of access for repairs, and the spindle being short, it guides and seats easily.

Approximate Shipping Weight.....pounds 17

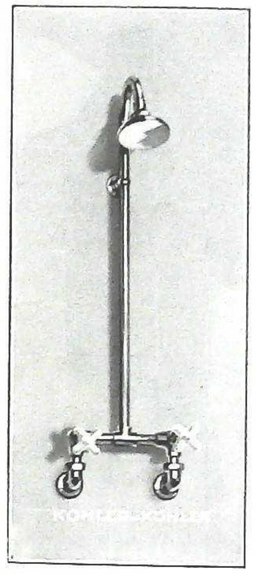


Fig. H-213

Shower Bath with ½-inch compression valve with china cross handles and indexes, gooseneck riser and cast brass ball joint shower head with removable face.

All connections furnished are brass. Exposed metal parts are nickel plated.

Valve is quick acting and has renewable parts.

Approximate Shipping Weight.....pounds 12

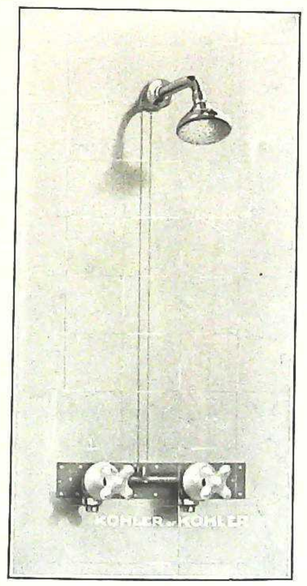


Fig. H-212

Built-In Shower Bath with two ½-inch built-in compression shower valves cast in one unit, with solid china cross handles, indexes and escutcheons, 4-inch adjustable ball joint shower head with removable face.

All connections furnished are brass.

Valves are quick acting and have renewable parts.

Approximate Shipping Weight.....pounds 12

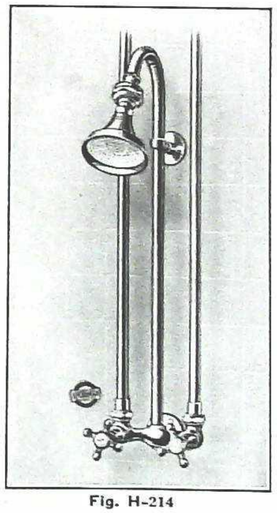


Fig. H-214

Speakman Shower, ½-inch size, with 4-inch cast brass shower head with removable face and adjustable ball joint, gooseneck discharge pipe with wall support, compression valves with four-ball china indexed handles, union couplings and supplies from overhead.

Approximate Shipping Weight.....pounds 25

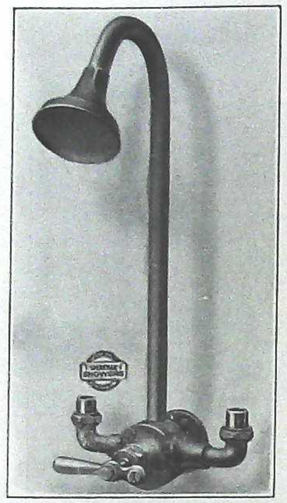


Fig. H-221

Speakman Industrial Mixometer Shower, ½-inch size, with elbow couplings to take supplies from overhead, wall or floor, galvanized gooseneck discharge pipe, 4-inch cast brass shower head.

Approximate Shipping Weight.....pounds 25

The Mixometer valve and head are regularly furnished in rough brass, nickel-plated.

When installing this shower it is desirable to put controlling stops in the supplies so as to permit the volume of water to be reduced and thus economize in its use.

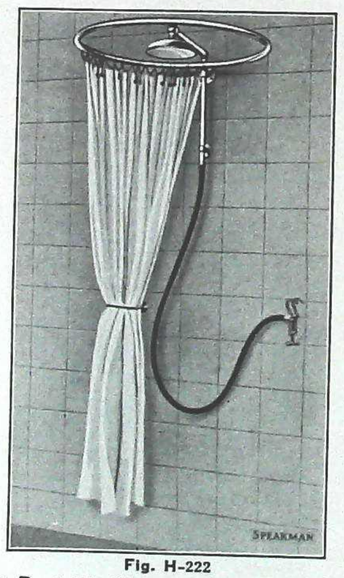


Fig. H-222

Speakman Portable Shower with 24-inch diameter curtain ring, white duck curtain and hold-back hook, straight arm and 6½-inch head, clip faucet attachment, and extra strong red rubber hose, 6 feet long, with woven fabric reinforcement.

Approximate Shipping Weight.....pounds 15

The Speakman Portable Shower is for use over a bath-tub having double faucet. It is furnished complete even to the wall screws. It can be installed in a few minutes.

The clip faucet attachment makes a tight connection to the bath faucet.

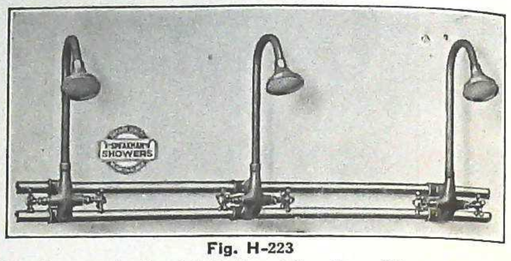
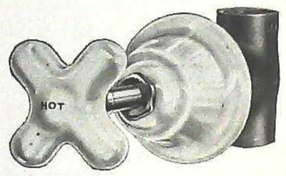


Fig. H-223

Speakman Industrial Combination Valve Showers with ¾-inch male union couplings, galvanized gooseneck discharge pipes with 4-inch cast brass head, rough nickel-plated.

Approximate Shipping Weight.....pounds 20

Center to center of inlets 3 inches. Horizontal supply pipes should be placed about 5 feet from floor.



No. 6505 Shower Valves

Built-In Globe Pattern

Speakman high-seat built-in globe pattern compression shower valve with renewable seat, china escutcheon and handle.

Price, ½-Inch....each $4.15
Price, ¾-Inch....each 5.25



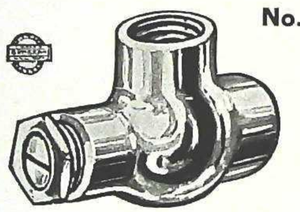
Shower Valves

Heavy Globe Pattern

No. 6530

Nickel-plated heavy globe pattern compression valve with stuffing box, swivel disc, encased washer and china handle.

Price, ½-inch.....each $3.75
Chrome Plate.....each 5.70



No. 6540 Shower Valves

With Screwdriver Slot Spindle

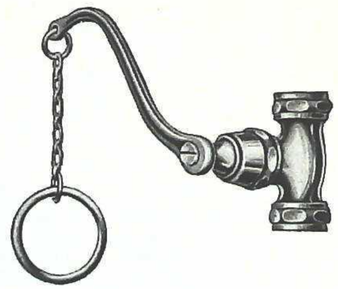
This valve is for use in supply pipes. Also made in straight pattern.

The flow is set and cannot be tampered with.

Price, ⅜-Inch..ea. $1.35
Chrom. Plate..ea. 1.70

No. 3490 Self-closing Shower Stops

With Lever and Chain



Size.....inches	½	¾
Price, Finished.....each	$4.40	$5.00
" Nickel-plated..... "	4.90	5.50

Hy-Tech Products

No. 3395 Speakman Self-Cleaning Shower Heads



This shower head can vary the force and fineness of its spray simply by a turn of a lever. The same lever makes it self cleaning. No half-sprays or off-side streams of water from a stopped-up spray head. No bother of cleaning. A turn of the lever and all accumulated sediment is flushed away.

Finished in chromium plate; not affected by salt water, acids or cooking fumes. Will not dull or wear off.

Easily installed on any shower; can be furnished with any new installation. With ½-inch female inlet.

Can also be furnished with adjustable joint.

Price, No. 3395.....each $15.00

No. 3375 Speakman Cast Brass Anyforce Shower Heads



Under high pressure everyone cannot stand the sting from a shower head when it is turned on full. On the other hand, some people like the strong flow. For that reason it is desirable to provide means for easily controlling the pressure without changing the temperature of the shower.

By the patented Anyforce shower head the bather can regulate the pressure from as strong as the shower will give to as mild as desired, simply by turning the china lever handle. The controlling feature is especially desirable in homes where the shower is used by the entire family.

The Anyforce shower head is sold only in connection with Speakman showers.



No. 3410 Cast Brass Shower Heads

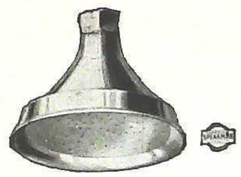
With Removable Face and Ball Joint

Diam. Face In.	Inlet In.	Price Each N.P.	Rough N.P.	Rough Brass	Chrom. Plated
4	½	$3.55	$3.30	$3.15	$4.50
5	½	4.35	4.15	3.90	5.65
6	½	7.35	7.15	6.85	9.00

No. 3405 Cast Brass Shower Heads

With Removable Face

Diam. Face In.	Inlet In.	Price Each N.P.	Rough N.P.	Rough Brass	Chrom. Plated
4	½	$2.20	$1.95	$1.80	$2.80
5	½	3.00	2.80	2.55	3.90
6	½	6.00	5.80	5.50	7.35





No. 3435 Needle Shower Heads

Diam. Face In.	Inlet In.	Price Each Nickel-Plated	Chromium Plated
5	½	$2.65	$4.35
6½	½	3.30	5.10
8	¾	4.75	7.15
10	1	13.15	18.00

Shower Head and Arm



Nickel-plated shower head with adjustable ball joint and offset arm with wall flange.

Price, Style C, with 4½-Inch Wrought Head....each $3.90
Price, Style A, with 6-Inch Wrought Head.....each 4.20
Price, Style E, with 4½-Inch Cast Head.....each 5.10

No. 115 Rubber Bound Bath Sprays



Rubber bound bath spray with 5 feet of tubing and faucet connection.

Size.....inches	3	3½	4
Price, No. 115.....each	$1.45	1.65	1.95

Speakman Shampoo Faucet Attachments

No. 3515



The faucet attachment is a great improvement over the ordinary rubber bulb, which blows off with water pressure and deteriorates with use. It can be attached instantly, and having a horizontal outlet, prevents kinking of the supply hose. The supply tubing is made of seamless rubber with a woven core; it is not affected by hot water.

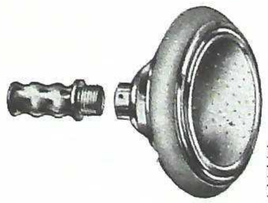
Price, with 6 Feet of Cloth Insertion Rubber Tubing and Rubber Hand Spray.....each	N.P. $5.25	Chrom. 6.00

Bath Sprays

No. 1228G

No.	Diam. Inches	Price Each
1228G	3	$.40
1228G	3½	.70
1228G	4	.90





No. 1230G

No.	Diam. Inches	Price Each
1230G	3	$.70
1230G	3½	1.15
1230G	4	1.65

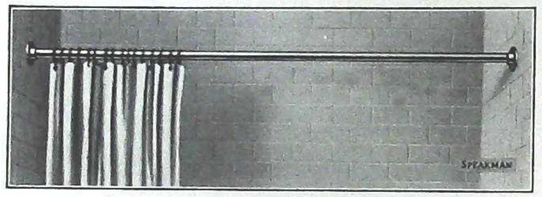
No. 3475 Adjustable Ball Joints



Brass adjustable ball joint for use on shower head.

Size.....inches	½	¾
Price, Nickel Plated.....each	$1.35	$1.65
Price, Chromium Plated..each	1.75	2.05

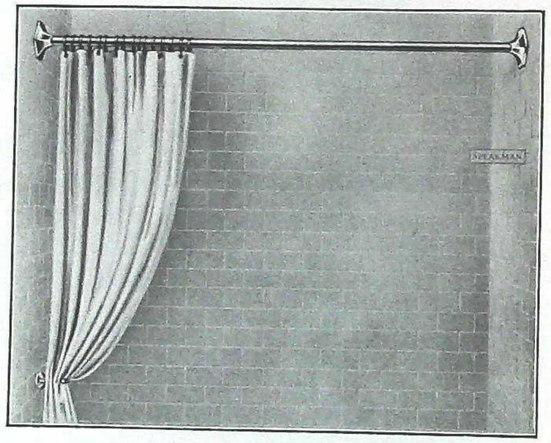
No. 3540 Recess Curtain Rods



Nickel-plated curtain rod with cast brass flanges, curtain hooks and white duck curtain.

	Each N.P. With Curtain	Each N.P. Less Curtain	Each Chrome With Curtain	Each Chrome Less Curtain	Length Inches	For Tub Feet
3540	$10.00	$5.10	$11.20	$6.30	62	5
3545	10.75	5.50	12.00	6.75	68	5½
3550	11.40	5.85	12.85	7.30	74	6

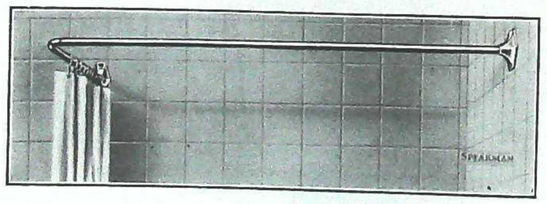
No. 3552 Speakman Artline Curtain Rods



Artline curtain rod, chromium-plated, cast brass Art flanges, curtain hooks, white duck curtain, Artline hold-back hook.

	With Curtain	Less Curtain
Price, 62 Inches Long.....each	$21.75	$17.25
Price, 68 Inches Long.....each	22.50	17.65
Price, 74 Inches Long.....each	23.05	18.40

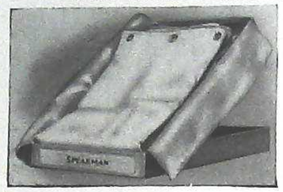
No. 3562 Speakman Artline Corner Curtain Rods



Artline corner curtain rod, chromium-plated, with extra heavy cast brass Art design flanges, curtain hooks, white duck curtain and Artline hold-back hook.

	With Curtain	Less Curtain
Price, 57 Inches Long.....each	$30.00	$24.75
Price, 63 Inches Long.....each	32.65	27.00

No. 3600 Duck Shower Curtains



Colored curtains can be furnished in a variety of shades and tints, and in figured patterns, solid colors and pastel shades: in rubberized material and in especially closely woven waterproof fabric treated to resist mildew. Lists below for white.

For Stalls

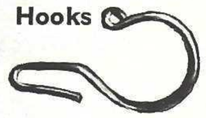
Width In.	Lgth. In.	Each	Width In.	Lgth. In.	Each	Width In.	Lgth. In.	Each
40	75	$3.40	46	75	$3.90	52	75	$4.50

For Tub Rods and Rings

66	72	$5.50	78	69	$5.10	100	72	$8.65
72	72	5.85	87	72	7.15	111	72	9.45
76	72	6.30	93	72	7.90	*147	72	13.50

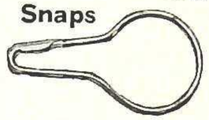
*Two-piece.

No. 3605 Curtain Hooks



Price, N.P.....each $.15
Price, Chromium..each .20

No. 3610 Curtain Snaps



Price, N.P.....$.15
Price, Chromium..each .20

Day's Roller Bearing Shower Curtain Hooks

No. 146-30



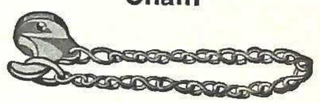
The rollers enable the curtains to glide along at the slightest touch.

Made of brass, heavily nickel-plated.

For 1-inch bars, 1¼-inch hooks; 1¼-inch bars, or 1½-inch bars, use 1¾-inch hooks.

Per Dozen.....$1.20

No. E262 Hold Back Curtain Hook and Chain

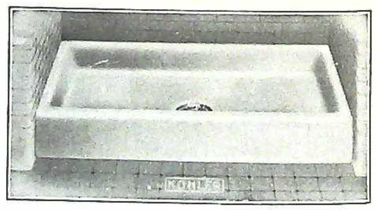


Chain type hold back hook polished and nickel-plated.
Price, No. E262.....each $.45

No. E260 Hold Back Curtain Hooks



Solid cast brass hold back hook. Polished and nickel-plated.
Price, No. E260.....each $.75



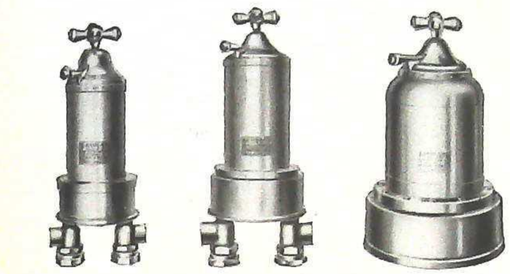
No. 105

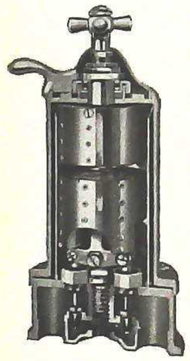
Cataract Enameled Iron Recess Shower Receptor to build 1¼ inches into walls and ½ inch into floor with apron, with center outlet, nickel-plated brass strainer with outlet for 2-inch lead or iron pipe for solder or calked joint.

Size over rim 36x36 inches Depth inside 3¾ inches Apron 5 inches Size over rim 42x42 inches Depth inside 3¾ inches Apron 5 inches		
Size.....inches	36x36	42x42
Approximate Shipping Weight.....pounds	190	250

Hy-Tech Products

Model B Leonard Thermostatic Water Mixing Valves





By the use of this valve the temperature of the water supply to plumbing fixtures can be predetermined and maintained at the desired temperature regardless of variations in pressure. If the pressure of the hot or cold supply changes after the valve is set, the thermostatic coils instantly adjust the balanced valves to give the predetermined temperature of water. If the cold or hot water supply to the valve was suddenly shut off the valve would automatically shut off the supply to the fixture.

Model B Valves are furnished with temperature scale, i.e., 80, 90, 100, 120 degrees. Special temperature markings can be furnished.

All valves are furnished with strainers and 4-arm metal handle. Check valves are also furnished on all models except B-120. Check valves are not furnished with the Model B-120 but should be installed in the supply pipes.

Model B Valves for concealed piping are supplied with flange. When ordering valves for concealed piping, always state whether valve is to be placed in a horizontal or vertical position. If not specified, concealed valves will be furnished for horizontal installation.

Model	Piping	†Cap. Gal. per Min.	I. P. Size In. Inlets	I. P. Size In. Outlet	Price, Each Bronze Castings N. P. Finish	Bronze Castings Chromium Finish	Benedict Metal Castings
*B- 5	Exposed	5	½	¾	$125.00	$140.00	$155.00
B-10	Exposed	15	½	¾	125.00	140.00	155.00
B-10	Concealed	15	½	¾	140.00	155.00	172.00
B-20	Exposed	25	¾	1	150.00	165.00	180.00
B-20	Concealed	25	¾	1	165.00	180.00	197.00
B-40	Exposed	45	1	1¼	185.00	207.00	222.00
B-40	Concealed	45	1	1¼	205.00	227.00	242.00
B-60	Exposed	55	1¼	1½	210.00	232.00	247.00
B-60	Concealed	55	1¼	1½	230.00	252.00	267.00
B-120	Exposed	120	1½	2	275.00	305.00	.....

*Baby bath model.
†Capacities under 40 pounds pressure.

Lock Escutcheons

Lock escutcheons can be furnished for temperature and volume control or for temperature control only.

Description	Price, Each Bronze Castings N. P. Finish	Bronze Castings Chromium Finish	Benedict Metal Castings
For Models B-5, B-10 and B-20....	$6.00	$6.00	$8.00
For Models B-40 and B-60.....	10.00	10.00	10.00
For Model B-120.....	10.00	10.00	.....

Wall Brackets

Wall brackets for bottom back outlet only.

For Models B-5, B-10 and B-20....	$10.00	$14.00	$16.00
For Models B-40 and B-60.....	14.00	20.00	.....

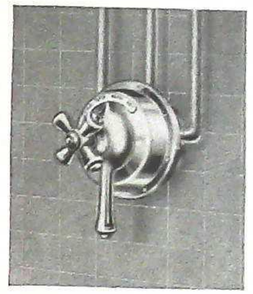
Thermometers

V type thermometers with glass front, furnished in nickel-plated only.

Straight Stem.....	$10.50	.....	.....
Angle Stem.....	11.00	.....	.....

Type L-9-E Leonard Thermostatic Water Mixing Valves

Exposed Type



This valve will provide blended water at a known temperature. Unequal pressure in the hot and cold water supplies do not affect the accuracy of operation. If either the hot or cold water supply should cease entirely the valve would shut off automatically, a possibility for which the ordinary mixing valve does not provide.

The exposed type of valve has a capacity of 7 gallons per minute under 40 pounds pressure. Inlets are ½-inch iron pipe size. Outlet is ¾-inch iron pipe size.

It is compactly built, as it extends into the shower stall only 6¼ inches, and the base casting is so designed that it permits the supply pipes to and from the valve to set practically flush with the wall.

The Type L-9 valve is particularly adapted for hotel use, as all working parts are assembled on the face plate, which is removed by unscrewing the screws on flange. All parts are standardized and interchangeable, thus making it possible to install a new face plate and working parts while other is being cleaned or parts replaced.

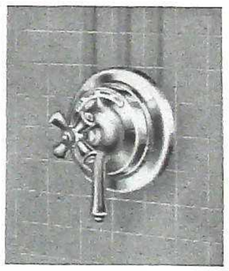
Furnished with word scale only: Cold, Tepid, Warm, Hot.

Check valves are not furnished but should be installed when valve is piped for more than one fixture.

Description	Price, Each Bronze Castings N. P. Finish	Bronze Castings Chromium Finish	Benedict Metal Castings
Type L-9-E, Exposed Piping, with 4-Arm Metal Handle and Metal Lever.....	$69.00	$81.00	$88.00
Type L-9-E, Exposed Piping, with Elbow Control.....	79.00	91.00	100.00

Type L-9-C Leonard Thermostatic Water Mixing Valves

Concealed Type



This valve has adjustable safety stops under the regulating pointer escutcheon which limit the range of bathing temperature. By removing or resetting these stops hot water can be drawn through the valve.

The concealed type of valve has a capacity of 7 gallons per minute under 40 pounds pressure. Inlets are ½-inch iron pipe size. The outlet is ¾-inch iron pipe size.

This valve can be placed in practically any partition as it is compactly built and requires only a space of 3¾ inches. The front of the valve extends 4¾ inches from the wall. The diameter of the wall escutcheon is 6⅞ inches.

All operating parts are assembled to the face plate and are removed as one unit. All repacking can be done from the front without disturbing base casting in the wall.

One-quarter turn of hand wheel opens or closes the valve.

Furnished with word scale only: Cold, Tepid, Warm, Hot.

Check valves are not furnished but should be installed when valve is piped for more than one fixture.

Description	Price, Each Bronze Castings N. P. Finish	Bronze Castings Chromium Finish	Benedict Metal Castings
Type L-9-C, Concealed Piping with Flange, with 4-Arm Metal Handle and Metal Lever.....	$75.00	$87.00	$94.00
Type L-9-C, Concealed Piping with Flange, with Elbow Control.....	85.00	97.00	106.00



Fig. H-261

Vitreous China Lavatory with anti-splash rim, open overflow with ledge, oval bowl, rear outlet, vitreous china pedestal, enameled wall brackets, with octagonal design combination compression supply and lift drain fittings, ⅜-inch supply pipes, with indexed stops. 1¼-inch P trap.

All fittings are chromium plated.

Slab 20x24 inches Basin 12x16½ inches
Slab 22x27 inches Basin 14x18 inches
Slab 24x30 inches Basin 16x21 inches

Size.....inches	20x24	22x27	24x30
Approximate Shipping Weight, Less Fittings.....pounds	100	125	150

Size 20x24 inches furnished with depressed soap dish.

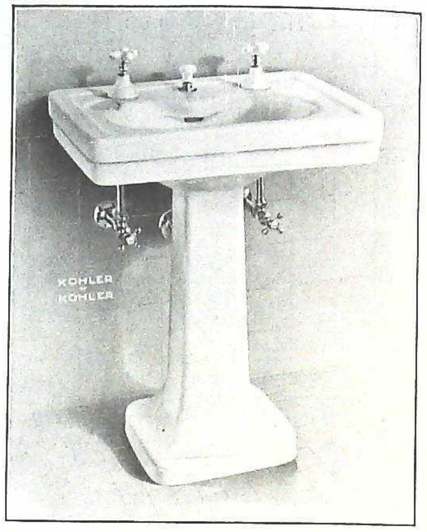


Fig. H-263

Vitreous China Pedestal Lavatory with rear outlet oval basin, anti-splash rim, hooded overflow and integral china supply nozzle, vitreous china pedestal, enameled wall brackets, compression combination supply and lift drain fitting with china cross handles, indexed, china escutcheons and china knob, nickel-plated supply pipes to wall with china indexed stops and 1¼-inch nickel-plated P trap.

Slab 20x24 inches Basin 12x16½ inches
Slab 22x27 inches Basin 14x18 inches
Slab 24x30 inches Basin 16x21 inches

Size.....inches	20x24	22x27	24x30
Approx. Ship. Wt. Less Fittings..lbs.	135	150	175

The 20x24-inch size has depressed soap dish.

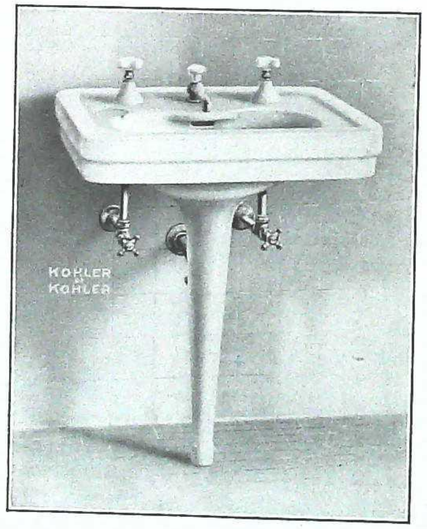


Fig. H-262

Vitreous China Straight Front Lavatory with rear outlet oval basin, anti-splash rim, open overflow with ledge, vitreous china leg, enameled iron wall brackets, fitted with compression combination supply and lift drain fitting with china cross handles, indexed, china knob and escutcheons, nickel-plated supply pipes to wall, angle stops with 4-ball china handles, indexed, and nickel-plated P trap.

Slab 18x20 inches Basin 10¼x15½ inches
Slab 20x24 inches Basin 12 x16½ inches
Slab 22x27 inches Basin 14 x18 inches
Slab 24x30 inches Basin 16 x21 inches

Size.....inches	18x20	20x24	22x27	24x30
App. Ship. Wt. Less Fittings..lbs.	85	100	125	150

Sizes 18x20 and 20x24 furnished with depressed soap dish.

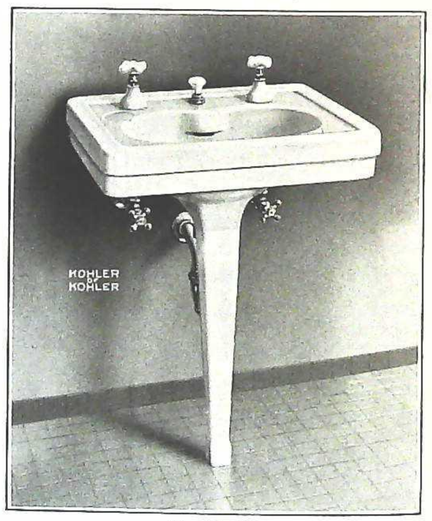


Fig. H-264

Vitreous China Lavatory with integral spout, concealed overflow, oval bowl, rear outlet, enameled wall brackets, vitreous china leg, with special combination compression supply and left drain fittings for integral spout, ⅜-inch supply pipes, with china indexed stops. 1¼-inch P trap.

Slab 18x20 inches Basin 10¼ x15½ inches
Slab 20x24 inches Basin 12 x16½ inches
Slab 22x27 inches Basin 14 x18 inches
Slab 24x30 inches Basin 16 x21 inches

Size.....inches	18x20	20x24	22x27	24x30
Approximate Ship. Weight, Less Fittings.....pounds	85	100	125	150

Sizes 18x20 and 20x24 inch furnished with depressed soap dish.

Hy-Tech Products

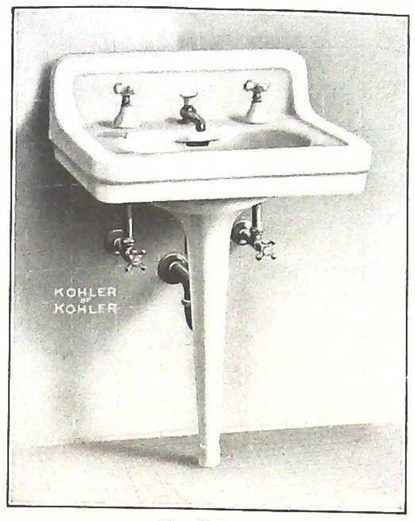


Fig. H-271

Vitreous China Straight Front Lavatory with back, rear outlet oval basin, anti-splash rim and open overflow with ledge, depressed soap dish, vitreous china leg, and concealed wall hanger, fitted with compression combination supply and lift drain fitting with china cross handles, indexed, china knob and escutcheons, nickel-plated supply pipes to wall, angle stops with 4-ball china index handles and nickel-plated P trap.

Slab 18x20 inches Basin 10¼x15½ inches Back 6 inches
Slab 20x24 inches Basin 12 x16½ inches Back 6 inches

Size.....inches	18x20	20x24
Approx. Ship. Wt. Less Fittings.....pounds	90	105

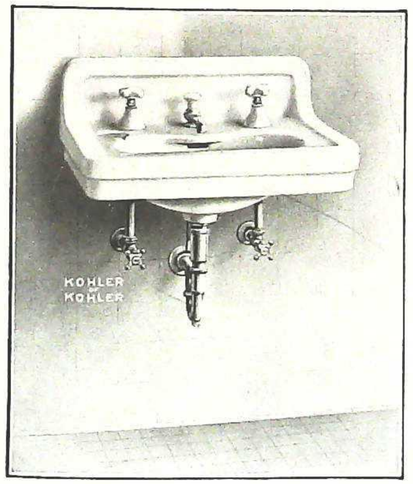


Fig. H-272

Vitreous China Straight Front Lavatory with back and rear outlet oval basin, anti-splash rim, open overflow with ledge, concealed wall hanger, fitted with nickel-plated compression combination supply and lift drain fitting with 4-arm china handles, china escutcheons and china knob, nickel-plated supplies to wall, angle stops with china index handles, and nickel-plated P trap.

Slab 18x20 inches Basin 10¼x15½ inches Back 6 inches
Slab 20x24 inches Basin 12 x16½ inches Back 6 inches

Size.....inches	18x20	20x24
Approx. Shipping Weight.....pounds	75	90

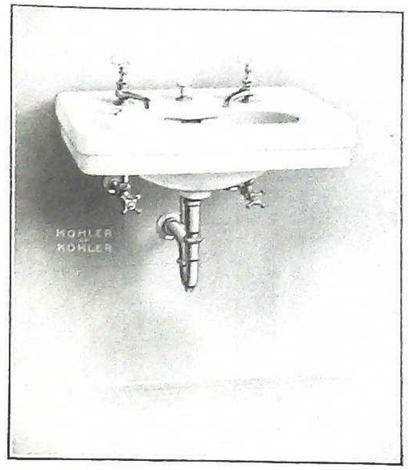


Fig. H-273

Vitreous China Straight Front Lavatory with rear outlet oval basin, anti-splash rim and open overflow with ledge, concealed wall supports, fitted with nickel-plated compression faucets with china cross handles, nickel-plated supply pipes to wall, angle stops with china index handles, lift drain with china knob, and nickel-plated P trap.

Slab 18x20 inches Basin 10¼ x15½ inches
Slab 20x24 inches Basin 12 x16½ inches
Slab 22x27 inches Basin 14 x18 inches
Slab 24x30 inches Basin 16 x21 inches

Size.....inches	18x20	20x24	22x27	24x30
App. Ship. Wt. Less Fittings lbs.	85	100	125	150

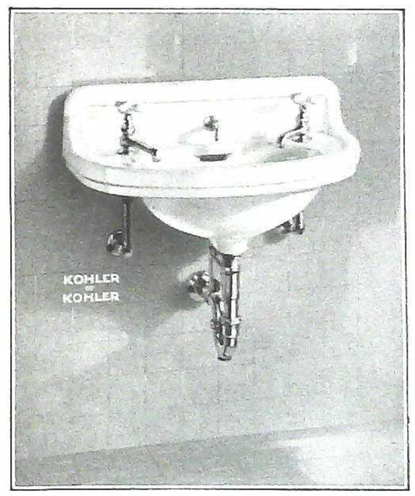


Fig. H-274

Vitreous China Space Saving Lavatory with back, anti-splash rim, open overflow with ledge, oval bowl, rear outlet, concealed wall hanger, with compression faucets, lift drain fitting, with lever handle through back. 1¼-inch P trap.

Specify if fittings are desired chromium plated.

Slab 14x26 inches Basin 10¼x18½ inches Back 5 inches

Size.....inches	14x26
Approximate Shipping Weight, Less Fittings..pounds	70

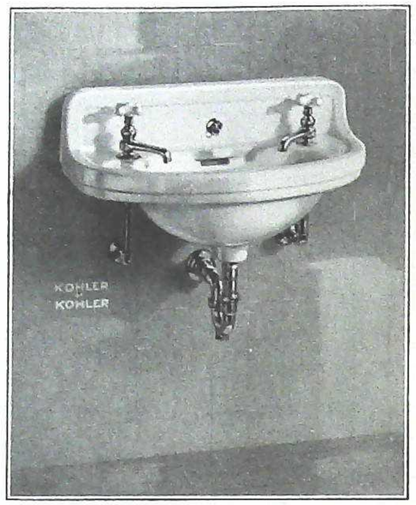


Fig. H-281

Vitreous China Space Saving Lavatory with back, anti-splash rim, open overflow with ledge, oval bowl, rear outlet, concealed wall hanger, with compression faucets, ⅜-inch supply pipes, drain plug and chain stay bolt, 1¼-inch P trap.

Specify if fittings are desired chromium plated.

Slab 14x26 inches	Basin 10½x18½ inches	Back 5 inches	
Size		inches	14x26
Approximate Shipping Weight, Less Fittings		pounds	70

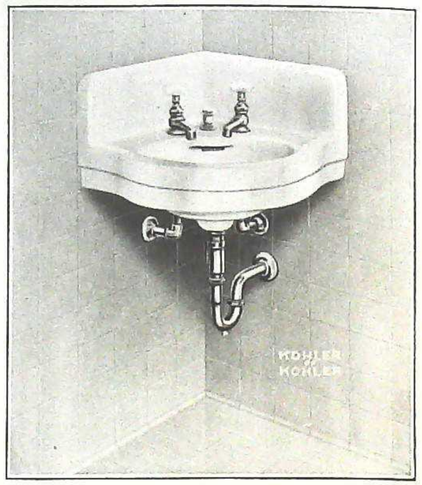


Fig. H-283

Vitreous China Corner Lavatory with integral back, rear outlet oval basin, anti-splash rim and open overflow with ledge, concealed wall hangers, fitted with nickel-plated compression faucets with china cross handles, nickel-plated supply pipes to wall, lift drain with china knob, and nickel-plated P trap.

Slab 17x17 inches	Basin 11x15 inches	Back 6 inches	
Size		inches	17x17
Approx. Shipping Weight		pounds	80

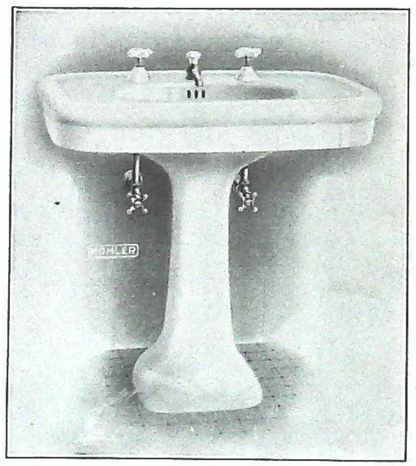


Fig. H-232

Belmore Enameled Iron Pedestal Lavatory with slab, D pattern basin with patent overflow, rear outlet and apron all in one piece, enameled iron pedestal, nickel-plated combination supply and lift drain fitting with compression valves, china cross handles, china knob and china escutcheons, ⅜-inch nickel-plated supply pipes with china indexed stops, and 1¼-inch nickel-plated P trap.

Slab 20x28 inches Slab 24x34 inches	Basin 12x15 inches Basin 14x18 inches	Apron 4½ inches Apron 4½ inches		
Size			inches	20x28 24x34
Shipping Weight Less Fittings			pounds	180 210

Can be furnished with fittings shown on any other lavatories.

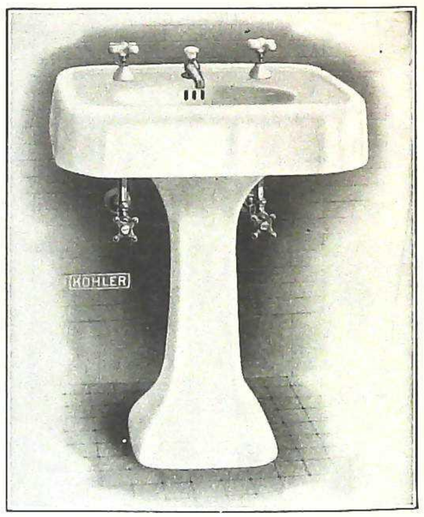


Fig. H-284

Columbia Enameled Iron Pedestal Lavatory with square slab, D pattern basin with rear outlet, patent overflow and apron all in one piece, enameled iron pedestal, nickel-plated combination compression supply and lift drain fitting with china cross handles, china knob and escutcheons, ⅜-inch nickel-plated supply pipes to wall with china indexed stops and 1¼-inch nickel-plated P trap.

Slab 20x24 inches Slab 22x27 inches	Basin 12x15 inches Basin 14x18 inches	Apron 5 inches Apron 5 inches		
Size			inches	20x24 22x27
Shipping Weight Less Fittings			pounds	185 200

Can be furnished with fittings shown on any other lavatories.

Hy-Tech Products

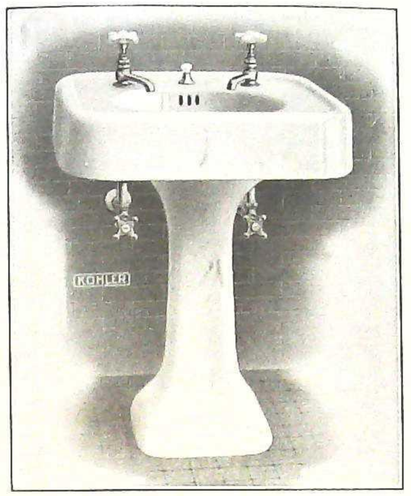


Fig. H-291

Columbia Enameled Iron Pedestal Lavatory with square slab, D pattern basin with rear outlet, patent overflow and apron all in one piece, enameled iron pedestal, nickel-plated compression faucets with china cross handles, lift drain with china knob, ⅜-inch nickel-plated supply pipes to wall with china indexed stops and 1¼-inch nickel-plated P trap.

Slab 20x24 inches Slab 22x27 inches	Basin 12x15 inches Basin 14x18 inches	Apron 5 inches Apron 5 inches		
Size			inches	20x24 22x27
Shipping Weight Less Fittings			pounds	185 200

Can be furnished with fittings shown on any other lavatory.

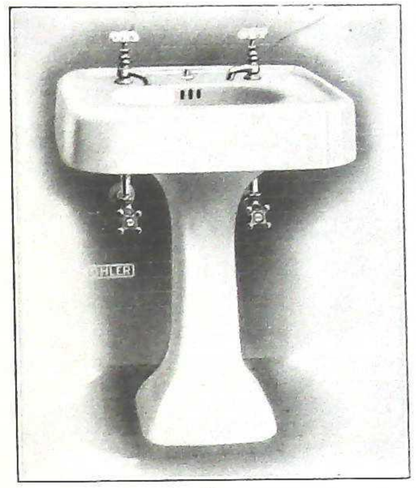


Fig. H-293

Columbia Enameled Iron Pedestal Lavatory with square slab, D pattern basin with rear outlet, patent overflow and apron all in one piece, enameled iron pedestal, nickel-plated compression faucets with china cross handles, ⅜-inch nickel-plated supply pipes to wall with china indexed stops, 1¼-inch nickel-plated P trap, drain plug and chain stay bolt.

Slab 20x24 inches Slab 22x27 inches	Basin 12x15 inches Basin 14x18 inches	Apron 5 inches Apron 5 inches		
Size			inches	20x24 22x27
Shipping Weight Less Fittings			pounds	185 200

Can be furnished with fittings shown on any other lavatories.

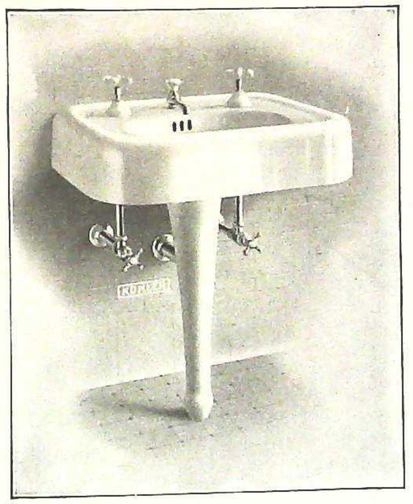


Fig. H-292

Columbia Enameled Iron Lavatory with square slab, D pattern basin with rear outlet, patent overflow and apron all in one piece, enameled iron leg, nickel-plated combination compression supply and lift drain fitting with china cross handles, china knob and escutcheons, ⅜-inch nickel-plated supply pipes to wall with stop valves and 1¼-inch nickel-plated P trap.

Slab 20x24 inches Slab 22x27 inches	Basin 12x15 inches Basin 14x18 inches	Apron 5 inches Apron 5 inches		
Size			inches	20x24 22x27
Shipping Weight Less Fittings			pounds	115 130

Can be furnished with fittings shown on any other lavatories.

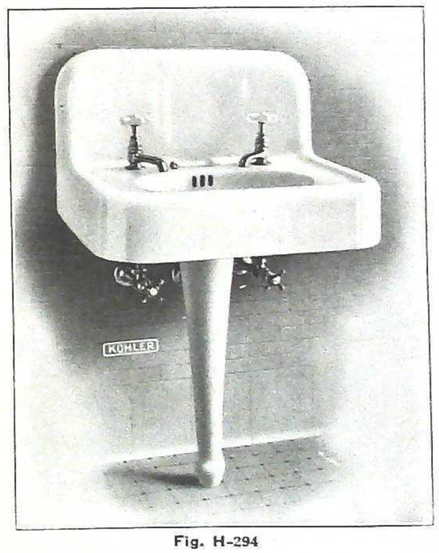


Fig. H-294

Emmet Enameled Iron Lavatory with slab, D pattern basin, patent overflow, rear outlet, depressed soap dish, one-piece back and apron, enameled iron round leg, concealed hanger, nickel-plated faucets with china handles, ⅜-inch nickel-plated supply pipes to wall, china indexed stops, 1¼-inch nickel-plated P trap, waste plug and chain stay bolt.

Slab 18x24 inches Slab 20x24 inches Slab 22x27 inches	Basin 12x15 inches Basin 12x15 inches Basin 14x18 inches	Back 10 inches Back 12 inches Back 12 inches	Apron 5 inches Apron 5 inches Apron 5 inches		
Size				inches	18x24 20x24 22x27
Approx. Ship. Wt. Less Ftgs.				lbs.	110 125 140

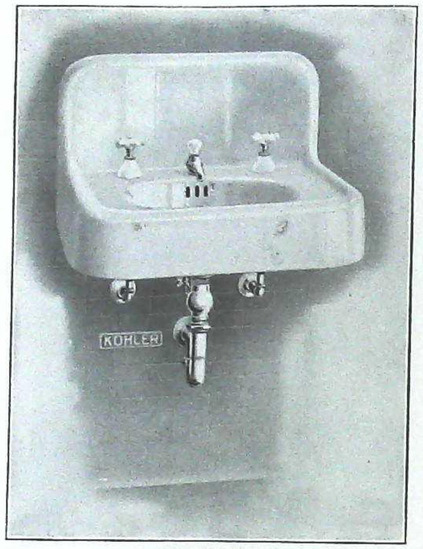


Fig. H-301

Emmet Enameled Iron Lavatory with slab, D pattern basin with patent overflow and rear outlet, back and apron all in one piece concealed wall hanger, nickel-plated combination supply and lift drain fitting with compression valves, china cross handles and china escutcheons, ⅜-inch nickel-plated supply pipes and 1¼-inch nickel-plated P trap.

Slab 18x24 inches	Basin 10½x16½ inches	Back 10 inches	Apron 5 inches	
Slab 20x24 inches	Basin 12 x16½ inches	Back 12 inches	Apron 5 inches	
Slab 22x27 inches	Basin 14 x18 inches	Back 12 inches	Apron 5 inches	
Size.....inches		18x24	20x24	22x27
Shipping Weight Less Fittings...lbs.		110	125	140

Can be furnished with fittings shown on any other lavatory.

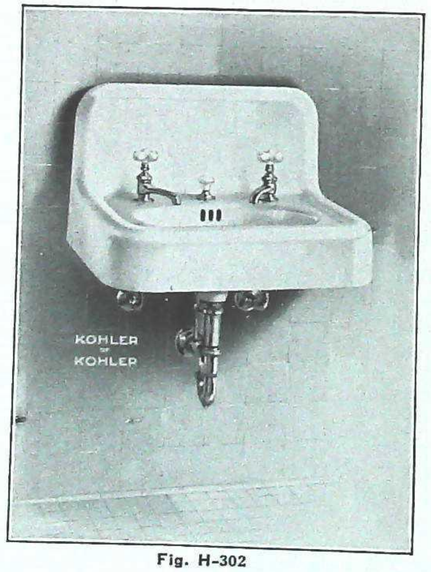


Fig. H-302

Emmet Enameled Iron Lavatory with slab, D pattern basin with rear outlet, patent overflow, back and apron all in one piece, concealed wall hanger, nickel-plated combination faucets with china cross handles, china handle lift waste through slab, ⅜-inch nickel-plated supply pipes to wall, 1¼-inch nickel-plated P trap.

Slab 18x24 inches	Basin 10½x16½ inches	Back 10 inches		
Slab 20x24 inches	Basin 12 x16½ inches	Back 12 inches		
Slab 22x27 inches	Basin 14 x18 inches	Back 12 inches		
Size.....inches		18x24	20x24	22x27
Approx. Ship. Wt. Less Fittings..lbs.		110	120	140

Can be furnished with fittings shown on any other lavatories.

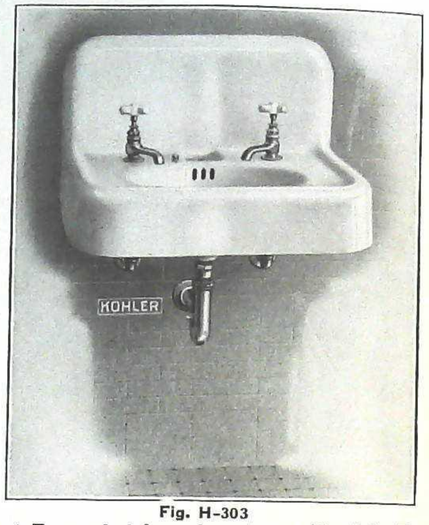


Fig. H-303

Emmet Enameled Iron Lavatory with slab, D pattern basin with rear outlet, patent overflow, depressed soap dish, cast in slab, draining into patent overflow, back and apron all in one piece, concealed wall hanger, nickel-plated compression faucets with china cross handles, ⅜-inch nickel-plated supply pipes to wall, 1¼-inch nickel-plated P trap, drain plug and chain stay bolt.

Slab 17x21 inches	Basin 11x14 inches	Back 8 inches			
Slab 18x24 inches	Basin 10½x16½ in.	Back 10 inches			
Slab 20x24 inches	Basin 12 x16½ in.	Back 12 inches			
Slab 22x27 inches	Basin 14x18 inches	Back 12 inches			
Size.....inches		17x21	18x24	20x24	22x27
Ship. Weight Less Fittings.pounds		90	110	120	140

Can be furnished with fittings shown on any of the other lavatories, except 17x21-inch size cannot be furnished with lift drain through slab and combination fittings.

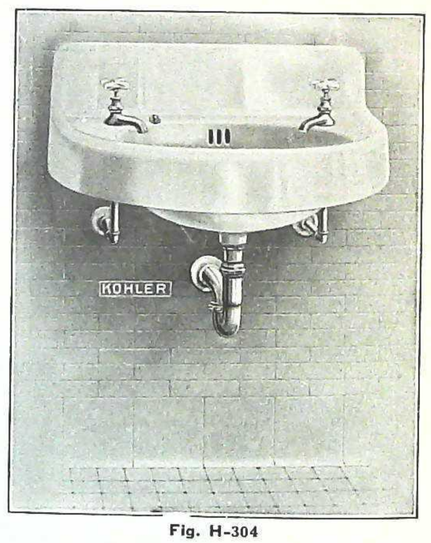


Fig. H-304

Narobol Enameled Iron Lavatory with slab, basin with patent overflow, back and apron all in one piece, concealed wall hanger, nickel-plated compression faucets with china cross handles, ⅜-inch nickel-plated supply pipes to wall, and 1¼-inch nickel-plated P trap, drain plug and chain stay bolt.

Slab 14x26 inches	Basin 9¾x16½ inches	Back 5½ inches

Shipping Weight Less Fittings.....pounds 80

Cannot be furnished with lift drain through slab, secret waste or combination fittings.

Hy-Tech Products

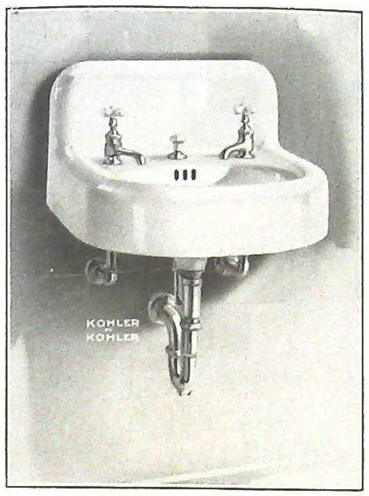


Fig. H-311

Bretton Enameled Iron Lavatory with slab, D pattern basin with rear outlet, patent overflow, back and apron all in one piece, nickel-plated compression faucets with china cross handles, lift drain with china handle, ⅜-inch nickel-plated supply pipes to wall and 1¼-inch nickel-plated P trap.

Slab 18x21 inches	Basin 10½x16½ inches	Back 8 inches		
Slab 19x24 inches	Basin 12 x15 inches	Back 10 inches		
Size.....inches		18x21	19x24	
Approx. Ship. Wt. Less Fittings.... pounds		90	105	

Can be furnished with fittings shown on any other lavatories.

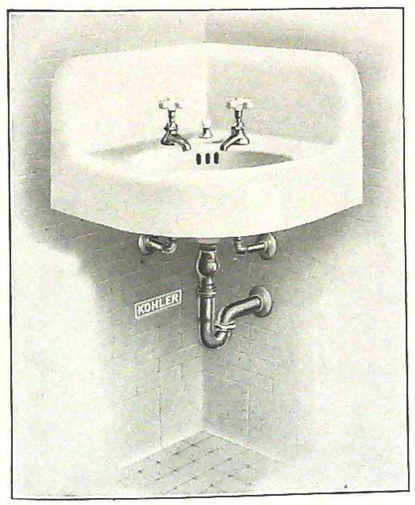


Fig. H-312

Osborne Enameled Iron Corner Lavatory with D pattern basin with rear outlet, depressed soap dish cast in slab, draining into patent overflow, back and apron all in one piece, concealed wall hangers, nickel-plated compression faucets with china cross handles, ⅜-inch nickel-plated supply pipes to wall, lift drain with china knob and 1¼-inch nickel-plated P trap.

Length on sides 19 inches	Back 8 inches
Basin 10½x14¾ inches	Apron 5 inches

Shipping Weight Less Fittings.....pounds 95

Can be furnished with fittings as shown on any of the other lavatories except combination supply and secret drain fitting.

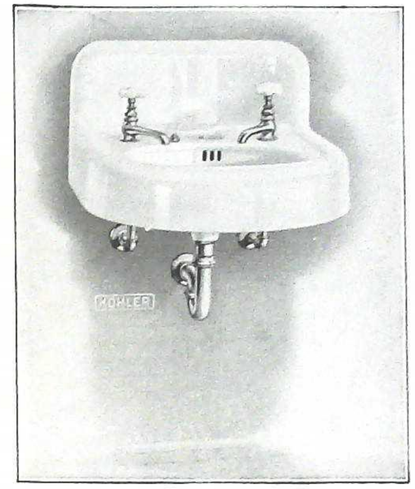


Fig. H-313

Bretton Enameled Iron Lavatory with slab, D pattern basin with rear outlet, patent overflow, depressed soap dish, cast in slab, draining into patent overflow, back and apron all in one piece, concealed wall hanger, nickel-plated compression faucets with china cross handles, ⅜-inch nickel-plated supply pipes to wall, 1¼-inch nickel-plated P trap, drain plug and chain stay bolt.

Slab 17x19 inches	Basin 10½x14¾ in.	Back 6 inches			
Slab 18x21 inches	Basin 10½x16½ in.	Back 8 inches			
Slab 19x24 inches	Basin 12x15 inches	Back 10 inches			
Size.....inches		17x19	18x21	19x24	
Ship. Weight Less Fittings..pounds		75	90	105	

Can be furnished with any other fittings, except the 17x19-inch which cannot be furnished with combination fittings or lift drain through slab.

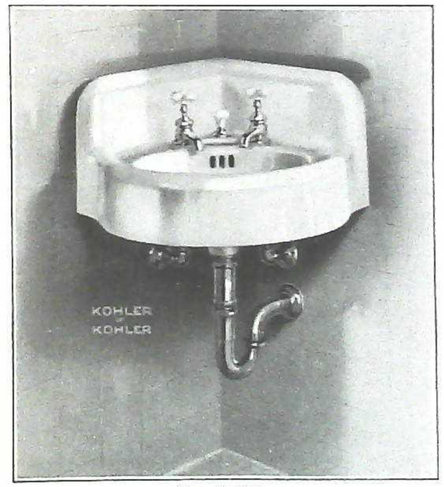


Fig. H-314

Kenneth Enameled Iron Corner Lavatory with slab, D pattern basin with rear outlet, depressed soap dish cast in slab, draining into patent overflow, back and apron all in one piece, concealed wall hangers, nickel-plated compression faucets with china cross handles, ⅜-inch nickel-plated supply pipes to wall, lift drain with china knob, and 1¼-inch nickel-plated P trap.

Length on sides 16 inches	Basin 11x14 inches	Back 6 inches

Size.....inches 16

Approx. Ship. Wt. Less Ftgs.....pounds 90

Can be furnished with fittings shown on any other lavatories except 16½-inch size cannot be fitted with combination supply and secret drain fitting.

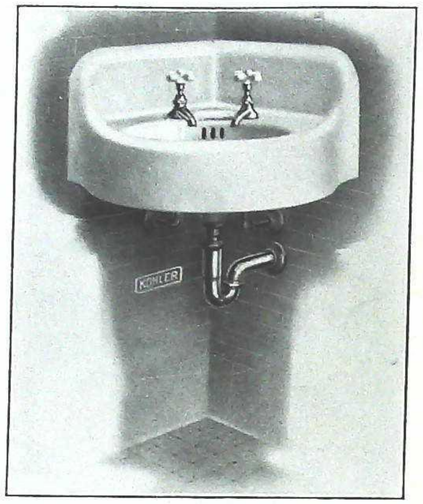


Fig. H-321

Kenneth Enameled Iron Corner Lavatory with slab, D pattern basin with rear outlet, depressed soap dish cast in slab, draining into patent overflow, back and apron all in one piece, concealed wall hangers, nickel-plated compression faucets with china cross handles, ⅜-inch nickel-plated supply pipes to wall, 1¼-inch nickel-plated P trap, drain plug and chain stay bolt.

Length on sides 16 inches Basin 11x14 inches Back 6 inches

Size	inches	16
Shipping Weight Less Fittings	pounds	90

Can be furnished with fittings shown on any other lavatories except combination supply and secret drain fitting.

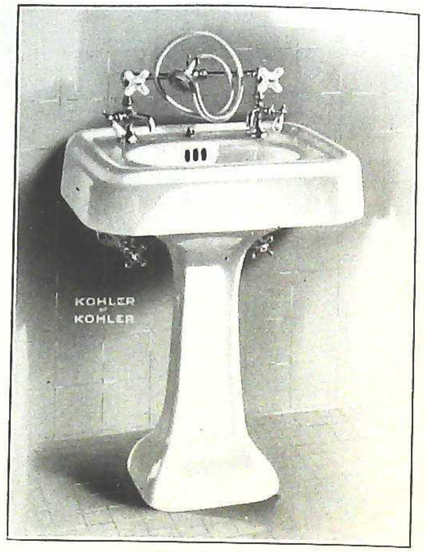


Fig. H-323

Columbia Barbers' Enameled Iron Pedestal Lavatory with D pattern basin with rear outlet, patent overflow and apron all in one piece, enameled iron pedestal, nickel-plated low pattern combination compression basin and shampoo fitting with china handles, shampoo and hose, ⅜-inch supply pipes with stops, 1¼-inch nickel-plated P trap, drain plug, chain stay, chain and stopper.

Slab 20x24 inches Basin 12x15 inches Apron 5 inches
Slab 22x27 inches Basin 14x18 inches Apron 5 inches

Size	inches	20x24	22x27
Approx. Ship. Wt., without Fittings	lbs.	185	200

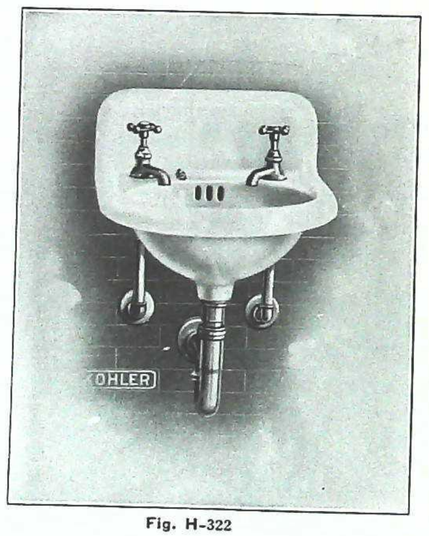


Fig. H-322

Midget Enameled Iron Lavatory with slab, round basin with center outlet, patent overflow and back all in one piece, concealed wall hanger, nickel-plated compression faucets with china index handles, ⅜-inch nickel-plated supply pipes to wall, nickel-plated 1¼-inch P trap, drain plug and chain stay bolt.

Slab 15¼x16 inches Basin 11¾ inches Back 5½ inches

Shipping Weight Less Fittings	pounds	50

Can be furnished with lift drain through back.

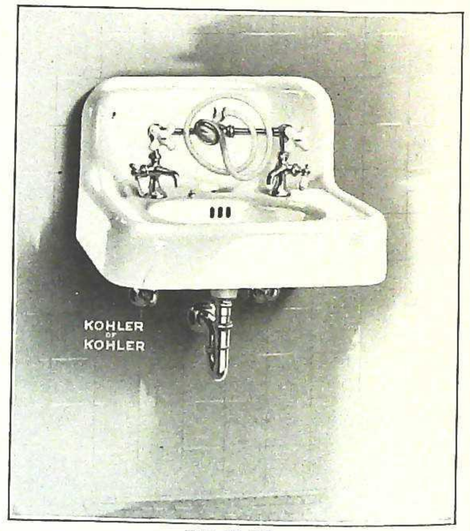


Fig. H-324

Emmet Barbers' Enameled Iron Lavatory with slab, D pattern basin with rear outlet, patent overflow, depressed soap dish, back and apron all in one piece, concealed wall hanger, nickel-plated low pattern combination compression basin and shampoo fitting with china handles, shampoo and hose, ⅜-inch nickel-plated supply pipes to wall, 1¼-inch nickel-plated P trap, drain plug and chain stay, chain and rubber stopper.

Slab 17x21 inches Basin 11 x14 inches Back 8 inches
Slab 18x24 inches Basin 10½x16½ inches Back 10 inches
Slab 20x24 inches Basin 12 x16½ inches Back 12 inches
Slab 22x27 inches Basin 14 x18 inches Back 12 inches

Size	inches	17x21	18x24	20x24	22x27
Ship. Weight Less Ftgs.	lbs.	80	110	125	140

Hy-Tech Products

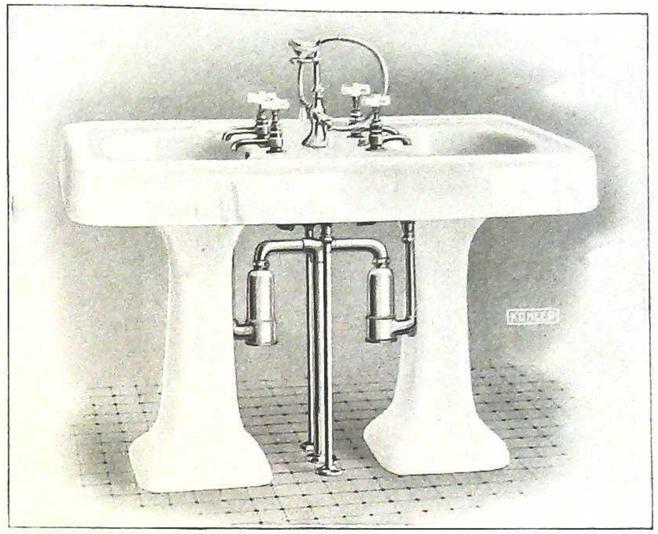


Fig. H-331

Beaufort Enameled Iron Barbers' Lavatory with four depressed soap cups cast in slab, draining into basins, on two enameled pedestals. Fitted with quick acting compression shampoo mixing faucet with hose and spray, compression faucets, ⅜-inch special combination hot and cold water supply pipes, supplying basin and shampoo faucets, drain plugs, 1¼-inch deep seal P traps, special double connection, 1½-inch drain to floor and chain stay bolts.

Slab 26x46 inches Basins 14x18 inches Apron 5 inches

Approximate Shipping Weight Less Fittings	pounds	360

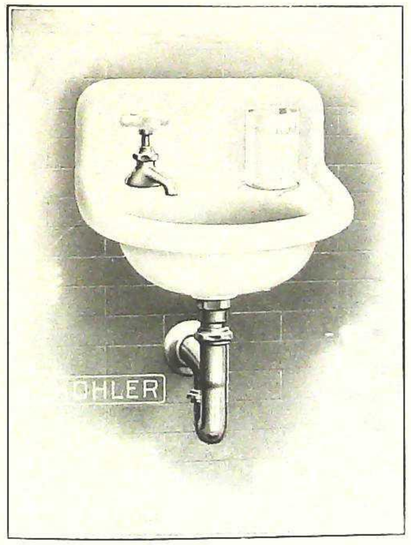


Fig. H-332

Sanita Enameled Iron Dental Lavatory with slab, back, oval basin and depressed tumbler holder all in one piece, concealed hanger, nickel-plated compression basin faucet with china cross handle, 1¼-inch P trap and special drain plug.

Slab 12x13 inches Basin 7x9 inches Back 5 inches

Shipping Weight Less Fittings	pounds	30

Can be furnished enameled upper surface only, or enameled all over.

Earthenware Round Wash Basins

With Patent Overflow for Metal Plug

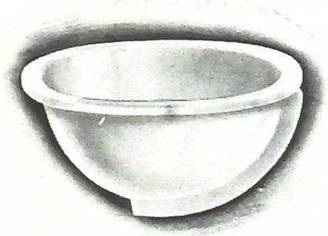


Fig. H-333

Outside Diameter	inches	12	13	14
Price	each	$7.00	7.00	7.00

Earthenware Oval Wash Basins

With Patent Overflow for Metal Plug

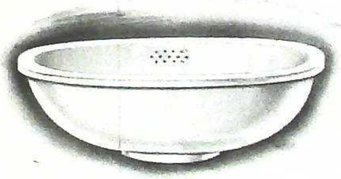


Fig. H-334

Outside Dimensions	inches	14x17	15x19
Price	each	$12.00	16.00

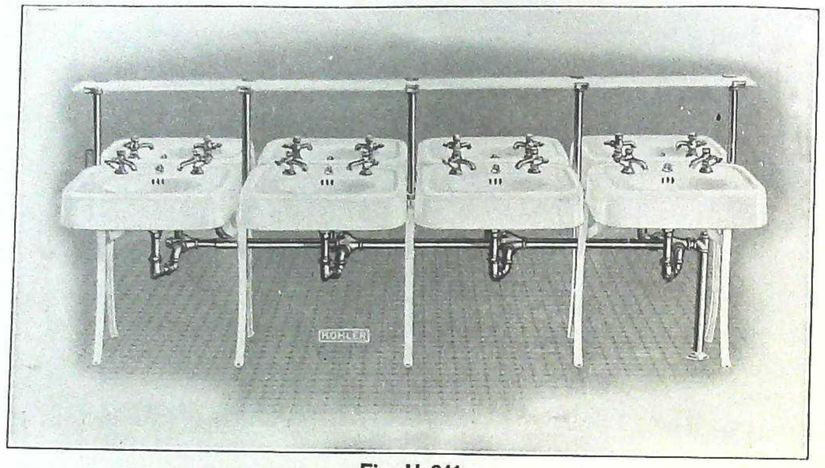


Fig. H-341

Burlington Battery of Eight (Four Double Sections) Enameled Iron Square Lavatories, each slab with D pattern basin, rear outlet, patent overflow and apron all in one piece, set on painted iron brackets to floor; fitted with opaline glass towel shelf on nickel-plated brass supports, nickel-plated self-closing faucets with china handles and china indexes, chain stay bolts, special drain plugs, 1¼-inch adjustable P traps, 2-inch nickel-plated continuous drain pipe with vent connection.

Pipe and fittings shown in outline only are not regularly furnished.

Slabs 16x20 inches Basins 9½x14 inches Aprons 5 inches
Slabs 20x24 inches Basins 12 x15 inches Aprons 5 inches

Space between lavatories at rear 1 inch. Space between lavatories at sides 1¼ inches.

Size ..... inches	16x20	20x24
Approximate Shipping Weight, 8 Lavatories Less Fittings ..... pounds	900	1030

Can be furnished in double sections of one or more, and with fittings as shown through slab on any other lavatories.

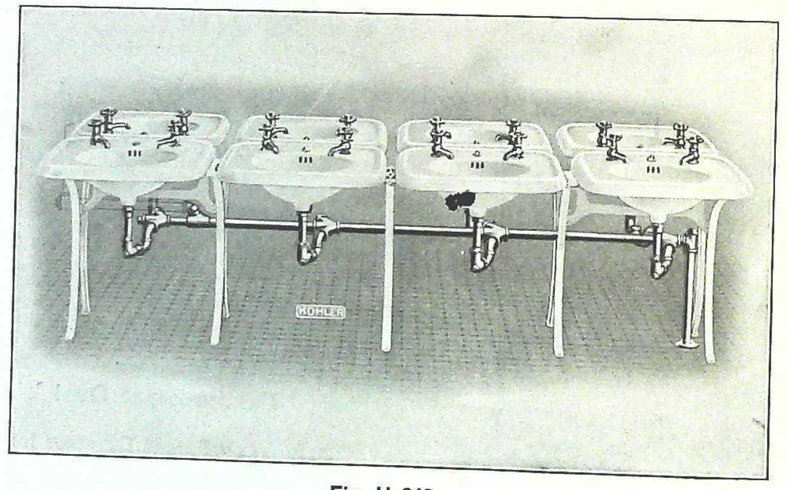


Fig. H-342

Gary Battery of Eight (Four Double Sections) Enameled Iron Roll Rim Lavatories, each slab with oval basin with center outlet, patent overflow and depressed soap dish all in one piece, painted iron brackets to floor, nickel-plated self-closing faucets, 1½-inch nickel-plated continuous drain with 1½-inch anti-syphon trap to floor, waste plugs, and chain stays.

Slabs 20x24 inches Basins 12x15 inches

Approximate Shipping Weight, Battery of 8 Lavatories Less Fittings ..... pounds	850

Can be furnished with fittings through slab as shown on any other lavatories; can also be furnished with towel shelf as shown on the Burlington lavatories.

Hy-Tech Products

Enameled Iron Roll Rim Wash Sink with end outlet, on enameled round adjustable pedestals, galvanized double supply supports, galvanized hot and cold supply pipes and crosses over center of sink, nickel-plated rough brass quick acting compression mixing faucets with rose spray spout, oblong soap dishes, 2-inch brass beehive strainer, and 2-inch galvanized iron P trap with male outlet.

Width over rim 30 inches
Width inside 26 inches
Floor to top of rim 30 inches
Depth inside at outlet 8 inches

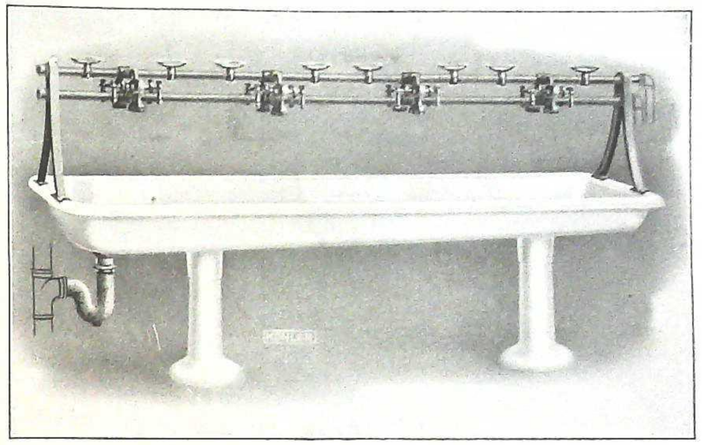


Fig. H-351

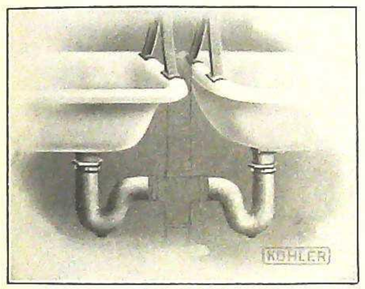


Fig. H-352

Length ..... inches	48	60	72	84	96
Number of Faucets	4	6	6	8	8
" " Soap Dishes	4	6	6	8	8
Size of Supply Pipes ..... inches	¾	¾	¾	1	1
Shipping Weight Less Fittings ..... pounds	315	350	430	495	560

Can be furnished also with painted pedestal.

Illustration herewith shows sinks end to end joined into one waste and vent.

Enameled Iron Roll Rim Factory Wash Sink on painted adjustable standards, with galvanized double supply supports, 2-inch center outlet, galvanized supply pipes over center of sink, rough nickel-plated quick compression mixing faucets with spray, spout and removable face, nickel-plated soap dishes, 1½-inch strainer and 1½-inch painted P trap, female iron pipe outlet.

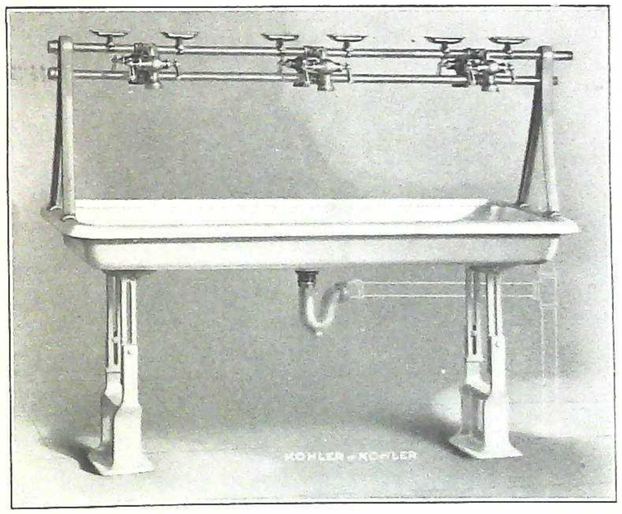


Fig. H-353

Width outside 27 inches Depth inside 6 inches
Width inside 22½ inches Height to top of rim adjustable 27 to 31 inches

Length ..... inches	48	60	72
Number of Faucets and Soap Dishes	4	6	6
Approximate Shipping Weight, Sink with Standards Only ..... pounds	170	210	250

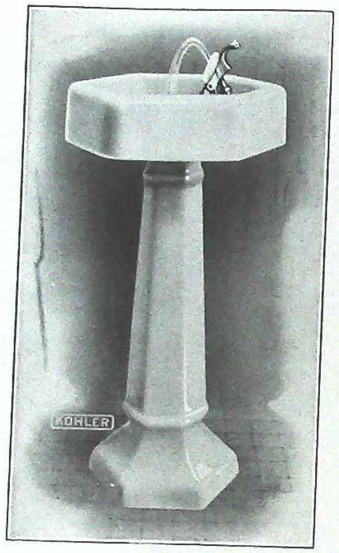


Fig. H-361

Wabash Enameled Iron Drinking Fountain with integral drain strainer, on enameled hexagonal pedestal, with china non-squirting stream jet with nickel-plated brass self-closing valve and flow regulator, adjustable for a continuous flow of water, and galvanized iron combined supply and drain pipes to floor.

	Diameter of bowl 15⅝ inches	Depth of bowl 3½ inches	
Height from Floor	inches	30	36
Approximate Shipping Weight	pounds	120	135

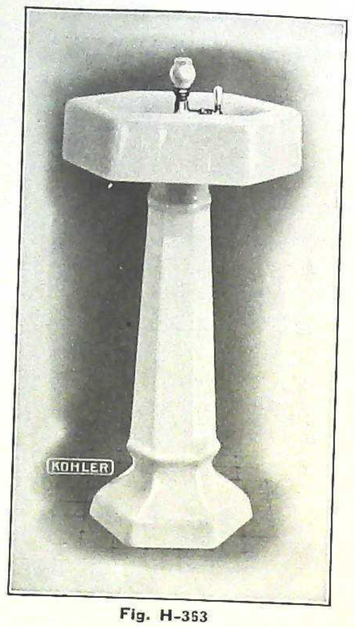


Fig. H-353

Wabash Enameled Iron Drinking Fountain with integral drain strainer, on enameled hexagonal pedestal, with china non-squirting bubbler with nickel-plated self-closing valve and flow regulator, adjustable for a continuous flow of water, and galvanized iron combined supply and drain pipes to floor.

	Diameter of bowl 15⅝ inches	Depth of bowl 3½ inches	
Height from Floor	inches	30	36
Approximate Shipping Weight	pounds	120	135

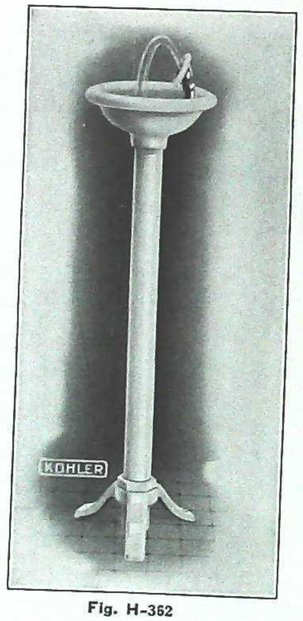


Fig. H-362

Tulare Enameled Iron Drinking Fountain with integral drain strainer, on painted iron stand and base, with china non-squirting flow stream jet with nickel-plated brass base and flow regulator, and galvanized iron combined supply and drain pipes to floor.

	Diameter of bowl 9 inches	Depth of bowl 2½ inches	
Height from Floor to Rim	inches	30	36
Approximate Shipping Weight	pounds	40	45

Can be furnished with bowl enameled inside and out or inside only, also with self-closing stream jet or bubbler.

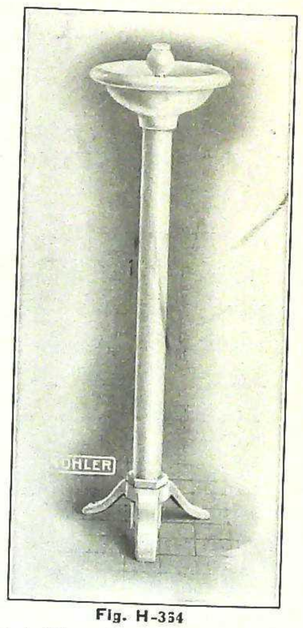


Fig. H-354

Tulare Enameled Iron Drinking Fountain with integral drain strainer, on painted iron stand and base, with china non-squirting continuous flow bubbler with nickel-plated brass base and flow regulator, and galvanized iron combined supply and drain pipes to floor.

	Diameter of bowl 9 inches	Depth of bowl 2½ inches	
Height from Floor to Rim	inches	30	36
Approximate Shipping Weight	pounds	40	45

Can be furnished with bowl enameled inside and out or inside only, also with self-closing stream jet or bubbler.

Hy-Tech Products



Fig. H-371

Enameled Iron Pedestal Drinking Fountain with china guard bubbler, loose key volume regulator and strainer base, foot-operated self-closing valve in nickel-plated floor plate, and concealed galvanized supply and drain pipe to floor.

Height	inches	27	30	36
Approximate Shipping Weight	pounds	120	136	148

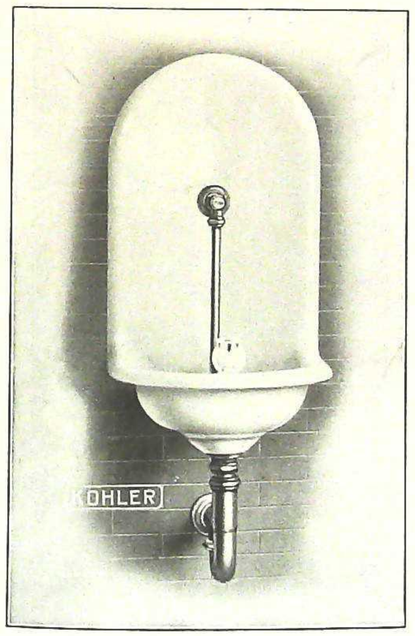


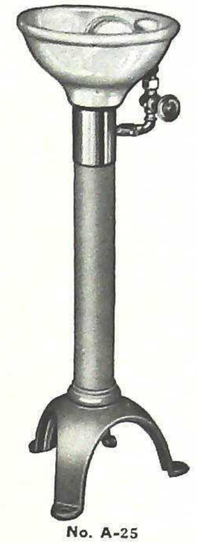
Fig. H-372

Delavan Enameled Iron One-piece Drinking Fountain with flat back, on concealed hanger, complete with china non-squirting bubbler with nickel-plated brass arm, flow regulator and push button valve with china index, 1¼-inch P trap and open strainer.

Height 24 inches Width 13¼ inches Wall to front 10¾ inches

Approximate Shipping Weight ..... pounds 55

Can be furnished with stream jet or faucet.



No. A-25



No. A-26

Pedestal Drinking Fountain with vitreous china bowl 11 inches in diameter, angle stream bubbler with adjustable nozzle, protecting cowl, iron pipe standard with tripod base, nickel-plated base for bowl, nickel-plated wheel handle self-closing valve, or nickel-plated oscillating metal handle self-closing valve, nickel-plated loose key stream regulator, ⅜-inch galvanized supply pipe and 1-inch galvanized drain pipe concealed in pedestal.

Pedestal and base furnished in white, machine gray or brown enamel. Specify color and height.

Height from Floor to Top of Bowl	inches	30	33	36
Approximate Shipping Weight	pounds	65	70	75

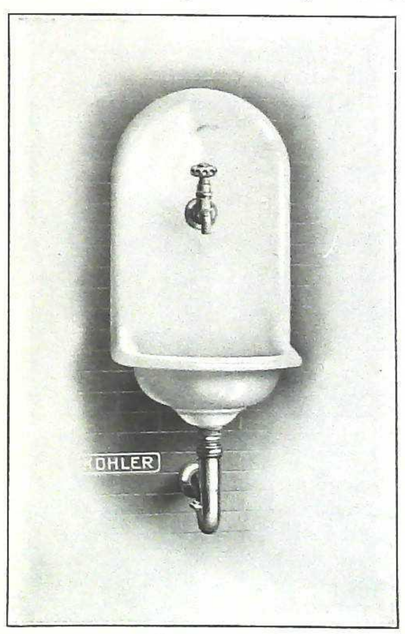


Fig. H-375

Delavan Enameled Iron Drinking Fountain with flat back, on concealed hanger, with nickel-plated self-closing faucet, combination glass holder and strainer, and 1¼-inch nickel-plated P trap.

Height 24 inches Width 13¼ inches Wall to front 10¾ inches

Approximate Shipping Weight ..... pounds 50

Can be furnished with stream jet if desired.

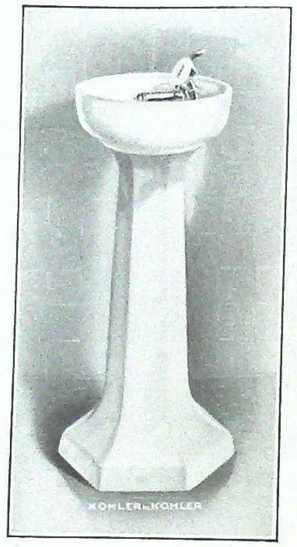


Fig. H-381

Arlington Vitreous China Drinking Fountain on hexagonal pedestal, with china non-squirting stream jet with nickel-plated self-closing valve, ⅜-inch i.p. size brass, supply pipe to floor with stop, nickel-plated brass strainer, and 1¼-inch i.p. size galvanized iron drain pipe to floor.

Diameter of bowl 12½ inches

Height from Floor.....inches 30
Approximate Shipping Weight.....pounds 40

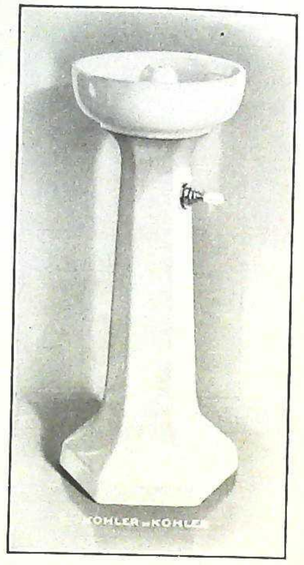


Fig. H-383

Arlington Vitreous China Drinking Fountain on nexagonal pedestal, with vitreous china non-squirting bubbler with vitreous china head and flow regulator, nickel-plated self-closing valve with vitreous china oscillating handle, ⅜-inch i.p. size brass supply pipe to floor with stop, and 1¼-inch i.p. size galvanized iron drain pipe to floor.

Diameter of bowl 12½ inches

Height from Floor.....inches 30
Approximate Shipping Weight.....pounds 40

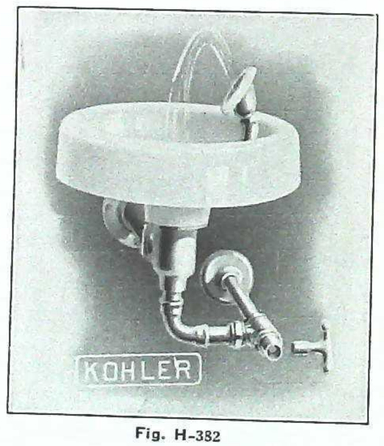


Fig. H-382

Tahoe Enameled Iron One-piece Drinking Fountain with integral drain strainer, complete with china non-squirting continuous flow stream jet with nickel-plated brass base, combined supply and drain connections, reversible supply pipe, loose key stop valve and 1¼-inch drain pipe to wall and supporting flange.

Diameter of bowl 9 inches Depth of bowl 2½ inches

Approximate Shipping Weight.....pounds 25

Can be furnished with bowl enameled all over or enameled inside only, with self-closing or continuous flow stream bubbler and with trap to wall instead of drain pipe.

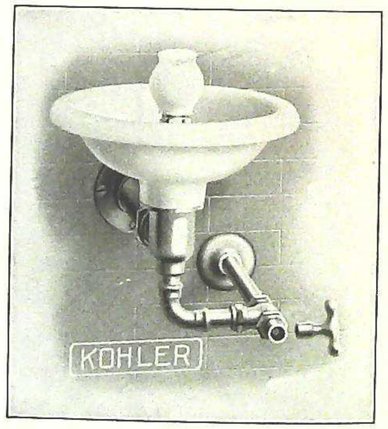


Fig. H-384

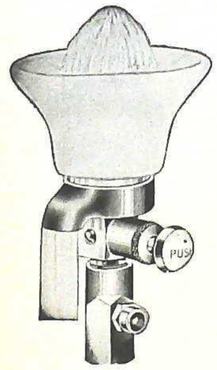
Yosemite Enameled Iron One-piece Drinking Fountain with integral drain strainer, complete with china non-squirting continuous flow bubbler with nickel-plated brass base, combined supply and drain connections, reversible supply pipe, loose key stop, drain pipe to wall and supporting flange.

Diameter of bowl 9 inches Depth of bowl 2½ inches

Approximate Shipping Weight.....pounds 25

Can be furnished with bowl enameled all over or enameled inside only, with self-closing or continuous flow stream bubbler, and with trap to wall instead of drain pipe.

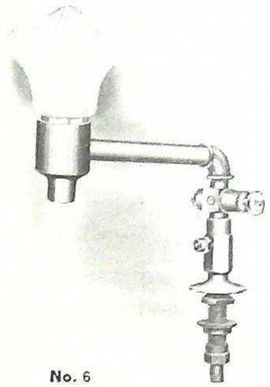
Hy-Tech Products



No. A-2
Trenjer Drinking Fountain with porcelain or metal bowl, self-closing valve with push button on side, Loose Key Control Valve, vertical shank threaded ½-inch iron pipe female.

Top of basin to end of shank 6¾ inches

Price, with Porcelain Cup .....each $5.80
Price, with N. P. Cup " 6.25



No. 6

Trenjer Drinking Fountain with porcelain or metal bowl, push button self-closing controlling valve, nickel-plated supply pipe, and coupling threaded ¼-inch iron pipe male.

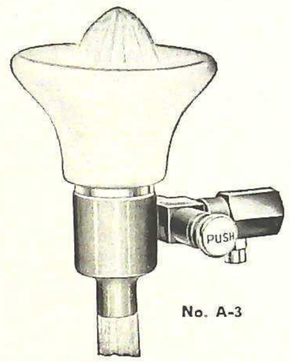
This drinking fountain can be installed on basins or lavatories and will fit in regular faucet hole.

Price, No. A-6, with Porcelain Cup..ea. $10.70
Price, No. A-6, with Nickel-Plated Cup .....each 10.25

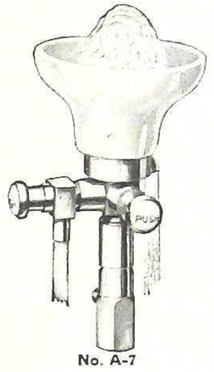
Trenjer Drinking Fountain with porcelain or metal bowl, self-closing valve with push button on side, Loose Key Control Valve, shank to wall threaded ½-inch iron pipe female.

Center of bubbler to end of shank 3⅜ inches

Price, with Porce-lain Cup....each $5.80
Price, with N. P. Cup.....each 6.25



No. A-3



No. A-7

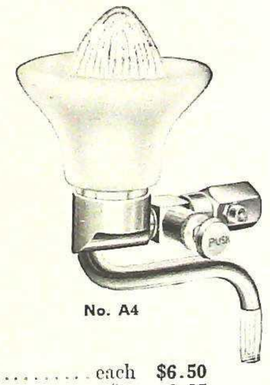
Trenjer Drinking Fountain with porcelain or metal bowl, self-closing valve with push button on side, push button cup filler, loose key control valve, vertical shank, threaded ½-inch iron pipe female.

Top of bubbler to end of shank, 8½ inches

Price, No. A-7 with Porcelain Cup..... each $8.30
Price, No. A-7 with N. P. Cup..... each 8.65

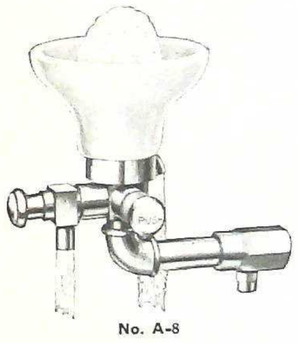
Trenjer Drinking Fountain with porcelain or metal bowl, self-closing valve with push button on side, push button cup filler, loose key control valve, shank to wall threaded ½-inch iron pipe female.

Center of bubbler to end of shank 3⅜ inches



No. A4

Price, with Porcelain Cup.....each $6.50
" " N. P. " ..... " 6.85

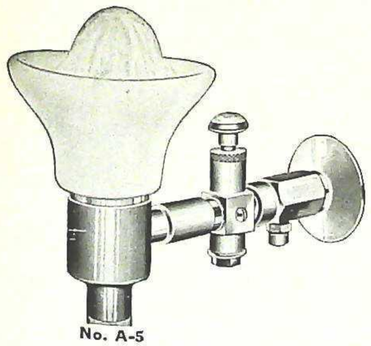


No. A-8

Trenjer Drinking Fountain with porcelain or metal bowl, self-closing valve with push button on side, push button cup filler, loose key control valve, shank to wall threaded ½-inch iron pipe female.

Center of bubbler to end of shank 4½ inches.

Price, No. A-8 with Porcelain Cup.....each $8.80
Price, No. A-8 with Nickel-Plated Cup.....each 9.20



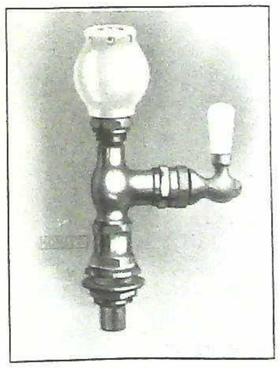
No. A-5

Trenjer Drinking Fountain with porcelain or metal bowl, self-closing valve with push button on top, Loose Key Control Valve, flanged shank to wall threaded for ⅜-inch iron pipe female.

Center of bubbler to end of shank 6⅛ inches

Price, with Porcelain Cup.....each $7.75
" " N. P. " ..... " 8.10

No. 8530 Bubbling Heads



Non-squirting bubbler with vitreous china head and handle, self-closing valve, and flow regulator, adjustable for a continuous flow of water.

Price, No. 8530, for Pan Fountain.each $10.55

Price, No. 8531, for Fountains with Integral Strainer .....each 9.90

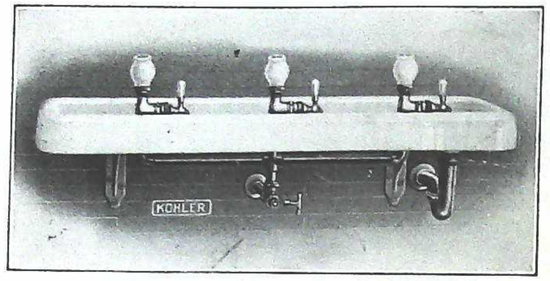


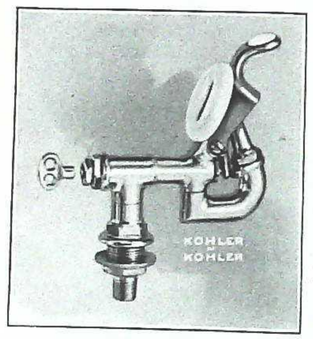
Fig. H-401

Montello Enameled Iron Drinking Fountain on concealed brackets, with china bubblers and nickel-plated brass self-closing valves with flow regulators adjustable for a continuous flow of water, and china handles, continuous ⅜-inch supply pipe with loose key stop, and 1¼-inch P trap with strainer and tailpiece.

Length.....inches	30	42	54
Width of Fountain..... "	13¼	13¼	13¼
Depth Inside, at Outlet..... "	2½	2½	2½
Center to Center of Bubblers... "	12	12	12
Number of Bubbling Valves.....	2	3	4
Approximate Shipping Weight..pounds	65	105	125

Furnished with either continuous flow bubblers, and self-closing or continuous flow stream jets.

No. 8525 Bubbling Heads



Nickel-plated non-squirting bubbling head with vitreous china index and shield, self-closing valve, loose key flow regulator, adjustable for a continuous flow.

Price, No. **8525**, for Pan Fountain .....each **$26.30**

Price, No. **8526**, for Fountains with Integral Strainer .....each **25.65**

No. 161 Bubbling Cups



Vitreous china cup with nickel-plated brass retainer with male thread for ¼ or ⅜-inch iron pipe, or female thread for ¼-inch iron pipe.

This bubbling cup is constructed to avoid squirting. It will not fill up as it drains through the bottom.

Price.....each **$3.50**

No. 159 Bubbling Cup Nozzles

Vitreous china nozzle with nickel-plated brass retainer with male thread for ¼ or ⅜-inch iron pipe, or female thread for ¼-inch iron pipe. This nozzle will not squirt. It drains through bottom.



Price.....each **$1.75**

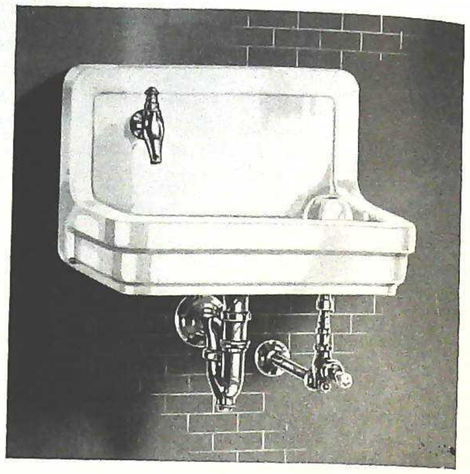


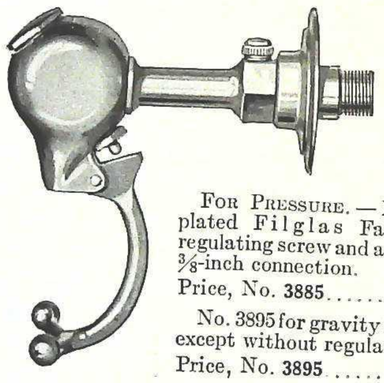
Fig. H-405

Vitreous China Straight Front Wall Drinking Fountain with integral back, on concealed hangers, fitted with ⅜-inch nickel-plated brass self-closing push button faucet with controlling stop, china bubbling cup, ⅜-inch nickel-plated brass supply pipe, self-closing valve with china oscillating handle and loose key stop valve and 1¼-inch nickel-plated brass P trap to wall with nickel-plated escutcheon.

Length over all 18 inches
Width wall to front 12¾ inches
Height of back 7¾ inches

Approximate Shipping Weight.....pounds 70

No. 3885 Mueller Filglas Faucets



For Pressure. — No. 3885 chromium plated Filglas Faucet with volume regulating screw and adjusting wall flange. ⅜-inch connection.

Price, No. **3885**.....each **$9.00**

No. 3895 for gravity is the same as above except without regulating screw.

Price, No. **3895**.....each **$8.50**

No. 5065 Self-Closing Ice Water Faucets

Speakman Ice Water Faucets, designed for use over lavatory, with integral stop, push button and ⅜-inch female inlet.

The nozzle is 7¾ inches long, which is long enough to extend over bowl of usual size lavatory. An integral stop permits controlling of the flow and prevents splashing.

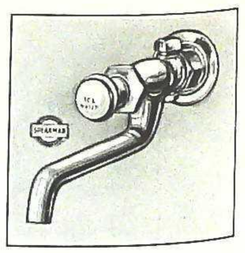


Fig. C-503

Nickel-Plated.....each	$12.40
Nickel-Plated, with Swinging Nozzle.....each	14.40
Chromium-Plated.....each	15.75
Chromium-Plated with Swinging Nozzle.....each	17.65

Hy-Tech Products



Fig. H-411

Syphon Jet Closet Combination with vitreous china syphon jet bowl with oval base, Stasco white ivory seat and cover with no metal exposed white hinge, vitreous china straight front tank with back ground smooth, Engel high pressure float valve, rubber ball flush valve, all white china side trip lever, nickel-plated supply pipe to floor, straight brass flush connection with vitreous china housing and china bolt caps.

Approximate Shipping Weight.....pounds 200

Made to smother noise when flushing. Large water surface and deep water seal. Roughing in measurements, 12½ inches.

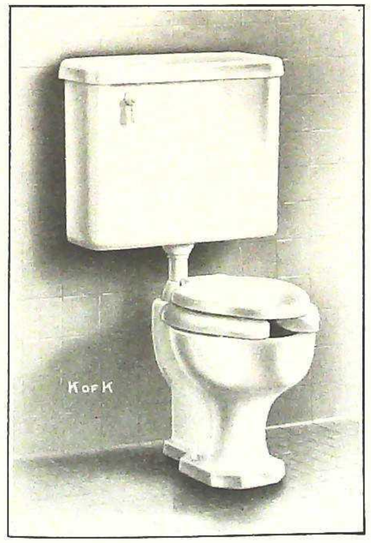


Fig. H-412

Syphon Jet Closet Combination with vitreous china syphon jet bowl with extended lip, angular base and twin jets, all white open front saddle seat and cover with all white hinges and white cushion bar bumpers, vitreous china straight front tank with concealed rear supply and special high grade fittings, all white top lever, white flush connection, cast brass floor flange with bolts and china caps.

Approximate Shipping Weight.....pounds 198

The bowl has deep seal and large waterway.



Fig. H-413

Syphon Jet Closet Combination with vitreous china syphon jet bowl with extended lip, angular base and twin jets, all white open front saddle seat and cover with all white hinges and white cushion bar bumper, vitreous china straight front tank with high grade fittings, all white top china lever handle and escutcheon, nickel-plated supply pipe to wall with 4-ball china indexed handle, white flush connection, cast brass floor flange, floor bolts and china caps.

Approximate Shipping Weight.....pounds 195

The bowl has large water seal, waterway and trap opening; it is quiet, positive and rapid flushing.



Fig. H-414

Syphon Jet Closet Combination with vitreous china syphon jet bowl with patented twin jets and angular base, birch mahogany finish seat and cover with nickel-plated brass bar hinge, flush and supply fittings, vitreous china straight front tank with all white top lever china handle, nickel-plated supply pipe to floor, nickel-plated flush connection, floor bolts and washers.

Approximate Shipping Weight.....pounds 195

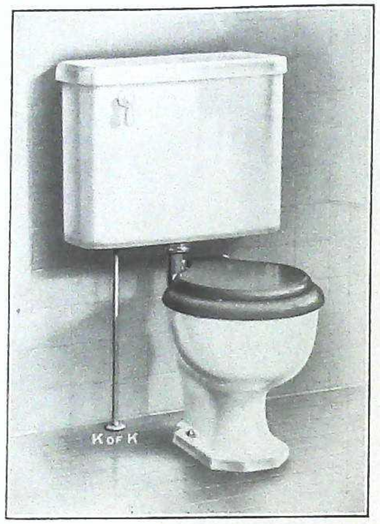


Fig. H-421

Reverse Trap Closet Combination with vitreous china reverse trap syphon action bowl with angular base, birch mahogany finish seat and cover with nickel-plated brass bar hinge, vitreous china straight front tank with all white top lever china handle, flush and supply fittings, nickel-plated supply pipe to floor, nickel-plated flush connection, floor bolts and washers.

Approximate Shipping Weight.....pounds 170



Fig. H-423

Syphon Wash Down Closet Combination with vitreous china syphon wash down bowl with angular base, mahogany finish seat and cover with nickel-plated bar hinge, vitreous china straight front tank with all white china lever handle and escutcheon, flush and supply fittings, nickel-plated supply pipe to floor, nickel-plated flush connection, floor bolts and washers.

Approximate Shipping Weight.....pounds 144



Fig. H-422

T/N One-Piece Water Closet Complete, vitreous china quiet non-overflow bowl and tank integral, combination cover fastener and bumper, special flush valve, all white china handle lever, special float valve with supply to flush rim, white seat and cover with all white hinges, chromium plated supply pipe, floor screws and china caps.

Approximate Shipping Weight.....pounds 115

Mahogany finish seat furnished if desired.

A one-piece fixture not attached to wall—very quiet in operation—powerful and cleansing centrifugal flushing action—non-overflow—cover fastened to tank.

Can be installed in any roughing-in 12 inches or over.

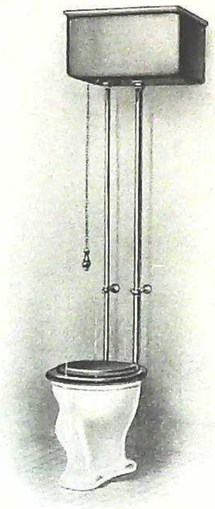


Fig. H-424

Syphon Wash Down Closet Combination with vitreous china syphon wash down bowl, oak seat and cover with nickel-plated cast brass hinges, round corner golden oak copper-lined high tank, nickel-plated supply pipe, nickel-plated flush pipe, pipe holders, nickel-plated chain and pull, closet screws and bolts.

Approximate Shipping Weight.....pounds 150

Hy-Tech Products



Fig. H-431

Syphon Jet Closet Combination with vitreous china syphon jet bowl with extended front lip, angular base, top supply, patented twin jets, all white open front seat with cover, chromium-plated hinges and white cushion bar bumpers, Royal flush valve with 1-inch ground joint union angle stop, china oscillating handle, 1½-inch nickel-plated flush connections, wall and spud escutcheons, china bolt caps, cast brass floor flange and bolts.

Approximate Shipping Weight.....pounds 78

This bowl has large water seal, waterway and trap opening; it is quiet, positive and rapid flushing.

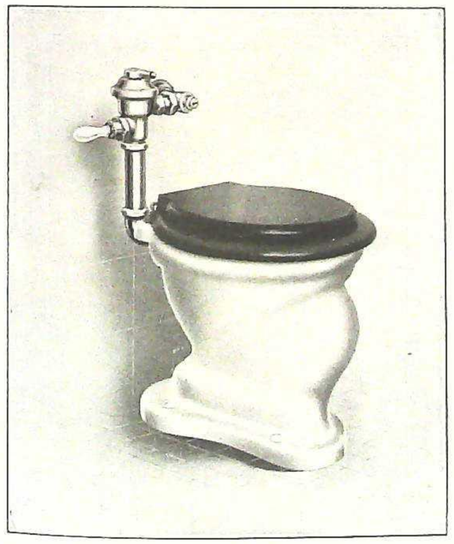


Fig. H-432

Syphon Wash Down Closet Combination, vitreous china syphon wash down bowl, golden oak or birch mahogany seat with cover and nickel-plated cast brass hinges, nickel-plated Royal flush valve with oscillating china handle, side supply inlet, 1-inch wheel handle or loose key angle stop, bumper on valve for seat with cover, brass floor flange, bolts and washers.

Approximate Shipping Weight.....pounds 80

Can be furnished without cover on seat; also with white celluloid covered seat and cover; with straight stop; also with jet in bowl.

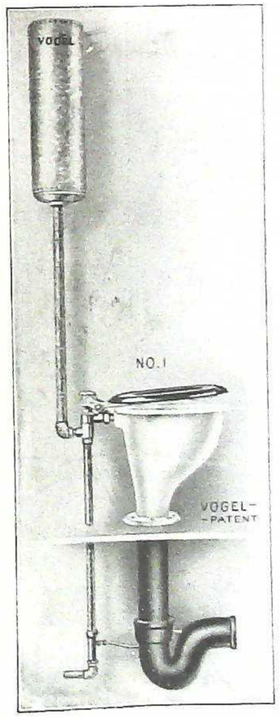


Fig. H-433

Syphon Jet Wall Closet Combination with vitreous china syphon jet wall bowl with extended lip, patented twin jets and side spud, mahogany finish open front seat with nickel-plated brass bar hinge, nickel-plated Royal flush valve with back inlet, 1-inch ground joint union straight stop, china oscillating handle, nickel-plated flush connection and escutcheon, balanced wall closet support, bolts, nickel-plated bolt caps and washers.

Approximate Shipping Weight.....pounds 125

This bowl has large waterway, deep seal, and quiet and positive flush.



No. 1 Vogel Automatic Enameled Iron Hopper Combination, tall oval enameled inside iron roll flush rim hopper with reenforced hardwood seat, 8x24-inch galvanized pressure tank, supply and flush valves, 39-inch valve rod and casing.

Approximate Shipping Weight.....pounds 100

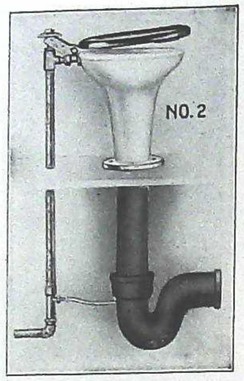
Can be furnished with hopper enameled inside and out, with earthenware bowl, or with self-raising seat.

Also can be furnished with spigot if desired.

This closet combination is simple, strong and durable, and requires no pit.

It is quickly and economically installed, as the valve may be covered with earth as soon as connection with the water supply is made. The valve parts can be easily removed from above the floor.

No. 2 Vogel Automatic Enameled Iron Hopper Combination, enameled inside hopper with enameled roll flush rim and brass fan wash, hardwood seat, supply valve, 39-inch valve rod and casing.



Approximate Shipping Weight.....pounds 50

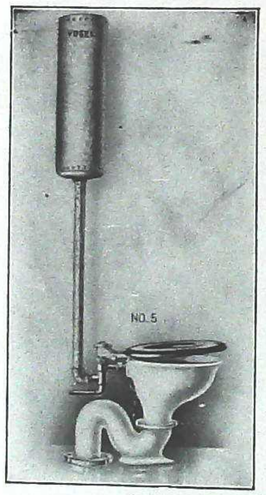
Can be furnished with hopper enameled inside and outside, or with self-raising seat.

Hoppers with 4-inch outlets for calking into bell end of soil pipe can be furnished at same price. Flanged hoppers will be furnished unless otherwise ordered.

The bowls have special design one-half roll enameled rims.

This combination contains but one washer and flushes while in use, after which no water remains in the fixture or in the casing.

It is simple, strong and durable, and requires no pit. Quickly and economically installed, as the valve may be covered with earth as soon as connection with the water supply is made. The valve parts can be easily removed from above the floor.



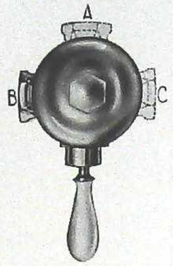
No. 5 Vogel Automatic Enameled Iron Hopper Combination, enameled flushing rim hopper and S trap enameled inside. re-enforced hardwood seat, heavy brass flush valve, galvanized pressure tank, galvanized flush pipe and connections.

This combination can be furnished with full S, ¾ S and ½ S trap to caulk. Can also be furnished with hopper and trap enameled inside and outside.

This hopper combination fills the demand for a strong and durable automatic closet for inside factory use.

Approximate Shipping Weight.....pounds 100

Royal Flush Valves



Top View

These are the only valves that flush the same amount of water at each operation regardless of whether handle or button is held or released, thus preventing either an excessive or insufficient flush.

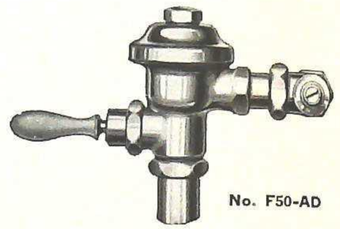
They can be used on either direct or tank supply and do not require regulating for any variation in pressure.

The oscillating handle is the best method of operating flush valves ever devised, as a slight movement in any direction causes the valve to flush.

The top view shows regular inlet at B, but the valve can be furnished with inlet at A or C when so ordered.



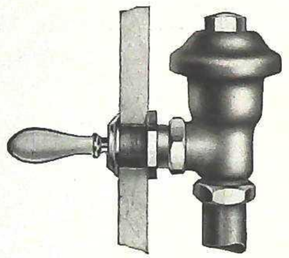
No. F50
Front View



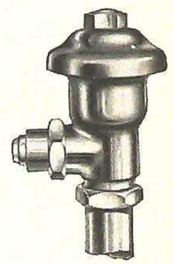
No. F50-AD

Price, No. F50, with China Handle and Straight Stop..ea. **$23.00**

Price, No. F50-AD, with China Handle and Angle Stop..ea. **$23.00**



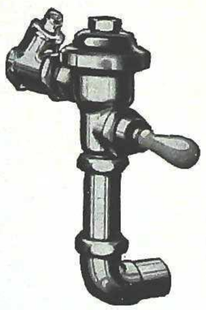
No. F55
Concealed Type



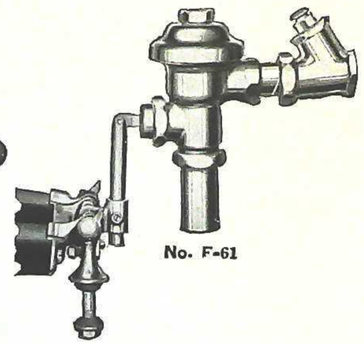
No. F52-CD
Side View

Price, No. F55 with China Handle or Push Button and Straight Stop..ea. **$26.00**

Price, No. F52-CD, with Push Button and Angle Stop and Outlet 21 In. Long .....each **$24.50**



No. F-53



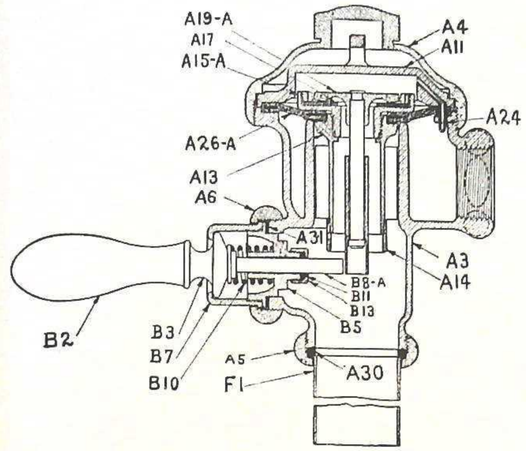
No. F-61

Price, No. F53, with China Handle, and Straight Stop, and Elbow Flush Connection for Side Spud Bowl.....each **$24.50**

Price, No. F61, Seat Operated with Straight Stop, Check Hinge and Open Front and Back Whalebonite Seat.....each **55.00**

Hy-Tech Products

Royal Flush Valves



Sectional View
Fig. H-451

A Royal Flush Valve delivers a uniform amount of water, then closes, regardless of how long the operating handle is held down. This feature is exclusive with this valve and its importance is apparent when it is considered that around a gallon of water a second can be wasted if a flush valve can be held open.

Requires no adjustment for variations in water pressure. Has no screws or other regulating devices that necessitate continual attention. Suitable for exposed or concealed installation; top, back, or side inlet fixtures, with either handle or push button on front, right or left-hand side, with straight or angle controlling stop and with straight or elbow flush connection.

A slight movement of the handle or push button results in a quick, complete flush—no strength or special method of operation required. The ease of operation is of special importance to women, children, and invalids.

The construction of this valve is simple; the only moving part is a complete unit which operates without friction because there are no tight fitting parts.

The metal used in this valve is a uniform high grade bronze, heavily nickeled.

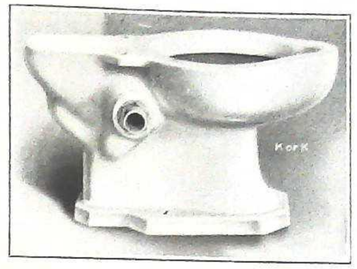
When wall hung closets are used, they require a pressure, maintained at the valve, of not less than 20 pounds for blowout type, or 15 pounds for syphon jet type. Orders must state which type will be used.

All parts of the Royal Flush Valve can be replaced as listed below.

No.	Name of Part	Price Each
A 3	Body Only	$7.50
A 4	Outside Cover	2.70
A 5	Outlet Coupling	.65
A 6	Handle Coupling	.60
A11	Inside Cover	1.50
A13A	Guide	1.00
A15A	Disc Complete	.75
A17	Auxiliary Valve Seat	.05
A19A	Auxiliary Valve Seat	1.00
A24	By-Pass Tube	.05
A25	Dowel	.02
A26A	Diaphragm	.75
A30	Outlet Gasket	.02
A31	Handle Gasket	.02
B 1A	Porcelain Handle Complete	3.00
B 2	Porcelain Grip	.55
B 3A	Handle Shank	.60
B 5	Bushing	.60
B 8A	Plunger	.25
B10	Handle Spring	.15
B11	Felt Washer	.01
B13	Packing Nut	.09
B32A	Metal Handle Complete	3.00
B32	Metal Grip and Shank	1.15
F 1	Outlet	.65

No. 6202 Syphon Jet Closet Bowls

With Extended Lip

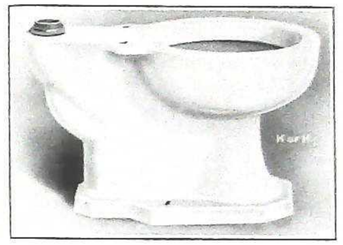


Vitreous china syphon jet closet bowl with extended front lip, twin jets, 1½-inch side inlet and angular base.

Also can be furnished with 1¼-inch side spud.

Approximate Shipping Weight.....pounds 65

No. 6220 Syphon Jet Closet Bowls



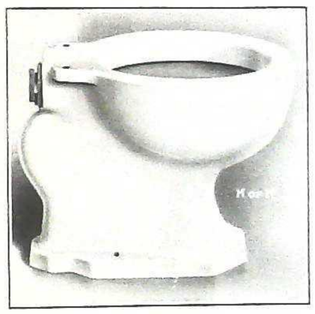
Vitreous china syphon jet closet bowl with twin jets, 2-inch top inlet and angular base.

Also can be furnished with 1¼ and 1½-inch top spud.

Made to rough in at 12 or 14 inches.

Approximate Shipping Weight.....pounds 60

No. 6380 Reverse Trap Closet Bowls



Vitreous china reverse trap closet bowl with jet, 2-inch rear inlet and angular base.

Also can be furnished with 1¼ or 1½-inch spud.

Made to rough in at 12 or 14 inches.

Approximate Shipping Weight.....pounds 52

No. 6555 Syphon Wash Down Closet Bowls



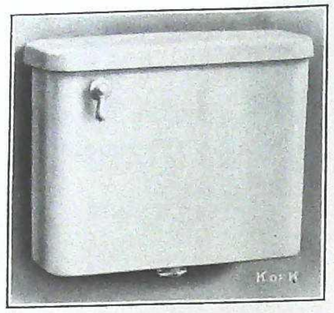
Vitreous china wash down closet bowl with jet, 2-inch rear inlet and angular base.

Also can be furnished with 1¼ or 1½-inch spud.

Made to rough in at 10, 12 or 14 inches.

Approximate Shipping Weight.....pounds 55

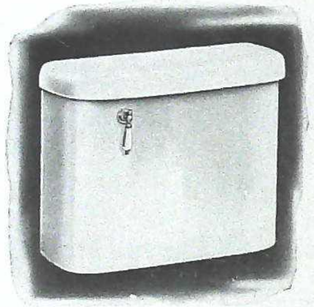
Vitreous China Low Closet Tanks



Vitreous china straight front tank with all china lever, special float valve and renewable washer, n.p. straight supply pipe, n.p. elbow flush connection. Can be furnished with rear supply.

No.	Capacity Gallons	Overall Dimensions, Inches: Length	Width	Height	Wt., Lbs. with Fittings
6800	8	23½	8¼	18¾	85
6802	6	22½	7¾	17	80

Vitreous China Closet Tanks

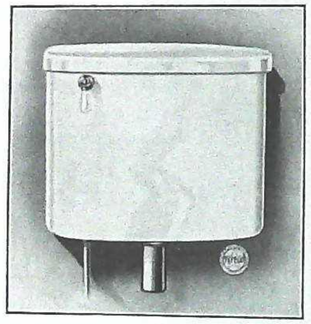


With Top Lever
No. 417

Vitreous china straight front six-gallon closet tank with china handle top flushing lever, high pressure ball cock, rubber flush valve, nickel-plated iron pipe size supply pipe and flush connection.

Price..... .....

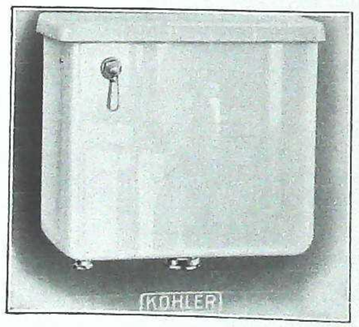
Vitreous China Closet Tanks



No. 3056

Vitreous china curved front 6-gallon closet tank with china handle trip lever, rubber ball flush valve, high grade float valve, nickel-plated flush connection and iron pipe size supply pipe.

Price..... **$30.85**

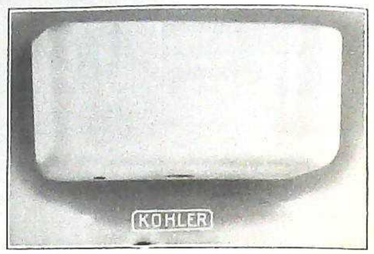


Enameled Iron Low Closet Tanks

Enameled in and out iron square front low tank, double-action lever with china handle, brass fitting, nickel-plated supply and 2-inch flush connection.

No.	Capacity Gallons	Width Inches	Height Inches	Wall to Front of Cover, Inches	Weight Pounds
3100	7	22	17½	8½	125
3110	5½	20¾	16	6¾	85

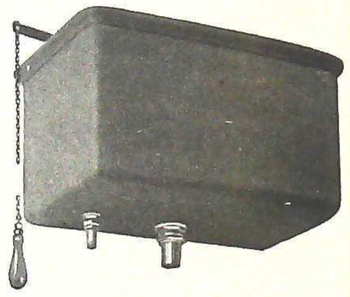
No. 3140 Enameled Iron High Tanks



Cast iron high tank with brass fittings, chain and pull.

Size.....	inches	18x10x9	20x10x10
Shipping Weight Less Fittings....	pounds	55	75
Price, Enameled All Over.....	each	....	...
Price, Enameled Inside.....	each	....	....

Wood High Closet Tanks

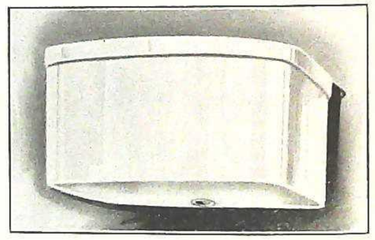


Oak round cornered high closet tank with wall hanger and 8-ounce copper lining, high pressure compound lever ball cock, 1¼-inch galvanized goose neck flush valve, chain and pull.

Price, No. **6**, 6-gallon..ea .....
Price, No. **8**, 8-gallon..ea.....

These tanks are furnished in natural, antique or golden oak.

Vitreous China Urinal Tanks

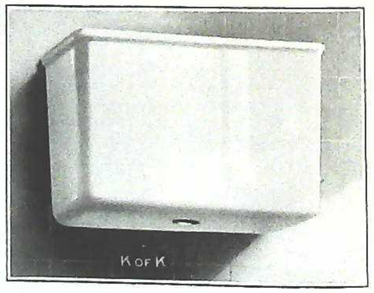


No. 6590

Vitreous china urinal tank with concealed hanger and automatic flush fittings.

Capacity.....	gallons	4	6
Size.....	inches	16½x8¾x12	19½x10x12
Shipping Weight .	pounds	60	85

No. 3155 Enameled Iron Urinal Tanks



Enameled in and out 3-gallon automatic syphon flushing urinal tank with brass top supply fittings.

Can be furnished enameled inside only, with chain and pull fittings and bottom supply

Dimensions..... inches 14x9x7½
Weight, Less Fittings..... pounds 40

Hy-Tech Products

Enameled Iron Hoppers
Tall Round—Flushing Rim
With Wood Rim Seat



No. 218

Price, Enameled Inside, without Brass Coupling. each **$6.40**
" " " and Outside..... " **9.90**

Enameled Iron Hoppers
Tall Oval—Flushing Roll Rim
With Seat Lugs

White enameled inside and on roll rim; painted outside.

With 1¼-inch brass spud, and coupling for lead pipe connection.

Price, as Described .....each **$7.10**
Price, Enameled All Over..... each **10.60**

Can supply with I.P. coupling, or with 1½ or 2-inch spud, or tapped for iron pipe.



No. 238

Enameled Iron Hoppers
Short Oval Roll Flushing Rim
With Seat Lugs

No. 249



White enameled inside and on roll rim; painted outside. With 1¼-inch brass spud; no coupling.

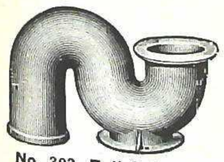
Can supply with iron pipe coupling or with 1½ or 2-inch spud, or tapped for iron pipe.

Shipping weight, 46 pounds.

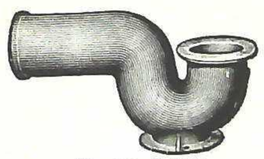
Price, As Described..... each **$ 6.66**
Price, Enameled Over All..... each **10.10**

Hopper Traps

Low Pattern



No. 303, Full S Trap

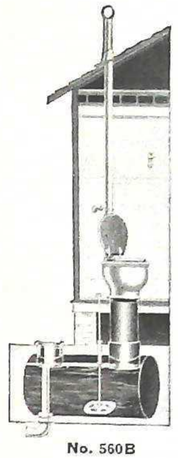


No. 300, P Trap

Inside diameter, 4 inches. Weight, 24 pounds.

Price, Painted..... each **$2.00**
Price, Enameled Inside..... each **2.50**

San-Equip Waterless Toilets
With Improved Self Drain Liquid Seal Storage Tank



No. 560B

For use wherever water supply is inadequate for a plumbing system or where special care is desirable to safeguard water supply. Often specified for entire camp groups on restricted water shed areas. Desirable also for public comfort stations, at roadside inns and gas stations, etc. Improves health and living conditions.

Drop-tube, agitator tube and manhole collar all extend below the liquid line thus providing a liquid seal against odors more effective than any system of ventilation.

Normally operates as a self-drain system requiring no attention except monthly supply of chemical as specified. Sewage is retained until liquified and sterilized, then discharges automatically into filter pool. This improved type also allows the tank to be entirely emptied through drain valve outlet at the end of the season or as frequently as desired.

Each system consists of the following: One vitreous china bowl with oak finish non-split seat; 12-foot galvanized ventilation, roof flange and vent cap. One storage tank of heavy gauge copperoid iron with simple, efficient mixer. Full charge of chemical, pipe stay, toilet paper and holder, putty and roof cement.

No.	Cap. Gals.	Rating Number of People: Home	School	Mill	Diam. Tank In.	Lgth. Tank In.	Ship. Wt. Pounds	Price Each
560B	60	4	..	..	22½	36	200	**$64.00**
580B	80	7	15	12	22½	48	275	**76.00**
5128B	128	12	25	20	28	48	325	**88.00**

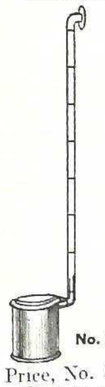
Price, No. **5129A**, As 5128B Except has 20-Foot Vent for 2-Story Dwellings .....each **$90.00**
Price, No. **561M**, As 560B Except has Metal Hopper Replacing China Bowl. .....each **48.00**
Price, No. **581M**, As 580B Except has Metal Hopper Replacing China Bowl .....each **60.00**
Price, No. **5128M**, As 5128B Except has Metal Hopper Replacing China Bowl.....each **72.00**

Multiple Bowl Systems

Where 2 or more bowls are required, the storage tank capacity is increased 125 gallons per bowl. Tank openings are spaced for bowls to set 30 inches center to center.

San-Equip Chemical Supplies

Price, No. **505**, 1 Dozen 5-Pound Cans, Packed 6 Cans to a Carton..... .....per dozen **$10.00**
Price, No. **525**, 25-Pound Can for 125-Gallon Sewage ....each **3.00**



No. 130

Chemical Commode Toilets
With Chemical and Vent Pipe

Provides a temporary toilet which may be installed indoors. Should not be confused with the larger permanent types of Chemical Storage Tank Systems.

Has a gray enameled jacket with removable 8-gallon galvanized inner container, oak finished dowelled, non-split seat, 7 feet of 3-inch gray pipe, two elbows, wall collar, toilet paper and holder, and 5-pound can of chemical.

Weight, complete, 40 pounds.

Price, No. **130**, Complete.....each **$8.90**

Chemical Supplies for Commodes

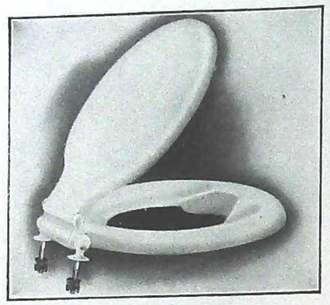
Price, No. **505**, 1 Dozen, 5-Pound Cans, Packed 6 Cans to a Carton..... .....per dozen **$10.00**
Price, No. **508**, 1-gallon Can, Liquid Chemical, ½ Dozen in Case ..... per can **1.75**
Above are suitable for use in any style of commode toilet.

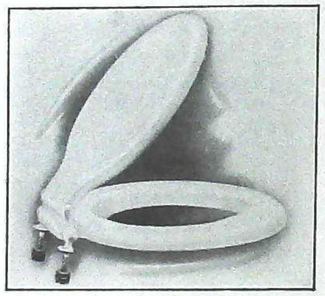
No. 102 Sani-White Closet Seats

Sani-white full saddle seat and cover with sanitary lip, all white including hinges, and white cushion bar bumpers. Exposed metal eliminated.

Furnished also in colors.

Price, No. **102** with Cover .....each .....





No. 142 Sani-White Closet Seats

All Sani-White plain pattern seat and cover with concealed hinge, white posts, and white rubber bumpers. No exposed metal.

For regular bowl.

Can be furnished in colors, either plain or sea pearl.

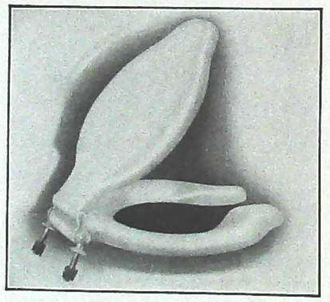
Price, No. **142**, Ring Pattern, with Cover.....each .....
Price, No. **150**, Ring Pattern, without Cover....each .....
Price, No. **122**, Saddle Pattern, with Cover....each .....
Price, No. **130**, Saddle Pattern, without Cover each .....

No. 186 Sani-White Closet Seats

Sani-White open front full saddle seat and cover for extended lip bowl, all white including hinges and white cushion bar bumpers.

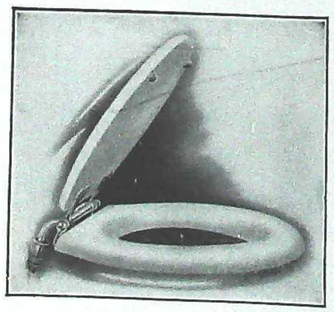
Exposed metal is eliminated.

Can be furnished in colors, either plain or sea pearl.



Price, No. **186** with Cover .....each .....
Price, No. **190** without Cover .....each .....

No. 425 Sani-White Closet Seats



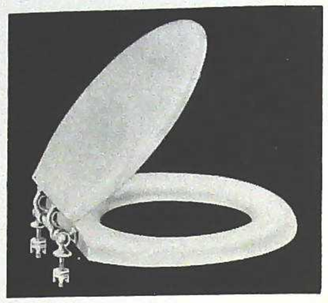
Sani-white 1½-inch square back seat and cover, reinforced front and back with spiral grooved dowels, heavy nickel-plated brass bar hinge.

For regular bowl.

Can be furnished in colors, either plain or sea pearl.

Price, No. **425**, with Cover .....each .....
" " **435**, without Cover ..... " .....

No. 220 Sani-White Closet Seats

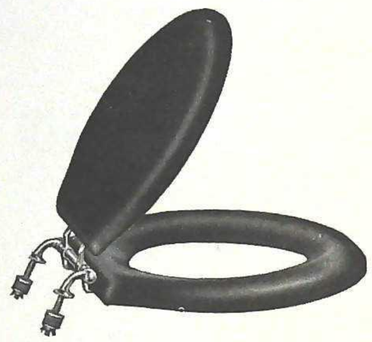


Sani-White plain square back seat plated cast brass screw-in bar hinge and white rubber bumpers.

No. **220** with Cover. each **$9.77**

No. **230** without Cover .....each **7.46**

No. 700 Closet Seats



Plain pattern seat and cover with No. 61 heavy nickel-plated cast brass bar hinge and cushion bar bumpers

For regular bowl

Price, No. **700**, Mahogany Finish, Piano Polish. .....
" " **702**, Natural or Golden Oak, Piano Polish. .....

No. 17 Improved Sani-Black Closet Seats



Improved Sani-Black open front full saddle seat without cover, with sanitary cutout back and molded black hinges. No exposed metal. Fits all regular bowls.

Price, No. **17**.....each ...

No. 24-9-E Whale-Bone-Ite Oval Closet Seats



Whale-Bone-Ite oval seat without cover with nickel-plated bar hinge and straight seat posts, for regular bowls.

Center of hinge post to front, 17⅜ inches; width, 15⅛ inches; hole, 9¾x8 inches.

Price, No. **24-9-E** without Cover.....each **$12.38**
Price, No. **24-91-E** with Cover.....each **22.85**

Hy-Tech Products

Whale-Bone-Ite Open Front Seats

No. 23-9, without Cover



Whale-Bone-Ite open front seat without cover with nickel-plated bar hinge and straight seat posts, for all staple bowls.

Price, No. **23-9**, Ebony Finish.....each .....
Price, No. **23-9**, Mahogany Finish.....each .....

No. 23-91, with Cover

Price, No. **23-91**, Ebony Finish.....each .....
Price, No. **23-91**, Mahogany Finish.....each .....

Type E Whale-Bone-Ite Closet Seats



No. **21-9-E**

Whale-Bone-Ite open front seat with or without cover with nickel-plated bar hinge and straight seat posts for regular or extended lip bowls.

For Regular Bowls

Center hinge post to front, 16½ inches; width, 15⅛ inches; front opening, 4 inches.

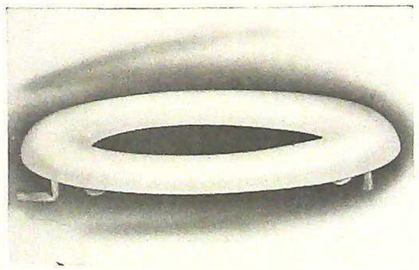
Price, No. **23-9-E** without Cover.....each .....
Price, No. **23-91-E** with Cover.....each .....

For Extended Lip Bowls

Center hinge post to front, 18⅛ inches; width, 15⅛ inches; hole, 8 inches.

Price, No. **21-9-E** without Cover.....each .....
Price, No. **21-91-E** with Cover.....each .....

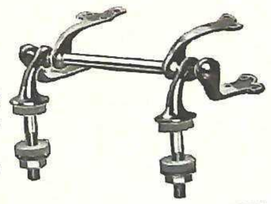
No. 590 Sani-White Baby Closet Seats



Sani-White Baby Slip-on Closet Seat with rubber-covered legs. Fits all standard closet seats. Easy to attach or remove.

Price.....each .....

No. C-3 Offset Post Bar Hinges



Nickel-plated closet post bar hinges, for seat and cover.

Price.....per pair **$2.50**

We are in position to supply many items not shown in this catalogue and shall be pleased to receive your inquiries.

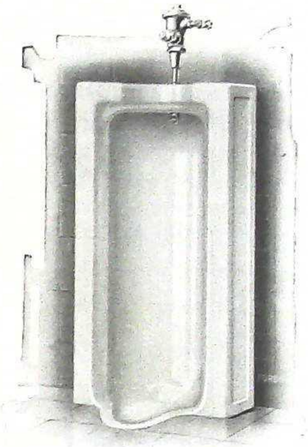


Fig. H-495

Porcelain Straight Front Urinal Stall with nickel-plated Royal flush valve with side inlet and ½-inch ground joint union angle stop, indexed push button, nickel-plated brass fan spreader with slip nut, brass outlet strainer with china top for 3-inch lead pipe.

Height of stall over all 42 inches
Height of stall from floor to top of stall 38 inches
Wall to front of lip 15 inches

Width of Stall	inches	18	24
Approximate Shipping Weight	pounds	244	316

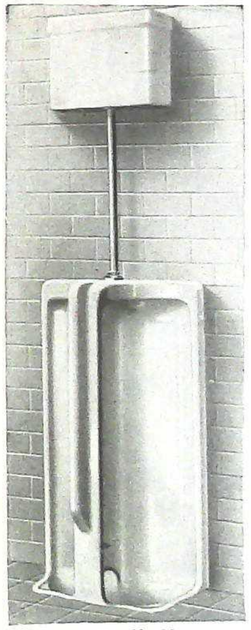


Fig. H-496

Duplex Semi-vitreous Porcelain Double Urinal Stall with center shield, drip receptors and center waste outlet, all in one piece, all exposed surfaces glazed, two integral vitreous spreaders with one inlet and brass spud, 3-gallon porcelain tank with automatic fittings, nickel-plated flush pipe, nickel-plated brass waste coupling with porcelain strainer.

The Duplex urinal stall has many advantages over the regulation stalls in cost of installation and sanitary qualities. It eliminates the complete roughing-in of one urinal, one flush pipe and outlet connection. The flush spreaders are made an integral part of the stall, which eliminates two brass spreaders. All unsightly and troublesome joints are eliminated, insuring perfect sanitation.

Width Over All	inches	24
Height "	"	46
" from Floor Line	"	41½
Wall to Front of Lip	"	12
" " Center of Waste	"	7½
Approximate Shipping Weight	pounds	325

Prices on porcelain urinals are for kiln-run ware. An extra charge is made for special selection.

Battery of Porcelain Urinal Stalls with Porcelain Integral Interlocking Partition Shields fitted with nickel-plated Royal flush valves with side inlet and ½-inch ground joint union angle stop and china oscillating handles, nickel-plated brass fan spreader with slip nut, nickel-plated brass outlet strainer and connection for 3-inch lead or iron pipe.

Furnished also with integral hooded vent.

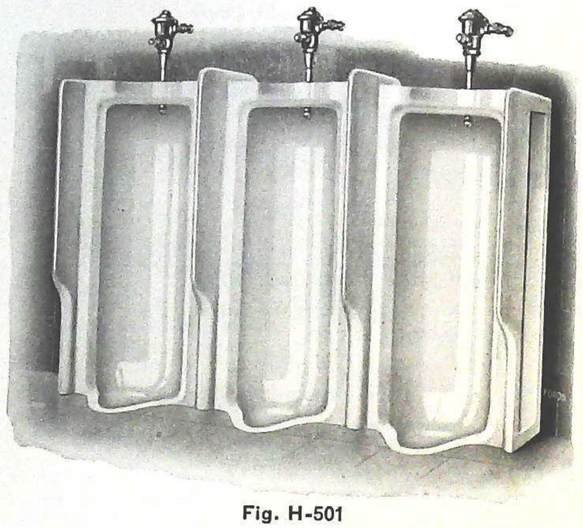


Fig. H-501

Height over all 42 inches
Height from floor line 38 inches
Wall to front of lip 15 inches

Width of Stall	inches	18	24
Approximate Shipping Weight, Porcelain Stall, Each	pounds	316	344

Prices on porcelain urinals are for kiln-run ware. An extra charge is made for special selection.

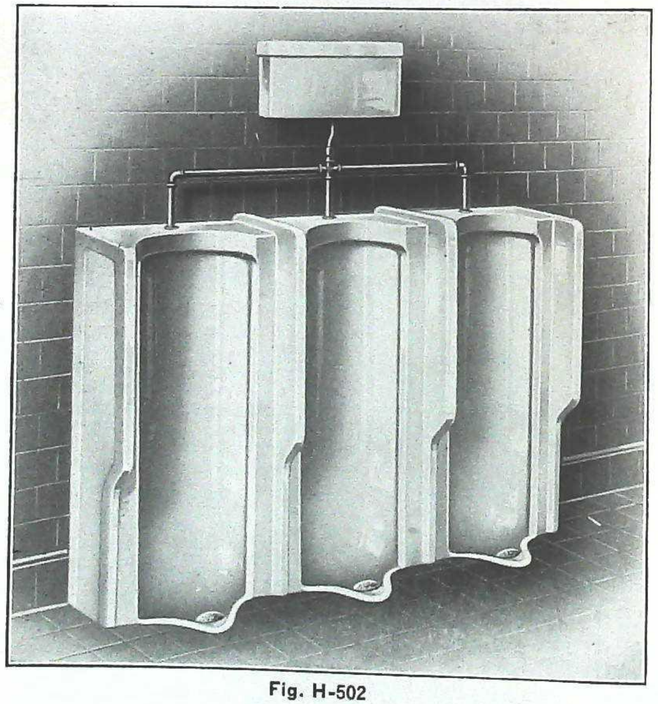


Fig. H-502

Battery of Semi-Vitreous Porcelain Urinal Stalls with integral shields, interlocking concealed seam, semi-vitreous porcelain automatic flush tank, nickel-plated three-way flush pipe, spreaders, locknuts, and strainers.

Size	number	1	2
Width Over All, Each Stall	in.	18	24
Height " " " "	"	46½	48
" from Floor Line to Top of Stall	in.	42	43½
Center of Inlet to Back of Stall	"	3	3
" " Outlet to Back of Stall	"	9	13
Front of Drip Base to Back of Stall	"	16½	18½
Approximate Shipping Weight, Each Stall	pounds	320	475
Approximate Shipping Weight, Tank only	pounds	65	65

These urinal stalls are made also with both sides glazed to set singly.

The measurements may vary from ¼ to ¾ inch.

Prices on porcelain urinal stalls are for kiln-run ware. An extra charge will be made for special selection.

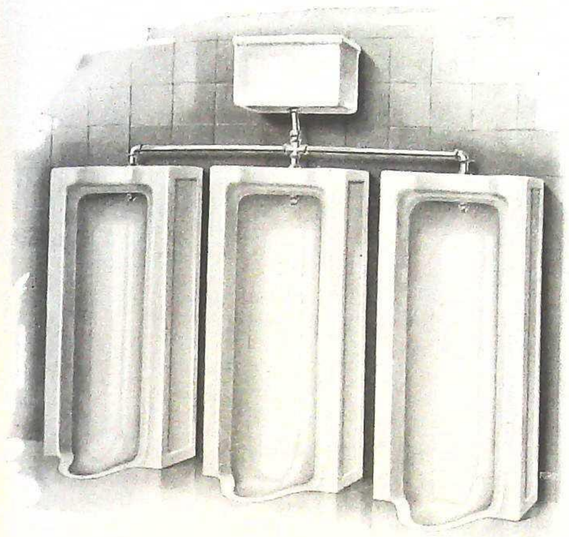


Fig. H-511

Battery of Porcelain Urinal Stalls with Straight Front, vitreous china tank on concealed hanger operated by periodic discharge fitting with top supply, nickel-plated brass three-part flush connection, nickel-plated brass fan spreaders with slip nuts, nickel-plated brass outlet strainers and connection for 3-inch lead or iron pipe.

Furnished with integral hooded vent when required.

Height over all 42 inches
Height from floor line 38 inches
Wall to front of lip 15 inches

Width of Stall	inches	18	24
Approximate Shipping Weight, Porcelain Stall, Each Stall	pounds	244	316
Approximate Shipping Weight, Tank and Fittings	pounds	110	110

Prices on porcelain urinals are for kiln-run ware. An extra charge is made for special selection.



Fig. H-512

Vitreous China Syphon Jet Pedestal Urinal with 1¼-inch top inlet, floor outlet, extended front lip and flushing rim, nickel-plated Royal flush valve with side inlet, china oscillating handle, 1-inch ground joint union angle stop, and nickel-plated flush connection.

Opening of bowl 10x18 inches — Water seal 3 inches
Floor to top of lip 20 inches — Water surface 6½x6½ inches

Approximate Shipping Weight ..... pounds 100

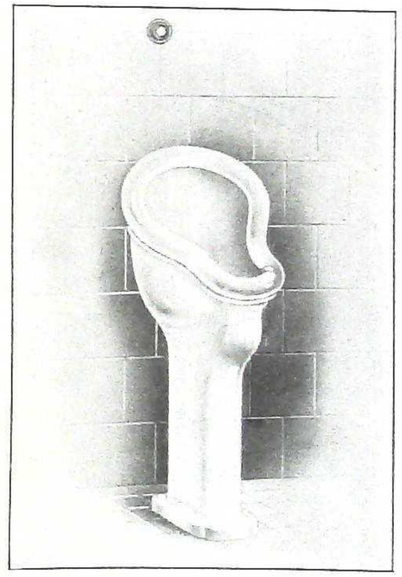


Fig. H-513

Vitreous China Pedestal Syphon Jet Urinal with concealed Royal Flush Valve, with rough brass stop, china push button and nickel-plated wall flange, rough brass connections, floor bolts and washers.

Approximate Shipping Weight ..... pounds 100

Wall extension for partitions more than 1 inch thick are furnished at an additional charge.

Hy-Tech Products

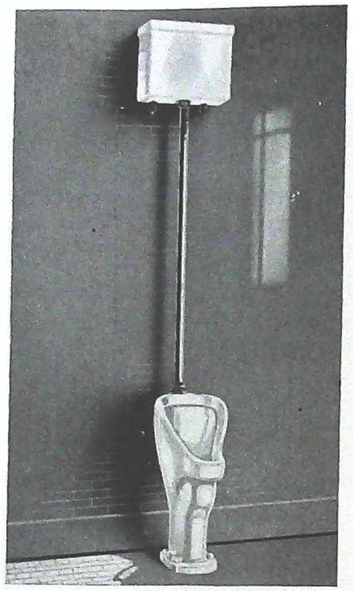


Fig. H-521

White Vitreous China Syphon Jet Pedestal Urinal with 1¼-inch brass spud top inlet, floor outlet, extended front lip and flushing rim, white vitreous china high tank, heavy brass control valve, automatic flush valve and N.P. tank supports, N.P. brass flush pipe and china bolt caps.

Opening of bowl 10x18 inches Water seal 3 inches
Water surface 6½x6½ inches

Approximate Shipping Weight, Complete.....pounds 187



Fig. H-522

Vitreous China Syphon Jet Urinal with flat back and extended lip, concealed outlet connection, nickel-plated Royal Flush Valve, with china push button and nickel-plated wall flange, ½-inch loose key angle stop and bolts with china caps.

Approximate Shipping Weight .....pounds 110

Prices upon application.

No. 700 Bedfordshire Urinals

Vitreous china Bedfordshire flat back urinal with lip, ¾-inch top inlet spud and 1½-inch bottom outlet spud.

Back to front	inches	12½
Width	inches	13½
Height	inches	18
Shipping Weight	pounds	45



F4373

Vitreous China Bedfordshire Urinals

With Earthenware Horns No. 3208

Vitreous China flat back Bedfordshire urinal with lip and 1¼-inch earthenware horns on inlet and outlet.

Width 13 inches
Wall to front 13 inches

Approximate Ship'g Weight.....pounds 40



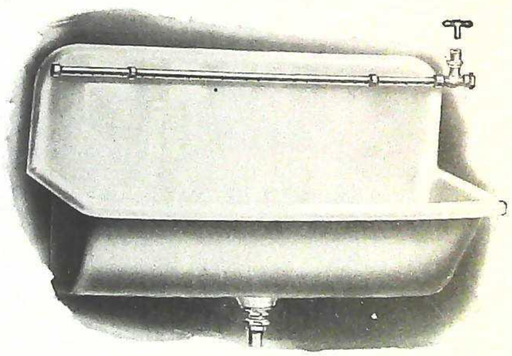


Fig. H-525

Enameled Iron Roll Rim Urinal with integral back, concealed wall hanger, brass beehive strainer and perforated wash down pipe with loose key stop. Trap extra.

Enameled urinals furnished with brass wash down pipe, painted urinals with galvanized wash down pipe.

Length Urinal.....feet	2	3	4	5	6
Approximate Shipping Weight.....pounds	89	125	164	219	264

Enameled Iron Roll Rim Urinal with integral back, concealed wall hanger, brass beehive strainer, perforated nickel-plated brass wash down pipe, enameled inside and outside automatic flushing tank complete with fittings and nickel-plated flush pipe connected to wash down pipe. Trap extra.

Length Urinal...feet	2	3	4	5	6
Approximate Shipping Weight....pounds	155	198	236	287	350

Hy-Tech Products

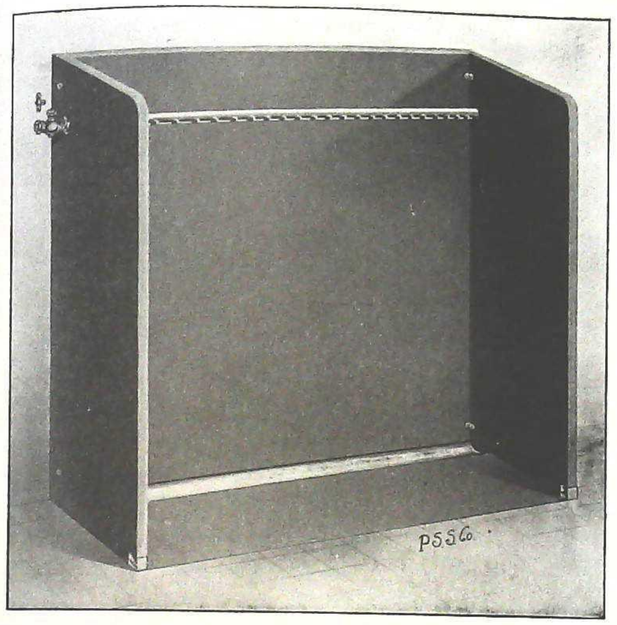


Fig. H-531

Single Slate Urinal Stall with back and two ends, without center partitions, with galvanized or enameled iron gutter and 1¼-inch thick floor slab, nickel-plated brass perforated wash-down pipe with loose key stop and heavy nickel-plated brass clamps for supporting in position.

Depth, 1 foot 8 inches. Made in any length desired.

Can also be furnished with gutter cut in floor slab made of 2-inch thick slate.

In ordering specify location of outlet and supply, whether right or left-hand end.

Length.....feet	4	6	8	10	12
Approximate Shipping Weight, 4½-Foot Height.....pounds	650	930	1170	1410	1650
Approximate Shipping Weight, 5-Foot Height.....pounds	700	980	1220	1460	1700

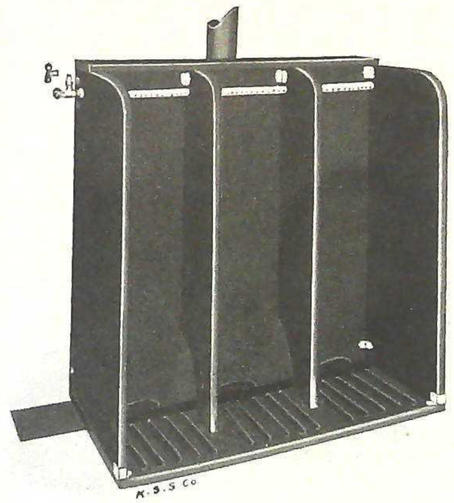


Fig. H-532

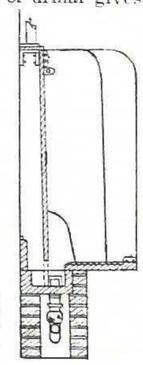
Special Single Ventilated Slate Urinal with partitions, back, cap slate gutter and floor slab; floor slab grooved. Nickel-plated standing waste, perforated wash-down pipe with loose-key stop-cock, partition braces and vent collar.

Designed by one of the leading sanitary engineers, and meet every demand for perfect sanitation. These urinals commend themselves to every architect, sanitary engineer, etc., for their ventilating effect upon the entire room. Through an opening near the urinal floor a constant flow of air passes into the air space behind the back, and out at the top through a vent flue, as shown in cross-section. By connecting it with a warm-air flue or chimney an efficient draught is generated. The entire surface of the back slabs is constantly flushed from a perforated brass washdown pipe fitted with a loose key at stop-cock to regulate the flow of water. The gutter is made of solid block of slate and filled with a constantly changing body of water, 3 inches deep. A standing waste syphons the gutter periodically. When flushing out the toilet-room the surplus water can be disposed of by unscrewing the cap of the waste. A manhole at end of urinal gives ready access to the gutter and its connections.

Every stall sent out is set up and carefully adjusted before leaving the factory.

In ordering give location of waste.

Special sizes will be made as requested.



Height 4½ or 5 feet
Width center to center 24 inches
Depth ends 2 feet 4 inches
Partitions 1 foot 2 inches

Thickness ends, partitions, cap and back 1 inch
Manhole cover 1¼ inches
Floor slab 2 inches
Gutter 6 inches

Number of Stalls	1	2	3	4	5	6
Approximate Shipping Weight, 4½ Feet High.....pounds	950	1500	2050	2590	3150	3700
Approximate Shipping Weight, 5 Feet High.....pounds	980	1560	2140	2720	3300	3880
Price, Stalls 4½ Feet High.....each						
Price, Stalls 5 Feet High.....each						

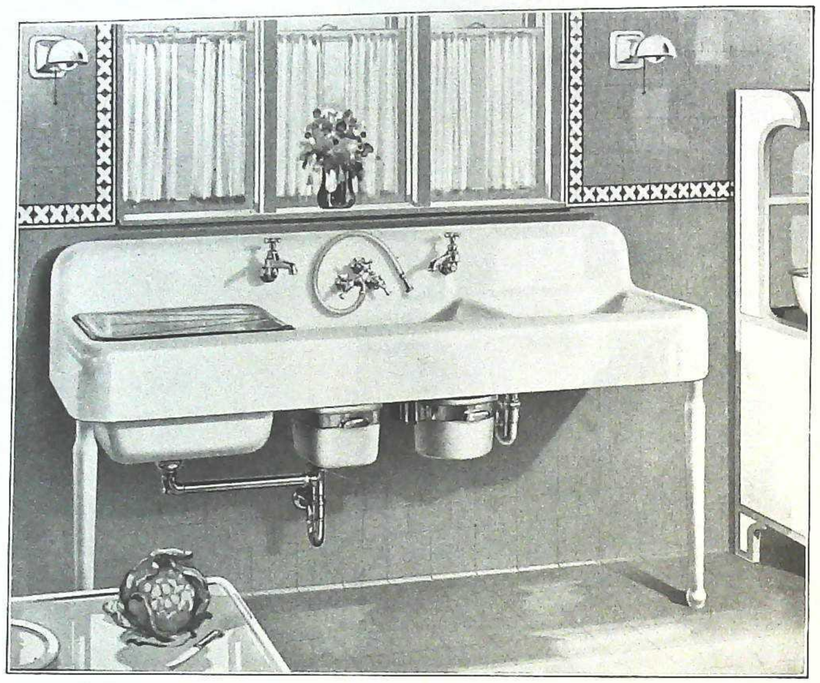


Fig. H-541

The sinks and sink combinations shown in the following pages are adaptable to the varied needs of the modern home or apartment.

Flint-Gloss Acid-Resisting Enamel

All enameled plumbing fixtures are available in Flint-Gloss Enamel, which is resistant to fruit and vegetable acids.

Because of its acid-resisting property, Flint-Gloss is not easily roughened or discolored. It is readily cleaned and preserves its beautiful whiteness.

Flint-Gloss is particularly serviceable on kitchen sinks, where fruit and vegetable acids, such as lemon juice, are likely to be present.

In ordering, Flint-Gloss should be specified, together with the regular plate number of the fixture.

Plumbing Fixtures in Color

The manufacture of Kohler fixtures in color accords with the growing appreciation and use of color in interior decoration. It puts at the command of the architect, decorator and home-builder a new medium for the expression of taste and the creation of beautiful effects.

With the inauguration of this new line, the use of color in walls, floors, and accessories has culminated in complete color schemes for bathroom, kitchen and laundry. The more interesting rooms thus achieved mean greater enjoyment of the home and also greater rental or sales value.

In ordering colored ware, the regular plate numbers should be used and the color should be specified by name as shown on the color chart.

Kohler colored enamel fixtures can be had not only in the regular enamel but in the Kohler Flint-Gloss Acid-Resisting Enamel, which should be specified on the order if it is desired.

Hy-Tech Products

Enameled Iron One-Piece Electric Dishwasher and Clotheswasher and Sink Combination with back and apron, concealed hangers, enameled adjustable legs, chromium-plated drain board covers, combination supply with compression valves, swing spouts, switch valve, hose and spray; dishwasher with impeller, dish baskets and chromium-plated brass spray tower; clotheswasher with reciprocating removable impeller; lever-operated lift drain with removable double strainers in sink and dishwasher, lever-operated secret drain in clotheswasher, continuous drain with 1½-inch P trap, vitreous china swing arm garbage and utensil containers, two ¼-h.p. 110-volt 60-cycle a.c. motors with switches.

All fittings chromium-plated.

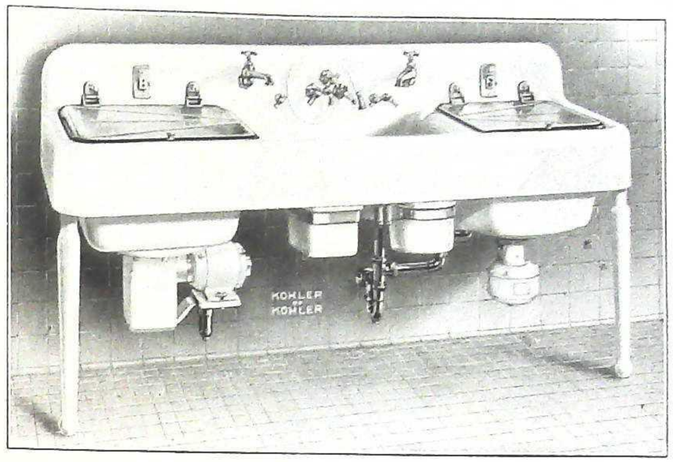


Fig. H-551

Length over all 76 inches — Back 8 inches — Sink inside 26¼x20¼ inches
Wall to front 25 inches — Apron 8 inches — Sink depth 8 inches
Dishwasher inside 18x18 inches — Clotheswasher inside 20¾x20¼ inches
Dishwasher depth 17 inches — Coltheswasher depth 14 inches

Approximate Shipping Weight ..... pounds 930

This combination may be furnished with dishwasher at left and clotheswasher at right instead of as shown.
If different motors are required, specify whether a.c. or d.c.; give voltage and number of cycles if a.c.

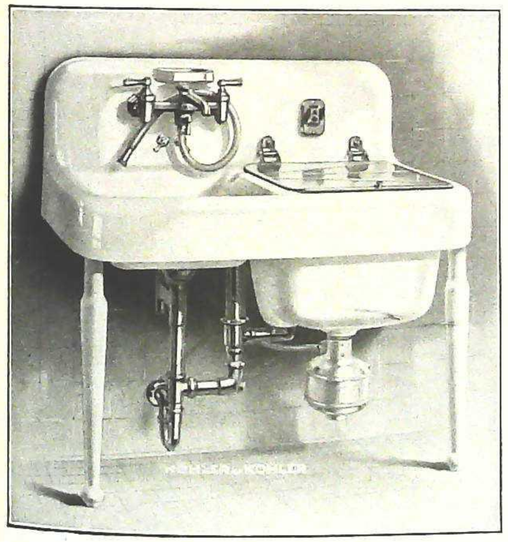


Fig. H-552

Enameled Iron One-Piece Electric Dishwasher and Sink with apron and back, concealed wall hanger, enameled adjustable legs; sink fitted with chromium-plated quick compression combination swing spout faucet with hose and spray, removable china soap dish, lever operated drain with china lever handle through back, removable double strainer; dishwasher fitted with lever operated secret drain and removable double strainers, continuous drain, and P trap, dishwashing mechanism with aluminum impeller and chromium-plated spray tower, operated by ¼-h.p. motor for any current, with switch in sink back, chromium-plated drain board cover and dish baskets.

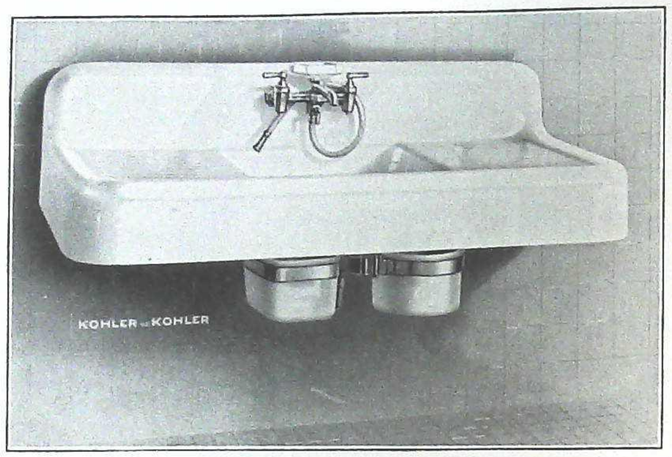
All fittings chromium-plated.

Length over all 42½ inches — Sink inside 17¼x19 inches
Wall to front 23½ inches — Sink depth 8 inches
Dishwasher inside 18x18 inches — Back 12 inches
Dishwasher depth 16½ inches — Apron 6 inches

Approximate Shipping Weight Less Faucet and Drain ..... pounds 515

This combination also can be furnished with sink at right.

Can be furnished in regular or Flint-gloss acid-resisting enamel in plain white or colors.



Enameled Iron One-Piece Apron Sink with two drain boards and back, concealed wall hangers, chromium-plated quick compression swing spout sink faucet with switch valve, hose and spray, lever handles and removable china soap dish, hand-operated lift drain with removable double strainers, 1½-inch chromium-plated plain P trap, vitreous china combination swing arm garbage and utensil containers.

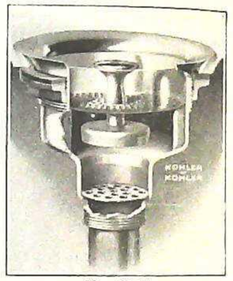
Height of back 8 inches
Apron 8 inches
Depth 8 inches

Fig. H-561

Nominal Size	inches	22x60	22x74	22x78
Length Over All	inches	60¾	74¾	78¾
Length of Sink	inches	22	26	28
Width Over All	inches	22⅜	22⅜	22⅜
Length Drain Boards	inches	19⅜	24⅜	25⅜
Approximate Shipping Weight, Less Fittings	pounds	320	390	400

Can be furnished with lever-operated drain in place of hand lift drain, or without spray attachment on the mixing faucet.

Also can be furnished with painted or enameled iron legs allowing sink adjustment from 30 to 36 inches, or with concealed sink brackets. Fittings as shown on any of the other sinks can be furnished if desired.



No. 9110
Hand-Operated Drain

Enameled Iron One-Piece Apron Sink with left drain board and back, on concealed wall hangers, chromium-plated quick compression swing spout sink faucet with switch valve, hose and spray, lever handles and removable china soap dish, hand-operated lift drain with removable double strainers, 1½-inch chromium-plated plain P trap, and vitreous china combination swing arm garbage and utensil containers.

Lever-operated lift drain furnished if desired.

This sink is also made with right drain board.

Can be furnished with enameled or painted iron legs adjustable from 30 to 36 inches, or with concealed sink brackets.

Fittings shown on any of the other sinks can be furnished if desired.

Furnished in regular or Flint gloss acid-resisting enamel, in white or colors.

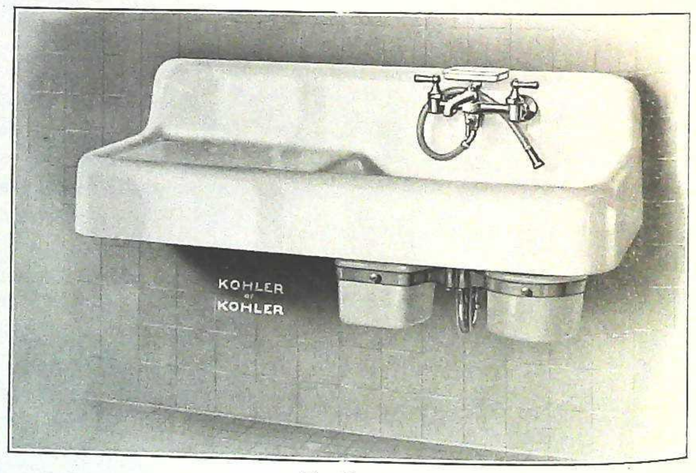
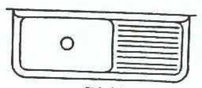


Fig. H-563

Height of back 8 inches Apron 8 inches Depth 8 inches



Right
Drain Board
Fig. H-564

Nominal Size	inches	22x42	22x52
Length Over All	inches	42¾	52¾
Length of Sink	inches	21¾	27¾
Width Over All	inches	22⅜	22⅜
Length Drain Board	inches	21	25
Approximate Shipping Weight, Less Fittings	pounds	235	285

Hy-Tech Products

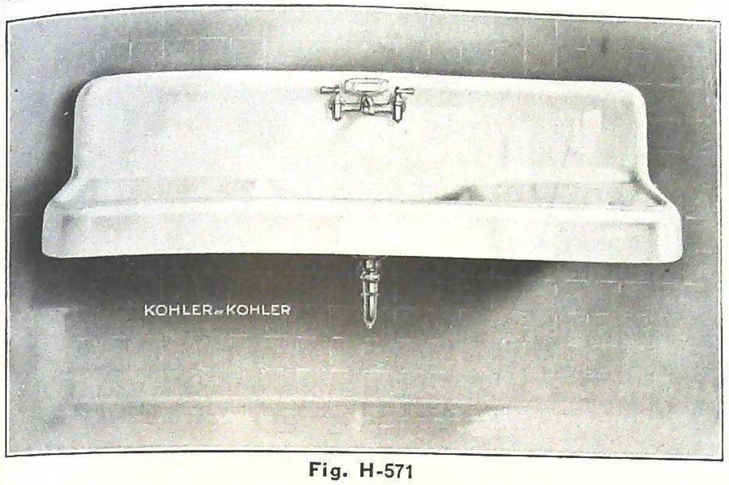


Fig. H-571

Enameled Iron One-Piece Apron Sink with two drain boards and back, on concealed wall hangers, fitted with chromium-plated quick compression swing spout sink faucet with lever handles and removable china soap dish, 1½-inch chromium-plated P trap and chromium-plated hand-operated lift drain with removable double strainers.

Height of back 12 inches
Apron 6 inches
Depth 6 inches

Nominal Size	inches	22x60	20x74	22x74
Length Over All	inches	60½	74½	74½
Length of Sink	inches	22	26	26
Width Over All	inches	22¼	20¼	22¼
Length Drain Boards	inches	19¼	24¼	24¼
Approximate Shipping Weight, Less Fittings	pounds	355	385	420

Also can be furnished with painted or enameled iron legs allowing sink adjustment from 32 to 36 inches, or with concealed sink brackets. Fittings as shown on any of the other sinks can be furnished if desired.

Lever operated lift drain furnished if desired.

Furnished in regular or Flint-gloss acid-resisting enamel in plain white or colors.

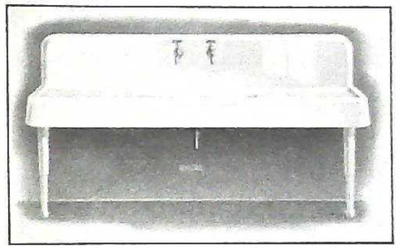


Fig. H-572
Sink on Legs with Plain Compression Faucets

Enameled Iron One-Piece Apron Sink with left drain board and back, on concealed wall hangers, fitted with chromium-plated quick compression swing spout sink faucet with lever handles and removable china soap dish, 1½-inch chromium-plated P trap, chromium-plated hand-operated lift drain with removable double strainers.

Lever operated lift drain furnished if desired.

This sink is also made with right drain board.

Can be furnished with enameled or painted iron legs adjustable from 30 to 36 inches, or with concealed sink brackets.

Fittings shown on any of the other sinks can be furnished if desired.

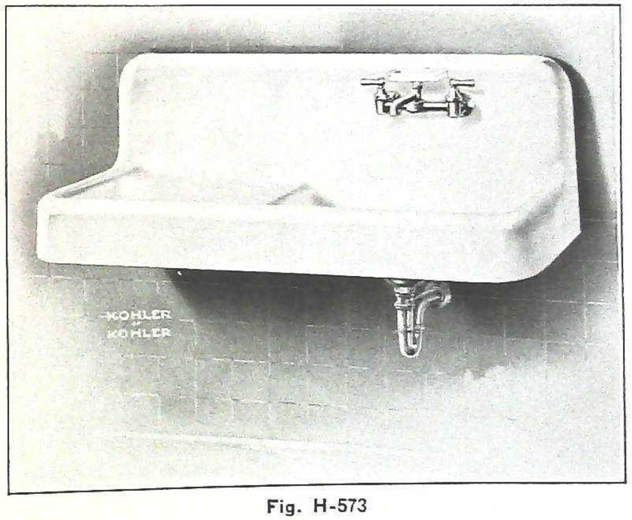
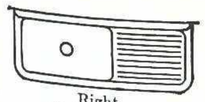


Fig. H-573

Height of back 12 inches Apron 6 inches Depth 6 inches



Right
Drain Board
Fig. H-574

Nominal Size	inches	20x42	20x48	20x52	22x52
Length Over All	inches	42½	48½	52½	52½
Length of Sink	inches	22¼	28¼	28¼	28¼
Width Over All	inches	20¼	20¼	20¼	22¼
Length Drain Board	inches	20¼	20¼	24¼	24¼
Approximate Shipping Weight, Less Fittings	pounds	210	235	285	300

Furnished in regular or Flint-gloss acid-resisting enamel in white or colors.

Enameled Iron Roll Rim Sink with back and right and left drain boards, on concealed wall hangers, chromium-plated combination quick compression swing spout faucet with lever handles and removable china soap dish, nickel-plated strainer and 1½-inch nickel-plated adjustable P trap.

Nominal size 22x60 inches
Drain boards 22x19 inches
Length of sink 22 inches
Depth of sink 6 inches
Length over all 60 inches
Width over all 22 inches
Back 12 inches

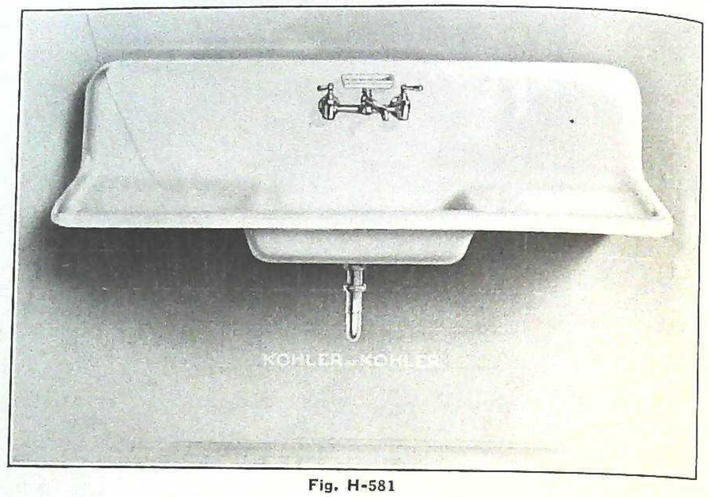


Fig. H-581

Approximate Shipping Weight Less Fittings.....pounds 305

Furnished in regular or Flint-gloss acid-resisting enamel in white or colors.

Can be furnished with concealed sink bracket support.

Can be furnished with enameled or painted iron legs adjustable from 30 to 36 inches, and with special length legs allowing sink adjustment from 36 to 41 inches from floor.

Fittings shown on any of the other sinks can be furnished if desired.

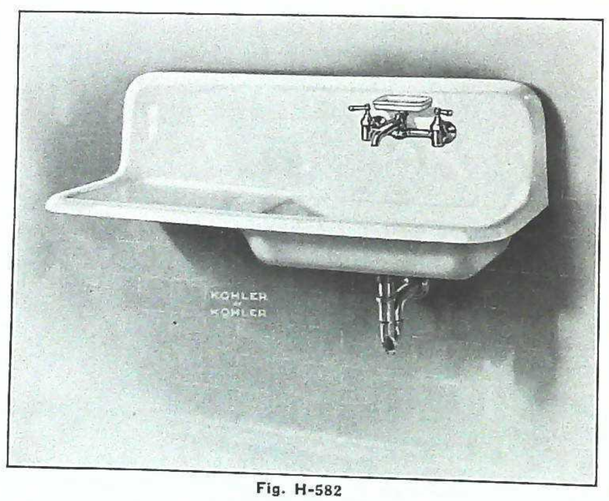


Fig. H-582

Enameled Iron One-Piece Roll Rim Sink with back and left drain board, on concealed hangers, fitted with chromium-plated compression double sink faucet with swing spout, handles and removable china soap dish, 1½-inch nickel-plated P trap, nickel-plated strainer with coupling and tail piece.

This sink is also made with right drain board.

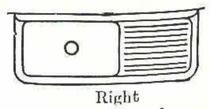
Also can be furnished with enameled or painted iron legs adjustable from 30 to 36 inches, or with concealed sink brackets.

Fittings shown on any of the other sinks can be furnished if desired.

Height of back 12 inches Depth 6 inches

Nominal Size	inches	20x42	20x42	20x48	20x49	20x52	22x52
Length Over All	inches	42	42	48	49	52	52
Length of Sink	inches	24	22	28	29	28	28
Width Over All	inches	20	20	20	20½	20	22
Length Drain Board	inches	18	20	20	20	24	24
Approximate Shipping Weight, Less Fittings	pounds	200	180	200	235	245	250

Furnished in regular or Flint-gloss acid-resisting enamel in plain white or colors.



Right Drain Board
Fig. H-583

Hy-Tech Products

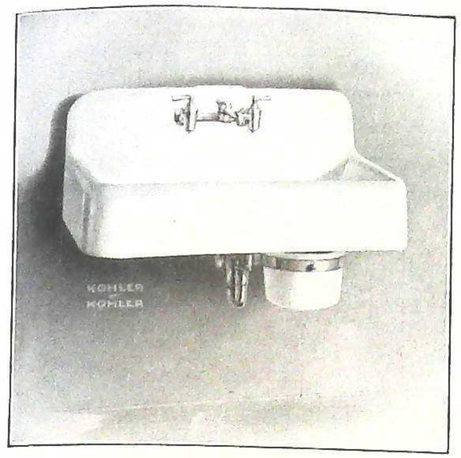


Fig. H-591

Enameled Iron One-Piece Apron Sink with back, on concealed wall hanger, chromium-plated quick compression swing spout sink faucet with lever handles and removable china soap dish, 1½-inch chromium-plated P trap and hand-operated lift drain with removable double strainers and vitreous china swing arm garbage container.

Height of back 8 inches Apron 8 inches
Depth of sink 8 inches
Nominal size 25x36 inches. Width over all 25 inches
Length over all 36 inches. Length of sink inside 30½ inches.
Approximate Shipping Weight.....pounds 225

Can be furnished with enameled iron or painted iron legs, adjustable from 30 to 36 inches. Fittings shown on any other sinks can be furnished if desired.

Furnished in regular or Flint-gloss acid-resisting enamel in plain white or colors.

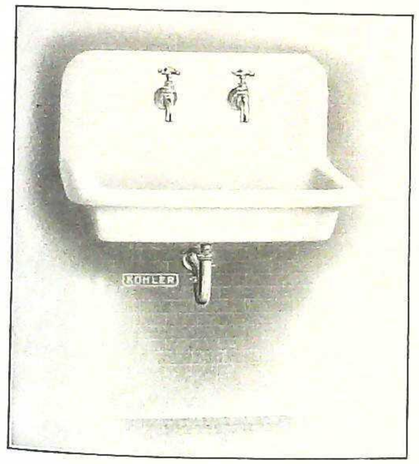


Fig. H-592

Enameled Iron Roll Rim Sink with 12-inch back in one piece, concealed wall hanger, nickel-plated compression flanged faucets with four-ball china index handles, 1½-inch nickel-plated P trap, nickel-plated strainer with coupling and tail piece.

Size Inches	Approx. Shipping Wt., Lbs.	Size Inches	Approx. Shipping Wt., Lbs.	Size Inches	Approx. Shipping Wt., Lbs.
16x24	95	20x20	90	20x40	165
18x18	80	20x24	110	22x30	130
18x24	100	20x30	125	22x36	150
18x30	120	20x36	150	22x42	190

Can be furnished on enameled or painted adjustable legs and with fittings shown on any other sinks.

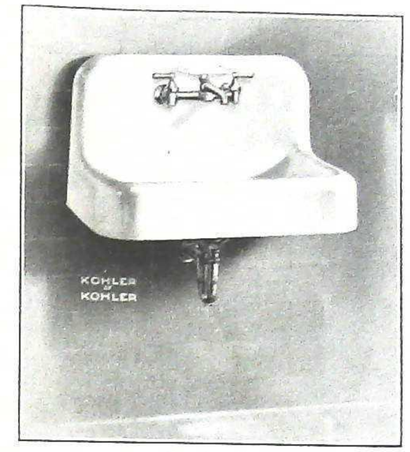


Fig. H-593

Enameled Iron One-Piece Apron Sink with back, on concealed wall hanger, chromium-plated quick compression swing spout faucet with lever handles and removable china soap dish, 1½-inch chromium-plated P trap and hand-operated lift drain with removable double strainers.

Sink 18x30 inches Back 12 inches Apron 6 inches
Sink 20x24 inches Back 12 inches Apron 6 inches
Sink 20x30 inches Back 12 inches Apron 6 inches

Size.....inches	18x30	20x24	20x30
Approx. Ship. Wt., Less Ftgs.....lbs.	145	135	160

Furnished in regular or Flint Gloss acid-resisting enamel, in white or colors.

Also can be furnished with enameled iron or painted iron legs, adjustable from 30 to 36 inches. Fittings shown on any other sinks can be furnished if desired.

Can be furnished with Lever-Duo-strainer or with regular 2-inch outlet.

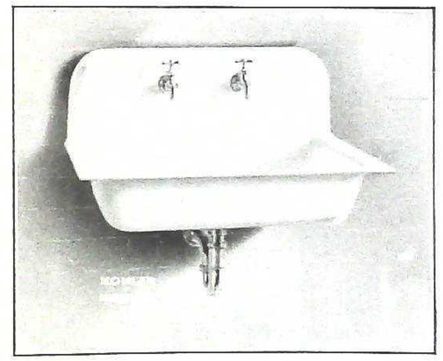


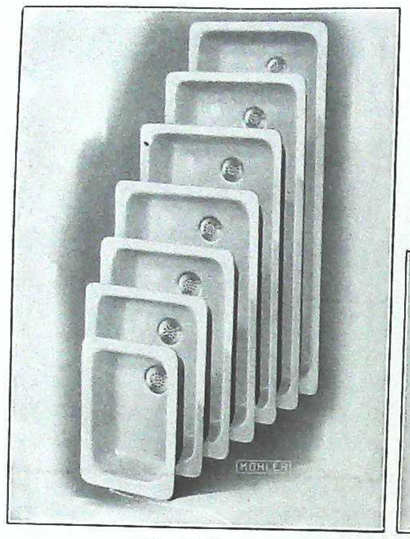
Fig. H-594

Kohler Enameled Iron One-Piece Flat Rim Sink with integral roll rim back, on concealed hanger, nickel-plated compression faucets, flange female iron pipe, nickel-plated P trap with nickel-plated outlet strainer, coupling and tail piece.

Depth 6 inches Back 10 inches

Size.....inches	18x30	20x30
Approx. Shipping Weight Less Fittings.pounds	115	120

Rims designed for building into drain boards of tile, composition, etc.



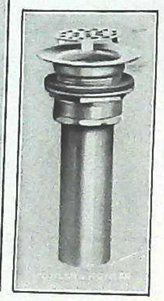


Fig. H-601

Enameled Iron Flat Rim Sink with new style nickel-plated strainer with lock nut and coupling. Depth 6 inches.

Size Inches	Approx. Shipping Wt., Lbs.	Size Inches	Approx. Shipping Wt., Lbs.	Size Inches	Approx. Shipping Wt., Lbs.
12x18	25	18x30	55	20x36	75
14x20	29	18x36	71	20x40	80
16x24	46	20x24	55	22x36	80
18x24	49	20x30	70	24x48	118

Plug strainer may be furnished.

Can be furnished with coupling threaded for 1¼, 1½ or 2-inch iron pipe.

Cast Iron Flat Rim Kitchen Sinks

6 Inches Deep

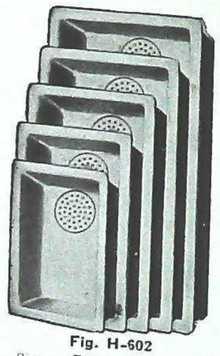


Fig. H-602

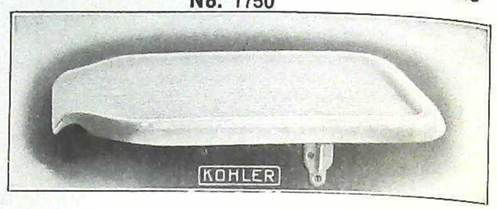
Size Inches	Price, Each Painted	Price, Each Galv.	Size Inches	Price, Each Painted	Price, Each Galv.	Size Inches	Price, Each Painted	Price, Each Galv.
12x12	$1.10	$2.20	18x20	$2.00	$4.00	22x40	$4.25	$9.00
12x16	1.20	2.40	18x24	2.10	4.30	22x42	4.75	10.00
12x18	1.25	2.60	18x28	2.35	4.80	22x48	5.75	12.25
12x20	1.50	3.10	18x30	2.50	5.10	24x48	6.00	12.25
14x14	1.35	2.70	18x36	3.25	6.50	24x50	7.50	16.00
14x20	1.50	3.20	20x20	1.95	4.20	18x60	8.00	16.00
14x22	1.60	3.30	20x24	2.40	5.00	20x60	10.00	21.00
14x24	1.70	3.75	20x28	2.70	5.50	20x72	13.00	26.00
16x16	1.60	3.25	20x30	3.00	6.25	24x60	12.00	25.00
16x20	1.70	3.50	20x36	3.70	7.75	24x72	15.00	31.00
16x24	1.90	4.00	20x40	4.00	8.75	24x84	20.00	40.00
16x28	2.10	4.50	20x42	4.25	9.00	24x96	28.00	56.00
16x30	2.25	4.75	20x48	5.30	11.50	24x108	32.00	64.00
18x18	1.80	3.80	22x36	4.00	8.25	24x120	36.00	72.00

Add for plug strainer, painted 25 cents; galvanized 50 cents.

Add for patent overflow, painted $1 00; galvanized $1 25.

Kohler Enameled Iron Drain Boards

No. 1750

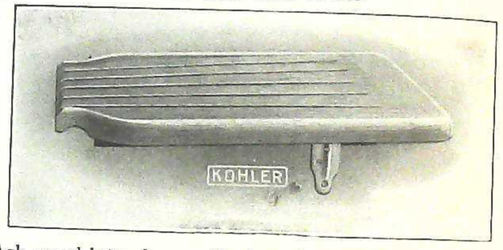


Enameled iron interchangeable drain board for roll rim sink, with concealed enameled iron bracket.

Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds
16x18	31	22x18	40	20x24	47
18x18	33	16x24	40	22x24	55
20x18	35	18x24	44	.....	..

No. 1765 Ash Drain Boards

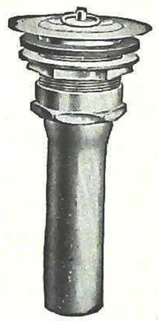
For Roll Rim Sinks



Ash wood interchangeable drain board with iron bracket, for roll rim sink.

Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds	Size Inches	Weight Pounds
16x18	17	20x18	20	16x24	23	20x24	25
18x18	18	22x18	23	18x24	24	22x24	27

Sink Strainers

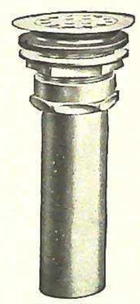


No. 12216
Plug Strainer

Plug Sink Strainers

Wrought brass with cast locknut. Top polished and nickel-plated.

No.	12216	10359
Each	$1.05	1.05
Tailpiece..in.	1¼	1½



No. 12143
Open Strainer

Open Sink Strainers

No.	12143	12144
Each	$1.05	1.05
Tailpiece..in.	1½	1¼

No. 2402 Brass Sink Strainers

For Iron Pipe Connection

Nickel-plated brass sink strainer with iron coupling threaded 1¼-inch I. P. Also furnished for 1¼ and 2-inch I. P.

Price, Open Strainer.....each $1.20
" with Rubber Stopper for Common Overflow.....each 1.70
Price, Patent Overflow with Rubber Stopper.....each 2.60





No. 4415 Nickel-Plated Brass Open Sink Strainers

Outside Diameter.....inches	4½	4⅝
Price, No. 4415.....each	$.25	.30

Hy-Tech Products

No. 414 Brass Sink Connections



Slip.....inches	1¼x5	1½x5
Gauge.....No.	22	22
Price, No. 414, Nickel-plated each	$.60	.65

Sink Collars

No. 450 for Lead Pipe



Size.....inches	1¼	1½	2
Price, Plain.....per doz.	$1.50	$1.50	$1.50
Price, Galvanized ... per doz.	2.00	2.00	2.00

No. 452 for Iron Pipe



Size.....inches	1¼	1½	2
Price, Plain ..per doz.	$3.00	$3.00	$6.00
Price, Galvanized per doz.	4.00	4.00	8.00

No. 4420 Sink Bolts



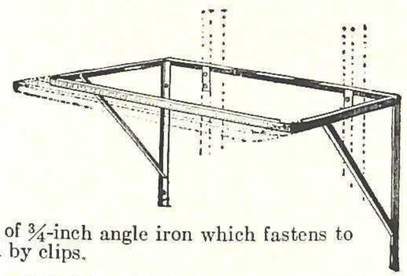
Long



Short

	Price, per Dozen Iron	Brass
Long, with Two Iron Nuts.....	$.35	$.50
Short, with One Iron Nut	.30	.40
Add for N.P. Heads.....	.20	.20

Sanitary Sink Frames



Made of ¾-inch angle iron which fastens to the wall by clips.

No.	Lgth. In.	Holds Sink Inches	Price Each	No.	Lgth. In.	Holds Sink Inches	Price Each
1	24	16x24 or 18x24	$2.00	4	36	18x36 or 20x36	$2.00
2	30	16x30 " 18x30	2.00	5	42	18x42 " 20x42	2.25
3	30	18x30 " 20x30	2.00	6	48	18x48 " 20x40	2.25



Redlon Adjustable Sink and Tray Legs

Can be adjusted in width to fit tray or sink. Thread on leg is 3 inches long so that it can be made the height wanted.

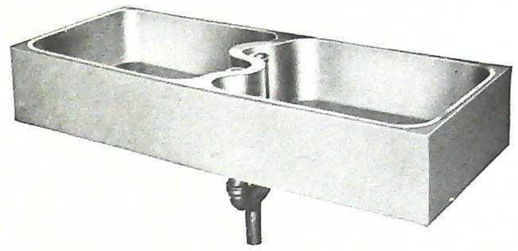
The leg is made of heavy cast iron which makes it strong. There being no legs to cut and fit, makes it a time saver.

Specify whether wanted for sink or tray as the pipe standards on sink legs are 6 inches longer. Otherwise the same.

Packed one pair to a carton.

Price.....per pair $7.00

No C-120 Metal Pantry Sinks



Double pattern unit set in wood box and fitted with S dividing partition, two standing overflows, waste plugs, couplings and 1½-inch outside diameter tail pieces; also one twin waste connection for 1½-inch trap.

Made in white or monel metal, polished copper and crodon plate or 99 per cent pure nickel.

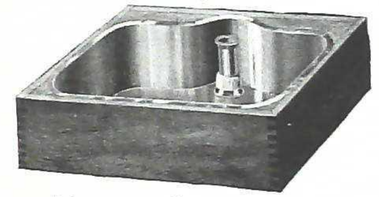
Maximum shipping weight, 75 pounds.

Size Inches	Price, Each White or Monel Metal	Polished Copper	*Crodon Plate	Size Inches	Price, Each White or Monel Metal	Polished Copper	*Crodon Plate
12x36	$94.70	$90.85	$118.35	16x48	$121.00	$114.00	$151.20
12x40	105.20	100.65	131.50	18x40	118.35	112.20	147.95
14x30	98.20	94.40	122.70	18x48	126.25	117.55	157.80
14x32	103.45	99.75	129.30	18x54	131.50	121.15	164.35
14x36	106.95	101.55	133.70	18x60	136.75	124.70	170.95
14x40	109.60	104.20	136.95	20x48	130.60	120.25	163.30
14x48	113.95	106.90	142.45	20x54	136.75	124.70	170.95
16x40	113.95	106.90	142.45	20x60	140.30	126.45	175.30
16x44	116.60	109.55	145.75	.....	.....	.....	.....

*Crodon plate or 99 per cent pure nickel.

No. C-100 Metal Pantry Sinks

Set in wood box and fitted with standing overflow, waste plug, coupling and 1½-inch outside diameter tail piece set in recess at back.



Maximum shipping weight, 50 pounds.

Size Inches	Price, Each White or Monel Metal	Polished Copper	*Crodon Plate	Size Inches	Price, Each White or Monel Metal	Polished Copper	*Crodon Plate
14x20	$31.40	$29.55	$37.05	16x30	$38.90	$37.80	$47.35
14x24	34.05	32.35	40.60	18x30	41.25	40.30	50.65
16x24	36.60	35.15	44.10	.....	.....		

*Crodon plate or 99 per cent pure nickel.

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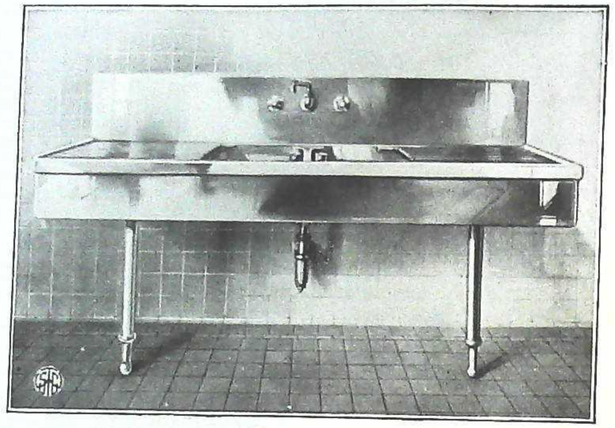

Fig. H-621

White Metal Double Pantry Sink with straight dividing partition, right and left grooved drain boards, back and apron all white metal covered, white metal legs, white metal combination compression supply fitting with swing spout and china index handles, standing drain and overflows, twin drain connection and white metal P trap. These sinks may be furnished in monel metal or German silver with or without drain boards made to special dimensions.

Height of back 12 inches
Width from front to back 24 inches
Depth of apron 8 inches
Size of each compartment 20x18 inches
Depth of sink inside 7 inches

Length Over All	inches	78
Approximate Shipping Weight	pounds	350

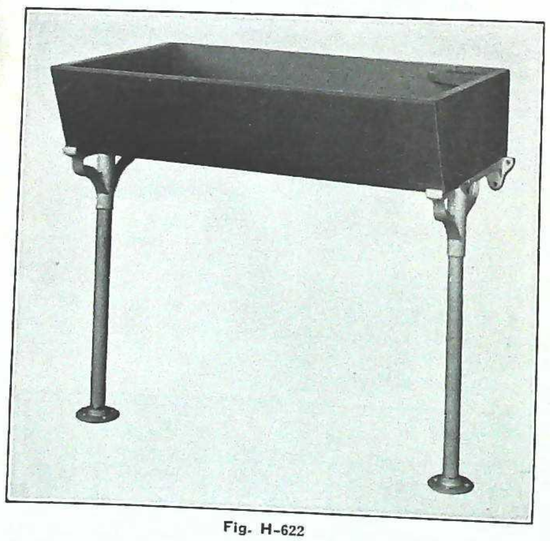

Fig. H-622

Slate Sink with soap dish, without back.
Legs are not furnished unless ordered.

Depth outside 7¾ inches

Outside Dimensions inches	36x24	42x24	48x24
Approx. Shipping Weight pounds	165	177	205

Special sizes made to order.
Loose backs and drainboards of any desired dimensions can be furnished for the above sinks.

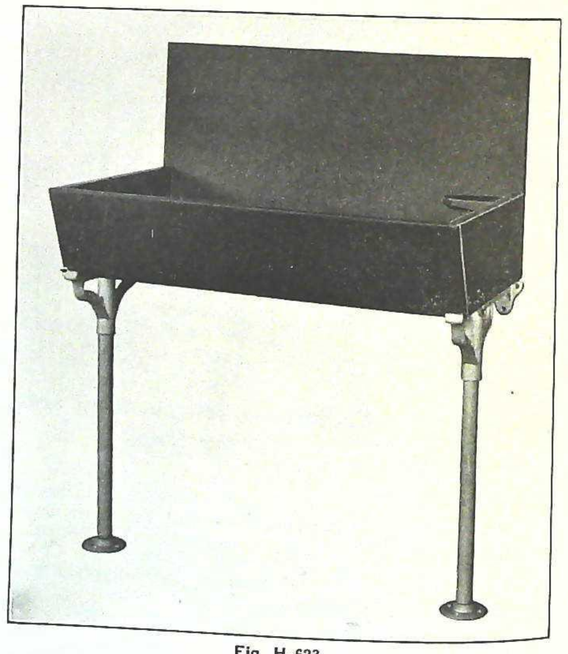

Fig. H-623

Slate Sink with integral back and soap dish.
Legs are not furnished unless ordered.

Depth outside 7¾ inches

Outside Dimensions inches	36x24	42x24	48x24
Approx. Shipping Weight pounds	205	235	265

Sinks are regularly fitted with 12-inch integral backs, but backs of other dimensions can be furnished on order.
Special sizes made to order.

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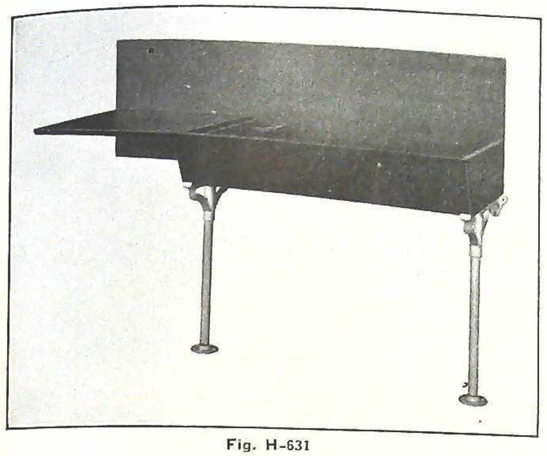

Fig. H-631

Slate Sink with left-hand integral drainboard, integral back and soap dish.
Legs are not furnished unless ordered.

Depth outside 7¾ inches

Outside Dimensions inches	36x24	42x24	48x24
Approx. Shipping Weight pounds	300	327	357

Sinks may be fitted with integral drainboard on either end or on both ends, with or without high back, with back over all, or with back over sink only.
Drainboards or backs of any dimensions can be furnished on order.
Special sizes made to order.

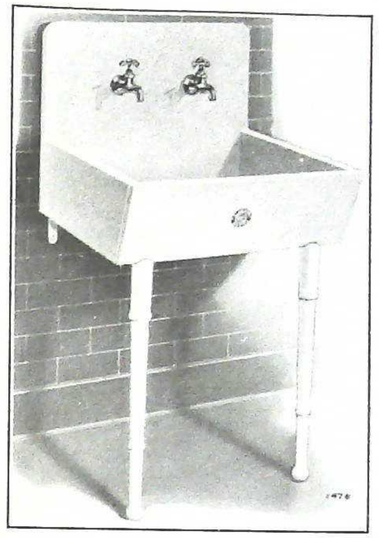

Fig. H-632

Alberene Stone Sink, with bevel front and 12-inch integral back. Strainer for drain in center at back, angle wall brackets and painted iron legs. Faucet holes drilled as usual.

Depth outside 8 inches

Size Inches	Approx. Shipping Wt. Lbs.	Size Inches	Approx. Shipping Wt. Lbs.	Size Inches	Approx. Shipping Wt. Lbs.
30x22	257	36x24	324	48x24	390
30x24	280	42x22	341	.....	...
36x22	299	42x24	366	.....	...

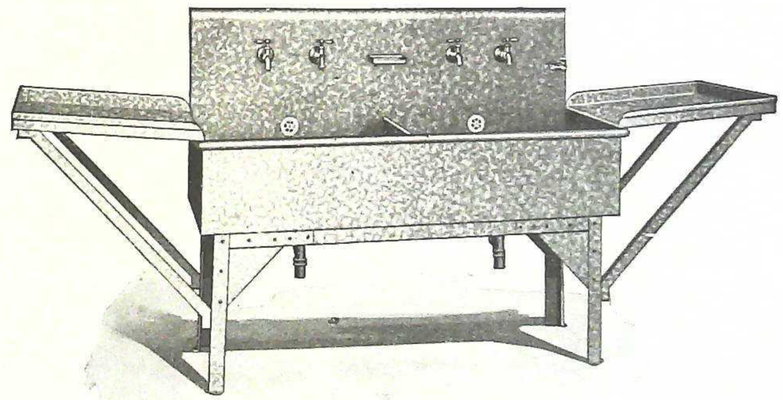

Fig. H-633

Galvanized Sheet Steel Roll Rim Scullery Sink with front, bottom and 15-inch high back in one piece, ends and partition welded in, 24-inch right and left drain boards with supports, on reinforced steel frame, fitted with nickel-plated quick compression faucets, flange female iron pipe, connected overflow and drain in each compartment and galvanized soap dish.

Made of 12-gauge black steel, all parts hot galvanized after fabrication.

Length 60 inches
Depth 12 inches
Width 24 inches
Back 15 inches

Approximate Shipping Weight	pounds	300

Can be furnished with drain boards 30 or 36 inches long and with drain board on one side only.
Also can be furnished without drain boards.
Special size sinks can be made to order.

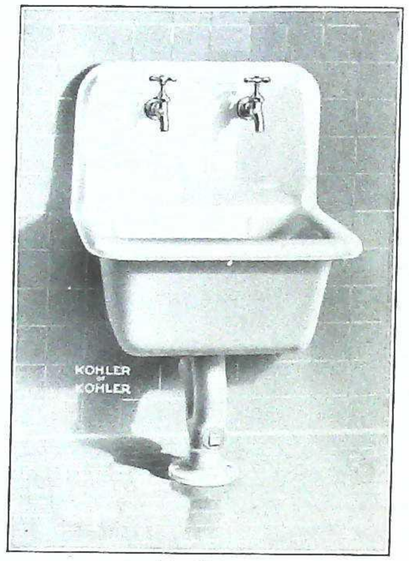

Fig. H-641

Enameled Iron One-Piece Roll Rim Slop Sink with 14-inch enameled back, concealed hangers, enameled adjustable trap standard with brass inlet flange, nickel-plated brass strainer, cleanout plug, outlet threaded for 2-inch iron pipe, and nickel-plated tee handle compression faucets.

Floor to top of rim 26 inches

Size.....inches	16x20x12	18x22x12	20x24x12
Approx. Ship. Wt.....lbs.	145	155	190

Can be furnished enameled all over.
Can be furnished with other style trap standards.

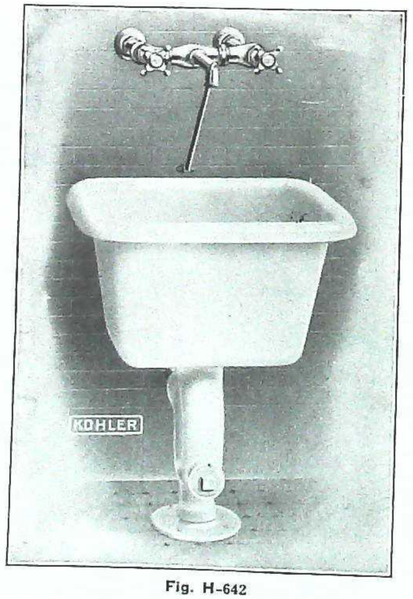

Fig. H-642

Enameled Iron Roll Rim Slop Sink, with enameled iron adjustable trap standard with brass inlet flange, outlet threaded for 2-inch iron pipe, nickel-plated brass clean-out plug and strainer, and nickel-plated quick-compression supply faucet with support and pail hook.

Slab 16x20 inches Depth 12 inches

Approximate Shipping Weight, Less Faucet..pounds 120

Can be furnished with other style trap standards; with or without supply fitting. Furnished enameled inside only.

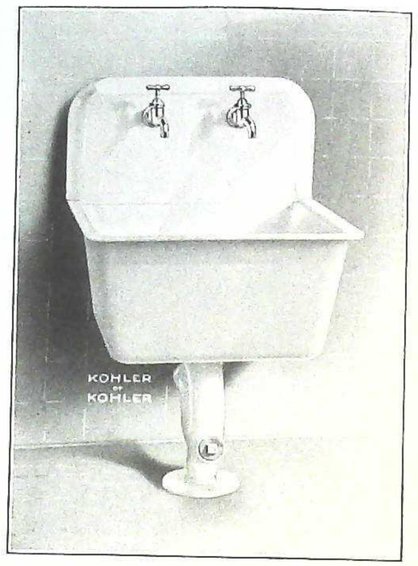

Fig. H-643

Enameled Iron Flat Rim Slop Sink with 12-inch separate back, on enameled adjustable trap standard with outlet threaded for 2-inch iron pipe, nickel-plated brass cleanout plug, strainer and flange and nickel-plated tee handle compression faucets. Furnished enameled inside only.

Height to top of rim 27 inches

Size.....inches	16x20x13	18x22x13	20x24x13
Approx. Ship. Wt.....lbs.	120	145	150

Can be furnished with other style trap standards.

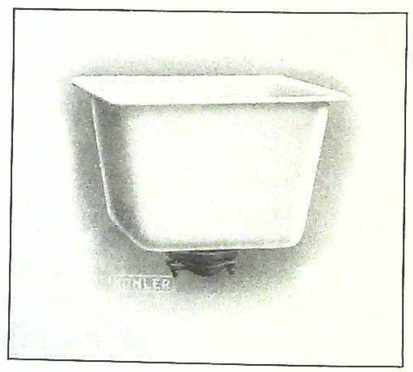

Fig. H-644

Enameled Iron Flat Rim Slop Sink with nickel-plated open brass strainer with iron coupling and collar for lead pipe connection. Enameled inside only.

Size.....inches	16x16x10	16x20x12
Approximate Shipping Weight pounds	50	60

Size.....inches	18x22x12	20x24x12
Approximate Shipping Weight pounds	70	85

The 16x16x10-inch has center outlet only. The 20x24x12-inch can be furnished with either center or end outlet. The balance have end outlet only. Strainer can be furnished with coupling threaded for 1¼, 1½ or 2-inch iron pipe.

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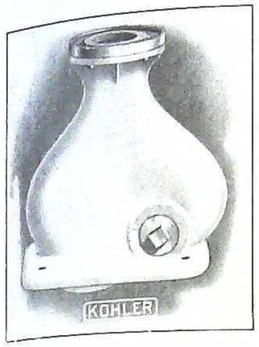
Enameled Iron Slop Sink Trap Standards

No. 2200



Plain trap slop sink standard for lead pipe, with nickel-plated cleanout plug.

Price, Enameled All Over.....
Price, Enameled Inside Only.....

Weight, 55 pounds.

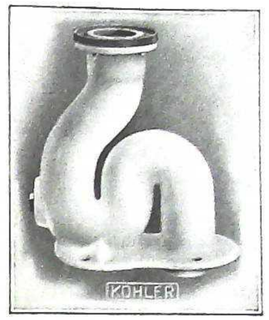
Can be furnished also with nickel-plated vent to wall.

Enameled Iron Slop Sink Trap Standards

No. 2210

Open trap slop sink standard for lead pipe, with nickel-plated cleanout plug.

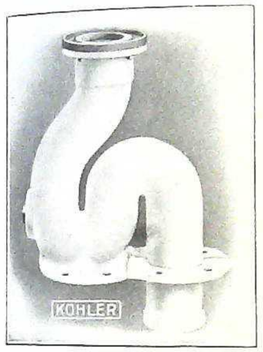
Price, Enameled All Over.....
Price, Enameled Inside Only.....



Can be furnished with hub vent or nickel-plated brass vent.

Enameled Iron Slop Sink Trap Standards

No. 2220



Open trap slop sink standard for 3-inch soil pipe, with nickel-plated cleanout plug.

Price, Enameled All Over.....
Price, Enameled Inside Only.....

Weight, 60 pounds.

Can be furnished with hub or nickel-plated brass vent.

Enameled Iron Slop Sink Trap Standards

No. 2230

Adjustable slop sink trap standard threaded for 2-inch iron pipe, with nickel-plated cleanout plug.

Price, Enameled All Over.....
Price, Enameled Inside Only.....

Weight, 50 pounds.

Also can be furnished with outlet threaded for 3-inch iron pipe.



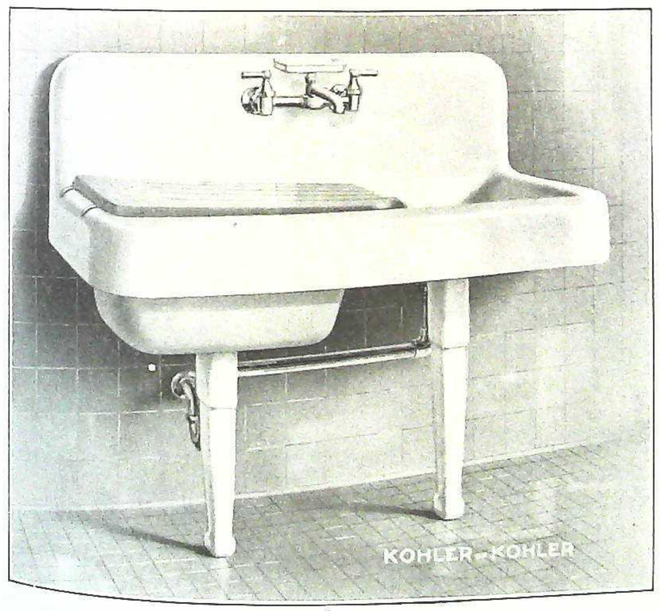


Fig. H-655

Enameled Iron One-Piece Apron Laundry Tray and Sink Combination on enameled adjustable legs and concealed hangers, with ash combination drain board and tray cover, chromium-plated quick compression double sink faucet with swing spout, lever handles and removable china soap dish, 1½-inch continuous drain pipe and chromium-plated 1½-inch P trap, and hand-operated lift drains with removable double strainers.

Also can be furnished with painted legs and integral patent overflow or drilled for overflow.

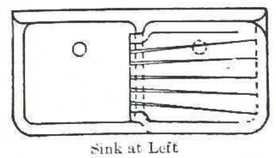
Furnished in regular or Flint gloss acid-resisting enamel, in white or colors.

Lever operated lift drain furnished if desired.

Width outside 23¾ inches
Width over all 23¾ inches
Length over all 50½ inches
Length sink inside 21¾ inches
Depth sink inside 6 inches
Depth tray inside 13¼ inches
Height of back 12 inches
Apron 6 inches

Nominal Size.....inches 24x50
Approximate Shipping Weight, Tray, Drain Board and Legs Only.....pounds 350

The drain board is interchangeable for use over sink or tray or may be removed entirely.



Sink at Left
Fig. H-656

Enameled Iron One-piece Roll Rim Sink and Laundry Tray Combination with integral back, on concealed hangers and painted iron adjustable leg, and hinged ash combination drain board and tray cover, fitted with ¾-inch compression sink faucets with china index handles, nickel-plated brass soap dish and ½-inch compression tray faucets, combination fitted with 1½-inch nickel-plated continuous drain and 1½-inch P trap, nickel-plated brass sink strainer, nickel-plated drain plug with rubber stopper.

Sink at right side.

Can be furnished with enameled legs and integral patent overflow or drilled for overflow.

Length over all 50 inches
Width outside 23½ inches
Width inside 19¼ inches
Length inside sink 21¾ inches
Height of back 8 inches
Depth inside sink 6 inches
Depth inside tray 13⅜ inches
Length inside tray 21¾ inches
Height floor to top of rim adjustable from 30 to 34 inches

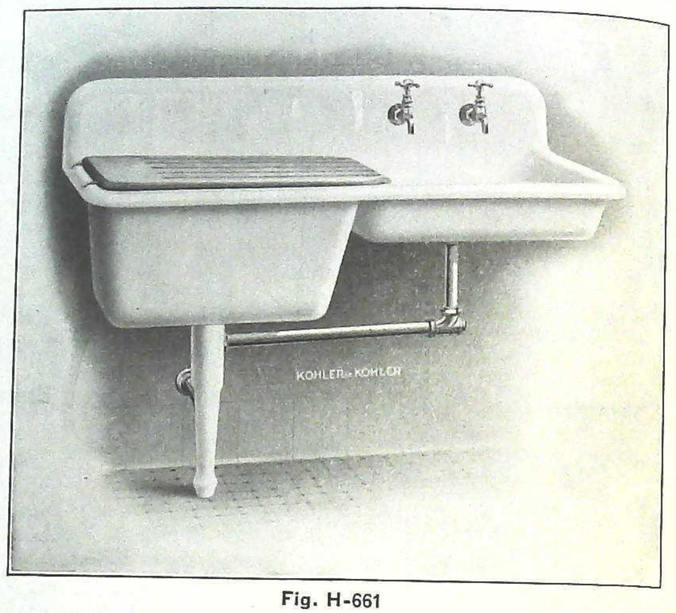
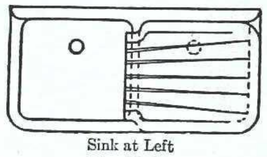


Fig. H-661



Sink at Left
Fig. H-632

Approximate Shipping Weight Less Fittings..... pounds 310

The drainboard is interchangeable for use over sink or tray or may be removed entirely.

Sink can be furnished on right or left side. Specify when ordering.

Enameled One Piece Roll Rim Double Laundry Tray on painted adjustable legs, fitted with wooden wringer holder, nickel-plated brass soap dishes, ½-inch compression faucets, 1½-inch special double waste connection and strainers with rubber stoppers, and 1½-inch P trap.

Length over rim 52¾ inches
Length each tray inside 23 inches
Width over rim 26⅝ inches
Height of back 8 inches
Front to back inside 21¼ inches
Depth inside 14¼ inches

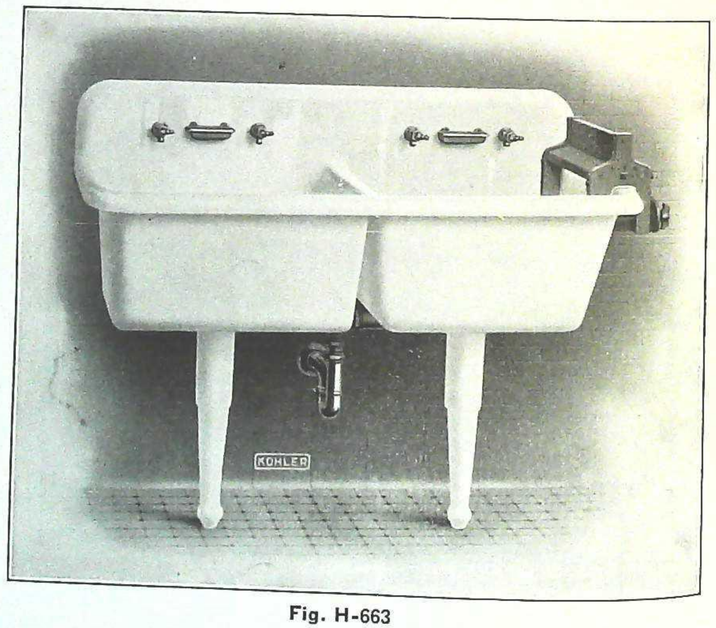


Fig. H-663

Approximate Shipping Weight. Less Fittings..... pounds 455

Height from floor to top of rim is adjustable from 33 to 37 inches.

If desired, can be furnished drilled for overflows, specify when ordering.

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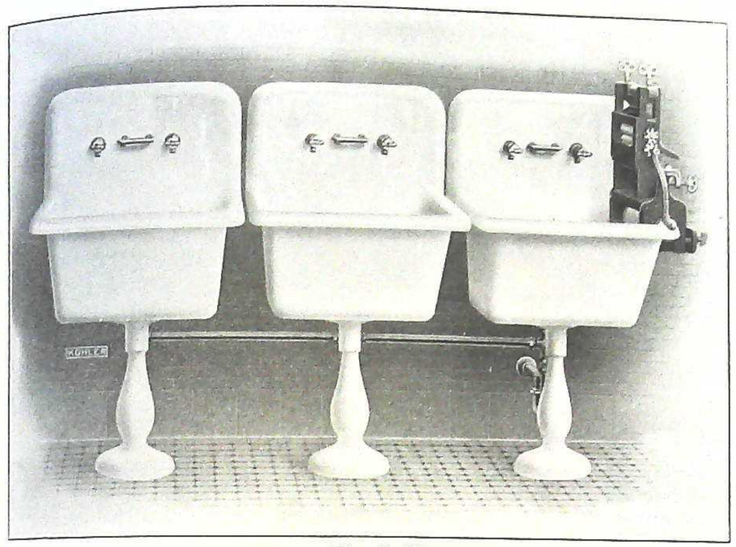

Fig. H-671

Enameled Iron Roll Rim Laundry Trays with integral backs, adjustable pedestals, nickel-plated soap dishes, wooden wringer holder, compression wash tray faucets, 1½-inch continuous drain, 1½-inch waste plugs and 2-inch P trap.

Length over rim 27½ inches
Length inside 22¾ inches
Depth inside 14¼ inches
Front to back over rim 26¾ inches
Front to back inside 22½ inches
Back 14 inches

Approximate Shipping Weight, Each Section Less Fittings..... pounds 240

Height from floor to top of rim is adjustable from 34 to 36½ inches.

Furnished enameled all over or enameled inside only.

Enameled Iron Flat Rim Laundry Trays on painted iron adjustable standards, with wooden wringer holders, nickel-plated compression stub pattern faucets 1½-inch drain plugs and couplings, 1½-inch continuous drain and S trap with vent.

Length over rim 24¼ inches
Length inside 21¼ inches
Length over all 72¾ inches
Width over rim 23¼ inches
Width inside 19½ inches
Depth inside 13½ inches

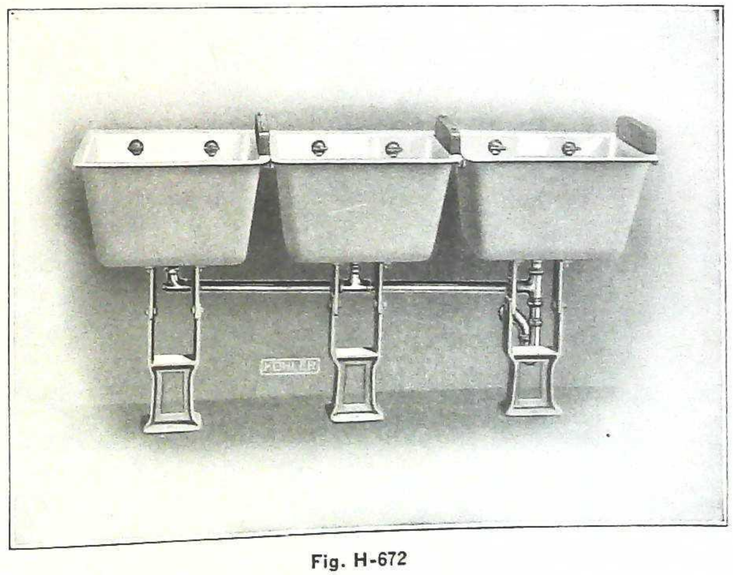

Fig. H-672

Approximate Shipping Weight, Each Section..... pounds 130

The height of these trays from floor can be adjusted from 29¼ to 34¼ inches.

Can be furnished drilled for overflow, and with round adjustable iron standards.

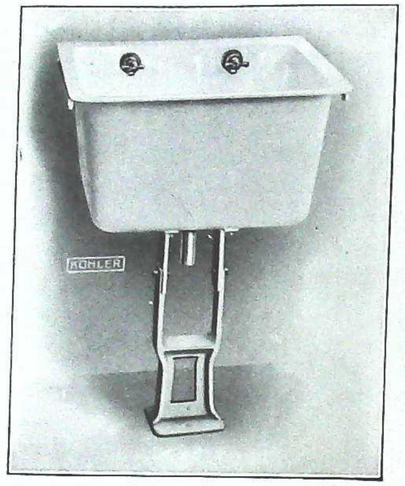

Fig. H-681

Enameled Iron Flat Rim Laundry Tray on painted iron adjustable standard and concealed hangers, nickel-plated compression tray faucets, drain plug with 1½-inch tail piece, and stopper.

The height of the tray can be adjusted from 29¼ to 34¼ inches from floor. Arranged for setting in batteries of two or more.

Length outside 24 inches
Length inside 21¼ inches
Width outside 20 inches
Width inside 17¼ inches
Depth 13¼ inches

Approximate Shipping Weight.....pounds 125

Can be furnished drilled for overflow.

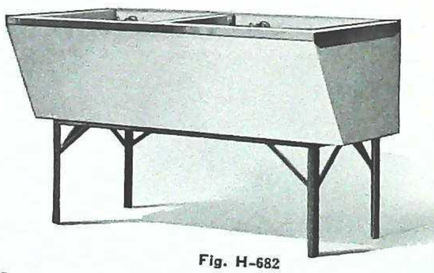

Fig. H-682

Granitine Laundry Tray without back, integrally cast in one piece, with metallic rim and wringer guards, twin waste connection, brass strainers, rubber plugs and supported on painted steel frame.

All trays have faucet holes partly drilled.

One-part Laundry Trays

Length Inches	Width Inches	Depth Inches	Approximate Shipping Weight, Pounds Without Back	With 6-inch Back
25	24	16	200	225
27	24	16	225	250
31	24	16	250	275
Two-part Laundry Trays				
48	24	16	375	425
54	24	16	400	450
60	24	16	425	475
Three-part Laundry Trays				
72	24	16	575	625

These trays are made of Portland cement and crushed granite stone by a process of cement waterproofing. The cement waterproofing presents a superior gray color and a smooth surface. They are made in one piece with rounded corners, without seams and joints, and are thus sanitary and easy to keep clean.

A twin waste connection is furnished with the two-part tray.



Fig. H-683

Soapstone Laundry Tray.—Drilled for waste connections and for faucets, supported on 2 painted iron legs, fitted with finished brass waste plugs and stoppers.

No. of Parts	Length In.	Width In.	Depth In.	Ship. Wt., Pounds	No. of Parts	Length In.	Width In.	Depth In.	Ship. Wt. Pounds
1	24	24	16	240	2	42	22	14	376
1	24	22	14	225	2	48	24	16	415
1	24	24	14	230	2	48	24	14	438
2	42	24	16	385	3	72	24	16	635
2	42	24	14	380	3	72	24	14	589



Faucets and waste connections are extra.

These trays are drilled for right or left waste, or the 2-part tray can be furnished with twin waste. By the use of the twin waste fitting but a single waste connection is required.

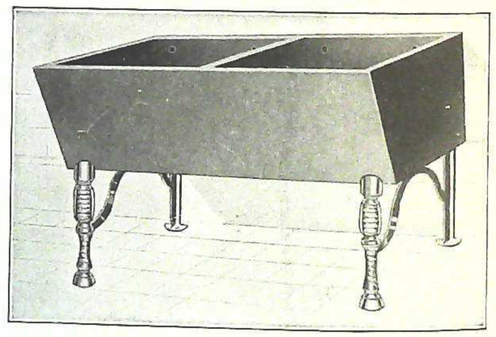

Fig. H-684

Slate Two-part Laundry Tray without back, supported on painted or galvanized iron legs.

Holes drilled for faucets unless otherwise ordered.

Thickness of slate 1¼ inches.

All measurements are outside.

Width 24 inches
Depth 14 inches

Length.....inches	48	54	60
Approximate Shipping Weight.pounds	470	540	585
Price, Tray Only.....	$26.00	29.00	32.00

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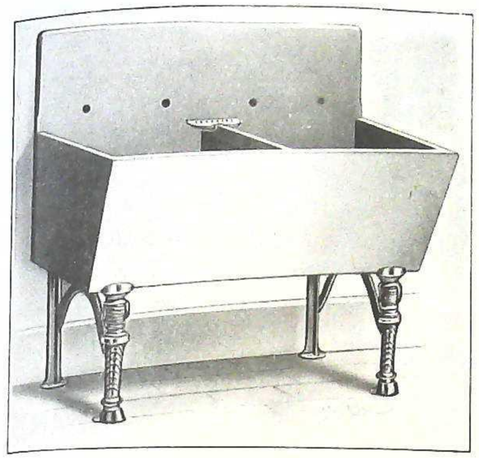


Fig. H-691

Slate Two-part Laundry Tray with 12-inch back, supported on painted or galvanized cast iron legs.

Holes drilled for faucets unless otherwise ordered.

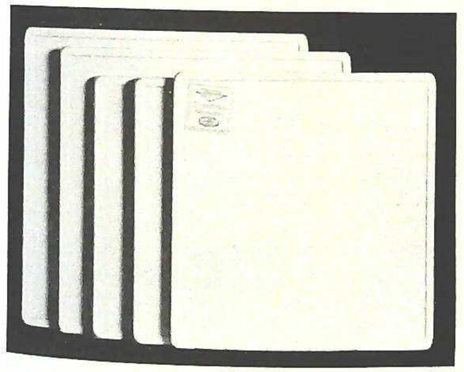
Thickness of slate, 1¼ inches.

All measurements are outside.

Width 24 inches
Depth 14 inches

Length.....inches	48	54	60
Approximate Shipping Weight.pounds	520	600	670
Price, Tray Only.....	$30.00	33.00	36.00

Porcelain Enameled Wash Tray Covers



These covers placed on a laundry tray converts it into a white sanitary table.

Enameled Wash Tray Covers can be easily installed. They are durable and will outlast an ordinary table. A damp cloth will keep them as clean as a china dish.

These covers are made with rounded corners, turned underneath flange and are finished all white.

No.	Size Inches	Price per Set of 2	No.	Size Inches	Price per Set of 2
51	20 x21	$6.00	54	22½x22½	$6.00
52	20½x22½	6.00	55	22½x24	6.00
53	20½x24	6.00	56	24 x24	6.90

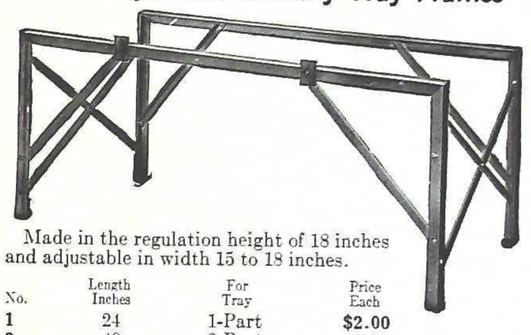
Prices include necessary fittings, rubber bumpers, hinges and screws. Style No. 1 hinges furnished unless otherwise specified. Brass nickel-plated hinges, Nos. 1 or 2 furnished at 50 cents per set extra.

No. 184 Cast Iron Laundry Tray Legs



Price, Painted Iron.....each $1 50
" Galvanized Iron....." 2.20

Steel Adjustable Laundry Tray Frames



Made in the regulation height of 18 inches and adjustable in width 15 to 18 inches.

No.	Length Inches	For Tray	Price Each
1	24	1-Part	$2.00
2	40	2-Part	2.00
3	64	3-Part	3.00

No. 994 Continuous Laundry Tray Drains

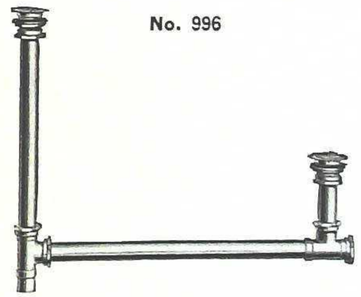


End outlet drain, slip joint inlets for 1½-inch tail pieces.

Number of Inlets.....	2	3	4	Add'l Sec.
Price, N.P., 1½-Inch.....ea.	$10.40	$16.70	$22.90	$6.20
Price, N.P., 2-Inch.....ea.	12.20	19.30	26.90	7.10

Continuous Laundry Tray Drains

No. 996



Nickel-plated continuous drain with plugs, Duplex strainer and rubber stopper for sink and laundry tray combination with 1½-inch tubing tail-pieces.

Size tubing run, 1½ inches.

Price, No. **996**.....each **$7.70**

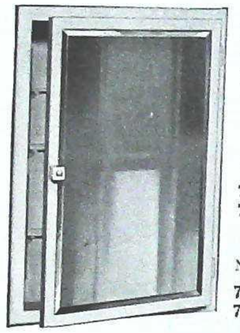
No. 997

Nickel-plated continuous drain with rubber stoppers or Duplex strainers with 1½-inch tubing tail-pieces for 2-section laundry trays and double compartment sinks.

Size tubing run, 1½ inches.

Price, No. **997**.....each **$8.65**

Sanoid Steel Recess Medicine Cabinets

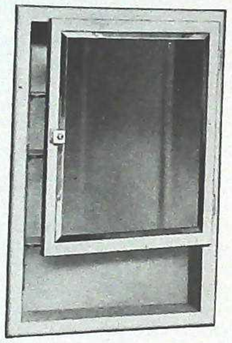


High grade special steel Recess Medicine Cabinet, Sanoid finish, with adjustable glass shelves, push catch, first quality bevel French mirror plate.

No.	Outside Measurements Inches	Made to Fit Recess Inches
765	28x20	25¼x17¼x3⅝
763	24x18	21¼x15¼x3⅝

No.	Mirror Inches	Price Each
765	24x16	$32.00
763	20x14	27.40

Sanoid Steel Recess Medicine Cabinets

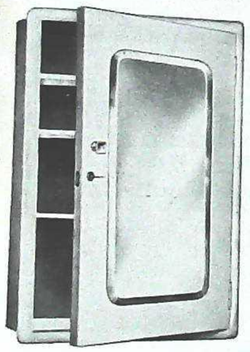


High grade special steel Recess Medicine Cabinet with open shelf, Sanoid finish, with adjustable glass shelves, push catch, bevel French first quality mirror plate.

No.	Outside Measurements Inches	Made to Fit Recess Inches
761	28x20	25¼x17¼x3⅛
759	24x18	21¼x15¼x3⅝

No.	Mirror Inches	Price Each
761	18x16	$29.00
759	15x14	27.00

Wood Recess Medicine Cabinets



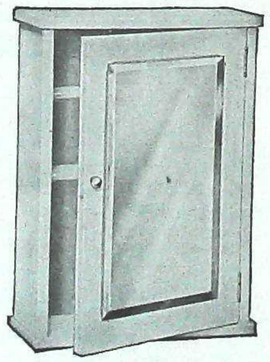
With Sanoid Finish

Wood recess medicine cabinet with white sanoid finish, first quality French bevel glass mirror, three plate glass shelves, nickel-plated trimmings, lock and key. Made in 2 sizes.

No.	Mirror Inches	To Fit Recess Inches	Price Each
342	18x12	23x17x4⅝	$30.00
344	20x14	25x19x4⅝	35.00

White Enamel Wood Medicine Cabinets

Cornice Top and Bottom

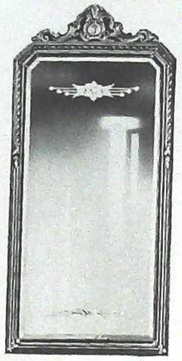


Wood wall medicine cabinet with cornice top and bottom, white enamel finish, with bevel French commercial quality mirror, glass shelves, nickel-plated trimmings.

No. 106 has 2 shelves and No. 118, 3 shelves.

No.	Glass Inches	Outside Measurements Inches	Price Each
106	14x10	19x15⅝x5¾	$13.00
118	18x10	23x15⅝x5¾	15.50

No. 809 Polychrome Mirrors



Beveled plate glass mirror, etched, with ornamental top.

Highly burnished silver and gold, together with black, give beauty of coloring.

Size of mirror, 12x24 inches.

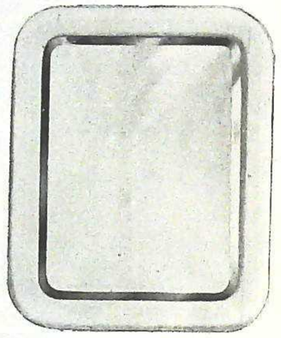
Dimensions over all, 14x29 inches.

Price, No. 809 ..... each $9.20

Plain plate glass furnished on special order at about 20 per cent reduction.

Silk mirror cords extra. Prices upon application.

White Enameled Framed Mirrors

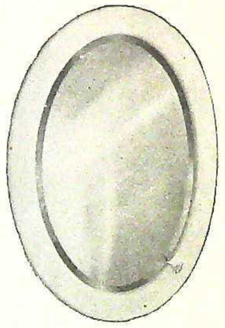


Beveled plate glass mirror with white enameled frame.

No.	Size Mirror Inches	Width Frame Inches	Price Each
22	12x20	½	$5.00
23	14x24	½	6.40
24	16x20	½	6.50

Plain plate glass furnished on special order at about 20 per cent reduction.

White Enameled Framed Mirrors



Beveled plate glass oval mirror with white enameled frame.

No.	20	21
Size of Mirror....in.	12x18	16x20
Width of Frame..in.	1½	1½
Price.....each	$4.40	6.50

Plain plate glass furnished on special order at about 20 per cent reduction.

Bath Tub Seats



Price, No. 1204 Oak, Piano Finish ..... each $3.20
" " 1206 Enamel, Rubbed Finish ..... " 3.85

Hy-Tech Products

No. 4 Bath Room Stools



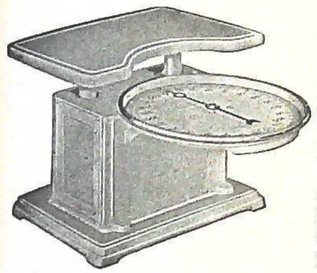
White enamel on wood. Rubber crutch tips.

Plain top, 12⅝ inches in diameter.

Height, 15½ inches.

Price, No. 4 ..... each $4.50

No. 101 Health-O-Meter Standard



A well constructed scale, with hardened bearings, rack and pinion of best quality steel. Equipped with regulating screw for close adjustment. A cork mat is inlaid in platform.

Colors: white, blue, orchid, green, rose and antique ivory. Figures are prominently shown on dial; convex glass is held in place with a lock joint, water and dust-proof sash ring, highly nickel-plated.

Price, No. 101 ..... each $10.95

Fairbanks Home Health Scales



The Health Scales here shown, placed in a bathroom or bedroom, offer every family the advantage of obtaining accurate weight without clothes as frequently as desired. It is convenient and easy to use, takes up but a small space and is handsomely finished to ornament any home. Its fine accuracy and sensitiveness give weights that can be relied upon to be authentic.

The tall iron pillar is surmounted by a full capacity beam on a level with the user's eye and free from any shadow, so as to be easily read. This beam has full 300 lbs. x ¼ lb. capacity upon its bars, doing away with loose weights which may drop and break or injure floors and toes. Scale may be furnished with an accurate adjustable measuring rod for giving accurate height, graduated from 2½ feet to 6½ feet by ¼ inches, for children as well as adults. Beam and measuring rod may be graduated to metric or other standards if desired. The finish is white enamel, with arrow-tip beam-sliding poises and measuring rod, all of polished nickel-plated brass. A rubber mat is fastened on the platform.

Beam graduations: upper bar, 50x¼ pounds; lower bar, 250x50 pounds.

Measuring rod: 2 feet 6 inches to 6 feet 6 inches by ¼ inches. Platform 10½ inches x 14 inches.

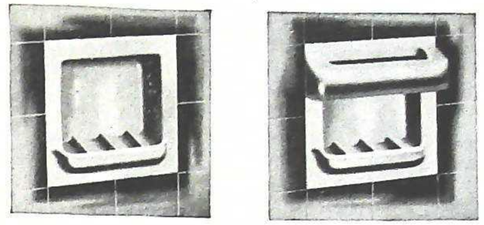
Height, from floor to top of beam, 58¼ inches.

Price, without Measuring Rod No. 1263 ..... each $37.00
Price, with Measuring Rod, No. 1265 ..... each 42.75

Bath Room Furnishings

TRADE ALL WHITE RIGHT MARK

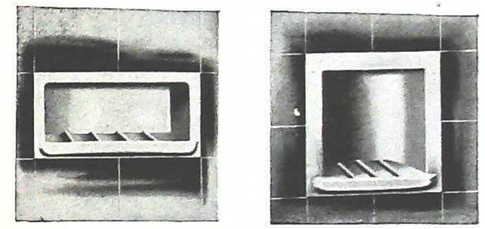
Tile-In Vitreous China Recess Soap Holders



No. R10 No. R11

Price, No. R10, Recess Soap Holders, 6x6 In. . . each $2.50
" " R11, " " " and Grab Rails, 6x6 In ..... each 4.25

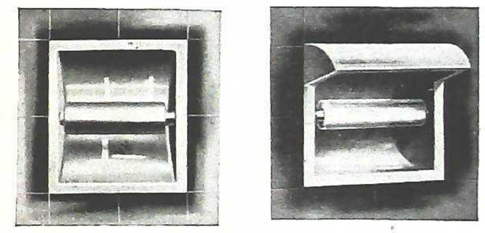
Recess Soap and Tumbler Holders



No. R17 Soap Holder No. R16 Tumbler Holders

Price, No. R17, Recess Soap Holders, 6x3 In. . . each $1.75
" " R16, " Tumbler Holders, 6x6 In.. " 2.50

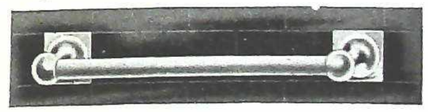
Recess Toilet Paper Holders



No. R12 No. R20

Price, No. R12, Recess Toilet Paper Holders, 6x6 Inches ..... each $3.0¢
Price, No. R20, Recess Toilet Paper Holders with Hood 6x6 Inches ..... each 5.00

Pyralin Towel Bars with China Ends



Size ..... inches	1x18	1x24	1x30	1x36	1x42	1x48
Price ..... each	$4.00	4.50	5.00	5.50	6.00	6.50

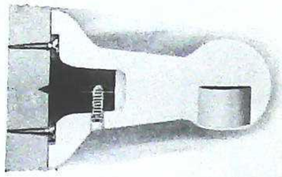
White Glass Shelves with China Ends



Projecting white glass shelf, ⅞ inches thick.

Size ..... inches	5x18	5x24	5x30	5x36
Price ..... each	$5.00	5.75	6.50	7.25

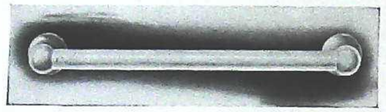
Bath Room Furnishings
American Beauty



Unsightly screw holes are eliminated in these fittings by means of a concealed expansion set screw fastening embedded in the base of the wall flange. Simple and easy to install, secure and firm in position, cannot tip over.

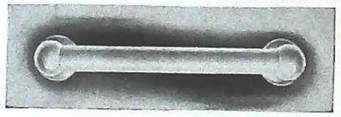
These fittings are superior to nickel-plated brass, as there is no metal to tarnish, are easy to keep clean, and are attractive in appearance.

No. 725, Opal Towel Bars with Vitreous China Ends



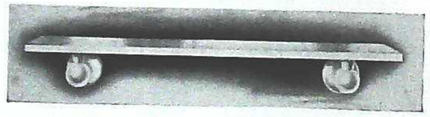
Length.....inches	18	24	30	36
Price, 1-inch Diameter.....each	$3.60	4.25	4.80	5.50

No. 727, Opal Hand Rails with Vitreous China Ends



Length.....inches	9	12	16
Price, 1¼-inch Diameter.....each	$3.60	4.25	4.90

No. 735, Opal Shelves with Vitreous China Brackets



Length.....inches	18	24	30	36
Price, ½x6 Inches.....each	$5.00	5.70	6.40	7.10

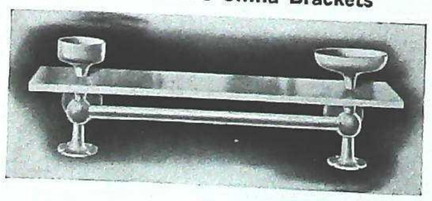
No. 737, Combination Opal Shelves with Vitreous China Brackets



White opal shelf, ⅜x6 inches, with ¾-inch opal towel bar, tumbler and soap holders.

Length.....inches	18	24	30
Price.....each	$8.60	9.75	10.95

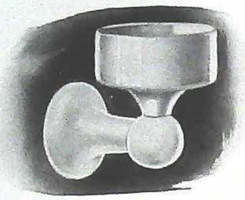
No. 741, Combination Opal Shelves with Vitreous China Brackets



White opal shelf, ⅜x6 inches, ¾-inch opal towel bar, tumbler, soap and tooth brush holders.

Length.....inches	18	24	30
Price.....each	$9.60	10.75	11.90

Vitreous China Bath Room Furnishings
American Beauty



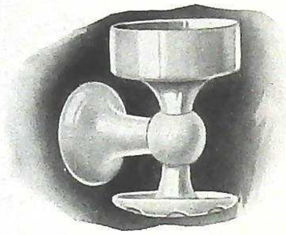
No. 745, Tumbler Holders

Diameter of Bracket.....inches	2½
Extreme Height and Depth.....inches	4½
Price.....each	$1.45



No. 746, Tumblers

Diameter.....inches	2½–2¾
Height.....“	4
Price, Straight or Bell Top.....each	$.50



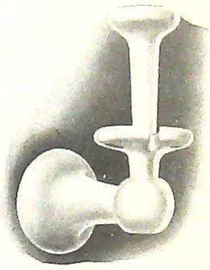
No. 755, Tumbler and Tooth Brush Holder

Diam. of Bracket in.	2½
Extreme Depth... “	4½
“ Height.. “	4½
Price.....each	$1.85

No. 757, Tumbler and Tooth Brush Holder

The No. 757 fitting holds tumbler and four brushes.

Price.....each $2.00



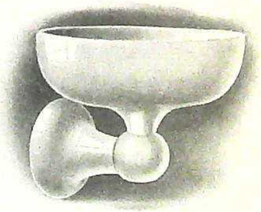


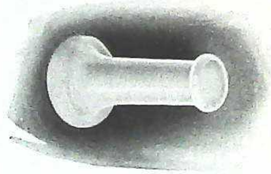
No. 765, Soap Dishes

Diam. of Bracket. inches	2½
Height.....“	4¾
Size of Cup. “	5x3½
Price.....each	$1.65

No. 767, Sponge Dishes

Depth...inches	1½
Size of Cup..in.	5½x3¾
Price.....each	$2.00

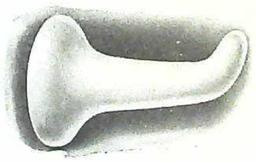




No. 775, Paper Holders

Holds standard roll of paper of 500 or 1000 sheets.

Diameter.....in.	2½
Extreme Depth.....“	6
Price.....each	$1.10

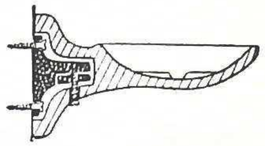


No. 785, Robe Hooks

Diameter....inches	2½
Extreme Depth “	3½
Price.....each	$.60

Hy-Tech Products

Bay Ridge All-China Bathroom Accessories
No. 800 Iris One-Piece Projecting Line



Unsightly screw holes are eliminated in these fittings by means of a concealed expansion set screw fastening embedded in the base of the wall flange. Simple and easy to install, secure and firm in position, cannot tip over.

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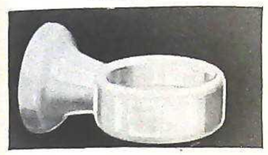
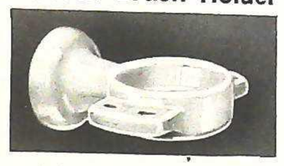
No. 845 Tumbler Holder



Diameter bracket, 2¾ inches; depth, 4¾ inches.
Price, No. 845...each $1.35

No. 855 Tumbler and Tooth Brush Holder



Diameter bracket, 2¾ inches; depth, 4¾ inches.
Price, No. 855...each $1.75

No. 869 Soap Dish



Diameter bracket, 2 13/16 inches; depth, 4⅞ inches.
Price, No. 869...each $1.60

No. 865 Soap Dish



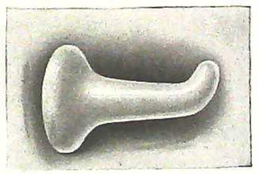
Diameter bracket, 2¾ inches; depth, 4¾ inches.
Price, No. 865...each $1.50

No. 888 Strop Hook



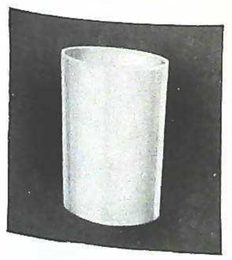
Diameter bracket, 1 9/16 inches; length, 1⅞ inches.
Price, No. 888...each $.40

No. 885 Robe Hook



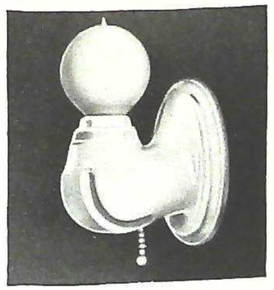
Diameter bracket, 2 7/16 inches; length, 3 5/8 inches.
Price, No. 885...each $.60

No. 846 Tumbler



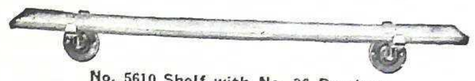
Made of opal glass.
Price, No. 846....each $.50

No. 801 Chinalite



Concealed fasteners, no exposed screws; without bulb.
Price, No. 801...each $5.00

Glass Bathroom Shelves
With Nickel-Plated Brass Brackets



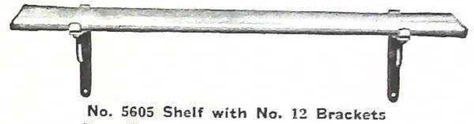
No. 5610 Shelf with No. 36 Brackets

Size In.	Price, Each Crystal ⅜-in.	Crystal ½-in.	Opal ⅝-in.	Size In.	Price, Each Crystal ⅜-in.	Crystal ½-in.	Opal ⅝-in.
5x18	$5.10	....	$6.35	6x18	$6.65	.....	$8.25
5x20	5.25	$8.65	6.75	6x20	6.85	$10.85	8.65
5x24	5.60	9.10	7.20	6x24	7.40	11.70	9.30
5x27	5.95	9.75	8.10	6x27	7.85	12.80	10.00
5x30	6.20	10.40	8.70	6x30	8.45	13.85	10.60
5x33	....	11.25	....	6x33	....	15.20	.....



No. 5600 Shelf with No. 3 Brackets

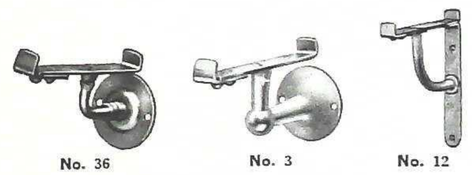
Size In.	Price, Each Crystal ⅜-in.	Crystal ½-in.	Opal ⅝-in.	Size In.	Price, Each Crystal ⅜-in.	Crystal ½-in.	Opal ⅝-in.
5x18	$6.35	....	$7.60	6x18	$7.35	.....	$8.90
5x20	6.50	$10.00	8.05	6x20	7.50	$11.50	9.30
5x24	6.85	10.40	8.65	6x24	8.00	12.35	10.00
5x27	7.20	11.05	9.30	6x27	8.50	13.45	10.60
5x30	7.45	11.70	10.00	6x30	9.10	14.30	11.25
5x33	....	12.60	.....	.....	.....	15.60	.....



No. 5605 Shelf with No. 12 Brackets

Size In.	Price, Each Crystal ⅜-in.	Crystal ½-in.	Opal ⅝-in.	Size In.	Price, Each Crystal ⅜-in.	Crystal ½-in.	Opal ⅝-in.
5x18	$5.10	....	$6.35	6x18	$6.10	.....	$7.60
5x20	5.25	$8.65	6.75	6x20	6.25	$10.20	8.10
5x24	5.60	9.10	7.20	6x24	6.75	11.05	8.70
5x27	5.95	9.75	8.10	6x27	7.25	12.15	9.35
5x30	6.20	10.40	8.70	6x30	7.85	13.25	10.00
5x33	....	11.25	....	6x33	....	14.50	.....

Nickel-Plated Brass Brackets



No. 36 No. 3 No. 12

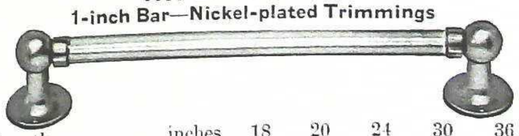
Glass shelves are securely clamped in the brackets and held about 3/16 of an inch from the wall, allowing the back edge to be cleaned. Glass shelves in contact with the wall are unsightly and unsanitary when dirt collects behind them.

No. 28 Towel Bars
Crystal or Opal—Nickel-plated Trimmings



Length.....inches	18	24	
Price, No. 28 ⅝-inch.....each	$2.35	2.70	

No. 29 Towel Bars
1-inch Bar—Nickel-plated Trimmings



Length.....inches	18	20	24	30	36
Price, No. 29, Crystal.each	$3.90	$4.10	$4.60	$5.45	$6.25
“ “ 29, Opal... “	4.10	4.45	4.95	5.85	6.70

No. 25 Towel Bars

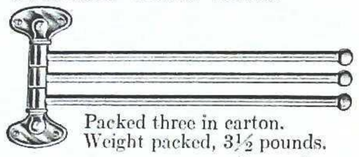
5/8-inch Bar—Nickel-plated Brass



Length.....inches	18	24	30	36
Price, No. 25, Ex. Hy....each	$2.20	2.65	3.15	3.55

No. 623 Universal Towel Racks

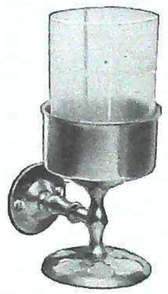
Heavy brass, nickel-plated. Length of arms, 12 inches; length of wall plate, 5 inches. Diameter bars, ¼ inch.



Packed three in carton.
Weight packed, 3½ pounds.

Price, No. 623.....per dozen $21.00

No. 3940 Tumbler and Tooth Brush Holders



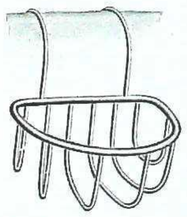
Price, No. 3940, Nickel, No Glass.....each $1.40
" " 3940, White, " " ..... " 1.65

No. 3624 Tumbler Holders



Price, No. 3624, Nickel.....each $1.50
" " 3624, White..... " 1.80

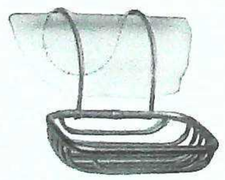
No. 3591 Sponge Holders



6 inches long, 3½ inches deep, 5 inches wide.

Price, Nickel....each $2.35
" White..... " 2.90

No. 3553 Soap Holders



6x3½ inches.

Price, Nickel....each $1.65
" White..... " 2.05

No. 1014 Universal Soap Dishes

Made of solid brass, heavily nickel-plated. The dish has a removable soap tray.

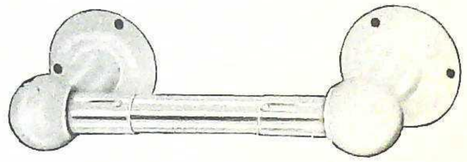
Size dish only, 5x3¾ inches.

Packed three in a carton, weight, 2 pounds.



Price, No. 1014.....per dozen $15.00

No. 15435 Toilet Paper Holders

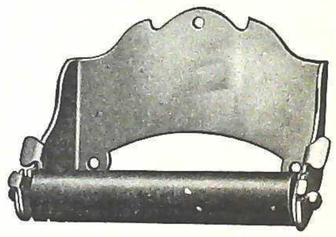


All white extra heavy toiler paper holder with lock roll.

Center to wall, 3 inches.

Price, No. 15435.....each $7.20

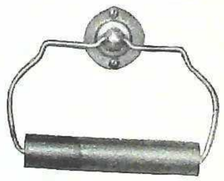
No. 5416 Paper Holders



Paper holder with black rubber enameled roll, nickel-plated brass ball end pintles and thumb lock catches.

Price, No. 5416..... each $2.05

No. 5431 Toilet Paper Holders



Nickel-plated brass wall plate and heavy wire with black rubber enamel roll.

Price, No. 5431, Nickel-plated Brass .....each $.70

Robe Hooks

No. 3533



No. 3533

Price, No. 3533 N. P. ea. $1.00
" " 3533 White .....ea. 1.15

No. 3534



No. 3534

Price, No. 3534 N. P. ea. $.45
" " 3534 White .....ea. .60

No. 15510 Hooks

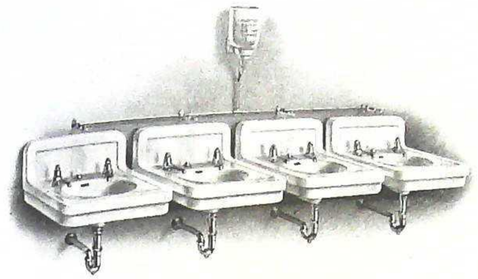


All white hook for razor strop.

Price, No. 15510.....each .....

Hy-Tech Products

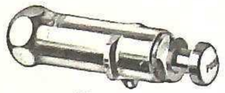
Watrous Liquid Soap Gravity System



A Typical Installation



No.C-862 Vertical Valve

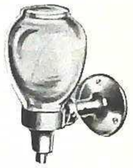


No. C-860 Horizontal Valve

This system operates wholly by the gravity principle—a simple valve delivers a predetermined supply of soap without drip or waste. An ideal system for factories, clubs, hotels, depots, hospitals, office buildings, etc. Any number of wash stands are served from one sanitary glass container. The large soap container is placed on its receptacle, and when empty is replaced by a full one. It can be quickly and easily installed in old or new buildings at a low cost. The equipment consists of soap valves, the wall support brackets, the glass containers, pipe and fittings.

Price, No. C-862, N. P. for ⅜-inch I. P.....each $2.60
" " C-860 " " ⅜ " I. P..... " 2.70
" " C-870 Gallon Glass Container, ⅜-in I.P. " 3.50

No. M-815 Watrous Liquid Soap Holders



This soap holder fastens to wall or back of lavatory.

The container has a swivel bracket so it can be inverted for refilling.

Price, No. M-815, Style K.....each $3.00

No. M-803 Watrous Liquid Soap Holders



Fastens to the wall or other support by means of flexible wire.

Threaded joints and cement are eliminated.

Nickel-plated finish.

Price, No. M-803.....each $3.40

No. C-866 Watrous Liquid Soap Valves



For attaching to top of lavatory.

This valve operates in an upright vertical position, being provided with shank to fit 1¼-inch faucet hole in lavatory top.

Shank is fitted with a ⅜-inch iron pipe coupling nipple and nut. Made of brass heavily nickel-plated.

When installed in the hole drilled for pop-up drain a chain stay can be furnished in the base of the soap valve at additional charge.

Price, No. C-866.....each $5.00
" " C-867, with Chain Stay..... " 5.60

Bath Supply Pipes



No. 59

No. 27 Coupling Only



No. 18

Price, No. 50, Plain, for Iron Pipe, ½-inch.....per pair $2.50
Price, No. 18, with Ball Offset ½-inch and Stop, 14 Gauge .....per pair 8.10
Price, No. 18, with Ball Offset ½-inch and Stop, I.P.S. per pair 8.40
Price, No. 27, N.P. Ball Offset Coupling with Nut.....per pair 1.75

Bath Faucet Couplings



Elbow Coupling Lead Pipe



Elbow Coupling Iron Pipe Female

Price, Elbow Coupling, L. P. Rough..... per pair $.90
" " " I. P. Female, Rough " 1.20
" " " I. P. " Nickel-plated ..... per pair 1.60

No. 689 Hose Connections

For Bath Faucet

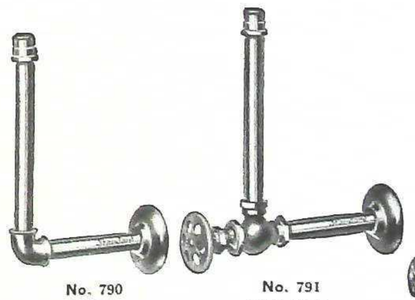


Price, No. 689.....each $.30

Lavatory Supply Pipes



No. 794 Plain



No. 790 Plain

No. 791 with Stop

Supply Pipes to Wall

Size.....inches	⅜	½
Price, No. 790 N.P., Plain per pair	$2.00	$2.20
Price, No. 791 N.P., with Wheel Handle Stop ... per pair	5.35	6.30

Supply Pipes to Wall

Size.....inches	⅜	½
Price, No. 794 N.P., Plain per pair	$2.80	$3.90
Price, No. 795 N.P., with Wheel Handle Stop ...per pair	6.15	8.10



No. 795 with Stop



No. 4512 Speakman Artline Bath Supply and Drains

Deshler Artline concealed supply and standing drain fitting with ½-inch renewable Hi-seat by-pass compression valves with unions, chromium-plated top nozzle spout, 4-arm handles and escutcheons and 2-inch drain. For enameled iron bath. Brass connections between valves and nozzle.

Price, No. 4512..each .....

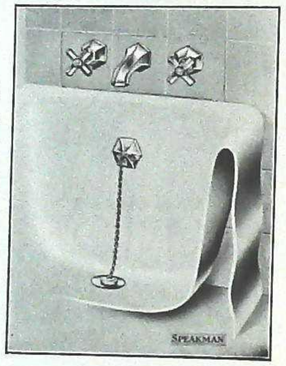
No. 4572 Speakman Artline Bath Supply and Drains

Dupont Artline concealed supply and standing drain fitting with renewable Hi-seat by-pass compression valves with unions, chromium-plated over rim spout, 4-arm handles and escutcheons.

Valves 11 inches center to center.

Drain not included.

Price, No. 4572..each .....



No. 4500 Concealed Bath Supply and Drains



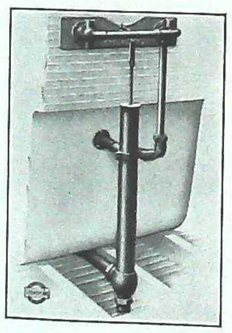
Concealed supply and standing drain fitting with ½-inch renewable high seat by-pass compression valves, nickel-plated top nozzle spout, four-arm china handles and escutcheons. For enameled iron bath with bottom outlet.

Also furnished all metal, chromium plate trim.

Price, ½-Inch..each .....
If with ¾-Inch Valves or for Porcelain Bath, Add .....each .....

This illustration shows the details of construction of the No 4500 supply and waste fitting. The valves are by-pass pattern, thus permitting connections to be made either from above or below, the other end of the valves being plugged. The by-pass valves are also convenient for connecting a shower to the bath fixture.

Note simplified construction of this fixture. There are few parts but yet the fixture is so constructed as to have sufficient adjustment to take care of any ordinary variation in roughing-in measurements.



No. 4515 Bath Supply and Drains



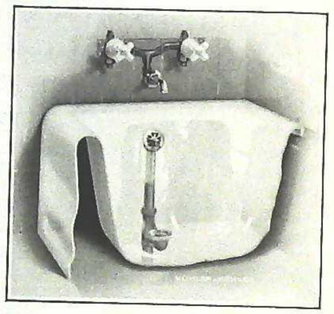
Concealed supply and standing drain fitting with renewable high seat by-pass compression valves, nickel-plated over rim spout, four-arm china handles and escutcheons.

For enameled tub with bottom outlet.

Also furnished all metal, chromium plate trim.

Price, No. 4515 with ½-Inch Valves..each .....
Price, No. 4515 with ¾-Inch Valves each .....

No. 7730 Concealed Bath Supply and Drain Fittings

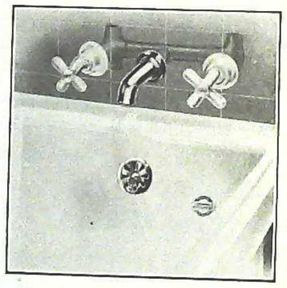


Concealed over rim bath supply and drain fitting with ½-inch built-in compression valves cast in one unit, china cross handles, indexes and escutcheons, 1½-inch connected drain and overflow with chain and rubber stopper.

Price, No. 7730, ½-Inch each .....

Price, No. 7731, ¾-Inch each .....

Tub Fillers with Concealed Valves



No. 4565

Dupont tub filler with renewable high seat, concealed by-pass compression valves, cross connected with four arm solid china handles and escutcheons, nickel-plated nozzle above rim of tub with flange.

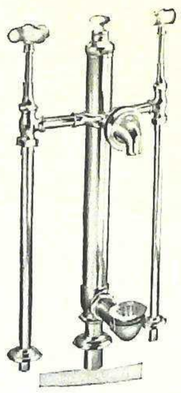
Valves 8 inches center to center.

Also furnished all metal, chromium plate trim.

Price, with ½-inch Valves .....each .....
" " ¾ " " ..... " .....
If with Lock Shield Control Valves with China Escutcheons, add ..... " .....

No. 7785 Exposed Bath Supply and Drain Fittings

For Bath on Legs or Base

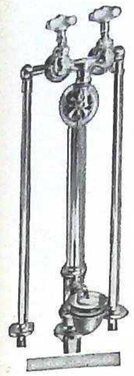


Nickel-plated exposed top nozzle bath supply and 2-inch standing drain fitting with ½-inch compression valves with 4-arm solid china handles, china knob, ½-inch nickel-plated supply pipes, and brass escutcheons.

Price, No. 7785, ½-Inch .....each $39.90

Hy-Tech Products

No. 7815 Exposed Bath Supply and Drain Fittings



Nickel-plated combination bath supply and connected drain and overflow fitting with nickel-plated compression double bath faucet with china cross index handles, ½-inch supply pipes to floor, bead chain and rubber stopper.

Price, No. 7815, ½-Inch.....each $15.75

Connected Bath Drains and Overflows

With Trap

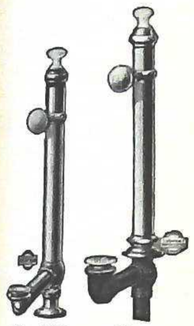


Crown clean sweep nickel-plated combined connected bath drain and overflow with trap and cleanout screw, no vent, chain and rubber stopper.

Size, 1⅜ inches.

Price.....each .....

Standing Bath Drains



No. 4680 No. 4675

No. 4680 for Tub on Legs or Base

Nickel-plated standing drain with solid china knob.

Price, 2-Inch..... each .....

No. 4675 for Legless Tub

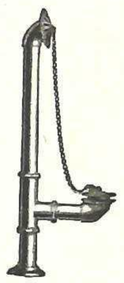
Nickel-plated standing drain with union and solid china knob, for low pattern tub when waste arm is under floor.

Price, 2-Inch..... ...each .....

For shallow floors a special elbow, 1½-inch I. P. by 1½-inch O. D. female fine thread, to be screwed on waste tee, can be furnished if desired.



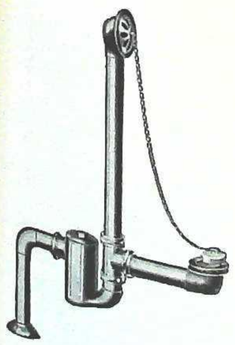
Connected Drain and Overflow



1⅜-inch adjustable connected drain and overflow with cast tees, elbows and nuts, chain and rubber stopper.
Price, No. 12355 All Polished and Plated.....each $5.30
" " 12297, Elbows and Tees White Plated, Other Parts Polish Nickeled 5.00

No. 25 Clean Sweep Connected Drain and Overflows

With Trap

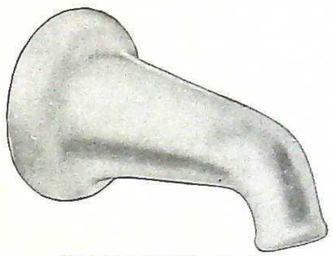


1⅜-inch nickel-plated brass connected drain and overflow with trap above floor, plug and chain.

Price, No. 25 .....each ....

This fixture is made of all cast brass parts. The outlet of trap is ground joint, and the waste pipe is fitted with double ground joint collar. It is adjustable either to floor or wall.

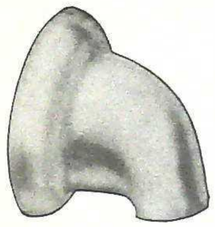
Vitreous China Bath Fittings



No. 2507 Over-Rim Nozzle



No. 2509 Bell Supply



No. 2508 Top Nozzle

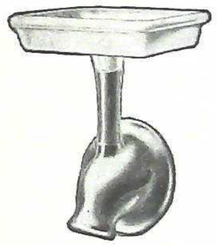
Price, No. 2507, Over-Rim Nozzle .....each .....

Price, No. 2509, Bell Supply .....each .....

Price, No. 2508, Top Nozzle .....each .....

Nickel-Plated Top Supply Spouts

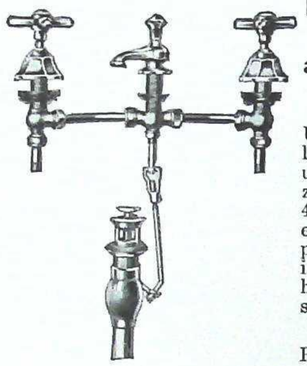
No. 6695 With China Soap Dish



N.P. brass top supply spout with china soap dish and threaded female for ¾-inch iron pipe. Can be used with concealed or exposed fitting.
Nickel Plated...ea. $5.10; Chromium Plated..ea. $6.00

We Ship Orders
the Same Day as They are Received
Our Service is
Prompt and Reliable
Send Us Your Mail Orders

No. 5017 Speakman Lavatory Supply and Drain Fittings

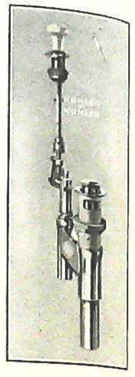


Speakman Artline Unit-Acto combination lavatory supply and pop-up drain fitting with nozzle 4½ inches long, metal 4-arm handles, indexed, escutcheons and knob; tail pieces threaded for ¼-inch iron pipe. Valves have renewable seats and swivel discs.

Chromium-plated.

Price, No. **5017** .....each ....

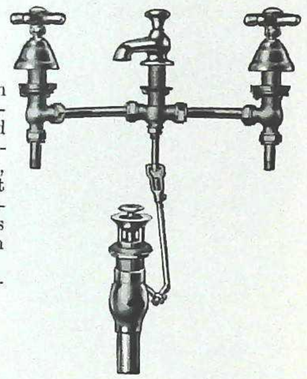
No. 8330 Pop-Up Lavatory Drains



Nickel-plated pop-up lavatory drain with china knob, indexed, operating through slab, and 1¼-inch outside diameter tail piece.

Price, No. **8330**, as Described .....each .....

No. 5010 Lavatory Supply and Drain Fittings

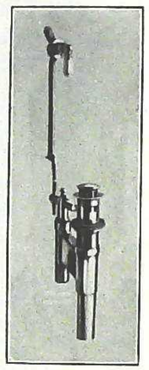


Speakman combination lavatory supply and pop-up drain fitting with raised nozzle, metal 4-arm handles with loose china index, metal knob, renewable seat valves, swivel disc and encased washers, tail pieces threaded for ¼-inch iron pipe.

Nickel or chromium-plated.

No. **5010** with 3½-In. Nozzle..each .....
No. **5015** with 4½-In. Nozzle..each .....

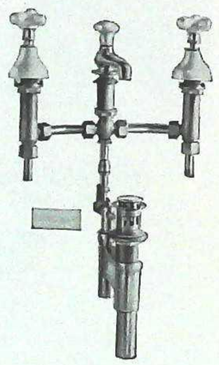
No. 8340 Pop-Up Lavatory Drains



Nickel-plated pop-up lavatory drain with china lever handle, operating through back of enameled iron lavatory, and 1¼-inch outside diameter tail piece.

Price, No. **8340**, as Described .....each **$9.00**

No. 8025 Lavatory Supply and Drain Fittings



Nickel-plated combination lavatory supply and lift drain fitting, compression valves with china cross handles and china escutcheons, nickel-plated spout, china knob on drain, and 1¼-inch o.d. tail piece.

Valves are quick acting and have renewable parts.

Price, No. **8025** .....each **$19.30**

No. 6022 Hospital Knee Action Valves



No. 6022 Speakman Knee Action Mixing Valve Lavatory Fitting with additional hand supply valves, gooseneck supply with 2-inch cast brass spray head with volume control, metal handles and escutcheons.

Knee valve and hand valves are connected. Only one set of supplies is necessary.

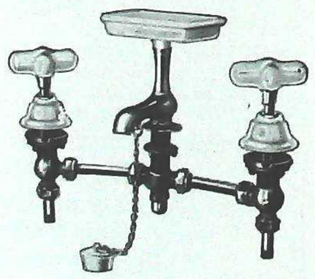
Water of the temperature desired can be obtained either through the knee valve or the hand valves.

Lavatory can be furnished either with open plug or with plug and stopper.

This fitting can be used on various types of lavatories.

Price, No. **6022**.....each .....
Price, No. **6023**, Less Hand Supply Valves.....each .....

No. 5130-S Compression Lavatory Supply Fittings

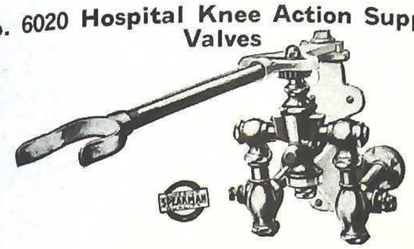


Combination compression lavatory supply fitting with solid china cross-arm handles, china escutcheons, ¼-inch threaded tails on valves, raised nozzle with china soap dish and solid link chain, soldered rings and 1⅛-inch rubber stopper.

Price, No. **5130-S**.....each .....

Furnished with metal handles and escutcheons if desired.

No. 6020 Hospital Knee Action Supply Valves

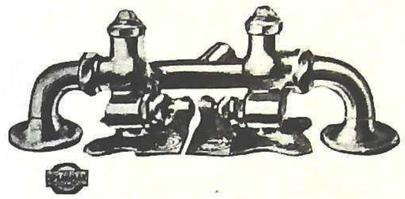


Knee action mixing valve to attach to wall, with ½-inch inlets to wall with lock shield controlling valves, and ½-inch outlet.

Price, No. **6020**.....each .....

The wall bracket is of malleable iron, white enameled, bolted to wall, and sufficiently large to permit use of valve under any type of lavatory.

No. 6005 Hospital Double Pedal Supply Valves

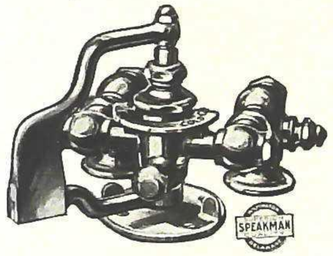


Pedal valve, for hot and cold water, with inlets and outlet for ½-inch female iron pipe.

Price, No. **6005**.....each .....

These valves are non-hammering, of self-closing pattern. The union elbow couplings can be turned to take supplies from wall if desired

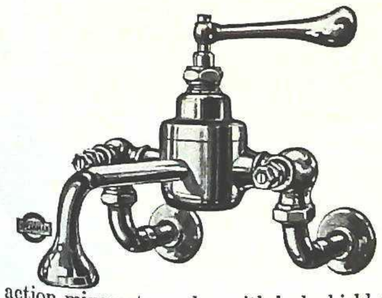
No. 6015 Hospital Foot Action Mixing Valves



No. 6015 Speakman Foot Action Mixing Valve with lock shield controlling valves, supplies from floor, 5 inches center to center, and outlet for ½-inch iron pipe female and plate to attach to floor.

Price, No. **6015**.....each .....

No. 6040 Hospital Elbow Action Supply Valves



Elbow action mixometer valve with lock shield controlling valves and elbow couplings to wall, discharge nozzle with spray regulator, inlet 8 inches center to center.

Price, No. **6040**.....each .....

Cast Brass Adjustable Traps

With PO Plug and Cleanout Screw



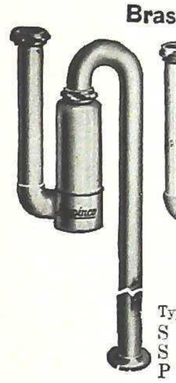
No. 313 S Trap

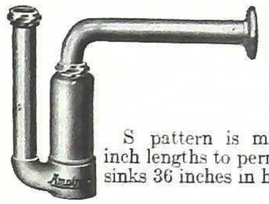


No. 301, P Trap

Size..... inches	1¼	1½
Price, P Trap, 17 Gauge .... each	$5.35	$6.05
" P " 20 " ..... "	5.05	5.75
" S " 17 " ..... "	6.45	7.75
" S " 20 " ..... "	6.15	7.45
If without Plug, Deduct... "	1.05	1.05

Brass Anti-syphon Traps

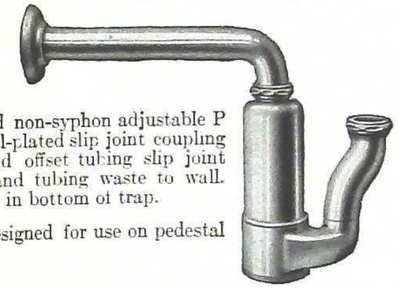




S pattern is made in 25½-inch lengths to permit setting of sinks 36 inches in height.

Type	Lgth. In.	1¼-inch No.	1¼-inch Price Each	1½-inch No.	1½-inch Price Each
S	20½	12170	$6.75	12199	$7.50
S	25½	12423	7.20	12467	8.40
P	11	12198	5.65	12200	6.15
Add for P. O. Plug.....			.75		

Sure Seal Non-syphon P Traps

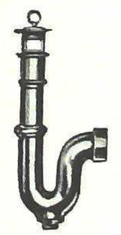


Nickel-plated non-syphon adjustable P trap with nickel-plated slip joint coupling nut on inlet and offset tubing slip joint coupling nut and tubing waste to wall. Cleanout screw in bottom of trap.

Especially designed for use on pedestal lavatories.

No	Size Inches	Length Wall, Inches	Slip Joint Inlet, Inches	Price Each
12463	1¼	..	1¼	$7.05
12464	1½	..	1¼ or 1½	7.80

Cast Brass P Traps



No. 391



No. 395

Size.....inches	1¼	1½
Price, No. 391.....each	$4.65	$5.25
" " 395..... "	5.50	6.50

Hy-Tech Products



No. 10479 New York Regulation Traps

Size.....inches	1¼	1½
Price.....each	$2.55	3.75

Add for P. O. Plug.....each $.50

No. 12420 Covering Tubes



Used to cover connection between trap and wall on 1½-inch New York Regulation trap.

Length.....inches	5
Outside Diam..... "	2
Gauge.....	22

Price, No. 12420....each $1.00

Basin Drains

With P. O. Plug



With Slip Joint



Plain

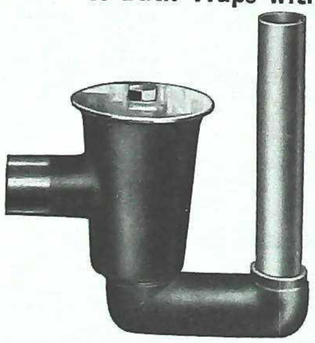
No. 946 Slip Joint

Size.....inches	1¼	1½
Price.....each	$3.00	3.50

No. 945 Plain

Size.....inches	1¼	1½
Price.....each	$2.50	3.00

No. 93 Bennor Pattern, Regular Cast Brass Bath Traps with Return Tubes



Size Inches	Price, Each Yellow Brass	Red Brass
1¼L.P.	$4.40	$4.80
1½L.P.	4.80	5.20
*1¼I.P.	4.60	5.00
*1½I.P.	5.00	5.40
†1¼I.P.	4.90	5.40
†1½I.P.	5.30	5.80

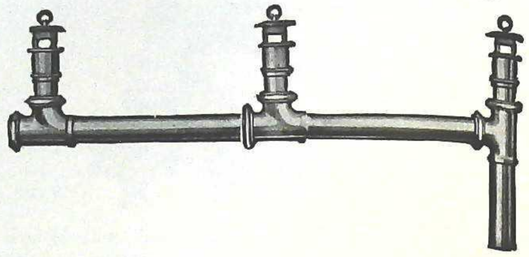
*Male.

†Female.

Bennor pattern traps have swivel threaded inlets and nickel-plated brass covers.

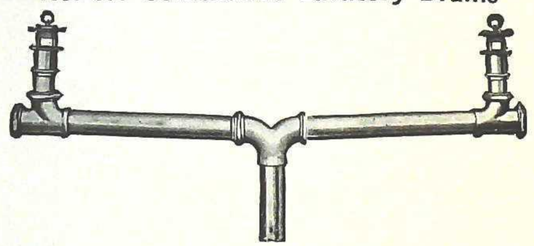
We refer you to our customers as to our service.

No. 671 Continuous Lavatory Drains



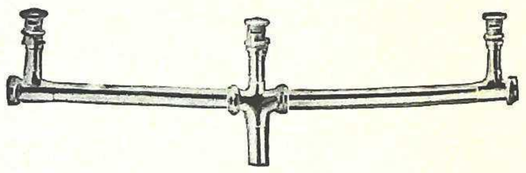
Size.....inches	1¼	1¼	1¼	1½	1½	1½
Number of Inlets..	2	3	4	2	3	4
Price, Rough..each	$4.70	$7.10	$9.75	$6.10	$9.00	$12.50
" Fin.... "	4.85	7.40	10.50	6.30	9.50	13.25
" N. P.... "	5.00	7.75	11.00	6.50	10.00	14.00

No. 677 Continuous Lavatory Drains



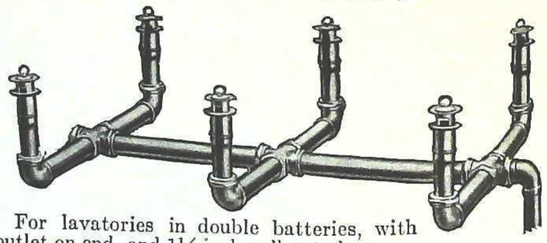
Size.....inches	1¼	1¼	1¼	1½	1½	1½
Number of Inlets...	2	4	6	2	4	6
Price, Rough...each	$5.70	$11.40	$14.90	$7.90	$15.25	$24.50
" Fin..... "	5.90	11.90	15.60	8.15	15.35	25.50
" N. P.... "	6.10	12.40	18.30	8.40	15.60	26.50

No. 685 Continuous Lavatory Drains



Size.....inches	1¼	1¼	1¼	1½	1½	1½
Number of Inlets..	3	5	7	3	5	7
Price, Rough .each	$7.30	$13.00	$18.00	$9.25	$17.50	$23.50
Price, Fin....each	7.65	13.50	19.00	9.75	18.50	24.75
Price, N.P....each	8.00	14.00	20.00	10.25	19.50	26.00

No. 993 Continuous Lavatory Drains



For lavatories in double batteries, with outlet on end, and 1¼-inch pull-out plugs.

No. of Inlets	Price, Each Size Run, In. 1½	2	No. of Inlets	Price, Each Size Run, In. 1½	2	No. of Inlets	Price, Each Size Run, In. 1½	2
4	$26.80	$29.40	10	$66.00	$71.60	16	$105.60	$114.00
6	39.90	43.40	12	79.30	85.70	..	.....	.....
8	53.10	57.50	14	80.40	99.90	..	.....	.....

Hy-Tech Products

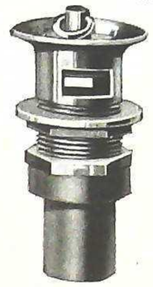
Basin Plugs

No. 4216 for Common Overflow



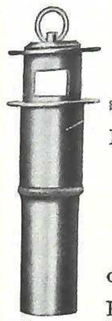
Nickel-plated, 1¼-inch tail piece.
Price, No. 4216..each $1.20

No. 4217 for Patent Overflow



Cast brass, nickel-plated, 1¼-inch tail piece.
Price, No. 4217..each $1.05

Patent Overflow Basin Plugs



No. 863

No. 863 Wrought Brass With Slip Joint

Nickel-plated P. O. plug with slip joint and rubber stopper.

Price, 1¼-Inch.....each $.75

No. 862 Cast Brass With Coupling and Lock Nut

Nickel-plated P. O. plug with coupling and rubber stopper.

Price, 1¼-Inch..... each $1.05
Price, without Overflow ..... each 1.05



No. 862

Trap Offset and Sink Connections



No. 405



No. 414

No. 405 Trap Offset Connections

Slip.....inches	1¼x3	1¼x3½
Price, Nickel-Plated.....each	$1.50	1.70

No. 414 Sink Connections

Slip.....inches	1¼x5	1½x5
Gauge.....No.	22	22
Price, Nickel-Plated.....each	$.60	.65

Brass Extension Tubes



No. 2700

No. 2700, Tubes to Solder

Size In.	Price Each	Size In.	Price Each
1¼x6	$.35	1½x6	$.40



No. 3400

No. 3400, Tubes to Slip

Size In.	Price Each	Size In.	Price Each
1¼x6	$.75	1½x6	$.80

Nickel-Plated Reducing Couplings

For Lavatory Supplies



No.....	630	631
I. P. Size.....inches	⅜x¼	½x¼
Price.....each	$.30	.40

Ground Joint Connections

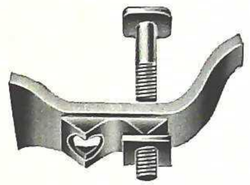


No. 901, Female



No. 902, Male

Price, No. 901, 1½" Male I. P., Slip 1¼" Tube...each $.80
Price, No. 903, 1½" Male I. P., Slip 1⅜" Tube...each .80
Price, No. 905, 1½" Male I. P., Slip 1½" Tube...each .80
Price, No. 902, 1½" Female I. P., Slip 1¼" Tube each .80
Price, No. 904, 1½" Female I. P., Slip 1⅜" Tube each .80
Price, No. 906, 1½" Female I. P., Slip 1½" Tube each .80



No. 1 Basin Clamps

Price, Rough....per doz. $2.00



Bead Chains

No. 10 Type A

Solid nickel silver, with jump couplings.

	Length Inches	Price per Doz.
For Basin...	12	$3.00
" Bath....	17	3.50
" Wash Tray..	11	3.50
" Closet...	48	12.50

Plumbers' Brass Link Chains



No. 000

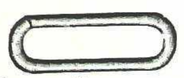


No. 3

No.	Style of Chain	Boxes of 12 Yards Price, per Box Fin.	N. P.	Reels of 500 Feet Price, per 100 Feet Fin.	N. P.
000	Plumbers	$1.25	$1.40	$3.50	$3.80
00	Plumbers	1.45	1.60	4.00	4.30
0	Plumbers	1.80	1.95	5.00	5.30
1	Plumbers	2.25	2.40	6.25	6.35
2	Plumbers	2.90	3.20	8.00	8.60
3	Navy Link	3.60	3.90	10.00	10.60
4	Navy Link	4.15	4.45	11.50	12.10

Brass Split Links

No. 1 Small



Price, per Gross Finished	Nickel-Plated
$1.50	$1.80

No. 2 Large



Price, per Gross Finished	Nickel-Plated
$1.75	$2.05

Brass Eight Hooks



No.	Price, per Gross Fin.	N. P.	No.	Price, per Gross Fin.	N. P.
½	$3.25	$3.60	2	$1.80	2.15
1½S	3.00	3.35	3	1.50	1.75
1½	2.75	3.10	4	1.30	1.55
2½	2.00	2.35	5	1.10	1.35
3½	1.50	1.75	6	.90	1.15
1	2.25	2.60	7	.85	1.10



No. 10424 Chain Stays

These chain stays are shipped in large quantities in bulk not assembled, or assembled 25 in a box.

Price, No. **10424** ..... each **$.20**

No. 12446 Chain Stays



Wrought shoulder under flange ⅞-inch diameter, centering shank in hole on lavatories drilled for Pop-up Basin Waste. Fits enameled iron or vitreous lavatories. Outside diameter of base 1½ inches, length shank under base 1¾ inches. Shank threaded 9–28. Nut tapped 9–28.

Price, No. **12446** .....each **$.35**



No. 12478 Combination Cock Hole Covers and Chain Stays for Lavatories

Made of cast brass, nickel-plated

Outside diameter of base 1¾ inches. Bolt 1¾ inches long under head, threaded 5/16–18.

Cast hexagon flanged nut tapped 5/16–18.

Price, No. **12478**.....each **$.45**



No. 8339 Faucet Hole Covers

Porcelain chain stay faucet hole cover, 1¾ inches in diameter.

Price, No. **8339**.....each **$.50**

No. 8338 Faucet Hole Covers



Porcelain faucet hole cover, 1¾ inches in diameter.

Price, No. **8338** ..... each **$.45**

Bath Overflow and Faucet Hole Covers



No. 9

Price, No. **9**, Bath Overflow Covers, Nickel-plated.....each **$.90**

Price, No. **90**, Bath Cock Hole Covers, Nickel-plated.....each **$.55**



No. 90

Nickel-Plated Brass Escutcheons



No. 9280

Dia., In.	IP., In.	Price per 100
2½	⅛ to 1¼	$6.50
3	⅜ to 1½	7.50
3½	1½ to 2	14.25
Dia., In.	**Tubing, In.**	**Price per 100**
2½	½ to 1¼	$6.50
3	1 to 2	7.50
3½	1½ to 2	14.25

No. 12218 Nickel-Plated Wrought Brass Flanges

Deep Pattern



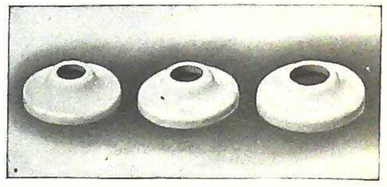
Diameter Inches	Height Inches	For Pipe Inches	Price per 100
2⅜	1¼	⅜ I.P.	$9.10
2⅜	1¼	½ I.P.	9.10
2⅜	1¼	9/16 O.D.	9.10

No. 140 Closet Spud Flanges

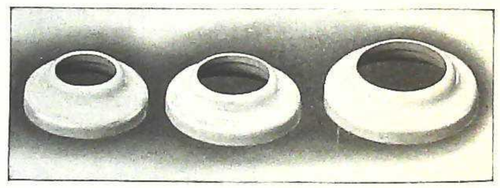
Diameter Inches	Hole Inches	Price per 100
3½	2 1/64	$11.00
3½	2 1/4	11.00
3½	2 5/16	11.00
3½	2 5/8	11.00



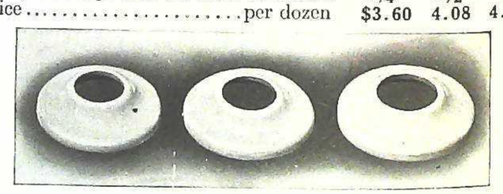
Baker Vitreous China Escutcheons



Sizes, Iron Pipe ..... inches	⅜	½	¾
Price ..... per dozen	$2.40	2.40	3.12



Sizes, Iron Pipe ..... inches	1¼	1½	2
Price ..... per dozen	$3.60	4.08	4.80



Sizes, O. D. Tubing ..... inches	1¼	1⅜	1½
Price ..... per dozen	$3.60	3.60	3.60

Plumbers' Seamless Brass Tubing

Nickel-Plated



No. 34200

Size Inches	Actual Outside Diam. Inches	Actual Inside Diam. Inches	Weight Pounds per Lineal Foot	Threads per Inch	Length of Thread Inches
⅝	.654	.521	.46	20	⅝
¾	.768	.631	.56	20	⅝
⅞	.875	.728	.67	18	⅝
1	1.000	.836	.88	18	⅝
1¼	1.245	1.060	1.27	18	⅝
1½	1.508	1.311	1.55	18	⅝
1¾	1.756	1.564	1.82	18	⅝
2	2.007	1.815	2.10	16	⅝

Prices will be quoted upon application.

Hy-Tech Products

Elevated Float Valves

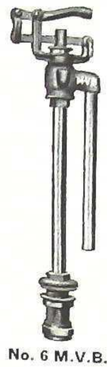


Paragon

Paragon

Paragon high pressure elevated pattern float valves with interchangeable seat. Not necessary to disconnect supply or take down tank when replacing seat.

Price, with Refill for Low Tanks.....each **$3.00**



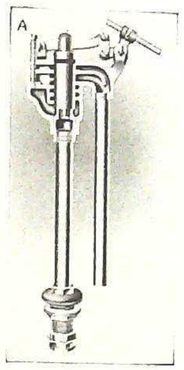
No. 6 M.V.B.

No. 6 M.V.B.

Elevated compound lever float valve with 15/16-inch shank for ⅝-inch supply pipe, slip joint or collar.

Price, No. **6**.....each **$3.00**

Curtin Rotary Float Valves

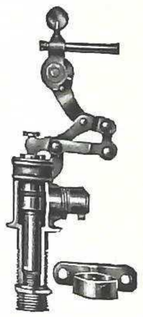


A valve which noiselessly yet rapidly fills the tank under all conditions. On very low pressures, opening the by-pass screw A permits free passage of water through ball cock and insures quick filling of tank.

The powerful compound leverage, together with the silent operation and non-corrosive qualities recommend this valve. Furnished for high and low tanks. Back supply type with integral stop can also be furnished for the all-white bathroom with no exposed metal.

Price..... each ....

Try-Me Ball Cocks



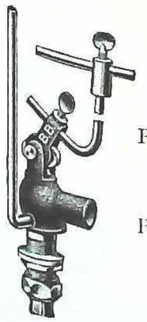
Simple in construction, non-leakable, effective in operation, and adjustable to all conditions that surround the placing and replacing of cocks in domestic and public institutions.

Its desirable features are compounded leverage of the ball rod, magazine of rubber packings, revolving plunger, special metal for wearing parts, absence of sand pockets, adjustment to high or low pressure, regulation of water in tank by adjustment of float rod, removal of seats without use of tools, and use of same valve for top, bottom and end connections.

Can be used to replace any make of ball cock without disturbing the plumbing.

Price..... each **$3.00**

B. B. Float Valves



For Low Tank Bottom Supply

Price, for Low Tank, with Bottom Supply .....each **$4.50**

Price, for High Tank, with Bottom Supply.....each **4.25**



For High Tank Bottom Supply

High Pressure Float Valves



With Top Supply for High Tanks

Has removable brass seat and only one packing, the seat packing, and ground joint coupling.

Price.....each **$2.00**

Tank Flush Valves



Nos. 1, 2 and 3

Nos. 1, 2 and 3 Cage Valves

Price, No. **1**, 1¼-inch, Rough Nut and Tail Piece..each **$1.80**

Price, No. **2**, 1½-inch, Rough Nut and Tail Piece..each **2.00**

Price, No. **3**, 1¾-inch, Rough Nut and Tail Piece..each **2.60**

Nos. 23 and 24 Valves for Low Down Tank

Price, No. **23**, 1-inch Overflow Tube.....each **$2.25**

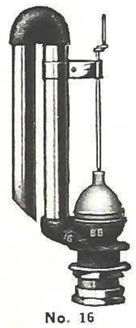
Price, No. **24**, 1¼-inch Overflow Tube.....each **2.50**



Nos. 23 and 24

Tank Flush Valves

No. 16 Rubber Ball Flush Valves



No. 16

Price, No. **16**, for 1½-Inch Flush Pipe.ea. **$3.00**

Nos. 25, 26 and 27 Improved Syphon Flush Valves

Price, No. **25**, 1¼-Inch, N. P. Nut, No Tail Piece..each **$3.00**

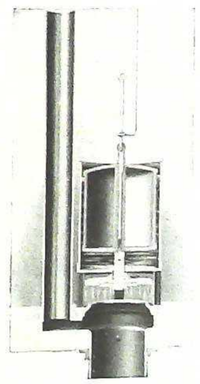
Price, No. **26**, 1½-Inch, N. P. Nut, No Tail Piece .....each **3.60**

Price, No. **27**, 1¾-Inch, N. P. Nut, No Tail Piece .....each **6.00**



Nos. 25, 26 and 27

Curtin Victory Flush Valves



Has a full, unrestricted waterway, and starts the siphon action immediately. It will operate the largest closet with a minimum amount of water.

Refills any closet. No refill tube required. Has a flat special seat washer which will not leak. A slight touch of lever lifts valve. Always finds its seat. Silent in operation. Float encased in cylinder is indestructible. Guiding bars insure positive seating of valve. Made of copper and cast bronze metal with no soldered parts.

Prices upon application.

No. 6822 Regular Float Rods



Length ..... inches	6	7	8	9	10
Price ..... per dozen	$1.00	1.15	1.25	1.40	1.60

With one end threaded regular and float ball end with running thread for adjustment.

Length ..... inches	6	8	10	12
Price ..... per dozen	$1.20	1.50	2.00	2.40

No. 6707 Solderless Copper Floats



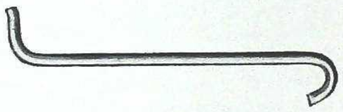
Price, No. 6707, 4 x 5 Inches, Oval.....each $1.00
Price, No. 6707, 5 Inches, Round.....each 1.00

No. 3575 Spun Copper Floats



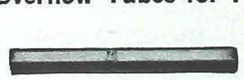
Size Inches	Price per Dozen	Size Inches	Price per Dozen
5	$8.00	9	$50.00
6	12.00	10	80.00
7	18.00	12	120.00
8	30.00	..	.....

No. 60 Refill Tubes



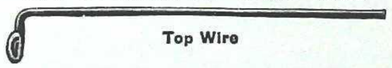
Price, 10-Inch, for Elevated Float Valves..per dozen $2.70
Price, 13-Inch, for Low Down Float Valves...per dozen 3.45

No. 10273 Overflow Tubes for Flush Valves

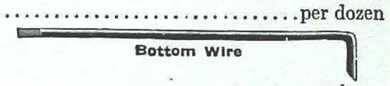


Diameter.....inches	1	1⅛	1¼
Price, Brass.....each	$.55	$.60	$.65
Price, Hard Rubber.....each	.90	1.00	1.10

No. 72 Wires for Tank Balls



Price.....per dozen $1.90



Price.....per dozen $1.20

No. 12152 Closet Tank Screw Hooks



Length.....inches 2⅛
Price, Steel.....per gross $10.00
" Brass..... " 45.00

No. 363 Brass Threaded Rods



Diameter ¼, 5/16, ⅜ inches.

Price.....each $.50

No. 678 Cast Brass Closet Spuds

Dipped Brass



I.P. Size Inches	Price Each
1¼	$.50
1½	.60
2	.65

No. 483 Closet Spud Reducers



Price, 2x1¼-Inch.....each $.75
Price, 2x1½-Inch.....each .80

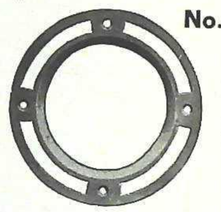
Spud Reducers

Nickel-plated Brass
No. 48



Size, I. P. Thread..in.	2x1¼	2x1½
Slips, O. D. Tubing."	1¼	1½
Price, with Nut..each	$.75	.80

No. 6855 Closet Floor Flanges



Plain cast brass, light pattern, with bolts and washers.

Outside Diameter.....inches 6⅞
Inside Diameter.....inches 4¼
Price.....each $.50
If wanted with Asbestos Molded Gasket, add.....each .25

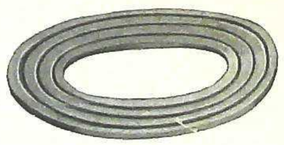
Durham Floor Flanges

No. 4940



Extra heavy pattern, with female thread, bolts and washers. Made of iron or brass.
Price, Iron.....each $1.50
Price, Brass....each 2.50

No. 9490 Closet Floor Flange Gaskets



No.....	9490
Outside Diameter..in.	7
Inside Diameter...in.	4¼
Price .....per doz.	$6.50

We are in position to supply many items not shown in this catalogue and shall be pleased to receive your inquiries.

Hy-Tech Products

Closet Screws and Washers













	Per 100
No. 6724 Iron Closet Screw with No. 5458 N. P. Brass Head and No. 5586 Oval Washer	$7.65
No. 12232 N. P. Brass Closet Bolt, with No. 6027 N. P. Head and No. 5586 Heavy Oval Brass Washers.....	9.95
No. 5474 Round Washers	.65
No. 5586 Oval Washers..	.90

No. 4120 Vitreous China Bolt Caps

For Floor Screws



White vitreous china bolt caps to set over brass floor screws.

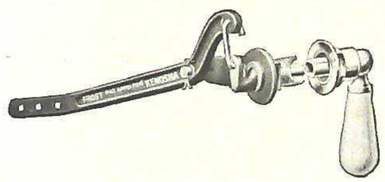
Price, No. 4120.....each $.10

No. 12074 Adjustable Guides



Size.....inches	1	1⅛
Price, Nickel-plated Brass.....per dozen	$4.00	4.00

No. 40 Lever for Low Tanks



This lever is of the rotary type. It is of sturdy construction and equipped with china handle for use with enameled iron or vitreous china tanks.

Price, No. 40.....each .....

Flush and Supply Pipe Holders

No. 1102, Supply



Size Inches	Price Each
⅜ I.P.	$.60
½ I.P.	.60
¾ O.D.	.75

No. 1098, Flush



Size Inches	Price Each
1¼ O.D.	$1.00
1⅜ O.D.	1.00
1½ O.D.	1.00

No. 4860 Angle Supply Pipe with Stop

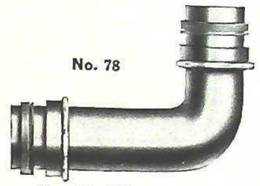
For Low Closet Tank



Nickel-plated lowdown tank supply pipe with stop. For ⅜ or ½-inch iron pipe.
Price, with Cross Handle.....each $1.50
" " China Cross Handle..... " 2.00

Closet Flush Connections

Nickel-Plated Brass



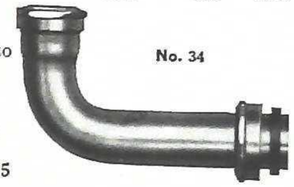
No. 78, 2-Inch Slip Joint Elbows

With 2-inch iron pipe size cast nuts and rubber washers.

Size Inches	Price Each	Size Inches	Price Each
3½x5	$1.25	5x8	$1.75
4 x6	1.35	6x8	1.90
5 x7	1.55	7x9	2.50

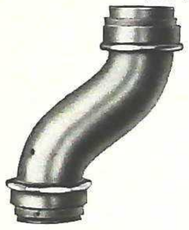
No. 34, 1¼-Inch Slip Joint Elbows

With 1¼-inch spud end, to slip 1¼-inch o.d. tubing.



Center of Bend to End.. in.	4	6	8
Price, No. 34...each	$1.10	1.25	1.45

No. 31 Offset Connections



With 2-inch iron pipe size nuts and rubber washers.

Center to Center Inches	Price Each	Center to Center Inches	Price Each
1	$1.92	3	$2.80
1½	1.96	3½	3.04
2	2.08	4	3.28
2½	2.48	...	....

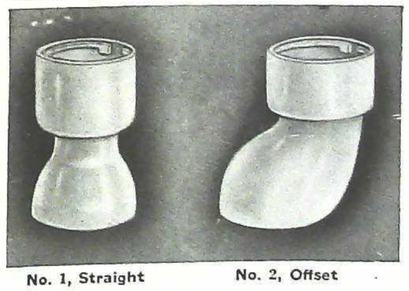


No. 126 Straight Connections

With 2-inch iron pipe size nuts and rubber washers, 6 inches long.

Price, No. 126.....each $1.50

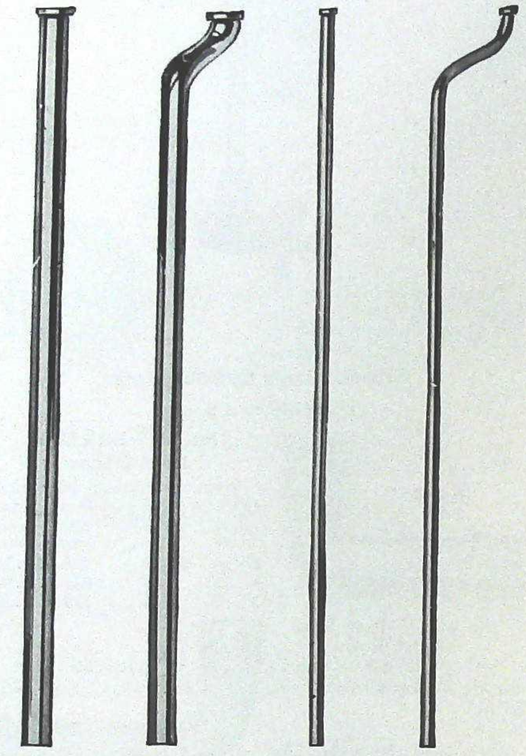
Vitreous China Flush Pipe Covers



Vitreous china covers to cover 2-inch brass flush connections.

Price, No. 1, Straight.....each $2.00
" " 2, Offset..... " 2.50

Water Closet Flush and Supply Pipes



No. 1084 Straight Flush Pipe — No. 1082 Offset Flush Pipe — No. 1085 Straight Supply Pipe — No. 1083 Offset Supply Pipe

In ordering flush and supply pipes send coupling nut from both flush and supply tank spuds, and state distance—when offset pipes are wanted—from center of flush and also supply spuds to back of tank.

Flush Pipes

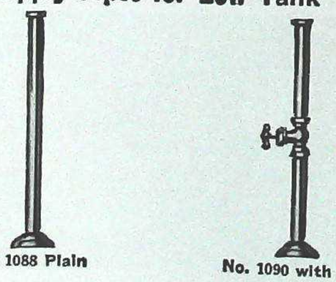
Gauge	number	20	20	20
Size	inches	1¼	1⅜	1½
Price, N. P., Straight	each	$4.60	4.60	4.80
" " Offset	"	4.60	5.00	5.20

Supply Pipes—7 Feet Long

Gauge	number	14	I.P.	I.P.
Size	inches	21/32	⅜	½
Price, N. P., Straight	each	$4.00	5.20	7.80
" " Offset	"	4.60	6.00	8.60

For pipes with a larger offset than 3½ inches an extra charge will be made.

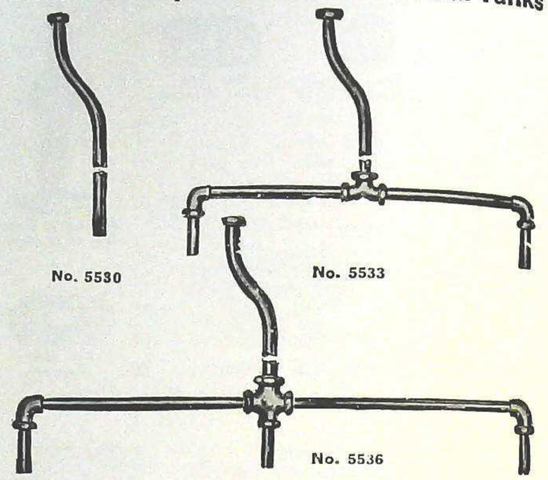
Supply Pipes for Low Tank



No. 1088 Plain — No. 1090 with Cock

Gauge	number	14	I.P.
Size	inches	21/32	⅜
Price, N. P., Plain	each	$2.00	$2.50
" " with Cock	"	4.00	4.50

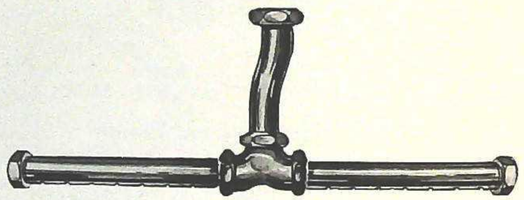
Brass Flush Pipes for Automatic Urinal Tanks



No. 5530 — No. 5533 — No. 5536

Price, for Single Urinal, Polished or N. P.	each	$3.30
" " Two Urinals	"	11.50
" " Three "	"	14.50
" " Four "	"	19.00

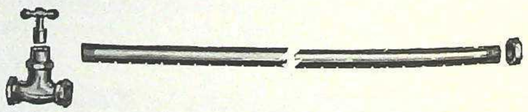
No. 5520 Perforated Brass Flush Pipe with Pipe to Tank



Length	feet	2	3	4	5	6
Price, No. 5520, Polished or Nickel-Plated	each	$9.80	10.40	11.00	11.60	12.20

No. 5510 Urinal Wash Down Pipes

With ½-Inch Compression Loose Key Stop and Straps



Length Urinal Ft.	Price, Each N. P. Brass	Fin. Brass	Galv. Iron	Length Urinal Ft.	Price, Each N. P. Brass	Fin. Brass	Galv. Iron
2	$4.30	$4.00	$3.30	6	$9.10	$8.40	$7.30
3	5.50	5.10	4.30	8	11.40	10.60	9.30
4	6.70	6.20	5.30	10	13.90	12.80	11.30
5	7.90	7.30	6.30	..	.....	.....	.....

If without Stop, deduct..... 1.80 1.60 1.30

No. 5590 Urinal Flush Spreaders

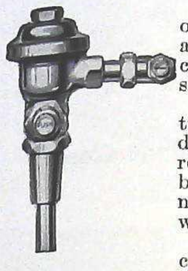


Price, No. 5590, Nickel-Plated Brass, with Slip Joint Nut for ¾-Inch O. D. Tube Supply.....each $3.00

Hy-Tech Products

No. 57 Royal Flush Valves

For Urinals



These valves flush the same amount of water at each operation, and thus automatically prevent the user from causing either an excessive or an insufficient flush.

They can be used on plumbing fixtures of any manufacture, on either direct or tank supply, and do not require regulating for any pressure between 5 and 100 pounds. They are noiseless, easy to operate, and have a wide range of operation.

Fitted with ½-inch angle stop, china push button, ¾-inch O.D. flush connection, spud coupling and flanges.

Price ..... each $22.00

Beehive Strainers and Urinal Traps



No. 5725 Beehive Strainer



No. 5745 Urinal Trap

Beehive Strainers

Price, 4½-inch Flange....each $6.50

Urinal Traps

Strainer....inches	4½	6	7½
Price, 5-inch Brass Body.....each	$13.00	$14.00	$18.00
Price, 6-inch Iron Body.....each	7.50	9.50	13.50

Brass Floor Strainers

The shoulder for this strainer is for lead pipe only, and is near the top which makes it easier to connect.



No.	Each N.P.	Each Chrome	Diam. Top In.	I.D. Outlet Inches
6820	$4.00	$4.95	4½	2 7/16
6825	4.75	5.70	5	2 7/16

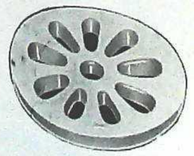
Cast Brass Strainers



No.	Each N.P.	Each Chrome	Diam. Top In.	I.D. Outlet Inches
6800	$4.00	$4.95	4½	2 7/16
6805	4.75	5.70	5	2 7/16

Can also be tapped 2-inch iron pipe female.

Vitreous China Strainer Covers



No. 3645

Price, Vitreous China Cover to fit over Brass Outlet Strainer.....each $2.00

No. 122 Flat Bibb Washers



Made of high grade rubber and asbestos compound, for hot or cold water. Packed 100 in a box.

Size.....inches	¼	⅜	½	⅝	¾	1
Price.....per 100	$1.80	1.90	2.00	2.20	2.40	2.80

No. 300 Beveled Seat Bibb Washers



Improved style, made of high grade rubber and asbestos compound, for hot or cold water. Packed 100 in a box.

Size.....inches	¼	⅜	*⅜	½	*½	⅝	¾	1
Price....per 100	$1.80	1.90	2.00	2.10	2.50	2.80	3.40	4.20

*Large.

No. 200 Flat Fibre Bibb Washers



Made of red fibre for hot water. Packed 100 in a box.

Size.....inches	¼	⅜	½	⅝	¾	1
Price.....per 100	$.80	.90	.95	1.00	1.35	2.10

No. 14 Fuller Balls



Size.....inches	⅜	½	9/16	⅝	¾	⅞	1
Price, No. 14.per 100	$2.20	2.80	3.40	4.00	6.00	8.00	10.00

No. 400 Rubber Featheredge Syphon Washers



Size Inches	Price per Dozen	Size Inches	Price per Dozen
1	$1.45	1⅝	$1.85
1⅛	1.55	1¾	1.95
1¼	1.70	1⅞	2.05
1⅜	1.75	2	2.15
1½	1.80	...	....

Regular width of flange ⅝ inch.

No. 8630 Beveled Syphon Rings



Size Inches	Inside Diam. Inches	Outside Diam. Inches	Price per Dozen
1	1	1⅞	$1.20
1¼	1¼	2 3/16	1.45
1½	1½	2 7/16	1.70

Wolff Waste Washers

No. 12



Size Inches	For Use on	Price per Dozen
1¼	Basin	$3.85
1½	Bath	5.30

Waste Washers



No. 8676 Ideal

Size Inches	Price, per Dozen Ideal	Unique
1	$.85	$.85
1¼	1.10	1.15
1½	1.35	1.45



No. 8638 Unique

Basin and Bath Gaskets



No. 1069 Basin Gasket — No. 8628 Bath Gasket

Price, No. 1069, Basin Gaskets .....per dozen $.75
Price, No. 8628, Bath Gaskets.....per dozen 1.20

No. 8591 Sink Gaskets



Price, No. 8591..per doz. $1.50

No. 3500 Rubber Slip Joint Washers



Size Diam. In.	Price per 100	Size Diam. In.	Price per 100	Size Diam. In.	Price per 100
1/4	$1.40	7/8	$2.10	1 5/8	$3.70
3/8	1.50	1	2.30	1 3/4	4.10
1/2	1.60	1 1/4	2.60	1 7/8	4.50
5/8	1.70	1 3/8	2.90	2	5.10
3/4	1.90	1 1/2	3.30	...	....

No. 832 Closet Spud Washers



Size.....inches	1 1/4	1 1/2	2
Price, No. 832.....per dozen	$1.80	2.15	2.65

Rubber Tack and Screw Bumpers



No. 1736 Tack

Diameter Inches	Price per 100
3/8	$1.40
1/2	1.60
5/8	1.80
3/4	3.40



No. 734 Screw

Diameter Inches	Price per 100
3/4	$5.00
7/8	6.00
1	7.50
...	....

No. 1801 Seat Rubbers



Diameter Inches	Hole Inches	Height Inches	Price per 100
1 3/16	1/2	3/8	$4.50
1 3/16	3/8	9/16	8.00

No. 461 Bar Bumpers



Length Inches	Width Inches	Height Inches	Price per 100
1 5/8	1/2	3/8	$6.00
2 1/8	1/2	3/8	7.00

No. 5525 Union Washers



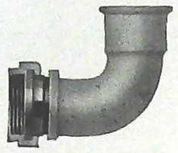
Size Inches	Price per 100 Fibre	Paper	Leather
3/8	$1.00	$.25	$.25
1/2	1.40	.35	.30
3/4	1.60	.40	.35
1	1.75	.45	.45
1 1/4	2.70	.55	.65
1 1/2	3.00	.65	1.20
2	4.10	.75	2.40

No. 6802 Rubber Furnace Bulbs



Price per Dozen Bulbs	Tubes
$6.00	$1.20

No. 8589 Rubber Elbow Connections



Size Inches	Price per Doz.	Size Inches	Price per Doz.
1 1/4	$7.20	1 1/2	$11.50
1 1/4 x 1 1/2	8.65	2	13.00

No. 8590 Rubber Straight Closet Connections

Size Inches	Price per Doz.	Size Inches	Price per Doz.
1 1/4	$5.40	2	$8.90
1 1/2	7.20	..	....



No. 100 Rubber Tank Balls

Size Inches	Price Each	Size Inches	Price Each
2	.....	2 3/4	.....
2 1/2	.....	3	.....
2 5/8	.....	...	.....



Parabal Rubber Tank Balls



Size Inches	Price per Dozen	Size Inches	Price per Dozen
2	$12.00	2 1/2	$12.00
2 1/8	12.00	2 5/8	12.00
2 1/4	12.00	2 3/4	12.00
2 3/8	12.00	3	12.00

No. 4213 Solid Rubber Stoppers



Size Inches	Price per Dozen	Size Inches	Price per Dozen
3/4	$1.35	1 3/8	$1.70
7/8	1.40	1 1/2	1.80
1	1.45	1 5/8	2.15
1 1/8	1.50	1 3/4	2.65
1 1/4	1.55	2	3.35

Special Rubber Stoppers

Price, No. 8609 Basin Size .....per doz. $2.20
Price, No. 8608 Bath Size .....per doz. 3.25
Price, No. 8617 Sink Size .....per doz. 5.75



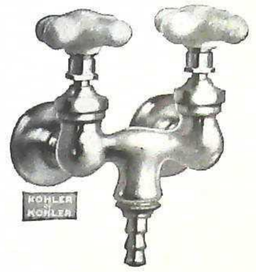
Brass Nuts and Screws



A partitioned metal box containing one gross assorted nuts and screws for every size bibb.
Price..... per assortment $3.00

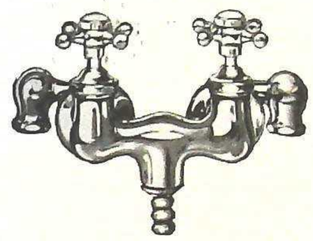
Hy-Tech Products

No. 7840 Compression Double Bath Faucets



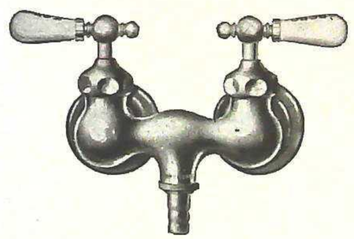
Nickel-plated compression double bath faucet with 4-arm china handles, hose connection and lock nuts.
Price, No. 7840.....each $5.65

No. 1142 Compression Double Bath Faucets



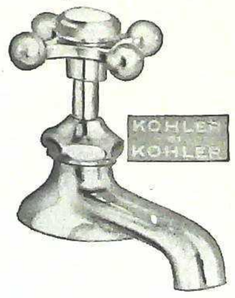
Nickel-plated compression double bath faucet with 4-ball china index handles, adjustable flanges, ball offset couplings and shampoo connection.
Price, No. 1142.....each $9.05

No. 170E4 Quick Compression Double Bath Faucets



Nickel-plated quick compression double bath faucet with china lever handles, hose connection and locknuts only.
Price, No. 170E4, with Locknuts Only.....each $5.35

No. 8095 Compression Basin Faucets



Nickel-plated compression basin faucet with 4-ball china index handles.
Price, No. 8095.....each $1.90

No. 8075 Compression Basin Faucets



Nickel-plated compression basin faucet with china cross handle.
Price, No. 8075.....each $2.30

No. 7 Quick Compression Basin Faucets



Nickel-plated quick compression basin faucet with china indexed top lever handle.
Price, No. 7.....each $2.40
This is a high grade line of brass goods, standardized in all parts, so that handles, stems, saps, etc., are interchangeable. Corrugated stem permits handle adjustment.

No. 31 Self-closing Ball Bearing Basin Faucets



No. 31 nickel-plated self-closing basin faucet with ball bearing nickel-plated 4-ball handle with interchangeable china index top.
Price, No. 31, as Described.....each $4.95
" " 31, with Crown Handle..... " 5.60
Also made in compression pattern to match for use in pairs.

No. B-27 Ball-Bearing Self-Closing Basin Faucets

Standard Pattern, Crown Handle Indexed



Price, No. B27, Finished or Nickel-Plated.....each $4.40

Bashlin Basin Faucets

Compression or Self-Closing



No. 33

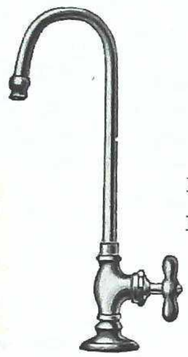
The chief feature of the Bashlin Faucet is the simplicity with which the faucet may be repaired under water pressure.

This feature enables the faucet to be repaired without the necessity of locating the main stop cock that may be in an inaccessible location. Both seat and disc are easily renewed.

	No .33	No. 33L	No. 48
Center of Base to Near Edge of Faucet ....inches	2¾	3½	3½
Price, Compression ....each	$3.75	$3.90	$4.00
Price, Self-Closing....each	4.25	4.40	4.50

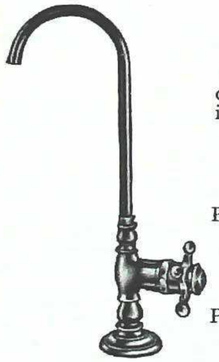
Prices on application for chromium plated.

No. 6120 Compression Single Pantry Faucets



Price, No. **6120**, Tee Handle ....each **$4.35**
Price, No. **6120**, 4-Ball China Index Handle....each **4.85**
Add for Hose End....each **.40**

No. 3774 Boston Self-closing Pantry Faucets



With Ball-bearing Handle

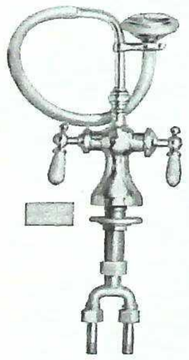
Boston pattern nickel-plated Self-closing Pantry Faucet with ball-bearing handle.

With 4-ball China Index Handle

Price, Plain End....each **$5.80**
" Hose " ....each **6.20**

With TEE Handle

Price, Plain End....each **$5.65**
" Hose " ....each **6.05**

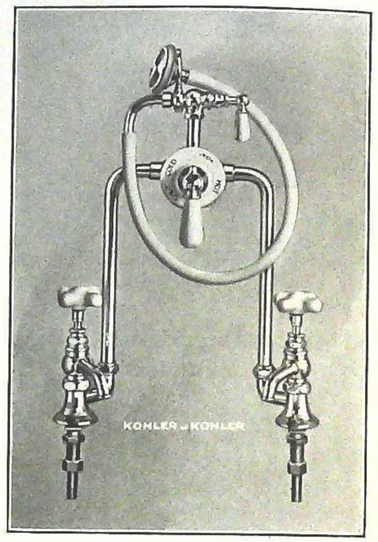


No. 8252 Quick Compression Double Shampoo Faucets

Nickel-plated quick compression double shampoo faucet with china lever handles, rubber tube, nickel-plated spray and hook.

Price, No. **8252**....each **$16.00**

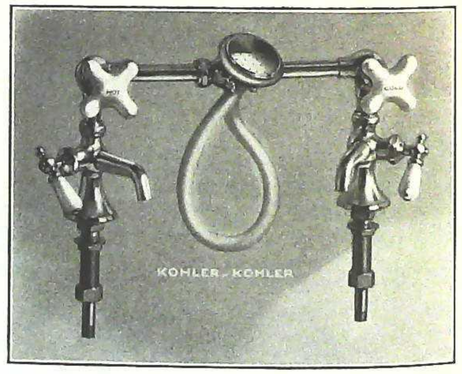
No. 8240 Combination Shampoo and Lavatory Supply Fittings



Combination shampoo and lavatory supply fitting with Niedecken mixer, shampoo control, vitreous china 4-arm and lever handles, compression faucets with stuffing boxes, hose, spray and hook.

Price, No. **8240**, Nickel-Plated ....each **$37.90**
Price, No. **8240**, Chromium-Plated ....each **45.50**

No. 8243 Combination Shampoo and Lavatory Supply Fittings



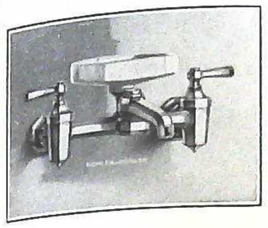
Combination shampoo and lavatory supply fittings with compression faucets, shampoo controls, vitreous china 4-arm and lever handles, hose, spray and hook.

Nickel-plated; chromium-plated if desired.

Price, No. **8243**, Nickel-Plated....each **$18.95**
Price, No. **8243**, Chromium-Plated....each **22.75**

Hy-Tech Products

No. 8665 Quick Compression Double Sink Faucets



Chromium-plated compression sink mixing faucet with swing spout, eccentric union shanks with ½-inch i.p. size outside thread, and vitreous china removable draining soap dish.

Valves are quick acting and have renewable parts.

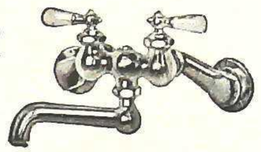
The eccentric unions facilitate installation.

Price, No. **8665**, with 6-Inch Spout....each ....
Price, No. **8666**, with 9-Inch Spout....each ....

No. 1 Quaturn Classic Sink Faucets Without Soap Dish

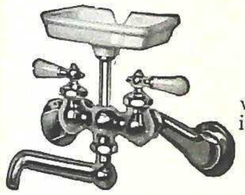
Quaturn Classic sink faucet with china indexed handles and swing spout.

Connections ½ or ¾-inch iron pipe female.



Price, For Cock Holes 8-inch Center to Center .each **$11.00**
" " " " 10 " " " " " " 11.75
" " " " 12 " " " " " " 12.50

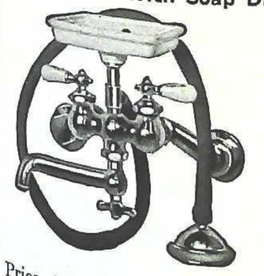
No. 226 Quaturn Classic Sink Faucets With Soap Dish



Quaturn Classic sink faucet with china soap dish, and china indexed handles and swing spout.

Price, for Faucet Holes 8-inch Center to Center .each **$13.50**
" " " " 10 " " " " " " 14.25
" " " " 12 " " " " " " 15.00

No. 252 Quaturn Classic Sink Faucets With Soap Dish and Spray



Nickel-plated classic sink faucet with swinging spout, adjustable arms for ½ or ¾-inch iron pipe female, china handles, china soap dish with drain, rubber tubing and spray.

Water is diverted from spout through spray by turning knob below spout.

Price, 4 to 8⅜ Inches....each **$21.00**
" 4 " 10⅜ " ....." **21.75**
" 4 " 12⅜ " ....." **22.50**

No. 7000 Compression Plain Faucets For Iron Pipe



Size....inches	⅜	½	¾	1	1¼
Price, Rough....each	$1.00	$1.10	$1.30	$2.70	$5.60
Price, Rough N.P....each	1.10	1.25	1.45	3.00	6.00
Price, Finished....each	1.20	1.40	1.60	3.30	6.40
Price, Nickel-Plated...each	1.30	1.50	1.80	3.60	6.80

No. 7001 Compression Hose Faucets For Iron Pipe



Size....inches	½	¾	1	1¼
Price, Rough....each	$1.30	$1.50	$3.15	$6.25
Price, Rough N.P....each	1.45	1.65	3.45	6.65
Price, Finished....each	1.60	1.80	3.75	7.05
Price, Nickel-Plated....each	1.70	2.00	4.05	7.45

No. 7020 Compression Plain Faucets Solid Flange—With Hexagon



Size....inches	½	¾
Price, No. **7020**, Female Flange, Finished..each	$1.90	$2.30
Price, No. **7020**, Female Flange, N.P....each	1.90	2.30
Price, No. **7019**, Male Flange, Finished...each	2.05	2.50
Price, No. **7019**, Male Flange, N.P....each	2.05	2.50
Add for Hose End....each	.20	.20
Add for Stuffing Box....each	.25	.30

No. 7021 Compression Hose Faucets Solid Female Flange—For Iron Pipe



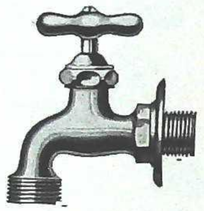
Size Inches	Price, Each: Finished	Nickel-Plated	Add for: Stuffing Box	Four-Ball-China Indexed Handle	Full China Cross Handle
½	$2.10	$2.10	$.25	$.50	$.65
¾	2.50	2.50	.35	.60	.75

No. 7019 Compression Plain Faucets
Solid Male Flange—For Iron Pipe



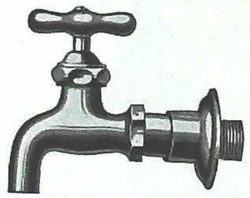
Size Inches	Price, Each: Finished	Nickel-Plated	Add For: Stuffing Box	Four-Ball-China Indexed Handle	Full China Cross Handle
½	$2.05	$2.05	$.25	$.50	$.65
¾	2.50	2.50	.35	.60	.75

No. 7022 Compression Hose Faucets
Solid Male Flange—For Iron Pipe



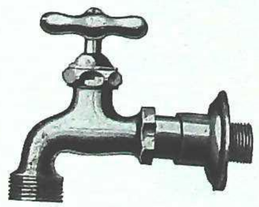
Size Inches	Price, Each: Finished	Nickel-Plated	Add for: Stuffing Box	Four-Ball China Indexed Handle	Full China Cross Handle
½	$2.25	$2.25	$.25	$.50	$.65
¾	2.70	2.70	.35	.60	.75

No. 7040 Compression Plain Faucets
With Adjustable Screw Flange for Iron Pipe



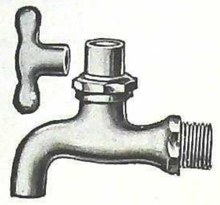
Size	inches	½ ¾
Price, No. 7040, Finished	each	$2.20 $2.60
Price, No. 7040, Nickel-Plated	each	2.20 2.60
Add for Stuffing Box	each	.25 .35
Add for China Indexed Handles	each	.50 .60

No. 7041 Compression Hose Faucets
With Adjustable Screw Flange for Iron Pipe



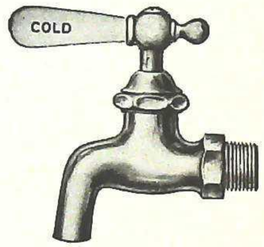
Size	inches	½ ¾
Price, Finished	each	$2.40 $2.80
" Nickel-plated	"	2.40 2.80
Add for Stuffing Box	"	.25 .35
" " China Indexed Handles	"	.50 .60

No. 7050 Loose Key Compression Faucets



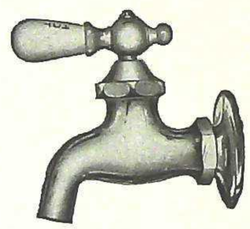
Size Inches	Price, Each: Rough	Finished	Nickel-plated	Add for Hose End Each	Add for Stuffing Box Each
⅜	$1.30	$1.50	$1.60	....	$.25
½	1.40	1.70	1.80	$.20	.25
¾	1.70	2.00	2.20	.20	.30

No. 7003 Quick Compression Plain Faucets
China Handle—For Iron Pipe



Size	inches	½ ¾
Price, No. 7003, Finished	each	$1.75 $2.05
Price, No. 7003, Nickel-Plated	each	1.85 2.25
Add for Hose End	each	.20 .20

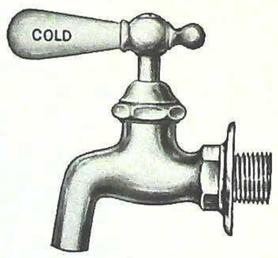
No. 174 Quick Compression Plain Faucets
Solid Female Flange—China Handle



Size	inches	½ ¾
Price, No. 174, Finished or Nickel-Plated	each	$2.25 $2.75
Add for Hose End	each	.20 .20

Brass handle, same list.

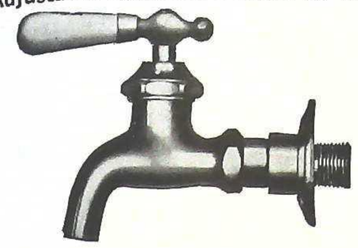
No. 7023M Quick Compression Faucets
With Solid Male Flange and China Handle



Size	inches	½ ¾
Price, Finished or Nickel-Plated	each	$2.40 $2.95
Add for Hose End	each	.20 .20

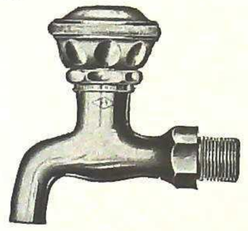
Hy-Tech Products

No. 3121 Quick Compression Faucets
With Adjustable Extension Flange, for Iron Pipe



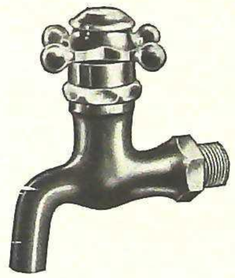
Size In.	With China Handles: Fin.	N. P.	With Brass Handles: Fin.	N. P.	Add for Hose End
½	$2.55	$2.55	$2.55	$2.55	$.20
¾	3.05	3.05	3.05	3.05	.20

No. 1125 Self-Closing Faucets
Crown Handle—For Iron Pipe



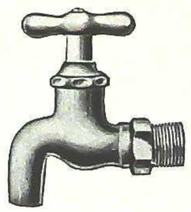
Size	inches	⅜	½	¾
Price, Finished	each	$3.85	$3.95	$4.50
" Nickel-plated	"	4.35	4.45	5.00
Add for Hose End	"	.25	.25	.25
" " China Index	"	.25	.25	.25

No. 2462-E Self-closing Faucets
Four Ball Handle—For Iron Pipe



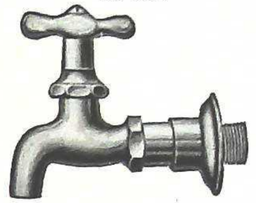
Size	inches	½	¾
Price, Finished	each	$2.65	$2.90
" Nickel-plated	"	3.15	3.40

No. 3312 Boston Self-closing Faucets
For Iron Pipe



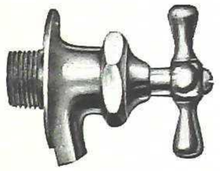
Size	inches	⅜	½	¾
Price, No. 3312, Finished	each	.....	$2.70	$3.00
" 3312, Nickel-plated	"	.....	2.80	3.20

Boston Self-closing Faucets
With Adjustable Extension Flange For Iron Pipe
No. 3332



Size	inches	½	¾
Price, Finished	each	$3.50	$4.00
" Nickel-plated	"	3.50	4.00

No. 805 Compression Stub Wash Tray Bibbs
Male Flange—Iron Pipe

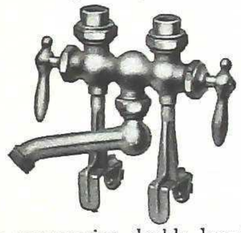


Flat spout, encased washers.

Size	inches	½
Price, No. 805, Finished	each	$1.50
Price, No. 806, Nickel-Plated	each	1.50

Also furnished rough nickel-plated.

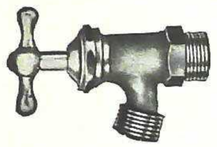
No. 70 Quick Compression Double Laundry Tray Faucets



Quick-opening compression double laundry tray faucet with female unions for ½-inch iron pipe, hose end swing spout, and adjustable clamps. Body rough brass, plated all over.

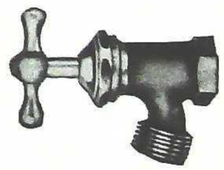
Price, No. 70, for 2-Part Tray	each $8.00
Price, No. 70, for 3-Part Tray	each 10.75
Add for Brass Soap Dish	each 1.00

No. 7754 Compression Sediment Faucets
Male for Iron Pipe



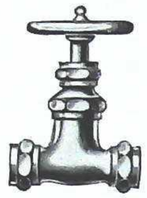
Size Inches	Price, Each: Rough Nickel-plated	Add for Loose Key Handles
½	$1.45	$.50
¾	1.90	.50

No. 7756 Compression Sediment Faucets
Iron Pipe Female



Size Inches	Price, Each: Rough Nickel-plated	Add for Loose Key Handles
½	$1.00	$.30
¾	1.25	.40

Compression Lavatory Stops



No. 7522 Straight

With Stuffing Box

Iron Pipe Thread

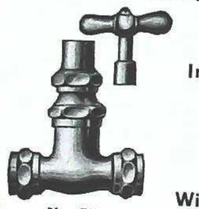
Both Ends Nickel-Plated



No. 7562 Angle

Size In.	Price, Each Wheel Handle	4-Ball Ind. Handle	4-Arm Ch. Handle	Size In.	Price, Each Wheel Handle	4-Ball Ind. Handle	4-Arm Ch. Handle
⅜	$1.75	$2.05	$2.20	⅝	$2.40	$2.70	$2.85
½	1.95	2.25	2.40	¾	2.75	3.05	3.20

Compression Lavatory Stops

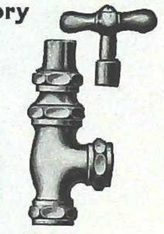


No. 7529 Straight

Iron Pipe Thread Both Ends

Loose Key

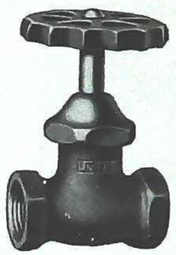
With Stuffing Box



No. 7569 Angle

Size Inches	Price, Each Finished	Nickel-Plated	Size Inches	Price, Each Finished	Nickel-Plated
⅜	$1.75	$1.85	⅝	$2.30	$2.50
½	1.95	2.05	¾	2.65	2.85

No. 435 Compression Stops



Rough brass body, detachable wheel handle, japanned finish. Made in globe and angle pattern.

Size	inches	½	¾
Price, No. 435	each	$1.00	1.70

No. 185E6 Compression Stop and Drains

With Stuffing Box



Side cap waste control compression stop with drain. Bonnet with asbestos ring packing. Encased seat washers.

Furnished with 1 waste control and packed 3 right and 3 left in a carton.

Size In.	Price Each	Size In.	Price Each
½	$1.40	1	$4.20
⅝	1.70	..	.....

Urinal Stops

Compression Urinal Stops

No. 7645

For Iron Pipe



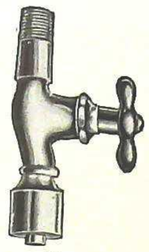
Compression For Iron Pipe

Size Inches	Price, Each Fin.	N. P.
½	$2.80	$3.05

Boston Self-closing Urinal Stops

No. 7655

S. O. T.

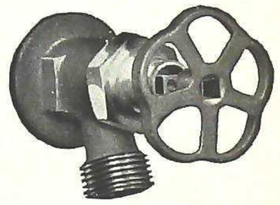


Boston Self-closing

Size Inches	Price, Each Fin.	N. P.
½	$3.75	$4.00

No. 178E4 Combination Compression Lawn Faucets

Key Wheel



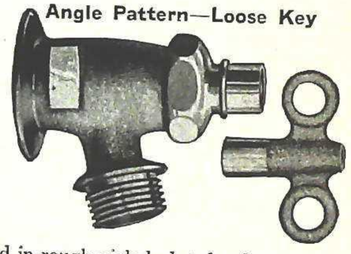
By removing the screw the faucet is converted into a loose key lawn faucet.

Made rough body nickel-plated only.

Size	inches	½	⅝
Price, No. 178E4	each	$1.50	1.50

No. 178E3 Compression Lawn Faucets

Angle Pattern—Loose Key



Furnished in rough nickel-plated only.

Size	inches	½	¾
Price, Loose Key	each	$1.50	$1.50
" Iron Wheel	"	1.40	1.40
" Brass "	"	1.50.	1.50
" Extra Keys	"	.08	.08

Telephone Your Orders



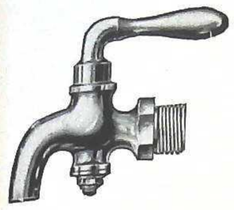
We are organized to give Special Service on Telephone orders.

Use the telephone and save time.

Hy-Tech Products

No. 8360 Ground Key Plain Faucets

For Iron Pipe



Size In.	Price, Each Rough	Finished	Nickel-Plated	Add for Hose End
¼	$1.20	$1.50	$ 1.80	....
⅜	1.25	1.55	1.85	....
½	1.30	1.60	1.90	$.20
⅝	1.85	2.20	2.60	.20
¾	2.25	2.80	3.40	.20
1	3.30	4.05	4.80	.45
1¼	5.60	6.70	7.85	.65
1½	9.30	11.20	13.10	.95
2	16.10	18.75	21.35	1.40

No. 1193 Automobile Filling Faucets

With Telegraph Handle



A self closing faucet which gives absolute control of supply force of water to the operator.

The faucet is made from the best of materials and is furnished rough, heavily nickel-plated.

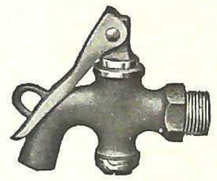
A necessity in every garage and service station for filling radiators.

Can be attached to rubber hose with the regular hose coupling. Has ¾-inch female hose thread.

Price, No. 1193..each $2.70

No. 3001 Lock Lever Plain Brass Faucets

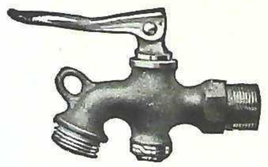
For Iron Pipe—With Shoulder



Size	inches	½	⅝	¾	1
Price, Rough	each	$2.15	$2.90	$3.55	$5.10
Price, Finished	each	2.55	3.40	4.30	6.10
Size	inches	1¼	1½	2	....
Price, Rough	each	$8.30	$13.45	$23.00	.....
Price, Finished	each	9.80	15.95	26.50	.....

No. 3004 Lock Lever Hose Faucets for Iron Pipe

With Shoulder



Size	inches	½	⅝	¾	1
Price, Rough	each	$2.40	$3.15	$3.80	$5.70
" Finished	"	2.80	3.65	4.55	6.70
Size	inches	1¼	1½	2	.....
Price, Rough	each	$9.20	$14.70	$24.85	.....
" Finished	"	10.70	17.20	28.35	.....

No. 8000 Flat Way Stops

Patent Guard

For Iron Pipe—With T or Lever Handle



Size Inches	Price Each	Size Inches	Price Each
½	$1.75	1¼	$6.85
⅝	2.30	1½	11.65
¾	2.75	2	20.20
1	4.15	...	.....

Flat Way Stop and Drains

No. 8010—Patent Guard

For Iron Pipe—With T or Lever Handle—Rough Finish



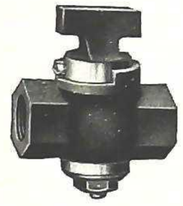
No. 8010

Size Inches	Price Each	Size Inches	Price Each
½	$1.80	1¼	$7.00
⅝	2.35	1½	11.80
¾	2.80	2	20.35
1	4.25	...	....

Stops and Stop and Drains

No. 8210 Stop

No. 8212 Stop and Drain



Newport Pattern

Solid Tee Handle

Round Way

For Iron Pipe



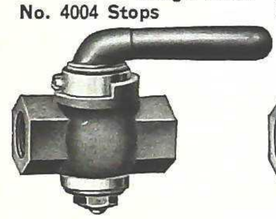
Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
½	$1.90	1¼	$10.70	½	$1.95	1¼	$10.85
¾	3.30	1½	15.60	¾	3.35	1½	15.75
¾x1	4.55	2	26.25	¾x1	4.60	2	26.40
1	5.90	...	.....	1	6.00	...	.....

Stops and Stop and Drains

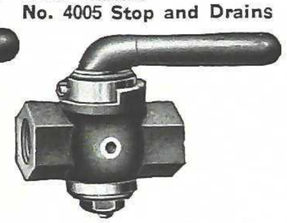
Newport Pattern—Round Way Socket Head

Rough Brass—Lever Handle

No. 4004 Stops



No. 4005 Stop and Drains



Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
½	$1.90	1¼	$10.70	½	$1.95	1¼	$10.85
¾	3.30	1½	15.60	¾	3.35	1½	15.75
¾x1	4.55	2	26.25	¾x1	4.60	2	26.40
1	5.90	...	.....	1	6.00	...	.....

Stops and Stop and Drains

Tee Handle—Flat Way—For Iron Pipe

No. 8100 Stop



No. 8110 Stop and Drain



Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
¼	$1.05	1	$2.75	¼	$1.10	1	$2.85
⅜	1.10	1¼	4.50	⅜	1.15	1¼	4.65
½	1.15	1½	7.70	½	1.20	1½	7.85
½	1.50	2	13.40	⅝	1.55	2	13.55
⅝	1.80	...	.....	¾	1.85	...	.....
¾							

Corporation Stops

With Straight or Bent Coupling

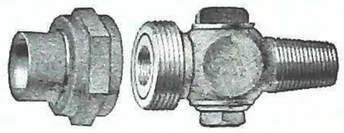


No. 8300

Size Inches	Price, Each As Shown	Price, Each With Hexagon on Main End	Size Inches	Price Each As Shown
½	$1.45	$1.55	1¼	$8.00
⅝	1.80	2.00	1½	12.80
¾	2.30	2.60	2	21.20
1	3.60	4.00	...	.....

Corporation Stops

With Lead Flange Coupling



Size In.	Price, Each No. G10006 For I.P.	No. G10015 For Wood	Size In.	Price, Each No. G10036 For I.P.	No. G10315 For Wood
½	$1.80	$2.10	1	$4.80	$5.30
⅝	2.45	2.80	1¼	10.20	11.50
¾	3.10	3.50	1½	16.00	18.00
..	.....	.....	2	25.80	29.00

Lead Goose Necks

With Lead Flange Ends



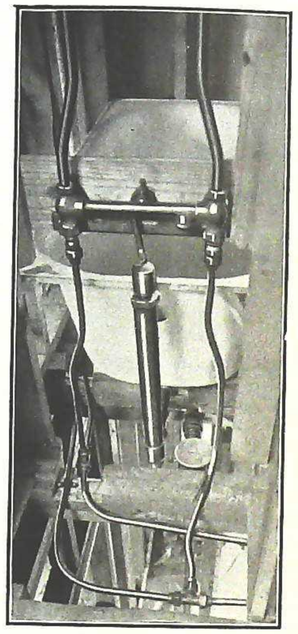
Size Inches	Length L. P. Inches	Weight, Pounds X	Weight, Pounds XX	Price Each
⅜	18	2	2½	$4.50
½	18	2½	3	5.50
⅝	18	3	3½	6.25
¾	18	3½	4	7.25
1	18	4¾	5½	10.75
1¼	24	6	6¾	19.50
1½	30	7½	9	31.00
2	36	9	10½	48.50

Lead Flange Union Couplings



Size Inches	Price, Each No. 8342 Lead to I.P. Female	No. 8344 Lead to I.P. Male	No. 8346 Lead to Lead Pipe
½	$.70	$.80	$1.40
⅝	.95	1.10	1.90
¾	1.05	1.20	2.10
1	1.40	1.60	2.75
1¼	2.65	2.95	5.25
1½	3.50	4.00	6.50
2	5.25	6.00	10.00

Hays Copper Service Pipe



The new Hays Copper Plumbing Method installation cost is less than that of brass and costs little more than wrought iron or steel.

The Hays fittings employ an entirely new and exclusive principle. A 90-degree flange in the pipe is locked between the two parts of the fitting by simply tightening up a nut which presses the flange into a finished metal seat.

This does away with the antiquated method of threading pipe or wiping joints.

Copper service pipe can be bent to suit the work and requires fewer fittings. Being non-corrosive, small pipe can be used, and being extremely ductile, it withstands freezing without bursting. Its light weight makes copper pipe very easy to handle.

Hays copper pipe service connections are made from a water works standard brass composition—85 per cent copper, 5 per cent tin, 5 per cent lead, and 5 per cent spelter. No piece leaves the factory without receiving a hydraulic test of not less than 200 pounds per square inch.

Corporation stops have all mandrel threads the same as before so that your present equipment can be used. Main end is threaded as per tap in use and outlet end is increased iron pipe.

Standard Weights and Dimensions of Copper Service Pipe

Nominal Size Inches	Exact O.D. Inches	Permitted Tolerance Plus or Minus	Gauge B.W.G.	Permitted Tolerance Plus or Minus	Wt. Lbs. per Foot	Permitted Tolerance Plus or Minus	Test Pressure Lbs. per Sq. In.
⅜	.445	.002	20	.002	.177	5%	1120
½	.625	.0025	18	.0025	.343	5%	1140
¾	.875	.003	16	.003	.640	5%	1040
1	1.125	.003	16	.003	.838	5%	780
1¼	1.375	.0035	16	.003	1.04	5%	630
1½	1.625	.004	15	.0035	1.36	5%	580
2	2.125	.005	14	.004	2.06	5%	520

Furnished in coils up to 60 feet.

Hy-Tech Products

Hays Copper Pipe Fittings

Continued



No. 502

Drop Tees

Size Inches	Price Each	Size Inches	Price Each
⅜	$1.35	¾	$1.80
½	1.45	1	2.60

Drop Ell—Male

Copper to Male Iron Pipe

Size Inches	Price Each	Size Inches	Price Each
⅜	$.95	¾	$1.15
½	1.00	1	1.70



No. 522



No. 527

Drop Ell—Female

Copper to Female Iron Pipe

Size Inches	Price Each	Size Inches	Price Each
⅜	$.95	¾	$1.15
½	1.00	1	1.70

Copper to Female Iron Pipe

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
⅜	$.50	1	$1.15	1½	$2.60
½	.55	1¼	1.70	2	4.10
¾	.70	...	....	...	....



No. 535

Price, ½-In. C.P. to ⅜-In. Female I.P.....each $.50
Price, ½-In. C.P. to ¾-In. Female I.P.....each .70
Price, ¾-In. C.P. to ½-In. Female I.P.....each .75
Price, 1½-In. C.P. to 2-In. Female I.P.....each 4.10

Copper Pipe Couplings

Copper to Male Iron Pipe



No. 540

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
⅜	$.50	1	$1.15	1½	$2.60
½	.55	1¼	1.70	2	4.10
¾	.70	...	....	...	.. .

Price, ½-In. C.P. to ⅜-In. Male I.P.....each $.50
Price, ½-In. C.P. to 1-In. Male I.P.....each 1.10
Price, ¾-In. C.P. to ½-In. Male I.P.....each .75
Price, ¾-In. C.P. to 1-In. Male I.P.....each 1.15
Price, 1¼-In. C.P. to 1-In. Male I.P.....each 1.75
Price, 1½-In. C.P. to 1-In. Male I.P.....each 2.60
Price, 1½-In. C.P. to 1¼-In. Male I.P.....each 2.60

No. 550 Reducing Couplings

Fitting Nut.....in.	½	¾	¾	1	1	1¼	1¼
For C.P.....in.	⅜	⅜	½	½	¾	¾	1
Price.....each	$.65	.75	.80	1.05	1.10	1.55	1.70

Copper Pipe Unions

Couplings, Copper to Copper

With the Hays "90" Flange, no threading of the pipe is necessary. A 90-degree flange is made on the job in less than a minute by means of a simple tool and a few blows of a hammer.



No. 530

This flange is securely locked by simply tightening up the nut on the fittings.

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
⅜	$.50	1	$1.15	1½	$2.60
½	.55	1¼	1.70	2	4.10
¾	.70	...	....	...	....



No. 545

Copper Pipe Plugs

Size Inches	Price Each	Size Inches	Price Each
⅜	$.35	1¼	$1.25
½	.40	1½	1.90
¾	.50	2	2.80
1	.75	...	....

Hays Copper Pipe Fittings

Copper Pipe Tees



No. 500

Size Inches	Price Each
⅜	$1.00
⅜x ½	1.10
⅜x ¾	1.45
½x ¾	1.10
½x ¾x ¾	1.10
½x ¾x ½	1.45
½x ¾	1.10
½	1.10
½x ¾	1.45
¾	1.45
¾x ¾	1.45
¾x ¾x ½	1.45
¾x ½	1.45
¾x ½x ¾	1.45
¾x ½x ½	1.45
¾x ½x ¾	1.45
¾x ½x1	2.20
¾	1.45
¾x ½	1.45
¾	1.45
¾x1	2.20
1 x ½x ½	2.20
1 x ½x ¾	2.20
1 x ½x1	2.20
1 x ¾x ½	2.20

No. 505

Size Inches	Price Each
1 x ¾x ¾	$2.20
1 x ¾x1	2.20
1 x ¾	2.20
1	2.20
1 x1¼	3.50
1 x1½	5.70
1¼x ¾x ¾	3.50
1¼x ¾x1	3.50
1¼x ¾x1¼	3.50
1¼x1 x ¾	3.50
1¼x1 x1	3.50
1¼x1 x1¼	3.50
1¼x ½	3.50
1¼x ¾	3.50
1¼x1	3.50
1¼	3.50
1¼x1½	5.70
1¼x2	8.20
1½	5.70
1½x ¾	5.70
1½x1	5.70
1½x1¼	5.70
1½	5.70
1½x2	8.20
2 x1¼x1¼	8.20
2 x1¼x1½	8.20
2 x1¼x2	8.20
2 x1½x1½	8.20
2 x1½x2	8.20
2 x ½	8.20
2 x ¾	8.20
2 x1	8.20
2 x1¼	8.20
2 x1½	8.20
2	8.20

No. 510

Size Inches	Price Each
1½x1¼x ¾	$5.70
1½x1¼x ¾	5.70
1½x1¼x1	5 70
1½x1¼x1¼	5.70
1½x1¼x1½	5.70
1½x ½	5.70
1½x ¾	5.70
1½x1	5.70
1½x1¼	5.70
1½	5.70
1½x2	8.20
2 x1¼x1¼	8.20
2 x1¼x1½	8.20
2 x1¼x2	8.20
2 x1½x1½	8.20
2 x1½x2	8.20
2 x ½	8.20
2 x ¾	8.20
2 x1	8.20
2 x1¼	8.20
2 x1½	8.20
2	8.20

Tees—Copper to Iron Pipe, Male or Female

Price, ½-In. C.P. ⅜-In. Female I.P.....each $1.10
Price, ½-In. C.P. to ½-In. Female I.P.....each 1.10
Price, ¾-In. C.P. to ½-In. Female I.P.....each 1.45
Price, ¾-In. C.P. to ¾-In. Female I.P.....each 1.45
Price, 1¼-In. C.P. to 1¼-In. Female I.P.....each 3.50
Price, 1½-In. C.P. to 1-In. Female I.P.....each 5.70
Price, ½-In. C.P. to ½-In. Male I.P.....each 1.10
Price, ¾-In. C.P. to ¾-In. Male I. P.....each 1.45
Price, ½-In. Female I.P. to ½-In. C.P. to ½-In. C.P...each 1.10
Price, ¾-In. Fem. I.P. to ½-In C.Pr to ½-In. Fem. I.P..each 1.45
Price, ¾-In. Fem. I.P. to ¾-In. C.P. to ¾-In. C.P.....each 1.45
Price, ½-In. Female I.P. to ½-In. C.P.....each 1.10
Price, ¾-In. Fem. I.P. to ½-In. Fem. I.P. to ¾-In. C.P. each 1.45
Price, ½-In. Male I.P. to ½-In. C.P. to ½-In. C.P....each 1.10
Price, ¾-In. Male I.P. to ¾-In. C.P. to ¾-In. C.P....each 1.45

Specify the run first then the outlet.

Copper Pipe Elbows

Copper to Copper



No. 515

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
⅜	$.65	1x½	$1.50	1½x1	$3.45
½x⅜	.70	1x¾	1.50	1½x1¼	3.45
½	.70	1	1.50	1½	3.45
¾x⅜	1.00	1¼x¾	2.90	2x1¼	6.30
¾x½	1.00	1¼x1	2.90	2x1½	6.30
¾	1.00	1¼	2.90	2	6.30

Copper to Male Iron Pipe

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
⅜	$.60	1	$1.30	1½	$3.20
½	.65	1¼	2.25	2	5.20
¾	.80	...	....	...	....



No. 520

Price, ½-In. C.P. to ⅜-In. Male I.P.....each $.65
Price, ½-In. C.P. to ¾-In. Male I.P.....each .80
Price, ¾-In. C.P. to ½-In. Male I.P.....each .80
Price, ¾-In. C.P. to 1-In. Male I.P.....each 1.30
Price, 1½-In. C.P. to 1-In. Male I.P.....each 3.20

Copper to Female Iron Pipe



No. 525

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
⅜	$.60	1	$1.30	1½	$3.20
½	.65	1¼	2.25	2	5.20
¾	.80	...	....	...	....

Price, ½-In.C.P. to ⅜-In. Female I.P.....each $.65
Price, ½-In. C.P. to ¾-In. Female I.P.....each .80
Price, ½-In. C.P. to 1-In. Female I.P.....each 1.30
Price, ¾-In. C.P. to ½-In. Female I.P.....each .80
Price, ¾-In. C.P. to ¾-In. Female I.P.....each 1.30
Price, 1-In. C.P. to ¾-In. Female I.P.....each 2.25
Price, 1¼-In. C.P. to 1-In. Female I.P.....each 3.20
Price, 1½-In. C.P. to 1-In. Female I.P.....each 3.20

Hays Stops and Stops and Drains

No. 54-E-3 Stop



Brass tee head, extra grade, round-way stop. Inlet end increased iron pipe fitted with listed stop size Hays copper pipe service connection; outlet end listed size female iron pipe.

Size.....inches	½	¾	1	1¼	1½	2
No. 54-E-3....each	$2.05	2.90	4.30	6.45	9.90	16.50

No. 54-E-4 Stop and Drain

Stop and drain.

Size.....inches	½	¾	1	1¼	1½	2
No. 54-E-4....each	$2.15	3.00	4.45	6.65	10.15	16.80

Hays Stops and Stops and Drains

No. 54-E-5 Stop



Brass tee head, extra grade, round-way stop. Inlet and outlet ends increased iron pipe fitted with listed stop size Hays copper pipe service connections.

Size.....inches	½	¾	1	1¼	1½	2
No. 54-E-5...each	$2.50	3.50	5.35	8.35	12.90	19.75

No. 54-E-6 Stop and Drain

Stop and drain. Otherwise same as described above.

Size.....inches	½	¾	1	1¼	1½	2
No. 54-E-6...each	$2.60	3.60	5.50	8.55	13.15	20.05

Hays Stops and Stops and Drains

No. 79-E-3 Stop



Brass tee head Newport Pattern stop. Inlet end increased iron pipe fitted with listed stop size Hays copper pipe service connection. Outlet end listed size female iron pipe.

Size.....inches	½	¾	1	1¼	1½	2
No. 79-E-3....each	$1.90	2.75	4.45	6.60	10.50	16.20

No. 80-E-6 Stop and Drain

Stop and drain.

Size.....inches	½	¾	1	1¼	1½	2
No. 80-E-6....each	$2.00	2.85	4.60	6.80	10.75	16.50

Hays Stops and Stops and Drains

No. 79-E-4 Stop



Brass tee head Newport Pattern stop. Inlet and outlet ends increased iron pipe fitted with listed stop size Hays copper pipe service connections.

Size.....inches	½	¾	1	1¼	1½	2
No. 79-E-4....each	$2.35	3.30	5.65	8.45	13.00	19.50

No. 80-E-7 Stop and Drain

Stop and drain.

Size.....inches	½	¾	1	1¼	1½	2
No. 80-E-7....each	$2.45	3.40	5.80	8.65	13.25	19.80

Hays Stops and Stops and Drains

No. 82-E-3 Stop



Brass tee handle, socket head, inverted key, roundway stop, extra grade. Inlet end increased iron pipe fitted with listed stop size Hays copper pipe service connection; outlet end listed size female iron pipe.

Size.....inches	½	¾	1	1¼	1½	2
No. 82-E-3....each	$3.10	3.90	5.90	12.65	17.75	33.90

No. 82-E-4 Stop and Drain

Stop and drain.

Size.....inches	½	¾	1	1¼	1½	2
No. 82-E-4 ..each	$3.20	4.00	6.05	12.85	18.00	34.20

Hays Stops and Stops and Drains

No. 82-E-5 Stop



Brass tee handle, socket head, inverted key, roundway stop, extra grade. Inlet and outlet ends increased iron pipe fitted with listed stop size Hays copper pipe service connections.

Size.....inches	½	¾	1	1¼	1½	2
No. 82-E-5....each	$3.45	4.50	6.90	14.95	20.50	36.00

No. 82-E-6 Stop and Drain

Stop and drain.

Size.....inches	½	¾	1	1¼	1½	2
No. 82-E-6....each	$3.55	4.60	7.05	15.15	20.75	36.30

Hays Copper Pipe Service Connections

No. 120-E-6



Listed size copper pipe to corresponding size female iron pipe.

Size.....inches	½	¾	1	1¼	1½	2
No. 120-E-6.....each	$.70	.90	1.60	2.50	3.75	6.00

No. 120-E-7

Listed size copper pipe to corresponding size male iron pipe.



Size.....inches	½	¾	1	1¼	1½	2
No. 120-E-7.....each	$.70	.90	1.60	2.50	3.75	6.00

Hays Copper Pipe Service Connections

No. 120-E-17



Two part copper to copper. A direct sealing of two copper flanges, making a continuous copper connection. The sizes correspond with copper service pipe sizes.

Size.....inches	½	¾	1	1¼	1½	2
No. 120-E-17.....each	$.80	1.05	1.80	3.00	4.65	7.30

No. 120-E-5

Three part copper to copper.

The sizes correspond with copper service pipe sizes.



Size.....inches	½	¾	1	1¼	1½	2
No. 120-E-5.....each	$1.05	1.45	2.45	4.05	6.10	9.75

Hy-Tech Products

Hays ⅛ Bend Copper Pipe Service Connections



No. 120-E-9

No. 120-E-9—Listed size copper pipe to corresponding size Water Works standard coupling thread.

No. 120-E-10—Listed size copper pipe to increased size female iron pipe.

No. 120-E-11—Listed size copper pipe to listed size female iron pipe.

Size.....in.	½	*¾x⅝	¾	1	1¼	1½	2
120-E- 9....each	$.80	$1.05	$1.05	$1.75	$3.25	$4.80	$7.10
120-E-10....each	.80	1.05	1.05	1.75	3.25	4.80	7.10
120-E-11....each	.80	1.05	1.05	1.75	3.25	4.80	7.10

*Used only on ⅝-inch corporation stops with ⅝-inch Water Works standard thread, or ¾-inch iron pipe thread on coupling end, connected with ¾-inch copper pipe for the service connection.

Hays ¼ Bend Copper Pipe Service Connections



No. 120-E-12

No. 120-E-12.—Listed size copper pipe to corresponding size Water Works standard coupling thread.

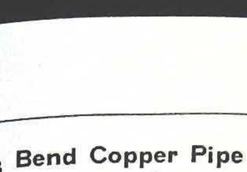
No. 120-E-13.—Listed size copper pipe to increased size female iron pipe.

No. 120-E-14.—Listed size copper pipe to listed size female iron pipe.

Size.....in.	½	*¾x⅝	¾	1	1¼	1½	2
120-E-12....each	$.90	$1.20	$1.20	$1.95	$3.15	$4.70	$7.55
120-E-13....each	.90	1.20	1.20	1.95	3.15	4.70	7.55
120-E-14....each	.90	1.20	1.20	1.95	3.15	4.70	7.55

*Used only on ⅝-inch corporation stop with ⅝-inch Water Works standard thread, or ¾-inch iron pipe thread on coupling end, connected with ¾-inch copper pipe for service connection.

Hays Copper Service Branch Connections



3-Branch

No.	Each	Description
125-E- 7	$5.75	With 2 ¾-Inch Inlets x 1 -Inch Outlet
125-E- 3	6.30	With 2 ¾-Inch Inlets x 1¼-Inch Outlet
125-E- 4	6.85	With 2 ¾-Inch Inlets x 1½-Inch Outlet
125-E- 5	7.15	With 2 1-Inch Inlets x 1¼-Inch Outlet
125-E- 6	7.70	With 2 1-Inch Inlets x 1½-Inch Outlet
125-E-10	10.75	With 3 ¾-Inch Inlets x 2 -Inch Outlet
125-E-11	11.80	With 3 1-Inch Inlets x 2 -Inch Outlet

Hays Corporation Stops



No. 108-E-4

Corporation stop, main end listed size iron pipe; outlet end increased iron pipe fitted with listed stop size Hays copper pipe service connection.

Size.....inches	½	¾	1	1¼	1½	2
No. 108-E-4..each	$1.70	2.30	3.45	8.40	12.85	20.10

No. 108-E-5

Corporation stop, main end Water Works standard thread; outlet end increased iron pipe fitted with listed stop size Hays copper pipe service connection.

Size.....inches	½	¾	1	1¼	1½	2
No. 108-E-5..each	$1.70	2.30	3.45	8.40	12.85	20.10

No. 128E-3 Hays Flanging Tools



This tool can make a 100 per cent joint by driving the tool into the end of the service pipe.

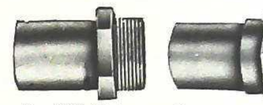
Right angle flanging is secured with tool which has a predetermined and fixed radius that will roll copper service pipe to right angle flange and stop at right diameter of flat so that it will be a proper size to be engaged in nut.

Besides the flanging tool, a hack saw, knife or reamer and hammer are all the tools required for making joints.

Pipe should be cut square and resulting burrs reamed out, and coupling nut placed on the copper service pipe before inserting flanging tool. Insert flanging tool in pipe and strike with hammer, turning the tool slightly after each blow. Repeat blows until flange is made.

Size.....in.	⅜	½	¾	1	1¼	1½	2
Price....each	$2.50	2.50	3.00	4.00	8.00	11.00	13.00

Soldering Nipples



No. 8700 Male — No. 8702 Female

Size Inches	Price, Each Male	Female
⅜	$.30	$.30
½	.35	.35
¾	.50	.50
1	.70	.70
1¼	.90	.90
1½	1.25	1.25
2	1.75	1.75

Soldering Unions

Size Inches	Price, Each Straight, No. 8704	Bent No. 8705
⅜	$.40	$.60
½	.50	.70
¾	.65	.80
1	.35	1.00
1¼	1.10	1.35
1½	1.25	1.90
2	1.75	2.50



No. 730 Hexagon Solder Bushings



I. P. Size In.	Slip O. D. In.	Price Each	I. P. Size In.	Slip O. D. In.	Price Each
1¼	1⅛	$.21	1½	1⅝	$.33
1¼	1⅜	.21	2	1½	.36
1½	1¼	.36	2	1⅝	.51
1½	1⅜	.33	2	2	.54
1½	1½	.33	...	...	...

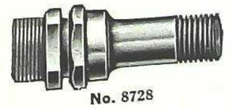
No. 740 Flush Bushings or Collars



I. P. Thread Inches	O. D. Tube Inches	Price Each
1¼	1¼	$.14
1¼	1⅜	.12
1¼	1½	.17
1½	1⅜	.18
1½	1½	.15
1½	1⅝	.15

Brass Boiler Couplings

Straight—Male Thread—For 1-Inch Iron Pipe



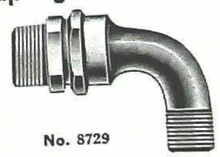
No. 8728

Size Inches	Price, Each Plain Face	Ground Face
½	$.90	$1.00
¾	1.20	1.30
1	1.60	1.70

Brass Boiler Couplings

Bent—Male Thread

For 1-Inch Iron Pipe



No. 8729

Size Inches	Price, Each Plain Face	Ground Face
½	$1.05	$1.15
¾	1.40	1.50
1	1.85	1.95

No. 52 Standard Brass Reducing Ferrules



Size Inches	Length Inches	Price Each	Size Inches	Length Inches	Price Each
2x1¼	3½	$.60	2x1½	3½	$.60

Standard Iron Body Trapscrew Ferrules



No. 72, with Brass Cover



No. 22, with Brass Plug Taper Thread

These ferrules can be furnished with countersunk nut.

Size ..... inches	2	3	4	5	6	8
Price ..... each	$.30	.40	.50	.90	1.20	3.00

No. 1111 Iron Drive Ferrules

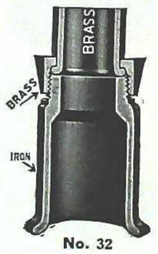


No.	Size Inches	Depth Inches	Price Each
1111A	4	1½	$.20
1111B	4	2¼	.20
1111C	4	3½	.25

Nos. 32 and 32A Athol Union Ferrules

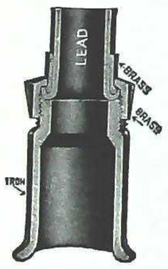
These ferrules are for connecting 2-inch cast iron soil pipe to lead pipe by soldering on to tail piece. They have a ground joint and require no packing.

Size ..... inches	2x1¼–1½	2x2
Price, No. 32, Straight Iron Body with Brass Union ..... each	$1.00	$1.50
Price, No. 32, Straight, All Brass ..... each	1.40	2.00
Price, No. 32A, ⅛-bend, Iron Body with Brass Union ..... each	1.20	1.70
Price, No. 32A, ⅛-bend, All Brass ..... each	1.80	2.40



No. 32

Nos. 33 and 33A Athol Union Ferrules



No. 33

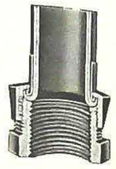
These ferrules are for connecting 2-inch iron soil pipe to lead pipe without the use of solder.

Size ..... inches	2x1¼	2x1½
Price, No. 33, Straight, Iron Body with Brass Union ..... each	$.90	$1.10
Price, No. 33, Straight, All Brass ..... each	1.30	1.50
Price, No. 33A, ⅛-bend, Iron Body with Brass Union ..... each	1.10	1.30
Price, No. 33A, ⅛-bend, All Brass ..... each	1.70	1.90

No. 34 Athol Union Couplings

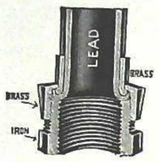
These couplings are for connecting wrought iron pipe to lead pipe by soldering.

Size ..... inches	1¼x1¼	1½x1½
Price, No. 34, Iron Body with Brass Union ..... each	$1.00	$1.20
Price, No. 34, All Brass ..... each	1.40	1.60



No. 34

No. 35 Athol Union Couplings



No. 35

These couplings are for connecting wrought iron pipe with lead pipe without soldering.

Size ..... inches	1¼x1¼	1½x1½
Price, No. 35, Iron Body with Brass Union ..... each	$.90	$1.10
Price, No. 35, All Brass ..... each	1.30	1.50

Union Ferrules



Plate E4314

Plate E4314 Straight

Size In.	Price, Each: Iron Body with Brass Nut and Collar	Price, Each: All Brass
2x1¼	$.90	$1.30
2x1½	1.10	1.50

Plate E4315 Eighth Bend

2x1¼	$1.10	$1.70
2x1½	1.30	1.90



Plate E4315

No. E-239 Vent Hubs

For Connecting Wrought Iron with Soil Pipe

Hub Inches	Spigot Inches	Tapped I.P. Inches	Price Each
2	3	1¼, 1½ or 2	$.25
3	4	1¼, 1½ or 2	.35
4	5	1¼, 1½ or 2	.50
5	6	1¼, 1½ or 2	.90



No. 129 Calking Sleeves

For connecting screw pipe with soil pipe.

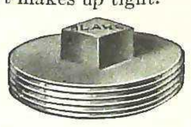


Size Iron Pipe Thread ..... in	1¼	1½
" " Soil ..... "	2	2
Price, No. 129 ..... each	$.20	.20

No. K-1185 Brass Plugs

This plug is not as deep as the regular steam plug, but there are 5 or 6 threads, all i.p. size. It makes up tight.

Size In.	Wt. Oz.	Price Each	Size In.	Wt. Oz.	Price Each
1	2	$.28	2½	7	$.66
1¼	3½	.32	3	12	.78
1½	4	.34	3½	14	1.10
2	6	.56	4	18	1.50



No. 3644 Spun Brass Drum Trap Covers

Nickel-plated brass trap cover; diameter 6 inches, height 5/16 inch.

Price, No. 3644 ..... each ...



Hy-Tech Products

Cast Iron Drum Traps



No. 293

These traps are tapped regularly for 1½-inch iron pipe but may be tapped for 2-inch iron pipe to order.



No. 294

Size ..... inches	4x8½	4x10
Price, No. 293, Painted ..... each	$2.50	$2.75
" " 293, Galvanized ..... "	3.50	4.00
" " 294, Painted ..... "	2.50	2.75
" " 294, Galvanized ..... "	3.50	4.00



No. 295

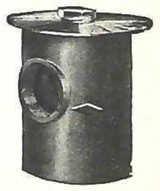
Tapped regularly for 1½-inch iron pipe, but may be tapped for 2-inch iron pipe to order.

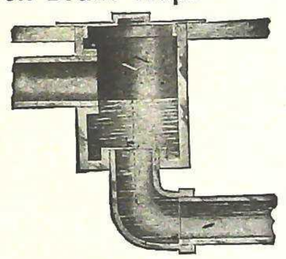


No. 296

Size ..... inches	4x8½	4x10
Price, No. 295, Painted ..... each	$2.75	$3.00
" " 295, Galvanized ..... "	3.75	4.25
" " 296, Painted ..... "	2.75	3.00
" " 296, Galvanized ..... "	3.75	4.25

No. 297 Cast Iron Drum Traps





Sectional View

The position of this trap is adjustable.
Outside diameter, 4¼ inches; height, 5¼ inches.

Price, Plain ..... each	$2.00
" Painted ..... "	2.25
" Galvanized ..... "	3.25

No. 4148 Diamond Cast Iron Bottle Traps

Slip Joint Inlet—Female Outlet

This trap is made with brass clean-out screw and is threaded for iron pipe.

Size ..... inches	1¼	1½
Price, Painted ..... each	$1.25	$1.80
" Galvanized ..... "	1.75	2.55
" Painted White Enam. ..... "	1.75	2.55



No. 4140 Diamond Cast Iron Bottle Traps

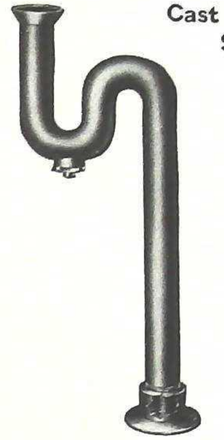
Female Both Ends



This trap is made with brass clean-out screw and is threaded for iron pipe.

Size ..... inches	1¼	1½
Price, Painted ..... each	$1.00	$1.50
" Galvanized ..... "	1.50	2.25
" Painted White Enam. ..... "	1.50	2.25

Cast Iron Long S Traps



No. 51, for Sink Collar



No. 52N, with Slip Joint Nut

Finish	Painted		Galv. or Enam. Ptd.	
Size ..... inches	1¼	1½	1¼	1½
Price, with Sink Collar ..... each	$1.50	$2.00	$2.25	$2.90
Price, with Slip Joint Nut ..... each	1.75	2.30	2.50	3.20
Price, with I.P. Thread Inlet ..... each	1.50	2.00	2.25	2.90

Diamond Universal Cast Iron P Traps

No. 4072 with Slip Joint Inlet and Male Outlet



This trap is made with brass clean out screw and is threaded for iron pipe.

Size ..... inches	1¼	1½
Price, Painted ..... each	$1.00	$1.30
" Galvanized ..... "	1.40	1.80

No. 4076 with Slip Joint Inlet and Female Outlet



This trap is made with brass clean-out screw and is threaded for iron pipe.

Size ..... inches	1¼	1½
Price, Painted ..... each	$1.15	$1.45
" Galvanized ..... "	1.55	1.95

No. 80 Cast Iron Sink Traps

With Brass Cleanout Screw Female Inlet and Outlet



Size Inches	Price, Each: Plain	Price, Each: Galvanized
1¼	$1.00	$1.30
1½	1.15	1.50
2	2.00	2.60

No. 7082 Cast Iron Grease Traps

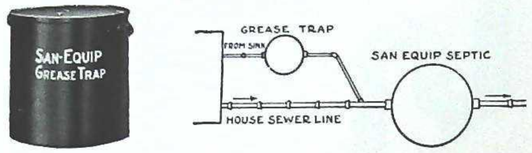


Cast iron grease trap with brass hand-hole cover and removable top with swivel bolts.

Diam. Inches	Height Inches	Opening Inches
16½	13	2 Soil
16½	13	2 I.P.
16½	14¾	4 Soil

	For 2 or 4-Inch Soil Pipe	For Iron Pipe
Price, No. 7082, Painted All Over	$18.10	$20.45
" " 7082, Enameled Inside	28.50	30.85
" " 7082, " All Over	41.90	44.25

San-Equip Grease Traps



For use with San-Equip Septic Systems in hotels, restaurants, or wherever there is a large amount of grease and kitchen waste. Reduces possibility of overloading or clogging septic systems. Easily installed as shown. Requires occasional skimming. Made of copper-bearing iron, rust-proofed by a heavy coating of mineral asphalt. Standard openings 2-in. threaded couplings. Openings for 4-in. soil pipe furnished if specified.

No. GT40, 40 Gals., Size 22½x24 In.....each **$15.00**
No. GT60, 60 Gals., Size 22½x36 In.....each **18.00**

Lead Drum Traps

With Nickel-plated Trap Screw


No. 1


No. 5½

Number			1	5½
Outside Diameter of Cap		inches	4⅛	5
Price, 4x 8 Inches, Standard Weight		each	$2.10	$2.35
" 4x 9 "	"	"	2.22	2.47
" 4x10 "	"	"	2.30	2.55
" 6x10 "	"	"	3.75	4.00
" 6x11 "	"	"	3.95	4.20
" 6x12 "	"	"	4.10	4.35
" 4x 8 "	Extra Heavy	"	2.60	2.85
" 4x 9 "	"	"	2.70	2.95
" 4x10 "	"	"	2.83	3.08
" 6x10 "	"	"	4.35	4.60
" 6x11 "	"	"	4.55	4.80
" 6x12 "	"	"	4.80	5.05

When ordering a drum trap complete please state style of cap, whether brass or nickel-plated, length of body and diameter of body.

No. 6F Eagle Lead Traps



Body, 3x7½ inches. 1½-inch inlet and outlet.

Over All	inches	15	24	28
Price, No. 6F Standard	each	$1.40	$1.75	$2.00
" " 6F Extra Heavy	"	1.60	2.00	2.25

Lead Traps


No. 30 S Trap


No. 40 P Trap

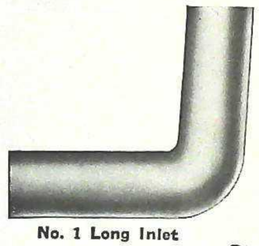
Size In.	Standard Wt. Lbs. per Ft.	Standard No. 30 S Trap	Standard No. 40 P Trap	Extra Heavy Wt. Lbs. per Ft.	Extra Heavy No. 30 S Trap	Extra Heavy No. 40 P Trap
1¼	1½	$.58	$.51	2½	$.87	$.77
1½	2¼	.90	.75	3½	1.25	1.09
2	3¼	1.38	1.20	4½	1.85	1.57

No. 6 Combination Lead Ferrules



Lgth. In.	Price, Each 1¼-in. for 2-in. C.I.Pipe	1½-in. for 2-in. C.I. Pipe	2-in. for 2-in. C.I. Pipe	4-in. for 4-in. C.I. Pipe
4½	$.28	$.28	....	...
6	.43	.43	$.46	$.85
8	.51	.51	.57	1.02
10	.60	.60	.67	1.25
12	.67	.67	.76	1.40
14	...	.80	.80	1.60
16	...	.90	.86	1.73
18	...	1.00	.92	1.85

Lead Bends


No. 1 Long Inlet

No. 2 Short Inlet

Standard

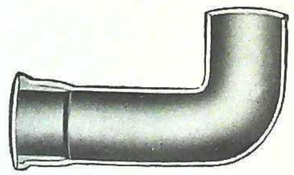
Size Inches	Weight Pounds per Foot	Long Inlet Bends Dimen., In. Center to End Inlet	Long Inlet Bends Dimen., In. Center to End Outlet	Price Each	Short Inlet Bends Dimen., In. Center to End Inlet	Short Inlet Bends Dimen., In. Center to End Outlet	Price Each
1¼	1½	6	6	$.30	3½	6	$.28
1½	2¼	7	7	.50	4	7	.35
2	3¼	7¾	7¾	.78	3¾	7¾	.57
3	5	8¼	8¼	1.39	4¼	8¼	1.09
4	6	10	10	1.95	5½	10	1.50

Extra Heavy

1¼	2½	6	6	$.50	3½	6	$.34
1½	3½	7	7	.79	4	7	.62
2	4½	7¾	7¾	1.05	3¾	7¾	.80
3	6	8¼	8¼	1.60	4¼	8¼	1.21
4	8	10	10	2.40	5½	10	1.84

No. 5 Combination Lead Bends and Ferrules

4-inch—Standard



Length Inches	Price, Each Short Inlet	Price, Each Long Inlet	Length Inches	Price, Each Short Inlet	Price, Each Long Inlet
12	$2.20	$2.65	16	$2.60	$3.04
14	2.40	2.85	18	2.80	3.23

Hy-Tech Products

Lead Pipe


In Coils—Strawed


On Reels

⅜-inch Size

Western Std.	Eastern Std.	Outside Diam.	Weight per Foot Pounds	Weight per Foot Ounces	Av. Lgth of Coil Feet
AQ	E	.49	..	8	140
XL	D	.52	..	9	124
L	C	.57	..	12	94
M	B	.61	1	..	70
S	A	.73	1	8	93
XS	AA	.75	2	..	70
XXS	.....	.79	2	8	56

½-inch Size

AQ	E	.64	..	10	280
XL	D	.66	..	12	230
L	C	.70	1	..	175
M	B	.75	1	4	140
S	A	.85	1	12	100
AA	.....	.89	2	..	87
XS	AA	.94	2	8	70
XXS	AAA	1.01	3	..	58
4 Lbs.	.....	1.12	4	..	43

⅝-inch Size

AQ	E	.77	..	12	230
XL	D	.84	1	4	138
L	C	.92	1	12	98
M	B	.95	2	..	86
S	....	1.02	2	8	69
AA	AA	1.05	2	12	62
XS	...	1.08	3	..	57
XXS	AAA	1.15	3	8	49
4 Lbs.	....	1.19	4	..	43

¾-inch Size

AQ	E	.91	1	..	171
XL	D	.97	1	8	114
L	C	1.04	2	..	85
M	B	1.07	2	4	76
S	....	1.16	3	..	57
XS	AA	1.23	3	8	49
XXS	AAA	1.26	4	..	43
5 Lbs.	....	1.35	5	..	34

1-inch Size

AQ	E	1.17	1	8	112
XL	D	1.23	2	..	84
L	C	1.27	2	8	67
M	B	1.35	3	4	52
S	A	1.43	4	..	42
XS	AA	1.49	4	12	35
XXS	AAA	1.56	5	8	58
7 Lbs.	....	1.66	7	..	45

1¼-inch Size

AQ	E	1.43	2	..	84
XL	D	1.49	2	8	67
L	C	1.53	3	..	56
M	B	1.58	3	12	85
S	A	1.66	4	12	67
XS	AA	1.77	6	..	53
XXS	AAA	1.83	6	12	47
9 Lbs.	....	1.89	9	..	35

Lead Pipe—Continued

1½-inch Size

Western Std.	Eastern Std.	Outside Diam.	Weight per Foot Pounds	Weight per Foot Ounces	Av. Lgth. of Coil Feet
AQ	E	1.74	3	..	56
XL	D	1.77	3	8	48
L	C	1.82	4	..	42
M	B	1.89	5	..	64
S	A	1.93	6	..	53
XS	AA	2.05	7	8	42
XXS	AAA	2.13	9	..	35
11 Lbs.	....	2.19	11	..	29

2-inch Size

AQ	E	2.19	3	..	12
XL	D	2.23	4	..	12
L	C	2.28	5	..	12
M	B	2.41	7	..	43
S	A	2.46	8	..	38
XS	AA	2.52	9	..	34
XXS	AAA	2.61	10	8	29
15 Lbs.	...	2.83	15	..	20

4-inch Size

3/32-in. Wall	D	4.18	6	..	12

Lead Tubing Caliber List

I. D. In.	O. D. In.	Nearest Fraction	Weight per Ft. Ounces	I. D. In.	O. D. In.	Nearest Fraction	Weight per Ft. Ounces
1/16	.125	1/8	3/4	3/16	.312	5/16	3½
3/32	.125	1/8	2/3	5/16	.343	11/31	5
3/32	.187	3/16	1½	5/16	.375	3/8	7
3/32	.250	1/4	4	1/4	.343	11/32	3½
1/8	.218	7/32	2¼	1/4	.390	25/64	5½
1/8	.250	1/4	3½	1/4	.453	29/64	9
1/8	.312	5/16	4½	1/4	.500	1/2	11½
3/16	.250	1/4	2¼	..	....	..	....

Block Tin Pipe

I. D. In	Weight per Ft. Ounces	I. D. In.	Weight per Ft. Ounces	I. D. In.	Weight per Ft. Lbs.	Weight per Ft. Oz.
1/4	3	7/16	4	1	...	15
1/4	5	1/2	4½	1	...	18
5/16	4	1/2	5	1¼	1¼	..
5/16	6½	1/2	6	1¼	1½	..
3/8	4	1/2	8	1½	2	..
3/8	5	5/8	8	1½	2½	..
3/8	6	5/8	10	2	2½	..
3/8	8	3/4	10	2	3	..
3/8	10	3/4	12	...	...	..

Sheet Lead



Thickness.....in.	1/64	1/32	3/64	1/25	1/16	1/14	1/12	1/8
Wt. per Sq. Ft.....lbs.	1½	2	2½	3	4	5	6	8

Market prices.

Lead Wool



Lead wool is lead cut in fine fibres which are put into the joint in the same way as yarn. The lead is being calked from the yarn up, which gives tight, perfect joint that will never leak and yet is flexible.

Price.....per pound

Duriron Acid-proof Drain Pipe and Fittings



Duriron is a cast metal alloy containing the proper silicon content to make it entirely resistant to all acids and alkalies used commercially, of any strength or temperature.

It is extremely hard and is not affected by the scouring effect of solids carried in suspension.

Duriron pipe is equally resistant inside, outside and all through its structure; there is no coating, lining or treating, and therefore no scaling or chipping to expose it to attack.

With a Duriron drain line installation it is unnecessary to encase it in concrete, to provide drip pans, or to make any provision for anticipated failure.

Duriron lines may be laid in concrete. In cinder concrete, where the sulphur will at once attack iron pipe, there is no action on Duriron.

Duriron drain lines are installed in the same manner as cast iron, except that asbestos rope should be used instead of oakum. Joints in a Duriron line, properly caulked, will not loosen or leak even under severe conditions such as building vibration or settling.

Duriron pipe, while taking paint readily when it is desired, does not require it for preservation, because it does not rust. It may show a discoloration due to surface impurities, sand, etc., of the casting, but there is no further action.

Duriron pipe will handle acids and acidulated water with the same facility and with no more effect on it than pure water has on cast or wrought iron pipe. It eliminates waste of material and reduces accident and fire hazard.

Duriron Acid-proof Pipe

Single-hub Pipe

Size In.	No. Ft. per Lgth.	Weight per Lgth. Pounds	Price per Lgth.	Size In.	No. Ft. per Lgth.	Weight per Lgth. Pounds	Price per Lgth.
1½	3	20	$11.00	4	5	85	$37.80
2	4	32	16.40	6	5	135	65.00
3	5	56	27.80	8	5	217	116.00

Double-hub Pipe

1½	3	23	$12.00	4	5	80	$43.00
2	4	34	18.90	6	5	142	71.00
3	5	61	35.00	8	5	258	124.00

Sanitary Tee, Y and TY Branches

Size In.	Tee Branches Weight Pounds	Tee Branches Price Each	Y Branches Weight Pounds	Y Branches Price Each	TY Branches Weight Pounds	TY Branches Price Each
1½x1½	9	$4.90	9	$5.10	9	$5.35
2 x1½	10	5.45	10	5.90	11	6.00
2 x2	11	6.10	11	6.20	12	7.00
3 x1½	13	7.00	13	7.70	14	7.90
3 x2	14	7.60	14	7.80	15	8.20
3 x3	17	8.60	17	8.90	19	10.30
4 x1½	16	8.70	17	8.80	18	10.00
4 x2	18	9.15	18	10.00	19	11.50
4 x3	21	11.80	21	12.80	22	14.50
4 x4	22	13.60	25	14.70	28	15.30
6 x2	35	16.80	35	17.80	26	18.40
6 x3	39	19.00	39	20.00	34	21.40
6 x4	44	19.50	44	21.50	36	23.20
6 x6	52	24.00	52	27.00	47	29.50

Cast Iron Soil Pipe

Five-foot Lengths



Single Hub
No. SP-1



Double Hub
No. SP-2

Size Inches	Price, per Foot — Single Hub Standard	Single Hub Medium	Single Hub Extra Heavy	Double Hub Standard	Double Hub Medium	Double Hub Extra Heavy
2	$.26	$.34	$.40	$.28	$.36	$.42
3	.35	.46	.62	.37	.48	.65
4	.46	.60	.84	.48	.63	.88
5	.58	.88	1.10	.62	.92	1.14
6	.70	1.08	1.30	.74	1.13	1.36
7	1.40	1.80	2.20	1.60	2.00	2.40
8	1.40	1.80	2.20	1.60	2.00	2.40
10	2.40	3.00	3.60	2.60	3.20	3.80
12	3.00	3.80	4.40	3.20	4.00	4.60
15	5.60	7.00	8.00	5.80	7.20	8.40

1½-inch pipe and fittings take same lists as 2-inch.

Approximate Weight of Soil Pipe per Length

Size..inches	2	3	4	5	6	7	8	10	12	15
Standard.lbs.	18	26	35	45	55	75	85	115	165	225
Medium. "	20	30	45	60	75	100	125	175	...	300
Extra Heavy.. "	27½	47½	65	85	100	135	170	225	270	375

Approximate Weight of Soil Pipe Fittings

Style.....	Standard 2	3	4	5	6	8	10	12
Size.....inches								
Quarter Bends, lbs...ea.	4½	7	10½	13	16½	33	54	58½
Sixth " " .. "	4	6½	9	11½	14	30	30	48
Eighth " " .. "	3½	6	8	10½	13	24	38	42½
T Branches " " .. "	7	11	14½	18½	23	33	42	102
San. T " " .. "	7½	12	16	20	24	49	100	....
Crosses " " .. "	9½	14	19	23½	28½	40	70	100
San. Crosses " " .. "	10½	15½	20½	25½	31½	52	....	....
Y Branches " " .. "	7½	12	17	22	28	58	106	158
Half Y Branches " " .. "	7	11	15	19	24	..	....	....
Double Y " " .. "	10½	16	22½	30	36½	77	121	....
" Hubs " " .. "	4	5¾	7½	9	10½	16	21	35
S Traps " " .. "	8½	14	21	28¼	37½	94	....	....
P " " .. "	7	12	17½	24½	31½	80	....	....
Rung Traps " " .. "	8½	13½	19½	26	34	54	....	....
Reducers " " .. "	...	4½	6	7½	9	8	21½	28

Style.....	Extra Heavy 2	3	4	5	6	8	10	12
Size.....inches								
Quarter Bends, lbs...ea.	6¾	10¼	15	19	23½	52	80	95
Sixth " " .. "	6	9½	13	16½	20	44	50	90
Eighth " " .. "	5½	8½	12¼	15¼	18¼	40	56	80
T Branches " " .. "	10½	15¼	21	26½	32½	60	75	166
San. T " " .. "	11	16½	22½	28	34½	80	135	210
Crosses " " .. "	13¼	19¾	27	33½	40½	92	116	176
San. Crosses " " .. "	14½	22	29½	36½	44½	79	161	...
Y Branches " " .. "	11	17	24	31½	39½	91	136	218
Half Y Branches " " .. "	10½	15½	21½	27½	34	90	....	....
Double Y " " .. "	14¾	23	32	41½	52	100	153	266
" Hubs " " .. "	5¾	8¼	10¾	12⅝	14¾	30	35	45
S Traps " " .. "	12	20	30	40½	53½	123	....	....
P " " .. "	10½	17¼	25½	34½	45	100	....	....
Rung Traps " " .. "	11⅝	19	27½	37	48	110	....	....
Reducers " " .. "	...	6¼	8½	10¾	12¾	15	28½	48

To determine the right or left-hand inlet or outlet in bends, branches and offsets, place them with the hub facing toward you and with spigot lower than hub. On traps, place in regular position with the hub end nearest you.

Long quarter bends are measured from the inside of hub nearest spigot to end of spigot. Other bends are measured from end of spigot to nearest point on inside base of hub. Long T's, Y's, etc., are measured from the base of the hub on main to the end of spigot.

Hy-Tech Products

Cast Iron Soil Pipe Fittings

Quarter Bends



No. SP-3

Size Inches	Price, Each Std.	Ex. Hy.	Size Inches	Price, Each Std.	Ex. Hy.
2	$.40	$.55	8	$4.00	$5.00
3	.55	.70	10	5.90	6.50
4	.70	.85	12	8.65	10.80
5	1.05	1.25	15	16.80	21.00
6	1.30	1.55	..	.....	.....

Fifth Bends

Size Inches	Price, Each Std.	Ex. Hy.	Size Inches	Price, Each Std.	Ex. Hy.
2	$.45	$.60	8	$4.00	$5.00
3	.80	1.00	10	5.90	6.50
4	.80	1.00	12	8.65	10.80
5	1.05	1.25	15	16.80	21.00
6	1.30	1.55	..	.....	.....



No. SP-4

Sixth Bends



No. SP-5

Size Inches	Price, Each Std.	Ex. Hy.	Size Inches	Price, Each Std.	Ex. Hy.
2	$.40	$.45	8	$4.00	$5.00
3	.60	.75	10	5.90	6.50
4	.60	.75	12	8.65	10.80
5	1.05	1.25	15	16.80	21.00
6	1.30	1.55	..	....	.....

Eighth Bends

Size Inches	Price, Each Std.	Ex. Hy.	Size Inches	Price, Each Std.	Ex. Hy.
2	$.35	$.40	8	$4.00	$5.00
3	.45	.55	10	5.90	6.50
4	.60	.75	12	8.65	10.80
5	.80	1.00	15	16.80	21.00
6	1.05	1.25	..	.....	.....



No. SP-6

Sixteenth Bends



No. SP-7

Size Inches	Price, Each Std.	Ex. Hy.	Size Inches	Price, Each Std.	Ex. Hy.
2	$.35	$.40	8	$4.00	$5.00
3	.50	.70	10	5.90	6.50
4	.60	.70	12	8.65	10.80
5	.80	1.00	15	16.80	21.00
6	1.00	1.25	..	.....	.....

Double Hub Bends



No. SP-8 Quarter



No. SP-9 Eighth



No. SP-10 Sixteenth

Size Inches	Price, Each Std.	Ex. Hy.	Size Inches	Price, Each Std.	Ex. Hy.
2	$.75	$.90	5	$1.85	$2.30
3	.95	1.15	6	2.45	3.05
4	1.20	1.40	..	....	....

Quarter Bends



No. SP-11 With R. H. Side Inlet



No. SP-12 With Low Heel Inlet



No. SP-13 With High Heel Inlet

Size In.	Size, Inlet Inches	Price, Each Std.	Ex. Hy.	Size In.	Size, Inlet Inches	Price, Each Std.	Ex. Hy.
2	2	$1.25	$1.55	5	2	$3.70	$4.60
3	2	1.25	1.55	5	3	3.70	4.60
3	3	1.25	1.55	5	4	3.70	4.60
4	2	1.25	1.55	6	2	4.30	5.40
4	3	3.10	3.85	6	3	4.30	5.40
4	4	3.10	3.85	6	4	4.30	5.40

Cast Iron Soil Pipe Fittings

Long Bends



No. SP-14
Long Quarter Bend



No. SP-15
Long Sixth Bend



No. SP-16
Long Eighth Bend

Size Inches	Length in Clear Inches	Price, Each Standard	Extra Heavy
2	12	$.90	$1.10
2	18	1.05	1.30
2	24	1.50	1.85
3	12	1.50	1.85
3	18	1.85	2.30
3	24	2.25	2.75
4	12	1.25	1.55
4	18	1.50	1.85
4	24	2.75	3.40
4	30	3.85	4.80
4	36	4.90	6.15
5	12	3.70	4.60
5	18	4.30	5.40
5	24	4.90	6.15
5	36	5.25	6.55
6	12	4.30	5.40
6	18	5.00	6.15
6	24	5.50	6.90
8	18	7.50	10.00

Long Quarter Bends

No. SP-17
With 2-Inch Low Heel Inlet



Size Inches	Length in Clear Inches	Price Each
4	18	$2.50

Reilly Long Sweep Quarter Bends



No. SP-22

Size Inches	Price, Each Standard	Extra Heavy
4	$2.80	$3.50
5	4.00	5.00
6	4.80	6.00
4x2	2.15	2.70
5x4	2.80	3.50

Reilly Long Sweep Quarter Bends

No. SP-23 with Foot Rest



Size Inches	Price, Each Standard	Extra Heavy
4	$3.80	$4.50
5	5.25	6.25
6	6.30	7.50
4x2	3.15	3.70
5x4	4.05	4.75

Sanitary Long Sweep Quarter Bends

No. SP-27



Size In.	Price, Each Standard	Extra Heavy	Size In.	Price, Each Standard	Extra Heavy
2	$.75	$.90	6	$2.75	$3.40
3	.95	1.15	8	6.00	7.50
4	1.25	1.55	10	8.00	10.00
5	1.70	2.00	..	....	.....

Sanitary Short Sweep Quarter Bends

No. SP-28



Size In.	Price, Each Standard	Extra Heavy	Size In.	Price, Each Standard	Extra Heavy
2	$.60	$.75	6	$2.50	$3.10
3	.90	1.10	8	4.80	6.00
4	1.15	1.40	10	6.80	8.50
5	1.55	1.85	..	....	....

Cast Iron Soil Pipe Fittings

Double Quarter Bends



No. SP-40

Size Inches	Price, Each Standard	Price, Each Extra Heavy
2x2	$1.50	$1.85
3x2	2.45	3.05
3x3	2.55	3.20
4x2	2.80	3.45
4x3	2.80	3.45
4x4	2.80	3.45

Single Hub Return Bends



No. SP-41

Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$1.25	$1.55
3	1.50	1.85
4	1.70	2.00
5	2.45	3.05
6	3.10	3.85
8	....	7.75

Double Hub Return Bends



No. SP-42

Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$1.35	$1.70
3	1.60	2.00
4	1.75	2.20
5	2.75	3.40
6	3.40	4.25
8	....	8.25

T Branches

No. SP-52, Plain

No. SP-53
With Right-Hand Side Inlet

Size In.	Price, Each Standard	Price, Each Extra Heavy	Size In.	Price, Each Standard	Price, Each Extra Heavy	Extras, Add to List, Each: Size Inlets In.	Right or Left Inlets	Brass Trap Screws Incl. Inlets
2x2	$.55	$.75	6x2	$1.80	$2.15			
3x2	.75	.90	6x3	1.80	2.15			
3x3	.85	1.10	6x4	1.80	2.15			
4x2	.85	1.10	6x5	2.00	2.45			
4x3	1.00	1.25	6x6	2.00	2.45	2	$1.00	$1.50
4x4	1.15	1.40	8	6.00	9.00	3	1.25	2.00
5x2	1.20	1.45	10	10.80	15.10	4	1.50	2.50
5x3	1.25	1.55	12	15.10	19.40	5	2.00	3.00
5x4	1.40	1.70	15	33.60	42.00	6	2.50	3.50
5x5	1.65	2.00	..	.....	.....	..	....	....

When ordering specify whether wanted with right or left-hand side inlet.

Tapped T Branches



Size Inches	Thread Inches	Price, Each Standard	Price, Each Extra Heavy
2	1¼, 1½, 2	$.70	$.85
3	1¼, 1½, 2	.85	1.10
4	1¼, 1½, 2	1.00	1.25
5	1¼, 1½, 2	1.60	2.00
6	1¼, 1½, 2	2.50	3.10

T Branches with Handhole and Cover



No. SP-55

Size Inches	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$1.05	$1.25	5	$2.45	$3.05
3	1.70	2.15	6	3.70	4.60
4	1.85	2.30	8	5.00	7.50

Cast Iron Soil Pipe Fittings

Long T Branches



No. SP-57

Size In.	Length in Clear In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Length in Clear In.	Price, Each Std.	Price, Each Extra Heavy
2	12	$1.20	$1.50	4	24	$4.10	$5.05
2	18	2.00	2.45	4	30	4.65	5.85
2	24	2.25	2.75	4	36	5.35	6.60
2	30	2.45	3.05	5	18	4.20	5.25
2	36	2.70	3.35	5	24	4.95	6.15
3	12	1.45	1.80	5	30	5.70	7.10
3	18	2.60	3.25	5	36	6.60	8.15
3	24	3.10	3.85	6	18	4.90	6.15
3	30	3.55	4.45	6	24	5.80	7.25
3	36	4.05	5.05	6	30	6.80	8.45
4	12	2.80	3.50	6	36	7.70	9.55
4	18	3.50	4.30	..	..	....	....

Sanitary T Branches



No. SP-59
Plain



No. SP-60
With Right-hand Side Inlet

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size Inches	Price, Each Std.	Price, Each Extra Heavy	Extras, Add to List, Each: Size Inlets In.	Right or Left Inlets	Brass Trap Screws Incl. Inlets
2x2	$.55	$.75	6x2	$1.80	$2.15			
3x2	.75	.90	6x3	1.80	2.15			
3x3	.85	1.10	6x4	1.80	2.15			
4x2	.85	1.10	6x5	2.00	2.45			
4x3	1.00	1.25	6x6	2.00	2.45	2	$1.00	$1.50
4x4	1.15	1.40	7	7.00	9.80	3	1.25	2.00
5x2	1.20	1.45	8	6.00	9.00	4	1.50	2.50
5x3	1.25	1.55	10	10.80	15.10	5	2.00	3.00
5x4	1.40	1.70	12	15.10	19.40	6	2.50	3.50
5x5	1.65	2.00	15	33.60	42.00			

When ordering specify whether wanted with right or left-hand side inlet.

Tapped Sanitary T Branches



No. SP-62

Size Inches	Thread Inches	Price, Each Standard	Price, Each Extra Heavy
2	1¼, 1½, 2	$.75	$.90
3	1¼, 1½, 2	.95	1.10
4	1¼, 1½, 2	1.25	1.55
5	1¼, 1½, 2	1.85	2.30
6	1¼, 1½, 2	2.95	3.70

Special Reducing Sanitary T Branches



No. SP-63

Size Inches	Price, Each Std.	Price, Each Ex. Hy.	Size Inches	Price, Each Std.	Price, Each Ex. Hy.
3x2x3	$2.50	$3.15	5x4x5	$3.80	$4.75
4x2x4	3.00	3.70	6x4x4	4.45	5.55
4x3x4	2.95	3.70	6x4x5	4.60	5.75
5x4x4	3.80	4.75	6x4x6	4.60	5.75

Tee Branches, All Hub Ends



No. SP-56

Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$2.25	$2.75
3	3.45	4.30
4	4.65	5.85
5	5.65	7.05
6	7.35	9.20

Hy-Tech Products

Cast Iron Soil Pipe Fittings

Long Sanitary T Branches



No. SP-64

Size Inches	Length in Clear In.	Price, Each Std.	Price, Each Extra Heavy	Size Inches	Length in Clear In.	Price, Each Std.	Price, Each Extra Heavy
2	12	$1.20	$1.50	4	24	$4.10	$5.05
2	18	2.00	2.45	4	30	4.65	5.85
2	24	2.25	2.75	4	36	5.35	6.60
2	30	2.45	3.05	5	18	4.20	5.25
2	36	2.70	3.35	5	24	4.95	6.15
3	12	1.45	1.80	5	30	5.70	7.10
3	18	2.60	3.25	5	36	6.60	8.15
3	24	3.10	3.85	6	18	4.90	6.15
3	30	3.55	4.45	6	24	5.80	7.25
3	36	4.05	5.05	6	30	6.80	8.45
4	12	2.80	3.50	6	36	7.70	9.55
4	18	3.50	4.30	8	36	9.00	....

Y and Half Y Branches



No. SP-73
Y Branch



No. SP-74
Half Y

Size Inches	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2x2	$.55	$.75	6x2	$1.80	$2.15
3x2	.75	.90	6x3	1.80	2.15
3x3	.85	1.10	6x4	1.80	2.15
4x2	.85	1.10	6x5	2.00	2.45
4x3	1.00	1.25	6x6	2.00	2.45
4x4	1.15	1.40	7	7.00	9.80
5x2	1.20	1.45	8	6.00	9.00
5x3	1.25	1.55	10	10.80	15.10
5x4	1.40	1.70	12	15.10	19.40
5x5	1.65	2.00	15	33.60	42.00

Y and Half Y Branches with Side Inlet



No. SP-75
Y Branch



No. SP-76
Half Y Branch

Size Inlet Inches	Extras Add to the Above List, Each: Inlets	Brass Trap Screws Incl. Inlets
2	$1.00	$1.50
3	1.25	2.00
4	1.50	2.50
5	2.00	3.00
6	2.50	3.50

Inverted Y Branches



No. SP-77

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size Inches	Price Each Std.	Price Each Extra Heavy
2x2	$1.00	$1.25	5x4	$3.10	$3.85
3x2	1.40	1.85	5x5	3.40	4.60
3x3	1.40	1.85	6x2	3.70	4.60
4x2	1.70	2.15	6x3	3.70	4.60
4x3	1.70	2.15	6x4	4.95	6.15
4x4	1.70	2.15	6x5	4.95	6.15
5x2	2.45	3.05	6x6	4.95	6.15
5x3	2.45	3.05	...	....	....

Cast Iron Soil Pipe Fittings

Long Y Branches



No. SP-78

Size Inches	Length in Clear Inches	Price, Each Std.	Price, Each Extra Heavy	Size Inches	Length in Clear Inches	Price, Each Std.	Price, Each Extra Heavy
2	12	$1.20	$1.50	4	24	$4.10	$5.05
2	18	2.00	2.45	4	30	4.65	5.85
2	24	2.25	2.75	4	36	5.35	6.60
2	30	2.45	3.05	5	18	4.20	5.25
2	36	2.70	3.35	5	24	4.95	6.15
3	12	1.45	1.80	5	30	5.70	7.10
3	18	2.60	3.25	5	36	6.60	8.15
3	24	3.10	3.85	6	18	4.90	6.15
3	30	3.55	4.45	6	24	5.80	7.25
3	36	4.05	5.05	6	30	6.80	8.45
4	12	2.80	3.50	6	36	7.70	9.55
4	18	3.50	4.30	..	..	....	....

Special Reducing Y Branches



No. SP-79

Size Inches	Price, Each Std.	Price, Each Ex. Hy.	Size Inches	Price, Each Std.	Price, Each Ex. Hy.
3x2x3	$2.50	$3.15	6x4x5	$4.60	$5.75
4x2x4	2.95	3.70	6x5x4	4.60	5.75
4x3x4	2.95	3.70	6x5x5	4.60	5.75
5x4x4	3.80	4.75	6x4x6	4.60	5.75
5x4x5	4.60	5.75	6x5x6	4.60	5.75
6x4x4	4.45	5.55	.....	....	....

Inverted Y Branches

Tapped for Iron Pipe

Thread, 1¼, 1½ and 2 inches.



No. SP-80

Size In.	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$1.40	$1.70	5	$2.80	$3.50
3	2.00	2.45	6	3.40	4.25
4	2.20	2.75	..	....	

Double Inverted Y Branches



No. SP-81

Size In.	Price, Each Standard	Price, Each Ex. Hy.
2x2	$2.45	$3.05
3x2	3.10	3.85
3x3	3.10	3.85
4x2	3.70	4.60
4x3	3.70	4.60
4x4	3.70	4.60

Double Y Branches



No. SP-90
Plain



No. SP-91
With Side Inlets

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size Inches	Price, Each Std.	Price, Each Extra Heavy	Extras, Add to List, Each: Size Inlet In.	Inlets	Brass Trap Screws Incl. Inlets
2x2	$1.25	$1.55	5x5	$4.95	$6.15			
3x2	1.65	2.00	6x2	6.15	7.70			
3x3	1.65	2.00	6x3	6.15	7.70			
4x2	1.80	2.15	6x4	6.15	7.70			
4x3	1.80	2.15	6x5	6.15	7.70	2	$1.00	$1.50
4x4	1.80	2.15	6x6	6.15	7.70	3	1.25	2.00
5x2	4.95	6.15	8x8	9.00	13.50	4	1.50	2.50
5x3	4.95	6.15	10x10	16.20	22.65	5	2.00	3.00
5x4	4.95	6.15	12x10	22.70	29.15	6	2.50	3.50

Cast Iron Soil Pipe Fittings

Double Half Y Branches



No. SP-92
Plain



No. SP-93
With Side Inlet

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy	Size Inlet In.	Extras, Add to List, Each Inlets	Extras, Add to List, Each Brass Trap Screws Incl. Inlets
2x2	$1.25	$1.55	5x5	$4.95	$6.15	2	$1.00	$1.50
3x2	1.65	2.00	6x2	6.15	7.70	3	1.25	2.00
3x3	1.65	2.00	6x3	6.15	7.70	4	1.50	2.50
4x2	1.80	2.15	6x4	6.15	7.70	5	2.00	3.00
4x3	1.80	2.15	6x5	6.15	7.70	6	2.50	3.50
4x4	1.80	2.15	6x6	6.15	7.70			
5x2	4.95	6.15	8x8	9.00	13.50			
5x3	4.95	6.15	10x10	16.20	22.65			
5x4	4.95	6.15	12x10	22.70	29.15			

Long Double Y Branches



No. SP-94

Size Inches	Price, Each Standard	Price, Each Ex. Hy.
2x2x12	$1.60	$2.00
2x2x18	2.75	3.45
2x2x24	3.00	3.75
4x2x18	4.25	5.30
4x2x24	4.85	6.05
4x4x18	4.65	5.80
4x4x24	5.25	6.55
4x4x30	5.90	7.35
4x4x36	6.50	8.10
5x4x18	5.40	6.75
5x4x24	6.10	7.65
5x4x30	6.90	8.60
5x4x36	7.70	9.65
6x4x18	6.10	7.65
6x4x24	7.00	8.75
6x4x30	7.95	9.95
6x4x36	8.85	11.05

Combination Y and Eighth Bends



No. SP-101
Plain



No. SP-102
With Left-hand Side Inlet

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy	Size Inlet In.	Extras, Add to List, Each Right or Left Inlets	Extras, Add to List, Each Brass Trap Screws Incl. Inlets
2x2	$1.05	$1.30	5x4	$3.70	$4.60	2	$1.00	$1.50
3x2	1.70	2.15	5x5	3.70	4.60	3	1.25	2.00
3x3	1.70	2.15	6x2	5.55	6.90	4	1.50	2.50
4x2	1.70	2.15	6x3	5.55	6.90	5	2.00	3.00
4x3	1.70	2.15	6x4	5.55	6.90	6	2.50	3.50
4x4	1.70	2.15	6x5	5.55	6.90			
5x2	3.70	4.60	6x6	5.55	6.90			
5x3	3.70	4.60	...	....	....			

Crosses

Tapped for Iron Pipe



No. SP-123

Size Inches	Thread Inches	Price, Each Standard	Price, Each Extra Heavy
2	1¼, 1½, 2	$1.15	$1.40
3	1¼, 1½, 2	1.25	1.55
4	1¼, 1½, 2	1.40	1.70
5	1¼, 1½, 2	2.25	2.80
6	1¼, 1½, 2	3.45	4.30

Straight Crosses

Plain



No. SP-119

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy
2x2	$1.25	$1.55	5x5	$4.95	$6.15
3x2	1.65	2.00	6x2	6.15	7.70
3x3	1.65	2.00	6x3	6.15	7.70
4x2	1.80	2.15	6x4	6.15	7.70
4x3	1.80	2.15	6x5	6.15	7.70
4x4	1.80	2.15	6x6	6.15	7.70
5x2	4.95	6.15	8	9.00	13.50
5x3	4.95	6.15	10	16.20	22.65
5x4	4.95	6.15	12x10	22.70	29.15

Straight Crosses
With Side Inlet
Add Extra to Above List



No. SP-120

Size Inlet In.	Price Each Inlet Only	Size Inlet In.	Price Each Inlet Only
2	$1.00	5	$2.00
3	1.25	6	2.50
4	1.50	.	....

Sanitary Crosses



No. SP-124

Size In.	Price, Each Std.	Price, Each Ex. Hy.	Size In.	Price, Each Std.	Price, Each Ex. Hy.
2x2	$1.25	$1.55	5x 5	$4.95	$6.15
3x2	1.65	2.00	6x 2	6.15	7.70
3x3	1.65	2.00	6x 3	6.15	7.70
4x2	1.80	2.15	6x 4	6.15	7.70
4x3	1.80	2.15	6x 5	6.15	7.70
4x4	1.80	2.15	6x 6	6.15	7.70
5x2	4.95	6.15	8	9.00	13.50
5x3	4.95	6.15	10	16.20	22.65
5x4	4.95	6.15	12x10	22.70	29.15

Sanitary Crosses
With Side Inlet
Add Extra to Above List



No. SP-125

Size Inlet In.	Inlets Each	Size Inlet In.	Inlets Each
2	$1.00	5	$2.00
3	1.25	6	2.50
4	1.50	..	.....

Tapped Crosses
For Iron Pipe



No. SP-123

Size Inches	Thread Inches	Price, Each Standard	Price, Each Extra Heavy
2	1¼, 1½, 2	$1.15	$1.40
3	1¼, 1½, 2	1.25	1.55
4	1¼, 1½, 2	1.40	1.70
5	1¼, 1½, 2	2.25	2.80
6	1¼, 1½, 2	3.45	4.30

Tapped Sanitary Crosses



No. SP-127

Size Inches	Thread Inches	Price, Each Standard	Price, Each Extra Heavy
2	1¼, 1½, 2	$1.25	$1.55
3	1¼, 1½, 2	1.50	1.85
4	1¼, 1½, 2	1.75	2.15
5	1¼, 1½, 2	2.75	3.40
6	1¼, 1½, 2	4.10	5.10

Hy-Tech Products

Plain Offsets



No. SP-133

Size In.	Price, Each Std.	Price, Each Ex. Hy.	Size In.	Price, Each Std.	Price, Each Ex. Hy.	Size In.	Price, Each Std.	Price, Each Ex. Hy.
2x 2	$.60	$.75	3x24	$3.70	$4.60	5x20	$6.15	$7.55
2x 4	.60	.75	3x26	4.15	5.20	5x22	6.30	7.85
2x 6	.75	.90	4x 2	1.00	1.25	5x24	6.50	8.15
2x 8	.75	.90	4x 4	1.00	1.25	5x26	6.75	8.45
2x10	1.00	1.25	4x 6	1.10	1.40	6x 2	3.35	4.15
2x12	1.15	1.40	4x 8	1.25	1.55	6x 4	3.35	4.15
2x14	1.25	1.55	4x10	1.50	1.85	6x 6	3.35	4.15
2x16	1.35	1.70	4x12	1.60	2.00	6x 8	3.70	4.60
2x18	1.70	2.15	4x14	1.90	2.45	6x10	4.30	5.40
2x20	2.00	2.45	4x16	2.00	3.40	6x12	4.95	6.15
2x22	2.20	2.75	4x18	2.30	3.55	6x14	6.15	7.70
2x24	2.45	3.05	4x20	2.60	4.30	6x16	6.75	8.30
2x26	2.70	3.35	4x22	3.10	4.60	6x18	7.10	8.75
3x 2	.95	1.15	4x24	3.70	5.05	6x20	7.40	9.20
3x 4	1.00	1.25	4x26	4.35	5.45	6x22	7.70	9.65
3x 6	1.10	1.40	5x 2	2.45	3.05	6x24	8.10	10.10
3x 8	1.25	1.55	5x 4	2.45	3.05	6x26	8.45	10.55
3x10	1.50	1.85	5x 6	2.65	3.40	7x 4	10.10	12.60
3x12	1.65	2.00	5x 8	3.00	3.80	7x 8	12.30	15.40
3x14	1.90	2.30	5x10	3.50	4.00	8x 4	8.00	11.00
3x16	2.10	2.60	5x12	3.65	4.45	8x 6	9.60	12.00
3x18	2.30	2.90	5x14	5.05	6.30	8x 8	10.40	13.00
3x20	2.75	3.40	5x16	5.35	6.60	....	.....	.....
3x22	3.10	3.85	5x18	5.85	7.25	....	.....	.....

For odd lengths use next highest list.

Spigot End Increasers



No. SP-166

Hub end to govern price.

Size Inches	Price, Each Std.	Price, Each Ex. Hy.	Size Inches	Price, Each Std.	Price, Each Ex. Hy.	Size Inches	Price, Each Std.	Price, Each Ex. Hy.
2x3	$.90	$1.10	4x 5	$1.85	$2.30	6x 8	$2.00	$5.00
2x4	.90	1.10	4x 6	1.85	2.30	6x10	3.40	4.25
2x5	1.25	1.55	4x 8	1.85	2.30	8x10	4.35	7.00
2x6	1.85	2.30	5x 6	2.45	3.05	8x12	7.35	9.20
3x4	1.85	2.30	5x 8	2.45	3.05	10x12	9.20	11.50
3x5	1.85	2.30	5x10	2.65	3.35	.....	....	.....
3x6	1.85	2.30	6x 7	2.25	3.85	.....	....	.....

Tapped Increasers



No. SP-167

Size Inches	Price, Each Std.	Price, Each Ex. Hy.	Size Inches	Price, Each Std.	Price, Each Ex. Hy.
1¼x2	$.60	$.75	2x5	$2.10	$2.45
1½x2	.60	.75	2x6	2.40	3.00
1½x3	1.40	1.70	3x4	1.85	2.30
1¼x4	1.50	1.85	3x5	2.10	2.60
1½x4	1.50	1.85	4x5	2.50	3.10
1½x5	2.10	2.45	4x6	2.90	3.60
2 x3	1.40	1.70	5x6	3.30	4.10
2 x4	1.50	1.85	...	....	....

Reducers



No. SP-142

Size In.	Price, Each Std.	Price, Each Ex. Hy.	Size In.	Price, Each Std.	Price, Each Ex. Hy.
3x2	$.40	$.45	6x 3	$.85	$1.00
4x2	.40	.45	6x 4	.85	1.00
4x3	.45	.55	6x 5	.85	1.00
5x2	.60	.75	8x 6	2.50	4.25
5x3	.60	.75	10x 8	4.85	6.20
5x4	.60	.75	12x10	6.76	10.80
6x2	.60	.75	15x12	13.30	22.30

Double Hubs



No. SP-141

Size In.	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$.40	$.45	8	$2.50	$3.50
3	.50	.75	10	3.80	4.85
4	.60	.75	12	5.40	9.20
5	1.00	1.25	15	11.90	21.00
6	1.15	1.55	..	.....	.....

Plugs



No. SP-145

Size Inches	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$.25	$.30	8	$1.20	$1.50
3	.40	.45	10	2.15	3.25
4	.45	.60	12	3.25	4.30
5	.60	.75	15	5.60	7.00
6	.75	.90	..	....	....

Vent Caps



No. SP-150
Plain

Size Inches	Price, Each With Spigot	Price, Each With Set Screw
2	$.60	$.60
3	.70	.65
4	.90	.80
5	1.85	1.25
6	2.00	1.55



No. SP-151
With Set Screw

Plain S Traps



No. SP-188

Size In.	Price, Each Std.	Price, Each Ex. Hy.
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

Plain P Traps



No. SP-190

Size In.	Price, Each Std.	Price, Each Ex. Hy.
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

Plain Running Traps



No. SP-209

Size Inches	Price, Each Standard	Price, Each Extra Heavy
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

Running Traps



No. SP-211
With Hub Vent



No. SP-212
With Double Hub Vent

Size Inches	Price, Each Std.	Ex. Hy.	Size Inches	Price, Each Std.	Ex. Hy.
2x2	$1.20	$1.50	2x2	$1.60	$2.00
3x2	1.35	1.70	3x2	1.80	2.25
3x3	1.35	1.70	3x3	1.80	2.25
4x2	2.20	2.75	4x2	2.60	3.25
4x3	2.20	2.75	4x3	2.60	3.25
4x4	2.20	2.75	4x4	2.60	3.25
5x2	4.00	5.00	5x2	4.80	6.00
5x3	4.00	5.00	5x3	4.80	6.00
5x4	4.00	5.00	5x4	4.80	6.00
5x5	4.00	5.00	5x5	4.80	6.00
6x2	4.80	6.00	6x2	5.60	7.00
6x3	4.80	6.00	6x3	5.60	7.00
6x4	4.80	6.00	6x4	5.60	7.00
6x5	4.80	6.00	6x5	5.60	7.00
6x6	4.80	6.00	6x6	5.60	7.00
8x4	11.60	14.50	8x4	12.80	16.00
8x6	12.00	15.00	8x6	14.00	17.00
8x8	12.00	15.00	8x8	14.00	17.00
10x6	19.45	25.90	10x6	21.60	28.10
10x8	23.00	29.00	12x6	29.35	36.70
12x6	29.35	36.70	12x8	31.10	38.90
15x6	67.00	84.00	15x15	.....	150.00
15x8	.....	130.00	.....	.....	.....

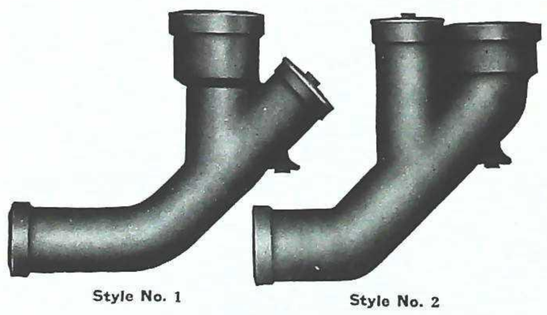
Soil Pipe Trap Covers



No. SP-185

Size In.	Price, Each Standard	Extra Heavy
2	$.25	$.30
3	.30	.35
4	.40	.50
5	.45	.55
6	.55	.65
8	.90	1.05
10	1.30	1.60

Blake Y Fittings



Style No. 1 Style No. 2

With So-Easy-To-Remove Cover

Size	inches	2	4
Price, Standard	each	$3.00	$5.50
Price, Extra Heavy	each	3.00	5.50

With Brass Screw Plug Cover

Size	inches	2	4
Price, Standard	each	$3.00	$5.50
Price, Extra Heavy	each	3.00	5.50

Bar Strainers



No. SP-186

Size In.	Price Each
2	$.10
3	.15
4	.20
5	.25
6	.30

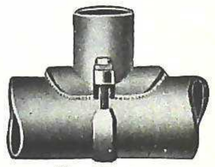
Pipe Hooks



No. SP-187

Size In.	Price Each
2	$.08
3	.11
4	.13
5	.16
6	.20

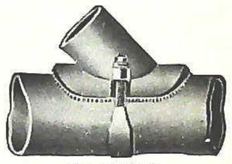
Connolly T Saddle Hubs



No. SP-177

Size In.	Price, Each Std.	Ex. Hy.	Size In.	Price, Each Std.	Ex. Hy.	Size In.	Price, Each Std.	Ex. Hy.
2x2	$.75	$.95	4x4	$.90	$1.10	6x2	$1.00	$1.25
3x2	.80	1.00	5x2	.90	1.10	6x3	1.00	1.25
3x3	.80	1.00	5x3	.95	1.15	6x4	1.00	1.25
4x2	.80	1.00	5x4	1.00	1.25	6x5	1.05	1.30
4x3	.90	1.10	5x5	1.00	1.25	6x6	1.15	1.40

Connolly Y Saddle Hubs



No. SP-178

Size In.	Price, Each Std.	Ex. Hy.	Size In.	Price, Each Std.	Ex. Hy.	Size In.	Price, Each Std.	Ex. Hy.
2x2	$.80	$1.00	4x4	$.95	$1.15	6x2	$1.15	$1.40
3x2	.90	1.10	5x2	.95	1.15	6x3	1.15	1.40
3x3	.90	1.10	5x3	1.00	1.25	6x4	1.15	1.40
4x2	.90	1.10	5x4	1.05	1.30	6x5	1.25	1.55
4x3	.95	1.15	5x5	1.05	1.30	6x6	1.25	1.55

No. D-4 Palmer Sewer Valves

With Hub



Size In.	Price Each	Size In.	Price Each
2	$6.00	6	$10.00
3	6.50	8	15.00
4	7.50	10	30.00
5	9.00	12	50.00

No. D-7 Palmer Sewer Valves



With Handhole and Cover

Size In.	Price Each	Size In.	Price Each
2	$6.00	6	$10.00
3	6.50	8	15.00
4	7.50	10	30.00
5	9.00	12	50.00

No. D-6 Palmer Old Style Valves

For Cast Iron or Tile Pipe



Size In.	Price Each	Size In.	Price Each
2	$1.00	8	$3.80
3	1.20	9	6.00
4	1.60	10	15.00
5	2.20	12	20.00
6	2.40	15	25.00

Hy-Tech Products

Plain Pipe Rests



No. SP-182

Size, In.	Price, Each, Plain Std.	Ex. Hy.
2	$.30	$.40
3	.40	.45
4	.40	.45
5	.75	.90
6	.95	1.15
8	1.75	2.25
10	2.15	3.25

Tapped Pipe Rests



No SP-183

Size...	inches	4	6
Price, Std. ea.		$.75	$1.45
" Ex. Hy. "		.95	...

Sisson Insertable Joints

No. SP-253



Size Inches	Price, Each Std.	Ex. Hy.
2	$1.40	$1.50
3	1.50	1.70
4	1.80	2.00
5	2.10	2.30
6	2.60	2.80
8	....	10.00

With this joint a satisfactory connection can be made when a leak is discovered in a pipe or fitting already connected; or if a new fixture is to be connected with a line of pipes already in.

To install, cut out of soil pipe the length of fitting required to insert plus 11½ inches for this joint. Slip the lead ring over the pipe above and push the joint up as far as possible and drop this joint down. The lead ring will drop into joint and rest upon shoulders. Insert packing.

No. E-251 Cast Iron Plain Closet Bends

With Adjustable Flange



Size Inches	Price Each
4x12	$2.40
4x14	2.50
4x16	2.60

No. 258 Cast Iron Closet Bends

With Two Tappings on Both Sides

With Adjustable Flange

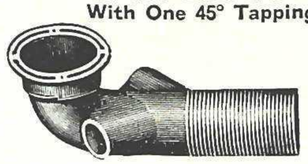


Size Inches	Price Each
4x12	$3.30
4x14	3.40
4x16	3.50

Two tappings on both sides for 1½ or 2-inch iron pipe.

No. 261 Cast Iron Closet Bends

With One 45° Tapping on Each Side And Adjustable Flange



Size Inches	Price Each
4x12	$2.80
4x14	2.90
4x16	3.00

A 45° tapping on each side for 1½ or 2-inch iron pipe.

The Jobber is using his years of experience in selecting and stocking the supplies you need.

Patronize your Jobber

No. 287 Sani-Teed Iron Closet Flanges



Plain iron flange for use in connection with cast iron closet bends and extensions.

Price..... each $1.00

No. 1 Redlon Cast Iron Closet Connections



Made to fit either standard or extra heavy soil pipe. Lead above hub is 4-inch, 8 pound lead 6 inches long and is part of the fitting. This lead can be longer if desired.

Size	inches	4
No. 1	each	$4.50
Full Length	inches	13

No. 2 Redlon Cast Iron Closet Bends

Plain



Made to fit either standard or extra heavy soil pipe.
Lead above hub is 4-inch, 8 pound lead 6 inches long and is part of the fitting. This lead can be longer if desired.

Size	inches	4
No. 2	each	$5.50
End to Center	inches	16

Redlon Cast Iron Closet Bends

With Y Inlet



No. 3, with Left-Hand Inlet



No. 4 with Right-Hand Inlet

Made to fit either standard or extra heavy soil pipe.
Lead above hub is 4-inch, 8 pound lead 6 inches long and is part of the fitting. This lead can be longer if desired.

Size	inches	4
No. 3, with Left-Hand Inlet	each	$6.50
No. 4, with Right-Hand Inlet	each	6.50
End to Center	inches	16

No. 5 Redlon Cast Iron Closet Bends

With Double Y Inlets



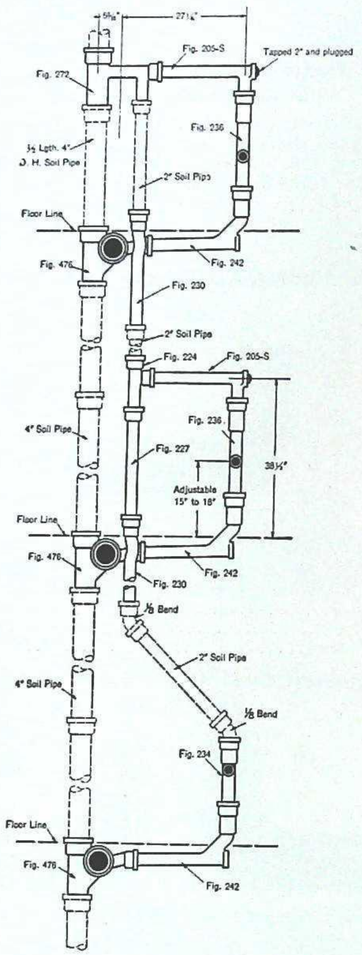
This bend is made to fit either standard or extra heavy soil pipe.
The lead above the hub is 4-inch, 8 pound lead 6 inches long and is part of the fitting. This lead can be longer if desired.

Size	inches	4
No. 5	each	$7.50
End to Center	inches	16

No. 323 Stringer 3-Story Single Cast Iron Bathroom Stacks

With Inside Vent

Simplified Method of Reventing



No.	Quantity	Description	Size Inches	Each	Total
205–S	2	Top Revent	2	$2.40	$4.80
224	1	Intermediate Floor Revent	2x2	2.25	2.25
227	1	Bath and Closet Revent	2	1.00	1.00
230	2	Jumpover	2	3.50	7.00
234	1	Basin Tee with 1½" Inlet	2	2.40	2.40
236	2	Basin Tee with 1½" Inlet	2	3.00	6.00
242	3	Bottom Waste with 2" Inlet	2	2.90	8.70
272	1	End Revent	4x2	3.75	3.75
476	3	Closet Tee	4	4.20	12.60
Stack No. 323, Complete				each	$48.50

All above fittings are extra heavy.

When ordering, state whether closet tees are wanted right or left-hand (illustration shows right-hand).

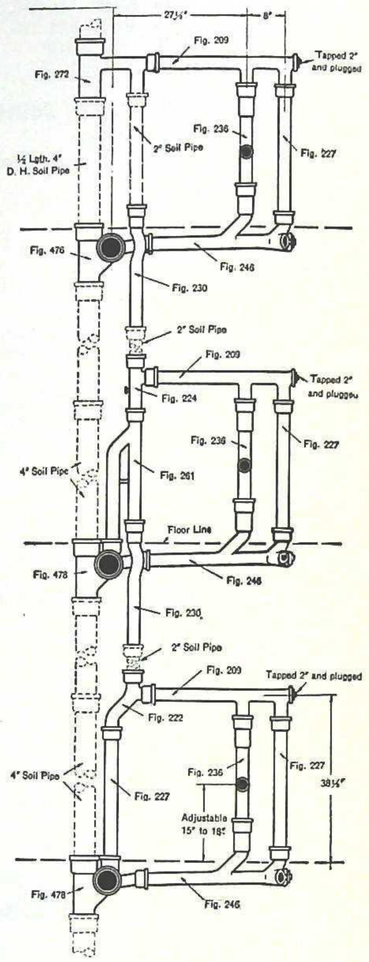
To complete Stack No. 323 add the following material: 1 half length of 4-inch extra heavy d.h. soil pipe; 2 extra heavy ⅛ bends; 3 closet bends; 3 bath traps; necessary 2 and 4-inch extra heavy soil pipe.

NOTE.—No. 242 bottom waste fitting and 205-S top revent bar are made long enough to give a maximum spread between center of water closet and center of lavatory of 27½ inches. They may be cut off to meet any required measurement less than 27½ inches.

No. 328 Stringer 3-Story Single Cast Iron Bathroom Stacks

With Inside Vent

All Fixtures Separately Revent



No.	Quantity	Description	Size Inches	Each	Total
209	3	Top Vent Fitting	2	$2.00	$6.00
222	1	First Floor Revent	2	3.00	3.00
224	1	Intermediate Floor Revent	2x2	2.25	2.25
227	4	Bath and Closet Revent	2	1.00	4.00
230	2	Jumpover Fitting	2	3.50	7.00
236	3	Basin Tee with 1½" Inlet	2	3.00	9.00
246	3	Bottom Waster with 1½" and 2" Inlets	2	3.90	11.70
261	1	Intermediate Floor Revent	2x2	4.20	4.20
272	1	End Revent	4x2	3.75	3.75
476	1	Closet Tee	4	4.20	4.20
478	2	Vented Closet Tee	4x2	4.54	9.08
Stack No. 328, Complete				each	$64.18

All above fittings are extra heavy.

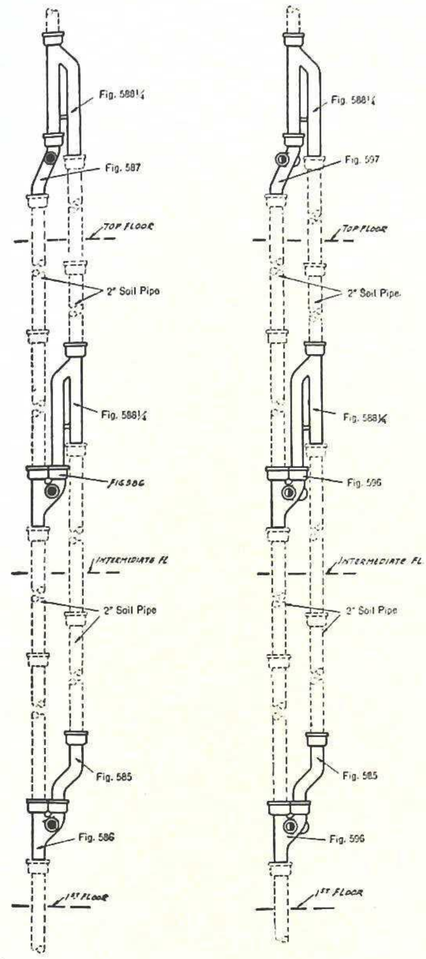
When ordering, state whether closet tees are wanted right or left-hand (illustration shows right-hand).

To complete Stack No. 328 add the following material: 1 half length of 4-inch extra heavy d.h. soil pipe ; 3 closet bends; 3 bath traps; necessary 2 and 4-inch extra heavy soil pipe.

NOTE.—No. 246 bottom waste fitting, and No. 209 top revent bar are made long enough to give a maximum spread between center of water closet and center of lavatory of 27½ inches. They may be cut off to meet any required measurement less than 27½ inches.

Hy-Tech Products

Stringer Cast Iron Sink Stacks



Stack No. 338 Stack No. 339

No. 338 Single Stacks—3-Story

No.	Quantity	Description	Size Inches	Each	Total
585	1	First Floor Vent	2	$1.30	$1.30
586	2	Sink Tee with 2" Vent	2x2x1½	1.80	3.60
587	1	Offset Sink Tee	2x2x1½	1.90	1.90
588¼	2	Intermediate Revent	2x2	3.40	6.80
Stack No. 338, Complete				each	$13.60

When ordering, state whether sink tees and offset sink tee are wanted right or left-hand (illustration shows right-hand).

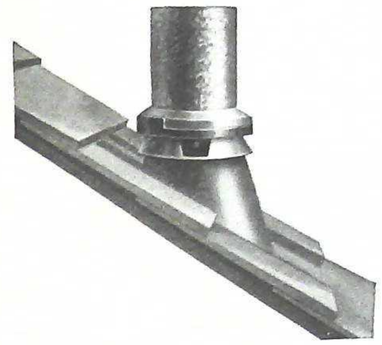
Remainder of stack made up of staple soil pipe.

No. 339 Double Stacks—3-Story Sinks Back to Back

No.	Quantity	Description	Size Inches	Each	Total
585	1	First Floor Vent	2	$1.30	$1.30
588¼	2	Intermediate Revent	2x2	3.40	6.80
596	2	Sink Cross with 2" Vent	2x2x1½	3.60	7.20
597	1	Offset Sink Cross	2x2x1½	2.50	2.50
Stack No. 339, Complete				each	$17.80

Remainder of stack made up of staple soil pipe.

Redlon Adjustable Roof Flanges



Made of heavy sheet copper. Has a soft lead ring for caulking against soil pipe. Makes a perfect joint.

Lower edge of lead caulking ring dresses back against copper after adjustment is made.

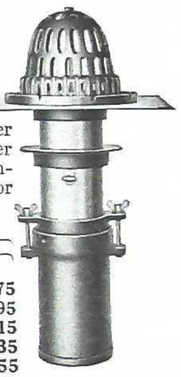
A rivet holds hub in place and will let it tip to fit the roof it is placed on.

Made in 2 angles; flat to 25 and 25 to 45 degrees.

For standard and extra heavy soil pipe.

Size ..... inches	2	3	4
Price ..... each	$4.00	4.00	4.00

Holt Roof Connections



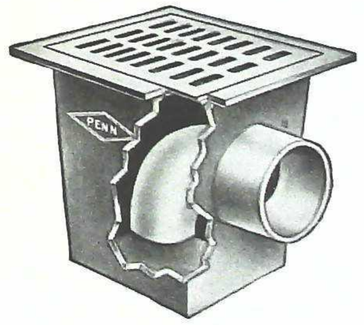
Type 1-G has gravel, 1-S has smooth and 1-M has metal surface.

For wood or concrete roof-deck. Has cast iron strainer, three guard cast iron gravel stop flange-ring, strainer attachment, 16-ounce copper flashing, No. 13 S. W. G. seamless copper pipe with roof lock fittings and expansion joint with spigot end or tapped for iron pipe.

Roof Thickness Inches	Length Connection Inches	Price, Each — For Drain Pipe, Inches 3	4	5	6
1	10	$14.00	$15.00	$18.25	$21.75
1–3	12	14.60	15.70	19.15	22.95
3–5	14	15.20	16.40	20.05	24.15
5–7	16	15.80	17.10	20.95	25.35
7–9	18	16.40	17.80	21.85	26.55

These connections made in various styles.

No. 596 Penn Sand or Garage Traps



This trap prevents sand and other solid matter from entering the drainage system and allows liquid waste to drain freely.

Waste inlet slips into position, no bolts, can be easily lifted out. Hub end integral with trap.

Specially recommended for garages, stables, dairies, etc.

Size 12½x14x13 inches deep.

Price, No. 596 ..... each $22.00

Series 100 Josam Double Drainage Floor or Shower Drains

All Brass

An all brass drain designed for use in cement, tile, terrazzo, mosaic, mastic or other composition floors. Does not have adjustable strainer.

For use in residences, hotels, schools, institutions and public buildings where lack of floor depth will not permit use of trap.



No.	Strainer Inches	Outlet Inches	Price Each
121½	2½	1½	$6.55
122	2½	2	7.05
132	3	2	7.65
133	3½	3	8.80
143	4	3	10.35
154	5	4	12.05

Made with either male or female threaded outlet.

Series 300 Josam Double Drainage Floor Drains

Without Trap



Adapted for floors of marble, tile, cement, or any composition where the construction will not permit, or where it is not desirable to place trap in same. This drain outlet can be used and an independent trap placed wherever the construction will permit. It has a cast iron body and adjustable brass strainer.

Strainers concave, convex or flat. Drain furnished with male or female threaded outlet or for slip caulked joint.

No.	341½	342	353	364
Strainer ..... inches	4	4	5	6
Outlet ..... "	1½	2	3	4
Price ..... each	$5.70	6.20	8.35	10.00

Series 3000 Josam Double Drainage Drains

With Adjustable Double Eccentric Bushings



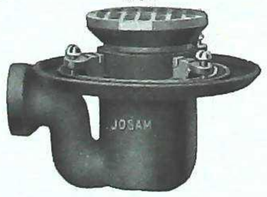
The double eccentric bushings correct distortions or irregularities in receptors when they will not meet with roughed-in connections. They can be so adjusted in relation to each other and the body of the drain that a variation of 1⅜ inches in any direction can be readily compensated. The drain proper has a high body on which the fixture rests, permitting ample clearance for easy operation of the eccentric bushings. Collar, strainer and bushings are of brass. Flange of strainer is feather-edged or beveled.

No.	Strainer Inches	Outlet Inches	Price Each
3042	4½	2	$9.35
3043	4½	3	$10.35

Price, Either No. 3042 or 3043 with 2-Inch Vent.. extra $1.00

Series 2000A Josam Shower or Floor Combined Drain and Trap

Double Drainage Shallow Type



A specially designed drain for shallow floors where construction will not permit installation of a deeper trap.

It has a cast iron body with adjustable brass strainer, polished or nickel-plated finish. Provided with new type flashing ring and clamping device.

Type No.	Outlet Hub or Screw, In.	Strainer Inches	Price Each	Type No.	Outlet Hub or Screw, In.	Strainer Inches	Price Each
2042A	2	4½	$14.35	2043A	3	4½	$17.35
2052A	2	5	14.35	2053A	3	5	17.35
2062A	2	6	15.50	2063A	3	6	18.50

Furnished with galvanized or brass bodies at extra cost.

Series 200A Josam Double Drainage Trap and Drain

For shower, urinal and floor drains for concrete, tile, marble or any composition floors. Has brass strainer. Collar screws into body of drain and is adjustable to suit floor level. If with flashing clamping device as shown, add $1.00 to list.

No.	Strainer Inches	Outlet Inches	Price Each
241½A	4	1½	$11.50
251½A	5	1½	12.00
242A	4	2	11.85
252A	5	2	12.35
261½A	6	1½	12.50
262A	6	2	13.50
253A	5	3	15.35
263A	6	3	16.50
264A	6	4	19.50
274A	7	4	20.65
284A	8	4	21.80



Series 900G Josam Garage and Industrial Floor Drains

With Cleanout Plug

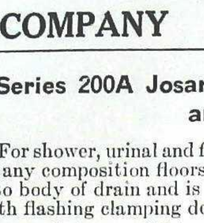


For garage and industrial plant floors. Furnished with iron sand bucket and gas seal cone. Diameter of brass cleanout plug 2 inches larger than drain outlet. Grate, 14 inches. Outlet, 4 inches.

No.	Slab In.	Price Each	No.	Slab In.	Price Each
910G	4	$58.00	940G	10	$76.00
920G	6	66.00	950G	12	81.00
930G	8	71.00	....	..	....

If without Sand Bucket, Deduct	each	$10.00
If without Gas Seal Cone, Deduct	each	6.00
For Brass Back Water Valve, Add	each	5.00
For Polished Brass Rim and Grate, Add	each	23.70

Cast Brass Bell Trap Cesspools

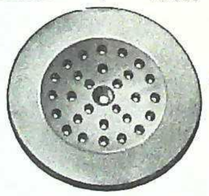


No. 208, Plain



No. 210, Threaded

Size Inches	Outlet Inches	No. 208, Plain Outlet — All Brass — Pol. Top	No. 208, Plain Outlet — All Brass — N.P. Top	No. 208, Plain Outlet — Iron Body Brass Strainer and Top — Pol. Top	No. 208, Plain Outlet — Iron Body Brass Strainer and Top — N.P. Top	No. 210 Threaded Outlet Add
6x 6	2	$3.70	$4.20	$2.00	$2.50	$.40
9x 9	3	6.50	7.50	3.50	4.50	.60
12x12	4	10.00	11.00	6.50	7.50	.80

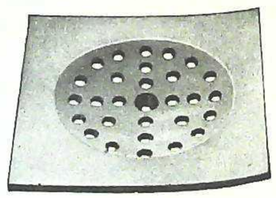


No. 225 Round Cesspool Plates

Size In.	Price, Each Reg.	Price, Each With Bars	Size In.	Price, Each Reg.	Price, Each With Bars
4	$.20	$.20	9	$.70	$.65
5	.25	.25	10	.80	.80
6	.30	.35	11	1.00	.90
7	.40	.45	12	1.20	1.10
8	.60	.55	..	....	....

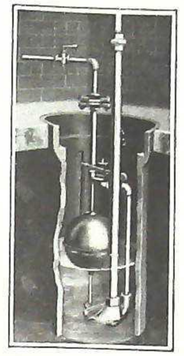
No. 226 Square Cesspool Plates

Size Inches	Price Each	Size Inches	Price Each
4	$.20	10	$1.00
5	.25	11	1.30
6	.35	12	1.50
7	.45	14	1.85
8	.75	16	2.30
9	.85	..	....



Hy-Tech Products

New Model Climax Cellar Drainers



In this drainer live water runs through a bronze gauze strainer of large diameter. Dead water runs through a self-purging strainer with no clogging and no lessening of lifting efficiency.

Ball float is made of copper, runs on a vertical guide, and is always in perfect alignment.

Valve operating lever is simple in construction and positive in action.

Ejector point is a true venturi placed in a vertical position for free flow.

Base is made of heavily galvanized iron—corrosion proof.

There should be no sharp angle fittings in the discharge pipe. Maximum lifting performance through a gradual bend in the pipe. A minimum of live water will lift an absolute maximum of seepage.

Will easily fit a 12-inch drain pipe—terra cotta preferred. It is quickly, easily, and correctly installed.

One drainer point operates on either high or low pressure.

Size Inches	Each	Water Pressure Pounds	Gallons per Hour 3-Foot Lift	Gallons per Hour 9-Foot Lift	Supply Pipe Inches	Discharge Pipe Inches
1	$25.00	20	280	62	½	1
		80	700	550		
2	40.00	20	520	190	¾	1¼
		80	1180	1090		
3	55.00	20	610	270	1	1½
		80	1510	1230		
4	80.00	20	820	430	1¼	2
		80	2240	1610		
5	110.00	20	1140	520	1½	2½
		80	2910	2430		
6	160.00	20	1460	700	2	3
		80	3820	2760		

Model R Penberthy Automatic Cellar Drainers



The Penberthy Automatic Cellar Drainer is of distinct service for installations such as office buildings, residence or factory basements, sumps, tanks, settling basins, flywheel, elevator, coal and scale pits or wherever it is desired to remove seepage, flood or back water from point below the natural drainage level of sewer.

No. 1 has ½-inch supply and 1-inch discharge; No. 2 has ¾-inch supply and 1¼-inch discharge.

The Model R drainer requires 5-pound water pressure or more for each 1 foot of elevation, while the low pressure drainer will work on 2 to 4-pound per foot of elevation which can be supplied.

Pit should be placed so that all surplus water will drain to it.

No.	Working Head Ft.	Maximum Net Capacities from Sump at 10 to 100 Pounds Water Pressure — Gallons per Hour 10	15	20	25	30	40	60	80	100	Price Each
1	3	80	210	300	340	400	510	700	720	700	$25.00
	6	...	90	140	240	300	390	570	670	690	25.00
	9	...	...	90	150	210	330	480	620	660	25.00
	12	...	...	...	100	150	220	390	550	630	25.00
	15	...	...	...	...	90	190	300	450	600	25.00
	18	...	...	...	...	...	120	250	320	550	25.00
2	3	190	390	550	620	750	910	1180	1240	1220	40.00
	6	...	210	340	420	600	750	1020	1140	1200	40.00
	9	...	...	210	300	380	540	900	1090	1150	40.00
	12	...	...	...	210	300	420	780	1020	1110	40.00
	15	...	...	...	...	210	370	570	940	1050	40.00
	18	...	...	...	...	...	300	510	850	970	40.00

Price, No. 1, Non-automatic ..... each $15.00
" " 2, " ..... " 25.00

Penberthy Automatic Electric Sump Pumps



Model 1E

In spite of our efficient municipal sewerage systems, there are numerous places where water accumulates by seepage, overflow, flood or backing up, that cannot be drained off directly, either because the flow line of the sewer is not deep enough or because obstacles intervene between the sump and the sewer.

To keep such places dry, the incoming water is most economically disposed of either by an automatic hydraulic cellar drainer (water operated) or an automatic electric sump pump (electrically operated). Local conditions determine which is preferable.

The electric sump pump necessarily costs more than the hydraulic pump, but its greater cost may be more than returned if large quantities of water are to be handled economically.

The light, compact character of the electrical unit makes it ideal as a portable contractors' pump, to be used in excavations or to dry up a pipe line ditch just ahead of the pipe-laying crew.

Conditions favoring the electric pump are:

For districts where city water pressure is not available, or at least very low.

Larger quantities of seepage water are to be handled.

Discharge heads up to 20 feet.

Low cost of operation.

The automatic electric sump pump is set in a floor sump which can be conveniently made by sinking a piece of 15 or 18-inch sewer crock 2 feet long with the bell at the floor level. Cementing up the bottom prevents undercutting and settling of the crock and protects the pump from loose dirt. A cover is desirable to keep out dirt and refuse and can be constructed from almost any material.

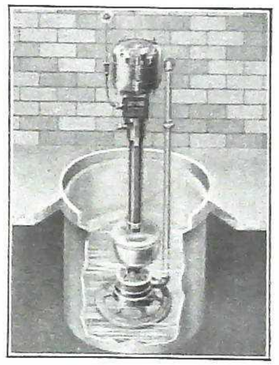
The pump outlet is piped to the nearest sewer or surface outlet.

The motor switch cord is plugged into the nearest plug or light socket and the pump is ready for operation.

There are no projecting arms or delicate parts to require special supports or protection.

The entire unit is so simple as to require no previous experience for installation.

The pump is all bronze throughout, except motor, which is connected to the Tobin bronze fully inclosed impeller shaft by flexible couplings. There are no gears, vibrations or lost power.



Model 2E

The pump is of the centrifugal type with high efficiency, machined bronze open balanced impeller of Penberthy design. It is powerful enough to raise water 18 to 20 feet. The pump is submerged and always primed.

Model No. 1E is equipped with 1/15-h.p. universal type motor for 25-60 cycles, 105-120 volts a.c. or d.c. Ball thrust bearings, moisture proof, self lubricating and fully guaranteed against defective workmanship for one year.

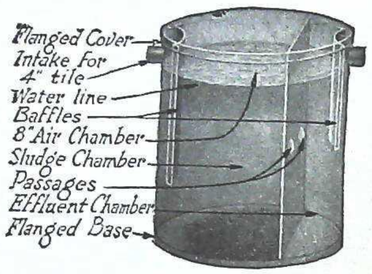
Model No. 2E is equipped with a ¼-h.p. General Electric repulsion induction type motor, 110-220 volts. It has ball thrust bearings.

Motors can be furnished to suit any current characteristics.

Both models are equipped with a special mercury type switch of exceptionally rugged construction.

Model No.	Each	Pipe Connection Inches	Approx. Discharge Capacity — Gallons per Hour — Lift, Feet — 5	10	15	20	Shipping Weight Pounds
1E	$65.00	¾	900	700	500	250	48
2E	100.00	1	2000	1700	1100	500	98

San-Equip Septic Systems



The San-Equip Septic enables the plumbing dealer to complete each unsewered job with an adequate sewage disposal system. It provides health protection and dependable service, making modern plumbing conveniences possible in unsewered areas.

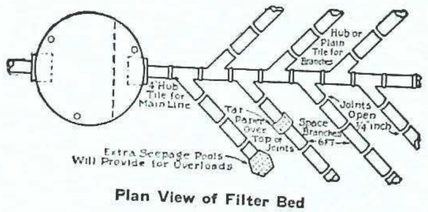
The septic process, simply stated, is a digestion of sewage by which solids are eliminated and final disposal simplified. The treated sewage must be disposed of by soil filter or seepage pool.

The San-Equip Septic is designed following U. S. Public Health Service recommendations. Now improved by larger baffles, channel iron reinforcement around the top, and full partition, making 2 distinct chambers. Nos. 402 and 403 are upright tanks; larger sizes are horizontal type with 2 or more manholes.

Special rust-resisting copper bearing iron, protected from moisture, acids and soil by a heavy enamel of mineral asphalt, is used in San-Equip construction to assure maximum durability. Nos. 402 to 405 inclusive, 14 ga.; Nos. 410 and 915, 12 ga.; larger sizes 3/16-inch plate.

Special plans for larger San-Equip Septic Systems will be furnished upon request.

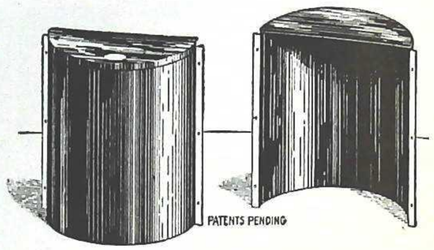
No.	Working Capacity Gallons	No. of People Home	School	Factory	Dimensions	Net Weight Pounds	Price Each
402	200	7	15	12	38″x48″	265	**$36.00**
403	300	10	25	20	48″x48″	350	**48.00**
405	500	25	40	35	52″x60″	425	**84.00**
410	1000	50	80	70	52″x10′	925	**164.00**
915	1500	75	120	105	52″x15′	1300	**244.00**
920	2000	100	165	140	69″x11′8″	2400	**328.00**
925	2500	125	210	175	69″x14′7″	2850	**408.00**
930	3000	150	250	200	69″x17′6″	3300	**488.00**
935	3500	175	290	235	69″x20′5″	3750	**568.00**
940	4000	200	330	270	69″x23′4″	4200	**648.00**
945	4500	225	370	305	69″x26′3″	4650	**728.00**
950	5000	250	410	340	69″x29′2″	5100	**800.00**



Plan View of Filter Bed

Materials needed for filter field are hub tile for a tight main line; hub or plain tile for branches which are laid 6 feet apart. In porous soil 20 feet per person should be used, 30 to 40 feet in tight soil. Joints should be covered with tar paper. Tile should be laid in stone filled trench if unfavorable filter conditions exist. Tank should be 12 to 18 inches underground. Tile lines should be graded 1 inch to 10 feet.

San-Equip Drain Pools



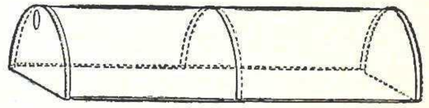
Efficient septic drainage is equally as important as correct septic tank operation in assuring complete sewage disposal. The San-Equip Drain Pool meets a real need for a better, standardized method of drainage. A scientifically designed seepage pool that facilitates the completion of every septic installation. More satisfactory than ordinary home-made equipment. Easier to install, with a saving of labor and materials. Single system consists of 2 sections. Multiple systems for larger installations may be planned with a series of drain pool units. Plan sheets on larger systems will be furnished on request.

No. 240DP is the complete drain pool. Made of 14-gauge copper-bearing iron, completely rust-proofed by mineral asphalt. Shipped in 2 sections, nested. Easily assembled.

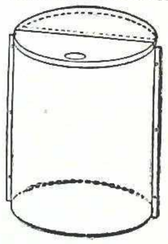
No. 120 SDP is a section without ends which can be added as required to assembly No. 1 to serve larger septic systems. Total capacity for ordinary soil should be practically the same as septic tank capacity.

	240DP	120SDP
No.		
Each	**$20.00**	**8.00**
Capacity ..... gallons	240	120
Weight ..... pounds	180	70

Assembly No. 1



Assembly No. 1 should be used wherever possible. No. 240DP makes open bottom pool 19 inches deep, 38 inches wide, 96 inches long, providing 25 sq. ft. of soil drainage. In average soil this is considered sufficient for 200 or 300-gallon septic systems. No. 120SDP sections can be added for larger systems.



Assembly No. 2

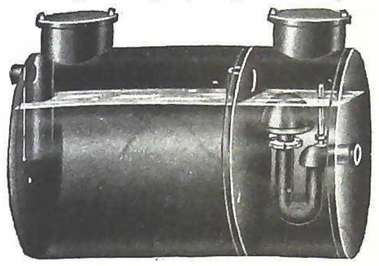
Assembly No. 2 makes upright pool 38 inches in diameter and 48 inches deep with approximately 9 sq. ft. of soil drainage.

Capacity equals average seepage pool. For use only where drainage conditions are favorable and disposal area is limited.

In our Engineering Department, as a part of our Service, there is a corps of experienced and highly trained specialists whose duty it is to assist customers when such help is desired.

Hy-Tech Products

San-Equip Siphon Septic System



This system provides for the intermittent discharge of the effluent to the filter bed or seepage disposal, allowing intervals of rest which improve the condition of the absorption field and reduce the possibility of overloading or clogging. It incorporates the septic process and the siphon discharge in one unit—easily handled and installed—no assembling of parts and no extra connections to make.

The Siphon unit is fully assembled within tank, and is easily accessible for inspection. Each tank has 2 or more manholes, large capacity baffles, set-in collars with stop lug and full partition, making 2 distinct chambers.

Made of rust resisting copperoid iron, protected from moisture, acids or soil by heavy coating of pure mineral asphalt melted on inside and outside.

No.	Net Gal.	Siphon Discharge Gal.	No. of People Home	School	Factory	Dimensions In.	Ship. Wt. Lbs.	Price Each
703	240	60	7	15	12	48x48	400	**$76.00**
705	350	80	12	25	25	52x60	495	**112.00**
707	550	120	25	50	40	52x90	695	**156.00**
710	750	160	40	75	60	52x120	1025	**196.00**
715	1125	225	70	110	95	52x180	1375	**272.00**
720	1500	300	85	155	130	69x140	2475	**368.00**
725	1875	375	115	200	170	69x175	2975	**448.00**
730	2250	450	140	245	200	69x210	3425	**528.00**
735	2625	525	170	290	235	69x245	3875	**608.00**
740	3000	600	195	330	270	69x280	4325	**688.00**
745	3375	625	220	370	305	69x315	4775	**768.00**
750	3750	750	250	410	340	69x350	5225	**840.00**

San-Equip Drain Tile



Patents Pending
No. 424

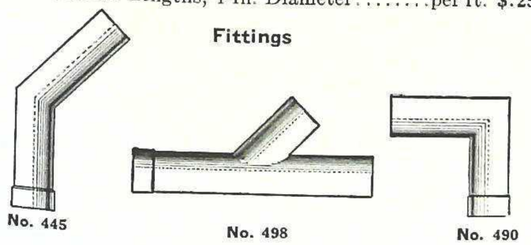
San-Equip Tile is an improved, unbreakable drain tile designed primarily for septic drainage field use. It assures better drainage, lays easier and functions longer than ordinary tile.

Made of rust-resisting 16-gauge copper-bearing iron, protected by mineral asphalt. Special perforations allow 12 to 20 times more seepage per foot. Costly breakage is eliminated. Tight joints maintain alignment and prevent seepage of dirt into tile.

San-Equip Drain Tile is also valuable for golf courses, airports, athletic fields or wherever the ground must be kept hard and dry.

No. 424, 24-In. Lengths, 4-In. Diameter ..... per ft. **$.25**

Fittings



No. 445 — No. 498 — No. 490

45-Degree Angle Fittings

No. 445, Size 4x12x12 Inches ..... each **$.50**

Single Y Fittings

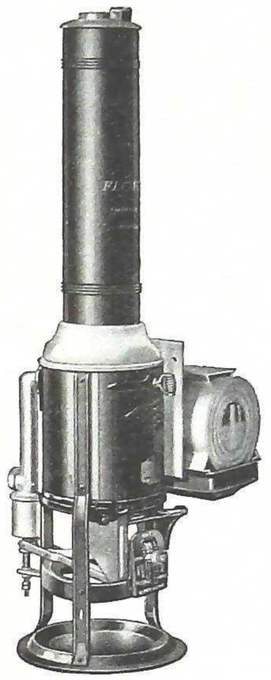
No. 498, Size 4x24 Inches ..... each **1.00**

90-Degree Angle Fittings

No. 490, Size 4x12x12 Inches ..... each **.50**

No. W11 New Florence Automatic Water Heaters

For Oil Burning



The New Florence 1-Burner Water Heater with thermostatic control is an oil burning heater and is fully automatic. It completely runs itself indefinitely and maintains a full tank of hot water at all times.

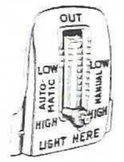
The thermostat consists essentially of the well-known copper bellows which can be subjected to millions of expansions and contractions with no signs of wearing.

Welded to the bellows is a long cylindrical stem, filled with a large amount of inert liquid and a minute quantity of low-boiling liquid.

The raising and lowering of the burner bowl (hence the regulating of the flame) is controlled automatically by the temperature of the water in the boiler.

With the burner lighted, the lever and burner bowl are in high flame positions. The burner is operating at full flame, maximum capacity. It continues at full heat until all water in the boiler is hot.

Hot water from the boiler then circulates through the intake pipe causing the volatile (low-boiling) liquid in the thermostat stem to boil and vaporize. This vapor or steam presses against the inert liquid (which has a higher boiling point) and expands the copper bellows.



Indicator Plate

A simple system of levers connects the copper bellows and the burner bowl. The expanding copper bellows pushes against these levers and gradually raises the burner bowl, through medium flame position to pilot flame position. As the burner bowl is raised the flame is lowered, the heat is lessened.

At pilot flame the burner operates at minimum capacity, just enough to maintain the temperature of the full tank of hot water. This condition remains as long as no hot water is used.

When hot water is drawn, cold water enters the intake pipe and cools the low-boiling liquid in the thermostat stem. The copper bellows contracts and the burner bowl is gradually lowered, through medium to high flame position.

Again the powerful burner heats the full boiler of water. Again the bellows expands and the burner bowl rises to the pilot flame position. This cycle is repeated indefinitely.

No attention required, except occasional filling of the oil tank and renewing the kindler.

When desired, the No. W11 can be run as an automatic shut-off water heater.

It can also be operated entirely by hand like any ordinary water heater.

Width, including oil tank, 18 inches. Depth, 16½ inches; height, 41 inches. Floor space required, 19½x17 inches.

Net weight, 38 pounds; crated weight, 57 pounds.

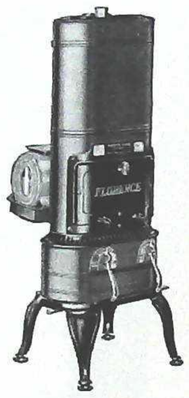
Price, No. W11 ..... each **$48.00**

Florence Oil-Burning Water Heaters

No. W1, 1-Burner—No. W21, 2-Burner



No. W1



No. W21

Florence Heaters supply all the hot water needed quickly and easily and at a few cents a day.

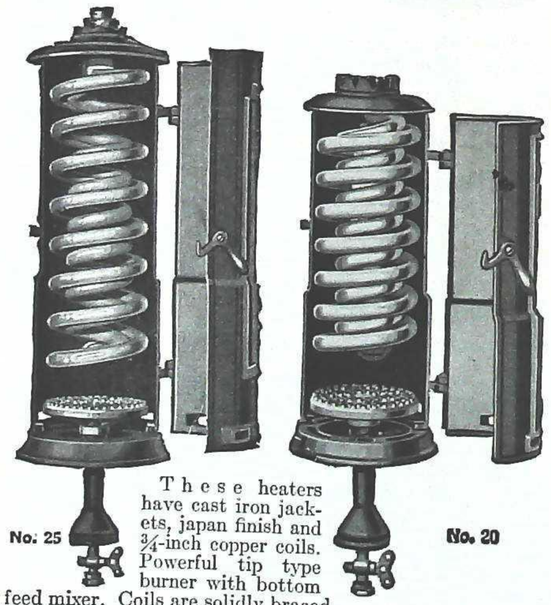
In the 1-burner heater the oversized 15-inch burner focuses its intense heat close-up to 20 feet of ⅝-inch copper tubing. The 2-burner heater has 2 standard Florence burners that focus their flames directly onto 28 feet of ½-inch copper tubing.

The preheating water chambers thoroughly pre-heat the water before it enters the coils. Heaters can be hooked-up with any 30-gallon range boiler, vertical or horizontal, as an independent unit or an auxiliary to furnace or range.

No.	Dimensions, Inches: Width	Depth	Height	Floor Space Required, In.	Ship. Wt. Lbs.	Price Each
W1	*19	15	41	19½x16½	48	**$25.00**
W21	17	*18½	39	20 x17	71	**35.00**

*Including oil tank.

Hotstream Double Copper Coil Gas Heaters



No. 25 No. 20

These heaters have cast iron jackets, japan finish and ¾-inch copper coils. Powerful tip type burner with bottom feed mixer. Coils are solidly brazed.

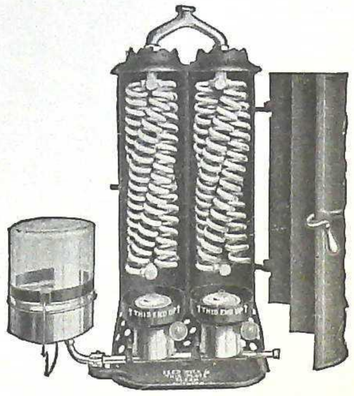
Gas connections ½ inch; water ¾ inch; flue **3 inches.**

Also made with cast iron jackets enameled in either grey or blue. Also furnished with side feed mixer.

No.	Diam. Inches	Height Inches	Capacity Gallons	Weight Pounds	Price Each
20	7	18	30–40	30	**$8.70**
25	7	23	40–52	40	**11.30**
30	7	23	40–66	42	**12.10**

No. 5-60K Holyoke Twin Water Heaters

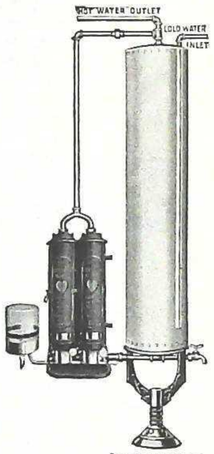
For Kerosene



The shell of this heater is of cast iron, made in three parts—front, back and cap. A cast iron plate supporting the burner is fitted to the base.

The coils are so constructed that the hot gases strike the heating surface many times before entering the vent, thus utilizing heat which would go to waste. They are easily cleaned with a small stiff brush.

The burner of the new improved blue flame wick type can be regulated instantly and positively, and has a practically odorless combustion. It is attached with a swivel to the cast iron plate. The burner, attached in this manner, may be swung out from under the coils and care of it simplified. This is a new and important feature.



Installation

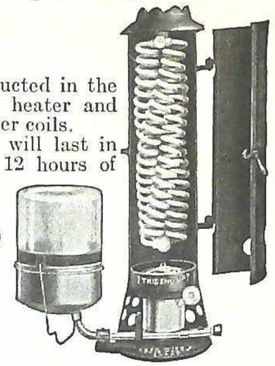
The heating surface of the twin heater consists of eight seamless copper coils, 7/16 inch in diameter and 8 feet long, all ends being brazed into bronze metal manifolds. The coils are tested under 250 pounds cold water pressure.

This illustration shows the proper method of connecting this heater to tank, using the Holyoke Twin Connections which are furnished with heaters.

Cap. of Tank.....gal.	30–60
Size of Shell.....in.	6x12
Size of Base.....in.	8x13
Height.....in.	28¼
Space Required.....in.	9x22
Approximate Shipping Wt. .....lbs.	90
Price No. 5-60K .....each	$54.00
Price Twin Connection, Only.....each	.....

No. 4-30K Holyoke Single Water Heaters

For Kerosene



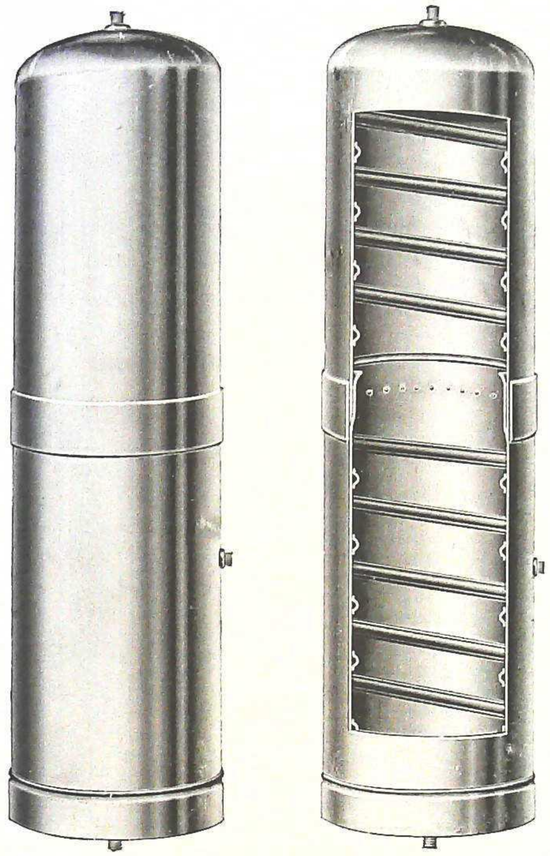
The single heater is constructed in the same manner as the double heater and contains 30 feet of heavy copper coils.

One gallon of kerosene oil will last in the single heater for about 12 hours of continuous burning.

Cap. of Tank.....gal.	20–40
Diam. of Shell.....in.	6
Diam. of Base.....in.	8
Space Required.....in.	9x17
Height.....in.	28¼
Approximate Shipping Wt.....lbs.	55
Price, No. 4-30K. each	$30.00

Hy-Tech Products

Brown & Bros. Seamless Drawn Copper Range Boilers



Made of the best quality copper, tinned on the inside.

Regular pressure boilers tested to 200 pounds water pressure, extra heavy tested to 300 pounds water pressure.

These boilers should not be installed without a relief valve set at the lowest pressure consistent with operation.

For 30, 35 and 40-gallon sizes, if made horizontal, or different in any way from standard boilers, add $5.00 to list price. On sizes 50-gallon and larger, horizontal same price as vertical.

Boilers 12, 14 and 16 inches in diameter have ¾-inch iron pipe size male couplings unless otherwise ordered, and 20 and 24-inch boilers have 1-inch iron pipe size couplings unless otherwise ordered.

Boilers can be furnished with high-low side connections without extra charge.

Connections in excess of four are charged extra.

Improved construction. Guaranteed not to collapse.

Cap. Gallons	Diam. Inches	Height Inches	Price, Each: Regular Pressure	Extra Heavy Pressure	Boxing Net Extra
30	12	60	$65.00	$85.00	$2.00
35	14	53	75.00	95.00	2.00
40	14	60	85.00	105.00	2.25
50	16	60	140.00	170.00	2.50
60	16	70	160.00	190.00	2.50
*80	20	44	210.00	250.00	3.50
80	16	96	200.00	240.00	3.50
100	20	59	250.00	290.00	3.50
100	20	76	300.00	350.00	5.00
120	24	60	325.00	375.00	5.00
125	24	65½	350.00	400.00	5.50
150	24	69	360.00	410.00	6.00
180	24	78½	400.00	450.00	7.00
200	24	92½	450.00	510.00	7.00
†250	24	103	530.00	600.00	7.50
†300	24	129	675.00	750.00	10.00
	24	155	800.00	875.00	12.50

*Horizontal. †Furnished on special order only.

Riverside Copper Range Boilers



Hilowtap Boiler with Thermostat Tapping

Massachusetts Regulations

The shell is of the finest quality lake copper. The head and bottom are both riveted with large machine-driven copper rivets. The concave copper bottom is reinforced outside with a heavy steel bottom. Hot water is only in contact with copper.

All inside surfaces are thoroughly tinned and shell is reinforced inside with hardened brass rings. All boilers are polished and then lacquered.

These boilers are well crated for shipment, at no extra charge.

Furnished in 200, 250 and 300-pound test, as follows:

200 Lbs. Test.—Stamped 200 lbs. test, 85 lbs. w.p. (outside of Massachusetts can be used for 100 lbs. w.p.).

250 Lbs. Test.—Stamped 250 lbs. test, 106 lbs. w.p. (outside of Massachusetts can be used for 125 lbs. w.p.).

300 Lbs. Test.—Stamped 300 lbs. test, 127½ lbs. w. p. (outside of Massachusetts can be used for 150 lbs. w.p.).

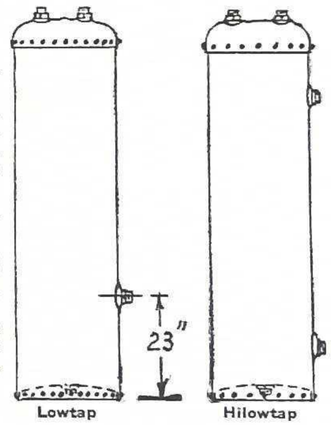
Openings in 3 styles: Lowtap, Hilowtap, and with thermostat tapping, so plumber can make up an automatic storage system with side arm heater.

Couplings for Lowtap 30 and 40-Gallon Boilers.—4 couplings regularly furnished, 3 straight and 1 bent, ¾-inch i.p. male. On request, 1½-inch i.p. female or ¾-inch fine thread female, 2 straight and 2 bent, can be furnished. Lowtap boilers have 2 openings in head, 1 in bottom and 1 on side, 23 inches up from bottom.

Couplings for Hilowtap 30 and 40-Gallon Boilers.—5 couplings regularly furnished, all ¾-inch i.p. male, 4 straight and 1 bent. On request, ½ inch i.p. female or ¾-inch fine thread female will be furnished, 3 straight and 2 bent.

Tappings on Boilers 50 Gallons and Over.—On 50 to 125-gallon inclusive, all openings are female tappings, 1-inch i.p.; 150-gallon tapped 1-inch female on top, 1½-inch side and bottom. No couplings furnished.

Thermostat Tapping.—Hilowtap boilers will be furnished with a 1-inch female spud for thermostat at extra cost above Hilowtap price. This opening is 18 inches up from bottom of boiler at 90° to the left of side openings.



Lowtap Hilowtap

Cap. Gal.	Each: 200-Lb.	250-Lb.	300-Lb.	Size In.	Persons	Ship. Wt., Lbs.: 200-Lb.	250-Lb.	300-Lb.
30	$56.00	$60.00	$71.00	12x60	3	85	87	90
40	74.00	80.00	94.00	14x60	4	108	112	116
50	90.00	100.00	113.00	16x60	5	146	157	162
60	118.00	129.00	145.00	18x60	6	185	190	195
80	149.00	166.00	185.00	20x60	7–8	220	229	240
100	200.00	228.00	274.00	22x60	9–10	268	276	284
125	224.00	242.00	287.00	24x60	12–15	312	322	335
150	269.00	289.00	350.00	24x72	15–20	370	385	400

Galvanized Range Boilers

Vertical or Horizontal



Vertical

Standard and extra heavy galvanized range boilers. Working pressure, standard, up to 85 pounds; extra heavy, up to 150 pounds.

Approx. Capacity Gallons	Diam. Inside of Shell Inches	Length of Shell Feet	Price, Each Standard or Extra Heavy
18	12	3	$14.50
24	12	4	15.75
30	12	5	19.00
32	14	4	21.00
40	14	5	24.00
42	16	4	26.00
52	16	5	31.00
66	18	5	38.00
82	20	5	45.50
100	22	5	63.50
120	24	5	72.50
144	24	6	103.00
192	24	8	132.00

These range boilers have five 1-inch tappings as follows: One side tapping 6 inches from the top; one 6 inches from the bottom, (measurements to be made from the edge of the shell plate); two tappings in the top and one in the bottom.

For all openings in excess of these, an extra charge will be made as follows:

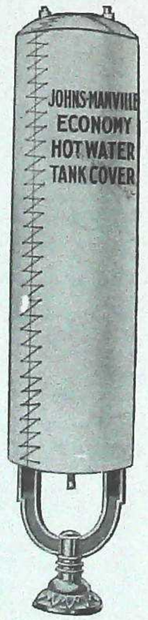
Size Inches	Price Each	Size Inches	Price Each
1	$.25	2½	$1.00
1¼	.25	3	1.50
1½	.50	4	2.00
2	.75	...	....

Standard weight boilers will be shipped unless otherwise specified on order.

Johns-Manville Economy Range Boiler Covers

This cover is especially recommended for use under conditions requiring maximum heat economy, such as on storage tanks of electrically heated or gas heated water systems. Its use will also provide great economies in coal or oil fired systems.

Standard 1, 2, and 3-ply Economy Range Boiler Covers are made for tanks or boilers heated by coal, outside circulation electrical systems, gas or oil heaters. Constructed of either 1, 2, or 3 layers of felt, each of which is covered with muslin and quilted. Thickness of each felt is 1 inch. A finish cover of heavy canvas is supplied, with brass eyelets and cord for lacing.



One-ply thickness is usually sufficient where fuel is cheap, but for any electrical system a 2-ply cover is needed, and in cases where fuel is particularly expensive or where it is desirable to maintain the high temperature of the water for considerable periods, a 3-ply cover should be used.

Prices for 2 and 3-ply covers upon application.

To obtain maximum efficiency, all hot water pipes should also be insulated.

Tank Cap. Gal.	Diam. In.	Ht. In.	Price 1-Ply Each	Tank Cap. Gal.	Diam. In.	Ht. In.	Price 1-Ply Each
18	12	36	$27.00	66	18	60	$59.00
24	12	48	41.00	79	18	72	62.50
24	14	36	41.00	82	20	60	62.50
30	12	60	41.00	88	20	72	66.00
36	12	72	45.00	100	22	60	66.00
36	14	54	45.00	120	22	72	73.50
40	14	60	45.00	120	24	60	73.50
48	14	72	52.50	144	24	72	78.50
52	16	60	52.50	168	24	84	86.00
63	16	72	59.00	192	24	96	93.00

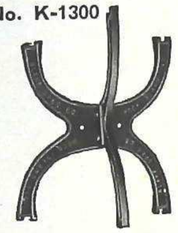
No. 1720 Ring Adjustable Boiler Stands



Size Ring In.	For Boiler Gal.	Price, Each Plain	Price, Each Galv.	Size Ring In.	For Boiler Gal.	Price, Each Plain	Price, Each Galv.
12	18–30	$1.25	$2.50	20	82– 98	$3.00	$6.00
14	35–40	1.40	2.80	22	100–120	3.50	7.00
16	42–52	1.75	3.50	24	120–192	4.00	8.00
18	53–79	2.50	5.00	..	.....	....	....

Blake Tripod Range Boiler Stands

No. K-1300



This stand requires no adjustment. Is reversible for 30 and 40-gallon boiler.

Easily knocked down and formed into a handy package.

Weight, 6 lbs.

Prices upon application.

Stack Nonbipas Valves



Adds greatly to the service value of every gas water heater. Insures full delivery of full service of the heater.

Cold water cannot pass through the Nonbipas Valve via the heater. Stops condensation.

Price ..... each $1.50

Ampinco Range Boiler Tubes



Furnished complete with vent, ready for installation.

Outside diameter, ⅝ inch. Has ½-inch iron pipe size bushing; unfinished.

Price ..... each $1.10

Universal Taco Water Heaters

This heater sets flush against the fire-pot wall and leaves no space to cause the fire to burn out around the heater. It has no projections to hold ashes or clinkers and does not interfere with efficient firing.



No. 6-9-30

Nos. 6-9-30 and 6-9-60 are for round boilers with coil openings 6, 9 or more inches center to center.

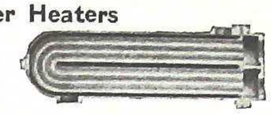
Extra bottom tapping accommodates distances greater than 9 inches or can be used as cleanout. All tappings are 1 inch.

Made of malleable iron and tested to 250 pounds pressure.

No.	Capacity Gallons	Shipping Weight Pounds	Price, Each Malleable	Price, Each Brass
6-9-30	30	10	$8.00	$20.00
6-9-60	60	17	14.00	35.00

Hy-Tech Products

Taco Water Heaters



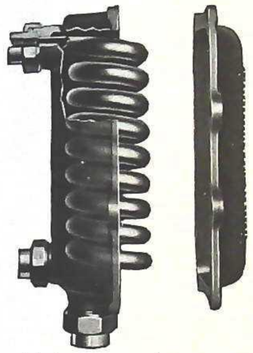
Especially constructed for use with steam or vapor-heating plants in apartments and other large buildings. It is connected below the water line at the side of the heating boiler, for connection to tanks 320 to 960-gallon capacity.

Size No.	Capacity Steam Gallons 100° Rise 3 Hours	100° Rise 1 Hour	Sq. Ft. Water Radiation	Length Inches	Diameter Inches
4	600	200	240	26	8
5	1200	400	480	38	11¾
6	1800	600	750	40	13½

Size No.	Tank Connection Inches	Boiler Connection Inches	Shipping Weight Pounds	Price Each
4	2	2	96	$100.00
5	2½	2½	192	200.00
6	3	3	265	300.00

Domestic Taco Water Heaters

With Brass Unions



This heater is connected below the water line of steam or vapor boilers. The water in the heating boiler circulates through the shell of the Taco Heater, transferring its heat to the domestic water which flows through the coil to the tank.

Consists of a cast iron housing containing a 1-piece coil to which it is permanently fastened and tested to 1200 pounds, giving positive assurance against leakage.

Unions are provided for quick installation.

Water comes into contact with copper and brass, not iron, thus avoiding any possible discoloration. The removable cover permits of easy cleaning without disconnecting any piping.

Size No.	Capacity, Gallons Below Water Line 100° Rise 3 Hours	100° Rise 1 Hour	Sq. Ft. Water Radiation	Height Inches	Diameter Inches
0	30	.....	...	8½	5½
30	30–40	.....	...	11	5½
1	40–60	.....	...	13	5½
1A	60–80	.....	...	14	7
2	80–120	30–40	60	16½	7½
2A	120–160	40–50	90	19	8½
3	160–200	50–66	120	21½	8½

Size No.	Tank Connection Inches	Boiler Connection Inches	Shipping Weight Pounds	Price Each
0	¾	1	9	$10.00
30	¾	1	11	15.00
1	¾	1	14	20.00
1A	1	1¼	20	25.00
2	1	1¼	24	30.00
2A	1	1½	45	40.00
3	1¼	2	54	50.00

Excelso Phaeton Water Heaters

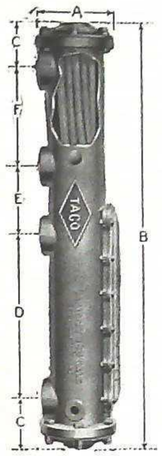


An auxiliary heating unit for warming water for domestic purposes, supplying heat for radiators, garages, enclosed verandas and for combination warm air and hot water system. Fits any type of hot water boiler or hot air furnace and is designed so as to be entirely above the fire.

Diam. In.	Ht. In.	Size Tap'gs In.	C. to C. of Side Out., In.	Cap. Gal. of Tank	Sq. Ft. of Direct Water Radiation	Ship. Wt. Lbs.	Price, Each Iron	Price, Each Brass
6	3½	1	2½	30	40	6	$7.50	$15.00
8	4½	1	2½	45	75	11	12.00	28.00
10	5¼	1½	3	80	100	18	20.00	45.00
12	6	2	3½	100	150	30	24.00	54.00
15	7	2½	4½	150	250	60	50.00	115.00
18	8	3	5½	250	400	85	70.00	160.00

Super Taco Water Heaters

Patented



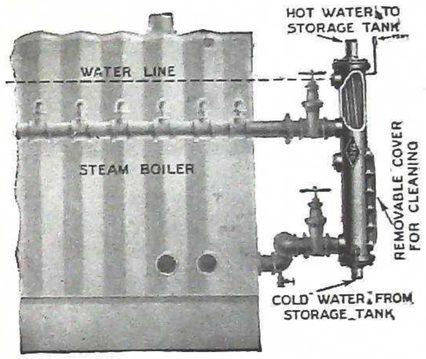
For heating domestic water supply with steam or vapor boilers.

This is a vertical type water heater made in a wide range of sizes, for installation either entirely below or part below and part above water line of steam and vapor heating boilers.

Consists of a cast iron housing to which water and steam from heating boiler is admitted, transmitting heat through a series of vertical copper tubes to domestic water circulating to storage tank. Liberal pipe connections are provided.

Vertically installed so as to provide positive circulation to hot water tank, even when located very low.

Removable cover provides for easy cleaning without disconnecting any piping.



Standard Indirect Installation

In the standard indirect installation, Super Taco is connected entirely below the water line using boiler water only.

This method of installation is recommended for use with steam heating boilers for year-round domestic hot water supply.

Where height of water line permits, upper side connection can be used, in which case no vent is required. All sections should be tapped and connected by header.

Steel boilers require only one tapping.

This hook-up is especially desirable with oil burner installations.

Size	Cap. Gal.	Dimensions, Inches A	B	C	D	E	F	Boiler Con's. In.	Tank Con's. In.	Ship. Wt. Lbs.	Price Each
7	160	6¼	34½	3¾	13½	5½	8	2	1½	70	$55
8	220	6¼	42½	3¾	17½	7½	10	2	1½	100	70
9	320	7½	36	5	13	5	8	2½	2	130	90
10	450	7½	44	5	17	7	10	2½	2	150	110
12	600	9¼	45	6	16½	6½	10	3	2	185	150
15	800	9¼	54	6	21	9	12	3	2	220	190
20	1000	11¾	45	7	15½	8	7½	4	2½	280	270
25	1250	11¾	54	7	20	11½	8½	4	2½	350	330
35	1750	14¼	55	7½	20	11½	8½	4	4	500	470
50	2500	14¼	77	8½	30	18	12	5	4	685	670
75	3750	19	81	10½	30	18	12	5	5	1050	1000
100	5000	21	84	12½	29	18	12	6	6	1250	1300

Capacity based on 100-degree temperature rise in 3 hours. Increase size of Taco for inadequate tank capacity. Thirty-gallon tank capacity is usually required per family.

Riverside Indirect Water Heaters

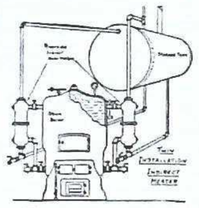


By connecting up a Riverside Indirect Heater to a steam or vapor boiler an abundance of clean, hot water is assured while the heating boiler is in operation.

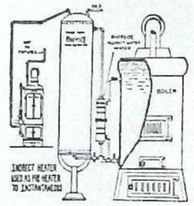
It is made in a number of sizes and works just as well on large installations in apartment houses as it does in the small house or bungalow.

Most new steam or vapor boilers have two extra connections to which the Riverside can be readily hooked up. When this is done, the boiler or tank is automatically kept filled with plenty of hot water day and night. No attention is required and there is no overheating, no worry.

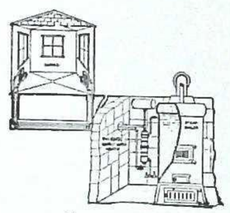
It can be used in connection with a coal heater, an instantaneous gas heater, to cut down the gas bill, and can be used to heat garage.



Twin Installation for Apartment House



How to Connect with Gas Heater



How to Heat your Garage

Specifications and Ratings when Connected to Steam Boiler

Size No.	Gallons Heated per Hour	*Capacity of Tank Gallons	Price Each
07	10	30 Max.	$18.50
113	20	50 "	25.50
226	40	100 "	45.00
352	80	250 "	80.00
480	120	350 "	125.00
500	300	500 "	175.00
600	500	1000 "	360.00

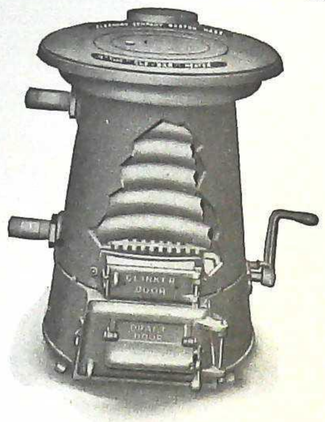
*Will take care of boilers or tanks not exceeding capacity indicated.

In selecting the proper size heater, remember that the larger the heater the better the service rendered. Make liberal allowance on circulating system.

Connections, Tappings, Weights, Etc.

Size No.	Shell Tappings In.	On Centers In.	Hot Water Connection In.	Length In.	Diam. In.	Shipping Weight Boxed Pounds
07	1	14	¾	19	4	16
113	1	14	¾	19	6	24
226	1¼	14	1	19	6	27
352	1½	14	1¼	19	8¼	60
480	2	14	1½	19	8¼	65
500	2	21	2	27¾	11½	130
600	2½	30	2½	37	13½	250

Cle-Bar Service Water Heaters



For apartment houses, residences, hotels, clubs, hospitals, office buildings, garages, etc.

Good for any water pressure; no more rusty water or cracked sections.

Simple to erect. Has shaking grates.

Made with copper coil in 5 sizes.

No.	Dimensions, Inches: Ht.	Diameter Base	Smoke Collar	Connection	*Heat. Cap. Gals. per Hr.	Tank Cap. Gals.	Wt. Lbs.	Price Each
12	28¾	18	5	1	40	40 to 80	240	$135.00
15	31	21	6	1½	60	80 to 150	340	170.00
18	38½	27	8	2	107	150 to 250	500	235.00
21	42	30⅛	9	2	175	250 to 350	650	330.00
24	44⅝	33⅛	9	2	225	350 to 500	800	400.00

*At a temperature rise of 110 degrees.

Ideal Hot Water Supply Boilers

Cast Iron



No. 02 Ideal



No. 09 Ideal

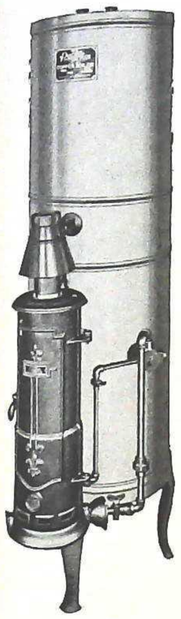
When hot water supply boilers are subjected to some unusual pressure, as is the case when tanks are connected direct to city pumping station, and the pressure is increased during times of conflagration or the like, it is recommended that the system be equipped with a water-pressure reducing valve and relief valve.

No.	Style of Grate	Diameter of Grate Inches	Grate Area Square Feet	No. and Size Outlets and Inlets Inches	Nominal Ratings Gallons per Hour	Approx. Ship. Wt. Pounds
01	Slide	10	.59	1—1½	56	170
02	Slide	10	.54	1—1½	93	230
03	Slide	10	.59	1—1½	144	270
04	Rocking	12	.80	3—1½	192	450
05	Rocking	12	.80	3—1½	210	510
06	Rocking	15	1.23	3—2	384	570
07	Rocking	15	1.23	3—2	426	670
08	Rocking	18	1.92	3—2	600	750
09	Rocking	18	1.92	3—2	660	890

Maximum working pressure, 80 pounds per square inch. No firing tools furnished. Ratings gallons per hour based on 25-degree rise on 8-hour firing period, with hard coal.

Hy-Tech Products

Packo All Copper Automatic Hot Water Storage Systems



The all copper Packo Hot Water Storage System is built for all classes of homes. It has been designed to give all year hot water service at the lowest possible cost.

Packo hot water service means a full faucet flow of clean hot water from one or several faucets simultaneously, quickly and at any time, day or night.

The water is heated and stored, meaning that hot water is always ready for instant use. As hot water is drawn cold water replaces it, lowering the temperature of the water, the control, operated by the temperature of the water automatically turns on the gas, which burns only long enough to heat the incoming water, then the gas is shut off. This operation is repeated as the heater is used.

The system consists of an insulated, extra heavy copper boiler, connected to the double coil tank heater, pilot light and snap action control. It rests on heavy legs.

The inner tank is extra heavy copper, conforming to Massachusett's regulations. It is built for 300 pounds test and guaranteed for a maximum working pressure of 127½ pounds.

The outer metal casing and heater are finished in attractive colors.

This system is shipped all crated and ready for immediate installation. Only 3 connections are necessary, hot water, cold water and gas supply. Any plumbing contractor can readily install it.

A safety pilot may be furnished at a slight extra cost. This immediately shuts off the main gas supply if the pilot light should go out.

A safety pressure and temperature valve should be installed with every storage system to relieve any possible excessive pressure or temperature. A valve approved by the local plumbing ordinance should be installed.

Nos. 20 and 24 are for houses and bungalows or cottages with 1 bath, kitchen sink and laundry, also small barber shops, beauty parlors, etc.

No. 30 is for homes with 2 baths, kitchen sink, and the usual number of lavatories, also 2-apartment buildings with 1 bath in each and other regulation fixtures.

No. 40 is for homes with 3 baths, kitchen sink, laundry, and butler's pantry, also 1 or 2 extra lavatories.

No. 52 is for large homes of 4 baths, kitchen sink, butler's pantry, laundry and extra lavatories. Also small apartment houses.

No. 66 is for large homes of 5 baths, butler's pantry, laundry, and extra lavatories. Also for small apartment houses.

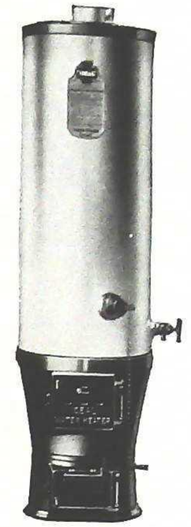
Nos. 82 and 100 are for homes with 5 or 6 baths, etc., or where an exceptionally large quantity of hot water is used, such as occurs with washing machines, dish washers, and shower baths.

No.	Each: Copper	Each: Kopsteel	Approx. Capacity Gallons	Height Over All Inches	Width Incl. Heater Inches	Approx. Shipping Weight Pounds
20	$125.00	$85.00	20	57	25	203
24	140.00	87.50	24	65	25	225
30	155.00	104.00	30	65	29	258
40	190.00	130.00	40	65	36	300
52	250.00	190.00	52	65	36	520
66	275.00	222.00	66	55	40	660
82	335.00	277.00	82	65	40	820
100	430.00	285.00	100	65	42	925

Automatic safety pilot, $15.00 extra.

New Ideal Automatic Water Heaters

Coal-Burning



A self-contained, coal-burning, automatic storage heater.

The body of the tank is made of heavy cold rolled steel, galvanized both inside and outside to prevent rust and corrosion.

The firepot is made of cast iron with a 1-inch non-heat-conducting refractory lining. This lining not only contributes to the efficiency of the heater, but it also provides for a quick pick-up capacity. For the lining retains the heat of the fire, and after a shaking-down and the addition of more fuel, the new charge of coal quickly ignites.

The Ideal Water Heater has been designed with deep firepot especially to provide for long firing periods.

Hard or soft coal may be used.

The firepot, base and top piece are finished in green porcelain enamel, the jacket in pearl gray japan.

Cold water inlet, ¾ inch. Hot water outlet, ¾ inch. Smoke pipe connection, 4 inches.

The 30 and 40-gallon heaters are 16 inches in diameter; the 60 and 80-gallon heaters, 22 inches.

No.	30	40	60	80
Nominal Capacity gallons	30	40	60	80
Fuel Capacity pounds	41	41	108	108
Height Over All inches	60	72¾	64¼	77
Shipping Weight pounds	345	385	565	625
Price each	$75.00	90.00	120.00	150.00

Riverside Welded Expansion Tanks



These galvanized expansion tanks are guaranteed for a working pressure not exceeding 20 pounds.

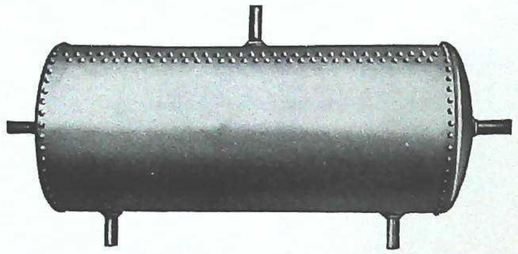
All seams are electrically welded. Tanks are heavily galvanized inside and out.

Size Inches	Capacity Gallons	Each	Size Inches	Capacity Gallons	Each
12x20	10	$8.00	16x30	26	$14.00
12x30	15	9.00	16x36	32	15.00
14x30	20	12.50	16x48	42	16.50

Gauge glass tappings 13½ inches o.c. Gauge glass extra.

Table above gives standard sizes. On special request, a 5½-gallon, 10x18-inch boiler listing at $6.00, and an 8-gallon, 10x20-inch boiler, listing at $7.50 can be furnished.

Hot Water Storage Tanks



For vertical or horizontal installation.

Heads are flanged and dished. All openings have welded threaded flanges, insuring perfectly straight threads.

Price includes standard tappings as shown. Additional number of special tappings, manholes, handholes and coils are extras and quoted upon application.

Standard, Single Riveted

Tested to a hydrostatic pressure of 100 pounds and guaranteed for 65 pounds working pressure per square inch.

Cap. Gal.	Size Diam. In.	Size Lgth. Ft.	Regular Open. In.	App. Ship. Wt. Lbs.	Price Each	Cap. Gal.	Size Diam. In.	Size Lgth. Ft.	Regular Open. In.	App. Ship. Wt. Lbs.	Price Each
66	20	4	1½	270	$94.00	315	36	6	2	700	$206.00
85	20	5	1½	310	104.00	365	36	7	2	780	241.00
100	24	4	1½	320	109.00	420	36	8	2	870	256.00
120	24	5	1½	380	123.00	525	36	10	2	1030	293.00
140	24	6	1½	440	134.00	430	42	6	2	890	276.00
150	30	4	2	430	143.00	500	42	7	2	980	310.00
180	30	5	2	500	158.00	575	42	8	2	1070	333.00
220	30	6	2	555	173.00	720	42	10	2	1250	375.00
250	30	7	2	630	196.00	865	42	12	2	1430	415.00
295	30	8	2	700	211.00	1000	42	14	2	1620	468.00

Extra Heavy, Double Riveted

All extra heavy storage tanks are tested to a hydrostatic pressure of 150 pounds and are guaranteed for a working pressure of 100 pounds per square inch.

Cap. Gal.	Size Diam. In.	Size Lgth. Ft.	Regular Open. In.	Wt. Lbs.	Price Each	Cap. Gal.	Size Diam. In.	Size Lgth. Ft.	Regular Open. In.	Wt. Lbs.	Price Each
120	24	5	1½	390	$137.00	500	42	7	2	1260	$390.00
140	24	6	1½	440	155.00	575	42	8	2	1400	420.00
180	30	5	2	520	182.00	720	42	10	2	1660	480.00
220	30	6	2	590	198.00	865	42	12	2	1910	540.00
250	30	7	2	660	224.00	1000	42	14	2	2180	614.00
295	30	8	2	720	242.00	750	48	8	3	1690	510.00
315	36	6	2	920	264.00	940	48	10	3	1960	580.00
365	36	7	2	1030	300.00	1130	48	12	3	2250	650.00
420	36	8	2	1160	328.00	1300	48	14	3	2570	715.00
525	36	10	2	1380	385.00	1500	48	16	3	2860	800.00
430	42	6	2	1140	345.00	1700	48	18	3	3150	870.00

Coils

Size of Tank In. x Ft.	No. of Pipes	Size Coil In.	Price, Each Black Pipe	Price, Each Galv. Pipe	Size of Tank In. x Ft.	No. of Pipes	Size Coil In.	Price, Each Black Pipe	Price, Each Galv. Pipe
20 4	4	1	$29.00	$35.00	36 6	4	1¼	$51.00	$62.00
20 5	4	1	30.50	38.50	36 7	4	1¼	54.00	66.00
24 4	4	1¼	35.50	42.00	36 8	4	1¼	57.50	70.00
24 5	4	1¼	37.00	45.00	36 10	4	1¼	64.00	78.00
24 6	4	1¼	38.50	48.00	42 6	4	1¼	51.00	62.00
30 4	4	1¼	35.50	42.00	42 7	4	1¼	54.50	66.00
30 5	4	1¼	37.00	45.00	42 8	4	1¼	57.50	70.00
30 6	4	1¼	38.50	48.00	42 10	4	1¼	64.00	78.00
30 7	4	1¼	40.00	51.00	42 12	4	1¼	70.50	85.00
30 8	4	1¼	41.50	54.00	42 14	4	1¼	77.00	93.00

All sizes can be furnished in Brass Pipe (I. P. S.).
Prices upon application.

Extras for Standard and Extra Heavy Tanks

Price,	2	-inch	Flange	each $8.00
"	2½	"	"	" 8.00
"	3	"	"	" 9.00
"	3½	"	"	" 9.00
"	4	"	"	" 10.00
"	Handholes in		Head	" 8.00
"	"	"	Shell	" 8.00
"	Manholes	"	Head	" 30.00
"	"	"	Shell	" 45.00

San-A-Tor Portable Garbage Incinerators

Gas Fired



The San-A-Tor is a gas-fired odorless garbage and refuse burner. Daily garbage disposal is positively the best method and somehow, somewhere refuse should be destroyed every day according to the health authorities.

The San-A-Tor is odorless, at hand to receive the daily accumulation of waste and rubbish, and in short order its perfectly devised burners have reduced every vestige of its contents to ashes.

Can be installed in any home in the kitchen or in the basement.

Cast iron top, front, base and doors; sheet steel side and back. Interiors of the Nos. S-A-1 and S-A-2 are lined with 2-inch fire brick; of the No. S-A-4, with 3-inch benezet brick, channel spaced by-passes.

Grates are of the best gray iron in basket formation, 2 side wing and bottom turn grates.

Furnished with gas conveying manifold, burners, valves, pilots and ash pans.

All grates removed and replaced through door opening.

No. S-A-1 Portable

Capacity is 1 bushel. Dimensions: Height, 37½ inches; width, 21 inches; depth, 21 inches; inner flue connection, 7 inches; outer flue connection, 9 inches; gas connection, ½ inch. Weight, 400 pounds.

Price, No. S-A-1, Black Finish.....each $100.00
Price, No. S-A-1, Nickel-Plated Finish.....each 135.00

No. S-A-2 Portable

Capacity is 2 bushels. Dimensions: Height, 50½ inches; floor space, 18x18 inches; combustion chamber, 12x12x36 inches; inner flue connection, 7 inches; outer flue connection, 9 inches; gas connection, ½ inch. Weight, 700 pounds

Price, No. S-A-2, Black Finish.....each $175.00

No. S-A-4 Portable

Capacity is 5 bushels. Dimensions: Height, 61½ inches; width, 32 inches; depth, 24 inches; combustion chamber, 33x26x18 inches; ash pit below grates, 15x22x26 inches; charging door, 12x16 inches; ash door, 12x16 inches; flue hole, 9x9 inches; floor space, 32x24 inches.

Burning capacity is from 12 to 15 bushels per day run. Rubbish and garbage mixed reduces gas consumption. Estimated gas consumption, 200 cubic feet per day's continuous run.

Weight, 1800 pounds.

Price, No. S-A-4, Black Finish.....each $350.00

Hy-Tech Products

Ideal Arco Round Steam Boilers

For Hard or Soft Coal, Coke, Gas and Oil Fuel

Steam Boiler Capacities—350 to 1400 Square Feet



The steam dome is unusually broad and high. This gives a wide steam disengaging area and ample storage space. A steady, silent flow of steam through piping and radiators is insured.

Grate area, fire contact heating surface, flue area and staggered gas travel are scientifically proportioned to insure quick, dependable and economical heating service.

The substantial character of all doors, frames, hinge pins, etc., insures durable service.

Contact faces on all doors are machine-ground, securing a leak-proof construction and giving superior control of combustion.

Shaking mechanism is sturdy and duly proportioned to make caretaking easy.

Draft control is at the rear, eliminating the usual interfering chains in front. This control is sensitive, dependable and positive in operation.

Fire pot is made with a third nipple, which gives quick heating response in the early morning hours of mid-winter. It effects a steady, unrestricted, rapid water flow within the boiler, which means a rapid absorption and quick delivery of the heat of combustion.

Grate bars are especially trussed, and their teeth carefully spaced to insure uniform combustion and a minimum loss of heat in the ash.

Base is large and substantial, providing ample space for the ashes, insuring durable service and making caretaking just as easy as possible.

The Arco Round Steam Boiler is equipped with an improved type, all metal pressure regulator. Extreme sensitiveness is obtained by a new design of rocker movement and two weights. The bellows is made of a single piece of seamless brass. There are no parts to wear out.

No.	Steam Rating Sq. Ft.	Water Line In.	Grate Area In.	Hard Coal Cap. Lbs.	Size Outlet and Inlet In.	Width at Base In.	Height Overall In.	Chimney Size In.
S-1704	350	47	1.40	140	2½	24¾	64	8x 8
S-1705	400	51	1.40	140	2½	24¾	68½	8x 8
S-1706	450	56	1.40	140	2½	24¾	73	8x 8
S-1904	500	45	1.88	184	2½	27¼	63½	8x 8
S-1905	550	50	1.88	184	2½	27¼	68	8x 8
S-1906	600	55	1.88	184	2½	27¼	72¾	8x 8
S-2004	625	46	2.23	217	3	29	62½	8x 8
S-2005	675	51	2.23	217	3	29	67¼	8x 8
S-2006	725	55	2.23	217	3	29	71¾	10x12
S-2204	775	47	2.62	268	3	30	65¾	8x12
S-2205	825	52	2.62	268	3	30	70¼	8x12
S-2206	875	56	2.62	268	3	30	75	10x12
S-2504	950	48	3.53	355	3½	33¼	68	8x12
S-2505	1025	53	3.53	355	3½	33¼	72¾	8x12
S-2506	1100	58	3.53	355	3½	33¼	77¾	10x12
S-2804	1200	49	4.36	476	4	36¾	69¾	8x12
S-2805	1300	54	4.36	476	4	36¾	74¾	12x12
S-2806	1400	59	4.36	476	4	36¾	80	12x12

Ideal Arco Round Water Boilers

For Hard or Soft Coal, Coke, Gas and Oil Fuel

Water Boiler Capacities—600 to 2325 Square Feet



One of the first requisites of a good boiler is a large direct heating surface; that is, a large surface must be exposed to the fire in order that as much heat as possible may be absorbed direct from the glowing coals and flames. It is also important that this combustion chamber be of generous size so that it can hold enough fuel to last for long periods and so preclude the necessity of frequent trips to the cellar to attend to the fire. The combustion chamber of the Arco Round Boiler is wide, deep, and correctly proportioned to obtain these results.

Because of the boiler's large heat-absorbing surface, the water is heated quickly and efficiently. Steam or hot water is on its way to the radiators soon after the starting of the fire, and a maximum amount of the heat value of the fuel is made available for heating service.

The economy and large fuel carrying capacity of the Arco Round Boiler make frequent attention unnecessary. Once in the morning and once at night is all the attention it needs in the coldest weather; while in moderate weather even less attention is required. With hard coal or with soft coal, an Arco Round Boiler easily holds its fire overnight, ready for quick heating service on the coldest winter mornings.

At a small additional cost the Arco Round Water Boiler may be equipped with an Arco Water Regulator of all-metal construction, insuring permanent efficiency. The first cost, which is moderate, is the last.

No.	Water Rating Sq. Ft.	Grate Area Sq. Ft.	Hard Coal Fuel Cap. Lbs.	*Size Outlet and Inlet In.	Width at Base In.	Height Overall In.	Chimney Size In.
W-1704	600	1.40	140	2½	24¾	58	8x 8
W-1705	675	1.40	140	2½	24¾	62½	8x 8
W-1706	750	1.40	140	2½	24¾	67	8x 8
W-1904	850	1.88	184	2½	27¼	57	8x 8
W-1905	925	1.88	184	2½	27¼	61½	8x 8
W-1906	1000	1.88	184	2½	27¼	66	8x 8
W-2004	1050	2.23	217	3	29	56½	8x 8
W-2005	1125	2.23	217	3	29	61½	8x 8
W-2006	1200	2.23	217	3	29	65¾	8x12
W-2204	1300	2.62	268	3	30	59	8x12
W-2205	1375	2.62	268	3	30	63¼	8x12
W-2206	1450	2.62	268	3	30	68¾	8x12
W-2504	1575	3.53	355	3½	33¼	60	8x12
W-2505	1700	3.53	355	3½	33¼	64¾	8x12
W-2506	1825	3.53	355	3½	33¼	70	8x12
W-2804	1975	4.36	476	4	36¾	63	12x12
W-2805	2150	4.36	476	4	36¾	68	12x12
W-2806	2325	4.36	476	4	36¾	73¾	12x12

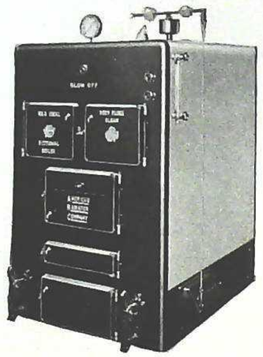
*Water boilers have two outlets and two inlets.

Ideal Redflash Boilers

Completely Equipped, Metal-Covered, Porcelain Enamel Finished
For Hard or Soft Coal, Coke, Oil or Gas


No. 1


No. 2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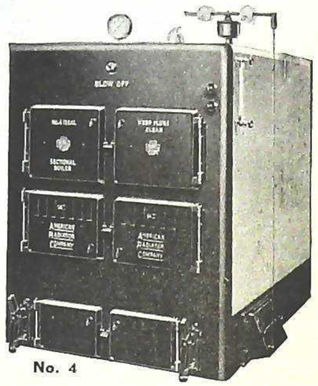
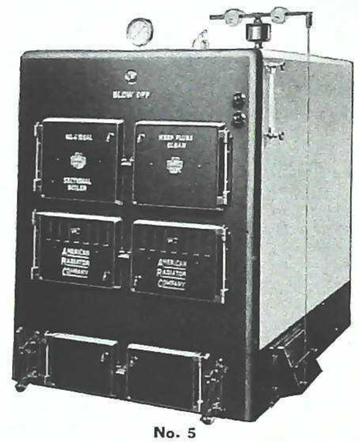
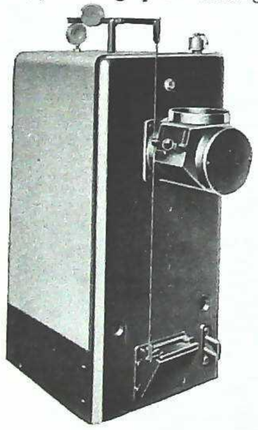

No. 4


No. 5

The Ideal Redflash Boiler has been developed to meet the new demands of our day. It has been entirely appropriate that the various improvements made heretofore in boilers have been fundamentally along the lines of operating economy and utter reliability. The primary purpose of a boiler is heating—but the time has come when the people expect and demand, not only a high degree of mechanical perfection in the products that they buy—but products which are beautiful as well.

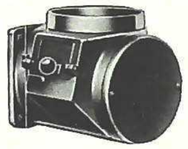
The Ideal Redflash Boiler is made in sectional design with long double flue gallery through which the gases of combustion must travel before escaping—a distance twice the boiler's length—which is not possible in the usual type of boiler. As a result of its long flue travel and carefully balanced design, the Ideal Redflash Boiler attains a high efficiency. It has an unusually quick pick-up heating capacity, insuring quick heating and abundant warmth on cold winter mornings. Its design is carefully calculated so that the boiler functions with exceptionally high efficiency while performing at the rates at which it is called upon to operate during the major part of the heating season. Interposed between the beautiful and indestructible cabinet exterior and the boiler is a 1-inch, corrugated, air-cell asbestos lining, to prevent radiation heat-loss. The boiler is completely equipped with mechanical regulation and all accessories.


Rear View

All contact-surfaces on doors and plate work are ground to a smooth finish for dust-proof construction.

The large, scientifically proportioned fuel chamber affords abundant coal-carrying capacity for long firing periods and easy care-taking.

Note, also, the two-way smoke-hood, allowing vertical or horizontal chimney connection, thus permitting close connections and considerable saving in floor space. The smoke-hood is equipped with both choke and check dampers.


Close-Up of Two-Way Smoke-Hood Fully Equipped with Dampers

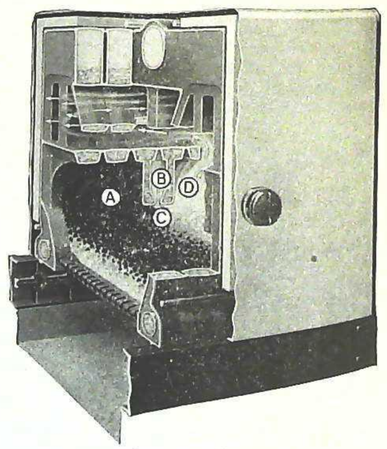
The well designed grates, with reinforced trussed construction and well-proportioned teeth and openings, permit the use of small-sized coal, such as buckwheat and pea; the openings being carefully calculated to provide a large percentage of free area so that an adequate supply of air may pass through and allow rapid, uniform and complete combustion. The top surfaces of the grates are angular in form effecting an easy grinding of clinkers when the grates are shaken—thus greatly facilitating care-taking. Every feature in this new boiler has been studiously developed in the minutest detail to insure quick heating response, high operating efficiency, and easy care-taking.


Grate Bar

The larger sizes of the Ideal Redflash Boiler, Nos. 2, 3, 4 and 5 are also equipped with the patented Ideal smoke oxidizer device for burning any grade of soft coal smokelessly. This oxidizer is simple and effective. It is water-backed throughout and cannot burn out. The space between the base of the oxidizer and the grating has been duly proportioned to meet all requirements.

The Ideal Redflash Smokeless Boiler is easily fired and cared for, guaranteeing satisfactory service without skilled attention.

Through its cleanliness and great beauty, the Ideal Redflash Boiler allows the house owner to convert his cellar into a really useful, livable place. In accomplishing this, it opens to heating merchants a new, almost unlimited opportunity for replacement business. The metal jacket of the boiler is finished in a beautiful lustrous red backed enamel; all doors are finished in black porcelain enamel. The beauty of the boiler is permanent.



Sectional View

Hy-Tech Products

Ideal Redflash Boilers

Ratings and Dimensions

Steam

Boiler No.	Rating Steam Square Feet	Grate Area Square Feet	Fuel Capacity Pounds	No. and Size Inches Outlets	Inlets	Length Inches	Approx. Ship. Weight Pounds
1-S- 4	350	1.33	120	1-3	2-2	16	1045
1-S- 5	500	1.79	160	1-3	2-2	20	1220
1-S- 6	650	2.25	200	2-3	2-2	24	1345
1-S- 7	800	2.71	240	2-3	2-2	28	1520
1-S- 8	950	3.17	280	2-3	2-2	32	1635
1-S- 9	1100	3.63	320	2-3	2-2	36	1820
Width, 26¾ inches; height, 51¾ inches; height of water line, 45 inches; smoke collar, 9 inches.							
2-S- 5	1050	3.50	320	2-4	2-4	25	1865
2-S- 6	1300	4.39	400	2-4	2-4	30	2050
2-S- 7	1550	5.28	480	2-4	2-4	35	2340
2-S- 8	1800	6.17	560	2-4	2-4	40	2540
2-S- 9	2050	7.06	640	2-4	2-4	45	2840
2-S-10	2300	7.95	720	2-4	2-4	50	3020
2-S-11	2550	8.84	800	3-4	2-4	55	3325
Width, 35¾ inches; height, 57¼ inches; height of water line, 50¼ inches; smoke collar, 12 inches.							
3-S- 6	2500	6.65	590	2-4	2-5	36	3585
3-S- 7	3000	8.00	710	3-4	2-5	42	4050
3-S- 8	3500	9.35	830	3-4	2-5	48	4450
3-S- 9	4000	10.70	950	4-4	2-5	54	4990
3-S-10	4500	12.05	1070	4-4	2-5	60	5450
3-S-11	5000	13.40	1190	4-4	2-5	66	5910
3-S-12	5500	14.75	1310	5-4	2-5	72	6375
3-S-13	6000	16.10	1430	5-4	2-5	78	6850
Width, 45¾ inches; height, 63 inches; height of water line, 53½ inches; smoke collar, 15 inches.							
4-S- 7	5000	11.70	950	3-4	2-6	49	5445
4-S- 8	5750	13.68	1110	3-4	2-6	56	5975
4-S- 9	6500	15.66	1270	4-4	2-6	63	6700
4-S-10	7250	17.64	1430	4-4	2-6	70	7340
4-S-11	8000	19.62	1590	5-4	2-6	77	7990
4-S-12	8750	21.60	1750	5-4	2-6	84	8620
4-S-13	9500	23.58	1910	6-4	2-6	91	9240
Width, 53¾ inches; height, 65 inches; height of water line, 55½ inches; smoke collar, 18 inches.							
5-S- 8	8000	18.83	1281	3-5	2-6	64	9095
5-S- 9	9100	21.52	1464	4-5	2-6	72	10000
5-S-10	10200	24.21	1647	4-5	2-6	80	10915
5-S-11	11300	26.90	1830	5-5	2-6	88	11825
5-S-12	12400	21.52	1464	5-5	2-6	96	12735
5-S-13	13500	24.21	1647	5-5	2-6	104	13645
5-S-14	14600	24.21	1647	6-5	2-6	112	14550
5-S-15	15700	26.90	1830	6-5	2-6	120	15460
Width, 63 inches; height, 71 inches; height of water line, 59½ inches; smoke collar, 22 inches.							

Steam—Smokeless

Boiler No.	Rating Steam Square Feet	Grate Area Square Feet	No. and Size Inches Outlets	Inlets	Length Inches	Approx. Ship. Weight Pounds
2-S- 8-S	1800	6.17	2-4	2-4	40	2710
2-S- 9-S	2050	7.06	2-4	2-4	45	2900
2-S-10-S	2300	7.95	2-4	2-4	50	3090
2-S-11-S	2550	8.84	3-4	2-4	55	3395
2-S-12-S	2800	9.73	3-4	2-4	60	3585
2-S-13-S	3050	10.62	4-4	2-4	65	3780
Width, 35¾ inches; height, 57¼ inches; height of water line, 50¼ inches, smoke collar; 12 inches.						
3-S- 8-S	3500	9.35	3-4	2-5	48	4545
3-S- 9-S	4000	10.70	4-4	2-5	54	5020
3-S-10-S	4500	12.05	4-4	2-5	60	5450
3-S-11-S	5000	13.40	4-4	2-5	66	5930
3-S-12-S	5500	14.75	5-4	2-5	72	6390
3-S-13-S	6000	16.10	5-4	2-5	78	6855
3-S-14-S	6500	17.45	6-4	2-5	84	7325
Width, 45¾ inches; height, 63 inches; height of water line, 53½ inches, smoke collar, 15 inches.						
4-S- 9-S	6500	15.66	4-4	2-6	63	6340
4-S-10-S	7250	17.64	4-4	2-6	70	7460
4-S-11-S	8000	19.62	5-4	2-6	77	8110
4-S-12-S	8750	21.60	5-4	2-6	84	8750
4-S-13-S	9500	23.58	6-4	2-6	91	9290
4-S-14-S	10250	25.56	6-4	2-6	98	10030
Width, 53¾ inches; height, 65 inches; height of water line, 55½ inches; smoke collar, 18 inches.						
5-S- 9-S	9100	21.52	4-5	2-6	72	10000
5-S-10-S	10200	24.21	4-5	2-6	80	10915
5-S-11-S	11300	26.90	5-5	2-6	88	11825
5-S-12-S	12400	21.52	5-5	2-6	96	12735
5-S-13-S	13500	24.21	5-5	2-6	104	13645
5-S-14-S	14600	24.21	6-5	2-6	112	14550
5-S-15-S	15700	26.90	6-5	2-6	120	15460
Width, 63 inches; height, 71 inches; height of water line, 59½ inches; smoke collar, 22 inches.						

Ideal Redflash Boilers

Ratings and Dimensions

Water

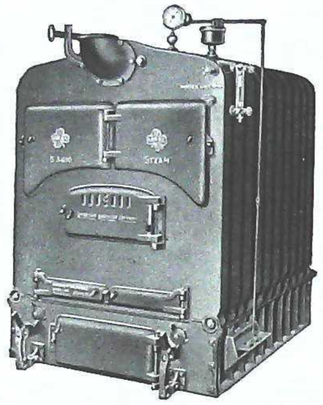
Boiler No.	Rating Water Square Feet	Grate Area Square Feet	Fuel Capacity Pounds	No. and Size Inches Outlets	Inlets	Length Inches	Approx Ship. Weight Pounds
1-W- 4	600	1.33	120	1-3	2-3	16	930
1-W- 5	850	1.79	160	1-3	2-3	20	1030
1-W- 6	1100	2.25	200	2-3	2-3	24	1135
1-W- 7	1350	2.71	240	2-3	2-3	28	1285
1-W- 8	1600	3.17	280	2-3	2-3	32	1435
1-W- 9	1850	3.63	320	2-3	2-3	36	1585
Width, 26¾ inches, height, 46⅝ inches, smoke collar, 9 inches.							
2-W- 5	1800	3.50	320	2-4	2-4	25	1865
2-W- 6	2200	4.39	400	2-4	2-4	30	2050
2-W- 7	2600	5.28	480	2-4	2-4	35	2340
2-W- 8	3000	6.17	560	2-4	2-4	40	2540
2-W- 9	3400	7.06	640	2-4	2-4	45	2840
2-W-10	3800	7.95	720	2-4	2-4	50	3020
2-W-11	4200	8.84	800	3-4	2-4	55	3325
Width, 35¾ inches; height, 57¼ inches; smoke collar, 12 inches.							
3-W- 6	4200	6.65	590	2-4	2-5	36	3585
3-W- 7	5000	8.00	710	3-4	2-5	42	4050
3-W- 8	5800	9.35	830	3-4	2-5	48	4450
3-W- 9	6600	10.70	950	4-4	2-5	54	4990
3-W-10	7400	12.05	1070	4-4	2-5	60	5450
3-W-11	8200	13.40	1190	4-4	2-5	66	5910
3-W-12	9000	14.75	1310	5-4	2-5	72	6375
3-W-13	9800	16.10	1430	5-4	2-5	78	6850
Width, 45¾ inches, height, 63 inches; smoke collar, 15 inches.							
4-W- 7	8500	11.70	950	3-4	2-6	49	5445
4-W- 8	9750	13.68	1110	3-4	2-6	56	5975
4-W- 9	11000	15.66	1270	4-4	2-6	63	6700
4-W-10	12250	17.64	1430	4-4	2-6	70	7340
4-W-11	13500	19.62	1590	5-4	2-6	77	7990
4-W-12	14750	21.60	1750	5-4	2-6	84	8620
4-W-13	16000	23.58	1910	6-4	2-6	91	9240
Width, 53¾ inches; height, 65 inches; smoke collar, 18 inches.							
5-W- 8	13200	18.83	1281	3-5	2-6	64	9095
5-W- 9	15000	21.52	1464	4-5	2-6	72	10000
5-W-10	16800	24.21	1647	4-5	2-6	80	10915
5-W-11	18600	26.90	1830	5-5	2-6	88	11825
5-W-12	20400	21.52	1464	5-5	2-6	96	12735
5-W-13	22200	24.21	1647	5-5	2-6	104	13645
5-W-14	24000	24.21	1647	6-5	2-6	112	14550
5-W-15	25800	26.90	1830	6-5	2-6	120	15460
Width, 63 inches, height, 71 inches, smoke collar, 22 inches.							

Water—Smokeless

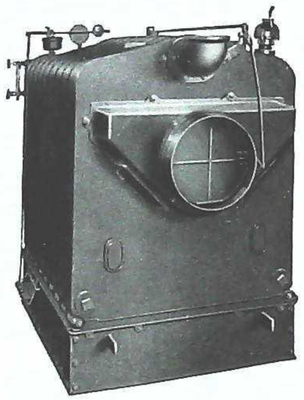
Boiler No.	Rating Water Square Feet	Grate Area Square Feet	No. and Size Inches Outlets	Inlets	Length Inches	Approx. Ship. Weight Pounds
2-W- 8-S	3000	6.17	2-4	2-4	40	2710
2-W- 9-S	3400	7.06	2-4	2-4	45	2900
2-W-10-S	3800	7.95	2-4	2-4	50	3090
2-W-11-S	4200	8.84	3-4	2-4	55	3395
2-W-12-S	4600	9.73	3-4	2-4	60	3585
2-W-13-S	5000	10.62	4-4	2-4	65	3780
Width, 35¾ inches; height, 57¼ inches; smoke collar, 12 inches.						
3-W- 8-S	5800	9.35	3-4	2-5	48	4545
3-W- 9-S	6600	10.70	4-4	2-5	54	5020
3-W-10-S	7400	12.05	4-4	2-5	60	5450
3-W-11-S	8200	13.40	4-4	2-5	66	5930
3-W-12-S	9000	14.75	5-4	2-5	72	6390
3-W-13-S	9800	16.10	5-4	2-5	78	6855
3-W-14-S	10600	17.45	6-4	2-5	84	7325
Width, 45¾ inches; height, 63 inches; smoke collar, 15 inches.						
4-W- 9-S	11000	15.66	4-4	2-6	63	6340
4-W-10-S	12250	17.64	4-4	2-6	70	7460
4-W-11-S	13500	19.62	5-4	2-6	77	8110
4-W-12-S	14750	21.60	5-4	2-6	84	8750
4-W-13-S	16000	23.58	6-4	2-6	91	9290
4-W-14-S	17250	25.56	6-4	2-6	98	10030
Width, 53¾ inches; height, 65 inches; smoke collar, 18 inches.						
5-W- 9-S	15000	21.52	4-5	2-6	72	10000
5-W-10-S	16800	24.21	4-5	2-6	80	10915
5-W-11-S	18600	26.90	5-5	2-6	88	11825
5-W-12-S	20400	21.52	5-5	2-6	96	12735
5-W-13-S	22200	24.21	5-5	2-6	104	13645
5-W-14-S	24000	24.21	6-5	2-6	112	14550
5-W-15-S	25800	26.90	6-5	2-6	120	15460
Width, 63 inches; height, 71 inches, smoke collar, 22 inches.						

Ideal Water Tube Boilers

Steam Boiler Capacities—1600 to 26000 Square Feet
Water Boiler Capacities—2600 to 42000 Square Feet



Front View



Rear View

The Ideal Water Tube Boiler possesses many points of superiority over all similar boilers. Its grate area, fire-contact surface, flue proportions and gas travel are so balanced as to obtain the maximum heat from the fuel and to reduce to a minimum the influence of the human element as a factor in the economical operation of the boiler.

Soft coal is as successfully burned in this boiler as hard coal, although in cities having strict anti-smoke ordinances the Ideal Smokeless Boiler is recommended, a boiler especially designed to burn all soft coals smokelessly with unskilled attendants. The large amount of heating surface and long flue travel of the Ideal Water Tube Boiler make it preeminently the best boiler for oil and gas fuels.

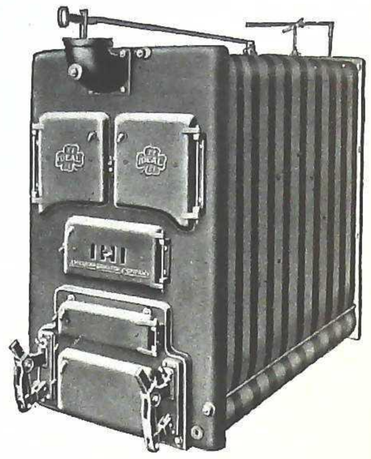
The sections have contact surfaces so accurately ground and smooth that the sections of the assembled boiler fit snugly together iron to iron. Air leaks between sections are entirely eliminated. The unsatisfactory loose fitting section with its putty filled joint is no longer found in any Ideal Boiler.

Ideal Water Tube Boilers because of their sectional construction are easily installed in any old or new building. The largest section may be carried through a 30-inch doorway. No costly brick settings are required. Made of superior rust-proof cast iron and will last as long as the building in which it is installed.

Ideal Water Tube Boilers are exceptionally well suited for battery installations, a type so rapidly coming into favor with far-seeing engineers. Such installations are exceedingly flexible and economical in operation.

Ideal Water Tube Boilers

Coal Burning—Unjacketed



The contacting surfaces of sections of Ideal Boilers are machined. When a boiler is assembled, these smooth surfaces are drawn together, iron to iron, so that permanently gas-tight connections are insured. Air cannot leak into the boiler, nor can gases escape or short circuit from the fire chamber to the chimney.

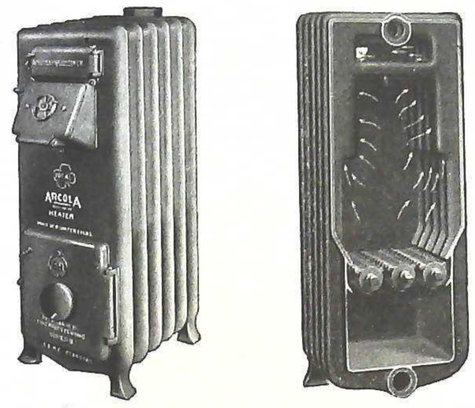
The gaseous products of combustion must travel a distance twice the length of the boiler; up and forward to the front, and up and back to the smokehood at the rear. This construction insures permanently high efficiency and cleanliness of operation.

Steam				Water			
No.	Each	Rating Sq. Ft.	Ship. Wt. Lbs.	No.	Each	Rating Sq. Ft.	Ship. Wt. Lbs.
S-2305	$113.00	600	1820	W-2305	$106.00	975	1820
S-2306	137.00	750	2020	W-2306	130.00	1200	2020
S-2307	161.00	900	2300	W-2307	154.00	1425	2300
S-2308	185.00	1050	2530	W-2308	178.00	1650	2530
S-2309	209.00	1200	2780	W-2309	202.00	1875	2780
S-2310	233.00	1350	3000	W-2310	226.00	2100	3000
S-2905	257.00	1600	2900	W-2905	249.00	2600	2900
S-2906	287.00	2000	3340	W-2906	279.00	3250	3340
S-2907	317.00	2400	3780	W-2907	309.00	3900	3780
S-2908	347.00	2800	4220	W-2908	339.00	4550	4220
S-2909	377.00	3200	4690	W-2909	369.00	5200	4690
S-2910	407.00	3600	5060	W-2910	399.00	5850	5060
S-3606	380.00	3150	4520	W-3606	369.00	5100	4490
S-3607	422.00	3800	5180	W-3607	411.00	6200	5160
S-3608	464.00	4450	5780	W-3608	453.00	7300	5750
S-3609	506.00	5100	6380	W-3609	495.00	8400	6310
S-3610	548.00	5750	6940	W-3610	537.00	9500	6920
S-3611	590.00	6400	7570	W-3611	579.00	10600	7550
S-3612	632.00	7050	8100	W-3612	621.00	11700	8080
S-3613	674.00	7700	8630	W-3613	663.00	12800	8610
S-3614	716.00	8350	9310	W-3614	705.00	13900	9290
S-3615	758.00	9000	9900	W-3615	747.00	15000	9770
S-4807	790.00	9000	12050	W-4807	778.00	14500	12045
S-4808	899.00	10250	13625	W-4808	887.00	16500	13355
S-4809	1008.00	11500	15115	W-4809	996.00	18500	15035
S-4810	1117.00	12750	16930	W-4810	1105.00	20500	16540
S-4811	1226.00	14000	18275	W-4811	1214.00	22500	17690
S-4812	1335.00	15250	19855	W-4812	1323.00	24500	19320
S-4813	1444.00	16500	21165	W-4813	1432.00	26500	20640
S-4814	1553.00	17750	22120	W-4814	1541.00	28500	22105
S-7909	1332.00	14000	18130	W-7909	1315.00	22000	17835
S-7910	1469.00	15500	20150	W-7910	1452.00	24500	20170
S-7911	1606.00	17000	21430	W-7911	1589.00	27000	20750
S-7912	1743.00	18500	22235	W-7912	1726.00	29500	22215
S-7913	1880.00	20000	23695	W-7913	1863.00	32000	23680
S-7914	2017.00	21500	25670	W-7914	2000.00	34500	25140
S-7915	2154.00	23000	26615	W-7915	2137.00	37000	26600
S-7916	2291.00	24500	28080	W-7916	2274.00	39500	28060
S-7917	2428.00	26000	29530	W-7917	2411.00	42000	29520

Hy-Tech Products

Ideal Arcola Heaters

PATENTED JANUARY 18, 1921. OTHER PATENT PENDING.



The Ideal Arcola Heater places comfort and fuel economy of hot water heating within the reach of owners of cellarless bungalows, small city and farm cottages, one-story stores and office buildings, small country school-houses, country resort-cottages, small churches and chapels, garages, interurban street-car and railroad stations, weighing rooms, village fire houses, police stations, etc. It is neat and compact.

It is peculiarly adapted for use in those two and three-story flat buildings where each tenant prefers to run his own heating outfit to suit his family's needs or preference as to exact degree of warmth, and without going to a cellar to attend the fire.

Similarly, it fits the needs of thousands of combination store and flat buildings, where the store-keeper and the family above each prefers or requires an independent heating outfit, and finds it difficult or inconvenient to go to the cellar or divide the use or care of cellar-set boilers or hot air furnaces.

It is unique, in that it serves both as boiler and radiator, distributing its heat to the room in which it is placed and yet developing a great enough quantity of heat from a small amount of coal to warm cozily several additional rooms. Its pleasing appearance and small size permit the Arcola to be placed in any room having chimney connection.

The Ideal Arcola Heater can be furnished with the Arcola Automatic Heat Regulator if desired.

The heater is not furnished as a complete heating outfit with radiation, but must be assembled to fit each installation.

Boiler No.	No. of Sections	Area Grate Sq. Ft.	Hard Coal Cap., Lbs.	No. and Size Tappings Inches Flow	Return	Length Inches
4H	4	81	60	2 2	1 2	12
5H	5	1 08	80	2 2	1 2	15
6H	6	1 35	100	2 2	1 2	18
7H	7	1 62	120	2 2	1 2	21
8H	8	1 89	140	2 2	1 2	24
9H	9	2 16	160	2 2	1 2	27

Boiler No.	Water Rating Sq. Ft.	*Radiating Surface Heater and Tank Sq. Ft.	Diam Smoke Pipe In.	Size Chimney Inches	Height Chimney Feet
4H	200	45	6	8x8	25
5H	300	50	6	8x8	25
6H	400	55	6	8x8	30
7H	500	60	6	8x8	30
8H	600	65	6	8x8	30
9H	700	70	6	8x8	30

Fuel recommended: Small anthracite, soft coal and coke. Other sizes of hard coal or coke may be burned, depending upon chimney flue conditions.

When coke is used it is advisable to select a larger size Arcola.

*In figuring the square feet of radiation required for the room in which the Ideal Arcola Heater stands, allow for the boiler, expansion tank and piping as shown in table.

Prices upon application.

Ideal Vecto House Heaters



A compact, self-contained, beautiful heating unit has been perfected which warms, not one room, but a whole home, and yet consumes no more coal than is now used by old-fashioned methods to heat one room. This is the Ideal Vecto Heater.

Its warmth is clean and healthful. It requires no basement for installation; it is an ornament in any room. Compact and self-contained, it may be moved like furniture. It burns either coal or wood.

In principle and construction, the Ideal Vecto Heater is altogether different from old-fashioned heating devices. It is a scientific application of nature's way of spreading warmth. That is why it is so almost unbelievably efficient as to warm an entire small home while consuming only the same amount of fuel, as is ordinarily used to heat one room.

The operation of the Ideal Vecto Heater is based on the natural law of gravitation. Air is drawn in at the grill in the base, and brought into contact with a very extensive, scientifically designed heating surface; being warmed, it flows upward and outward, carrying its warmth to every corner of the home. The process is continuous. A gentle suffusion of even, comfortable warmth fills every room.

The great secret of the Ideal Vecto Heater lies in its extraordinarily large and scientifically designed heating surface, the temperature of which is easily controlled.

The cover of the Vecto Heater is sheet steel, finished in a beautiful walnut grained porcelain enamel. This finish is a vitreous enamel, baked on at a high temperature, so that it will not be affected by heat.

The inside of the heater is cast in one single, seamless piece.

There are no joints or crevices whatever through which any gas or dust might escape into the home, or through which excess air might leak into the heater.

The faces of the doors and fittings are ground smooth and have perfect contact. When the doors are closed, the fire is effectively sealed. It is impossible, then, to force it in any unsafe or wasteful manner.

Each heater is shipped completely equipped with high-grade fire brick lining, and completely assembled with jacket, ready for installation, which can be accomplished in a few minutes.

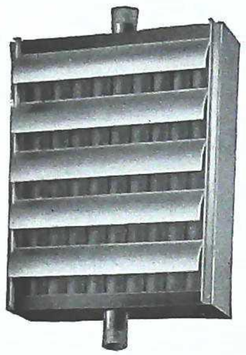
Made in three sizes—No. 3C, for 2 to 3 rooms; No. 5C, for 3 to 5 rooms; and No. 8C, for 5 to 8 rooms.

No.	For Rooms	Dimensions, Inches Height	Width	Depth	Shipping Weight Pounds
3C	2 to 3	33	15	11	180
5C	3 to 5	43	18	17	320
8C	5 to 8	48	21	21	500

Prices upon application.

Hoffman Moto-Heaters

For Factories, Mills, Garages, Gymnasiums or Any Service Where Large Spaces Are to Be Heated



Front View, Nos. 2, 4 and 5 with Louvres

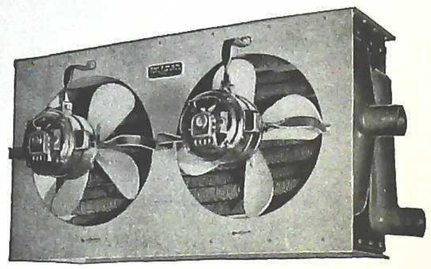
The Hoffman Moto-Heater insures uniform and quick distribution of heat and requires a short heating up period. It is compact in design, rugged in construction and light in weight on basis of heat output. Brazed joints and welded steel headers reduce expansion and contraction strains to a minimum.

Fins are 1½ inches outside diameter, imbedded in copper tubing, making a metal to metal contact that permits maximum transfer of heat from tube to fin.

Duplex heaters Nos. 6, 7 and 8, when equipped with double switches, have variable heat output, 100 per cent with both fans operating, 55 per cent with one fan, 6 per cent with no fans running.

Tested under 1000 pounds per square inch hydrostatic pressure. All heaters are suitable for pressures up to 200 pounds per square inch.

All Moto-Heaters (except No. 2) can be supplied with recirculating box and with horizontal outside air intake. Orders for all types should specify whether louvres are required, type of current available and fan speed.



Rear View, Nos. 6, 7 and 8

Heater No.	Tube Position	No. of Tubes Deep	No. of Fans
2	Vertical	2	1
4	Vertical	2	1
5	Vertical	2	1
6	Horizontal	2	2
7	Horizontal	3	2
8	Horizontal	4	2

Rated Capacities—Moto-Heater No. 2

Steam Pressure at Heater 4 Ounces per Square Inch

1/15 H.P. Motor 1750 R.P.M. 60 Cycle 700 Cu. Ft. Air/Min. Entering Heater Air Temp. Deg. Fahr. at Heater				1/20 H.P. Motor 1450 R.P.M. 25 Cycle 580 Cu. Ft. Air/Min. Entering Heater Air Temp. Deg. Fahr. at Heater				1/30 H.P. Motor 1160 R.P.M. 60 Cycle 465 Cu. Ft. Air/Min. Entering Heater Air Temp. Deg. Fahr. at Heater				1/40 H.P. Motor 870 R.P.M. 60 Cycle 350 Cu. Ft. Air/Min. Entering Heater Air Temp. Deg. Fahr. at Heater			
Entrance	Exit	Heat Output B.T.U. per Hr.	Condensation Lbs. per Hr.	Entrance	Exit	Heat Output B.T.U. per Hr.	Condensation Lbs. per Hr.	Entrance	Exit	Heat Output B.T.U. per Hr.	Condensation Lbs. per Hr.	Entrance	Exit	Heat Output B.T.U. per Hr.	Condensation Lbs. per Hr.
Steam Pressure at Heater 4 Ounces per Square Inch															
50	102	41300	43	50	105	36000	37	50	108	30400	31	50	112	24400	25
60	109	38300	40	60	112	33300	34	60	115	28100	29	60	118	22600	23
70	116	35200	36	70	119	30700	32	70	121	25900	27	70	125	20800	21
80	123	32400	33	80	125	28100	29	80	128	23800	25	80	131	19100	20
Steam Pressure at Heater 2 Pounds per Square Inch															
50	105	43200	45	50	107	37500	39	50	110	31700	33	50	114	25400	26
60	112	40000	41	60	114	34800	36	60	117	29400	30	60	121	23600	24
70	119	37100	38	70	121	32200	33	70	124	27200	28	70	128	21900	23
80	126	34100	35	80	128	29700	31	80	130	25000	26	80	134	20100	21
Steam Pressure at Heater 5 Pounds per Square Inch															
0	71	62200	65	0	75	54000	56	0	79	45600	48	0	84	36800	38
50	107	45000	47	50	110	39200	41	50	113	33100	34	50	119	26600	28
60	114	42000	44	60	117	36600	38	60	120	30900	32	60	124	24800	26
70	121	39000	41	70	124	33900	35	70	127	28600	30	70	131	23000	24
80	128	36000	37	80	130	31200	33	80	133	26500	28	80	137	21100	22

Rated Capacities—Moto-Heater No. 4

Steam Pressure at Heater 4 Ounces per Square Inch

1/8 H.P. Motor 1750 R.P.M. 60 Cycle 1700 Cu. Ft. Air/Min. Entering Heater				1/8 H.P. Motor 1450 R.P.M. 25 Cycle 1410 Cu. Ft. Air/Min. Entering Heater				1/8 H.P. Motor 1160 R.P.M. 60 Cycle 1130 Cu. Ft. Air/Min. Entering Heater				1/10 H.P. Motor 870 R.P.M. 60 Cycle 850 Cu. Ft. Air/Min. Entering Heater			
Steam Pressure at Heater 4 Ounces per Square Inch															
50	100	95100	98	50	103	83800	86	50	106	71400	74	50	111	59000	61
60	107	88000	91	60	110	77500	80	60	114	66000	68	60	118	54500	56
70	114	81100	84	70	117	71400	74	70	120	60800	63	70	124	50200	52
80	121	74400	77	80	124	65500	68	80	126	55800	58	80	131	46000	47
Steam Pressure at Heater 2 Pounds per Square Inch															
50	102	99000	103	50	105	87200	90	50	108	74200	77	50	114	61400	64
60	109	92000	95	60	112	81000	84	60	115	69000	72	60	121	57000	59
70	116	85200	88	70	119	75000	78	70	122	63900	66	70	127	52800	55
80	123	78500	81	80	126	69000	72	80	129	58800	61	80	134	48600	50
Steam Pressure at Heater 5 Pounds per Square Inch															
0	68	143300	145	0	72	126000	131	0	76	107300	112	0	84	88800	92
50	104	103800	108	50	107	91200	95	50	111	77700	81	50	117	64200	67
60	111	96500	101	60	114	85000	89	60	118	72500	76	60	124	59900	62
70	118	89500	93	70	121	79000	83	70	125	67200	70	70	130	55500	58
80	126	82800	86	80	129	73000	76	80	132	62100	65	80	137	51400	54

NOTE:—The equivalent of direct cast iron radiation is normally based on the heater output at 2 pounds steam pressure and 60° entering air temperature. To determine this for any special condition, divide the B.t.u. output by 240 or multiply the condensation per hour by 4.

Hy-Tech Products

Hoffman Moto-Heaters

Rated Capacities—Moto-Heater No. 5

Steam Pressure at Heater 4 Ounces per Square Inch

1/6 H.P. Motor 1750 R.P.M. 60 Cycle 1850 Cu. Ft. Air/Min. Entering Heater Air Temp. Deg. Fahr. at Heater				1/6 H.P. Motor 1450 R.P.M. 25 Cycle 1530 Cu. Ft. Air/Min. Entering Heater Air Temp. Deg. Fahr. at Heater				1/4 H.P. Motor 1160 R.P.M. 60 Cycle 1230 Cu. Ft. Air/Min. Entering Heater Air Temp. Deg. Fahr. at Heater				1/10 H.P. Motor 870 R.P.M. 60 Cycle 920 Cu. Ft. Air/Min. Entering Heater Air Temp. Deg. Fahr. at Heater			
Entrance	Exit	Heat Output B.T.U. per Hr.	Condensation Lbs. per Hr.	Entrance	Exit	Heat Output B.T.U. per Hr.	Condensation Lbs. per Hr.	Entrance	Exit	Heat Output B.T.U. per Hr.	Condensation Lbs. per Hr.	Entrance	Exit	Heat Output B.T.U. per Hr.	Condensation Lbs. per Hr.
Steam Pressure at Heater 4 Ounces per Square Inch															
50	105	113900	117	50	107	100200	103	50	112	86400	89	50	118	70900	73
60	111	105200	109	60	115	92800	96	60	119	79800	83	60	124	65500	68
70	118	97000	100	70	121	85500	88	70	125	73500	76	70	130	60300	62
80	125	89000	92	80	128	78400	81	80	131	67500	70	80	136	55400	57
Steam Pressure at Heater 2 Pounds per Square Inch															
50	107	118600	123	50	111	104500	108	50	115	90000	93	50	121	73800	76
60	114	110000	114	60	117	97000	100	60	121	83500	87	60	127	68500	71
70	121	102000	106	70	124	89900	93	70	128	77400	80	70	134	63500	66
80	128	93900	97	80	131	82700	86	80	134	71200	74	80	140	58500	61
Steam Pressure at Heater 5 Pounds per Square Inch															
0	74	171500	179	0	79	151200	158	0	85	130000	136	0	93	106500	111
50	109	124000	129	50	113	109200	114	50	118	94000	98	50	124	77100	80
60	116	115500	120	60	120	101800	106	60	124	87600	91	60	131	72000	75
70	123	107000	111	70	127	94400	98	70	131	81200	85	70	137	66600	69
80	130	99200	103	80	134	87400	91	80	137	75200	78	80	143	61700	64

Rated Capacities—Moto-Heater No. 6

Steam Pressure at Heater 4 Ounces per Square Inch

1/5 H.P. Motor 1750 R.P.M. 60 Cycle 3740 Cu. Ft. Air/Min. Entering Heater				1/4 H.P. Motor 1450 R.P.M. 25 Cycle 3100 Cu. Ft. Air/Min. Entering Heater				1/4 H.P. Motor 1160 R.P.M. 60 Cycle 2480 Cu. Ft. Air/Min. Entering Heater				1/5 H.P. Motor 870 R.P.M. 60 Cycle 1860 Cu. Ft. Air/Min. Entering Heater			
Steam Pressure at Heater 4 Ounces per Square Inch															
50	87	158300	163	50	90	139300	144	50	93	119000	123	50	97	98000	101
60	95	146200	151	60	97	128700	133	60	100	110000	113	60	104	90500	93
70	103	134800	139	70	106	118500	122	70	108	101200	104	70	111	83500	86
80	111	123900	128	80	113	108800	112	80	115	93100	96	80	118	75800	78
Steam Pressure at Heater 2 Pounds per Square Inch															
50	89	165000	170	50	91	144500	149	50	94	124000	128	50	99	102500	106
60	97	153000	158	60	99	134500	139	60	102	115000	119	60	106	95300	99
70	105	141500	146	70	107	124500	128	70	110	106500	110	70	114	88200	91
80	113	130000	134	80	115	114500	118	80	117	98400	102	80	121	81200	84
Steam Pressure at Heater 5 Pounds per Square Inch															
0	51	237000	247	0	54	208000	216	0	58	178500	186	0	63	147500	154
50	91	172000	179	50	93	151000	157	50	96	130000	135	50	101	107000	111
60	99	160500	167	60	101	141000	147	60	104	121000	126	60	108	100000	104
70	107	149000	155	70	109	130500	136	70	112	112000	117	70	116	92600	96
80	115	138000	144	80	117	121000	126	80	119	104000	108	80	123	85800	89

Rated Capacities—Moto-Heater No. 7

Steam Pressure at Heater 4 Ounces per Square Inch

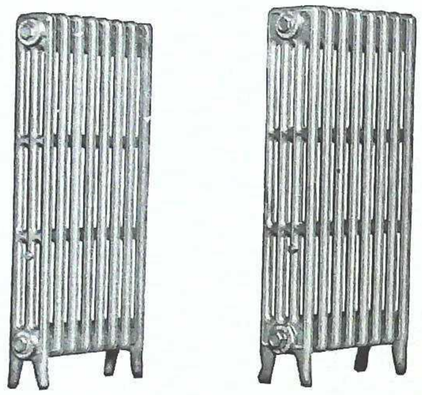
1/3 H.P. Motor 1750 R.P.M. 60 Cycle 3490 Cu. Ft. Air/Min. Entering Heater				1/4 H.P. Motor 1450 R.P.M. 25 Cycle 2890 Cu. Ft. Air/Min. Entering Heater				1/4 H.P. Motor 1160 R.P.M. 60 Cycle 2320 Cu. Ft. Air/Min. Entering Heater				1/5 H.P. Motor 870 R.P.M. 60 Cycle 1740 Cu. Ft. Air/Min. Entering Heater			
Steam Pressure at Heater 4 Ounces per Square Inch															
50	102	204000	210	50	105	180000	186	50	108	155300	160	50	115	127500	132
60	109	188300	194	60	112	166300	172	60	116	143400	148	60	121	118000	122
70	116	173500	179	70	119	153300	158	70	122	132100	136	70	128	109000	112
80	123	159500	165	80	126	141100	146	80	129	121400	125	80	133	98800	102
Steam Pressure at Heater 2 Pounds per Square Inch															
50	104	212500	220	50	107	187000	193	50	112	161500	167	50	118	133500	138
60	111	197000	203	60	114	174000	180	60	118	150000	155	60	124	124000	128
70	118	182500	189	70	121	161000	166	70	125	139000	144	70	131	114500	118
80	125	168000	174	80	128	148000	153	80	132	128000	132	80	137	103500	109
Steam Pressure at Heater 5 Pounds per Square Inch															
0	70	306000	318	0	74	269000	280	0	80	232500	242	0	88	192000	200
50	106	222000	231	50	110	195500	204	50	115	169000	176	50	121	139500	145
60	114	207000	215	60	117	182500	190	60	121	157500	164	60	127	130000	135
70	121	192000	200	70	124	169000	176	70	128	146000	152	70	134	120500	125
80	128	177500	185	80	131	156500	163	80	135	135000	141	80	140	111500	116

Rated Capacities—Moto-Heater No. 8

Steam Pressure at Heater 4 Ounces per Square Inch

1/3 H.P. Motor 1750 R.P.M. 60 Cycle 3240 Cu. Ft. Air/Min. Entering Heater				1/4 H.P. Motor 1450 R.P.M. 25 Cycle 2680 Cu. Ft. Air/Min. Entering Heater				1/4 H.P. Motor 1160 R.P.M. 60 Cycle 2150 Cu. Ft. Air/Min. Entering Heater				1/5 H.P. Motor 870 R.P.M. 60 Cycle 1610 Cu. Ft. Air/Min. Entering Heater			
Steam Pressure at Heater 4 Ounces per Square Inch															
50	117	244300	252	50	121	214200	221	50	125	183200	189	50	132	149500	154
60	123	225500	233	60	127	198000	204	60	131	169200	175	60	137	138000	143
70	129	208000	215	70	133	182500	188	70	137	156000	161	70	143	127500	132
80	135	191000	196	80	139	167700	173	80	142	143300	148	80	147	116000	120
Steam Pressure at Heater 2 Pounds per Square Inch															
50	120	254500	263	50	124	223000	240	50	129	191000	197	50	136	156500	162
60	126	236000	244	60	130	207000	214	60	134	177000	183	60	142	145500	150
70	132	218500	226	70	136	191500	198	70	140	164000	169	70	147	134500	139
80	138	201500	208	80	142	176000	182	80	146	151000	156	80	152	124000	128
Steam Pressure at Heater 5 Pounds per Square Inch															
0	90	366000	381	0	95	320000	333	0	102	274500	286	0	112	225000	234
50	123	266000	277	50	127	232500	242	50	132	199500	208	50	140	163500	170
60	129	248000	258	60	133	217000	226	60	138	186000	194	60	146	152500	159
70	135	230000	239	70	139	201000	209	70	144	172500	180	70	151	141500	147
80	142	213000	222	80	145	186000	193	80	150	159500	166	80	156	131000	136

Corto Radiators
For Steam or Water



3-Tube Corto

4-Tube Corto

3-Tube
Width, 4⅝ Inches; Centers, 2½ Inches

Number of Sections	†Length 2½ In. per Section	*Heating Surface, Square Feet: 20-Inch Height 1¾ Sq. Ft. per Section	23-Inch Height 2 Sq. Ft. per Section	26-Inch Height 2⅓ Sq. Ft. per Section	32-Inch Height 3 Sq. Ft. per Section	38-Inch Height 3½ Sq. Ft. per Section
2	5	3½	4	4⅔	6	7
3	7½	5¼	6	7	9	10½
4	10	7	8	9⅓	12	14
5	12½	8¾	10	11⅔	15	17½
6	15	10½	12	14	18	21
7	17½	12¼	14	16⅓	21	24½
8	20	14	16	18⅔	24	28
9	22½	15¾	18	21	27	31½
10	25	17½	20	23⅓	30	35
11	27½	19¼	22	25⅔	33	38½
12	30	21	24	28	36	42
13	32½	22¾	26	30⅓	39	45½
14	35	24½	28	32⅔	42	49
15	37½	26¼	30	35	45	52½
16	40	28	32	37⅓	48	56
17	42½	29¾	34	39⅔	51	59½
18	45	31½	36	42	54	63
19	47½	33¼	38	44⅓	57	66½
20	50	35	40	46⅔	60	70

4-Tube
Width, 6⅝ Inches; Centers, 2½ Inches

Number of Sections	†Length 2½ In. per Section	*Heating Surface, Square Feet: 20-Inch Height 2¼ Sq. Ft. per Section	23-Inch Height 2½ Sq. Ft. per Section	26-Inch Height 2¾ Sq. Ft. per Section	32-Inch Height 3½ Sq. Ft. per Section	38-Inch Height 4¼ Sq. Ft. per Section
2	5	4½	5	5½	7	8½
3	7½	6¾	7½	8¼	10½	12¾
4	10	9	10	11	14	17
5	12½	11¼	12½	13¾	17½	21¼
6	15	13½	15	16½	21	25½
7	17½	15¾	17½	19¼	24½	29¾
8	20	18	20	22	28	34
9	22½	20¼	22½	24¾	31½	38¼
10	25	22½	25	27½	35	42½
11	27½	24¾	27½	30¼	38½	46¾
12	30	27	30	33	42	51
13	32½	29¼	32½	35¾	45½	55¼
14	35	31½	35	38½	49	59½
15	37½	33¾	37½	41¼	52½	63¾
16	40	36	40	44	56	68
17	42½	38¼	42½	46¾	59½	72¼
18	45	40½	45	49½	63	76½
19	47½	42¾	47½	52¼	66½	80¾
20	50	45	50	55	70	85

*Based upon engineering standard of 240 B.t.u. emission per square foot per hour.

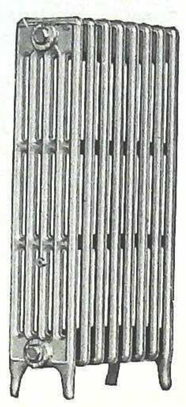
†Add ½ inch for each bushing.

Tappings.—1½-inch top and bottom. Bushed for steam or water as per specifications.

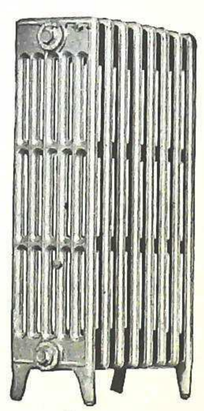
Connections.—Both steam and water—extra heavy 1½-inch right and left threaded nipples at top and bottom.

Shipping weight, 5 pounds per square foot.

Corto Radiators
For Steam or Water



5-Tube Corto



6-Tube Corto

5-Tube
Width, 8 Inches; Centers, 2½ Inches

Number of Sections	†Length 2½ In. per Section	*Heating Surface, Square Feet: 20-Inch Height 2⅔ Sq. Ft. per Section	23-Inch Height 3 Sq. Ft. per Section	26-Inch Height 3½ Sq. Ft. per Section	32-Inch Height 4⅓ Sq. Ft. per Section	38-Inch Height 5 Sq. Ft. per Section
2	5	5⅓	6	7	8⅔	10
3	7½	8	9	10½	13	15
4	10	10⅔	12	14	17⅓	20
5	12½	13⅓	15	17½	21⅔	25
6	15	16	18	21	26	30
7	17½	18⅔	21	24½	30⅓	35
8	20	21⅓	24	28	34⅔	40
9	22½	24	27	31½	39	45
10	25	26⅔	30	35	43⅓	50
11	27½	29⅓	33	38½	47⅔	55
12	30	32	36	42	52	60
13	32½	34⅔	39	45½	56⅓	65
14	35	37⅓	42	49	60⅔	70
15	37½	40	45	52½	65	75
16	40	42⅔	48	56	69⅓	80
17	42½	45⅓	51	59½	73⅔	85
18	45	48	54	63	78	90
19	47½	50⅔	57	66½	82⅓	95
20	50	53⅓	60	70	86⅔	100

6-Tube
Width, 9 11/16 Inches; Centers, 2½ Inches

Number of Sections	†Length 2½ In. per Section	*Heating Surface, Square Feet: 20-Inch Height 3 Sq. Ft. per Section	23-Inch Height 3½ Sq. Ft. per Section	26-Inch Height 4 Sq. Ft. per Section	32-Inch Height 5 Sq. Ft. per Section	38-Inch Height 6 Sq. Ft. per Section
2	5	6	7	8	10	12
3	7½	9	10½	12	15	18
4	10	12	14	16	20	24
5	12½	15	17½	20	25	30
6	15	18	21	24	30	36
7	17½	21	24½	28	35	42
8	20	24	28	32	40	48
9	22½	27	31½	36	45	54
10	25	30	35	40	50	60
11	27½	33	38½	44	55	66
12	30	36	42	48	60	72
13	32½	39	45½	52	65	78
14	35	42	49	56	70	84
15	37½	45	52½	60	75	90
16	40	48	56	64	80	96
17	42½	51	59½	68	85	102
18	45	54	63	72	90	108
19	47½	57	66½	76	95	114
20	50	60	70	80	100	120

*Based upon engineering standard of 240 B.t.u. emission per square foot per hour.

†Add ½ inch for each bushing.

Tappings.—1½-inch top and bottom. Bushed for steam or water as per specifications.

Connections.—Both steam and water—extra heavy 1½-inch right and left threaded nipples at top and bottom.

Shipping weight, 5 pounds per square foot.

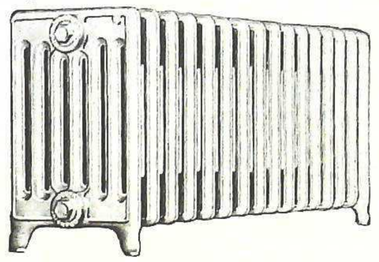
Hy-Tech Products

Corto Window Radiators
For Steam or Water
Width, 11⅜ Inches; Centers, 2½ Inches

Add ½ inch to length for each bushing.

Tappings.—1½-inch top and bottom, bushed for steam or water.

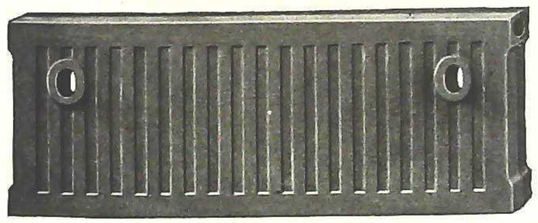
Connections.—Extra heavy 1½-inch right and left threaded nipples at top and bottom. Shipping weight, 5 pounds per sq. ft.



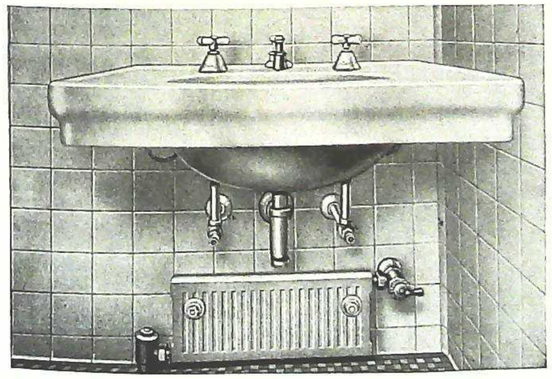
Number of Sections	Length 2½ In. per Section	*Heating Surface, Square Feet: 14-Inch Height 2½ Sq. Ft.	17-Inch Height 3 Sq. Ft.	20-Inch Height 3⅓ Sq. Ft.
2	5	5	6	7⅓
3	7½	7½	9	11
4	10	10	12	14⅔
5	12½	12½	15	18⅓
6	15	15	18	22
7	17½	17½	21	25⅔
8	20	20	24	29⅓
9	22½	22½	27	33
10	25	25	30	36⅔
11	27½	27½	33	40⅓
12	30	30	36	44
13	32½	32½	39	47⅔
14	35	35	42	51⅓
15	37½	37½	45	55
16	40	40	48	58⅔
17	42½	42½	51	62⅓
18	45	45	54	66
19	47½	47½	57	69⅔
20	50	50	60	73⅓

*Based upon engineering standard of 240 B. t. u. emission per sq. ft. per hr.

Peerless Bathroom Radiators



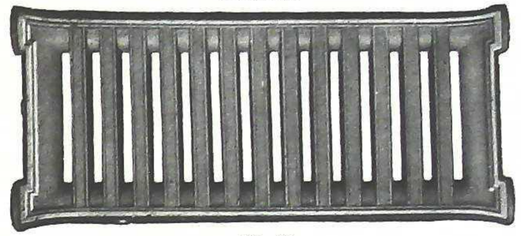
Designed especially for the warming of small bathrooms. Easily fastened to wall by lag screws or hooks. When harmoniously enameled its appearance is most pleasing.



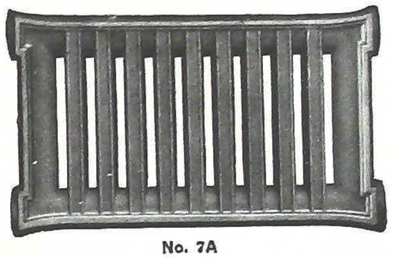
Heating surface, 3½ square feet. Wall area, 1.15 square feet. Two ½-inch tappings. Weight, 21 pounds.

Price.....each .....

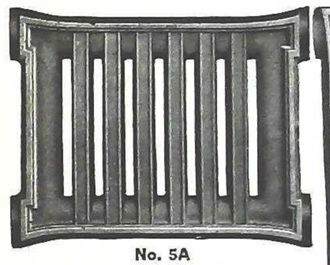
Cast Iron Wall Radiators
For Steam or Water
Peerless



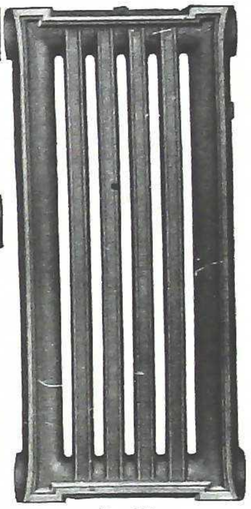
No. 9A



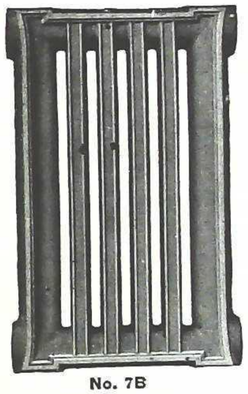
No. 7A



No. 5A



No. 9B



No. 7B

Sections 5A, 7A, and 9A have bars running crosswise of the section and tapped 1½ inches for connecting end to end.

Sections 7B and 9B have bars running the long way of the section and are regularly tapped 1½ inches to be connected side by side. The sections are connected by 1½-inch right and left-hand internal nipples. Tappings may be bushed if desired.

Special tappings at extra charge.

No.	Height Inches	Length or Width Inches	Thickness Inches	Thickness with Bracket Inches	Heating Surface Sq. Feet	Price per Sq. Ft.
5A	13 5/16	16 5/16	2 7/8	3 1/2	5	....
7A	13 5/16	21 7/8	2 7/8	3 1/2	7	....
7B	21 7/8	13 5/16	3 1/16	3 11/16	7	....
9A	13 5/16	29 1/16	2 7/8	3 1/2	9	....
9B	29 1/16	13 5/16	3 1/16	3 11/16	9	....

Special catalogue and prices furnished upon application.

Wall Radiator Brackets

New Arco Adjustable

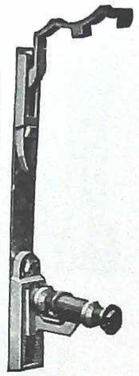
PATENTED



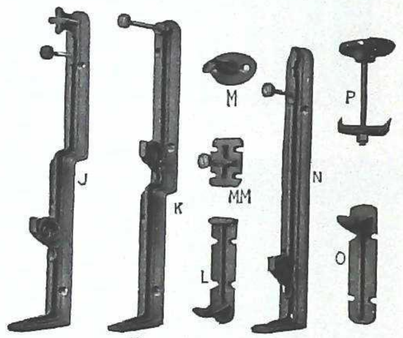
Single Spool Bracket

Has vertical adjustment of 2 inches. The outer face of the radiator sets 4¾ inches from the wall. The spools on the bottom bracket allow horizontal movement for expansion and contraction. The malleable iron finger of the top guides it and keeps it from tipping forward. Single spool bracket for one run of wall radiation. Double spool bracket for two runs of wall radiation.

Price, for Single Spool Bracket.....each $2.50
Price, for Double Spool Bracket.....each 4.50



Double Spool Bracket



Regular Pattern

J brackets fit over a 9½-inch high baseboard for supporting wall radiators Nos. 7B and 9B. One ¼-inch bolt and button furnished with each bracket.

K brackets to fit over baseboard for supporting wall radiators Nos. 5A, 7A and 9A. One ¼-inch stove bolt and button furnished with each bracket.

Brackets L, O, MM and M are screwed to wall baseboard or wainscoting. L and O brackets are bottom supports for all sizes of wall radiators. MM and M brackets are top guides to hold radiator in place. L and MM brackets are concealed; O and M brackets are not. One MM or M bracket should be used with each L or O bracket. L, O and MM brackets are slotted for four, and the M bracket for two wood screws, one ¼-inch stove bolt and button furnished with each MM bracket.

Bracket N is a straight right angle bracket, without offset, for supporting all sizes of wall radiators; height from floor to center of end tapping bosses, 5½ inches. One ¼-inch stove bolt and button with each N Bracket.

Ceiling bracket P is made of cast plate, 3½-inch diameter and screwed to ceiling joists by four screws. The bolt furnished gives a distance of 3½ inches to 5 inches from bottom of radiator to ceiling. Other length bolts furnished on special order.

NOTE.—In ordering buttons and stove bolts separately state for which bracket.

No.	Height from Floor to Center of Supply or Return End of Lowest Tapping	Price Each
J-1	9½-in.	$.80
J-2	7½ "	.75
J-3	5½ "	.75
K-1	16 " for 11½-in. Baseboard	.70
K-2	14 " " 9½ " "	.88
K-3	12 " " 7½ " "	.84
K-4	10 " " 5½ "	.80
K-5	8 " " 3½ "	.76
K-6	6 " " 1½ "	.72
L, M, MM, O		.68
N		.20
P-3½ to 5 Ext		.75

Concealed Radiator Brackets

For Corto Radiators



Top Guide



Bottom Support

For supporting 3, 4, 5 and 6-tube Corto radiators.

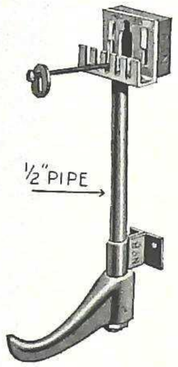
A set consists of one each, top and bottom support. Ordinarily two sets will support a radiator of medium size.

When ordering top brackets, specify whether for use on right-hand or right and left-hand threaded nipple construction.

Price, 3-Tube.....per pair $.60
Price, 4 and 5-Tube.....per pair 1.00
Price, 6-Tube.....per pair 1.20

E-Z Radiator Hangers

Style H with Baseboard Adjustment

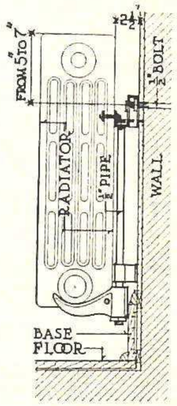




Part No. 5



Part No. 8



Made of pressed steel except bottom hook support. Fits any style or make of radiator including new tube type.
Price, for Wall Radiator, Tube and Window.....each $1.10
Price, for Double Wall Radiator.....each 1.30
All parts furnished except ½-inch pipe and anchor bolt.

Number of E-Z Hangers to Use

Type Radiator	Number of Sections — 2 Hangers	3 Hangers	4 Hangers
Wall	3 to 10	11 to 15	16 to 20
Double Wall	3 to 10	11 to 15	16 to 20
3-Tube	Up to 25	25 to 60	60 to 75
4-Tube	Up to 25	25 to 60	60 to 75
5-Tube	Up to 18	18 to 36	36 to 54
6-Tube	Up to 11	11 to 20	20 to 30
7-Tube	Up to 11	11 to 20	20 to 30

Style H places radiator 2½ inches from the wall.

Jennison Adjustable Radiator Feet



Size In.	Height, Inches Closed	Open	Price Each	Size In.	Height, Inches Closed	Open	Price Each
1	⅞	1¼	$.30	4	2	3	$.50
2	1¼	1¾	.35	5	3	4	.55
B3	1	1⅜	.40	6	4	5	.60
3	1½	2½	.45				

Hy-Tech Products

Radiator Pedestals

No. 10



Radiator pedestals are made in the following heights: ½, 1, 1½, 2, 2½, 3, 3½, 4, 4½ and 5 inches.

No. 35 Eccentric Bushings

Size Inches	Price Each	Size Inches	Price Each
.....	....	1½x ¾	$.25
1¼x½	$.22	2 x ½	.27
1¼x¾	.22	2 x ¾	.27
1½x½	.25	2 x1	.27

Add 15% for right and left.



Cast Iron Radiator Bushings



No. 336

Size Inches	Price Each	Size Inches	Price Each
1¼x1	$.11	1½x1¼	$.14
1½x ½	.14	2 x ¾	.21
1½x ¾	.14	2 x1	.21
1½x1	.14	2 x1¼	.21
.....	...	2 x1½	.21

No. 337 Cast Iron Radiator Plugs



Size.....inches 1½ 2
Price. No. 337.....each $.20 .20

Radiator Bronze

No. 652-5 Bronze Powder



Price, Aluminum, 1-lb. Cans.per lb. $2.50
" " ½" " " 2.80
" Gold, 1-lb. Cans..... " 2.90
Other colors: Gold, copper and silver in pound cans.

No. 646 Bronzing Liquid

One pound of bronze (except aluminum) covers about 300 square feet of radiation; one pound of aluminum powder covers about 600 square feet of radiation. One quart of liquid is required for each pound of bronze powder, except in the case of aluminum, for which the proportion is about ½ gallon of liquid to 1 pound of powder.

Price, in Gallon Cans.....per can $3.40
" " ½-gallon Cans..... " 1.80

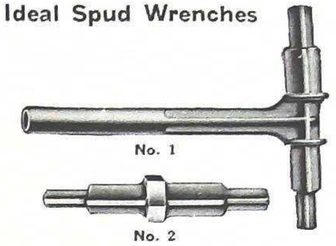
No. 647 Black Asphaltum Varnish

For painting boilers and risers. Put up in gallon and ½-gallon cans and in barrels of 30 gallons.

Price, Gallon Cans.....per can $2.70
" ½-gallon Cans..... " 1.40



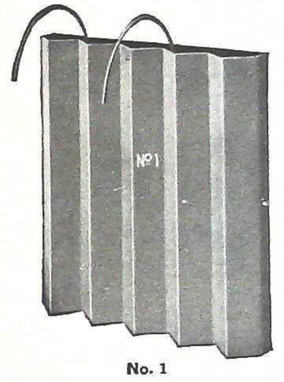
No. 590 Ideal Spud Wrenches



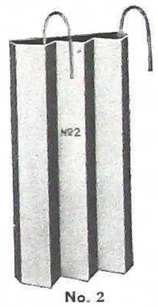
Convenient for connecting up union radiator valves or union elbows. Style 1 is used hand-to and has an open hexagon on end of handle for adjusting bolt nut. Style 2 is used with a Stillson wrench. Either style, ¾, 1, 1¼ and 1½-inch sizes. Made of malleable iron.

Price, Style 1.....each $1.50
Price, Style 2.....each 1.00

Savo Air Moisteners



No. 1



No. 2



No. 3

The dead, dry heat of the steam and hot water radiator and the hot air furnace dries up the mucous linings of the lungs, nose and throat, causing most of the ills during the fall, winter and spring months, when artificial heat is used.

The Savo Air Moistener converts the dry, vitiated indoor air into a moist, wholesome, healthful atmosphere that nature requires and good health demands. Also protects furniture, wall paper, paint and house plants.

The moistener is a corrugated galvanized iron reservoir which fits closely around the coils on the back of any radiator, out of sight, where the space between side wall and radiator is 1½ inches or more.

The heat of the radiator coming in direct contact with the corrugated back of the moistener, the water becomes hot and evaporates very rapidly.

Finished in aluminum or gilt to match radiators in color.

No. 1

For 6 to 20-coil radiator. Height, 14 inches. Width, 12½ inches.
Price, No. 1.....each $3.00

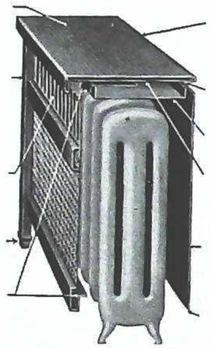
No. 2

For 4 or 5-coil radiator. Height, 14 inches. Width, 8 inches.
Price, No. 2.....each $2.50

No. 3

Low radiator. Height, 9 inches. Width, 12½ inches.
Price, No. 3.....each $2.50

H & C Steel Radiator Enclosures

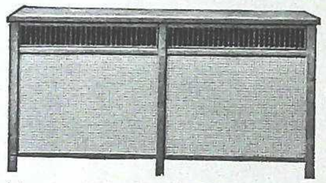


Radiator enclosures take away the last unfinished spot and help blend every detail into a harmonious whole. The use of H & C Enclosures in a room creates a circulation of air and diffuses the heat into the lower part of the room where it is needed. This, with the humidifier, creates more healthful conditions.

Enclosures are made entirely of steel, eliminating warping or crackling. Finished in 12 wood grains or 16 flat colors.

The top is easily raised for filling humidifier. While filling, a folding arm holds top in raised position. A door on end gives access to the valves. Top may be removed for cleaning. Air insulation protects top so that is is comfortable as a window seat and safe for plants. Back at extreme rear allows installation close to wall. Adjustable feet take care of irregularities in floor and window lines.

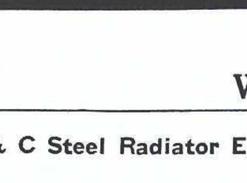
Thermaino No. 11



This model has a grille of extra large free air capacity, which insures free flow of heated air.

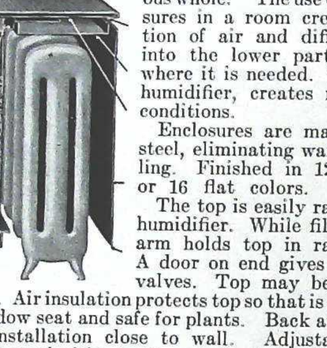
Has panels of woven steel cane, perforated cane or perforated diagonal lattice. Legs are plain.

Berkshire No. 24



Made with 4 front panel designs. Legs are plain.

Cheltenham No. 44



Has a Grecian design grille. This open design encourages the free flow of warm air. Especially appropriate for use with radiators above the average height.

In ordering, give style of radiator, length, height and width.

Prices and further information upon application.

American Hot Water Thermometers



Straight
Type 278

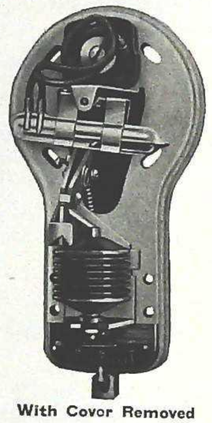


Angle
Type 280

Price, Straight.....each $1.75
Price, Angle.....each 2.00

No. 845 Mercoid Thermostats

Patent Pending



With Cover Removed

For temperature control in refrigeration, on oil burners, unit heaters, etc.

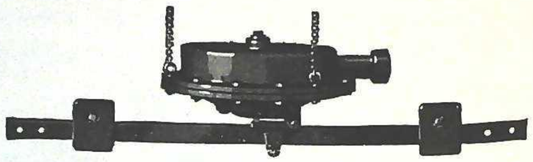
The Mercoid Thermostat is for use where it is desired to start or stop an electric motor according to air temperature changes. Current is thrown on or off direct to motor. No relay or other remote control is necessary where motor load is below tube rating. Has many applications such as oil burning apparatus, refrigeration work, control of motors, pumps, fans, etc. Operates by the expansion of a volatile gas contained within a flexible metal bellows. When temperature advances, the bellows expands, tilting the Mercoid, a sealed glass tube containing inert gas and mercury.

When tube is tilted mercury flows to one end making contact within tube. Tilting movement positive and quick acting. Gives accurate and close regulation. No open arc. No corrosion or oxidation of contacts. A positive safeguard against fire or explosion. Tests show the tube perfect after hundreds of thousands of operations. Rating: 10 amperes at 110 volts or 5 amperes at 200 volts, either d.c. or a.c. Can be furnished for any 25° range from 25° to 260° F. Operates accurately at any set point. Also furnished with flexible tube for remote control of the temperature of liquids.

Complete data furnished on request, giving full details covering conditions of use.

	For Heating	For Refrigeration
Price, Single Circuit, Single-Pole	$30.00	$40.00
Price, 2-Circuit or Double-Pole	36.00	46.00

Hoffman Vapor Damper Regulators

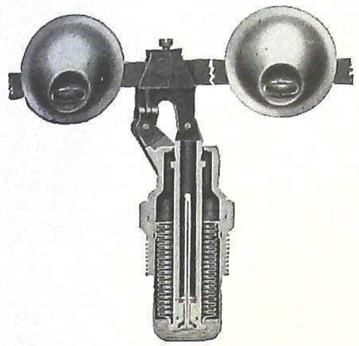


Has compensating or balancing plate, and is practically frictionless; it is sensitive and operates on slight changes in pressure. It is automatic in operation and after it has once been set at the desired pressure requires no attention. It controls the dampers, and responds immediately, accelerating or retarding the fire to meet the change in demand for steam from the radiators. It will fit any type boiler. Equipped with lever, weights, chain and pulleys.

Price.....each $30.00

Hy-Tech Products

No. 800 Arco Water Regulators



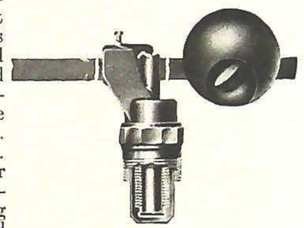
A damper regulator designed for hot water boilers which will control the drafts so as to maintain a constant water temperature at any degree between 100 and 220 degrees Fahrenheit.

The Arco Water Regulator is made entirely of metal. Within the bulb is an expansible metallic bellows, surrounding which is volatile liquid. As the water temperature in the system increases, the liquid vaporizes and the gas pressure generated thereby compresses the bellows and forces upward the thrust rod or stem which tilts the lever and closes the drafts. As the water cools the gas pressure is relieved and the counterweight opens the drafts. There are no perishable parts to wear out. The action is sensitive and accurate. Adjustment for temperature is obtained by changing the position of weights on the lever.

Connections, 2-inch iron pipe thread.

Price, No. 800.....each $18.00

No. 801 Arco Junior Water Regulators



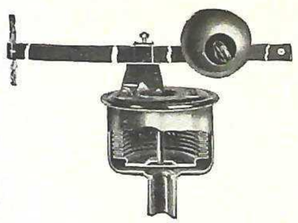
This regulator is designed especially for hot water supply boilers. As the dampers are small and light, less power is required to operate them. The construction and operation are similar to that of the No. 800 Arco Water Regulator.

The Arco Junior Water Regulator prevents boiling, sputtering steaming water at the faucets and insures plenty of hot water as long as there is sufficient fire in the heater.

Connection, 1½-inch standard pipe thread. Temperature range, 130 to 180 degrees Fahrenheit.

Price, No. 801.....each $16.00

No. 905 Arco Steam Regulators



An all-metal pressure regulator for controlling dampers on steam-heating boilers. It is sensitive and accurate. The diaphragm is a metallic bellows. The regulator contains no rubber or other perishable material, thus saving the annoyance and expense of renewals so common with regulators using a rubber diaphragm. The design is such that the steam pressure is on the outside of the bellows, with the stem or thrust rod extending down within the bellows where it is attached to the head at the bottom. These two prime features insure that the bellows expands or contracts evenly in all folds. There is no tendency for the bellows to tilt, and thus unduly stretch the metal on one side. The head is formed as an integral part of the bellows thereby eliminating possibilities of leak at a soldered joint.

For pressures up to 15 pounds. Connection, 1-inch male thread.

Price, No. 905.....each $15.00

No. 930 Sylphon Temperature Regulators

Lever Type



This regulator is used for controlling the temperature of liquids. It is adapted for hot water service heaters and open or closed tanks.

The No. 930 is often preferred in special processes requiring frequent changes in temperature setting, as the lever bar may be calibrated in degrees.

Made in valve sizes ½ to 8 inches inclusive. All valves are double-seated balanced type with bronze discs and seats. Sizes ½ to 1½ inches inclusive have bronze bodies fitted with bronze unions. Sizes 2 inches and above have iron bodies, flanged. Can be fitted with companion flanges on special order, at additional cost.

Furnished regularly to close valve with rising temperature. On special order at slight additional cost, regulators will be furnished to open valve with rising temperature.

Size Valve Inches	Bulb Threading I.P. Std. Inches	Bulb Length Inches	Length Lever Bar Inches	Adjusting Weight Pounds	Shipping Weight Pounds	Price Each
½	1	16	24	5	58	$60.00
¾	1	16	24	5	59	65.00
1	1	16	24	5	60	70.00
1¼	1	16	24	5	88	75.00
1½	1	16	24	5	90	80.00
2	1¼	16	24	5	106	90.00
2½	1¼	16	24	5	127	95.00
3	1¼	24	36	10	166	100.00
3½	1¼	24	36	10	177	110.00
4	1¼	24	36	10	200	120.00
5	1¼	24	36	10	270	175.00
6	2½	24	36	10	375	225.00
8	2½	24	36	10	625	275.00

An extra charge of $2.50 is made for reversing valve.

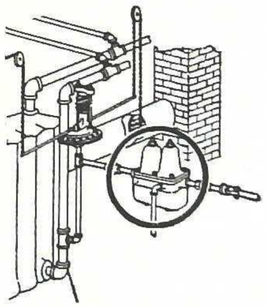
Type AH Cash Acme Automatic Pressure Controls

For the Hot Water Heating Plant



This control is built of bronze and has a large, easily cleaned strainer ahead of the working parts for their protection: a wide opening regulator to supply the water, this also protected by a strainer; a by-pass valve, used to fill the system quickly and prevent foreign matter in the piping from choking up the entire unit.

It is a combined regulator, relief valve, by-pass valve and strainer. Once installed, and the system filled through the by-pass, the action is automatic. The regulator constantly maintains a pressure of not less than 10 pounds within the system and the relief valve prevents the pressure going high enough to be dangerous. The by-pass is for quick filling and the strainer protects the unit and the entire system.



This control reduces air pockets, due to the higher pressure carried, and speeds up circulation.

It completely replaces the expansion tank and tank piping.

Shipping weight, 7 pounds.

Control, Only....each $20.00

Jewell Automatic Temperature Regulators



Type J-8, 8-Day Clock Thermostat



Type J-O, Plain Thermostat

Type J-8 has a jewelled balance clock especially developed for thermostatic control. Clock will automatically lower temperature to any degree at night and automatically raise the temperature at any predetermined time in the morning. Necessary only to wind periodically.

Type J-1 one-day has morning and evening control feature but it is necessary to wind clock and alarm once every 24 hours.

Type J-O plain pattern is like the other thermostats except it has no clock. Used where clock control is unnecessary. Indicator at all times is set by hand.

All are equipped with wall plate making it unnecessary to handle thermostat when connecting wires.

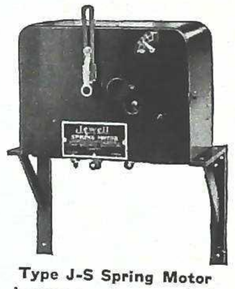


Type J-E Electric Motor

The Type J-E electric motor is the shaded pole type. It is simple in operation and silent and neat appearing.

It has no armature, armature windings, commutator, brushes, brush holders, brush holder springs or brush holder bearings. The rotor is the only primary moving part.

Line voltage is taken into the motor and is automatically reduced to low voltage for the thermostatic circuit.



Type J-S Spring Motor

The Type J-S spring motor is fitted with a spring of sufficient size to operate motor from 60 to 75 times on one winding. Two ordinary dry cells are required, or city lighting circuit reduced to 12 volts through special transformer, may be used to trip the motor. Easily wound from front and indicator shows whether winding is needed.

The type J-G gravity motor is similar in operation to the spring motor, except that the motive power is supplied by a 10-pound weight. Gives 20 to 25 operations, in average basement, to one weight adjustment.

Limiting Devices

The use of a limiting device insures greater economy in heating plant operation and provides a safety device which prevents overheating and possible damage to the heating system. To obtain the best results from automatic heat regulation include a limiting device with the thermostat and motor. See price list for model numbers.

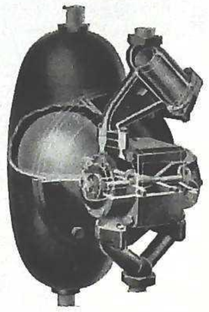
Model	Description	Shipping Wt., Lbs.	Price Each
J-8	8-Day Clock Thermostat	3	$60.00
J-1	1-Day Clock Thermostat	2	42.00
J-0	No Clock Thermostat	1	31.00
J-E	110-Volts, 60-Cycle A.C. Electric Motor	8	60.00
J-S	Spring Type Motor	16	36.00
J-G	Gravity Type Motor	20	25.00
B-2	Immersion Type Aquastat—for Hot Water	4	30.00
A-1	Vaportrol—for Low Pressure Vapor	2	18.00
F-1	Surface Aquastat—for Hot Water	2	24.00
B-2-F	Warm Air Limit Control	4	30.00
70	Pressure Regulator—for Steam or Vapor	4	30.00

To obtain the list price of a complete regulator, add the list prices of the units to be ordered; the necessary fittings for installation are included. State clearly that a regulator is wanted and list the models that are wanted by model number.

Extra charge of $2.50 net for current specifications other than 110-volt, 60-cycle A.C. for the J-E motor.

Batteries not furnished. Any standard make of dry cell is satisfactory.

McDonnell & Miller Self-Cleaning Duplex Water Feeders



The McDonnell & Miller Self Cleaning Rotary Valve Duplex Water Feeder is a simple and positive means of controlling the water line in low pressure steam boilers, automatically supplying make-up water from the city mains to compensate for leaks in the system or held up condensation, and also protecting the boiler against flooding.

Made in one size only, but it will automatically control the water line in any boiler, from the smallest residence unit to installations serving 20000 sq. ft. of radiation.

The 4 outstanding advantages of the rotary valve duplex water feeder are:

1. Self-Cleaning Valves—The cast bronze valve-discs turning on monel seats work-in to a better and better seat the more the feeder is in operation. As a result of this feature, and the other steps taken to insure clean operation, this feeder will give uninterrupted service even where feed water is particularly hard.

2. Fully Adjustable—By providing 3 easily made settings of both the supply and overflow valves, water line can be changed to 1 inch higher or lower after installation is made, and the differential between supply level and overflow level may be set at 1, 2, 3, 4, or 5 inches.

3. Large Capacity—The action of the supply valve is the same as if operated by hand, except that it is actuated by the float. This puts the full city pressure into the feed line.

4. Greater Simplicity—There is only one moving unit consisting of the float, float arm, horizontal shaft and rotary valve discs. This assembly moves as a unit, and oscillates, instead of sliding, on 2 bronze bearings. There is not a single sliding part and therefore no possibility of sticking.

The equalizing connections to the boiler maintain boiler conditions in the feeder. Any change in the boiler water line produces a similar change in the feeder and opens or closes the supply valves.

If an excess amount of condensation causes the water level in the boiler to approach flood point, the overflow valve opens and discharges the surplus to the sewer. It protects the boiler from the dangers of low water. It eliminates all expense in the replacement of burned out boilers and cracked sections, and does away with the discomfort of cold rooms while repairs are being made.



Typical Installation of McDonnell & Miller Self-Cleaning Feeder on Sectional Cast Iron Boiler

This feeder is not suitable where steam pressure is greater than 20 pounds.

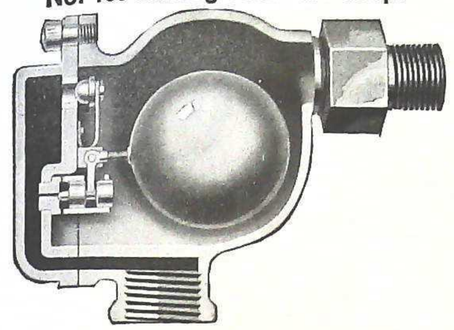
Intake supply pressure must be at least 5 pounds more than maximum steam pressure.

Complete installation diagrams furnished with each self-cleaning feeder.

Approximate shipping weight, 90 pounds.

Price ..... each $60.00

No. 109 Strong Radiator Traps

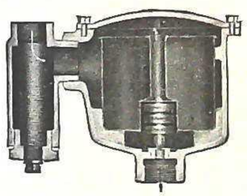


The valves of this trap are located below the radiation, thus draining every ounce of condensation from the radiators or piping. The trap is fitted with 2 valves, both of which are wide open during the peak load when large quantities of air and low temperature condensate are coming to trap. The thermal unit or air valve is of the bimetal type, positive in operation. No fluid or complicated construction to require adjustment or renewals. The main valve and seat is removable and is opened and closed by a ball float. All parts are assembled on the cover, consequently the trap may be taken entirely apart without removing the trap from the line. The No. 1 size may be fitted with either a 10 or 30-pound pressure valve, i.e., the 10 pound valve for pressure from zero to 10 pounds or the 30 pound valve for pressures of from 10 to 30 pounds; the 30-pound valve will operate down to zero, but with a decreasing capacity.

No. 2 size is fitted with a 10, 30 or 60-pound valve.

Trap No.	Pipe Conn. In.	Dist Center Inlet Bottom Outlet In.	Dist. Center Outlet and Inlet Nipple, In.	Cap. Lbs. per Hr	Ship. Wt. Lbs.	Price, Each Plain Finish	Price, Each Nickel-plated
1	½	2⅝	5⅛	200	4	$8.00	$9.50
2	½	4⅞	6	600	7½	12.90	15.00

No. 12 Hoffman Blast Traps



Especially adapted for draining condensation from indirect radiators, blast, Vento or Aerofin stacks, unit heaters, ends of steam mains and risers, driers and drums, hot-water generators and laundry machinery where the operating pressure is not in excess of 30 pounds. This valve will take care of large amounts of condensation. In functioning it distinguishes between steam, heated air and water of condensation, giving free discharge of air and condensation.

It relieves condensation immediately upon its arrival at the trap regardless of the water temperature. Combined with the float is a thermostatic member which overcomes the chief difficulty with float traps by automatically relieving air as well as condensation from the system.

The normal position of the valve is open and this is held until steam reaches it when closure takes place. If small quantities of condensation flow to the trap, the thermostat functions and relieves the water, but if larger amounts of condensation, beyond the capacity of the thermostat reach the trap, the float lifts the thermostat from its seat and maximum capacity is obtained.

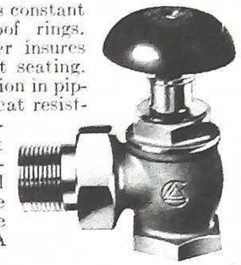
Nominal Capacities

Pressure per Sq. In. ..... lbs.	½	1	2	3	4	5
Capacity per Hr. ..... lbs.	800	1000	1500	1800	2000	2500
*Capacity Radiation ..... sq. ft.	3200	4000	6000	7200	8000	10000

*Based on ¼ pound condensation per hour per square foot.
Maximum operating pressure, 30 pounds.
Capacities for over 5 pounds pressure on application.
Inlet connection, 1 inch; outlet, 1 inch.
Prices upon application.

No. 999 Arco Packless Radiator Valves

For Steam, Hot Water, Vapor and Vacuum With Union and Composition Disc



Heavy non-rusting spring keeps constant pressure on special leak-proof rings. Thread screw of large diameter insures easy, smooth operation and tight seating. Long tapered joints allow variation in piping. Non-breakable handle of heat resisting composition insures comfortable grip. When specified for hot water service on gravity or circulation system a 1/16-inch hole will be drilled through the seat of the valve; valves for this service should be ordered with an A prefix.

Size ..... inches	½	¾	1	1¼	1½
Price No. 999, Angle Type ..... each	$3.70	4.30	5.10	6.40	8.40

Jenkins Low Bonnet Radiator Valves

With Male Union

No. 852, Globe — No. 853, Angle



This type of valve is preferred by many because of its compact design and close dimensions.

The manganese bronze spindle has double threads so that valve can be opened with approximately one turn of the hand wheel. It is fitted with the follower type of stuffing box.

With black composition hand wheels; also with bronze hand wheels when required or with lock shield and key. Nickel-plated body with union outlet; other finishes on order.

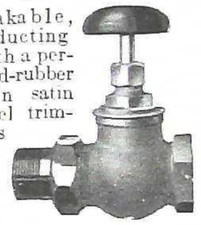
Size ..... inches	½	¾	1	1¼	1½
Each	$3.15	3.90	4.70	6.25	8.15

Nos. 72 and 57 Detroit Radiator Valves

For Steam, with Union and Composition Disc



No. 72, Angle



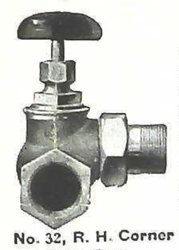
No. 57, Globe

Has non-breakable, non-heat conducting round handle, with a permanent black hard-rubber finish. Body is in satin finish with nickel trimmings. All threads right hand.

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
½	$3.70	1	$5.10	1½	$8.40
¾	4.30	1¼	6.40	2	13.60

Nos. 32 and 37 Detroit Radiator Valves

For Steam, with Union and Composition Disc



No. 32, R. H. Corner



No. 37, L. H. Corner

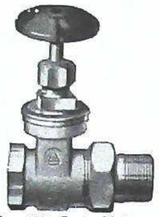
Equipped with a new kind of non-breakable, non-heat conducting round handle, with a permanent black hard-rubber finish. Body is in satin finish with nickel trimmings. All threads right hand.

Size In.	Price, Each R. H. Corner	L. H. Corner	Size In.	Price, Each R. H. Corner	L. H. Corner	Size In.	Price, Each R. H. Corner	L. H. Corner
½	$4.10	$4.10	1	$5.60	$5.60	1½	$9.25	$9.25
¾	4.75	4.75	1¼	7.05	7.05	2	15.00	15.00

Hy-Tech Products

Angle and Gate Union Radiator Valves

For Steam and Hot Water



No. 373 Gate Valves For Steam and Hot Water



No. 101 Angle Quick Opening Valves for Hot Water

Rough body, polished trimmings, nickel-plated all over.

Size.....inches	½	¾	1	1¼	1½	2
Price, No. 373..ea.	$3.65	$4.25	$5.20	$6.60	$9.00	$12.80
" " 101.. "	3.25	3.70	4.50	5.75	7.30	12.00

Lock and Shield Radiator Valves



Size Valve Inches	Price Each N. P Keys	Size Valve Inches	Price Each N. P. Keys
½	$.50	1¼	$.50
¾	.50	1½	.50
1	.50	2	.50

Lock and shield equipment can be furnished with any regular pattern of radiator valves at additional charge.

No. 132 Union Radiator Elbows



Size Inches	Price Each
½	$1.75
¾	2.00
1	2.50
1¼	3.30
1½	4.25
2	7.20

Composition Valve Handles



Size Valve In.	Price, Each Handle Only	Screws Only	Size Valve In.	Price, Each Handle Only	Screws Only
½	$.30	$.06	1¼	$.35	$.06
¾	.30	.06	1½	.45	.06
1	.35	.06	2	.45	.06

No. 206 Wood Wheel Compression Air Valves



The valve is nickeled inside as well as outside to prevent corrosion, and every valve examined before packing.

Threaded for ⅛-inch iron pipe.

Price, No. 206, Nickel-Plated.....each $.70

Compression Radiator Air Valves

No. 4 with Loose Key



Key



No. 4, ⅛-Inch, Nickel-Plated.....each $.60
Extra Keys for No. 4.....each .10

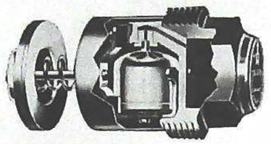
Coin-operated Compression Air Valves

No. 12202

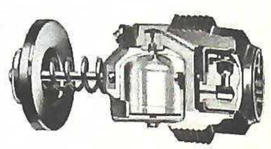


Price, Nickel-plated.....each $.30

In-Airid Invisible Air Valves



No. 1, for Steam



No. 2, for Vacuum

This air valve fits all new type radiation. It prevents short circuiting and assures complete venting of all the air, making all sections hot. It is entirely invisible, thereby improving the appearance of the radiator.

In-Airid is in the driest part of the radiator, yet, should water reach it the float closes instantly. No siphon is necessary because there is no shell to hold water. There is no hissing or leaking of steam or water.

It will not clog with dirt because it is in the cleanest part of the radiator, yet when necessary it can be easily cleaned if clogged under abnormal condition.

It cannot be damaged because all working parts are within the section.

It is all metal. Requires no adjustment and cannot be tampered with. It is easily installed.

The No. 2 In-Airid is for below atmosphere jobs. It permits the air to escape but prevents its return into the system.

It has a vacuum seal with hand-lapped monel disc and seat. This valve vents with only a slight boiler pressure. But as the steam goes down the air seal closes tightly, creating a partial vacuum in the system and retaining heat for hours after the fire is banked.

Price, No. 1.....each $1.85
Price, No. 2.....each 3.00

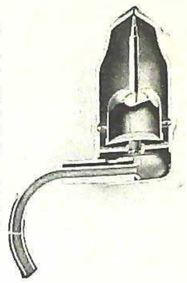
Ideal Quick Vents



For venting mains, long runs of pipe, indirect stacks, drop risers, etc., where a large amount of air must be expelled quickly. Will benefit all low pressure steam jobs by venting entire piping system thereby heating radiators quicker under less pressure. Operates by volatile liquid contained within expansible member which has diaphragm at top and bottom giving full movement of stem. No adjustment. All metal. Very sensitive. Does not close against water. Venting port, 3/32-inch diameter. Valve connection, ¾ or ⅜-inch pipe thread. Nickeled finish.

Price, No. 815, ¾-Inch.....each $3.00
Price, No. 820, ⅜-Inch.....each 3.00

No. 500 Ideal Airid Siphon Valves

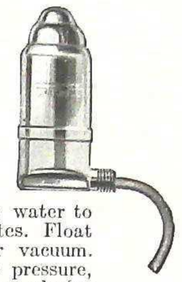


The valve operates thermostatically by the evaporation of a volatile liquid contained within the float forcing outward the diaphragm which forms the bottom of the float, raising the pin and instantly closing the valve. A slight cooling relieves the internal pressure and opens the valve.

Under flooded radiator conditions the valve vents without leak because the large separating chamber allows separation of the air and water. The seat requires no guide for the pin, thus eliminating the water pocket around the seat which causes sputtering and leaking. The drain area allows the valve to drain perfectly without a by-pass from the stem to the air space at the top of the shell.

Price, No. 500.....each $1.35

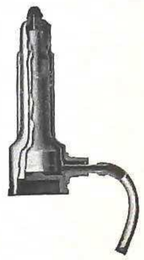
No. 510 Ideal Airid Vacuum Valves



For venting low pressure steam radiators, self sealing against return of air. No seat plug or guide; reduces to a minimum the liability of clogging from dirt and insures dry operation by preventing capillary attraction from holding water in suspension around the opening. Large separating chamber; ample space for air and water to separate, insuring that only air will pass out the opening. Proper area between float and shell allows water to drain from the valve when siphon operates. Float contains volatile liquid sealed under vacuum. Steam temperature causes internal gas pressure, expanding diaphragm at bottom of float closing valve.

Price, No. 510, Angle Connection, ⅛-Inch.....each $4.00
Price, No. 512, Straight Shank, ⅛-Inch.....each 5.00

No. 1 Hoffman Siphon Air Valves



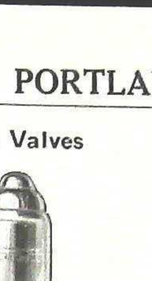
This valve is designed for low pressure gravity systems of one and two pipe type. Through its use all air is vented from radiator without loss of steam, maximum heating efficiency is assured and leakage from water-logged radiators prevented. After contact of water with valve the siphon drains all water from the valve and venting occurs without the slightest spit even if the radiator is under pressure.

Maximum guaranteed operating pressure, 10 pounds.

Has ⅛-inch radiator connection.

No. 1.....each $1.90

No. 2 Hoffman Syphon Air and Vacuum Valves



This valve is similar to the No. 1, but in addition, when the radiator is once freed from air, return of air through the vent port is prevented.

Normally air vent port is wide open until steam comes in contact with the heat sensitive fluid in the float, expanding the flexible diaphragm, raising the float and closing vent port. Air check prevents return of air until the vacuum formed in the valve permits atmospheric pressure, acting through chamber port to force diaphragm upward, raising the float and doubly closing the vent port.

With this valve an ordinary one-pipe steam system may be changed into vacuum type. Maximum guaranteed operating pressure, 10 pounds. Radiator connection, ⅛ inch.
Price, No. 2.....each $4.50

Hoffman Air Valves



No. 3



No. 4

No. 3 Air Line Valves are sensitive in action and close the instant steam fills the radiator. No adjustment is necessary either before or after installation.

Maximum guaranteed operating pressure, 10 pounds. ⅛-inch radiator connection with ¼-inch air line connection.

No. 4 Quick Vent Valves are for venting mains, risers, vents, stacks, coils, etc., *where water is not a factor.* All air is vented through ⅛-inch vent port. *Valve does not close against water.*

Maximum guaranteed operating pressure, 10 pounds.
Standard connection ¾-inch. Can be supplied with ¼-in.
Price, No. 3.....each $2.50
Price, No. 4.....each 2.80

No. 5 Hoffman Quick Vent Float Air Valves



This valve installed on the end of return mains in one-pipe gravity systems causes steam to first flow to end of main, then into radiators at a uniform rate, so that radiators distant from boiler will receive their supply of steam as quickly as those close to boiler. For quick venting where water may be a factor. Especially well adapted for use in venting ends of steam mains, ends of dry return mains, indirect radiators, Blast, Vento or Aerofin Stacks, hot-water generators, low pressure feed water heaters, dryers and drums, etc. It closes instantly when steam or water comes into contact with float. Pipe connection, ⅜ inch; vent port for less than 3 pounds is 3/16 inch; for 3 pounds and over is 1/16 inch. Unless otherwise ordered will be shipped with 1/16-inch port. Maximum guaranteed operating pressure, 10 pounds.

Price, No. 5.....each $8.00

No. 6 Hoffman Quick Vent Float Air and Vacuum Valves



Similar in construction and operating principle to the No. 2 valve and is used for venting ends of mains in one pipe gravity vacuum systems where No. 2 valves are used on radiators.

The 1/16-inch port should always be used in one pipe systems, as too rapid venting of air frequently causes water hammer

In vapor vacuum systems where the pressure is less than 3 pounds, 3/16-inch port is supplied.

Unless otherwise specified all valves shipped with 1/16-inch port.

Price, No. 6.....each $12.00

Nos. 8 and 9 Hoffman Return Line Valves

These valves or radiator traps relieve air and condensation from radiators in vapor or vacuum systems without steam loss. Installed on systems where steam is supplied through a reducing valve, proper trap operation is assured, should the reducing valve fail to function, because of their wide operating pressure range.

Maximum guaranteed operating pressure, 50 pounds.

No. 8 valve is furnished in angle, straightway and right and left-hand offset patterns. Capacity is 200 square feet of direct cast iron radiation.

No. 9 valve is made in angle and straightway patterns only. Capacity is 600 square feet of direct cast iron radiation.

Price, No. 8, ½-Inch.....each $6.00
Price, No. 9, ¾-Inch.....each 8.00

No 11 Hoffman Vapor Vacuum Valves



The No. 11 vapor vacuum valve is similar in operation to the No. 16 valve but of much greater capacity, having ¾-inch port.

It is widely used for venting the return mains of vapor-vacuum systems or where the return of air to the system after having been vented is not desirable.

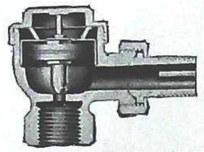
Maximum guaranteed operating pressure, 15 pounds.

Has ¾-inch connection.

Price, No. 11.....each $28.00

Hy-Tech Products

No. 18 Hoffman Return Line Valves



This valve is similar in construction and basic principle to the No. 8 Hoffman Return Line Valve.

It is used where radiator units contain not over 100 square feet of direct cast iron radiation, and the pressure at the trap not in excess of 15 pounds. The thermostat consists of one chamber made by 2 diaphragms separated by a space ring to which they are fastened. In the center of the bottom diaphragm the valve pin is attached. The joint being expanded and soldered remains tight. The thermostat is held in its cage by a pin expanded and attached to the top diaphragm, this pin extending through the cage and engaging with the boss on the cap.

Made in ½-inch size only in angle, straightway and right and left offset patterns.

Price, No. 18 ..... each **$4.50**

No. 7 Hoffman Adjustable Modulating Valves



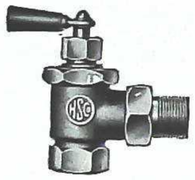
For use in vapor or vapor vacuum systems. Its chief feature is the easy and accurate setting of the valve port to fit radiators of various sizes. Is made in one size, ¾ inch only, having a range of adjustment up to 200 square feet of radiation.

Adjustment is simple; loosen locknut; turn valve handle until proper number of graduations are visible on the dial plate; then tighten locknut. The valve handle may then be set to admit sufficient steam to heat a quarter, half, three quarters or entire radiator.

Regularly supplied with lever handle. It can be furnished with wood wheel, lock shield, closed top, without extra charge.

No. 7, with ¾-Inch Connections ..... each **$6.00**

No. 19 Hoffman Quick Opening Radiator Supply Valves



For vapor or vacuum installations where modulation is not required.

This valve is made in ¾-inch size, angle pattern only; suitable for radiators up to 200 square feet capacity. Is of the semi-packless type and attractive in appearance.

Full opening of the valve is obtained with less than one full turn of the valve handle and the valve can be opened or closed using only the pressure of one finger.

This valve is regularly supplied with lever handle, but can be furnished also with wood wheel handle, lock shield or closed top on special orders. Furnished with extended stem or chain pull at extra charge.

Price, No. 19 ..... **$4.50**

Hoffman Kompo Gages



Measures pressure up to 30 pounds, vacuum to 30 inches. Pressure is registered in ounces up to 5 pounds. Vacuum is recorded in half inches up to 10 inches.

Used in Hoffman controlled heat installations or for one pipe gravity systems equipped with Hoffman No. 2 siphon air and vacuum valves. Pipe connection is ¼ inch.

Price ..... each **$9.00**

Hoffman Controlled Heat Equipment



Differential Loops

A simple, efficient device, which prevents water from backing up in the return main and at the same time maintains a constant differential pressure between steam and return mains whenever the pressure exceeds a predetermined amount.

Standard No. 0 and No. 02 loops are intended for systems where the low point in the dry return is not less than 24 inches above boiler water line. No. 03 and No. 04 loops require a minimum differential of 30 inches.

Loop No.	Radiation Sq. Ft.	Loop No.	Radiation Sq. Ft.
0	1 to 2000	**03**	3501 to 7500
02	2001 to 3500	**04**	7501 to 15000

Loops are sold as a part of controlled heat equipment. Prices on loops, or basement specialties, for use otherwise, are quoted on application; sold only when plan of installation is approved.

Radiator and Basement Specialties

Special attention is directed to the simple methods of figuring on vapor or vapor vacuum specialties.

It is only necessary to obtain data as to the number of radiators, the total amount of radiation and information as to whether steam mains or risers are dripped through return line valves. Then refer to the following table.

Radiator Specialties

Hoffman No. 7 adjustable modulating valve, ¾-inch capacity up to 200 square feet direct radiation.

Hoffman No. 8 return line valve, ½-inch capacity up to 200 square feet direct radiation.

Price for Both Valves ..... per radiator **$12.00**

Basement Specialties

Class O

For installations up to 2000 square feet direct radiation, consisting of:

2 No. 18 Return Line Valves for Venting Steam Mains into Dry Return
1 No. 0 Hoffman Differential Loop, Including 1 No. 15 Vacuum Valve
1 No. 13 Hoffman Damper Regulator
1 No. 14A Hoffman Kompo Gauge

Price, Class O ..... per set **$100.00**

Class B

For installations of 2001 to 3500 square feet direct radiation, consisting of:

3 No. 18 Return Line Valves for Venting Steam Mains into Dry Return
1 No. 02 Hoffman Differential Loop, Including 1 No. 15 Vacuum Valve
1 No. 13 Hoffman Damper Regulator
1 No. 14A Hoffman Kompo Gauge

Price, Class B ..... per set **$133.00**

Class C

For installations of 3501 to 7500 square feet direct radiation, consisting of:

4 No. 18 Return Line Valves for Venting Steam Mains into Dry Return
1 No. 03 Hoffman Differential Loop, Including 1 No. 15 Hoffman Vacuum Valve
1 No. 13 Hoffman Damper Regulator
1 No. 14A Hoffman Kompo Gauge

Price, Class C ..... per set **$165.00**

Class D

For installations of 7501 to 15000 square feet direct radiation, consisting of:

6 No. 18 Return Line Valves for Venting Steam Mains into Dry Return
1 No. 04 Hoffman Differential Loop, Including 2 No. 15 Vacuum Valves
1 No. 13 Hoffman Damper Regulator
1 No. 14A Hoffman Kompo Gauge

Price, Class D ..... per set **$242.00**

Where 50-foot risers or ends of 100-foot steam mains are dripped through return line valves, add $6.00 for each No. 8 or $8.00 for each No. 9 valve. For longer risers or steam mains add $30.00 for each No. 12 valve.

Where more than one boiler is used, add $39.00 per boiler for additional specialties required.

Special or larger installations on application.

Hy-Tech Products

Series A Richardson Perfect Warm Air Heaters

With 1-Piece Cast Iron Radiator



No.	Diam. Fire Pot In.	Grate Area In.	Diam. Radiator In.	Diam. Cases In.	Ht. Panel Front In.	Size Smoke Pipe In.	Pipe Cap. Sq. In.	Wt., Ship. Lbs. Less Cases
3362	18	176.72	28	36	49⅞	8	338	650
3402	20	226.98	28	40	49⅞	8	404	775
3442	22	287.27	30½	44	49⅞	8	476	940
3482	24	350.50	33½	48	49⅞	9	570	1080
3522	26	447.68	37½	52	49⅞	9	687	1225
2229E	29	572.56	40	53½	58	9	851	1600

Ratings based on a sufficient supply of air to heater. For indoor air supply, figure 100%, and for outside, 80% of total capacity of warm air pipes attached to heater.

Series A Richardson Perfect Warm Air Heaters

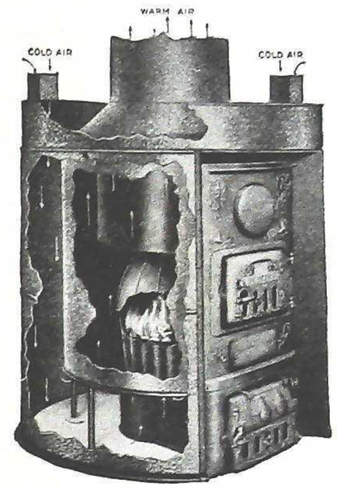
With Steel Radiator



No.	Diam. Fire Pot In.	Grate Area In.	Diam. Radiator In.	Diam. Cases In.	Ht. Panel Front In.	Size Smoke Pipe In.	Pipe Cap. Sq. In.	Wt., Ship. Lbs. Less Cases
3322	16	132.73	22½	32	49⅞	8	286	550
3362	18	176.72	26	36	49⅞	8	338	610
3402	20	226.98	26	40	49⅞	8	404	700
3442	22	287.27	29¾	44	49⅞	8	476	850
3482	24	350.50	33½	48	49⅞	9	570	990
3522	26	447.68	37	52	49⅞	9	687	1120
2229E	29	572.56	42	53½	58	9	851	1420

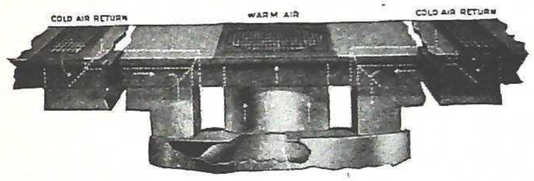
Ratings based on a sufficient supply of air to heater. For indoor air supply, figure 100%, and for outside 80% of total capacity of warm air pipes attached to heater.

Richardson Perfect Recirculating Air Systems



This system is an adaptation of the original pipeless heating system. It is recommended in instances where there is not a free circulation of air throughout the house.

The heating of a distant room or a room which has coldest exposures is accomplished by taking a cold air return line from those parts of the house. This cold air return has a tendency to draw the warm air into that part of the house. It overcomes the cold drafts along the floor and opens up an enlarged field for pipeless heating systems.



No.	Diam. Fire Pot In.	Grate Area In.	*Feed Door Opening In.	Size Smoke Pipe In.	Diam. Casing, In. Inner	Diam. Casing, In. Outer	Warm Air Register Opening In.	Warm Air Pipe In.
3363	18	176.72	12x15	8	36	48	20¾x20¾	17⅞
3403	20	226.98	12x15	8	40	52	20¾x20¾	17⅞
3443	22	287.27	12x15	8	44	56	24¾x24¾	21¾
3483	24	350.50	12x15	9	48	60	26¾x26¾	23⅝
3523	26	447.68	12x15	9	52	64	30¾x30¾	27⅜

*With pipe holes.

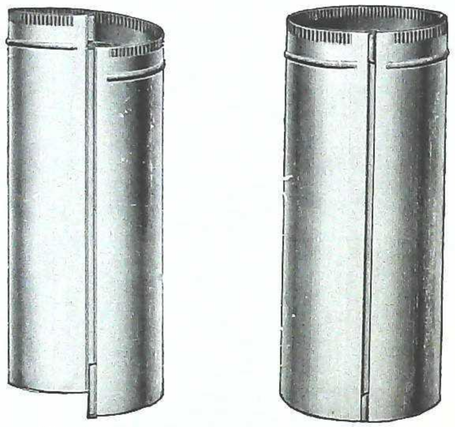
No.	Cold Air Grilles In.	Cold Air Conn. on Bonnet In.	Capacities Cu. Ft.	Height, In. Floor to Top of Bonnet	Height, In. To Top of Warm Air Pipe	Ship. Wt., Lbs. With Cast Iron Radiators Complete	Ship. Wt., Lbs. With Cast Iron Radiators
3363	10x24	10x14	8-10000	66¼	96	960	1010
3403	10x24	10x14	9-13000	66¼	96	1075	1150
3443	12x30	10x22	13-18000	66¼	96	1300	1400
3483	14x30	10x24	18-28000	66¼	96	1450	1560
3523	20x30	12x30	28-40000	66¼	96	1650	1775

If the building is spread out (that is, if the first floor has wing extensions, or if there are rooms on the second floor not directly over those on the first floor), use a heater "one size larger". That is, if the building has a total cubical content of 13750 feet, and is a spreadout building, use the No. 3443 Heater, which is one size larger than would be needed for the same building if it were compact.

To Decide Size of Heater

Perfect Pipeless Heaters are made in 5 sizes. Multiply length by width by height of each room and each hall, and add results. This will give total cubical content of the building. Refer to table and choose the heater having the capacity nearest above the total cubical content of the building.

Nested Round Tin Furnace Pipe



Pipe Open

Pipe Locked

The pipe requires $\frac{1}{5}$ the space of ordinary pipe; needs no heavy crates; saves on freight; saves in cartage and storage room; saves in labor, as it goes together without tools of any kind and can be installed quickly.

Size Inches	Price, per Foot I. C. Tin	I. X. Tin	Size Inches	Price, per Foot I. C. Tin	I. X. Tin
8	$.33	$.40	12	$.51	$.60
9	.37	.45	14	...	.78
10	.42	.50	..	...	...

Nested Galvanized Iron Pipe



Pipe Open



Pipe Locked

For smoke pipe and cold air, 6 to 36-inch joints inclusive. Pipe is made with heavy shoulder, holding joint in place.

Size In.	Price, per Foot 26 Gauge	24 Gauge	Size In.	Price, per Foot 26 Gauge	24 Gauge	Size In.	Price per Foot 26 Gauge
5	$.36	....	12	$.62	$.80	24	$1.60
6	.36	$.45	14	.70	...	26	1.85
7	.39	.48	16	.80	...	28	2.10
8	.43	.52	18	.95	...	30	2.35
9	.47	.59	20	1.10	...	...	.....
10	.52	.64	22	1.35	...	...	.....

Nested Stove Pipe



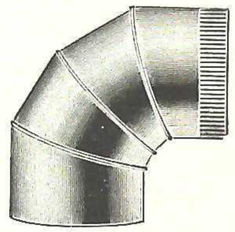
Made of refined iron, locked, grooved, beaded, crimped and oiled, is complete except the pounding down of the lock.

Furnished in 4, 5, 6 and 7-inch diameters in standard gauge. Full, taper and half joints.

Twenty-five lengths are packed in a bundle. Takes up little room and can be shipped at a low freight rate.

Prices upon application.

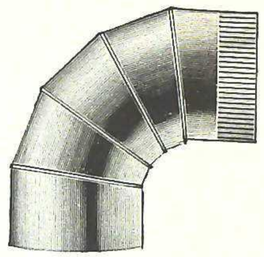
Eagle Stove Pipe Elbows



Made of stove pipe stock.

Diam. Inches	Price per Doz.	Diam. Inches	Price per Doz.	Diam. Inches	Price per Doz.
4	.....	5	.....	6	....
4½	.....	5½	.....	7	....

Five-piece Adjustable Stove Pipe Elbows



Made of cleaned iron.

Diam. Inches	Price per Doz.	Diam. Inches	Price per Doz.	Diam. Inches	Price per Doz.	Diam. Inches	Price per Doz.
3	.....	4½	.....	5½	.....	7	....
4	.....	5	.....	6	.....		

Griswold American Stove Pipe Dampers



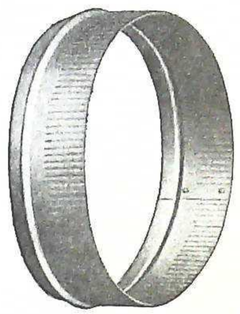
Dampers from 4 to 12 inches inclusive are made with reversible plates. This feature provides for spindle being inserted from either side. Spindle made in one piece of solid steel, with sharp point that will pierce any stove pipe. Hump on spindle insures positive lock.

Furnished with wood handles when so ordered.

Size In.	Packed in Bbls., Doz.	Wt., Lbs. per Bbl.	Price per Doz.	Size In.	Packed in Bbls., Doz.	Wt., Lbs. per Bbl.	Price per Doz.
3	90	315	$2.60	7	34	465	$5.00
4	50	305	2.80	8	25	445	8.00
4½	60	330	3.00	9	17	435	12.00
5	50	345	3.00	10	15	415	15.00
5½	50	400	3.30	11	12	460	16.50
6	48	415	3.50	12	10	460	18.00

Hy-Tech Products

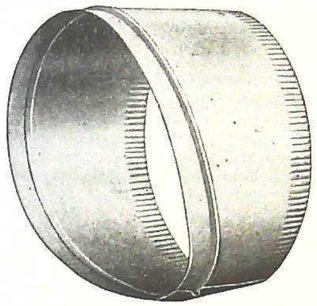
Galvanized Casing Collars



Style A



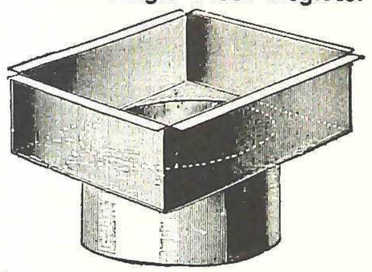
Style B



Style C

Size In.	Price, Each Style A	B	C
7	$.20	$.32	$.40
8	.24	.32	.40
9	.28	.36	.46
10	.30	.40	.50
12	.36	.48	.60
14	.46	.60	.74
16	.60	.80	1.00
18	.76	1.00	1.26
20	.90	1.20	1.80
22	1.20	2.00	....
24	1.40	2.40	....
26	1.60	2.80	....
28	1.80	3.40	....
30	2.00	3.80	....

Single Floor Register Boxes

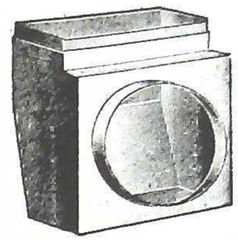


In ordering state if register boxes are to fit borders. Otherwise they will be shipped to fit register.

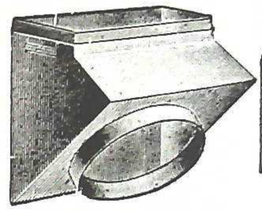
Prices given are for boxes with 4-inch collars. For 6-inch collars add 20 per cent. Prices on IC Single First Floor Boxes, 4 inches deep without collar same as with collar.

Size Inches	Diameter of Collar Inches	Price, Each: Single First Floor Boxes 4 Inches Deep with Collar IC	IX	Single First Floor Boxes 6 Inches Deep with Collar IC	IX	Galv.	2nd Floor Single Boxes 10 In. Deep without Collar
8x10	8	$.60	....	....	....	....	$.60
8x12	8	.64	....	....	....	....	.64
9x12	8 and 9	.64	....	....	....	....	.64
10x12	9 " 10	.72	$.90	....	....	....	.72
10x14	9 " 10	.80	1.00	....	....	....	.80
12x14	12	.96	1.20	$.96	$1.20	$1.50	.86
12x15	12	.96	1.20	.96	1.20	1.50	.86
14x16	14	....	1.60	....	1.60	1.80	....
14x18	14	....	1.80	....	1.80	2.00	....
14x20	14	....	2.00	....	2.00	2.20	....
14x22	14	....	2.20	....	2.20	2.40	....
16x20	16	....	2.50	....	2.50	2.60	....
16x24	16	....	3.00	....	3.00	3.00	....
18x24	18	....	3.60	....	3.60	3.60	....
20x24	20	....	4.00	....	4.00	4.00	....
20x26	20	....	....	....	....	4.50	....

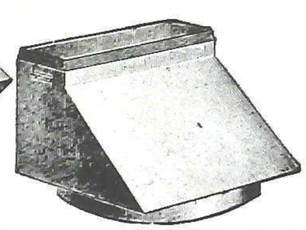
Transition Boots



Style A



Style B

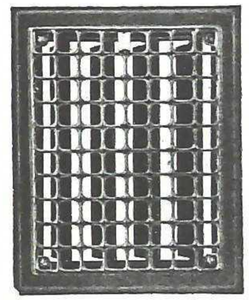


Style C

In ordering transition boots, specify size of collar.

Size Inches	Price, Each Style A	B	C
3½x10	$.70	$.70	$.70
3½x12	.80	.80	.80
3½x14	.90	.90	.90

Class 200 Floor Registers



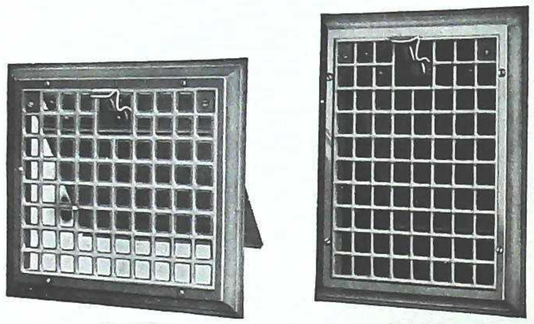
This register is strong, rigid and durable. The face is reinforced by supporting bars of heavy gauge steel. The valves have solid trunnions securely riveted to each end, insuring free and easy operation and long life.

Heavy steel corner angles increase the strength and rigidity.

Size Inches	Air Cap. Square Inches	Price, Each: Black Japan	White Japan	Oxidized Copper	Electroplated
8x10	56	$1.65	$2.00	$3.15	$3.85
8x12	67	1.90	2.30	3.65	4.40
9x12	75	2.10	2.55	4.00	5.10
10x12	84	2.40	2.90	4.40	5.50
12x14	118	4.35	5.25	6.85	8.25
14x16	157	8.50	10.20	11.50	16.50
16x18	213	12.00	13.20	16.20	22.25

H & C Wrought Steel Side Wall Registers

Nos. 340 and 350 with Convex Face



No. 340
Sets Horizontally

No. 350
Sets Vertically

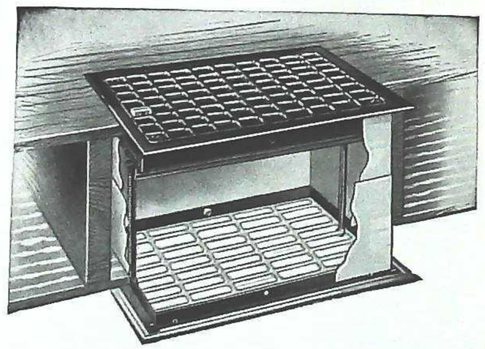
Designed for use in the side wall above the baseboard. The convex face adds to the beauty of the design and serves to cover inequalities of plaster close to the opening. The single valve operation is the same as used on baseboard registers.

Size Inches	Free Air Capacity Face Sq. In.	Number in Case	Shipping Weight Pounds Case	H & C Price, Each — Japanned Finishes: Black Japanned	Japanned Finishes: White Japanned	Electroplated Finishes: *Oxidized Copper	Electroplated Finishes: *Brass Nickel Bronze
8x10	44	30	100	$1.65	$2.00	$3.15	$3.85
8x12	53	30	110	1.90	2.30	3.65	4.40
9x12	60	30	115	2.10	2.55	4.00	5.10
10x12	66	30	120	2.40	2.90	4.40	5.50
10x14	78	24	110	3.15	3.80	5.25	6.55

*For sand finishes, add 10 per cent to above prices.

H & C Adjustable Ventilators

Class 2250

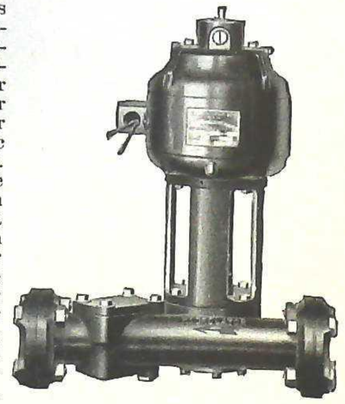


Designed to carry surplus heat from a lower to an upper floor room. Ventilators are complete, ready for installation—each consists of one H & C black floor register, and one H & C white face, attached to a tin box which is adjustable from 5 to 12 inches in depth.

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
8x10	$4.40	14x16	$16.50	16x20	$22.00
8x12	4.80	14x18	18.00	16x24	26.00
9x12	5.40	14x20	19.25	18x20	23.95
10x12	6.40	14x22	20.60	18x24	37.45
10x14	7.60	14x24	25.00	20x20	31.25
12x14	10.00	14x30	28.00	20x24	38.75
12x15	10.40	16x18	21.50	.....	.....

Hydrolators

For Stimulating Circulation



The Hydrolator is a motor-driven centrifugal pump designed to operate on balanced 2-pipe hot water systems, open or closed type, whether for heating or domestic service water supply. It consists of a Janette repulsion-induction motor mounted on a 12-inch pipe section with the pump rotor located in the pipe section. Pump rotor is off the line of water flow so as not to interfere with normal circulation when Hydrolator is not running.

The basic principle of the Hydrolator is to circulate water several times faster than it flows by ordinary thermal action.

The check-valve feature enables the Hydrolator to secure a differential in pressure between the inlet and outlet sides. By completely closing the path of normal water flow when the Hydrolator is running, this check-valve diverts all water through the pump rotor where it is placed under sufficient pressure to overcome pipe resistances, a valuable feature where piping is abnormally small.

Uses

On Hot Water Heating Systems

Eliminates sluggishness.

Overcomes traps and short-circuits.

Circulates water where radiators are below the boiler.

Circulates water when one building is to be heated by a boiler in another building.

Stimulates circulation on long horizontal pipe runs, as in greenhouses.

Takes care of additional radiation, as where rooms have been added to a home.

Stimulates circulation on systems with inadequate pipe sizes.

Circulates hot water in sections of a building formerly "starved" for heat.

On Domestic Supply Systems

Makes all water in supply tank the same temperature

Keeps hot water instantly on tap at all outlets.

On Ice Water Systems

Maintains a constant flow of water through cooling coils.

Keeps cold water instantly on tap at all outlets.

Sizes

The Hydrolator is furnished in 3 sizes. The 1½-inch size may be used on systems with two 1½-inch returns or the equivalent, the 2-inch size on systems with two 2-inch returns or the equivalent, and the 3-inch size on systems with two 3-inch returns or the equivalent. If a system has two 4-inch returns, use two 3-inch machines. A Hydrolator should not be installed on returns larger than 4-inch without dividing the pipe.

For Heating Systems

Type	*Each	Pipe Size In.	Motor H.P.	Cap. Gal. per Min.	Head in Feet	Ht. In.	Lgth. In.	Ship. Wt. Lbs.
H1½	$90.00	1½	⅛	16	1½	17½	12	75
H2	95.00	2	⅙	25	1½	18	12	85
H3	110.00	3	¼	40	1½	19½	12	105

*Price applies on units with any voltage or frequency motors. Unit is regularly equipped with 110-220-volt 60-cycle single phase motor. If other motor is desired, specify voltage and frequency.

Hy-Tech Products

Electric Heaters



Tile-in china recess electric heater with three lamps, 110–112 volts, 250 watts.

Flange, 15x15 inches. Depth outside, 5 inches.

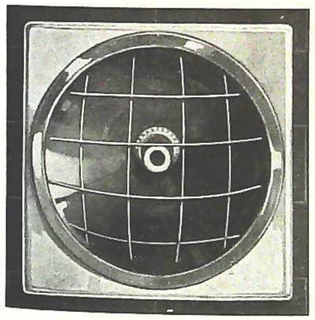
Price ..... each **$60.00**

Switch and wiring is not included in above price.

Lamps of higher voltage and wattage can be furnished if desired.

Recess accessories may be used in any kind of walls, regardless of the kind of wainscoting. A recess is arranged in the wall to the depth and size of the particular accessory to be installed. Cement is applied to the side walls of the accessory and the accessory is then placed in recess in wall.

No. R23 Electric Wall Heaters



Recesses into wall. Made of vitreous china with a metal reflector and guard. May be connected to any lighting circuit.

Wall opening, 9x9 inches. Watts, 660.

With Copper Reflector

White.....each **$38.50**
Colored.....each **66.50**

With Crodon Reflector

White.....each **$43.00**
Colored.....each **75.00**

Telephone Your Orders



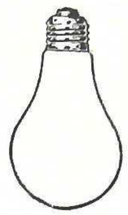
We are organized to give Special Service on Telephone orders.

Use the telephone and save time.

National Inside Frosted Mazda Lamps

Standard Line
General Lighting Service

110, 115 and 120 Volts



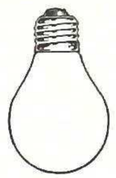
Frosting is on the inside. Bulb does not gather dirt. Diffusion is obtained with small loss of light. Used in place of all clear as well as frosted lamps. Pearl-gray bulb harmonizes with any background color.

Fitted with medium screw base.

Watts	Bulb	Over All Length Inches	Std. Pkg.	Price Each
25	A19	3 5/16	120	$.20
40	A21	4 7/16	120	.20
50	A21	4 15/16	120	.20
60	A21	5 1/4	120	.20
100	A23	6 1/16	60	.35

National Rough Service Mazda Lamps

110, 115 and 120 Volts



A19



P19

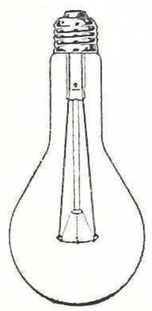
In some classes of lighting service it is necessary to use lamps which are strong mechanically—lamps which will stand a great deal of rough handling. In the Rough Service Lamp, the filament is supported in such a way that it is capable of resisting severe bumps. The superior strength of the filament enables it to give satisfactory service.

Fitted with medium screw base.

Watts	Each	Bulb	Length Over All, Inches	Std. Pkg.
50	$.37	A19 Inside Frosted	3 5/16	120
*50	.25	P19 Clear	3 7/8	120

*This lamp is recommended where vibration prevails, such as is produced by heavy or high speed machinery.

National Mazda C Lamps



General Lighting Service

110, 115 and 120 Volts

These lamps constitute a great percentage of the ordinary lamp demand for store and office lighting.

Proper reflector should be provided to protect the eyes from the extremely bright filaments of a Mazda C lamp, especially whenever the lamp is hung low in the usual line of vision.

Clear—Medium Screw Base

Watts	Style Bulb	Over All Length Inches	Lumens	Std. Pkg	Price Each
150	PS25 Clear	6 15/16	2300	24	$.60
200	PS30 Clear	8 1/8	3300	24	.80
Clear—Mogul Screw Base					
300	PS35 Clear	9 7/16	5400	24	$1.25
500	PS40 Clear	9 13/16	9500	12	2.00
*750	PS52 Clear	13 1/8	14500	8	3.75
*1000	PS52 Clear	13 1/8	20000	8	4.00
White Bowl—Medium Screw Base					
150	PS25 White Bowl	6 15/16	.....	24	$.65
200	PS30 White Bowl	8 1/8	.....	24	.85
White Bowl—Mogul Screw Base					
300	PS35 White Bowl	9 7/16	.....	24	$1.35
500	PS40 White Bowl	9 13/16	.....	12	2.15
*750	PS52 White Bowl	13 1/8	.....	8	3.95
*1000	PS52 White Bowl	13 1/8	.....	8	4.25

*Not recommended for base down burning.

Electrical Equipment

We are in position to supply a complete line of electrical equipment and will be glad to have your inquiries on generators, switchboards, motors, electric welders and other equipment of this nature.

No. 6 Eveready Columbia Ignitor Batteries

With Screw Connections



A special high grade cell designed for all heavy service. It is particularly adapted for motor ignition. A set of ignitors will keep the engine running smoothly until every bit of current is exhausted.

Equally satisfactory for motor boats, gas engines, and in fact, any service where a reliable, long life battery is needed.

These batteries are carefully packed from fresh stock, and guaranteed to reach their destination in perfect condition.

Voltage, 1½.
Width, 2½ inches.
Height, 6 inches.

Packed 50 to a standard package.
Weight of standard package 120 pounds.
Price, No. 6 ..... each **$.45**

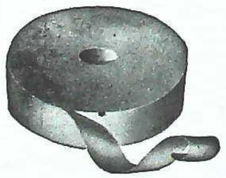
Eveready Columbia Hot Shot Batteries



Cells are connected by soldered copper strips and encased in a single metal container. The advantages of this new type covering are the ability to withstand rough usage, water-proof, thoroughly insulated to prevent internal short circuits and a woven fabric handle for convenience in carrying.

Cat. No.	Voltage	Dimensions, Inches Lgth.	Wdth.	Ht.	Std. Pkg. Quantity in Box	Approx. Wt., Lbs. Std. Pkg.	Price Each
1461	6	10⅝	2¾	7½	12	128	**$2.30**
1561	7½	13¼	2¾	7½	8	116	**2.70**
1562	7½	8	5	7½	8	115	**2.70**
1662	9	8	5⅜	7½	8	136	**3.25**

Friction Tape



This is a good grade friction tape. Furnished in ¼ and ½-pound rolls ¾ inch wide.

Price ..... per pound **$1.00**

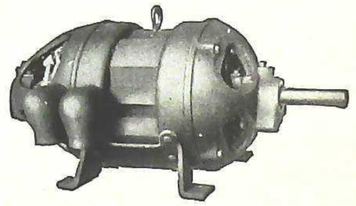
Type CW Westinghouse A. C. Motors

Equipped with Sealed Sleeve Bearings

Polyphase, Wound-Rotor Induction

For Constant and Varying Speed Continuous Service

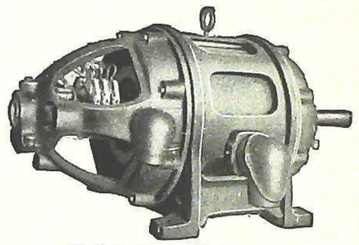
2 H. P. to 200 H. P. and Higher, 2 and 3-phase, 25, 40, 50 and 60 Cycles, 110, 220, 440, 500 and 2200 Volts



10 H.P. Type CW Motor

By varying the external resistance of a wound-rotor motor a condition can be created which will parallel any of the various classes of squirrel-cage motors, so that the speed torque characteristics of a wound-rotor motor are governed entirely by the operation of the control which is used in connection with it.

Type CW motors are employed for constant speed work where starting conditions are too severe for squirrel-cage motors or where starting is frequent and where good all day running conditions under load are a consideration.



50 H.P. Type CW Motor

Westinghouse Type CW Wound-Rotor Induction Motors are designed for both constant and varying speed, continuous duty service. High starting torque with low starting current is obtained by inserting resistance in the rotor circuit when starting the motor. For constant speed service this resistance is cut out by means of a starter furnished with the motor.

For varying speed service a controller with resistance is furnished to obtain continuous operation on any running point from one-half to full-load speed for both varying and constant torque service.

These motors find extensive application where it is necessary to bring up to speed loads requiring heavy starting torque on power lines where generator capacity is limited or where good voltage regulation is imperative. They are suitable for driving plunger pumps, compressors, positive pressure blowers, hoists requiring a continuous duty motor, and in shops where many machines are driven by one motor through long line shafts.

Prices and complete information upon application.

Hy-Tech Products

Byers Genuine Wrought Iron Pipe

For Water, Steam, Air, Gas and Oil



Identification

Byers Pipe is easily identified by the spiral stripe painted on each length in red or other bright color. In addition, the Byers name is rolled in the metal at intervals of 3 or 4 feet.

Installation

Byers pipe is recommended for installation in permanent buildings of every description, such as office buildings, hotels, schools, residences, hospitals, etc., where corrosion is a factor, as in plumbing and in heat and power systems. Also, for underground steam, water and gas piping. It should be pointed out that the cost of Byers Pipe, while somewhat higher than steel pipe, is a small item in the total installation of a pipe system, yet the life of the entire investment depends usually on the life of the pipe. If the pipe fails, the whole pipe system has to be replaced. Where pipes are concealed in walls, partitions and floors, failures are especially costly.

Service of Byers Pipe

For over 65 years A. M. Byers Company has produced the one product—wrought iron pipe—in strict adherence to a standard of purity of material and honesty of manufacture established long before cheap pipe was known. The record of the company is on millions of feet of pipe, installed under varying conditions during half a century, and still enduring.

Standard Weight Pipe—Black and Galvanized

Size In.	Diameter, Inches External	Internal	Butt Weld Thickness In.	Threads per Inch	Weight, per Foot Pounds Plain Ends	Threads and Couplings	Price per Foot
⅛	.405	.266	.069	27	.244	.245	$.05½
¼	.540	.360	.090	18	.424	.425	.06
⅜	.675	.489	.093	18	.567	.568	.06
½	.840	.617	.111	14	.850	.852	.08½
¾	1.050	.819	.115	14	1.130	1.134	.11½
1	1.315	1.043	.136	11½	1.678	1.684	.17
1¼	1.660	1.374	.143	11½	2.272	2.281	.23
1½	1.900	1.604	.148	11½	2.717	2.731	.27½
2	2.375	2.060	.158	11½	3.652	3.678	.37
			Lapp Weld				
1¼	1.660	1.374	.143	11½	2.272	2.281	.23
1½	1.900	1.604	.148	11½	2.717	2.731	.27½
2	2.375	2.060	.158	11½	3.652	3.678	.37
2½	2.875	2.450	.212	8	5.793	5.819	.58½
3	3.500	3.059	.221	8	7.575	7.616	.76½
3½	4.000	3.538	.231	8	9.109	9.202	.92
4	4.500	4.016	.242	8	10.790	10.889	1.09
5	5.563	5.036	.263	8	14.617	14.810	1.48
6	6.625	6.053	.286	8	18.974	19.185	1.92
8	8.625	8.059	.283	8	24.696	25.000	2.50
8	8.625	7.967	.329	8	28.554	28.809	2.88
10	10.750	10.181	.284	8	31.201	32.000	3.20
10	10.750	10.124	.313	8	34.240	35.000	3.50
10	10.750	10.005	.372	8	40.483	41.132	4.12
12	12.750	12.077	.336	8	43.773	45.000	4.50
12	12.750	11.985	.382	8	49.562	50.706	5.07

Permissible variation in weight is 2½ per cent below and 5 per cent above weights given in tables.

Standard weight pipe is regularly furnished with threads and couplings and in random lengths, unless otherwise ordered.

For cut lengths, an extra charge will be made above random.

For coated—galvanized, asphalted, painted and wrapped—pipe an extra charge will be made above black.

Prices and specifications on Byers O. D. Pipe, up to 18-inch diameter upon application.

Hydrostatic Test

¼-Inch to 1½-Inch B. W. ..... 750 lbs.
1¼-Inch to 9-Inch L. W. and 10-Inch (41.132 lbs.) .. 1000 lbs.
Other 10-Inch, 11-Inch and 12-Inch ..... 750 lbs.

National Pipe



Two important processes have been developed, one of which makes the smaller sizes, 4-inch and under, of National Pipe more resistant to corrosion, while the other makes all National Butt-weld Pipe free from welding-scale. To the trade these are known as the Spellerizing and Scale Free processes, respectively.

Spellerizing is a method of treating metal, which consists in subjecting the heated bloom to the action of rolls having regularly shaped projections on their working surface, then subjecting the bloom while still hot to the action of smooth faced rolls and repeating the operation, whereby the surface of the metal is worked so as to produce a uniformly dense texture better adapted to resist corrosion, especially in the form of pitting.

Inasmuch as the Spellerizing process is entirely mechanical and does not in any way depend upon skilled labor, beyond keeping up the machinery involved, uniform treatment is assured. This process is applicable to the smaller sizes of pipe; such as 4 inches and under, although it is possible in special cases to Spellerize pipe a few sizes larger than 4 inches. This process is especially desirable for the smaller sizes on account of the thinner walls. The larger sizes, owing to their thicker walls, do not require as much extra work of this character.

The Spellerizing process produces a fine-grained, uniform, dense texture which is better adapted to resist corrosion than ordinary pipe.

By subjecting National Butt-weld Pipe to the recently evolved scale-removing process, the mill-scale, or welding-scale, which has long been considered inevitable on butt-weld pipe, is removed, leaving the surfaces of the pipe smooth and clean and giving a full interior diameter, and an ideal surface for a uniform and close adherence of galvanizing or other protective coatings. Thus the working capacity and the durability of the pipe are appreciably increased.

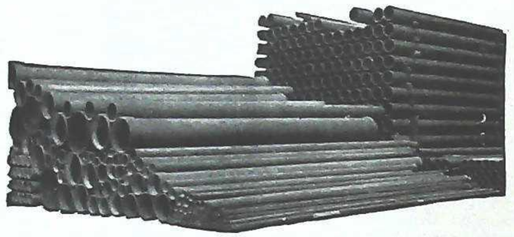
The National Scale Free Pipe is now made by practically the same process as heretofore used in making regular National Butt-weld Pipe, the chief difference being that the pipe is passed through a series of rolls in addition to the sizing and straightening rolls the first stand of rolls in this series reduces the size of the pipe by literally crushing the pipe down. Since the mill-scale, or welding-scale, is brittle and somewhat harder than the metal at this stage of manufacture, this crushing or distorting of the pipe loosens the scale and it falls off, leaving a clean surface. The pipe then passes to other rolls of this series, where it is further reduced in size; after cooling, the loose scale is washed out with water or blown out by compressed air, no acid pickling bath being used. The crop ends are then removed, the pipe threaded, tested and inspected in the manner as was customary with all National Butt-weld Pipe.

Additional advantages to those mentioned above, include: Elimination of the wear and tear on valves and fittings formerly caused by loose scale; better adaptation to exposed installations due to the clean, smooth surfaces; reduced frictional resistance and a further reduction of any tendency to corrosion caused by scale dropping away and leaving exposed surfaces.

In order that consumers may know positively they are receiving National Tube Company Pipe the name National is rolled, at regular intervals, on every length of welded tubular products manufactured, except on sizes under ½-inch where this is not mechanically feasible: on these smaller sizes the name National appears on the metal tag attached to each bundle of pipe.

Steam, Gas and Water Pipe

Standard
Black and Galvanized
Revised January 1, 1923



The permissible variation in weight is 5 per cent above and 5 per cent below.

Furnished with threads and couplings and in random lengths unless otherwise ordered.

Taper of threads is ¾-inch diameter per foot length for all sizes.

The weight per foot of pipe with threads and couplings is based on a length of 20 feet, including the coupling, but shipping lengths of small sizes will usually average less than 20 feet.

On sizes made in more than one weight, weight desired must be specified.

For pipe smoothed on the inside, known as reamed and drifted, an extra charge will be made above standard pipe.

For galvanized, or coated pipe, an extra charge will be made above black.

On orders calling for commercial sizes of pipe which are finished with threads and couplings, in sizes ⅛ to 12-inch, inclusive, and where orders specify quantity in linear feet, it is understood that random lengths fitted with threads both ends and coupling one end will be supplied and the measurement is charged from end to end, that is over all, including coupling.

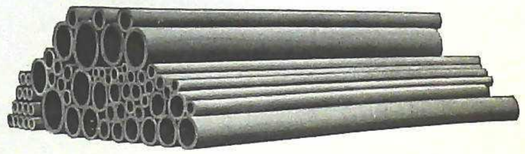
If cut lengths of any sizes are ordered, instructions must appear on the face of the order whether plain ends, threads only or threads and couplings are required. The pipe proper is cut to the length specified for plain ends or threads only, and if cut lengths with threads and couplings are specified, the practice is the same with the exception that the couplings are charged separately whether they are shipped loose or screwed on the pipe.

All Weights and Dimensions are Nominal

Size Inches	Diam., Inches External	Diam., Inches Internal	Thickness Inches	Plain End	Wt. Lbs., per Ft. Threaded and Coupled	No. of Threads per Inch	Price per Foot
⅛	.405	.269	.068	.244	.245	27	$.05½
¼	.540	.364	.088	.424	.425	18	.06
⅜	.675	.493	.091	.567	.568	18	.06
½	.840	.622	.109	.850	.852	14	.08½
¾	1.050	.824	.113	1.130	1.134	14	.11½
1	1.315	1.049	.133	1.678	1.684	11½	.17
1¼	1.660	1.380	.140	2.272	2.281	11½	.23
1½	1.900	1.610	.145	2.717	2.731	11½	.27½
2	2.375	2.067	.154	3.652	3.678	11½	.37
2½	2.875	2.469	.203	5.793	5.819	8	.58½
3	3.500	3.068	.216	7.575	7.616	8	.76½
3½	4.	3.548	.226	9.109	9.202	8	.92
4	4.500	4.026	.237	10.790	10.889	8	1.09
4½	5.	4.506	.247	12.538	12.642	8	1.27
5	5.563	5.047	.258	14.617	14.810	8	1.48
6	6.625	6.065	.280	18.974	19.185	8	1.92
7	7.625	7.023	.301	23.544	23.769	8	2.38
8	8.625	8.071	.277	24.696	25.	8	2.50
8	8.625	7.981	.322	28.554	28.809	8	2.88
9	9.625	8.941	.342	33.907	34.188	8	3.45
10	10.750	10.192	.279	31.201	32.	8	3.20
10	10.750	10.136	.307	34.240	35.	8	3.50
10	10.750	10.020	.365	40.483	41.132	8	4.12
11	11.750	11.	.375	45.557	46.247	8	4.63
12	12.750	12.090	.330	43.773	45.	8	4.50
12	12.750	12.	.375	49.562	50.706	8	5.07

Steam, Gas and Water Pipe

Extra Strong and Double Extra Strong
Black and Galvanized



Furnished with plain ends and in random lengths unless otherwise ordered.

Random length of extra strong and double extra strong pipe is considered to be 12 feet to 22 feet, we to have the privilege, however, of supplying not exceeding 5 per cent of total order in lengths from 6 to 12 feet.

For pipe fitted with threads only or with threads and couplings, an extra charge will be made above plain ends.

For cut lengths, an extra charge will be made above random.

For galvanized, or coated pipe, an extra charge will be made above black.

All Weights and Dimensions are Nominal
Revised January 1, 1923

Extra Strong

Size Inches	Diameter, Inches External	Diameter, Inches Internal	Thickness Inches	Weight Pounds per Foot Plain Ends	Price per Foot
⅛	.405	.215	.095	.314	$.12
¼	.540	.302	.119	.535	.07½
⅜	.675	.423	.126	.738	.07½
½	.840	.546	.147	1.087	.11
¾	1.050	.742	.154	1.473	.15
1	1.315	.957	.179	2.171	.22
1¼	1.660	1.278	.191	2.996	.30
1½	1.900	1.500	.200	3.631	.36½
2	2.375	1.939	.218	5.022	.50½
2½	2.875	2.323	.276	7.661	.77
3	3.500	2.900	.300	10.252	1.03
3½	4.	3.364	.318	12.505	1.25
4	4.500	3.826	.337	14.983	1.50
4½	5.	4.290	.355	17.611	1.80
5	5.563	4.813	.375	20.778	2.08
6	6.625	5.761	.432	28.573	2.86
7	7.625	6.625	.500	38.048	3.81
8	8.625	7.625	.500	43.388	4.34
9	9.625	8.625	.500	48.728	4.90
10	10.750	9.750	.500	54.735	5.48
11	11.750	10.750	.500	60.075	6.10
12	12.750	11.750	.500	65.415	6.55

The permissible variation in weight is 5 per cent above and 5 per cent below.

Double Extra Strong

Size Inches	Diameter, Inches External	Diameter, Inches Internal	Thickness Inches	Weight Pounds per Foot Plain Ends	Price per Foot
½	.840	.252	.294	1.714	$.32
¾	1.050	.434	.308	2.440	.35
1	1.315	.599	.358	3.659	.37
1¼	1.660	.896	.382	5.214	.52½
1½	1.900	1.100	.400	6.408	.65
2	2.375	1.503	.436	9.029	.91
2½	2.875	1.771	.552	13.695	1.37
3	3.500	2.300	.600	18.583	1.86
3½	4.	2.728	.636	22.850	2.30
4	4.500	3.152	.674	27.541	2.76
4½	5.	3.580	.710	32.530	3.26
5	5.563	4.063	.750	38.552	3.86
6	6.625	4.897	.864	53.160	5.32
7	7.625	5.875	.875	63.079	6.35
8	8.625	6.875	.875	72.424	7.25

The permissible variation in weight is 10 per cent above and 10 per cent below.

Hy-Tech Products

Lap Welded Boiler Tubes

Steel or Charcoal Iron

Adopted April 1, 1921



Outside Diam. In.	Standard Minimum Thickness Birmingham Wire Gauge	Standard Minimum Thickness In.	Price per Foot Standard Thickness	1 Extra Wire Gauge	2 Extra Wire Gauges	3 Extra Wire Gauges	4 Extra Wire Gauges
1½	13	.095	$.27	$.32	$.34	$.38	$.42
1¾	13	.095	.22	.26	.28	.31	.34
1⅞	13	.095	.22	.26	.28	.31	.34
2	13	.095	.21	.24	.26	.28	.31
2¼	13	.095	.24	.27	.29	.32	.35
2½	12	.109	.30	.33	.36	.39	.43
2¾	12	.109	.34	.37	.40	.44	.48
3	12	.109	.38	.41	.45	.49	.54
3¼	11	.120	.45	.49	.53	.59	.63
3½	11	.120	.48	.53	.58	.64	.69
3¾	11	.120	.52	.57	.62	.68	.74
4	10	.134	.61	.66	.73	.79	.88
4½	10	.134	.69	.75	.83	.89	.99
5	9	.148	.81	.90	.97	1.08	1.17
6	8	.165	1.08	1.17	1.31	1.41	1.52

Theoretical Weights of Steel Tubes

Outside Diam. In.	Nearest Birmingham Wire Gauge	Standard Thickness In.	Standard Wt., Lbs. per Foot	Weight per Foot, Pounds 1 Extra Wire Gauge	2 Extra Wire Gauges	3 Extra Wire Gauges	4 Extra Wire Gauges
1½	13	.095	1.414	1.622	1.765	1.960	2.142
1¾	13	.095	1.679	1.910	2.089	2.312	2.532
2	13	.095	1.932	2.201	2.409	2.670	2.927
2¼	13	.095	2.186	2.492	2.729	3.028	3.322
2½	12	.109	2.783	3.050	3.386	3.717	4.114
2¾	12	.109	3.074	3.370	3.743	4.112	4.555
3	12	.109	3.365	3.691	4.101	4.508	4.995
3¼	11	.120	4.011	3.459	4.903	5.436	5.901
3½	11	.120	4.331	4.817	5.298	5.877	6.382
3¾	11	.120	4.652	5.175	5.693	6.317	6.863
4	10	.134	5.532	6.088	6.758	7.343	8.232
4½	10	.134	6.248	6.879	7.639	8.304	9.316
5	9	.148	7.669	8.520	9.266	10.400	11.231
6	8	.165	10.282	11.188	12.568	13.580	14.646

Theoretical Weights of Charcoal Iron Tubes

1½	13	.095	1.40	1.59	1.73	1.92	2.09
1¾	13	.095	1.65	1.84	2.05	2.27	2.49
2	13	.095	1.90	2.17	2.37	2.63	2.88
2¼	13	.095	2.15	2.45	2.68	2.98	3.28
2½	12	.109	2.73	2.99	3.32	3.64	4.04
2¾	12	.109	3.02	3.31	3.67	4.04	4.47
3	12	.109	3.30	3.62	4.02	4.09	4.90
3¼	11	.120	3.80	4.37	4.65	5.33	5.79
3½	11	.120	4.25	4.73	5.03	5.77	6.26
3¾	11	.120	4.57	5.08	5.59	6.20	6.74
4	10	.134	5.43	5.97	6.63	7.21	8.11
4½	10	.134	6.13	6.74	7.50	8.15	9.13
5	9	.148	7.53	8.36	9.09	10.21	11.02
5⅜	9	.148	8.11	9.01	9.80	11.00	11.88
5½	9	.148	8.32	9.22	10.03	11.14	12.17
6	8	.165	10.09	10.98	12.32	13.33	14.37

Under the A.S.M.E. specifications to which these boiler tubes are manufactured, the gauge ordered is the lightest weight that may be shipped. As it is impossible to manufacture to an exact weight, the necessary variation will be represented by over-weight. Therefore the exact theoretical weight of each gauge is published, and the best estimate possible is made of the average shipping weight, and the list prices are predicated on this estimated weight. Tubes may be found to vary in weight, but will not be lighter than the weight of the gauge ordered.

Pipe Columns

From National Tube Company's National Pipe Standards



The tables give the safe loads in tons of 2000 pounds for standard and extra strong pipe, computed by the formula of the New York and Chicago building laws.

According to these laws the allowable compressive stress per square inch for steel columns shall be determined by formula S = 16000–70 L/R, with a maximum allowable stress of 14000 pounds per square inch. Length of columns is limited to 120 times least radius of gyration, except in case of struts for wind bracing, in which case the limit is 150 times the least radius of gyration.

S = 16000—70L/R

S = allowable compressive stress for steel, pounds per square inch.
L = length of column in inches.
R = least radius gyration in inches.
Maximum allowable compressive stress = 14000 pounds per square inch.

Standard Pipe Columns

Length Feet	2 (.154 in.)	2½ (.203 in.)	3 (.216 in.)	3½ (.226 in.)	4 (.237 in.)	4½ (.247 in.)	5 (.258 in.)	6 (.280 in.)
16	....	....	4.96	7.97	11.26	14.78	19.01	27.95
14	....	3.06	6.57	9.65	13.03	16.62	20.93	30.04
13	....	3.81	7.37	10.49	13.91	17.54	21.90	31.08
12	....	4.57	8.18	11.33	14.79	18.46	22.86	32.12
11	2.29	5.32	8.98	12.18	15.68	19.38	23.82	33.17
10	2.86	6.08	9.78	13.02	16.56	20.30	24.78	34.21
9	3.44	6.83	10.59	13.86	17.44	21.22	25.74	35.26
8	4.01	7.59	11.39	14.70	18.33	22.14	26.71	36.30
7	4.58	8.34	12.20	15.54	19.21	23.06	27.67	37.34
6	5.16	9.10	13.00	16.38	20.09	23.98	28.63	38.39
5	5.73	9.86	13.81	17.23	20.98	24.90	29.59	39.07

Length Feet	7 (.301 in.)	8 (.322 in.)	9 (.342 in.)	10 (.365 in.)	11 (.375 in.)	12 (.375 in.)	13 (.375 in.)
16	37.45	47.98	59.38	73.48	84.83	94.25	106.03
14	39.69	50.38	61.93	76.21	87.62	97.05	108.83
13	40.81	51.58	63.21	77.57	89.02	98.45	110.23
12	41.94	52.78	64.49	78.93	90.42	99.85	111.62
11	43.06	53.99	65.76	80.29	91.82	101.24	112.36
10	44.18	55.19	67.04	81.65	93.22	102.05	112.36
9	45.30	56.39	68.31	83.01	93.81	102.05	112.36
8	46.43	57.59	69.59	83.36	93.81	102.05	112.36
7	47.55	58.79	69.82	83.36	93.81	102.05	112.36
6	48.48	58.79	69.82	83.36	93.81	102.05	112.36
5	48.48	58.79	69.82	83.36	93.81	102.05	112.36

Extra Strong Pipe Columns

Length Feet	2 (.218 in.)	2½ (.276 in.)	3 (.300 in.)	3½ (.318 in.)	4 (.337 in.)	4½ (.355 in.)	5 (.375 in.)	6 (.432 in.)
16	....	....	6.29	10.51	15.20	20.31	26.56	41.51
14	....	3.69	8.52	12.87	17.71	22.95	29.35	44.72
13	....	4.71	9.64	14.06	18.96	24.27	30.75	46.33
12	....	5.74	10.75	15.24	20.22	25.59	32.15	47.94
11	2.91	6.76	11.87	16.42	21.47	26.91	33.54	49.55
10	3.72	7.79	12.98	17.60	22.72	28.23	34.94	51.16
9	4.53	8.81	14.09	18.79	23.98	29.55	36.33	52.76
8	5.34	9.83	15.21	19.97	25.23	30.88	37.73	54.37
7	6.15	10.86	16.32	21.15	26.48	32.20	39.12	55.98
6	6.96	11.88	17.44	22.33	27.74	33.52	40.52	57.59
5	7.77	12.91	18.55	23.52	28.99	34.84	41.92	58.83

Length Feet	7 (.500 in.)	8 (.500 in.)	9 (.500 in.)	10 (.500 in.)	11 (.500 in.)	12 (.500 in.)	13 (.500 in.)
16	59.75	72.30	84.86	98.98	111.54	124.11	139.81
14	63.48	76.03	88.58	102.71	115.27	127.84	143.54
13	65.34	77.89	90.45	104.58	117.14	129.70	145.40
12	67.20	79.75	92.31	106.44	119.00	131.56	147.27
11	69.06	81.61	94.17	108.30	120.87	133.43	148.44
10	70.92	83.48	96.04	110.17	122.73	134.70	148.44
9	72.78	85.34	97.90	112.03	123.70	134.70	148.44
8	74.64	87.20	99.76	112.70	123.70	134.70	148.44
7	76.51	89.06	100.33	112.70	123.70	134.70	148.44
6	78.34	89.34	100.33	112.70	123.70	134.70	148.44
5	78.34	89.34	100.33	112.70	123.70	134.70	148.44

Loads above or to the left of the zigzag line correspond to values of L/R greater than 120.

Spiral Riveted Pipe with Plain Ends



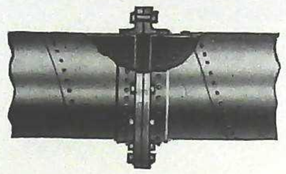
All prices and weights on asphalted are figured per 100 lineal feet in four standard 25-foot lengths. Prices and weights on galvanized are figured in five standard 20-foot lengths. Shorter lengths and additional joints increase in price.

When ordering, state working pressure and purpose for which pipe is going to be used, and material to be conveyed.

Diam. In.	Thickness B.W. Gauge Inches	Approx. Bursting Pressure per Sq. In. in Pounds	Weight, Pounds Asphalted	Weight, Pounds Galvanized	Price, per 100 Ft. Asphalted	Price, per 100 Ft. Galvanized
3	18	1890	231	245	$37.30	$53.10
4	16	1845	395	412	54.55	77.00
5	16	1480	491	513	65.60	93.70
6	16	1220	560	582	76.70	108.30
6	14	1580	705	726	95.90	130.00
6	12	2060	910	932	117.20	154.80
7	16	1060	649	673	87.85	124.30
7	14	1340	816	840	110.10	149.50
7	12	1780	1053	1078	142.45	185.70
8	16	945	739	767	101.95	143.50
8	14	1180	929	958	124.25	169.00
8	12	1540	1200	1228	160.65	210.00
9	16	820	832	865	118.10	164.90
9	14	1040	1046	1077	142.45	192.90
9	12	1380	1350	1381	180.90	236.40
10	16	740	922	956	126.10	178.10
10	14	945	1158	1193	151.50	207.40
10	12	1224	1495	1530	196.05	257.50
11	16	670	1012	1054	131.95	185.60
11	14	860	1282	1314	162.35	220.30
11	12	1120	1642	1683	212.90	277.10
12	16	615	1108	1154	158.05	218.60
12	14	790	1393	1438	193.50	258.80
12	12	1025	1797	1843	250.10	322.10
12	10	1265	2185	2231	296.50	375.30
13	14	730	1533	1587	204.65	276.90
13	12	950	1980	2032	265.35	345.00
13	10	1165	2407	2460	315.95	402.50
14	14	675	1660	1709	225.85	299.50
14	12	890	2144	2192	291.55	371.50
14	10	1090	2707	2656	347.25	436.90
15	14	630	1780	1843	241.95	322.90
15	12	825	2298	2360	317.75	407.30
15	10	1015	2795	2858	378.50	479.40
16	14	590	1910	1979	258.05	348.60
16	12	770	2467	2535	333.95	433.60
16	10	950	3000	3069	399.70	502.30
18	14	525	2130	2205	295.30	395.90
18	12	690	2750	2825	381.25	492.30
18	10	850	3345	3420	452.10	573.20
20	14	470	2355	2436	332.55	443.70
20	12	620	3038	3119	423.60	546.20
20	10	760	3686	3777	514.60	648.10
22	12	565	3327	3428	460.25	590.00
22	10	695	4047	4148	551.30	693.30
24	12	515	3630	3734	502.54	640.90
24	10	635	4425	4530	597.84	750.50
26	12	475	3785	3891	534.75	705.00
26	10	580	4617	4713	646.00	820.50
28	12	440	4139	4235	582.20	743.00
28	10	545	4965	5061	693.50	873.70
30	12	410	4377	4505	624.40	804.70
30	10	510	5325	5450	745.80	948.80

Connections for Spiral Riveted Pipe

Flanged Joints



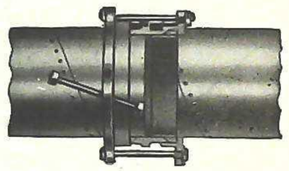
The flanged joint is cast to a special standard, the outside diameters of which are somewhat less than those of the A. S. M. E. Standard, and the drilling varying in proportion.

The flanged joint is used as a rule on galvanized pipe for the conveying of exhaust steam, etc., and its use is of course necessary to connect with other flanges already in place, in which case A. S. M. E. Standard or other standards to suit are furnished. Always specify which standard is wanted.

Size Inches	*Price, Each Flanges, Riveted to Pipe Black	*Price, Each Flanges, Riveted to Pipe Galvanized	Size Inches	*Price, Each Flanges, Riveted to Pipe Black	*Price, Each Flanges, Riveted to Pipe Galvanized
3	$.78	$.87	14	$4.15	$5.85
4	.94	1.06	15	4.97	6.94
5	1.10	1.25	16	6.02	8.46
6	1.52	1.71	18	6.92	9.57
7	1.95	2.20	20	7.74	10.60
8	2.21	2.50	22	11.34	15.40
9	2.78	3.15	24	12.26	16.70
10	3.05	3.50	26	16.00	22.50
11	3.37	4.00	28	17.25	25.25
12	3.52	4.50	30	18.50	28.00
13	3.86	5.40	..	.....	.....

*Price is for one flange only of spiral riveted standard diameter and drilling. Bolts and gaskets are not included.

Bolted Joints



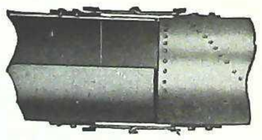
For asphalted pipe and also galvanized pipe if for water conveying.

A joint for high pressure service. In sizes over 12 inches it is considerably cheaper than flanges. For export use it is ideal, as it admits of nesting several sizes of plain end pipe, the joints being knocked down and crated separately. The joint formed is also flexible to a certain extent and makes easy the laying of pipe lines over rolling country or in shifting soil.

Size Inches	*Price Each	Size Inches	*Price Each	Size Inches	*Price Each
3	$1.22	10	$6.00	18	$13.35
4	1.70	11	6.45	20	13.45
5	2.00	12	6.70	22	15.00
6	2.90	13	7.85	24	17.00
7	3.20	14	8.70	26	19.00
8	3.40	15	10.45	28	21.00
9	3.90	16	12.55	30	23.00

*Price is for joint complete with bolts and packing.

Slip Joints



Sleeved joints may be rendered quite effective by the use of lugs for drawing up and by carefully caulking the slip joint.

Prices upon application.

Hy-Tech Products

Cast Iron Flanged Fittings

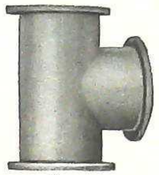
For Spiral Riveted Flanged Pipe



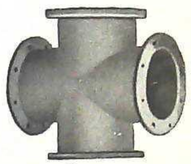
90° Elbow



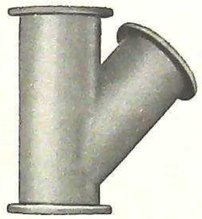
45° Elbow



Tee



Cross



Y Branch

Black

Diam. Inches	90° Elbows	45° Elbows	Tees	Crosses and Y Branches	Reducers	Flanges Loose	Price Bolts and Gaskets per Set
3	$1.95	$1.95	$2.75	$4.70	.....	$.45	$.29
4	2.35	2.35	3 45	5.80	$4.55	.61	.49
5	3.15	3.15	4.85	7.50	5.35	.76	.54
6	4.30	4.30	6.10	8.90	6.85	.91	.61
7	5.45	5.45	7.80	12.10	9.15	1.03	.70
8	7.05	7.05	10.30	15.30	10.70	1.17	.72
9	9.45	9.45	13.70	18.80	13.70	1.55	.87
10	10.65	10.65	16.40	22.70	15.25	1.80	.94
11	13.75	13.75	20.30	28.10	18.30	1.93	1.14
12	15.75	14.20	22.70	32.80	20.60	2.07	1.21
13	20.00	15.00	26.60	39.10	22.85	2.33	1.24
14	22.00	17.60	31.30	46.10	25.90	2.59	1.60
15	25.80	20.70	37.50	56.30	27.45	3.11	1.72
16	31.30	25.20	47.00	68.80	30.50	4.14	2.19
18	40.70	32.70	70.40	79.80	36.60	4.75	2.80
20	51.60	41.60	90.70	106.35	42.70	5.24	3.00
22	68.80	55.50	98.50	131.40	.....	8.53	3.57
24	84.50	68.00	142.90	154.80	.....	9.14	3.61

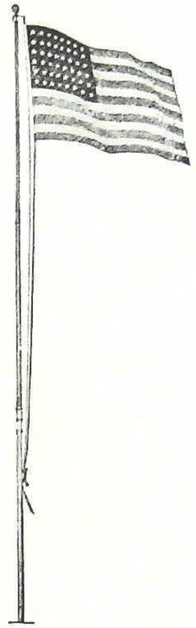
Galvanized

Diam. Inches	90° Elbows	45° Elbows	Tees	Crosses and Y Branches	Reducers	Flanges Loose	Price Bolts and Gaskets per Set
3	$2.25	$2.20	$3.21	$5.46	.....	$.54	$.34
4	2.80	2.75	4.10	6.81	$5.45	.73	.60
5	3.75	3.65	5.37	8.60	6.55	.91	.64
6	5.05	4.90	7.20	10.30	8.35	1.10	.75
7	6.45	6.20	9.25	13.95	11.00	1.28	.84
8	8.50	8.15	12.20	18.05	12.85	1.45	.89
9	11.30	10.90	16.40	22.50	16.60	1.92	1.03
10	12.85	12.40	19.80	26.85	18.75	2.23	1.10
11	16.35	15.90	24.30	33.30	22.25	2.41	1.37
12	18.70	16.75	27.20	39.40	25.20	2.56	1.45
13	24.12	17.80	32.40	47.00	28.00	2.88	1.50
14	27.65	20.80	38.80	58.35	31.70	3.20	1.85
15	31.65	24.55	46.65	70.65	33.85	3.84	1.97
16	39.40	29.35	58.35	85.80	38.10	5.18	2.44
18	50.15	39.60	84.15	100.50	46.20	5.94	3.38
20	65.30	50.00	111.30	133.70	54.00	6.55	3.58
22	87.10	67.40	126.00	168.00	.....	10.67	4.15
24	108.30	83.25	178.60	202.40	.....	11.43	4.20

Prices based on A. and R. standard dimensions and flange drilling.

Steel Flag Poles

Black and Galvanized



For parks, schools, colleges, country clubs, play grounds, public buildings, private buildings, etc.

Made from black or galvanized wrought steel pipe of different sizes.

Each joint is properly telescoped, and fitted with reducing couplings to make a finished joint.

For setting in a concrete foundation or on roofs.

Fitted at top with hook and pulley.

Steel cord and rope hitch for fastening cord is included.

The flag pole is attractive and durable and practically any size and length desired can be furnished.

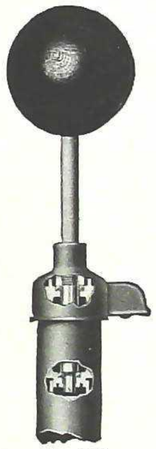
Poles can be furnished in lengths 20 feet to 100 feet over all.

Shipments are made in sections not to exceed 36 feet in length.

Prices upon application.

Walworth Revolving Halyard Tops

Ball-Bearing, Non-Fouling



No. 5301
Single Sheave

This halyard top is so sensitive that the flag or pennant will not wrap around the pole or foul the halyards. The top responds to the slightest shift of the lightest breeze as well as to the heaviest gale. In the former case the flag is carried quickly into the wind, and cannot foul, no matter how strong the wind or how suddenly it changes direction.

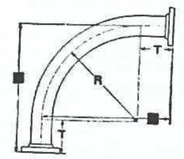
The revolving halyard top securely houses the sheave wheel, protecting it as well as the ball bearings.

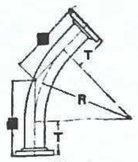


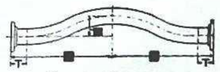
No. 5302
Double Sheave

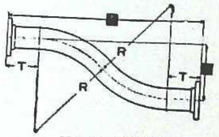
Description	Price, Each No. 5301 Single Sheave	Price, Each No. 5302 Double Sheave
2½-Inch, with 18 Inches of Pipe, with 6-Inch Gilded Copper Ball	$22.00	$30.00
2½-Inch, with 18 Inches of Pipe, without Ball	10.00	18.00
4-Inch, with 18 Inches of Pipe, with 8-Inch Gilded Copper Ball	26.00	35.00
4-Inch, with 18 Inches of Pipe, without Ball	11.00	20.00

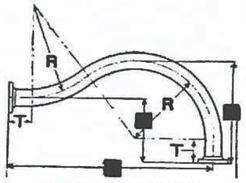
Pipe Bends Made from Lap Welded Pipe

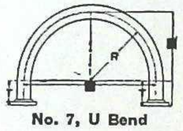

No. 1, Quarter Bend

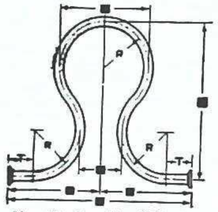

No. 3, 45° Bend

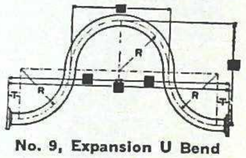

No. 4, Crossover

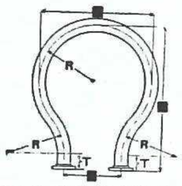

No. 5, Offset

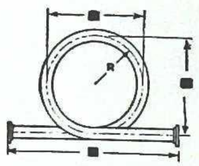

No. 2, Single Offset Quarter Bend

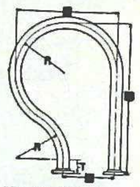

No. 7, U Bend


No. 10, Double Offset Expansion U Bend


No. 9, Expansion U Bend


No. 8, Double Offset U Bend


No. 11, Circle Bend


No. 6, Single Offset U Bend

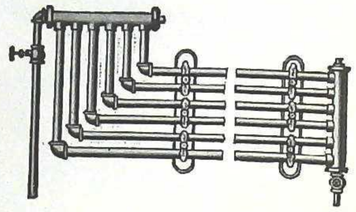
Size of Pipe Inches	R Minimum Advisable Radius of Bends Inches	Shortest Radius to Which Pipe Can Be Bent, Inches *Stand.	†XStrong	T—Minimum Length of Tangent or Straight Part, In. Screwed and Shrunk	Steel Welded	Van Stone
2½	12½	10	7	4	.	.
3	15	12	8	4	5	6
3½	17½	14	10	5	5	6
4	20	16	12	5	5	6
4½	22½	18	14	6	5	6
5	25	20	15	6	5	7
6	30	26	20	7	6	7
7	35	30	24	8	6	8
8	40	34	28	9	6	8
9	45	42	35	11	6	9
10	50	45	40	12	7	10
12	60	54	50	14	7	10
14	70	70	65	16	7	14
15	75	75	70	16	7	14
16	80	80	78	18	8	16
18	108	90	88	18	8	18
20	120	104	104	18	8	18
22	132	132	132	18	9	20
24	144	144	144	18	9	20

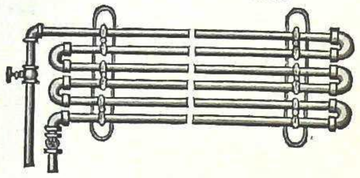
*For 14-inch O. D. pipe and larger having 7/16-inch or lighter metal.

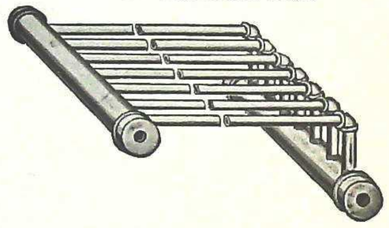
†For 14-inch O. D. pipe and larger having ½-inch or heavier metal.

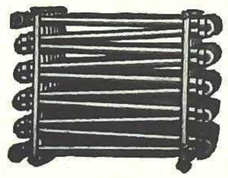
Full dimension sketch or blue print should accompany all inquiries or orders for bends, also include dimensions R, T, and dimensions marked where necessary, and any other variations from above table.

Pipe Coils


Wall Coil with Manifold

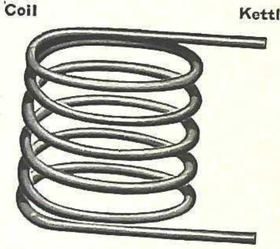

Wall Coil with Return Bends


Wrought Iron Pipe Header

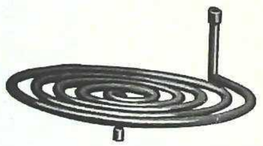

Box Coil

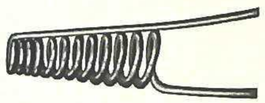

Kettle Coil


Heater Coil


Heater Coil


Heater Coil


Flat Coil


Tuyere Coil


Tank Coil

Prices and full information upon application.

Hy-Tech Products



Salt Glazed Vitrified Sewer Pipe and Fittings

Pipe

Size Inches	Single Strength Wt., Lbs. per Ft.	Single Strength Price per Ft.	Double Strength Wt., Lbs. per Ft.	Double Strength Price per Ft.	Channel Pipe Depth Inches	Channel Pipe Length Feet	Channel Pipe Price per Ft.
3	5	$.30	...	....	....	.....	....
4	7½	.30	...	....	2	2	$.18
5	11	.45	...	....	2½	2	.27
6	13	.45	...	....	3	2	.27
8	20	.70	...	....	4	2, 3	.42
10	30	1.05	...	....	5	2, 3	.63
12	42½	1.35	...	....	6	2, 3	.81
15	60	1.80	70	1.80	7½	2, 3	1.08
18	80	2.50	100	2.50	9	2, 3	1.50
20	100	3.00	125	3.00	10	2, 3	1.80
21	112	3.50	135	3.50	10½	2, 3	2.10
22	122	4.00	155	4.00	11	2, 3	2.40
24	140	4.50	175	4.50	12	2, 3	2.70
27	195	6.50	215	6.50	13½	2½, 3	3.90
30	230	7.20	275	7.20	15	2½, 3	4.32
33	300	9.00	310	9.00	16½	2½, 3	5.40
36	350	10.25	390	10.25	18	2½, 3	6.15

Elbows and Curves


Elbow

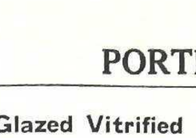

¼-Curve


⅛-Curve

Diam. In.	Elbows, 90° Bend Price, Each 12 or 18″ Long	Elbows, 90° Bend Price, Each 24″ Long	Diam. In.	Curves, 45° Bend Price, Each 12 or 18″ Long	Curves, 45° Bend Price, Each 24″ Long
3	$1.20	$1.80	3	$1.20	$1.80
4	1.20	1.80	4	1.20	1.80
5	1.80	2.70	5	1.80	2.70
6	1.80	2.70	6	1.80	2.70
8	2.80	4.20	8	2.80	4.20

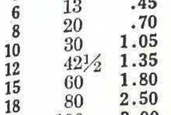
T and Y Branches

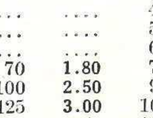

T Branch

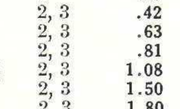

Y Branch

Size In.	Spur Size	T Branch Price Each	Size In.	Spur Size	Y Branch Price Each	Size In.	Spur Size	Price Each
3	3	$1.20	12	8	$5.40	24	15	$31.50
4	4	1.20	15	10	7.20	27	15	39.00
5	5	1.80	18	12	10.00	30	15	43.20
6	6	1.80	20	12	12.00	33	15	54.00
8	8	3.50	21	12	14.00	36	15	61.50
10	8	4.20	22	12	16.00	..	..	.....

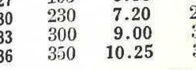
P, R, and H. H. Traps

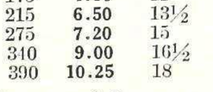

S Trap

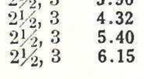

P Trap


Running Trap

Diam. Inches	S Trap Price Each	Diameter Inches	P Trap Price Each	Diameter Inches	Running Trap Price Each
3	$2.40	5	$3.60	8	$5.60
4	2.40	6	3.60	.	....

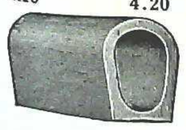

Increaser


Reducer


Slant

Reducers and Increasers Size, In.	Price, Each
3x4	$1.20
4x5, 6	1.80
5x6	1.80
5x8	2.80
8x8	2.80
8x10	4.20

Slants Diam. In.	Short Side	Price, Each
5	4½, 9, 13	$1.80
6	4½, 9, 13	1.80
8	9, 13	2.80
10	9, 13	4.20
12	9, 13	5.40
15	9, 13	7.20



Red Land Tile

Used for under draining wet land.

Made in 4 and 6-inch sizes.

Price upon application.

Cast Iron Water Pipe

Bell and Spigot and Turned and Bored



Standard Thickness and Weights of Cast Iron Pipe

Nom. I. D. In.	Class A Gas 100-Ft. Head 43 Lbs. Press. Thickness In.	Class A Gas Wt. Lbs. per Ft.	Class B Standard 200-Ft. Head 86 Lbs. Press. Thickness In.	Class B Standard Wt. Lbs. per Ft.	Class C Medium Heavy 300-Ft. Head 130 Lbs. Press Thickness In.	Class C Medium Heavy Wt. Lbs. per Ft.	Class D Extra Heavy 400-Ft. Head 173 Lbs. Press. Thickness In.	Class D Extra Heavy Wt. Lbs. per Ft.
3	.38	13.9	.42	15.4	....	....	....	.....
4	.42	20	.45	21.7	.48	23.3	.52	25
6	.44	30.8	.48	33.3	.51	35.8	.55	38.3
8	.46	42.9	.51	47.5	.56	52.1	.60	55.8
10	.50	57.1	.57	63.8	.62	70.8	.68	76.7
12	.54	72.5	.62	82.1	.68	91.7	.75	100
14	.57	89.6	.66	102.5	.74	116.7	.82	129.2
16	.60	108.3	.70	125	.80	143.8	.89	158.3
18	.64	129.2	.75	150	.87	175	.96	191.7
20	.67	150	.80	175	.92	208.3	1.03	229.2
24	.76	204.2	.89	233.3	1.04	279.2	1.16	306.7
30	.88	291.7	1.03	333.3	1.20	400	1.37	450
36	.99	391.7	1.15	454.2	1.36	545.8	1.58	625
42	1.10	512.5	1.28	591.7	1.54	716.7	1.78	825
48	1.26	666.7	1.42	750	1.71	908.3	1.96	1050
54	1.35	800	1.55	933.3	1.90	1141.7	2.23	1341.7
60	1.39	916.7	1.67	1104.2	2	1341.7	2.38	1583.3
72	1.62	1283.4	1.95	1545.8	2.39	1904.2	....	.....
84	1.72	1633.4	2.22	2104.2	....	.....	....	.....

All lengths to lay 12 feet. All weights are approximate; those per foot include allowance for bell. All pipe is tested by water pressure. Turned and bored pipe made to order only.

Inquiries and orders should clearly indicate the approximate number of lengths or feet of pipe of each size and class required. Give the desired delivery point and time of shipment, with any particulars as to sizes required first, the service intended, etc. This will facilitate prompt attention and avoid delays.

Two-inch pipe and fittings also furnished.

Approximate Weights of Lead and Hemp Required for Joints

Pipe In.	Wt., Lbs. Lead	Wt., Lbs. Hemp	Pipe In.	Wt., Lbs. Lead	Wt., Lbs. Hemp	Pipe In.	Wt., Lbs. Lead	Wt., Lbs. Hemp
3	6.	.18	16	30	.94	48	85.5	4.37
4	7.5	.21	18	33.8	1	54	97.6	6.25
6	10.25	.31	20	37	1.25	60	108.3	8.25
8	13.25	.44	24	44	1.50	72	128	12.50
10	16	.53	30	54.25	2.06	84	147	15.00
12	19	.61	36	64.75	3	..	.....	.....
14	22	.81	42	75.25	3.62	..	.....	.....

Flanged



Flanged cast iron pipe, sizes 3 to 48 inches, same thickness as standard pipe. Thickness of flange equals approximately 1½ times thickness of pipe, plus ⅛ inch. Pipe made in 12-foot lengths and faced ⅛ inch short for gaskets.

Specials for Cast Iron Pipe

Class D

90° Quarter Bends



Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
4	82	16	750
6	130	18	888
8	200	20	1070
10	278	24	1656
12	366	30	2836
14	504	36	4820

45° Eighth Bends



Size In.	Wt. Lbs.	Size In	Wt. Lbs.	Size In.	Wt. Lbs.
4	66	12	265	20	964
6	105	14	442	24	1515
8	150	16	558	30	2291
10	202	18	663	36	4012

22½° Sixteenth Bends

4	66	10	202	16	484	24	1372
6	105	12	265	18	574	30	2080
8	150	14	382	20	858	36	4012

Tees



Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.
4x 4x 4	128	10x10x 6	352	16x16x16	969
6x 6x 6	200	10x10x 4	338	16x16x12	861
6x 6x 4	183	12x12x12	512	20x20x20	1438
8x 8x 8	294	12x12x10	491	24x24x24	2113
8x 8x 6	270	12x12x 8	474	30x30x30	3660
8x 8x 4	255	12x12x 6	458	36x36x36	5567
10x10x10	395	12x12x 4	445	48x48x48	....
10x10x 8	371	14x14x14	724	.....	....

Crosses

Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.
4x 4x 4x 4	166	10x10x 6x 6	406	16x16x16x16	1259
6x 6x 6x 6	257	10x10x 4x 4	377	18x18x18x18	1454
6x 6x 4x 4	221	12x12x12x12	623	20x20x20x20	1828
8x 8x 8x 8	372	12x12x10x10	577	24x24x24x24	2694
8x 8x 6x 6	325	12x12x 8x 8	545	30x30x30x30	4609
8x 8x 4x 4	294	12x12x 6x 6	512	36x36x36x36	6857
10x10x10x10	493	12x12x 4x 4	486	48x48x48x48	....
10x10x 8x 8	443	14x14x14x14	963	.....	....

Plugs and Caps



Plug



Cap

Size In.	Wt., Lbs. Plug	Cap	Size In.	Wt., Lbs. Plug	Cap	Size In.	Wt., Lbs. Plug	Cap
4	8	26	14	65	149	30	723	704
6	14	40	16	96	198	36	1050	1084
8	24	59	18	121	242	48	2047	2341
10	38	81	20	156	308	54	2733	3009
12	50	104	24	472	442	60	3397	3687

Sleeves

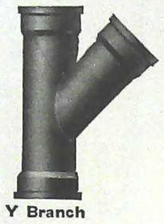


Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
4	15	61	14	18	280	30	24	1262
6	15	87	16	24	443	36	24	1772
8	15	119	18	24	518	48	24	2879
10	18	176	20	24	625	54	24	3571
12	18	223	24	24	821	60	24	4231

Special for Cast Iron Pipe

Class D

Y Branches



Y Branch



Reducer Increaser

Size In.	Wt. Lbs.
4x 4	103
6x 6	181
8x 8	291
10x10	434
12x12	632
14x14	985
16x16	1413
18x18	1737
20x20	2199
24x24	3599

Reducers

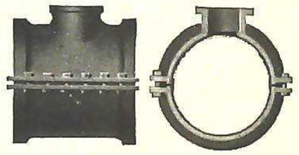
Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
6x 4	97	12x 6	202	16x10	364	20x12	576
8x 6	143	12x 4	179	18x16	569	24x20	987
8x 4	119	14x12	360	18x14	502	24x18	901
10x 8	198	14x10	320	18x12	446	24x16	838
10x 6	169	14x 8	288	18x10	405	24x14	764
10x 4	146	14x 6	256	20x18	776	30x24	1398
12x10	261	16x14	461	20x16	711	36x30	2264
12x 8	231	16x12	405	20x14	638	.....	....

Increasers

4x 6	104	6x 8	150	8x10	201	12x14	378
4x 8	132	6x10	180	8x12	240	.....	...
4x10	162	6x12	218	10x12	267	.....	....

Split Tees

With any size outlet.



Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	60	14	293
4	103	16	355
6	115	18	400
8	165	20	460
10	245	24	563
12	275	..	...

Split Sleeves



Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	50	14	268
4	91	16	323
6	101	18	368
8	151	20	423
10	225	24	513
12	250	..	...

Flanges and Spigots



Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs
3	16	24	10	18	140	18	20	340
4	16	38	12	18	173	20	20	425
6	16	60	14	18	220	24	24	635
8	16	90	16	20	255	..	..	...

Flanges and Bells



Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
3	4	24	14	6	220
4	4	38	16	6	275
6	4	60	18	6	325
8	4	90	20	6	395
10	6	140	24	6	520
12	6	173	..	.	...

Flanges



Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	10	10	45	18	117
4	15	12	59	20	153
6	20	14	80	24	210
8	32	16	105	..	...

Hy-Tech Products

Wrought Nipples



Close



Short

Plain, Right Hand

Size In.	Close or Short	Long	Each: Length, Inches 4	5	6	7	8	9	10	11	12	Length, Inches: Close*	Short*	Long
⅛	$.04	$.06	$.07	$.08	$.10	$.12	$.14	.$15	$.17	$.18	$.19	¾	1½	2 2½ 3 3½
¼	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19	⅞	1½	2 2½ 3 3½
⅜	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19	1	1½	2 2½ 3 3½
½	.05	.07	.08	.10	.12	.14	.16	.18	.20	.22	.23	1¼	1½	2 2½ 3 3½
¾	.06	.09	...	.11	.13	.17	.18	.20	.22	.24	.26	1⅜	2	2½ 3 3½ 4
1	.08	.13	...	.15	.18	.23	.25	.28	.31	.34	.36	1½	2	2½ 3 3½ 4
1¼	.11	.17	...	.20	.24	.29	.33	.36	.40	.44	.47	1⅝	2½	3 3½ 4 4½
1½	.13	.20	...	.25	.29	.36	.40	.45	.50	.54	.59	1¾	2½	3 3½ 4 4½
2	.18	.27	...	.32	.38	.50	.54	.59	.65	.72	.77	2	2½	3 3½ 4 4½
2½	.39	.59	...	...	.68	.90	.97	1.06	1.17	1.26	1.35	2⅛	3	3½ 4 4½ 5
3	.48	.72	...	...	.85	1.08	1.20	1.33	1.45	1.58	1.70	2⅝	3	3½ 4 4½ 5
3½	.75	1.05	...	...	....	1.30	1.45	1.60	1.75	1.90	2.05	2¾	4	4½ 5 5½ 6
4	.85	1.20	...	...	....	1.52	1.69	1.87	2.05	2.22	2.40	2⅞	4	4½ 5 5½ 6
4½	1.25	1.70	...	...	....	2.25	2.50	2.75	2.95	3.17	3.40	2⅞	4	4½ 5 5½ 6
5	1.55	2.45	...	...	....	2.58	2.83	3.10	3.35	3.60	3.85	3	4½	5 5½ 6 6½
6	1.85	2.90	...	...	....	3.05	3.35	3.70	4.00	4.30	4.65	3⅛	4½	5 5½ 6 6½
7	3.20	....	...	...	3.60	4.05	4.45	4.90	5.30	5.75	6.15	3¼	5	.. ..
8	3.55	....	...	...	4.05	4.55	5.05	5.50	6.00	6.50	7.00	3½	5	....
9	5.25	....	...	...	....	....	6.50	7.10	7.75	8.40	9.00	3⅝	5	....
10	6.75	....	...	...	....	....	8.25	8.90	9.70	10.40	11.15	3⅞	5	....
12	8.00	....	...	...	....	....	10.00	10.80	11.75	12.70	13.65	4½	6	....

Galvanized, Right Hand

⅛	$.06	$.11	$.12	$.15	$.17	$.21	$.24	$.26	$.29	$.31	$.34	¾	1½	2	2½	3	3½
¼	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34	⅞	1½	2	2½	3	3½
⅜	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34	1	1½	2	2½	3	3½
½	.06	.11	.13	.16	.18	.23	.26	.28	.31	.33	.36	1⅛	1½	2	2½	3	3½
¾	.08	.14	...	.18	.21	.26	.29	.32	.35	.38	.41	1⅜	2	2½	3	3½	4
1	.11	.19	...	.24	.28	.34	.38	.42	.47	.51	.55	1½	2	2½	3	3½	4
1¼	.17	.29	...	.32	.38	.45	.51	.57	.63	.69	.75	1⅝	2½	3	3½	4	4½
1½	.21	.35	...	.39	.46	.55	.63	.70	.77	.84	.91	1¾	2½	3	3½	4	4½
2	.27	.47	...	.52	.61	.74	.83	.93	1.13	1.13	1.23	2	2½	3	3½	4	4½
2½	.56	.86	...	...	1.00	1.26	1.41	1.56	1.71	1.86	2.01	2⅛	3	3½	4	4½	5
3	.70	1.10	...	...	1.30	1.60	1.80	2.00	2.20	2.40	2.60	2⅝	3	3½	4	4½	5
3½	1.20	1.70	...	...	....	2.10	2.35	2.60	2.85	3.15	3.40	2¾	4	4½	5	5½	6
4	1.35	1.87	...	...	....	2.30	2.60	2.90	3.20	3.50	3.80	2⅞	4	4½	5	5½	6
4½	1.85	2.60	...	...	....	3.30	3.65	4.05	4.45	4.85	5.25	2⅞	4	4½	5	5½	6
5	2.30	3.15	...	...	....	3.75	4.20	4.60	5.00	5.40	5.85	3	4½	5	5½	6	6½
6	2.80	4.25	...	...	....	4.50	5.00	5.55	6.05	6.60	7.15	3⅛	4½	5	5½	6	6½
7	4.25	....	...	...	4.95	5.65	6.35	7.05	7.75	8.45	9.20	3¼	5	...	...	...	...
8	5.00	....	...	...	5.80	6.65	7.50	8.35	9.25	10.10	10.95	3½	5	...	...	...	...

Nipples will be made to order from extra strong pipe at double the above lists. Nipples longer than 12-inch are made to order and charged as cut pipe; threads extra.

Plain, Right and Left Nipples

⅛	$.05	$.08	$.09	$.11	$.13	$.16	$.18	$.20	$.23	$.25	$.27	¾	1½	2	2½	3	3½
¼	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27	⅞	1½	2	2½	3	3½
⅜	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27	1	1½	2	2½	3	3½
½	.07	.10	.11	.13	.16	.18	.21	.24	.27	.29	.31	1⅛	1½	2	2½	3	3½
¾	.08	.12	...	.15	.17	.23	.25	.27	.29	.32	.35	1⅜	2	2½	3	3½	4
1	.11	.18	...	.20	.24	.31	.33	.37	.41	.45	.48	1½	2	2½	3	3½	4
1¼	.15	.23	...	.27	.32	.39	.45	.50	.55	.60	.65	1⅝	2½	3	3½	4	4½
1½	.18	.27	...	.34	.39	.48	.52	.60	.67	.72	.80	1¾	2½	3	3½	4	4½
2	.24	.36	...	.43	.51	.67	.72	.80	.87	.96	1.03	2	2½	3	3½	4	4½
2½	.52	.79	...	...	.91	1.20	1.30	1.40	1.55	1.68	1.80	2⅛	3	3½	4	4½	5
3	.65	.96	...	...	1.13	1.44	1.60	1.77	1.93	2.10	2.27	2⅝	3	3½	4	4½	5
3½	1.00	1.40	...	...	....	1.75	1.95	2.15	2.35	2.55	2.75	2¾	4	4½	5	5½	6
4	1.15	1.60	...	...	....	2.00	2.25	2.50	2.75	3.00	3.25	2⅞	4	4½	5	5½	6

*These lengths conform to the manufacturers' standard.
For galvanized right and left and substitute nipples, add 60 per cent to above prices.

Locknut or Tank Nipples

6 Inches Long Over All

Size ..... inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each	$.10	$.10	$.12	$.13	$.18	$.24	$.29	$.38	$.68	$.85
Galvanized ..... each	.17	.17	.18	.21	.28	.38	.46	.61	1.00	1.30

These nipples have American Briggs standard locknut thread 4 inches long on one end, and standard pipe thread on the other end.

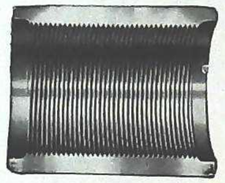
Standard Wrought Couplings


No. 713

The prices given are for right-hand couplings.

Size. In.	Each Black	Each Galv.	Size In.	Each Black	Each Galv.	Size In.	Each Black	Each Galv.
1/8	$.09	$.11	2	$.60	$.75	7	$3.45	$4.30
1/4	.10	.12	2 1/2	.75	.95	8	4.35	5.45
3/8	.11	.14	3	.90	1.10	9	5.85	7.30
1/2	.12	.15	3 1/2	1.25	1.55	10	7.80	9.75
3/4	.15	.19	4	1.50	1.85	11	10.00	12.50
1	.29	.36	4 1/2	1.75	2.20	12	10.20	12.75
1 1/4	.32	.40	5	2.70	3.40	..	.....	.....
1 1/2	.36	.45	6	3.00	3.75	..	.....	.....

Heavy Recessed Wrought Couplings



These prices given are for right hand couplings.

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
1/8	$.32	$.40	2	$.90	$1.15	7	$10.20	$12.75
1/4	.34	.43	2 1/2	1.85	2.30	8	10.80	13.50
3/8	.35	.44	3	2.65	3.30	9	13.20	16.50
1/2	.36	.45	3 1/2	3.10	3.90	10	18.45	23.00
3/4	.40	.50	4	3.60	4.50	11	23.25	29.00
1	.60	.75	4 1/2	3.80	4.75	12	27.00	33.75
1 1/4	.65	.80	5	4.10	5.05	..	.....	.....
1 1/2	.70	.90	6	4.20	5.25	..	.....	.....

Wrought Iron Long Screws


No. 741

Furnished with coupling and locknut faced. Long screws, longer than standard, furnished on special order and charged as cut pipe, with threads, couplings and locknuts extra.

Size Pipe Inches	Standard Length In.	Price, Each Black	Price, Each Galv.	Size Pipe Inches	Standard Length In.	Price, Each Black	Price, Each Galv.
1/4	2 1/2	$.30	$.35	1 1/2	5 1/2	$1.30	$1.60
3/8	3	.35	.40	2	6	1.70	2.10
1/2	3 1/2	.40	50	2 1/2	7	2.70	3.10
3/4	4	.55	.66	3	8	3.70	4.70
1	4 1/2	.75	1.00	3 1/2	8 1/2	5.40	6.50
1 1/4	5	1.00	1.25	4	9	6.60	7.75

In ordering, specify length of thread wanted.

Wrought Lock-nut or Tank Nipples


No. 706

This nipple has standard lock-nut thread 4 inches long on one end; the other end has a standard pipe thread.
It is not furnished over 6 inches long.

Size Inches	Price, Each Black	Price, Each Galvanized	Size Inches	Price, Each Black	Price, Each Galvanized
1/4	$.10	$.17	1 1/4	$.24	$.38
3/8	.10	.17	1 1/2	.29	.46
1/2	.12	.18	2	.38	.61
3/4	.13	.21	2 1/2	.68	1.00
1	.18	.28	3	.85	1.30

90° Malleable Elbows


No. 101

Size In.	Price, Each Right Hand Black	Price, Each Right Hand Galv.	Price, Each R. and L. Black	Price, Each R. and L. Galv.
1/8	$.06	$.08	...	....
1/4	.07	.09	$.09	$.12
3/8	.08	.11	.11	.16
1/2	.10	.14	.13	.17
3/4	.15	.20	.17	.23
1	.22	.32	.25	.35
1 1/4	.25	.40	.30	.45
1 1/2	.35	.60	.40	.65
2	.50	.90	.65	1.00
2 1/2	.90	1.50	...	....
3	1.50	2.60	...	....
3 1/2	2.25	3.75	...	....
4	3.00	5.00	...	....
4 1/2	3.50	5.75	...	....
5	4.00	6.50	...	....
6	6.50	10.00	...	....

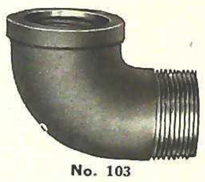
45° Malleable Elbows


No. 102

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
1/4	$.08	$.12	2 1/2	$1.25	$1.90
3/8	.10	.15	3	2.50	3.75
1/2	.12	.20	3 1/2	3.25	4.75
3/4	.18	.25	4	4.50	6.75
1	.26	.40	4 1/2	5.25	7.75
1 1/4	.36	.50	5	6.00	9.00
1 1/2	.54	.85	6	7.50	11.00
2	.82	1.35	...	....	.....

90° Malleable Street Elbows

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
1/8	$.08	$.10	2	$.90	$1.30
1/4–3/8	.10	.12	2 1/2	1.50	2.25
1/2	.12	.15	3	2.25	3.50
3/4	.20	.28	3 1/2	2.85	4.65
1	.25	.35	4	3.50	5.75
1 1/4	.40	.55	5	4.75	7.50
1 1/2	.55	.80	6	7.75	11.50


No. 103

45° Malleable Street Elbows


No. 104

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
1/4	$.12	$.15	1 1/4	$.40	$.55
3/8	.12	.15	1 1/2	.55	.80
1/2	.12	.15	2	.90	1.30
3/4	.20	.28	3	2.25	3.50
1	.25	.35	4	3.50	5.75

90° Malleable Iron Banded Reducing Street Elbows



Size Inches	Price, Each Black	Price, Each Galvanized
3/4 x 1/2	$.20	$.28
1 x 3/4	.25	.35
1 1/4 x 1	.40	.55
1 1/2 x 1 1/4	.55	.80
2 x 1 1/2	.90	1.30

Malleable Side Outlet Elbows

Size In.	Price, Each Black	Price, Each Galv.
3/8	$.08	$.10
1/2	.10	.15
3/4	.18	.25
1	.30	.45
1 1/4	.45	.65
1 1/2	.60	.90
2	1.00	1.50


No. 105

Hy-Tech Products

Malleable Female Drop Elbows


No. 106

Size In.	Price, Each Black	Price, Each Galv.
1/4	$.06	$.09
3/8	.08	.12
1/2	.12	.20
3/4	.20	.35

Malleable Tees


No. 110, Straight


No. 111, Reducing

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
1/8	$.07	$.09	1 1/4	$.30	$.50	4	$3.40	$5.75
1/4	.08	.10	1 1/2	.45	.70	4 1/2	4.25	7.00
3/8	.09	.13	2	.60	1.00	5	5.00	8.00
1/2	.11	.16	2 1/2	1.05	1.90	6	7.75	12.00
3/4	.15	.20	3	1.70	3.00	...	....	.....
1	.25	.38	3 1/2	2.50	4.25	...	....	.....

Malleable Service Tees

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
1/4	$.12	$.15	1 1/2	$.75	$1.10
3/8	.12	.15	2	1.15	1.65
1/2	.15	.20	2 1/2	2.00	....
3/4	.25	.35	3	2.50	....
1	.35	.50	3x2 1/2x3	2.50	....
1 1/4	.50	.70	3x3 x4	4.00	....


No. 115

Malleable 4-Way Tees

Size Inches	Price, Each Black	Price, Each Galv.
3/8	$.12	$.17
1/2	.14	.20
3/4	.20	.28
1	.35	.50
1 1/4	.50	.70
1 1/2	.80	1.10
2	1.25	1.75


No. 112

Malleable Drop Tees


No. 113

Size In.	Price, Each Female Black	Price, Each Female Galv.	Price, Each Male and Female Black	Price, Each Male and Female Galv.
3/8	$.10	$.15	$.10	$.15
1/2	.14	.25	.14	.25
3/4	.22	.40	.22	.40
1	.30	...	.30	...

Malleable Crosses


No. 116

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
3/8	$.08	$.11	1	$.30	$.45	3	$3.00	$4.50
1/4	.09	.12	1 1/4	.40	.60	3 1/2	3.25	5.25
3/8	.10	.14	1 1/2	.60	.90	4	5.25	8.00
1/2	.16	.25	2	1.00	1.50	5	7.50	11.00
3/4	.20	.29	2 1/2	1.75	2.75	6	13.00	19.00

Malleable Y Bends


No. 119

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
3/8	$.35	$.50	1 1/2	$1.00	$1.50
1/2	.40	.60	2	1.70	2.50
3/4	.50	.75	2 1/2	2.00	3.00
1	.60	.90	3	4.00	6.00
1 1/4	.80	1.25	4	5.50	8.25

Malleable Reducing Couplings

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
1/4	$.05	$.08	1 1/2	$.28	$.45
3/8	.06	.10	2	.45	.75
1/2	.07	.10	2 1/2	.70	1.05
3/4	.10	.15	3	1.00	1.65
1	.16	.25	3 1/2	1.50	2.40
1 1/4	.20	.35	4	1.85	3.05


No. 123

Malleable Right and Left Hand Couplings


No. 122

Size In.	Price, Each Black	Price, Each Galv.	Size In.	Price, Each Black	Price, Each Galv.
1/4	$.04	$.06	1 1/4	$.25	$.35
3/8	.06	.09	1 1/2	.36	.55
1/2	.08	.10	2	.52	.75
3/4	.12	.17	2 1/2	.70	1.05
1	.16	.25	3	1.00	1.50

Malleable Caps


No. 125

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1/8	$.03	$.04	2	$.32	$.52
1/4	.03	.04	2 1/2	.45	.76
3/8	.04	.05	3	.85	1.30
1/2	.05	.08	3 1/2	1.00	1.60
3/4	.08	.12	4	1.20	2.00
1	.12	.17	5	2.50	3.50
1 1/4	.16	.24	6	3.50	5.00
1 1/2	.24	.38	...	....	....

Malleable Shoulder Bushings


No. 135

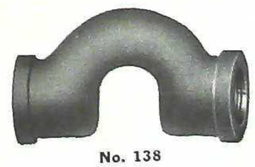
Size In.	Each Black	Each Galv.	Size In.	Each Black	Each Galv.
1/4	$.04	$.08	1 1/4	$.07	$.14
3/8	.04	.08	1 1/2	.09	.18
1/2	.04	.08	2	.14	.28
3/4	.05	.10	2 1/2	.21	.42
1	.06	.12	...	...	...

Malleable Faced Bushings

Size In.	Each Black	Each Galv.	Size In.	Each Black	Each Galv.
3/8	$.08	$.12	3 1/2	$1.20	$1.80
1/2	.09	.14	4	1.50	2.25
3/4	.11	.17	4 1/2	2.10	3.15
1	.13	.20	5	2.60	3.90
1 1/4	.17	.25	6	3.75	5.60
1 1/2	.22	.33	7	8.00	....
2	.32	.48	8	9.00	....
2 1/2	.48	.72	10	14.00	....
3	.70	1.05	12	20.00	....


Malleable Bushings Reduce One Size Only
No. 136

Malleable Cross Overs


No. 138

Size Inches	Price, Each Black	Price, Each Galvanized
1/2	$.20	$.25
3/4	.30	.40
1	.45	.60

Malleable Lock Nuts



No. 127

Size. In.	Each Black	Each Galv.	Size In.	Each Black	Each Galv.
1/8	$.02		1	$.07	$.10
1/4	.02	$.03	1 1/4	.09	.14
3/8	.03	.04	1 1/2	.11	.20
1/2	.04	.05	2	.18	.30
3/4	.05	.07	...	...	...

Close Pattern Malleable Return Bends



No. 131

Will not make up parallel coils, as distance, center to center, of two adjacent bends is greater than center to center distance between openings of a single bend.

Size Inches	Center to Center Inches	Price, Each Right Hand Black	Right Hand Galv.	Right and Left Black	Right and Left Galv.	Left Hand Black
1/2	1	$.18	$.25	$.23	$.35	$.23
3/4	1 1/4	.25	.35	.30	.40	.30
1	1 1/2	.35	.55	.45	.65	.45
1 1/4	1 3/4	.50	.75	.60	.85	.60
1 1/2	2 3/16	.75	1.15	.90	1.30	.90
2	2 5/8	1.00	1.65	1.25	1.90	1.25

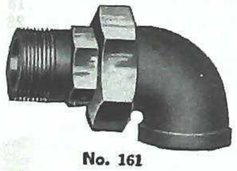
Open Pattern Malleable Return Bends



No. 133

Size Inches	Each Right Hand Black	Right Hand Galv.	Right and Left Black	Right and Left Galv.	Left Hand Black	Center to Center Inches
1/2	$.20	$.28	$.25	....	$.25	1 1/2
3/4	.30	.45	.38	$.55	.38	2
1	.50	.70	.60	.80	.60	2 1/2
1 1/4	.65	.90	.80	1.05	.80	3
1 1/2	.85	1.25	1.05	1.50	1.05	3 1/2
2	1.25	2.00	1.55	2.40	1.55	4
2 1/2	2.00	3.50	2.50	....	2.50	4 1/2
3	3.00	5.00	3.75	....	3.75	5

Malleable Iron Male Union Elbows



No. 161

Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.
1/4	$.43	$.65	1 1/4	$1.05	$1.60
3/8	.45	.70	1 1/2	1.20	1.80
1/2	.48	.72	2	1.80	2.70
3/4	.62	.93	2 1/2	3.30	4.95
1	.72	1.08	...	....	....

Malleable Iron Boiler Elbows With Union

New Pattern

Size, Male and Female Inches	Price, Each Plain Galv.	With Union Galv.
3/4x3/4x1	$.40	$.75
3/4x1/2x1	.40	.75
1/2x1/2x1	.40	.60



No. 586

Malleable Iron Boiler Couplings

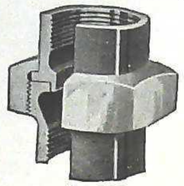


No. 589, with Union

Size, Male and Female Inches	Price, Each Plain Galv.	With Union Galv.
3/4x3/4x1	$.40	$.75
3/4x1/2x1	.40	.75
1/2x1/2x1	.40	.60

Standard Malleable Iron Unions

For 150 Pounds Steam Working Pressure

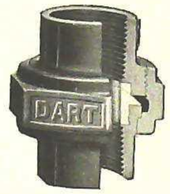


No. 156

Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.
1/8	$.18	$.27	1	$.33	$.50	3	$2.10	$3.15
1/4	.18	.27	1 1/4	.46	.70	3 1/2	3.65	5.50
3/8	.20	.30	1 1/2	.58	.90	4	4.35	6.50
1/2	.22	.33	2	.75	1.15	...	....	...
3/4	.27	.40	2 1/2	1.55	2.35	...	...	...

Dart Malleable Iron Unions

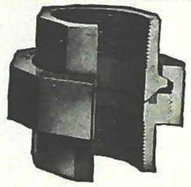
Made of malleable iron, plain or galvanized, with extra heavy pipe ends and nut with double-seated ball joint formed of bronze metal rings swedged into recesses made to receive them; the seats are machined to form a true arc or ball-joint, then properly ground with oil and corundum producing a positive union requiring no packing, absolutely non-corrosive, hermetically tight.



Size. In.	Each Black	Each Galv.	Size In.	Each Black	Each Galv.	Size In.	Each Black	Each Galv.
1/8	$.30	$.45	1	$.80	$1.20	3	$4.80	$7.20
1/4	.30	.45	1 1/4	1.20	1.80	3 1/2	7.20	10.80
3/8	.40	.60	1 1/2	1.60	2.40	4	10.80	16.20
1/2	.50	.75	2	2.00	3.00	...	.....	.....
3/4	.60	.90	2 1/2	3.20	4.80	...	.....	.....

Style A Jefferson Malleable Iron Unions

For 300 Pounds Steam Working Pressure



This union is made with malleable iron pipe ends which will not stretch. The nut threads are coarse enough to permit rapid adjustment, and are coated with graphite to lubricate them and prevent their corrosion. Thus the union may always be easily disconnected after being put in use.

Has octagonal ends and nut, and brass-to-iron joint.

Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.
1/8	$.30	$.45	1	$.80	$1.20	3	$4.80	$7.20
1/4	.30	.45	1 1/4	1.20	1.80	3 1/2	8.00	12.00
3/8	.40	.60	1 1/2	1.60	2.40	4	10.00	15.00
1/2	.50	.75	2	2.00	3.00	...	.....	.....
3/4	.60	.90	2 1/2	3.20	4.80	...	.....	.....

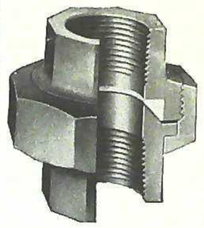
Corley Malleable Iron Unions

With Bronze Seat

For 300 Pounds Working Pressure

The bronze seat, a solid cast heavy ring, is pressed and expanded into a machined recess which is dovetailed. Ground to a standard master. For steam, water, gas and air.

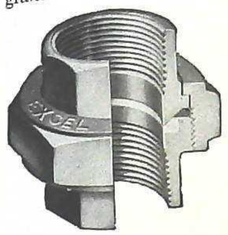
Size Inches	Black Each	Galvanized Each
1/8	$.30	$.45
1/4	.30	.45
3/8	.40	.60
1/2	.50	.75
3/4	.60	.90
1	.80	1.20
1 1/4	1.20	1.80
1 1/2	1.60	2.40
2	2.00	3.00
2 1/2	3.20	4.80
3	4.80	7.20



Excel Malleable Iron Unions

For 250 Pounds Steam Working Pressure

A union for steam, water, gas or oil, extensively used by the plumbing trade. So constructed as to seal tight, stay tight and stand up under exceptional stress and strain. Made of high grade air refined malleable iron, and has brass to iron seat.



Size Inches	Price, Each Black	Galv.
1/8	$.30	$.45
1/4	.30	.45
3/8	.40	.60
1/2	.50	.75
3/4	.60	.90
1	.80	1.20
1 1/4	1.20	1.80
1 1/2	1.60	2.40
2	2.00	3.00
2 1/2	3.20	4.80
3	4.80	7.20

Mark Forged Steel Unions

For 300 Pounds Steam Working Pressure

This union is made from forged steel, which not only makes it stronger but eliminates any chance for blow-holes, sand-holes, and similar defects common to cast or malleable fittings.

It has the same co-efficient of expansion as the steel pipe which it connects.

The seat is the ideal combination of hardened steel to soft brass, ground to a ball joint.



Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.	Size In.	Price, Each Black	Galv.
1/8	$.30	$.45	3/4	$.60	$.90	2	$2.00	$3.00
1/4	.30	.45	1	.80	1.20	2 1/2	3.20	4.80
3/8	.40	.60	1 1/4	1.20	1.80	...	....	....
1/2	.50	.75	1 1/2	1.60	2.40	...	....	....

Pipe Cutting and Fitting

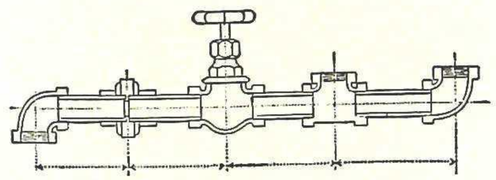


Diagram Showing Screwed Valves and Fittings

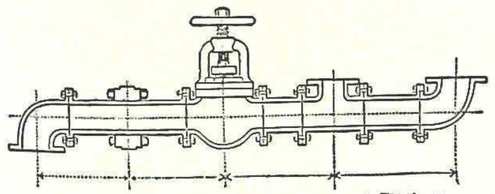


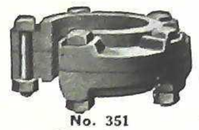
Diagram Showing Flanged Valves and Fittings

We are in a position to furnish quickly pipe cutting, threading and fitting all sizes of pipe to order.

In laying out work of this kind, great care should be taken in making sketches. All measurements should be given center to center as shown in diagrams. It is also necessary to know for what purpose the pipe is to be used and pressure required to stand.

If flanged fittings are to be used state if desired drilled and if with bolts and gaskets complete. Flanges, flanged fittings and valves are drilled in multiples of four, so that they may be made to place in any quarter and bolts straddle the center line. It is always advisable to send templates when drilling of valves or fittings is required.

Prices upon application.



No. 351

Standard Cast Iron Flange Unions

For 125 Pounds Steam Working Pressure

Sizes 14-inch and larger are to be used with O. D. pipe of the same size.

Size In.	Diam. Flanges In.	No. of Bolts	Price, Each Black	Galv.	Size In.	Diam. Flanges In.	No. of Bolts	Price, Each Black	Galv.
1/2	2 3/4	3	$.40	$.80	5	9 1/8	5	$3.15	$6.30
3/4	3 1/8	3	.46	.92	6	10 3/8	6	3.95	7.90
1	3 5/8	3	.52	1.04	7	11 5/8	7	5.50	11.00
1 1/4	4 1/8	4	.64	1.28	8	12 3/4	8	7.00	14.00
1 1/2	4 1/2	4	.78	1.56	9	13 7/8	9	10.00	20.00
2	5 1/8	4	1.00	2.00	10	15 1/2	10	11.50	23.00
2 1/2	5 7/8	4	1.25	2.50	12	17 1/4	12	16.00	32.00
3	6 5/8	4	1.50	3.00	14	20 5/8	14	28.00	56.00
3 1/2	7 1/4	4	1.80	3.60	15	20 5/8	14	35.00	70.00
4	7 3/4	5	2.10	4.20	16	23	16	60.00	.....
4 1/2	8 3/8	5	2.70	5.40	..	....	..	.....	.....

Extra Heavy Cast Iron Flange Unions

For 250 Pounds Saturated Steam Working Pressure

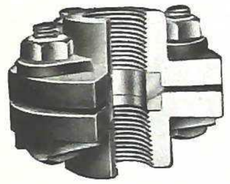


No. 415

Size Inches	Diameter Flanges Inches	No. of Bolts	Price Each	Size Inches	Diameter Flanges Inches	No. of Bolts	Price Each
1/2	3 1/4	4	$.70	4	8	7	$3.15
3/4	3 1/4	4	.70	4 1/2	8 3/4	8	4.00
1	3 5/8	4	.80	5	9 3/8	8	4.75
1 1/4	4 1/8	4	1.00	6	10 7/8	9	6.00
1 1/2	4 5/8	4	1.15	7	12	10	8.25
2	5 3/8	5	1.50	8	13 1/4	10	10.50
2 1/2	6	5	1.90	9	14 3/8	12	15.00
3	6 3/4	6	2.25	10	15 3/4	12	17.25
3 1/2	7 1/2	6	2.70	12	18	14	24.00

Dart Flange Unions

For 500-Pound Working Pressure



Made of cast iron and equipped with 2 bronze-to-bronze ground joint seats. No gasket required. Tight joints assured whether in or out of alignment.

Prices for galvanized flanged unions upon application.

Size In.	Plain Price Each	Size In.	Plain Price Each	Size In.	Plain Price Each	Size In.	Plain Price Each
1/2	$.55	2	$2.00	4 1/2	$8.75	9	$21.60
3/4	.60	2 1/2	3.20	5	10.00	10	28.80
1	.80	3	4.80	6	12.50	12	46.00
1 1/4	1.20	3 1/2	6.00	7	15.00	..	.....
1 1/2	1.60	4	7.50	8	18.00	..	.....

Malleable Iron Flange Unions



For 125 Pounds Steam Working Pressure

Malleable flange unions are always furnished faced and without gaskets.

Size In.	Diam. Flange In.	No. of Bolts in Each	Price, Each Black	Galv.	Size In.	Diam. Flange In.	No. of Bolts in Each	Price, Each Black	Galv.
3/4	3	3	$1.40	$2.80	3 1/2	7 3/16	4	$5.25	$10.50
1	3 9/16	4	1.60	3.20	4	8	5	6.00	12.00
1 1/4	4	4	2.00	4.00	5	9 1/8	6	8.00	16.00
1 1/2	4 1/2	4	2.50	5.00	6	10 3/8	6	9.00	18.00
2	5 1/8	4	3.00	6.00	8	13 1/8	8	18.00	36.00
2 1/2	5 9/16	4	3.50	7.00	...	....	..	.....	.....
3	6 11/16	4	4.40	8.80	...	....	..	.....	.....

Hy-Tech Products

Malleable Iron Railing Fittings

For galvanized railing fittings, add 50 per cent to prices below.

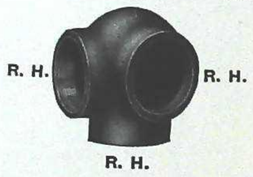


No. 1 Elbows

Size Inches	Price Each	Size Inches	Price Each
½	$.15	1¼	$.35
¾	.20	1½	.45
1	.25	2	.75

No. 2 Side Outlet Elbows

Size Inches	Price Each	Size Inches	Price Each
½	$.20	1¼	$.40
¾	.25	1½	.50
1	.30	2	.80



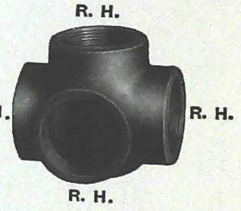


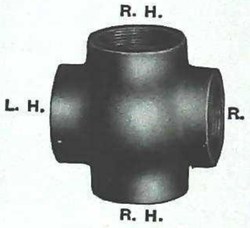
No. 3 Tees

Size Inches	Price Each	Size Inches	Price Each
½	$.20	1¼	$.40
¾	.25	1½	.50
1	.30	2	.80

No. 4 Side Outlet Tees

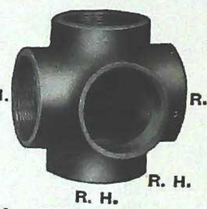
Size Inches	Price Each	Size Inches	Price Each
½	$.30	1¼	$.50
¾	.35	1½	.60
1	.40	2	1.00





No. 5 Crosses

Size Inches	Price Each	Size Inches	Price Each
½	$.30	1¼	$.50
¾	.35	1½	.60
1	.40	2	1.00



No. 6 Side Outlet Crosses

Size Inches	Price Each	Size Inches	Price Each
½	$.35	1¼	$.55
¾	.40	1½	.75
1	.45	2	1.35



No. 7 Globe Floor Flanges

Size Inches	Price Each	Size Inches	Price Each
½	$.25	1¼	$.45
¾	.30	1½	.50
1	.35	2	.70

No. 8 Ball Ornaments

Size Inches	Price Each	Size Inches	Price Each
½	$.16	1¼	$.25
¾	.18	1½	.35
1	.20	2	.90





No. 9 Round Railing Flanges

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
⅜	$.20	1	$.34	2	$.70
½	.30	1¼	.44	..	...
¾	.32	1½	.60	..	...

Malleable Iron Adjustable Railing Fittings

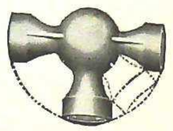
No. 70 Elbows



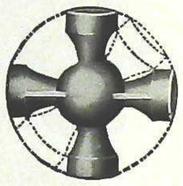
Size Inches	Price Each	Price, Each *Side Outlet
1	$1.50	$1.70
1¼	2.15	2.40
1½	2.80	3.00
2	3.90	4.40

No. 71 Tees

Size Inches	Price Each	Price, Each *Side Outlet
1	$1.80	$2.10
1¼	2.50	2.80
1½	3.30	3.70
2	4.50	5.00



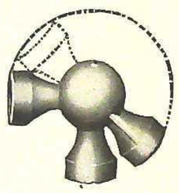
No. 73 Crosses



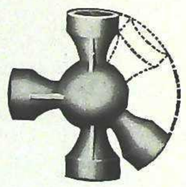
Size Inches	Price Each	Price, Each *Side Outlet
1	$2.10	....
1¼	3.00	....
1½	3.90	....
2	6.00	....

No. 72 Stair Tees

Size Inches	Price Each	Price, Each *Side Outlet
1	$2.10	$2.40
1¼	3.00	3.50
1½	3.90	4.50
2	6.00	7.00



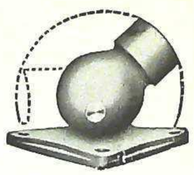
No. 74 Stair Crosses



Size Inches	Price Each	Price, Each *Side Outlet
1	$2.20	$2.50
1¼	3.20	4.00
1½	4.00	5.00
2	6.40	7.00

No. 79 Flanges

Size Inches	Length Inches	Width Inches	Bolt Holes C to C Inches	Bolt Holes Inches	Price Each
1	5	1 11/16	4	7/16	$1.90
1¼	5½	2 1/16	4 3/8	7/16	2.40
1½	6	2 5/16	5	7/16	2.80
2	7	2 7/8	5 3/4	9/16	5.00
2½	8	3 1/2	7	9/16	7.20



*S. O. fittings not illustrated.
Galvanized, double above prices.
Price on brass adjustable fittings upon application.

Malleable Iron Railing Fittings

No. 10, 45° Elbows



Size In.	Price Each	Size In.	Price Each
1	$.30	2	$.90
1¼	.45	2½	2.15
1½	.55	3	2.90

No. 11A, 45° Tees



Size In.	Price Each	Size In.	Price Each
1	$.40	2	$.95
1¼	.50	2½	2.50
1½	.60	3	3.00

No. 12B, 45° Crosses



Size In.	Price Each	Size In.	Price Each
1	$.45	2	$1.15
1¼	.55	2½	2.20
1½	.70	3	2.75

No. 13 Stair Landing Ells



Size In.	Price Each	Size In.	Price Each
1	$.40	2	$1.44
1¼	.70	2½	2.00
1½	.90	...	....

No. 14 Side Outlet Stair Landing Ells



Size In.	Price Each	Size In.	Price Each
1	$.50	2	$1.60
1¼	.80	2½	2.30
1½	1.00	...	....

No. 15 Hand Rail and Stair Landing Tees



Size In.	Price Each	Size In.	Price Each
1	$.50	2	$1.60
1¼	.80	2½	2.40
1½	1.00	...	....

No. 16 Side Outlet Hand Rail and Stair Landing Tees



Size In.	Price Each	Size In.	Price Each
1	$.70	2	$1.80
1¼	.90	2½	2.80
1½	1.10	...	....

No. 17 Stair Landing Tees



Size In.	Price Each	Size In.	Price Each
1	$.50	2	$1.60
1¼	.80	2½	2.40
1½	1.00	...	....

No. 18 Hand Rail Crosses



Size In.	Price Each	Size In.	Price Each
1	$.70	2	$1.80
1¼	.90	2½	2.80
1½	1.10	...	....

No. 19 Stair Landing Crosses



Size In.	Price Each	Size In.	Price Each
1	$.70	2	$1.80
1¼	.90	2½	2.80
1½	1.10	...	....

No. 20 Flanges



Size In.	Price Each	Size In.	Price Each
1	$.30	2	$.60
1¼	.40	2½	1.00
1½	.56	...	....

In ordering above fittings, describe kind wanted by number and size. All openings tapped right hand; 15% additional, net, for tapping right and left or left hand. For galvanizing add 50% to above lists.

Brazed Brass Tubing

12 to 14-foot Lengths

B. & S. Gauge	Weight, Per Foot, Pounds — Outside Diameter, Inches: 9/16	1/4	5/16	3/8	7/16	1/2	9/16
18	.069	.099	.128	.158	.180	.217	.240
22	....	....	....	....	....	.141	....
24	....	....	....	.084	....	.113	....
B. & S. Gauge	Outside Diameter, Inches: 5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8
17	....	....	....	....	....	.638	.690
18	.276	.335	.390	.453	.500	....	....
20	....	....	....	.362	....	.456	.500
22	.178	.215	.248	.289	....	....	....
24	.142	.172	.198	.231	....	....	....
B. & S. Gauge	Outside Diameter, Inches: 1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	3
14	....	....	.....	1.453	1.640	1.828	2.203
15	.964	....	1.131	.....	.....	.....	....
17	.771	.820	.903	1.036	1.168	1.301	.....
20	.549	....	.643	.737	.....	.....	.....

Hard Drawn Seamless Brass Tubing

12-foot Lengths

Stubs Gauge	O.D. In.	Wt. per Ft., Lbs.	Stubs Gauge	O.D. In.	Wt. per Ft., Lbs.	Stubs Gauge	O.D. In.	Wt. per Ft., Lbs.
21	1/8	.034	17	7/8	.548	12	2 1/4	2.70
21	3/16	.057	16	1	.703	16	2 1/4	1.643
20	1/4	.087	16	1 1/8	.790	12	2 1/2	3.015
20	5/16	.112	15	1 1/4	.981	16	2 1/2	1.831
19	3/8	.162	14	1 3/8	1 24	12	2 3/4	3.331
19	7/16	.192	14	1 1/2	1 361	11	3	3.999
18	1/2	.256	14	1 5/8	1.48	16	3	2.207
18	9/16	.291	13	1 3/4	1.819	10	3 1/4	4.831
18	5/8	.327	13	2	2 094	10	3 1/2	5.219
17	3/4	.464	16	2	1.455	10	4	5.994

Hard Drawn Seamless Copper Tubing

12-foot Lengths

Stubs Gauge	O. D. In.	Wt. per Ft., Lbs.	Stubs Gauge	O.D. In.	Wt. per Ft., Lbs.	Stubs Gauge	O. D. In.	Wt. per Ft., Lbs.
21	1/8	.036	14	1 3/8	1.30	14	3	2.945
21	3/16	.06	14	1 1/2	1.431	10	3 1/4	5.079
20	1/4	.092	14	1 5/8	1.55	10	3 1/2	5.487
20	5/16	.118	13	1 3/4	1.913	14	3 1/2	3.45
19	3/8	.170	13	2	2.202	10	3 3/4	5.895
19	7/16	.202	14	2	1.936	10	4	6.302
18	1/2	.269	10	2 1/4	3.449	14	4	3.955
18	9/16	.306	12	2 1/4	2.839	10	4 1/4	6.71
18	5/8	.343	10	2 1/2	3.857	10	4 1/2	7.117
17	3/4	.488	12	2 1/2	3.17	10	4 3/4	7.525
17	7/8	.576	14	2 1/2	2.44	10	5	7.932
16	1	.737	10	2 3/4	4.264	10	6	9.562
16	1 1/8	.829	12	2 3/4	3.502	..	...	.....
15	1 1/4	1.032	11	3	4.204	..	...	.....

Seamless Annealed Copper Tubing

Small Sizes, in Straight Lengths of 12 Feet

Stubs Gauge	O. D. In.	Wt. per Ft., Lbs.	Stubs Gauge	O. D. In.	Wt. per Ft., Lbs.
21	3/16	.06	20	5/16	.118
20	1/4	.092	19	3/8	.170

Small Sizes, in Coils of About 25 Feet

21	1/4	.085	19	3/8	.170

Seamless Brass and Copper Pipe

Iron Pipe Sizes

12-foot Lengths—Plain Ends

Brass: Reg. Temp.	Brass: Annealed	Brass: Reg. Temp. N. P.	Brass: Reg. Temp. Tinned	Copper Hard	Copper Soft	Actual O. D. In	Actual I. D. In.	Weight Per Foot Pounds: Brass	Weight Per Foot Pounds: Copper
1/8	1/8	...	...	1/8	1/8	.405	.281	.246	.259
1/4	1/4	1/4	...	1/4	1/4	.540	.375	.437	.459
3/8	3/8	3/8	3/8	3/8	3/8	.675	.494	.612	.644
1/2	1/2	1/2	1/2	1/2	1/2	.840	.625	.911	.958
3/4	3/4	3/4	3/4	3/4	..	1.05	.822	1.235	1.298
1	1	1	1	1	..	1.315	1.062	1.740	1.829
1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	..	1.66	1.368	2.557	2.689
1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	..	1.90	1.600	3.037	3.193
2	2	2	2	2	..	2.375	2.062	4.017	4.224
2 1/2	...	...	2 1/2	2 1/2	..	2.875	2.500	5.830	6.130
3	...	...	...	3	..	3.50	3.062	8.314	8.741
3 1/2	...	...	...	...	..	4.00	3.500	10.85	11.41
4	...	...	...	4	..	4.50	4.000	12.29	12.93
5	...	...	...	...	..	5.563	5.062	15.40	16.19
6	...	...	...	...	..	6.625	6.125	18.44	19.39

Prices upon application.

Hy-Tech Products

Rough Brass Screwed Steam Fittings

Iron Pipe Size

For 125 Pounds Steam Working Pressure



No. 625
90° Elbow



No. 626
45° Elbow



No. 627
Tee



No. 628, Y Bend



No. 629, Cross

Price, Each

Size ..... inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Elbows, 90°	$.12	$.15	$.20	$.28	$.40	$.63	$.90
" Reducing	*	.19	.25	.35	.50	.80	1.10
" 45°	.16	.20	.25	.31	.40	.63	.90
" Street 90°	.25	.27	.33	.48	.63	.85	1.50
" Drop, Female ..	...	...	.35	.45	.65	1.05	1.50
" Side Outlet	...	...	.60	.85	1.20	1.90	2.75
Tees	.17	.21	.28	.40	.55	.85	1.25
" Reducing	*	.25	.35	.50	.70	1.05	1.55
" Drop, Female....	...	...	.43	.57	.80	1.25	....
" 4-way	...	...	...	1.20	1.65	2.50	3.75
Crosses	.25	.30	.40	.55	.80	1.25	1.80
" Reducing	*	.38	.50	.70	1.00	1.55	2.25
Bushings, Hexagon	...	.10	.12	.15	.22	.35	.50
" Face	...	.12	.15	.19	.27	.44	.62
Plugs, Regular	.08	.10	.12	.15	.20	.30	.45
" Solid	.08	.10	.12	.22	.30	.45	.80
" Countersunk....	...	...	...	.22	.30	.45	.65
Caps	.10	.13	.16	.20	.30	.42	.60
Locknuts	.10	.10	.12	.15	.20	.28	.40
Reducers	...	.15	.20	.28	.40	.60	.90
Couplings	.10	.13	.17	.25	.37	.55	.80
" R. and L....	...	.17	.22	.30	.45	.70	1.00
Return Bends, Closed...	...	...	...	.70	1.00	1.25	1.80
" " Open	...	...	...	.80	1.10	1.40	2.15
Y Bends	...	...	...	.75	1.10	1.65	2.50

Size ..... inches	1 1/2	2	2 1/2	3	3 1/2	4
Elbows, 90°	$1.20	$2.00	$3.50	$6.00	$8.00	$10.00
" Reducing	1.50	2.50	4.25	7.50	10.00	12.50
" 45°	1.20	2.00	3.50	6.00	.....	10.00
" Street 90°	2.00	3.25	.....	.....	.....	.....
" Drop, Female ..	2.00	3.40	.....	.....	.....	.....
" Side Outlet ...	3.60	6.00	10.50	18.00	.....	.....
Tees	1.70	2.80	5.00	8.50	11.00	14.00
" Reducing	2.10	3.50	6.25	10.50	14.00	17.50
" 4-way	5.00	8.50	.....	.....	.....	.....
Crosses	2.40	4.00	7.00	12.00	16.00	20.00
" Reducing	3.00	5.00	8.75	15.00	20.00	25.00
Bushings, Hexagon	.70	1.00	1.50	2.50	3.75	5.00
" Face	.87	1.25	1.85	3.10	4.75	6.25
Plugs, Regular	.60	.95	1.50	2.25	3.75	5.00
" Solid	1.20	1.90	3.00	4.50	7.50	10.00
" Countersunk ...	.90	1.40	.....	.....	.....	.....
Caps	.80	1.25	2.50	3.50	5.50	7.00
Locknuts	.55	.80	1.75	2.75	4.00	5.00
Reducers	1.10	1.75	2.75	4.00	6.00	8.00
Couplings	1.00	1.60	2.50	3.50	5.25	7.00
" R. and L....	1.30	2.00	3.10	4.50	.....	.....
Return Bends, Closed..	2.50	4.25	.....	.....	.....	.....
" " Open...	3.00	4.75	8.25	11.00	.....	.....
Y Bends	3.30	5.50	9.50	16.00	.....	26.00

Right and left elbows and right and left return bends furnished at an advance of 25 per cent over above list.

*Elbows, tees, crosses, bushings and reducers, reducing more than two sizes, will be furnished at an advance of 25 per cent over above reducing list prices.

Finished Brass Screwed Steam Fittings

Iron Pipe Size, Polished and Buffed

For 125 Pounds Steam Working Pressure



No. 630
90° Elbow



No. 631
45° Elbow



No. 632, Tee



No. 633, Y Bend



No. 634, Cross

Price, Each

Size ..... in.	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Elbows 90°	$.30	$.35	$.45	$.56	$.75	$1.10	$1.55
" Reducing	*	.44	.55	.70	.95	1.40	1.90
" 45°	.38	.45	.55	.66	.85	1.23	1.70
" Street	.47	.52	.63	.83	1.08	1.45	2.30
" Drop, Female.	...	...	.85	1.05	1.40	2.00	2.80
" Side Outlet ..	...	...	1.35	1.70	2.25	3.30	4.70
Tees	.42	.49	.63	.80	1.05	1.50	2.15
" Reducing	*	.60	.77	1.00	1.30	1.85	2.65
" Drop, Female...	...	...	1.13	1.37	1.80	2.55	....
" 4-way	...	...	...	2.05	2.70	3.90	5.70
Crosses	.60	.70	.90	1.10	1.50	2.20	3.10
" Reducing	*	.88	1.10	1.40	1.85	2.75	3.85
Bushings	...	.22	.27	.35	.47	.70	1.00
Plugs, Regular	.23	.30	.37	.43	.55	.75	1.00
" Solid	...	...	.43	.50	.65	.90	1.35
" Countersunk...	...	...	...	.42	.55	.80	1.15
Caps	.20	.25	.31	.40	.55	.77	1.10
Locknuts	.24	.25	.32	.40	.50	.65	.85
Reducers	*	.35	.45	.56	.75	1.05	1.55
Couplings	.24	.28	.36	.46	.63	.90	1.30
" R and L.....	...	.37	.47	.58	.80	1.15	1 65
Return Bends, Close.	...	...	...	1.55	2.05	2.65	3.75
" " Open.	...	...	...	1.65	2.15	2.80	4.10
Y Bends.....	...	...	...	1.60	2.15	3.05	4.45

Size ..... in.	1 1/2	2	2 1/2	3	3 1/2	4
Elbows, 90°	$2.00	$3.00	$5.50	$9.00	$14.00	$17.50
" Reducing.....	2.50	3.75	6.75	11.25	17.50	22.00
" 45°	2.20	3.25	6.00	9.75	.....	19.50
" Street	3.00	4.50	.....	.....	.....	.....
" Drop, Female.	3.60	5.40	.....	.....	.....	.....
" Side Outlet...	6.00	9.00	16.50	27.00	.....	.....
Tees	2.80	4.20	7.75	12.75	19.50	24.50
" Reducing	3.50	5.25	9.75	15.80	24.50	30.50
" 4-way	7.40	11.50	.....	.....	.....	.....
Crosses	4.00	6.00	11.00	18.00	28.00	35.00
" Reducing	5.00	7.50	13.75	22.50	35.00	44.00
Bushings	1.40	2.00	3.00	4.50	6.25	8.00
Plugs, Regular	1.30	1.95	3.00	4.25	6.25	8.00
" Solid	1.90	2.90	4.50	6.50	10.00	13.00
" Countersunk...	1.55	2.25	.....	.....	.....	.....
Caps	1.50	2.25	4.00	5.50	8.00	10.00
Locknuts	1.10	1.60	3.25	4.75	6.50	8.00
Reducers	1.90	2.75	4.75	7.00	12.00	15.50
Couplings	1.60	2.35	4.00	5.75	9.75	12.50
" R and L	2.10	3.00	5.10	7.50	.....	.....
Return Bends, Close.	4.90	7.25	.....	.....	.....	.....
" " Open..	5.40	7.75	14.25	20.00	.....	.....
Y Bends	5.70	8.50	15.50	25.00	.....	41.00

Right and Left Elbows, and Right and Left Return Bends will be furnished at an advance of 25 per cent over above list prices.

*Elbows, Tees, Crosses, Bushings and Reducers, reducing more than two sizes, will be furnished at an advance of 25 per cent over above reducing list prices.

Hy-Tech Products

Nickel-plated Brass Screwed Steam Fittings

Iron Pipe Size, Polished and Buffed

For 125 Pounds Steam Working Pressure



No. 635, 90° Elbow



No. 636, 45° Elbow



No. 637, Tee



No. 638, Y Bend



No. 639, Cross

Price, Each

Size .... inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Elbows ..... ea.	$.36	$.42	$.53	$.65	$.87	$1.25	$1.75
" Reducing.. "	*	.52	.65	.82	1.10	1.60	2.15
" 45° .... "	.45	.53	.65	.78	1.00	1.43	1.95
" Street .. "	.54	.60	.73	.95	1.23	1.65	2.55
" Drop, Female "	....	....	1.00	1.25	1.65	2.30	3.20
" Side, Outlet "	....	....	1.60	2.00	2.60	3.75	5.35
Tees ..... "	.50	.58	.75	.93	1.22	1.70	2.45
" Reducing "	*	.72	.90	1.15	1.50	2.10	3.00
" Drop, Female "	....	....	1.33	1.62	2.15	2.95	....
" 4-way .. "	....	....	....	2.35	3.05	4.35	6.35
Crosses..... "	.72	.84	1.05	1.30	1.75	2.50	3.50
" Reducing "	*	1.05	1.30	1.65	2.15	3.15	4.35
Bushings ... "	....	.26	.32	.42	.55	.82	1.15
Plugs..... "	.28	.37	.45	.52	.67	.90	1.20
Solid Plugs.. "	.28	.37	.45	.59	.77	1.05	1.55
Countersunk Plugs "	....	....	....	.49	.63	.92	1.30
Caps..... "	.23	.29	.36	.47	.63	.89	1.25
Lock-nuts.. "	.29	.30	.39	.48	.60	.77	1.00
Reducers... "	....	.42	.53	.65	.87	1.20	1.75
Couplings .... "	.29	.33	.42	.53	.72	1.00	1.45
" R. & L. "	....	.44	.55	.67	.92	1.30	1.85
Return Bends, Close "	....	....	....	1.85	2.40	3.10	4.40
" " Open "	....	....	....	1.95	2.50	3.25	4.75
Y Bends ... "	....	....	....	1.90	2.50	3.50	5.10

Size .... inches	1 1/2	2	2 1/2	3	3 1/2	4
Elbows ..... ea.	$2.25	$3.35	$6.15	$10.00	$16.00	$20.00
" Reducing.. "	2.85	4.15	7.60	12.50	20.00	25.00
" 45° .... "	2.55	3.65	6.85	11.00	.....	22.50
" Street .. "	3.35	4.90	.....	.....	.....	.....
" Drop, Female "	4.10	6.00	.....	.....	.....	.....
" Side, Outlet "	6.80	10.00	18.50	30.00	.....	.....
Tees..... "	3.15	4.65	8.65	14.00	22.30	28.00
" Reducing "	3.95	5.85	10.90	17.50	28.00	35.00
" Drop, Female "	....	....	.....	.....	.....	.....
" 4-way .. "	8.20	12.50	.....	.....	.....	.....
Crosses..... "	4.50	6.70	12.30	20.00	32.00	40.00
" Reducing.. "	5.70	8.30	15.40	25.00	40.00	50.00
Bushings ... "	1.65	2.35	3.50	5.15	7.10	9.00
Plugs ..... "	1.55	2.30	3.50	4.90	7.10	9.00
Solid Plugs . "	2.15	3.25	5.00	7.15	10.85	14.00
Countersunk Plugs "	1.75	2.55	.....	.....	.....	.....
Caps..... "	1.75	2.60	4.50	6.15	8.85	11.00
Lock-nuts.. "	1.30	1.85	3.75	5.40	7.35	9.00
Peducers... "	2.15	3.10	5.40	8.00	14.00	18.00
Couplings .... "	1.80	2.60	4.50	6.50	11.25	14.25
" R. & L. "	2.35	3.35	5.75	8.50	.....	.....
Return Bends, Close "	5.70	8.25	.....	.....	.....	.....
" " Open "	6.20	8.75	16.25	23.00	.....	.....
Y Bends... "	6.50	9.50	17.50	28.00	.....	46.00

Right and left elbows and right and left return bends will be furnished at an advance of 25 per cent over above list prices.

*Elbows, tees, crosses, bushings and reducers, reducing more than two sizes will be furnished at an advance of 25 per cent over above reducing list prices.

Extra Heavy Brass Screwed Fittings

Cast Iron Pattern, Iron Pipe Size

For 250 Pounds Steam Working Pressure



No. 649, Elbow



No. 650, Tee

Rough

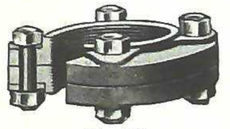
Size ..... inches	1/4	3/8	1/2	3/4	1	1 1/4
Elbows, 90° ..... each	$.33	$.45	$.65	$1.00	$1.50	$2.25
Elbows, Reducing.. each	...	.55	.75	1.20	1.80	2.60
Elbows, 45° ..... each	.45	.55	.75	1.10	1.65	2.50
Elbows, R. and L.. each	.40	.45	.75	1.20	1.80	2.60
Tees ..... each	.45	.60	.90	1.35	2.00	3.00
Tees, Reducing .... each	...	.70	1.05	1.55	2.30	3.50
Crosses ..... each	...	...	1.30	2.00	3.00	4.50
Crosses, Reducing .each	...	...	1.50	2.40	3.60	5.25
Couplings ..... each	...	.50	.70	1.10	1.65	2.25
Return Bends, Close .... each	...	...	1.65	2.50	3.50	5.00
Return Bends, Open..... each	...	...	1.80	2.75	4.00	5.50
Y's ..... each	...	...	1.50	2.50	3.50	5.50

Size ..... inches	1 1/2	2	2 1/2	3	3 1/2	4
Elbows, 90° ..... each	$3.00	$4.50	$8.00	$11.25	$16.00	$22.00
Elbows, Reducing..each	3.50	5.25	9.00	13.00	19.00	25.00
Elbows, 45° ..... each	3.25	4.50	8.00	11.25	16.00	22.00
Elbows, R. and L. each	3.50	5.25	9.00	13.00	.....	.....
Tees ..... each	4.00	6.00	10.75	15.00	22.00	30.00
Tees, Reducing .... each	4.50	6.75	12.00	17.00	25.00	35.00
Crosses ..... each	6.00	9.00	16.00	22.50	28.00	37.00
Crosses, Reducing .each	7.00	10.50	18.00	26.00	32.00	42.00
Couplings ..... each	3.00	4.50	7.00	10.00	13.00	17.00
Return Bends, Close..... each	7.00	10.00	.....	.....	.....	.....
Return Bends, Open ..... each	8.00	11.00	.....	.....	.....	.....
Y's ..... each	7.25	11.00	19.00	27.00	33.00	45.00

Finished

Size ..... inches	1/4	3/8	1/2	3/4	1	1 1/4
Elbows, 90° ..... each	$.73	$ .95	$1.25	$1.75	$2.50	$3.50
Elbows, Reducing. each	...	1.15	1.50	2.10	3.00	4.10
Elbows, 45° ..... each	.95	1.15	1.50	2.00	2.85	4.00
Elbows, R. and L. each	.90	1.15	1.50	2.10	3.00	4.10
Tees ..... each	1.00	1.25	1.70	2.35	3.35	4.65
Tees, Reducing .... each	.....	1.50	2.05	2.80	4.00	5.50
Crosses ..... each	.....	.....	2.50	3.50	5.00	7.00
Crosses, Reducing .each	.....	.....	3.00	4.25	6.00	8.25
Couplings ..... each	.....	.90	1.15	1.70	2.40	3.20
Return Bends, Close .... each	.....	.....	2.85	4.00	5.50	7.50
Return Bends, Open..... each	.....	.....	3.00	4.25	6.00	8.00
Y's ..... each	.....	.....	2.70	4.00	5.50	8.00

Size ..... inches	1 1/2	2	2 1/2	3	3 1/2	4
Elbows, 90° ..... each	$4.50	$6.25	$10.50	$14.75	$23.50	$31.00
Elbows, Reducing..each	5.35	7.50	12.00	17.25	28.00	36.00
Elbows, 45° ..... each	5.10	6.75	11.00	15.50	25.00	33.00
Elbows, R. and L. each	5.35	7.50	12.00	17.25	.....	.....
Tees ..... each	6.00	8.35	14.00	19.75	32.00	42.00
Tees, Reducing .... each	7.00	9.75	16.00	23.00	37.00	50.00
Crosses ..... each	9.00	12.50	21.00	29.50	43.00	55.00
Crosses, Reducing each	10.75	15.00	24.00	35.00	50.00	64.00
Couplings ..... each	4.15	5.85	9.00	13.00	.....	.....
Return Bends, Close ..... each	10.00	13.50	.....	.....	.....	.....
Return Bends, Open..... each	11.00	14.50	.....	.....	.....	.....
Y's ..... each	10.25	14.50	24.00	34.00	48.00	63.00



No. 651

Brass Flange Unions

For Steam Working Pressures

Standard, 125 Pounds; Extra Heavy 250 Pounds

Furnished with iron bolts.

Size ..... inches	3/4	1	1 1/4	1 1/2	2
Price, Standard... each	$4.50	$5 00	$5 50	$7 00	$9 00
Price, Extra Heavy each	7.50	8.50	11.00	13.00	16.00
Size ..... inches	2 1/2	3	3 1/2	4	.....
Price, Standard... each	$11.50	$15.00	$18.00	$22.00	.....
Price, Extra Heavy each	18.00	24.00	27.00	30.00	.....

Brass Nipples

Iron Pipe Size



No. 652, Close



No. 653, Shoulder

Size Inches	Length Close Inches	Price, Rough, Each — Length, Inches: Close	1½	2	2½	3
⅛	¾	$.11	$.13	$.15	$.17	$.19
¼	⅞	.13	.16	.19	.22	.25
⅜	1	.15	.19	.23	.27	.31
½	1⅛	.23	.25	.30	.35	.40
¾	1⅜	.28	...	.35	.42	.49
1	1½	.37	...	.44	.53	.62
1¼	1⅝	.60	...	...	.75	.88
1½	1¾	.70	...	...	.90	1.05
2	2	1.00	...	...	1.20	1.40

Size Inches	Price, Rough, Each — Length, Inches: 3½	4	4½	5	5½	6
⅛	$.21	$.23	$.25	$.27	$.29	$.31
¼	.28	.31	.34	.37	.40	.43
⅜	.35	.39	.43	.47	.51	.55
½	.45	.50	.55	.60	.65	.70
¾	.56	.63	.70	.77	.84	.91
1	.71	.80	.89	.98	1.07	1.16
1¼	1.01	1.14	1.27	1.40	1.53	1.66
1½	1.20	1.35	1.50	1.65	1.80	1.95
2	1.60	1.80	2.00	2.20	2.40	2.60

Polished brass nipples, longer than close, 25 per cent extra.

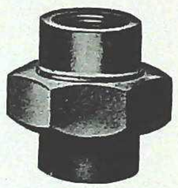
Nickel-plated nipples, 20 per cent extra over polished list.

Standard Brass Unions

Ground Joints

For 150 Pounds Steam Working Pressure

Size In.	Price, Each — Rough	Semi-Fin.	Polished	N. P.	Pol. Tinned
⅛	$.40	$.45	$.50	$.60	$.65
¼	.50	.55	.60	.72	.75
⅜	.65	.75	.85	1.02	1.05
½	.85	.95	1.05	1.25	1.30
¾	1.15	1.30	1.40	1.68	1.70
1	1.60	1.75	1.90	2.28	2.35
1¼	2.25	2.50	2.75	3.30	3.30
1½	2.70	3.00	3.25	3.90	3.85
2	4.00	4.50	5.00	6.00	5.90
2½	7.50	8.25	9.00	10.80	10.20
3	11.50	12.75	14.00	16.80	16.25
3½	20.00	22.50	25.00	30.00	28.00
4	27.00	30.00	33.00	39.50	36.75

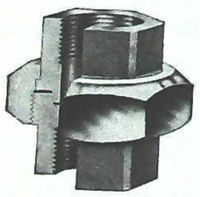


Prices for acid-resisting metal upon application.

Extra Heavy Brass Unions

Ground Joints

For 250 Pounds Steam Working Pressure



No. 656

Size In.	Price, Each — Rough	Polished	Polished and N. P.
⅛	$.85	$1.10	$1.30
¼	1.10	1.35	1.55
⅜	1.40	1.70	1.95
½	1.60	1.95	2.25
¾	1.85	2.25	2.60
1	3.00	3.50	4.00
1¼	4.00	4.60	5.20
1½	5.25	5.90	6.55
2	7.50	8.40	9.20
2½	10.00	11.50	12.75
3	15.00	18.00	21.50
3½	24.00	27.50	31.00
4	35.00	40.00	44.00

Grinnell Cast Iron Screwed Fittings

For 125 Pounds Steam Working Pressure, 175 Pounds Water Working Pressure

Straight Right-Hand Elbows



No. 351

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¼	$.05	2	$.28	6	$2.75
⅜	.05	2½	.50	7	4.70
½	.06	3	.75	8	6.75
¾	.08	3½	1.05	9	9.00
1	.10½	4	1.20	10	13.50
1¼	.16	4½	1.75	12	20.00
1½	.20	5	2.00	..	.....

Reducing Elbows

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
⅜	$.06	2½	$.60	7	$5.40
½	.07	3	.85	8	7.75
¾	.09	3½	1.20	9	10.50
1	.12	4	1.40	10	15.50
1¼	.18	4½	2.00	12	23.00
1½	.23	5	2.30	..	.....
2	.32	6	3.15	..	.....



No. 352

Right and Left Elbows



No. 353

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¼	$.06	1	$.12	2½	$.60
⅜	.06	1¼	.18	3	.85
½	.07	1½	.23	3½	1.20
¾	.09	2	.32	4	1.45

The ribs on band of right and left elbows denote the left hand thread.

Straight Pitched Elbows

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¾	$.10	2	$.35	4	$1.50
1	.13	2½	.65	4½	2.25
1¼	.20	3	1.00	5	3.00
1½	.25	3½	1.30	6	4.00



No. 354

Reducing Pitched Elbows

No. 355

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¾	$.10	1½	$.25	3	$1.00
1	.13	2	.35	3½	1.30
1¼	.20	2½	.65	...	....

The letter P cast on body denotes pitched elbow.

Pitched elbows are tapped to pitch ¼ inch in 1 foot.

45° Elbows



No. 356

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¼	$.06	2	$.34	6	$3.45
⅜	.06	2½	.60	7	5.90
½	.07	3	.90	8	8.50
¾	.10	3½	1.25	9	11.25
1	.12	4	1.45	10	17.00
1¼	.19	4½	2.20	12	25.00
1½	.24	5	2.50	..	.....

For galvanized, double above list.

Hy-Tech Products

Grinnell Cast Iron Screwed Fittings

For 125 Pounds Steam Working Pressure, 175 Pounds Water Working Pressure

Straight Tees



No. 358

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¼	$.08	3½	$1.50		
⅜	.08	4	1.75		
½	.09	4½	2.55		
¾	.12	5	3.00		
1	.15	6	4.00		
1¼	.23	7	6.80		
1½	.29	8	9.75		
2	.41	9	13.00		
2½	.73	10	19.50		
3	1.10	12	29.00		

Reducing Tees



On Run
No. 359



On Outlet
No. 359

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
⅜	$.09	1½	$.33	4	$2.00	8	$11.25
½	.10	2	.47	4½	2.95	9	15.00
¾	.14	2½	.83	5	3.50	10	22.50
1	.17	3	1.25	6	4.60	12	33.50
1¼	.27	3½	1.75	7	7.80	..	.....

Straight Crosses

Size Inches	Price Each	Size Inches	Price Each
¼	$.15	3½	$2.70
⅜	.15	4	3.15
½	.16	4½	4.60
¾	.22	5	5.50
1	.27	6	7.25
1¼	.42	7	12.25
1½	.53	8	17.50
2	.75	9	23.50
2½	1.30	10	35.00
3	2.00	12	52.50



No. 360

Reducing Crosses



No. 361

Size Inches	Price Each	Size Inches	Price Each
½	$.18	4	$3.50
¾	.25	4½	5.10
1	.30	5	6.00
1¼	.46	6	8.00
1½	.60	7	13.50
2	.83	8	19.25
2½	1.45	9	26.00
3	2.20	10	38.50
3½	3.00	12	58.00

Straight Y Branches

Size Inches	Price Each	Size Inches	Price Each
½	$.20	3	$2.50
¾	.28	3½	3.50
1	.34	4	4.00
1¼	.54	4½	5.90
1½	.66	5	7.00
2	.94	6	9.20
2½	1.66	8	22.50



No. 373

Reducing Y Branches

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
½	$.23	1½	$.76	3½	$4.00	6	$10.60
¾	.33	2	1.08	4	4.60	8	26.00
1	.40	2½	1.90	4½	6.80	.	.....
1¼	.62	3	2.90	5	8.00	.	.....

Reducing Y branches are made from straight size patterns.
For galvanized, double above lists.

No. 381 Grinnell Cast Iron Caps



Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
2½	$.40	4½	$1.05	8	$2.85
3	.54	5	1.20	9	4.75
3½	.75	6	1.55	10	5.50
4	.87	7	2.50	12	7.00

For galvanized, double above list.

Cast Iron Screwed Reducers



Size In.	Price, Each — Black	Galv.	Size In.	Price, Each — Black	Galv.
4½	$1.85	$3.70	8	$6.75	$13.50
5	2.00	4.00	9	8.35	16.70
6	2.70	5.40	10	10.00	20.00
7	5.35	10.70	12	15.00	30.00

Bushings

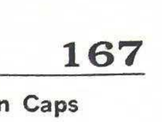


No. 320

Size In.	Price, Each — Black	Galv.	Size In.	Price, Each — Black	Galv.
⅜	$.04	$.08	4	$.50	$1.00
½	.04	.08	4½	.75	1.50
¾	.05	.10	5	.93	1.85
1	.06	.12	6	1.25	2.50
1¼	.07	.14	7	1.87	3.75
1½	.09	.18	8	2.75	5.50
2	.14	.28	9	3.25	6.50
2½	.21	.42	10	3.75	7.50
3	.30	.60	12	5.00	10.00
3½	.40	.80	....	....	.....

Plugs

Size In.	Price, Each — Black	Galv.	Size In.	Price, Each — Black	Galv.
⅛	$.02	$.04	3½	$.38	$.76
¼	.02	.04	4	.42	.84
⅜	.02	.04	4½	.65	1.30
½	.02	.04	5	.88	1.75
¾	.03	.06	6	1.20	2.40
1	.04	.08	7	1.85	3.70
1¼	.05	.10	8	2.75	5.50
1½	.07	.14	9	3.25	6.50
2	.10	.20	10	3.75	7.50
2½	.18	.36	12	5.00	10.00
3	.25	.50	....	....	.....



No. 321

Solid Plugs

Size In.	Black Price Each	Size In.	Black Price Each	Size In.	Black Price Each	Size In.	Black Price Each
¼	$.04	1¼	$.09	3½	$.57	8	$4.15
⅜	.04	1½	.11	4	.63	10	5.75
½	.04	2	.15	4½	1.00	12	7.50
¾	.06	2½	.27	5	1.35	..	....
1	.08	3	.38	6	1.80	..	....

Countersunk Plugs



No. 322

Size In.	Black Price Each	Size In.	Black Price Each	Size In.	Black Price Each
¼	$.04	1¼	$.09	3½	$.92
⅜	.04	1½	.11	4	1.10
½	.04	2	.15	5	2.00
¾	.06	2½	.30	6	3.50
1	.08	3	.40	...	....

Locknuts

Size In.	Price, Each — Black	Galv.	Size In.	Price, Each — Black	Galv.
2½	$.27	$.54	6	$1.30	$2.60
3	.34	.68	7	1.70	3.40
3½	.47	.94	8	2.35	4.70
4	.64	1.28	9	2.70	5.40
4½	.85	1.70	10	3.00	6.00
5	.90	1.80	12	4.00	8.00



No. 323

Grinnell Cast Iron Screwed Fittings

For 125 Pounds Steam Working Pressure, 175 Pounds Water Working Pressure

Close Pattern Return Bends



No. 375

Right and left and left-hand pitched return bends are made to order.

Return bends not listed will be furnished at special net prices.

Size Inches	Center to Center Inches	Price, Each Right-Hand	Right and Left	Left-Hand	Right-Hand Pitched	R. & L. or L. H. Pitched
½	1¼	$.18	$.21	$.21	...	...
¾	1½	.20	.23	.23	$.23	$.23
1	1¾	.22	.26	.26	.26	.26
1¼	2 3/16	.28	.33	.33	.33	.33
1½	2½	.40	.46	.46	...	...
2	3	.57	.66	.66	...	...
2½	3¾	1.20	1.40	1.40	...	...
3	4¼	1.70	1.95	1.95	...	...

Open Pattern Return Bends



No. 376

Size Inches	Center to Center Inches	Price, Each Right Hand	Right and Left	Left-Hand
½	2	$.25	$.30	$.30
¾	2¼	.26	.30	.30
1	2½	.30	.35	.35
1¼	3	.40	.46	.46
1½	3½	.55	.64	.64
2	4½	.80	.92	.92
2½	6	1.35	1.55	1.55
3	6½	2.20	2.50	2.50

Special Wide Pattern Return Bends



No. 377

Size Inches	Center to Center Inches	Price, Each Black	Galv.
1	4	$.50	$.90
1	5	.60	1.10
1¼	4½	1.00	1.75
1¼	6	1.25	2.00
1½	6	1.60	2.60
1½	7½	2.00	3.25
2	6	2.00	3.25
2½	8	5.50	9.00

Special wide pattern return bends are stocked 1¼ and 2 inches with 6-inch centers. Other sizes are made to order.

Close Pattern Return Bends with Back Outlet

No. 378

Size Inches	Center to Center Inches	Price, Each Right-Hand	Right and Left	Size Inches	Center to Center Inches	Right-Hand	Right and Left
¾	1½	$.38	$.42	2	3	$1.15	$1.30
1	1¾	.42	.48	2½	3¾	2.00	2.30
1¼	2 3/16	.60	.70	3	4¼	3.00	3.50
1½	2½	.80	.95	...	...	....	....

Open Pattern Return Bends with Back Outlet



No. 379

Size Inches	Center to Center Inches	Price, Each Right-Hand	Right and Left
¾	2¼	$.38	$.42
1	2½	.42	.48
1¼	3	.60	.70
1½	3½	.80	.95
2	4½	1.15	1.30
2½	6	2.00	2.30
3	6½	3.00	3.50

For galvanized, double above lists.

Grinnell Extra Heavy Cast Iron Fittings

For 250 Pounds Steam Working Pressure, Sizes 8 inches and Smaller 400 Pounds Water Working Pressure, Sizes 10 inches and Larger 350 Pounds Water Working Pressure

Elbows



No. 421

Size In.	Price, Each Straight	Reducing	Size In.	Price, Each Straight	Reducing
¼	$.20	...	3½	$2.75	$3.40
⅜	.20	$.35	4	3.50	4.40
½	.25	.35	4½	4.25	5.30
¾	.30	.40	5	5.50	6.80
1	.35	.45	6	8.00	10.00
1¼	.45	.55	7	12.00	15.00
1½	.60	.75	8	17.00	21.00
2	.75	.95	9	25.00	...
2½	1.25	1.55	10	28.00	35.00
3	2.00	2.50	12	40.00	50.00

45° Elbows

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¼	$.30	2	$.90	6	$9.75
⅜	.30	2½	1.50	7	14.50
½	.35	3	2.50	8	21.00
¾	.40	3½	3.50	9	31.00
1	.44	4	4.50	10	34.00
1¼	.55	4½	5.50	12	48.00
1½	.70	5	6.75	..	.....



No. 424



No. 425

Tees

Size In.	Price, Each Straight	Reducing	Size In.	Price, Each Straight	Reducing
¼	$.35	...	3½	$4.25	$5.30
⅜	.35	$.55	4	5.50	6.85
½	.40	.55	4½	6.75	8.50
¾	.45	.60	5	8.25	10.25
1	.55	.70	6	12.00	15.00
1¼	.70	.90	7	18.00	22.50
1½	.90	1.15	8	25.00	31.00
2	1.15	1.40	9	35.00	44.00
2½	1.80	2.25	10	42.00	52.00
3	3.00	3.75	12	60.00	75.00

Crosses

Size In.	Price, Each Straight	Reducing
¼	$.60	...
⅜	.60	$.80
½	.60	.80
¾	.65	.85
1	.70	.90
1¼	.90	1.15
1½	1.20	1.50
2	1.50	1.85
2½	2.50	3.15
3	4.00	5.00

Size In.	Price, Each Straight	Reducing
3½	$5.50	$6.85
4	7.00	8.75
4½	8.50	10.00
5	11.00	13.75
6	16.00	20.00
7	24.00	30.00
8	34.00	42.00
9	48.00	60.00
10	56.00	70.00
12	80.00	100.00



No. 427

Y Branches

Size In.	Price, Each Straight	Reducing	Size In.	Price, Each Straight	Reducing
1	$1.10	$1.38	4	$11.00	$13.75
1¼	1.35	1.75	4½	13.50	16.88
1½	1.80	2.25	5	16.50	20.63
2	2.25	2.88	6	24.00	30.00
2½	3.75	4.50	7	36.00	45.00
3	6.00	7.50	8	50.00	62.50
3½	8.25	10.63	...	.....	.....



No. 431

Reducers

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
½	$.28	2½	$1.38	6	$8.80
¾	.33	3	2.20	7	13.20
1	.39	3½	3.05	8	18.75
1¼	.50	4	3.85	9	27.50
1½	.66	4½	4.68	10	31.00
2	.83	5	6.00	12	44.00



No. 433

Solid Plugs

No. 388

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
¼	$.04	1¼	$.09	3½	$.57	7	$2.80
⅜	.04	1½	.11	4	.63	8	4.15
½	.04	2	.15	4½	1.00	9	5.00
¾	.06	2½	.27	5	1.35	10	5.75
1	.08	3	.38	6	1.80	12	7.50

For galvanized, double above lists.

Grinnell Cast Iron Long Turn Fittings

For 150 Pounds Water Working Pressure

Elbows



No. 301 Screw

Size Inches	Price Each No. 301 Screw	Size Inches	Price, Each No. 301 Screw	No. 302 One Flange	No. 303 Two Flanges
¾	$.32	2½	$1.20	$5.50	$6.75
1	.32	3	2.25	6.00	7.50
1¼	.40	3½	3.25	6.50	8.50
1½	.55	4	3.50	7.50	10.00
2	.80	5	6.50	10.00	12.50
4½	5.50	6	8.75	14.00	17.50

Flanges faced and drilled.

Bossed Elbows



No. 301B

For list prices of bossed elbows, add as follows to list prices given above:

Solid Bosses (Cored for ½-Inch Tap).....each $1.00
Screw or Slip Bosses.....each 1.50

Tees



No. 304 Screw

Size Inches	Price, Each No. 304, Screw Straight	Reducing	Nos. 305, 306, 307 One or Two Flanges	No. 309 Three Flanges
1½	$1.10	.....	.....	.....
2	1.60	.....	.....	.....
2½	2.40	$3.60	$9.00	$10.00
3	4.50	6.75	10.00	11.50
3½	6.50	9.75	11.00	13.00
4	7.00	10.50	12.00	15.00
5	13.00	19.50	15.00	18.00
6	17.50	26.25	22.00	26.00

Flanges faced and drilled.

Crosses

Flanged one end. Flange faced and drilled.



No. 310

Size Inches	Price Each	Size Inches	Price Each
2½	$12.50	4	$17.00
3	13.50	5	22.00
3½	15.00	6	30.00

Double Branch or Twin Elbows



No. 317

Size Inches	Price, Each Straight	Reducing
1	$.64	$.96
1¼	.80	1.20
1½	1.10	1.65
2	1.60	2.40
2½	2.40	3.60
3	4.50	6.75
3½	6.50	9.75
4	7.00	10.50

Teapot or Single Sweep Tees

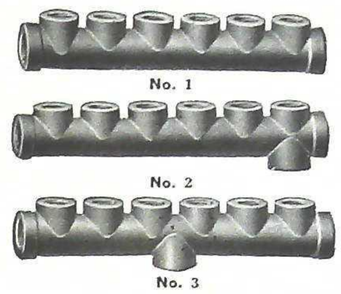


No. 316

Size In.	Price, Each Straight	Reducing	Size In.	Price, Each Straight	Reducing
¾	$.48	$.72	3	$3.40	$5.10
1	.48	.72	3½	4.90	7.35
1¼	.60	.90	4	5.25	7.88
1½	.82	1.23	5	9.75	14.63
2	1.20	1.80	6	13.25	19.88
2½	1.80	2.70	..	....	.....

For galvanized, double above lists.

Cast Iron Branch Tees



No. 1

No. 2

No. 3

1-Inch Branches—Center to Center, 2½ Inches

No. of Branches	Price, Each Size of Run, Inches 1	1¼	1½	2	2½	3	3½	4
2	$.90	$.90	$1.00	$1.15	$1.75	....	....	....
3	1.05	1.05	1.15	1.35	2.05	....	....	....
4	1.15	1.15	1.30	1.60	2.40	$3.95	....	....
5	1.35	1.35	1.45	1.85	2.75	4.40	....	....
6	1.60	1.60	1.75	2.10	3.10	4.85	....	....
7	1.90	1.90	2.20	2.45	3.50	5.50	....	....
8	2.20	2.20	2.45	2.75	3.75	6.20	....	....
9	2.65	2.65	2.90	3.40	4.30	7.85	....	....
10	3.15	3.15	3.30	4.00	5.00	8.40	....	....
11	3.75	3.75	4.50	4.80	5.50	9.05	....	....
12	4.40	4.40	4.75	5.10	5.85	9.70	....	....
13	5.00	5.00	5.50	6.00	6.30	10.35	....	....
14	5.50	5.50	7.00	7.25	....	11.00	....	....
15	....	....	7.50	7.75	....	11.75	....	....
16	....	....	8.00	8.25	....	12.50	....	....

1¼-Inch Branches—Center to Center, 3 Inches

2	....	$1.30	$1.30	$1.50	$1.95	....	....	....
3	....	1.65	1.65	1.90	2.40	....	....	....
4	....	2.00	2.00	2.40	2.85	$4.30	....	....
5	....	2.40	2.40	2.90	3.55	4.90	....	....
6	....	2.80	2.80	3.30	3.95	5.40	....	....
7	....	3.20	3.20	3.90	4.20	6.25	....	....
8	....	3.60	3.60	4.50	4.95	7.10	....	....
9	....	4.30	4.30	5.25	6.15	8.25	....	....
10	....	4.80	4.80	5.85	6.85	9.20	....	....
11	....	5.00	5.00	6.25	7.25	10.00	....	....
12	....	5.25	5.25	6.50	7.65	10.85	....	....
13	....	6.00	6.00	7.00	8.25	11.65	....	....
14	....	6.75	6.75	7.75	9.00	....	....	....
15	....	7.50	7.50	8.50	9.75	....	....	....
16	....	8.50	8.50	9.50	10.75	....	....	....

1½-Inch Branches—Center to Center, 3½ Inches

2	....	....	$2.10	$2.10	$2.85	$3.15	....	....
3	....	....	2.70	2.70	3.45	3.80	....	....
4	....	....	3.35	3.35	4.15	4.60	....	....
5	....	....	4.00	4.00	5.00	5.50	....	....
6	....	....	4.65	4.65	5.75	6.25	....	....
7	....	....	5.25	5.25	6.50	7.25	....	....
8	....	....	5.85	5.85	7.00	7.75	....	....
9	....	....	6.50	6.50	8.25	9.00	....	....
10	....	....	7.60	7.60	9.25	10.00	....	....
11	....	....	8.00	8.00	9.75	10.75	....	....
12	....	....	8.50	8.50	10.50	11.50	....	....
13	....	....	9.50	9.50	11.50	12.75	....	....

2-Inch Branches—Center to Center, 4½ Inches

2	....	....	....	$4.10	$4.50	$4.50	$5.00	$5.50
3	....	....	....	5.25	5.75	5.75	6.25	6.75
4	....	....	....	6.40	7.00	7.00	7.75	8.25
5	....	....	....	7.65	8.50	8.50	9.25	9.75
6	....	....	....	8.80	9.75	9.75	10.75	11.25
7	....	....	....	10.60	11.75	11.75	13.00	13.50
8	....	....	....	11.50	12.75	12.75	14.00	14.50
9	....	....	....	12.25	13.50	13.50	15.00	15.50
10	....	....	....	13.50	15.00	15.00	16.50	17 00
11	....	....	....	14.25	15.75	15.75	.....	.....
12	....	....	....	15.00	16.50	16.50	.....	.....
13	....	....	....	16.00	17.50	17.50	.....	.....

Back or side outlets charged as additional front outlets. In ordering state size of run required. Branch tees for circulation are tapped right hand—all openings. Branch tees for box coils are tapped left hand in branches and right hand in back or side outlet.

Hy-Tech Products

Series 300 Walworth Sigma Steel Screwed Fittings

300 Pounds Working Steam, Hot Oil and Vapor Pressures at 750 Degrees Fahrenheit
225 Pounds Working Hot Oil and Vapor Pressures at 900 Degrees Fahrenheit
1000 Pounds Non-Shock Cold Oil, Water and Gas Pressures
2000 Pounds Hydrostatic Pressure Test

45 and 90-Degree Elbows

No. N5901, 90-Degree—No. N5902, 45-Degree



No. N5901

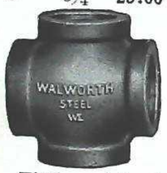
Size Inches	Center to Face Inches 45-Degree	Center to Face Inches 90-Degree	Price Each 45 Degree	Price Each 90 Degree
2½	2¼	3¼	$4.75	$4.75
3	2½	3¾	6.00	6.00
4	2 9/16	4½	8.50	8.50
6	3½	6¼	16.50	16.50
8	4 5/16	7¾	34.00	34.00
10	5 3/16	9¼	61.00	61.00
12	6	11½	92.00	92.00

No. N5903 Tees



Size In.	Center to Face Inches	Price Each	Size In.	Center to Face Inches	Price Each
2½	3¼	$7.10	8	7¾	$51.00
3	3¾	9.00	10	9¼	91.00
4	4½	12.75	12	11½	138.00
6	6¼	25.00	..	....	.....

No. N5904 Crosses



Size In.	Center to Face Inches	Price Each	Size In.	Center to Face Inches	Price Each
2½	3¼	$9.50	8	7¾	$68.00
3	3¾	12.00	10	9¼	122.00
4	4½	17.00	12	11½	184.00
6	6¼	33.00	..	....	.....

Fittings interchange with 175-pound cast iron, refinery oil or heavy oil malleable and Series 600 Sigma Steel screwed fittings without change in pipe lengths.
Sizes 3½, 4½, 5, 7 and 9 inch made to order only.

Walworth Drop Forged Steel Screwed Fittings

For Superheated Steam

90° Elbows



Size In.	For 3000 Lbs. Center to Face In.	For 3000 Lbs. Price Each	For 10000 Lbs. Center to Face In.	For 10000 Lbs. Price Each
¼	1¼	$.55	...	....
⅜	1¼	.55	1¼	$.65
½	1¼	.65	1½	.75
¾	1½	.75	1¾	.90
1	1¾	.90	2	1.20
1¼	2	1.20	2¼	1.50
1½	2¼	1.50	2½	1.90
2	2½	1.90	2¾	2.90
2½	2¾	2.90	3¼	5.00
3	3¼	5.00	...	....

45° Elbows



Size In.	For 3000 Lbs. Center to Face In.	For 3000 Lbs. Price Each	For 10000 Lbs. Center to Face In.	For 10000 Lbs. Price Each
¼	13/16	$.68	13/16	$.68
⅜	13/16	.68	13/16	.78
½	7/8	.78	7/8	.90
¾	1	.90	1	1.08
1	1 3/16	1.08	1 3/16	1.44
1¼	1 11/32	1.44	1 11/32	1.80
1½	1 7/16	1.80	1 7/16	2.28
2	1 23/32	2.28	1 23/32	3.48
2½	2 1/16	3.48	...	....

Street or Service Elbows



Size Inches	Price, Each for 3500 Pounds	Size Inches	Price, Each for 3500 Pounds
½	$.85	1	$1.40
¾	1.05	...	....

Pressures given are not guaranteed if fittings are subject to shock. Add 15 per cent to prices for reducing fittings.

Walworth Drop Forged Steel Screwed Fittings

For Superheated Steam

Tees


No. R5706

Size Inches	For 3000 Lbs. Center to Face In.	For 3000 Lbs. Price Each	For 10000 Lbs. Center to Face In.	For 10000 Lbs. Price Each
¼	1¼	$.80	...	....
⅜	1¼	.80	1¼	$.95
½	1¼	.95	1½	1.10
¾	1½	1.10	1¾	1.35
1	1¾	1.35	2	1.75
1¼	2	1.75	2¼	2.30
1½	2¼	2.30	2½	2.90
2	2½	2.90	2¾	4.40
2½	2¾	4.40	3¼	7.50
3	3¼	7.50	...	....

Crosses


No. R5708

Size Inches	For 3000 Lbs. Center to Face In.	For 3000 Lbs. Price Each	For 10000 Lbs. Center to Face In.	For 10000 Lbs. Price Each
¼	1⅛	$1.10	1⅛	$1.10
⅜	1⅛	1.10	1¼	1.30
½	1¼	1.30	1½	1.50
¾	1½	1.50	1¾	1.90
1	1¾	1.90	2	2.80
1¼	2	2.80	2¼	3.50
1½	2¼	3.50	2½	5.00
2	2½	5.00	2¾	7.30
2½	2¾	7.30	...	....

Flange Unions


No. R5714, Oval

Size Inches	Oval For 2500 Lbs.	No. R5716, Square Size Inches	No. R5716, Square For 2000 Lbs.
¼	$1.00	1¼	.. ..
⅜	1.00	1½	....
½	1.20	2	.....
¾	1.60	2½	... .
1	1.90	...	... .

Cast Iron Eccentric Bushings


No. 332

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1¼	$.22	3½	$.80	7	$3.75
1½	.25	4	1.00	8	5.50
2	.27	4½	1.50	9	6.50
2½	.42	5	1.85	10	7.50
3	.60	6	2.50	12	10.00

Cast Iron Eccentric Reducing Couplings



Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
1¼	$.55	3	$2.40	5	$6.00
No. 1½	.72	3½	3.00	6	8.00
331 2	1.00	4	4.00	7	9.00
2½	1.50	4½	5.00	8	11.00

Cast Iron Floor Flanges

Not Faced


No. 340

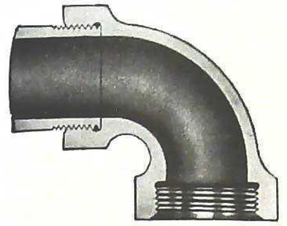
Size Inches	Price Each	Size Inches	Price Each
⅜x3	$.10	1¼x4	$.16
½x3½	.15	1½x4½	.22
¾x3½	.15	2 x5½	.35
1 x4	.16	.....	...

Galvanized take double the list.

Hy-Tech Products

Cast Iron Drainage Fittings

Screwed for Wrought Pipe



These fittings have an interior shoulder, and are made with same inside capacity as the inside diameter of the pipe, thus securing an unobstructed surface, allowing all solid matter to pass without choking the pipes.
Fittings are chamfered, thus preventing damage to the threads and permitting of an easy entrance of the pipe in making up joints. All fittings are regularly made of gray iron, of good quality and high tensile strength, and are thoroughly inspected.

90° Elbows


Short Turn
No. D-201


Long Turn
No. D-202

Size Inches	Price, Each Short Turn Black	Short Turn Galv.	Long Turn Black	Long Turn Galv.
1¼	$.30	$.52	$.35	$.60
1½	.38	.67	.42	.72
1½x1¼	.57	1.00	.65	1.15
2	.57	1.00	1.40	2.45
2 x1½	.85	1.50	1.75	3.10
2½	1.20	2.10	2.75	4.80
3	1.45	2.55	5.25	9.20
4	2.30	4.00	7.50	13.15
5	4.25	7.40	13.50	23.50
6	6.25	11.00	19.00	33.25
7	11.50	20.00	38.00	66.50
8	15.00	26.25	57.50	100.00
10	31.00	54.00		
12	47.50	83.00		

Outlet is tapped, pitched ¼ inch to the foot.

45° Elbows


Short Turn
No. D-203


Long Turn
No. D-204

Size Inches	Price, Each Short Turn Black	Short Turn Galv.	Long Turn Black	Long Turn Galv.
1¼	$.30	$.52	$.35	$.60
1½	.38	.67	.42	.72
2	.57	1.00	.65	1.15
2½	1.20	2.10	1.40	2.45
3	1.45	2.55	1.75	3.10
4	2.30	4.00	2.75	4.80
5	4.25	7.40	5.25	9.20
6	6.25	11.00	7.50	13.15
7	11.50	20.00	13.50	23.50
8	15.00	26.25	19.00	33.25
10	31.00	54.00	38.00	66.50
12	47.50	83.00	57.50	100.00

Cast Iron Drainage Fittings

Screwed for Wrought Pipe

22½° and 11¼° Elbows


22½° Elbow
No. D-205


11¼° Elbow
No. D-206

Size Inches	Price, Each 22½° Elbow Black	22½° Elbow Galv.	11¼° Elbow Black	11¼° Elbow Galv.
1¼	$.30	$.52	$.30	$.52
1½	.38	.67	.38	.67
2	.57	1.00	.57	1.00
2½	1.20	2.10	1.20	2.10
3	1.45	2.55	1.45	2.55
4	2.30	4.00	2.30	4.00
5	4.25	7.40	4.25	7.40
6	6.25	11.00	6.25	11.00
7	11.50	20.00	11.50	20.00
8	15.00	26.25	15.00	26.25
10	31.00	54.00	31.00	54.00
12	47.50	83.00	.....	.....

60° Elbows


No. D-208

Size Inches	Price, Each Black	Galv.	Size Inches	Price, Each Black	Galv.
1¼	$.30	$.52	5	$4.25	$7.40
1½	.38	.67	6	6.25	11.00
2	.57	1.00	7	11.50	20.00
2½	1.20	2.10	8	15.00	26.25
3	1.45	2.55	10	31.00	54.00
4	2.30	4.00	..	.....	.....

Three-way Elbows


No. D-214

Size Inches	Price, Each Black	Galv.	Size Inches	Price, Each Black	Galv.
1¼	$.75	$1.25	4x3	$5.50	$9.65
1½	.85	1.50	5	7.50	13.15
2	1.10	1.95	5x4	8.25	14.50
2½	2.25	3.90	6	13.50	23.50
3	3.00	5.25	6x4	15.00	26.25
4	5.00	8.75	6x5	15.00	26.25

Outlets of 90° elbows and inlets of three-way elbows are tapped, pitched ¼ inch to the foot.

45° Elbows with Shoe


No. D-217

Size Inches	Price, Each Black	Galv.	Size Inches	Price, Each Black	Galv.
2	$1.00	$1.75	6	$6.75	$11.75
3	1.75	3.10	8	20.00	31.75
4	2.75	4.80	10	40.00	65.50
5	4.50	7.75	..	.....	.....

Cast Iron Drainage Fittings

Screwed for Wrought Pipe

90° Base Elbows with Cleanout and Soil Pipe Hub Connection



No. D-213

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
3x2	$5.50	$9.50	6x4	$27.50	$48.00
3	5.00	8.75	6x5	27.50	48.00
4x3	8.75	15.25	6	25.00	43.75
4	8.00	14.00	8x6	44.00	77.00
5x4	16.50	28.75	8	40.00	70.00
5	15.00	26.25	...	.....	.....

Can be made with or without base and cleanout.

Tee Branches



No. D-231

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1¼	$.45	$.80	5	$6.00	$10.50
1½	.55	1.00	6	8.75	15.25
2	.80	1.40	7	16.00	28.00
2½	1.50	2.50	8	21.00	37.00
3	2.00	3.50	10	43.00	75.00
4	3.25	5.70	12	60.00	100.00

Reducing Tee Branches



No. D-233

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1½x1¼	$.60	$1.10	6x 5	$9.60	$16.75
2 x1½	.90	1.60	7x 4	17.60	30.80
2½x1½	1.65	2.75	8x 4	23.00	40.70
2½x2	1.65	2.75	8x 5	23.00	40.70
3 x1½	2.20	3.85			
3 x2	2.20	3.85	8x 6	23.00	40.70
4 x2	3.60	6.30	8x 7	23.00	40.70
4 x3	3.60	6.30	10x 5	47.30	82.50
5 x2	6.60	11.55	10x 6	47.30	82.50
5 x3	6.60	11.55	10x 7	47.30	82.50
5 x4	6.60	11.55	10x 8	47.30	82.50
6 x2	9.60	16.75	12x 8	65.00	110.00
6 x3	9.60	16.75	12x10	65.00	110.00
6 x4	9.60	16.75	.....	.....	.....

The inlet of reducing tees, is tapped, pitched ¼ inch to the foot.

The inlet on reducing fittings is always the smallest opening.

Cast Iron Drainage Fittings

Screwed for Wrought Pipe

Short TY Branches



No. D-222

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1¼	$.45	$.80	5	$6.50	$11.35
1½	.57	1.00	6	9.50	16.50
2	.85	1.50	7	17.50	30.50
2½	1.80	3.15	8	23.00	40.00
3	2.20	3.85	10	47.00	82.00
4	3.50	6.15	..	.....	.....

The inlet of TY's is tapped, pitched ¼ inch to the foot.

Reducing Short TY Branches



No. D-224

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1½x1¼	$.63	$1.10	5x4	$7.15	$12.50
2 x1¼	.95	1.65	6x2	10.50	18.50
2 x1½	.95	1.65	6x3	10.50	18.50
2 x2½	2.00	3.50	6x4	10.50	18.50
2½x1¼	2.00	3.50	6x5	10.50	18.50
2½x1½	2.00	3.50	7x4	19.00	33.25
2½x2	2.00	3.50	8x3	25.50	44.50
3 x1½	2.40	4.20	8x4	25.50	44.50
3 x2	2.40	4.20	8x5	25.50	44.50
4 x1½	3.85	6.75	8x6	25.50	44.50
4 x2	3.85	6.75	8x7	25.50	44.50
4 x2½	3.85	6.75	10x4	52.00	88.00
4 x3	3.85	6.75	10x6	52.00	88.00
			10x8	52.00	88.00
5 x1½	7.15	12.50	12x4	80.00	145.00
5 x2	7.15	12.50	12x5	80.00	145.00
5 x3	7.15	12.50	....	.....	.....

The inlets on reducing fittings are always the smallest openings. Inlet tapped, pitched ¼ inch to the foot.

Long TY Branches



No D-223

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1¼	$.57	$1.00	5	$9.50	$16.50
1½	.70	1.22	6	20.00	35.00
2	1.10	1.95	7	30.00	52.50
2½	2.40	4.20	8	40.00	70.00
3	3.35	5.85	10	55.00	90.00
4	6.00	10.50	12	80.00	140.00

Inlet is tapped, pitched ¼ inch to the foot.

Cast Iron Drainage Fittings

Screwed for Wrought Pipe

Reducing Long TY Branches



No. D-225

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1½x1¼	$.80	$1.40	6x3	$22.00	$38.50
2 x1½	1.20	2.10	6x4	22.00	38.50
2½x1½	2.65	4.65	6x5	22.00	38.50
2½x2	2.65	4.65	7x3	33.00	58.00
3 x1½	3.75	6.55	7x4	33.00	58.00
3 x2	3.75	6.55	8x3	44.00	77.00
4 x1½	6.60	11.55	8x4	44.00	77.00
4 x2	6.60	11.55	8x5	44.00	77.00
4 x2½	6.60	11.55	8x6	44.00	77.00
4 x3	6.60	11.55	10x4	60.00	102.00
5 x1½	10.50	18.50	10x6	60.00	102.00
5 x2	10.50	18.50	10x8	60.00	102.00
5 x3	10.50	18.50	12x4	85.00	150.00
5 x4	10.50	18.50	12x5	85.00	150.00
6 x2	22.00	38.50	....	.....	.....

45° Y Branches



No. D-226

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1	$.45	$.80	5	$7.10	$12.50
1¼	.52	.90	6	10.50	18.50
1½	.65	1.15	7	19.00	33.25
2	.95	1.65	8	25.00	44.00
2½	2.10	3.70	10	52.00	91.00
3	2.65	4.65	12	75.00	130.00
4	3.85	6.75			

Reducing 45° Y Branches



No. D-228

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1½x1¼	$.72	$1.25	7x3	$21.00	$37.00
2 x1½	1.05	1.85	7x4	21.00	37.00
2½x1½	2.30	4.00	7x5	21.00	37.00
2½x2	2.30	4.00	7x6	21.00	37.00
3 x1½	2.90	5.10	8x3	27.50	48.00
3 x2	2.90	5.10	8x4	27.50	48.00
3 x2½	2.90	5.10	8x5	27.50	48.00
4 x1½	4.25	7.40	8x6	27.50	48.00
4 x2	4.25	7.40	8x7	27.50	48.00
4 x2½	4.25	7.40	10x4	57.00	97.00
4 x3	4.25	7.40	10x5	57.00	97.00
5 x2	7.80	13.65	10x6	57.00	97.00
5 x3	7.80	13.65	10x7	57.00	97.00
5 x4	7.80	13.65	10x8	57.00	97.00
6 x2	11.50	20.00	12x4	80.00	140.00
6 x3	11.50	20.00	12x5	80.00	140.00
6 x4	11.50	20.00	12x6	80.00	140.00
6 x5	11.50	20.00	....	.....	.....

The inlet on reducing fittings is always the smallest opening.

Cast Iron Drainage Fittings

Screwed for Wrought Pipe

Double 45° Y Branches



No. D-227

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1¼	$ .90	$1.60	5	$10.75	$18.80
1½	1.00	1.75	6	16.00	28.00
2	1.45	2.55	7	28.50	50.00
2½	3.25	5.70	8	38.00	66.50
3	4.00	7.00	10	78.00	137.00
4	5.75	10.00	12	110.00	200.00

Reducing Double 45° Y Branches



No. D-229

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1½x1¼	$1.10	$1.90	6x5	$17.50	$30.50
2 x1½	1.60	2.80	7x4	31.50	54.00
2½x1½	3.60	6.30	7x5	31.50	54.00
2½x2	3.60	6.30	7x6	31.50	54.00
3 x1½	4.40	7.70	8x3	42.00	72.00
3 x2	4.40	7.70	8x4	42.00	72.00
4 x2	6.35	11.00	8x5	42.00	72.00
4 x3	6.35	11.00	8x6	42.00	72.00
5 x2	11.75	20.50	8x7	42.00	72.00
5 x3	11.75	20.50	10x4	86.00	146.00
5 x4	11.75	20.50	10x5	86.00	146.00
6 x2	17.50	30.50	10x6	86.00	146.00
6 x3	17.50	30.50	10x7	86.00	146.00
6 x4	17.50	30.50	10x8	86.00	146.00

60° Y Branches



No. D-230

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1¼	$.52	$.90	4	$3.85	$6.75
1½	.65	1.15	5	7.10	12.50
2	.95	1.65	6	10.50	18.50
2½	2.10	3.70	8	25.00	44.00
3	2.65	4.65	..	.....	....

The inlet, or branch, of tees is tapped, pitched ¼ inch to the foot.

Hy-Tech Products

Cast Iron Drainage Fittings

Screwed for Wrought Pipe

Reducing 60° Y Branches



No. D-232

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1½x1¼	$.72	$1.25	5x4	$7.80	$13.65
2 x1½	1.05	1.85	6x2	11.50	20.00
2½x1½	2.30	4.00	6x3	11.50	20.00
2½x2	2.30	4.00	6x4	11.50	20.00
3 x1½	2.90	5.10	6x5	11.50	20.00
3 x2	2.90	5.10	7x4	21.00	37.00
4 x1½	4.25	7.40	8x3	27.50	48.00
4 x2	4.25	7.40	8x4	27.50	48.00
4 x3	4.25	7.40	8x5	27.50	48.00
5 x2	7.80	13.65	8x6	27.50	48.00
5 x3	7.80	13.65	8x7	27.50	48.00

The inlet of reducing tees is tapped, pitched ¼ inch to the foot. The inlets on reducing fittings are always the smallest openings.

Short Cross Branches



No. D-234

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1¼	$.70	$1.22	5	$9.50	$16.50
1½	.85	1.50	6	14.00	24.50
2	1.30	2.30	7	25.00	42.50
2½	2.85	5.00	8	36.00	62.00
3	3.40	5.95	10	60.00	102.00
4	5.25	9.20	..	.....	.....

The inlets of crosses are tapped, pitched ¼ inch to the foot.

Reducing Short Cross Branches



No. D-236

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1½x1¼	$.95	$1.65	6x3	$15.50	$27.00
2 x1¼	1.50	2.60	6x4	15.50	27.00
2 x1½	1.50	2.60	6x5	15.50	27.00
2½x1½	3.15	5.50	7x4	27.50	46.75
2½x2	3.15	5.50	8x3	40.00	68.00
3 x1½	3.75	6.55	8x4	40.00	68.00
3 x2	3.75	6.55	8x5	40.00	68.00
4 x2	5.75	10.00	10x4	66.00	112.00
4 x3	5.75	10.00	10x6	66.00	112.00
5 x2	10.50	18.50	10x8	66.00	112.00
5 x3	10.50	18.50	....	.....	.....
5 x4	16.50	18.50			
6 x2	15.50	27.00			

The inlets of these fittings are tapped, pitched ¼ inch to the foot. Inlet is the smallest opening.

Cast Iron Drainage Fittings

Screwed for Wrought Pipe

P Traps without Vent



No. D-261

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1½	$1.55	$2.70	3	$6.25	$10.95
2	2.00	3.50	..	.....	.....

The outlet of P traps is tapped, pitched ¼ in. to the foot.

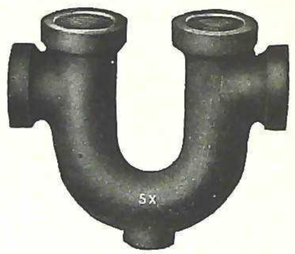
P Traps with Vent



No. D-258

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1¼	$1.55	$2.70	5	$21.50	$37.50
1½	1.70	3.00	6	32.50	57.00
2	2.20	3.85	7	40.00	70.00
3	5.00	8.75	8	55.00	95.00
4	10.00	17.50	10	100.00	175.00

Running Traps



No. D-257

Size Inches	Price, Each Black	Price, Each Galv.	Size Inches	Price, Each Black	Price, Each Galv.
1¼	$2.40	$4.20	6	$33.50	$58.50
1½	2.70	4.70	7	50.00	87.50
2	3.30	5.75	8	65.00	115.00
3	5.50	9.50	10	115.00	200.00
4	9.75	17.00	12	180.00	300.00
5	24.50	43.00	..	.....	.....

The outlet of P traps, and the inlet and outlet of running traps are tapped, pitched ¼ inch to the foot.

Hy-Tech Products

Forged Steel Boiler Flanges

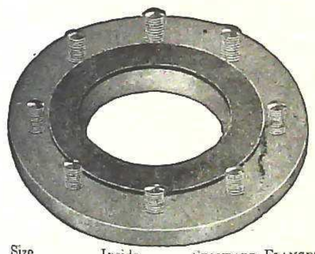


Forged from soft open-hearth steel. May be punched for rivets, wide face making ample space for rivet heads.

Edges beveled for calking. Heavy, deep hub with perfect thread entire length. Tested with Briggs Standard Thread Gauge.

Size Pipe Inches	Each Bent or Flat not Threaded	Each Bent or Flat and Threaded	Diam Flange Inches	Thickness Flange Inches	Depth Flange Inches	Approx. Weight Flange Pounds
¾	$1.60	$1.70	6	5/16	1	3
1	1.60	1.80	6	5/16	1	3
1¼	1.75	1.95	6½	5/16	1	3½
1½	2.05	2.25	7	3/8	1¼	4½
2	2.35	2.50	8	3/8	1¼	6
2½	2.45	2.60	8½	3/8	1½	8
3	2.65	2.80	9	3/8	1½	9
3½	3.00	3.20	9½	7/16	1½	10
4	3.35	3.50	10	7/16	1½	10½
4½	4.00	4.20	10½	½	1½	13
5	4.75	5.00	11½	½	2	15
6	5.70	6.00	12½	½	2	19
7	8.60	9.00	14	5/8	2¼	28
8	11.40	12.00	15	5/8	2¼	30
9	17.00	20.00	16	¾	2½	36
10	21.00	25.00	17½	¾	2½	44
12	26.00	30.00	20	13/16	3	60

Flanges 7-inch and smaller, bent to smaller than 18-inch, but not under 14-inch, 50 per cent extra. Bending flanges 8-inch and larger to circles under 24-inch, subject to special prices. Flanges threaded straight through, 15 per cent extra. Dished flanges, 10 per cent extra. Flanges larger O. D. than standard, special price. Other irregular flanges, special price.



No. 61 J-M Service Flange Joint Gaskets

Cut from Johns-Manville service sheet. May be used for any variety of conditions. Standard in thickness, 1/64, 1/32, 1/16, 3/32 and 1/8 inch.

Size Pipe Inches	Inside Diam. Inches	Standard Flanges Outside Diam. Inches	Standard Flanges Price Each	Extra Heavy Flanges Outside Diam. Inches	Extra Heavy Flanges Price Each
¾	¾	2⅛	$.06	....	....
1	1	2 5/16	.09	2¾	$.11
1¼	1¼	2 5/16	.12	3¼	.14
1½	1½	3⅜	.15	3⅞	.20
2	2	4⅛	.19	4⅜	.24
2½	2½	4⅞	.28	5⅛	.30
3	3	5⅜	.32	5⅞	.42
3½	3½	6⅜	.44	6½	.50
4	4	6⅞	.46	7⅛	.52
4½	4½	7	.46	7¾	.63
5	5	7¾	.55	8½	.75
6	6	8¾	.62	9⅞	.97
7	7	10	.80	11	1.13
8	8	11	.90	12⅛	1.26
9	9	12½	1.18	13	1.43
10	10	13⅜	1.19	14¼	1.62
12	12	16⅛	1.76	16⅝	2.22
14	14	17¾	1.88	19⅛	3.00
15	15	19	2.14	20¼	3.10
16	16	20¼	2.42	21¼	3.61
18	18	21⅝	2.26	23½	4.00
20	20	23⅞	2.68	25⅝	4.50
22	22	26	3.02	27¾	4.90
24	24	28¼	3.49	30⅜	5.76
26	26	30½	4.00	....	....
28	28	32¾	4.54	....	....
30	30	34⅝	4.70	....	....

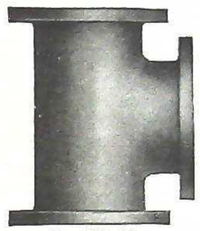
Cast Iron Flanged Fittings



No. 500, Elbow



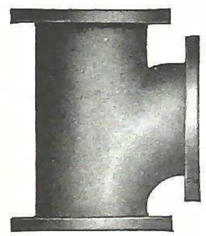
No. 501, 45° Elbow



No. 509, Tee



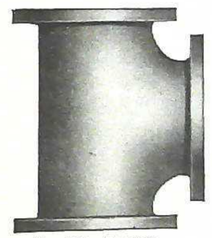
No. 510, Reducing Tee



No. 511, Single Sweep Tee



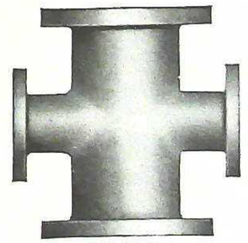
No. 512, Reducing Single Sweep Tee



No. 513, Double Sweep Tee



No. 517, Cross



No. 518, Reducing Cross



No. 504, Base Elbow

Standard Cast Iron Flanged Fittings

125 Pounds Steam Working Pressure

90° Elbows

Size In.	Price, Each Faced Only	Faced and Drilled	Size Inches	Price, Each Faced Only	Faced an Drilled
1¼	$3.00	$3.60	8	$12.00	$13.60
1½	3.00	3.60	9	17.00	19.25
2	3.00	3.60	10	19.00	21.70
2½	3.15	3.75	12	28.00	31.00
3	3.45	4.15	14	41.50	45.25
3½	4.05	4.90	15	47.00	51.50
4	4.50	5.50	16	54.50	59.50
4½	5.50	6.50	18	71.00	77.00
5	6.25	7.25	20	90.00	97.00
6	7.60	8.90	22	113.00	122.00
7	10.50	12.00	24	140.00	150.00

45° Elbows

1¼	$3.30	$3.90	8	$12.60	$14.20
1½	3.30	3.90	9	17.75	20.00
2	3.30	3.90	10	20.00	22.70
2½	3.50	4.10	12	29.50	32.50
3	3.80	4.50	14	41.50	45.25
3½	4.50	5.35	15	47.00	51.50
4	5.00	6.00	16	54.50	59.50
4½	6.00	7.00	18	71.00	77.00
5	6.90	7.90	20	90.00	97.00
6	8.35	9.65	22	113.00	122.00
7	11.00	12.50	24	140.00	150.00

Reducing Elbows

3	$6.90	$7.60	9	$34.00	$36.25
3½	8.10	8.95	10	38.00	40.70
4	9.00	10.00	12	56.00	59.00
4½	11.00	12.00	14	70.00	73.75
5	12.50	13.50	15	80.00	84.50
6	15.25	16.55	16	90.00	95.00
7	21.00	22.50	18	105.00	111.00
8	24.00	25.60	20	120.00	127.00

Flanged taper reducing elbows not listed made to order at special price.

Long Radius Elbows

2	$5.00	$5.90	9	$28.50	$31.85
2½	5.25	6.15	10	31.50	35.50
3	5.75	6.85	12	46.50	51.00
3½	6.75	8.00	14	69.00	74.50
4	7.50	9.00	15	78.00	84.75
4½	9.25	10.75	16	91.00	98.50
5	10.50	12.00	18	118.00	127.00
6	12.65	14.60	20	150.00	160.00
7	17.50	19.75	22	190.00	203.00
8	20.00	22.40	24	235.00	250.00

Base Elbows

Size In.	Price, Each Faced Only	Faced and Drilled	Facing and Drilling Base Flanges	Size In.	Price, Each Faced Only	Faced and Drilled	Facing and Drilling Base Flanges
4	$9.00	$10.00	$3.00	12	$56.00	$59.00	$7.50
4½	11.00	12.00	3 00	14	70.00	73.75	7.50
5	12.50	13.50	3.50	15	80.00	84.50	7.50
6	15.25	16.55	3.50	16	90.00	95.00	7.50
7	21.00	22.50	3.50	18	105.00	111.00	12.00
8	24.00	25.60	5.00	20	120.00	127.00	12.00
9	34.00	36.25	5.00	22	150.00	159.00	12.00
10	38.00	40.70	5.00	24	190.00	200.00	12.00

Reducers

Size In.	Price, Each Faced Only	Faced and Drilled	Size In.	Price, Each Faced Only	Faced and Drilled
3	$6.90	$7.60	8	$24.00	$25.60
3½	8.10	8.95	10	38.00	40.70
4	9.00	10.00	12	56.00	59.00
5	12.50	13.50	14	70.00	73.75
6	15.25	16.55	15	80.00	84.50
7	21.00	22.50	16	90.00	95.00

All flanged fittings will always be furnished faced only unless otherwise ordered.

Standard Cast Iron Flanged Fittings

125 Pounds Steam Working Pressure

Tees

Size Inches	Price, Each Faced Only	Faced and Drilled	Size Inches	Price, Each Faced Only	Faced and Drilled
1¼	$4.35	$5.25	8	$17.40	$19.80
1½	4.35	5.25	9	24.65	28.00
2	4.35	5.25	10	27.50	31.50
2½	4.55	5.45	12	40.50	45.00
3	5.00	6.10	14	60.00	65.50
3½	5.85	7.10	15	68.00	74.75
4	6.50	8.00	16	79.00	86.50
4½	8.00	9.50	18	103.00	112.00
5	9.10	10.60	20	130.00	140.00
6	11.00	12.95	22	164.00	177.00
7	15.25	17.50	24	203.00	218.00

Reducing Tees

1½	$5.00	$5.90	9	$28.50	$31.85
2	5.00	5.90	10	31.50	35.50
2½	5.25	6.15	12	46.50	51.00
3	5.75	6.85	14	69.00	74.50
3½	6.75	8.00	15	78.00	84.75
4	7.50	9.00	16	91.00	98.50
4½	9.25	10.75	18	118.00	127.00
5	10.50	12.00	20	150.00	160.00
6	12.65	14.60	22	189.00	202.00
7	17.50	19.75	24	233.00	248.00
8	20.00	22.40	..	....	.....

Crosses and Laterals

1¼	*$6.75	*$7.95	8	$26.50	$29.75
1½	*6.75	*7.95	9	37.50	42.00
2	6.75	7.95	10	42.00	47.50
2½	6.95	8.15	12	61.50	67.50
3	7.65	9.05	14	91.00	98.50
3½	9.00	10.70	15	103.00	112.00
4	10.00	12.00	16	120.00	130.00
4½	12.00	14.00	18	157.00	169.00
5	13.75	15.75	20	198.00	212.00
6	16.75	19.25	22	248.00	266.00
7	23.00	26.00	23	310.00	330.00

*Crosses only.

Reducing Crosses and Laterals

2	$7.75	$8.95	9	$43.00	$47.50
2½	8.00	9.20	10	48.00	53.50
3	8.75	10.15	12	71.00	77.00
3½	10.35	12.05	14	105.00	112.50
4	11.50	13.50	15	118.00	127.00
4½	13.75	15.75	16	138.00	148.00
5	15.75	17.75	18	180.00	192.00
6	19.25	21.75	20	228.00	242.00
7	26.50	29.50	22	285.00	303.00
8	30.50	33.75	24	355.00	375.00

Single and Double Sweep Tees

1¼	*$5.00	*$5.90	8	$20.00	$22.40
1½	*5.00	*5.90	9	28.50	31.85
2	5.00	5.90	10	31.50	35.50
2½	5.25	6.15	12	46.50	51.00
3	5.75	6.85	14	69.00	74.50
3½	6.75	8.00	15	78.00	84.75
4	7.50	9.00	16	91.00	98.50
4½	9.25	10.75	18	118.00	127.00
5	10.50	12.00	20	150.00	160.00
6	12.65	14.60	22	189.00	202.00
7	17.50	19.75	24	233.00	248.00

*Double sweep tees only.

Reducing Single and Double Sweep Tees

2	*$5.75	*$6.65	9	$32.75	$36.10
2½	6.00	6.90	10	36.00	40.00
3	6.60	7.70	12	53.50	58.00
3½	7.75	9.00	14	79.00	84.50
4	8.65	10.15	15	90.00	96.75
4½	10.60	12.10	16	105.00	112.50
5	12.00	13.50	18	135.00	144.00
6	14.50	16.45	20	173.00	183.00
7	20.00	22.25	22	217.00	230.00
8	23.00	25.40	24	258.00	283.00

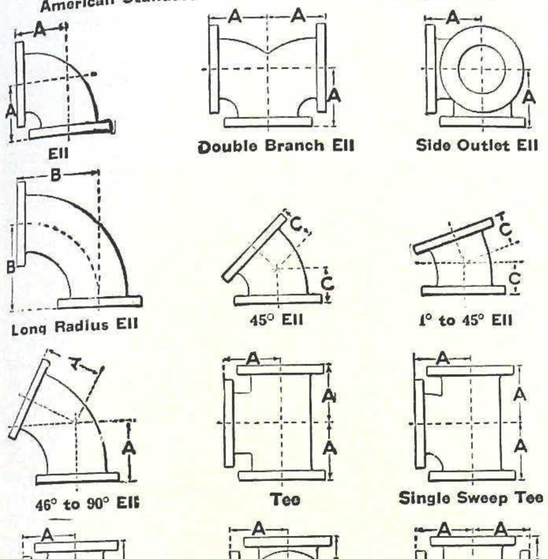
*Double sweep tees only.

All square turn and sweep pattern tees and crosses have same dimensions. Single sweep tees not made with outlet larger than run. All flanged fittings will always be furnished faced only, unless otherwise ordered.

Hy-Tech Products

General Dimensions of Standard and Low Pressure Cast Iron Flanged Fittings

American Standard — Straight Sizes



Size In.	AA Face to Face Tees and Crosses	*A Center to Face Elbows Tees and Crosses	B Long Radius Elbows	*C 45° Elbows	45° Laterals D Face to Face	E Center to Face	F Center to Face	G Face to Face Reducers	Flanges Diam.	Flanges Thickness
1	7	3½	5	1¾	7½	5¾	1¾	...	4	7/16
1¼	7½	3¾	5½	2	8	6¼	1¾	...	4½	1/2
1½	8	4	6	2¼	9	7	2	...	5	9/16
2	9	4½	6½	2½	10½	8	2½	...	6	5/8
2½	10	5	7	3	12	9½	2½	...	7	11/16
3	11	5½	7¾	3	13	10	3	6	7½	3/4
3½	12	6	8½	3½	14½	11½	3	6½	8½	13/16
4	13	6½	9	4	15	12	3	7	9	15/16
4½	14	7	9½	4	15½	12½	3	7½	9¼	15/16
5	15	7½	10¼	4½	17	13½	3½	8	10	15/16
6	16	8	11½	5	18	14½	3½	9	11	1
7	17	8½	12¾	5½	20½	16½	4	10	12½	1 1/16
8	18	9	14	5½	22	17½	4½	11	13½	1 1/8
9	20	10	15¼	6	24	19½	4½	11½	15	1 1/8
10	22	11	16½	6½	25½	20½	5	12	16	1 3/16
12	24	12	19	7½	30	24½	5½	14	19	1 1/4
14	28	14	21½	7½	33	27	6	16	21	1 3/8
15	29	14½	22¾	8	34½	28½	6	17	22¼	1 3/8
16	30	15	24	8	36½	30	6½	18	23½	1 7/16
18	33	16½	26½	8½	39	32	7	19	25	1 9/16
20	36	18	29	9½	43	35	8	20	27½	1 11/16
22	40	20	31½	10	46	37½	8½	22	29½	1 13/16
24	44	22	34	11	49½	40½	9	24	32	1 7/8

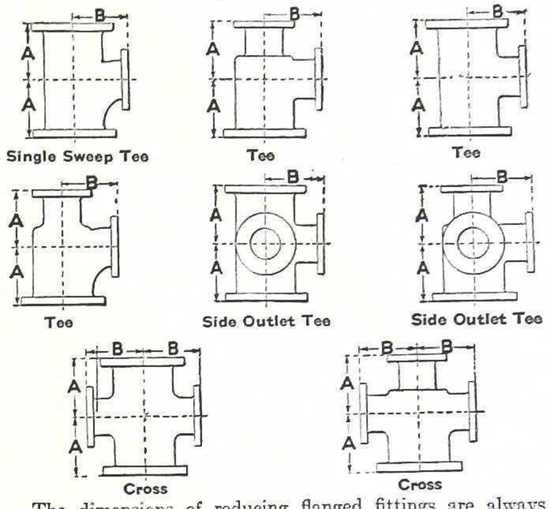
*Special angle fittings 1° to 45° use center to face dimension of 45° elbow, and 46° to 90° use center to face dimension of 90° elbow.

Furnished plain faced unless otherwise ordered.

General Dimensions of Standard and Low Pressure Cast Iron Reducing Flanged Fittings

American Standard — Short Body Pattern

Reducing Tees and Crosses



The dimensions of reducing flanged fittings are always regulated by the reduction of the outlet.

Fittings, reducing on the run only, the long body pattern will always be used, except double sweep tees, on which the reduced end is always longer than the regular fittings. Dimensions on request.

Bull heads or tees having outlets larger than the run will be the same length center to face of all openings as a tee with all openings of the size of the outlet. For example a 12x12x18-inch tee will be governed by the dimensions of the 18-inch, long body tee, namely, 16½ inches center to face of all openings and 33 inches face to face.

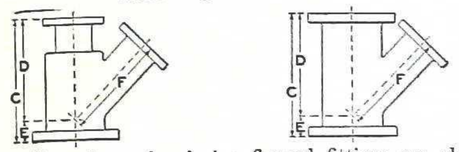
Reducing elbows carry same center to face dimensions as regular elbows of largest straight size.

All reducing fittings 1 inch to 16 inches, inclusive, have the same center to face dimensions as straight size fittings.

Size In.	*Size of Outlet and Smaller	AA, Face to Face Run	A, Center to Face Run	B, Center to Face Outlet
18	12	26	13	15½
20	14	28	14	17
22	15	28	14	18
24	16	30	15	19

*Long body patterns are used when outlets are larger than given in the above table, therefore have same dimensions as straight size patterns.

Reducing 45° Laterals



The dimensions of reducing flanged fittings are always regulated by the reduction of the branch; fittings reducing on the run only, the long body pattern will always be used.

All reducing fittings 1 inch to 16 inches, inclusive, have the same center to face dimensions as straight size fittings.

Size In.	*Size of Branch and Smaller	C, Face to Face Run	D, Center to Face Run	E, Center to Face Run	F, Center to Face Branch
18	9	26	25	1	27½
20	10	28	27	1	29½
22	10	29	28½	1½	31½
24	12	32	31½	1½	34½

*Long body patterns are used when branches are larger than given in the above table, therefore have same dimensions as straight size fittings.

Extra Heavy Cast Iron Flanged Fittings

250 Pounds Steam Working Pressure

90° Elbows

Size Inches	Price, Each Faced Only	Faced and Drilled	Size Inches	Price, Each Faced Only	Faced and Drilled
1¼	$4.50	$5.40	8	$18.00	$20.50
1½	4.50	5.40	9	25.50	28.85
2	4.50	5.40	10	28.50	32.50
2½	4.75	5.65	12	42.00	46.50
3	5.15	6.25	14	62.00	67.50
3½	6.10	7.35	15	70.00	77.00
4	6.75	8.25	16	82.00	90.00
4½	8.25	9.75	18	106.00	115.00
5	9.35	10.85	20	135.00	145.00
6	11.40	13.40	22	170.00	183.00
7	15.75	18.00	24	210.00	225.00

45° Elbows

1¼	$5.00	$5.90	8	$19.00	$21.50
1½	5.00	5.90	9	26.75	30.10
2	5.00	5.90	10	30.00	34.00
2½	5.25	6.15	12	44.00	48.50
3	5.65	6.75	14	62.00	67.50
3½	6.75	8.00	15	70.00	77.00
4	7.50	9.00	16	82.00	90.00
4½	9.00	10.50	18	106.00	115.00
5	10.35	11.85	20	135.00	145.00
6	12.50	14.50	22	170.00	183.00
7	16.50	18.75	24	210.00	225.00

Reducing Elbows

2	$9.00	$9.90	7	$31.50	$33.75
2½	9.50	10.40	8	36.00	38.50
3	10.25	11.35	10	57.00	61.00
3½	12.25	13.50	12	84.00	88.50
4	13.50	15.00	14	105.00	110.50
5	18.75	20.25	15	120.00	127.00
6	22.75	24.75	16	135.00	143.00

Long Radius Elbows

2	$7.50	$8.85	9	$42.50	$47.50
2½	8.00	9.35	10	47.75	53.75
3	8.60	10.25	12	70.00	76.75
3½	10.25	12.15	14	103.50	111.75
4	11.25	13.50	15	117.00	127.00
4½	13.75	16.00	16	137.00	149.00
5	15.50	17.75	18	177.00	191.00
6	19.00	22.00	20	225.00	240.00
7	26.50	29.85	22	285.00	305.00
8	30.00	33.75	24	350.00	373.00

Base Elbows

Size Inches	Price, Each Faced Only	Faced and Drilled	Facing and Drilling Base Flanges
4	$13.50	$15.00	$4.50
4½	16.50	18.00	4.50
5	18.75	20.25	5.25
6	22.75	24.75	5.25
7	31.50	33.75	5.25
8	36.00	38.50	7.50
9	51.00	54.35	7.50
10	57.00	61.00	7.50
12	84.00	88.50	11.00
14	105.00	110.50	11.00
15	120.00	127.00	11.00
16	135.00	143.00	11.00
18	157.00	166.00	18.00
20	180.00	190.00	18.00
22	225.00	238.00	18.00
24	285.00	300.00	18.00

Reducers

Size Inches	Price, Each Faced Only	Faced and Drilled	Size Inches	Price, Each Faced Only	Faced and Drilled
3	$10.25	$11.35	12	$84.00	$88.50
3½	12.25	13.50	14	105.00	110.50
4	13.50	15.00	15	120.00	127.00
5	18.75	20.25	16	135.00	143.00
6	22.75	24.75	18	157.00	166.00
7	31.50	33.75	20	180.00	190.00
8	36.00	38.50	22	225.00	238.00
10	57.00	61.00	24	285.00	300.00

All flanged fittings will always be furnished faced only, unless otherwise ordered.

Extra Heavy Cast Iron Flanged Fittings

250 Pounds Steam Working Pressure

Tees

Size Inches	Price, Each Faced Only	Faced and Drilled	Size Inches	Price, Each Faced Only	Faced and Drilled
1¼	$6.50	$7.85	8	$26.00	$29.75
1½	6.50	7.85	9	37.00	42.00
2	6.50	7.85	10	41.50	47.50
2½	6.90	8.25	12	61.00	67.75
3	7.50	9.15	14	90.00	98.25
3½	8.90	10.80	15	102.00	112.00
4	9.75	12.00	16	119.00	131.00
4½	12.00	14.25	18	154.00	168.00
5	13.50	15.75	20	195.00	210.00
6	16.50	19.50	22	247.00	267.00
7	23.00	26.35	24	305.00	328.00

Reducing Tees

1½	$7.50	$8.85	9	$42.50	$47.50
2	7.50	8.85	10	47.75	53.75
2½	8.00	9.35	12	70.00	76.75
3	8.60	10.25	14	103.50	111.75
3½	10.25	12.15	15	117.00	127.00
4	11.25	13.50	16	137.00	149.00
4½	13.75	16.00	18	177.00	191.00
5	15.50	17.75	20	225.00	240.00
6	19.00	22.00	22	285.00	305.00
7	26.50	29.85	24	350.00	373.00
8	30.00	33.75	..	.....	.....

Crosses and Laterals

1¼	*$10.00	*$11.80	8	$40.00	$45.00
1½	*10.00	*11.80	9	56.00	62.75
2	10.00	11.80	10	63.00	71.00
2½	10.50	12.30	12	92.00	101.00
3	11.50	13.75	14	136.00	147.00
3½	13.50	16.00	15	155.00	169.00
4	15.00	18.00	16	180.00	196.00
4½	18.00	21.00	18	235.00	253.00
5	20.50	23.50	20	300.00	320.00
6	25.00	29.00	22	375.00	401.00
7	35.00	39.50	24	465.00	495.00

*Crosses only.

Reducing Crosses and Laterals

2	*$11.50	*$13.30	9	$65.00	$71.75
2½	12.00	13.80	10	72.00	80.00
3	13.25	15.50	12	106.00	115.00
3½	15.50	18.00	14	158.00	169.00
4	17.00	20.00	15	177.00	191.00
4½	21.00	24.00	16	207.00	223.00
5	23.50	26.50	18	270.00	288.00
6	29.00	33.00	20	345.00	365.00
7	40.00	44.50	22	430.00	456.00
8	46.00	51.00	24	535.00	565.00

*Crosses only.

Single and Double Sweep Tees

2	$7.50	$8.85	9	$42.50	$47.50
2½	8.00	9.35	10	47.75	53.75
3	8.60	10.25	12	70.00	76.75
3½	10.25	12.15	14	103.50	111.75
4	11.25	13.50	15	117.00	127.00
4½	13.75	16.00	16	137.00	149.00
5	15.50	17.75	18	177.00	191.00
6	19.00	22.00	20	225.00	240.00
7	26.50	29.85	22	285.00	305.00
8	30.00	33.75	24	350.00	373.00

Reducing Single and Double Sweep Tees

2½	$9.15	$10.50	10	$55.00	$61.00
3	9.90	11.55	12	80.00	86.75
3½	11.75	13.65	14	119.00	127.25
4	13.00	15.25	15	135.00	145.00
4½	15.75	18.00	16	158.00	170.00
5	17.85	20.10	18	204.00	218.00
6	22.00	25.00	20	260.00	275.00
7	30.50	33.85	22	327.00	347.00
8	34.50	38.25	24	402.00	425.00
9	49.00	54.00	..	.....	.....

All square turn and sweep pattern tees and crosses have same dimensions.

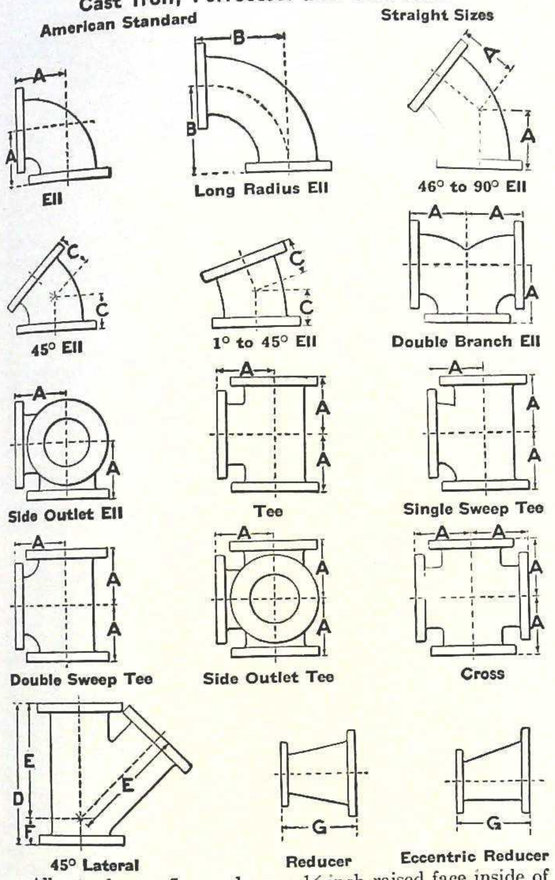
All flanged fittings will always be furnished faced only unless otherwise specified.

Hy-Tech Products

General Dimensions of Extra Heavy Flanged Fittings

Cast Iron, Ferrosteel and Cast Steel

American Standard



All extra heavy flanges have a 1/16-inch raised face inside of bolt holes. This raised face is included in face to face, center to face, and thickness of flange dimensions.

Size In.	AA, Face to Face Tees and Crosses	Center to Face *A, Elbows Tees and Crosses	B Long Radius Elbows	*C 45° Elbows	45° Laterals D Face to Face	E Center to Face	F Center to Face	G Face to Face Reducers	Flanges Diam.	Flanges Thickness
1	8	4	5	2	8½	6½	2	...	4⅞	11/16
1¼	8½	4¼	5½	2½	9½	7¼	2¼	...	5¼	¾
1½	9	4½	6	2¾	11	8½	2½	...	6⅛	13/16
2	10	5	6½	3	11½	9	2½	...	6½	⅞
2½	11	5½	7	3½	13	10½	2½	...	7½	1
3	12	6	7¾	3½	14	11	3	6	8¼	1⅛
3½	13	6½	8½	4	15½	12½	3	6½	9	1 3/16
4	14	7	9	4½	16½	13½	3	7	10	1¼
4½	15	7½	9½	4½	18	14½	3½	7½	10½	1 5/16
5	16	8	10¼	5	18½	15	3½	8	11	1⅜
6	17	8½	11½	5½	21½	17½	4	9	12½	1 7/16
7	18	9	12¾	6	23½	19	4½	10	14	1½
8	20	10	14	6	25½	20½	5	11	15	1 5/8
9	21	10½	15¼	6½	27½	22½	5	11½	16¼	1¾
10	23	11½	16½	7	29½	24	5½	12	17½	1⅞
12	26	13	19	8	33½	27½	6	14	20½	2
14	30	15	21½	8½	37½	31	6½	16	23	2⅛
15	31	15½	22¾	9	39½	33	6½	17	24½	2 3/16
16	33	16½	24	9½	42	34½	7½	18	25½	2¼
18	36	18	26½	10	45½	37½	8	19	28	2⅜
20	39	19½	29	10½	49	40½	8½	20	30½	2½
22	41	20½	31½	11	53	43½	9½	22	33	2⅝
24	45	22½	34	12	57½	47½	10	24	36	2¾

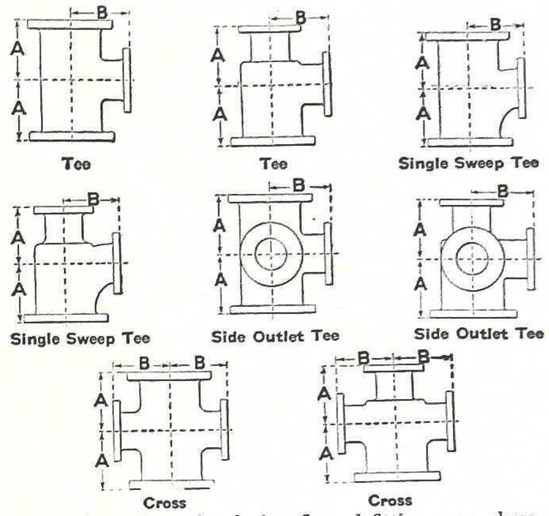
*Special angle fittings 1° to 45° use center to face dimension of 45° elbow and 46° to 90° use center to face dimension of 90° elbow.

General Dimensions of Extra Heavy Reducing Flanged Fittings

Cast Iron, Ferrosteel and Cast Steel

American Standard — Short Body Pattern

Reducing Tees and Crosses



The dimensions of reducing flanged fittings are always regulated by the reduction of the outlet.

Fittings reducing on the run only, the long body pattern will always be used, except double sweep tees, on which the reduced end is always longer than the regular fitting. Dimensions on request.

Bull heads or tees having outlets larger than the run will be the same length center to face of all openings as a tee with all openings of the size of the outlet. For example, a 12x12x18-inch tee will be governed by the dimensions of the 18-inch long body tee, namely, 18 inches center to face of all openings and 36 inches face to face.

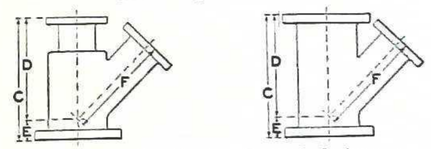
Reducing elbows carry same center to face dimension as regular elbows of largest straight size.

All reducing fittings 1 inch to 16 inches, inclusive, have the same center to face dimensions as straight size fittings.

Size Inches	*Size of Outlet and Smaller	AA, Face to Face Run	A, Center to Face Run	B, Center to Face Outlet
18	12	28	14	17
20	14	31	15½	18½
22	15	33	16½	20
24	16	34	17	21½

*Long body patterns are used when outlets are larger than given in the above table, therefore have same dimensions as straight size fittings.

Reducing 45° Lateral



The dimensions of reducing flanged fittings are always regulated by the reduction of the branch; fittings reducing on the run only, the long body pattern will always be used.

All reducing fittings 1 inch to 16 inches, inclusive, have the same center to face dimensions as straight size fittings.

Size Inches	*Size of Branch and Smaller	C, Face to Face Run	D, Center to Face Run	E, Center to Face Run	F, Center to Face Branch
18	9	34	31	3	32½
20	10	37	34	3	36
22	10	40	37	3	39
24	12	44	41	3	43

*Long body patterns are used when branches are larger than given in the above table, therefore have same dimensions as straight size fittings.

Standard Companion Flanges

125 Pounds Steam Working Pressure



No. 523, Back View Showing Hub



No. 522, Smooth Face



No. 524, Blind Flange

Cast Iron Flanges

Size Inches	Price, Each Faced Only	Faced and Drilled	Size Inches	Price, Each Faced Only	Faced and Drilled
1 x 4¼	$.55	$.80	8x13½	$3.10	$3.80
1¼x 4⅝	.60	.85	9x15	3.85	4.65
1½x 5	.65	.90	10x16	4.50	5.50
2 x 6	.75	1.00	12x19	6.50	7.65
2½x 7	.85	1.10	14x21	9.00	10.35
3 x 7½	.95	1.25	15x21	11.50	13.20
3½x 8½	1.20	1.55	15x22¼	11.50	13.20
4 x 9	1.35	1.80	16x23½	13.50	15.30
4½x 9¼	1.45	1.90	18x25	16.00	18.00
5 x10	1.60	2.05	20x27½	19.00	21.50
6 x11	2.00	2.50	22x29½	22.00	25.00
7 x12½	2.65	3.25	24x32	27.00	30.50

Malleable Iron Flanges

Double list of cast iron flanges. Made in sizes 2x6 to 16x23½ inches only.

Semi-Steel Flanges

1 x4¼	$.70	$1.00	8x13½	$3.90	$4.75
1¼x4⅝	.75	1.05	9x15	4.80	5.80
1½x 5	.80	1.10	10x16	5.65	6.85
2 x 6	.95	1.25	12x19	8.15	9.55
2½x 7	1.05	1.35	14x21	11.25	13.00
3 x 7½	1.20	1.55	15x21	14.50	16.50
3½x 8½	1.50	1.95	15x22¼	14.50	16.50
4 x 9	1.70	2.25	16x23½	17.00	19.00
4½x 9¼	1.80	2.35	18x25	20.00	22.50
5 x10	2.00	2.55	20x27½	24.00	27.00
6 x11	2.50	3.10	22x29½	27.50	31.00
7 x12½	3.30	4.05	24x32	34.00	38.00

*Cast Steel Flanges

14x21	$55.50	$63.00	18x25	$98.00	$110.00
15x21	64.00	74.00	20x27½	117.00	130.00
15x22¼	64.00	74.00	22x29½	140.00	155.00
16x23½	78.00	89.00	24x32	165.00	180.00

Furnished with bolt holes spot faced, when ordered faced and drilled, at prices given for faced and drilled.

*Forged Steel Flanges

1 x 4¼	$7.50	$8.00	5x10	$22.30	$24.00
1¼x 4⅝	8.40	9.00	6x11	25.40	27.00
1½x5	9.40	10.00	7x12½	27.20	32.00
2 x6	10.40	11.00	8x13½	32.00	35.00
2½x7	11.80	13.00	9x15	37.00	40.00
3 x7½	13.70	15.00	10x16	45.00	48.00
3½x8½	17.60	19.00	12x19	56.00	60.00
4 x9	18.30	20.00	14x21	75.50	80.00
4½x9¼	20.30	22.00	.....	.....	.....

Cast Iron Blind Flanges

2 x 6	$1.15	$1.40	14x21	$13.50	$14.85
2½x 7	1.30	1.55	15x22¼	17.00	18.70
3 x 7½	1.40	1.70	16x23½	20.00	21.80
3½x 8½	1.80	2.15	18x25	24.00	26.00
4 x 9	2.00	2.45	20x27½	28.00	30.50
4½x 9¼	2.20	2.65	22x29½	33.00	36.00
5 x10	2.40	2.85	24x32	40.00	43.50
6 x11	3.00	3.50	26x34¼	62.50	70.00
7 x12½	4.00	4.60	28x36½	77.50	85.00
8 x13½	4.60	5.30	30x38¾	90.00	100.00
9 x15	5.75	6.55	32x41¾	110.00	120.00
10 x16	6.75	7.75	34x43¾	122.50	135.00
12 x19	9.75	10.90	36x46	137.50	150.00

*Furnished with 1/16-inch raised face.

Other Standard Flanges, smooth faced. All flanges furnished faced only, unless otherwise ordered.

Spot facing bolt holes, 10 cents per hole.

Standard Reducing Cast Iron Companion Flanges

For Standard Flanged Valves and Fittings

125 Pounds Steam Working Pressure



No. 529

These flanges, used in connection with straight or reducing fittings, make it possible to fill orders for reduced sizes more promptly. Customers who desire fittings reduced in this manner will please specify, "Reduce by Flanges if Necessary."

They will always be of the same thickness as the regular companion flanges of corresponding outside diameter, and drilled to the template corresponding to the outside diameter, unless otherwise ordered.

In ordering reducing companion flanges, always give the screwed or reduced size first, then the outside diameter of flange wanted; for instance, if a reducing flange is wanted to connect a 6-inch pipe to a 9-inch flanged valve or fitting having a 15-inch outside diameter flange, order a 6x15-inch reducing flange. This will clearly avoid the confusion often caused by orders incorrectly calling for a 9x6 or 6x9-inch flange.

Size Inches	Price, Each Faced Only	Faced and Drilled	Size Inches	Price, Each Faced Only	Faced and Drilled
1¼x 6	$1.30	$1.55	6x12½	$4.40	$5.00
1½x 6	1.30	1.55	6x13½	5.10	5.80
1½x 7	1.45	1.70	6x15	6.35	7.15
1½x 7½	1.55	1.85	6x16	7.45	8.45
2 x 7	1.45	1.70	6x19	10.75	11.90
2 x 7½	1.55	1.85	7x13½	5.10	5.80
2 x 8½	2.00	2.35	7x15	6.35	7.15
2 x 9	2.20	2.65	7x16	7.45	8.45
2 x10	2.65	3.10	7x19	10.75	11.90
2 x11	3.30	3.80	8x15	6.35	7.15
2 x13½	5.10	5.80	8x16	7.45	8.45
2½x 7½	1.55	1.85	8x19	10.75	11.90
2½x 8½	2.00	2.35	8x21	15.00	16.35
2½x 9	2.20	2.65	8x22¼	19.00	20.70
2½x 9¼	2.40	2.85	9x16	7.45	8.45
2½x10	2.65	3.10	9x19	10.75	11.90
2½x11	3.30	3.80	9x21	15.00	16.35
2½x13½	5.10	5.80	10x19	10.75	11.90
2½x16	7.45	8.45	10x21	15.00	16.35
3 x 8½	2.00	2.35	10x22¼	19.00	20.70
3 x 9	2.20	2.65	10x23½	22.00	23.80
3 x 9¼	2.40	2.85	12x21	15.00	16.35
3 x10	2.65	3.10	12x22¼	19.00	20.70
3 x11	3.30	3.80	12x23½	22.00	23.80
3 x13½	5.10	5.80	12x25	26.50	28.50
3 x16	7.45	8.45	14x22¼	19.00	20.70
3½x 9	2.20	2.65	14x23½	22.00	23.80
3½x 9¼	2.40	2.85	14x25	26.50	28.50
3½x10	2.65	3.10	14x27½	31.00	33.50
3½x11	3.30	3.80	14x32	44.00	47.50
3½x16	7.45	8.45	15x23½	22.00	23.80
4 x 9¼	2.40	2.85	15x25	26.50	28.50
4 x10	2.65	3.10	15x27½	31.00	33.50
4 x11	3.30	3.80	15x29½	36.00	39.00
4 x12½	4.40	5.00	16x25	26.50	28.50
4 x13½	5.10	5.80	16x27½	31.00	33.50
4 x16	7.45	8.45	16x29½	36.00	39.00
4½x10	2.65	3.10	16x32	44.00	47.50
4½x11	3.30	3.80	18x27½	31.00	33.50
4½x12½	4.40	5.00	18x29½	36.00	39.00
5 x11	3.30	3.80	18x32	44.00	47.50
5 x12½	4.40	5.00	20x29½	36.00	39.00
5 x13½	5.10	5.80	20x32	44.00	47.50
5 x16	7.45	8.45	.....	.....	.....

Companion flanges are always furnished faced only, unless otherwise specified.

Extra Heavy Companion Flanges

250 Pounds Steam Working Pressure



No. 554, Back View Showing Hub



No. 555, Blind Flange

Cast Iron Flanges

Size Inches	Price, Each Faced Only	Faced and Drilled	Size Inches	Price, Each Faced Only	Faced and Drilled
1 x 4⅞	$.95	$1.30	8x15	$5.10	$6.15
1¼x 5¼	1.00	1.35	9x16¼	6.30	7.50
1½x 6⅛	1.10	1.45	10x17½	7.40	8.90
2 x 6½	1.25	1.60	12x20½	10.75	12.50
2½x 7½	1.40	1.75	14x23	15.00	17.00
3 x 8¼	1.60	2.05	15x24½	19.00	21.50
3½x 9	2.00	2.55	16x25½	22.25	25.00
4 x10	2.25	2.95	18x28	26.00	29.00
4½x10½	2.40	3.10	20x30½	31.00	35.00
5 x11	2.65	3.35	22x33	36.00	41.00
6 x12½	3.30	4.05	24x36	45.00	50.00
7 x14	4.40	5.30	.....	.....	.....

Malleable Iron Flanges

Double list of cast iron. Made in sizes 1½x6 to 16x25½ inches only.

Semi-Steel Flanges

1 x 4⅞	$1.20	$1.65	8x15	$6.40	$7.70
1¼x 5¼	1.25	1.70	9x16¼	7.90	9.40
1½x 6⅛	1.35	1.80	10x17½	9.25	11.00
2 x 6½	1.55	2.00	12x20½	13.50	15.50
2½x 7½	1.75	2.20	14x23	18.50	21.00
3 x 8¼	2.00	2.55	15x24½	24.00	27.00
3½x 9	2.50	3.20	16x25½	28.00	31.00
4 x10	2.80	3.70	18x28	32.50	36.00
4½x10½	3.00	3.90	20x30½	39.00	44.00
5 x11	3.30	4.20	22x33	45.00	51.00
6 x12½	4.10	5.05	24x36	56.00	62.00
7 x14	5.50	6.60	.....	.....	.....

Cast Steel Flanges

14x23	$55.50	$65.00	20x30½	$117.00	$131.00
15x24½	64.00	75.00	22x33	140.00	157.50
16x25½	78.00	90.00	24x36	165.00	182.00
18x28	98.00	111.00	.....	.....	.....

Furnished with bolt holes spot faced, when ordered faced and drilled, at price given for faced and drilled.

Forged Steel Flanges

1 x 4⅞	$7.50	$.800	7x14	$27.20	$32.00
1¼x 5¼	8.40	9.00	8x15	32.00	35.00
1½x 6⅛	9.40	10.00	9x16¼	37.00	40.00
2 x 6½	10.40	11.00	10x17½	45.00	48.00
2½x 7½	11.80	13.00	12x20½	56.00	60.00
3 x 8¼	13.70	15.00	14x23	75.50	80.00
3½x 9	17.60	19.00	15x24½	84.00	90.00
4 x10	18.30	20.00	16x25½	93.00	100.00
4½x10½	20.30	22.00	18x28	118.00	12 .00
5 x11	22.30	24.00	20x30½	142.00	150.00
6 x12½	25.40	27.00	.....	.....	.....

Cast Iron Blind Flanges

1½x 6⅛	$1.65	$2.00	9x16¼	$9.50	$10.70
2 x 6½	1.90	2.25	10x17½	11.00	12.50
2½x 7½	2.10	2.45	12x20½	16.00	17.75
3 x 8¼	2.40	2.85	14x23	22.50	24.50
3½x 9	3.00	3.55	15x24½	28.50	31.00
4 x10	3.35	4.05	16x25½	33.50	36.25
4½x10½	3.60	4.30	18x28	39.00	42.00
5 x11	4.00	4.70	20x30½	46.00	50.00
6 x12½	5.00	5.75	22x33	54.00	59.00
7 x14	6.60	7.50	24x36	67.00	72.00
8 x15	7.65	8.70	.....	.....	.....

Furnished faced only, unless otherwise ordered.

Sizes 14-inch and larger are tapped to be used with O. D. pipe of the same sizes.

Cast steel flanges, sizes 1 to 12 inches, inclusive, can be furnished when so ordered. Prices upon application.

Spot facing bolt holes, 10 cents per hole.

Extra Heavy Cast Iron Reducing Companion Flanges

For Extra Heavy Flanged Valves and Fittings

250 Pounds Steam Working Pressure



No. 560

These flanges used in connection with straight or reducing fittings, make it possible to fill orders more promptly. Customers who desire fittings reduced in this manner will please specify "Reduce by Flanges if Necessary."

These flanges will always be of the same thickness as the regular companion flanges of corresponding outside diameters, and drilled to the template corresponding to the outside diameter, unless otherwise ordered.

In ordering reducing companion flanges always give the screwed or reduced size first, then the outside diameter of flange wanted; for instance, if a reducing flange is wanted to connect a 6-inch pipe to a 9-inch flanged valve or fitting having a 16¼-inch O. D. flange, order a 6x16¼-inch reducing flange. This will clearly avoid the confusion often caused by orders incorrectly calling for a 9x6 or a 6x9-inch flange.

Size Inches	Price, Each Faced Only	Faced and Drilled	Size Inches	Price, Each Faced Only	Faced and Drilled
1¼x 6⅛	$1.80	$2.15	6x14	$7.25	$8.15
1½x 6½	2.10	2.45	8x15	8.40	9.45
1½x 7½	2.30	2.65	6x16¼	10.50	11.70
1½x 8¼	2.65	3.10	6x17½	12.00	13.50
2 x 7½	2.30	2.65	6x20½	17.50	19.25
2 x 8¼	2.65	3.10	7x15	8.40	9.45
2 x 9	3.30	3.85	7x16¼	10.50	11.70
2 x10	3.70	4.40	7x17½	12.00	13.50
2 x10½	4.00	4.70	7x20½	17.50	19.25
2 x11	4.40	5.10	8x16¼	10.50	11.70
2 x12½	5.50	6.25	8x17½	12.00	13.50
2½x 8¼	2.65	3.10	8x20½	17.50	19.25
2½x 9	3.30	3.85	8x23	25.00	27.00
2½x10	3.70	4.40	8x24½	31.50	34.00
2½x10½	4.00	4.70	9x17½	12.00	13.50
2½x11	4.40	5.10	9x20½	17.50	19.25
2½x12½	5.50	6.25	9x23	25.00	27.00
3 x 9	3.30	3.85	10x20½	17.50	19.25
3 x10	3.70	4.40	10x23	25.00	27.00
3 x10½	4.00	4.70	10x24½	31.50	34.00
3 x11	4.40	5.10	10x25½	37.00	39.75
3 x12½	5.50	6.25	12x23	25.00	27.00
3 x15	8.40	9.45	12x24½	31.50	34.00
3½x10	3.70	4.40	12x25½	37.00	39.75
3½x10½	4.00	4.70	12x28	43.00	46.00
3½x11	4.40	5.10	14x24½	31.50	34.00
3½x15	8.40	9.45	14x25½	37.00	39.75
4 x10½	4.00	4.70	14x28	43.00	46.00
4 x11	4.40	5.10	14x30½	51.00	55.00
4 x12½	5.50	6.25	15x25½	37.00	39.75
4 x15	8.40	9.45	15x28	34.00	46.00
4 x16¼	10.50	11.70	15x30½	51.00	55.00
4¼x11	4.40	5.10	16x28	43.00	46.00
4½x12½	5.50	6.25	16x30½	51.00	55.00
4½x14	7.25	8.15	16x33	60.00	65.00
5 x12½	5.50	6.25	18x30½	51.00	55.00
5 x14	7.25	8.15	18x33	60.00	65.00
5 x15	8.40	9.45	18x36	74.00	79.00
5 x16¼	10.50	11.70	20x33	60.00	65.00
5 x17½	12.00	13.50	20x36	74.00	79.00

Companion flanges are always furnished faced only, unless otherwise ordered.

Hy-Tech Products

Templates for Drilling Standard and Low Pressure Flanged Valves and Fittings

Prices for Drilling Standard Valves Sizes 1 to 48-Inch, Inclusive



No. 530

These drilling templates are in multiples of four, so that fittings may be made to face in any quarter, and bolt holes straddle the center line.

They can be drilled to any other template, if so desired.

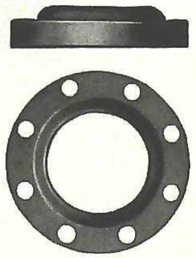
Bolt holes are drilled ⅛ inch larger than nominal diameter of bolts.

Size In.	Diam. Flanges In.	Thickness Flanges In.	Bolt Circle In.	No. Bolts	Size Bolts In.	Bolt Lengths In.	Price, Each for Drilling Valves With Two Flanges Except Angle Valves	Angle Valves	Cross Valves and Cross Safety Valves
1	4¼	7/16	3⅛	4	½	1½	$.60	$1.00	$1.20
1¼	4⅝	½	3½	4	½	1½	.60	1.90	1.20
1½	5	9/16	3⅞	4	½	1¾	.60	1.00	1.20
2	6	⅝	4¾	4	⅝	2	.75	1.25	1.50
2½	7	11/16	5½	4	⅝	2¼	.75	1.25	1.50
3	7½	¾	6	4	⅝	2¼	.75	1.25	1.50
3½	8½	13/16	7	8	⅝	2½	1.00	1.50	2.00
4	9	15/16	7½	8	⅝	2¾	1.25	1.75	2.50
4½	9¼	15/16	7¾	8	¾	2¾	1.50	2.00	3.00
5	10	15/16	8½	8	¾	2¾	1.50	2.00	3.00
6	11	1	9½	8	¾	3	1.75	2.50	3.50
7	12½	1 1/16	10¾	8	¾	3	2.25	3.00	4.50
8	13½	1⅛	11¾	8	¾	3¼	2.25	3.00	4.50
9	15	1⅛	13¼	12	¾	3¼	2.50	3.50	5.00
10	16	1 3/16	14¼	12	⅞	3½	2.50	3.50	5.00
12	19	1¼	17	12	⅞	3½	3.50	5.00	7.00
14	21	1⅜	18¾	12	1	4	4.00	6.00	....
15	22¼	1⅜	20	16	1	4	4.50	6.50	....
16	23½	1 7/16	21¼	16	1	4	5.00	7.00	....
18	25	1 9/16	22¾	16	1⅛	4½	6.00	10.00	....
20	27½	1 11/16	25	20	1⅛	4¾	7.50	12.00	....
22	29½	1 13/16	27¼	20	1¼	5	9.00	14.00	....
24	32	1⅞	29½	20	1¼	5¼	10.00	16.00	....
26	34¼	2	31¾	24	1¼	5½	11.00	18.00	....
28	36½	2 1/16	34	28	1¼	5½	12.00	20.00	....
30	38¾	2⅛	36	28	1¼	5¾	12.00	22.00	....
32	41¾	2¼	38½	28	1½	6¼	12.00	22.00	....
34	43¾	2 5/16	40½	32	1½	6½	14.00	24.00	....
36	46	2⅜	42¾	32	1½	6½	14.00	24.00	....
38	48¾	2⅜	45¼	32	1⅝	6¾	.....	.....	....
40	50¾	2½	47¼	36	1⅝	7	.....	.....	....
42	53	2⅝	49½	36	1½	7¼	25.00	.....	....
44	55¼	2⅝	51¾	40	1⅝	7¼	.....	.....	....
46	57¼	2 11/16	52¾	40	1⅝	7½	.....	.....	....
48	59½	2¾	56	44	1½	7½	30.00	.....	....

Bolt holes are spot faced only when so ordered except cast steel, which are always furnished spot faced.

Templates for Drilling Extra Heavy Flanged Valves and Fittings

Prices for Drilling Extra Heavy Valves Sizes 1 to 48-Inch Inclusive



No. 561

These drilling templates are in multiples of four, so that fittings may be made to face in any quarter, and bolt holes straddle the center line.

They can be drilled to any other template, if so desired.

Bolt holes are drilled ⅛ inch larger than nominal diameter of bolts.

Size Inches	Diam. Flanges Inches	Thickness Flanges Inches	Bolt Circle Inches	No. of Bolts	Size Bolts Inches	Bolt Lengths Inches	Price Each for Drilling Valves With Two Flanges Except Angle Valves	Angle Valves	Cross Valves
1	4⅞	11/16	3½	4	⅝	2	$.60	$1.00	....
1¼	5¼	¾	3⅞	4	⅝	2¼	.60	1.00	....
1½	6⅛	13/16	4½	4	¾	2½	.60	1.00	$1.20
2	6½	⅞	5	8	⅝	2½	.75	1.25	1.50
2½	7½	1	5⅞	8	¾	3	.75	1.25	1.50
3	8¼	1⅛	6⅝	8	¾	3¼	.75	1.25	1.50
3½	9	1 3/16	7¼	8	¾	3¼	1.00	1.50	2.00
4	10	1¼	7⅞	8	¾	3½	1.25	1.75	2.50
4½	10½	1 5/16	8½	8	¾	3½	1.50	2.00	3.00
5	11	1⅜	9¼	8	¾	3¾	1.50	2.00	3.00
6	12½	1 7/16	10⅝	12	¾	3¾	1.75	2.50	3.50
7	14	1½	11⅞	12	⅞	4	2.25	3.00	4.50
8	15	1⅝	13	12	⅞	4¼	2.25	3.00	4.50
9	16¼	1¾	14	12	1	4¾	2.50	3.50	5.00
10	17½	1⅞	15¼	16	1	5	2.50	3.50	5.00
12	20½	2	17¾	16	1⅛	5¼	3.50	5.00	7.00
14	23	2⅛	20¼	20	1⅛	5½	4.00	6.00	8.00
15	24½	2 3/16	21½	20	1¼	5¾	4.50	6.50	9.00
16	25½	2¼	22½	20	1¼	6	5.00	7.00	....
18	28	2⅜	24¾	24	1¼	6¼	6.00	....	....
20	30½	2½	27	24	1¼	6½	7.50	....	....
22	33	2⅝	29¼	24	1½	7	9.00	....	....
24	36	2¾	32	24	1½	7½	10.00	....	....
26	38¼	2 13/16	34½	28	1⅝	7¾	.....	....	....
28	40¾	2 15/16	37	28	1⅝	8	.....	....	....
30	43	3	39¼	28	1¾	8¼	12.00	....	....
32	45¼	3⅛	41½	28	1⅞	8½	.....	....	....
34	47½	3¼	43½	28	1⅞	9	.....	....	....
36	50	3⅜	46	32	2	9¼	.....	....	....
38	52¼	3 7/16	48	32	1⅞	9¼	.....	....	....
40	54½	3 9/16	50¼	36	1⅞	9½	.....	....	....
42	57	3 11/16	52¾	36	2	9¾	.....	....	....
44	59¼	3¾	55	36	2	10	.....	....	....
46	61½	3⅞	57¼	40	2	10¼	.....	....	....
48	65	4	60¾	40	2	10½	.....	....	....

Bolt holes are spot faced only when so ordered except cast steel which are always furnished spot faced.

Hy-Tech Products

Series 15 Stockham Cast Steel Flanged Fittings and Flanges

Maximum Working Pressures:
150 Pounds Steam or Hot Oil at 750° F. Max. Temp.
300 Pounds Water, Oil, Air or Gas at 100° F. Max. Temp.

Maximum Hydrostatic Test Pressure:
500 Pounds at 100° F. Max. Temp.



No. 300 Elbow



No. 303 Tee



No. 304 Cross

Prices include 1/16 inch raised face, drilling and spot facing.

Price, Each

Size Inches	No. 300 90° Elbows	No. 301 Long Radius Elbows	No. 302 45° Elbows	No. 303 Tees	No. 304 Crosses	No. 305 Laterals
2	$13.00	$17.00	$13.00	$18.00	$25.00	$25.00
2½	15.00	19.00	15.00	20.00	29.00	29.00
3	17.00	22.00	17.00	23.00	33.00	33.00
3½	20.00	26.00	20.00	26.00	38.00	38.00
4	22.00	29.00	22.00	29.00	42.00	42.00
5	27.00	39.00	27.00	37.00	51.00	51.00
6	33.00	48.00	33.00	46.00	63.00	63.00
8	48.00	70.00	48.00	65.00	91.00	91.00
10	67.00	92.00	67.00	90.00	127.00	127.00
12	84.00	115.00	84.00	110.00	160.00	160.00
14OD	108.00	157.00	108.00	147.00	205.00	205.00
16OD	140.00	205.00	140.00	190.00	265.00	265.00

Size Inches	No. 312 90° Base Ells	No. 306 Taper Reducers	No. 307 90° Red. Elbows	No. 308 Red. Tees	No. 309 Red. Crosses	No. 310 Red. Laterals
2	3½" and	..	$16.00	..	..	..
2½	Under, Bases	..	18.00	$22.50	$33.00	$33.00
3	Are Not Faced	$17.00	20.00	26.00	37.00	37.00
3½	or Drilled	20.00	24.00	29.50	43.00	43.00
4	$32.00	22.00	26.00	33.00	47.50	47.50
5	41.00	27.00	32.00	42.00	58.00	58.00
6	50.00	33.00	39.00	52.00	71.50	71.50
8	70.00	48.00	56.00	74.00	103.00	103.00
10	97.00	67.00	79.00	102.00	144.00	144.00
12	120.00	84.00	100.00	125.00	182.00	182.00
14OD	160.00	108.00	128.00	168.00	234.00	234.00
16OD	205.00	140.00	165.00	217.00	302.00	302.00

No. 311 Eccentric reducers made to order only; prices on request.

Flanges

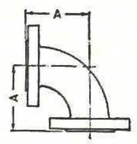
Size In.	No. 313 Companion	No. 314 Blind	No. 315 Reducing	Size In.	No. 313 Companion	No. 314 Blind	No. 315 Reducing
2 x 6	$8.50	$10.00	.....	6x11	$25.00	$28.50	$34.50
2½x 7	9.50	11.00	$13.00	8x13½	33.00	39.00	45.00
3 x 7½	12.00	13.00	15.00	10x16	41.50	58.00	58.00
3½x 8½	15.50	17.00	20.50	12x19	54.00	77.00	77.00
4 x 9	18.50	22.00	25.50	14x21	63.00	92.50	92.50
5 x10	20.50	24.50	28.50	16x23½	89.00	126.00	126.00

No. 316 Return Bends

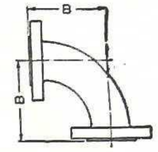
Size In.	Ctr. to Ctr. In.	Price Each	Size In.	Ctr. to Ctr. In.	Price Each	Size In.	Ctr. to Ctr. In.	Price Each
2	7	$18.25	4	11	$33.75	6	15	$57.50
2	7½	18.75	4	12	35.00	6	18	64.00
2	9	19.50	4	13	36.25	6	24	76.00
2½	7	20.50	4	14	37.50	8	14	81.00
2½	9	21.50	4	18	44.00	8	18	91.00
3	7½	23.00	5	10	38.50	8	20	97.00
3	8	23.75	5	12	41.00	10	21	141.00
3	9	24.50	5	13	42.50	10	22	146.00
3	12	26.50	5	18	49.00	10	24	153.00
4	9	31.00	6	12	51.50	12	24	202.00
4	10	32.50	6	13	53.25	12	30	240.00

Series 15 Stockham Cast Steel Flanged Fittings and Flanges

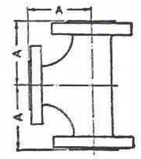
Maximum Working Pressures:
150 Pounds Steam or Hot Oil at 750° Max. Temp.
300 Pounds Water, Oil, Air or Gas at 100° F. Max. Temp.
Maximum Hydrostatic Test Pressure:
500 Pounds at 100° F. Max. Temp.



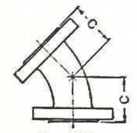
No. 300 90° Elbow



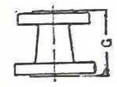
No. 301 Long Radius Elbow



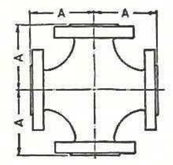
No. 303 Tee



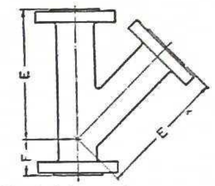
No. 302 45° Elbow



No. 306 Taper Reducer



No. 304 Cross



No. 305 Lateral

American Standard Association specifications B-16C-1927 adopted June 1927.

Dimensions are based upon the American 125-pound cast iron fittings standard, with exception of thickness of body of fitting, which is designed with ample factor of safety.

Dimensions, Inches

Sizes	Inside Diam. Fitting	Outside Diam. Flange	Thick. Flange	Diam. Raised Face	Diam. Bolt Circle	No. of Bolts	Size of Bolts
2	2	6	5/8	3 5/8	4 3/4	4	5/8
2½	2½	7	11/16	4 1/8	5½	4	5/8
3	3	7½	¾	5	6	4	5/8
3½	3½	8½	13/16	5½	7	8	5/8
4	4	9	15/16	6 5/16	7½	8	5/8
5	5	10	15/16	7 5/16	8½	8	¾
6	6	11	1	8½	9½	8	¾
8	8	13½	1⅛	10 5/8	11¾	8	¾
10	10	16	1 3/16	12¾	14¼	12	⅞
12	12	19	1¼	15	17	12	⅞
14 OD	14	21	1⅜	17¼	18¾	12	1
16 OD	16	23½	1 7/16	19 3/8	21¼	16	1

Sizes	Center to Contact Surface: Elbow Tee Cross A	45° E11 C	Long Radius Elbow B	Long Leg of Lateral E	Short Leg of Lateral F	Contact Surface to Contact Surface Reducer G
2	4½	2½	6½	8	2½	5
2½	5	3	7	9½	2½	5½
3	5½	3	7¾	10	3	6
3½	6	3½	8½	11½	3	6½
4	6½	4	9	12	3	7
5	7½	4½	10¼	13½	3½	8
6	8	5	11½	14½	3½	9
8	9	5½	14	17½	4½	11
10	11	6½	16½	20½	5	12
12	12	7½	19	24½	5½	14
14 OD	14	7½	21½	27	6	16
16 OD	15	8	24	30	6½	18

Center to contact surface dimensions include 1/16 inch raised face, all sizes.

Minimum flange thickness includes 1/16 inch raised face and is measured from top of raised face to bottom of spot face.

Diameter bolt holes is ⅛ inch larger than bolt diameter.

Series 30 Stockham Cast Steel Flanged Fittings and Flanges

Maximum Working Pressures:
300 Pounds Steam or Hot Oil at 750° Max. Temp.
325 Pounds Boiler Feed Lines at 450° F. Max. Temp.
275 Pounds Hot Oil or Vapor at 900° F. Max. Temp.
225 Pounds Hot Oil or Vapor at 1000° F. Max. Temp.
500 Pounds Water, Oil, Air or Gas at 100° F. Max. Temp.

Maximum Hydrostatic Test Pressure:
750 Pounds at 100° F. Max. Temp.

Prices include 1/16-inch raised face, drilling and spot facing. For sizes 1½ and under use series 60.

Price, Each

Size Inches	No. 330 90° Elbows	No. 331 Long Radius Elbows	No. 332 45° Elbows	No. 342 90° Base Ells	No. 333 Tees	No. 334 Crosses
2	$13.00	$17.00	$13.00	3½" and Under, Bases Are Not Faced or Drilled	$18.00	$25.00
2½	15.00	19.00	15.00		20.00	29.00
3	17.00	22.00	17.00		23.00	33.00
3½	20.00	26.00	20.00		26.00	38.00
4	22.00	29.00	22.00	$32.00	29.00	42.00
5	27.00	39.00	27.00	41.00	37.00	51.00
6	33.00	48.00	33.00	50.00	46.00	63.00
8	48.00	70.00	48.00	70.00	65.00	91.00
10	67.00	92.00	67.00	97.00	90.00	127.00
12	84.00	115.00	84.00	120.00	110.00	160.00
14 OD	108.00	157.00	108.00	160.00	147.00	205.00
16 OD	140.00	205.00	140.00	205.00	190.00	265.00
18 OD	180.00	.....	180.00	.....	245.00	340.00
20 OD	225.00	.....	225.00	.....	320.00	430.00
24 OD	355.00	.....	355.00	.....	490.00	675.00

Size Inches	No. 335 Laterals	No. 336 Taper Reducers	No. 337 90° Red. Elbows	No. 338 Red. Tees	No. 339 Red. Crosses	No. 340 Red. Laterals
2	$25.00	.....	$16.00	$20.25	$28.25	.....
2½	29.00	.....	18.00	22.50	33.00	.....
3	33.00	$17.00	20.00	26.00	37.00	.....
3½	38.00	20.00	24.00	29.50	43.00	.....
4	42.00	22.00	26.00	33.00	47.50	$47.50
5	51.00	27.00	32.00	42.00	58.00	58.00
6	63.00	33.00	39.00	52.00	71.50	71.50
8	91.00	48.00	56.00	74.00	103.00	103.00
10	127.00	67.00	79.00	102.00	144.00	144.00
12	160.00	84.00	100.00	125.00	182.00	182.00
14 OD	205.00	108.00	128.00	168.00	234.00	234.00
16 OD	265.00	140.00	165.00	217.00	302.00	302.00
18 OD	340.00	.....	.....	280.00	388.00	388.00
20 OD	430.00	.....	.....	365.00	490.00	490.00
24 OD	675.00	.....	.....	560.00	770.00	770.00

No. 341 Eccentric Reducers made to order only; prices on request.

Flanges

Size Inches	No. 343 Companion	No. 344 Blind	No. 345 Reducing	Size Inches	No. 343 Companion	No. 344 Blind	No. 345 Reducing
2 x6½	$8.50	10.00	11.85	10x17½	$41.50	$59.00	$59.00
2½x7½	9.50	11.00	13.00	12x20½	54.00	78.00	78.00
3 x8¼	12.00	14.00	16.00	14x23	65.00	95.00	95.00
3½x9	15.50	18.00	21.50	16x25½	90.00	127.00	127.00
4 x10	18.50	22.00	25.50	18x28	111.00	158.00	158.00
5 x11	20.50	24.50	28.50	20x30½	131.00	189.00	189.00
6 x12½	25.00	29.50	35.50	24x36	182.00	267.00	267.00
8 x15	33.00	40.00	46.00	.....	.....	.....	.....

No. 346 Return Bends

Size Inches	Center to Center Inches	Price Each	Size Inches	Center to Center Inches	Price Each
2	7½	$18.75	4	16	$40.50
2½	9½	21.75	5	13	42.50
3	8½	24.00	5	14	44.00
3	12	26.50	6	14	56.00
4	10	32.50	6	15	57.50
4	11	33.75	6	16	60.75
4	12	35.00	6	18	64.00
4	13½	37.00	8	18	91.00

Series 60 Stockham Cast Steel Flanged Fittings and Flanges

Maximum Working Pressures:
600 Pounds Steam or Hot Oil at 750° F. Max. Temp.
720 Pounds Boiler Feed Lines at 450° F. Max. Temp.
550 Pounds Hot Oil or Vapor at 900° F. Max. Temp.
475 Pounds Hot Oil or Vapor at 1000° F. Max. Temp.
1000 Pounds Water, Oil, Air or Gas at 100° F. Max. Temp.

Maximum Hydrostatic Test Pressure:
1500 Pounds at 100° F. Max. Temp.

Prices include ¼-inch raised face, drilling and spot facing.

Price, Each

Size Inches	No. 390 90° Elbows	No. 392 45° Elbows	No. 393 Tees	No. 394 Crosses	No. 395 Laterals
½	$12.00	.....	$17.50	.....	.....
¾	13.00	.....	19.00	.....	.....
1	14.50	.....	21.50	.....	.....
1¼	15.50	$15.50	23.00	$31.50	.....
1½	17.00	17.00	25.00	34.50	.....
2	19.00	19.00	28.00	39.00	$39.00
2½	22.00	22.00	32.50	45.00	45.00
3	25.00	25.00	37.00	51.00	51.00
3½	29.00	29.00	43.00	60.00	60.00
4	34.00	34.00	51.00	71.00	71.00
5	47.75	47.75	72.25	100.50	100.50
6	61.00	61.00	91.00	126.00	126.00
8	89.00	89.00	135.50	189.00	188.00
10	140.00	140.00	209.00	292.00	292.00
12	182.00	182.00	276.00	385.00	385.00
14 OD	231.00	231.00	346.00	482.00	482.00
16 OD	325.00	325.00	485.00	675.00	675.00
18 OD	406.00	406.00	572.00	798.00	798.00
20 OD	518.00	518.00	729.00	1019.00	1019.00
24 OD	791.00	791.00	1113.00	1554.00	1554.00

Size Inches	No. 396 Taper Reducers	No. 398 Reducing Tees	No. 399 Red. Crosses	No. 400 Red. Laterals	No. 402 Base Elbows
....	.....	.....	.....	.....	For Sizes 3½" and Under Bases Are Not Faced or Drilled
2	.....	$31.50	$44.00	.....	
2½	.....	36.50	51.00	.....	
3	$25.00	41.75	58.00	.....	
3½	29.00	48.50	68.00	.....	
4	34.00	58.00	80.50	$80.50	$50.00
5	47.75	82.25	114.50	114.50	72.75
6	61.00	104.00	143.00	143.00	93.00
8	89.00	154.50	214.00	214.00	132.00
10	140.00	238.00	333.00	333.00	197.00
12	182.00	315.00	439.00	439.00	254.00
14 OD	231.00	395.00	550.00	550.00	316.00
16 OD	325.00	554.00	771.00	771.00	445.00
18 OD	406.00	652.00	910.00	910.00	.....
20 OD	518.00	831.00	1162.00	1162.00	.....
24 OD	791.00	1271.00	1775.00	1775.00	.....

Flanges

Size Inches	No. 403 Companion	No. 404 Blind	Size Inches	No. 403 Companion	No. 404 Blind
½x 3¾	$6.25	$7.25	5x13	$30.50	$37.00
¾x 4⅝	6.50	7.75	6x14	36.00	44.00
1 x 4⅞	6.85	8.20	8x16½	53.00	67.00
1¼x 5¼	7.30	8.80	10x20	80.00	107.00
1½x 6⅛	8.00	9.45	12x22	93.00	134.00
2 x 6½	9.00	10.60	14x23¾	110.00	164.00
2½x 7½	11.00	12.75	16x27	141.00	209.00
3 x 8¼	14.00	16.25	18x29¼	177.00	252.00
3½x 9	16.50	19.25	20x32	209.00	302.00
4 x10¾	20.75	24.25	24x37	291.00	427.00

Hy-Tech Products

Water Pipe Clamps

Malleable Iron, with Wrought Iron Strap



No. 722



No. 723

No.	Clamps Will Fit, Inches O.D of Circle	Size Wrought Iron Pipe	Size O. D. of Casing	Size Cast Iron Pipe	Tapped for Wrought Iron Pipe Connections, Inches	Price Each
0	1⅞	1¼	2	..	¼ and ¾	$1.00
1	2¾	2	2½	..	½ to 1	1.00
2	2⅞	2½	2¾ & 3	2	½ to 1¼	1.25
3	3½	3	3½	..	½ to 1	1.25
4	3½	3	3½	..	1¼ to 2	1.50
5	4	3½	4	3	½ to 1	1.50
6	4	3½	4	3	1¼ to 2	1.75
7	4½	4	4½	..	½ to 1½	1.75
8	4½	4	4½	..	2	2.00
9	4½	4	4½	..	2½ and 3	4.00
10	5	4½	5	4	¾ to 1½	1.80
11	5	4½	5	4	2	2.15
12	5	4½	5	4	2½ and 3	4.00
13	5½	5	5½	..	¾ to 1½	1.80
14	5½	5	5½	..	2	2.15
15	5½	5	5½	..	2½ and 3	4.00
16	6	....	6	5	½ to 1½	2.00
17	6	....	6	5	2	2.40
18	6	....	6	5	2½ and 3	4.50
19	6⅝	6	6⅝	..	¾ to 1½	2.25
20	6⅝	6	6⅝	..	2	2.50
21	6⅝	6	6⅝	..	2½ and 3	5.00
22	7	....	7	6	¾ to 1½	2.50
23	7	....	7	6	2	2.70
24	7	....	7	6	2½ and 3	5.00
25	7⅝	7	7⅝	..	¾ to 1½	2.50
26	7⅝	7	7⅝	..	2	2.70
27	7⅝	7	7⅝	..	2½ and 3	5.00
28	8	....	8	7	¾ to 1½	4.50
29	8	....	8	7	2	5.00
30	8	....	8	7	2½ and 3	5.50
30½	8⅝	8	8⅝	..	¾ to 1½	5.50
31	8⅝	8	8⅝	..	2 to 3	5.50
32	8⅝	8	8⅝	..	4	6.00
33	9⅝	9	....	..	1½ to 3	8.00
34	10	....	10	9	¾ to 2	9.00
35	10¾	10	....	..	¾ to 2	9.00
36	12¾	12	....	..	¾ to 2	10.00

Always order water pipe clamps by number.

Steam Pipe Saddles

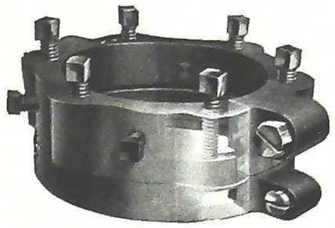
Malleable Iron, with Wrought Iron Straps for Wrought Pipe



No. 724

Size Pipe Inches	Tapped for Pipe Inches	Price Each	Size Pipe Inches	Tapped for Pipe Inches	Price Each
1½	½ and ¾	$.90	6	2½ to 4	$5.75
2	½ to 1½	1.00	7	1 to 4	6.50
2½	¾ to 1½	1.25	8	1 to 4	6.50
3	¾ to 2	1.25	9	1½ to 4	8.50
3½	¾ to 2	1.40	10	1½ to 4	10.00
4	¾ to 2	1.50	10	1½ to 6	10.00
4½	¾ to 2	2.50	12	1½ to 4	14.00
5	¾ to 2	2.75	12	1½ to 6	14.00
5	2½ and 3	2.75	15	3 to 6	22.00
6	¾ to 2	2.75	16	3 to 6	25.00

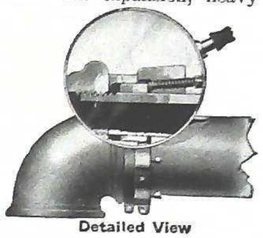
Skinner Pipe Joint Clamps



Repairs leaks where pipe is screwed into fitting. The entire thrust is against the packing and the lip on the gasket container ring guides the packing squarely into the threads.

Made of malleable iron, elastic enough to accommodate vibration and expansion, heavy enough to withstand the highest pressures. A positive permanent repair on steam, oil, gas, hot or cold water, air, ammonia or brine.

Painted to resist rust and packed in stout carton. Made in halves held together by cap screws.

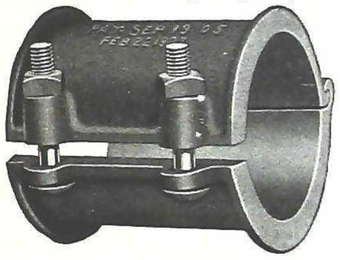


Detailed View

Size Pipe Inches	Price Each	Size Pipe Inches	Price Each	Size Pipe Inches	Price Each
½	$1.50	3	$4.50	8	$13.00
¾	1.50	3½	5.25	9	15.75
1	1.50	4	6.00	10	18.75
1¼	1.90	4½	6.75	12	22.50
1½	2.25	5	7.50	14	31.50
2	3.00	6	9.00	15	33.75
2½	3.75	7	10.50	16	36.00

Clamps ½ to 12-inch are for pipe measured inside diameter; 14-inch and larger, outside diameter.

Emergency Pipe Clamps



For stopping leaks in pipe lines. It is a malleable iron cylinder, halved, hinged along one side and fitted with bolts on the other. A gasket completes the clamp. It is by concentration of pressure on the leak that this clamp makes a positive permanent repair.

Owing to the long open hinge, the two halves of the clamp may be slid together along the pipe so as to fit the clamp when crowded for room.

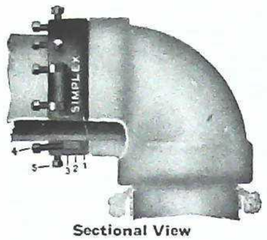
Packed 12 to a carton, ½ to 2-inch sizes, and 6 to a carton, 2½ to 4-inch sizes. For the larger sizes of pipe, clamps are reinforced with heavy ribs, which insure security under high pressure. Specify when O.D. or cast iron pipe sizes.

Size Pipe In.	Lgth. Overall In.	Wt., Lbs. per Doz.	Price Each	Size Pipe In.	Lgth. Overall In.	Wt., Lbs. per Doz.	Price Each
½	3¼	10	$.60	1½	4	23	$1.05
¾	3¼	13	.68	2	4¼	32	1.20
1	3½	15	.75	2½	4½	39	1.50
1¼	3¾	20	.90	3	5	51	1.88

Size Pipe In.	Lgth. Overall In.	No. Bolts	Wt. Lbs.	Price Each	Size Pipe In.	Lgth. Overall In.	No. Bolts	Wt. Lbs.	Price Each
3½	5½	2	6	$2.25	8	9½	3	30	$12.00
4	6	2	7½	3.00	*8	9½	3	32	12.00
*4	6½	2	8½	6.75	9	10	3	34	13.50
4½	6½	2	8½	6.75	10	12	4	45	15.00
5	7	3	10	7.50	*10	12	4	48	15.00
6	8	3	14	9.00	12	12	4	57	18.00
*6	8	3	15	9.00	*12	12	4	59	18.00
7	9	3	18	10.50	...	....	.	..	.....

*Cast iron.

Yarway Pipe Joint Clamps



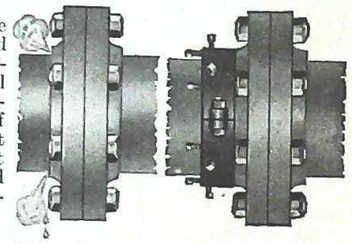
Sectional View

The Yarway (formerly Simplex) Pipe Joint Clamp has square packing ring, which is forced against packing (1) by screws (4). Outside ring is bolted around pipe by bolts (6) and secured to the pipe by set screws (5), prevents slipping from leak when adjusting screws (4).

Clamps are made of malleable iron.

The packing used is made of rubber with lead insert.

The Yarway pipe joint clamp can be used over and over temporarily to stop leaks until it is convenient to renew the pipes. Or, if left on permanently, it keeps as tight a joint as could be obtained by any amount of repairs.


Before Application After Application

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
½	$1.50	2½	$3.75	6	$9.00	14	$31.50	22	$55.00
¾	1.50	3	4.50	7	10.50	15	33.75	24	60.00
1	1.50	3½	5.25	8	13 00	16	36.00	26	65.00
1¼	1.90	4	6.00	9	15.75	18	40.50	28	70.00
1½	2.25	4½	6.75	10	18.75	20	45.00	30	76.00
2	3.00	5	7.50	12	22.50	21	50.00	32	82.00

Moran Flexible Joints



No. 1 Joints for Steam and Air

Size Inches	Price Each	Size Inches	Price Each
¼	$6.00	3	$22.50
⅜	6.00	3½	28.00
½	6.50	4	30.00
¾	7.50	4½	37.50
1	8.50	5	40.00
1¼	10.50	6	60.00
1½	12.00	8	144.00
2	15.00	10	190.00
2½	18.00	12	240.00

No. 2 Joints for Steam and Air



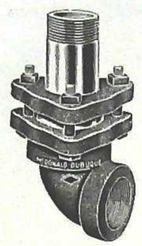
Size Inches	Price Each	Size Inches	Price Each
¼	$6.50	3	$24.50
⅜	6.50	3½	31.00
½	7.00	4	33.50
¾	8.00	4½	41.50
1	9.00	5	41.75
1¼	11.00	6	75.00
1½	12.50	8	165.00
2	17.50	10	250.00
2½	21.00	12	300.00



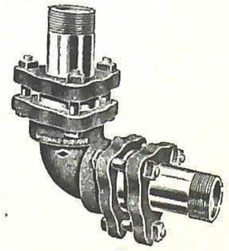
No. 3 Joints for Liquids

Size Inches	Price Each	Size Inches	Price Each
¼	$6.00	3	$22.50
⅜	6.00	3½	28.00
½	6.50	4	30.00
¾	7.50	4½	37.50
1	8.50	5	40.00
1¼	10.50	6	60.00
1½	12.00	8	144.00
2	15.00	10	190.00
2½	18.00	12	240.00

McDonald Swing Joints



Single



Double

McDonald Swing Joints are universally used wherever flexible joints in pipe lines are required, particularly in petroleum lines. They give free rotary motion without leakage.

These Swing Joints are of heavy durable construction—having cast iron body and cast brass ferrules. Ferrules are threaded with standard iron pipe thread. Specially treated strand packing prevents any leakage through stuffing box.

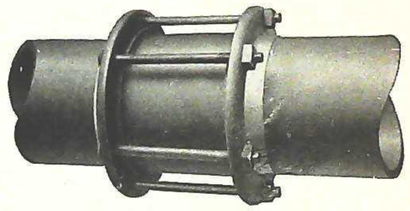
Size Inches	Price, Each Single	Price, Each Double	Size Inches	Price, Each Single	Price, Each Double
1¼	$3.75	$6.50	4	$20.00	$30.00
1½	4.00	7.00	6	75.00	130.00
2	4.75	8.50	8	.....	.....
2½	7.00	11.00	10	.....	.....
3	10.00	15.00	12	.....	.....

McDonald All-brass Curb Pump Swing Joints

Made in various patterns in ¾, 1 and 1¼-inch iron pipe thread sizes.

Prices upon application.

Style 39 Dresser Insulating Pipe Coupling



This coupling is designed for use with plain end steel pipe. In the finished sizes, the flanges and middle rings are made sufficiently large to accommodate the special rubber gaskets. These rubbers cover the end of the pipe and extend back along under the flanges, thus making the insulating qualities of this joint perfect.

Pipe Size Inches	Thickness Metal Inches	Length Middle Ring Inches	Number Bolts	Weight Pounds	Price Each
¾ I.D.	¼	5	2	4	$1.34
1 I.D.	¼	5	2	4	1.34
1¼ I.D.	¼	5	2	4	1.52
1½ I.D.	¼	5	2	5	1.76
2 I.D.	¼	5	3	11	2.48
3 I.D.	¼	5	4	15	3.48
4 I.D.	¼	5	4	18	3.88
5¼ O.D.	¼	5	4	20	5.36
5 I.D.	¼	5	4	21	5.44
6 I.D.	¼	5	6	25	5.84
8 I.D.	¼	5	6	32	7.28

Style No. 38 Dresser Steel Pipe Couplings

Complete with Bolts and Gaskets



This coupling has been adopted generally for high pressure trunk lines in all natural gas fields.

Designed for plain or threaded end wrought steel pipe, casing and boiler tubes. It forms a perfect expansion joint and in mechanical construction, strength, and durability stands in a class by itself.

Size Steel Pipe Inches	Thickness Metal Inches	Length Middle Ring Inches	No. of Bolts	Weight Pounds	Price, Each Gasket Equipment Plain	Duck Tipped	Lead Tipped
⅜ I.D.	..	.	2	4	$.80	$.90	$1.10
½ I.D.	..	.	2	4	.80	.90	1.10
¾ I.D.	..	.	2	4	.94	1.08	1.28
1 I.D.	..	.	2	4	.96	1.12	1.38
1¼ I.D.	..	.	2	4	1.04	1.24	1.66
1½ I.D.	..	.	2	5	1.20	1.48	1.86
2 I.D.	..	.	3	11	1.92	2.12	2.52
3 O.D.	¼	5	3	13	2.22	2.46	2.96
3 I.D.	¼	5	4	15	2.52	2.80	3.38
3½ I.D.	¼	5	4	16	2.70	3.04	3.58
4 O.D.	¼	5	.	..	2.70	3.04	3.58
4 I.D.	¼	5	4	18	2.92	3.24	3.82
4½ I.D.	¼	5	4	18	3.16	3.50	4.18
5¼ O.D.	¼	5	4	19	3.32	3.72	4.44
5 I.D.	¼	5	4	20	3.50	3.90	4.60
6 O.D.	¼	5	6	23	4.00	4.32	4.92
6 I.D.	¼	5	6	25	4.20	4.56	5.30
7 O.D.	¼	5	6	26	4.38	4.74	5.68
8 O.D.	¼	5	6	30	4.82	5.24	6.22
8 I.D.	¼	5	6	31	5.00	5.46	6.54
10 O.D.	¼	5	8	37	5.84	6.28	7.20
10 O.D.	¼	7	8	43	6.34	6.78	7.70
10 I.D.	¼	5	8	39	6.12	6.56	7.44
10 I.D.	¼	7	8	45	6.66	7.10	7.98
10 I.D.	5/16	5	8	50	7.14	7.58	8.70
10 I.D.	5/16	5	.	..	6.82	7.26	8.14
10 I.D.	5/16	7	8	57	7.74	8.18	9.30
12 O.D.	¼	5	8	44	6.78	7.26	8.50
12 O.D.	¼	7	8	50	7.32	7.80	9.04
12 O.D.	5/16	7	8	62	8.58	9.08	10.40
12 I.D.	¼	5	8	45	7.20	7.66	8.82
12 I.D.	¼	7	8	52	7.78	8.24	9.40
12 I.D.	5/16	5	8	58	8.40	8.94	10.16
12 I.D.	5/16	5	.	...	8.04	8.50	9.66
12 I.D.	5/16	7	8	67	9.06	9.60	10.82
14 O.D.	¼	7	8	59	8.94	9.64	11.18
14 O.D.	5/16	7	8	71	9.98	10.68	12.22
16 O.D.	¼	7	10	68	10.08	10.96	12.42
16 O.D.	5/16	7	10	82	11.18	12.06	13.52
18 O.D.	5/16	7	10	91	12.60	13.58	15.80
20 O.D.	5/16	7	12	102	14.48	15.58	17.78
24 O.D.	5/16	7	..	...	.....	.....	.....

Prices on 24-inch size quoted upon request.

No. 111 Grinnell Pipe Threaded Coach Screws



For use with hangers. The coach screw end has gimlet point while opposite end has standard pipe thread.

Designed for use with split pipe ring and socket and with extension split ring.

Made in 4 sizes carrying pipe threads ⅛ to ½ inch and coach screw threads ⅜ to ¾ inch. Note that coach screws for ⅛ and ¼-inch pipe thread are 3½ inches long and that for ⅜ and ½-inch pipe thread are 5 inches long.

No.		1	2	3	4
Pipe Thread	inches	⅛	¼	⅜	½
Coach Screw Thread	inches	⅜	½	⅝	¾
Length	inches	3½	3½	5	5
Price, No. 111	each	$.10	.12	.14	.20

Cast Iron Hook Plates


No. 736 6-Hook


No. 737, Single Hook

No. of Looks	Price, Each For Pipe, Inches 1 — Center to Center, Inches 2½	1¼ — 3	1½ — 3½	2 — 4½
1	$.09	$.10	$.15	$.22
2	.18	.21	.28	.43
3	.23	.27	.43	.65
4	.26	.32	.58	.90
5	.32	.41	.72	1.15
6	.38	.52	.88	1.35

No. 51 Grabler Sectional Steel Hook Plates



This sectional steel hook plate is stronger, neater and easier to work than cast iron.

It will not break and is practically indestructible.

Furnished in long strips; as many hooks as desired can easily be cut off at the ribs shown.

For Pipe Inches	No. of Hooks per Strip	Price per Strip
1	30	$2.50
1¼	30	3.25
1½	25	3.75
2	20	4.25

Cast Iron Pipe Rolls

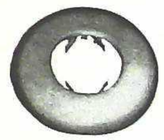

No. 1920

Size Inches	Center to Center Inches	Size Hole Inches	Price Each	Size Inches	Center to Center Inches	Size Hole Inches	Price Each
1	2½	⅝	*$.08	4½	5⅝	11/16	$.24
1¼	3	⅝	* .09	5	6⅛	11/16	.24
1½	3½	⅝	* .10	6	7⅛	11/16	.27
2	3	⅝	.13	7	8¼	⅞	.36
2½	3⅜	⅝	.15	8	9⅛	⅞	.60
3	4⅛	⅝	.18	10	11½	⅞	1.40
3½	4½	⅝	.21	12	13¾	⅞	2.00
4	5	11/16	.21	14	17¼	⅞	2.75

*Special flanges, for hanging rolls, tapped for 9/16-inch rod, and drilled for screws, add 10 cents each.

No. 10 Perfection Floor and Ceiling Plates

Cold Rolled Steel


Closed


Open

Size In.	Price, Each Black	Nickel-Plated	Size In.	Price, Each Black	Nickel-Plated	Size In.	Price, Each Black	Nickel-Plated
¼	$.14	$.25	1¼	$.22	$.35	3½	$.80	$1.00
⅜	.15	.26	1½	.25	.38	4	1.00	1.25
½	.16	.27	2	.30	.45	4½	1.25	1.50
¾	.17	.28	2½	.50	.65	5	1.50	1.75
1	.20	.32	3	.65	.80	6	1.75	2.00

Hy-Tech Products

No. 101 Grinnell Pipe Hangers

Solid Adjustable Swivel Ring
Malleable Iron



The ring can be used with coach screw rod or with machine threaded rod in connection with practically any type of ceiling flange expansion case, insert, etc.

The unusual feature of this ring is the swivel shank allowing an adjustment of about two inches by simply turning the nut on the shank to the left or right.

Pipe Inches	Rod Inches	Price Each	Pipe Inches	Rod Inches	Price Each
¾	⅜	$ 18	3½	½	$.44
1	⅜	.20	4	⅝	.56
1¼	⅜	.21	5	⅝	.70
1½	⅜	.22	6	¾	1.08
2	⅜	.24	8	⅞	1.92
2½	½	.34	..	..	....
3	½	.42	..	..	....

No. 100 Grinnell Adjustable Coach Screw Clips

Malleable Iron



Designed for Grinnell Sprinkler installation work where lines were to be hung from plastered, wood, plaster board and metal sheathed ceilings. Sold complete for hanging ¾ to 2-inch pipe inclusive. For hanging other sizes and for other lengths of rods than specified, order parts separately. Spring ceiling plates must be ordered separately.

Pipe Size Inches	C. S. Rod Inches Diam.	C. S. Rod Inches Length	Ceiling to Pipe Center Inches	Price Each
¾	⅜	11	8 – 9⅝	$.28
1	⅜	11¼	8½–10⅛	.30
1¼	⅜	11½	8¾–10⅜	.31
1½	⅜	11½	9 –10⅝	.32
2	⅜	11¾	9½–11⅛	.34

No. 109 Grinnell Pipe Hangers

Split Ring with Socket and Pipe Threaded Coach Screw
Malleable Iron



Pipe Size In.	Pipe Thrd. Size In.	Lgth. Coach Screw In.	Price Each	Pipe Size In.	Pipe Thrd. Size In.	Lgth. Coach Screw In.	Price Each
½	⅛	3½	$.15	3½	⅜	5	$.50
¾	⅛	3½	.18	4	⅜	5	.60
1	⅛	3½	.18	5	½	5	.70
1¼	¼	3½	.20	6	½	5	.90
1½	¼	3½	.22	8	½	5	1.40
2	¼	3½	.25	...	..	..	....
2½	¼	3½	.30	..	..	..	....
3	¼	3½	.35	..	..	..	....

No. 104 Grinnell Pipe Hangers

Split Adjustable Swivel Ring—Malleable Iron



This ring can be used with coach screw rod or with machine threaded rod in connection with practically any type of ceiling flange expansion case, insert, etc.

The unusual feature of this ring is the swivel shank allowing an adjustment of about 2 inches by simply turning the nut on the shank to the left or right. The hinging of the ring is somewhat off center, which provides sufficient seating to hold the pipe before closing the ring. A wedge type pin is loosely but inseparably cast into hinged section for fastening this section after pipe is in place.

Size In.	Rod In.	Price Each	Size In.	Rod In.	Price Each	Size In.	Rod In.	Price Each
¾	⅜	$.18	2	⅜	$.24	4	⅝	$.56
1	⅜	.20	2½	½	.34	5	⅝	.70
1¼	⅜	.21	3	½	.42	6	¾	1.08
1½	⅜	.22	3½	½	.44	8	⅞	1.92

No. 106 Grinnell Adjustable Clips

Malleable Iron

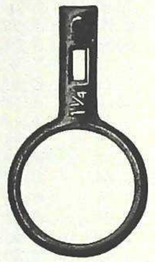


The adjustable clip ring allows about 1½-inch adjustment, which adjustment can easily be made after pipe is installed. Hanger made in sizes ¾ to 2 inches only. Rods furnished with 2½-inch machine thread. Two holes for No. 18 screws in each base.

Size Pipe In.	Square Head Hanger Rod Inches Diam.	Square Head Hanger Rod Inches Length	Nominal Distances Ceiling to Pipe Center In.	Price Each
¾	⅜	6¼	8 – 9⅝	$.18
1	⅜	6¾	8½–10⅛	.20
1¼	⅜	6¾	8¾–10⅜	.22
1½	⅜	7	9 –10⅝	.25
2	⅜	7¼	9½–11⅛	.28

No. 105 Grinnell Adjustable Clip Rings

Malleable Iron



Long shank permits about 1½-inch adjustment and because of its strength and light weight, it is one of the best pipe rings on the market today.

Pipe Size Inches	Size Rod Inches	Length Shank Inches	Inside Diameter of Ring Inches	Price Each
¾	⅜	2	1⅜	$.10
1	⅜	2	1⅞	.115
1¼	⅜	2	1⅛	.125
1½	⅜	2	2⅛	.16
2	⅜	2	2⅝	.20

Grinnell Split Pipe Rings

With Socket
Malleable Iron

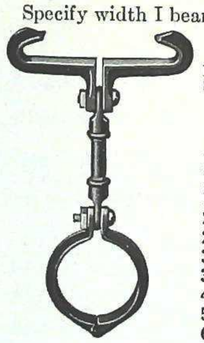


Pipe Size Inches	No. 107 Pipe Thread Center of Ring to Top of Socket, In.	No. 107 Pipe Thread Price Each	No. 107R Rod Thread Center of Ring to Top of Socket, In.	No. 107R Rod Thread Price Each
½	2⅜	$.10	2⅜	$.10
¾	2⅜	.12	2⅜	.12
1	2½	.12	2½	.12
1¼	3⅜	.14	2⅜	.14
1½	3⅜	.16	2⅝	.16
2	3⅜	.18	3⅜	.18
2½	3⅝	.22	3⅝	.22
3	4⅜	.28	4⅜	.28
3½	4¾	.43	4¾	.43
4	5⅛	.53	5⅞	.53
5	6⅜	.63	6⅜	.63
6	7⅝	.82	7½	.82
8	8⅜	1.32	8⅜	1.32

Grinnell I Beam Hangers

Malleable Iron

Specify width I beam and space between halves of clamp.



Pipe Size In.	No. 132 Pipe Threaded Tapped for Pipe, In.	No. 132 Pipe Threaded Price Each	No. 132R Rod Threaded Tapped for Rod, In.	No. 132R Rod Threaded Price Each
½	⅛	$.55	⅜	$.55
¾	⅛	.55	⅜	.55
1	⅛	.58	⅜	.58
1¼	¼	.60	⅜	.60
1½	¼	.62	⅜	.62
2	¼	.65	⅜	.65
2½	¼	.70	½	.70
3	¼	.75	½	.75
3½	⅜	.90	½	.90
4	⅜	1.00	⅝	1.00
5	½	1.10	⅝	1.10
6	½	1.30	¾	1.30

Hy-Tech Products

No. 102 Grinnell Adjustable Swivel Rings

Malleable Iron

With Machine Thread Hanger Rod, U. S. Expansion Case and Spring Ceiling Plate



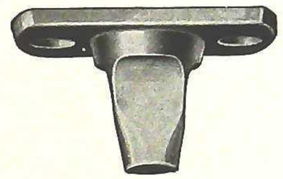
This hanger can be used to advantage on practically all kinds of piping installation work where it is necessary to hang piping from concrete ceilings.

No set screws are necessary with this ceiling plate, the patented spring clip feature holding it firmly in place after installation. For rods other than 8 inches order parts separately. For other sizes of pipe, order adjustable swivel ring, rod, expansion case and spring ceiling plate separately. The adjustable swivel ring, split ring type, No. 104, can be used with expansion case, spring ceiling plate and rod, but the various parts must be ordered separately.

Pipe Size In.	Rod, In. Diam.	Rod, In. Length	Price Each	Pipe Size In.	Rod, In. Diam.	Rod, In. Length	Price Each
¾	⅜	8	$.46	1½	⅜	8	$.52
1	⅜	8	.48	2	⅜	8	.54
1¼	⅜	8	.50	...	..	.	...

No. 116 Grinnell Adjustable Clip Bases

Malleable Iron



Tapered formation allowing various size bolt heads used. Two holes for No. 18 screws in each base.
Price, Size, ⅜ In. each $.10

No. 138 Grinnell Extension Split Rings

Sizes ⅜ to 2 inches, tapped for ¼-inch pipe size; 2½ to 4 inches, ½ inch; 5, 6 inches, ¾ inch.

Pipe Size, In.	⅜	½	¾	1	1¼	1½
Plain, ea.	$.15	$.15	$.18	$.22	$.27	$.35
Galv. ea.	.17	.17	.20	.25	.30	.40
Pipe Size, In.	2	2½	3	4	5	6
Plain, ea.	$.40	$.45	$.50	$.65	$1.00	$1.50
Galv. ea.	.50	.60	.65	.80	1.50	2.00



No. 232 Grinnell Pear Shape Rings

Malleable Iron



Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
¾	$.10	2	$.20	4	$.50
1	.13	2½	.23	5	.60
1¼	.15	3	.25	6	.75
1½	.18	3½	.40	..	...

No. 733 Adjustable Steel Pipe Hangers



Size In.	Each	Size In.	Each	Size In.	Each
½	$.08	2	$.14	4½	$.30
¾	.08	2½	.16	5	...
1	.09	3	.18	6	...
1¼	.10	3½	.20	...	...
1½	.12	4	.25	...	...

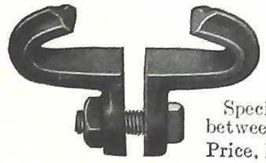
No. 734 Extension Bars



No.	Width In.	Per Foot	No.	Width In.	Per Foot
10	¾	$.08	14	1⅛	$.12
11	⅞	.09	15	1¼	...
13	1	.11	...	...	...

No. 131 Grinnell I-Beam Clamps

Malleable Iron



Can be used with socket or eye bolt. Made to fit I-beams with flanges 2, 2½, 3, 3½, 4, 4½, 5, 5½ or 6 inches. Specify width of I-beam and space between halves of clamp.

Price, No. 131..... each $.40

No. 310 Solid Ring Pipe Hangers



Size In.	Price, per 100 Blk.	Price, per 100 Galv.	Size In.	Price, per 100 Blk.	Price, per 100 Galv.
⅜	$5.00	$6.50	1¼	$10.00	$12.00
½	5.00	6.50	1½	14.00	16.00
¾	5.80	7.00	2	22.00	25.00
1	7.75	9.00	...	.....	.....

Split Ring Swivel Base Pipe Hangers



Galvanized

Size Inches	Price per 100	Size Inches	Price per 100
⅜	$17.00	¾	$20.00
½	17.00	1	25.00

No. 302 Split Ring Extension Pipe Hangers



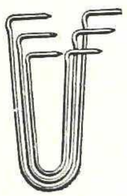
Size In.	Price, Each With Nipple Blk.	Price, Each With Nipple Galv.	Price, Each Less Nipple Blk.	Price, Each Less Nipple Galv.	Size In.	Price, Each With Nipple Blk.	Price, Each With Nipple Galv.	Price, Each Less Nipple Blk.	Price, Each Less Nipple Galv.
⅜	$.22	$.25	$.17	$.20	1¼	$.35	$.40	$.30	$.35
½	.22	.25	.17	.20	1½	.40	.50	.35	.45
¾	.27	.30	.22	.25	2	.50	.60	.45	.55
1	.32	.35	.27	.30	2½	.70	.80	.65	.70

Tinned Pipe Straps



Size Inches	Price per Pound	Size Inches	Price per Pound
¼	$.18	1	$.18
⅜	.18	1¼	.18
½	.18	1½	.18
¾	.18	2	.18

Reznor Steel Wire Pipe Hooks

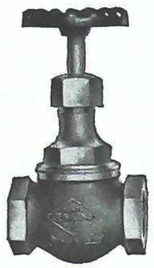


In ordering, always specify the length of hook desired, otherwise the shortest, or standard length, will be shipped.

Pipe Size Inches	Price, per 100 Length, Inches 3	4	6	8	10
⅜	$1.00	$1.15	$1.40	....	....
½	1.10	1.20	1.50	$1.90	....
¾	....	1.30	1.70	2.20	....
1	....	1.50	2.00	2.40	$2.80
1¼	....	1.90	2.50	3.00	3.50
1½	....	....	2.70	3.50	4.00
2	....	....	2.90	4.00	4.50

Jenkins Bronze Globe and Angle Valves

For 150 Pounds Steam Working Pressure, 250 Pounds Water



No. 106, Globe Screwed

Disc holder, made of bronze, fitted with a removable Jenkins composition disc which presents a slightly yielding surface to the valve seat, and is flexible enough to adapt itself to inequalities of seat.



No. 108, Angle Screwed

Size In.	Price Each	Size In.	Price Each
1/8	$1.10	1 1/4	$4.00
1/4	1.10	1 1/2	5.50
3/8	1.25	2	8.75
1/2	1.60	2 1/2	15.75
3/4	2.20	3	22.00
1	2.80	...	.....

No. 110 Jenkins Bronze Cross Valves

For 150 Pounds Steam Working Pressure, 250 Pounds Water



No. 110, Screwed

This valve contains a disc holder, made of bronze or other suitable metal, and a removable disc, made of a softer material, preferably the Jenkins Composition Disc.

Size In.	Price Each	Size In.	Price Each
1/4	$2.25	1 1/4	$6.25
3/8	2.65	1 1/2	8.20
1/2	2.95	2	12.50
3/4	3.30	2 1/2	26.25
1	4.25	3	36.00

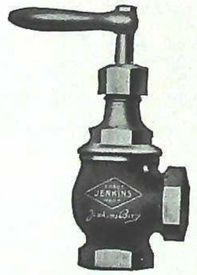
Jenkins Bronze Globe and Angle Valves

Quick-opening

For 150 Pounds Steam Working Pressure



No. 241, Globe



No. 243, Angle

The quick-opening valve is made from the same pattern and is the same design as the standard Jenkins Globe and Angle Valves, with the exception of the spindles and bonnets which are quadruple threaded with a thread of coarse pitch. This enables the valve to be opened full with about a quarter the usual number of turns.

Ordinarily the valve is fitted with a lever handle, but can be furnished with a hand wheel if desired.

In ordering, specify the service for which the valve is desired. For cold water a soft disc is required, while for steam, the regular hard Jenkins Composition should be used.

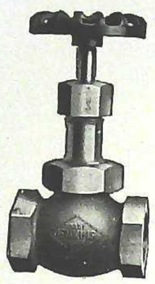
Size Inches	No. of Turns To Open: Globe	No. of Turns To Open: Angle	Screwed, Price, Each: No. 241 Globe	Screwed, Price, Each: No. 243 Angle
1/2	7/8	1 1/4	$3.00	$3.00
3/4	7/8	1 1/4	3.60	3.60
1	1	1 1/2	4.50	4.50
1 1/4	1 1/8	2	6.20	6.20
1 1/2	1 1/2	2 1/4	8.20	8.20
2	1 3/4	2 1/4	12.00	12.00

Also made in extra heavy pattern. Prices upon application.

Jenkins Bronze Globe and Angle Marine Valves

Malleable Iron Non-heat Wheel—Union Bonnet

For 225 Pounds Steam Working Pressure



No. 750, Globe, Screwed



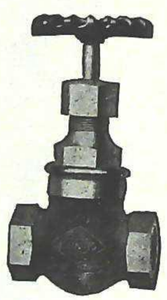
No. 752, Angle, Screwed

Jenkins Marine Valves are designed to supply the demand for a high-grade regrinding valve.

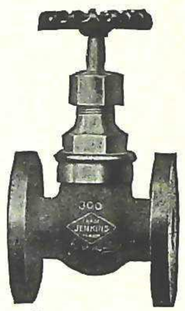
Size Inches	Face to Face Flanged Inches	Center to Face Flanged Inches	Diameter Flanges Inches	Price, Each: No. 750 Globe No. 752 Angle Screwed	Price, Each: No. 751 Globe No. 753 Angle Flanged
1/4	3 1/4	2 3/32	3	$1.05	.....
3/8	3 3/8	2 3/32	3	1.30	$4.20
1/2	3 7/8	2 9/32	3 1/2	1.75	5.10
3/4	4 1/2	2 9/16	4	2.20	7.05
1	4 3/4	2 7/8	4 1/2	3.00	8.70
1 1/4	5 1/4	3 5/32	5	4.20	12.00
1 1/2	6 5/8	3 11/16	6	5.85	16.50
2	7 3/8	4	6 1/2	9.30	21.75
2 1/2	8 9/16	4 9/16	7 1/2	18.00	36.00
3	9 7/16	5 7/16	8 1/4	24.75	43.50

Jenkins Bronze Globe and Angle Valves

For 300 Pounds Steam Working Pressure, 500 Pounds Water



No. 128, Globe Screwed



No. 129, Globe Flanged



No. 130, Angle Screwed

These valves are well proportioned, handsomely finished, and have all the most improved features of construction necessary to meet the requirements of up-to-date practice.

The spindles, made of manganese bronze, are large and have powerful threads. The stuffing boxes are fitted with glands or followers, and are so arranged that they can be repacked when valves are wide open and under pressure. Seat rings are removable and can be reground or renewed when necessary.

Size Inches	Price, Each: No. 128, Globe No. 130, Angle Screwed	Price, Each: No. 129, Globe No. 131, Angle Flanged
1/4	$3.00	.....
3/8	3.50	.....
1/2	4.00	$6.00
3/4	5.00	7.50
1	6.50	10.00

Size Inches	Price, Each: No. 128, Globe No. 130, Angle Screwed	Price, Each: No. 129, Globe No. 131, Angle Flanged
1 1/4	$8.25	$13.00
1 1/2	11.00	17.00
2	16.00	24.00
2 1/2	33.00	43.00
3	45.00	57.00

Hy-Tech Products

Jenkins Discs



Square Hole Disc



Round Hole Disc

Jenkins Discs are made of the finest grade of rubber and other ingredients, compounded and vulcanized with such accuracy as to produce practically a uniform product. The various compounds, each best suited for a particular kind of service, are described below.

It will be noted that there is a Jenkins Disc of rubber composition for practically every condition of service found in the average building or factory.

The Jenkins Composition Disc presents a slightly yielding surface to the valve seat, and is flexible enough to adapt itself to the seat, thus insuring perfect contact.

Schedule of Principal Compounds and Service for Which Jenkins Discs Are Guaranteed

No. **30.**—A disc for cold water, air and gas up to 10 pounds pressure. For extremely low pressures in check valves on vacuum lines, this disc will be tight on a fraction of an ounce.

No. **15.**—A disc for cold water, air and gas 10 to 25 pounds pressure. This disc is recommended for use in check valves only for suction lines to pumps and low pressure systems.

No. **946.**—A soft, tough, elastic disc for cold water, air, gas, and oil up to 50 pounds pressure. For check, whistle, safety, Selclo, and rapid action valves, also for globe and angle valves, where but slight effort is required to close them tightly. Also recommended for all classes of cold, wet, and dry vacuum systems. Used exclusively in fire line valves up to 250 pounds.

No. **936.**—A tough, resilient disc for cold water, air and gas 50 to 250 pounds pressure, or hot water, not exceeding 200°, up to 50 pounds pressure. For globe and angle, also check and other self-closing valves. This disc is regularly fitted in all Jenkins check valves, both standard and extra heavy.

No. **110.**—A tough, semi-hard disc for hot water, not exceeding 250°, up to 250 pounds pressure, or cold water 250 to 400 pounds pressure. This disc is regularly used in Jenkins radiator valves. Recommended for check valves, both standard and extra heavy, when intended for boiler feed lines. For steam pressure up to 25 pounds in globe and angle valves. Used in standard pattern Y valves for boiler blow-offs.

No. **80.**—A disc of dark gray composition for steam up to 100 pounds pressure, or hot water not exceeding 300°. Also recommended for hydraulic pressures from 400 to 800 pounds, when used in extra heavy valves. Used in extra heavy Y valves for boiler blow-offs.

No. **119.**—A dark red composition disc which is sufficiently resilient in service under steam pressure. For saturated (wet) steam 150 pounds pressure, not exceeding 366°. For globe, angle, cross, Selclo, and safety valves.

No. **1106.**—A disc for oil, not exceeding 150°, up to 200 pounds pressure. For globe, angle, and check valves.

No. **806.**—A hard disc for oil, not exceeding 150°, for pressures up to 300 pounds. For globe, angle, and check valves.

Price List

Size Inches	Price, Each: No. 101 Square Hole	Price, Each: No. 223 Round Hole	Size Inches	Price, Ea. No. 223 Round Hole	Size Inches	Price, Ea. No. 223 Round Hole
1/4	...	$.06	3	$.80	10	$4.50
3/8	...	.08	3 1/2	1.00	12	5.00
1/2	...	.08	4	1.20	14	7.00
3/4	$.10	.10	4 1/2	1.40	16	8.00
1	.12	.12	5	1.60	18	10.00
1 1/4	.18	.18	6	2.00	20	12.00
1 1/2	.24	.24	7	2.40	22	15.00
2	.36	.36	8	2.80	24	18.00
2 1/2	...	.48	9	3.60	..	.....

Special Discs for Jenkins Valves

Interchangeable with regular Jenkins composition discs.

No. 800, Fig. 616 Discs

A special composition suitable for high pressure saturated steam, and superheated steam under pressure between 150 to 250 pounds and temperatures up to 600°. Also recommended for extremely hot water and hot oil service.

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/4	$.25	1	$.50	2 1/2	$1.70	4 1/2	$4.35	8	$8.80
3/8	.35	1 1/4	.70	3	2.65	5	5.10	.	....
1/2	.35	1 1/2	.85	3 1/2	2.95	6	6.45	.	....
3/4	.40	2	1.30	4	3.75	7	7.70	.	....

Fig. 269 Steam Metal Discs

Made of bronze, same composition as the body metal used for regular Jenkins valves. Suitable for saturated steam at high pressure or temperatures not exceeding 500° up to 300 pounds pressure. Regularly used in Jenkins extra heavy bronze and iron body, globe, angle and cross valves.

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/4–3/8	$.23	1 1/4	$.45	3	$1.40	5	$3.75	9	$8.50
1/2	.26	1 1/2	.50	3 1/2	2.20	6	4.25	10	9.10
3/4	.32	2	.55	4	2.60	7	6.00	12	11.85
1	.36	2 1/2	1.00	4 1/2	3.25	8	6.50	14	15.90

Fig. 648 White Metal Discs

Frequently used in globe or angle valves for special service. Suitable for pressures up to 150 pounds, temperature not exceeding 365°, in steam, air, gas, water, oil, gasoline and kerosene. Fits tight without grinding in, but rounded seats are recommended for valves in which it is used.

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1/4	$.08	1	$.28	2 1/2	$.90	4 1/2	$3.15	8	$6.30
3/8	.11	1 1/4	.42	3	1.25	5	3.85	9	7.35
1/2	.11	1 1/2	.50	3 1/2	1.95	6	4.55	10	8.75
3/4	.17	2	.65	4	2.60	7	5.60	12	11.25

Fig. 649 Monel Metal Discs

For superheated steam not exceeding 800°, 350 pounds pressure. Prices upon application.

No. 184 Jenkins Composition Valve Wheels



The regular Jenkins radiator and corner valves, and valves formerly listed as wood wheel valves are now being fitted with a wheel made of moulded composition. A bronze square or bushing is moulded in place at the bottom, which fits the square on the valve stem. The rim has a knurled edge which insures a perfect grip. Wheel is nicely finished and polished. For the top of each wheel a nickel-plated washer or plate is supplied, which is held in place by the wheel nut.

Size Valve . . in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Diam. Wheel . . in.	2 3/16	2 3/16	2 1/2	2 3/4	3	3 1/4	3 3/8	3 5/8
Price, Wheel and Plate . . . . . each	$.18	.18	.22	.24	.26	.30	.38	.50

No. 189 Jenkins Wire Valve Wheels



Size Valves Inches	Outside Diameter Wheel Inches	Price Each	Size Valves Inches	Outside Diameter Wheel Inches	Price Each
1/8	1 1/8	$.30	1	2 7/8	$.40
1/4	2 1/8	.30	1 1/4	3 1/4	.45
3/8	2 1/8	.30	1 1/2	3 5/8	.60
1/2	2 3/8	.30	2	4	.80
3/4	2 5/8	.35	2 1/2	4 1/2	1.20

Jenkins Bronze Check Valves

Horizontal, Vertical and Angle

For 150 Pounds Working Pressure



No. 117, Horizontal Screwed — No. 118, Angle Screwed — No. 119, Vertical Screwed

Tightness does not depend on regrinding, for instead of the common metal clapper, these valves contain an accurately guided brass disc holder and a renewable Jenkins Disc.

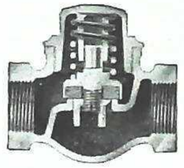
As regularly furnished, all check valves are fitted with a Jenkins No. 936 Disc which will soften slightly under the action of hot water. When ordered for cold water, air or gases, a slightly softer disc is supplied. The Jenkins Discs are specially compounded and will retain their toughness and resiliency indefinitely. When necessary to repair, valves can be made as good as new at small cost by removing cap and renewing disc.

Size Inches	Face to Face Flanged, In. Horiz.	Face to Face Flanged, In. Vert	Center to Face Flanged Inches	Diam. Flanges Inches	Price, Each No. 117, Horiz. No. 118, Angle No. 119, Vert. Screwed	Price, Each No. 120, Horiz. No. 120A, Angle No. 120B, Vert. Flanged
1/8	...	...	...	...	$1.10	.....
1/4	2 7/16	2 7/8	1 15/16	2 1/2	1.10	.....
3/8	3	3 1/16	2 1/16	2 1/2	1.20	.....
1/2	3 1/16	3 7/16	2 1/16	3	1.30	$4.00
3/4	3 5/8	3 13/16	2 3/8	3 1/2	1.90	5.00
1	4	4 3/8	2 5/8	4	2.60	6.00
1 1/4	4 3/8	4 13/16	2 15/16	4 1/2	3.60	8.00
1 1/2	4 7/8	5 1/2	3 5/16	5	5.00	10.00
2	6	6 1/4	3 3/4	6	7.50	15.00
2 1/2	6 3/4	7 3/8	4 1/4	7	14.00	23.00
3	7 1/2	9 1/16	4 9/16	7 1/2	21.00	32.00

No. 655 Jenkins Bronze Check Valves

Horizontal, Screwed

With Spring for Air Compressor Service



When ordering, specify pressure carried and conditions of service, so that valves fitted with disc of proper compound may be furnished.

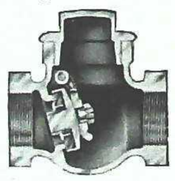
Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
3/8	$2.40	3/4	$3.00	1 1/4	$5.30	2	$10.00
1/2	2.60	1	4.00	1 1/2	7.50	..	.....

No. 352 Jenkins Bronze Swing Check Valves

For 150 Pounds Working Pressure



No. 352, Screwed



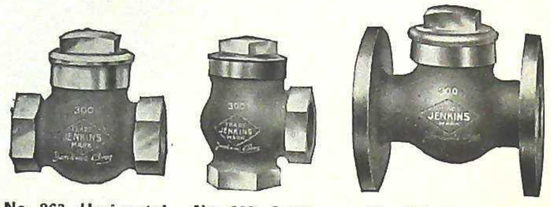
No. 352, Sectional View

Size Inches	Price Each	Size Inches	Price Each
1/4	$1.75	1 1/4	$5.20
3/8	1.75	1 1/2	7.20
1/2	1.90	2	10.75
3/4	2.75	2 1/2	20.25
1	3.75	3	30.25

Jenkins Bronze Check Valves

Horizontal and Angle

For 300 Pounds Working Pressure



No. 263, Horizontal Screwed — No. 132, Angle Screwed — No. 133, Horizontal Flanged

These valves are heavy and sturdy in design, all parts well proportioned, carefully made, tested, and guaranteed as being fully adapted to the service required.

They are regularly fitted with Jenkins No. 110 Disc, a tough semi-hard compound particularly adapted for hot water service. When valves are specified for cold water, a slightly softer disc can be supplied.

Size In.	Price, Each No. 263 Horizontal No. 132 Angle Screwed	Price, Each No. 133 Horizontal No. 133A Angle Flanged	Size In.	Price, Each No. 263 Horizontal No. 132 Angle Screwed	Price, Each No. 133 Horizontal No. 133A Angle Flanged
1/2	$4.50	$7.50	1 1/2	$11.50	$21.00
3/4	5.00	9.50	2	17.00	29.00
1	6.50	12.50	2 1/2	30.00	45.00
1 1/4	8.00	15.00	3	44.00	60.00

Jenkins Bronze Swing Check Valves

For 300 Pounds Working Pressure

Can be used in either horizontal or vertical position.



No. 260, Screwed

Size In.	Price, Each No. 260 Screwed	No. 262 Flanged
1/2	$4.50	$7.50
3/4	5.00	9.50
1	6.50	12.50
1 1/4	8.00	15.00
1 1/2	11.50	21.00
2	17.00	29.00
2 1/2	30.00	45.00
3	44.00	60.00

Williams Light Pattern Brass Needle Valves

For Gas, Gasoline, Oil and Air

Female Ends, Rough Body



No. 567, Globe



No. 571, Angle

Not equipped with removable hub, but the neck extension of body guides the stem properly. Packing nut prevents leakage. Valve can be regulated to as fine an opening as desired. The hexagon connecting ends have been eliminated from body, both sides of which are made flat to permit application of a wrench when connecting valve to the pipe.

Size ..... inches	1/8	1/4	3/8
Diameter of Seat Opening ..... inches	5/64	5/32	3/16
Price, No. 567, Globe, Screw Ends ..... each	$.65	$.75	$.85
Price, No. 571, Angle, Screw Ends ..... each	.65	.75	.85

Hy-Tech Products

Walworth Jenkins Type Brass Globe and Angle Valves

With Ventilated Non-Heating Wheels

For 125 Pounds Steam Working Pressure



No. 3260 Globe Valve

Size In.	Price, Each No. 3260 Globe	No. 3261 Angle	Size In.	Price, Each No. 3260 Globe	No. 3261 Angle
1/4	$1.10	$1.10	1 1/4	$4.00	$4.00
3/8	1.25	1.25	1 1/2	5.50	5.50
1/2	1.60	1.60	2	8.75	8.75
3/4	2.20	2.20	2 1/2	15.75	15.75
1	2.80	2.80	3	22.00	22.00

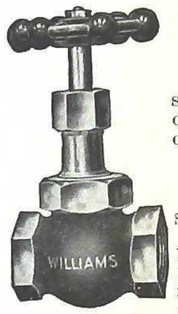
Sizes 3/4-inch and larger can be repacked while under pressure when valve is wide open.

These valves can be furnished with leather disc at special price.

Williams Brass Globe and Angle Valves

Regrinding, Union Bonnet, Inside Screw Stem

For 200 Pounds Steam Working Pressure

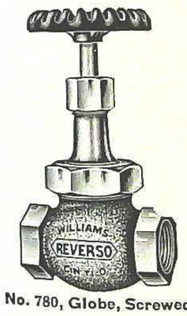


No. 107, Globe Screwed

Hexagon rings regularly furnished on sizes 3-inch and under; on quantity orders, slotted rings supplied without extra charge.

Size In.	Price, Each No. 107 Globe No. 108 Angle Screwed	No. 280 Globe No. 281 Angle Flanged	Size In.	Price, Each No. 107 Globe No. 108 Angle Screwed	No. 280 Globe No. 281 Angle Flanged
1/8	$.70	....	1 1/4	$2.80	$8.00
1/4	.70	....	1 1/2	3.90	11.00
3/8	.85	$2.20	2	6.20	14.50
1/2	1.15	3.40	2 1/2	12.00	21.00
3/4	1.45	4.70	3	16.50	29.00
1	2.00	5.80	...	.....	.....

Williams Reverso Bronze Globe and Angle Valves



No. 780, Globe, Screwed

Nickel Alloy Disc and Seat Reversible Renewable Regrindable

For 200 Pounds Steam Working Pressure



No. 781, Angle, Screwed

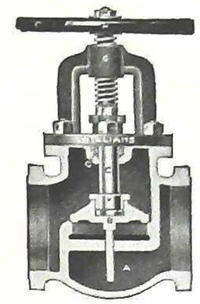
The Reverso Valve, intended for steam, water, oil, air or gas, has a wide range of usefulness which is further increased by the immunity of the Niculanium disc and seat to certain acids and acid contaminated liquids, making it the ideal valve for power, chemical or textile plants, oil refineries, paper mills, steel mills or any of the diversified industrial requirements.

Size Inches	Face to Face Flanged Inches	Face to Face Screwed Inches	Diam. Flanges Inches	Price, Each No. 780, Globe No. 781, Angle Screwed	No. 783, Globe No. 784, Angle Flanged
1/4	...	2 1/8	...	$1.10	....
3/8	3	2 5/16	2 1/2	1.25	$4.00
1/2	3 7/16	2 5/8	3 1/2	1.60	4.00
3/4	4	3 1/4	3 7/8	2.20	5.00
1	4 9/16	3 3/4	4 1/4	2.80	6.00
1 1/4	5 1/16	4 1/4	4 5/8	4.00	9.00
1 1/2	6 1/8	4 3/4	5	5.50	11.00
2	7 1/4	5 3/4	6	8.75	16.50
2 1/2	8	6 5/16	7	15.75	25.00
3	9	7 3/4	7 1/2	22.00	34.00

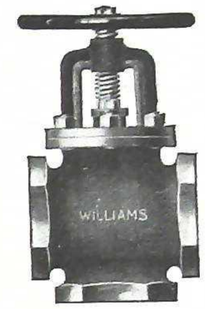
Williams Brass Globe, Angle and Cross Regrinding Stop Valves

Flanged Yoke with Outside Screw Stem, Screw Ends

For Working Pressures Up to 200 Pounds



No. 393, Globe



No. 395, Cross

The yoke has a flange on one end, corresponding in diameter and thickness to the flange on the body, to which it is held by means of steel stud bolts, the size and number of which vary with the size of the valve.

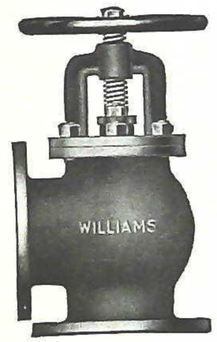
The principal advantage of this style of yoke is that the threads on stem do not come in contact with the steam and are accessible for oiling, thus increasing their durability. This yoke also affords easy access to the interior of valve, and is quickly removed for regrinding when necessary. To repack, simply open the valve to its limit.

Size Inches	No. 393 Globe Each	No. 394 Angle Each	No. 395 Cross Each	Size Inches	No. 393 Globe Each	No. 394 Angle Each	No. 395 Cross Each
1 1/2	$12.00	$12.00	$14.00	4	$47.00	$47.00	$56.00
2	15.50	15.50	18.00	5	75.00	75.00	88.00
2 1/2	18.00	18.00	21.00	6	100.00	100.00	115.00
3	26.00	26.00	31.00	8	205.00	205.00	240.00
3 1/2	37.00	37.00	44.00	...	.....	.....	.....

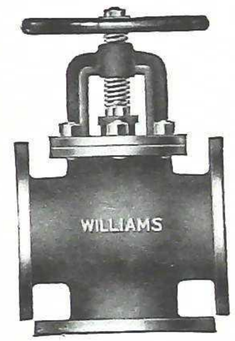
Williams Brass Globe, Angle and Cross Regrinding Stop Valves

Flanged Yoke with Outside Screw Stem, Flange Ends

For Working Pressures up to 200 Pounds



No. 397, Angle



No. 398, Cross

The yoke has a flange on one end of the same diameter and thickness as the flange on the body, to which it is held by steel stud bolts.

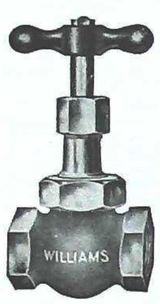
The prices below apply to valves with plain faced flanges, but they can be furnished with male and female, or with companion flanges bolted on, for which a slight additional charge will be made. An extra charge will also be made for valves ordered with British or Navy Standard Flanges, or for plain brass or Navy Standard Wheels.

Size Inches	No. 396 Globe Each	No. 397 Angle Each	No. 398 Cross Each	Size Inches	No. 396 Globe Each	No. 397 Angle Each	No. 398 Cross Each
1 1/2	$13.50	$13.50	$17.50	4	$62.00	$62.00	$73.00
2	17.00	17.00	20.00	5	98.00	98.00	115.00
2 1/2	24.00	24.00	29.00	6	125.00	125.00	150.00
3	34.00	34.00	41.00	8	255.00	255.00	295.00
3 1/2	47.00	47.00	56.00	...	.....	.....	.....

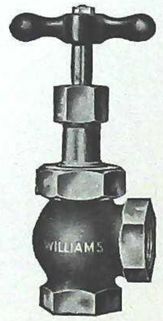
Williams Globe and Angle Regulating Stop Check Valves

Union Bonnet with Inside Screw Stem, Brass, Screw Ends

For Working Pressures up to 200 Pounds



No. 295, Globe



No. 454, Angle

The lift of disc is controlled by a threaded stem, which, when screwed up or down, gives any degree of opening through the valve.

Well adapted for use on boiler feed lines, are easily and quickly reground and can also be easily repacked under pressure, when wide open.

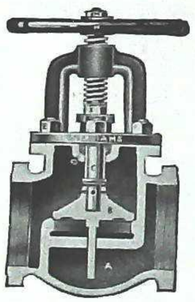
The disc is in no way fixed to the stem, consequently, this valve cannot be opened by hand.

Size Inches	No. 295 Globe Each	No. 454 Angle Each	Size Inches	No. 295 Globe Each	No. 454 Angle Each
1/8	$.70	$.70	1 1/4	$2.80	$2.80
1/4	.70	.70	1 1/2	3.90	3.90
3/8	.85	.85	2	6.20	6.20
1/2	1.15	1.15	2 1/2	12.00	12.00
3/4	1.45	1.45	3	16.50	16.50
1	2.00	2.00	....	....	....

Williams Brass Globe, Angle, and Cross Regulating Stop Check Valves

Flanged Yoke with Outside Screw Stem, Screw Ends

For Working Pressures up to 200 Pounds



No. 233, Globe



No. 234, Cross

The stem operates through a brass flanged yoke, securely held to the body by steel stud bolts. As the threads of the stem do not enter the body, they are not subject to any corrosive influences and being accessible, they can be lubricated occasionally. This style of yoke permits of quick and easy access to the valve body.

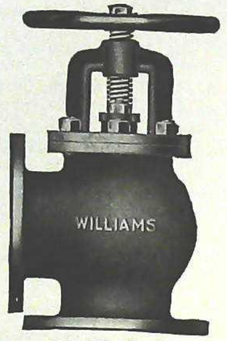
The disc is not attached to the stem, consequently the valve cannot be opened by hand. The lift of the disc can be regulated to any degree of opening. The stem can be easily repacked under pressure when valve is opened to its limit.

Size Inches	No. 233 Globe Each	No. 235 Angle Each	No. 234 Cross Each	Size Inches	No. 233 Globe Each	No. 235 Angle Each	No. 234 Cross Each
1 1/2	$14.30	$14.30	$16.80	4	$59.00	$59.00	$70.00
2	18.30	18.30	20.00	5	93.00	93.00	100.00
2 1/2	22.00	22.00	26.00	6	125.00	125.00	145.00
3	33.00	33.00	39.00	8	255.00	255.00	295.00
3 1/2	45.00	45.00	55.00	...	.....	.....	.....

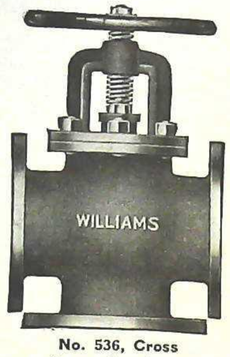
Williams Brass Globe, Angle, and Cross Regulating Stop Check Valves

Flanged Yoke with Outside Screw Stem, Flange Ends

For Working Pressures up to 200 Pounds



No. 535, Angle



No. 536, Cross

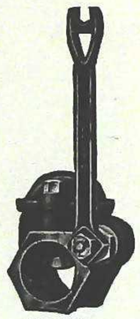
The stem operates through a brass flanged yoke, securely held to the body by steel stud bolts. As the threads of the stem do not enter the body, they are not subject to any corrosive influences.

The flange ends are regularly supplied with plain face, but if desired, they can be furnished at a slightly increased cost with male and female, or with brass or iron companion flanges bolted on. An extra charge will also be made for British or Navy Standard flanges.

Size Inches	No. 534 Globe Each	No. 535 Angle Each	No. 536 Cross Each	Size Inches	No. 534 Globe Each	No. 535 Angle Each	No. 536 Cross Each
1 1/2	$19.50	$19.50	$24.50	4	$76.00	$76.00	$90.00
2	23.50	23.50	28.50	5	115.00	115.00	135.00
2 1/2	34.00	34.00	40.00	6	145.00	145.00	175.00
3	46.00	46.00	55.00	8	290.00	290.00	335.00
3 1/2	62.00	62.00	74.00	...	.....	.....	.....

Williams Brass Lever Throttle Valves

Working Pressure
Medium Pattern, 100 Pounds;
Heavy Pattern, 200 Pounds



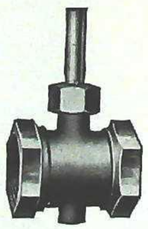
No. 130

Generally used where conditions make necessary the use of a quick-opening valve with an unobstructed, full way opening. Up to and including 1 1/2-inch size heavy pattern valve is furnished with hexagon cap, larger with brass flanged cap.

Size In.	Scrd., Price, Ea. No. 130 Medium Pattern	No. 131 Heavy Pattern	Size In.	Scrd., Price, Ea. No. 130 Medium Pattern	No. 131 Heavy Pattern
1/2	$1.60	....	2	$7.50	$10.00
3/4	1.80	$3.00	2 1/2	13.50	19.00
1	2.50	4.00	3	19.00	29.00
1 1/4	3.50	5.00	3 1/2	40.00	.....
1 1/2	5.00	7.00	4	60.00	.....

Brass Butterfly Valves

For 125 Pounds Steam Working Pressure



No. 822

These valves are not intended to be steam tight.

Size Inches	Price Each	Size Inches	Price Each
3/4	$3.10	2	$10.00
1	4.40	2 1/2	13.75
1 1/4	5.65	3	21.00
1 1/2	6.75	...	.....

Always specify brass butterfly valves if brass is required, otherwise sizes 2 inch and larger will be furnished in iron body.

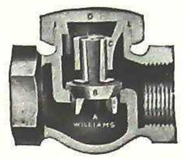
Hy-Tech Products

Williams Brass Check Valves

Horizontal, Vertical and Angle Regrinding

For 300 Pounds Steam Working Pressure

Size In.	Price, Each No. 113, Hor. No. 321, Angle No. 322, Vert. Screwed	No. 225, Hor. No. 287, Angle No. 286, Vert. Flanged
1/4	$.70	.....
3/8	.70	$2.20
1/2	1.00	3.70
3/4	1.70	5.20
1	2.80	6.80
1 1/4	3.90	9.40
1 1/2	5.50	12.70
2	8.90	18.10
2 1/2	16.20	29.00
3	24.30	39.10



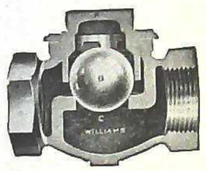
No. 113, Horizontal Screwed

Williams' Brass Ball Check Valves

Horizontal, Angle and Vertical

For 200 Pounds Working Pressure

Intended for steam and water service only. Made of a hard bronze composition and is unusually durable.



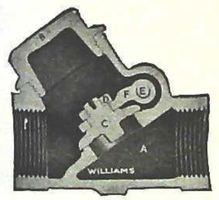
No. 116

Size In.	Diam. Ball In.	Price, Each No. 116, Hor. 439, Angle 440, Vert.	No. 525, Hor. with Drain Cock, Each
1/8	3/8	$.85	....
1/4	1/2	.95	.....
3/8	1/2	1.10	$1.50
1/2	11/16	1.60	2.00
3/4	1	2.30	2.70
1	1 1/4	3.10	3.50
1 1/4	1 1/2	4.00	4.40
1 1/2	1 3/4	6.20	6.60
2	2 1/4	9.40	9.80
2 1/2	2 3/4	18.00	18.50
3	3 1/4	25.00	25.50

Williams Brass Swing Check Valves

Regrinding

For 200 Pounds Steam Working Pressure



No. 254, Screwed

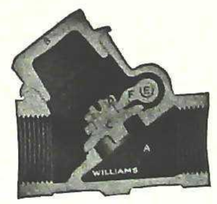
Size In.	Price, Each No. 254 Screwed	No. 296 Flanged
1/4	$1.25	.....
3/8	1.25	$2.60
1/2	1.30	2.90
3/4	1.75	3.60
1	2.25	4.90
1 1/4	3.25	7.20
1 1/2	4.25	9.20
2	6.25	12.30
2 1/2	11.50	18.50
3	16.00	26.80

Williams Brass Swing Check Valves

Regrinding

For 300 Pounds Steam Working Pressure

Size In.	Price, Each No. 324 Screwed	No. 325 Flanged
1/4	$2.00	.....
3/8	2.10	$3.40
1/2	2.20	4.00
3/4	2.90	4.90
1	4.00	6.60
1 1/4	5.60	9.50
1 1/2	7.50	12.50
2	11.00	16.80
2 1/2	18.30	25.30
3	28.30	37.00



No. 324, Screwed

Fairbanks Bronze Globe and Angle Valves

Renewable Vulcabeston Ring Disc—Follower Gland

For 300 Pounds Hydraulic Test Pressure;
150 Pounds Steam Working Pressure; 200 Pounds Water



No. 01, Globe, Screwed,



No. 03, Angle, Screwed

The stuffing box is packed with a specially moulded asbestos ring, which is durable and cannot be blown or washed out. The packing ring is held in place by a follower gland, except in the 1/4 and 3/8-inch sizes.

Valves can be packed under pressure, when wide open.

Size Inches	End to End Screwed Inches	Face to Face Flanged Inches	Center to Face Screwed Inches	Center to Face Flanged Inches	Diameter Flanges Inches	Price, Each No. 01, Globe No. 03, Angle Screwed	No. 02, Globe No. 04, Angle Flanged
1/8	1 9/16	...	...	...	...	$1.10	.....
1/4	1 9/16	...	15/16	...	...	1.10	.....
3/8	2	...	1 1/32	...	...	1.25	.....
1/2	2 3/4	2 7/8	1 7/16	2 1/4	3	1.60	$4.00
3/4	3 3/16	3 1/4	1 11/16	2 5/8	3 1/2	2.20	5.00
1	3 11/16	3 13/16	1 15/16	3	4	2.80	6.00
1 1/4	4 1/4	4 3/8	2 3/16	3 1/4	4 1/2	4.00	9.00
1 1/2	4 13/16	4 13/16	2 3/8	3 5/8	5	5.50	11.00
2	5 15/16	6	2 15/16	4 1/16	6	8.75	16.50
2 1/2	6 7/16	6 7/16	3 1/4	4 3/16	7	15.75	25.00
3	7 5/16	7 1/16	3 7/8	5 1/16	7 1/2	22.00	34.00

Fairbanks Valve Discs



No. 019



No. 021

No. 019 is a vulcabeston ring with bronze holder.

No. 021 is a special metal ring with bronze holder.

Size Inches	Price, Each No. 019	No. 021	Size Inches	Price, Each No. 019	No. 021
1/8	$.21	....	1 1/4	$.38	$.56
1/4	.21	$.29	1 1/2	.51	.80
3/8	.16	.29	2	.70	1.07
1/2	.19	.29	2 1/2	1.20	1.63
3/4	.23	.36	3	1.61	2.32
1	.28	.45	...	....	....

O. I. C. Valve Discs

For Working Pressures: 300 Pounds Steam; 550° Fahrenheit; 1000 Pounds Hydraulic



Not affected by oils, acids or alkalies. Guaranteed to give results under the most exacting conditions, whether on high or low pressure.

Size In.	Price, Each Composition Disc	Steam Metal Disc	Size In.	Price, Each Composition Disc	Steam Metal Disc	Size In.	Price, Each Composition Disc	Steam Metal Disc
1/8	$.06	....	1 1/2	$.24	$.30	5	$1.60	$2.30
1/4	.06	$.14	2	.36	.34	6	2.00	2.60
3/8	.08	.14	2 1/2	.48	.60	7	2.40	3.70
1/2	.08	.16	3	.80	.85	8	2.80	4.00
3/4	.10	.20	3 1/2	1.00	1.35	10	4.50	5.60
1	.12	.22	4	1.20	1.60	12	5.00	7.30
1 1/4	.18	.28	4 1/2	1.40	2.00	..	....	....

Jenkins Bronze Gate Valves

Inside Screw, Stationary Spindle

For 125 Steam Working Pressure; 175 Pounds Water



No. 370, Screwed

This valve has gland stuffing box. Fitted with malleable iron, non-heat hand wheel.

Size Inches	Face to Face Flanged Inches	Diameter Flanges Inches	Price Each No. 370 Screwed	No. 371 Flanged
¼	...	...	$1.45	.....
⅜	...	...	1.45	.....
½	...	...	1.65	.....
¾	3 3/8	3½	2.05	$9.00
1	3 15/16	4	2.80	10.25
1¼	4½	4½	3.70	12.00
1½	4 7/8	5	5.00	15.00
2	5¾	6	7.30	25.00
2½	6½	7	13.00	33.00
3	7⅜	7½	19.00	39.00

Jenkins Bronze Gate Valves

Inside Screw, Stationary Spindle

For 175 Pounds Steam Working Pressure, 250 Pounds Water



Spindles of manganese bronze. Gland stuffing box can be repacked when valve is wide open and under pressure.

Size In.	Face to Face Flanged Inches	Diameter Flanges Inches	Price, Each No. 270 Screwed	No. 271 Flanged
¼	3¼	3	$2.35	.....
⅜	3¼	3	2.35	.....
½	3¼	3½	2.75	.....
¾	3 11/16	4	3.25	$10.25
1	4¼	4½	4.50	12.50
1¼	4¾	5	6.00	16.25
1½	5 1/16	6	8.00	21.50
2	6	6½	13.00	31.00
2½	6 13/16	7½	20.00	45.00
3	8½	8¼	32.50	67.50

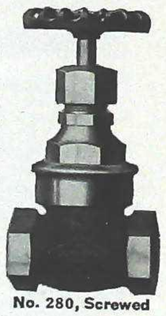
Jenkins Bronze Gate Valves

Inside Screw, Stationary Spindle

For 250 Pounds Steam Working Pressure; 400 Pounds Water

The spindle of this valve is manganese bronze.

It is fitted with malleable iron, non-heat hand wheel.

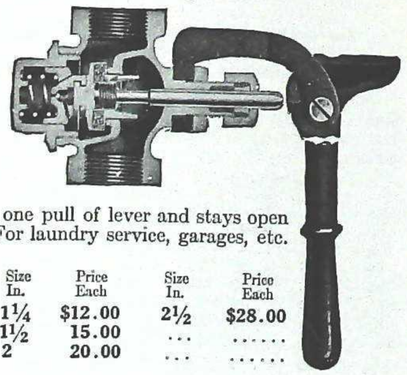


No. 280, Screwed

Size Inches	Face to Face Flanged Inches	Diameter Flanges Inches	Price, Each No. 280 Screwed	No. 281 Flanged
½	3 5/16	3½	$5.00	$9.00
¾	4 1/16	4	6.00	13.00
1	5	4½	8.00	16.00
1¼	5½	5	11.25	21.50
1½	6	6	16.50	30.00
2	7⅛	6½	23.00	41.00
2½	8⅛	7½	40.00	65.00
3	9	8¼	65.00	100.00

No. 720 Jenkins Bronze Rapid Action Valves

Renewable Composition Disc



Bronze spindle with hardened steel tip, steel yoke, malleable iron lever with cam hardened. Opens full with one pull of lever and stays open automatically. For laundry service, garages, etc.

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
½	$7.00	1¼	$12.00	2½	$28.00
¾	9.00	1½	15.00	...	.....
1	10.00	2	20.00	...	.....

Fairbanks Bronze Gate Valves

Solid Wedge Pattern, Renewable Bronze Seat Rings, Cage Construction, Follower Gland

For 300 Pounds Hydraulic Test Pressure, 150 Pounds Steam Working Pressure, 200 Pounds Water Working Pressure



No. 0201, Stationary Spindle, Screwed



No. 0203, Rising Spindle, Screwed

Size Inches	Face to Face Flanged Inches	Diam. Flanges Inches	End to End Screw End Inches	Price, Each Stationary Spindle No. 0201 Screwed	Stationary Spindle No. 0202 Flanged	Rising Spindle No. 0203 Screwed	Rising Spindle No. 0204 Flanged
½	3¼	3	2½	$1.65	.....	$4.25	.....
¾	3 1/16	3½	2 5/16	2.20	.....	5.00	.....
1	4¼	4	3⅜	2.80	$7.50	5.80	$10.50
1¼	4¾	4½	3 13/16	4.00	9.35	7.50	13.00
1½	5 1/16	5	4¼	5.30	14.00	9.00	17.75
2	6	6	5⅛	7.80	16.00	12.50	20.50
2½	6 13/16	7	5¾	17.00	26.50	.....	.....
3	8⅛	7½	6½	23.00	35.75	.....	.....

No. 0205 Fairbanks Bronze Gate Valves

Solid Wedge Pattern, with Gland

For 300 Pounds Hydraulic Test Pressure, 125 Pounds Steam Working Pressure, 175 Pounds Water Working Pressure

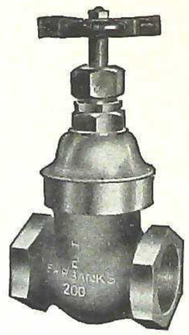


Size In.	No. 0205 Screwed Price Each	Size In.	No. 0205 Screwed Price Each
¼	$1.45	1¼	$3.70
⅜	1.45	1½	5.00
½	1.65	2	7.30
¾	2.05	2½	13.00
1	2.80	3	19.00

No. 0206 Fairbanks Bronze Gate Valves

Heavy Solid Wedge Pattern, with Gland

For 450 Pounds Hydraulic Test Pressure 200 Pounds Steam Working Pressure 300 Pounds Water Working Pressure



Size In.	No. 0206 Screwed Price Each	Size In.	No. 0206 Screwed Price Each
¼	$2.35	1	$4.50
⅜	2.35	1¼	6.00
½	2.75	1½	8.00
¾	3.25	2	13.00

Hy-Tech Products

No. 0208 Fairbanks Bronze Gate Valves

Extra Heavy Type Solid Wedge Pattern, with Gland

For 800 Pounds Hydraulic Test Pressure, 250 Pounds Steam Working Pressure, 350 Pounds Water Working Pressure



Size In.	No. 0208 Screwed Price Each	Size In.	No. 0208 Screwed Price Each
½	$5.00	1¼	$11.25
¾	6.00	1½	16.50
1	8.00	2	23.00

No. 27W Kennedy Bronze Gate Valves

With Waste Drip for Use As Service Valves

Solid Wedge Disc Stationary Stem

For 175 Pounds Water Working Pressure



Furnished also with outside rising stem and with T wrench heads instead of wheels when so specified.

British standard or Whitworth threads when required.

Sizes over 2-inch, prices on application.

Size Inches	Face to Face Inches	No. 27W Screwed Price, Ea.
½	2	$1.65
¾	2 1/4	2.05
1	2 3/4	2.80
1¼	3 1/16	3.70
1½	3 1/8	5.00
2	3 5/8	7.30

Kennedy Bronze Gate Valves

Quick Opening, Sliding Stem and Lever, Solid Wedge Disc

For Working Pressures: 125 Pounds Steam; 175 Pounds Water

Operated by a single movement of lever. Disc can be locked in any position by wheel screw.



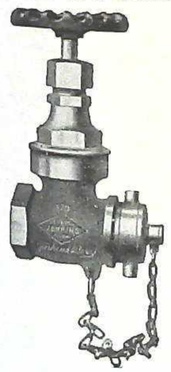
No. 36, Screwed

Size In.	Face to Face Flanged Inches	Diam. Flanges Inches	Price, Each No. 36 Screwed	No. 361 Flanged
½	2½	3	$3.50	.....
¾	3	3½	3.60	.....
1	3¼	4	4.80	$12.50
1¼	3½	4½	6.20	14.50
1½	4	5	8.50	18.50
2	4¾	6	11.80	29.50
2½	5½	7	20.25	40.00
3	6	7½	30.00	50.00

No. 374 Jenkins Bronze Hose Gate Valves

Screwed Inlet, Threaded on Outlet for Hose Connection With Cap and Chain

For 175 Pounds Working Water Pressure



Size In.	*Rough Body Fin. Trimmings	Rough Body Fin. Trimmings	Fin. All Over	Rough Body N.P. All Over	Fin. and N. P. All Over
	Price, Each				
¾	$3.95	$5.20	$6.70	$5.70	$7.20
1	5.10	6.95	8.65	7.55	9.25
1¼	6.70	8.85	11.10	9.65	11.80
1½	8.85	11.45	14.45	12.25	15.25
2	12.60	15.90	20.90	16.90	21.90
2½	20.00	23.70	31.00	24.95	32.25
3	29.50	34.80	45.50	36.50	47.25

*Iron wheel. All others have bronze wheel.

Jenkins Bronze Hose Globe and Angle Valves

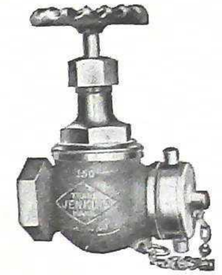
With Cap and Chain

Screwed Inlet, Outlet Threaded for Hose Connection

For 250 Pounds Water Working Pressure



No. 114, Angle, Screwed



No. 114A, Globe, Screwed

Valves are fitted with Jenkins Discs of pliable rubber composition specially adapted for cold water service, ensuring tightness under pressure, and freedom from corrosion, or sticking at the seat.

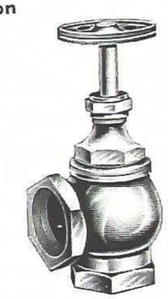
No. 11 has rough body, finished trimming, and iron wheel. No. 12 has rough body, finished trimming and bronze wheel. No. 13 is finished all over, with bronze wheel. No. 14 has rough body, nickel-plated all over, and bronze wheel. No. 15 is finished and nickel-plated all over, with bronze wheel.

Size Inches	Price, Each, Globe or Angle No. 11	No. 12	No. 13	No. 14	No. 15
¾	$4.50	$5.15	$5.55	$6.00	$6.40
1	5.50	6.25	6.65	7.00	7.40
1¼	7.00	7.80	8.20	8.70	9.00
1½	9.50	10.50	10.90	11.70	12.00
2	15.00	16.50	15.90	16.80	17.20
2½	22.00	24.80	25.40	27.50	28.00
3	30.00	32.80	33.40	36.50	37.50

No. 171 New York Pattern Brass Hose Valves

Female Hose Connection

For 100 pound pressure. Has a full waterway and a renewable soft rubber disc. For use in connection with standpipes for interior fire protection, especially on wet systems where the pressure is on the valve at all times.



Finished Brass

Rough Body, Finished Trimmings Iron Wheel Handle

Size In.	Price, Each Plain	N. P.	Size In.	Price, Each Plain	N. P.
1¼	$4.00	$4.50	2	$7.00	$7.50
1½	5.00	5.50	2½	9.00	9.50

Finished Body, Finished Brass Hand Wheel

1¼	$5.50	$6.00	2	$8.50	$9.00
1½	6.50	7.00	2½	10.50	11.00

Brass Garden Hose Faucets



No. 819, Angle Opening

Size In.	Price, Each Straight Opening	Angle Opening
½	$1.65	$1.65
¾	1.65	1.65
1	2.20	2.20
1¼	3.40	3.40
1½	4.75	4.75
2	7.00	7.00
2½	15.00	15.00

Furnished with Chicago hose thread. California or iron pipe thread furnished at regular prices.

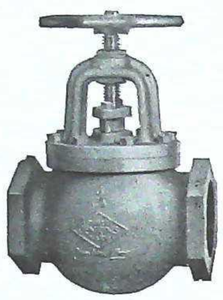
Other styles extra.

When ordering, specify thread required.

Jenkins Iron Body Globe and Angle Valves

With Yoke, Bronze Mounted

For Working Pressures: 150 Pounds Steam; 250 Pounds Water



No. 141, Globe, Screwed



No. 144, Angle, Flanged

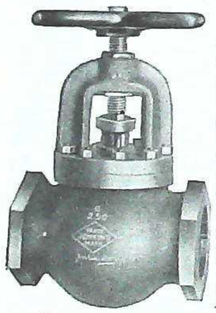
The yokes of these valves are wide, giving easy access to the stuffing boxes which can be packed under full pressure when the valves are wide open.

Size Inches	Face to Face Inches Screwed	Face to Face Inches Flanged	Center to Face Inches Screwed	Center to Face Inches Flanged	Diameter Flanges Inches	Price, Each No. 141 Globe No. 143 Angle Screwed	Price, Each No. 142 Globe No. 144 Angle Flanged
2	6½	7⅛	3½	3⅞	6	$10.00	$11.75
2½	7¾	8	3⅞	4½	7	12.00	14.00
3	9⅜	9¼	4 11/16	4⅝	7½	16.75	18.50
3½	10	10	5	5⅜	8½	19.50	21.50
4	12	11¾	6	5⅞	9	24.00	26.00
4½	12⅝	12½	6 5/16	6¼	9¼	32.00	34.00
5	13¼	13⅛	6⅝	6½	10	40.00	42.00
6	16	16	8	8	11	48.00	50.00
7	16½	16¼	8¼	8	12½	80.00	80.00
8	18¾	18½	9⅜	9¼	13½	90.00	90.00
9	20	20	10	10	15	121.00	121.00
10	21½	21¼	10¾	10 5/8	16	130.00	130.00
12	25¾	24½	12⅞	12¼	19	185.00	185.00

Jenkins Iron Body Globe and Angle Valves

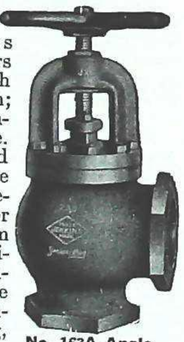
With Yoke, Composition Mounted

For Working Pressures: 250 Pounds Steam; 400 Pounds Water



No. 162A Globe, Screwed

Bodies, yokes and disc holders are made of high grade cast iron; spindles, of manganese bronze. The discs and seat rings can be reground or renewed. Made for maximum strength and rigidity. Will withstand strains due to expansion, contraction of piping, etc.



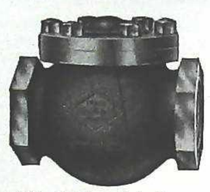
No. 163A Angle, Screwed

Size In.	Face to Face Inches Screwed	Face to Face Inches Flanged	Center to Face Inches Screwed	Center to Face Inches Flanged	Diam. Flanges In.	Price, Each No. 162A Globe No. 163A Angle Screwed	Price, Each No. 162 Globe No. 163 Angle Flanged
2	7¾	9	3⅞	4½	6½	$26.00	$29.00
2½	9	10	4½	5	7½	31.00	34.00
3	10¼	11¾	5⅛	5⅞	8¼	39.00	42.00
3½	11½	12½	5¾	6¼	9	45.00	48.00
4	12¾	13¾	6⅜	6⅞	10	61.00	64.00
4½	14	14½	7	7¼	10½	70.00	73.00
5	15	15½	7½	7¾	11	84.00	88.00
6	17	17	8½	8½	12½	111.00	116.00
7	18	18½	9	9¼	14	159.00	159.00
8	19½	20	9¾	10	15	175.00	175.00
9	21	21¼	10½	10⅝	16¼	262.00	262.00
10	23	23	11½	11½	17½	286.00	286.00
12	26	26	13	13	20½	365.00	365.00

Jenkins Iron Body Check Valves

Horizontal, Angle and Vertical

For 150 Pounds Working Pressure



No. 151, Horizontal, Screwed



No. 152, Angle, Screwed

Size In.	Face to Face Inches Screwed	Face to Face Inches Flanged	Center to Face Inches Screwed	Center to Face Inches Flanged	Diam. Flange In.	Price, Each No. 151, Horiz. No. 152, Angle No. 152A, Vert. Screwed	Price, Each No. 153, Horiz. No. 153A, Angle No. 153B, Vert. Flanged
2	6½	7⅛	3½	3⅞	6	$10.00	$12.50
2½	7¾	7½	3⅞	4½	7	13.75	16.25
3	9⅜	9¼	4 11/16	4⅝	7½	17.50	20.75
3½	10	10	5	5⅜	8½	21.25	25.00
4	12	11¾	6	5⅞	9	25.00	28.75
4½	12⅝	12½	6 5/16	6¼	9¼	31.25	35.00
5	13¼	13⅛	6⅝	6½	10	37.50	41.25
6	16	16	8	8	11	50.00	54.00
7	16½	16¼	8¼	8	12½	81.00	81.00
8	18¾	18½	9⅜	9¼	13½	100.00	100.00

Jenkins Iron Body Swing Check Valves

For 150 Pounds Working Pressure



No. 294, Screwed



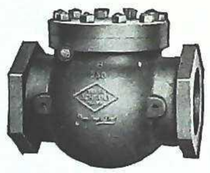
No. 295, Flanged

Can be used in horizontal or vertical position.

Size In.	Face to Face Inches Screwed	Face to Face Inches Flanged	Diam. Flanges In.	Price, Each No. 294 Screwed	Price, Each No. 295 Flanged
2	7¾	8	6	$22.00	$26.00
2½	9¾	10	7	22.00	26.00
3	10¾	11	7½	25.00	30.00
3½	11¾	12	8½	32.00	37.00
4	12¾	13	9	37.00	43.00
5	14¾	15	10	54.00	60.00
6	16	16	11	63.00	71.00
7	17¼	17½	12½	96.00	104.00
8	18½	18¾	13½	122.00	130.00
10	21¾	22	16	189.00	197.00
12	25¾	26	19	.....	370.00

Jenkins Iron Body Swing Check Valves

For 250 Pounds Working Pressure



No. 338, Screwed

Can be used in horizontal and vertical positions.

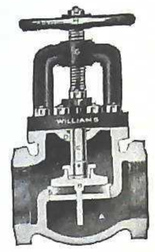
Size In.	Face to Face, In. Screwed	Face to Face, In. Flanged	Diam. Flanges, In.	Price, Each No. 338 Screwed	Price, Each No. 339 Flanged
2	7¾	9	6½	$25.00	$28.00
2½	9	10	7½	33.00	37.00
3	10¼	11¾	8¼	46.00	50.00
4	12¾	13¾	10	68.00	73.00
5	15	15½	11	89.00	94.00
6	17	17	12½	109.00	116.00
8	19½	20	15	165.00	173.00

Hy-Tech Products

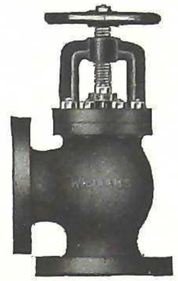
Williams Iron Body Globe and Angle Valves

Regrinding, Flanged Yoke, Outside Screw Brass Mounted, with Bronze Stem

For 125 Pounds Steam Working Pressure



No. 180, Globe, Screwed



No. 629, Angle, Flanged

These valves are made of a hard, close-grained cast iron of great tensile strength, are of pleasing design, well proportioned, and have thick, substantial walls and full areas throughout. They are well made, will stand hard usage, can be repacked under pressure, when wide open and if worn the discs are easily reground.

Valves are fitted with renewable seat rings.

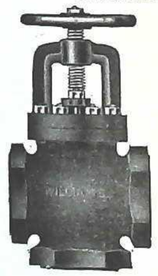
A strong, compact, cast iron yoke, through which the stem operates, is firmly bolted to the body.

Size In.	Face to Face Inches Screwed	Face to Face Inches Flanged	Center to Face Inches Screwed	Center to Face Inches Flanged	Diam. Flanges In.	Price, Each No. 180 Globe No. 181 Angle Screwed	Price, Each No. 628 Globe No. 629 Angle Flanged
2	6 1/16	7½	3 1/16	3¾	6	$7.00	$8.60
2½	7	8 5/16	3½	4 5/16	7	9.00	10.75
3	8	9¼	4	4⅝	7½	12.50	15.00
3½	8 7/16	10 7/16	4 7/16	5 7/32	8½	15.25	18.50
4	9⅝	11 3/16	4 13/16	5 19/32	9	19.00	22.50
5	11¼	12½	5⅝	6¼	10	27.00	31.00
6	12⅞	13¾	6 7/16	6⅞	11	37.50	42.00
8	16¼	17¾	8⅛	8⅞	13½	72.00	77.00
10	23	24¼	10	11	16	114.00	123.00
12	27	27½	11⅞	12¾	19	170.00	187.00

Williams Iron Body Cross Valves

Regrinding, Flanged Yoke, Outside Screw Brass Mounted, with Bronze Stem

For 125 Pounds Steam Working Pressure



No. 528, Screwed

This valve is well made, will stand hard usage, can be repacked under pressure, when wide open and if worn the discs are easily reground.

Valve is fitted with renewable seat rings.

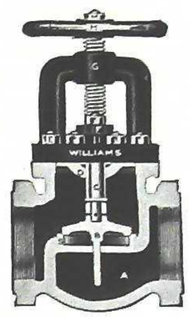
A strong, compact, cast iron yoke, through which the stem operates is firmly bolted to the body.

Size In.	Face to Face, In. Screwed	Face to Face, In. Flanged	Diam. Flanges In.	Price, Each No. 528 Screwed	Price, Each No. 529 Flanged
2	6 1/16	7½	6	$8.50	$11.00
2½	7	8 5/16	7	11.75	14.50
3	8	9¼	7½	16.25	20.00
3½	8 7/16	10 7/16	8½	20.00	25.00
4	9⅝	11 3/16	9	23.50	28.50
5	11¼	12½	10	35.25	41.00
6	12⅞	13¾	11	47.25	54.00
8	16¼	17¾	13½	92.00	100.00
10	23	24¼	16	162.00	175.00
12	27	27½	19	240.00	265.00

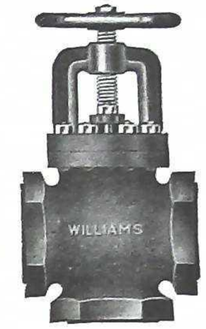
Williams Iron Body Globe, Angle, and Cross Stop Regulating Check Valves

Flanged Yoke with Outside Screw Stem, Screw Ends Brass Mounted, Bronze Stems

Working Pressures up to 125 Pounds



No. 563, Globe



No. 444, Cross

For use on lines where a check valve is required in which it is possible to regulate the lift of the disc so that the volume through the seat opening may be controlled to suit the needs of the service. The lift of the disc is controlled by the bronze threaded stem, which can be repacked under pressure by unscrewing to its limit. The disc is accurately guided at top and bottom, insuring correct alignment and positive seating. This valve cannot be opened by hand.

Size Inches	No. 563 Globe Each	No. 564 Angle Each	No. 444 Cross Each	Size Inches	No. 563 Globe Each	No. 564 Angle Each	No. 444 Cross Each
2	$8.80	$8.80	$10.70	5	$34.00	$34.00	$44.00
2½	11.30	11.30	14.00	6	47.00	47.00	59.00
3	15.60	15.60	20.30	8	90.00	90.00	115.00
3½	19.00	19.00	25.00	10	145.00	145.00	205.00
4	24.00	24.00	29.50	12	215.00	215.00	300.00

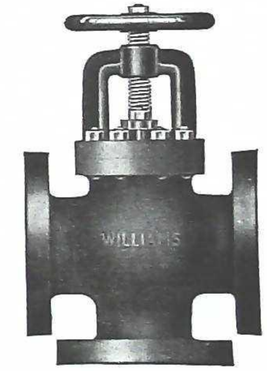
Williams Iron Body Globe, Angle, and Cross Stop Regulating Check Valves

Flanged Yoke with Outside Screw Stem, Brass Mounted, Flange Ends, Bronze Stems

For Working Pressures up to 125 Pounds



No. 566, Angle



No. 445, Cross

The lift of the disc is controlled by the bronze threaded stem, which can be repacked under pressure by unscrewing it to its limit. As the disc is not attached to the stem, the valve cannot be opened by hand, but can be closed like an ordinary stop valve. Fitted with renewable bronze seat rings. The flanges are regularly furnished with plain face.

Size Inches	No. 565 Globe Each	No. 566 Angle Each	No. 445 Cross Each	Size Inches	No. 565 Globe Each	No. 566 Angle Each	No. 445 Cross Each
2	$10.80	$10.80	$13.80	5	$39.00	$39.00	$51.00
2½	13.50	13.50	18.00	6	53.00	53.00	68.00
3	19.00	19.00	25.00	8	96.00	96.00	125.00
3½	23.00	23.00	31.00	10	155.00	155.00	230.00
4	28.00	28.00	36.00	12	235.00	235.00	330.00

Jenkins Iron Body Gate Valves

Bronze Mounted

Inside Screw, Stationary Spindle

For Working Pressure: 2 to 16-inch, 125 Pounds Steam, 175 Pounds Water; 18 to 24-inch, 100 Pounds Steam, 125 Pounds Water

Double face solid wedge type. Body and bonnet are made of high grade cast iron. Seat rings are bronze and gate or wedge cast iron, faced with bronze rings firmly secured to wedge, except in the sizes in which wedges are made entirely of bronze. Wedge has guide which is fitted to slide true and easy on ribs in body and thus prevent disc from chattering when partly open, or from touching seat except at point of final closing.

Valve can be packed under pressure when wide open.



No. 326, Flanged

Size In.	Face to Face Inches Scrd.	Face to Face Inches Flgd.	Diam. Flanges In.	Price, Each No. 325 Screwed	Price, Each No. 326 Flanged
2	5 7/16	7	6	$10.00	$12.00
2½	5 7/8	7½	7	11.50	13.50
3	6 3/8	8	7½	14.00	16.50
3½	7	8½	8½	17.00	19.50
4	7½	9	9	19.00	23.00
4½	7 5/8	9½	9¼	24.00	28.00
5	8 1/8	10	10	27.50	31.50
6	8½	10½	11	32.50	36.50
7	9¼	11	12½	45.00	49.00
8	10¼	11½	13½	54.00	58.00
9	10¾	12	15	76.00	81.00
10	11 3/8	13	16	90.00	95.00
12	12¾	14	19	125.00	133.00
14	....	15	21	.....	181.00
15	....	15	22¼	.....	220.00
16	....	16	23½	.....	260.00
18	....	17	25	.....	350.00
20	....	18	27½	.....	425.00
22	....	19	29½	.....	530.00
24	....	20	32	.....	600.00

Jenkins Iron Body Gate Valves

Bronze Mounted, Bronze Spindle

Outside Screw and Yoke, Rising Spindle

For Working Pressures: 2 to 16-Inch, 125 Pounds Steam, 175 Pounds Water; 18 to 24-Inch, 100 Pounds Steam, 125 Pounds Water

These valves are made of high grade cast iron; double face solid wedge type, bronze spindle and renewable bronze seat rings. Wedges up to and including 3 inches are cast of solid bronze; 3½ inches and larger are cast iron with bronze faces rolled in. Wedge has guide which is fitted to slide true and easy on ribs in body and thus prevent wedge face from chattering when partly open, or from touching seat except at point of final closing.

Valve can be packed under pressure when wide open.



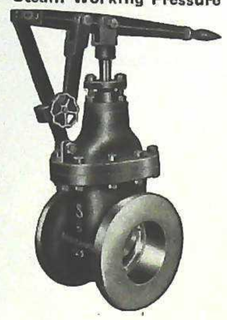
No. 651, Flanged

Size In.	Face to Face Inches Screwed	Face to Face Inches Flanged	Diam. Flanges In.	Price, Each No. 650 Screwed	Price, Each No. 651 Flanged
2	5 7/16	7	6	$19.00	$21.00
2½	5 7/8	7½	7	20.50	22.50
3	6 3/8	8	7½	23.50	26.00
3½	7	8½	8½	27.00	29.50
4	7½	9	9	32.50	36.50
4½	7 5/8	9½	9¼	40.00	44.00
5	8 1/8	10	10	45.00	49.00
6	8½	10½	11	52.00	56.00
7	9¼	11	12½	69.00	73.00
8	10¼	11½	13½	86.00	90.00
9	10¾	12	15	113.00	118.00
10	11 3/8	13	16	131.00	136.00
12	12¾	14	19	172.00	180.00
14	....	15	21	.....	255.00
15	....	15	22¼	.....	310.00
16	....	16	23½	.....	350.00
18	....	17	25	.....	470.00
20	....	18	27½	.....	565.00
22	....	19	29½	.....	700.00
24	....	20	32	.....	775.00

Fairbanks Iron Body Gate Valves

Quick Opening, Solid Wedge Pattern

For 300 Pounds Hydraulic Test Pressure, 125 Pounds Steam Working Pressure



Guides in wedge and ribs in body are so finished and fitted as to insure true and easy movement, and to prevent wedge from touching seats in body, except at point of closing. Seats in body and faces of wedge are made of high grade bronze. The operating and locking device of this quick-opening valve is positive in action. It will hold the wedge and spindle in any desired position and cannot be jarred loose.

Size In.	Face to Face Inches Scrd.	Face to Face Inches Flgd.	Diam. Flanges In.	Price, Each No. 0407 Screwed	Price, Each No. 0408 Flanged
2	5 7/16	7	6	$17.50	$19.50
2½	5 7/8	7½	7	19.00	21.00
3	6 3/8	8	7½	22.00	24.50
3½	6½	8½	8½	25.00	27.50
4	6 7/8	9	9	30.00	34.00
4½	7¼	9½	9¼	37.00	41.00
5	7 5/16	10	10	42.00	46.00
6	7¾	10½	11	48.00	52.00
7	8¼	11	12½	64.00	68.00
8	8 11/16	11½	13½	80.00	84.00

Fairbanks U-Bolt Iron Body and All-Iron Gate Valves

For 100 Pounds Steam Working Pressure

Bonnet is secured to body by means of a U-shaped bolt. This bolt encircles body and passes through holes in bonnet.

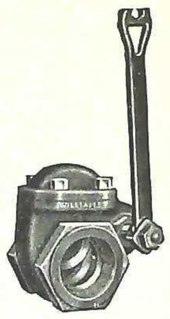


Size Inches	Face to Face Inches	Screwed, Price, Each No. 0414 Iron Body Bronze Mounted	Screwed, Price, Each No. 0416 All Iron
½	2	$2.00	$2.00
¾	2 5/16	2.35	2.35
1	2½	2.50	2.50
1¼	2¾	3.50	3.50
1½	3	5.00	5.00
2	3½	7.50	7.50
2½	4 3/16	12.00	12.00
3	4 3/8	15.00	15.00
4	5 5/8	22.00	20.00

Williams Iron Body Lever Throttle Valves

For Steam Working Pressure: Medium Pattern, 100 Lbs.; Heavy Pattern, 150 Lbs.

Easily and quickly operated, providing when open, a straightway unobstructed passage through the body of the valve.



No. 328

Size In.	Scrd., Price, Each Medium Pattern No. 328, Brass Mounted	Scrd., Price, Each Medium Pattern No. 231 All Iron	Scrd., Price, Each No. 132, Hvy. Pattern, Brass Mounted
2	$7.00	$7.00	$8.50
2½	12.00	12.00	16.00
3	15.00	15.00	20.00
3½	18.00	18.00	25.00
4	21.00	21.00	30.00
5	30.00	30.00	35.00
6	35.00	35.00	40.00

Hy-Tech Products

Kennedy Iron Body and All-iron Gate Valves

Double Disc, Parallel Seats

Outside Rising Stem and Yoke



No. 48 Flanged

Working Pressures

Flanged

No. Iron Body Bronze Mounted Steel Stem	No. Iron Body Bronze Mounted Bronze Stem	No. All-iron Steel Stem	Working Pressure Pounds Steam	Working Pressure Pounds Water
48	481	482	15	35
53	531	532	25	50
Bell Ends				
483	484	485	..	35
533	534	535	..	50

Size In.	Face to Face Flanged In.	Diam. Flanges In.	End to End Bell Ends In.	Diam. Bell Sockets In.	Price Each
14	11½	21	14 3/8	16 1/8	$200.00
16	12	23½	15 1/8	18½	255.00
18	12½	25	15¼	20½	340.00
20	13	27½	15 3/8	22¾	395.00
24	13¼	32	16	26 7/8	610.00
30	15	38¾	17	33	1125.00
36	16	46	17½	39	1650.00
42	24	53	25	45¼	2150.00
48	26	59½	26¾	51 3/8	3100.00

These valves can, if required, be furnished with single disc and seat face with quick-operating compound thread on stem or with chain wheel for operating.

No. 48 can be furnished with cleanout pockets if desired. When this valve is wanted, specify No. 47D.

Kennedy Iron Body and All Iron Gate Valves

Inside Stationary Stem, Double Discs Parallel Seats

For Working Pressures: 12-inch and Smaller, 125 Pounds Steam, 175 Pounds Water; 14 and 16-inch, 125 Pounds Steam, 150 Pounds Water; 18-inch and Larger, 100 Pounds Steam, 120 Pounds Water



No. 57, Iron Body Bronze Mounted Screwed

Size In.	Face to Face, Inches Scrd.	Face to Face, Inches Flgd.	Diam. Flanges In.	Price, Each No. 57 Iron Body No. 82 All Iron Screwed	Price, Each No. 58 Iron Body No. 83 All Iron Flanged
1½	4	5½	5	$10.00	$12.00
2	5	7	6	10.00	12.00
2½	6	7½	7	11.50	13.50
3	6¼	8	7½	14.00	16.50
3½	6¾	8½	8½	17.00	19.50
4	7	9	9	19.00	23.00
4½	7 5/8	9½	9¼	24.00	28.00
5	8	10	10	27.50	31.50
6	8 1/8	10½	11	32.50	36.50
7	10	11	12½	45.00	49.00
8	10¼	11½	13½	54.00	58.00
9	10 7/8	12	15	76.00	81.00
10	11½	13	16	90.00	95.00
12	13¼	14	19	125.00	133.00
14	....	14 3/8	21	.....	181.00
16	....	14 3/8	23½	.....	260.00
18	....	15 1/8	25	.....	350.00
20	....	20½	27½	.....	425.00
22	....	21½	29½	.....	530.00
24	....	22½	32	.....	600.00
30	....	26	38¾	.....	1100.00

With Gears

Size Inches	Flgd.—Price, Each No. 58, Iron Body No. 83, All Iron Plain	Flgd.—Price, Each No. 58, Iron Body No. 83, All Iron With By-pass
16	$360.00	$425.00
18	460.00	535.00
20	550.00	635.00

Size Inches	Flgd.—Price, Each No. 58, Iron Body No. 83, All Iron Plain	Flgd.—Price, Each No. 58, Iron Body No. 83, All Iron With By-pass
22	$675.00	$775.00
24	750.00	850.00
30	1400.00	1550.00

Kennedy Iron Body and All-Iron Gate Valves

Double Discs, Parallel Seats
Outside Rising Stem and Yoke

For Working Pressures:
12-Inch and Smaller, 125 Pounds Steam, 175 Pounds Water
14 and 16-Inch, 125 Pounds Steam, 150 Pounds Water
18-Inch and Larger, 100 Pounds Steam, 120 Pounds Water



No. 60, Iron Body, Bronze Mounted, Screwed



No. 61, Iron Body, Bronze Mounted, Flanged

On valves 4-inch and smaller, the bonnet and yoke are cast in one piece. On valves 4½-inch and larger, the bonnet and yoke are bolted together.

Size Inches	Face to Face Inches Screwed	Face to Face Inches Flanged	Diameter Flanges Inches	End to End, Bell Ends, Inches	Diam. Bell Sockets Inches
1½	4	5½	5	....	....
2	5	7	6	7 1/8	3¼
2½	6	7½	7	....	....
3	6¼	8	7½	9½	4 9/16
3½	6¾	8½	8½	....	....
4	7	9	9	11	5 11/16
4½	7 5/8	9½	9¼	....	....
5	8	10	10	10½	6¾
6	8 5/8	10½	11	11½	7 13/16
7	10	11	12½	....	....
8	10¼	11½	13½	13 1/8	10
9	10 7/8	12	15	....	....
10	11½	13	16	14	12
12	13¼	14	19	14¾	14 1/8
14	....	14 3/8	21	15	16 15/32
16	....	14 3/8	23½	16 1/8	18 13/16
18	....	15 1/8	25	16½	20 15/16
20	....	20½	27½	22	23 1/16
22	....	21½	29½	....	....
24	....	22½	32	23	27 5/16
30	....	26	38 3/4	26½	33 9/16

Size In.	Price, Each Steel Stem No. 60 Iron Body No. 85 All-Iron Screwed	Price, Each Steel Stem No. 61 Iron Body No. 86 All-Iron Flanged	Price, Each Steel Stem No. 612 Iron Body No. 861 All-Iron Bell Ends	Price, Each Bronze Stem No. 601 Iron Body Screwed	Price, Each Bronze Stem No. 611 Iron Body Flanged	Price, Each Bronze Stem No. 613 Iron Body Bell Ends
1½	$17.50	$19.50	.....	$19.00	$21.00	.....
2	17.50	19.50	$17.50	19.00	21.00	$19.00
2½	19.00	21.00	.....	20.50	22.50	.....
3	22.00	24.50	22.00	23.50	26.00	23.50
3½	25.00	27.50	.....	27.00	29.50	.....
4	30.00	34.00	30.00	32.50	36.50	32.50
4½	37.00	41.00	.....	40.00	44.00	.....
5	42.00	46.00	42.00	45.00	49.00	45.00
6	48.00	52.00	48.00	52.00	56.00	52.00
7	64.00	68.00	.....	69.00	73.00	.....
8	80.00	84.00	80.00	86.00	90.00	86.00
9	105.00	110.00	.....	113.00	118.00	.....
10	122.00	127.00	122.00	131.00	136.00	131.00
12	160.00	168.00	160.00	172.00	180.00	172.00
14	.....	236.00	236.00	.....	255.00	255.00
16	.....	325.00	325.00	.....	350.00	350.00
18	.....	435.00	435.00	.....	470.00	470.00
20	.....	525.00	525.00	.....	565.00	565.00
22	.....	650.00	.....	.....	700.00	.....
24	.....	725.00	725.00	.....	775.00	775.00
30	.....	1300.00	1300.00	.....	1400.00	1400.00

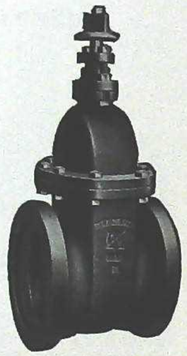
Prices of 36, 42, 48 and 54-inch upon application.

Kennedy Iron Body and All Iron Gate Valves

Inside Stationary Stem, Double Discs, Parallel Seats

For Water Working Pressures: 12-Inch and Smaller, 175 Pounds; 14 and 16-Inch, 150 Pounds; 18-Inch and Larger, 120 Pounds; 18-Inch and Larger, Ribbed, 150 Pounds

Size In.	End to End In.	Diam. Bell Sockets In.	Bell Ends—Price, Each No. 59, Iron Body No. 84, All Iron Plain	With Bypass
2	7⅞	3¼	$10.00	.....
3	9½	4 9/16	14.00	.....
4	11	5 11/16	19.00	.....
6	11½	7 5/16	32.50	.....
8	13⅛	10	54.00	.....
10	14	12	90.00	.....
12	14¾	14⅛	125.00	.....
14	15	16 15/32	173.00	.....
16	16⅛	18 5/16	250.00	$315.00
18	16½	20 5/16	340.00	415.00
20	22	23 1/16	415.00	500.00
24	23	27 5/16	590.00	690.00
30	26½	33 3/16	1075.00	1225.00



No. 59, Iron Body, Bronze Mounted, Bell Ends

With Gears

Size In.	Bell Ends—Price, Each No. 59, Iron Body No. 84, All Iron Plain	With Bypass	Size In.	Bell Ends—Price, Each No. 59, Iron Body No. 84, All Iron Plain	With Bypass
16	$350.00	$415.00	24	$740.00	$840.00
18	450.00	525.00	30	1375.00	1525.00
20	540.00	625.00	..	.....	.....

Kennedy U A Indicator Post Iron Body Gate Valves

National Standard Underwriters' Type Bronze Mounted

The opening of these posts is not affected by rain, snow or frost. The indicator openings are furnished with extra thick glass, and to prevent condensation on the glass, ventilating openings are provided under the cover. A clamp name-plate can also be furnished on special order designating mill or system controlled by post. Two drip holes at bottom of post drain water.

Unless otherwise specified these posts are equipped with operating nut 1¼-inch square and turn to left to open.

The post is made in two tubular cast iron sections and can be used on any make approved valve.

An oil hole is drilled through cover for lubricating stem.

A locking device wrench is furnished regularly on all U A Posts with staple on post as illustrated. Lock is extra and furnished only as ordered.

These valves can be furnished with bell, flange or screwed ends.



No. 54 Bell Ends with No. 70 Valve and No. 541 Post

Size In.	Price, Each No. 54 Complete for 5-ft. Trench	No. 541 Post Only for 5-ft. Trench	Size In.	Price, Each No. 54 Complete for 5-ft. Trench	No. 541 Post Only for 5-ft. Trench
4	$70.00	$40.00	10	$148.00	$40.00
6	84.00	40.00	12	185.00	40.00
8	105.00	40.00	14	230.00	40.00

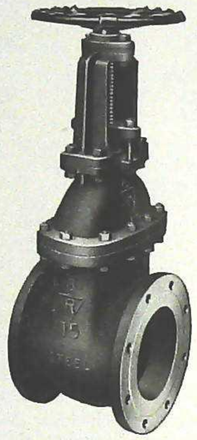
Wrench, No. 543, $2.00 each (locking device).

Variation in depth of bury, add for each 6 inches over 5 feet, $2.00. Deduct for each 6 inches less than 5 feet, $1.25.

Series 15 Reading Cast Steel Gate Valves

Outside Screw and Yoke, Solid Wedge
Class A, Monel Trim; Class B, All Steel Trim
Class C, Bronze Trim
Class D, Rustless Steel Trim

For 150 Pounds Pressure at 750 Degrees
For 300 Pounds Pressure at 100 Degrees
Tested to 750 Pounds



No. 1501, Flanged

Series 15 Cast Steel Gate Valves conform to the main overall dimensions and general appearance of standard cast iron valves, but there are many differences in design, which provide for the reliable soundness of the steel castings and avoid distortions in service due to temperature.

The body is well rounded and designed to avoid shrinkage faults. It has a full nominal size port opening. The wedge is guided to the seat by a machined groove engaging a spline in the body.

The wedge is a solid I-section which has the least possible distortion in hot service; of particular advantage when the valve is closed, hot on one side, cool on the other. The larger sizes have separate face rings which are securely held by rolling the steel of the wedge over the beveled side of the ring. The connection with the stem is flexible but absolutely secure.

In all sizes and types of trim separate seat rings are screwed in.

The bonnet, like the body, is of well rounded shape and designed to avoid shrinkage faults. Bonnet bolting consists of steel studs with a nut on each end. Sizes 5 inches and larger have bolted on yokes.

Stuffing box packing is asbestos and is kept under uniform pressure by making the gland and follower in two pieces with a ball joint between them. This also prevents binding the stem if the stuffing box is tightened unevenly.

The stem has a beveled collar forged integral with it, which forms a tight joint with the top of the bonnet when the valve is wide open so that it can be packed under pressure.

The operating nut is firmly held in the top of the yoke by the wheel nut and is so proportioned that if the valve is forced it will break before the internal parts of the valve are damaged.

Dimensions of Series 15 Cast Steel Gate Valves are based upon the 1928 Tentative American 125-pound cast iron flanged fittings standard.

The valves are especially designed so that they can be most easily equipped with by-passes, motor operators, or ball bearings at the operating nuts, either at the factory or in the field.

Specify class of trim, as indicated above, in ordering.

Size Inches	Face to Face—Inches Screwed	Flanged	Diam. Flanges Inches	Price, Each No. 1500 Screwed	No. 1501 Flanged Faced Only	Extra for Drilling and Spot Facing
2	5	7	6	$54.00	$57.50	$3.00
2½	5½	7½	7	66.00	70.00	3.25
3	6⅛	8	7½	81.00	85.00	3.75
3½	....	....	....	.....	100.00	4.00
4	6⅞	9	9	110.00	115.00	4.50
5	....	10	10	.....	145.00	5.00
6	....	10½	11	.....	170.00	6.00
8	....	11½	13½	.....	245.00	8.00
10	....	13	16	.....	375.00	10.00
12	....	14	19	.....	475.00	12.00

Hy-Tech Products

Iron Body Foot Valves and Strainers

Foot Valves, Screwed



No. 881, Foot Valve Screwed

I. P. Size Inches	Price, Each Black	Galvanized
¾	$1.15	$1.75
1	1.30	2.00
1¼	1.40	2.10
1½	1.90	2.85
2	2.40	3.60
2½	3.30	5.00
3	3.90	5.75
3½	5.60	8.50
4	7.30	11.00
5	11.25	16.75
6	14.75	22.00
8	41.00	62.00

Strainers

I. P. Size Inches	Price, Each Black	Galvanized
¾	$.30	$.40
1	.40	.50
1¼	.50	.75
1½	.75	1.00
2	1.00	1.50
2½	1.50	2.00
3	2.00	3.00
3½	3.00	4.50
4	3.75	6.00
5	4.75	7.00
6	6.50	10.00
8	15.00	20.00



No. 883, Strainer

Iron Body Butterfly Valves

For 125 Pounds Steam Working Pressure

These valves are not intended to be steam tight.

Size In.	Price, Each Screwed	Flanged	Size In.	Price, Each Screwed	Flanged
2	$8.00	$9.50	6	$42.50	$47.00
2½	9.50	11.50	8	.....	90.00
3	12.00	15.00	10	.....	125.00
3½	16.00	19.00	12	.....	160.00
4	18.50	22.00	14	.....	275.00
5	28.50	32.00	16	.....	350.00



No. 823

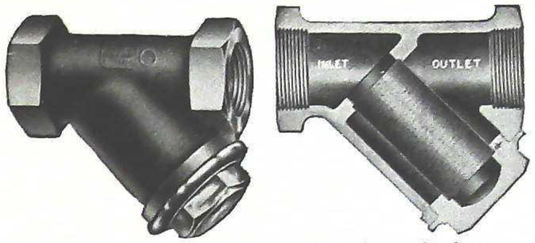
Can be furnished with a brass stem instead of steel stem, at an extra price.

No. 251 Flat Strainers



Size Inches	Brass Wire Mesh No.	Price Each	Size Inches	Brass Wire Mesh No.	Price Each
⅜	20	$.20	1¼	12	$.60
½	20	.30	1½	12	.75
¾	20	.40	2	12	1.00
1	12	.50	...	..	....

Mason Strainers



Exterior and Sectional Views of Mason Bronze Strainers

Designed for use on pipe lines to prevent sediment, scale, bits of packing or other foreign material common to such systems from passing into the reducing valve or other regulator installed on the line, thus preventing not only the annoyance incident to taking the regulator apart to clean it, but also assuring the user of continuous service and the avoidance of expensive shut-downs.

They are so constructed that they do not reduce the volume of flow passing through them, yet are compact and easily cleaned without removing them from the line.

The strainer should always be installed with cap down.

Sizes ¼ to 1½ inches, inclusive, are made of bronze with tapped ends, and are suitable for pressures up to 300 pounds. Sizes 2 inches and above have iron bodies with extra heavy flanges. They are suitable for pressures up to 250 pounds.

Bronze Body, Tapped Ends

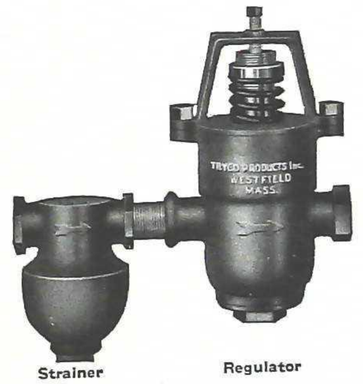
Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¼	$3.00	¾	$5.00	1¼	$10.00
½	4.00	1	7.00	1½	14.00

Iron Body, Extra Heavy Flanges

2	$30.00	3½	$72.00	6	$160.00
2½	44.00	4	85.00	...	.....
3	60.00	5	120.00	...	.....

Try-Me Pressure Regulators and Strainers

For Water or Air



Strainer Regulator

The Try-Me Regulator is for use on water or air services where delivery pressure lower than initial pressure is desired or where delivery pressure must be constant.

Reduces from 250 to 0 pounds. Made of bronze. Gives maximum volume at given pressure. Can be used as emergency shut off.

The Try-Me Strainer protects regulator and other fixtures from injury by foreign matter in pipes. Of rustproof bronze. Has perforated brass strainer with straining area larger than inlet or outlet; easily cleaned, renewable. Bottom cap and screen are removed together; quickly repaired.

Size In.	Price, Each Combination	Regulator	Strainer	Size In.	Price, Each Combination	Regulator	Strainer
¼	$10.35	$7.50	$3.00	1¼	$24.00	$15.00	$10.00
⅜	10.35	7.50	3.00	1½	34.00	18.00	17.50
½	10.35	7.50	3.00	2	52.00	29.00	25.00
¾	13.25	10.00	3.50	2½	72.50	40.00	35.00
1	17.50	12.00	6.00	...	.....	.....	.....

No. 11 Mason All Bronze Standard Reducing Valves



For reduced pressures 5 pounds and above. Reduces and maintains an even pressure of steam or air regardless of the variation of the initial pressure, or of the volume of steam or air required.

It automatically reduces boiler pressure for steam heating systems of all types (vacuum systems included), central heating plants, engines, paper machines, slashers, dye kettles and wherever it is desirable to use a lower pressure than that on a boiler. Provided with dashpot.

Size Inches	Price Each	Size Inches	Price Each
½	$32 00	1¼	$55.00
¾	32.00	1½	75.00
1	44.00	2	96.00

No. 12 Mason All Bronze Reducing Valves
With Large Diaphragm Chambers



For reduced pressure under 5 pounds. The diaphragm having a large area to be acted upon by the reduced pressure, provides ample power to move auxiliary valve and also renders the action of the valve very sensitive to the slightest change of reduced pressure.

This valve will operate without any variation of reduced pressure whatever, and will work equally well on reduced pressures below the atmosphere.

Size Inches	Price Each	Size Inches	Price Each
½	$44.00	1¼	$65.00
¾	44.00	1½	85.00
1	54.00	2	106.00

Mason Iron Body Standard Reducing Valves
No. 11

For reduced pressures 5 pounds and above. Maintains an even pressure of steam or air regardless of the variation of initial pressure or of the volume required. It automatically reduces boiler pressure for steam heating systems, engines, paper machines, dye kettles, etc.

Fitted with extra heavy iron body, flanged connections, bronze mounted; for initial pressures up to 250 pounds.

Size Inches	Price Each	Size Inches	Price Each
2½	$110.00	5	$260.00
3	140.00	6	375.00
3½	180.00	8	700.00
4	220.00	..	.....

No. 12 Mason Iron Body Reducing Valves
With Large Diaphragm Chambers

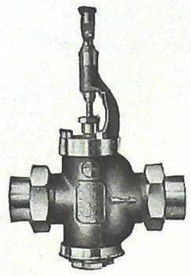


For reducing pressures under 5 pounds. This valve with large diaphragm is very sensitive and is especially adapted to control steam to low pressure systems where close regulation is desired, as on heating systems, etc.

Fitted with extra heavy iron body, flanged; connections, bronze mounted; for initial pressures up to 250 pounds.

Size Inches	Price Each	Size Inches	Price Each
2½	$120.00	5	$270.00
3	150.00	6	385.00
3½	190.00	8	710.00
4	230.00	..	.....

Mason All Bronze Balanced Valves
With Valve Stem Guide



Double disc valve of extra heavy design. Made in either the piston type or with bevel seats.

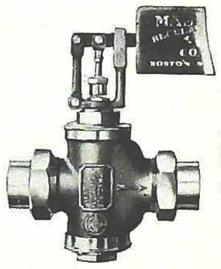
The metal in all Mason Balanced Valves is so distributed that expansion does not interfere with the action of the valves.

All Mason Bronze Balanced Valves are fitted with union connections threaded for standard wrought iron pipe.

Fluid should flow through valve in direction indicated by arrow on side of valve body; but flow may pass through in opposite direction if desired.

Size Inches	Price Each	Size Inches	Price Each
½	$18 00	1	$24.00	1½	$34.00
¾	20 00	1¼	29.00	...	.....

Mason All Bronze Balanced Valves
Yoke and Lever Type



Made in either piston or bevel seated types. Used to control pumps, engines, and the like, by means of tank floats or cords to distant points, and also in connection with various devices for controlling the flow to water wheels, receivers, open heaters, and other similar devices. They are self closing by means of the weight. The length of the lever causes them to open slowly.

Size Inches	Price Each	Size Inches	Price Each
½	$18.00	1¼	$29.00
¾	20.00	1½	34.00
1	24.00	...	.....

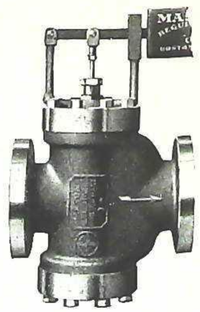
Mason Iron Body Balanced Valves
With Valve Stem Guide



Valves are flanged extra heavy standard. Made in either piston or bevel seated types. Constructed of cast-iron with all internal wearing parts of bronze; the valve seats being practically unaffected by the difference in expansion between cast-iron and bronze.

Size Inches	Price Each	Size Inches	Price Each
2	$44.00	5	$205.00
2½	60.00	6	280.00
3	85.00	8	520.00
3½	100.00	10	840.00
4	125.00	12	1150.00
4½	165.00	..	.....

Mason Iron Body Balanced Valves
Yoke and Lever Type

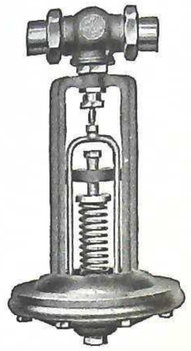


Valves are flanged extra heavy standard. Made in either piston or bevel seated types. Used to contro pumps, engines, etc., by distant points, and also in connection with various devices for controlling the flow to water wheels, receivers, open heaters, and other similar devices. They are self closing by means of the weight.

Size Inches	Price Each	Size Inches	Price Each
2	$44.00	5	$205.00
2½	60.00	6	280.00
3	85.00	8	520.00
3½	100.00	10	840.00
4	125.00	12	1150.00
4½	165.00	..	.....

Hy-Tech Products

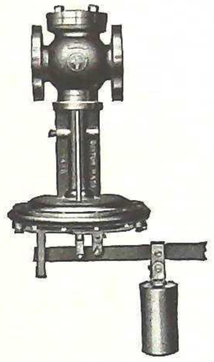
No. 229 Mason Reducing Valves



Designed for installations where the initial pressure is up to 125 pounds, reduced pressure up to 90 pounds. This regulator is equipped with a removable diaphragm spring. Springs can be furnished for ranges of reduced pressure as follows: 1 to 10 pounds, 8 to 35 pounds, 25 to 90 pounds.

Size In.	Bronze Body and Parts — Price, Each — Tapped Ends	Bronze Body and Parts — Price, Each — Union Ends	Size In.	Iron Body Bronze Parts — Price, Each — Standard Flanges
½	$20.00	$22.00	2	$48.00
¾	22.00	25.00	2½	56.00
1	25.00	29.00	3	66.00
1¼	29.00	34.00	3½	76.00
1½	34.00	40.00	4	91.00

No. 236 Mason Lever Style Reducing Valves
For Heating Systems



For heating systems requiring accurate regulation of steam at low pressures. Regularly made with 2 sizes of diaphragms for reduced pressure from 0 to 10 pounds and from 5 to 25 pounds. Equipped with a standard weight body for initial pressures not exceeding 125 pounds. With iron bodies, standard flanges.

Size In.	Price, Each — Bronze Parts	Price, Each — Monel Parts	Size In.	Price, Each — Bronze Parts	Price, Each — Monel Parts
2	$72.00	$88.00	5	$173.00	$243.00
2½	80.00	100.00	6	200.00	320.00
3	90.00	115.00	8	345.00	485.00
3½	100.00	135.00	10	555.00	735.00
4	125.00	170.00	..	.....	.....

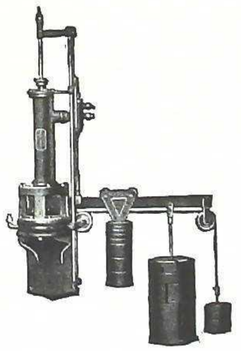
Mason Iron Body Water Reducing Valves
No. 24



For reduced pressures of 5 to 90 pounds. The Mason Water Reducing Valve is deigned to reduce the water pressure from treet watermains to a low pressure for ouses and buildings. The tension of the main spring is adjusted by means of a small rod inserted in a nut at the end of the spring case. Two bolt holes will be observed in the cap forming the top of the water chamber. Into these the bolts may be inserted and the cap forced off, if it is necessary, to take the regulator apart.

Size Inches	Price Each	Size Inches	Price Each
2	$72.00	3½	$115.00
2½	85.00	4	145.00
3	100.00	...	.....

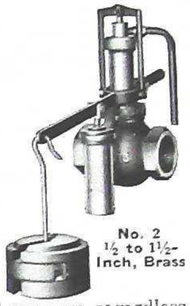
Mason Hydraulic Damper Regulators



Double acting, having a positive movement and being actuated by water pressure in both directions. Provided with a compensating attachment, preventing the damper from being fully opened or closed by each slight change of boiler pressure. Furnished with sediment chamber, bracket, 25 feet of chain and weights.

No.	Operating Cyl., In.	Shank Inches	Price Each
130-A	3	10	$200.00
130-C	5	10	250.00

Davis Pressure Regulators
Counterweighted Piston Type
For 250 Pounds Maximum Initial and 2 Pounds Minimum Service Pressure

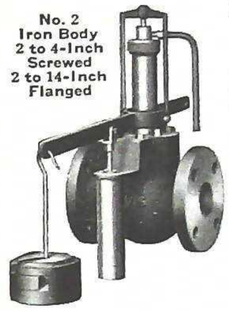


No. 2 ½ to 1½-Inch, Brass

Wherever steam is used at a higher pressure than is necessary to properly perform the service there is needless waste. The lower the service pressure the higher the operating efficiency.

Reducing the pressure one half makes an approximate saving in steam consumption of 50 per cent—the greater the reduction the greater the saving.

The Davis Regulator will automatically reduce any high initial pressure down to any desired service pressure. Having a balanced inner valve it maintains a constant reduced pressure regardless of high pressure fluctuations. It functions like a lever scale —pressure is balanced by counterweights. To change the delivery pressure simply change the weights.

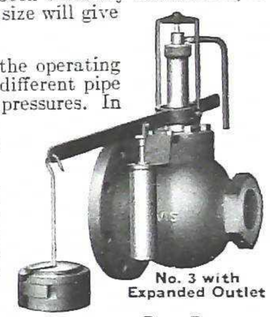


No. 2 Iron Body 2 to 4-Inch Screwed 2 to 14-Inch Flanged

This valve has no springs or toggles, no diaphragm, no auxiliary valve, no small ports, and no packing. Its action is visible.

Standard regulators are made for steam. Valves of the same outward appearance are constructed for air and water, but have the internal movable parts especially made for the service.

The initial and reduced pressures and the volume of steam determine the proper size of regulator to be used for a given condition. The Davis Regulator has full pipe capacity. If pipe sizes have been correctly determined, a regulator of the corresponding size will give good service.



No. 3 with Expanded Outlet

It is frequently found that the operating conditions require the use of different pipe sizes for the high and reduced pressures. In such instances it is advantageous to use a regulator with expanded outlet (No. 3).

Steel regulators with monel metal or other suitable trimmings are made to order for pressures up to 400 pounds and 750° total temperature. Prices upon application.

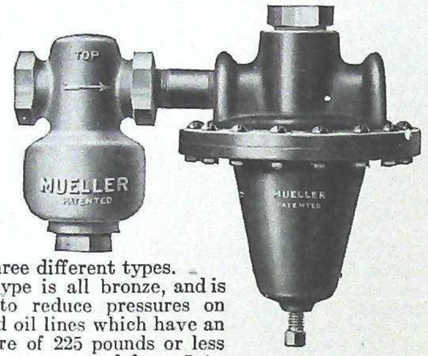
Size Inches	Price, Each — Screwed	Price, Each — Standard Flanged	Price, Each — Ex. Hy. Flanged	Size Inches	Price, Each — Standard Flanged	Price, Each — Ex. Hy. Flanged
½	$45.00	.....	.....	5	$175.00	$185.00
¾	45.00	.....	.....	6	225.00	235.00
1	50.00	.....	.....	7	300.00	325.00
1¼	55.00	.....	.....	8	375.00	400.00
1½	60.00	$65.00	$70.00	10	575.00	600.00
2	70.00	75.00	80.00	12	825.00	850.00
2½	85.00	90.00	95.00	14	1025.00	1075.00
3	100.00	105.00	110.00	..	.....	.....
3½	120.00	125.00	130.00	..	.....	.....
4	140.00	145.00	150.00	..	.....	.....

With Expanded Outlet

1 x2	$55.00	.....	.....	4x 6	$175.00	$185.00
1¼x2½	60.00	.....	.....	4x 8	200.00	210.00
1½x3	70.00	$75.00	$80.00	5x 8	250.00	265.00
2 x3	80.00	85.00	90.00	5x10	300.00	315.00
2 x4	85.00	90.00	95.00	6x 8	350.00	365.00
2½x5	.....	105.00	110.00	6x10	400.00	415.00
3 x5	.....	120.00	125.00	6x12	425.00	440.00
3 x6	.....	130.00	135.00	8x10	450.00	475.00
3½x7	.....	150.00	160.00	8x12	500.00	525.00

No. G9100 Mueller Reducing and Regulating Valves

For Hot Water and High Pressures



This valve is used for the reduction of pressures on oil and hot water lines, and on cold water lines where initial pressure exceeds 225 pounds.

Made in three different types.

The light type is all bronze, and is constructed to reduce pressures on hot water and oil lines which have an initial pressure of 225 pounds or less to a delivery pressure of from 5 to 25 pounds.

The heavy type up to 1-inch size is all bronze and is constructed to reduce initial pressure ranging from 225 to 400 pounds to delivery pressures of from 5 to 225 pounds.

The extra heavy type is constructed to reduce initial pressures ranging from 400 to 1000 pounds to delivery pressures of from 50 to 300 pounds.

In cases where the inlet pressure does not exceed 400 pounds the regular G-9030 galvanized strainer is used.

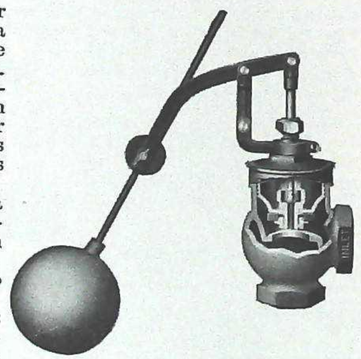
Information on special valves of this type for any service required furnished upon application.

Size Inches	Weight Pounds	Price Each	Size Inches	Weight Pounds	Price Each
¼	7½	$27.90	1	19½	$45.54
⅜	11¾	30.24	1¼	29	74.80
½	13	30.24	1½	36½	100.26
¾	15½	32.32	2	60¼	145.62

Davis Float Valves

Globe and Angle Patterns

For 250 Pounds Working Pressure



Screwed

A tank will never overflow if there is a Davis Float Valve on the makeup line. This valve will automatically maintain a constant water level. When it is closed the flow is entirely stopped.

This valve has a single seat with renewable composition disc. It closes tight. Has no leather cup packing.

When valve is seated the inlet pressure which enters on top of disc accumulates in the chamber above the loosely fitted piston. When water level recedes and float drops, it opens the port—the pressure above the piston is relieved and the valve opens.

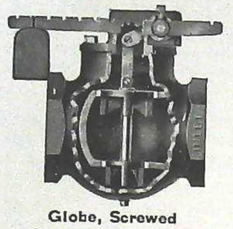
Sizes 3 inches and smaller are brass valves. Larger sizes have iron body with bronze trim.

Size Inches	Price, Each Standard Screwed	Price, Each Standard Flanged	Size Inches	Price, Each Standard Screwed	Price, Each Standard Flanged
½	$30.00	.....	3½	$120.00	$125.00
¾	30.00	.....	4	130.00	135.00
1	32.00	.....	5	.....	160.00
1¼	35.00	.....	6	.....	200.00
1½	40.00	$45.00	7	.....	300.00
2	50.00	55.00	8	.....	400.00
2½	70.00	75.00	10	.....	500.00
3	90.00	95.00	12	.....	700.00

Davis Noiseless Back Pressure Valves

Counterweighted Semi-Balanced Type

For 20 Pounds Maximum Exhaust Steam Pressure



Globe, Screwed
Horizontal Position

The function of this valve is to automatically regulate the pressure of exhaust steam. It is the original semi-balanced noiseless valve with two port openings. One disc of the inner valve partially balances the other. A comparatively small counterweight maintains the back pressure.

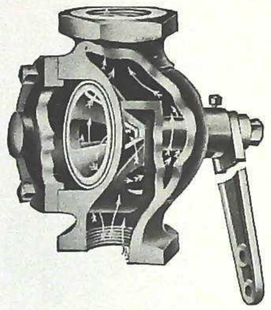
The top member of the valve is bevel seated and the bottom one is a piston disc—the tightest possible construction. The largest port is closed tight under all conditions and the bottom one is water sealed. With both top and bottom members beveled, expansion tends to unseat the top one. The seats are bronze bushing rings and the valve is cast iron. A patented construction that positively prevents sticking from expansion.

This valve may be used in either a horizontal or vertical pipe line. Less wear will occur if used horizontally.

Size Inches	Face to Face Inches Screwed	Face to Face Inches Flanged	Price, Each Screwed	Price, Each Standard Flanged	Size Inches	Face to Face Flanged Inches	Price Each Standard Flanged
2	7½	7¾	$54.00	$60.00	12	22	$400.00
2½	7½	7¾	64.00	70.00	14	24¼	600.00
3	8½	8½	74.00	80.00	16	27½	800.00
3½	9¼	9	84.00	90.00	18	29½	1000.00
4	10¼	10	100.00	106.00	20	30½	1200.00
5	11½	11½	126.00	132.00	22	38	1400.00
6	13¼	13	150.00	156.00	24	38	1600.00
7	14¾	14½	180.00	190.00	26	48	1900.00
8	16¾	16¾	220.00	230.00	28	48	2200.00
10	....	19	.....	300.00	30	47	2600.00

Union Fitts Chronometer Valves

For 250 Pounds Steam Working Preasure



Easily adapted to service conditions, and by changing position of lever may be set as required whether horizontal, vertical or oblique without special fittings. Designed for regulating and governing purposes only and should not be used as stop valves.

The plain valve is balanced by the pressure only.

The yoke valve is perfectly balanced, regardless of pressure conditions, and varies from the plain type only in the exterior yoke.

Valves of the yoke type only should be used for high pressures.

Screwed

Size Valve Inches	Face to Face Inches	Price, Each Plain Type Iron Body	Price, Each Plain Type Bronze Body	Price, Each Yoke Type Iron Body	Price, Each Yoke Type Bronze Body
⅜, ½	3½	.....	.....	.....	$40.00
¾	4¾	.....	$30.00	.....	50.00
*1	5½	$40.00	50.00	.....	60.00
*1¼	6	50.00	60.00	$60.00	80.00
1½	7	60.00	80.00	80.00	100.00
2	9	80.00	120.00	100.00	140.00
2½	10⅜	100.00	150.00	140.00	180.00
3	11¾	150.00	220.00	180.00	260.00

Flanged

4	15⅛	.....	.....	$300.00	.....
5	17¾	.....	.....	520.00	.....
6	20¼	.....	.....	600.00	.....
8	22½	.....	.....	1000.00	.....

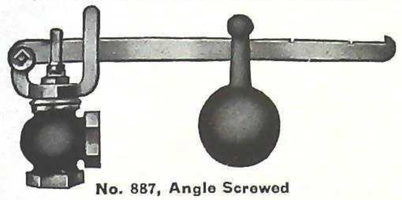
*Face to face dimensions with flanges; 1-inch valve, 6⅝ inches, 1¼-inch valve, 6¾ inches.

Hy-Tech Products

Globe, Angle and Cross Safety Valves

Brass Disc

For 100 Pounds Steam Working Pressure



No. 887, Angle Screwed

Brass Valves

The levers on these valves are graduated from 30 to 100 pounds. Can be furnished graduated under 30 pounds at special prices.

Size In.	Screwed Price Each	Size In.	Screwed Price Each	Size In.	Screwed Price Each	Size In.	Screwed Price Each
¼	$2.20	¾	$3.90	1½	$9.00	3	$33.50
⅜	2.50	1	4.70	2	12.50	.	.....
½	3.25	1¼	7.15	2½	22.50	.	.....

Iron Body Valves

Sizes from 1 to 3-inch inclusive have brass swivel top; larger sizes have cast iron top and can be set at any 90° angle. The stem, disc and seat ring are made of brass.

Levers are graduated from 30 to 100 pounds. These valves can be furnished with any other graduations not exceeding 100 pounds at a special price.

Size In.	Diam. Flange In.	Price, Each Screwed	Price, Each Flanged	Size In.	Diam. Flange In.	Price, Each Screwed	Price, Each Flanged
1	...	$4.00	.....	4	9	$28.75	$34.00
1¼	...	5.00	.....	4½	9¼	34.50	40.00
1½	...	5.80	.....	5	10	41.50	48.00
2	6	7.80	$10.25	6	11	57.75	65.00
2½	7	13.25	16.00	7	12½	93.50	100.00
3	7½	17.25	21.50	8	13½	132.00	140.00
3½	8½	23.00	27.50	..	....	.....	.....

Model JRT American Pop Safety Valves

For Fire Tube Boilers

For Steam Pressures up to 250 Pounds

Iron body, bronze mountings.

Inlet flanges furnished extra heavy dimensions only and drilled (extra heavy dimensions) only when so ordered at extra cost.

When ordering always state set pressure.

Type 1414, screwed; 1416, flanged.



Type 1414, Screwed

Size Inches	Price, Each Bronze Seat	Price, Each Nickel Seat
2	$35.00	$40.00
2½	42.00	48.00
3	50.00	57.00
3½	68.00	75.00
4	75.00	87.00
4½	100.00	115.00

Type 1460 American House Heater Pop Safety Valves

For Pressures Not Exceeding 15 Pounds
Regularly Set to Blow at 10 Pounds or at 15 Pounds



The body and all working parts are bronze, with base of iron, thus reducing possibility of damage by use of heavy pipe wrenches in connecting.

Furnished to meet the requirements of A. S. M. E. and various other boiler codes. All threaded standard pipe thread.

Size In.	Ht. In.	Price Each	Size In.	Ht. In.	Price Each
½	4	$5.25	2	6¼	$11.25
¾	4 1/16	5.25	2½	7 1/16	26.00
1	4 1/16	6.00	3	7⅝	37.50
1¼	5	6.75	3½	9⅞	50.00
1½	5 7/16	8.25	4	10 9/16	80.00

Model K Lonergan Bronze Pop Safety Valves

A.S.M.E. Top Outlet



For portable, stationary, marine, hoisting, farm and traction boilers.

Has few working parts and is extremely simple in construction.

Size Inches	Price, Each Without Lock-Up Attachment Semi-Finished	Without Lock-Up Attachment Finished	With Lock-Up Attachment, No Lock Semi-Finished	With Lock-Up Attachment, No Lock Finished
½	$8.00	$9.00	$9.00	$10.00
¾	8.00	9.00	9.00	10.00
1	10.00	11.00	11.00	12.00
1¼	12.00	13.00	13.00	14.00
1½	15.00	16.00	17.00	18.00
2	23.00	24.00	25 00	27.00
2½	38.00	40.00	40.00	43.00
3	65.00	68.00	68.00	71.00

In ordering, state pressure at which valve is to blow off.

Types 1485 and 1487 American Standard Bronze Water Relief Valves

For Pressures up to 250 Pounds
Also, Extra Heavy for Pressures up to 400 Pounds

Especially designed for extra large relieving capacities for pumps or similar service.



Easily taken apart, cleaned or reground, without being disconnected.

Type 1485 is furnished without wheel, the compression screw being covered with cup.

Type 1487 has wheel. Supplied with female connection only. When ordering specify pressure at which valve is to be set.

Size In.	Price, Each Semi-Fin.	Price, Each Finished	Size In.	Price, Each Semi-Fin.	Price, Each Finished
½	$10.00	$11.00	2	$27.00	$29.00
¾	10.00	11.00	2½	43.00	46.00
1	12.00	13.00	3	72.00	77.00
1¼	15.00	16.00	3½	95.00	105.00
1½	18.00	19.00	4	120.00	135.00

No. 1496 American Underwriters' Iron Body Water Relief Valves

For 250 Pounds Working Pressure



Bronze mounted. Has been accepted by the Inspection Department of the Associated Factory Mutual Fire Insurance Companies for use on Standard Underwriter Fire Pumps, the sizes required under this particular service being 3, 3½, 4 and 5 inches, and set at 100 pounds.

Always furnished with flanged inlet, which conforms to Underwriters' requirements.

Size In.	Price Each	Size In.	Price Each
3	$65.00	4	$100.00
3½	85.00	5	150.00

Try-Me Pressure Relief Valves



This valve is for use on air, water, range boilers, water fronts, air compressors, pressure tanks, pumps, refrigerating machines and similar applications.

Has large seat area which insures relief. Special lubricated Jenkins seat prevents sticking. Bronze spring scientifically designed. Non-torsional spring button assures accurate setting. Safety lock cap maintains original setting. Wide range of up to 225 pounds per square inch.

Easily set. Sealed to prevent tampering.

Size..... inches	½	¾
Price..... each	$6.00	6.00

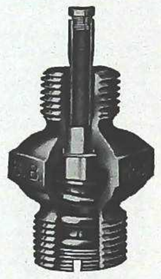
3 in 1 Boiler Relief Valves



The 3 in 1 boiler relief valve gives protection against temperature, pressure and vacuum.

Price.....each **$5.00**

B.B. No. 20 Temperature-Pressure Valves



This valve guards against the dangers of high temperature and excessive pressure.

It has a solid plug of fusing **metal** placed in the pressure spindle. When the temperature of the water at the plug exceeds 220° F., the plug melts, leaving a direct opening for steam and hot water to waste through the center of the valve and out to some open fixture.

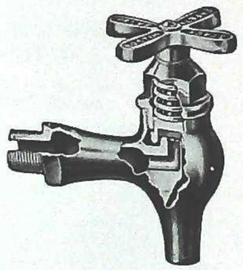
Eliminates the danger of boiler explosions.

Male inlet, ½-inch and ¾-inch I. P. S. and ¾-inch F. T.

No. **20**.....each **$3.25**

Stack Relief Valves

Faucet Type



Designed to serve the dual purpose of relief valve and sink faucet. Simple in construction.

Cast from virgin metal. Fabricated into quality valve of bronze.

Price, ½-inch I. P. S., Male.....each **$6.00**
Price, ¾-Inch I. P. S., Male.....each **7.00**
Price, ½-Inch I. P. S., Female Flanged...each **7.00**

Tray Type

Designed as a relief valve and laundry tray bibb.

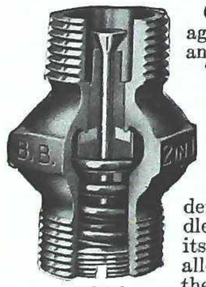
Price, ½-Inch I.P.S., Female Flange.....each **$7.00**

Drain Type

Designed as a relief valve and drain cock. Rough brass.

Price, ½-Inch I.P.S., Male.....each **$5.00**

B.B. 2 in 1 Pressure-Vacuum Valves



2 In 1



Vacuum Valve

Gives double protection against excessive pressure and vacuum.

The spindle in the vacuum valve has a flared head which seats against a knife edge seat on the pressure spindle.

When a vacuum develops, the spindle is drawn from its seat and air allowed to enter the system through the valve, thus breaking the vacuum.

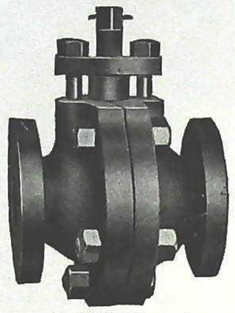
Male inlet, ½ and ¾-inch I.P.S. and ¾-inch F.T.

No. 2 In 1.....each **$3.00**

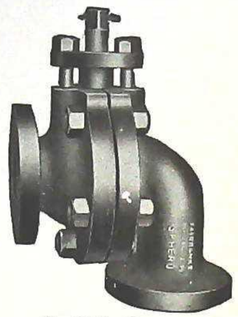
Fairbanks Sphero Valves

Straight and Angle Pattern

For 250 Pounds Working Pressure



No. 0830, Flanged



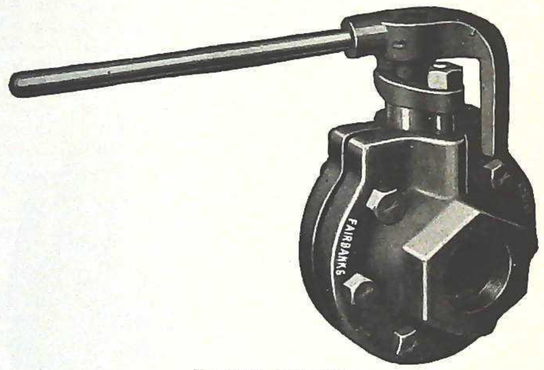
No. 0831, Flanged

Size Inches	Face to Face Flanged Inches	Diam. Flanges Inches	Price, Each No. 0830 Flanged	No. 0831 Flanged
1½	7⅛	6	$14.25	$15.75
2	7¾	6½	20.50	22.55
2½	9	7½	27.00	30.00

Fairbanks Sphero Valves

With Quarter Stop

For 200 Pounds Steam Working Pressure



No. 0828, Screwed

Size Inches	Face to Face Inches Screwed	Face to Face Inches Flanged	Diam. Flanges Inches	Price, Each No. 0828 Screwed	No. 0829 Flanged	Sphero Rings Encased
½	2 13/16	.....	....	$6.50	.....	$.79
¾	3 5/16	.....	...	7.25	.....	.81
1	4 5/32	5 17/32	4½	8.00	$8.00	1.05
1¼	4 17/32	5 21/32	5	10.75	10.75	1.11
1½	4 25/32	6 13/32	6	13.75	13.75	1.21
2	5 29/32	7 21/32	6½	19.00	19.00	1.49
2½	6¾	8 17/32	7½	25.00	25.00	2.01
3	7¾	9½	8¼	35.00	35.00	2.80
4	10	12	10		On application	

No. 2189 Myers Water Relief Valves

For Power Pumps



This valve is used on all Myers home, direct and medium size water systems.

Packed 1 in a carton.

Weight, 1 pound.

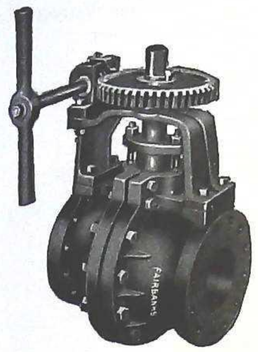
Price, No. **2189**.....each **$2.50**

Hy-Tech Products

Fairbanks Sphero Valves

Worm Gear Attachment

For 200 Pounds Working Pressure



The 6 and 8-inch sizes are furnished with worm gear attachment only; the 4-inch size can be furnished with hand lever or worm gear.

Prices upon application.

Homestead Brass Straightway Valves

For 200 Pounds Working Pressure

Valves 2 inches and larger have bonnet bolted on.

Price includes handle.



Screwed

Size Inches	Face to Face Flanged, In.	Diam. Flgs., In.	Price, Each Scrd. No. 2	Flgd. No. 3
⅛	....	....	$4.00	....
¼	....	....	4.00	....
⅜	....	....	4.00	....
½	....	....	4.50	....
¾	....	....	5.35	....
1	....	....	7.15	....
1¼	5 7/8	4½	9.60	$19.20
1½	6¼	5	13.40	26.70
2	7 3/8	6	23.30	35.00
2½	8	7	35.00	46.40
3	9 5/8	7½	60.40	82.90
4	11⅛	9	120.40	136.00
6	15½	11	190.00	240.00

Homestead Brass Straightway Valves

For 500 Pounds Working Pressure

Sizes under 1 inch have screw bonnet and stuffing box.

Price includes handle.



Screwed

Size In.	Face to Face Flanged, In.	Diam. Flgs., In.	Price, Each Scrd. No. 5	Flgd. No. 6
⅛	....	....	$5.00	.....
¼	....	....	5.00	.....
⅜	....	....	5.00	.....
½	....	....	7.30	.....
¾	....	....	9.15	.....
1	5⅞	4½	11.70	$23.30
1¼	6 3/8	5	16.60	25.00
1½	7¼	6	21.30	29.00
2	8¼	6½	31.60	45.00
2½	9 3/8	7½	50.00	70.00
3	11 3/8	8¼	95.30	116.60
4	12½	10	160.20	193.30
5	14½	11	183.30	226.60
6	16¼	12½	233.30	288.10

Homestead Brass Four-way Valves

For 200 Pounds Working Pressure



Screwed

Designed only for use as operating valves to direct flow, the seats being leakless only in the two extreme positions of the ports.

Four-way valves are used on water, air, oil, steam, etc., wherever this type of valve is suitable to conditions and where the fluid handled does not attack brass.

Price includes handle.

Size Inches	No. 14 Screwed Price Each	Size Inches	No. 14 Screwed Price Each
⅜	$10.00	¾	$13.00
½	10.25	1	20.20

Homestead Semi-steel Body Three-way Valves

Brass Plug

For 200 Pounds Working Pressure

For air and cold water service.

Price includes handle.



Screwed

Size In.	Face to Face Flgd. In.	Ctr. to Face Flgd. In.	Diam. Flgs. In.	Price, Each Screwed No. 19	Flanged No. 20
1	...	...	...	$25.00	.....
1¼	...	...	...	31.00	.....
1½	7½	3⅛	6	38.00	$50.00
2	8½	4	6½	45.00	60.00
2½	10	5	7½	68.00	75.60
3	10⅞	5⅜	8¼	98.00	135.00
4	14⅝	7 3/16	10	150.00	180.00
5	16	8	11	190.00	220.00
6	16½	8¼	12½	244.40	271.15

Homestead Semi-steel Body Straightway Valves

Brass Plug

For 250 Pounds Working Pressure



Flanged

For air and cold water service.

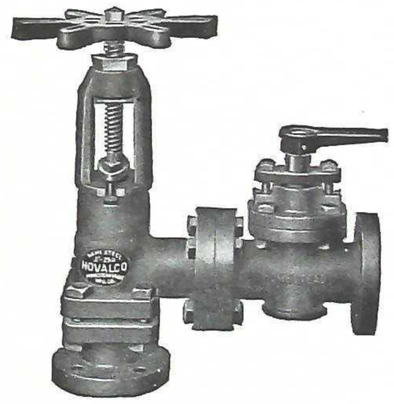
Price includes handle.

Size In.	Face to Face Flanged In.	Diam. Flanges In.	Price, Each Screwed No. 17	Flanged No. 18
¾	...	...	$10.20	.....
1	...	...	10.20	.....
1¼	...	...	12.80	.....
1½	7¼	6	19.00	$28.00
2	8¼	6½	24.00	31.65
2½	9 3/8	7½	35.55	47.55
3	11 3/8	8¼	62.20	82.20
4	12½	10	97.80	120.00
5	14½	11	137.80	166.65
6	16¼	12½	151.15	217.75

Hovalco-Homestead Semi-steel Combination Blow-off Valves

Reversible—Regrindable—Renewable

For 250 Pounds Working Pressure



No. 51

This double blow-off arrangement represents the accepted practice in many power plants, and meets the requirements of those states whose codes specify two valves on the blow-off line.

The valve body is made of Homestead semi-steel. This material is closely grained and extremely tough.

The valve seat and disc are made of monel metal which is non-corrosive, and which will not cut easily. Both parts are tapered to an angle which will not permit any dirt or grit to find a lodging place.

The trimmings are made of steam bronze.

This combination makes it possible, when necessary, to regrind, renew, or reverse the seat and disc of the Hovalco Blow-off Valve while the boiler is under pressure.

Size In.	Back to Face, In.	Price, Each No. 51	Size In.	Back to Face, In.	Price, Each No. 51
1½	12 1/16	$38.00	2½	18 3/16	$59.00
2	16 5/16	44.00	3	20 9/16	85.00

Homestead All Semi-steel Straightway Valves

For 250 Pounds Working Pressure

Price includes handle.



Screwed

Size In.	Face to Face Flanged In.	Diam. Flanges In.	Price, Each Screwed No. 22	Flanged No. 23
½	...	...	$12.00	.....
¾	...	...	12.00	.....
1	...	...	12.00	.....
1¼	...	...	17.00	.....
1½	7¼	6	18.50	$24.00
2	8¼	6½	21.90	28.50
2½	9⅜	7½	36.00	46.80
3	11⅜	8¼	60.00	78.00
4	12½	10	88.00	108.00
5	14½	11	124.00	170.00
6	16¼	12½	172.00	196.00

Jenkins Bronze Y or Blow-Off Valves

For Working Pressures: 150 Pounds Steam; 250 Pounds Water

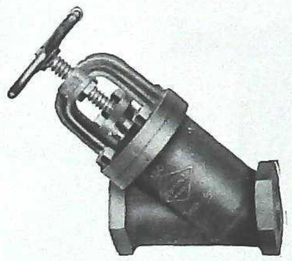
With Renewable Seat Rings


No. 124 Screwed

Size Inches	Price, Each No. 124 Screwed	No. 125 Flanged
⅜	$3.00	.....
½	3.00	$7.50
¾	4.50	10.50
1	6.00	13.50
1¼	7.50	16.50
1½	9.75	19.50
2	14.00	30.00
2½	27.00	42.00
3	37.50	55.50

Jenkins Iron Body Y or Blow-Off Valves

With Yoke, Bronze Mounted, Jenkins Disc, Renewable Bronze Seat Rings


No. 296, Screwed

For Working Pressures: 150 Pounds Steam 250 Pounds Water

Size Inches	Face to Face, In. Screwed	Flanged	Diam. Flgs. In.
2	8	9 13/16	6
2½	9½	11	7
3	11½	12⅛	7½

Size Inches	Price, Each No. 296 Screwed	No. 297 Flanged
2	$16.00	$19.00
2½	22.00	27.00
3	29.00	34.00

Standard Three-Way Iron Cocks

Square Head

For 125 Pounds Steam Working Pressure


No. 872, Screwed

Size Inches	Price, Screwed, Each All Iron	With Brass Washer	With Brass Plug	With Brass Plug and Washer
½	$1.50	$1.60	$1.90	$2.00
¾	1.65	1.80	2.20	2.35
1	1.80	2.05	2.40	2.65
1¼	2.05	2.40	3.10	3.45
1½	2.65	3.05	4.50	4.90
2	3.65	4.15	6.25	6.75
2½	5.35	6.10	9.75	10.50
3	7.50	8.50	13.75	14.75
3½	14.00	16.00	30.00	32.00
4	19.00	22.50	40.00	43.50
5	36.50	42.50	71.50	77.50
6	52.00	60.00	100.00	108.00
8	110.00	120.00	210.00	220.00

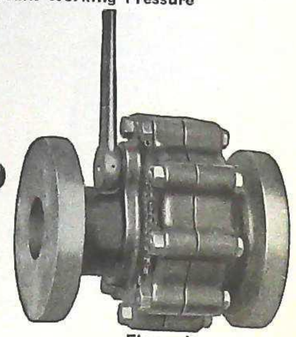
Prices of flanged three-way cocks upon application.

Everlasting Iron Body Blow-Off Valves

For 250 Pounds Steam Working Pressure



Screwed

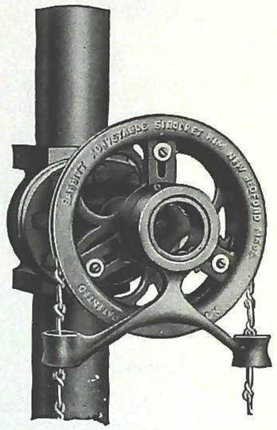

Flanged

Designed to give continual, uninterrupted service, being self-grinding and self-compensating at all points. Every valve is carefully inspected and tested; all valves for boiler and other high pressure service are worked under 250 pounds steam pressure before leaving the factory.

Size In.	Approximate Face to Face, In. Screwed	Flanged	Diam. Flanges In.	Price, Each Screwed	Flanged	Rack and Pinion Screwed	Flanged
¼	2⅛	....	....	$9.00	.....	.....	.....
⅜	2½	....	....	9.00	.....	.....	.....
½	2½	....	....	9.00	.....	.....	.....
¾	3	....	....	11.00	.....	.....	.....
1	3½	7¼	4⅞	11.00	$15.00	.....	.....
1¼	3⅜	7¼	5¼	16.00	19.00	.....	.....
1½	4¼	8⅛	6⅛	22.00	26.00	.....	.....
2	4⅜	8⅞	6½	25.00	30.00	$34.50	$39.00
2½	5⅛	10¼	7½	32.00	39.00	40.00	48.00
3	6⅜	11⅞	8¼	44.00	50.00	54.00	60.00
4	6⅞	12	10	60.00	70.00	71.00	81.00
5	7	12½	11	.....	.....	95.00	100.00
6	7½	13	11	.....	.....	110.00	117.00

Babbitt Adjustable Sprocket Rims

With Chain Guides



Every valve in an overhead pipe line should be equipped for immediate operation from the floor. The Babbitt Adjustable Sprocket Rim and Chain Guide gives this instantaneous control by simply pulling the chain.

The rim is adjustable and may be quickly attached to any type of valve wheel whether used for controlling the flow of steam, gas, water, or other liquids, and does not interfere with the rising stem.

When ordering give diameter of valve wheel to be fitted and number of feet of chain required.

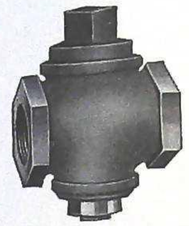
No.	Diameter Sprocket Wheel Inches	Will Fit Valve Wheels Diameter Inches	Price Each	Price Chain per Foot
0	4	2 to 4	$2.40	$.08
1	5⅞	4⅛ to 5⅞	4.00	.10
1½	7½	6 to 7½	5.20	.10
2	9	7¾ to 9	6.40	.10
2½	12½	9¼ to 12½	8.80	.16
3	15½	12¾ to 15½	10.80	.16
3½	19	15¾ to 19	15.20	.16
4	22	19¼ to 22	20.00	.24
4½	26	22¼ to 26	28.00	.24
5	30	26¼ to 30	32.00	.24

Hy-Tech Products

Standard Iron Cocks

Square and Flat Head

For 125 Pounds Steam Working Pressure


No. 870, Square Head Screwed


No. 871, Flat Head Screwed

Galvanized iron cock, add 50 per cent to lists below.

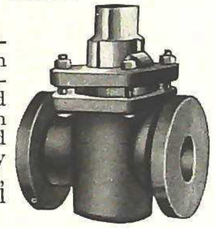
Size Inches	Price, Each Screwed All Iron	With Brass Washer	With Brass Plug	With Brass Plug and Washer	Flanged All Iron	With Brass Washer	With Brass Plug	With Brass Plug and Washer
⅜	$.85	$.95	$1.25	$1.35	.....	.....	.....	.....
½	.90	1.00	1.30	1.40	$1.85	$1.95	$2.25	$2.35
¾	1.05	1.20	1.60	1.75	2.00	2.15	2.65	2.75
1	1.30	1.55	1.90	2.15	2.25	2.50	3.00	3.15
1¼	1.60	1.95	2.65	3.00	2.75	3.10	3.75	4.10
1½	1.95	2.35	3.75	4.15	3.25	3.65	5.00	5.40
2	2.70	3.20	5.25	5.75	4.25	4.75	7.00	7.50
2½	4.40	5.15	8.75	9.50	6.25	7.00	10.50	11.25
3	6.75	7.75	13.00	14.00	9.50	10.50	15.75	16.75
3½	12.00	14.00	27.50	29.50	15.00	17.00	30.00	32.00
4	15.50	19.00	36.50	40.00	19.00	22.50	40.00	43.50
5	32.00	38.00	67.00	73.00	36.00	42.00	70.00	76.00
6	45.00	53.00	94.00	102.00	50.00	58.00	100.00	108.00
8	100.00	110.00	200.00	210.00	107.00	117.00	210.00	220.00

Asbestos Packed Iron Cocks

Grooved Packed—U-Shaped


No. 873, Screwed

For boiler blow-off, water column blow-off, also between check and boiler, and between water column and boiler. Successfully used for hydraulics, ammonia, gas, oil and air.


No. 874, Flanged

Standard Pattern

For Steam Working Pressures: ⅛ to 2-Inch, 125 Pounds; 2½ to 6-Inch, 100 Pounds

Size In.	Face to Face Inches Screwed	Flgd.	Price, Each Screwed	Flgd.	Size In.	Face to Face Inches Screwed	Flgd.	Price, Each Screwed	Flgd.
⅛	2⅝	...	$1.60	....	2	6	7⅛	$7.00	$7.00
¼	2⅝	...	1.60	....	2½	7	8¼	12.00	12.00
⅜	2⅝	...	1.60	....	3	8⅛	9¼	18.00	18.00
½	3	...	1.60	....	3½	8¾	10¼	27.00	27.00
¾	3⅜	...	2.10	....	4	9½	11½	30.00	30.00
1	4	5½	2.50	$2.50	5	11½	13¾	45.00	45.00
1¼	4⅝	5¾	3.50	3.50	6	14¾	16	60.00	60.00
1½	5⅜	5⅞	4.75	4.75	...	....	....	.....	.....

Extra Heavy Pattern

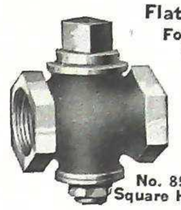
For Steam Working Pressures: 1 to 2-Inch, 250 Pounds; 2½ to 4-Inch, 250 Pounds

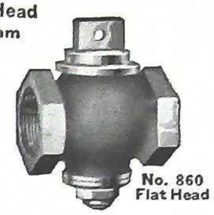
Size In.	Face to Face Inches Serd.	Flgd.	Price, Each Serd.	Flgd.	Size In.	Face to Face Inches Serd.	Flgd.	Price, Each Serd.	Flgd.
½	3¾	...	$2.40	....	2	6⅞	8	$10.00	$10.00
¾	4⅛	...	3.00	....	2½	8⅜	10	17.00	17.00
1	4¾	5⅛	3.50	$3.50	3	10⅞	11½	26.00	26.00
1¼	5⅜	5⅝	5.00	5.00	3½	12	12¾	38.00	38.00
1½	5⅞	6¾	6.75	6.75	4	15	15	42.00	42.00

Brass Steam Cocks

Flat and Square Head

For 125 Pounds Steam Working Pressure


No. 859 Square Head


No. 860 Flat Head

Size Inches	Price, Each Square or Flat Head	Square Head With Check	Size Inches	Price, Each Square or Flat Head	Square Head With Check
¼	$.85	....	1¼	$3.70	$3.95
⅜	1.00	....	1½	4.85	5.15
½	1.25	$1.40	2	7.30	7.65
¾	1.70	1.90	2½	14.50	....
1	2.35	2.55	3	22.50	....

3-Way Brass Steam Cocks

Square Head—With Check

For 100 Pounds Steam Working Pressure

With Extra Large Plug and Full Openings


No. 862

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¼	$1.80	1	$3.75	2½	$18.75
⅜	2.10	1¼	5.75	3	26.00
½	2.50	1½	7.15	...	.....
¾	3.00	2	11.00	...	.....

4-Way Brass Steam Cocks

Square Head—With Check

For 100 Pounds Steam Working Pressure

These cocks are furnished to order only.

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
½	$6.00	1	$11.00	1½	$17.50
¾	8.50	1¼	14.50	2	25.00

No. 3317 Walworth Standard Brass Flat Head Gas Service Cocks



Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
¼	$.90	¾	$1.30	1½	$4.60	3	$27.00
⅜	1.00	1	2.10	2	8.00	..	.....
½	1.10	1¼	3.25	2½	17.50	..	.....

Brass Lock Wing Gas Service Stops

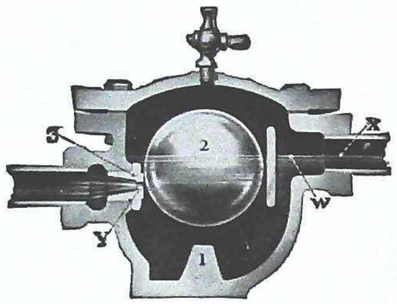
Standard Flat and Round Way


No. 8432


No. 8532

Size Inches	Price, Each No. 8432 Flat Way	No. 8532 Round Way	Size Inches	Price, Each No. 8432 Flat Way	No. 8532 Round Way
¼	$.80	....	1	$1.65	$2.60
⅜	.85	$1.25	1¼	2.55	3.85
½	.95	1.40	1½	3.55	5.65
¾	1.05	1.75	2	6.00	10.10

J-M Ball Steam Traps



View of Trap Discharging

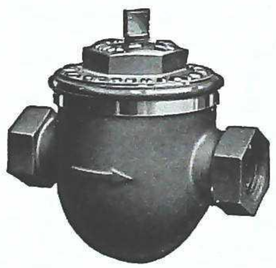
The only moving part, a hollow, seamless ball, takes the place of the levers, buckets, thermostats, cotterpins, etc., in other traps.

The advantages of this simplicity are that the first cost of the trap is less, and the usual expense of adjustment is eliminated. When this trap has been connected, the ball put in and the cover bolted, that is the end of the job. There is no necessity for the steam-fitter to return for adjustment. And this same simplicity insures permanent efficiency, for, with a copper sphere as the only moving part, and the buoyant force of water operating this sphere, there is nothing to get out of order.

The trap is equipped with a pet cock in the top, not as an air relief but because it is useful in showing that the trap is operating properly.

No.	Pipe Connections In.	Cap. Water per Hour Lbs.	Ht. In.	Face to Face In.	Wt. Lbs.	Price Each
2A	¾	600	6	7 5/16	14¼	$27.00
3A	1	1400	7⅛	8¼	23	35.00
4A	1¼	2400	8¾	10⅞	47	40.00
5A	1½	5000	11¼	12¾	85	70.00
6A	2	8000	13	14½	126	95.00

J-M Ball Junior Steam Traps



This trap, with a capacity of 250 pounds of condensate per hour, is intended for small capacity service in which the operating steam pressure is less than 50 pounds.

The body is of bronze.

The cover screws in place making a metal-to-metal joint with the body. No gasket is required.

Discharge bushing screws into place through threaded discharge pipe connection.

Size Pipe, In.	Pressure Range, Lbs.	Water per Hour, Lbs.	Lgth. In.	Ht. In.	Wt. Lbs.	Price Each
½	1 to 10 10 " 50	250	4¼	3⅝	2⅜	$10.00

Sarco No. 7 Adjustable Steam Traps


No. 7

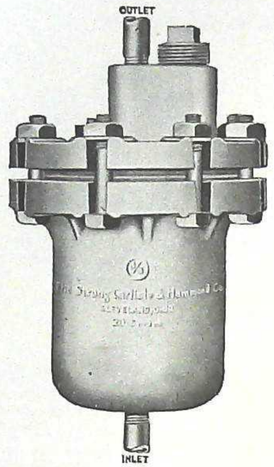
The Sarco Low Pressure Steam Trap is used on pressures from 1 to 50 pounds, and the high pressure steam traps are used from 50 to 200 pounds.

It is so designed that the trap may be installed in any position without requiring supports and floor space.

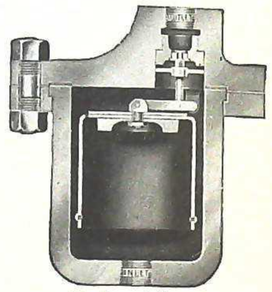
Inlet and Outlet In.	Weight Pounds	Price, Each Low Pressure	Price, Each High Pressure	Inlet and Outlet In.	Weight Pounds	Price, Each Low Pressure	Price, Each High Pressure
⅜	1 9/16	$6.00	$7.75	1¼	11½	$24.15	$28.50
½	1 9/16	6.00	....	1½	18	30.00	34.50
½	2¼	....	7.75	2	29	38.70	48.30
¾	2⅜	9.45	10.35	...	....	.....	.....
1	3¼	11.25	12.00	...	....	.....	.....

Strong Forged-Steel Steam Types

Anum-Metl Seat and Disc



Exterior View



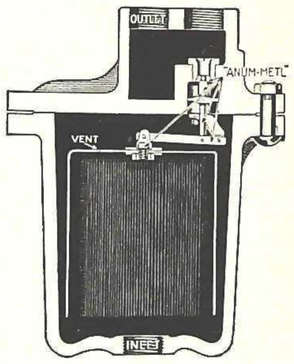
Sectional View

Suitable for pressures up to 1800 pounds per square inch. It is particularly free from trouble normally experienced with traps on high pressure service. The inlet being in the bottom, produces a turbulent action in the interior. The indestructible Anum-Metl parts eliminate valve and seat replacement. The trap or body is hot drawn forged and the cover is of solid forged steel. Genuine Mac-it studs are used for bolting the cover to the base.

No	21	22	23	24
Each	$68.00	90.00	125.00	150.00
Pipe Size ..... inches	¾	1	1¼	1½
Weight ..... pounds	60	95	140	220

Strong Inverted Bucket Steam Traps

The Strong inverted bucket steam traps are Anum-Metl fitted throughout, i.e., the valve and seat, valve rod, and all levers and pins are made from this practically indestructible metal.



As a result of the general use of Anum-Metl, this trap carries a guarantee against wear for one year and any replacements required during that time will be furnished without charge. Strong steam traps will not become air-bound.

For pressures of 0 to 225 pounds. In ordering, state highest pressure under which the trap will be operated.

Capacities given are based on 125-pound seat operating at 125 pounds pressure. For approximate capacities at various pressure (using proper orifice), multiply capacities given below by the following factors: 250 pounds, 50; 200 pounds, 75; 125 pounds, 1.00; 30 pounds, 2.00; and 10 pounds, 2.50.

No.	Pipe Connections In.	Water per Hour Lbs.	Radiation Sq. Ft.	1-In. Pipe Linear Ft.	Greatest Diameter In.	Ht. Over All In.	Ship. Wt. Lbs.	Price Each
020	½	450	1350	4050	4¾	6	8	$12.90
20	½	800	2400	7200	6¼	7¾	19	17.00
21	¾	1600	4800	14400	7⅞	9¾	27	22.50
22	1	4000	12000	36000	8¼	11	33	30.00
23	1¼	6500	19500	58500	9½	12¾	54	37.00
24	1½–2	12000	36000	108000	11½	14¾	88	55.00

2-Inch furnished unless otherwise specified.

Hy-Tech Products

Strong Steam Traps

Bucket Type



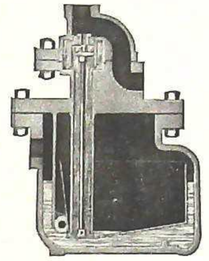
Exterior View

The only steam trap fitted with Anum-Metl valves and seats. These valves and seats are guaranteed to stay tight for one year or they will be replaced without charge.

Anum-Metl wears longer than other metal, being one of the toughest valve metals known.

Ball type valve and seat form a perfect joint any way they come together. When open, the valve is wide open. There is no cutting down in trap capacity due to the end of the valve remaining in the discharge port.

Strong Steam Traps work intermittently. The trap is either wide open with the condensation rushing unobstructed from the trap or closed tight while the condensation is collecting in the trap.


Sectional View

This action develops a pumping action upon any water lying in pipe sags or pockets, also breaks up the drops of moisture clinging to the walls of the piping.

No piping to disconnect for valve inspection. Loosen three bolts, slip them from their respective slots and raise the cap.

As soon as sufficient water enters the trap, the bucket, being buoyant, floats and closes the valve and the trap is in operation. As the condensation increases, the body of the trap fills and the water enters the bucket, causing it to sink. The bucket being attached to the discharge valve, opens it and the trap begins to discharge, continuing to do so until the condensation is blown out of the body to the lowest edge of the bucket, when the water in the bucket is forced out until the bucket again becomes buoyant, rises and closes the valve.


Valve Construction

No. 30 Series

Trap No.	Size Pipe Connections In.	Water per Hr. Lbs.	Cap. Rad. Sq. Ft.	Cap. 1-In. Pipe Lin. Ft.	Ship. Wt. Lbs.	Price Each
30	½	1000	3000	9000	40	$22.50
31	¾	1700	5100	15300	50	28.00
32	1	2100	6300	18900	75	34.00
33	1¼	4500	13000	39000	115	47.00
34	1½	6000	18000	54000	150	60.00
35	2	8000	24000	72000	210	85.00
36	2½	15000	45000	135000	330	120.00

They can be furnished at the same prices for different pressures, as follows:

Gravity Traps ..... 10 lbs. or less
Low Pressure Traps ..... 10 lbs. to 30 lbs.
Standard Pressure Traps ..... 30 lbs. to 125 lbs.
High Pressure Traps ..... 125 lbs. to 200 lbs.

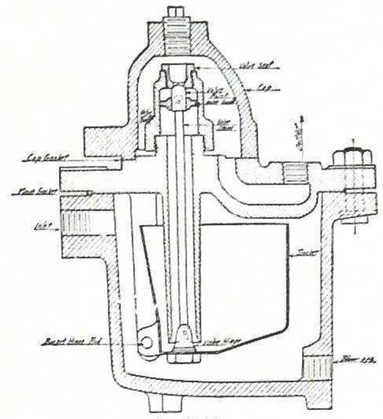
For drying lumber, greenhouses or moist goods, divide linear and square feet ratings by 2. For brick kilns, laundries or wet goods, divide by 3. For fan systems and blower coils, divide by 5.

Unless otherwise specified, standard pressure traps will be shipped.

For pressures greater than 225 pounds, cast steel body traps will be furnished.

Prices upon application.

Repairs for Strong Steam Traps


No. 30 Trap

In the manufacture of Strong Steam Traps great care is exercised to insure an exact duplication of each part to its original. Metal patterns are used for machine molding.

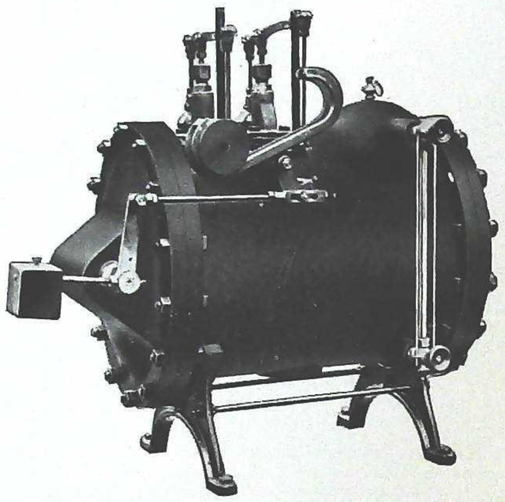
The trap parts are held by special chucks and formed by special tools.

Description	Price, Each — Trap No. 30 or 00	31	0, 1 or 32	2 or 33
Bodies	$9.40	$13.80	$15.00	$20.00
Bolt—Cap, Complete with Nuts and Washers	.25	.25	.25	.28
Bolts—Main Flange with Nuts and Washers	.25	.25	.25	.28
Buckets	2.95	3.10	3.40	4.50
Caps	2.10	2.40	2.80	3.50
Covers	9.00	11.25	11.85	14.35
Gaskets—Cap	.65	.70	.75	.85
" Main Flange	.40	.40	.45	.60
Guides—Valve	.40	.45	.45	.45
Hinges—Bucket Rod	.70	.75	.80	1.00
Seats—Valve any Pressure excepting Gravity	1.25	1.25	1.25	1.80
Seats—Valve, Gravity Pressure	1.25	1.25	3.00	4.00
Valves—any Pressure	1.25	1.25	1.25	1.80
Valve—Rods	1.10	1.20	1.30	1.50
" Bodies	2.50	2.80	3.00	3.60
" Hinges	.70	.75	.75	.80
Air Cocks—Regular	.40	.40	.40	.40
" " Automatic	3.20	3.20	3.20	3.20

Description	Price, Each — Trap No. 3 or 34	4 or 35	5 or 36	.....
Bodies	$28.00	$40.00	$62.00	
Bolt—Cap, Complete with Nuts and Washers	.28	.28	.28	
Bolts—Main Flange with Nuts and Washers	.28	.28	.28	
Buckets	5.20	6.40	9.10	
Caps	4.80	5.60	8.30	
Covers	19.15	27.25	42.00	
Gaskets—Cap	1.10	1.20	1.35	
" Main Flange	.70	.90	1.20	
Guides—Valve	.50	.65	.65	
Hinges—Bucket Rod	1.25	1.40	1.60	
Seats—Valve any Pressure excepting Gravity	1.80	2.25	2.25	
Seats—Valve, Gravity Pressure	4.10	4.25	6.80	
Valves—any Pressure	1.80	2.25	2.25	
Valve—Rods	1.80	1.90	2.10	
" Bodies	3.80	4.40	5.10	
" Hinges	.90	1.00	1.10	
Air Cocks—Regular	.40	.40	.40	
" " Automatic	3.20	3.20	3.20	

Note: Valves and seats are sold only in complete sets.

Sterling Return Traps



As the condensation, or the liquid, flows into the body of the trap the float rises, gradually raising the track, and when the body is filled the track tilts to the right, causing the weight to roll to the right side, closing the equalizing valve and opening the live steam valve. The steam pressure then closes the inlet check valve beneath the trap and forces the condensation through the outlet check valve either into the boiler, or boilers, or lifts it into some receptacle overhead, as an open or closed tank, depending upon whichever service is required. As the condensation is pushed out of the body by the steam pressure the float falls to the bottom, causing the track to tilt in the opposite direction so that the roller goes over, thereby shutting the live steam valve, and opening the equalizing valve. This completes one cycle and the trap is now ready to receive another supply of condensate or other liquid.

Sterling Lifting Traps are successfully used for pumping liquids such as gasoline, oils and chemicals. When this application is employed it is generally customary to use air or gas as the pressure medium.

Trap No.	Pipe Size In.	Capacity Pounds of Water per Hour: Boiler Feeder	Capacity Pounds of Water per Hour: Lift or Pump	Steam and Vent In.	Over All Dimensions Inches: Lgth.	Wdth.	Ht.	Ship. Wt. Lbs.	Price Each
R-0	¾	500	750	½	17	15	18	120	$90.00
R-1	1	1000	1500	¾	29½	19½	30	325	140.00
R-2	1¼	1800	2700	¾	33	20	33	402	190.00
R-3	1½	3100	4650	¾	34	20	33	480	260.00
R-4	2	5300	7950	1	35	18	32	500	360.00
R-5	2½	8200	12300	1	38	20	34	640	490.00
R-6	3	12000	18000	1	51	27	46	1375	640.00
R-7	3½	18000	27000	1	53	28	51	1475	810.00

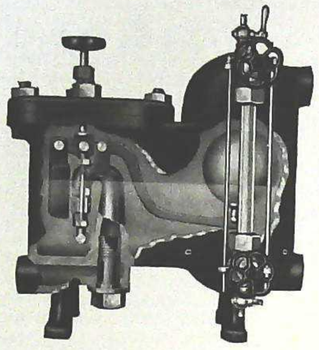
Sizes from R-1 to R-3, inclusive, can be furnished with condensing attachment for an additional charge of $20.00, and from sizes R-4 to R-7, for an additional charge of $25.00.

For tappings other than standard, there is an additional charge of $10.00 net.

Counters can be furnished not attached to trap at a net price of $8.00, and if attached, $15.00.

Write for details on larger sizes.

Sterling Separating Traps



Will drain all condensation from steam and compressed air lines, provided the pressure on the inlet exceeds that on the outlet. They will also raise water about 3 feet for every 2 pounds pressure difference between inlet and outlet. Please state pressure when ordering.

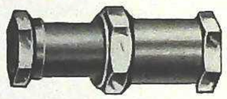
When furnished with cast steel bodies, special high pressure floats and monel metal working parts are excellent for super-heated steam lines as the re-evaporation of the water in the trap (by the superheated steam) does not affect operation.

For pressures above 150 pounds traps of 30 series are used, extra heavy cast iron bodies, or cast steel bodies. They have extra heavy floats, monel metal working parts; prices on application.

Trap No.	Pipe Size In.	Pressure Difference Pounds, per Square Inch: 10	30	60	100	150	Price Each
20	½	1500	1442	1484	1515	1449	$25.00
21	¾	2343	2596	2812	2632	2346	27.00
22	1	6000	4240	3674	3630	3220	33.00
23	1¼	9375	7944	5936	6060	5796	40.00
24	1½	18368	10384	8160	7400	7227	55.00
25	2	24000	16240	18560	14520	12800	70.00
26	2½	37500	31776	22944	18968	17772	110.00

Brass Expansion Joints

Screwed, Standard Traverse—125 Pounds Pressure



No. 404

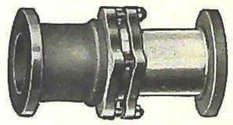
Size In.	Traverse In.	Price Each	Size In.	Traverse In.	Price Each
½	2	$1.50	1½	2¼	$5.00
¾	2¼	2.20	2	2½	8.00
1	2¼	2.75	2½	2½	17.50
1¼	2¼	4.00	3	2¾	24.00

Iron Body Expansion Joints

Brass Sleeve—125 Pounds Pressure



No. 398, Screwed



No. 401, Flanged

Screwed, Standard Traverse

Size In.	Traverse In.	Price Each	Size In.	Traverse In.	Price Each	Size In.	Traverse In.	Price Each
2	2½	$7.00	4½	3½	$30.00	9	7	$110.00
2½	2½	8.00	5	4	38.00	10	7	160.00
3	2¾	10.00	6	5	45.00	12	8	225.00
3½	3	14.00	7	6	70.00	..	.	.....
4	3¼	18.00	8	7	100.00	..	.	.....

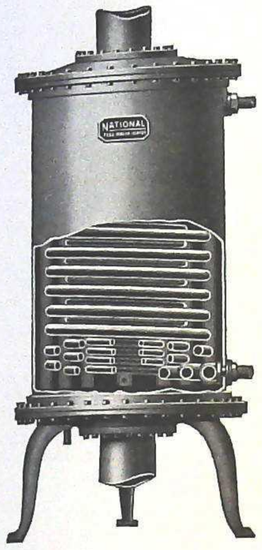
Flanged, Standard Traverse

Size In.	Traverse In.	Diam. Flanges In.	Price Each	Size In.	Traverse In.	Diam. Flanges In.	Price Each
2	2½	6	$15.00	7	6	12½	$80.00
2½	2½	7	16.00	8	7	13½	110.00
3	2¾	7½	18.50	9	7	15	120.00
3½	3	8½	25.00	10	7	16	175.00
4	3¼	9	30.00	12	8	19	250.00
4½	3½	9¼	40.00	14	10	21	500.00
5	4	10	48.00	15	10	22¼	550.00
6	5	11	55.00	16	10	23½	600.00

Hy-Tech Products

National Feed Water Heaters

Inside Manifold Type



The inside manifold type feed water heater consists of a cast iron or steel shell containing one or more helical coils of seamless drawn copper tubing. Water is pumped through the coils, entering through one manifold, passing through the tubing. The heated water passes out through another manifold and is forced directly into the boilers. Exhaust steam enters the shell at one end, giving up heat to the water flowing through the tubing. The steam which is condensed in this process leaves at the bottom of the heater.

The shells for the small sizes are of cast iron, and for the large sizes of steel plate construction—all sizes are provided with heavy cast iron heads bolted on. Tubes are of commercially pure seamless drawn copper with brazed joints and ends brazed to bronze manifolds which have long threaded nipples extending through side of shell. All coils are rigidly secured to wrought iron supports with copper hangers. Coils are easily removed for repairs by removing the head and unscrewing the manifold nipples. All coils are tested tight under 600 pounds hydrostatic pressure, and shells, unless otherwise specified, to a pressure of 10 pounds.

Shells are safe for a working steam pressure of 10 pounds per square inch.

Coils are safe for working water pressure of 250 pounds per square inch.

No.	Normal H. P. Rating	Height Without Legs	Diam. In.	Height of Legs In.	Diam. Feed Pipe In.	Diam. Exhaust Pipe In.	Weight Pounds	Price Each
05	5	10½	7	....	½	2	30	.....
1	10	12	11	....	½	2	60	.....
1½	15	17	11	....	½	2½	70	.....
2	20	18	16	....	¾	2½	175	.....
2½	25	20	19	....	1	3	260	.....
3	30	21½	20	12½	1	4	350	.....
4	40	23	20	12½	1	4	370	.....
5	50	28½	20	12½	1	4	400	.....
6	60	33½	20	12½	1	4	450	.....
8	80	38½	20	12½	1	4	475	.....
10	100	40½	22	14	1¼	5	750	.....
12	125	40½	22	14	1½	5	800	.....
15	150	45	26	15	1½	8	1100	.....
20	200	55	26	15	2	8	1275	.....
25	250	61	26	15	2	8	1450	.....
30	300	69	26	15	2	8	1600	.....
40	400	70	36	18	2½	10	2175	.....
50	500	84	36	18	2½	10	2375	.....
60	600	79	42	22	3	12	3200	.....
70	700	83	42	22	3	12	3300	.....
80	800	88	42	22	3	12	3400	.....

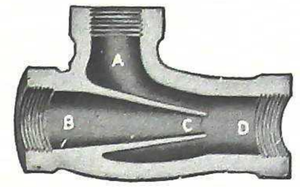
Sizes Nos. 1 to 2½ have exhaust inlet and outlet in top head.

Sizes Nos. 05, 3, and larger have exhaust inlet in bottom and outlet in top heads, unless ordered different.

Shells Nos. 05 to 30 are cast iron, 40 to 80 boiler plate.

Special location or size of exhaust connection furnished at additional cost.

McDaniel Suction Tees



This is a fitting that will make all bad jobs of steam heating work well.

Stops one steam connection from backing up on another, prevents all noise when heating water by direct blow of steam

It can be used to advantage in making all connections on heating jobs. Where condensation returns to the boilers, put it on wherever two returns come together. It is required wherever two or more connections are made to the same steam trap, as it will cause all the condensation to flow freely into the trap and avoid the trouble of one backing up on another, and one steam trap can be made to answer for several different connections, avoiding the necessity of putting a steam trap on each return, if all are from the same boiler.

All sizes are made of cast iron.

Standard Tees

For 100 Pounds Steam Working Pressure

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
½	$1.50	1¼	$2.25	2½	$5.50
¾	1.50	1½	2.75	3	8.00
1	2.00	2	3.50	...	.....

Extra Heavy Tees

For 250 Pounds Steam Working Pressure

1	$3.50	2½	$11.00	5	$43.00
1¼	4.50	3	16.00	6	60.00
1½	5.50	3½	21.00	...	.....
2	7.50	4	27.00	...	.....

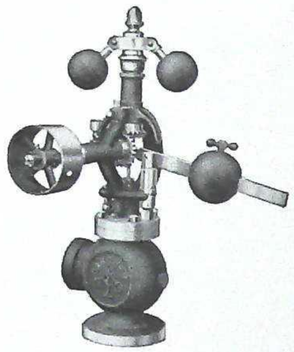
Cast Iron Blow-off Basins

Gravel and Drainage Catch Basins



Depth Inches	Diam. Inches	Weight Pounds	Price Each	Depth Inches	Diam. Inches	Weight Pounds	Price Each
16	16	222	$35.50	42	36	1210	$194.00
18	18	270	43.00	42	42	1600	224.00
20	16	245	39.00	48	24	725	116.00
20	20	310	49.60	48	30	1026	164.20
24	16	270	43.00	48	36	1310	210.00
24	18	310	49.60	48	42	1720	240.80
24	20	345	55.00	48	48	2325	325.50
30	18	350	56.00	54	30	1112	177.90
30	20	380	60.80	54	36	1410	226.00
30	24	540	86.40	54	42	1840	257.60
30	30	770	123.00	54	48	2500	350.00
36	18	400	64.00	60	30	1196	191.35
36	20	440	70.40	60	36	1510	242.00
36	24	605	96.80	60	42	1960	274.00
36	30	855	136.80	60	48	2670	373.80
36	36	1110	177.60	66	48	2825	395.50
42	24	665	106.40	72	36	1800	288.00
42	30	940	150.40	72	48	3000	420.00

Class A Gardner-Denver Standard Engine Governors



This governor is of the gravity action and is especially adapted for the larger types of stationary engines. In this governor the centrifugal force of the balls is opposed by the resistance of a weighted lever and the speed is varied by the position of the weight on the lever.

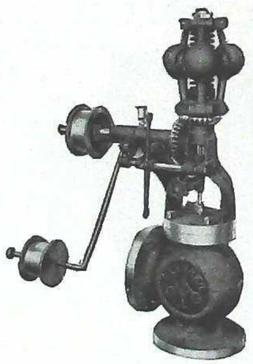
The Gardner Automatic Safety Stop is simple and reliable. The action is accomplished by permitting a slight oscillation of the shaft bearing, which is supported between centers and held in position by the pull of the belt; a projection at the lower part of the shaft bearing supports the fulcrum of the speed lever. If the belt breaks or slips off the pulley, the support of the fulcrum is forced back, allowing the fulcrum to drop, instantly closing the valve. It never fails to work at proper time.

Size Inches	Plain Price Each	Size Inches	Plain Price Each	Size Inches	Plain Price Each
2	$48.00	3½	$97.00	6	$220.00
2½	64.00	4	120.00	8	386.00
3	80.00	5	175.00	10	546.00

Price on sizes 12 to 16 inches, inclusive, on application.

As regularly furnished,—2-inch has screwed side and flanged base; larger sizes have flanged side and base. Other style valve chambers can be furnished.

Class A Gardner Wide Range Engine Governors



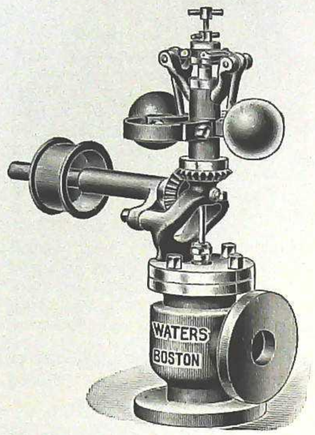
This governor was designed especially to meet those conditions of service where wide ranges in engine speeds are required.

The speeding attachment on this governor permits an unusually wide range in engine speed without affecting the regulation. This is accomplished through a patented attachment, which can be easily operated when the engine is in motion by simply turning the speed screw. There is no necessity for stopping the engine to change pulley. The operation of the speeder does not increase the friction nor cause excessive wear. Extension to speeding attachment, so that speed may be controlled from engineer's cab or any other location, can be furnished on order at extra cost.

Governors ordinarily furnished are suited for variations as high as 65 per cent. Special governors having a special variation of 3 to 1 can be furnished when ordered at additional cost. When a range in excess of this is wanted, it is better to use in addition to the governor some special speed changing attachment, for the governor at a variation over 3 to 1 would be obliged to run at speed so excessive as to cause it to wear rapidly and make lubrication difficult.

Size In.	Price Each	Size In.	Price Each
2	$48.00	4	$120.00
2½	64.00	5	175.00
3	80.00	6	220.00
3½	97.00	7	306.00

Waters Improved Steam Engine Governors



Class B

The Waters Governor is not affected by the action of gravity, the weights remaining always on the same plane, and as they are supported by the springs which furnish the centripetal force, there is consequently no friction in the joints of the ball arms, they merely serving as levers to operate the valve.

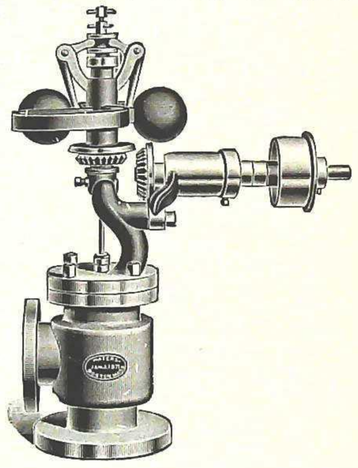
The valve is hollow, steam being discharged through it, as well as above and below the rings. On account of this manner of constructing the valve, the steam is permitted to enter freely.

The valve seats are in one casting, which fits the iron body at the ends only, thus providing perfectly for free expansion and contraction.

This governor is made in two classes: Class B without stop motion, and Class A with automatic stop motion. Class A will be sent unless otherwise ordered.

Can furnish angle or horizontal valve chambers with screwed or flanged ends, as desired.

Sizes1½-inch and smaller will be sent with angle chambers, screwed ends; 2-inch size with screwed side and flanged base, and 2½-inch and larger sizes, with both openings flanged unless otherwise specified.



Class A

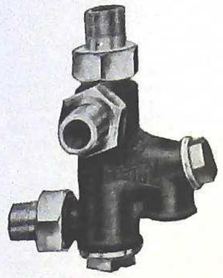
When ordering, state which class is wanted and the style of valve chamber desired, also give the number of revolutions the engine is to run and the diameter of the pulley on the crankshaft which drives the governor, and a pulley the proper size for the governor will be sent.

When no information is given a pulley flange will be sent in place of a pulley

Size In.	Diam. Flange Inches Base	Side	Extreme Height Inches Class B	Class A	Diam. Pulley In.	Width Belt In.	Price, Each Class B	Class A
½	3½	3½	12	....	2	¾	$22.00	$25.00
¾	4	3½	15	15½	2½	1	23.00	27.00
1	4½	4	15½	16	2½	1	25.00	29.00
1¼	5	4½	17	19½	3	1½	28.00	33.00
1½	6	5	19½	20½	3½	1½	34.00	40.00
2	7	6	24½	25½	4	2	40.00	48.00
2½	8	6½	26	27	4	2	54.00	64.00
3	9	7	30½	32	4	2	68.00	80.00
3½	10	8	31½	33	4	2	83.00	97.00
4	11	8½	39	40	4½	2½	102.00	120.00
4½	12	9½	40	41	4½	2½	120.00	140.00
5	12	11	41	42	5	2½	149.00	175.00
6	14	12	50	52	6	2½	187.00	220.00
7	15	13	50	52	6	2½	260.00	306.00
8	16	14	58	60	8	3	328.00	386.00
10	20	16	63	65	10	3	464.00	546.00

Hy-Tech Products

Penberthy Automatic Injectors

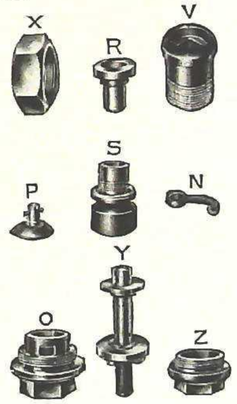


A high grade automatic machine; meaning, if the current of water is broken by any cause, the injector will pick up the water and re-establish the current to the boiler without the least attention. Every machine is carefully tested, and will work on the following points: Start low, 20 to 22 lbs. steam on 3-foot lift. Work high, 165 to 170 lbs. steam on 3-foot lift. Lift water, 20 to 24 feet on 60 to 80 lbs. steam. Will deliver water to boiler at 160 to 212 degrees, according to temperature of feed water and steam pressure. Water 200 to 212 degrees can nearly always be delivered at nearly all pressures over 50 lbs. by throttling suction valve and delivering minimum capacity. It is advisable in many cases to install an injector large enough so that the supply can be cut down and attain this result, thereby saving fuel. By placing a short piece of pipe having a stopcock, in the overflow, and closing after the injector has started, water 8 to 10 degrees hotter can be handled, but the injector is rendered non-automatic while the stopcock is closed.

Size	H. P. Based on Ordinary Tubular Boiler	H. P. Based on 30 Lbs. Water per H. P. per Hour	Pipe Connections Inches	Gallons per Hour 1 to 3-ft. Lift 60 to 110 Lbs. Steam Pressure Max.	Min.	Price Each
O	3 to 6	4 to 8	¼	60	35	$15.00
OO	4 " 8	6 " 12	⅜	80	45	16.00
A	8 " 16	10 " 20	½	135	70	18.00
AA	12 " 22	15 " 30	½	180	100	20.00
B	17 " 32	22 " 45	¾	260	140	25.00
BB	20 " 45	25 " 60	¾	360	180	30.00
C	40 " 65	45 " 80	1	475	250	40.00
CC	45 " 80	50 " 100	1	600	325	45.00
D	50 " 100	60 " 135	1¼	800	425	55.00
DD	75 " 135	85 " 165	1¼	1000	525	60.00
E	100 " 180	125 " 235	1½	1400	740	75.00
EE	115 " 255	150 " 320	1½	1900	850	90.00
F	160 " 320	200 " 400	2	2400	1275	110.00
FF	200 " 400	250 " 500	2	3000	1600	125.00
GG	375 " 600	400 " 750	2½	4200	2150	200.00

Repair Parts

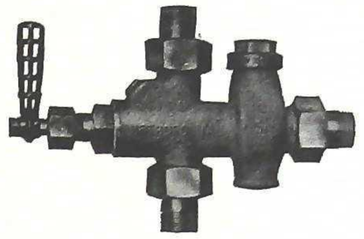
In ordering parts do not fail to give serial letter and number, which will be found on top of overflow. In referring to or ordering parts, designate them by letter or name.



Size of Injector.....	O OO	A AA	B BB
R—Steam Jet....each	$.25	$.35	$.45
S—Suction Jet... "	.25	.35	.45
Y—Delivery Jet... "	1.25	1.50	2.00
X—Coupling Nut. "	.25	.30	.40
V—Tail Pipe..... "	.25	.30	.40
Z—Overflow Cap. "	.30	.40	.50
P— " Valve "	.40	.50	.60
N— " Hinge "	.10	.10	.15
O—Plug..... "	.60	.80	1.00
Strainer..... "	.40	.45	.50

Size of Injector.....	C CC	D DD	E	EE	F	FF	G GG
R—Steam Jet....each	$.55	$.65	$.75	$.75	$.85	$1.00	$2.00
S—Suction Jet... "	.55	.65	.75	.75	.85	1.00	3.00
Y—Delivery Jet.. "	2.50	3.00	3.75	4.50	5.50	6.50	9.00
X—Coupling Nut. "	.50	.60	1.25	1.25	1.50	1.50	2.00
V—Tail Pipe..... "	.50	.60	.80	.80	1.00	1.00	1.25
Z—Overflow Cap. "	.60	.70	.80	.80	.90	.90	1.50
P— " Valve "	.75	.90	1.00	1.10	1.25	1.25	1.75
N— " Hinge "	.15	.15	.20	.20	.20	.20	.30
O—Plug..... "	1.25	1.50	1.75	1.75	2.00	2.00	4.00
Strainer..... "	.55	.60	.75	.75	1.00	1.00	1.50

Model N Metropolitan Automatic Injectors



The Metropolitan Automatic Injector is operated entirely by one handle and does not require manipulation of globe valves in the steam and suction pipes. The tubes are removed by the use of an ordinary monkey wrench. The overflow valve can easily be ground to its seat with an ordinary screwdriver.

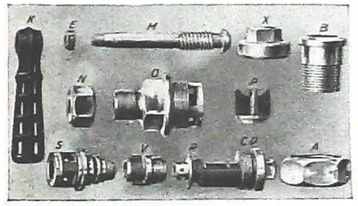
With feed water at 72 degrees Fahr., will start on a 2-foot lift with 25 pounds steam pressure and work up to 150 pounds steam pressure. Starts on a 20-foot lift with 55 pounds steam pressure and works up to 85 pounds steam pressure.

Size No.	Sizes of All Pipe Connections Inches	Size of Overflow or Waste Pipe Inches	Capacity with 80 Lbs. Steam Pressure, 2-foot Lift, Gallons per Hour	Horsepower Water Tube Boiler, Basis 7½ Gals. Water per H.P. per Hour	Horsepower Ordinary Tubular Boiler Basis 30 Lbs. Water per H.P. per Hour	Price Each
2	⅜	¾	60	4 to 6	5 to 8	$15.00
3	⅜	¾	80	6 to 8	8 to 12	16.00
3½	½	¾	120	8 to 15	12 to 20	18.00
4	½	¾	165	15 to 20	20 to 28	20.00
5	¾	1	250	20 to 30	28 to 40	25.00
6	¾	1	350	30 to 45	40 to 55	30.00
7	1	1¼	500	45 to 65	55 to 80	40.00
8	1	1¼	600	65 to 80	80 to 110	45.00
9	1¼	1½	800	80 to 100	110 to 145	55.00
10	1¼	1½	1000	100 to 130	145 to 180	60.00
11	1½	2	1300	130 to 170	180 to 235	75.00
12	1½	2	1750	170 to 230	235 to 300	90.00
13	2	2½	2300	230 to 300	300 to 400	110.00
14	2	2½	2850	300 to 375	400 to 500	125.00

A flat strainer is furnished with these injectors, sizes 2 to 10, inclusive. Ratings approximately 30 per cent below those based on actual capacities in gallons per hour.

Repair Parts

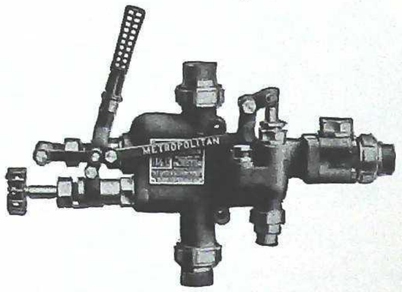
By unscrewing the steam plug O, the steam nozzle S is removed. The lifting tube V is screwed into the injector. The combining tube C-D is made square on the end so that it may be removed by an ordinary monkey wrench. Be careful that the ring R is not lost; also that it is on the tube in its proper position. Be sure that tube C-D is not stopped up and that the small slots and drill holes are clean.



Size No.	S Steam Nozzle	V Lifting Valve	C. D. R. Combining and Delivery Tube and Auxiliary Check	P Overflow Valve	O Steam Plug	M Steam Valve and Stem	N Packing Nut
2, 3	$1.50	$.60	$1.75	$.25	$1.00	$.40	$.30
3½, 4	1.70	.70	2.10	.50	1.25	.55	.40
5, 6	2.00	.90	2.75	.75	1.50	.75	.50
7, 8	2.50	1.25	3.50	1.00	2.25	1.10	.65
9, 10	3.75	1.85	4.50	1.25	3.50	1.75	.80
11, 12	5.00	3.00	6.50	1.75	5.00	2.50	1.00
13, 14	7.00	4.00	9.00	2.50	7.00	4.00	1.25

Size No.	K Steam Valve Handle	A Coupling Nut	B Tail-pipe	X Overflow Cap	E Nut for Stem M	Tube Wrenches	Always state the size number of the injector, model letter and serial or factory number.
2, 3	$.60	$.60	$.40	$.50	$.10	$1.30	
3½, 4	.70	.80	.55	.75	.10	1.40	
5, 6	.80	1.20	.80	1.00	.10	1.50	
7, 8	1.00	1.65	1.20	1.25	.15	1.75	
9, 10	1.20	2.40	1.70	1.75	.15	2.25	
11, 12	1.40	3.20	2.40	2.25	.15	3.00	
13, 14	1.60	5.00	3.40	3.00	.20	4.00	

Model O Metropolitan Double Tube Injectors



The Metropolitan Double Tube Injector, as its title indicates, contains a double set of nozzles and tubes, i.e., the forcing set, and the lifting set. There are two successive operations in the double tube injector, the lifting of the water by the lifting half of the apparatus, and the forcing of it into the boiler by the forcing half.

The fundamental advantage of this separate construction obtained with no other design, exists in the automatic regulation or governing of the water supply by the lifting tubes. The lifting part of the injector consists of a steam nozzle and a combining tube. Both steam nozzles receive full pressure when the injector is working, the lifting tube raising water and delivering it under pressure into the chamber of the forcing tube. The forcing tube receives this water from the lifting tube, and delivers it into the boiler. If the steam pressure in the boiler rises, there will be more steam, and at a higher temperature, passing through the forcing steam nozzle. The forcing steam will, therefore, require more water to properly condense it, but as the steam pressure rises, the lifting tube lifts and delivers more water to the forcing tube.

The result is that the lifting half of the apparatus, the nozzle and tube of which are designed to form a flexible type of ejector, delivers water to the forcing half exactly according to its needs, varying the quantity as the steam pressure increases or decreases.

A characteristic feature of the Metropolitan Double Tube Injector is its positively closed final overflow valve. This makes it impossible for any water to discharge at the overflow while the injector is in operation.

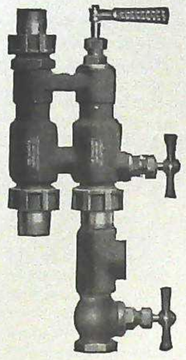
The peculiar form and the location of the final overflow valve eliminates sensitiveness in starting, even under unfavorable conditions, a disadvantage common to other makes of double tube injectors.

Excepting a few minor parts, the Metropolitan double tube injector is constructed of special bronze compositions, varied according to the duty required of them. The nozzles and tubes which are the parts most subject to wear, are remarkable for their hardness and will give exceptional service even when the water contains an excess of injurious substances. The lever handle, the zero type, which is more durable than the usual wooden handle, and will remain cool under all conditions.

No. Size	Size of All Connections Inches	Size of Pipe Inches	Cap. per Hour Gallons Overflow With Waste 100 Lbs. Steam Pressure	175 Lbs. Steam Pressure	Horse Power For Ordinary Type of Engine and Boiler	Horse Power On a Basis of 30 Pounds Evaporation per H. P. per Hour	Price Each
2½	½	¾	135	150	8 to 15	12 to 20	$18.00
4½	½	¾	180	200	15 " 20	20 " 28	20.00
5½	¾	¾	260	300	20 " 30	28 " 40	25.00
6½	¾	¾	365	415	30 " 45	40 " 55	30.00
7½	1	¾	525	600	45 " 65	55 " 80	40.00
8½	1	¾	625	720	65 " 80	80 " 110	45.00
9½	1¼	1	835	950	80 " 100	110 " 145	55.00
10½	1¼	1	1040	1195	100 " 130	130 " 180	60.00
11½	1½	1¼	1350	1550	130 " 170	180 " 235	75.00
12½	1½	1¼	1800	2070	170 " 230	235 " 300	90.00
13½	2	1½	2350	2675	230 " 300	300 " 400	110.00
14½	2	1½	2900	3275	300 " 375	400 " 500	125.00
15½	2½	2	3600	3975	375 " 500	500 " 650	150.00
16½	2½	2	4300	4750	500 " 650	650 " 800	200.00
17½	3	2½	4900	5300	650 " 800	800 " 975	250.00
18½	3	2½	5500	6100	800 " 1000	975 " 1250	300.00

A flat strainer is furnished with sizes Nos. 2½ to 10½ inclusive.

Hancock Inspirators



Stationary Type

Works with high or low steam pressures on all lifts up to 25 feet, or when taking water under a head, with hot feed water as well as cold. One set of tubes lifts water and delivers it to second set, which in turn forces it into boiler.

Directions for Operation

To START.—Open the overflow valves, close forcer steam valve and open wide the starting valve in the steam line.

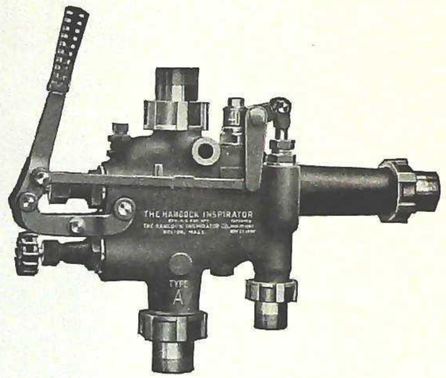
When water appears at the overflow, close the upper overflow valve, open forcer steam valve a quarter turn and close lower overflow valve.

To STOP.—Close starting valve in the steam pipe.

Sizes	Pipe Connections Inches Steam	Suction and Delivery	Overflow	Capacity with 60 Lbs. Steam Pressure Gallons per Hour	Horsepower For the Ordinary Type of Boiler and Engine	Horsepower On a Basis of 30 Pounds Evaporation per H.P. per Hour	Price Each
7½	⅜	⅜	¼	60	4 to 6	5 to 8	$16.00
8¾	⅜	½	⅜	90	6 to 8	8 to 15	18.00
10	⅜	½	⅜	120	8 to 15	15 to 25	20.00
12½	½	¾	½	220	15 to 30	25 to 35	25.00
15	½	¾	½	300	30 to 40	35 to 60	30.00
17½	¾	1	¾	420	40 to 60	60 to 75	40.00
20	¾	1	¾	540	60 to 75	75 to 100	45.00
22½	1	1¼	1	720	75 to 90	100 to 130	55.00
25	1	1¼	1	900	90 to 120	130 to 175	60.00
30	1¼	1½	1¼	1260	120 to 165	175 to 235	75.00
35	1¼	1½	1¼	1740	165 to 230	235 to 300	90.00
40	1½	2	1½	2230	230 to 300	300 to 400	110.00
45	1½	2	1½	2820	300 to 375	400 to 500	125.00
50	2	2½	2	3480	375 to 500	500 to 650	150.00
55	2	2½	2	3650	500 to 600	650 to 700	175.00

A flat strainer is supplied with each of these inspirators, sizes 7½ to 25, inclusive.

Type A Hancock Inspirators



To START:—Pull lever back until the resistance of the main steam valve is felt. This will lift the water. When water appears at overflow, pull lever back slowly and steadily as far as it will go.

To STOP:—Push lever forward as far as it will go.

Sizes	Horsepower For the Ordinary Type of Boiler and Engines	Horsepower On Basis of 30 Pounds Evaporation per H. P. per Hour	Pipe Connections Inches Steam	Suction	Delivery	Overflow	Capacity Gallons per Hr. with 100 Pounds Steam Pressure	Price Each
25	80 to 130	110 to 180	1¼	1¼	1¼	1¼	1020	$60.00
30	130 " 170	180 " 235	1½	1½	1½	1½	1430	75.00
35	170 " 230	235 " 300	1½	1½	1½	1½	1975	90.00
40	230 " 300	300 " 400	2	2	2	1½	2530	110.00
45	300 " 375	400 " 500	2	2	2	1½	3200	125.00
50	375 " 500	500 " 650	2	2½	2	1½	3950	150.00
55	500 " 600	650 " 750	2	2½	2	1½	4140	200.00

Hy-Tech Products

Hancock Ejectors



The most efficient steam pressure at which an ejector will operate is 60 pounds. At this pressure all sizes will lift water 25 feet, and elevate it 15 feet above ejector. For lifts greater than 40 feet, ejector should be placed as near the water as possible, thereby permitting greater power to be expended on forcing the water, and not on lifting it. Furthermore, under such conditions, one size larger pipe should be used on the delivery.

Steam pressures higher than 60 pounds should either be reduced to 60 pounds by a reducing valve or throttled down to 60 pounds by means of an ordinary globe valve. When necessary, ejectors with special nozzles for pressures over 60 pounds can be furnished at an extra cost.

Sizes 1, 2, 3 and 4 are made entirely of brass. Sizes 5, 6 and 7 have iron bodies and brass unions for steam and suction connections. Sizes 8, 9, 10 and 11 have iron bodies with brass unions for steam connection only. Sizes 5, 6, 7, 8, 9, 10 and 11 can be furnished to order, made entirely of brass. Special all iron ejectors also made to order.

To operate, open valve in steam pipe.

Capacities given are when lifting 4 feet and when elevating 4 feet, with cold feed water. Capacities of all ejectors decrease when lift is increased or temperature of feed water increased.

Size No.	Size Pipe Connections, In. Steam	Suction and Delivery	*Capacity per Hour Gallons	Price Each
1	¼	½	244	$8.00
2	⅜	¾	550	10.00
3	½	1	977	15.00
4	¾	1¼	1525	20.00
5	¾	1½	2200	25.00
6	1	2	3900	35.00
7	1¼	2½	6000	45.00
8	1½	3	8800	55.00
9	2	4	15600	70.00
10	2½	5	24300	110.00
11	2½	6	35000	160.00

*Capacity at 60 pounds steam pressure.

Repair Parts

Nos. 1, 2, 3, 4, 5, 6 and 7 ejectors are furnished with coupling connection on suction end.

Size Ejector No.	Price, Each Steam End Steam Nozzle	Delivery Tube	Tail Pipe	Coupling Nut	Suction End Tail Pipe	Coupling Nut
1	$.50	$1.00	$.60	$1.00	$.90	$1.30
2	.80	1.45	.70	1.30	1.30	2.00
3	1.15	2.35	.90	1.30	2.00	2.60
4	1.60	3.75	1.30	2.00	2.90	4.00
5	5.00	4.30	1.30	2.00	4.00	5.30
6	6.00	7.60	2.00	2.60	5.75	7.50
7	7.00	11.00	2.90	4.00	8.00	11.00
8	9.00	15.00	4.00	5.30	....	.....
9	12.00	20.00	5.75	7.50	....	.....
10	18.00	35.00	8.00	11.00	....	.....
11	30.00	60.00	8.00	11.00	....	.....

Penberthy Hydraulic Ejectors



The demand for an ejector operated by water as a motive power, has necessitated the development of the ejector shown in the illustration above. It is designed to meet conditions where the water pressure operating the same is from 15 to 200 pounds and the elevation or discharge does not exceed 50 feet. All details are proportioned to give the highest efficiency under these conditions, with a minimum operating water consumption.

Water consumption varies according to pressure, capacity, and elevation. The water pressure controls the elevation, but it is safe to figure four pounds of pressure to every foot of elevation. The table below shows capacities under different pressures.

No.	Operating Size Inches	Size of Suction Inches	Size of Delivery Inches	Length In.	Capacity, Gallons per Hour 40 Lbs Pressure	60-80 Lbs. Pressure	Price Each
62	⅜	¾	¾	5	500	750	$10.00
63	½	1	1	6¾	900	1100	15.00
64	¾	1¼	1¼	8	1500	2000	20.00
65	1	1½	1½	9	2100	3400	25.00
66	1¼	2	2	10½	3000	4500	35.00
67	1½	2½	2½	11½	4200	6000	50.00
68	2	3	3	13¼	6000	9000	70.00

Capacities given are when ejector is working against a head of 10 feet, and include the operating water.

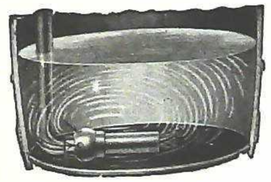
Garfield Ejectors

For raising water from deep wells, mines or pits, filling or emptying tanks, raising and transferring liquids, hot or cold, in tanneries, dye houses, etc.



The capacities are secured from actual tests made on 3-foot lift and 20-foot elevation with 80 pounds of steam.

No.	Iron Pipe Connections, Inches Steam	Suction	Delivery	Capacity Gals. Hour	Diam. of Well Inches	With Strainer Price, Each
1	⅜	¾	½	480	2¼	$8.00
2	⅜	1	¾	650	2¾	10.00
3	½	1¼	1	1000	3	15.00
4	¾	1½	1¼	1400	3½	20.00
5	1	2	1½	2400	4¼	25.00
6	1¼	2½	2	4000	5	35.00
7	1½	3	2½	5100	6	50.00
8	1½	3	2½	6500	6	60.00



Penberthy Noiseless Steam Water Heaters

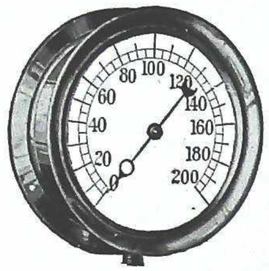
The use of this heater does away with all noise such as otherwise occurs when heating a tank or barrel of water or other liquid with steam. It is of special value to creameries, chemical works, breweries, etc.

Size No.	Steam Pipe In.	Disch. Pipe In.	*Cap. Gals.	Price Each
F	¼	⅜	50	$1.50
G	⅜	½	60	1.75
H	½	1	75	2.00
J	¾	1	100	2.50
K	1	1¼	125	$3.00
L	1¼	1½	175	4.00
M	1½	2	250	5.00
N	2	2½	500	8.00

*Gallons of water heated from 70° to 210° in 30 minutes with 70 pounds steam pressure.

Pressure Gauges

Single Spring



The standard type of gauge for steam, water, air, gas or any pressure medium which will not deteriorate brass.

For any standard graduation up to 500 pounds and at extra charge for higher pressures up to 1000 pounds.

Should be graduated to double the actual working pressure.

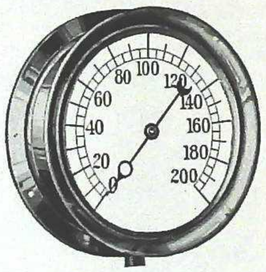
Unless otherwise specified, gauges will be furnished: sizes 2 and 2½-inch with ⅛-inch male bottom connection; other sizes, ¼-inch male bottom connection. No extra charge for back connection.

Prices include a T-handle cock for sizes 3½ to 6-inch inclusive; a small union cock for sizes 6¾ to 10-inch, and a large union cock for sizes 12-inch and larger.

Size Dial In.	Price, Each — Iron Case, Brass Ring	Iron Case, N. P. Ring	Brass Case	N. P. Case	Deep Case, O. G. or Oct. Ring, Brass	Deep Case, O. G. or Oct. Ring, N. P.
16	$90.00	$92.00	$125.00	$135.00	.....	.....
12	50.00	51.50	75.00	79.00	$80.00	$84.00
10	32.00	33.00	40.00	43.00	44.00	47.00
8½	22.00	22.75	30.00	32.50	33.50	36.00
6¾	16.00	16.60	20.00	22.00	23.00	25.00
6	13.00	13.50	16.00	17.50	18.50	20.00
5½	10.00	10.25	12.00	13.25	13.75	15.00
5	8.00	8.20	11.00	12.00	12.50	13.50
4½	8.00	8.20	10.00	11.00	11.50	12.50
3½	7.00	7.18	9.00	9.75	10.25	11.00
3	6.00	6.15	8.00	8.60	9.25	9.75
2½	6.00	6.15	8.00	8.60	9.25	9.75
2	6.00	6.15	8.00	8.60	9.25	9.75

Pressure Gauges

Double Spring



Especially designed and recommended for marine or portable work, or any service where there is excessive vibration or rapid fluctuation in pressures.

For any standard graduation up to 500 pounds and at extra charge for higher pressures up to 1000 pounds.

Should be graduated to double the actual working pressure.

Non-corrosive movement with cast hard bronze, extra wide, heavy machine cut gearing.

Sensitive, rigid, non-vibrating, non-freezing springs of solid drawn seamless tube.

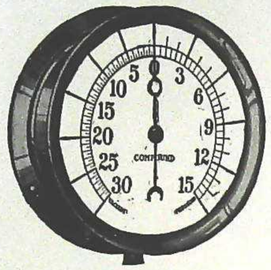
One piece of solid drawn seamless tubing, hand rolled and shaped, passed through and held securely by the socket block, makes the non-freezing double springs. They are rigid, sensitive, uniform in dimension and travel, short, non-vibrating and self-draining.

Prices include a T-handle cock for sizes 4½ to 6 inches inclusive; a small union cock for sizes 6¾ to 10 inches, and a large union cock for sizes 12 inch and larger.

Size Dial In.	Price, Each — Iron Case, Brass Ring	Iron Case, N.P.Ring	Brass Case	N. P. Case	Deep Case, O. G. or Oct. Ring, Brass	Deep Case, O. G. or Oct. Ring, N. P.
16	$105.00	$107.00	$140.00	$150.00	.....	.....
12	55.00	56.50	80.00	84.00	$85.00	$89.00
10	37.00	38.00	45.00	48.00	49.00	52.00
8½	25.00	25.75	34.00	36.50	37.50	40.00
6¾	18.00	18.60	22.00	24.00	25.00	27.00
6	15.00	15.50	18.00	19.50	20.75	22.25
5½	12.00	12.25	14.00	15.25	16.25	17.50
5	11.00	11.20	13.00	14.00	15.00	16.00
4½	10.00	10.20	12.00	13.00	13.75	14.75

Compound Pressure and Vacuum Gauges

Single Spring



For use where either pressure or vacuum is to be indicated.

Standard graduation is 15 pounds pressure and 30 inches vacuum. Can be furnished for pressures up to 500 pounds.

Hand made spring of solid drawn seamless tube. Non-corrosive metal movement with machine cut gearing.

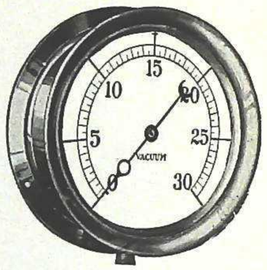
Unless otherwise specified, sizes 2 and 2½-inch furnished with ⅛-inch male bottom connection; other sizes ¼-inch male bottom connection. Back connection optional.

Prices include a T-handle cock for sizes 3½ to 6 inches inclusive; a small union cock for sizes 6¾ to 10 inches, and a large union cock for 12 inches.

Size Dial In.	Price, Each — Iron Case, Brass Ring	Iron Case, N. P. Ring	Brass Case	N. P. Case	Deep Case, O. G. or Oct. Ring, Brass	Deep Case, O. G. or Oct. Ring, N. P.
12	$60.00	$61.50	$80.00	$84.00	$85.00	$89.00
10	40.00	41.00	50.00	53.00	54.00	57.00
8½	30.00	30.75	40.00	42.50	43.50	46.00
6¾	20.00	20.60	25.00	27.00	28.00	30.00
6	16.00	16.50	20.00	21.50	23.00	24.50
5½	14.00	14.25	16.00	17.25	18.50	19.75
5	14.00	14.25	16.00	17.25	18.50	19.75
4½	12.00	12.20	14.00	15.00	16.00	17.00
3½	10.00	10.18	12.00	12.75	13.75	14.50
3	9.00	9.15	11.00	11.60	12.25	12.75
2½	9.00	9.15	11.00	11.60	12.25	12.75
2	9.00	9.15	11.00	11.60	12.25	12.75

Vacuum Gauges

Single Spring



For the indication of vacuum.

These gauges are graduated from an open mercury column and are warranted to be perfectly accurate.

Hand-made spring of solid drawn seamless tube. Non-corrosive metal movement with machine cut uniform gearing. Carefully inspected, adjusted and tested. Guaranteed for long and continued accurate service.

Unless otherwise specified, gauges will be furnished, sizes 2 and 2½-inch with ⅛-inch male bottom connection; other sizes, ¼-inch male bottom connection. No extra charge for back connection.

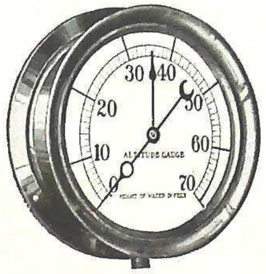
Prices include a T-handle cock for sizes 3½ to 6 inches inclusive; a small union cock for sizes 6¾ to 10 inches, and a large union cock for sizes 12-inch and larger.

Size Dial In.	Price, Each — Iron Case, Brass Ring	Iron Case, N. P. Ring	Brass Case	N. P. Case	Deep Case, O. G. or Oct. Ring, Brass	Deep Case, O. G. or Oct. Ring, N. P.
16	$90.00	$92.00	$125.00	$135.00	.....	.....
12	50.00	51.50	75.00	79.00	$80.00	84.00
10	32.00	33.00	40.00	43.00	44.00	47.00
8½	22.00	22.75	30.00	32.50	33.50	36.00
6¾	16.00	16.60	20.00	22.00	23.00	25.00
6	13.00	13.50	16.00	17.50	18.50	20.00
5½	10.00	10.25	12.00	13.25	13.75	15.00
5	8.00	8.20	11.00	12.00	12.50	13.50
4½	8.00	8.20	10.00	11.00	11.50	12.50
3½	7.00	7.18	9.00	9.75	10.25	11.00
3	6.00	6.15	8.00	8.60	9.25	9.75
2½	6.00	6.15	8.00	8.60	9.25	9.75
2	6.00	6.15	8.00	8.60	9.25	9.75

Hy-Tech Products

Altitude Gauges

Single Spring



The black hand indicates the height of water. The red hand is independent from the gauge tube and set by the user at the proper altitude to be maintained.

Standard graduation is 70 feet. Can be furnished for any required altitude.

Should be graduated to double the maximum altitude to be registered.

Hand-made spring of solid drawn seamless tube. Non-corrosive metal movement with machine cut uniform gearing. Carefully inspected, adjusted and tested.

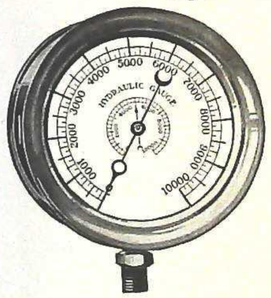
Unless otherwise specified, gauges will be furnished ¼-inch male bottom connection. No extra charge for back connection.

This instrument can be supplied with U. S. Navy specification case, interior and test.

Prices include a T-handle cock for sizes 3½ to 6 inches inclusive; a small union cock for sizes 6¾ to 10 inches, and a large union cock for 12 inch.

Size Dial In.	Price, Each — Iron Case, Brass Ring	Iron Case, N. P. Ring	Brass Case	N. P. Case	Deep Case, O. G. or Oct. Ring, Brass	Deep Case, O. G. or Oct. Ring, N. P.
12	$60.00	$61.50	$80.00	$84.00	$85.00	$89.00
10	40.00	41.00	50.00	53.00	54.00	57.00
8½	30.00	30.75	40.00	42.50	43.50	46.00
6¾	20.00	20.60	25.00	27.00	28.00	30.00
6	16.00	16.50	20.00	21.50	23.00	24.50
5½	14.00	14.25	16.00	17.25	18.50	19.75
5	12.00	12.20	14.00	15.00	16.00	17.00
4½	12.00	12.20	14.00	15.00	16.00	17.00
3½	10.00	10.18	12.00	12.75	13.75	14.50

Hydraulic Gauges



For pressures from 500 to 20000 pounds per square inch with or without maximum pointer.

The spring is made from special, solid bar tool steel, carefully bored out and lathe turned to proper size, then shaped and tempered by a special process.

The lathe cut threads connect spring, socket and end piece, preventing leakage or injury to mechanism under the high and fluctuating pressures.

Non-corrosive movement with cast hard bronze, extra wide, heavy machine cut gearing.

Unless otherwise specified, gauge without maximum hand will be furnished.

Dials should be graduated to double the actual working pressure. No extra charge is made for dial graduated in pounds per square inch and equivalent tons on ram.

Has ½-inch male bottom connection.

Fitted with internal check valve to protect spring and gauge from sudden pressure or release of pressure.

No cocks are furnished with these gauges.

Size Dial Inches	Price, Each — Iron Case, Brass Ring	Iron Case, N. P. Ring	Brass Case	N. P. Case
12	$110.00	$111.50	$125.00	$129.00
10	90.00	91.00	100.00	103.00
8½	70.00	70.75	80.00	82.50
6¾	50.00	50.60	60.00	62.00
6	35.00	35.50	40.00	41.50
5	30.00	30.50	35.00	36.00
4½	25.00	25.50	30.00	31.00
3½	22.00	22.50	26.00	26.75

Add $5.00 to list for gauges with maximum pointer, hinged front, fitted with lock and key.

Mercoid Automatic Steam Boiler Controls

Pressure Type



Fig. No. 31

A positive safety limiting device for all steam units—widely used as a boiler control with automatic oil burners and automatic coal-burning equipment. Furnished with ¼-inch threaded connections. Steam switches must be installed with siphons. Furnished with improved outlet boxes.

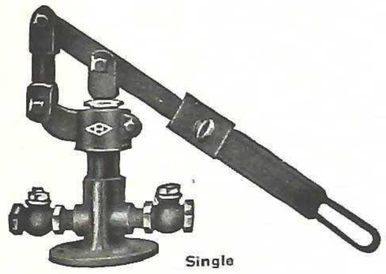
Fig. No. 31 is regularly furnished with Fig. 3 Mercoid tube and snap action movement. Actuated by specially-designed Bourdon type of great strength and elasticity. The snap action movement is locked in position at both the cut-in and cut-out points. No relay or starting switch is necessary where the normal working loads do not exceed 10 amperes at 110 volts or 5 amperes at 220 volts, a.c. or d.c.

Fig. No. 31-A is of the same style and design as Fig. 31 except that it is equipped with Fig. 17, 3-ampere tube. For application where the current requirements do not exceed 3 amperes at 110 volts, a.c. or d.c.

These instruments are also used in connection with domestic water systems. For steam boiler control, the standard range is 1 to 4 pounds; for water system control, the standard range is 20 to 40 pounds. Other pressure ranges up to 300 pounds are available.

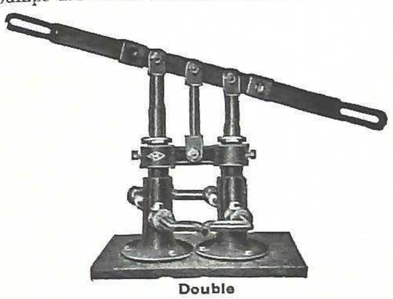
Prices and special bulletin upon application.

Hydraulic Test Pumps



Single

These pumps will generate a cold water pressure of 500 pounds per square inch, and are adapted for testing boilers, cleaning pipes, etc. The single pump has a revolving top, admitting its being worked in any position. Both pumps are fitted with sectional levers which can be adjusted to give greater leverage.



Double

Where the customer wishes to supply and attach gauge, the pump will be tapped without extra charge.

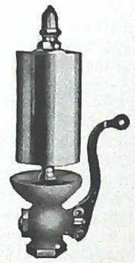
No.	Diam. In. Plunger	Suction Discharge In.	Length Stroke	Single, Wt.	Single, Price	Double, Wt.	Double, Price
1	1	¾	4	22	$14.00	...	.....
2	1½	1	4	33	16.00	...	.....
3	1¾	1¼	6	57	20.00	148	$60.00
4	2	1½	6	72	30.00	180	90.00

Brass Steam Whistles

For 125 Pounds Steam Working Pressure



No. 894, without Valve



No. 895, with Valve

Diam. Bell In.	Lgth. Bell In.	Size Pipe In.	Price, Each Without Valve	Price, Each With Valve	Diam. Bell In.	Lgth. Bell In.	Size Pipe In.	Price, Each Without Valve	Price, Each With Valve
1	2½	¼	$2.20	$3.10	3½	5½	1	$ 9.50	$11.50
1¼	3	¼	2.75	3.75	4	6½	1¼	12.00	15.00
1½	3¼	⅜	3.00	4.00	5	8	1½	19.00	22.50
2	4	½	4.35	5.50	6	9½	2	24.00	33.00
2½	4½	¾	5.25	6.50	8	14	2½	70.00	95.00
3	5	¾	7.25	8.50	..	....	...	.....	.....

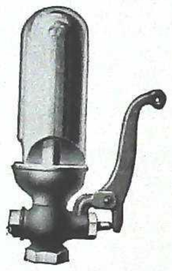
Whistles with longer bell than standard made to order.

Always order whistles by diameter of bell, and not by the size of pipe connection.

Single Bell Chime Whistles

For 25 to 150 Pounds Working Pressure

For Steam or Compressed Air



No. 896, with Lever Valve



No. 897, without Valve

Diam. Bell In.	Size Pipe In.	Price, Each With Lever Valve	Price, Each Without Valve	Diam. Bell In.	Size Pipe In.	Price, Each With Lever Valve	Price, Each Without Valve
1½	⅜	$6.00	$4.50	4	1¼	$18.00	$14.00
2	½	7.00	5.00	5	1½	28.00	22.00
2½	¾	9.00	7.00	6	1½	42.00	38.00
3	¾	11.00	8.00	8	2	100.00	85.00
3½	1	15.00	11.00	.	...	.....	.....

Always order whistles by diameter of bell, and not by the size of pipe connection.

No. 121 Jenkins Bronze Whistle Valves



Quick acting spring and lever operated valve designed for operating steam whistles in factories and on steamboats.

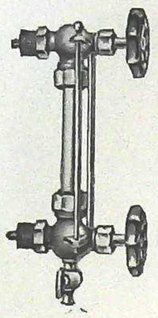
It contains a Jenkins disc of either hard or soft composition, as may be preferred for the particular service for which it is intended.

Valve is made in brass, with malleable iron lever, from ⅜ to 2 inches.

Size Inches	Price Each
⅜	$4.95
½	4.95
¾	6.10
1	6.85
1¼	9.55
1½	11.80
2	13.70

Self-Cleaning Water Gauges

With Iron Wheels



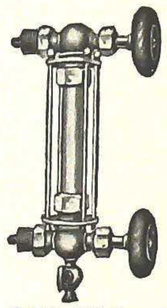
Nos. 000, 1 and 1½ have rough body.

No.	Size Glass Inches	No. of Guards	Pipe Thread Inches	Price Each
000	⅝x10	2	⅜	$2.75
1	⅝x12	2	½	3.00
1½	¾x16	2	¾	4.50

Self-Cleaning Water Gauges

With Wood Wheels

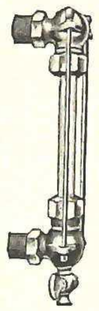
These gauges have polished bodies and T handle drip cocks.



Polished Body

No.	Size Glass Inches	No. of Guards	Pipe Thread Inches	Price Each
0	⅝x10	2	⅜	$3.75
3	⅝x12	2	½	4.25
5	⅝x12	4	½	5.00
7	¾x16	4	¾	6.25
7½	¾x16	2	¾	5.50

No. 0000 Expansion Tank Water Gauges



This gauge is used in connection with hot water systems. Standard finish is rough body.

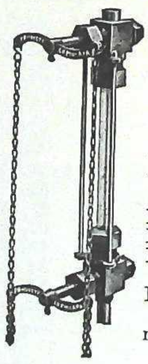
It is threaded for ½-inch iron pipe.

Has T handle drip cock.

The glass is protected by two guards. It is ⅝-inch by 12 inches.

Price, No. 0000.....each $2.60

P. B. H. Quick Closing Water Gauges



Glass and brass guard rods included for gauge centres up to 18 inches, as well as brass safety chain sufficient to operate gauge 10 feet from floor.

Size of glass, ¾ inch.

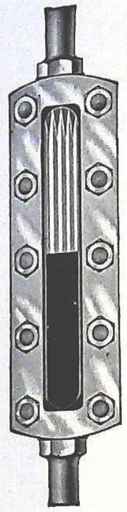
Description	Working Pres. Lbs.	Price, Each Polished Brass	Nickel-Plated
*Regular Pattern...	275	$12.00	$16.00
†Extra Heavy.....	450	19.00	24.00
Flanged (B. & W. Style)			
Regular.....	...	$21.00	$27.00
Extra Heavy.....	...	30.00	36.00
Double Extra Heavy	750	75.00	85.00
Marine (4x11/16-Inch Flange)			
Extra Heavy.....	...	$34.00	$40.00

*Has ½ or ¾-inch shank. This pattern furnished in rough brass at $11.00 each.

†Has ¾-inch shank.

Hy-Tech Products

Type Y Jerguson Improved Reflex Water Gauges



This gauge is used on marine, locomotive and stationary boilers, separators, tanks, etc. The reflex gauge assures quick and accurate reading of the water level, as the water always appears black, and white indicates immediately the absence of water. This effect is obtained by grooving the glass.

Safe at the highest pressures and is a protection to workmen, as the glass does not fly when disabled, rendering protecting devices, such as wire netting, etc., superfluous. Saves loss of time and annoyance replacing broken tube glasses. Repairs can be made without disturbing the connections, and they can be easily applied to any boiler without change of fittings.

End stems for gauges are furnished any length and diameter, also without the hex collar if gauge will be crowded between packing nuts.

When ordering Reflex Gauge to replace tube glass, give the distance between packing nuts of fittings and diameter and length of the tube glass used.

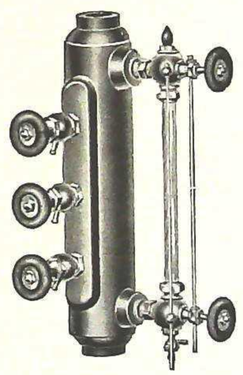
When ordering set of fittings and Reflex Gauge, give the distance between the centers of fittings and pipe tap size of screw connection to boiler. Dimensions of flange, if flange connections are required.

Size No.	Dimensions, In. Lgth. Body	Dis. Req. bet. Packing Nuts	Glass Visible	Price Each	Size No.	Dimensions, In. Lgth. Body	Dis. Req. bet. Packing Nuts	Glass Visible	Price Each
..	...	....	...	....	5Y	9¼	10 to 11	8	$9.50
1Y	5⅛	6"	7	3⅞ $7.50	6Y	10½	11¼ " 12½	9¼	13.50
2Y	6⅛	7 "	8	4⅞ 7.50	7Y	11⅝	12½ " 13½	10¼	16.50
3Y	7⅛	8 "	9	5⅞ 8.50	8Y	13⅛	14 " 15	12	18.00
4Y	8⅛	9 "	10	6⅞ 8.50	9Y	14⅛	15 " 16	13	20.00

Water Columns



Column Only



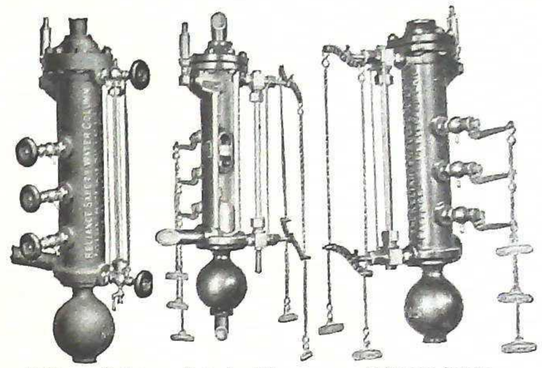
Column with Trimmings

Trimmings are never furnished unless especially ordered, in which case there is an extra charge. The usual trimmings consist of one water gauge set complete, three gauge cocks, one steam gauge and syphon, one globe valve, two bushings, and one nipple. Tappings are located so that water gauge columns may be used either on right or left side of boiler.

No.	Length Inches	Center to Center Gauge Connections Inches	Tapped I. P. Thread Ends Inches	For Gauge Cocks Inches	For Water Gauge Inches	Outside Diameter Inches	Body Only Price Each
1	15	10	1	⅜	½	2⅝	$2.75
2	17	12	1	½	½	3	4.00
3	20	15	1¼	½	½	3⅝	6.00
4	24	18	1¼	¾	¾	4	8.00
5	26	20	1¼	¾	¾	4¾	12.00
6	28	20¼	1¼	¾	¾	5½	16.00

Reliance Safety Water Columns

For 250 Pounds Working Steam Pressure



Reliance Safety Water Column No. 5 Equipped with Wood Wheel Gauge Cocks and Water Gauge

Interior View Combined High and Low Alarm

Reliance Safety Water Column No. 5 with Reliance Water Gauge and Gauge Cocks

Reliance Columns may be combined high and low alarm or high or low alarm only. In the latter case, 1 float and its mechanism is left out.

The low water alarm gives warning when water level drops to lower gauge cock. Float keeps valve closed as long as water is above this point. In the combined high and low alarm column the low alarm works exactly as above. The high water alarm has separate float and valve. When the water level reaches upper gauge cock, it buoys up float which opens valve and released steam blows whistle or operates electric alarm.

No.	Kind of Boiler	Variation Between Alarms	Steam and Water Conn. In.	Water Gauge Conn., In. Center to Center	Water Gauge Conn., In. Size	Size of Blowoff In.
†1	36-54-in.	6-in.	1	13½	1½	¾
†2	36-54-in.	Low Only	1	13½	1½	¾
*5	54-72-in.	8-in.	1¼	18	¾	¾
5A	Water Tube	8-in.	1¼	16	Flgd.	¾
**5B&W	Water Tube	8-in.	1¼	18	¾	¾
††5Com.	54-72-in.	No Alarm	1¼	18	¾	¾
6	54-72-in.	Low Only	1¼	15¾	¾	¾
§7	Water Tube	12-in.	1½	21	¾	¾
‡7B	Water Tube	12-in.	1½	20	¾	¾
§9	Water Tube	18-in.	1½	28	¾	1
§11	Water Tube	24-in.	1½	32	¾	1

No.	Each	Gauge Cock Conn., In. Center to Center	Gauge Cock Conn., In. Size	Center Water Conn. to Top Column In.	Lgth. Over All In.	Approx. Ship. Wt. Lbs.
†1	$28.00	3	½	16¼	23¾	45
†2	25.00	3	½	16¼	23¼	45
*5	30.00	4	¾	21	29¾	70
5A	35.00	4	¾	21	29¾	75
**5B&W	31.00	4	½ or ¾	21	29¾	70
††5Com.	16.00	4	¾	20	29¼	70
6	28.00	4	¾	19	28	65
7	35.00	6	¾	25¾	36	120
‡7B	33.00	6	¾	25¼	34⅝	75
9	40.00	9	¾	33¼	44¼	140
11	42.50	12	¾	37⅝	48	150

*May be furnished without alarms, price $22.00. ††No. 5 Com. has solid cap and no alarm. **Steam connection on side, 14-inch steam and water centers.

‡Steam connection on side, 17-inch steam and water centers.

†200 pounds pressure only.

§Equipped with special alloy seats in whistle valves.

Above prices for columns only; trimmings upon application.

Libbey High Pressure Gauge Glasses

For 400 Pounds Steam Working Pressure

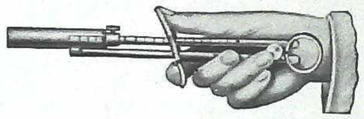


Libbey High Pressure Gauge Glasses are guaranteed to be uniform in size and to withstand steam pressures of 400 pounds, as well as sudden and radical changes in temperature.

Lgth. In.	Price, per Dozen — External Diam., In. ½, ⅝	¾	⅞	1
10	$5.00	$7.00	$8.00	$10.40
11	5.40	7.40	8.60	11.20
12	6.00	8.40	10.00	12.40
13	6.40	9.00	10.60	13.60
14	6.60	9.60	11.00	14.80
15	7.00	10.00	11.80	15.60
16	7.80	11.40	12.60	17.00
17	8.00	11.80	13.40	18.00
18	8.60	12.20	14.20	19.00
19	9.00	13.00	15.00	20.00
20	10.00	14.00	16.40	21.40
22	11.00	14.80	17.20	22.40
24	12.00	16.80	20.00	24.80
30	14.00	20.00	23.40	31.20
36	17.20	24.40	28.40	38.00
48	23.40	34.20	37.80	51.00
60	28.00	40.00	47.20	62.40
72	34.40	48.80	56.80	76.00

Special prices on lengths over 72 inches.

Chesterton Gauge Glass Cutters



Nickel-Plated.....each $2.00

Gauge Glass Washers



Made in two styles, square and round.

Size.....inches ½ ⅝ ¾

Prices upon application.

Gilbert's Self-Packing Glass Protectors



Sizes ½, ⅝ and ¾-inch, packed 1 dozen in a box; 1-inch size packed ½ dozen in a box.

Size.....inches	½	⅝	¾	1
Glass Protectors.....per box	$.60	.60	.60	.60

Syphons for Steam Gauges

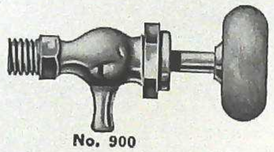


Connection size, ¼ inch. Length, 8 inches.

Price, Iron.....each $.50

Price, Brass.....each 1.00

Compression Gauge Cocks with Stuffing Box



No. 900

Size Inches	Price, Each — Light Pattern	Standard Pattern
⅜	$1.20	$1.35
½	1.30	1.50
¾	1.45	1.70

No. 166 Williams Brass Regrinding Gauge Cocks

For 200 Pounds Steam Working Pressure



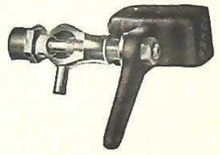
Metal disc and seat.

Easily reground at no extra expense, and is practically indestructible.

Made of the best steam metal, and is nicely finished.

Size No.	I.P. Thread Inches	Price Each
00	¼	$.90
0	⅜	1.05
1	½	1.30
2	¾	1.80

P. B. H. Weighted Gauge Cocks

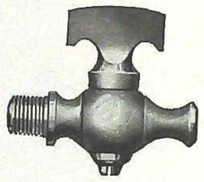


Quick-opening; self-closing. The valve pencil insures a leakless gauge cock under high pressure.

Size.....inches	½	¾
Price, Brass.....each	$2.50	$2.50
" " Nickel-plated.....each	3.50	3.50

Tee Handle Air Cocks

Straight Nose

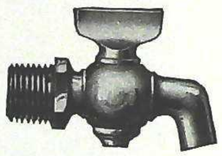


No.	Size In.	Price Each	No.	Size In.	Price Each
6	⅛	$.40	8	⅜	$.50
7	¼	.45	9	½	.60

For spring key and washer, add 10 cents.

Bibb Air Cocks

Bibb Nose Male, Tee Handle

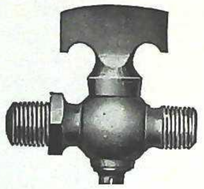


Standard finish is polished.

Model No.	I.P. Thread Inches	Price Each
26	⅛	$.70
27	¼	.80
28	⅜	.90
33	½	1.00

Tee Handle Air Cocks

Male Both Ends



No.	Size In.	Price Each	No.	Size In.	Price Each
18	⅛	$.55	20	⅜	$.75
19	¼	.65	21	½	.90

Tee Handle Air Cocks

Female Both Ends

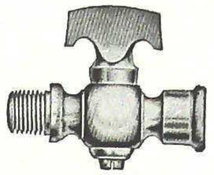


No.	Size In.	Price Each	No.	Size In.	Price Each
37	⅛	$.65	39	⅜	$.85
38	¼	.70	39½	½	1.10

Hy-Tech Products

Tee Handle Air Cocks

Male and Female Ends



No.	Size In.	Price Each	No.	Size In.	Price Each
40	⅛	$.75	42	⅜	$.90
41	¼	.80	42½	½	1.15

Lever Handle Air Cocks

Straight Nose

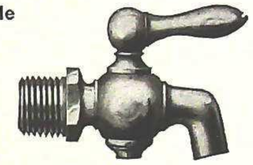


No.	Size In.	Price Each	No.	Size In.	Price Each
12	⅛	$.55	14	⅜	$.65
13	¼	.60	15	½	.75

For spring key and washer, add 10 cents.

Bibb Air Cocks

Bibb Nose Male, Lever Handle

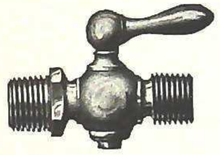


Standard finish is polished.

Model No.	I.P. Thread Inches	Price Each
29	⅛	$.85
30	¼	.95
31	⅜	1.05
32	½	1.15

Male Air Cocks

Double Male, Lever Handle

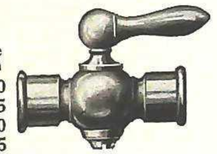


Standard finish is polished.

No.	Size Inches	Price Each
22	⅛	$.70
23	¼	.80
24	⅜	.90
25	½	1.05

Female Air Cocks

Double Female, Lever Handle

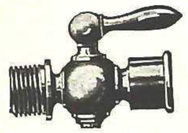


Standard finish is polished.

No.	Size Inches	Price Each
43	⅛	$.80
44	¼	.85
45	⅜	1.00
45½	½	1.25

Male and Female Air Cocks

Male and Female, Lever Handle

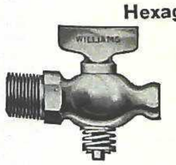


Standard finish is polished.

No.	Size Inches	Price Each
46	⅛	$.90
47	¼	.95
48	⅜	1.05
48½	½	1.30

Williams Brass Spring Key Cocks

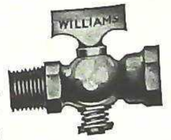
Hexagon Shoulder—Male End



Size Inches	Price, Each — No. 220 Tee Handle	No. 221 Lever Handle
⅛	$.65	$.70
¼	.75	.90
⅜	1.00	1.15
½	1.30	1.55

Williams Brass Spring Key Cocks

Hexagon Shoulder—Male and Female Ends



Size Inches	Price, Each — No. 472 Tee Handle	No. 487 Lever Handle
⅛	$.80	$.90
¼	1.05	1.15

Williams Brass Spring Key Cocks

Hexagon Shoulder—Bibb Nose, Male End



Size Inches	Price, Each — No. 306 Tee Handle	No. 307 Lever Handle
⅛	$.85	$.90
¼	.90	1.00
⅜	1.30	1.50
½	1.65	1.90

Williams Brass Spring Key Cocks

Hexagon Shoulder Double Female Ends



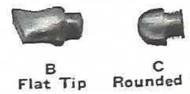
Size Inches	Price, Each — No. 473 Tee Handle	No. 495 Lever Handle
⅛	$.80	$.90
¼	1.05	1.15

No. 710 Jenkins Air Guns

With Improved Easy-Curve Lever and Leakproof Jenkins Disc



No. 710 Air Gun



B Flat Tip

C Rounded Tip



No. 710A Hose Nipple



D, Extension Tip

The Jenkins Air Gun prevents air waste wherever it is used. For removing dust, dirt, chips, lint, filings, etc.

Fitted with a Jenkins Disc, specially compounded for air, and held to seat by a spring and air pressure, making an air-tight joint. Gun is made of high grade bronze.

When gun is open, bevel shoulder on spindle seats tightly against the body, preventing loss of air around the spindle.

Easy-curve lever conforms to hand of the operator.

Size.....inches	⅛	¼	⅜
No. 710 Air Gun with Regular Tip.....each	$1.65	$1.65	$1.90
No. 710E, Gun with Flat Tip B.....each	2.15	2.15	2.40
No. 710F, Gun with Rounded Tip C..each	1.65	1.65	1.90
No. 710G, Gun with Extension Tip D.each	2.40	2.40	2.65

No. 710A Hose Nipples

Size, In.	Each	Size, In.	Each	Size, In.	Each	Size, In.	Each
⅛x⅛	$.45	⅛x¾	$.70	¼x½	$.60	⅜x⅜	$.60
⅛x¼	.45	¼x⅛	.45	¼x¾	.70	⅜x½	.65
⅛x⅜	.50	¼x¼	.45	⅜x⅛	.50	⅜x¾	.75
⅛x½	.60	¼x⅜	.50	⅜x¼	.55	.....	...

We are in position to supply many items not shown in this catalogue and shall be pleased to receive your inquiries.

No. 2779 Bristol Recording Gauges



Original Form

All ranges, from full vacuum to 12000 pounds pressure per square inch, can be taken care of by Bristol's Recording Gauges. The gauges are adapted to practically every application where pressure of liquids, gases, steam, or air are required to be measured.

The recording gauge located where the operator can see it shows the pressure or vacuum as it is now, what it has been, and the direction in which it is leading.

Size of Chart.....inches	12	8
Price, Original Form Case, Black Enamel Finish.....each	$61.00	$50.00
Price, Portable Form Case, Wood Finish.each	66.00	55.00
Price, Moisture-Proof Case, Black Enamel Finish.....each	66.00	55.00
Price, Water-Proof Case, Black Enamel Finish.....each	84.00	72.00

Extra Charts

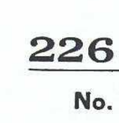
Size.....inches	8	12
Price.....per 100	$.80	$1.65
Price (Copying Ink).....per 100	.95	1.90
Price 7-Day (Two Colors).....per 100	1.35	2.20

Special Recording Ink

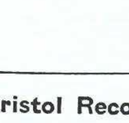
Size of Bottle.....	1-Oz.	4-Oz.	½-Pt.	1-Pt.	1-Qt.
Price.....each	$.30	.65	1.10	1.90	3.30

Combination rubber stopper and glass filler, each 11 cents.

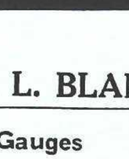
Walworth Fusible Plugs



No. 3917 Regular, Short Pattern, Outside

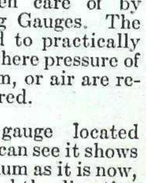


No. 3918 Regular, Short Pattern, Inside



No. 3919 Mass. Std. Tube

No. 3920 Mass. Std. Long Pattern Outside



No. 3921 Mass. Std. Long Pattern Inside

Regular short pattern plugs, Nos. 3917 and 3918, can be used where there is no law requiring long pattern plugs. Tube plugs for Massachusetts are made in ⅜ and ½-inch size only and are a special pattern with ¾-inch extension.

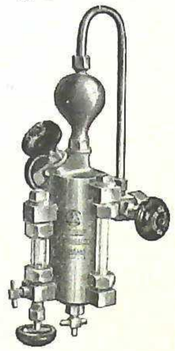
Long pattern plugs, Nos. 3920 and 3921, comply with the various state laws which require a 1-inch extension and with A. S. M. E. Boiler Code for pressures up to 175 pounds.

All fusible plugs are made with bronze casings filled with pure tin and should be inserted with large end of tin exposed to the water.

Plugs made to any size larger than regular are special.

	Price, Each — Regular, Short Pattern			Mass. Standard Long Pattern	
Size Inches	No. 3917 Inside	No. 3918 Outside	Mass. Std. Tube Plug No. 3919	No. 3920 Inside	No. 3921 Outside
⅜	$.50	$.50	$1.00	....	....
½	.60	.60	1.00	$1.20	$1.20
¾	.75	.75	...	1.50	1.50
1	1.00	1.00	...	2.00	2.00
1¼	1.50	1.50	...	3.00	3.00
1½	2.00	2.00	...	4.00	4.00
...	....	....	...	....	....

Detroit Improved Standard Single Connection Lubricators



For use on all kinds of reciprocating engines, steam engines, steam pumps, etc., where conditions do not permit the installation of a double connection lubricator.

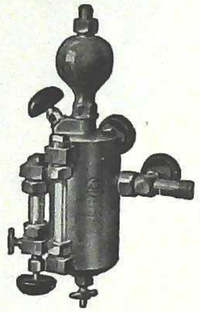
Connected to the steam pipe either above or below the throttle or into the steam chest direct.

Finished in polished brass or nickel-plated.

Capacity Pints	Pipe Thread on Support Arm Inches	Capacity Pints	Pipe Thread on Support Arm Inches
⅓	½	1	½
½	½	2	½

Prices upon application.

Detroit Improved Standard Double Connection Lubricators



For use on all kinds of reciprocating steam engines, steam pumps, etc.

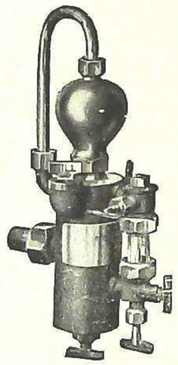
Installed with both connections between the boiler and throttle.

Finished in polished brass or nickel-plated.

Capacity Pints	Pipe Thread on Support Arm Inches	Capacity Pints	Pipe Thread on Support Arm Inches
⅓	½	2	½
½	½	4	¾
1	½	..	..

Prices upon application.

Detroit Zero Single Connection Lubricators



For the same service as the double connection and where the double connection cannot be installed.

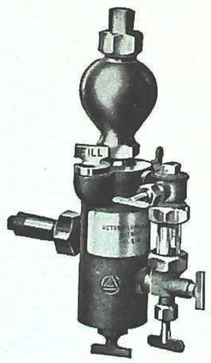
Installed on either side of the throttle or into the steam chest direct by using an elbow and short vertical piece of pipe.

Finished with rough body and polished trimmings in brass.

Capacity Pints	Pipe Thread on Support Arm Inches	Capacity Pints	Pipe Thread on Support Arm Inches
¼	½	1	½
⅓	½	2	½
½	½	.	

Prices upon application.

Detroit Zero Double Connection Lubricators



For use in out-door service, particularly in places subject to low temperatures, such as on traction engines, portable engines, etc.

Installed with both connections between the boiler and the throttle.

Finished with rough body and polished trimmings in brass.

Capacity Pints	Pipe Thread on Support Arm Inches	Capacity Pints	Pipe Thread on Support Arm Inches
¼	⅜	1	½
⅓	⅜	2	½
½	⅜	.	..

Prices upon application.

Hy-Tech Products

No. 253 Williams Worthy Glass Body Lubricators



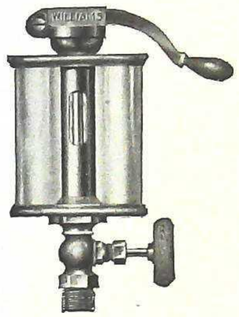
With Sight Feed

For gas, gasoline or motor boat engines.

Large, heavy sight feed fitted to bottom of oil reservoir. Provided with a ball check in shank, which prevents the back pressure from interfering with proper formation of drops in sight feed chamber.

Size No.	I. P. Thrd. In.	Cap. Oz.	O. D. Glass In.	Ht. Glass In.	Price, Each Fin. Brass	Nickel-plated
1½	¼	1½	1¾	1⅝	$2.00	$2.40
2	⅜	2½	2	1⅞	2.80	3.25
3	⅜	4	2¼	2⅛	3.50	4.10
4	⅜	5	2½	2⅜	4.00	4.60
5	½	10	3	3	5.40	6.25
6	½	18	3½	4	7.00	8.20
8	¾	32	4¼	5	14.00	16.40

Williams Walrus Glass Body Oil Pumps

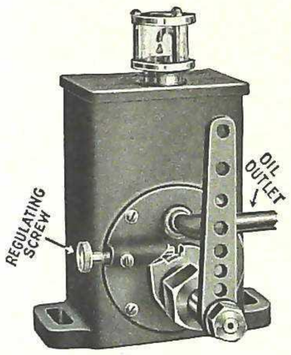


For emergency use, in case the regular sight feed lubricator gets out of order.

Size No.	I. P. Thread Inches	Capacity Pint	O. D. Glass Inches	Height Glass Inches
3	⅜	⅛	2¼	2⅛
5	½	½	3	3
6	½	1	3½	4
8	¾	2	4¼	5

Size No.	Price, Each Fin. Brass	Nickel-plated	Extra Glasses Each	Extra Cork Washers per Doz.
3	$7.50	$8.25	$.15	$.45
5	8.50	9.50	.35	.60
6	10.00	11.00	.65	.75
8	15.00	16.50	1.50	1.50

Model D Practical Force Sight-Feed Oil Pumps



The pumping mechanism is simple and compact.

For lubricating the cylinders and valves of steam engines, steam pumps, air compressors, etc. No ratchet wheels or pawls to wear, no valves in the pump.

With large glass on top of pump, the feed of oil can be easily observed from any point around the engine.

To fill, lift the lid (which is pivoted on the upper end of the sight-feed cup and can be turned around in either direction) and pour the oil into oil bowl. Lid is flanged to fit over top of bowl and a spring keeps it in place. Below lid is a strong basket strainer, 4 inches long, removable for cleaning.

Pump can be used on horizontal or vertical engines, and operated with pump arm and driving rod at any angle, at any stroke from 1-inch up. Pump is either right or left-hand, as it can be piped fron either side from pump outlet. Fittings for ¼-inch pipe. Length of foot, 6½ inches; center to center of slotted holes, 5⅜ inches.

Complete with one Practical triple check valve, adjustable driving rod and driving arm, and full printed instructions. Pumps are packed in a wooden box.

Cap. Pints	Shipping Weight Pounds	Price, Each Black Enamel Finish	Nickel-plated Finish	Cap. Pints	Shipping Weight Pounds	Price, Each Black Enamel Finish	Nickel-plated Finish
1	15	$14.00	$18.00	4	21	$18.00	$23.00
2	17	16.00	21.00	.	..	.....	.....

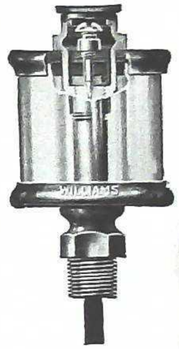
No. 246 Williams Tacoma Oil Cups



Simple feed mechanism, there being a complete absence of unnecessary locknuts. The rate of feed is adjusted by turning the upper knurled nut which, when once set, is firmly held in place by the curved spring. Raising and lowering snap lever opens or closes feed without disturbing adjustments.

No.	I. P. Thread In.	Cap. Oz.	O. D. In.	Ht. Lever Up In.	Price, Each Fin. Brass	Nickel-plated
0	⅛	⅝	1¼	5⅜	$3.00	$3.50
1	¼	1	2	5⅝	3.25	3.75
1½	¼	1½	2	5⅝	3.50	4.00
2	⅜	2½	2½	6⅛	3.75	4.25
3	⅜	4	2½	6¼	4.25	4.75
4	⅜	5	3¼	6¼	5.25	5.75
5	½	10	3⅜	8⅛	7.25	8.00
6	½	18	4⅜	9⅛	9.25	10.25

No. 223 Williams Automatic Rod Oil Cups



For use on engine crank pins. Operation is dependent upon the centrifugal motion imparted by the crank pin, oil being fed automatically to the bearing at each revolution. The feed is easily adjusted with a screwdriver, and when once regulated no further attention is necessary other than refilling.

No.	I. P. Thread Inches	Capacity Ounces	Price, Each Fin. Brass	Nickel-plated
0	⅛	⅝	$1.10	$1.25
1	¼	1	1.50	1.70
1½	¼	1½	2.00	2.25
2	⅜	2½	2.50	2.75
3	⅜	4	3.00	3.30
4	⅜	5	4.00	4.35

Oiler Glasses and Washers



No.	O. D. In.	Hgt. In.	Price Glasses Each	Washers per Doz.	No.	O. D. In.	Hgt. In.	Price Glasses Each	Washers per Doz.
000	1	⅞	$.05	$.15	3	2⅛	2⅛	$.15	$.45
00	1⅛	1	.06	.18	4	2½	2⅜	.25	.50
0	1¼	1⅛	.08	.24	5	3	3	.35	.60
1	1½	1⅜	.10	.30	6	3½	4	.65	.75
1½	1¾	1⅝	.10	.36	8	4¼	5	1.50	1.50
2	2	1⅞	.12	.40	.	...	...	....	....

Plain Brass Oil Cups



No.	Outside Diam. In.	I. P. Thread In.	Price Each	No.	Outside Diam. In.	I. P. Thread In.	Price Each
1	¾	⅛	$.30	6	1¾	⅜	$1.25
2	⅞	⅛	.35	7	1⅞	⅜	1.60
3	1	¼	.40	8	2	½	1.75
4	1¼	¼	.60	9	2¼	½	2.25
5	1½	⅜	.90	.	...	..	....

Tee Handle Priming Cups



Diam. Cup In.	Pipe Shank In.	Price, Each Short Pattern	Long Pattern
¾	⅛	$.65	$.70
¾	¼	.75	....
⅞	⅛	....	.90
⅞	¼	1.15	1.25
1⅛	¼		

Plain Steel and Brass Grease Cups

This cup is drawn from rolled sheet metal, making it lighter, neater and stronger than a cast cup. The metal is dense and uniform. Breakage and leakage due to spongy metal and sand holes are eliminated. The threaded shank is stronger on a cup drawn from rolled sheet metal, and breakage is minimized.



Size No.	I.D. In.	Cap. Oz.	Thd. In.	Price, Each Pol. Brass	N. P. Brass	Rough Steel
000	3/4	1/4	1/8	$.48	$.60	$.17
00	1	1/2	1/8	.63	.76	.20
0	1 1/4	2/3	1/4	.89	1.03	.27
1	1 1/2	1	1/4	1.09	1.24	.33
2	2	2	3/8	1.69	1.94	.49
3	2 1/2	3 1/2	1/2	2.77	3.30	.72
4	3	5	1/2	3.57	4.15	1.08
5	3 1/2	8	3/4	5.31	6.06	1.80

Williams Dandy Automatic Grease Cups

The Dandy is generally used on crank pins and journals. It will be found well adapted to many other uses. The construction comprises a spiral spring placed between the cover and a leather packed plunger, secured to a threaded stem which is raised or lowered by the thumb nut. Thumb nut has a locking device in one end, which prevents it from jarring from its position on stem.



No. 210

No.	I. P. Thrd In	Cap. Oz.	Hght. In	O. D. In.	Price, Each Fin. Brass	N. P.
00	1/8	1/3	3 3/4	1	$1.50	$1.75
0	1/4	1	4 1/2	1 3/4	2.00	2.25
1	1/4	1 1/2	5 1/2	2	2.50	2.80
2	3/8	3	6 5/8	2 9/16	3.20	3.60
3	1/2	6	8 1/8	3 3/16	4.30	5.00
4	1/2	10	9 1/2	3 11/16	6.00	6.75

No. 212 Williams Duke Screw Feed Grease Cups



In the lubrication of steam and gasoline engines, automobiles, etc., conditions are such that it is sometimes necessary to force grease a long distance to the bearings and retain the cup in a place accessible. This cup fulfills these requirements nicely. The cover at top is removed for filling.

No.	I. P. Thrd. In.	Cap. Oz.	Hght. In.	O. D. In.	Price, Each Fin. Brass	N. P.
00	1/8	1/3	3 21/32	1 7/16	$1.00	$1.20
0	1/4	1	4 1/2	1 3/4	1.20	1.45
1	1/4	1 1/2	5 3/16	2	1.60	1.90
2	3/8	3	6 5/8	2 9/16	2.00	2.40
3	1/2	6	8 1/8	3 3/16	2.80	3.40
4	1/2	10	9 1/2	3 11/16	4.00	4.75

No. 213 Williams Dragon Brass Grease Cups

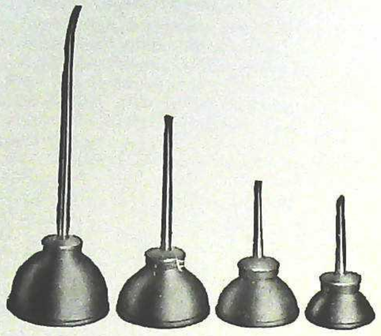


The Dragon has no locking device and is dependent upon the threaded leather washer in its base for holding the cap secure, which prevents any leakage.

An extra charge will be made on all cups having pipe threaded shanks smaller or larger than listed below.

No.	I. P. Thrd. In.	Cap. Oz.	Hght. In.	O. D. In.	Price, Each Rough Brass	Fin. Brass	N. P.
00	1/8	1/4	1 19/32	1 1/8	$.56	$.70	$.82
0	1/4	2/3	1 31/32	1 13/32	.74	.90	1.06
1	1/4	1	2 5/32	1 5/8	.96	1.15	1.36
2	3/8	2	2 17/32	2 3/32	1.28	1.50	1.80
3	1/2	3 1/2	3 3/32	2 11/16	1.76	2.15	2.60
4	1/2	5	3 7/16	3 1/4	2.30	2.90	3.40

Noera Wide Mouth Copper Plated Steel Oilers



One-piece seamless steel domes, spring steel bottoms and rolled threads. Collar, cap, bottom and nozzle are assembled without solder, insuring solid joints. 1¼-inch opening for filling. Copper-plated inside and out.

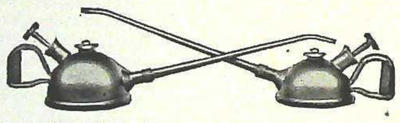
Spouts are interchangeable.

Packed in cartons of one dozen.

No.	Capacity Pints	Diameter Inches	Length Spout Inches	Weight Pounds	Price per Dozen
12	1/4	2 3/4	3	2 1/4	$4.50
13	1/3	3 3/8	3	2 3/4	5.50
13A	1/3	3 3/8	5	2 3/4	6.00
14	1/3	3 3/8	9	3	6.50
14A	1/2	3 3/4	3	3 1/4	7.50
14AA	1/2	3 3/4	5	3 1/4	8.00
14B	1/2	3 3/4	9	3 1/2	8.50
15	1	4 1/4	3	3 3/4	9.25
15A	1	4 1/4	5	3 3/4	9.75
16	1	4 1/4	9	4	10.50

Noera Automobile Pump Oilers

Copper-Plated Steel


No. 804 No. 802

These oilers permit easy access to oil cups, bearings and other places that are usually awkward for the motorist to reach with the ordinary oiler, and are particularly useful for oiling springs on all makes of cars.

Oilers are equipped with a strong, positive pump which will shoot oil overhead with greater force than an ordinary oiler feeds oil below and with the same ease. The pump also places under the operator's control the amount of oil he wishes to use, from a few drops to a large quantity. A large 1¼-inch opening allows them to be filled easily. The handle is roomy, convenient to grip and within easy reach of the plunger pump.

They are made from the best quality steel, heavily copper-plated and nicely polished.

The oiler pump has been carefully redesigned, making it possible to throw either light or heavy oil farther than any other type of pump oiler, working easily even in cold weather.

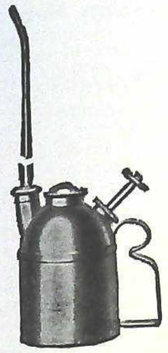
These oilers are guaranteed and will be found practically fool-proof under almost any condition.

Packed 6 of one size to a carton.

No.	Cap. Pints	Height, Inches Spout	Height, Inches Dome	Over All	Diameter, Inches Dome	Diameter, Inches Opening	Weight Pounds per Dozen	Price per Dozen
800	1/2	3	2 3/4	3 1/8	3 3/4	1 1/4	8 1/2	$23.00
801	1/2	5	2 3/4	3 1/8	3 3/4	1 1/4	9	23.50
802	1/2	9	2 3/4	3 1/8	3 3/4	1 1/4	10	24.00
802½	1	3	2 7/8	3 3/8	4 1/8	1 1/4	9 1/2	24.75
803	1	5	2 7/8	3 3/8	4 1/8	1 1/4	10	25.25
804	1	9	2 7/8	3 3/8	4 1/8	1 1/4	11	25.75

Hy-Tech Products

Noera Copper-Plated Steel Pump Oilers



This pump oiler is made with the same pump action as the Noera automobile oilers. For use around farm machinery, such as tractors, harvesters, etc.

The lower half and bottom are made of one piece. Oiler will not leak.

It has an extra large opening, 1¼ inches. It will throw both light and heavy cylinder oil. Valve is removable. Lower valve works by gravity. Can be had with wire screen if specified.

No.	Cap. Pts.	Diam. In.	Size Spout In.	Wt. Lbs. per Dozen	Price per Dozen
1000	1	3 3/8	9	11 1/2	$30.00
2000	1 1/2	3 3/4	12	13	35.00
3000	2	4 1/8	15	16	40.00

Noera Steel Railroad Oilers

Copper Plated Inside and Out


No. 10

Long spouts are handy for reaching inconveniently placed parts. Lower half and bottom are made in one piece. Large 1¼-inch opening. Spouts are interchangeable and connections are made with a union, enabling spout to be pointed in any direction.

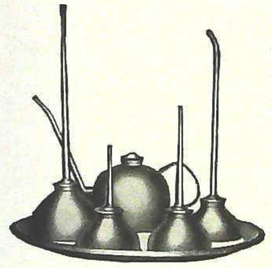
Packed 6 to a carton.


No. 100

No.	Cap. Pints	Ht. Spout In.	Wt., Lbs. per Doz.	Price per Doz.
10	1	12	9	$14.00
10½	1 1/2	12	9	16.00
11	2	18	12	18.00
100	1	12	10	14.00
101	2	12	13 1/4	18.00
111	4	12	20 3/4	20.00

Noera Engineers' Sets

With 14-Inch Round Tray


No. 40 or C-40

The oilers are made with large openings so they can be easily filled. The domes are made in one-piece. A plain tray is included in a set.

The Nos. 30 and C-30 sets each include Nos. 12, 13, 14 oilers and No. 19A filler. Weight, 3½ pounds.

The Nos. 40 and C-40 sets each include Nos. 12, 13, 14, 16 oilers, and No. 210 filler. Weight, 4 pounds.

Price, No. C-30, Copper Plated Steel.....per set $5.00
Price, No. C-40, Copper Plated Steel.....per set 7.00
Price, No. C-30, Polished Brass.....per set 6.00
Price, No. C-40, Polished Brass.....per set 9.00

Noera Copper-plated Steel Engineers' Fillers



This filler is made from heavy seamless cold rolled steel, copper plated inside and out. Has machine cut threads.

It is strong and durable.

Handsomely finished.

No.	Capacity Quarts	Diameter Inches	Weight Pounds per Dozen	Price per Dozen
210	1	5	11	$20.00
211	2	6	15 1/2	24.00

Galvanized Oil Cans

With Spout



This galvanized oil can has a large spout

It has banded top and bottom and plain stamped fluted tin breast.

Nos. 0 and 02 have a 1½-inch screw cap; Nos. 03 and 05 have a 2⅜-inch screw cap.

No.	Capacity Gal.	Diam. In.	Carton Lots Dozen	Carton Wt. Lbs.	Price per Dozen
0	1	6 1/4	*1	15 1/2	$5.10
02	2	8 1/4	1/2	17	8.15
05	5	10 1/2	1/4	17	14.20

*Carton.

Oily Waste and Rubbish Cans

This can complies with all the requirements of the Fire Underwriters. It is made from heavy galvanized sheet steel. Built to withstand hard factory usage. No solder is used.

Cover is self closing. Bottom is well ventilated, as it sets three inches above the floor, allowing free air circulation.

This can is built without legs.



No.	Diameter Inches	Height Inches	Price per Dozen
400	15	20	$42.00
402	18	24	50.00
404	18	30	60.00

Heavy Galvanized Water Pails



This pail is made of heavy grade steel and well galvanized. It has riveted ears and heavy wire bail. The body of the pail is plain.

Packed in bundles of one dozen each.

No.	Cap. Qts.	Size In.	Wt. Lbs. Bundles	Price per Doz.
1310	10	10 1/2 x 8 3/4	30 1/2	$8.55
1312	12	12 x10 1/4	36	9.20
1314	14	12 1/2 x10 1/2	38	10.50
1316	16	12 3/4 x11	43	11.85

Extra Heavy Galvanized Iron Pails

These pails are made of heavy steel and after construction are hot galvanized both inside and outside, which closes all crevices against rust.

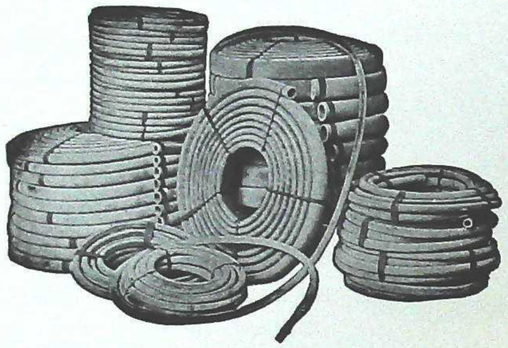
The ears are securely attached and the bail is made of heavy wire.

Packed in bundles of 12 each.



No.	Cap. Qts.	Size Inches	Bundle Wt. Lbs.	Price per Dozen
1510	10	10 3/4 x 9 7/16	39	$10.20
1512	12	11 7/8 x10 1/4	45	10.70
1514	14	12 5/8 x10 1/2	49	11.60
1516	16	12 1/2 x11 3/4	52	13.60
1520	20	12 3/4 x12 3/4	60	16.50

Water Hose



Two-ply hose, designed to conduct water under moderate pressure only. Sizes above 3-inch are mainly for tank hose; 3-ply hose, of medium strength, suitable for hydrants, garden and pump uses, street sprinkling, washing decks, etc.

Four-ply hose, recommended for all purposes where a particularly strong and reliable article is required.

Five and 6-ply hose, for use where great resistance to pres sure or very severe service is required.

Internal Diam. In.	Price, per Foot — No. of Plies 2	3	4	5	6
½	$.20	$.25	$.30	$.37	$.45
¾	.25	.30	.37	.46	.55
1	.33	.40	.50	.62	.75
1¼	.42	.50	.62	.77	.93
1½	.50	.60	.75	.93	1.12
1¾	.58	.70	.87	1.08	1.30
2	.66	.80	1.00	1.25	1.50
2¼	.75	.90	1.12	1.40	1.68
2½	.83	1.00	1.25	1.56	1.87
2¾	.92	1.10	1.37	1.71	2.05
3	.99	1.20	1.50	1.87	2.25
3½	1.16	1.40	1.75	2.18	2.62
4	1.32	1.60	2.00	2.50	3.00
5	1.65	2.00	2.50	3.13	3.75
6	1.98	2.40	3.00	3.75	4.50
7	2.31	2.80	3.50	4.38	5.25
8	2.64	3.20	4.00	5.00	6.00
9	2.97	3.60	4.50	5.63	6.75
10	3.33	4.00	5.00	6.25	7.50

All intermediate sizes charged at the list price of the next larger size, thus: 1⅛-inch is charged at 1¼-inch price, etc. Furnished regularly in 25 and 50-foot lengths.

No. 312 Galvanized Round Bottom Fire Pails



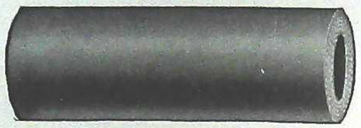
Made up from black steel sheets and galvanized.

Painted red and lettered in black.

Made in accordance with requirements of board of fire underwriters.

Ears electrically welded on.

Cat. No.	Size Inches	Trade Cap., Qts.	Dozen in Bundle	Wt., Lbs. Bundle	Price per Dozen
312	10¾x9	12	1	25¾	$9.10



Steam Hose

The rubber tube and friction between plies are of a special heat resisting compound.

I. D. Inches	Price, per Foot — 3-Ply	4-Ply	5-Ply	6-Ply	7-Ply	8-Ply
½	$ .47	$ .56	$ .70	$ .84	$ .98	$1.12
¾	.57	.71	.87	1.05	1.23	1.41
1	.70	.87	1.07	1.28	1.50	1.70
1¼	.85	1.04	1.30	1.56	1.82	2.08
1⅜	.94	1.15	1.43	1.71	2.00	2.29
1½	1.02	1.25	1.56	1.87	2.18	2.50
1⅝	1.10	1.35	1.69	2.02	2.35	2.70
1¾	1.18	1.45	1.81	2.17	2.53	2.90
2	1.34	1.66	2.07	2.49	2.90	3.32
2¼	1.50	1.87	2.33	2.80	3.27	3.74
2½	1.66	2.08	2.60	3.12	3.64	4.16

Rough Bore Suction Hose

Iron Wire Lined



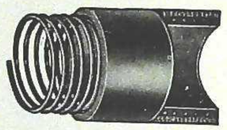
Made to withstand an exterior collapsing tendency.

Round or flat wire is spirally wound with sufficient space between the spiral to retain proper flexibility of the hose. The tube and walls are built up on the wire lining and the wire is imbedded in the tube.

I. D. In.	Price per Foot	I. D. In.	Price per Foot	I. D. In.	Price per Foot
¾	$.70	1¼	$1.15	1¾	$1.90
1	.90	1½	1.50	2	2.30

Smooth Bore Suction Hose

Steel Wire Lined



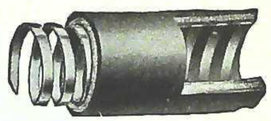
Made to withstand an exterior collapsing tendency instead of an internal bursting pressure. Wire lining or insertion is employed effectively.

Round or flat wire is spirally wound with sufficient space between the spiral to retain proper flexibility of the hose.

I. D. Inches	Price per Foot	I. D. Inches	Price per Foot	I. D. Inches	Price per Foot	I. D. Inches	Price per Foot
1	$1.05	2½	$3.50	5	$8.50	7½	$15.00
1¼	1.30	3	4.50	5½	9.50	8	16.50
1½	1.70	3½	5.50	6	10.50	9	19.50
1¾	2.15	4	6.50	6½	12.00	10	22.50
2	2.60	4½	7.50	7	13.50	12	27.50

Rough Bore Suction Hose

Wire Lined



Made to withstand an exterior collapsing tendency.

Round or flat wire is spirally wound with sufficient space between the spiral to retain proper flexibility of the hose.

I. D. In.	Price per Foot	I. D. In.	Price per Foot	I. D. In.	Price per Foot	I. D. In.	Price per Foot
2½	$3.10	4½	$6.70	6½	$10.50	9	$17.50
3	4.00	5	7.60	7	12.00	10	20.00
3½	4.90	5½	8.50	7½	13.50	12	25.00
4	5.80	6	9.50	8	15.00	..	.....

Hy-Tech Products

Cotton Mill Hose

Rubber Lined



This is a reliable hose in every respect—strong, durable. It is light and pliable, reels closely, will not sweat nor leak.

It is, therefore, well adapted for protection against fire in factories, public buildings, etc.

Inside Diameter Inches	Price per Foot	Inside Diameter Inches	Price per Foot	Inside Diameter Inches	Price per Foot
1	$.40	2	$.65	3½	$1.50
1¼	.45	2½	.80	4	2.00
1½	.50	3	1.00	..	....

Double Jacket Cotton Fire Hose

Rubber Lined

Double jacket fire hose is adapted for use in city fire departments and in any place where the pressure is heavy.

Size ..... inches	1½	2	2½
Price ..... per foot	....	....	....

Single Jacket Cotton Fire Hose

Rubber Lined

Single jacket fire hose is intended for use in fire departments in towns and small cities, and in any place where there is a moderately heavy pressure.

Size ..... inches	1¼	1½	2	2½
Price ..... per foot	....	....	....	....

Underwriters' Cotton Fire Hose

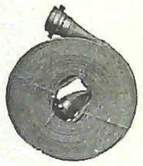
Rubber Lined

Guaranteed to conform to the specifications of the Associated Mutual Fire Insurance Association and the National Board of Fire Underwriters, for outdoor factory fire protection.

This hose is 2⅝ inches in diameter and takes 2½-inch couplings.

Price ..... per foot ....

Unlined Linen Fire Hose



Recommended for interior use in preference to a rubber lined cotton hose. The linen hose has no lining to deteriorate with age and will last a great deal longer. Its chief value is for short lines for brief use inside the building. On account of its lightness, compactness and convenience, it can be handled by one man alone. When water is first turned on, the hose will leak slightly, but the fibers will almost immediately expand and the hose becomes practically water-tight.

Couplings are not included in price and must be specified when wanted.

Size Inches	Price per Foot	Size Inches	Price per Foot	Size Inches	Price per Foot
¾	$.25	1¼	$.35	2	$.54
1	.30	1½	.42	2½	.66

Underwriter's Unlined Linen Hose

Made in any length and labeled strictly in accordance with the requirements and specifications of the Associated Factory Mutual Fire Insurance Companies and the National Fire Protection Association as an unlined linen fire hose for inside protection.

Size ..... inches	¾	1	1¼	1½	2	2½
Price ..... per foot	$.25	.30	.35	.42	.54	.66

Air Hose



We carry several grades of air hose each of which fits the needs of one class of trade or another.

For extremely high pressures and hard usage such as air compressor work for medium or light pressures, we can furnish a hose at the right price and of suitable quality.

Prices upon application.

Type BD 15 American Metal Hose



A hose made of metal. Steam cannot burn it; oil will not rot it.

Steel hose of BD types is adapted to the carrying of oils, fats, greases; also superheated steam. It is not recommended for saturated steam except under exceptional circumstances. BD 15 bronze hose is suitable for all ordinary steam purposes, particularly in sizes ¾-inch and up.

I. D. In.	Price, per Foot — Steel	Bronze	I. D. In.	Price, per Foot — Steel	Bronze	I. D. In.	Price, per Foot — Steel	Bronze
3/16	$.13	$.20	¾	$.70	$1.25	2½	$2.20	$4.50
¼	.15	.25	1	.90	1.60	3	2.70	6.50
5/16	.25	.30	1¼	1.00	2.25	4	4.00	9.00
⅜	.30	.55	1½	1.25	2.70	...	....	....
½	.40	.80	2	1.80	3.90	...	....	....

American Metal Oil Hose



Oils have no pernicious effect on American Metal Hose, but on the contrary, keep the bearing surfaces lubricated, and in this way increase its flexibility and actually prolong its life.

Prices upon application.



American Elbow Unloading Couplings

For Oil Tank Cars

Made for use with 2, 2½, 3 and 4-inch BD15 hose.

Size Hose Inches	Price Each	Size Hose Inches	Price Each
2	$7.00	3	$8.50
2½	7.50	4	11.00

We are as near as your nearest telephone.

Cast Brass Garden Hose Couplings

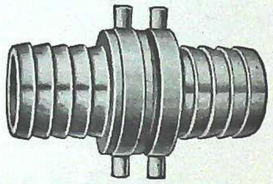


Size Inches	Per Dozen
½*	$2.40
⅝	2.40
¾*	2.40
1	4.40

*Hose thread furnished unless otherwise ordered.

Water Hose Couplings

Size Inches	Per Dozen	Size Inches	Per Dozen
1¼	$10.00	3	$75.00
1½	14.00	3½	120.00
2	24.00	4	150.00
2½	48.00	..	.....



Steam Hose Couplings



Always furnished with iron pipe thread.

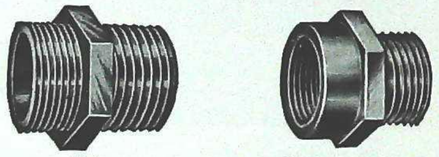
Size In.	Per Dozen	Lgth. Tail In.	Size In.	Per Dozen	Lgth. Tail In.	Size In.	Per Dozen	Lgth. Tail In.
½	$15.00	2½	1¼	$24.00	3½	2½	$72.00	5
¾	15.00	3	1½	30.00	4	...	.....	.
1	18.00	3¼	2	42.00	4¼	...	.....	.

Wrought Brass Garden Hose Couplings



Size	inches	½	⅝	¾
Hose Couplings	per dozen	$2.40	2.40	2.40

Hose Nipples



Male — Male and Female

Size....in.	½	¾	1	1¼	1½	2	2½
Per Doz.	$3.50	3.50	5.00	9.00	10.00	14.00	28.00

Hose Reducers and Bushings



Reducer



Bushing

Size Inches	Per Dozen	Size Inches	Per Dozen	Size Inches	Per Dozen
¾x ½	$6.50	1½x1¼	$12.00	2½x1¼	$23.00
1 x ½	6.50	2 x ¾	13.00	2½x1½	24.00
1 x ¾	6.50	2 x1	14.00	2½x2	26.00
1¼x ¾	8.00	2 x1¼	16.00	3 x2	30.00
1¼x1	10.00	2 x1½	18.00	3 x2½	36.00
1½x ¾	11.50	2½x ¾	20.00	.....	.....
1½x1	11.50	2½x1	22.00	.....	.....

Brass Hose Clamps



Made of heavy wrought brass, this clamp is rust-proof clear through.

Tongue runs in channel holding it close to hose and making a uniform grip.

Band portion is pliable, grips tight, and can be opened up, removed and used again.

Stiff ears cannot pull together at top when tightened, and also form a perfect nut lock.

Heavy shoulder engages vise jaws, permitting clamp to be pulled tremendously tight.

For Water Hose

Size In.	Hose Ply	Inside Diam. In.	Gross in Box	Wt. Lbs. per Gross	Price per Doz.	Size In.	Hose Ply	Inside Diam. In.	Gross in Box	Wt. Lbs. per Gross	Price per Doz.
3/16	3	7/16	1	2¼	....	1	2	1 11/32	½	17	$2.00
¼	3	½	1	4	....	1	3	1 7/16	½	18	2.00
⅜	2	⅝	1	4¼	....	1	4	1 17/32	⅓	20	2.00
⅜	3	¾	1	4¾	....	1¼	3	1 21/32	⅓	21	2.50
½	2	⅞	1	5¼	....	1¼	4	1 13/16	⅓	23	2.50
½	3	15/16	1	5¾	....	1½	3	1 15/16	¼	30	3.00
½	4	1 1/32	1	6½	....	1½	4	2 1/16	¼	31	3.00
⅝	3	1 1/32	1	6½	....	2	3, 4	2 9/16	⅙	38	4.00
⅝	4	1 3/32	1	6¾	....	2¼	3, 4	2 7/8	1/12	48	6.50
¾	2	1 3/32	1	6¾	....	2½	3, 4	3 1/16	1/12	50	7.00
¾	3	1 3/16	1	6¾	....	3	3, 4	3¾	1/12	72	10.00
¾	4	1¼	1	7¾	....	...	....	....	....	..	.....

For Steam Hose

¾	3	1 7/16	½	18	$2.00	1½	3, 4	2 7/32	¼	33	$3.50
¾	4	1 17/32	⅓	20	2.00	1½	5	2 13/32	⅛	35	4.00
1	3	1 5/8	⅓	21	2.50	2	3, 4	2 11/16	⅛	38	5.50
1	4	1 21/32	⅓	21	2.50	2	5	2 7/8	1/12	50	6.50
1¼	3	1 15/16	¼	30	3.00	2½	3, 4	3¼	1/12	60	8.50
1¼	4	1 31/32	¼	30	3.00	2½	5	3 9/16	1/12	66	9.50

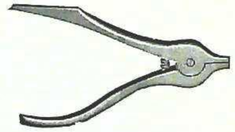
No. 80 Caldwell Hose Straps



Flexible brass wire straps, for minor repairs where the use of clamps is not essential. Applied with special pliers. Packed one gross in package.

No.	For Size Hose In.	Length Strap In.	Price per Gross	No.	For Size Hose In.	Length Strap In.	Price per Gross
2	½	3⅜	$3.20	20	1½	7⅛	$15.96
4	½	3¾	3.52	22	1¾	7½	18.16
6	¾	4⅛	3.80	24	1¾	8	18.16
8	¾	4½	4.00	26	2	8½	20.72
10	1	5	5.00	28	2	9	20.72
12	1	5⅜	5.28	30	2¼	9½	23.32
14	1¼	6	12.96	32	2¼	10	23.32
16	1¼	6⅜	12.96	34	2½	10½	25.92
18	1½	6¾	15.96	36	2½	11	25.92

No. 81 Caldwell Pliers

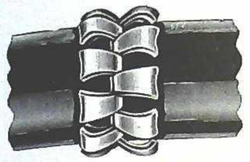


Designed especially for applying Caldwell Hose Straps. Made of cast iron.
No. 1, 6½ inches long, for ½, ¾ and 1-inch hose.
No. 2, for hose larger than 1 inch.

Price, No. 1.....per dozen $3.60
" " 2..... " 6.00

Hy-Tech Products

Bull Dog Hose Menders



This mender has a cast tube, which supplies a solid foundation for the steel fingers and which will withstand abuse and hard knocks. Steel fingers are scientifically designed to grip the hose without injury to the fabric, and when properly applied, are sure to hold ends of the hose in position.

Easily applied, simply cut the hose apart where a leak occurs, insert the tube and hammer down the steel fingers. Sizes ½, ⅝ and ¾ inch, packed 2 dozen of a size in a box: 6 dozen in a shipping carton. One-inch size packed 1 dozen in a box.

Size.....inches	½	⅝	¾	1
Weight per Dozen.....ounces	17	19	23	44
Price.....per dozen	$1.10	1.10	1.10	2.40

Plain Hose Nozzles



All ¾-inch nozzles and pipes are furnished with hose thread unless otherwise specified. All other sizes are furnished with iron pipe thread, unless otherwise specified.

Sizes ¾ and 1-inch packed in cartons.

Size Inches	Length Inches	Per Dozen	Size Inches	Length Inches	Per Dozen
¾	6	$7.00	1½	5¾	$18.00
1	4	5.00	1½	10	20.00
1	8	9.00	1½	12	22.00
1¼	4¾	12.00	2	12	34.00
1¼	10	16.00	2½	15	65.00
1¼	12	18.00	...	....	.....

Screw Tip Hose Pipes



Threads on tips of all ¾ and 1-inch pipes are ⅜-inch iron pipe sizes. All ¾-inch nozzles and pipes are furnished with hose thread unless otherwise specified. All other sizes are furnished with iron pipe thread, unless otherwise specified.

Sizes ¾ and 1-inch packed in cartons.

Size In.	Length In.	Per Doz.	Size In.	Length In.	Per Doz.	Size In.	Length In.	Per Doz.
¾	6	$7.00	1¼	15	$24.00	2	20	$50.00
¾	7½	8.00	1½	13	25.00	2½	15	75.00
¾	12	10.00	1½	15	30.00	2½	20	96.00
1	8½	10.00	1½	20	36.00	2½	24	100.00
1	12½	12.00	2	12	38.00	2½	30	144.00
1¼	12	20.00	2	15	45.00	2½	36	157.00

Underwriters' Standard Play Pipes



Wound and painted, metal swivel handle; constructed in accordance with the Underwriters' Specifications.
Price, Size, 2½x30 Inches.....each $14.00

Boston Spray Nozzles



Solidly made of fine cast brass; has a large barrel, enabling stream of water to form before leaving orifice. Easily and quickly regulated by a simple turn of the wrist.
Size, ¾-inch. Packed 1 dozen in a paper box.
Price.....per dozen .....

Galvanized Malleable Iron Common Hose Spanners



No. 9

Size In.	Length Inches	Price per Dozen
1½	9	$4.00
2	10	4.50
2½	10¾	5.00
3	11	7.00
4	12	8.00

No. 2113 Allen Reducing Valve Couplings



This reducing valve coupling is used only on inside standpipe installation to connect 1½-inch linen hose to the 2½-inch Fire Department valves.

Price, No. 2113.....each $4.00

No. 26 Standpipe Siamese Connections

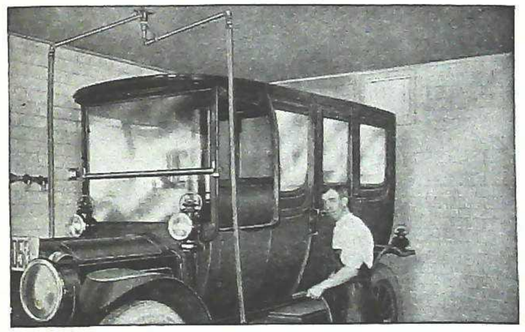
45°, With Single Clapper Valve



For use only at the base of an outside, exposed standpipe in connection with fire escape. Made with a single clapper valve so that one or both streams can be used. Rough finish. Extra for polishing, 2½, 3 or 4 inches, $2.80 each; 5 or 6 inches, $5.00 each.

Dimensions Inches	Price Each	Dimensions Inches	Price Each
2½x2½x2½	$10.00	3x3x3	$18.00
2½x2½x3	10.00	3x3x4	18.00
2½x2½x4	10.00	3x3x5	23.00
2½x2½x5	13.00	3x3x6	25.00
2½x2½x6	18.00	.....	.....

Walworth Auto Washers



No ungainly length of hose to drag along floor, catch under wheel, coil up after using, or leak.

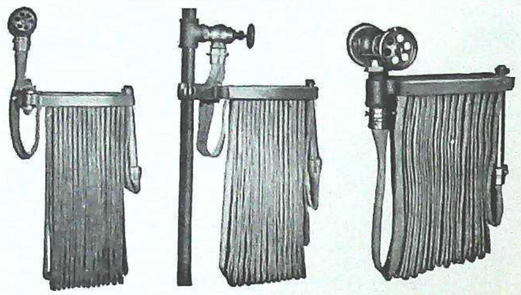
Makes it easy to wash every part of car because overhead construction swings the hose entirely about car with only a 16⅔-foot length hose that can be guided to any part instantly. Stream of water can be steadily directed at mud and dirt, washing the spots away quickly and without scratching the finish.

Easily installed and connected to water supply. The plate is attached to ceiling by four simple lag screws which are furnished.

Pipe arm swings in an 8-foot circle on swivel. When in use arm drops hose where it is wanted, keeping hose out of the way and allowing moisture to run out of it, and so prolong life of hose. Working parts made of brass; all other parts of wrought and cast iron heavily galvanized.

Price, Washer only.....each $15.00
" 16⅔-foot ¾-inch 3-ply hose, Complete with Couplings.....each 5.25
Price, Self-closing ¾-inch Spray Nozzle..... " 2.50

Bowes Hose Racks
For Unlined Linen Hose



Style E with Wall Bracket — Style F with Pipe Clamp — Style G with Valve Nipple

The Bowes Rack consists of a tubular arm on which are slidably mounted eyeleted pins, supporting the folded hose. This gives a positive support; the pressure is equal on both sides, prevents pinching of the hose and holds it in place until the hose is withdrawn at the open end, the pins remaining on the extension arm. Rack has a cover; the hose cannot jam.

In ordering Style F racks, specify size of stand pipe.

Iron

No. Style E	No. Style F	No. Style G	Capacity Feet	Hose Size Inches	Price Each Alum. Bronze	Price Each N. P.
31	41	51	50	1½	$5.00	$7.00
32	42	52	50	2	5.00	7.00
33	43	53	50	2½	5.00	7.00
31A	41A	51A	75	1½	5.50	7.50
32A	42A	52A	75	2	5.50	7.50
33A	43A	53A	75	2½	5.50	7.50
34	44	54	100	1½	6.00	8.00
35	45	55	100	2	6.00	8.00
36	46	56	100	2½	6.00	8.00
34A	44A	54A	150	1½	6.00	8.00
35A	45A	55A	150	2	6.00	8.00
36A	46A	56A	150	2½	6.00	8.00

Solid Brass

No. Style E	No. Style F	No. Style G	Capacity Feet	Hose Size Inches	Price, Each Lacquered Fin.	Price, Each N. P.
131	141	151	50	1½	$10.00	$11.00
132	142	152	50	2	10.00	11.00
133	143	153	50	2½	10.00	11.00
131A	141A	151A	75	1½	11.00	12.00
132A	142A	152A	75	2	11.00	12.00
133A	143A	153A	75	2½	11.00	12.00
134	144	154	100	1½	12.00	13.00
135	145	155	100	2	12.00	13.00
136	146	156	100	2½	12.00	13.00
134A	144A	154A	150	1½	12.00	13.00
135A	145A	155A	150	2	12.00	13.00
136A	146A	156A	150	2½	12.00	13.00

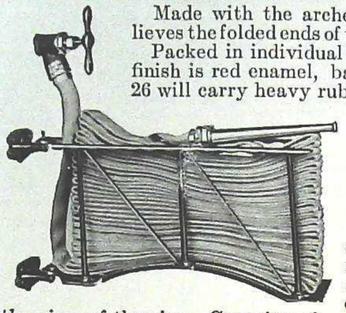
Where the rack is swung from the valve, Style G, a pipe thread nipple is furnished without charge. For nipples with special threads the following net extra charge per rack applies.

Iron Nipples — Size Inches	Iron Nipples — Price Each	Solid Brass Nipples — Size Inches	Solid Brass Nipples — Price Each
1½	$1.50	1½	$1.90
2	1.70	2	2.20
2½	2.00	2½	2.50

Where pipe clamps are specified, Style F, they are furnished up to and including 4-inch, without charge. For larger sizes there is a net extra charge per rack as follows:

Iron Clamps — Size Inches	Iron Clamps — Price Each	Solid Brass Clamps — Size Inches	Solid Brass Clamps — Price Each
4½	$.80	4½	$1.80
5	1.00	5	2.20
6	1.20	6	2.40
7	1.30	7	3.00
8	1.80	8	3.60

Hartford Swinging Hose Racks
Approved by Associated Factory Mutual Ins. Co.





Pipe Clamps

Made with the arched bedplate which relieves the folded ends of the weight of the hose.

Packed in individual wooden boxes. Stock finish is red enamel, baked on. Nos. 25 and 26 will carry heavy rubber-lined cotton hose in 50-foot lengths.

Furnished with clamps or wall brackets. In ordering state which is desired and if pipe clamps give the size of the pipe. Capacity of racks for linen hose is figured on hose with only one set of couplings. Where hose is coupled in two or more lengths, next larger size rack is required.

In ordering Nos. 21, 021, 23 or 023 state if for 1½ or 2-inch hose.

Prices include pipe clamps up to and including 4-inch size. For larger size pipe clamps there is an extra charge.

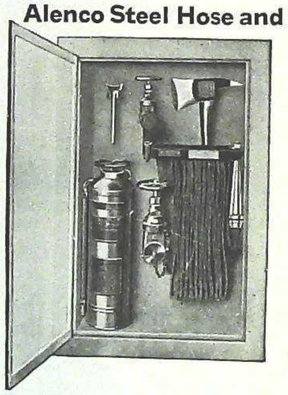
For Unlined Linen Hose

No. Style A Pipe Clamps	No. Style B Wall Brack.	Cap. Ft.	Hose Size In.	Price Each	No. Style A Pipe Clamps	No. Style B Wall Brack.	Cap. Ft.	Hose Size In.	Price Each
17H	017H	50	1¼	$5.00	20A	020A	75	2½	$5.50
18H	018H	50	1½	5.00	21A	021A	100	1¼	6.00
19H	019H	50	2	5.00	21H	021H	100	1½ or 2	6.00
20H	020H	50	2½	5.00	22H	022H	100	2½	6.00
17A	017A	75	1¼	5.50	23H	023H	150	1½ or 2	7.00
18A	018A	75	1½	5.50	24H	024H	150	2½	7.00
19All	019All	75	2	5.50	....	.....	...	...	....

For Cotton Rubber-Lined Mill Hose

23H	023H	50	1½ or 2	$7.00	25H	025H	100	1½ or 2	$7.50
24H	024H	50	2½	7.00	26H	026H	100	2½	8.00

Alenco Steel Hose and Extinguisher Cabinets



Door and casing are of furniture steel, without joints or rivets.

Standard finish is white enamel inside, priming coat outside. Can be furnished snow white enamel outside at an extra charge of $1.00.

Cabinets can be furnished prepared for panels of plate glass or double thick glass.

Glass is shipped separately but can be installed at extra charge of 50 cents net.

If words "Fire Hose" in gold letters are desired on glass panel, add 35 cents net.

For roughing-in measurements, add ¾ inch to height and width, but nothing extra for depth.

Capacity, 50, 75 or 100 feet of 1½-inch hose. Inside measurements. Height, 38¾ inches; width, 30¾ inches; depth, 8½ inches. Height of trim, 43½ inches; width, 35½ inches.

No.	Size Glass, In.	Price, Each Double Thick Glass Panel	Price, Each Plate Glass Panel
CC	36x28	$35.00	$44.00

Cabinets can be grained to match trim at extra cost.

Firemen's Axes



Price, Standard 6-lb ..... each $3.50
" Brackets ..... " .50

Hy-Tech Products

Pyrene Fire Extinguishers



With Bracket



1 Quart



In Metal Box

Pyrene Extinguishers are safest for use on electrical fires of all kinds and for fires starting in oil, paint or other highly inflammable materials. The liquid is non-conductive and will not injure electrical equipment.

The contents will not freeze at 50° F below zero. Needs no recharging until used.

The 1-pint size is made especially for the modern car. It contains enough liquid to extinguish any incipient automobile fire.

The 1 and 1½-quart sizes (not pint size) are labeled by the Underwriters' Laboratories.

The 1-quart extinguishers are packed 6 to a carton; liquid, 1-quart can, 20 to carton; 1½-quart can, 10 to a case; 1-gallon can, 4 to a case; 1-pint extinguishers, in unit packages of 6, 2 packages of 12 to a carton.

Prices below include black bracket and charge.

Size Extinguisher	Price, Each Brass Extinguisher	Price, Each C.P. Extinguisher	Extra Brackets
1-Pint	$9.00	$11.00	$.75
1-Quart	12.00	14.00	1.00
1½-Quart	15.00	17.00	*1.50

*Clamping type bracket.

Pyrene Fire Extinguishing Liquid

Size Can	1-Pt.	1-Qt.	1½-Qt.	1-Gal.
Price.....each	$.90	1.80	2.70	7.20

Metal Boxes—1 Quart

Price, Metal Boxes with Glass Front.each $3.00
Price, Glass Fronts ..... each .25

Guardene Fire Extinguishers
Non-Slop Type



Made of cold rolled copper, heavily lined with non-corrosive metal. Each extinguisher is tested to 350 pounds per square inch. The actual working pressure is about 100 pounds. To operate, tip upside down. To stop, turn right side up. Provided with a special stopple, and a baffle plate in the outlet, which prevent accidental mixing of the chemicals or leakage through the hose. Especially designed for use on moving vehicles. Labeled by the Underwriters' Laboratories and approved by the U. S. Steamboat Inspection Service.

Packed one in carton.

Shipping weight, 22½ pounds.

Price, Polished Copper, Charged..each ....
" Nickel-Plated, Charged.... " ....
" Extra Recharges.....per doz. $9.00

Phomene Fire Extinguishers
Foam Type



Phomene extinguishers will put out burning oil, enamel, tar, wax, grease, shellac, inflammable solvents or chemicals. Built of cold rolled copper, polished and lacquered. Capacity is 2½ gallons. Height, 24 inches, twenty-two gallons of foam produced.

Will discharge a stream of fire smothering foam 25 to 35 feet. Labeled by the Underwriters' Laboratories and approved by insurance authorities.

Packed 1 in a cardboard carton. Shipping weight, 26½ pounds.

Price.....each .....
Price Rechargers for Foam Type each $1.75

Pyrene 2-Gallon Hand Pump Extinguishers



For fighting such fires as electric arcs, gasoline, kerosene, grease, varnish, etc. Efficient for use in extinguishing highly flammable liquid fires of all kinds.

Made of two units—a powerful hand operated double-acting liquid pump and a container of 2-gallon liquid capacity. Pump is capable of ejecting a continuous stream from a nozzle of 3/32-inch bore for approximately 40 feet.

Overall height, 24⅜ inches. Diameter of tank, 7 inches.

Weight, filled, 45 pounds. Shipping weight, 75 pounds.

Price, Complete with Charge.....each $45.00
Price, Extra Recharges (2 Gallons).....each 14.40

Protex Non-freezing Fire Extinguishers
2½-gallon Capacity
Approved and Labelled by Underwriters' Laboratories, Inc.

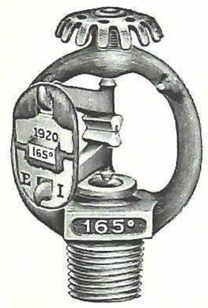


This extinguisher is non-freezing at 40 degrees below zero.

Protex is instantaneous and positive in operating because when the extinguisher is inverted it generates its own operating pressure by the reaction of chemicals which are in solution. It will put out more fire than the soda and acid type because it throws a more powerful stream and burning material which has been extinguished by this chemical solution cannot rekindle as quickly as when put out with a soda solution. It is quickly charged and recharged. Plays a neutral, harmless stream.

Price .....each $25.00

C. S. B. Automatic Sprinklers



Consists of a bronze frame with upper and lower levers.

The deflector is of stamped bronze with 14 teeth, containing 7 holes. It is swedged to the frame, there being no adjusting screw passing through the center with pin as is customary.

Levers are of the ordinary type with a bronze key at the point of contact, fitting into a slot in the upper lever and in a groove in the lower level. This key is wedge-shaped, and the desired tension of 20 pounds is secured on link by driving the wedge in the proper amount.

Link is composed of 3 pieces: The upper piece on the outside having a hook which passes through a slot in the lower piece on the outside, and sets in a groove in the back piece. The frame is provided with a turned seat; between this seat and the valve is placed a copper gasket which insures a tight leakless joint when the sprinkler is not in operation.

The sprinkler is uniform in fusing, and operates with no halt nor hesitation. The result is that where a system using C. S. B. Sprinklers is installed, fire will be extinguished immediately and effectively.

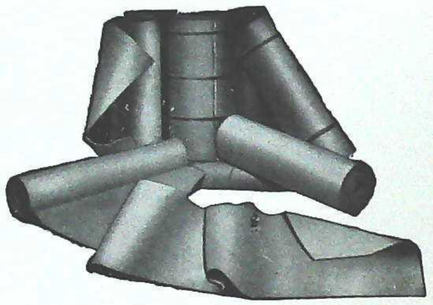
C. S. B. Sprinklers are made in 4 temperatures:

Ordinary	Color Bronze	165 Degrees
Intermediate	Color White	212 Degrees
Hard	Color Blue	280 Degrees
Extra Hard	Color Red	360 Degrees

Every head has the model, year of manufacture and the degree of fusing cast on the frame. Each link is stamped with the year and month of manufacture, the degree of fusing and the name of person who made it.

Prices and recommendations upon application.

Cloth Insertion Rubber Sheet Packing



Recommended for use with water which is cold or merely warm at pressures up to 300 pounds per square inch or for air which is practically free from oil at pressures up to 100 pounds and for low pressure steam.

Made in two grades, with cloth insertion, cloth one side or cloth both sides.

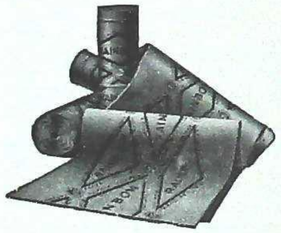
Thickness In.	No. of Plies: Cloth Inserted	Cloth One Side	Cloth Both Sides	Thickness In.	No. of Plies: Cloth Inserted	Cloth One Side	Cloth Both Sides
1/16	1	2	2	3/16	3	3	4
3/32	1	2	2	1/4	4	4	5
1/8	2	3	3	..	..	..	..

The cloth whether used as an insertion, or on the outside, counts as one ply. Standard width 36 to 40 inches, and standard weight per roll is 175 to 250 pounds. Approximate weights per square yard are as follows:

Grade No.	Thickness Inches	Weight, Pounds, per Square Yard: C.I.	C.O.S.	C.B.S.
1	1/16	4.875	4.875	5.125
2	1/16	4.75	4.75	5.

Price.....per pound .....

U. S. Rainbow Sheet Packing



Will pack an air, steam, hot or cold water joint equally well and will not blow out under high pressure or temperature. It is a non-conductor. Particularly adapted to packing expansion or steam joints, as it does not burn or char.

It will make a tight joint however rough the surfaces to which it is applied may be. Furnished in standard rolls 36 inches wide, 1/32 to 1/4 inch in thickness, and weighing approximately 100 and 200 pounds.

Price.....per pound **$1.00**

No. 60 Johns-Manville Service Sheet Packing



For packing parallel surfaces of flanges against steam, air, water, ammonia, oil and various acidulated and alkaline or other chemical solutions.

Furnished in standard sheets 54x63 inches and 54x126 inches and thicknesses of 1/64, 1/32 and 1/16 inch; also made 1/8 and 3/32 inch thick; 1/32 and 1/16 inch thicknesses also furnished in sheets 108x126 inches.

Thick. In.	Approx. Wt., Lbs. per Sq. Yd.	Price per Sq. Yd.	Thick. In.	Approx. Wt., Lbs. per Sq. Yd.	Price per Sq. Yd.
1/16	5.33	...	1/64	1.34	...
1/32	2.67	...	...	....	...

No. 711 J-M Seigelite Sheet Packing

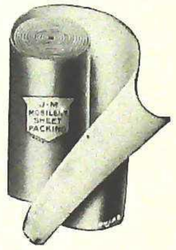


For packing flanges or joints against gasoline, benzine, oil, greases, and hot or cold water.

Furnished in 25 or 50-yard rolls, approximately 48 inches wide, 3/32, 3/16, and 1/8-inch thicknesses only, 36x48 inches.

Thick. In.	Approx. Wt., Lbs. per Sq. Yd.	Price, per Sq. Yd.	Thick. In.	Approx. Wt., Lbs. per Sq. Yd.	Price per Sq. Yd.
.01	.5	$.85	1/16	3.7	$4.50
1/64	.81	1.05	3/32	5.	6.80
.02	1.	1.35	1/8	7.	9.20
1/32	1.7	1.90	3/16	10.5	13.50

No. 101 Johns-Manville Mobilene Sheet Packing



This packing is used for packing gas and gasoline engine parts.

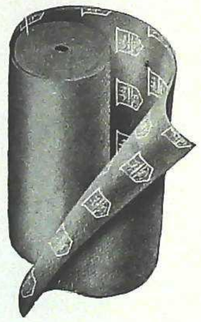
It is made of asbestos fabric of great strength, interwoven with fine brass wire, and impregnated with a special compound to withstand high pressure and temperature.

Made with red compound on one side, so the packing will stick to flange when joint is broken, and graphite on the other to allow joint to be easily taken apart.

Furnished in rolls 48 inches wide, weighing 250 pounds each; 1/32 and 1/16 inch thick.

Price, No. **101** .....per pound ....

No. 100 Johns-Manville Kearsarge Asbesto-Metallic Sheet Packing



Generally used where surfaces are somewhat rough or uneven and where a sheet of a soft nature is therefore required. This packing is constructed of tightly twisted asbestos yarn, spun with brass wire to give additional strength, woven into asbesto-metallic cloth and impregnated with heat-resisting compound.

Furnished in rolls 48 inches wide; graphited on one or both sides, if desired. Approximate weight per roll, 250 pounds.

Thick. In.	Approx. Wt., Lbs. per Sq. Yd.	Price per Sq. Yd.
1/32	4 1/2	.....
1/16	5 1/2	.....

Plain Ring Piston Packing



Intended for piston and valve rods on all kinds of engines—stationary, blower, hoisting, traction, marine—and also pumps of all kinds.

Can be furnished in all standard sizes.

Price .....per pound **$1.50**

Sectional Ring Piston Packing



Intended for rods out of center; cut rods and difficult places to keep tight. Can be made sectional only when flange of packing is 1/2 inch or larger.

An excellent packing for use on ammonia.

Price.....per pound **$2.00**

Hy-Tech Products

Johns-Manville Universal Piston Packing



For packing pistons of inside packed pumps handling hot or cold water, air, and brine, provided temperatures do not exceed 250 degrees Fahrenheit and hydrostatic pressure does not exceed 1000 pounds per square inch.

Made only in sizes 3/8 inch and larger, in coil style No. C-33; spiral style No. S-33; ring style No. R-33.

Coil Style No. **C-33**.—Furnished in coils approximately 12 feet long, packed several coils to the box, as follows:

Size.....in.	3/8	7/16	1/2	9/16	5/8	11/16	3/4	7/8	1
Coils per Box.....	4	3	4	3	3	2	2	2	2

Spiral Style No. **S-33**.—Furnished in boxes, each containing one length of packing approximately 12 feet long.

Ring Style No. **R-33**.—1. Unless otherwise specified, rings will be packed in boxes containing the following weights:

Rod.....inches	Under 1	1 to 2	2 to 3	3 to 4	Over 4
Weight....pounds	3	5	10	15	20

2. May be ordered in sets to fit piston exactly.

Approximate Weight of 100 Linear Feet

Size.....inches	3/8	1/2	5/8	3/4	7/8	1
Weight.....pounds	10	18	24	36	42	56

Price.....per pound ....

Diagonal Expansion Packing



Regular Style



Special Style

Regular style, for steam pressures of 100 pounds and under.

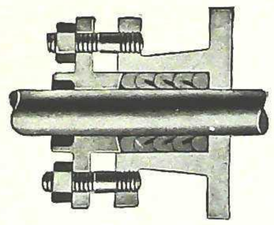
Special style for steam pressures over 100 pounds.

Both kinds are made in sizes beginning with 3/8 of an inch and advancing by 1/16ths up to 1 1/4 inches, and from 1 1/4 inches advancing by 1/8ths up to 3 inches.

Price, Low Pressure ..... per pound **$1.25**

" High " ..... " **1.50**

Johns-Manville Sea Ring Packing



For packing rods and outside packed plungers against steam, water, air, brine, etc.

This packing is made for rods or plungers 3/4 inch in diameter or over, provided with flange or space between rod and stuffing box is 5/16 inch or more.

The action of this packing is automatic. It presses against or grips the rod only when there is a tendency to leakage through the stuffing box. The pressure through the box acts on the lips of the packing and in proportion to the pressure.

Furnished in ring form only.

Price.....per inch .....



Square Hydraulic Packing

Made of special closely woven duck, with a high grade rubber friction. The duck is laid diagonally instead of at right angles.

For hot and cold water service.

Price.....per pound ....

Johns-Manville Kearsarge Rod Packing



No. S-166, Spiral Style



No. R-166, Ring Style

For packing rods where space between rod and inside of stuffing box is 3/4 inch or over.

Suitable for steam or air at any temperature and pressure. Eliminates the necessity of using several packings for various steam and air conditions.

Furnished in boxes, each containing one length of packing approximately 12 1/2 feet long. Size, 3/8 inch and larger.

Price, No. R**166**, Ring Style.....per pound ....

Price, No. S**166**, Spiral Style.....per pound ....

Johns-Manville Besta-Monia Packing

Spiral Style, No. S-172; Ring Style, No. R-172
Ring, Sectional Cut, No. R-172-S
Ring, Diagonal Cut, No. R-172-DC
Spiral Style Stitched, No. S-172-X
Ring Style Stitched, No. R-172-X



No. S-172



For ammonia service on reciprocating rods and plungers.

Made of plies of first quality duck frictioned with a special rubber compound, lubricated and graphited.

Size.....in.	1/4	3/8	1/2	5/8	3/4	7/8	1
Wt. Lbs....per 100 ft.	5	11	19 1/2	30 1/2	43 1/2	59	77

Besta-Monia Packing .....per lb. ... ...

Johns-Manville Mogul Coil Packing

No. C193 Twisted Style, No. C222 Braided Style

For packing small rods, valve stems, etc.

Size 1/16 inch, style No. C193, put up on 1-pound spools, or larger; 1/8 to 1/2, inclusive, both styles, on 1-pound spools, or larger; over 1/2, both styles, on 5-pound spools, or larger.



Size Inches	Weight, Pounds per 100-Foot Length: Twisted No. C193	Braided No. C222	Size Inches	Weight, Pounds per 100-Foot Length: Twisted No. C193	Braided No. C222
1/8	1	1	5/8	22	20
1/4	3 3/4	3 1/2	3/4	28	28
3/8	8	7	7/8	36	40
1/2	13	12 1/2	1	50	53

Price.....per pound .....

Square Braided Flax Packing



This packing is made in 2 grades.

No. 1 is made from a high grade of flax and thoroughly lubricated. Used on water end of pumps and on all hydraulic work.

No. 2 is made in the same careful manner as No. 1, but with not as expensive material. Will give good service. Furnished in sizes 1/4 to 1 1/4 inches.

Prices upon application.

Asbestos Rope Packing



Made of the finest long fibre asbestos spun and twisted into ropes of any desired size from ¼ inch to 2 inches in diameter. One of the best and most durable packings known for locomotives, marine and stationary engines, etc. Not affected by acids, dampness or heat.

Price.....per pound **$1.50**

J-M Asbestos Wick Packing



Made in the following five standard styles:

Style 4202, a wick made from several strands of asbestos twisted together, through the center of each strand of which is run a small cotton yarn for additional strength; style 4195, a single strand asbestos wick for ordinary requirements; style 199, a wick made from pure asbestos roving, in a single strand form; style 202, a pure wick made from asbestos roving by twisting together several strands and style 4199, a single strand wick made of pure asbestos. Furnished in ½ and 1-pound balls.

Price.....per pound ....

Candle Wick



Carefully manufactured of cotton specially selected for the purpose.

For packing small valve stems, etc.

Furnished in ⅛ and ¼ pound balls.

Price.....per pound **$1.00**

Cloth Insertion Rubber Gaskets



Can be furnished with cloth on one or both sides. For water tube boilers, such as Heine and Geary, also hand holes, manholes, etc., of many makes of boilers.

In ordering specify round or oval, and the size of plate. When possible send template or sample.

Price.....per pound .....

Kearsarge Standard Asbesto-Metallic Boiler Manhole, Handhole and Tube Plate Gaskets



For packing manhole and handhole plates of boilers. Made of Asbesto-Metallic fabric treated with a heat resisting compound and folded into several plies or thicknesses to proper size and shape. Furnished in oval form to fit plates for which they are intended.

The gaskets are so made that an unbroken rounded shoulder comes on the outside of the gasket which is presented to the pressure. The edges of the folds are on the inside of the gasket. May be used over, if properly applied.

Price, No. **116**, for Manholes and Handholes...per lb. ....
Price, No. **118**, for Tube Plates, Jointless.....each ....

No. 2 Goetze's Elastic Corrugated Copper Gaskets

With Asbestos Lining



This gasket makes a joint practically as leak-proof as the pipe itself, even with the roughest, most uneven surfaces.

It not only makes a tight joint, but a permanently tight joint under any pressure or temperature.

Numerous exacting tests, as well as severe trials in actual service, have shown that it is not affected by sudden and radical changes of temperature (from extremes of heat to extremes of cold and vice versa).

Furthermore, instead of requiring frequent renewal, often involving great labor cost and expensive shutdowns, Goetze's No. 2 lasts for years and may be used over and over again.

One Goetze No. 2 will make a joint tight.

When ordering, state inside and outside diameters required and state whether for standard flanged fittings, extra heavy flanged fittings, union, male and female or tongue and groove flanges.

For Standard Flanged Fittings

Size Pipe Inches	Size of Gasket By Outside Diameter, Inches	Price Each	Size Pipe Inches	Size of Gasket By Outside Diameter, Inches	Price Each
1	1¼x 2½	$.16	8	8¼x10⅞	$1.28
1¼	1½x 2¾	.20	9	9¼x12⅜	1.44
1½	1¾x 3	.24	10	10¼x13¼	1.60
2	2¼x 4	.32	12	12¼x16	1.92
2½	2¾x 4¾	.40	14	14½x17⅝	2.24
3	3¼x 5¼	.48	15	15½x18⅞	2.40
3½	3¾x 6¼	.56	16	16½x20⅛	2.56
4	4¼x 6⅝	.64	18	18½x21½	2.88
4½	4¾x 7⅞	.72	20	20½x23¾	3.20
5	5¼x 7⅝	.80	22	22½x25⅞	3.52
6	6¼x 8⅝	.96	24	24½x28⅛	3.84
7	7¼x 9⅞	1.12	..	.....	....

For Extra Heavy Flanged Fittings

Size Pipe Inches	Size of Gasket by Outside Diameter, Inches	Price Each	Size Pipe Inches	Size of Gasket by Outside Diameter, Inches	Price Each
1	1¼x 2⅞	$.20	8	8¼x12	$1.60
1¼	1½x 3⅛	.27	9	9¼x13	1.80
1½	1¾x 3½	.30	10	10¼x14¼	2.00
2	2¼x 4¼	.40	12	12¼x16¾	2.40
2½	2¾x 5	.50	14	14½x19	2.80
3	3¼x 5⅞	.60	15	15½x19⅞	3.00
3½	3¾x 6½	.70	16	16½x21⅜	3.20
4	4¼x 7	.80	18	18½x23⅞	3.60
4½	4¾x 7⅝	.90	20	20½x25½	4.00
5	5¼x 8⅜	1.00	22	22½x27½	4.40
6	6¼x 9¾	1.20	24	24½x30	4.80
7	7¼x10⅞	1.40	..	.....	....

Special prices for gaskets larger than 30-inch outside diameter.

Cotton and Wool Waste



Less than 50-pound bale takes 2 cents per pound advance over 100-pound bale.

Fifty-pound bale takes ½ cent per pound advance over 100-pound bale.

Price, No. **1**, White Cotton Waste.....per pound ....
" White King.....per pound ....
" No. **1**, Colored Cotton Waste.....per pound ....
" " **2** " " " .....per pound ....
" Wool Waste.....per pound ....

Wiping Rags

Washed and sterilized, very absorbent. Free from buttons, hooks and eyes, etc. Furnished in 100, 250 and 500-pound bales.

Grade	Price per Pound
Mixed Colored	$.25
Near White	.30
All "	.35
Knit Underwear	.35



Cheese Cloth

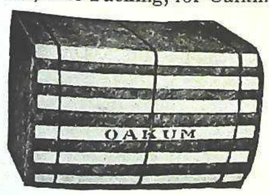
Furnished in 50, 100 and 250-pound bales.

Grade	Price per Pound
Reclaimed	$.85
New	1.25

Hemp and Jute Packing



Price, American Hemp Packing.....per pound ....
Price, Italian A Hemp Packing.....per pound ....
Price, Italian B Hemp Packing.....per pound ....
Price, Italian AA Hemp Packing.....per pound ....
Price, Jute Packing, for Calking.....per pound ....



Plumbers' Spun Oakum

A good grade of oakum for calking soil pipe. It is made of jute, jute waste and carded jute bagging, and contains a large percentage of tar.

Price.....per pound **$.15**

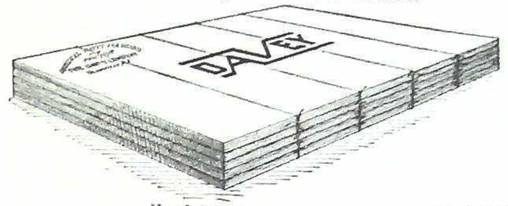
Rope Oakum

This is made entirely of jute, and comes in the form of rope, about 1½ inches in diameter, wound in coils of about 50 pounds each. Untarred, it is used for caulking of water supply pipes. Tarred, it is used for all other kinds of pipe caulking.

Price.....per pound .....



Red and Grey Friction Board

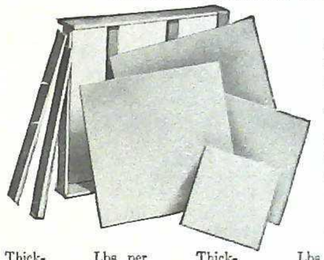


No.	Thickness In.	Size Boards In.	No. of Boards to Bundle	Approx Wt. per Bundle Lbs.	No.	Thickness In.	Size Boards In.	No. of Boards to Bundle	Approx. Wt. per Bundle Lbs.
4	¼	34x44	4	50	**7**	⅛	34x44	7	50
5	3/16	34x44	5	50	**14**	⅛	34x44	14	50

Other intermediate numbers between 4 and 16 can be supplied on order.

Prices upon application.

Asbestos Sheet Mill Board



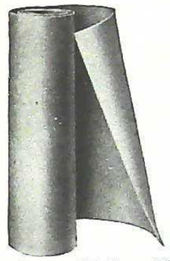
For packings, fire screens, linings for ranges, stoves, grates gas backs, etc.

Sheets are 42 inches by 48 inches. Made in hard, medium and soft grades. Medium furnished unless otherwise ordered.

Prices upon application.

Thickness Inches	Lbs. per Sheet 42x48 In.	Thickness Inches	Lbs. per Sheet 42x48 In.	Thickness Inches	Lbs. per Sheet 42x48 In.
1/32	3.05	3/32	6.95	¼	17.65
3/64	3.45	⅛	8.80	5/16	21.50
1/16	4.60	5/32	11.35	⅜	25.20
5/64	6.30	3/16	12.60	½	31.50

Asbestos Paper



A fire-resisting sheathing material extensively used for the protection of wood partitions, walls, ceilings and in all kinds of building construction.

Also used for lining weather boards, floors, etc., being especially desirable for such purposes as it is practically indestructible and is absolutely vermin-proof.

Thickness Inch	*Wt., Lbs. per 100 Sq. Ft.	Thickness Inch	*Wt., Lbs. per 100 Sq. Ft.	Thickness Inch	Wt., Lbs. per 100 Sq. Ft.
.015	6	.025	12	1/16	35
.018	8	.028	14	**3/32	53
.020	10	1/32	16	**⅛	68

*The actual weights of Asbestos Paper may vary ± 10 %.
**These thicknesses may vary ± .02 inches.

Hair Felt

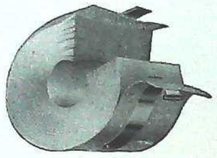


Made of carefully selected hair in all the regular thicknesses, and extensively used for lining and insulating refrigerator cars, etc. Furnished in rolls 3 and 6 feet wide.

Thickness Inches	In Bales of About Sq. Ft.	Price per Sq. Ft.	Thickness Inches	In Bales of About Sq. Ft.	Price per Sq. Ft.
¼	300	$.13	1	300	$.24
½	300	.16	1½	150	.36
¾	300	.20	2	150	.48

Hy-Tech Products

Asbesto-Sponge Felted Sectional Pipe Insulation

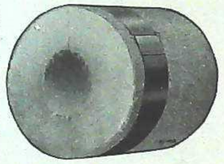


A durable, adaptable and efficient insulation for pipes conveying steam or fluids at temperatures to 700° F. Made of layers of thin felt, composed of asbestos fibre and particles of finely ground spongy material forming an extremely cellular felt, built up like a book in laminated form thereby confining a large volume of minute dead air cells in the felt and between the layers. Tough, flexible and practically indestructible. It is suited to withstand vibration and wear and tear encountered in modern steam engineering practice.

Furnished in thickness from ½ inch to 3 inches, in 3-foot sections with canvas jacket and brass-lacquered bands to fit standard pipe sizes. Also furnished in sheets and blocks for boilers, flues, and large regular surfaces.

Sold from regular sectional pipe insulation list prices.

85% Magnesia Sectional Pipe Insulation

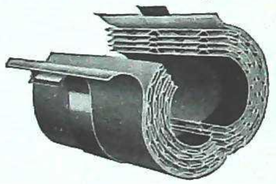


For pipes conveying steam. This insulation combines the high insulating qualities of carbonate of magnesia and asbestos and affords a light, efficient insulation. Under actual service conditions, 85% Magnesia has proven the most durable and efficient of the molded type.

Made in various thicknesses from standard (approximately 1 inch thick) to 3 inches, in 3-foot sections with canvas jacket and brass-lacquered bands, to fit standard pipe sizes up to and including 10 inches diameter. For larger sizes, curved segments or blocks are supplied. Also furnished in blocks for covering boilers, boiler flues, and other large regular and irregular surfaces.

Sold from regular sectional pipe insulation list prices.

Improved Asbestocel Sectional Pipe Insulation



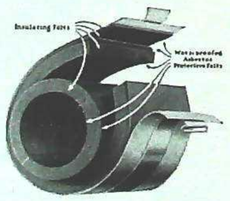
For insulating pipes conveying steam at medium or low pressures or for pipes conveying hot water. A cellular type of insulation made up of alternate layers of plain and corrugated asbestos felt.*

Furnished 2, 3 and 4-ply, each ply approximately ¼-inch thick. Made in 3-foot sections with canvas jacket and brass-lacquered bands, to fit standard sizes of pipe. Also furnished in sheet and block form for boilers, flues and other large regular surfaces.

Sold from regular sectional pipe insulation list prices.

*The longitudinal corrugations are crossed at right angles by other corrugations to form a barrier to the free circulation of air along the pipe sections.

Anti-Sweat Sectional Pipe Insulation



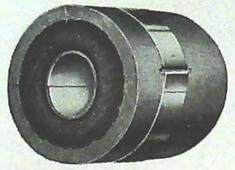
For insulating pipes conveying cold water or other cold liquids at temperatures above 32 degrees Fahrenheit. A combination of insulating felts that retard the flow of heat to the pipe, and waterproofed felts that protect the insulating felts against the admission of moisture.

Anti-sweat insulation prevents condensation of moisture and dripping from pipes and keeps the contents of the pipes cool.

Furnished in thicknesses of ½-inch and ¾-inch solid construction, and in 1-inch, 1½-inch and 2-inch broken joint construction, in 3-foot sections, to fit standard pipe sizes. Not furnished in sheet or block form.

Sold from regular sectional pipe insulating list prices.

Zero Sectional Pipe Insulation



For insulating cold water pipes located where there is likelihood of the water in the pipes freezing, but where temperatures are moderate rather than extreme or where the length of time that the surrounding air would be below freezing-point is short. Made of a layer of 1-inch hair felt surrounded by several layers of wool felt and with a layer of saturated wool felt inside the hair felt. Hair felt, one of the best non-conductors, greatly retards the flow of heat from the water.

Furnished in one thickness only, approximately 1¼-inch, in 3-foot sections with canvas jacket and brass-lacquered bands, to fit standard pipe sizes. Not furnished in sheet or block form.

Sold from regular sectional pipe insulation list prices.

Sectional Pipe Insulation

Price, per Linear Foot

These pipe insulations are supplied in sections three feet long, canvased and with brass lacquered bands.

Anti-Sweat Insulation is made in ½, ¾, 1, 1½ and 2-inch thicknesses. Use standard thickness list prices for thicknesses 1-inch and under.

Inside Diameter of Pipe Inches	Price per Linear Foot — Thickness — Standard	1½-inch	2-inch	2½-inch	†Double Standard	3-inch Broken Joint
½	$.22	$.46	$.75	$1.00	$.65	$1.20
¾	.24	.49	.80	1.05	.70	1.35
1	.27	.52	.85	1.10	.75	1.40
1¼	.30	.56	.90	1.15	.80	1.45
1½	.33	.60	.95	1.20	.85	1.55
2	.36	.64	1.00	1.25	.90	1.65
2½	.40	.70	1.05	1.35	1 00	1.75
3	.45	.76	1.15	1.50	1.10	1.90
3½	.50	.82	1.25	1.65	1.20	2.05
4	.60	.88	1.35	1.80	1.40	2.20
4½	.65	.94	1.45	1.95	1.50	2.35
5	.70	1.00	1.55	2.10	1.60	2.50
6	.80	1.10	1.70	2.25	1.80	2.70
7	1.00	1.20	1.85	2.40	2.25	2.90
8	1.10	1.35	2.00	2.55	2.50	3.15
9	1.20	1.50	2.20	2.80	2.70	3.40
10	1.30	1.65	2.40	3.05	2.90	3.65
*12	1.85	1.85	2.70	3.40	4.10	4.10
14 O. D.	2.10	2.10	3.00	3.80	4.60	4.60
16 O. D.	2.35	2.35	3.30	4.20	5.10	5.10
18 O. D.	2.60	2.60	3.60	4.60	5.60	5.60
20 O. D.	2.85	2.85	4.00	5.00	6.00	6.00
24 O. D.	3.30	3.30	4.50	5.75	7.00	7.00
30 O. D.	4.00	4.00	5.50	6.95	8.40	8.40

*Sizes 12-inch and larger furnished in segmental form. 12-inch can be supplied in sectional type on special order.

†Only 85 per cent Magnesia made in this thickness.

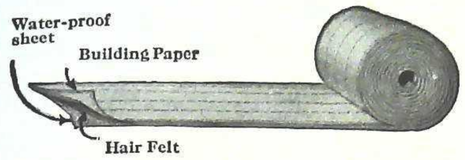
Johns-Manville Asbestos Sheets and Blocks

Asbesto-Sponge Felted, 85% Magnesia, Superex, Vitribestos, Improved Asbestocel, Fire-Felt, Thermo Fire-Felt, Vitro Fire-Felt, Super Fire-Felt.

Thickness Inches	Price per Square Foot	Thickness Inches	Price per Square Foot	Thickness Inches	Price per Square Foot
½	$.30	1⅝	$.49	2⅝	$.79
¾	.30	1¾	.53	2¾	.83
⅞	.30	1⅞	.57	2⅞	.87
1	.30	2	.60	3	.90
1⅛	.34	2⅛	.64	3¼	.98
1¼	.38	2¼	.68	3½	1.05
1⅜	.42	2⅜	.72	4	1.20
1½	.45	2½	.75	...	....

Prices on Pan-o-cel sheets upon application.

Johns-Manville Housline



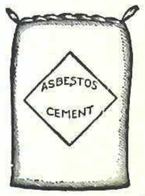
Housline consists of a heavy layer of thoroughly cleaned cattle hair securely stitched between a sheet of a building paper on one side and a waterproof felt on the other.

It effectively insulates buildings of all kinds It reduces the passage of sound through the walls and floors

Packed in rolls of 250 square feet, 36 inches wide, weighing approximately 50 pounds, or rolls of 125 square feet, 18 inches wide, weighing 25 pounds.

Price ..... per 100 sq. ft.

J-M Insulating Cements



No. 302 Asbestos Cement

Made of asbestos fibre and binding materials. Easy to mix and apply, and readily sticks to hot surfaces. Finishes with a hard, durable, and attractive surface which does not crack, break or peel off. Packed in 100-pound bags. Covering capacity, 25 square feet, 1 inch thick, per bag.

No. 400 Insulating Cement

Is not as well adapted to service under certain other conditions as the No. 302. For general use. Gives a smooth, attractive surface. Packed in 100-pound bags. Covering capacity, 25 square feet, 1 inch thick, per bag.

No. 352 Asbestos Mine Cement

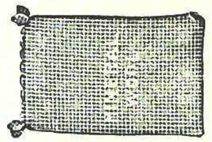
For insulating heating boilers and pipe fittings. Covering capacity, 19 square feet, 1 inch thick per 100-pound bag. Furnished in carload lots direct from the mines.

Prices upon application.

85% Magnesia Cement

The 85% Magnesia cement is composed of approximately 85% carbonate of magnesia and 15% asbestos fibre. It is exceptionally light, and has a large covering capacity. It is recommended in cases where a cement of high insulating value is desired. Furnished in bags containing 60 pounds each, and has a covering capacity of approximately 30 square feet one inch thick, per bag.

Mineral Wool



A mineral substance in fibrous form, used for fire-proofing buildings and deadening sound. Weighs about 12 pounds to the cubic foot, equal to about ¾-pound to 1 square foot, 1 inch thick. In bags weighing about 60 pounds each.

Prices upon application.

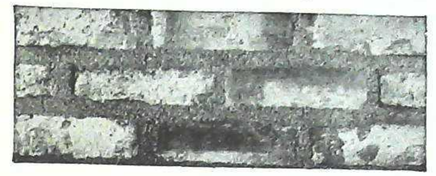
Fireite Asbestos Furnace Cement



A strong and durable plastic cement for setting up and repairing broken joints in furnaces, ranges, heaters and stoves. It is prepared ready for use, adheres readily and firmly to castings and tin and sets in a few hours after application. When subjected to heat, it vitrifies without shrinking or becoming porous. It is odorless and effectually prevents escape of smoke, gases and dust, thus insuring perfect draft.

Price, 1-pound Cans..... each $.18
Price, 2-pound Cans..... each .34
Price, 5-pound Cans..... each .70

Johns-Manville Refractory Cements



Especially prepared for use as a bond between, or as a coating for, fire brick which must withstand the severe temperatures imposed by modern service conditions. When one of J-M Refractory Cements is used under the particular conditions for which it is intended, it will not only bond the bricks together, but will fill in the joints between them to make the courses even, and will stand up under furnace operation as well as, or better than, the bricks themselves.

Loss of heat through open joints, or through cracks in the setting, is practically eliminated through the use of these refractory cements. The absorption of heat by excess air is another source of economic waste. Use of the proper J-M Refractory Cement will prevent the entrance of outside air, thus facilitating the maintenance of correct temperatures during operation.

Protects against softening of the fire brick under load and temperature, or plastic deformation. Also protects the edges of the fire brick, thus minimizing the danger of spalling which results from internal strain, due to uneven heating of the fire brick. A wash-coating of a finely ground refractory cement will fill up all cracks and crevices in the brick, giving a smooth, even surface. This materially reduces the possibility of pulling out the brick with clinkers when the latter are removed with the slice bar. Certain types of ash having slags of high viscosity, tend to build out a slag mass along the walls of the setting. A strong bond of refractory cement will tend to prevent the brick being fractured or pulled out with the slag when it is removed.

The materials are scientifically adapted to the particular needs of every industrial service.

No. 31

No. 31 is for setting up fire brick of boilers and various furnaces. It begins to vitrify at 1450°F., and will withstand the action of flame and heat without fusing or melting, to a temperature of 3100°F. This is as high temperature as is usually encountered in fire boxes or furnaces.

Packed in 100-pound paper lined bags.

No. 26

No. 26 begins to vitrify at 900°F., and must always be used for brick settings that are to be subjected to temperatures from 900° to 1450°F. No. 26 will withstand temperatures up to 2600°F. so may be used where temperatures range from 900° to 2600°F. It is stronger than No. 31, so is more suitable for molding into slabs, walls or pieces that are self-supporting, providing temperatures do not exceed 2600°F. Packed in 100-pound paper lined bags.

No. 32

No. 32 made for wash coating the face of brickwork exposed to flame and heat, and will withstand any temperatures from 1250° to 3100°F. Packed in 100-pound paper lined bags.

No. 30

No. 30 is especially adapted for general iron and steel metallurgical conditions such as blast furnaces, re-heating furnaces, etc. It begins to vitrify at 1850°F. and is resistant to temperatures up to 3000°F. Being a carbon base cement it will give best service in reducing atmosphere. It offers excellent resistance to slags It is not highly acted upon by either basic or acid slags. Where an excess of air is admitted to the combustion chamber No. 33 should be used.

Packed in 100-pound paper lined bags.

Nos. 33 and 35

Made for the same general use as No. 31 but for temperatures higher than No. 31 will withstand.

No. 33 may be used where temperatures range from 1000°F., its vitrifying temperature, to 3300°F., the highest temperature it will withstand.

No. 35 may be used where temperatures range from 1200°F., its vitrifying temperature, to 3500°F., the highest temperature it will withstand.

Nos. 33 to 35 packed in 100-pound paper lined bags.

Hy-Tech Products

Rutland Stove Lining



Rutland Stove Lining is used for the patching or replacing of brick or cast iron linings.

It is sold in powder form and is ready for use when mixed with water.

Should be thoroughly pounded into the stove when using; fuses at a comparatively low point, and becomes as hard as brick.

Made of high grade materials.

No. 3 packed 2 dozen in a case; No. 6 packed 1 dozen in a case; No. 10 packed ½ dozen in a case.

Price, No. 3 (2½ Pounds).....per dozen $3.60
Price, No. 6 (5 Pounds).....per dozen 6.00
Price, No. 10 (8 Pounds).....per dozen 8.40
Price, Barrels (320 Pounds).....per pound .06

Johns-Manville Aertite Boiler Wall Covering



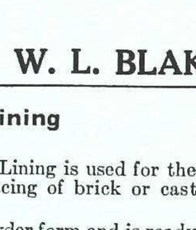
Johns-Manville Aertite Boiler Wall Coating is applied to the outside of the wall, eliminating air infiltration. It provides a tough, rubbery coating or blanket over the entire boiler setting.

Applied by troweling on the outside of boiler walls. The best results are obtained by keeping the thickness as near 1/16 inch as possible.

The quantity required to cover 100 square feet depends upon the number and variety of cracks and the way the walls are pointed up. For 1/16-inch thickness it will take from 25 to 40 pounds per 100 square feet. Furnished in 25, 50, 150, 300, and 500-pound tight metal containers.

Prices upon application.

Key Graphite Paste



For sealing all screw thread and gasket joints. Expands with heat; ideal for use on steam, hot oil and hot air lines. Will hold a joint leak-proof against all oils, acids and gases which have a tendency to penetrate through the joint. Requires water only for thinning. Does the work of red lead, white lead, graphite and oil, shellac, litharge, etc.

Price, in ¼-Pound Cans.....each $.25
Price, in 1-Pound Cans.....each .75
Price, in 3-Pound Cans.....each 1.65
Price, in 5-Pound Cans.....each 2.50
Price, in 10 Pound Cans.....each 4.50
Price, in 30-Pound Steel Buckets.....each 10.50
Price, in 60-Pound Steel Buckets.....each 15.00
Also packed in 700-pound steel drums.

Key-Tite Waterproof Pipe Joint Compound

Key-Tite Pipe Joint Compound will effectively seal screw thread and gasket joints for such service as gas, water, steam, compressed air, etc.



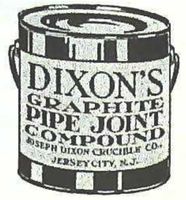
It is not a quick hardening cement, but a plastic lubricant and filler that will seal the most obstinate joint with ease.

Covers more surface than lead mixtures and is more economical.

Price, ½-Pint Cans..... $.25
Price, 1-Pint Cans..... .40
Price, ½-Gallon Cans..... 1.35
Price, 1-Gallon Cans..... 2.55
Price, 5-Gallon Pails..... 10.80
Price, ½-Bbl. (460 Lbs.) per lb. .16

Price, Handy Dope Kit, ½-Pint Can, Screwed Cover, with Brush Attachment, with Tinned Strap for Hanging the Can on Pipe.....each $.35

Dixon's Graphite Pipe Joint Compound



This is a true lubricant for the threads of pipes, bolts, nuts, turnbuckles, etc., making them easy to screw up and allowing them to be taken apart without damage or trouble. Also valuable on flanges, gaskets, boiler tube caps, gas retort doors, etc.

No.	Size Package Pounds	Style of Package	No. in Case	Price per Pound
693	1	Tin Can	36	$.35
694	5	Tin Pail	10	.30
695	10	Tin Pail	6	.28
696	25	Tin Pail	..	.26
697	50	Keg	..	.24
698	100	Keg	..	.23
699	625	Barrel	..	.22

X Boiler Liquid



X Liquid is an absolute liquid. It has a chemical affinity for water. When it is poured into a leaking boiler, it instantly combines itself with the water in the boiler. In trickling out through the leak or crack, it is changed by the free atmospheric oxygen from a liquid to a solid, thus stopping the leak or crack. The surplus X in the boiler will automatically repair any new leaks which may develop.

X stops the leak quickly and permanently. It loosens and prevents rust and scale.

1-Quart Cans.....each $6.00
½-Gallon Cans.....each 10.00

Dixon's Ticonderoga Flake Graphite



Prepared in the large (or No. 1) flake, and the powdered flake (or No. 2) size.

This graphite is indispensable to engineers and mechanics for coating gaskets and packing, for pipe fitting, etc.

No.	Size Pkg. Pounds		No. of Cans in Case	Price per Case	Price Each	Price per Pound
632	1	Paper Cans	36	$13.80	$.45	...
633	5	Screw-Top Tin Cans	10	18.50	2.00	...
634	10	Screw-Top Tin Cans	5	18.00	3.75	...
644	25	Boxes	..	.....	8.75	...
645	50	Boxes	..	.....	16.50	...
646	100	Kegs	..	.....	.....	$.32
646½	200	Kegs	..	.....	.....	.31
647	400	Barrels	..	.....	.....	.30

No. 677 Dixon's Graphite Gear Lubricant



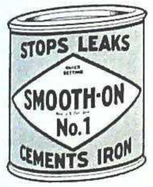
A grease of medium density that provides the bearings with a durable, lubricating film that prevents wear and reduces friction to a minimum. It flows over the gears like oil, yet clings to the teeth under load and when the gears are idle. Neither hot nor cold weather affects it.

A 3-wheeled barrel truck and a pump for dispensing the grease can be furnished.

Weight Pounds	Style of Container	No. in Case	Price per Lb.
1	Tin Cans	36	$.50
5	" Pails	10	.45
10	" "	6	.43
25	" "	..	.42
50	Kegs	..	.36
100	"	..	.32
200	Half Barrels, or Steel Drums	..	.31
400	Barrels " " "	..	.30

Hy-Tech Products

Nos. 1 and 2 Smooth-On Iron Cements



Used by mixing with water. For repairing breaks in castings, making tight joints and seams, and stopping leaks in boilers, pipe lines, pressure containers, etc. Becomes hard as iron when metallized, and expands at the same rate. May be used on iron, brass, steel, copper, lead, aluminum, etc., either alone or as a filling compound under a plate, and will withstand fire, water, steam, oil, and high pressures.

No. 1 is a quick-hardening iron cement. No. 2 is a slow-hardening hydraulic iron cement. Sold in powdered form.

7-Ounce Can (No. 1 Only).....per can $.30
1-Pound Can.....per pound .50
5-Pound Can.....per pound .40
25-Pound Keg.....per pound .32
100-Pound Keg.....per pound .27½

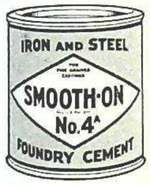
No. 3 Smooth-On Iron Cement



In paste form. For making screw-thread joints, coating gaskets, and sealing rivets, seams and joints in boilers, etc. Leak-proof at any temperature. Lubricates in assembling screw threads.

1-Pound Can.....per pound $.50
4-Pound Can.....per pound .40
25-Pound Keg.....per pound .32

No. 4 Smooth-On Iron Cement



For filling surface defects in castings. Sold in powder form.

No. 4-A for fine-grained, 4-B for coarse-grained castings.

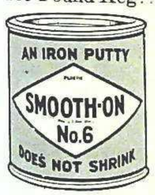
No.	4-A	4-B
1-Pound Can.....per pound	$.40	$.30
5-Pound Can.....per pound	.32	.24
25-Pound Keg.....per pound	.26	.19
100-Pound Keg.....per pound	.22	.16½

No. 5 Smooth-On Iron Cement

In powder form. Used by mixing with water. For caulking bell-and-spigot joints in cast iron soil, water, or gas pipes. Requires no heat.

1-Pound Can.....per pound $.30
5-Pound Can.....per pound .24
25-Pound Keg.....per pound .19
100-Pound Keg.....per pound .16½

No. 6 Smooth-On Iron Cement



A dark gray plastic iron putty, sold ready for use for making water-tight joints on sky and vault lights, for filling in seams, rivet heads, and for setting glass in metal frames, etc.

1-Pound Can.....per pound $.40
5-Pound Can.....per pound .32
25-Pound Keg.....per pound .26

Tuttle's Tite-On Repair Cement

For Vitreous Ware, China Ware, Enamel and Metals



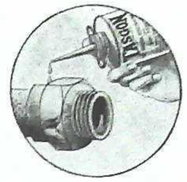
The white cement is used for repairing cracks and chipped parts in all vitreous china and enamel white ware only and is made in white, blue-white and cream-white.

The metal cement is for repairing all metals, galvanized iron, lead and aluminum; also repairs cracked laundry tubs, sectional boilers and radiators.

Quick Set cement will set a china handle in 3 to 6 minutes and successfully repairs broken china or vitreous ware.

Prices upon application.

Tasgon



Tasgon is a penetrating oil and rust-solvent. It penetrates instantly into the rustiest or tightest joint or connection, dissolving and breaking down the rust and loosening and lubricating the parts.

A few drops of Tasgon will loosen the rustiest nut, bolt, coupling, union, bushing or connection of any kind.

It prevents or loosens frozen grease in transmissions and penetrates and lubricates springs.

Tasgon may also be used to clean rust and grease from nickel parts. It will not injure metal.

Price, ¼-Pint Cans.....each $.40
Price, Pint Cans.....each 1.00
Price, Quart Cans.....each 1.50
Price, Gallon Cans.....each 5.00

Chemicals

In Bulk

Calcium Chloride
Sulphuric Acid
Bicarbonate of Soda
Soda Ash
Prices upon application.

Plumbers' Putty



Best quality putty. Furnished in 10 and 25-pound pails.

Size Pail.....pounds 10 25
Price.....per pail .. ..

Plumbers' Candles



Regular

Price.....per pound ....
Price 20-Pound Boxes each ....
Price 50-Pound Boxes each ....

Genuine Tallow

Price.....per pound ....
Price 20-Pound Boxes each ....

Phoenix Cut-Rite Oil

Cut-Rite is a chemical combination of oils, scientifically prepared by a special process. It is instantly and permanently soluble in any kind of water, forming a perfect mixture that will not separate, decompose, become rancid or cause an unpleasant odor.

Cut-Rite keeps the tools cool and prolongs the life of dies. Adapted to difficult cutting.

Prices and further information upon application.

Lard Oil



Pure winter strained lard oil. Put up in wood-jacketed cans.

Size of Cans.....gallons 1 3 5
Price.....per gallon .. .. ..

Keystone Grease



Nos. 000, 00 and 0 Densities

Exceptionally viscous and tenacious, suitable for open slot boxes, and satisfactory for heavy bearing pressures. Can also be used in any hand compression cup. No. 0 is also suitable for some types of spring compression cups. In open wells, it should be applied so grease comes directly in contact with revolving shaft.

Nos. 1 and 2 Densities

For general hand compression cup use, for Organ spring automatic grease cups, large ball and solid roller bearings, or wherever a solid grease is required.

Nos. 3 and 4 Densities

Semi-solid, expressly for Venango gravity feed grease cups, Organ centrifugal cups, small motors having wick feed, gyratory rock crushers, elevator worm gears and slides, small ball bearings, Hyatt roller bearings, Morse and Link Belt silent chain drives.

No. 5 Density

For flour and feed mill rolls, especially those of ring oiling type. Also used for comb boxes of textile machinery.

No. 6 Light and Medium Densities

No. 6 medium is for ring oiling bearings, except on electric motors. No. 6 light is for electric motors, air compressors, pneumatic tools, and is satisfactory for cooling down hot boxes. Has a liquid density, pours like oil.

High Melting Point Grease

High heat resisting greases, furnished in several consistencies, some in brick form for use in open grease wells, where intense heat is encountered; other densities in bulk for hand compression and Venango gravity feed grease cups, enclosed gears, etc. Especially suitable for laundry machines, and wherever bearings operate under excessive heat.

Velox Gear Grease

Velox Gear Grease (Black) is manufactured in several densities. This grease is primarily for exposed and enclosed gear practice. The heavier densities are more suitable for exposed and slow speed gears, the lighter densities for enclosed gears.

On large gears, where the lubricant is applied by hand, Nos. 00, 0, and 1 densities are used. Medium sized gears running in a gear case are lubricated with No. 3 or 4 densities. Small gears running at high speed and encased in gear cases are lubricated with densities Nos. 4, 5, or 6.

Size Can Lbs.	No. Cans in Wood Cases	Price, per Pound: Nos. 000 to 5 Incl. and Velox	No. 6 and Light Medium	High Melting Point
5	24	$.40	$.35	$.45
10	12	.40	.35	.45
25	4	.35	.30	.40
50	2	.35	.30	.40

Wool Yarn and Wool Yarn Elastic Greases

Wool yarn grease is suitable for top feed boxes. Comes saturated with any density of Keystone grease.

Wool yarn elastic grease is suitable for under-feed boxes, of the M. C. B. type.

Prices upon application.

Telephone Your Orders



We are organized to give Special Service on Telephone orders.

Use the telephone and save time.

Keystone Automobile Grease



Keystone Grease Lubricant is put up in the following sizes: 1 pound, 5 pound, 10 pound, 25 and 50 pound, also in steel drums of 100 pounds.

No. 600 grease, heavy.

No. 601 grease, heavy medium.

No. 602 grease, medium.

Nos. 603, 604, 604A, 605 are especially adaptable to transmissions and differentials.

No. 605 Grease

Used to lubricate the transmissions and differentials of the Buick, Packard, Oakland, Paige, Jewett, Jordan and Hupmobile or wherever a liquid grease is required.

Heavy Duty Gear Grease

This density is a heavy fluid lubricant of a dark green color and is especially suited for the lubrication of motor bus and truck. It gives unusual service in heavy duty equipment, both chain and worm drive.

Universal Joint Grease

Its tenacious property enables it to most satisfactorily lubricate universal joints. It will remain in the joints and not work out or be thrown out by centrifugal force. It has a high melting point and is not affected by water. Also used for wheel bearings of motor buses and trucks.

Prices upon application.

Oils

For Railroads, Mills, Automobiles and General Use



Steam Refined Cylinder Oil

For high grade steam engines and power plants, requiring first-class lubrication and high viscosity and flush point.

Price.....per gallon ....

Gas Engine Cylinder Oil

Gas Engine Cylinder Oil is for automobile and gas engine use, No. 1 light, No. 2 medium, No. 3 heavy. It is free from carbon deposits and adapted for high temperature.

Price .....per gallon ....

No. 1 Red Engine Oil

No. 1 Red Engine Oil is a high grade engine oil for heavy duty marine type of engines and general mill use where a high grade lubricant is required.

Price.....per gallon ....

No. 1 Machine Oil

No. 1 machine oil is for general mill lubrication. It will not heat the bearings.

Price.....per gallon ....

Mineral Sperm Oil

Mineral Sperm Oil is a high grade burning oil for factory and general uses. Does not carbon.

Price.....per gallon ....

Extra Winter Strained Lard Oil

Price.....per gallon ....

Cutting Oil

For pipe cutting and threading.

Price.....per gallon ....

Hy-Tech Products

Keystone Automobile Grease



No. 281 Cup Grease

This is a solid grease suitable for use in grease cups, axle bearings, universal joints, in pressure feed grease systems and suitable for lubricating any place where a heavy cup grease may be required.

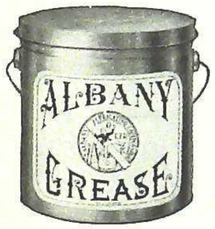
No. 284 Gear Grease

Recommended for gears. It will cling to the gears at all times, eliminating noise and friction, and when applied to a clean transmission or differential gear case, will have a tendency to get lighter in color, proving no deterioration of any kind or character.

Satisfactory for use in pressure guns.

Size Can Pounds	No. Cans in Wood Case	Price, per Pound: No. 281 Cup Grease	No. 284 Gear Grease
5	24	$.33	$.33
10	12	.32	.32
25	4	.31	.31
50	2	.30	.30

Albany Grease



Albany Grease is all lubricant, no waste and is made in 7 different consistences.

No. 0 is extremely soft, being used in extremely cold weather and on exposed journals.

No. 1 is harder than No. 0, and is used on ordinary journals in cold weather, or on cool running journals, also elevator slides.

No. 2 is harder than No. 1 and is known as winter grease, ordinarily used in moderately cold weather.

No. 3 is adapted for use on all stationary, marine and tugboat engines; also shafting, dynamos, general electrical and high speed machinery in warm weather and is known as summer grease.

Nos. X, XX and XXX are heavy bodied. higher melting point greases, which will lubricate journals with entire satisfaction, where temperatures are high. Never fails in severe cases to overcome all lubricating difficulties.

Style Package / Price, per Pound	1-Lb. Cans	5, 10-Lb. Cans	25, 50-Lb. Cans
	$.45	.32	.28
Style Package / Price, per Pound	**100-Lb. Containers**	**200-Lb. Containers**	**400-Lb. Drums**
	$.19	.18	.17

Murphy's Oil Soap



A neutral soap. Cleans and beautifies. Used especially on finely finished surfaces. Cuts grease and dirt on automobiles easily, yet it is safe, actually preserving the finish. Where finish has become dulled it gives lustre.

Size of Can. lbs.	½	1	2	5	10	25	50
Price.....each	$.20	.35	.65	1.55	3.00	6.50	12.50

Gold Medal Liquid Polish



This is an oil cream emulsion.

It does not require shaking because it does not settle and leaves no sediment.

This polish works quickly, contains no grit and will not scratch.

Size Pkg.	Dozen in Case	Price per Dozen	Size Pkg.	Dozen in Case	Price per Dozen
4-oz.	6	$1.80	1-qt.	2	$6.30
8 "	3	2.70	½-gal.	½	10.80
1-pt.	4	3.60	1 "	½	18.00

Puritan Metal Polish



This polish cleans by solution, not by friction or abrasion. It dissolves and removes the tarnish easily and quickly.

Produces a brilliant, lasting luster.

For brass, nickel, copper, aluminum, polished steel and all burnished metals.

Size Container	Number to Case	Price Each	Size Container	Number to Case	Price Each
Gallon	6	$2.00	Pint	36	$.50
Quart	24	.80	6 Ounces	48	.25

Solarine Liquid Metal Polish



This is a liquid metal polish made in black and white. It is harmless, free from grit, acid, grease or poison.

Used for polishing all kinds of metals, such as gold, silver, brass, nickel, copper, bronze, zinc, aluminum, tin, etc.

No.	Size Can	Price per Doz.
0	⅙ pint	$1.20
1	½ "	2.00
2	1 "	3.75
3	1 quart	6.75
4	½ gallon	12.00
5	1 "	20.00

U. S. Metal Polish Paste

Made in white, black and red. Used for carriage, harness, soda fountain, automobile trimmings, silver, nickel, brass and gold. Will not stain upholstering or the enamel. Gives a lasting luster to the metal.

Size Container	Price per Dozen
3 -oz. Box	$.90
1½ " "	.62½
½-lb. "	1.87½
1 " "	3.37½
5 " Pail	13.44
10 " "	*2.00
25 " "	*4.87½

*Price each.



Dependable Leather Belting



Dependable

Guaranteed first quality, extra heavy, oak tanned leather belting.

Dependable Medium

Guaranteed first quality, regular heavy oak tanned leather belting.

Dependable Light

First quality, light double, oak tanned leather belting. Especially adapted for small pulleys and high speed.

Made in double only.

Dependable Waterproof

First quality, extra heavy, guaranteed waterproof belt.

Dependable Waterproof Medium

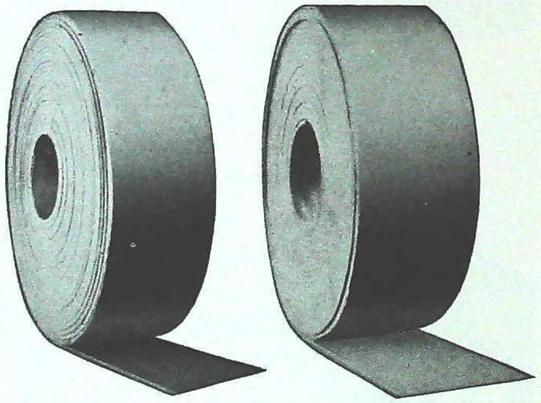
Guaranteed first quality, regular heavy waterproof belt.

Dependable Light Waterproof

Guaranteed first quality, light double, waterproof belting.

Prices on application.

Dependable Leather Belting



Single Double

Width Inches	Price, per Foot Single	Double	Width Inches	Price, per Foot Single	Double
½	$.12	$.24	18	$4.32	$8.64
¾	.18	.36	20	4.80	9.60
1	.24	.48	22	5.28	10.56
1¼	.30	.60	24	5.76	11.52
1½	.36	.72	26	6.24	12.48
1¾	.42	.84	28	6.72	13.44
2	.48	.96	30	7.20	14.40
2¼	.54	1.08	32	7.68	15.36
2½	.60	1.20	34	8.16	16.32
2¾	.66	1.32	36	8.64	17.28
3	.72	1.44	38	9.12	18.24
3½	.84	1.68	40	9.60	19.20
4	.96	1.92	42	10.08	20.16
4½	1.08	2.16	44	10.56	21.12
5	1.20	2.40	46	11.04	22.08
5½	1.32	2.64	48	11.52	23.04
6	1.44	2.88	50	12.00	24.00
7	1.68	3.36	52	12.48	24.96
8	1.92	3.84	54	12.96	25.92
9	2.16	4.32	56	13.44	26.88
10	2.40	4.80	60	14.40	28.80
12	2.88	5.76	64	15.36	30.72
14	3.36	6.72	68	16.32	32.64
16	3.84	7.68	72	17.28	34.56

Solid Rounded Oak Leather Belting



Solid rounded Oak tanned leather belting is made from selected No. 1 centers.

Special care in the currying produces a round belting of the maximum strength.

Packed on 100 and 500-foot spools, as desired.

Size Inches	Price, per 1000 Feet Heavy	Regular
⅛	$70.00	.....
3/16	100.00	.....
¼	155.00	$140.00
9/32	.....	170.00
5/16	240.00	210.00
⅜	330.00	290.00
½	.....	510.00

Stephenson Bar Belt Dressing



Clean to handle, easily applied, acts instantly, prevents slipping, and preserves belts.

Red Label Brand for leather belts; Green Label for rubber, canvas or Balata belts.

Put up in 1-pound bars, 12 to the box.

Size Box Pounds	Price per Pound	Size Box Pounds	Price per Pound	Size Box Pounds	Price per Pound	Size Box Pounds	Price per Pound
12	$.50	50	$.46	100	$.44	200	$.43
30	.48	72	.46	144	.43	300	.42

Cling-Surface Belt Dressing



Cling-Surface can now be had in 4 densities: heavy, medium liquid, light liquid and bar.

None contains rosin nor harmful ingredients, and all can be used for any kind of belt or rope, keeping them pliable, waterproof and preventing all slip, so all belts can be run easy or slack and pull full loads.

Liquid in Cans

Price, 1-Pint Cans.....each $.65
Price, 1-Quart Cans.....each 1.25
Price, ½-Gallon Cans.....each 2.00
Price, 1-Gallon Cans.....per gallon 3.50
Price, 3-Gallon Cans.....per gallon 3.40
Price, 6-Gallon Cans.....per gallon 3.25

Bars

Price, Under 2 Dozen.....each $.45
Price, 2 Dozen or More.....each .44

Hercules Leather Belt Cement

Regular

A high grade leather belt cement, embodying superior adhesive strength and flexibility.

It sets quickly, enabling a belt to be put in operation with the least possible delay. Not waterproof.

Furnished in 1, 2, 3 and 5-pound cans.

Price.....per pound $1.00

Waterproof

A high grade dependable waterproof leather belting cement.

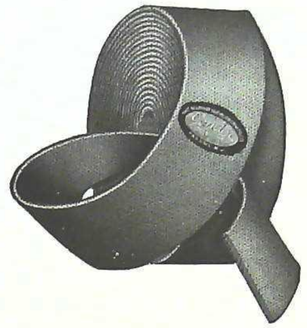
It is made from a special formula and is waterproof and impervious to steam, moisture or water.

Furnished in 1-quart and 1-gallon cans.

Price.....per gallon $8.00

Hy-Tech Products

Condor Red Friction Surface Belting



Powerful cotton duck, woven to certain specifications, impregnated with and united into a homogeneous, inseparable mass by strong, clean, tenacious rubber friction compound imparts strength, flexibility and durability to Condor Red Friction Surface Belting. The rich surface compound causes it to adhere closely to pulleys.

The rubber friction is not merely spread on the surface of the cotton duck; it is forced into the interstices of the duck by massive iron rollers. Vulcanization is accomplished by means of large hydraulic presses, the stretch being permanently taken out of the belt during this process.

Condor Belt is not affected by dryness, moisture, fumes, vapors, heat, or cold.

Condor is furnished in sizes from 1-inch 2-ply to 72-inch 15-ply and in any lengths up to approximately 525 feet, the length of a full roll. It weighs approximately 40 pounds per 100 feet in 4-inch 4-ply size; other widths and plies in direct proportion.

Every genuine Condor Belt is branded twice on each 35-foot length with Condor trade-mark surrounded by a black oval border.

Price, per Foot—Effective July 1, 1918

Width Inches	2-Ply	3-Ply	4-Ply	5-Ply	6-Ply	7-Ply	8-Ply
1	$.18	$.20	$.24	....	.....	.....	.....
1¼	.23	.26	.30	....	.....	.....	.....
1½	.27	.31	.36	$.45	.....	.....	.....
1¾	.32	.36	.42	.53	.....	.....	.....
2	.34	.39	.46	.58	$.69	.....	.....
2½	.42	.48	.56	.70	.84	.....	.....
3	.48	.55	.65	.81	.98	.....	.....
3½	.57	.65	.76	.95	1.14	.....	.....
4	.61	.70	.82	1.03	1.23	$1.44	.....
4½	...	.78	.92	1.15	1.38	1.61	.....
5	...	.87	1.02	1.28	1.53	1.79	.....
6	...	1.04	1.22	1.53	1.83	2.14	$2.44
7	...	1.22	1.43	1.79	2.15	2.50	2.86
8	...	1.31	1.54	1.93	2.31	2.70	3.08
9	...	....	1.73	2.16	2.60	3.03	3.46
10	...	....	1.92	2.40	2.88	3.36	3.84
11	...	....	2.11	2.64	3.17	3.69	4.22
12	...	....	2.30	2.88	3.45	4.03	4.60
13	...	....	2.50	3.13	3.75	4.38	5.00
14	...	....	2.69	3.36	4.04	4.71	5.38
15	...	....	2.88	3.60	4.32	5.04	5.76
16	...	....	3.08	3.86	4.62	5.40	6.16
18	...	....	3.46	4.32	5.20	6.06	6.92
20	...	....	3.84	4.80	5.76	6.72	7.68
22	...	....	4.22	5.28	6.34	7.38	8.44
24	...	....	4.60	5.76	6.90	8.06	9.20
26	...	....	....	6.26	7.50	8.76	10.00
28	...	....	....	6.72	8.08	9.42	10.76
30	...	....	....	7.20	8.64	10.08	11.52
32	...	....	....	7.72	9.24	10.80	12.32
34	...	....	....	8.18	9.82	11.46	13.08
36	...	....	....	8.64	10.40	12.12	13.84
38	...	....	....	....	10.95	12.78	14.60
40	...	....	....	....	11.52	13.44	15.36
42	...	....	....	....	12.10	14.10	16.12
44	...	....	....	....	12.68	14.76	16.88
46	...	....	....	....	13.24	15.44	17.64
44	...	....	....	.....	13.80	16.12	18.40

Prices on other widths and plies upon application.

Balata Belting



The distinctive qualities that recommend this belt to the users are:

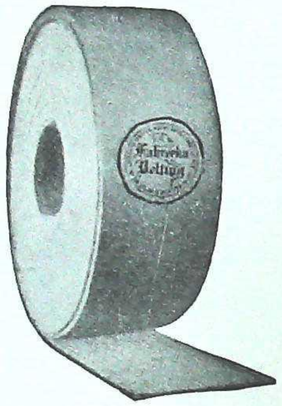
Freedom from shrinkage, resistance to stretch, great tractive power, solidity of texture, unequaled strength, great durability, perfect balance, flexibility and the fact that it is waterproof, weatherproof and chemical-proof.

Its flexibility permits a perfect troughing condition and being practically solid throughout, it gives a wearing surface of great strength down to the last ply.

Price List

Width In.	Price, per Foot 3-ply	4-ply	5-ply	6-ply	7-ply	8-ply
1	$.18	$.24	.....	.....	.....	.....
1¼	.23	.30	.....	.....	.....	.....
1½	.27	.36	.....	.....	.....	.....
1¾	.32	.42	$.53	.....	.....	.....
2	.36	.48	.60	.....	.....	.....
2¼	.41	.54	.68	.....	.....	.....
2½	.45	.60	.75	.....	.....	.....
2¾	.50	.66	.83	.....	.....	.....
3	.54	.72	.90	.....	.....	.....
3¼	.59	.78	.98	.....	.....	.....
3½	.63	.84	1.05	.....	.....	.....
3¾	.68	.90	1.13	.....	.....	.....
4	.72	.96	1.20	$1.44	.....	.....
4¼	.77	1.02	1.28	1.53	.....	.....
4½	.81	1.08	1.35	1.62	.....	.....
4¾	.86	1.14	1.43	1.71	.....	.....
5	.90	1.20	1.50	1.80	.....	.....
5½	.99	1.32	1.65	1.98	.....	.....
6	1.08	1.44	1.80	2.16	.....	.....
6½	1.17	1.56	1.95	2.34	.....	.....
7	1.26	1.68	2.10	2.52	$2.94	$3.36
7½	1.35	1.80	2.25	2.70	3.15	3.60
8	1.44	1.92	2.40	2.88	3.36	3.84
9	1.62	2.16	2.70	3.24	3.78	4.32
10	1.80	2.40	3.00	3.60	4.20	4.80
11	1.98	2.64	3.30	3.96	4.62	5.28
12	2.16	2.88	3.60	4.32	5.04	5.76
13	2.34	3.12	3.90	4.68	5.46	6.24
14	2.52	3.36	4.20	5.04	5.88	6.72
15	2.70	3.60	4.50	5.40	6.30	7.20
16	2.88	3.84	4.80	5.76	6.72	7.68
17	3.06	4.08	5.10	6.12	7.14	8.16
18	3.24	4.32	5.40	6.48	7.56	8.64
19	3.42	4.56	5.70	6.84	7.98	9.12
20	3.60	4.80	6.00	7.20	8.40	9.60
21	3.78	5.04	6.30	7.56	8.82	10.08
22	3.96	5.28	6.60	7.92	9.24	10.56
23	4.14	5.52	6.90	8.28	9.66	11.04
24	4.32	5.76	7.20	8.64	10.08	11.52
25	4.50	6.00	7.50	9.00	10.50	12.00
26	4.68	6.24	7.80	9.36	10.92	12.48
28	5.04	6.72	8.40	10.08	11.76	13.44
30	5.40	7.20	9.00	10.80	12.60	14.40
32	5.76	7.68	9.60	11.52	13.44	15.36
34	6.12	8.16	10.20	12.24	14.28	16.32
36	6.48	8.64	10.80	12.96	15.12	17.28
38	6.84	9.12	11.40	13.68	15.96	18.24
40	7.20	9.60	12.00	14.40	16.80	19.20
42	7.56	10.08	12.60	15.12	17.64	20.16
44	7.92	10.56	13.20	15.84	18.48	21.12
46	8.28	11.04	13.80	16.56	19.32	22.08
48	8.64	11.52	14.40	17.28	20.16	23.04

Fabreeka Belting



Fabreeka Belting is a fabrication of layers of special, close-weave cotton fabric, united under enormous hydraulic pressure with a compound that actually gains in strength by standing or remaining in stock. Each layer is separate from every other layer with no wrapped or folded edge but the plies are welded so closely that one cannot count them accurately except under a glass. A single layer of Fabreeka fabric has a tensile strength of 145 pounds per inch of width.

When thin layers of duck are combined under enormous pressure they form a belting with a condensed fabric comparable only to leather but unlike leather always uniform in quality. This combination makes a more pliable belt than leather and takes it out of the class of ordinary fabric belts since it can be used on the smallest pulleys.

The cementing compound in Fabreeka is a special development superior to ordinary rubber compounds. Impregnated between the layers of duck the resulting product is water and weather-proof and resists heat as well as acids and their fumes to a remarkable degree.

Fabreeka's reputation is due to the combination of dense fabric, great strength and pliability.

The unusual thinness and enormous tensile strength of the individual layers of duck is the reason that when a multiple number is used to build up a belt it results in the strongest belt for its thickness.

The thin duck layer construction without a wrapped edge means that Fabreeka will not fray at the edge even when run with shifters.

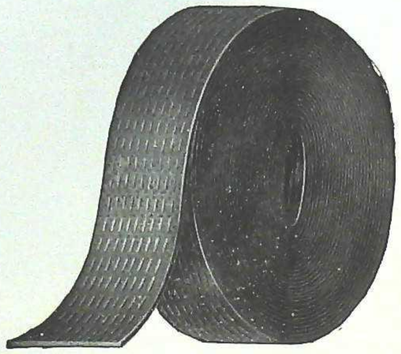
The reason that Fabreeka lasts long in dusty, gritty service, wearing down evenly and not breaking down when one ply wears through, is due to the independent ply construction and close weave.

The peculiar construction without a folded edge permits Fabreeka belts to be salvaged when accidents occur or plant changes are necessary by cutting down from wide to narrower sizes by pulling against a straight-edged knife. True running qualities are not impaired nor is fraying possible when this is done.

Special sizes not listed take price of next larger size. Stock sizes, up to 40-inch; wider sizes listed and other weights made up to order.

Width Inches	Price, per Foot Regular and Heavy Single	Light and Heavy Double	Width Inches	Price, per Foot Regular and Heavy Single	Light and Heavy Double	Width Inches	Price, per Foot Regular and Heavy Single	Light and Heavy Double
½	$.12	....	4	$.96	$1.92	18	$4.32	$8.64
¾	.18	....	4½	1.08	2.16	20	4.80	9.60
1	.24	$.48	5	1.20	2.40	22	5.28	10.56
1¼	.30	....	5½	1.32	2.64	24	5.76	11.52
1½	.36	.72	6	1.44	2.88	26	6.24	12.48
1¾	.42	....	7	1.68	3.36	28	6.72	13.44
2	.48	.96	8	1.92	3.84	30	7.20	14.40
2¼	.54	....	9	2.16	4.32	32	7.68	15.36
2½	.60	1.20	10	2.40	4.80	34	8.16	16.32
2¾	.66	1.32	12	2.88	5.76	36	8.64	17.28
3	.72	1.44	14	3.36	6.72	38	9.12	18.24
3½	.84	1.68	16	3.84	7.68	40	9.60	19.20
						42	10.08	20.16
						44	10.56	21.12
						46	11.04	22.08
						48	11.52	23.04

Stitched Canvas Belting



This belting is made from the highest grade of cotton duck, manufactured by the most modern machinery; the fabric is designed with a view of producing the greatest strength.

The duck is folded and sewn by special devices and the belt is waterproofed by a composition of oils being forced through all the fibres and, to further protect it, the surfaces are coated with a red paint.

Stitched canvas belting can be used for any purpose where transmission of power is required.

Owing to its waterproof construction, it is especially adapted to outdoor work as exposure to the weather and dampness will not affect it.

Width Inches	Per Foot 4-Ply	5-Ply	6-Ply	8-Ply	10-Ply
1	$.20	....	....	....	....
1½	.30	$.38	....	....	....
2	.39	.49	$.59	....	....
2½	.49	.61	.73	....	....
3	.57	.71	.86	....	....
3½	.66	.83	1.00	....	....
4	.74	.93	1.11	$1.48	....
4½	.84	1.04	1.22	1.68	....
5	.93	1.16	1.39	1.86	....
6	1.08	1.35	1.62	2.16	....
7	1.26	1.58	1.89	2.52	....
8	1.44	1.80	2.16	2.88	....
9	1.62	2.03	2.43	3.24	....
10	1.80	2.25	2.70	3.60	$4.50
11	1.98	2.48	2.97	3.96	4.95
12	2.16	2.70	3.24	4.32	5.40
13	2.41	3.01	3.61	4.81	6.01
14	2.59	3.24	3.89	5.18	6.48
15	2.78	3.47	4.16	5.55	6.94
16	2.96	3.70	4.44	5.92	7.40
18	3.33	4.16	5.00	6.66	8.33
20	3.80	4.75	5.70	7.60	9.50
22	4.18	5.23	6.27	8.36	10.45
24	4.56	5.70	6.84	9.12	11.40
26	4.97	6.22	7.46	9.95	12.43
28	5.36	6.69	8.03	10.71	13.39
30	5.73	7.17	8.61	11.48	14.34
32	6.12	7.65	9.18	12.24	15.30
34	6.50	8.13	9.75	13.01	16.26
36	6.88	8.61	10.33	12.77	17.21
38	7.26	9.08	10.90	14.54	18.17
40	7.65	9.56	11.47	15.30	19.13
42	8.03	10.04	12.05	16.07	20.08
44	8.41	10.52	12.62	16.83	21.04
46	8.79	11.00	13.20	17.60	21.00
48	9.18	11.48	13.77	18.36	22.95
50	9.63	12.03	14.43	19.25	24.06
52	10.01	12.51	15.02	20.02	25.03
54	10.40	12.99	15.59	20.79	25.99
60	11.55	14.44	17.33	23.10	28.88

Hy-Tech Products

Solid Woven White Cotton Belting



This belting is called "solid woven" because the threads which bind ply on ply are woven into the fabric as one phase of a continuous weaving operation. These binding threads occupy, in the fabric, their own space, and do not displace other threads nor extend quite to the surface of the finished belt, as they are drawn (in the weaving) as tightly as good practice will permit.

The binding threads are as a result not subject to full surface wear, and do not break after the manner of machine stitching. The result is a solid, uniform product which can be woven to any desired width, weight or thickness.

Solid woven is, therefore, to all practical purposes a one-ply belt and the designation by plies is for purposes of comparison, one weight with another. The actual number of plies (given a certain weight and texture) is often a matter of little importance.

Solid woven belting, when water proofed, possesses the ideal power transmitting surface. The solid woven construction provides greater flexibility and elasticity, and consequently a more even pulley contact than is possible with other types of fabric belting.

While these qualities especially apply to water-proof belting when used for power transmission, they are also of great importance when the belt is used for elevators and conveyors without water-proof treatment.

Width Inches	Price, per Running Foot 2-Ply	3-Ply	4-Ply	5-Ply	6-Ply	8-Ply	10-Ply
1	$.08	$.12	$.18	$.22	$.27	....	.....
1¼	.09	.13	.20	.25	.30	....	.....
1½	.10	.15	.22	.27	.33	$.45	.....
1¾	.11	.17	.24	.30	.36	.48	.....
2	.12	.18	.26	.32	.39	.50	$.60
2¼	.14	.20	.28	.35	.43	.57	.....
2½	.15	.22	.30	.37	.47	.62	.....
3	.18	.26	.34	.42	.53	.71	.....
3½	.20	.29	.39	.50	.61	.82	.....
4	.23	.32	.43	.56	.67	.90	.....
4½	.26	.36	.48	.63	.77	1.05	.....
5	.28	.40	.53	.69	.84	1.15	.....
5½	.31	.44	.58	.76	.93	1.25	.....
6	.33	.47	.63	.81	1.00	1.33	.....
6½	.37	.53	.69	.90	1.12	1.50	.....
7	.40	.58	.74	.96	1.20	1.60	.....
8	.44	.64	.84	1.08	1.35	1.80	.....
9	.55	.78	1.00	1.30	1.60	2.20	....
10	.60	.85	1.10	1.45	1.75	2.50	3.15
12	.68	.97	1.27	1.70	2.06	2.90	3.65
14	.84	1.18	1.53	1.98	2.40	3.40	4.25
16	.96	1.35	1.75	2.25	2.70	3.90	4.90
18	1.08	1.53	1.98	2.52	3.05	4.35	5.45
20	1.20	1.70	2.20	2.85	3.40	4.90	6.15
22	1.30	1.85	2.44	3.20	3.85	5.45	6.85
24	1.40	2.00	2.64	3.40	4.10	6.00	7.50
26	1.55	2.30	2.87	3.90	4.60	6.65	8.35
28	1.70	2.50	3.15	4.15	5.00	7.10	8.90
30	1.80	2.65	3.45	4.40	5.40	7.50	9.40
32	2.00	2.95	3.80	4.85	6.00	8.25	10.35
36	2.15	3.20	4.30	5.50	6.65	9.00	11.25
40	2.50	3.60	4.75	6.20	7.45	10.50	13.15
42	2.65	3.80	5.00	6.50	7.75	11.00	13.75
44	2.85	4.10	5.25	6.90	8.20	11.90	14.90
48	3.00	4.30	5.70	7.40	8.85	13.00	16.25

Full rolls are 400 to 500 feet.

Lace Leather in Sides



Price, Rawhide	per square foot	....
" Chrome Tanned	"	....
" Waterproof	"	....

Cocheco Rawhide Cut Laces

Packed in neatly labeled boxes, each containing 100 feet. Each lace put up in oil-proof envelope. Keeps lace clean and orderly.



Size In.	Price per 100 Feet
¼	$2.50
5/16	3.00
⅜	3.75
7/16	4.50
½	5.50
⅝	6.50
¾	7.50

Cut Lacing



This is made tanned or rawhide.

Width In.	Price per 100 Ft.	Width In.	Price per 100 Ft.	Width In.	Price per 100 Ft.	Width In.	Price per 100 Ft.
¼	$2.50	⅜	$3.75	½	$5.50	¾	$7.50
5/16	3.00	7/16	4.50	⅝	6.50	3/16	2.00

Kerr A. B. C. Wire Belt Lacing



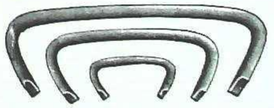
No.	For Belts	Width Belts Inches	Price per 100 Feet
00	Lght. Sgl.	Up to 1	$2.00
0	Single	" " 3	2.00
1	"	3 " 6	2.00
2	"	6 " 12	2.00
2	Double	Up " 6	2.00
3	"	6 and Over	2.00

Round Belt Couplings



Size Belt In.	Price per Doz.	Size Belt In.	Price per Doz.	Size Belt In.	Price per Doz.
⅛	$3.00	5/16	$2.50	⅝	$6.00
5/32	3.00	11/32	3.00	11/16	7.50
3/16	2.50	⅜	3.00	¾	9.00
7/32	2.50	7/16	3.50	⅞	13.00
¼	2.00	½	4.00	1	18.00
9/32	2.50	9/16	5.00	.....	.....

Oval Pointed Belt Hooks



*Size, inches.

No.	Price per 1000	No.	Price per 1000	No.	Price per 1000
15	$2.00	9	$4.00	3	$16.00
14	2.40	8	5.00	2	20.00
13	2.60	7	6.00	1	30.00
12	2.80	6	8.50	*3	60.00
11	3.00	5	11.00	*3½	70.00
10	3.50	4	14.00	.....	.....

Clipper Belt Lacing Machines

No. 3 Standard Clipper Belt Lacers



Particularly adapted for belts up to 6 inches wide and not over ⅜ inch thick, but by repeated operation will lace wider belts.

It weighs but 24 pounds, therefore can be carried to the belt and lacing made without removing the belt from the shaft.

No. 3 Lacer.....each $25.00
No. 3, Including 1 Box Each, Nos. 3, 4 and 5 Carded Hooks.....each 28.15

No. 1 Lever Belt Lacers



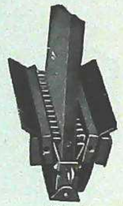
For belts up to 2 inches in width and 3/16 inch in thickness. Especially adapted for use in textile establishments, watch and clock factories, garages, etc.

Weight, 3 pounds.

Only No. 1 Clipper Belt Hooks can be used in Lever Belt Lacer No. 1.

No. 1 Lacer.....each $10.00
No. 1 Hooks...per box .95

Clipper Vise Belt Lacers



For use in any ordinary vise. Useful in tool rooms, garages and small shops. No. 101 laces belts 5/16 inch thick to 2 inches wide; No. 0 laces belts up to 4 inches wide and ⅜ inch thick in one operation. For wider belts repeat. Only No. 1 Clipper belt hooks can be used in No. 101 Belt Lacer.

Weights: No. 101, ¾ pound; No. 0, 1¾ pounds.

Price, No. 101 Lacer.....each $2.50
Price, No. 1 Hooks.....per box .95
Price, No. 0 Lacer.....each 3.50
Price, No. 0 Lacer Including 1 Box, Either No. 3 or 4 Carded Hooks.....each $4.50

No. 8 New Clipper Speed Lacers



A powerful and efficient acer which will lace both ends of an 8-inch belt in 1½ minutes, necessitating only one operation for each end of the belt.

The lacer has a pressure of 45900 pounds which is ample for embedding hooks cleanly and uniformly flush with an 8-inch belt surface in one operation; thus reducing wear on pulleys and belt hooks to a minimum. Laces all belts from 1 inch to and including 8 inches wide and up to ⅜ in. thick in one operation; for wider belts repeat operation.

Weights: Lacer, 100 pounds; stand only, 48 pounds.

Price, No. 8 Lacer, without Stand.....each $115.00
Price, Stand.....each 12.00

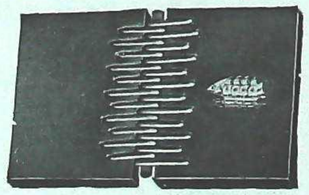
No. 6 New Clipper Speed Lacers

This lacer is of the same type as the Clipper No. 8 only lighter and smaller. It will lace all belts from 1 to and including 6 inches in width in 1½ minutes, with the same efficiency, ease and speed as the No. 8.

Weight of lacer only, 56½ pounds.

Price, No. 6 Lacer, without Stand.....each $75.00
Price, Stand.....each 12.00

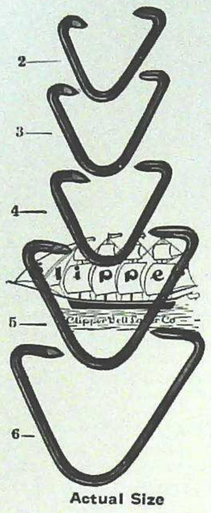
The Clipper Joint



A smooth, flexible, durable joint that will not tear nor pull out. Easily and rapidly applied.

Suitable for every kind of belting—balata, fabric, leather, rubber, etc.—not exceeding ⅜ inch in thickness.

Clipper Belt Lacing



Clipper Belt Lacing makes an ideal hinge joint, far more flexible than the belt itself. The hooks are made from a special steel wire of an analysis that combines great tensile strength with rigidity and wearing qualities, capable of standing a strain of over 400 pounds per inch on single belt and more on double belts. These smooth, bright wire loops, bearing upon the connecting pin, make a joint not only pliable and strong, but safe.

Suitable for every kind of belting—balata, fabric, leather, rubber, etc., not exceeding ⅜ inch in thickness.



Cross Section of Embedded Hook Before Joining



Joined

The secret of the success of Clipper Hooks lies in their design and in the manner in which one hook is placed behind the other as shown in the illustration. While a powerful grip is thus secured, no belting fibres are cut or injured. The belt is not weakened at the joint.

Clipper Belt Hooks



Carded on paper for convenience in handling. The cards can be cut, without waste, to suit the width required for any belt. Each card holds 84 hooks.

Packed in boxes containing 12 cards (one size) and rawhide pins—sufficient for lacing both ends of belt, total width 80 inches.

Selection of size is determined by the thickness of the belt.

No.	For	Price per Box
2	Thin Belts over Small Sized Pulley	$.95
3	Thin Belts over Medium Sized Pulley	1.00
4	Belts not over ¼ Inch Thick	1.00
5	Belts not over 5/16 Inch Thick	1.15
6	Belts not over ⅜ Inch Thick	1.50

Add $1.00 per box for rust-proof hooks; for Nos. 5 and 6 add $1.25 per box.

Fibro, Special and Twisted Rawhide Pins



Twisted rawhide pins are for general requirements. Fibro (water-proof) pins are for use wherever there is moisture.

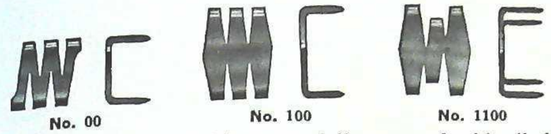
Specials are made of a specially treated friction resisting substance; will outwear any composition pins.

Packed in standard package containing 24 pins, 12 inches long.

Size No.	Diam. In.	For	Price. per Package Fibro	Special	Rawhide
13	3/32	Nos. 1, 2 and 3 Hooks	$.85	$.35	$.70
12	7/64	No. 4 Hooks	.85	.35	.70
11	1/8	No. 5 Hooks	.85	.35	.70
10	9/64	No. 5 Hooks	.95	.40	.80
9	5/32	No. 6 Hooks	1.05	.45	.90
8	11/64	No. 6 Hooks	1.15	.50	1.00
7	3/16	Heavy Belts	1.45	.60	1.20
5	7/32	Heavy Belts	2.00	.70	1.60
Assorted Sizes, Nos. 8 to 13			.90	.40	.75

Hy-Tech Products

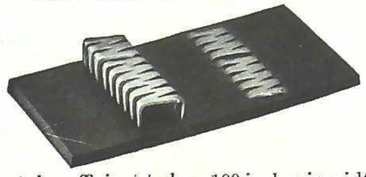
Bristol's Steel Belt Lacing



This belt lacing is cut from especially prepared cold rolled steel strips. By its use, belts can be quickly and easily joined without the use of special tools.

Made in three styles and various sizes.

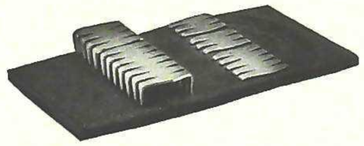
No. 1 Style for Leather Belts



Boxes contain sufficient to lace 100 inches in width of belts.

Size No.	Thickness Belt, Inches	Kind of Belt	Price per Box
00	1/16 to ⅛	Split and Extra Light	$1.00
0	⅛ to 3/16	Split and Light	1.00
1	3/16 to ¼	Single	1.50
2	¼ to 5/16	Extra Heavy and Wide Single	2.00
3	5/16 to ⅜	Double	2.50
4	⅜ to 7/16	Heavy Double	3.00
5	7/16 to 9/16	Extra Heavy Double	3.50

No. 11 Style for Woven Belts



Boxes contain sufficient to lace 100 inches in width of belts.

Size No.	Thickness Belt, Inches	Kind of Belt	Price per Box
100	1/16 to ⅛	Lightest Rubber and Cotton	$1.00
10	⅛ to 3/16	2-Ply Rubber and Cotton	1.00
11	3/16 to ¼	3-Ply Rubber and Cotton	1.50
12	¼ to 5/16	4-Ply Rubber and Cotton	2.00
13	5/16 to ⅜	5-Ply Rubber and Cotton	2.50
14	⅜ to 7/16	6-Ply Rubber and Cotton	3.00
15	7/16 to 9/16	7-Ply Rubber and Cotton	3.50
17	½ to ⅝	8-Ply Rubber and Cotton	4.95
19	11/16 to 13/16	10-Ply and Extra Heavy Conveyor	6.05

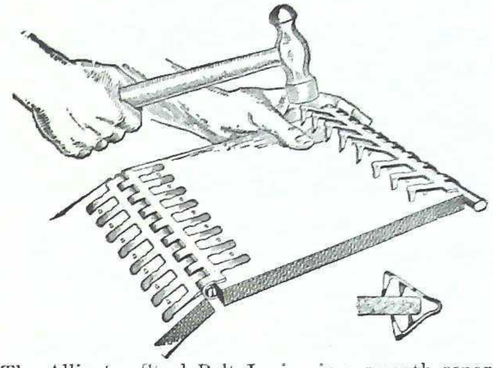
Staggered Point Style for All Kinds of Belts



Boxes contain sufficient to lace 100 inches in width of belts.

Size No.	Thickness Belt, Inches	Kind of Belt	Price per Box
1100	1/16 to ⅛	Split Leather, Light Rubber and Cotton	$1.00
110	⅛ to 5/32	Split Leather, Light Rubber and Cotton	1.00
110½	5/32 to ¼	Single Leather, 2-Ply Rubber and Cotton	1.25
111	3/16 to ¼	Single Leather, 3-Ply Rubber and Cotton	1.50
112	¼ to 5/16	Ex. Hy. and Wide Single Leather, 4-Ply Rubber and Cotton	2.00
113	5/16 to ⅜	Dbl. Leather, 5-Ply Rbr. and Cot.	2.50
114	⅜ to 7/16	Hy. Dbl. Leather, 6-Ply Rubber and Cotton	3.00
115	7/16 to 9/16	Ex. Hy. Dbl. Leather, 7-Ply Rubber and Cotton	3.50
117	½ to ⅝	Conveyor and 8-Ply Rbr. and Cot.	4.95
119	⅝ to 13/16	10-Ply and Extra Heavy Conveyor	6.05

Alligator Steel Belt Lacing



The Alligator Steel Belt Lacing is a smooth separable hinge joint of extreme strength which protects the ends of fabric belts and allows any belt to be used with an idler pulley.

In a working time of only three minutes the average belt can be laced with the Alligator Lacing. No special skill or training is needed. Any one can repair a break in almost no time at all. A hammer is all that is required.

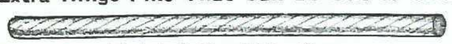
Packed in boxes complete with gauge and hinge pins.

Lacing No.	Thickness of Belt Inches	Will Join in Width Inches	Length Section Inches	Price per Box
00	Up to 1/16	72	6	$2.60
1	1/16 to 3/32	42	6	1.70
15	1/16 to 5/32	64	8	2.60
*S15	1/16 to 5/32	12	6	.55
20	5/32 to 3/16	60	12	2.60
F25	3/16 to 7/32	48	8	2.50
G25	3/16 to 7/32	96	12	5.00
*S25	3/16 to 7/32	12	6	.70
L27	¼ to 9/32	96	12	5.30
*S27	¼ to 9/32	12	6	.75
M35	9/32 to 5/16	32	8	2.30
N35	9/32 to 5/16	48	12	3.40
*S35	9/32 to 5/16	12	6	.95
U45	5/16 to ⅜	48	12	4.50
W55	⅜ to 7/16	48	12	5.20
X65	7/16 to ½	48	12	6.00
75	½ to ⅝	48	12	8.80

Sizes Nos. 75, 65 and 55 are packed only with sectional steel rocker hinge pins. Sizes Nos. 45, 35, 27, 25 and 20 are packed regularly with rocker hinge pins, but can be had with rawhide pins only if so specified. Sizes Nos. 15, 1 and 00 are packed only with rawhide hinge pins.

*These handy S packages are supplied to the dealer in cartons, each containing a single size; 10 of the small packages to the carton.

Extra Hinge Pins That Can Be Cut to Suit



Twisted Rawhide Pins

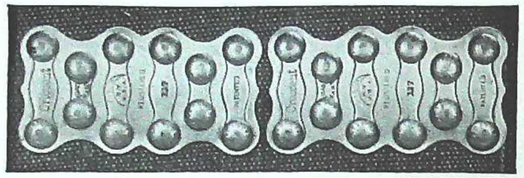
Size Pin	For Lacing No.	Length, Lacing, Inches	Price per Dozen
No. 00	00	6	$.40
1/16	1	6	.40
3/32	15	8	.60
1/8	20 and 25	8	.60
1/8	20 and 25	12	.90
9/64	27	12	1.00
5/32	35	8	.70
5/32	35	12	1.00
3/16	45	12	1.20



Sectional Steel Rocker Pins

Size Pin	For Lacing No.	Length, Lacing, Inches	Price per Dozen
No. 25	20 and 25	12	$.90
27	27	12	1.00
35	35	12	1.00
45	45	12	1.20
65	55 and 65	12	1.40
75	75	12	1.70

Crescent Belt Fasteners



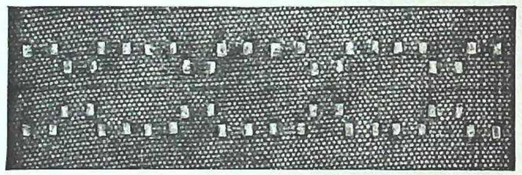
Outside of Crescent Joint

Crescent Plates are curved to fit the diameter of pulley for which they are intended. Patent roller edge prevents breaking back of joint. Nothing to pry up, fly off or work loose.



Cross Section

Crescent Rivets find their way through belt without cutting or severing lengthwise fibre. The clinch sinks below the surface of the belt. No wear nor noise. Crescent Belt Fasteners will outlast the belt.



Pulley Side of Crescent Joint

The strain is evenly distributed across the entire width of belt. Crescent joining is as smooth as endless on pulley side. Belt ends are butted tightly together. No gap to catch on shifter or guide.

Service Chart

Crescent Short-Grip Plates for Light Work

Smaller Pulley 3-inch Diameter or Larger

No.	For Belt Widths Inches	Crescent Rivets Required	Weight Pounds per Gross	Price per Gross
25	¾–1	2	1¾	$2.88
45	1½	4	3¼	5.76
65	2	6	4½	8.64
85	2½	8	5½	11.52
805	3	8	6½	11.52

Crescent Medium-Grip Plates for General Work

Smaller Pulley 6-inch Diameter or Larger

67	1½	6	6	$8.64
607	2	6	7½	8.64
87	2½	8	9½	11.52
107	3	10	11½	14.40
127	3½	12	15¼	17.28
147	4	14	16½	20.16

Crescent Special-Grip Plates for General Work

Smaller Pulley 9-inch Diameter or Larger

63	2	6	10½	$11.52
83	2½	8	12½	14.40
103	3	10	16½	17.28
123	3½	12	20½	20.16

Crescent Long-Grip Plates for Heavy Work

Smaller Pulley 12-inch Diameter or Larger

109	2½	10	21½	$17.28
149	3	14	24½	23.04
1409	3½	14	30½	25.92
189	4	18	34½	28.80

For wider belts use 2 or more Crescent Plates.

Crescent Large Shank Rivets for Attaching Above Crescent Plates

Use a size 3/16 inch longer than thickness of belt.

No.	Lgth. In.	Wt., Oz. per Gross	Price per Gross	No.	Lgth. In.	Wt., per Gross Lbs.	Wt., per Gross Oz.	Price per Gross
L5	5/16	10	$.70	L10	10/16	1	..	$.90
L6	6/16	11	.70	L11	11/16	1	1	1.00
L7	7/16	12	.80	L12	12/16	1	2	1.00
L8	8/16	14	.80	L13	13/16	1	3	1.10
L9	9/16	15	.90	L14	14/16	1	4	1.10

Crescent Belt Fasteners

Continued

Crescent High-Speed Plates for Light Work

Smaller Pulley 2-inch Diameter or Larger

No.	For Belt Widths Inches	Crescent Rivets Required	Weight Pounds per Gross	Price per Gross
20	¾–1	2	1¼	$2.88
40	1	4	1½	5.76
44	1¼	4	2¼	5.76
60	2	6	3½	8.64

Smaller Pulley 4¼-Inch Diameter or Larger

66	1½–6	6	4	$8.64

For wider belts use 2 or more Crescent Plates.

Crescent Small Shank Rivets for Attaching Crescent High-Speed Plates

Use a size 3/16 inch longer than thickness of belt.

No.	Lgth. In.	Wt., Oz. per Gross	Price per Gross	No.	Lgth. In.	Wt., Oz. per Gross	Price per Gross
S5	5/16	6	$.50	S 8	8/16	8	$.55
S6	6/16	6½	.50	S 9	9/16	9	.60
S7	7/16	7	.55	S10	10/16	10	.60

Crescent Jumbo Plates for Extra Heavy Work

Smaller Pulley 24-Inch Diameter or Larger

No.	For Belt Widths Inches	Crescent Rivets Required	Weight Pounds per Gross	Price per Gross
1011	2	10	26	$23.04
1611	3	16	38¼	28.80
2211	4	22	51½	34.56

For wider belts use 2 or more Crescent Plates.

For conveyor or elevator work where belt runs at a comparatively slow speed, Crescent Jumbo Plates can be used where smaller pulley is 18 inches diameter or larger.

Crescent Jumbo Rivets for Attaching Crescent Jumbo Plates

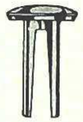
Use a size 5/16 inch longer than thickness of belt.

No.	Length Inches	Weight per Gross Lbs.	Weight per Gross Oz.	Price per Gross	No.	Length Inches	Weight per Gross Lbs.	Weight per Gross Oz.	Price per Gross
J10	10/16	1	9	$1.25	J14	14/16	1	14	$1.55
J11	11/16	1	11	1.40	J15	15/16	1	15	1.70
J12	12/16	1	12	1.40	J16	16/16	2	..	1.70
J13	13/16	1	13	1.55	J18	18/16	2	4	1.85

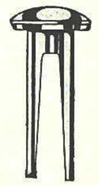
Crescent Rivets



S6 Crescent Small Shank Rivet



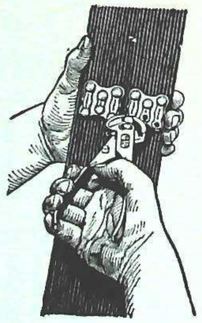
L9 Crescent Large Shank Rivet



J14 Crescent Jumbo Rivet

Crescent Rivets are of special construction, size and proportion especially adapted for this work. They are made in 3 styles as shown and in various lengths as indicated in the different tables.

Packed one gross of one size to a box.



No. 79 Crescent Extractors

To shorten or disconnect with a Crescent Rivet Extractor remove the Crescent Rivets from one side of the joint only. Cut out slack and rejoin, using a few new Crescent Rivets.

The Crescent Plates and half the Crescent Rivets are undisturbed and good for the life of the belt.

Crescent Rivet Extractor is a specially designed tool for removing Crescent Rivets quickly and easily.

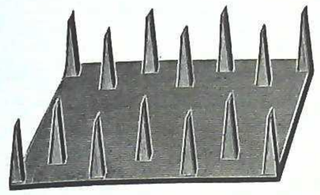
Length, 8 inches.

Weight, 1 pound.

Price, No. 79.....each $1.00

Hy-Tech Products

Talcott's Clinching Belt Hooks



Nos. 31 to 43, 45 to 51, 53 to 56 and 45L to 51L are packed 100 in a package.

Nos. 57 to 59, 60 to 63 and 68 to 75 are packed 50 in a package.

For Single Leather Belts

No.	For Belt In.	Price per 100	No.	For Belt In.	Price per 100	No.	For Belt In.	Price per 100
31	½	$.75	34	1½	$1.50	38	2½	$2.50
31½	¾	.90	35	1¾	1.75	40	3	3.50
32	1	1.00	36	2	2.00	42	3½	4.00
33	1¼	1.25	37	2¼	2.25	43	4	5.00

For Light Fabric Belts

45	1½	$6.00	47	2¼	$8.00	50	3½	$12.50
45½	1¾	6.50	48	2½	8.50	51	4	14.00
46	2	7.00	49	3	10.50	....	...	.....

For Medium Double Leather Belts

53	1½	$3.50	56	2½	$5.00	59	4	$8.50
54	2	4.00	57	3	6.00	....	...	.....
55	2¼	4.50	58	3½	7.00	....	...	.....

For 4-ply Rubber or Fabric Belts

45L	1½	$6.00	50L	3½	$14.00	62	3	$20.00
46L	2	8.00	51L	4	16.00	63	4	24.00
48L	2½	10.00	60	2	16.00	....	...	.....
49L	3	12.00	61	2½	18.00	....	...	.....

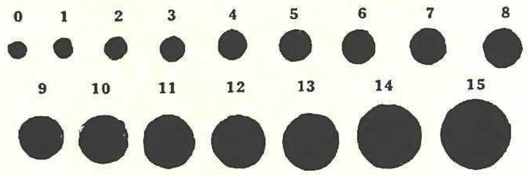
For 5-ply and 6-ply Rubber or Fabric Belts

68	2	$16.00	70½	3½	$24.00	74	3	$22.00
69	2½	18.00	71	4	26.00	74½	3½	23.00
70	3	22.00	72	2	18.00	75	4	25.00

Round Belt Punches

With Square Shank





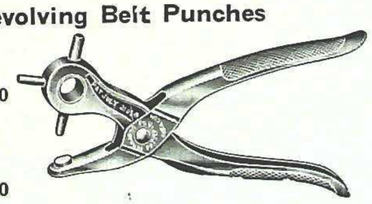
Actual Sizes of Holes

Size No.	Price per Dozen	Size No.	Price per Dozen
0 to 6	$3.20	13 to 14	$9.30
7 to 9	3.70	15 to 17	10.80
10 to 12	5.40	.....	.....

LX Revolving Belt Punches

Price, Four Tube, Nos. 1, 3, 5 and 7...per doz. $23.00

Price, Six Tube, Nos. 1, 2, 3, 4, 5 and 7....per doz. $30.00



Combination Awls and Pliers



For use with belt studs.

Price.....each $1.00

No. 23 Belt Clamps



For Belts Width, In.	Price Each	For Belts Width, In.	Price Each
6 to 12	$24.00	18 to 24	$36.00
12 to 18	28.00	24 to 36	72.00

Clipper Open End Belt Cutters



A tool for cutting belting from the roll as well as for squaring belt ends preparatory to lacing them.

The 6-Inch Cutter will cut and square all makes of belting up to 6 inches in width, even of the toughest material with a slight pressure on the handle; 10-inch Cutter up to 10 inches in width.

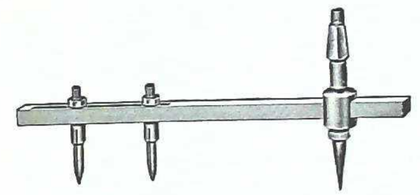
Belts which are squared with the Clipper Belt Cutter will not cause any undue strain on any part of the belting fibre or lacing.

The knife cannot be raised high enough to become a hazard.

Weight of 6-inch with open end, 11 pounds; closed end, 10 pounds; 10-inch open end, 16 pounds.

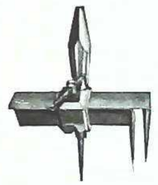
Price, 6-Inch Open End Cutter.....each $15.00
Price, 6-Inch Closed End Cutter.....each 10.00
Price, 10-Inch Open End Cutter.....each 20.00

Skinner Gasket and Washer Cutters



The Skinner Gasket Cutter has cutting blades of Swedish knife steel which successfully cut gaskets from asbestos or wire-insert sheet packing, and stay sharp. All parts nickel-plated. Will cut gaskets up to 24 inches outside diameter suitable for large cylinder heads and flange joints down to small size washers. Weight, 1¼ pounds.

Price.....each $2.50



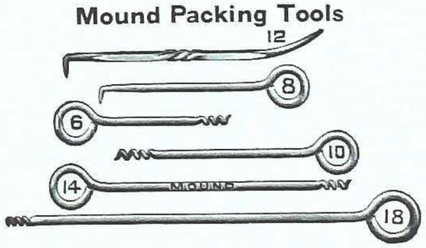
Johnson Washer Cutters

No. 352 will cut washers 6 inches in diameter. No. 353 will cut washers 8 inches in diameter.

Packed six in a box.

Price, No. 352.....per dozen $10.00
" " 353..... " 15.00

Mound Packing Tools



Made of special tool steel, warranted not to break in removing packing from stuffing boxes of engines, pumps, etc. Highly polished and nickel-plated.

Price, No. 1-P, Consisting of 4 Tools, Nos. 6, 10, 12 and 14.....per set $2.25
Price, No. 6-P, Consisting of 6 Tools, Nos. 6, 8, 10, 12, 14 and 18.....per set 3.25

American Steel Split Pulleys

Standard Design



Small Diameter Pulley
Sizes 3, 3½, 4, 5 and 6-inch diameters.

American Pulleys of standard design are recommended for all ordinary service.

The weights of different sizes of American Pulleys, compared with the weight of cast iron pulleys, show that American Steel Split Pulleys are from 40 to 60 per cent lighter, size for size.

American Steel Split Pulleys are safer at high speeds than any other type of split metal pulley, and seldom if ever burst destructively.

The fact that American Pulleys are parting pulleys makes them readily applicable to a shaft, without taking the shaft down; that they are used with interchangeable bushings enables them to be applied to shafts of different diameters.



6-Arm Construction showing construction of pulleys—16 to 24-inch diameter with wide faces; 25 to 42-inch, with all faces; 44 to 48-inch, with 6-inch face—either straight or crown face.

American Steel Split Pulleys with grooved faces and angular crowns will allow less belt slip and therefore transmit more h.p. (speed, belt tension and other conditions being equal) than any other standard pulleys.

In the large majority of cases it is not necessary to use keyways in American Pulleys. The hub clamps are of steel and of such design that they hold the pulley hub so closely and firmly on the shaft as to prevent slip even when the maximum traction of the belt is exerted. Pulleys will not slip on the shaft, if properly tightened, under a belt pull which is double that considered permissible under normal conditions.

As all parts of these pulleys are made in dies and are interchangeable, and as the parts are symmetrically arranged, the pulleys ought to be in perfect balance. All pulleys above 24 inches are regularly balanced as a distinct operation of manufacture before being sent to the shipping room, and smaller sizes as well when requirements of service demand it. Balance is an essential feature for high speed.



Large Double Arm Pulleys. Pulleys are made of this construction from 44 to 82 inches in diameter, inclusive, with faces wider than 16 inches. More arms and reinforced hub are supplied as size and service require them.

Many engineers fail to appreciate the power that is lost by the displacement of air due to the revolving pulley. It is evident that the less air fanned by a pulley, the more efficient it is in this respect.

The narrow arms of the pulley—edge on—cut the air instead of fanning it. The loss due to excessive air fanning runs into surprising amounts when a large number of pulleys are used.

Small diameter pulleys are adapted for use on motors. The 3 and 3½-inch pulleys are made with 1 7/16-inch bore; 4 and 5-inch, with 1 15/16-inch bore; 6-inch, with 2 7/16-inch bore. Bushings can be furnished to fit shafts of smaller diameter. Sizes 3 and 3½ inch may be made on 1½-inch bore; 4 and 5 inch, on 2-inch bore; 6 inch, on 2½-inch bore.

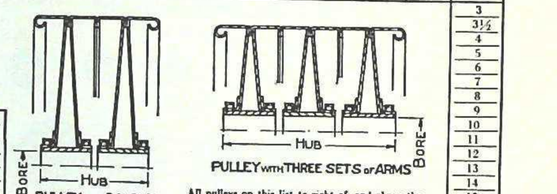
The heavy duty type pulleys are available for extreme conditions and intermittent loads.

Prices upon application.

Table of Standard Hubs and Bores of American Steel Split Pulleys

Diameter	FACES 2	3	4	5	6	8	10	12	14	16	FACES 18	20	22	24	26	28	30	32	34	36	Diameter
3		1 3/16" Bore – 2¼" Hub		1 5/16" Bore 5¼" Hub	1 5/16" Bore 5¾" Hub																3
3½																					3½
4		1 15/16" Bore – 2½" Hub			1 15/16 x 6			Not made as a Standard													4
5				1 15/16" Bore	1 15/16" Bore 3½" Hub	1 15/16 x 7	1 15/16 x 8														5
6		2 7/16" Bore 3½" Hub				2 7/16 x 7¾	2 7/16 x 9	2 7/16 x 10 5/16													6
7						2 7/16" Bore	7¾" Hub	2 7/16 x 10 3/16													7
8		2 7/16" Bore 3½" Hub 2 7/16" Bore 4½" Hub		2 11/16" Bore – 4½" Hub				2H" Bore 10 5/8" Hub													8
9																					9
10		2 7/16" Bore																			10
11	2 7/16" Bore 3½" Hub	3½" Hub																			11
12		2 11/16" or 3 7/16" Bore 4½" Hub																			12
13																					13
14																					14
15																					15
16																					16
17						3 7/16" Bore 5½" Hub																17
18		2 11/16" or 3 7/16" Bore 4½" Hub									3 7/16" Bore 11¾" Hub										18
19																					19
20																					20
21																					21
22																					22
23																					23
24																					24
25 to 28inc					3 7/16" Bore 5½" Hub																25 to 28inc
30																					30
32																					32
34																					34
36								4 7/16" Bore 6½" Hub														36
38 to 42inc																					38 to 42inc
44 to 48inc																					44 to 48inc
50 to 60inc							4 7/16" Bore 8½" Hub														50 to 60inc
62 to 72inc																					62 to 72inc
74 to 82inc							6" or 8½" Bore 10½" Hub														74 to 82inc
84 to 88inc		Not made as a Standard																			84 to 88inc
90 to 112inc								8½" Bore 10½" Hub													90 to 112inc
114 to 120inc																					114 to 120inc
Diameter	2	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	Diameter

FACES



All pulleys on this list to right of, and above the double line, up to, and including 28" face, are made with double set of arms.

Pulleys above 28" face are made with three sets of arms.

The figures given for the length of hub is the over all length of the entire hub of the pulley, or the distance taken up by the hub on the shaft.

Where the space on the shaft is limited, it should be noted on the order.

The length of the bushing for double arm pulleys on 3 7/16" bore is 5½".

On 4 7/16" bore, 25" to 42" diameter, the length of bushing is 6½"

On 4 7/16" bore, 44" to 60" diameter, the length of bushing is 8½"

On 6" and 8½" bore, the length of bushing is 10½"

Double arm pulleys require two, and triple arm, three sets of bushings.

Note.—In addition to the above, the 3" and 3½" diameter pulleys are made on a 1½" bore, and the 4" and 5" diameter pulleys are made on a 2" bore

Hy-Tech Products

American Steel Split Pulleys

Standard Design—Straight or Crown Face

Diam. In.	Price, Each — Width Face, Inches 2	3	4	5	6	8	10	12	14	16 Double Arm	18	20	22	24	26	28	30 Triple Arm	32	34	36
3	$2.28	$2.40	$2.52	$2.68	$3.00															
3½	2.34	2.46	2.58	2.72	3.05															
4	2.40	2.52	2.64	2.75	3.10															
5	2.52	2.64	2.75	2.87	3.25	$4.50	$5.10													
6	3.15	3.30	3.45	3.75	4.05	4.60	5.20	$5.90												
7	3.22	3.38	3.60	3.90	4.20	4.80	5.40	6.10												
8	3.30	3.45	3.75	4.05	4.35	4.95	5.60	6.25												
9	3.38	3.60	3.90	4.20	4.50	5.10	5.75	6.35												
10	3.45	3.75	4.05	4.35	4.65	5.25	5.90	6.45												
11	3.65	3.90	4.20	4.50	4.80	5.40	6.00	6.90												
12	3.90	4.20	4.63	4.80	5.33	5.78	6.45	7.65	$9.00	$10.25	$11.60									
13	4.05	4.35	4.80	5.20	5.62	6.43	7.20	8.40	9.50	10.75	12.10									
14	4.20	4.50	5.20	5.65	6.15	7.05	8.03	9.00	10.00	11.25	12.60									
15	4.35	4.65	5.45	5.80	6.55	7.65	8.80	9.75	10.75	12.00	13.35									
16	4.50	4.95	5.75	6.10	6.90	8.25	9.45	10.50	11.50	12.65	14.00									
17	....	5.25	6.00	6.50	7.28	8.78	10.05	11.25	12.40	13.65	15.00									
18	....	5.55	6.38	7.00	7.65	9.30	10.65	12.00	13.25	14.50	15.85									
19	....	5.80	6.75	7.50	8.25	10.13	11.25	12.90	14.20	15.60	17.00									
20	....	6.00	7.50	8.10	9.00	10.73	12.00	14.25	15.30	16.90	18.59									
21	....	6.25	8.00	8.90	9.60	11.25	12.98	15.60	18.00	20.55	22.60									
22	....	6.50	8.55	9.50	10.28	12.00	14.10	16.80	19.50	21.30	23.43									
23	....	7.00	8.70	9.90	10.58	12.60	14.75	18.00	21.00	24.30	26.73									
24	....	7.50	8.90	10.00	10.95	13.20	15.68	19.05	22.65	26.25	29.92	$34.50								
25	....	....	9.20	10.25	11.45	13.80	16.40	20.20	24.50	29.25	35.05	39.50								
26	....	....	9.55	10.50	11.95	14.40	17.10	21.30	26.25	31.20	36.15	41.40								
28	....	....	10.80	11.70	12.90	15.45	18.15	22.90	28.50	34.50	40.35	46.35								
30	....	....	12.00	12.90	14.10	17.25	19.90	24.75	31.50	38.10	45.00	49.50	$55.50	$61.50	$67.50	$74.25	$81.67			
32	....	....	13.20	14.10	15.45	19.35	22.50	26.86	34.15	41.65	48.37	54.37	60.37	66.37	72.37	79.60	87.56	$96.31		
34	....	....	14.40	15.75	17.25	21.75	25.50	30.00	36.75	45.00	51.75	57.45	63.75	69.75	75.00	82.50	90.75	99.82		
36	....	....	15.90	17.85	19.50	24.00	28.65	33.75	39.75	48.60	55.50	61.50	67.50	73.50	79.50	87.45	96.19	105.80	$116.38	$128.01
38	....	....	19.50	20.65	21.75	26.40	31.05	37.15	42.75	51.75	58.87	64.87	70.87	76.87	82.87	91.15	100.26	110.28	121 30	133 43
40	....	....	21.00	22.75	24.00	28.50	33.75	40.15	46.50	55.15	62.25	69.75	77.25	84.75	92.55	101.80	111.98	123.17	135.48	149.02
42	....	....	23.25	24.85	26.25	32.25	37.50	43.50	50.25	57.75	65.62	73.12	80.62	88.12	95.62	105.18	115.69	127.25	139.97	153.96
44	....	....	....	....	29.25	35.62	41.25	47.25	54.00	61.12	69.00	78.00	87.00	96.00	105.00	115.50	127.05	139.75	153.72	169.09
46	....	....	....	....	33.00	39.00	45.00	50.25	57.75	64.50	72.00	81.00	90.00	99.00	108.00	118.80	130.68	143.74	158.11	173.92
48	....	....	....	....	36.75	42.00	48.75	54.00	61.50	67.50	75.00	87.00	99.00	111.00	123.00	135.30	148.83	163.71	180.08	198.08
50	....	....	....	....	40.87	47.25	53.25	58.50	66.00	75.00	84.00	95.00	108.00	120.00	132.00	145.20	159.72	175.69	193.25	212.57
52	....	....	....	....	46.50	51.00	57.00	63.00	69.00	78.75	90.00	102.00	114.00	126.00	138.00	151.80	166.98	183.67	202.03	222.23
54	....	....	....	....	50.25	56.25	61.50	67.50	74.25	83.25	96.75	108.75	120.75	132.75	144.75	159.22	175.14	192.65	211.91	233.10
56	....	....	....	....	54.00	60.75	66.75	72.75	80.25	90.00	104.25	119.25	134.25	149.25	164.25	180.67	198.73	218.60	240.46	264.50
58	....	....	....	....	60.00	65.25	71.25	78.37	86.62	96.37	110.62	125.62	140.62	155.62	170.62	187.68	206.44	227.08	249.78	274.75
60	....	....	....	....	63.75	70.50	77.25	84.00	93.00	102.75	117.00	132.00	147.00	162.00	177.00	194.70	214.17	235.58	259.13	285.04
62	....	....	....	....	64.40	72.85	84.30	95.95	107.55	119.95	132.30	144.85	185.80	201.65	214.70	227.80	241.10	254.50	268.05	288.70
64	....	....	....	....	65.05	76.50	88.20	100.10	111.95	124.60	137.20	150.00	197.10	210.20	223.50	236.85	250.40	264.05	273.85	291.75
66	....	....	....	....	68.55	80.25	92.20	104.35	116.45	129.35	142.20	155.30	205.55	218.95	232.50	246.15	259.95	273.85	287.95	302.20
68	....	....	....	....	72.20	84.15	96.35	108.75	121.10	134.25	147.40	160.80	214.30	227.95	241.70	255.70	269.85	284.10	298.50	313.05
70	....	....	....	....	75.80	88.10	100.70	113.55	126.35	139.95	153.60	167.60	223.70	237.85	252.20	266.60	281.20	295.95	310.90	326.00
72	....	....	....	....	79.50	92.15	105.05	118.15	131.30	145.40	159.65	174.30	232.90	247.35	262.00	276.80	291.90	307.20	322.75	338.50
74	....	....	....	....	....	96.35	109.65	123.20	136.85	151.50	166.30	181.50	240.40	257.70	272.90	288.30	303.95	319.80	335.90	352.30
76	....	....	....	....	....	100.65	114.30	128.35	142.55	157.75	173.10	188.95	245.30	268.35	284.10	300.10	316.35	332.85	349.65	366.70
78	....	....	....	....	....	105.05	119.15	133.70	148.45	164.20	180.20	196.60	251.60	279.40	295.75	312.35	329.25	346.40	363.80	381.45
80	....	....	....	....	....	109.60	124.25	139.35	154.65	170.95	187.45	204.40	256.70	291.05	307.00	325.20	342.65	360.35	378.35	396.60
82	....	....	....	....	....	114.25	129.45	145.10	160.95	177.90	195.05	212.65	262.30	302.90	320.50	338.30	356.50	374.90	393.60	412.55
84	....	....	....	....	....	119.00	134.75	150.95	167.40	184.95	202.75	221.05	265.40	315.00	333.15	351.70	370.55	389.65	409.05	428.70
86	....	....	....	....	....	123.90	140.25	157.10	174.20	192.40	210.85	229.80	269.70	327.70	346.55	365.80	385.35	405.15	425.25	445.60
88	....	....	....	....	....	128.90	145.85	163.35	181.05	199.90	218.95	238.55	274.60	340.60	360.20	380.00	400.15	420.60	441.40	462.50
90	....	....	....	....	....	....	151.70	169.85	188.20	207.65	227.30	247.45	279.80	354.05	374.35	394.90	415.75	436.85	458.25	479.95
92	....	....	....	....	....	....	157.75	176.55	195.70	215.85	236.10	256.85	283.90	368.00	389.45	410.50	432.10	453.95	476.10	498.50
94	....	....	....	....	....	....	163.85	183.45	203.20	223.95	244.95	266.35	288.20	382.15	404.00	426.05	448.40	471.00	493.85	517.00
96	....	....	....	....	....	....	170.15	190.55	210.95	232.35	253.90	275.85	298.25	396.90	419.45	442.20	465.15	488.35	511.90	535.70
98	....	....	....	....	....	....	176.60	197.85	219.10	241.20	263.25	285.65	308.50	410.75	435.45	459.15	483.00	506.85	530.95	555.25
100	....	....	....	....	....	....	181.50	203.20	224.90	247.45	269.90	292.65	315.80	424.60	446.90	470.95	495.15	519.45	544.00	568.75
102	....	....	....	....	....	....	186.40	208.45	230.50	253.40	276.35	299.50	322.90	438.40	457.75	482.30	507.00	531.80	556.80	582.00
104	....	....	....	....	....	....	191.35	213.85	236.30	259.55	282.75	306.20	329.95	452.25	469.10	494.05	519.15	544.35	569.75	595.25
106	....	....	....	....	....	....	196.95	220.00	243.05	266.95	290.90	315.10	339.50	466.10	482.20	507.85	533.70	559.60	585.80	612.10
108	....	....	....	....	....	....	203.40	226.90	250.45	274.90	299.40	324.70	349.40	479.95	496.95	523.10	549.55	576.05	602.85	629.75
110	....	....	....	....	....	....	210.00	234.00	258.05	283.05	308.15	333.53	359.35	493.80	512.00	538.75	565.75	592.90	620.30	637.90
112	....	....	....	....	....	....	216.85	241.45	266.15	291.75	317.35	343.30	369.60	507.60	528.00	555.45	583.10	610.95	640.65	668.80
114	....	....	....	....	....	....	....	248.90	274.15	300.30	326.45	352.95	379.80	521.45	543.90	572.00	600.20	628.65	657.25	685.95
116	....	....	....	....	....	....	....	256.50	282.30	309.00	335.80	362.90	390.30	535.30	560.10	588.75	617.60	646.60	675.95	705.35
118	....	....	....	....	....	....	....	264.20	290.50	317.65	344.95	372.65	400.70	549.15	576.50	605.65	634.95	664.50	694.30	724.30
120	....	....	....	....	....	....	....	271.95	298.70	326.40	354.25	382.50	411.20	563.00	592.90	622.00	652.45	682.60	713.00	743.60

Extra for Keyseating

For keyseating pulleys 3 to 5-inch diameter, . . . per set of arms.—For keyseating pulleys over 5-inch diameter, . . . per set of arms.

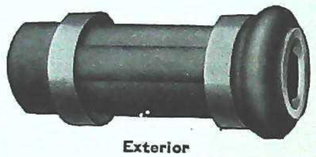
American Steel Split Pulley Bushings

Regular Split Bushings

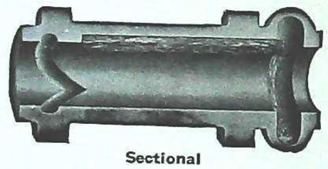


Outside Diameter Inches	Length Inches	Outside Diameter Inches	Length Inches
17/16	2¼	37/16	5½
115/16	2½	47/16	6½
115/16	3½	47/16	8½
27/16	3½	6	10½
215/16	4½	8½	10½
37/16	4½	...	....

Roberts' Patent Self-oiling Loose Bushings



Exterior



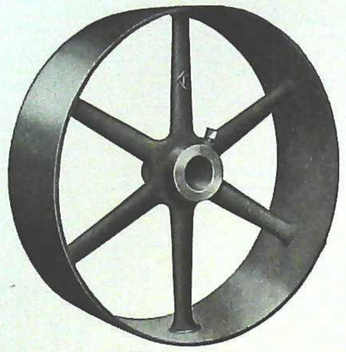
Sectional

By using Roberts' Self-oiling Loose Bushings, standard pulleys can readily be converted into loose pulleys. They are not furnished regularly and when ordered with pulleys, the following prices must be added to the pulley list.

Standard Outside Diameter of Bushing Corresponding to Bores of Pulleys Inches	Inside Bores of Bushings Inches	Length of Bushings without Oil Chamber Inches	For Pulley Face as Given in This Column Inches	Price Each
17/16	½–1	2½	2	$1.75
115/16		†2½	3–4	2.00
2½ Hub	½–1½	2½	2	2.00
		3½	3	2.25
		*3½	4–5	2.50
115/16–3½ Hub	½–1½	*4 9/16	5–6	3.40
27/16	9/16–2	3¾	3	2.75
		4 5/8	4	3.10
		*4 5/8	5–6	3.40
		4 7/8	4	3.10
		5 7/8	5	3.65
215/16	15/16–2¼	6 7/8	6	5.10
		*6 7/8	8–10	6.00
		4 7/8	4	3.60
		5 7/8	5	4.75
37/16	1–2¾	6 7/8	6	5.90
4½ and 5½ Hub		8 7/8	8	6.70
		*8 7/8	10–12	8.30
47/16		7 1/8	6	6.80
6½ and 8½ Hub	1¼–3½	9 1/8	8	8.50
		*9 1/8	10–12	9.60
		*9 1/8	14–16	9.60

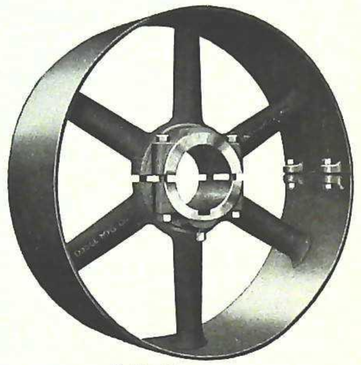
*Collars are supplied to go between tight and loose pulleys.
†Special collar, 7/8 inch wide.

Dodge Cast Iron Solid and Split Pulleys



Solid Single Arm

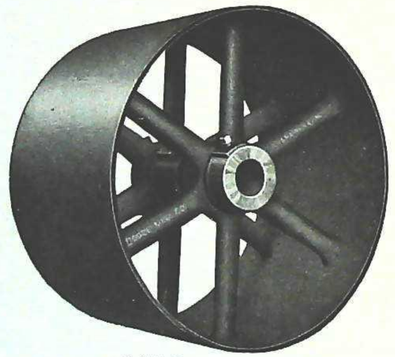
Cast iron pulleys are designated in accordance with the service which they are to perform, such as special, double belt or triple belt; these terms referring to leather belting to be used in connection with them.



Split Single Arm

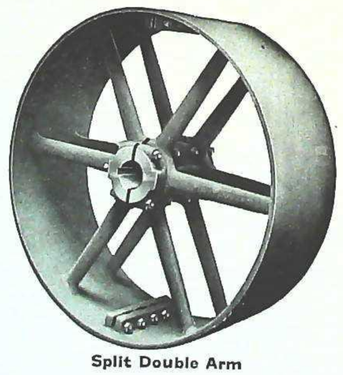
These pulleys are designed and built to withstand the strains under which the respective belts, whether double or triple, can be expected to operate.

Keys are never furnished unless specifically ordered,



Solid Double Arm

Pulleys ordered double arm will be made in most economical manner to meet the known conditions of service. One piece pulleys will usually be furnished.



Split Double Arm

In ordering specify: Double or triple belt; solid or split construction; diameter and face; crown or straight face; bore; set screws only, or keyseated and set screws; hub details if any, and location of hub; condition of service: r.p.m., h.p.; driver or driven; use of pulley; steady or intermittent load.

Prices upon application.

Hy-Tech Products

Rockwood Paper Pulleys



A paper pulley overcomes in a large degree the annoyance and loss caused by a slipping belt. The lighter tension on the belt permits lighter shafting, hangers, etc., reduces consumption of oil and loss from hot bearings. Tighteners are not necessary.

Rockwood Pulleys are used extensively on dynamos, motors, etc.

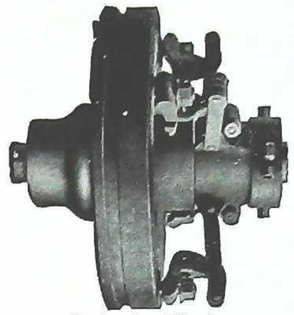
Prices on larger sizes furnished upon request.

Diam. Inches	Face Inches	Price Each	Diam. Inches	Face Inches	Price Each	Diam. Inches	Face Inches	Price Each
2	2	$2.25	7	7	$5.10	12	14	$15.35
2	3	2.30	7	8	5.50	12	15	17.85
2	4	2.35	7	9	6.05	12	16	20.90
2	5	2.50	7	10	6.60	12	17	24.00
2	6	2.80	7	11	7.15	12	18	27.20
2½	2	2.30	7	12	7.90	13	3	6.60
2½	3	2.40	8	3	4.40	13	4	7.05
2½	4	2.50	8	4	4.65	13	5	7.50
2½	5	2.65	8	5	4.95	13	6	7.95
2½	6	2.90	8	6	5.30	13	7	8.50
3	2	2.40	8	7	5.65	13	8	9.10
3	3	2.50	8	8	6.05	13	9	9.95
3	4	2.65	8	9	6.60	13	10	10.80
3	5	2.80	8	10	7.20	13	11	11.75
3	6	3.05	8	11	7.85	13	12	13.10
3	7	3.45	8	12	8.65	13	13	14.75
3½	2	2.50	8	13	9.75	13	14	16.70
3½	3	2.60	9	3	4.80	13	15	19.25
3½	4	2.80	9	4	5.10	13	16	22.30
3½	5	3.00	9	5	5.40	13	17	25.40
3½	6	3.25	9	6	5.80	13	18	28.60
3½	7	3.60	9	7	6.20	13	19	31.95
3½	8	4.10	9	8	6.60	14	3	7.05
4	2	2.65	9	9	7.20	14	4	7.55
4	3	2.80	9	10	7.85	14	5	8.05
4	4	3.00	9	11	8.60	14	6	8.55
4	5	3.20	9	12	9.45	14	7	9.15
4	6	3.45	9	13	10.55	14	8	9.85
4	7	3.75	10	3	5.25	14	9	10.75
4	8	4.25	10	4	5.55	14	10	11.65
4½	2	2.85	10	5	5.90	14	11	12.70
4½	3	3.00	10	6	6.30	14	12	14.15
4½	4	3.20	10	7	6.75	14	13	15.95
4½	5	3.40	10	8	7.20	14	14	18.10
4½	6	3.65	10	9	7.85	14	15	20.70
4½	7	3.95	10	10	8.55	14	16	23.75
4½	8	4.40	10	11	9.35	14	17	26.85
4½	9	4.90	10	12	10.30	14	18	30.05
5	2	3.05	10	13	11.45	14	19	33.40
5	3	3.20	10	14	12.80	14	20	36.85
5	4	3.40	10	15	15.30	14	21	40.40
5	5	3.60	10	16	18.35	15	3	7.55
5	6	3.85	11	3	5.70	15	4	8.05
5	7	4.15	11	4	6.05	15	5	8.60
5	8	4.55	11	5	6.40	15	6	9.15
5	9	5.05	11	6	6.80	15	7	9.85
5	10	5.55	11	7	7.30	15	8	10.60
5½	2	3.25	11	8	7.80	15	9	11.55
5½	3	3.40	11	9	8.50	15	10	12.50
5½	4	3.60	11	10	9.25	15	11	13.65
5½	5	3.80	11	11	10.10	15	12	15.25
5½	6	4.05	11	12	11.15	15	13	17.25
5½	7	4.35	11	13	12.45	15	14	19.55
5½	8	4.75	11	14	14.05	15	15	22.20
5½	9	5.25	11	15	16.55	15	16	25.25
5½	10	5.75	11	16	19.60	15	17	28.35
6	3	3.65	11	17	22.70	15	18	31.55
6	4	3.85	11	18	25.90	15	19	34.90
6	5	4.05	12	3	6.15	15	20	38.35
6	6	4.30	12	4	6.55	15	21	41.90
6	7	4.60	12	5	6.95	15	22	45.60
6	8	5.00	12	6	7.35	16	3	8.05
6	9	5.55	12	7	7.90	16	4	8.60
6	10	6.10	12	8	8.45	16	5	9.15
6	11	6.65	12	9	9.15	16	6	9.75
7	3	4.00	12	10	9.95	16	7	10.55
7	4	4.20	12	11	10.85	16	8	11.35
7	5	4.50	12	12	12.05	16	9	12.35
7	6	4.80	12	13	13.55	16	10	13.40

Kinney Interchange Type Cut-Off Couplings

(Giffin Patent)

With Ball Bearing Guide



The Interchange Cut-Off Coupling is equipped with a ball bearing short hub disk. The bore of this disk is the proper size to drive tightly on the driving shaft.

The end of the driven shaft projects into and is supported by the ball bearing which is inserted in the face of the driving disk.

The ball bearing used is of the Fafnir transmission type of ample capacity to carry the load. The inner race is made to fit the end of the driven shaft without the use of an adapter.

By the use of the ball bearing guide the principal cause of cut-off coupling trouble is eliminated; it keeps the shafts in line and eliminates trouble caused by lack of lubrication.

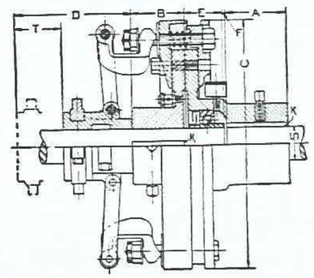
As it is sometimes difficult to obtain the exact horse power to be transmitted, the table of sizes for cut-off couplings is based upon using a coupling of the same rated capacity as the rated capacity of commercial steel shafting.

If larger bore than listed is required, this type cut-off coupling can be furnished with any Interchange pulley clutch bore by substituting a bronze bushing for the ball bearing. Such clutches, however, are not guaranteed to transmit the full power of the shaft.

Interchange-Competitor Type Cut-Off Couplings are made standard to specifications as listed below. An extra charge of 10 per cent will be made when special bore is required.

Prices include keys for fastening disks to the shafts and shifter straps with ceiling plate, to which may be attached wood or iron lever, as the location requires.

Orders for cut-off couplings should specify the bore, speed, power required and shaft space if limited.

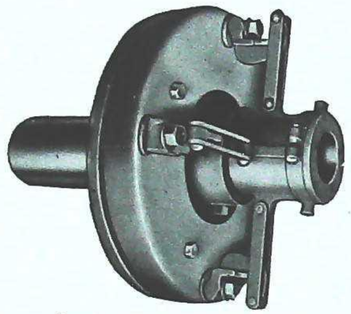


Clutch No.	Dimensions, Inches A	B	D	E	F	C	T
180	2¼	1 15/16	4¼	1 3/8	1/8	7 3/16	1 7/16
181	2½	2 1/8	4 5/8	1 7/16	3/16	8½	1 5/8
182	3	2 3/16	4 5/8	1 7/16	3/16	10½	1 3/4
183	3	2 13/16	6 3/16	1 11/16	1/4	13	2 9/16
184	3½	3¼	8¼	1 15/16	1/4	15 3/8	3 1/8
185	3¾	3¼	8¾	2 3/16	1/4	16 7/8	3½
186	4	3¾	9	2 7/16	3/8	18 3/8	3¼
187	5	5½	10¾	2 15/16	3/8	22	4

Clutch No.	H.P. 150 R.P.M.	300 R.P.M.	Stock Bore Inches	Keyway Inches	Price Each
180	3	6	15/16	1/4x1/8	$21.00
181	4	8	1 3/16	1/4x1/8	24.00
182	5	10	1 7/16	3/8x3/16	30.00
183	8	16	1 11/16	3/8x3/16	35.00
184	12	24	1 15/16	1/2x1/4	47.00
185	20	40	2 3/16	1/2x1/4	60.00
186	35	70	2 7/16	5/8x5/16	90.00
187	60	120	2 15/16	3/4x3/8	160.00

Kinney Interchange-Competitor Type Pulley Clutches

(Giffin Patent)



Cutch with Wick Oiled Sleeve
Solid Construction

The Interchange-Competitor Type Clutch is a combination of the Interchange and Competitor Type Clutches as formerly made. It may be used on the driving or driven end of a belt, chain or gear drive, or by exchanging the long sleeve member for a short hub member it may be used as a cut-off coupling. This clutch can be supplied either split or solid in construction. When a split clutch is used, it allows an easy and quick installation on a main or line shaft, without taking the shaft down or disturbing the equipment upon the shaft.

In construction this clutch is the simplest friction clutch made. When clamped together it forms a solid bolt coupling.

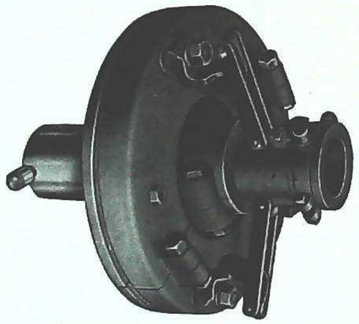
The power is transmitted directly through the two substantial flat disks and not through bolts, loose joints or working parts.

There are no wood blocks, fibre disks or other parts to quickly wear out and be replaced.

Change in atmospheric conditions does not affect the tension of the adjustments.

When properly oiled the glazed surfaces of the metal allow an easy, smooth, positive action with no sudden strain and without grinding, chattering or other noises.

This clutch is practically indestructible. It seldom needs adjustment or repairs.



Clutch with Wick Oiled Sleeve
Split Construction

The wear of the parts does not affect their power or efficiency.

The shifting mechanism consists of a sliding member to which the one-piece cams are connected by pivoted links. This link movement is powerful and requires slight pressure on the shifting lever to clamp the disks firmly together. The shifting mechanism does not revolve when the clutch is disengaged. All that is necessary to adjust the clutch is to turn the draw bolt nuts which are on the cams on the face of the clutch. This can be done with a common wrench and does not require any special tools.

These friction pulleys possess many advantages not possible to obtain by the use of tight and loose pulleys. They do away with the shifting of belts, which is a source of much annoyance and expense. They provide a safety device against accidents and eliminate strains upon belting and machinery.

The slippage in starting and stopping is taken up by the clutch instead of the belt slipping on the pulley.

Machinery can be run direct from the line shaft by using these friction pulleys.

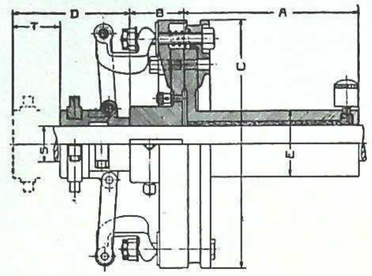
The standard sleeve is of the well-known wick oiling type so successfully used in loose pulleys. This sleeve is much longer than a pulley bushing, therefore more durable.

The sleeve is equipped with an automatic oil cup which can be filled in any position. To insure a perfect running bearing it is only necessary to keep this cup well filled with machine oil.

Kinney Interchange-Competitor Type Pulley Clutches

(Giffin Patent)

With Wick Oiled Sleeve



Clutch No.	Dimensions, Inches A	B	D	C	T	Space for Pulley
80	6	$1\frac{15}{16}$	$4\frac{1}{4}$	$7\frac{3}{4}{}_{4}$	$1\frac{7}{16}$	4
81	7	$3\frac{1}{8}$	$4\frac{5}{8}$	$8\frac{1}{2}$	$1\frac{5}{8}$	5
82	9	$2\frac{3}{16}$	$4\frac{5}{8}$	$10\frac{1}{2}$	$1\frac{3}{4}$	7
83	9	$2\frac{13}{16}$	$6\frac{3}{16}$	13	$2\frac{9}{16}$	7
84	12	$3\frac{1}{4}$	$8\frac{1}{4}$	$15\frac{3}{8}$	$3\frac{1}{8}$	9
85	12	$3\frac{1}{4}$	$8\frac{3}{4}$	$16\frac{7}{8}$	$3\frac{1}{2}$	9
86	14	$3\frac{3}{4}$	9	$18\frac{3}{8}$	$3\frac{1}{4}$	11
87	16	$5\frac{1}{2}$	$10\frac{3}{4}$	22	4	12

Clutch No.	H.P. 150 R.P.M.	300 R.P.M.	Standard Bores Inches	Outside Diameter Sleeve, Inches	Price, Each Solid	Split
80	3	6	$\frac{15}{16}$–$1\frac{3}{16}$–$1\frac{7}{16}$	$2\frac{7}{16}$	$14.00	.....
81	4	8	$1\frac{3}{16}$–$1\frac{7}{16}$–$1\frac{11}{16}$	$2\frac{15}{16}$	16.00	.....
82	5	10	$1\frac{7}{16}$–$1\frac{11}{16}$–$1\frac{15}{16}$	$2\frac{15}{16}$	18.00	$25.00
83	8	16	$1\frac{11}{16}$–$1\frac{15}{16}$–$2\frac{3}{16}$	$3\frac{7}{16}$	26.00	36.00
84	12	24	$1\frac{15}{16}$–$2\frac{3}{16}$–$2\frac{7}{16}$	$3\frac{7}{16}$–$3\frac{7}{16}$–$3\frac{15}{16}$	40.00	50.00
85	20	40	$2\frac{3}{16}$–$2\frac{7}{16}$–$2\frac{15}{16}$	$4\frac{7}{16}$	50.00	60.00
86	35	70	$2\frac{7}{16}$–$2\frac{15}{16}$–$3\frac{7}{16}$	$4\frac{7}{16}$–$4\frac{15}{16}$–$5\frac{7}{16}$	75.00	90.00
87	60	120	$2\frac{15}{16}$–$3\frac{7}{16}$–$3\frac{15}{16}$	$4\frac{15}{16}$–$5\frac{7}{16}$–$5\frac{15}{16}$	140.00	160.00

Nos. 80 and 81 fasten to shaft with set screws only; all other sizes have set screws and keyway.

Proper Size of Interchange Clutches for Standard Pulleys

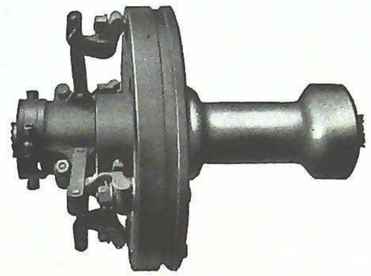
Diam. Pulley Inches	Clutch No. Width of Face, Inches 2	3	4	5	6	8	10	12	14	16
6	80	80	80	80	82	83	84	84	86	86
8	80	80	80	80	82	83	84	84	86	86
10	80	80	80	81	82	83	84	84	86	86
12	80	80	81	81	82	83	84	84	86	86
14	80	80	81	82	83	83	84	84	86	86
16	80	81	82	83	83	84	84	85	86	86
18	80	81	82	83	83	84	85	85	86	86
20	80	82	83	83	84	84	85	85	86	86
22	..	82	83	83	84	84	85	85	86	86
24	..	82	83	84	84	85	85	86	86	86
26	..	83	83	84	84	85	86	86	86	86
28	..	83	83	84	84	85	86	86	86	86
30	..	83	84	84	85	85	86	86	86	87
32	..	83	84	84	85	85	86	86	86	87
34	..	83	84	84	85	85	86	86	86	87
36	..	83	84	85	85	86	86	86	87	87
38	..	..	84	85	85	86	86	86	87	87
40	..	..	84	85	85	86	86	86	87	87
42	..	..	84	85	85	86	86	87	87	87
44	..	..	..	85	85	86	86	87	87	87
46	..	..	..	85	85	86	86	87	87	87
48	..	..	..	85	86	86	86	87	87	87
50	..	..	..	85	86	86	86	87	87	87
52	..	..	..	85	86	86	86	87	87	..
54	..	..	..	85	86	86	87	87	87	..
56	..	..	..	85	86	86	87	87	87	..
58	..	..	..	85	86	86	87	87	87	..

No allowance will be made if these clutches fail to give satisfaction when used with a pulley of a greater capacity than indicated above; this does not apply to the smallest bore of the several sizes. When clutch is used of the smallest listed bore any size pulley may be used.

Kinney Interchange-Competitor Type Pulley Clutches

(Giffin Patent)

With Ball Bearing Sleeve



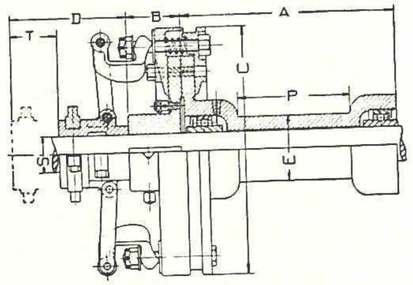
For heavy duty or for use on driving shaft at high speed the ball bearing sleeve as illustrated above is recommended.

Kinney Interchange-Competitor Type Pulley Clutches possess many advantages not possible to obtain by the use of tight and loose pulleys. They do away with the shifting of belts, which is a source of much annoyance and expense. They provide a safety device against accidents and eliminate strains upon belting and machinery.

The slippage in starting and stopping is taken by the clutch instead of the belt slipping on the pulley.

Machinery can be run direct from the line shaft by using these friction pulleys.

Clutches with Ball Bearing Sleeve for Use with Split Pulley, Sprocket or Gears

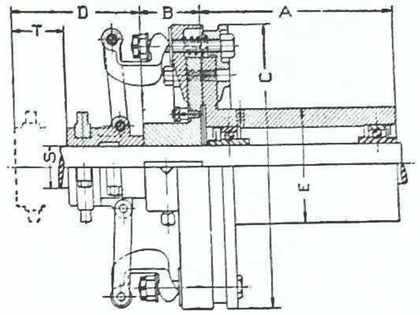


Clutch No.	Bore Inches	Dimensions, Inches A	B	D	C	E	P	T	Price Each
80	$\frac{15}{16}$–1	$8\frac{3}{4}$	$1\frac{15}{16}$	$4\frac{1}{4}$	$7\frac{3}{16}$	$2\frac{7}{16}$	$4\frac{3}{4}$	$1\frac{7}{16}$	$28.00
	$1\frac{3}{16}$	$8\frac{3}{4}$	$1\frac{15}{16}$	$4\frac{1}{4}$	$7\frac{3}{16}$	$2\frac{7}{16}$	$4\frac{3}{4}$	$1\frac{7}{16}$	30.00
81	$1\frac{3}{16}$	9	$2\frac{1}{8}$	$4\frac{5}{8}$	$8\frac{1}{2}$	$2\frac{7}{16}$	5	$1\frac{5}{8}$	33.00
	$1\frac{7}{16}$–$1\frac{1}{4}$	9	$2\frac{1}{8}$	$4\frac{5}{8}$	$8\frac{1}{2}$	$2\frac{7}{16}$	5	$1\frac{5}{8}$	35.00
82	$1\frac{7}{16}$–$1\frac{1}{4}$	10	$2\frac{3}{16}$	$4\frac{5}{8}$	$10\frac{1}{2}$	$2\frac{15}{16}$	5	$1\frac{3}{4}$	37.00
	$1\frac{11}{16}$–$1\frac{1}{2}$ $1\frac{3}{4}$	$11\frac{3}{8}$	$2\frac{3}{16}$	$4\frac{5}{8}$	$10\frac{1}{2}$	$2\frac{15}{16}$	6	$1\frac{3}{4}$	40.00
	$1\frac{15}{16}$	$11\frac{3}{8}$	$2\frac{3}{16}$	$4\frac{5}{8}$	$10\frac{1}{2}$	$2\frac{15}{16}$	6	$1\frac{3}{4}$	43.00
83	$1\frac{11}{16}$–$1\frac{1}{2}$ $1\frac{3}{4}$	$11\frac{3}{8}$	$2\frac{13}{16}$	$6\frac{3}{16}$	13	$2\frac{15}{16}$	6	$2\frac{9}{16}$	48.00
	$1\frac{15}{16}$	$11\frac{3}{8}$	$2\frac{13}{16}$	$6\frac{3}{16}$	13	$3\frac{7}{16}$	6	$2\frac{9}{16}$	51.00
	$2\frac{3}{16}$–2 $2\frac{1}{8}$	$11\frac{3}{4}$	$2\frac{13}{16}$	$6\frac{3}{16}$	13	$3\frac{7}{16}$	6	$2\frac{9}{16}$	53.00
84	$1\frac{15}{16}$	$11\frac{1}{2}$	$3\frac{1}{4}$	$8\frac{1}{4}$	$15\frac{3}{8}$	$3\frac{7}{16}$	6	$3\frac{1}{8}$	69.00
	$2\frac{3}{16}$–2 $2\frac{1}{8}$	$11\frac{3}{4}$	$3\frac{1}{4}$	$8\frac{1}{4}$	$15\frac{3}{8}$	$3\frac{7}{16}$	6	$3\frac{1}{8}$	72.00
	$2\frac{7}{16}$–$2\frac{1}{4}$	$12\frac{1}{2}$	$3\frac{1}{4}$	$8\frac{1}{4}$	$15\frac{3}{8}$	$4\frac{7}{16}$	7	$3\frac{1}{8}$	75.00
85	$2\frac{3}{16}$–2 $2\frac{1}{8}$	$13\frac{1}{8}$	$3\frac{1}{4}$	$8\frac{3}{4}$	$16\frac{7}{8}$	$4\frac{7}{16}$	7	$3\frac{1}{2}$	88.00
	$2\frac{7}{16}$–$2\frac{1}{4}$	$13\frac{1}{2}$	$3\frac{1}{4}$	$8\frac{3}{4}$	$16\frac{7}{8}$	$4\frac{7}{16}$	7	$3\frac{1}{2}$	92.00
	$2\frac{15}{16}$–$2\frac{3}{4}$	$14\frac{5}{8}$	$3\frac{1}{4}$	$8\frac{3}{4}$	$16\frac{7}{8}$	$4\frac{7}{16}$	7	$3\frac{1}{2}$	108.00
86	$2\frac{7}{16}$–$2\frac{1}{4}$	$15\frac{1}{2}$	$3\frac{3}{4}$	9	$18\frac{3}{8}$	$4\frac{7}{16}$	9	$3\frac{1}{4}$	129.00
	$2\frac{15}{16}$–$2\frac{3}{4}$	$16\frac{5}{8}$	$3\frac{3}{4}$	9	$18\frac{3}{8}$	$4\frac{15}{16}$	9	$3\frac{1}{4}$	145.00
	$3\frac{7}{16}$–$3\frac{1}{4}$	18	$3\frac{3}{4}$	9	$18\frac{3}{8}$	$5\frac{7}{16}$	9	$3\frac{1}{4}$	186.00
87	$2\frac{15}{16}$–$2\frac{3}{4}$	$18\frac{5}{8}$	$5\frac{1}{2}$	$10\frac{3}{4}$	22	$4\frac{15}{16}$	11	4	225.00
	$3\frac{7}{16}$–$3\frac{1}{4}$	20	$5\frac{1}{2}$	$10\frac{3}{4}$	22	$5\frac{7}{16}$	11	4	270.00
	$3\frac{15}{16}$–4	$21\frac{1}{2}$	$5\frac{1}{2}$	$10\frac{3}{4}$	22	$5\frac{15}{16}$	11	4	324.00
	$4\frac{7}{16}$	....	$5\frac{1}{2}$	$10\frac{3}{4}$	22	$6\frac{7}{16}$	11	4	400.00
	$4\frac{15}{16}$	....	$5\frac{1}{2}$	$10\frac{3}{4}$	22	$6\frac{15}{16}$	11	4	450.00

Kinney Interchange-Competitor Type Pulley Clutches

(Giffin Patent)

With Ball Bearing Sleeve for Use with Solid Pulley, Gear or Sprocket



Clutch No.	Bore Inches	Dimensions, Inches B	D	C	E	T	A	Price Each
80	$\frac{15}{16}$–1	$1\frac{15}{16}$	$4\frac{1}{4}$	$7\frac{3}{16}$	$2\frac{15}{16}$	$1\frac{7}{16}$		$27.00
	$1\frac{3}{16}$	$1\frac{15}{16}$	$4\frac{1}{4}$	$7\frac{3}{16}$	$3\frac{1}{16}$	$1\frac{7}{16}$		30.00
81	$1\frac{3}{16}$	$2\frac{1}{8}$	$4\frac{5}{8}$	$8\frac{1}{2}$	$3\frac{3}{16}$	$1\frac{5}{8}$		32.00
	$1\frac{7}{16}$–$1\frac{1}{4}$	$2\frac{1}{8}$	$4\frac{5}{8}$	$8\frac{1}{2}$	$3\frac{3}{16}$	$1\frac{5}{8}$		33.00
82	$1\frac{7}{16}$–$1\frac{1}{4}$	$2\frac{3}{16}$	$4\frac{5}{8}$	$10\frac{1}{2}$	$3\frac{3}{4}$	$1\frac{3}{4}$		36.00
	$1\frac{11}{16}$–$1\frac{1}{2}$ $1\frac{3}{4}$	$2\frac{3}{16}$	$4\frac{5}{8}$	$10\frac{1}{2}$	$4\frac{1}{4}$	$1\frac{3}{4}$		39.00
	$1\frac{15}{16}$	$2\frac{3}{16}$	$4\frac{5}{8}$	$10\frac{1}{2}$	$4\frac{7}{16}$	$1\frac{3}{4}$		42.00
83	$1\frac{11}{16}$–$1\frac{1}{2}$ $1\frac{3}{4}$	$2\frac{13}{16}$	$6\frac{3}{16}$	13	$4\frac{7}{16}$	$2\frac{9}{16}$		47.00
	$1\frac{15}{16}$	$2\frac{13}{16}$	$6\frac{3}{16}$	13	$4\frac{9}{16}$	$2\frac{9}{16}$		50.00
	$2\frac{3}{16}$–2 $2\frac{1}{8}$	$2\frac{13}{16}$	$6\frac{3}{16}$	13	5	$2\frac{9}{16}$		59.00
84	$1\frac{15}{16}$	$3\frac{1}{4}$	$8\frac{1}{4}$	$15\frac{3}{8}$	$4\frac{7}{8}$	$3\frac{1}{8}$		66.00
	$2\frac{3}{16}$–2 $2\frac{1}{8}$	$3\frac{1}{4}$	$8\frac{1}{4}$	$15\frac{3}{8}$	$5\frac{1}{4}$	$3\frac{1}{8}$		71.00
	$2\frac{7}{16}$–$2\frac{1}{4}$	$3\frac{1}{4}$	$8\frac{1}{4}$	$15\frac{3}{8}$	$5\frac{3}{8}$	$3\frac{1}{8}$		75.00
85	$2\frac{3}{16}$–2 $2\frac{1}{8}$	$3\frac{1}{4}$	$8\frac{3}{4}$	$16\frac{7}{8}$	$5\frac{1}{4}$	$3\frac{1}{2}$		87.00
	$2\frac{7}{16}$–$2\frac{1}{4}$	$3\frac{1}{4}$	$8\frac{3}{4}$	$16\frac{7}{8}$	$5\frac{5}{8}$	$3\frac{1}{2}$		90.00
	$2\frac{15}{16}$–$2\frac{3}{4}$	$3\frac{1}{4}$	$8\frac{3}{4}$	$16\frac{7}{8}$	$6\frac{1}{2}$	$3\frac{1}{2}$		105.00
86	$2\frac{7}{16}$–$2\frac{1}{4}$	$3\frac{3}{4}$	9	$18\frac{3}{8}$	$5\frac{3}{4}$	$3\frac{1}{4}$		127.00
	$2\frac{15}{16}$–$2\frac{3}{4}$	$3\frac{3}{4}$	9	$18\frac{3}{8}$	$6\frac{1}{2}$	$3\frac{1}{2}$		143.00
	$3\frac{7}{16}$–$3\frac{1}{4}$	$3\frac{3}{4}$	9	$18\frac{3}{8}$	$7\frac{1}{4}$	$3\frac{1}{2}$		182.00
87	$2\frac{15}{16}$–$2\frac{3}{4}$	$5\frac{1}{2}$	$10\frac{3}{4}$	22	$6\frac{5}{8}$	4		222.00
	$3\frac{7}{16}$–$3\frac{1}{4}$	$5\frac{1}{2}$	$10\frac{3}{4}$	22	$7\frac{3}{4}$	4		262.00
	$3\frac{15}{16}$–4	$5\frac{1}{2}$	$10\frac{3}{4}$	22	$8\frac{7}{8}$	4		321.00
	$4\frac{7}{16}$	$5\frac{1}{2}$	$10\frac{3}{4}$	22	9	4		395.00
	$4\frac{15}{16}$	$5\frac{1}{2}$	$10\frac{3}{4}$	22	$10\frac{1}{2}$	4		445.00

Width of Pulley Face Plus Diam. of Shaft to nearest $\frac{1}{4}$ inch

The Interchange-Competitor Type Pulley Clutches are made standard to specifications as listed. Special bore or sleeves can be furnished on order at a special price.

Clutches Nos. 80 and 81 are equipped with set screws for fastening to shaft; the six larger sizes have both set screws and key. The key is of standard size for the bore.

The clutches are made for clamp hub pulleys, and no keyway is furnished on the outside of sleeve unless so ordered; when keyway is ordered, there is a small charge for cutting.



No. C-8—Shifter Strap

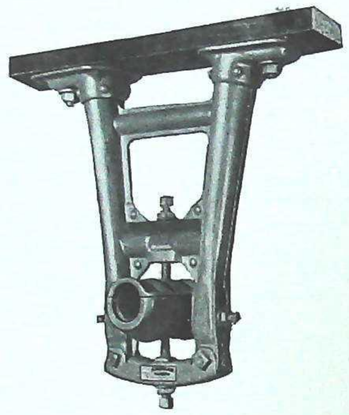
Prices quoted are for clutch, key for fastening to shaft, shifter strap with ceiling plate (No. C-8), automatic oil cup for sleeve and self-closing cup for disks—but do not include pulley. Any standard iron, steel or wood pulley of a suitable size can be quickly clamped to the extended sleeve of the clutch.

All pulley clutches are shipped assembled for the receiving end of the drive; to change to driving clutch, remove the cap screws from the short hub face and place on long sleeve end. Change No. 2 oil cup to face with short hub.

Hy-Tech Products

American Pressed Steel Hangers

With Ring-Oiling Bearings

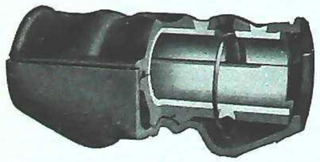


This hanger represents an advanced development in general purpose hanger construction. It is light, but strength has not been sacrificed to secure low manufacturing cost. It is strong—note the turned-in flanges along the back of each frame leg to provide the stiffest section to resist side strain. Tests confirm the value of this exclusive and essential feature.

The frame is smooth with rounded surfaces. Dust pockets and projecting parts are eliminated. The foot is simple, but strong—made of heavy metal—and is ample to sustain the pressure of clamping bolts or lag screws. Attachment to the oval frame leg is through the solid drawn seamless flange on the foot by means of heavy rivets.

Shaft Size Inches	Length Drop Inches	Price Each	Shaft Size Inches	Length Drop Inches	Price Each
15/16	6 to 8	$4.25	2 3/16	8 to 10	$9.25
	10 to 12	4.75		10 to 12	9.50
	14 to 16	5.50		14 to 16	10.50
	18 to 20	6.25		18 to 20	11.25
1 3/16	6 to 8	4.50		22 to 24	12.25
	10 to 12	5.00	2 7/16	8 to 10	10.25
	14 to 16	5.75		10 to 12	10.50
	18 to 20	6.50		14 to 16	11.50
1 7/16	6 to 8	5.00		18 to 20	12.25
	10 to 12	5.50		22 to 24	13.25
	14 to 16	6.25	2 11/16	8 to 10	12.50
	18 to 20	7.00		10 to 12	13.50
1 11/16	7 to 9	6.00		14 to 16	15.00
	10 to 12	6.50		18 to 20	17.00
	14 to 16	7.25		22 to 24	18.50
	18 to 20	7.75	2 15/16	8 to 10	14.50
1 15/16	7 to 9	7.00		10 to 12	15.50
	10 to 12	7.50		14 to 16	17.00
	14 to 16	8.25		18 to 20	19.00
	18 to 20	8.75		22 to 24	20.50

American Ring-Oiling Bearings

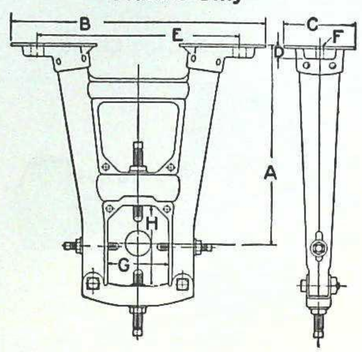


Ample bearing surface is provided; the babbitt is of superior quality and is broached carefully to size. A generous oil reservoir assures abundant lubrication.

Size Inches	Length Inches	Price Each	Size Inches	Length Inches	Price Each
15/16	4 3/4	$1.75	2 3/16	9 1/2	$4.25
1 3/16	5 1/4	2.00	2 7/16	10	5.25
1 7/16	6 1/8	2.50	2 11/16	11 1/8	6.00
1 11/16	7 1/8	2.75	2 15/16	12	8.00
1 15/16	8	3.75	.....	....	....

American Pressed Steel Hangers

Frames Only



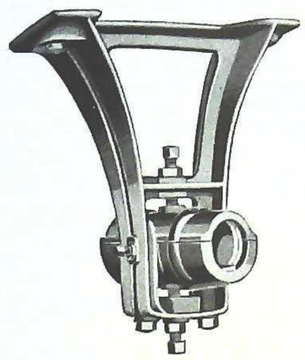
Size Shaft In.	Length Drop In.	Dimensions, Inches B	C	D	E	G	H	Bolts No.	Bolts Size In.
1 1/16	6 to 8	14 5/8	4 1/4	7/8	11 1/8	3 3/4	5 3/8	2	5/8
	10 " 12	16 7/16	4 1/2	7/8	12 9/16	3 3/4	5 3/8	2	5/8
	14 " 16	17 9/16	4 1/2	7/8	13 5/8	3 3/4	5 3/8	2	5/8
	18 " 20	19 3/8	5 5/16	7/8	15 1/8	3 3/4	5 3/8	2	5/8
1 3/16	6 " 8	14 5/8	4 1/4	7/8	11 1/8	3 3/4	5 3/8	2	5/8
	10 " 12	16 7/16	4 1/2	7/8	12 9/16	3 3/4	5 3/8	2	5/8
	14 " 16	17 9/16	4 1/2	7/8	13 5/8	3 3/4	5 3/8	2	5/8
	18 " 20	19 3/8	5 5/16	7/8	15 1/8	3 3/4	5 3/8	2	5/8
1 7/16	6 " 8	14 5/8	4 1/4	7/8	11 1/8	3 3/4	5 3/8	2	5/8
	10 " 12	16 7/16	4 1/2	7/8	12 9/16	3 3/4	5 3/8	2	5/8
	14 " 16	17 9/16	4 1/2	7/8	13 5/8	3 3/4	5 3/8	2	5/8
	18 " 20	19 3/8	5 5/16	7/8	15 1/8	3 3/4	5 3/8	2	5/8
1 11/16	7 " 9	16 3/4	4 1/2	7/8	12 7/8	4 1/2	5 7/8	2	5/8
	10 " 12	17 9/16	4 1/2	7/8	13 11/16	4 1/2	5 7/8	2	5/8
	14 " 16	19 7/16	5 5/16	7/8	15 3/16	4 1/2	5 7/8	2	5/8
	18 " 20	20 1/2	5 5/16	7/8	16 1/4	4 1/2	5 7/8	2	5/8
1 15/16	7 " 9	16 3/4	4 1/2	7/8	12 7/8	4 1/2	5 7/8	2	5/8
	10 " 12	17 9/16	4 1/2	7/8	13 11/16	4 1/2	5 7/8	2	5/8
	14 " 16	19 7/16	5 5/16	7/8	15 3/16	4 1/2	5 7/8	2	5/8
	18 " 20	20 1/2	5 5/16	7/8	16 1/4	4 1/2	5 7/8	2	5/8
2 3/16	8 " 10	20 7/16	5 1/2	1 1/8	15 5/16	5 1/4	6 7/8	2	3/4
	10 " 12	21 1/8	5 1/2	1 1/8	16 1/2	5 1/4	6 7/8	2	3/4
	14 " 16	23 1/8	6	1 3/16	18 3/8	5 1/4	6 7/8	2	3/4
	18 " 20	24 7/16	6	1 3/16	19 11/16	5 1/4	6 7/8	2	3/4
	22 " 24	25 3/4	6	1 3/16	21	5 1/4	6 7/8	2	3/4
2 7/16	8 " 10	20 7/16	5 1/2	1 1/8	15 5/16	5 1/4	6 7/8	2	3/4
	10 " 12	21 1/8	5 1/2	1 1/8	16 1/2	5 1/4	6 7/8	2	3/4
	14 " 16	23 1/8	6	1 3/16	18 3/8	5 1/4	6 7/8	2	3/4
	18 " 20	24 7/16	6	1 3/16	19 11/16	5 1/4	6 7/8	2	3/4
	22 " 24	25 3/4	6	1 3/16	21	5 1/4	6 7/8	2	3/4
2 11/16	8 " 10	21 3/16	5 1/2	1 1/8	16 9/16	6	7 1/2	2	1
	10 " 12	21 7/8	5 1/2	1 1/8	17 1/4	6	7 1/2	2	1
	14 " 16	23 7/8	6	1 3/16	19 1/8	6	7 1/2	2	1
	18 " 20	25 3/16	6	1 3/16	20 7/16	6	7 1/2	2	1
	22 " 24	26 1/2	6	1 3/16	21 3/4	6	7 1/2	2	1
2 15/16	8 " 10	21 3/16	5 1/2	1 1/8	16 9/16	6	7 1/2	2	1
	10 " 12	21 7/8	5 1/2	1 1/8	17 1/4	6	7 1/2	2	1
	14 " 16	23 7/8	6	1 3/16	19 1/8	6	7 1/2	2	1
	18 " 20	25 3/16	6	1 3/16	20 7/16	6	7 1/2	2	1
	22 " 24	26 1/2	6	1 3/16	21 3/4	6	7 1/2	2	1

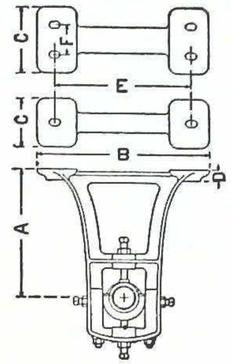
Size Shaft, In	Length Drop, In.	Price Each	Size Shaft, In	Length Drop, In.	Price Each
15/16	6 to 8	$2.50	2 3/16	8 to 10	$5.00
	10 " 12	3.00		10 " 12	5.25
	14 " 16	3.75		14 " 16	6.25
	18 " 20	4.50		18 " 20	7.00
1 3/16	6 " 8	2.50		22 " 24	8.00
	10 " 12	3.00	2 7/16	8 " 10	5.00
	14 " 16	3.75		10 " 12	5.25
	18 " 20	4.50		14 " 16	6.25
1 7/16	6 " 8	2.50		18 " 20	7.00
	10 " 12	3.00		22 " 24	8.00
	14 " 16	3.75	2 11/16	8 " 10	6.50
	18 " 20	4.50		10 " 12	7.50
1 11/16	7 " 9	3.25		14 " 16	9.00
	10 " 12	3.75		18 " 20	11.00
	14 " 16	4.50		22 " 24	12.50
	18 " 20	5.00	2 15/16	8 " 10	6.50
1 15/16	7 " 9	3.25		10 " 12	7.50
	10 " 12	3.75		14 " 16	9.00
	14 " 16	4.50		18 " 20	11.00
	18 " 20	5.00		22 " 24	12.50

Hy-Tech Products

Universal Ring-oiling Hangers

Reamed Babbitted Bearings





The ring-oiling hanger with universal adjustment has become so popular in the last twenty years that it is scarcely necessary to say anything in its favor.

It can be used as a drop hanger, wall bracket or floor stand.

The base of each hanger is ground true, and when mounted, will set parallel and square. This is desirable when a hanger is mounted on an I-beam or any other true surface.

Size Shaft Inches	A Drop Inches	Length Boxes Inches	Dimensions, Inches B	C	D	E	Price Each
15/16	7 to 9	4 3/4	11 1/2	4	1	8 1/4	$3.50
&	10 " 12	4 3/4	13 1/4	4	1	9 7/8	4.00
1	14 " 16	4 3/4	15 1/2	4	1	12 1/4	4.75
1 3/16	7 " 9	5 13/16	13 1/4	4 1/2	1	9 3/4	4.50
&	10 " 12	5 13/16	15	4 1/2	1	11 3/8	5.00
1 1/4	13 " 15	5 13/16	17	4 3/4	1	13 1/4	5.50
	14 " 16	5 13/16	17	4 3/4	1	13 3/8	5.75
	16 " 18	5 13/16	19	5	1	15 3/8	6.00
	18 " 20	5 13/16	19	5	1	15 3/8	6.50
	22 " 24	5 13/16	21 1/8	5 1/2	1 1/8	17 1/2	7.50
1 7/16	7 " 9	6 5/8	13 1/4	4 1/2	1	9 3/4	5.00
&	10 " 12	6 5/8	15	4 1/2	1	11 3/8	5.50
1 1/2	13 " 15	6 5/8	17	4 3/4	1	13 1/4	6.00
	14 " 16	6 5/8	17	4 3/4	1	13 3/8	6.25
	16 " 18	6 5/8	19	5	1	15 3/8	6.50
	18 " 20	6 5/8	19	5	1	15 3/8	7.00
	22 " 24	6 5/8	21 1/8	5 1/2	1 1/8	17 1/2	8.00
1 11/16	7 " 9	7 5/16	15 1/2	4 1/2	1 1/8	11 1/2	6.00
&	10 " 12	7 5/16	16 1/2	4 1/2	1 1/8	12 1/2	6.50
1 3/4	13 " 15	7 5/16	18 1/4	4 3/4	1	14	7.00
	14 " 16	7 5/16	18	4 1/2	1 1/8	14 1/8	7.25
	16 " 18	7 5/16	20	5	1	16	7.50
	18 " 20	7 5/16	20	5	1 1/8	16	7.75
	22 " 24	7 5/16	22	5 1/2	1 1/8	17 3/4	8.50
	26 " 28	7 5/16	24 1/2	6 1/2	1 1/8	20 1/2	10.75
	30 " 32	7 5/16	29	7 1/4	1 7/16	24 1/4	12.50
	34 " 36	7 5/16	31 5/8	7 1/2	1 3/8	27	14.50
1 15/16	7 " 9	8 3/8	15 1/2	4 1/2	1 1/8	11 1/2	7.00
&	10 " 12	8 3/8	16 1/2	4 1/2	1 1/8	12 1/2	7.50
2	13 " 15	8 3/8	18 1/4	4 3/4	1	14	8.00
	14 " 16	8 3/8	18	4 1/2	1 1/8	14 1/8	8.25
	16 " 18	8 3/8	20	5	1	16	8.50
	18 " 20	8 3/8	20	5	1 1/8	16	8.75
	22 " 24	8 3/8	22	5 1/2	1 1/8	17 3/4	9.50
	26 " 28	8 3/8	24 1/2	6 1/2	1 1/8	20 1/2	11.75
	30 " 32	8 3/8	29	7 1/4	1 7/16	24 1/4	13.50
	34 " 36	8 3/8	31 5/8	7 1/2	1 3/8	27	15.50
2 3/16	7 " 9	9 5/8	16 1/2	5	1 1/4	12 1/8	9.00
&	10 " 12	9 5/8	18	5 1/4	1 1/4	13 3/4	9.50
2 1/4	14 " 16	9 5/8	20 1/2	5 3/4	1 1/4	16 1/4	10.50
	16 " 18	9 5/8	21 1/4	5 7/8	1 1/4	17 1/4	11.00
	18 " 20	9 5/8	22 1/2	6	1 1/4	18 1/4	11.25
	22 " 24	9 5/8	24 1/2	6 1/2	1 1/4	20 1/4	12.25
	26 " 28	9 5/8	26	7	1 1/4	21 3/4	14.00
	30 " 32	9 5/8	30	7 1/4	1 1/4	25 1/4	16.00
	34 " 36	9 5/8	32	8	1 3/8	27 1/4	19.00

Size Bolts

Size Shaft Inches	Bolts No.	Bolts Diam., In.	Size Shaft Inches	Bolts No.	Bolts Diam., In.
15/16 to 1	2	1/2	2 3/16 to 2 1/4	2	3/4
1 3/16 " 2	2	5/8	.....	..	..

Universal Ring-oiling Hangers

Reamed Babbitted Bearings

Continued

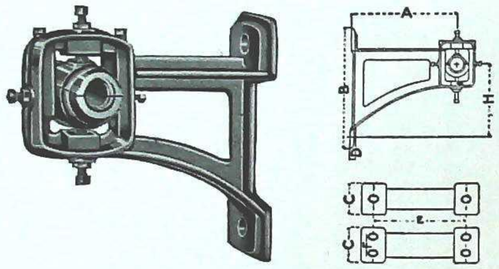
Size Shaft Inches	A Drop Inches	Length Boxes Inches	Dimensions, Inches B	C	D	E	F	Price Each
2 7/16	7 to 9	10 5/16	16 1/2	5	1 1/4	12 1/8	...	$10.00
&	10 " 12	10 5/16	18	5 1/4	1 1/4	13 3/4	...	10.50
2 1/2	14 " 16	10 5/16	20 1/2	5 3/4	1 1/4	16 1/4	...	11.50
	16 " 18	10 5/16	21 1/4	5 7/8	1 1/4	17 1/4	...	12.00
	18 " 20	10 5/16	22 1/2	6	1 1/4	18 1/4	...	12.25
	22 " 24	10 5/16	24 1/2	6 1/2	1 1/4	20 1/4	...	13.25
	26 " 28	10 5/16	26	7	1 1/4	21 3/4	...	15.00
	30 " 32	10 5/16	30	7 1/4	1 1/4	25 1/4	...	17.00
	34 " 36	10 5/16	32	8	1 3/8	27 1/4	...	20.00
2 11/16	7 " 9	11 1/2	18	5 3/4	1 1/2	13 1/4	...	12.00
&	10 " 12	11 1/2	18 3/4	6	1 1/2	14	...	13.50
2 3/4	14 " 16	11 1/2	21	6 1/2	1 1/2	16 1/4	...	15.00
	16 " 18	11 1/2	22 1/8	6 3/4	1 1/2	17 5/8	...	16.25
	18 " 20	11 1/2	23 1/4	7	1 1/2	18 3/8	...	17.00
	22 " 24	11 1/2	25 1/2	7 1/2	1 1/2	20 3/4	...	18.50
	26 " 28	11 1/2	27 3/4	8 3/8	1 1/2	23	...	20.00
	30 " 32	11 1/2	30 1/2	9 1/4	1 1/2	25 1/2	...	23.00
	34 " 36	11 1/2	32 1/2	9 3/4	1 1/2	25 1/2	...	26.00
2 15/16	7 " 9	12	18	5 3/4	1 1/2	13 1/4	...	14.00
&	10 " 12	12	18 3/4	6	1 1/2	14	...	15.50
3	14 " 16	12	21	6 1/2	1 1/2	16 1/4	...	17.00
	16 " 18	12	22 1/8	6 3/4	1 1/2	17 5/8	...	18.25
	18 " 20	12	23 1/4	7	1 1/2	18 3/8	...	19.00
	22 " 24	12	25 1/2	7 1/2	1 1/2	20 3/4	...	20.50
	26 " 28	12	27 3/4	8 3/8	1 1/2	23	...	22.00
	30 " 32	12	30 1/4	9 1/4	1 1/2	25 1/4	...	25.00
	34 " 36	12	32	8 3/4	1 5/8	27 1/4	...	28.00
3 3/16	10 " 12	13 1/2	22 3/8	8 3/4	1 3/4	17 1/4	3 5/8	20.00
&	14 " 16	13 1/2	24 1/2	8 3/4	1 3/4	19 1/4	3 5/8	22.50
3 1/4	18 " 20	13 1/2	26 1/2	10 1/4	1 3/4	21 1/8	4 3/4	25.00
	22 " 24	13 1/2	28 1/2	10 3/8	1 3/4	23 1/4	4 3/4	26.50
	26 " 28	13 1/2	30 1/2	10 1/4	1 3/4	25	4 3/4	28.50
	30 " 32	13 1/2	32	10 1/2	1 3/4	25	4 3/4	30.50
	34 " 36	13 1/2	34	10 1/2	1 3/4	28 1/2	4 3/4	33.50
3 7/16	10 " 12	14 1/2	22 3/8	8 3/4	1 3/4	17 1/4	3 5/8	22.00
&	14 " 16	14 1/2	24 1/2	8 3/4	1 3/4	19 1/4	3 5/8	24.50
3 1/2	19 " 20	14 1/2	26 1/2	10 1/4	1 3/4	21 1/8	4 3/4	27.00
	22 " 24	14 1/2	28 1/2	10 3/8	1 3/4	23 1/4	4 3/4	28.50
	26 " 28	14 1/2	30 1/2	10 1/4	1 3/4	25	4 3/4	30.50
	30 " 32	14 1/2	32	10 1/2	1 3/4	25	4 3/4	32.50
	34 " 36	14 1/2	34	10 1/2	1 3/4	28 1/2	4 3/4	35.50
3 11/16	10 " 12	15 1/4	23	9 1/4	1 7/8	17 1/4	4 1/4	26.00
&	14 " 16	15 1/4	24 3/4	9	1 7/8	18 3/4	4 1/4	28.50
3 3/4	18 " 20	15 1/4	26 3/4	9 5/8	1 7/8	20 1/2	4 1/4	31.50
	22 " 24	15 1/4	28 1/2	10 1/2	1 7/8	22 1/2	4 1/4	33.50
	26 " 28	15 1/4	30 1/4	10 1/2	1 7/8	24 1/4	4 1/4	35.50
	30 " 32	15 1/4	32	10 1/2	1 7/8	26	4 1/4	37.50
	34 " 36	15 1/4	35	10 1/2	1 7/8	28 7/8	4 1/4	40.50
3 15/16	10 " 12	16 3/8	23	9 1/4	1 7/8	17 1/4	4 1/4	28.00
&	14 " 16	16 3/8	24 3/4	9	1 7/8	18 3/4	4 1/4	30.50
4	18 " 20	16 3/8	26 3/4	9 5/8	1 7/8	20 1/2	4 1/4	33.50
	22 " 24	16 3/8	28 1/2	10 1/2	1 7/8	22 1/2	4 1/4	35.50
	26 " 28	16 3/8	30 1/4	10 1/2	1 7/8	24 1/4	4 1/4	37.50
	30 " 32	16 3/8	32	10 1/2	1 7/8	26	4 1/4	39.50
	34 " 36	16 3/8	35	10 1/2	1 7/8	28 7/8	4 1/4	42.50
4 3/16	11 1/2" 12 1/2	17 3/8	25 1/2	9 1/2	2 1/8	19 1/4	4 3/4	35.50
&	14 " 16	17 3/8	26 3/4	9 1/2	2 1/8	20 1/2	4 3/4	38.00
4 1/4	18 " 20	17 3/8	28	10 1/2	2 1/8	21 3/4	5 1/4	40.50
	22 " 24	17 3/8	29 1/4	10 1/2	2 1/8	23	5 1/4	43.50
	26 " 28	17 3/8	30 1/2	11 1/2	2 1/8	24 1/4	5 3/4	47.00
	30 " 32	17 3/8	31 3/4	11 1/2	2 1/8	25 1/2	5 3/4	51.00
	34 " 36	17 3/8	33	12 1/2	2 1/4	26 3/4	6 1/4	55.00

Size Bolts

Size Shaft Inches	Bolts No.	Bolts Diam. In.	Size Shaft Inches	Bolts No.	Bolts Diam. In.
2 7/16 to 2 1/2	2	3/4	3 11/16 to 4	4	7/8
2 11/16 " 3	2	1	4 3/16 " 4 1/4	4	1
3 3/16 " 3 1/2	4	3/4	.....	..	...

Universal Ring-oiling Bracket Hangers

Reamed Babbitted Bearings



Often it is necessary that a hanger should be mounted on an I-beam, or some other true surface. In this event if the foot or base of the hanger is rough, it would have a tendency to throw the hanger out of alignment and possibly cause it to break when it is bolted in position. The foot or base of all frames is ground so they are perfectly true, and parallel.

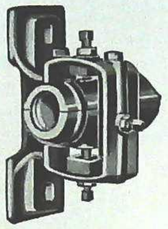
Size of Shaft Inches	Reach Inches	Dimensions, Inches B	C	D	E	H	Price Each
1 3/16, 1 1/4	10	15 1/2	4 1/4	1	12	8	$5.00
	12	16	4 3/8	1	12 3/8	8 3/4	5.50
	14	16 1/8	4 1/2	1	12 5/8	9	6.00
	16	16 1/2	4 7/8	1	12 7/8	9 1/4	6.50
	18	17 3/4	5 1/2	1 1/8	14 1/4	10 3/4	7.00
	20	18 1/2	5 1/2	1 1/8	14 1/2	11 1/4	7.50
1 7/16, 1 1/2	10	15 1/2	4 1/4	1	12	8	5.50
	12	16	4 3/8	1	12 3/8	8 3/4	6.00
	14	16 1/8	4 1/2	1	12 5/8	9	6.50
	16	16 1/2	4 7/8	1	12 7/8	9 1/4	7.00
	18	17 3/4	5 1/2	1 1/8	14 1/4	10 3/4	7.50
	20	18 1/2	5 1/2	1 1/8	14 1/2	11 1/4	8.00
1 11/16, 1 3/4	10	17 1/4	5	1 1/8	13 1/4	9 3/4	6.50
	12	17 1/2	5	1 1/8	13 3/8	9 3/4	7.00
	14	17 5/8	5	1 1/8	13 5/8	10	7.75
	16	18	5 1/4	1 1/8	13 7/8	10 1/4	8.50
	18	18 1/8	5 1/4	1 1/8	14 1/8	10 1/2	9.25
	20	18 5/8	5 1/2	1 1/8	14 1/2	11 1/8	10.00
1 15/16, 2	10	17 1/4	5	1 1/8	13 1/4	9 3/4	7.50
	12	17 1/2	5	1 1/8	13 3/8	9 3/4	8.00
	14	17 5/8	5	1 1/8	13 5/8	10	8.75
	16	18	5 1/4	1 1/8	13 7/8	10 1/4	9.50
	18	18 1/8	5 1/4	1 1/8	14 1/8	10 1/2	10.25
	20	18 5/8	5 1/2	1 1/8	14 1/2	11 1/8	11.00
2 3/16 , 2 1/4	10	18 1/2	5 1/2	1 1/4	14	9 3/4	9.50
	12	19	5 1/2	1 1/4	14 3/8	10 1/4	10.25
	14	19 1/4	5 1/2	1 1/4	14 1/2	10 5/8	11.50
	16	19 1/2	5 3/4	1 1/4	14 3/4	10 3/4	13.00
	18	19 5/8	5 3/4	1 1/4	15	11	14.50
	20	20 1/4	6	1 1/4	15 1/2	11 3/8	16.00
2 7/16, 2 1/2	10	18 1/2	5 1/2	1 1/4	14	9 3/4	10.50
	12	19	5 1/2	1 1/4	14 3/8	10 1/4	11.25
	14	19 1/4	5 1/2	1 1/4	14 1/2	10 5/8	12.50
	16	19 1/2	5 3/4	1 1/4	14 3/4	10 3/4	14.00
	18	19 5/8	5 3/4	1 1/4	15	11	15.50
	20	20 1/4	6	1 1/4	15 1/2	11 3/8	17.00
2 11/16, 2 3/4	10	20 1/2	6	1 1/2	15 1/4	11	14.00
	12	20 3/4	6	1 1/2	15 1/2	11	15.00
	14	21	6 1/8	1 1/2	15 5/8	11 1/4	16.50
	16	21 1/4	6 3/8	1 1/2	16	11 3/8	18.00
	18	21 1/2	6 1/4	1 1/2	16 1/4	11 5/8	21.00
	20	21 3/4	6 1/2	1 1/2	16 1/2	11 3/4	25.00
2 15/16, 3	10	20 1/2	6	1 1/2	15 1/4	11	16.00
	12	20 3/4	6	1 1/2	15 1/2	11	17.00
	14	21	6 1/8	1 1/2	15 5/8	11 1/4	18.50
	16	21 1/4	6 3/8	1 1/2	16	11 3/8	20.00
	18	21 1/2	6 1/4	1 1/2	16 1/4	11 5/8	23.00
	20	21 3/4	6 1/2	1 1/2	16 1/2	11 3/4	27.00

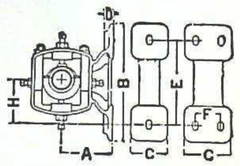
Size Bolts

Size Shaft Inches	Bolts No.	Bolts Diam. In.	Size Shaft Inches	Bolts No.	Bolts Diam. In.
1 3/16 to 2	2	3/4	2 11/16 to 3	2	1
2 3/16 " 2 1/2	2	7/8	.....	..	..

Universal Ring Oiling Post Hangers

Reamed Babbitted Bearings



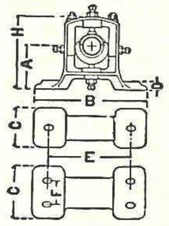


Size of Shaft Inches	Dimensions, Inches A	B	C	D	E	F	Central Position Bolts H Inches	No.	Size In.	Price Each
15/16 and 1	6 1/2	12 1/4	3 3/4	1	8 1/2	...	4 3/4	2	1/2	$3.75
1 3/16 " 1 1/4	7	13 1/2	4 1/2	1	10	...	5 5/8	2	5/8	4.75
1 7/16 " 1 1/2	7	13 1/2	4 1/2	1	10	...	5 5/8	2	5/8	5.25
1 11/16 " 1 3/4	7	15 1/4	4 3/4	1 1/8	11 1/4	...	6 1/4	2	5/8	6.00
1 15/16 " 2	7	15 1/4	4 3/4	1 1/8	11 1/4	...	6 1/4	2	5/8	7.00
2 3/16 " 2 1/4	7	16 1/4	5	1 1/4	11 5/8	...	6 1/2	2	3/4	9.25
2 7/16 " 2 1/2	7	16 1/4	5	1 1/4	11 5/8	...	6 1/2	2	3/4	10.25
2 11/16 " 2 3/4	7	19 1/4	5 3/4	1 1/2	14	...	7 3/4	2	1	13.50
2 15/16 " 3	7	19 1/4	5 3/4	1 1/2	14	...	7 3/4	2	1	15.50
3 3/16 " 3 1/4	9	20 1/2	7	1 7/8	15	4	8	4	3/4	20.00
3 7/16 " 3 1/2	9	20 1/2	7	1 7/8	15	4	8	4	3/4	22.00
3 11/16 " 3 3/4	9	22 3/4	8	1 7/8	17	3 1/2	9 1/8	4	3/4	31.50
3 15/16 " 4	9	22 3/4	8	1 7/8	17	3 1/2	9 1/8	4	3/4	33.50
4 3/16 " 4 1/4	11	25 1/4	9	2 1/8	19	4 3/8	10 3/8	4	1	43.50
4 7/16 " 4 1/2	11	25 1/4	9	2 1/8	19	4 3/8	10 3/8	4	1	46.00
4 11/16 " 4 3/4	11	27 1/2	10	2 1/2	21	5	11 1/2	4	1	53.50
4 15/16 " 5	11	27 1/2	10	2 1/2	21	5	11 1/2	4	1	56.00

Universal Ring-Oiling Pillow Blocks

Reamed Babbitted Bearings



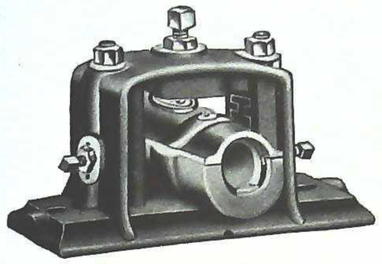


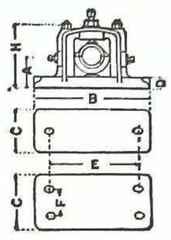
Size Shaft Inches	Dimensions, Inches A Central Position	B	C	D	E	F	Bolts No.	Size In.	Price Each
15/16 & 1	6 3/8	11 1/2	3 3/4	7/8	8	...	2	1/2	$3.50
1 3/16 & 1 1/4	6 3/8	13 1/4	4 1/2	1	9 5/8	...	2	5/8	4.50
1 7/16 & 1 1/2	6 3/8	13 1/4	4 1/2	1	9 5/8	...	2	5/8	5.00
1 11/16 & 1 3/4	6 3/4	15	4 1/2	1	10 3/4	...	2	5/8	6.00
1 15/16 & 2	6 3/4	15	4 1/2	1	10 3/4	...	2	5/8	7.00
2 3/16 & 2 1/4	7 1/4	16 1/2	5	1 1/4	12	...	2	3/4	8.75
2 7/16 & 2 1/2	7 1/4	16 1/2	5	1 1/4	12	...	2	3/4	9.75
2 11/16 & 2 3/4	8	18	6	1 1/2	13 1/4	...	2	3/4	11.50
2 15/16 & 3	8	18	6	1 1/2	13 1/4	...	2	3/4	13.50
3 3/16 & 3 1/4	9	20 1/4	8 1/8	1 3/4	15	3 1/2	4	3/4	19.00
3 7/16 & 3 1/2	9	20 1/4	8 1/8	1 3/4	15	3 1/2	4	3/4	21.00
3 11/16 & 3 3/4	11	23	9	1 7/8	17 1/4	4	4	7/8	26.50
3 15/16 & 4	11	23	9	1 7/8	17 1/4	4	4	7/8	28.50
4 3/16 & 4 1/4	12	25 1/2	9 1/2	2 1/8	19 1/4	4 3/4	4	1	36.00
4 7/16 & 4 1/2	12	25 1/2	9 1/2	2 1/8	19 1/4	4 3/4	4	1	39.00
4 11/16 & 4 3/4	12	27 1/2	10 1/2	2 3/8	20 3/8	5 1/4	4	1	43.50
4 15/16 & 5	12	27 1/2	10 1/2	2 3/8	20 3/8	5 1/4	4	1	46.00
5 3/16 & 5 1/4	14	33 3/4	12	2 1/2	26 1/2	6	4	1 1/8	72.00
5 7/16 & 5 1/2	14	33 3/8	12	2 1/2	26 1/2	6	4	1 1/8	75.00
5 11/16 & 5 3/4	14	34 1/2	13	2 3/4	27 1/4	6 1/2	4	1 1/8	92.00
5 15/16 & 6	14	34 1/2	13	2 3/4	27 1/4	6 1/2	4	1 1/8	95.00
6 3/16 & 6 1/4	14	35 3/4	14	3	28 1/4	7	4	1 1/4	117.00
6 7/16 & 6 1/2	14	35 3/4	14	3	28 1/4	7	4	1 1/4	120.00
6 11/16 & 6 3/4	14	37	15	3 1/4	28 3/4	7 1/2	4	1 1/4	147.00
6 15/16 & 7	14	37	15	3 1/4	28 3/4	7 1/2	4	1 1/4	150.00

Hy-Tech Products

Ring-Oiling Pedestal Pillow Blocks

Reamed Babbitted Bearings

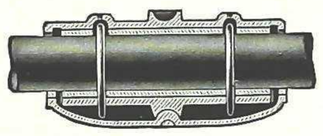




Size of Shaft Inches	Dimensions, Inches A Central Position	C	D	E	F	H	Bolts No.	Diam. In.	Price Each
15/16 1	2 1/2	3 3/4	7/8	7 3/4	...	5 7/8	2	1/2	$3.50
1 3/16, 1 1/4	2 5/8	4	7/8	8 5/8	...	6 5/8	2	5/8	4.50
1 7/16, 1 1/2	2 5/8	4	7/8	8 5/8	...	6 5/8	2	5/8	5.00
1 11/16, 1 3/4	3 1/4	4 1/2	15/16	10 1/8	...	7 1/4	2	5/8	6.00
1 15/16, 2	3 1/4	4 1/2	15/16	10 1/8	...	7 1/4	2	5/8	7.00
2 3/16, 2 1/4	4	4 7/8	1 1/8	11 3/4	...	8 5/8	2	3/4	8.75
2 7/16, 2 1/2	4	4 7/8	1 1/8	11 3/4	...	8 5/8	2	3/4	9.75
2 11/16, 2 3/4	4 1/2	5 1/4	1 1/8	12 5/8	...	9 3/4	2	3/4	11.50
2 15/16, 3	4 1/2	5 1/4	1 1/8	12 5/8	...	9 3/4	2	3/4	13.50
3 3/16, 3 1/4	5 1/4	6 1/2	1 3/8	14 3/8	...	11	2	1	19.00
3 7/16, 3 1/2	5 1/4	6 1/2	1 3/8	14 3/8	...	11	2	1	21.00
3 11/16, 3 3/4	5 7/8	7 1/4	1 1/2	16 1/4	2 7/8	12 1/2	4	5/8	26.50
3 15/16, 4	5 7/8	7 1/4	1 1/2	16 1/4	2 7/8	12 1/2	4	5/8	28.50
4 3/16, 4 1/4	6 7/16	8	1 3/4	17 5/8	3 1/4	14	4	3/4	36.00
4 7/16, 4 1/2	6 7/16	8	1 3/4	17 5/8	3 1/4	14	4	3/4	39.00
4 11/16, 4 3/4	7 1/8	8 3/4	1 3/4	19 1/8	4	15 1/4	4	3/4	43.50
4 15/16, 5	7 1/8	8 3/4	1 3/4	19 1/8	4	15 1/4	4	3/4	46.00
5 3/16, 5 1/4	8 1/2	9 1/2	2 1/2	20 1/2	4 1/2	18	4	7/8	72.00
5 7/16, 5 1/2	8 1/2	9 1/2	2 1/2	20 1/2	4 1/2	18	4	7/8	75.00
5 11/16 5 3/4,	8	10 3/4	2 1/16	22	5 1/2	17 3/8	4	7/8	92.00
5 15/16 6 ,	8	10 3/4	2 1/16	22	5 1/2	17 3/8	4	7/8	95.00

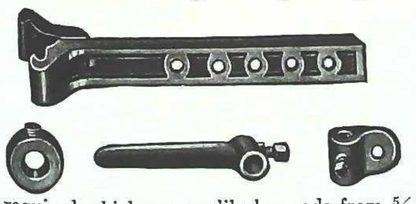
Ring-Oiling Hanger Boxes

Babbitted and Reamed



Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
15/16–1	$1.75	2 5/16 –2 1/2	$5.25	3 13/16–4	$14.50
1 1/16 –1 1/4	2.00	2 9/16 –2 3/4	6.00	4 1/16 –4 1/4	17.00
1 5/16 –1 1/2	2.50	2 13/16–3	8.00	4 5/16 –4 1/2	20.00
1 9/16 –1 3/4	2.75	3 1/16 –3 1/4	9.00	4 9/16 –4 3/4	22.50
1 13/16–2	3.75	3 5/16 –3 1/2	11.00	4 13/16–5	25.00
2 1/16 –2 1/4	4.25	3 9/16 –3 3/4	12.50	.....	.....

Shifting Attachments for Universal Ring Oiling Hangers

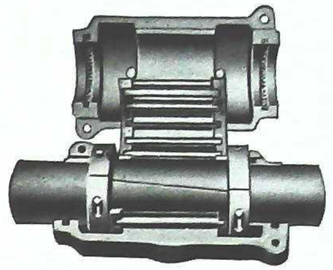


Shifting attachments for counter shafts consist of 2 arms, 2 fingers, 2 collars, 1 lever clamp. In addition, a shifting rod is required which can readily be made from 5/8-inch cold rolled steel. If furnished, an extra charge is made.

Size Shafting Inches	Price, Each Complete Attachments	Fixtures without Arms	Arms
15/16 to 1 1/2	$5.00	$2.50	$1.25
1 9/16 " 2	5.50	2.50	1.50
2 3/16 " 3	6.50	3.00	1.75

Sells Roller Bearing Boxes

With Single Roller Structure



Designed for general power transmission purposes.

The following speeds, recommended as maximum, allow for an ample factor of safety.

Size of Shaft Inches	Max. Speed R. P. M.
1 15/16 and smaller	600
2 3/16 to 2 15/16	400
3 3/16 " 3 15/16	300
4 3/16 " 5 15/16	250

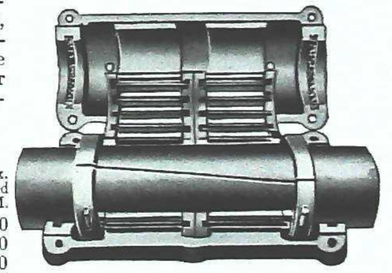
Size of Shaft Inches	Dimensions of Box, Inches Length	Width	Height	Price Each
15/16 and 1	6 3/8	2 11/16	2 3/4	$6.00
1 3/16 " 1 1/4	6 13/16	3	3 5/16	7.00
1 7/16 " 1 1/2	7 3/16	3 3/16	3 5/8	8.00
1 11/16 " 1 3/4	8	3 3/4	4 3/16	9.50
1 15/16 " 2	8 3/8	3 15/16	4 1/4	11.00
2 3/16 " 2 1/4	9 3/4	4 1/2	5 1/8	13.50
2 7/16 " 2 1/2	10 1/4	4 3/4	5 3/8	15.50
2 11/16 " 2 3/4	10 5/8	5 3/8	6 1/4	19.00
2 15/16 " 3	11	5 1/2	6 1/4	22.50
3 3/16 " 3 1/4	11 7/8	6	6 5/8	34.50
3 7/16 " 3 1/2	12 3/8	6	6 11/16	38.50
3 11/16 " 3 3/4	14 7/16	6 5/16	7 3/8	67.00
3 15/16 " 4	15	6 5/16	7 1/2	77.00
4 3/16 " 4 1/4	15 9/16	7 1/8	8 5/8	88.00
4 7/16 " 4 1/2	16 1/8	8	8 3/8	100.00
4 11/16 " 4 3/4	16 1/2	8 1/2	9 3/8	113.00
4 15/16 " 5	17	8 5/16	9 3/8	128.00

Sells Roller Bearing Boxes

With Double Roller Structures

These bearings should be used on head shafts and on line shafts adjacent to main driving pulleys, especially where most of the load is carried by one bearing.

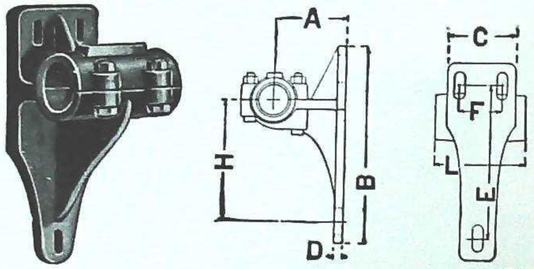
Providing an ample factor of safety, the following maximum speeds are recommended for all Sells Roller-Bearings.



Size of Shaft Inches	Max. Speed R. P. M.
1 15/16 and smaller	600
2 3/16 to 2 15/16	400
3 3/16 " 3 15/16	300
4 3/16 " 5 15/16	250

Size of Shaft Inches	Box, Inches Dimensions of Length	Width	Height	Price Each
1 15/16 and 2	13	3 15/16	4 5/8	$19.00
2 3/16 " 2 1/4	13 3/4	4 1/2	5 3/16	23.50
2 7/16 " 2 1/2	14 3/8	4 3/4	5 7/16	26.50
2 11/16 " 2 3/4	15 1/4	5 1/4	6 1/8	32.50
2 15/16 " 3	15 7/8	5 1/2	6 5/16	39.00
3 3/16 " 3 1/4	17	5 15/16	6 3/4	59.00
3 7/16 " 3 1/2	17 3/4	6	6 3/4	66.00
3 11/16 " 3 3/4	19 1/4	6 13/16	7 11/16	94.00
3 15/16 " 4	19 3/4	7 1/8	8	110.00
4 3/16 " 4 1/4	21	7 7/8	8 5/8	126.00
4 7/16 " 4 1/2	21 3/4	8	9	140.00
4 11/16 " 4 3/4	22 3/8	8 1/16	8 7/8	161.00
4 15/16 " 5	24	8 5/16	9 3/8	179.00
5 7/16 " 5 1/2	24 3/4	9 1/16	10 1/2	230.00
5 15/16 " 6	26 1/2	10 3/8	11 1/2	316.00

Standard Rigid Post Boxes
With Split and Babbitted Bearings

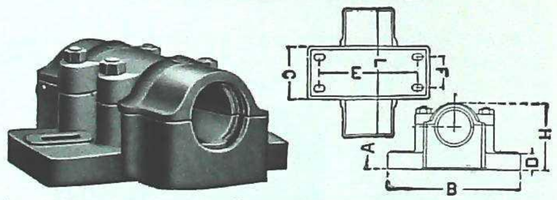


Size Shaft Inches	Dimensions, Inches A	B	C	D	E	F	H	L	Price Each
15/16, 1	3 7/8	7 5/16	3	5/8	5	1 7/8	3 7/8	3 1/8	$3.25
1 3/16, 1 1/4	3 7/8	8 1/2	3 1/4	5/8	6 1/8	2 1/4	4 7/8	3 3/4	3.50
1 7/16, 1 1/2	3 7/8	10	3 5/8	5/8	7 1/2	2 1/2	5 7/8	4 1/2	3.70
1 11/16, 1 3/4	5 7/8	11 3/8	4	5/8	8 3/4	2 5/8	6 7/8	5 1/4	4.00
1 15/16, 2	5 7/8	13	4 3/4	3/4	10	3	7 7/8	6	5.10
2 3/16, 2 1/4	5 7/8	14 3/4	5 1/4	3/4	11 1/8	3 1/4	8 7/8	6 3/4	6.15
2 7/16, 2 1/2	5 7/8	16 1/4	5 3/4	7/8	12 1/4	3 1/2	9 7/8	7 1/2	7.00
2 11/16, 2 3/4	5 7/8	16 3/4	6 5/8	7/8	12 3/4	3 3/4	10	8 1/4	8.50
2 15/16, 3	5 7/8	19 1/4	7	1	15	4	11 3/4	9	10.15
3 3/16, 3 1/4	6	22	8 1/4	1	17 1/2	4 1/2	14	10 5/8	11.50
3 7/16, 3 1/2	6	22	8 1/4	1	17 1/2	4 1/2	14	10 5/8	15.60
3 11/16, 3 3/4	9	25	9 1/8	1 1/8	20	5	18 3/4	12	19.70
3 15/16, 4	9	25	9 1/8	1 1/8	20	5	18 3/4	12	23.80
4 3/16, 4 1/4	9	27 1/2	10 1/2	1 1/8	22 1/2	5 5/8	20 5/8	13 5/8	28.50
4 7/16, 4 1/2	9	27 1/2	10 1/2	1 1/8	22 1/2	5 5/8	20 5/8	13 5/8	33.50
4 11/16, 4 3/4	9	30 1/2	11 5/8	1 3/8	25	6	22 7/8	15	39.75
4 15/16, 5	9	30 1/2	11 5/8	1 3/8	25	6	22 7/8	15	46.00

Size Bolts

Size Shaft, In	Bolt No.	Bolt Diam., In.	Size Shaft, In.	Bolt No.	Bolt Diam., In.
15/16 to 1 3/4	3	1/2	3 3/16 to 4 1/2	3	1
1 15/16 " 2 1/4	3	5/8	4 11/16 " 5	3	1 1/8
2 7/16 " 3	3	3/4	.....	.	...

Rigid Ring-oiling Pillow Blocks
Reamed Babbitted Bearings



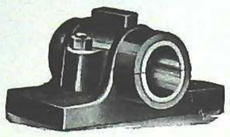
Size of Shaft Inches	Dimensions, Inches A	B	C	D	E	F	H	L	Price Each
15/16, 1	1 3/4	6 1/16	1 5/16	5/8	4 3/4	...	2 7/8	4 3/4	$3.50
1 3/16, 1 1/4	2	6	2 3/16	1/16	4 5/8	...	3 1/16	5 3/4	3.75
1 7/16, 1 1/2	2 1/4	6 7/8	2 9/16	7/8	5 5/16	...	3 5/8	6 1/2	4.65
1 11/16, 1 3/4	2 1/2	7 3/4	3 1/16	1	6	...	3 7/8	7 3/4	5.25
1 15/16, 2	2 3/4	8 5/8	3 3/8	1 1/16	6 3/4	...	4 1/2	8 3/8	6.00
2 3/16, 2 1/4	3 1/16	9 1/2	3 7/8	1 1/4	7 5/8	...	4 3/4	9 1/2	7.00
2 7/16, 2 1/2	3 5/16	10 1/4	4 1/4	1 3/8	8 1/4	...	5 1/4	10 1/4	8.00
2 11/16, 2 3/4	3 9/16	11 1/4	4 3/4	1 1/2	8 7/8	...	5 3/4	11 5/16	9.25
2 15/16, 3	3 7/8	12 1/8	5 1/4	1 5/8	9 1/2	...	6 1/2	12	10.40
3 3/16, 3 1/4	4 1/8	12 7/8	5 3/4	1 3/4	10 1/8	...	6 1/2	13 1/2	12.00
3 7/16, 3 1/2	4 3/8	13 3/4	6	1 7/8	10 7/8	3 1/2	7	14 1/2	15.00
3 11/16, 3 3/4	4 5/8	14 5/8	6 1/2	1 15/16	11 1/2	3 3/4	7 1/2	15 3/8	18.00
3 15/16, 4	4 15/16	15 1/2	7	2	12 1/4	4	8 1/4	16 3/8	22.00
4 3/16, 4 1/4	5 3/16	16 3/8	7 1/8	2 3/16	12 7/8	4 1/4	8 1/2	17 1/4	26.50
4 7/16, 4 1/2	5 7/16	17 1/4	7 3/4	2 1/4	13 5/8	4 1/2	9 1/8	18 1/8	31.00
4 11/16, 4 3/4	5 3/4	18 1/8	8 1/2	2 1/2	14 1/4	4 3/4	9 3/8	19 1/8	36.00
4 15/16, 5	6	19	8 5/8	2 5/8	15	5	10	20	41.00
5 3/16, 5 1/4	6 3/8	20 1/8	9 5/16	2 5/8	16 1/4	5 1/2	10 7/8	21 7/8	.....
5 7/16, 5 1/2	6 3/8	20 1/8	9 5/16	2 5/8	16 1/4	5 1/2	10 7/8	21 7/8	65.00
5 11/16, 5 3/4	6 3/4	21 7/8	10	2 7/8	17 1/2	6	11 3/4	23 3/4	.....
5 15/16, 6	6 3/4	21 7/8	10	2 7/8	17 1/2	6	11 3/4	23 3/4	75.00

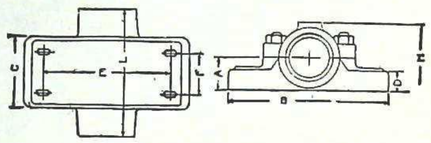
Size Bolts

Shaft Inches	Bolts No.	Diam. In.	Shaft Inches	Bolts No.	Diam. In	Shaft Inches	Bolts No.	Diam. In.
15/16 to 1 1/2	2	3/8	2 11/16 to 3	2	3/4	3 15/16 to 4 1/4	4	7/8
1 11/16 " 2	2	1/2	3 3/16 " 3 1/4	2	7/8	4 7/16 " 4 3/4	4	1
2 3/16 " 2 1/2	2	5/8	3 7/16 " 3 3/4	4	3/4	4 15/16 " 6	4	1 1/8

Heavy Rigid Pillow Blocks

Split and Reamed Babbitted Bearings





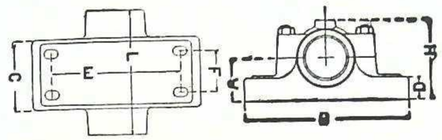
Size Shaft In.	General Dimensions, Inches A	B	C	D	E	F	H	L
15/16 & 1	1 1/8	4 3/4	1 3/4	3/4	3 11/16	...	2 1/4	2 1/2
1 3/16 & 1 1/4	1 1/4	5 3/8	2	3/4	4 3/16	...	2 9/16	3 5/8
1 7/16 & 1 1/2	1 1/2	6 3/8	2 3/8	15/16	4 15/16	...	3	4 3/8
1 11/16 & 1 3/4	1 5/8	7 1/4	2 3/4	1 1/16	5 11/16	...	3 1/2	5 1/8
1 15/16 & 2	2	8 1/4	3 1/4	1 1/4	6 1/2	...	3 7/8	5 3/4
2 3/16 & 2 1/4	2 1/4	9 1/2	3 1/2	1 3/8	7 11/16	...	4 1/2	6 5/8
2 7/16 & 2 1/2	2 1/2	10 5/8	4	1 1/2	8 3/16	...	5	7 3/8
2 11/16 & 2 3/4	2 3/4	11 5/8	4 3/8	1 5/8	9 1/8	...	5 3/8	8 1/8
2 15/16 & 3	3 1/8	12 5/8	4 1/4	1 11/16	9 9/16	...	6	8 15/16
3 3/16 & 3 1/4	3 1/4	13 5/8	5 1/8	1 3/4	10 5/16	...	6 1/8	9 1/2
3 7/16 & 3 1/2	3 1/2	14 3/4	5 1/2	2	11 7/8	...	6 5/8	10 1/4
3 11/16 & 3 3/4	3 7/8	15 7/8	6	2 1/4	12 7/8	...	7 1/4	11
3 15/16 & 4	4	17 5/8	6 1/2	2 1/4	13 7/8	...	7 3/4	11 3/4
4 3/16 & 4 1/4	4 5/16	17	7 1/4	2 1/2	13	4 1/4	8 3/8	12 3/4
4 7/16 & 4 1/2	4 1/2	18	7 5/8	2 5/8	13 1/2	4 1/2	8 1/2	13 3/8
4 11/16 & 4 3/4	4 5/16	19	8	2 3/4	14 1/2	4 3/4	9 1/2	14 1/8
4 15/16 & 5	5 1/4	19 7/8	8 1/2	3	15 3/8	5	9 7/8	15
5 3/16 & 5 1/4	5 5/16	22	9 5/16	3 1/8	17	5 1/2	10 1/2	16 3/4
5 7/16 & 5 1/2	5 5/16	22	9 5/16	3 1/8	17	5 1/2	10 1/2	16 3/4
5 11/16 & 5 3/4	6 1/8	23 3/4	10 1/2	3 1/2	18 1/2	6	11 3/4	18
5 15/16 & 6	6 1/8	23 3/4	10 1/2	3 1/2	18 1/2	6	11 3/4	18
6 3/16 & 6 1/4	6 9/16	24 1/4	11 1/8	3 5/8	19	6 1/2	12 3/4	19 1/2
6 7/16 & 6 1/2	6 9/16	24 1/4	11 1/8	3 5/8	19	6 1/2	12 3/4	19 1/2
6 11/16 & 6 3/4	7 1/16	28	11 7/8	4 1/8	21 1/4	7	13 1/2	20 3/4
6 15/16 & 7	7 1/16	28	11 7/8	4 1/8	21 1/4	7	13 1/2	20 3/4

Size Shaft In.	Bolts No.	Bolts Size In.	Price Each	Size Shaft In.	Bolts No.	Bolts Size In.	Price Each
15/16 & 1	2	3/8	$1.25	4 3/16 & 4 1/4	4	7/8	$18.00
1 3/16 & 1 1/4	2	3/8	1.50	4 7/16 & 4 1/2	4	1	21.00
1 7/16 & 1 1/2	2	3/8	2.25	4 11/16 & 4 3/4	4	1	23.00
1 11/16 & 1 3/4	2	1/2	2.75	4 15/16 & 5	4	1 1/8	26.50
1 15/16 & 2	2	1/2	3.50	5 3/16 & 5 1/4	4	1 1/8	.....
2 3/16 & 2 1/4	2	5/8	4.00	5 7/16 & 5 1/2	4	1 1/8	33.00
2 7/16 & 2 1/2	2	5/8	4.75	5 11/16 & 5 3/4	4	1 1/4	.....
2 11/16 & 2 3/4	2	3/4	6.00	5 15/16 & 6	4	1 1/4	47.00
2 15/16 & 3	2	3/4	7.50	6 3/16 & 6 1/4	4	1 1/4	.....
3 3/16 & 3 1/4	2	7/8	9.50	6 7/16 & 6 1/2	4	1 1/4	55.00
3 7/16 & 3 1/2	2	7/8	11.00	6 11/16 & 6 3/4	4	1 3/8	.....
3 11/16 & 3 3/4	2	1	13.00	6 15/16 & 7	4	1 3/8	62.00
3 15/16 & 4	2	1 1/8	16.50	.....	.	...	.....

Hy-Tech Products

Flat Boxes
Split and Reamed Babbitted Bearings





For light or medium service or for use on shaft where space is limited.

Slotted holes provide for lateral adjustment.

Size Shaft, In.	Dimensions, Inches A	B	C	D	E	F	H	L	Price Each
3/4	5/8	4 1/2	1 1/4	1/2	3 3/8	...	1 1/2	2 1/16	$1.00
7/8	5/8	4 1/2	1 1/4	1/2	3 3/8	...	1 1/2	2 1/16	1.00
15/16	3/4	5	1 3/8	5/8	3 3/4	...	1 3/4	2 1/2	1.00
1	3/4	5	1 3/8	5/8	3 3/4	...	1 3/4	2 1/2	1.10
1 1/8	15/16	5 1/2	1 5/8	3/4	4 1/4	...	2 1/4	2 7/8	1.20
1 3/16, 1 1/4	15/16	5 1/2	1 5/8	3/4	4 1/4	...	2 1/4	2 7/8	1.20
1 5/16	1 1/16	6 1/8	1 15/16	7/8	4 11/16	...	2 3/8	3 1/16	1.30
1 7/16, 1 1/2	1 1/16	6 1/8	1 15/16	7/8	4 11/16	...	2 3/8	3 1/16	1.60
1 11/16, 1 3/4	1 5/16	6 7/8	2 5/16	1	5 1/16	...	2 7/8	4 5/16	2.20
1 15/16, 2	1 1/2	7 1/2	2 5/8	1 1/16	5 7/8	...	3 1/4	4 15/16	2.90
2 3/16, 2 1/4	1 11/16	8 3/8	2 7/8	1 1/4	6 1/2	...	3 7/8	5 9/16	3.70
2 7/16, 2 1/2	1 13/16	9 1/4	3 1/8	1 3/8	7 3/8	...	4 3/16	6 1/8	4.25
2 11/16, 2 3/4	2	10 1/4	3 1/2	1 1/2	8 1/4	...	4 3/8	6 13/16	5.40
2 15/16, 3	2 3/16	11 3/16	3 3/4	1 9/16	8 7/8	...	4 5/8	7 1/16	6.50
3 3/16, 3 1/4	3 1/4	13 5/8	5 1/8	1 3/4	10 5/16	...	6 1/8	9 1/2	9.50
3 7/16, 3 1/2	3 1/2	14 3/4	5 1/2	2	11 7/8	...	6 5/8	10 1/4	10.50
3 11/16, 3 3/4	3 7/8	15 7/8	6	2 1/4	12 7/8	...	7 1/4	11	11.50
3 15/16, 4	4	17 5/8	6 1/2	2 1/4	13 7/8	...	7 3/4	11 3/4	13.75
4 3/16, 4 1/4	4 5/16	17	7 1/4	2 1/2	13	4 1/4	8 3/8	12 3/4	15.00
4 7/16, 4 1/2	4 1/2	18	7 5/8	2 5/8	13 1/2	4 1/2	8 1/2	13 3/8	18.00
4 11/16, 4 3/4	4 5/16	19	8	2 3/4	14 1/2	4 3/4	9 1/2	14 1/8	20.00
4 15/16, 5	5 1/4	19 7/8	8 1/2	3	15 3/8	5	9 7/8	15	22.00

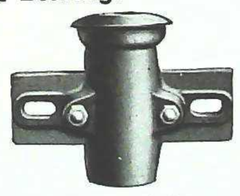
Size Bolts

Size Shaft Inches	Bolts No.	Bolts Diam. In.	Size Shaft Inches	Bolts No.	Bolts Diam. In.
3/4 to 1 1/2	2	3/8	3 11/16 to 3 3/4	2	1
1 11/16 " 2	2	1/2	3 15/16 " 4	2	1 1/8
2 3/16 " 2 1/2	2	5/8	4 3/16 " 4 1/4	4	7/8
2 11/16 " 3	2	3/4	4 7/16 " 4 3/4	4	1
3 3/16 " 3 1/2	2	7/8	4 15/16 " 5	4	1 1/8

Vertical Shaft Bearings



No. 28B, Solid



No. 25B, Split

Size Inches	Price, Each No. 28B, Solid Plain Bore	Babbitt Lined	No. 25B Split	Size Inches	Price, Each No. 25B Solid Plain Bore	Babbitt Lined	No. 25B Split
1 15/16	$3.15	$3.15	$5.40	3 3/16	$9.00	$9.00	$16.50
2 3/16	3.75	3.75	7.00	3 7/16	11.25	11.25	19.50
2 7/16	4.65	4.65	8.25	3 11/16	13.50	13.50	21.75
2 11/16	5.50	5.50	10.50	3 15/16	16.15	16.15	24.00
2 15/16	7.15	7.15	13.15	...	.....	.....	.....

Safety Set Collars


Solid


Split

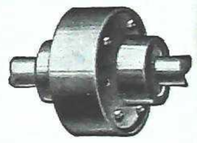
Solid

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
15/16	$.62	1 11/16	$1.20	2 5/8	$2.03	3 15/16	$3.60
1	.65	1 3/4	1.25	2 11/16	2.10	4 3/16	4.15
1 1/8	.75	1 13/16	1.30	2 3/4	2.17	4 7/16	4.70
1 3/16	.80	1 7/8	1.34	2 7/8	2.32	4 11/16	5.30
1 1/4	.85	1 15/16	1.40	2 15/16	2.40	4 15/16	5.90
1 5/16	.90	2	1.45	3	2.48	5 7/16	7.00
1 3/8	.95	2 1/8	1.55	3 3/16	2.70	5 15/16	8.50
1 7/16	1.00	2 3/16	1.60	3 1/4	2.77	6 7/16	10.50
1 1/2	1.05	2 1/4	1.65	3 7/16	3.00	6 15/16	12.50
1 9/16	1.10	2 7/16	1.80	3 1/2	3.08	.....	.....
1 5/8	1.15	2 1/2	1.88	3 11/16	3.30	.....	.....

Split

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
15/16	$.93	1 11/16	$1.80	2 5/8	$3.05	3 15/16	$5.40
1	.97	1 3/4	1.87	2 11/16	3.15	4 3/16	6.22
1 1/8	1.13	1 13/16	1.95	2 3/4	3.25	4 7/16	7.05
1 3/16	1.20	1 7/8	2.03	2 7/8	3.48	4 11/16	7.95
1 1/4	1.27	1 15/16	2.10	2 15/16	3.60	4 15/16	8.85
1 5/16	1.35	2	2.17	3	3.72	5 7/16	10.50
1 3/8	1.43	2 1/8	2.32	3 3/16	4.05	5 15/16	13.00
1 7/16	1.50	2 3/16	2.40	3 1/4	4.15	6 7/16	16.00
1 1/2	1.57	2 1/4	2.57	3 7/16	4.50	6 15/16	18.00
1 9/16	1.65	2 7/16	2.70	3 1/2	4.62	.....	.....
1 5/8	1.72	2 1/2	2.82	3 11/16	4.95	.....	.....

Standard Compression Couplings



Grips shaft securely and will not slip. Flanges extend beyond the heads of bolts thus making them safe. Care should be taken, in mounting, to see that bolts are drawn up evenly.

For reducing couplings, add 20 per cent to list of largest size.

Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
15/16, 1	$4.25	2 11/16, 2 3/4	$13.00	4 11/16, 4 3/4	$83.00
1 3/16, 1 1/4	4.75	2 15/16, 3	16.00	4 15/16, 5	94.00
1 5/16,	5.00	3 3/16, 3 1/4	32.50	5 3/16, 5 1/4	102.50
1 7/16, 1 1/2	5.50	3 7/16, 3 1/2	39.25	5 7/16, 5 1/2	111.00
1 11/16, 1 3/4	6.25	3 11/16, 3 3/4	45.25	5 11/16, 5 3/4	120.50
1 15/16, 2	8.00	3 15/16, 4	51.25	5 15/16, 6	130.00
2 3/16, 2 1/4	9.00	4 3/16, 4 1/4	61.50	.....	.....
2 7/16, 2 1/2	10.75	4 7/16, 4 1/2	71.75	.....	.....

Flange or Plate Couplings
With Tight Fitting Bolts and Keys



These couplings are of good design, amply heavy to withstand severe service that may be imposed on them. Nuts and bolt heads are under flanges.

For reducing couplings, add 20 per cent to list of largest size.

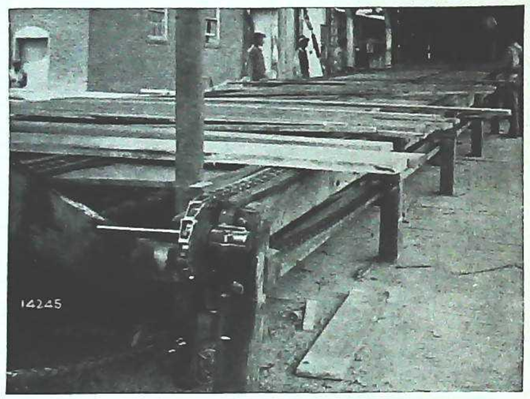
Size Inches	Price Each	Size Inches	Price Each	Size Inches	Price Each
15/16, 1	$7.50	2 15/16, 3	$21.50	4 15/16, 5	$75.00
1 3/16, 1 1/4	8.00	3 3/16, 3 1/4	26.00	5 3/16, 5 1/4	82.50
1 7/16, 1 1/2	9.00	3 7/16, 3 1/2	28.50	5 7/16, 5 1/2	88.00
1 11/16, 1 3/4	10.50	3 11/16, 3 3/4	33.50	5 11/16, 5 3/4	98.00
1 15/16, 2	11.50	3 15/16, 4	36.00	5 15/16, 6	103.00
2 3/16, 2 1/4	13.00	4 3/16, 4 1/4	49.00	6 7/16, 6 1/2	120.00
2 7/16, 2 1/2	14.50	4 7/16, 4 1/2	63.00	6 15/16, 7	140.00
2 11/16, 2 3/4	17.50	4 11/16, 4 3/4	68.00	.....	.....

Jeffrey Material Handling Machinery

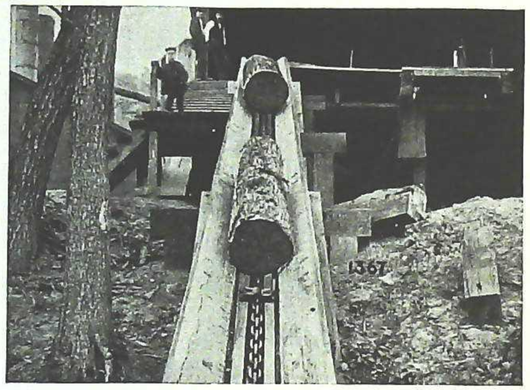
For more than 40 years Jeffrey Equipment has been a vital factor in reducing handling cost, saving labor and increasing production in nearly every industry. Other pages list the various types of Jeffrey Chains, Sprockets, Transmission and other elevator and conveyor accessories on which we are prepared to render prompt and reliable service.

When you have any requirements involving the need of equipment of this nature, it will be a pleasure for us to help you in the selection of the proper type to meet your needs.

A complete catalogue on any equipment shown will be mailed upon request.



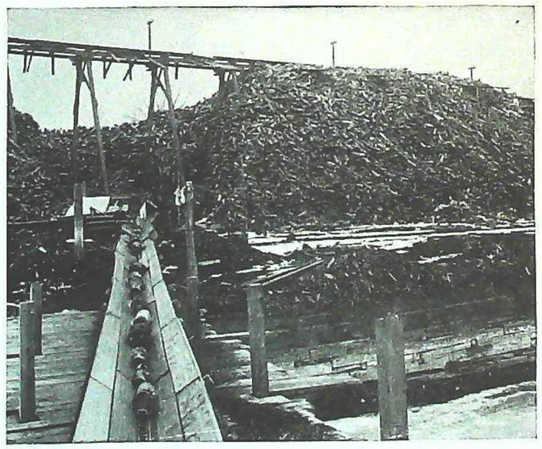
Two or More Strands of Chain Spaced far Apart Make an Ideal Carrier between Mill and Yard Storage



Jeffrey Haul-up for Carrying Large Logs from Pond to Mill



Reliance Drag Chain Conveyor for Handling Refuse in Saw Mill Service

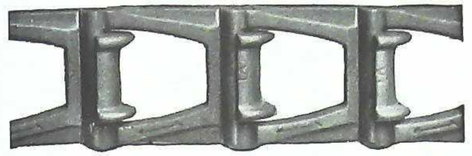


Jeffrey Chain and Cable Conveyor Show a Substantial Saving in Handling Pulpwood in Many Pulp and Paper Mills

Hy-Tech Products

Jeffrey Detachable Link Chain

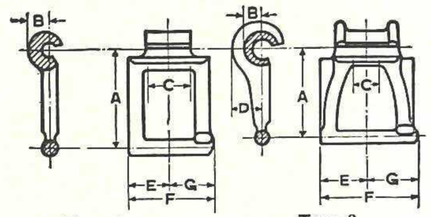
Standard Stock Sizes



Chain No.	A Pitch In.	Approx. Links in 10 Feet	Type	*Working Strength at 150 Ft. per Min. Pounds	†Max. Speed in Feet per Minute	Average Ultimate Strength Pounds	Sprocket No.	Approx. Wt. Lbs. per Foot	Price Plain Chain per Foot
25	.902	133	1	120	700	700	25	.24	$.17
32	1.154	104	1	185	700	1100	32	.32	.17
33	1.394	86	1	200	700	1190	33	.32	.16
34	1.398	86	1	215	700	1300	34	.40	.18
42	1.375	88	1	250	700	1500	42	.55	.19
45	1.630	74	1	265	700	1600	45	.52	.18
50	1.380	87	1	390	700	1900	50	.71	.22
51	1.155	104	1	315	700	1900	51	.70	.24
52	1.506	80	1	385	700	2300	52	.80	.23
55	1.631	74	1	370	700	2200	55	.70	.20
57	2.308	52	1	470	700	2800	57	.87	.26
62	1.654	73	1	515	700	3100	62	1.04	.27
67	2.308	52	2	555	600	3300	57	1.15	.30
75	2.609	46	1	670	600	4000	88	1.34	.33
77	2.297	52	2	600	600	3600	77	1.45	.35
78	2.609	46	2	815	600	4900	88	1.86	.44
85	4.000	30	2	1265	500	7600	102**	2.47	.62
88	2.609	46	2	960	600	5750	88	2.30	.50
95	3.967	30	2	1450	500	8700	95	2.90	.68
103	3.075	39	2	1600	500	9600	103	4.00	.73
108	4.720	25½	2	1650	400	9900	108	3.48	.80
114	3.250	37	2	1835	500	11000	114	5.25	.92
124	4.063	30	2	2115	400	15000	124	6.40	1.08

**B Her.

Plain Chain

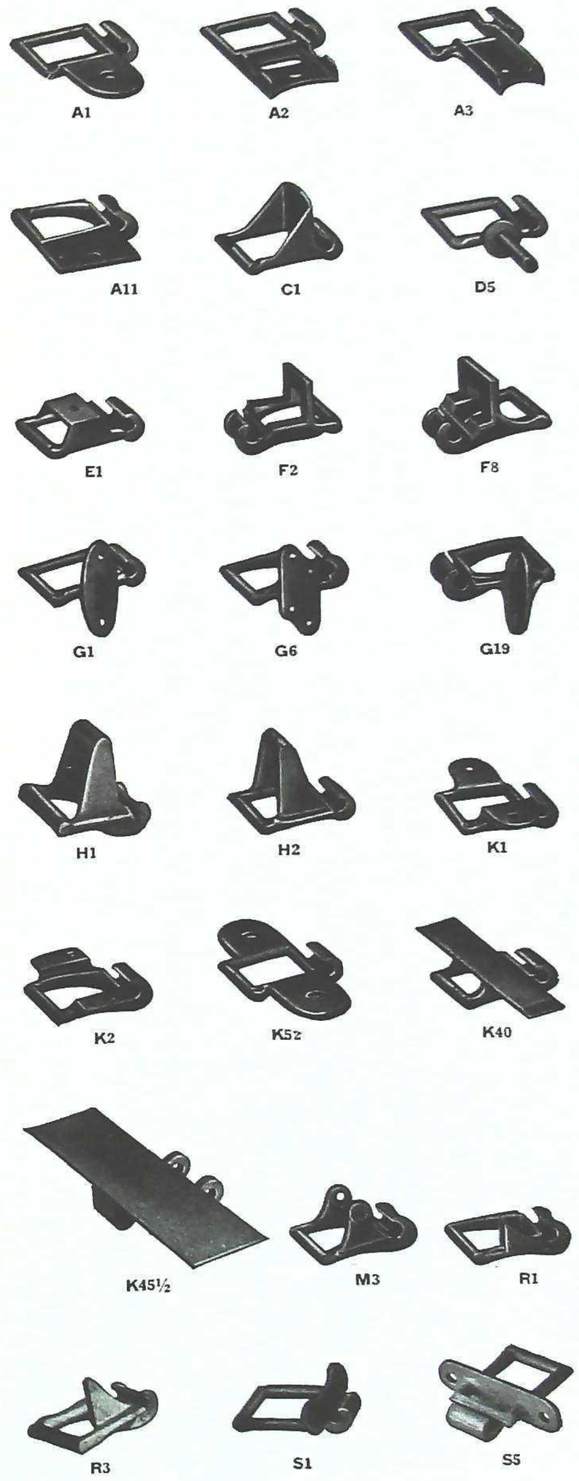


Type 1 Type 2

Chain No.	Dimensions, Inches B	C	D	E	F	G
25	.203	3/8	....	3/8	25/32	13/32
32	.250	1/2	....	15/32	31/32	1/2
33	.234	1/2	....	1/2	1 1/32	17/32
34	.266	1/2	....	9/16	1 5/32	19/32
42	.281	5/8	....	5/8	1 9/32	21/32
45	.297	11/16	....	5/8	1 5/16	11/16
50	.312	5/8	....	21/32	1 11/32	11/16
51	.359	9/16	....	19/32	1 1/4	21/32
52	.344	5/8	....	3/4	1 17/32	25/32
55	.359	11/16	....	21/32	1 13/32	3/4
57	.406	3/4	....	7/8	1 13/16	15/16
62	.406	11/16	....	25/32	1 21/32	7/8
67	.406	11/16	17/32	1	2 1/32	1 1/32
75	.438	15/16	....	1 1/32	2 3/32	1 1/16
77	.359	11/16	39/64	1 1/16	2 1/32	1 5/32
78	.438	15/16	21/32	1 1/4	2 5/8	1 3/8
85	.484	1 7/8	13/16	2 1/16	4 7/32	2 5/32
88	.438	15/16	53/64	1 5/16	2 3/4	1 7/16
95	.516	1 7/8	1	2 1/16	4 1/4	2 3/16
103	.609	1 1/8	1	1 9/16	3 9/32	1 23/32
108	.563	2 3/8	1	2 13/32	4 15/16	2 17/32
114	.813	1 1/8	1 11/64	1 5/8	3 15/32	1 27/32
124	.859	1 1/4	1 3/8	1 31/32	4 1/16	2 3/32

*Strengths increased or decreased for speeds other than 150 feet per minute. †Economical speeds are ½ maximum speeds.

Jeffrey Attachments for Detachable Chains



Jeffrey Attachments for Detachable Chain

No. 25

Attach. No.	Price per Foot
A1	$.36
C1	.39
D3	.60
E	.46
H2	.42
K1	.40
M1	50
S1	.70

No. 32

Attach. No.	Price per Foot
A1	$.36
C1	.39
D3	.64
E1	.40
K1	.43
K5	.50
M1	.90

No. 33

Attach. No.	Price per Foot
A1	$.42
E1	.34
K1	.37
K3	.80
K5	.46
S1	.40

No. 34

Attach. No.	Price per Foot
A1	$.43
C1	.48
C2	.45
E1	.40
K1	.41

No. 35

Attach. No.	Price per Foot
A1	$.38
C1	.44
E1	.38
K1	.46

No. 042

Attach. No.	Price per Foot
A1	$.54

No. 42

Attach. No.	Price per Foot
A1	$.35
A3	.70
C1	.44
E1	.46
G27	.64
K1	.42
K5	.60
K6	.80
S1	.43

No. 44

Attach. No.	Price per Foot
A3	$.56

No. 45

Attach. No.	Price per Foot
A1	$.35
A2	.52
A3	.56
A14	.64
A37LA	.56
C1	.37
C15	.56
C27	.72
D3	.70
D5	.62
E1	.31
F2	.46
G1	.68
G27	.56

No. 45 Cont.

Attach. No.	Price per Foot
H2	$.74
K1	.39
K1 Cplrs. pair	.38
K3	.80
K5	.50
K40	.65
K44	.58
K45½	1.15
K48	.70
L2	.36
M1	.70
S1	.40
S5	.50
Scraper 22 ea.	.14
Scraper 27 ea.	.16

No. 47

Attach. No.	Price per Foot
C5	$.56
C33	.60

No. 48

Attach. No.	Price per Foot
A3	$.52
K1	.78

No. 50

Attach. No.	Price per Foot
K3½	$.92

No. 51

Attach. No.	Price per Foot
A1	$.62
K1	.70
K5	.78
S1	.74

No. 52

Attach. No.	Price per Foot
A1	$.42
A3	.66
C1	.54
E1	.60
F2	.59
G1	.70
K1	.50
K5	.64
K9	.70

No. 55

Attach. No.	Price per Foot
A1	$.37
A2	.58
A3	.58
C1	.38
C8	.76
D5	.68
D42	.60
D43	.78
E1	.35
F2	.52
G27	.62
K1	.42
K5	.62
K45½	.94
K52	.64
L2	.46
L21	.42
M1	.72
S1	.45
S5	.45
Scraper 19 ea.	.22
Scraper 20 ea.	.18

No. 057

Attach. No.	Price per Foot
L3	$.46

No. 57

Attach. No.	Price per Foot
A1	$.41
D5	.68
E1	.50
F2	.63
H2	.80
K1	.51

No. 62

Attach. No.	Price per Foot
A1	$.48
A3	.74
A12	.72
C1	.50
C8	.94
D5	.74
G27	.68
K1	.54
K5	.68
K40	.80
M17	.80
S1	.66

No. 62½

Attach. No.	Price per Foot
A3	$.74

No. 66

Attach. No.	Price per Foot
C1	$.70
K1	.80

No. 67

Attach. No.	Price per Foot
A1	$.51
D5	.76
E1	.70
F2	.65
G1	.80
K1	.58
K3	1.10

No. 75

Attach. No.	Price per Foot
D5	$.86
F2	.70
G1	.90
H1	.70
K1	.57
R1	.50

No. 77

Attach. No.	Price per Foot
A1	$.56
A113	.72
D5	.76
E1	.64
F2	.78
G1	.66
G6	.88
H1	.94
K1	.66
M3	.92
R3	.64

No. 78

Attach. No.	Price per Foot
A1	$.86
A3	1.10
A11	.76
D5	1.20
E1	.80
F2	.84
G1	.96
G6	1.00
G19	1.00
H1	1.24
H2	1.20

No. 78 Cont.

Attach. No.	Price per Foot
K1	$.66
M3	1.20
R1	.58

No. 83

Attach. No.	Price per Foot
D5	$1.10
K1	.96
M3	1.20

No. 85

Attach. No.	Price per Foot
F2	$1.46
K2	1.02

No. 88

Attach. No.	Price per Foot
A3	$1.24
A11	.78
DK	1.40
D5	1.36
E1	.94
F2	.94
F8	1.10
G1	1.10
G6	1.10
G19	1.20
H1	1.30
K1	.78
M3	1.54
R1	.68

No. 95

Attach. No.	Price per Foot
F2	$1.60
K2	1.12

No. 103

Attach. No.	Price per Foot
A4	$1.30
A11	1.40
D5	1.70
F2	1.30
F8	1.52
G6	1.40
G19	1.60
H1	1.50
H2	1.30
K1	1.12
K2	1.16
L2	2.00
M3	1.90

No. 104½

Attach. No.	Price per Foot
F2	$1.90
K2	2.00

No. 108

Attach. No.	Price per Foot
F2	$1.70
K2	1.16

No. 114

Attach. No.	Price per Foot
DD	$2.30
F8	1.90
K1	1.50
K2	1.70

No. 122

Attach. No.	Price per Foot
K2	$2.50

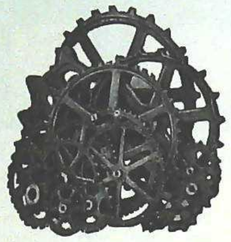
No. 124

Attach. No.	Price per Foot
F2	$2.50
F8	2.36
G6	2.40
K1	1.90

Bold face type indicates stock sizes.

Jeffrey Standard Sprocket Wheels

Bored, Keyseated and Set-screwed



Give the following information when ordering sprockets: Speed and size of shafts; kind and amount of power; distance between shaft centers; clearance about shafts and sprockets.

Give the following information when ordering from the catalogue: Pitch diameter, inches; number of teeth; chain number and kind; pattern No.; shaft sizes; if hubs are special, give sketch; driving, driven, or perfect; keyseated or set-screwed (or both); keyway (unless Jeffrey standard).

Cast iron furnished when not specified. Plain cast iron teeth furnished unless specified chilled. Hubs and rim furnished not split unless specified.

A driving sprocket, marked DG on casting, is made to transfer power from the wheel to the chain; a driven sprocket, marked DN on casting, to transfer power from the chain to the wheel—a perfect sprocket marked PER on casting can be used either as a driving or driven sprocket.

A driving sprocket is ordinarily made somewhat larger than an exact fit to the chain, while a driven sprocket is made slightly smaller.

In the case of both driving and driven sprockets, but one tooth at a time takes the chain pull and transfers it to each successive tooth as the wheel rotates—and this tooth is the one just in the act of leaving the chain.

Standard Hubs

Hubs of suitable diameter, as determined by long experience, are furnished to conform to the bore of the wheel.

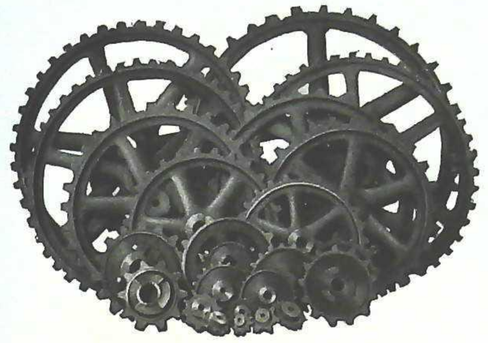
If for any reason hubs should be specified larger than standard, an extra charge for this will be made, base on additional cost.

The following table covers dimensions of hubs for sprockets, gears and transmission pulleys.

Bore Inches	Hub, Inches: Diam.	Hub, Inches: Length	Diam. Set Screw Inches	Key, Inches: Width	Key, Inches: Thickness
15/16	2	2	3/8	1/4	1/4
1 3/16	2 1/2	2 1/2	1/2	5/16	5/16
1 7/16	3	3	1/2	3/8	3/8
1 11/16	3 1/2	3 1/2	5/8	7/16	7/16
1 15/16	3 3/4	4	5/8	1/2	1/2
2 3/16	4	4 1/2	5/8	9/16	9/16
2 7/16	4 1/2	4 3/4	5/8	5/8	5/8
2 11/16	4 3/4	4 3/4	5/8	11/16	11/16
2 15/16	5 1/4	5	3/4	3/4	3/4
3 7/16	6	5 1/4	3/4	7/8	7/8
3 15/16	6 3/4	6	7/8	1	1
4 7/16	7 1/2	6 3/4	7/8	1 1/8	1 1/8
4 11/16	7 3/4	7 1/4	7/8	1 1/8	1 1/8
4 15/16	8 1/4	7 1/2	7/8	1 1/4	1 1/4
5 3/16	8 1/2	8	7/8	1 1/4	1 1/4
5 7/16	9 1/4	8 1/4	7/8	1 3/8	1 3/8
5 15/16	10	9	1	1 1/2	1 1/2
6 1/2	10 1/2	9 3/4	1	1 5/8	1 1/2
7	11 1/2	10 1/2	1	1 3/4	1 5/8
7 1/2	12	11 1/4	1	1 3/4	1 5/8
8	12 3/4	12	1	2	1 3/4
8 1/2	13 1/4	12 3/4	1	2	1 3/4
9	14 1/2	13 1/2	1 1/4	2 1/4	1 7/8
9 1/2	15	14 1/4	1 1/4	2 1/4	1 7/8

Sprocket Wheels

Bored and Set-Screwed or Key-Seated



Nos. 25 and 31

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
1 1/4	4	5/8	‡$2.00
T 1 1/2	5	5/8	‡2.05
T 1 3/4	6	3/4	‡2.10
T 2	7	3/4	‡2.15
T 2 1/4	8	3/4	‡2.20
T 2 1/2	9	3/4	‡2.25
T 3	10	1 3/16	‡2.30
T 3 1/4	11	1 3/16	‡2.35
T 3 1/2	12	1 3/16	‡2.40
T 3 3/4	13	1 3/16	‡2.50
T 4	14	1 3/16	‡2.60
T 4 1/4	15	1 3/16	‡2.70
T 4 1/2	16	1 7/16	‡2.80
T 5	17	1 7/16	‡2.90
T 5 1/4	18	1 7/16	‡3.00
T 5 1/2	19	1 7/16	‡3.10
T 5 3/4	20	1 7/16	‡3.20
T 6	21	1 7/16	‡3.30
T 6 1/4	22	1 7/16	‡3.40
T 6 3/4	23	1 7/16	3.50
T 7	24	1 7/16	‡3.60
T 7 1/4	25	1 7/16	3.70
T 7 1/2	26	1 7/16	‡3.80
T 7 3/4	27	1 7/16	3.90
T 8	28	1 7/16	‡4.00
T 8 3/4	30	1 7/16	4.20
9	31	1 7/16	4.30
T 9 1/4	32	1 7/16	4.40
T 9 1/2	33	1 7/16	4.50
9 3/4	34	1 7/16	4.60
T10	35	1 7/16	4.70
T10 1/4	36	1 7/16	4.80
10 3/4	37	1 7/16	4.90
11	38	1 7/16	5.00
11 1/2	40	1 7/16	5.20
T12	42	1 7/16	5.50
12 1/2	43	1 7/16	5.60
12 3/4	44	1 7/16	5.70
13	45	1 7/16	5.80

Nos. 25 and 31—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
T13 3/4	48	1 7/16	$6.10
14 1/2	50	1 7/16	6.40
15	52	1 7/16	6.60
15 1/2	54	1 7/16	6.80
T16	56	1 7/16	7.00
17 1/4	60	1 7/16	7.50
T18 1/4	64	1 7/16	8.00
T20	70	1 7/16	9.00

No. 32

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
1 1/2	4	1/2	‡$2.20
T 2	5	5/8	‡2.30
T 2 1/4	6	3/4	‡2.40
T 2 1/2	7	3/4	‡2.50
T 3	8	1 3/16	‡2.60
T 3 1/4	9	1 3/16	‡2.70
T 3 3/4	10	1 3/16	‡2.80
T 4	11	1 3/16	‡2.90
T 4 1/2	12	1 7/16	‡3.00
T 4 3/4	13	1 7/16	‡3.10
T 5 1/4	14	1 7/16	‡3.20
T 5 3/4	16	1 7/16	‡3.40
T 6 1/4	17	1 7/16	‡3.50
T 6 3/4	18	1 7/16	‡3.60
7	19	1 7/16	3.80
T 7 1/2	20	1 7/16	‡4.00
T 7 3/4	21	1 7/16	‡4.10
T 8	22	1 7/16	‡4.20
T 8 1/2	23	1 7/16	4.30
T 8 3/4	24	1 7/16	‡4.40
T 9 1/4	25	1 7/16	‡4.50
T 9 1/2	26	1 7/16	4.60
T10	27	1 7/16	4.80
T10 1/4	28	1 7/16	‡5.00
T11	30	1 7/16	5.30

‡Regularly furnished plate center at price listed.

Sprocket Wheels

Bored and Set-Screwed or Key-Seated
Continued

No. 32—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
T11 3/4	32	1 7/16	$5.60
T12	33	1 7/16	5.70
12 1/4	34	1 7/16	5.90
T13 1/4	36	1 7/16	6.20
T14	38	1 7/16	6.50
T14 3/4	40	1 7/16	6.80
T16 1/4	44	1 7/16	7.40
T16 1/2	45	1 7/16	7.60
17 3/4	48	1 7/16	8.20
22	60	1 7/16	10.60

Nos. 33 and 34

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
T 2 3/4	6	15/16	‡$2.60
T 3 1/4	7	15/16	‡2.70
T 3 1/2	8	1 3/16	‡2.80
T 4	9	1 3/16	‡2.90
T 4 1/2	10	1 7/16	‡3.00
T 5	11	1 7/16	‡3.10
T 5 1/2	12	1 7/16	‡3.30
T 6	13	1 7/16	‡3.45
T 6 1/4	14	1 7/16	‡3.60
T 6 3/4	15	1 7/16	‡3.80
T 7 1/4	16	1 7/16	4.00
8	18	1 7/16	4.30
T 8 1/2	19	1 7/16	4.50
9	20	1 7/16	4.70
T 9 3/4	22	1 7/16	5.00
10 1/4	23	1 7/16	5.20
T10 3/4	24	1 7/16	5.40
T11 1/4	25	1 7/16	5.60
11 1/2	26	1 7/16	5.80
T12	27	1 7/16	6.00
T13	29	1 7/16	6.40
T13 1/2	30	1 7/16	6.60
T14 1/4	32	1 7/16	7.00
T14 3/4	33	1 7/16	7.20
T15 1/4	34	1 7/16	7.40
T16	36	1 7/16	7.80
17	38	1 7/16	8.20
T18	40	1 7/16	8.50
T18 1/4	41	1 7/16	8.80
18 3/4	42	1 7/16	9.00
T24	54	1 7/16	12.00

Nos. 35, 45 and 55

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
T 2 1/4	4	15/16	‡$2.70
T 2 3/4	5	15/16	‡2.80
*T 3 1/4	6	1 3/16	‡2.90
*T 3 3/4	7	1 3/16	‡3.00
*T 4 1/4	8	1 3/16	‡3.10
T 4 3/4	9	1 3/16	‡3.20
*T 5 1/4	10	1 15/16	‡3.50
T 5 3/4	11	1 15/16	‡3.70
*T 6 1/4	12	1 15/16	4.00
*T 6 3/4	13	1 15/16	4.20
T 7 1/4	14	1 15/16	‡4.40
*T 7 3/4	15	1 15/16	‡4.70
T 8 1/4	16	1 15/16	‡4.90
*T 8 3/4	17	1 15/16	‡5.10

Nos. 35, 45 and 55—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
T 9 1/4	18	1 15/16	‡$5.40
*T 9 3/4	19	1 15/16	5.60
*T10 1/4	20	1 15/16	‡5.90
T11	21	1 15/16	6.20
T11 1/4	22	1 15/16	6.50
T12	23	1 15/16	6.80
T12 1/2	24	1 15/16	7.00
*T13	25	1 15/16	7.30
13 1/2	26	1 15/16	7.50
*T14	27	1 15/16	7.80
*T14 1/2	28	1 15/16	8.00
T15	29	1 15/16	8.30
*T15 1/2	30	1 15/16	8.50
*T16	31	1 15/16	8.80
*T16 1/2	32	1 15/16	9.00
17	33	1 15/16	9.30
T18	35	1 15/16	9.80
T18 1/2	36	1 15/16	10.10
*T19 3/4	38	1 15/16	10.60
T20 1/4	39	1 15/16	11.00
T20 3/4	40	1 15/16	11.30
T21 3/4	42	1 15/16	11.80
T22 3/4	44	1 15/16	12.40
T23 1/4	45	1 15/16	12.60
T23 3/4	46	1 15/16	12.90
*T24 3/4	48	1 15/16	13.50
T25 1/4	49	1 15/16	13.80
T25 3/4	50	1 15/16	14.00
T28	54	1 15/16	15.40
T28 1/2	55	1 15/16	15.70
T30	58	1 15/16	16.80
T31	60	1 15/16	17.60
T35 3/4	69	1 15/16	21.80

No. 42

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
T 2	5	15/16	‡$2.70
T 2 3/4	6	15/16	‡2.80
T 3 1/4	7	15/16	‡2.90
T 3 3/4	8	1 3/16	‡3.00
T 4 1/4	9	1 3/16	‡3.10
T 4 1/2	10	1 7/16	‡3.20
T 4 3/4	11	1 7/16	‡3.30
T 5 1/4	12	1 15/16	‡3.40
T 5 3/4	13	1 15/16	‡3.60
T 6	14	1 15/16	‡3.80
T 6 1/2	15	1 15/16	‡4.00
T 7	16	1 15/16	4.20
T 7 1/2	17	1 15/16	‡4.40
T 8	18	1 15/16	‡4.60
T 8 1/4	19	1 15/16	‡4.80
8 3/4	20	1 15/16	5.00
9 1/4	21	1 15/16	5.20
T 9 1/2	22	1 15/16	5.40
T10 1/2	24	1 15/16	5.80
11 1/2	26	1 15/16	6.20
T11 3/4	27	1 15/16	6.40
T12 1/4	28	1 15/16	6.60
12 3/4	29	1 15/16	6.80

Specify cast iron or chilled rim wheels.

*Only these wheels can be furnished with chilled rims.

‡Regularly furnished plate center at price listed.

Hy-Tech Products

Sprocket Wheels

Bored and Set-Screwed or Key-Seated
Continued

No. 42—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
T14	32	1 15/16	$7.40
T14 1/2	33	1 15/16	7.60
T15 3/4	36	1 15/16	8.20
T17 3/4	41	1 15/16	9.40
T20	46	1 15/16	10.60
T24	55	1 15/16	12.80

No. 51

1 3/4	5	3/4	‡$2.50
2 1/4	6	3/4	‡2.55
T 2 1/2	7	3/4	‡2.60
3	8	15/16	‡2.70
T 3 1/4	9	15/16	‡2.80
T 3 3/4	10	1 3/16	‡2.90
T 4	11	1 3/16	‡3.00
T 4 1/2	12	1 7/16	‡3.10
T 4 3/4	13	1 7/16	‡3.20
T 5	14	1 7/16	‡3.30
T 5 1/2	15	1 7/16	‡3.50
T 6	16	1 7/16	‡3.60
T 6 1/4	17	1 7/16	‡3.80
6 3/4	18	1 7/16	‡4.00
T 7	19	1 7/16	‡4.10
7 1/4	20	1 7/16	‡4.20
7 3/4	21	1 7/16	‡4.40
T 8	22	1 7/16	‡4.60
9	24	1 15/16	‡4.90
T 9 1/4	25	1 15/16	‡5.00
9 1/2	26	1 15/16	5.20
T10	27	1 15/16	5.40
T10 1/4	28	1 15/16	‡5.50
10 1/2	29	1 15/16	5.60
T11	30	1 15/16	‡5.80
11 1/2	31	1 15/16	6.00
T12	33	1 15/16	6.40
T13 1/4	36	1 15/16	6.80
T14	39	1 15/16	7.20
T14 1/2	40	1 15/16	7.40
T15 1/2	42	1 15/16	7.80
16	44	1 15/16	8.20
16 1/2	45	1 15/16	8.40
17	46	1 15/16	8.60
18 1/4	50	1 15/16	9.40
20 1/4	56	1 15/16	10.60
22	58	1 15/16	11.00

No. 52

T 3	6	15/16	‡$2.80
*T 3 1/2	7	15/16	‡2.90
T 3 3/4	8	1 3/16	‡3.00
*T 4 1/4	9	1 3/16	‡3.10
T 4 3/4	10	1 7/16	‡3.30
T 5 1/4	11	1 7/16	‡3.50
T 5 3/4	12	1 7/16	‡3.70
T 6 1/4	13	1 7/16	‡4.00
T 6 3/4	14	1 7/16	‡4.20
7 1/4	15	1 7/16	‡4.40
*T 7 3/4	16	1 7/16	‡4.70
T 8 1/4	17	1 7/16	‡4.90

No. 52—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
*T 8 3/4	18	1 15/16	‡$5.10
*T 9	19	1 15/16	‡5.30
*T 9 1/2	20	1 15/16	‡5.50
*T10	21	1 15/16	‡5.80
*T10 1/2	22	1 15/16	6.00
T11	23	1 15/16	6.30
T11 1/2	24	1 15/16	6.50
T12	25	1 15/16	6.80
T12 1/2	26	1 15/16	7.00
13	27	1 15/16	7.30
T13 1/2	28	1 15/16	7.50
T14 1/4	30	1 15/16	8.00
14 3/4	31	1 15/16	8.20
T15 1/4	32	1 15/16	8.40
15 3/4	33	1 15/16	8.70
T16 1/4	34	1 15/16	8.90
T16 3/4	35	1 15/16	9.20
17 1/4	36	1 15/16	9.40
T17 3/4	37	1 15/16	9.60
T18 1/4	38	1 15/16	9.90
18 3/4	39	1 15/16	10.20
T19 1/4	40	1 15/16	10.50
T20	42	1 15/16	11.00
21	44	1 15/16	11.40
T22	46	1 15/16	11.80
22 1/2	47	1 15/16	12.10
23	48	1 15/16	12.40
T23 1/2	49	1 15/16	12.60
T24	50	1 15/16	12.90
T24 1/2	51	1 15/16	13.20
T25	52	1 15/16	13.50
26	54	1 15/16	14.00
26 1/2	55	1 15/16	14.30
T28 3/4	60	1 15/16	15.60
T30 1/2	64	1 15/16	17.00
T36	65	1 15/16	22.00

Nos. 57, 67, 77

T 4	5	15/16	‡$3.20
*T 4 3/4	6	1 3/16	‡3.50
*T 5 1/4	7	1 3/16	‡3.80
*T 6	8	1 11/16	‡4.20
*T 6 3/4	9	1 11/16	‡4.60
*T 7 1/2	10	1 15/16	‡5.00
*T 8 1/4	11	1 15/16	‡5.40
*T 9	12	1 15/16	‡5.80
*T 9 1/2	13	1 15/16	‡6.20
*T10 1/4	14	2 7/16	‡6.60
*T11	15	2 7/16	‡7.00
*T11 3/4	16	2 7/16	‡7.40
*T12 1/2	17	2 7/16	7.80
*T13 1/4	18	2 7/16	‡8.20
*T14	19	2 7/16	8.60
*T14 3/4	20	2 7/16	9.00
*T15 1/2	21	2 7/16	9.40
*T16 1/4	22	2 7/16	9.80
*T17	23	2 7/16	10.20
*T17 3/4	24	2 7/16	10.60

Specify cast iron or chilled rim wheels.

*Only these wheels can be furnished with chilled rims.

‡Regularly furnished plate center at price listed.

Sprocket Wheels

Bored and Set-Screwed or Key-Seated
Continued

Nos. 57, 67, 77—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
*T18 3/4	25	2 7/16	$11.00
*T19	26	2 7/16	11.40
*T19 3/4	27	2 7/16	11.80
*T20 1/2	28	2 7/16	12.20
T22	30	2 7/16	13.00
T23 1/2	32	2 7/16	13.80
*T24 1/4	33	2 7/16	14.40
*T25	34	2 7/16	15.00
*T25 3/4	35	2 7/16	15.60
*T26 1/2	36	2 7/16	16.20
27 1/4	37	2 7/16	16.80
*T28	38	2 7/16	17.40
T29 1/4	40	2 7/16	18.60
T30	41	2 7/16	19.20
T31 1/2	43	2 7/16	20.40
*T32 1/4	44	2 7/16	21.00
T35 1/4	48	2 7/16	23.40
*T36	49	2 7/16	24.00
T38	52	2 7/16	26.40
T39 3/4	54	2 7/16	28.00
*T41	56	2 7/16	29.60
T43	59	2 7/16	31.00
*T44	60	2 7/16	‡32.00
T47	64	2 7/16	36.60
T56	77	2 7/16	49.00

No. 62

*T 3 3/4	7	15/16	‡$3.60
*T 4 1/4	8	15/16	‡3.80
*T 4 3/4	9	15/16	‡4.00
*T 5 1/4	10	1 7/16	‡4.20
*T 5 3/4	11	1 7/16	‡4.40
*T 6 1/4	12	1 11/16	‡4.70
T 6 3/4	13	1 11/16	‡5.00
*T 7 1/2	14	1 15/16	‡5.30
*T 8	15	1 15/16	‡5.60
*T 8 1/2	16	1 15/16	‡5.80
T 9	17	1 15/16	‡6.10
*T 9 1/2	18	1 15/16	‡6.30
T10	19	1 15/16	6.60
*T10 1/2	20	2 7/16	‡6.90
T11	21	2 7/16	7.10
*T11 1/2	22	2 7/16	7.40
*T12 1/4	23	2 7/16	7.70
T12 3/4	24	2 7/16	8.00
*T13 1/4	25	2 7/16	8.30
*T13 3/4	26	2 7/16	8.60
14 1/4	27	2 7/16	8.90
*T14 3/4	28	2 7/16	9.20
*T15 3/4	30	2 7/16	9.80
*T16 3/4	32	2 7/16	10.40
*T18	34	2 7/16	11.10
*T19	36	2 7/16	11.70
*T20	38	2 7/16	12.30
21	39	2 7/16	12.60
T21 1/2	41	2 7/16	13.20
22 1/4	42	2 7/16	13.60
T23	43	2 7/16	14.00

No. 62—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
T23 3/4	45	2 7/16	$14.40
24 1/4	46	2 7/16	14.80
25 1/4	48	2 7/16	15.40
T25 3/4	49	2 7/16	15.80
28 1/2	54	2 7/16	17.80
T30 1/2	58	2 7/16	19.40
T31 1/2	60	2 7/16	20.20

No. 66

4	6	15/16	‡$3.80
4 3/4	7	15/16	‡4.00
T 5 1/4	8	1 7/16	‡4.20
T 5 3/4	9	1 7/16	‡4.40
6 1/2	10	1 11/16	‡4.70
7	11	1 11/16	‡5.00
T 7 3/4	12	1 15/16	‡5.30
8 1/2	13	1 15/16	‡5.70
9	14	1 15/16	‡6.10
9 3/4	15	1 15/16	‡6.50
T10 1/4	16	2 7/16	‡6.80
11 1/2	18	2 7/16	7.40
T12 1/4	19	2 7/16	7.80
16 1/4	25	2 7/16	10.00
19 1/4	30	2 7/16	12.00
23	36	2 7/16	14.40
T23 1/2	37	2 7/16	14.80
28 1/2	44	2 7/16	17.60
33 1/4	52	2 7/16	21.60
34 3/4	54	2 7/16	23.20

No. 72

5 3/4	8	1 7/16	‡$3.90
6 5/8	10	1 11/16	‡4.50
8	12	1 15/16	‡5.30
T 9 1/2	15	1 15/16	‡6.50
20 1/4	31	2 7/16	12.00
23 1/2	36	2 7/16	14.00
26	40	2 7/16	15.60

Nos. 75, 78, 88, 88 1/2

*T 4 1/4	5	1 3/16	‡$3.80
*T 5 1/4	6	1 7/16	‡4.20
*T 6	7	1 7/16	‡4.60
*T 6 3/4	8	1 15/16	‡5.00
*T 7 1/2	9	1 15/16	‡5.50
*T 8 1/4	10	1 15/16	‡6.00
*T 9 1/4	11	1 15/16	‡6.50
*T10	12	2 7/16	‡7.00
*T10 3/4	13	2 7/16	‡7.50
*T11 3/4	14	2 15/16	‡8.00
*T12 1/2	15	2 15/16	8.50
*T13 1/4	16	2 15/16	‡9.00
*T14 1/4	17	2 15/16	9.50
*T15	18	2 15/16	10.00
*T15 3/4	19	2 15/16	10.50
*T16 3/4	20	2 15/16	11.00
*T17 1/2	21	2 15/16	11.50
*T18 1/4	22	2 15/16	12.00
*T19	23	2 15/16	12.50
*T20	24	2 15/16	13.00

Specify cast iron or chilled rim wheels.

*Only these wheels can be furnished with chilled rims.

‡Regularly furnished plate center at price listed.

Sprocket Wheels

Bored and Set-Screwed or Key-Seated
Continued

Nos. 75, 78, 88, 88 1/2—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
*T20 3/4	25	2 15/16	$13.50
*T21 3/4	26	2 15/16	14.00
*T22 1/2	27	2 15/16	14.50
*T23 1/4	28	2 15/16	15.00
*T24 1/4	29	2 15/16	15.50
*T25	30	2 15/16	16.00
*T25 3/4	31	2 15/16	16.60
*T26 3/4	32	2 15/16	17.20
T27 1/2	33	2 15/16	18.00
*T28 1/4	34	2 15/16	18.80
*T29 1/4	35	2 15/16	19.60
*T30	36	2 15/16	20.40
*T30 3/4	37	2 15/16	21.20
*T31 1/2	38	2 15/16	22.00
*T32 1/2	39	2 15/16	22.80
*T33 1/4	40	2 15/16	23.60
T35	42	2 15/16	25.20
*T35 3/4	43	2 15/16	26.00
*T36 1/2	44	2 15/16	26.80
*T38 1/4	46	2 15/16	28.60
T40	48	2 15/16	30.60
*T40 3/4	49	2 15/16	31.60
*T41 1/2	50	2 15/16	32.60
43 1/4	52	2 15/16	34.80
T45	54	2 15/16	37.20
47 1/4	57	3 1/16	40.80
*T48	58	3 1/16	42.20
T50	60	3 1/16	45.00
*T64	77	3 1/16	74.00

No. 83

11 3/4	8	2 7/16	$8.00
15 1/2	12	2 15/16	10.40
T16 3/4	13	2 15/16	11.20
18	14	2 15/16	11.80
T20 1/2	16	2 15/16	13.40
23	18	2 15/16	15.00
24 1/4	19	2 15/16	16.00
25 1/2	20	2 15/16	17.00
28	22	2 15/16	19.00
30 3/4	24	2 15/16	21.60
34 1/2	27	2 15/16	25.50
40 3/4	32	2 15/16	33.40
51	40	2 15/16	50.00

No. 85

*T 8	6	2 7/16	‡$7.40
9 1/4	7	2 7/16	‡8.20
T10 1/2	8	2 15/16	‡9.00
T11 3/4	9	2 15/16	‡9.80
T13	10	2 15/16	‡10.80
*T14 1/4	11	2 15/16	‡11.80
*T15 1/2	12	2 15/16	‡12.80
T16 3/4	13	2 15/16	13.80
*T18	14	2 15/16	14.80
*T19	15	2 15/16	‡15.80
*T20 1/2	16	2 15/16	16.80
23	18	2 15/16	19.20
T24 1/4	19	2 15/16	20.40
*T25 3/4	20	2 15/16	21.60
T26 3/4	21	2 15/16	23.80

No. 85—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
28	22	2 15/16	$24.00
T30 1/2	24	2 15/16	26.80
32	25	2 15/16	28.20
33	26	2 15/16	29.60
34 1/2	27	2 15/16	31.20
*T35 3/4	28	2 15/16	32.80
35 3/4	28	2 15/16	32.80
40 3/4	32	2 15/16	40.00
48 1/2	38	2 15/16	51.60

No. 103

T 5 1/4	5	1 15/16	$4.20
T 6	6	1 15/16	‡4.80
*T 7	7	1 15/16	5.40
*T 8	8	2 7/16	‡6.00
*T 9	9	2 7/16	‡6.60
*T10	10	2 15/16	‡7.20
*T11	11	2 15/16	‡7.80
*T11 3/4	12	2 15/16	‡8.40
*T12 3/4	13	2 15/16	‡9.00
*T13 3/4	14	2 15/16	‡9.60
*T14 3/4	15	2 15/16	‡10.20
*T15 3/4	16	2 15/16	‡10.80
*T16 3/4	17	2 15/16	11.40
*T17 1/2	18	2 15/16	‡12.00
*T18 3/4	19	2 15/16	12.60
*T19 1/2	20	2 15/16	13.20
*T20 1/2	21	2 15/16	13.80
*T21 1/2	22	2 15/16	14.40
*T22 1/2	23	2 15/16	15.00
*T23 1/2	24	2 15/16	15.60
*T25 1/2	25	2 15/16	16.40
*T26 1/2	26	2 15/16	17.20
*T27 1/2	27	2 15/16	18.00
*T28 1/2	29	2 15/16	19.80
*T29 1/4	30	2 15/16	20.80
*T30 1/4	31	2 15/16	21.80

Specify cast iron or chilled rim wheels.

*Only these wheels can be furnished with chilled rims.

‡Regularly furnished plate center at price listed.

Sprocket Wheels

Bored and Set-Screwed or Key-Seated
Concluded

No. 103—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
*T31 1/4	32	2 15/16	$22.80
*T32 1/2	33	2 15/16	23.80
*T33 1/4	34	3 1/16	25.00
*T34 1/4	35	3 1/16	26.50
*T35 1/4	36	3 1/16	28.00
T36 1/4	37	3 1/16	29.50
*T37 1/4	38	3 1/16	31.00
*T39 1/4	40	3 1/16	34.00
T40 1/2	41	3 1/16	35.50
*T41	42	3 1/16	37.00
43	44	3 1/16	40.00
*T44 1/4	45	3 1/16	41.50
*T45	46	3 1/16	43.00
47	48	3 1/16	46.00
*T48	49	3 1/16	47.50
*T53	54	3 15/16	56.00
*T57	58	3 15/16	64.00
*T58 3/4	60	3 15/16	68.00
*T60	61	3 15/16	69.00
T61 1/2	63	3 15/16	‡71.00
*T66	67	3 15/16	82.00

Nos. 108 and 110

9 1/2	6	2 15/16	‡$9.80
*T12 1/4	8	2 15/16	‡11.80
T13 3/4	9	2 15/16	‡13.00
15 1/4	10	2 15/16	‡14.20
*T16 3/4	11	2 15/16	15.40
*T18 1/4	12	2 15/16	16.60
*T19 3/4	13	2 15/16	18.00
*T21 1/4	14	2 15/16	19.40
22 3/4	15	2 15/16	21.00
*T24 1/4	16	3 1/16	22.60
*T27 1/4	18	3 1/16	25.80
*T30 1/4	20	3 1/16	29.00
T36	24	3 1/16	36.20
T42	28	3 1/16	45.00
45	30	3 1/16	49.40
*T48	32	3 1/16	54.40

No. 114

7 1/2	7	2 3/16	‡$6.60
*T 8 1/2	8	2 7/16	‡7.00
9 1/2	9	2 7/16	‡7.60
*T10 1/2	10	2 7/16	‡8.20
T11 1/2	11	2 7/16	‡8.80
*T12 1/2	12	2 15/16	‡9.40
*T13 3/4	13	2 15/16	‡10.00
*T14 3/4	14	2 15/16	‡10.60
*T15 3/4	15	2 15/16	11.30
*T16 3/4	16	2 15/16	12.00
T17 3/4	17	2 15/16	12.70
*T18 3/4	18	2 15/16	13.40
*T19 3/4	19	2 15/16	14.20
*T20 3/4	20	2 15/16	15.00
T22	21	2 15/16	15.80
23	22	3 1/16	16.60
T24	23	3 1/16	17.40
T25	24	3 1/16	18.40
T26 3/4	26	3 1/16	20.40
*T31 1/4	30	3 1/16	24.60
*T33	32	3 1/16	27.00

No. 114—Cont.

Pitch Diam. In.	No. Teeth	Largest Bore In. at Regular Price	Price Each
*T35	34	3 1/16	$30.00
T36	35	3 1/16	31.50
37 1/2	36	3 1/16	33.00
T39 1/2	38	3 1/16	36.20
42 1/2	41	3 1/16	41.00
47 1/2	46	3 15/16	49.00
T48 1/2	47	3 15/16	50.60
49 1/2	48	3 15/16	52.20
T59	57	3 15/16	77.00
62	60	3 15/16	86.00

No. 122

T12	6	2 15/16	‡$14.00
*T13 3/4	7	2 15/16	‡15.80
*T15 3/4	8	3 1/16	‡17.20
*T17 1/2	9	3 1/16	‡19.20
*T19 3/4	10	3 1/16	‡21.40
*T21 1/2	11	3 1/16	23.60
*T23	12	3 1/16	22.60
*T25 1/2	13	3 1/16	28.80
27 1/2	14	3 1/16	31.40
*T29 1/2	15	3 1/16	34.00
*T31 1/2	16	3 1/16	36.60
35 1/4	18	3 15/16	45.40
*T36 1/2	19	3 15/16	49.80
40 3/4	21	3 15/16	58.60
42 1/2	22	3 15/16	63.00

No. 124

*T 9 1/2	7	2 15/16	‡$9.00
*T10 1/2	8	2 15/16	‡10.00
*T11 3/4	9	2 15/16	‡11.00
*T13	10	3 1/16	‡12.00
*T14 1/2	11	3 1/16	‡13.00
*T15 3/4	12	3 1/16	‡14.00
T17	13	3 1/16	‡15.00
*T18 1/4	14	3 1/16	‡16.00
*T19 1/2	15	3 1/16	17.20
*T20 3/4	16	3 1/16	18.40
*T22	17	3 1/16	19.60
*T23	18	3 1/16	20.80
*T24 1/2	19	3 1/16	22.00
*T26	20	3 1/16	23.20
T28 1/2	22	3 1/16	25.60
*T30	23	3 1/16	26.80
*T31	24	3 1/16	28.40
32 1/2	25	3 1/16	30.00
T33 3/4	26	3 1/16	31.60
35	27	3 1/16	33.20
*T36 1/4	28	3 15/16	34.80
39	30	3 15/16	38.00
*T41 1/2	32	3 15/16	41.60
*T44	34	3 15/16	45.20
47	36	3 15/16	49.20
48	37	3 15/16	51.40
*T49 1/4	38	3 15/16	53.60
T50 1/2	39	3 15/16	56.00
51 3/4	40	3 15/16	58.40
*T59 1/2	46	4 15/16	82.00
62	48	4 15/16	90.00
72 1/2	56	4 15/16	122.00

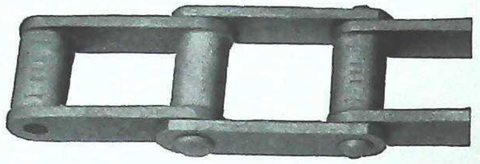
Specify cast iron or chilled rim wheels.

*Only these wheels can be furnished with chilled rims.

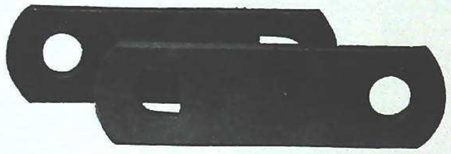
‡Regularly furnished plate center at price listed.

Hy-Tech Products

Jeffrey Hercules Combination Steel and Malleable Chain



Hercules Chain is adapted for drives of moderate speed and is used extensively for elevators and conveyors where it is well fitted for the handling of gritty materials. In elevator service it is usually attached to buckets in single and double strands and in conveyors of single or multiple strands with or without pusher attachments.



Interchangeable Side Bars

Large quantities are used in the lumber industry for conveying logs, planks and refuse and also in the paper industry for handling pulp wood.

Block links are made of high quality malleable iron with side bars and pins of .40 carbon steel. When desired, block links can be made of high carbon cast steel, or where greater strength is required, block links can be made of alloy cast steel with side bars and pins heat treated.

Hercules is a practically dust proof chain of simple construction.

Made up with riveted pins unless otherwise ordered.



Rivet Pin



Coupling Pin

Chain No.	Pitch Inches	‡Working Strength at 150 F.P.M. Pounds	§Max. Speed Feet per Min.	Average Ultimate Strength Pounds	Works on Sprockets Number	Dimensions, Inches: Inside Side Bars	Diam. Barrel	Diam. Pin	Max. Width Sprkt.	Side Bars: Height	Side Bars: Thickness	Width Over All: Riveted Chain	Width Over All: Coupled Chain	Aver. Weight Pounds per Foot	†Price Plain Chain per Foot
*102	3.96	2500	450	18000	102B	2 13/16	31/32	1/2	2	1 1/2	3/8	4	4 5/32	5.9	**$1.40**
*102-B	3.96	3900	450	24000	102B	2 3/16	1	5/8	2	1 1/2	3/8	4 1/8	4 5/16	6.4	**1.40**
*102½	4.03	5600	400	36000	102½	2 15/16	1 3/8	3/4	2	1 3/4	3/8	4 5/16	4 7/16	9.0	**1.90**
*110	6.00	3900	350	24000	110	2 13/16	1 1/4	5/8	1 15/16	1 1/2	3/8	4 1/8	4 5/16	5.9	**1.30**
¶110 Sp.	6.00 / 12.00	3900	300	24000	110 Sp.	2 13/16	1 1/4	5/8	1 15/16	1 1/2	3/8	4 1/8	4 5/16	7.2	**.95**
*111	4.78	5600	400	36000	111	3 3/8	1 3/8	3/4	2 3/8	1 3/4	3/8	4 3/4	4 15/16	9.3	**1.75**
¶*111 Sp.	4.78 / 7.22	5600	350	36000	111 Sp.	3 3/8	1 3/8	3/4	2 3/8	1 3/4	3/8	4 3/4	4 15/16	7.9	**1.60**
*131	3.075	3750	550	24000	103 Det.	2	1 1/4	5/8	1 1/8	1 1/2	3/8	3 5/16	3 1/2	6.7	**1.40**
*132	6.125	10000	300	50000	132	4 3/8	1 3/4	1	3 1/8	2	1/2	6 1/8	6 1/4	13.1	**2.50**
*188	2.609	2450	600	14000	88 Det.	1 9/16	7/8	1/2	15/16	1 1/8	1/4	2 1/2	2 11/16	3.5	**.90**
214	3.25	4800	400	36000	114 Det.	2 1/8	1 5/8	3/4	1 1/8	1 3/4	3/8	3 1/2	3 3/4	11.0	**2.40**
1226	6.00	7300	325	43000	1226	3 3/8	1 1/2	7/8	2 1/8	1 3/4	1/2	5 1/16	5 1/4	9.6	**2.00**

*Sizes carried in stock to cover all reasonable demands; all others subject to occasional delays.
‡Working strengths in table are increased or decreased for speeds other than 150 feet per minute.
§Economical speeds are half of "max." speeds.
¶Alternate long and short pitches, with long pitch in steel side bars.
†Prices cover riveted chain.

Price Each of Detached Parts

Name of Part	102	102B	102½	110	110Sp	111	111Sp	131	132	188	214	1226
No. of Links in 100 Feet of Chain	304	304	296	200	133	251	200	391	196	462	369	200
Block Link, M. I.	**$.40**	**$.40**	**$.65**	**$.70**	**$.70**	**$.72**	**$.72**	**$.30**	**$1.20**	**$.16**	**$.65**	**$.90**
Plain Side Bars, Steel	**.16**	**.16**	**.20**	**.21**	**.32**	**.21**	**.30**	**.14**	**.35**	**.06**	**.20**	**.32**
Pin, Rivet, Steel	**.10**	**.13**	**.14**	**.13**	**.13**	**.16**	**.16**	**.10**	**.37**	**.06**	**.14**	**.28**
††Coupling Link, M. I.	**.65**	**.65**	**.85**	**.85**	.....	**.90**	.....	**.50**	**1.60**	**.25**	**.75**	.....
C-3 Att. (Block Link) M. I.	.....	.....	.....	.....	.....	**1.20**	**1.20**	**.60**	**2.00**	.....	.....	.....
D-D Att. (Block Link) M. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	**1.00**	.....
F-2 Att. (Block Link) M. I.	.....	.....	**1.50**	.....	.....	**1.40**	**1.40**	**.80**	.....	**.45**	.....	.....
F-27 Att. (Block Link) M. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	**2.40**
G-6 Att. (Block Link) M. I.	.....	.....	.....	**1.20**	.....	**1.35**	**1.35**	**.65**	.....	**.40**	.....	.....
**G-9 Att. (Steel Riv. to Side Bar)	**1.10**	**1.10**	.....	**1.10**	.....	**1.20**	**1.20**	**1.00**	**1.25**	.....	.....	.....
G-19 Att. (Block Link) M. I.	.....	.....	.....	.....	.....	.....	.....	**.70**	.....	**.45**	.....	.....
H-36 Att. (Spur) M. I.	.....	.....	.....	.....	.....	.....	.....	**1.30**	.....	**1.00**	.....	.....
▲H-37 Att. (Spur) C. I.	.....	.....	.....	.....	.....	.....	.....	**3.60**	.....	.....	.....	.....
K-1 Att. (Block Link) M. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	**.40**	.....	.....
K-1 Att. (Steel Side Bar)	.....	.....	.....	.....	.....	.....	.....	.....	.....	**.25**	.....	.....
K-2 Att. (Block Link) M. I.	.....	.....	**.95**	**1.05**	.....	**1.10**	**1.10**	.....	**1.90**	.....	.....	.....
K-2 Att. (Steel Side Bar)	.....	.....	**.45**	**.50**	.....	**.50**	**.75**	.....	**.80**	.....	.....	**.80**
K-1 and K-2 Att. (Block Link) M. I.	**.75**	**.75**	.....	.....	.....	.....	.....	**.50**	.....	.....	.....	.....
K-1 and K-2 Att. (Steel Side Bar)	**.40**	**.40**	.....	.....	.....	.....	.....	**.35**	.....	.....	.....	.....
K-3 Att. (Steel Side Bar)	.....	.....	.....	.....	**.85**	.....	.....	.....	.....	.....	.....	.....
K-12 Att. (Block Link) M. I.	.....	**.85**	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
K-12 Att. (Steel Side Bar)	.....	**.45**	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
S Att. (Steel Side Bar)	**.55**	**.55**	**.55**	**.60**	.....	**.65**	**.80**	**.50**	**1.05**	**.35**	**.60**	**1.05**

††Coupling link, without pins. Specify one or two pins as required.
**Price of plain side bar to be added to make complete attachment.
▲Replaces plain block link when assembled in chain.

Hy-Tech Products

Jeffrey Hercules Combination Steel and Malleable Chain and Attachments



F-2, Malleable



G-6, Malleable, with Taper for Standard Buckets



G-9, Steel



G-19, Malleable



K-1, Malleable



K-1, Steel



K-2, Malleable



K-2, Steel



S, Steel

Price per Foot Assembled

Attachment: Style	Spacing per Link	102	102B	102½	110	110 Spec.	111	111 Spec.	131	132	188	214	1226
Plain Chain		$1.40	$1.40	$1.90	$1.30	$.95	$1.75	$1.60	$1.40	$2.50	$.90	$2.40	$2.00
D-D (Mall.)	2nd	....	....	....	....	....	....	....	....	....	....	3.00	....
	4th	....	....	....	....	....	....	....	....	....	....	2.75	....
	6th	....	....	....	....	....	....	....	....	....	....	2.60	....
	8th	....	....	....	....	....	....	....	....	....	....	2.50	....
F-2 (Mall.)	2nd	....	....	2.80	....	....	2.50	2.20	2.20	....	1.35	....	....
	4th	....	....	2.45	....	....	2.20	1.95	1.90	....	1.20	....	....
	6th	....	....	2.30	....	....	2.10	1.85	1.80	....	1.10	....	....
G-6 (Mall.)	2nd	....	....	....	1.75	....	2.50	2.10	2.00	....	1.50	....	....
	4th	....	....	....	1.55	....	2.25	1.90	1.70	....	1.40	....	....
	6th	....	....	....	1.45	....	2.15	1.80	1.60	....	1.30	....	....
G-9 (Steel)	2nd	3.05	3.05	....	2.40	....	3.25	2.80	3.35	3.70	....	....	....
	4th	2.25	2.25	....	1.85	....	2.50	2.20	2.40	3.10	....	....	....
	6th	1.95	1.95	....	1.70	....	2.25	2.00	2.05	2.90	....	....	....
	8th	1.85	1.85	....	1.60	....	2.10	1.90	1.90	2.80	....	....	....
	10th	1.75	1.75	....	1.55	....	2.05	1.85	1.80	2.75	....	....	....
G-19 (Mall.)	2nd	....	....	....	....	....	....	....	2.10	....	1.70	....	....
	4th	....	....	....	....	....	....	....	1.80	....	1.50	....	....
	6th	....	....	....	....	....	....	....	1.70	....	1.40	....	....
	8th	....	....	....	....	....	....	....	1.60	....	1.30	....	....
K-1 or K-2	2nd (Mall.)	‡1.75	‡1.75	‡2.35	†1.60	....	†2.25	†1.90	‡1.90	‡3.10	*1.40	....	....
	3rd (Mall. and Steel)	‡1.70	‡1.70	‡2.30	†1.55	....	†2.20	....	‡1.85	‡3.00	*1.30	....	....
	4th (Mall.)	‡1.60	‡1.60	‡2.20	†1.45	....	†2.10	†1.75	‡1.80	‡2.80	*1.20	....	....
	5th (Mall. and Steel)	‡1.55	‡1.55	‡2.15	†1.40	....	†2.05	....	‡1.70	‡2.75	*1.15	....	....
	6th (Mall.)	‡1.50	‡1.50	‡2.10	†1.40	....	†2.00	†1.70	‡1.65	‡2.70	*1.10	....	....
	All (Mall. and Steel)	‡2.30	‡2.30	‡3.00	‡2.00	....	‡2.75	....	‡2.50	‡3.80	*2.00	....	....
K-1 or K-2	2nd (Steel)	‡1.95	‡1.95	‡2.60	‡1.75	....	‡2.45	‡2.10	‡2.10	‡3.40	*1.55	....	†2.70
	4th (Steel)	‡1.70	‡1.70	‡2.30	‡1.55	....	‡2.25	....	‡1.90	‡2.95	*1.30	....	†2.25
	6th (Steel)	‡1.60	‡1.60	‡2.20	‡1.45	....	‡2.10	....	‡1.75	‡2.85	*1.15	....	†2.15
K-3 (Steel)	2nd	....	....	....	....	1.35	....	....	....	....	....	....	....
	4th	....	....	....	....	1.20	....	....	....	....	....	....	....
	6th	....	....	....	....	1.10	....	....	....	....	....	....	....
K-12	2nd (Mall.)	....	2.00	....	....	....	....	....	....	....	....	....	....
	3rd (Mall. and Steel)	....	1.95	....	....	....	....	....	....	....	....	....	....
	4th (Mall.)	....	1.70	....	....	....	....	....	....	....	....	....	....
	5th (Mall. and Steel)	....	1.65	....	....	....	....	....	....	....	....	....	....
	6th (Mall.)	....	1.60	....	....	....	....	....	....	....	....	....	....
	All (Mall. and Steel)	....	....	....	....	....	....	....	....	....	....	....	....

Bold face type indicates carried in stock sizes.
*K-1 attachment only. †K-2 attachment only. ‡K-1 and K-2 attachments combined.

S Spur Side Bar Attachments

Chain No.	102	102 B	102½	110	**110 Spec.	111	**111 Spec.	131	132	188	214	1226
Pitch, inches	3.96	4.00	4.03	6.00	6.00 / 12.00	4.78	4.78 / 7.22	3.075	6.125	2.609	3.25	6.00
Height Above Center Line of Chain, inches	3 3/4	3 3/4	3 3/4	4 1/4	4 1/4	4 3/8	4 3/8	3 1/4	5	2 5/8	4 3/8	4 1/4
Price, Attachment, each	$.55	.55	.60	.70	....	.65	.80	.50	1.05	.35	.60	1.05

**Alternate long and short pitches, with long pitch in steel side bars.
When spurs are assembled in chain, deduct for equal number of plain side bars.
A set-up charge to be added regardless of size or quantity.

Jeffrey Cast Iron Sprocket Wheels

For Hercules Chain

State whether driving or driven wheels are required.

No. 102* —(Use No. 95 Detachable Sprockets.)

No. 102B*

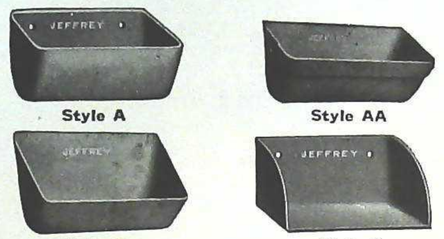
No. of Teeth	Approximate Pitch Diameter Inches	Pattern No. Driven	Pattern No. Driver	Largest Bore at Regular Price	Weight Pounds	Price Each	Extra for Plate Center
12	15¼P	S-4845	S-4845	2 15/16	60	$14.40	.....
14	17¾P	S-4846	S-4846	2 15/16	81	16.80	.....
16	20¼P	S-4847	S-4847	2 15/16	90	18.00	$5.00
18	23 P	S-4848	S-4848	2 15/16	95	19.20	6.00
22	28 P	S-4849	S-4849	2 15/16	140	24.00	8.90
		No. 102½*					
† 6	8	S-2234	.....	2 7/16	36	$10.00	.....
† 8	10½P	S- 381	S- 381	2 7/16	40	11.60	.....
† 9	11¾	S- 123	S- 644	2 15/16	44	12.40	.....
†10	13 P	S-1069	S-1069	2 15/16	50	13.40	.....
†11	14¼	S-1075	S- 631	2 15/16	55	14.60	.....
†12	15½	S- 584	.....	2 15/16	62	15.80	.....
15	19½P	S-1044	S-1044	2 15/16	81	19.40	.....
16	20¾P	S-1072	S-1072	2 15/16	88	20.60	$5.80
17	22	.....	S-2235	2 15/16	92	21.80	6.10
18	23¼P	S-4841	S-4841	2 15/16	95	23.00	7.20
19	24½P	S- 993	S- 993	2 15/16	110	24.40	8.30
22	28¼	S-2236	.....	3 7/16	135	28.60	11.50
23	29½P	S-2237	S-2237	3 7/16	143	30.20	12.10
26	33½	S- 864	.....	3 7/16	175	35.60	16.40
27	34¾	S-3885	.....	3 7/16	184	37.40	18.70
31	39¾	S-2238	.....	3 7/16	220	42.80	24.80
37	47½	S- 650	S-3932	3 7/16	338	57.60	42.60
46	59	S-2239	.....	3 15/16	400	77.40	77.40
48	61¾	.....	S-4270	3 15/16	656	81.80	.....
		No. 110*					
† 6	12	S- 621	.....	2 15/16	50	$12.20	.....
† 8	15¾	S-2242	.....	2 15/16	60	15.40	.....
9	17½	S- 551	.....	2 15/16	85	17.00	.....
10	19½	S- 459	.....	2 15/16	95	18.80	$4.90
11	21¼	S- 950	.....	2 15/16	100	20.60	5.80
12	23¼	S- 488	S- 948	2 15/16	105	22.60	7.00
13	25	S-1038	.....	3 7/16	120	24.60	8.40
16	30¾	S- 930	.....	3 7/16	160	31.20	13.40
18	34½	S- 487	S-2243	3 7/16	200	36.00	18.00
37	70¾	S-2240	.....	3 15/16	...	.....	.....
		No. 110 Sp.*					
8	23¾P	S-4822	S-4822	2 15/16	110	$23.00	$7.20
		No. 111*					
† 9	14 P	S-2244	S-2244	2 15/16	76	$15.60	.....
†11	17 P	S- 127	S- 127	2 15/16	88	18.40	.....
†12	18½P	S- 598	S- 598	2 15/16	92	20.00	.....
†13	20 P	S- 561	S- 561	2 15/16	95	21.80	.....
14	21½P	S- 580	S- 580	2 15/16	117	23.60	$6.60
15	23 P	S- 641	S- 641	2 15/16	125	25.40	7.90
16	24½P	S- 576	S- 576	3 7/16	133	27.20	9.30
18	27½P	S- 592	S- 592	3 7/16	169	31.00	11.50
20	30½P	S- 557	S- 557	3 7/16	217	35.60	15.30
22	33½P	S- 773	S- 773	3 7/16	222	41.40	19.00
		No. 111 Sp.*					
† 8	15½	S- 377	S-2245	2 15/16	75	$17.20	.....
10	19½	S- 954	.....	2 15/16	135	21.60	$5.60
12	23¼P	S- 961	S- 961	2 15/16	190	26.20	8.10
16	30¾	S- 822	.....	3 7/16	260	36.60	15.80
		No. 131* —(Use No. 103 Detachable Sprockets.)					
		No. 132*					
8	16	.....	S-2246	3 7/16	125	$20.20	.....
9	18 P	S-3198	S-3198	3 7/16	155	23.00	.....
12	23¾P	S-3199	S-3199	3 7/16	220	32.00	$10.00
13	25½P	S- 113	S- 113	3 7/16	250	35.20	12.00
15	29½P	S-3200	S-3200	3 7/16	280	42.60	17.10
16	31½P	S-3372	S-3372	3 7/16	310	47.60	20.50
18	35¼P	S-3201	S-3201	3 15/16	350	58.00	29.00
21	41¼P	Sp-2247	S-2247	3 15/16	420	77.20	47.90
		No. 188* —(Use No. 88 Detachable Sprockets)					
		No. 214* —(Use No. 114 Detachable Sprockets)					
		No. 1226*					
10	19½P	S-4860	S-4860	2 15/16	120	$22.00	$5.80

*Can be furnished with chilled rims.

†Plate center wheels; all others have arms.

P—Perfect diameter of sprocket which can be used either for driver or driven.

Jeffrey Malleable Iron Elevator Buckets



Adapted for handling ores, stone, phosphates, cement, coal and other gritty and abrasive materials. In ordering, state whether buckets are to be punched for flat belt or for chain, and if for the latter give size and number of strands of chain and style of attachments.

The Style A is the standard bucket in most general use.

When handling gritty materials the life of the Style AA Bucket is prolonged by the heavily re-enforced front edge and corners.

The Style B is most advantageously used when elevator is on an incline and handling coarse materials.

The Style C Bucket will handle satisfactorily such materials as tend to stick and pack in other buckets, like clay, finely pulverized wet ores, sugar, etc.

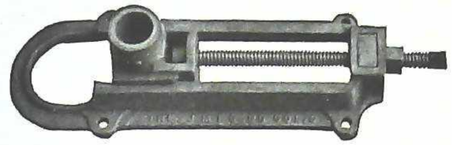
Style A

Bucket, Inches Lgth.	Proj.	Ht.	*Cap. at Level Cubic Feet	Thickness In.	Radius Bot. In.	Standard Back Wt. Lbs.	Standard Back Price Each	Reinforced Back Wt. Lbs.	Reinforced Back Price Each
4	2¾	3	.009	5/64	7/8	.9	$.31	....	....
4½	3	3½	.014	5/64	1	1.0	.40	....	....
5	3½	3¾	.018	5/64	1 1/8	1.4	.50	....	....
6	4	4¼	.030	3/32	1¼	2.1	.64	....	....
7	4½	5	.050	3/32	1 3/8	2.8	.76	....	....
8	5	5½	.068	3/32	1½	3.8	.90	....	....
10	6	6¼	.119	7/64	2	6.2	1.45	....	....
11	6	6¼	.122	7/64	2	6.7	1.55	....	....
12	6	6¼	.131	7/64	2	7.2	1.65	....	....
12	7	7¼	.194	9/64	2 3/8	9.5	1.90	12.7	$2.20
14	6	6¼	.210	7/64	2	10.5	2.05	....	....
14	7	7¼	.226	9/64	2 3/8	11.0	2.20	14.8	2.55
14	8	8½	.286	11/64	2¾	15.2	3.00	20.6	3.45
16	7	7¼	.256	9/64	2 3/8	12.7	2.60	17.1	3.00
16	8	8½	.339	11/64	2¾	17.2	3.40	21.0	3.90
18	8	8½	.381	11/64	2¾	19.2	3.75	23.9	4.30
18	10	10½	.609	13/64	3¼	30.0	5.85	33.0	6.60
			Style AA						
6	4	4¼	.030	3/32	1¼	2.5	$.70	....	....
8	5	5½	.068	3/32	1½	4.0	1.00	....	....
10	6	6¼	.119	7/64	2	6.5	1.50	9.2	$1.75
11	6	6¼	.122	7/64	2	7.0	1.65	....	....
12	6	6¼	.131	7/64	2	7.7	1.80	9.9	2.05
12	7	7¼	.194	9/64	2 3/8	10.0	2.10	13.2	2.40
14	6	6¼	.210	7/64	2	12.0	2.35	....	....
14	7	7¼	.226	9/64	2 3/8	12.8	2.45	15.3	2.80
15	7	7¼	.235	9/64	2 3/8	13.0	2.60	....	....
16	7	7¼	.258	9/64	2 3/8	14.6	2.85	18.2	3.25
16	8	8½	.339	11/64	2¾	19.1	3.75	22.9	4.25
18	8	8½	.381	11/64	2¾	21.0	4.10	25.7	4.65
24	8	8½	.495	11/64	2¾	28.0	6.15	....	....
			Style B						
4	1½	2¼	.0035	1/16	...	.4	$.25	....	....
7	3½	5	.031	5/64	...	2.2	.58	....	....
8	3½	5	.035	5/64	...	2.3	.65	....	....
10	4	5½	.068	3/32	...	4.0	1.10	....	....
12	5½	7½	.130	7/64	..	6.5	1.65	....	....
16	6½	9	.243	9/64	...	13.5	2.60	....	....
			Style C						
6	4½	4	.028	3/32	...	2.0	$.60	....	....
8	4½	4	.039	3/32	...	2.8	.85	....	....
10	5	4	.046	3/32	...	4.0	1.20	....	....
12	5	4	.058	3/32	..	4.8	1.35	....	....
12	6	6	.109	7/64	...	6.6	1.60	....	....
14	7	5½	.131	9/64	...	8.5	2.20	....	....
16	7	5½	.164	9/64	...	10.5	2.40	....	....
18	8	8	.279	11/64	..	18.0	3.70	....	....

*It is customary in figuring elevators to figure that the buckets are loaded 80 per cent full.

Hy-Tech Products

Style B Adjustable Take-Up Boxes

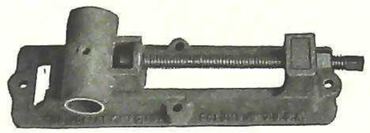


Short adjustment furnished unless otherwise specified.

Diameter Shaft Inches	Adjustment Inches	Approx. Weight Pounds	*Price Each	Diameter Shaft Inches	Adjustment Inches	Approx. Weight Pounds	*Price Each
1 5/16	4½	11	$5.60	2 11/16	18	67	$17.60
1 3/16	8	21	7.20	2 11/16	25½	74	20.00
1 7/16	8	22	8.00	2 15/16	13½	68	19.20
1 11/16	9½	29	9.60	2 15/16	18	74	20.60
1 11/16	19	38	12.60	2 15/16	25½	76	23.60
1 15/16	9½	31	10.40	3 7/16	13	97	25.40
1 15/16	19	41	14.80	3 7/16	22	117	29.20
2 3/16	11	46	12.40	3 7/16	28½	122	32.00
2 3/16	20½	58	15.60	3 15/16	16½	140	35.00
2 7/16	11	48	13.20	3 15/16	26	150	39.00
2 7/16	20	60	16.40	3 15/16	36½	165	42.00
2 11/16	13½	60	16.00	.....	....	...	.....

*Without grease cups. Sizes up to 1 11/16-inch inclusive take No. 0 cup; 1 15/16-inch, No. 1 cup; 2 3/16 to 3 7/16-inch, No. 2; larger sizes, No. 3 cup.

Style C Jeffrey Adjustable Take-Up Boxes



Short adjustment furnished unless otherwise specified.

Diameter Shaft Inches	Adjustment Inches	Approx. Weight Pounds	*Price Each	Diameter Shaft Inches	Adjustment Inches	Approx. Weight Pounds	*Price Each
1 5/16	4½	12	$5.90	2 11/16	20½	75	$19.50
1 3/16	7	22	7.60	2 11/16	24½	80	21.00
1 7/16	7	24	8.40	2 15/16	12½	72	20.20
1 11/16	9	31	10.10	2 15/16	20	80	23.10
1 11/16	17	40	13.20	2 15/16	24	85	24.80
1 15/16	9	33	10.90	3 7/16	14	100	26.70
1 15/16	17	42	15.60	3 7/16	22	117	30.70
2 3/16	11	48	13.00	3 7/16	30	128	33.60
2 3/16	20	60	16.40	3 15/16	15	145	36.80
2 7/16	10½	50	13.90	3 15/16	26	155	41.00
2 7/16	19½	60	17.20	3 15/16	35½	180	44.20
2 11/16	13	65	16.80	.....	....	...	.....

*Without grease cups. Sizes up to 1 11/16 inches inclusive take No. 0 cup; 1 15/16 inches take No. 1; 2 7/16 to 3 7/16 inches inclusive, No. 2; all larger sizes take No. 3 cup.

You can send in orders by mail with the assurance that they will be handled promptly and accurately.

We ask our customers to use this catalogue when ordering goods. It will facilitate handling orders by using catalogue numbers and names.

Jeffrey Jaw Clutches and Couplings

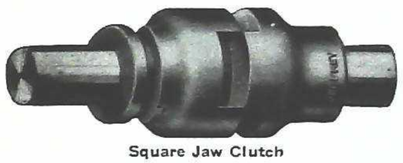


Spiral Jaw Left Hand Coupling



Spiral Jaw Right Hand Coupling

Arrows indicate direction of rotation for both right hand and left hand spiral clutches where the sliding halves drive the stationary halves. Rotation is in the opposite direction from that shown where stationary halves drive the sliding halves.



Square Jaw Clutch

	§Solid—Price, Each						
	Complete with Shifter Collar		Stationary Half Only		*Sliding Half Only		
Diam. Shaft Inches	†Wheel Clutch	‡Clutch Coupling	Jaw Hub to Wheel	Half of Coupling	without Shifter Collar	Shifter Collar Only	Internal Thrust Collar
1 5/16	$8.40	$10.40	$2.00	$4.00	$4.80	$1.60	....
1 3/16	9.90	11.20	2.20	4.40	5.20	1.60	$.90
1 7/16	11.20	12.60	2.60	5.00	5.80	1.80	1.00
1 11/16	12.70	14.20	3.00	5.60	6.80	1.80	1.10
1 15/16	14.20	16.00	3.40	6.40	7.60	2.00	1.20
2 3/16	16.80	19.00	4.00	7.60	9.20	2.20	1.40
2 7/16	19.80	22.00	5.00	8.80	11.00	2.20	1.60
2 11/16	23.00	25.00	6.00	10.00	12.40	2.60	2.00
2 15/16	26.20	28.00	7.00	11.20	13.80	3.00	2.40
3 7/16	32.40	35.00	9.00	14.60	17.00	3.40	3.00
3 15/16	39.60	46.00	11.00	21.00	21.20	3.80	3.60
4 7/16	49.40	58.00	13.00	26.00	27.80	4.20	4.40
4 15/16	59.20	70.00	15.00	31.00	34.00	5.00	5.20

†Consisting of stationary half for wheel cast to hub with thrust collar, also sliding half with shifter collar. Lever and yoke extra.

‡Consisting of stationary half, also sliding half with shifter collar. Lever and yoke extra.

Clutches are of either two square jaws or three spiral jaws. Square jaws furnished when kind is not specified

*For clutch or coupling.

§Prices for split on application.

Cast Iron Gears



Spur



Bevel

In ordering spur gears, be particular to state the number of teeth, pitch, face and bore of gear, also whether desired key-seated or set-screwed.



Spur Mortise

In ordering bevel gears, be particular to state the number of teeth, pitch, face and bore of both the wheel and the pinion.

Also state the backing or the projection of the hub back of the pitch line, and whether desired key-seated or set-screwed.

In ordering miter gears, be particular to state the number of teeth, pitch, face and bore.

Also state the backing of the projection of the hub back of the pitch line and whether desired key-seated or set-screwed.

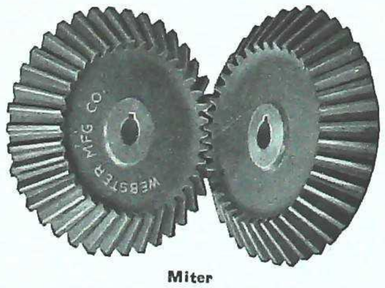
All spur mortise gears are filled with a selected quality of hard maple cogs, and are trimmed on a modern gear cutter, insuring perfect shape.

All bevel core wheels are made from approved patterns, and filled with the best hard maple cogs.

All pinions to run with the core wheels have dressed teeth and are made accurately.

Split gears of all types, which meet special requirements for offset hubs, jaw clutch hubs, shrouded pinions, etc., can also be supplied.

Bevel Mortise



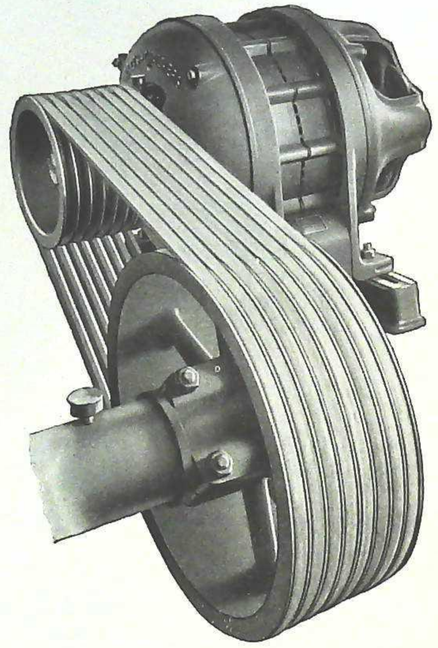
Miter

Also gears of cast steel, manganese steel, bronze, rawhide and other materials, with machine cut teeth, can be supplied.

Prices upon application.

Allis-Chalmers Texrope Drives

A Flexible and Positive Multiple Belt Drive for Close Centers



A recently patented, highly efficient type of transmission especially adapted for short centers, standard ratios 1 to 7 or special higher ratios, and horsepowers ½ to 2000. It consists of two grooved pulleys, or sheaves, and V-cord belts called "Texropes."

It's original development for driving textile machines paved the way to application in every industry. Applications include fans, blowers, pumps, compressors, machine tools, rock crushing machinery, conveyors, laundry machinery, dough mixers, drives to and from lineshafts, etc.

Furnished from stock for ratings up to 100 h.p. in all popular motor speeds and are standard up to 300 h.p. Larger or special drives require longer delivery.

Some Advantages of the Texrope Drive

Short centers, taking up practically no space of value.
Always silent—it never becomes noisy.
Positive—no slippage.
Trouble proof, requiring little care and adjustment.
Maintenance—infrequent, and inexpensive replacement of belts.
Cleanliness—drive requires no lubrication, eliminating oil and grease.
Moisture proof—climatic conditions do not affect it.
Shock absorbing.
Safe and dependable.
Continuity of operation—it is impossible for the entire drive to fail and cause a shut-down. One or several Texropes may fail and the machine can still be operated with balance until convenient to replace worn Texropes.

Information Required to Order

In ordering give: Center to center of sheaves; diameters of both sheaves; h.p. of driver; full load speed of both shafts; length of extensions of both shafts; bore of both sheaves (if taper bore send gauge or large diameter, and taper per foot); keyseat sizes of both sheaves; maximum hub-lengths of both sheaves; type of both sheaves (solid clamp hub, or completely split); number of drives required; slide rails or adjustable base for motor; sheet steel guard (give height of centers of shafts from floor and a sketch of parts coming within 6 inches of the drive).

Prices and special bulletin upon application.

Hy-Tech Products

Jeffrey Portable Car Unloaders



Unloader May be Placed Beneath Rails by Removing a Tie and Digging a Small Pit

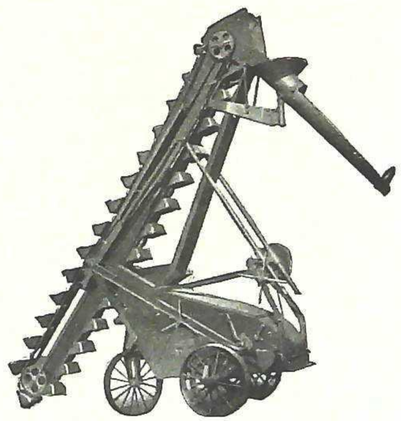
This is an efficient machine for unloading hopper bottom railroad cars.

It is designed to fit in between the rails and car hopper doors, or where a more permanent unloading point can be established, it may be placed under the rails by digging a shallow pit.

The coal falls directly onto the conveyor which delivers it either to storage or truck by means of a separate conveyor.

Prices and special bulletin upon application.

Type K Jeffrey Mechanical Loaders

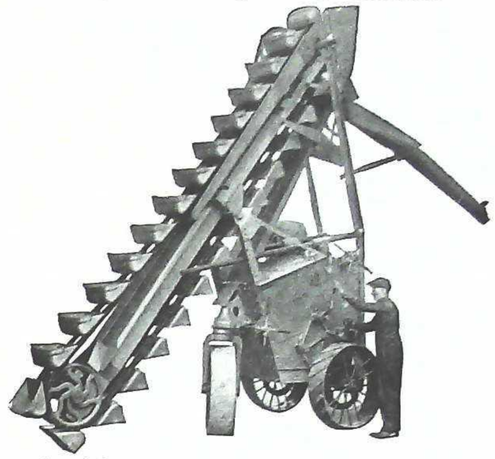


This loader is designed to handle loose material such as coal, coke, crushed stone, sand, gravel, etc., at the rate of one cubic yard per minute. Only one man is needed to operate the machine. The loader feeds itself into the pile of material, thus greatly reducing hand shoveling. All controlling levers are on one side of the machine for the convenience of the operator.

Larger machines similar in design to the type K but equipped with Tank tred mounting can be furnished for especially heavy service.

Prices and special bulletin upon application.

Type G Jeffrey Radial Loaders



Designed for service where a large quantity of material is to be handled rapidly. The capacity is 1½ to 2 cubic yards per minute of sand, gravel, crushed stone, coal, coke, cinders, etc. All controlling levers are in plain sight on one side.

A feature of great importance is its two speeds of travel. A fast speed of 40 f.p.m. for traveling from pile to pile and a slow speed of 2 f.p.m. for feeding into the material.

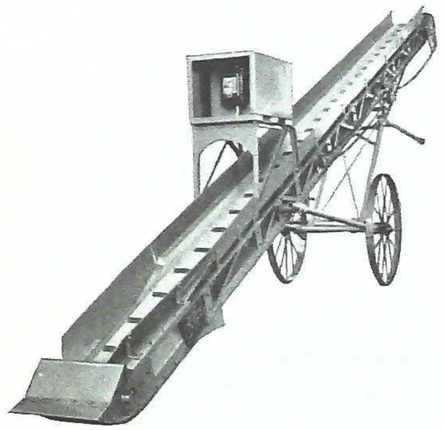
The construction of this loader is rugged. Its three-wheel support permits the machine to dig 8 to 10 feet into a pile of material, or operate on an arc by oscillating back and forth, a feature which makes it an ideal clean-up machine. It will turn short corners and can be propelled in any direction as readily as a wheelbarrow.

Is equipped with either electric motor or gasoline engine.

Shipping weight, approximately 8500 pounds.

Prices and special bulletin upon application.

Jeffrey Portable Belt Conveyors



This is a light and inexpensive machine designed particularly for service where large quantities of loose materials such as coal, crushed stone, etc., are stored and reclaimed, such as found about industrial plants, power houses, coal yards, building supply yards, etc.

The capacity of this machine varies from 20 to 50 tons per hour, depending upon the kind of material handled and the method used in loading the conveyor. As a rule, it will handle all that two men can shovel, or rake onto it.

Shipment is made assembled, ready to operate.

The Jeffrey Portable Belt Conveyor is built in three standard lengths 18, 24 and 30 feet, with 16-inch belt. It also can be furnished with 24-inch belt where large carrying capacity is required.

Equipped with electric motor or gasoline engine.

Prices upon application.

Jeffrey Portable Scraper Conveyors

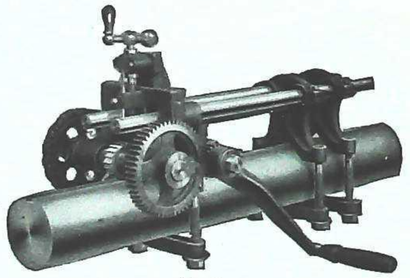


The Jeffrey Portable Scraper Conveyor is built especially for loading domestic size bituminous coal into trucks or wagons.

This machine is capable of handling 1 ton per minute. It is entirely self-contained and the discharge end is adjustable to take care of different heights of trucks. The discharge end may be fitted with screen chute to separate the slack from the lump coal.

Prices and special bulletin upon application.

Burr Portable Shaft Keyseaters



No. 1

This machine will mill keyseats in the middle or on the ends of shafting without removing it from its hangers or boxes. It will mill keyseats up to 12 inches long at each setting and as there is a sliding support under the cutters at all times it cuts without chatter or jar and produces keyseats with straight sides and smooth bottoms.

It is provided with automatic feed while cutting which may be disengaged if desired and the cutter-head fed by hand feed. The cutter-slide is provided with an adjustable depth gauge showing the depth being milled.

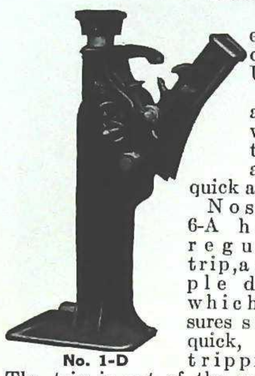
A set of milling cutters which used singly or combined will mill all widths from ¼ inch to widest of machine's capacity, is furnished as well as all necessary operating equipment.

Can be furnished motor-driven. Price on application.

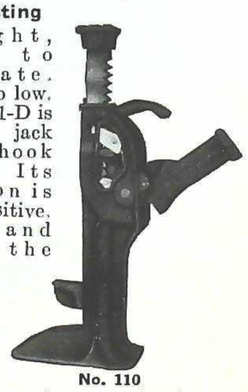
Machine No.	Largest Shaft Cap. In.	Will Mill at Each Setting In.	No. of Cranks	No. Cutters in Set	Will Mill All Widths In.	Wt., Lbs. Net	Wt., Lbs. Gross	Price Each
1	5	12	1	5	¼–1⅛	80	105	$85.00
1-A	6	12	2	5	¼–1⅛	90	115	95.00
2	8	12	2	6	¼–1½	200	250	135.00
3	12	12	2	7	¼–2½	325	390	200.00

Genuine Barrett Track Jacks and Combination Trip and Lowering Jacks

Double Acting



No. 1-D



No. 110

Light, easy to operate. Upkeep low. No. 1-D is a trip jack with hook trip. Its action is quick and positive. Nos. 1-A and 6-A have the regular trip, a simple device which assures safe, quick, easy tripping. The trip is out of the way where it cannot be lost or knocked off.

No. 110 is a combination trip and automatic lowering jack and can either be tripped or, by pushing reversing lever up, can be lowered notch by notch.

The operating mechanism of Nos. 1-A and 6-A jacks is identical.

Jack No.	Supersedes Jack No.	Cap. Tons	Height Inches	Raise Inches	Weight Pounds	Price Each
1-D*	1	15	22	13	60	$21.00
1–A*	1	15	22	13	58	†21.00
6–A*	6	15	28	19	73	†27.00
110‡	10	15	22	13	59	†24.00

*Double-acting, raising on upward and downward stroke.
‡Double-acting. Fitted with automatic lowering device.
†Prices shown cover square socket lever to fit lining bar. Add $1.00 to price if round socket lever and wood handle are desired. Weight of wood handle, 5 pounds.

Duff Genuine Barrett Automatic Lowering Jacks

Single Acting



No. 518



No. 539

Used in contracting, bridge building, car work, handling machinery, etc. For general service the single acting jack is lighter, more convenient more efficient.

Moves load on downward stroke of lever only.



Square Lever Socket



Round Lever Socket



Double Lever Socket

Jack No.	Supersedes Jack No.	Capacity Tons	Height Inches	Raise Inches	Weight Pounds	Price Each
*513	..	5	14	6	28	$15.00
550	50	5	16	8	32	16.00
551	51	5	21	13	40	18.00
‡518	2	10	22	12	63	†25.00
‡539	4	15	22	11	78	†38.00
‡519	19, 119, 219	15	28	17	96	†40.00

*With round socket lever and 3-ft. steel operating bar.
‡With round socket lever and wood handle or with double socket lever and 5-ft. steel operating bar if ordered.
†Deduct $1.00 from prices for square socket lever.

Hy-Tech Products

Duff Barrett General Purpose Jacks and Pole Jacks



No. 540



No. 500

Useful and dependable general purpose jacks for rough service. Sturdily built, but extremely light in weight for capacity. Conveniently handled and spotted, and easily operated by one man.

Four methods of application are possible with Nos. 510 and 540: (1) straight lifting, load applied on head; (2) with chain; (3) with claw; (4) with foot-lift.

Double socket-lever aids operation in close quarters.

No. 500, the Duff pole jack, is used for pulling, straightening, or moving poles of all sorts, telephone, telegraph, trolley, etc., no matter what size, weight, or depth in the ground, and without digging around the stump.

Jack No.	Cap. Tons	Height Inches	Raise Inches	Weight Pounds	Price, Each: Complete	Price, Each: With Claw Only	Price, Each: With Chain Only	Price, Each: Without Chain and Claw
*540	15	22⅞	12	70	$48.00	$42.50	$43.50	$38.00
*510	10	22	12	62	35.00	29.50	30.50	25.00
*500	15	37½	23	116	70.00	.....	.....	.....

*With No. 540 and No. 510 steel operating lever, chain and claw are furnished when purchased complete. With No. 500 steel operating lever and chain are furnished.

Bell Bottom Jack Screws



These jack screws have cast-iron stands, with forged head screws.

Diam. Screw Inches	Capacity Tons	Diam. Screw Inches	Capacity Tons
1	5	2	20
1¼	10	2¼	24
1½	12	2½	28
1¾	16	3	36

Diam. of Screw Inches	Height of Stand Inches	Height Over All Closed Inches	Price Each	Diam. of Screw Inches	Height of Stand Inches	Height Over All Closed Inches	Price Each
1	6	8	$2.60	2	20	24	$11.50
1¼	4	6¾	2.90	2	22	26	12.50
1¼	6	8¾	3.10	2	24	28	13.50
1¼	8	10¾	3.40	2¼	6	10	7.00
1¼	10	12¾	3.80	2¼	8	12	7.50
1¼	12	14¾	4.20	2¼	10	14	8.25
1¼	14	16¾	4.60	2¼	12	16	9.00
1½	4	7	3.25	2¼	14	18	10.00
1½	6	9	3.75	2¼	16	20	11.00
1½	8	11	4.25	2¼	18	22	12.00
1½	10	13	4.75	2¼	20	24	13.25
1½	12	15	5.25	2¼	22	26	14.50
1½	14	17	6.00	2¼	24	28	15.75
1½	16	19	6.75	2½	6	10½	7.75
1¾	5	8	4.25	2½	8	12½	8.75
1¾	6	9½	4.50	2½	10	14½	9.75
1¾	8	11½	5.00	2½	12	16½	10.75
1¾	10	13½	5.75	2½	14	18½	12.00
1¾	12	15½	6.25	2½	16	20½	13.25
1¾	14	17½	6.75	2½	18	22½	14.50
1¾	16	19½	7.50	2½	20	24½	15.75
1¾	18	21½	8.50	2½	22	26½	17.00
2	5	9	5.00	2½	24	28½	18.25
2	6	10	5.25	3	14	18½	19.50
2	8	12	6.00	3	16	20½	20.75
2	10	14	6.75	3	18	22½	22.00
2	12	16	7.50	3	20	24½	23.25
2	14	18	8.25	3	22	26½	24.50
2	16	20	9.25	3	24	28½	25.75
2	18	22	10.25	3	30	34½	30.00

Duff Ball Bearing Screw Jacks



Adapted to all general lifting purposes within the range of its capacity. Full rated capacity is lifted on top and foot lift is rated at one-half capacity of jack. This jack is powerful, swift, and easy in its operation.

No.	Cap. Tons	Height In.	Raise In.	*Wt. Lbs.	Price Each
66	15	22	10	120	$60.00
60	15	26	13	132	70.00
67	25	22	10	170	90.00
61	25	27	13	200	96.00
68	35	22	10	220	130.00
62	35	26	13	250	138.00

*With lever.

Straight Link Chains



Dimensions and weights are approximate.
Material is all 1/32 inch larger than trade size given.

Proof Coil Chain

For the ordinary hardware trade. It is made from open hearth basic steel; longer in the link; welds not as strong as B. B. B. chains.

Size Chain Inches	Links per Foot	Inside Length Inches	Inside Width Inches	Proof Test Pounds	Breaking Strength Pounds	Suggested Load Limit Pounds	Weight Pounds per 100 Feet
3/16	12½	61/64	13/32	1045	2090	520	40
¼	12	1	½	1800	3600	900	70
5/16	10¾	1 7/64	½	2720	5440	1360	105
3/8	9¾	1 15/64	5/8	3720	7440	1860	158
7/16	8¾	1 3/8	¾	5000	10000	2500	210
½	8	1½	13/16	6600	13200	3300	275
9/16	6⅞	1 3/4	⅞	8200	16400	4100	335
5/8	6⅜	1 7/8	1	10000	20000	5000	410
¾	5⅝	2 1/8	1 1/8	14150	28300	7075	580
⅞	4¾	2 3/8	1 3/8	19200	38400	9600	780
1	4⅜	2 3/4	1½	24800	49600	12400	1000
1 1/8	3⅞	3 1/8	1 3/4	31200	62400	15600	1270
1 1/4	3¾	3 1/4	1 7/8	38400	76800	19200	1560

Prices upon application.

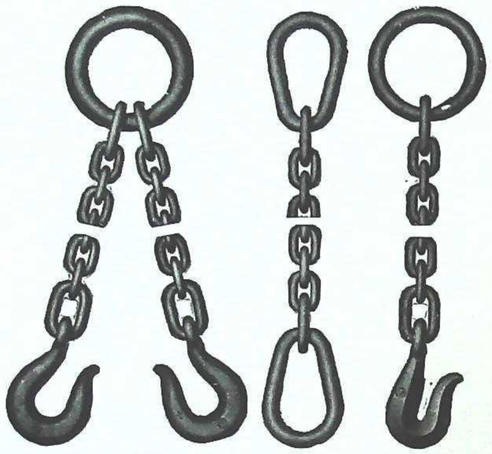
B. B. B. Coil Chain

This chain is a closer link chain than the Proof quality and has heavier, stronger welds. Only high grade open hearth steel is used in its manufacture.

Size Chain Inches	Links per Foot	Inside Length Inches	Inside Width Inches	Proof Test Pounds	Breaking Strength Pounds	Suggested Load Limit Pounds	Weight Pounds per 100 Feet
3/16	15½	25/32	3/8	1300	2600	650	43
¼	14	55/64	7/16	2250	4500	1125	78
5/16	12	1	½	3400	6800	1700	115
3/8	11	1 3/32	5/8	4650	9300	2325	166
7/16	9¾	1 7/32	11/16	6250	12500	3125	220
½	9	1 11/32	¾	8250	16500	4125	295
9/16	7¾	1 9/16	⅞	10250	20500	5125	350
5/8	7⅛	1 11/16	7/8	12500	25000	6250	430
¾	6⅜	1 7/8	1	17700	35400	8850	615
⅞	5⅜	2 1/4	1 1/4	24000	48000	12000	820
1	4¾	2 9/16	1 3/8	31000	62000	15500	1045
1 1/8	4⅛	2 7/8	1 5/8	39000	78000	19500	1310
1 1/4	3⅞	3 1/16	1 3/4	48000	96000	24000	1600

Prices upon application.

Sling or Hoisting Chains



Made from the best grade of iron, and by the best hand welded workmanship, carefully tested and inspected.

Chains are made of any size material, in any length, single, double or quadruple branches as required with hooks having solid drop-forged eyes. These chains are for use in foundries, quarries, mines, machine shops, boiler shops, and for structural work of all kinds.

Hooks, rings and loops are made of suitable size to equalize the strength of the chain.

Prices upon application.

Braided Sash Cord



No.	Diameter Inches	Weight per 1200 Feet Pounds	Length per Pound Feet	Price per Pound
5	5/32	12	100	....
6	3/16	18	66	....
7	7/32	23	52	....
8	1/4	27	44	....
9	9/32	33	36	....
10	5/16	44	27	....
12	3/8	60	20	....
14	7/16	84	14	....
16	1/2	102	11	....

Above figures are approximate.

Sisal Lathyarn

Tarred

C, Plymouth ship brand, 130 strands, lightly tarred.
D, Plymouth ship brand, 200 strands, lightly tarred.
C, Mayflower brand, 130 strands, tarred.
D, Mayflower brand, 200 strands, tarred.

Untarred

C, Puritan stainless, 130 strands.
D, Puritan stainless, 200 strands.
Puritan 2-thread medium, untarred.
Puritan 2-thread fine, untarred.
Puritan 1-thread shingle yarn.

The Puritan 2-thread medium and fine and 1-thread shingle yarns are on cardboard centers.

Plymouth Three-strand Manila Rope

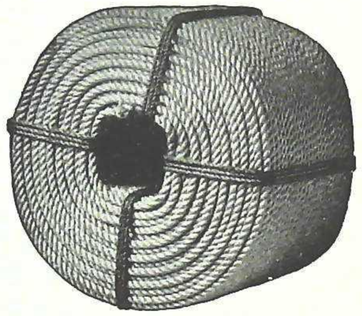


Section of Three-strand Rope



Cross Section of Rope

Recommended for all work not calling for goods of special construction, stock or lay. Furnished on all orders which specify simply manila or manila three-strand. If special goods are wanted, please say so; if in doubt, state the work for which the rope is wanted. Made from manila fiber of high quality. Has ample strength and durability for all general purposes. Ordinarily used in right-laid and untarred forms, but can be furnished left-laid or tarred when desired. The lay is the regular lay—soft enough for easy handling and splicing, yet firm enough to preserve the rope's shape.



Coil of Plymouth Manila Rope, Three-strand

The 5/16 and 3/4-inch circ. sizes are 6 thread; 1-inch, 9 thread; 1 1/8-inch, 12 thread.

Put up in full coils of 200 fathoms (1200 feet) and half coils of 100 fathoms (600 feet), except 6, 9 and 12-thread, which are put up in coils of 50 pounds.

Circumference Inches	Approx. Diam. Inches	Length of Standard Coil Feet	Weight of Standard Coil Pounds	Minimum Tensile Strength Pounds	Approx. Feet per Pound
9/16	3/16	3850	50	480	77
3/4	1/4	3020	50	620	60 5/12
1	5/16	1970	50	1000	39 5/12
1 1/8	3/8	1455	50	1275	29
1 1/4	7/16	1200	65	1750	18 1/2
1 3/8	15/32	1200	75	2100	16
1 1/2	1/2	1200	90	2450	13 1/3
1 3/4	9/16	1200	125	3150	9 7/12
2	5/8	1200	160	4000	7 1/2
2 1/4	3/4	1200	198	4900	6 1/12
2 1/2	13/16	1200	234	5990	5 1/12
2 3/4	7/8	1200	270	7000	4 5/12
3	1	1200	324	8200	3 2/3
3 1/4	1 1/16	1200	378	9500	3 1/6
3 1/2	1 1/8	1200	432	11000	2 3/4
3 3/4	1 1/4	1200	504	12500	2 5/12
4	1 5/16	1200	576	14200	2 1/12
4 1/2	1 1/2	1200	720	17500	1 7/8
5	1 5/8	1200	900	21500	1 1/3
5 1/2	1 3/4	1200	1080	25500	1 1/12
6	2	1200	1296	30000	11/12
6 1/2	2 1/8	1200	1512	34000	10/24
7	2 1/4	1200	1764	38500	2/3
7 1/2	2 1/2	1200	2016	43500	7/12
8	2 5/8	1200	2304	49000	25/48
8 1/2	2 7/8	1200	2590	55000	11/24
9	3	1200	2915	61000	5/12
9 1/2	3 1/8	1200	3240	67000	9/24
10	3 1/4	1200	3600	73000	1/3

Prices upon application.

Hy-Tech Products

Standard Wire Rope

Cast Steel Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



Diam. Inches	Circum. Inches	Approx. Wt. per Foot Pounds	Approx. Strength Tons of 2000 Lbs.	Working Load, Tons 2000 Lbs.	Diameter of Drum or Sheave Advised in Feet	Price per Foot
2 3/4	8 5/8	11.95	211.	42.2	11.	$2.10
2 1/2	7 7/8	9.85	170.	34.	10.	1.75
2 1/4	7 1/8	8.	133.	26.6	9.	1.44
2	6 1/4	6.30	106.	21.2	8.	1.16
1 7/8	5 3/4	5.55	96.	19.	8.	1.02
1 3/4	5 1/2	4.85	85.	17.	7.	.90
1 5/8	5	4.15	72.	14.4	6.5	.77
1 1/2	4 3/4	3.55	64.	12.8	6.	.66
1 3/8	4 1/4	3.	56.	11.2	5.5	.56
1 1/4	4	2.45	47.	9.4	5.	.46
1 1/8	3 1/2	2.	38.	7.6	4.5	.38
1	3	1.58	30.	6.	4.	.31
7/8	2 3/4	1.20	23.	4.6	3.5	.24
3/4	2 1/4	.89	17.5	3.5	3.	.19
5/8	2	.62	12.5	2.5	2.5	.14
9/16	1 3/4	.50	10.	2.	2.25	.12
1/2	1 1/2	.39	8.4	1.68	2.	.11
7/16	1 1/4	.30	6.5	1.30	1.75	.10
3/8	1 1/8	.22	4.8	.96	1.50	.09 1/2
5/16	1	.15	3.1	.62	1.25	.09 1/4
1/4	3/4	.10	2.2	.44	1.	.09

Galvanized Wire Rope

Iron Ships' Rigging or Guy Rope

6 Strands—7 or 12 Wires to the Strand—1 Hemp Core



Diam. Rope Inches	Circumference Inches	Approx. Weight per Foot	Approx. Strength Tons 2000 Lbs.	Price, per Foot 7 Wire	Price, per Foot 12 Wire
1 3/4	5 1/2	4.85	42	$.44	$.46
1 11/16	5 1/4	4.42	38	.41	.43
1 5/8	5	4.15	35	.38	.40
1 1/2	4 3/4	3.55	30	.35	.37
1 7/16	4 1/2	3.24	28	.31 1/2	.33 1/2
1 3/8	4 1/4	3	26	.28 1/2	.30 1/2
1 1/4	4	2.45	23	.25	.26 1/2
1 3/16	3 3/4	2.21	19	.22 1/2	.24
1 1/8	3 1/2	2	18	.19 1/2	.21
1 1/16	3 1/4	1.77	16.1	.17 1/2	.18 1/2
1	3	1.58	14.1	.15	.16
7/8	2 3/4	1.20	11.1	.13	.....
13/16	2 1/2	1.03	9.4	.11	.....
3/4	2 1/4	.89	7.8	.09	.....
5/8	2	.62	5.7	.08	.....
9/16	1 3/4	.50	4.46	.07	.....
1/2	1 1/2	.39	3.39	.06	.....
7/16	1 1/4	.30	2.35	.05	.....
3/8	1 1/8	.22	1.95	.04 1/2	.....
5/16	1	.15	1.42	.03 1/2	.....
9/32	7/8	.125	1.20	*.03	.....
1/4	3/4	.09	.99	*.02 1/2	.....
7/32	5/8	.063	.79	*.02 1/4	.....
3/16	1/2	.04	.61	*.02	.....

*Five strands.

Perfected Road Guard Rope

State of Maine Specifications

Extra Galvanized, 3 Strands, 7 Wires to the Strand



Size..... 3x7
Breaking Strength.....pounds 25,000
Price.....per foot .....

Wire Rope Clips



Clips are not recommended as permanent fastenings on hoisting rope. They are easily applied and taken off, requiring no special skill. The U-bolt should bear on the short end of the rope. Not fewer than two clips to be used and preferably four to six.

Diam. Rope In.	Price Each	Diam Rope In.	Price Each	Diam. Rope In.	Price Each	Diam. Rope In.	Price Each
3	$35.00	1 3/4	$5.50	1 1/8	$ .95	1/2	$.45
2 3/4	25.00	1 5/8	3.50	1	.85	7/16	.45
2 1/2	11.50	1 1/2	1.50	7/8	.75	3/8	.40
2 1/4	9.50	1 3/8	1.25	3/4	.65	5/16	.35
2	7.50	1 1/4	1.10	5/8	.55	1/4	.35

Galvanized Thimbles



Galvanized oval thimbles are heavily coated with zinc. For hawsers we furnish a special non-collapsible thimble at a special price.

Regular: Diam. Rope In.	Regular: Price Each	Regular: Diam. Rope In.	Regular: Price Each	Large: Diam. Rope In.	Large: Price Each	Large: Diam. Rope In.	Large: Price Each
1/4	$.05	1	$.18	1/4	$.10	1 1/8	$.33
5/16	.06	1 1/8	.28	5/16	.10	1 1/4	.38
3/8	.07	1 1/4	.33	3/8	.11	1 3/8	.44
7/16	.08	1 3/8	.42	7/16	.12	1 1/2	.58
1/2	.09	1 1/2	.50	1/2	.13	1 5/8	.75
9/16	.10	1 5/8	.65	5/8	.16	1 3/4	1.00
5/8	.11	1 3/4	.75	3/4	.18	1 7/8	1.25
3/4	.13	1 7/8	.95	7/8	.20	2	1.50
7/8	.14	2	1.10	1	.25	...	....

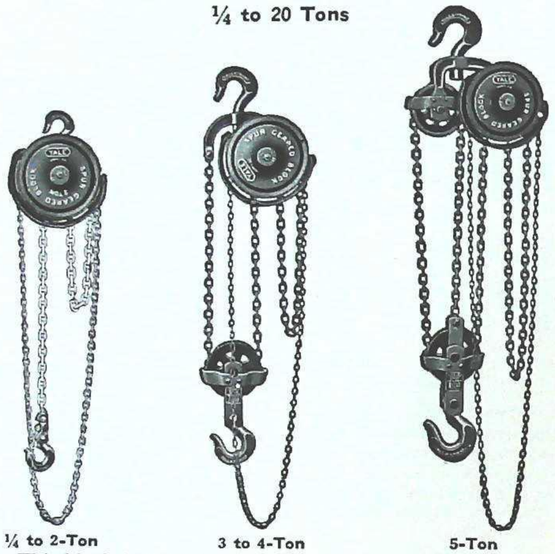
Galvanized Thimbles Spliced Into Rope



Diameter Rope Inches	Circum. Rope Inches	Price Each Attached	Diameter Rope Inches	Circum. Rope Inches	Price Each Attached
2	6 1/4	$20.11	7/8	2 3/4	$3.18
1 7/8	5 3/4	12.23	3/4	2 1/4	2.60
1 3/4	5 1/2	10.80	5/8	2	2.30
1 5/8	5	9.72	9/16	1 3/4	2.01
1 1/2	4 3/4	8.87	1/2	1 1/2	1.99
1 3/8	4 1/4	7.70	7/16	1 1/4	1.45
1 1/4	4	7.04	3/8	1 1/8	1.45
1 1/8	3 1/2	5.37	5/16	1	1.42
1	3	4.70	1/4	3/4	1.42

Yale Ball-Bearing Spur-Geared Chain Blocks

¼ to 20 Tons



¼ to 2-Ton 3 to 4-Ton 5-Ton

This block is rugged; all steel suspension parts carry the load. It holds the load and will not lower it until the hand chain is pulled. This means safety to the user.

The Yale ball-bearings on which the load sheave rotates reduce friction, where friction is greatest.

Every Yale Chain Block must pass a final test of 3360 pounds for each rated ton or 50 per cent overload in long tons.

Special steel chain is used to insure the greatest endurance and safety. The links are die-formed and the weld is die-forged to secure perfect welding, which results in 100 per cent strength throughout the link. The complete chain is put through a special heat-treating process which toughens it and prolongs its life. Each foot of Yale steel load chain is subjected to a test load equal to three times its rated capacity.

Yale hooks are drop-forged from a special steel that allows them if severely overloaded to open slowly without fracture, thus giving visible warning of danger—the "safety valve" of each Yale Chain Block.

Rated Cap. Tons	*Std. Lift in Ft.	Test Load in Long Tons	Min. Distance Between Hooks In.	†Chain Pull Lbs.	†Chain Pull Ft.	Ship. Wt. Lbs.	Complete Std. Lift Price Each	‡Extra Lift Price per Foot
¼	8	⅜	13	47	12½	80	$70.00	$1.80
**½	8	¾	13	57	21	80	70.00	1.80
1	8	1½	16	77	31	117	90.00	1.90
1½	8	2¼	18	103	35	164	120.00	2.00
2	9	3	21	112	42	250	140.00	2.10
3	10	4½	32	107	70	260	180.00	3.00
4	10	6	37	116	84	358	220.00	3.20
5	12	7½	45	102	126	484	280.00	4.30
6	12	9	46	122	126	484	330.00	4.30
8	12	12	49	127	168	578	400.00	5.40
10	12	15	54	132	210	702	480.00	6.50
12	12	18	54	#122	#126	1105	600.00	8.60
16	12	24	62	#127	#168	1330	720.00	10.80
20	12	30	70	#132	#210	1680	850.00	13.00

Prices and particulars of 32 and 40-ton blocks on request.

*Figures denote height in feet which blocks with regular length of chain will lift above level on which operator stands.

†Figures denote the pull in pounds required to lift the full load, and the number of feet of hand chain which must be overhauled to lift the load one foot.

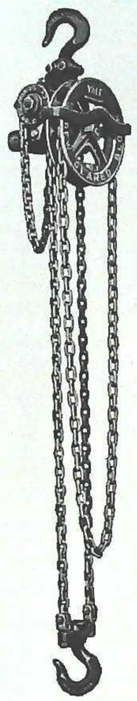
‡Extra lift per foot includes sufficient hand and load chain to increase the travel of the lower hook, one foot.

**A ½-ton special Quick Speed Spur-Geared Block can be furnished which is the same as the 1-ton regular with the exception that the gear ratio has been changed to double the speed at half load. Price is $90.00 each.

#On each hand chain.

Yale Screw-Geared Chain Blocks

½ to 4 Tons



Where the higher speed of the Yale spur-geared block is not required, the Yale Screw-Geared Block is recommended. It is well adapted for portable use, and though light, is powerful and durable. It holds the load securely, and will not lower except as the hand chain is pulled. It is operated on the worm wheel and screw principle. The hand chain drives a sprocket wheel directly keyed to the worm shaft; the worm meshes into the worm wheel, which in turn drives the shaft holding the two load sheaves.

The Yale Screw-Geared Block is about one-half as efficient as the Yale Ball Bearing Spur-Geared Block and about 25 per cent more efficient than ordinary screw hoists. This block is operated by a light chain pull. With a 1-ton block, 1 man, by pulling only 87 pounds, can lift 2000 pounds. However, the relatively large overhaul of hand chain required to lift the load makes it proportionately slow in operation. This is essentially a block for riggers and for temporary and occasional service, as it may be readily moved to meet an emergency. It is adaptable also to horizontal work when pulling heavy loads on rollers or skids. The worm gear makes this block compact and good for lifting loads in cramped places and close up to the ceiling.

The load is carried by Yale steel load chains, and safety guides are provided to prevent the chains from jumping off the load sheaves. Every precaution has been taken in the design of the bottom crosshead and new demountable shackles to eliminate all possibility of kinking the load chains. It often happens that the bottom hook is turned through the two load chains. When this happens the swiveling demountable shackles between the load chains and the bottom crosshead connection prevent twisting of the chains.

The new demountable shackles enable the hook to be attached to longer load chains without welding. To do this it is only necessary to insert the hardened steel pins through the swiveling shackles and the last link on the load chain.

The steel pin, heat-treated and drop-forged, is of a special oval shape to fit the contour of the link and give it a full bearing surface.

A special process of heat-treating is used on the thrust end of the worm shaft to harden its wearing surface and at the same time improve the strength and wearing quality of the worm itself. The bronze worm wheel and the steel worm (or screw) which have hardened and ground thrust-bearings, run in oil and graphite in a litharge-sealed case, insuring smooth action and thorough lubrication. A special quality of bronze is used in the worm gear which is cast on a square but solid steel shaft.

Rated Cap. Tons	*Std. Lift in Ft.	Test Load in Long Tons	Min. Distance between Hooks In.	†Chain Pull Lbs.	†Chain Pull Ft.	Ship. Wt. Lbs.	Complete Price Each	Extra Lift Price per Foot
½	8	¾	14	68	40	56	$50.00	$2.50
1	8	1½	16	87	59	73	60.00	2.60
1½	8	2¼	19	94	80	100	80.00	2.70
2	9	3	21	115	93	130	100.00	2.80
3	10	4½	25	132	126	234	150.00	3.00
4	10	6	26	142	155	265	190.00	3.80
5	12	7½	31	145	195	406	280.00	4.00

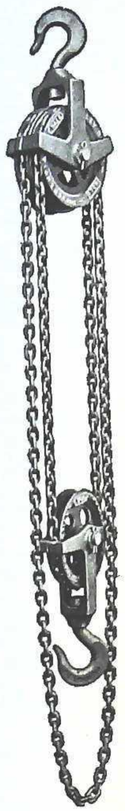
*Figures denote height in feet which blocks, with regular lengths of chain, will lift from level on which operator stands.

†Figures denote the pull in pounds required to lift the full load, and the number of feet of hand chain which must be overhauled to lift load one foot.

Hy-Tech Products

Yale Differential Chain Blocks

¼ to 2 Tons



The Yale Differential Chain Block is designed for service where comparatively light loads are handled occasionally. It consists of a pair of pocketed chain wheels above and a single wheel below. The endless chain passes over one upper sheave, down around the bottom block and then over the other upper sheave. The two upper sheaves are in one piece and only vary enough in diameter to make a difference of one chain pocket in their circumferences.

The overhaul of hand chain is about the same as that of the Yale Spur-Geared chain block, but the hand chain pull required is about 2½ times as great. The block, however, is light and easily handled, and where men are readily available for emergency or infrequent work, it is desirable equipment. It holds the load securely and will lower only as the hand chain is pulled.

It has few parts, and on account of its reliability and simplicity is especially adapted for use in garages and for all ordinary hoisting purposes where the higher power and durability of the Yale Spur-Geared and Screw-Geared blocks are not required.

Standard Yale drop-forged steel safety hooks are used on all Yale Differential Chain Blocks. The large, well proportioned sheaves have correctly formed pockets into which the Yale die-formed, electrically welded steel chain meshes accurately. Provision is made for the lubrication of bearings.

This block possesses the excess capacity that is the distinctive feature of all Yale hoisting equipment. Protection of life and property is the first consideration in its construction.

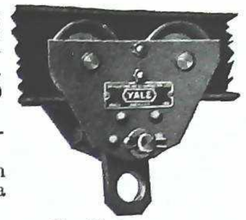
Rated Cap. Tons	Std. Lift in Feet	Test Load in Long Tons	Min. Distance between Hooks In.	Chain Pull Lbs.	Chain Pull Ft.	Ship. Wt. Lbs.	Complete Standard Lift Price Each	Extra Lift Price per Foot
¼	6	⅜	17	72	18	28	$36.00	$4.80
½	7	¾	21	110	24	36	42.00	4.80
1	8	1½	26	190	30	60	56.00	5.00
1½	8½	2¼	32	225	36	94	72.00	5.40
2	9	3	39	300	42	146	90.00	5.60

Parts

No.	Description	Price, Each For Hoist, Cap., Tons ¼	½	1
11	Top Yoke and Hook	$5.00	$6.00	$8.50
12	Top Sheave	6.25	8.00	12.00
13	Bottom Sheave	1.80	2.40	3.00
14	Bottom Yoke and Hook	4.00	5.00	7.00
15	Top Sheave Pin	.80	1.00	1.00
16	Bottom Sheave Pin	.60	.80	.80
..	Regular Chain	26.40	31.20	37.50

No.	Description	Price, Each For Hoist, Cap., Tons 1½	2	3
11	Top Yoke and Hook	$11.00	$15.00	$22.00
12	Top Sheave	16.80	24.00	31.20
13	Bottom Sheave	3.80	5.00	7.50
14	Bottom Yoke and Hook	9.00	12.00	16.00
15	Top Sheave Pin	1.20	1.20	1.40
16	Bottom Sheave Pin	1.00	1.00	1.20
..	Regular Chain	44.60	50.40	57.00

Yale Plain Steel Trolleys



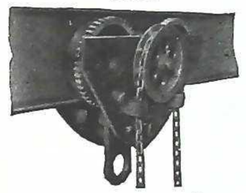
Furnished with adjusting washers to fit on I-beam three sizes larger than standard. For trolleys to fit on larger sized I-beam than specified, $4.00 extra.

Three adjustments for headroom are also provided.

In any position, the chain block is free to swing through a complete circle.

Rated Cap. Tons	For I-Beams Std. In.	For I-Beams Max. In.	Greatest Distance Between Supports Feet	Smallest Radius for Curve Inches	Diameter of Tread of Wheel Inches	Direct Push to Start Fully Loaded Trolley Pounds	Weight Lbs.	Price Each
¼	4	7	10	18	3	25	25	$22.00
½	5	8	14	21	3¾	18	30	25.00
1	6	9	14	21	4¾	20	50	29.00
1½	7	10	15	30	5½	26	95	39.00
2	8	12	16	36	6½	30	115	46.00
3	9	15	16	42	7¼	40	150	61.00
4	10	18	16	48	8¼	50	210	85.00
5	12	20	18	54	10	60	270	109.00
6	12	24	16	60	10	70	350	134.00
8	15	24	18	60	12	90	420	170.00
10	15	24	15	60	13	115	550	218.00
12	..	..	29	60	13	150	600	295.00
15	..	..	26	96	18	180	1100	485.00
20	..	..	21	120	18	260	1200	585.00

Yale Geared Steel Trolleys



Equalizing pin allows trolley to be assembled at any point on I-beam or crane. Furnished with adjusting washers to fit on I-beam larger than standard, as shown in table.

To fit on larger sized I-beam $4.00 extra.

Where heavy loads are carried on an overhead trolley or where there is normally a considerable distance between the load and the trolley, it will reduce the "pendulum effect" or swing, in starting and stopping the load.

Rated Cap. Tons	For I-Beams Std. In.	For I-Beams Max. In.	Smallest Radius for Curve Inches	Diameter of Tread of Wheel Inches	Std. Reach of Hand Chain from Under Side of I-Beam Feet	Pull on Hand Chain to Move Load Pounds	Net Weight Pounds	Price Each
1	6	9	21	4¾	8 2/3	8	90	$59.00
1½	7	10	30	5½	9	9	140	68.00
2	8	12	36	6½	10 5/12	11	170	77.00
3	9	15	42	7¼	12¼	13	180	97.00
4	10	18	48	8¼	12½	18	350	134.00
5	12	20	54	10	15¼	20	360	170.00
6	12	24	60	10	15 5/12	23	460	206.00
8	15	24	60	12	16 1/6	28	540	291.00
10	15	24	60	13	16¾	35	650	352.00
12	..	..	60	13	16¾	42	700	Upon
15	..	..	96	18	17 5/12	44	1400	Appli-
20	..	..	120	18	18 5/6	49	1500	cation

Yale Cast Iron Trolleys



Equalizing pin allows them to be widened for larger I-beams.

Three sizes of adjusting washers are regularly furnished.

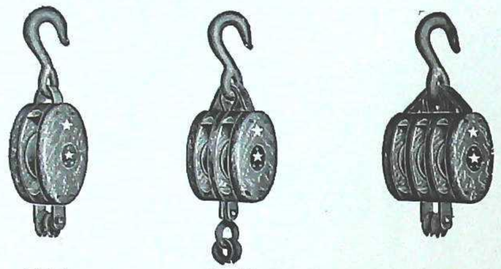
Trolleys to fit larger sized I-beams than specified, $4.00 extra.

Where low headroom conditions have to be met, the chain block can be hooked directly over the equalizing pin.

Rated Cap. Tons	For I-Beams Standard Inches	For I-Beams Max. Inches	Smallest Radius Curve	Distance from I-Beam to Lower Edge of Eye in Clevis, In.	Weight Pounds	Price Each
¼	4	7	18	5 5/16	16	$11.00
½	5	8	21	5⅝	27	15.00
1	6	9	21	7	46	22.00
1½	7	10	30	7¾	66	27.00
2	8	12	36	8⅛	84	34.00

Regular Wood Shell Tackle Blocks for Manila Rope

Inside Iron Strapped, Iron Sheaves, Loose Hooks



Single No. 2207 — Double No. 2208 — Triple No. 2209

Beckets are furnished on all single, one-half of the double and one-third of the triple blocks, without charge. If a greater number are wanted, add for each additional becket five cents net for beckets in blocks 5 inches and under, and one cent per inch of shell, in length, for each additional becket in sizes larger.

Star Graphite or Iron Bushed

Dimensions, Inches: Sheaves	Rope	Shell	Price, Each: Single	Double	Triple
1¾x ½x⅜	⅜	3	$.70	$1.30	$1.75
2 x ½x⅜	⅜	3½	.75	1.45	2.00
2¼x ⅝x⅜	½	4	.85	1.60	2.15
3 x ¾x⅜	⅝	5	.90	1.75	2.25
3½x1 x½	⅝–¾	6	1.10	2.00	2.90
4¼x1 x½	⅞	7	1.30	2.40	3.50
4¾x1⅛x⅝	1	8	1.65	2.85	4.25
5½x1⅛x⅝	1	9	1.85	3.40	4.75
6¼x1¼x⅝	1⅛	10	2.75	4.50	6.25
7¼x1¼x¾	1⅛	11	4.45	7.50	10.65
8 x1⅜x¾	1¼	12	4.45	7.50	10.65
9 x1½x¾	1¼	13	7.00	10.50	15.00
9½x1⅝x⅞	1⅜	14	7.00	10.50	15.00
10 x1⅝x⅞	1½	15	8.00	13.00	18.00
11 x1¾x⅞	1⅝	16	10.00	15.00	22.00

Roller Bushed

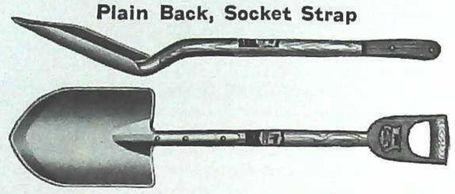
Dimensions, Inches: Sheaves	Rope	Shell	Price, Each: Single	Double	Triple
1¾x ½x⅜	⅜	3	$1.10	$2.00	$2.90
2 x ½x⅜	⅜	3½	1.15	2.20	3.15
2¼x ⅝x⅜	½	4	1.20	2.25	3.25
3 x ¾x⅜	⅝	5	1.25	2.35	3.50
3½x1 x½	⅝–¾	6	1.50	2.85	4.40
4¼x1 x½	⅞	7	1.70	3.35	5.00
4¾x1⅛x⅝	1	8	2.25	4.15	6.00
5½x1⅛x⅝	1	9	2.50	4.70	7.25
6¼x1¼x⅝	1⅛	10	3.50	6.00	8.50
7¼x1¼x¾	1⅛	11	5.30	9.20	13.20
8 x1⅜x¾	1¼	12	5.30	9.20	13.20
9 x1½x¾	1¼	13	8.15	12.80	18.45
9½x1⅝x⅞	1⅜	14	8.15	12.80	18.45
10 x1⅝x⅞	1½	15	9.25	15.50	21.75
11 x1¾x⅞	1⅝	16	11.50	18.00	26.50

Graphite Bronze or Metaline Bushed

Dimensions, Inches: Sheaves	Rope	Shell	Price, Each: Single	Double	Triple
2¼x ⅝x⅜	½	4	$1.50	$2.90	$4.15
3 x ¾x⅜	⅝	5	1.75	3.35	4.75
3½x1 x½	⅝–¾	6	2.20	4.00	5.80
4¼x1 x½	⅞	7	2.50	4.50	6.70
4¾x1⅛x⅝	1	8	3.25	5.70	8.50
5½x1⅛x⅝	1	9	3.70	6.75	10.00
6¼x1¼x⅝	1⅛	10	4.75	8.50	12.50
7¼x1¼x¾	1⅛	11	6.75	12.50	18.50
8 x1⅜x¾	1¼	12	6.75	12.50	18.50
9 x1½x¾	1¼	13	9.75	17.00	25.00
9½x1⅝x⅞	1⅜	14	9.75	17.00	25.00
10 x1⅝x⅞	1½	15	11.00	19.50	28.50
11 x1¾x⅞	1⅝	16	14.00	24.00	34.00

Conneaut D Handle Round Point Shovels

Plain Back, Socket Strap

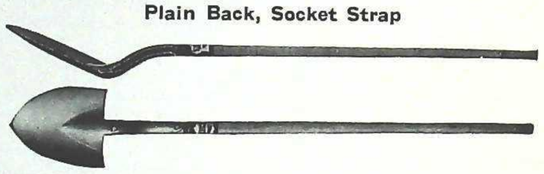


For handling ballast and crushed rock; also for sewer and excavating work.

Size No.	Dimensions Blade Inches	Wt. Lbs. Doz.	List No.	Price per Dozen
2	10 x12	60	215	$24.00
3	10½x12½	63	216	24.50
4	11 x13	66	217	25.00
6	12 x14	72	219	26.00

Conneaut Long Handle Round Point Shovels

Plain Back, Socket Strap

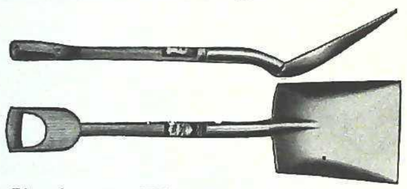


This shovel is specially made for spading and makes the use of a pick unnecessary. It is intended for use when the material is not picked down.

Size No.	Blade Inches	Wt., Lbs. per Doz.	List No.	Price per Dozen
2	10 x12	60	X111	$24.00
3	10½x12½	63	X112	24.50
4	11 x13	66	X113	25.00
6	12 x14	72	X115	26.00

Conneaut Standard D or Long Handle Square Point Shovels

Hollow Back



Size No.	Dimensions Blade Inches	Weight Pounds per Dozen	List No. D Handle	List No. Long Handle	Price per Dozen
2	10 x12	59	19	X19	$24.00
3	10½x12½	61	20	X20	24.50
4	11 x13	63	21	X21	25.00
6	12 x14	67	23	X23	26.00

Conneaut Long Handle Square Point Shovels

Plain Back, Socket Strap



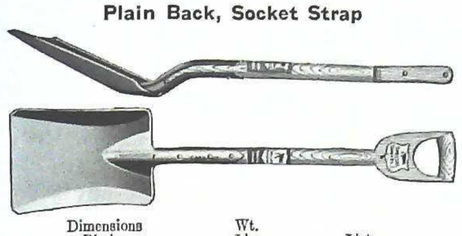
For sewer and clay digging. Also used in excavating. Blade is special analysis steel, hand pounded and tempered. Fourteen gauge is regular thickness but 12 or 13 gauge can be supplied on special order. Black finish.

Size No.	Dimens. Blade Inches	Wt. Lbs. Doz.	List No.	Price per Dozen
2	10 x12	60	X117	$24.00
3	10½x12½	63	X118	24.50
4	11 x13	66	X119	25.00
6	12 x14	72	X121	26.00

Hy-Tech Products

Conneaut D Handle Square Point Railroad Shovels

Plain Back, Socket Strap



Size No.	Dimensions Blade Inches	Wt. Lbs. Doz.	List No.	Price per Dozen
2	10 x12	60	123	$24.00
3	10½x12½	63	124	24.50
4	11 x13	66	125	25.00
6	12 x14	72	127	26.00

Conneaut Standard D or Long Handle Square Point Coal Shovels

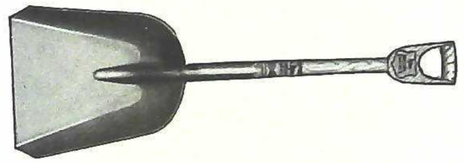
Hollow Back



Size No.	Dimensions Blade Inches	Weight Pounds per Dozen	List No. D Handle	List No. Long Handle	Price per Dozen
1	13½x14½	62	68	X68	$24.00
2	14 x15	66	69	X69	24.50
3	14½x15	70	70	X70	25.00

Conneaut Special D or Long Handle Western Pattern Coal Scoops

Hollow Back



Size No.	Dimensions Blade Inches	Weight Pounds per Dozen	List No. D Handle	List No. Long Handle	Price per Dozen
6	14¼x17	75	56	X56	$26.00
7	14½x17½	77	57	X57	26.50
8	14¾x18	80	58	X58	27.00
10	15¼x19	84	60	X60	28.00

Conneaut Shovel Handles



Split D — I.D.L. — Malleable D — Sturde D

All Conneaut special D handle shovels are shown with wood D. They can however be furnished with Split D, I.D.L., Malleable D or Sturde D at the same price.

Prices upon application.

Railroad Pick Handles



Length Inches	Price, per Dozen: Extra Grade	No. 1
36	. . .	. . . .

No. 280 Contractors' Picks

Adze Eye

When ordered can make both points square or square point and chisel end.



Wt. Lbs.	Price per Doz.	Wt. Lbs.	Price per Doz.	Wt. Lbs.	Price per Doz.	Wt. Lbs.	Price per Doz.
7	$18.50	8	$19.50	9	$21.50	10	$23.50

No. 830 Cross Pein Blacksmiths' Sledges



Wt. Lbs.	Dimensions, In. Lgth.	Face	Pein	Price Each
6	6½	2	2	$1.50
8	7	2¼	2¼	1.70
10	. . .	. . .	. . .	1.90
12	. . .	. . .	. . .	2.30
14	8½	2¾	2¾	2.80
16	. . .	. . .	. . .	3.20

Crow Bars



No. 74, Wedge Point



No. 75, Pinch Point

Weight Pounds	Size Inches	Length Feet	Weight Pounds	Size Inches	Length Feet	Weight Pounds	Size Inches	Length Feet
*3	⅝	2	16	1¼	4⅔	35	1½	6½
*4	¾	2½	18	1¼	5	40	1⅝	7
*6	⅞	3	22	1⅜	5⅓	50	1¾	7½
*8	1	3½	24	1⅜	5½	75	2	8
10	1	4	26	1⅜	5⅔	100	2¼	9
14	1⅛	4½	30	1½	6⅓	150	2⅝	10

*No. 75, pinch point only.

Atlas Car Movers



Price, No. **VIII**, without Rail Guides.....each $8.00
Price, No. **X**, with Rail Guides.....each 8.00
Price, Extra Spurs, Single.....each .50
Price, Extra Spurs, Double.....per pair .50

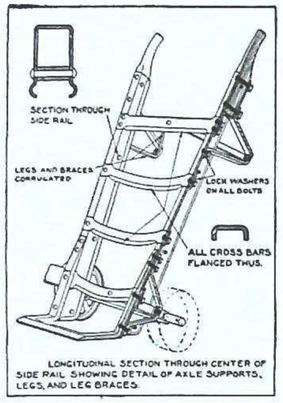
Style M American Pressed Steel Bag Trucks

Cast semi-steel plain bearing wheels supplied standard. Lowest cross bar curved. Truck is dipped in a red enamel paint which affords an excellent weather-proof covering. All parts are bolted together with lock washers.



Truck No.....	45M	48M
Length of Sides (Including Handles) ..... in.	45	48
Width at Handles	20	21
Width at Nose . .in.	11	11
Length of Nose..in.	9	9
Size of Wheels .in.	7x1¾	7x1¾
Size of Axle..Sq in.	⅞	⅞
Approx. Wt. . . lbs.	47	48
Price.....each	$12.00	$14.00

American Pressed Steel Trucks



Section Through Side Rail

Structural Features

This truck has great strength for its weight. The U-section of the side rails has beads on lower edges. Pipe separators prevent buckling.

Truck is practically as light as wood, size for size, and will not splinter, shrink or crack. It will not shake loose. It is bolted together with lock washers. Replacement is made easy in case of damage through accident. Has excellent balance. Wheel and axle fits are carefully made to assure easy running. Has hardwood handles for non-conductivity of heat and cold. Easily replaceable.

Has semi-steel or pressed steel wheels of special design to stand hard service. Has an attractive appearance, is well painted, always red.

Wheels



Semi-steel wheels with plain bearings are regular equipment on all except the grain truck. This cast wheel is of unusually high grade and less likely to chip or break than ordinary cast iron.

Pressed steel wheels are recommended because of lighter weight and also because they are even less subject to breakage than the semi-steel. A truck equipped with the pressed steel wheel is found to be easy to handle.

Both types of wheels can be sold separate from the trucks and a leaflet can be furnished upon request showing prices and dimensions.

Roller Bearing Wheels



Sectional View of Rubber Tired Semi-Steel Wheel with Roller Bearings

Particular attention is called to the type of roller bearings used on American Trucks. They are the kind that will be found in high grade machinery, motor and railway cars. The rollers instead of being pieces of ordinary steel are hardened and ground. The bearing is self-contained in a high-carbon steel split outer race so that the fit of the wheel is never impaired. The oil tight chamber in which the rollers run retains the lubricating liquid. If necessary new bearings are easy to install.

The semi-steel wheel in all sizes, either plain or rubber tread may be furnished with roller bearings.

* * *

Truck users adopting the American Steel Hand Truck will practically eliminate all future cost of maintenance and repair.

Trucks will sometimes be injured, just as steel railroad cars and motor cars are injured through accident and abuse. So all truck parts are bolted together with lock washers (no rivets). Thus a damaged piece can be quickly and easily replaced.

American Trucks are dipped in red, slow-drying, tough enamel paint which provides a durable coating upon every part of the frame, permeates the joints and affords an excellent weather-proof covering.

An interesting test under severe conditions was imposed by fastening a 700-pound chunk of iron on a stock 60-inch B truck and then towing the truck by automobile at 5 miles an hour over the roughest roadway of old brick pavement and Belgian block. When a run of 10 miles had been completed, the truck was dismantled for inspection. One end of one axle was found to be slightly bent (less than 1/16 inch, due to a sudden drop into a deep hole), the axle bearing showed a little natural wear, but in no other respect was there the least degree of injury. Parts which are held together by bolts and lock washers were tight and in place and undamaged. The truck was as ready for business as when the test began.

No. 10 American Truk-Paks



The usefulness of the Truk-Pak in connection with hand trucking is almost unlimited. Cartons or packages that might be dented or weakened by crowding can be handled without injury. Warehouse and platform congestion is avoided by the orderly arrangement possible with the use of the Truk-Pak. Checking systems are improved or more easily installed.

The Truk-Pak is built entirely of steel and welded so that it is practically of one-piece construction. There are no bolts, no rivets, nothing to need tightening. It is balanced to stand upright when unloaded and to be nested in stacks when not in use.

The deck is a single sheet of steel formed at the rear to become part of the back, thus avoiding the weakness of a joint. Channeled side rails, cross pieces and flanged longitudinal bars electrically welded at each intersection, provide a structure of extraordinary rigidity. It cannot work loose and is unaffected by climatic changes.



The deck of the Truk-Pak is raised above the floor so that the nose of a truck readily slides under preparatory to moving. The handle at the top of the Truk-Pak is fastened by nuts and welding too, so that its security is permanent. It is curved backward, thus leaving space for handhold even though the load extends above the top.

To guard against slippage, a stout piece of hard wood is bolted to the heel of the Truk-Pak. This "friction block" is intended to prevent sliding of the steel Truk-Pak when resting on the nose of the truck.

The standard model can be used on all suitable sizes of American pressed steel hand trucks.

Size of deck, 28 inches wide, 24 inches deep.

Size of back, 28 inches wide, 48 inches high.

Approximate weight, 75 pounds.

Price, No. 10 ..... each **$16.50**

American Pressed Steel Daisy Trucks

The side rails, cross bars and longitudinal straps of this truck are all formed from one piece. The various members are flanged or beaded similar to the regular construction in the larger sizes so that the utmost strength with light weight is assured.



Length of Sides, Including Handles ..... inches	46
Width at Handles ..... inches	19½
Width at Nose ..... inches	11½
Length of Nose ..... inches	4¼
Size of Wheels ..... inches	6x1⅜
Size of Axle ..... inches	⅞ Sq.
Approximate Weight ... pounds	29
Price, with Plain Bearing Cast Wheels ..... each	$8.00

Hy-Tech Products

Style L American Pressed Steel Barrel Trucks

Cast semi-steel plain bearing wheels supplied standard.



42L and 48L trucks have 3 cross bars

Truck No.	Length Sides, In. Incl. Handles	Width at Hdle. Inches	Width at Nose Inches	Length Nose Inches
42L	42	19½	13	5½
48L	48	20½	13	5½
52L	52	22	14	6½
54L	54	22½	14	6½
56L	56	23¾	15	7
60L	60	25½	16	7¼

Truck No.	Wheels Inches	Axle, In. Square	Weight Pounds	Price Each
42L	7x1¾	⅞	45½	**$12.00**
48L	7x1¾	⅞	49	**12.80**
52L	8x2	1	66	**15.10**
54L	8x2	1	67	**16.25**
56L	9x2¼	1⅛	87	**18.25**
60L	10x2½	1¼	119	**20.90**

American Pressed Steel Box Trucks

Cast semi-steel plain bearing wheels supplied standard. The Nos. 42X and 48X trucks have 3 cross bars.



Truck No.	Length Sides, In. (Incl. Handles)	Width at Hdle. Inches	Width at Nose Inches	Length Nose Inches
42X	42	19½	13	5½
48X	48	20½	13	5½
52X	52	22	14	6½
54X	54	22½	14	6½
56X	56	23¾	15	7
60X	60	25½	16	7¼

Truck No.	Size Wheels Inches	Size Axle, In. Square	Approx. Weight Pounds	Price Each
42X	7x1¾	⅞	45½	**$12.00**
48X	7x1¾	⅞	49	**12.80**
52X	8x2	1	66	**15.10**
54X	8x2	1	67	**16.25**
56X	9x2¼	1⅛	87	**18.25**
60X	10x2½	1¼	119	**20.90**

Styles G and N American Pressed Steel Grain Trucks

This pressed steel truck is as light as a wooden truck, size for size. All cross bars are straight. Dipped in a red, slow-drying, tough enamel paint which provides a durable coating upon every part of the frame. Special pressed steel wheels are supplied standard except 56N.



Truck No.	56G	59G	56N
Length of Sides Including Handles ..... in.	56	59	56
Width at Handles ..... in.	21	22	21
Width at Nose . in.	14½	15	14½
Length of Nose . in.	7½	8	7½
Size of Wheels . in.	10x2½	12x3	10x2½
Size of Axle Sq. in.	1⅛	1⅜	1⅛
Approx. Wt. . . lbs.	75	110	76
Price ..... each	**$20.10**	**24.70**	**16.60**

Style S American Pressed Steel Stevedore Trucks

Each member of the truck is made in a die, thus being shaped in metal. It is as light as a wooden truck, size for size. All cross bars are curved. The truck is dipped in a red enamel paint which permeates the joints and affords a water-proof covering.



Cast semi-steel plain bearing wheels are supplied standard.

Truck No	60S	64S
Length of Sides, Including Handles ..... in.	60	64
Width at Handles ..... in.	23	23
Width at Nose ..... in.	16	16
Length of Nose ..... in.	7	7
Size of Wheels ..... in.	12x3	12x3
Size of Axle Sq. ..... in.	1½	1½
Approx. Wt. ..... lbs.	149	150
Price ..... each	**$26.00**	**26.75**

Style W American Pressed Steel Warehouse Trucks

Cast semi-steel plain bearing wheels supplied standard. Parallel side rails. All cross bars straight.

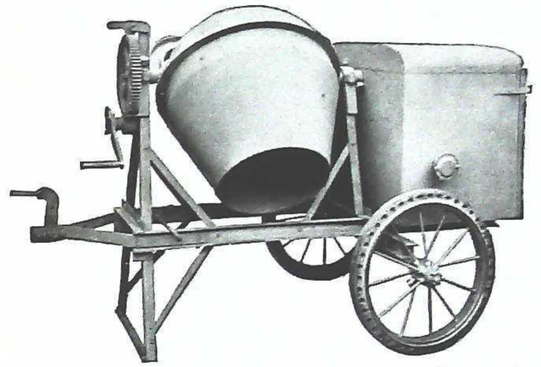
No. 48W truck has 3 cross bars.



Truck No.	Length Sides, In. (Incl. Hdles.)	Width at Hdle. Inches	Width at Nose Inches	Length Nose Inches
48W	48	19	19	4½
52W	52	20	20	5
54W	54	20	20	5
56W	56	22	22	5½

Truck No.	Size Wheels Inches	Size Axle, In. Round	Approx. Weight Pounds	Price Each
48W	7x1¾	⅞	49	**$14.55**
52W	8x2	1	70	**16.70**
54W	8x2	1	71	**18.00**
56W	9x2¼	1⅛	88½	**20.30**

No. 3½ Jumbo Concrete Mixers



The Jumbo 3½-cubic-foot mixer is a full half-bag mixer. Will handle economically and efficiently all small jobs and patch work. The frame is strong and well built. Two heavy 3-inch steel channels support the engine, enclosed in housing, while the drum is upheld by four strong and well braced steel angles.

The drawbar is adjustable to four different positions.

Model 3½C is mounted on trailer with cushion tire wheels, size 30x3½ inches; Model 3½ Swith steel wheels, 28x3 inches. Roller bearings in the wheels are furnished extra.

Overall dimensions, 90x54x69 inches. Size of frame, 72x18½ inches. Drum diameter, 31 inches; depth, 27 inches; diameter opening, 18½ inches. Capacity dry materials, 5 cubic feet; wet concrete, 3½ cubic feet.

Equipped with Jumbo engine, 2 h.p.; chain and sprocket drive.

Weight, 1150 pounds.

Price, Model 3½C, Cushion Tire Wheels ..... each ....
Price, Model 3½S, Steel Wheels ..... each ....

General Coal Chutes



Featured in this coal chute is the 16-gauge reinforcing plate, placed at the wagon end where wear is hardest. The plain chute is of 16-gauge steel, the heaviest gauge that can be used without excessive weight. With the additional plate, double thickness is provided at the vital wearing point, a thickness that cannot be dented and quickly worn out by the continual attack of falling coal. Tapered on the extension principle, this chute can be telescoped to any desired length.

Furnished in 6, 8, 10, 12 or 14-foot lengths, with or without the reinforcing plate. Black or galvanized.

Width at top end, inside, 19 inches; at bottom end, 16½ inches. Depth, 4 inches. Approximate weight, 8 pounds per foot.

Price, Plain, Black Finish ..... per foot **$1.28**
Price, Plain, Galvanized Finish ... per foot **1.45**
Price, Reinforcing Plate, Extra ..... each **1.65**

Rigid Casters

With Plain Iron and Rubber Tired Wheels



No. 56, Rectangular Plate



No. 45 Offset Plate



No. 58 Oblong Plate



No. 10 Rubber Tired



No. 35 Rubber Tired



No. 11 Rubber Tired

Wheel, In. Diam.	Width Tread	Casters, Each — Nos. 45, 56	Nos. 58	Nos. 10, 35	Nos. 11	Ht. Over All	Dimensions, Plate, Inches — For Nos. 58, 11	For Nos. 56, 10	For Nos. 45, 35
2	x ¾	$.29	$.29	$.70	$.70	2⅜	3 3/16 x3 5/16	1⅞ x3	2 3/16 x3 1/8
2½	x1	.31	.31	.77	.77	2⅞	4 3/8 x4 3/4	1 15/16 x4	2 11/16 x3 7/8
3	x1¼	.44	.44	.99	.99	3⅜	4¾ x5¼	2½ x4¼	2⅞ x3¾
4	x1⅜	.70	.70	1.43	1.43	4⅝	5 3/8 x5 7/8	2 1/16 x5⅜	3 1/16 x5
5	x1½	1.03	1.13	2.18	2.18	5⅞	6½ x7 3/8	3	x6¾	4	x5⅜
6	x1¾	1.34	1.48	3.20	3.20	6¾	8	x8 3/8	3¾	x7⅜	5½	x7⅛
7	x2¼	1.87	2.03	4.40	4.65	7⅜	7⅛ x	9½	3½	x8	5⅛	x7¼
8	x2⅜	2.32	2.60	5.30	5.60	9	8 7/8 x10¼	3¾	x8 7/16	5⅞	x8 5/16

No. 60 Ball Bearing Swivel Casters

Plain Iron Wheel



Diam. Wheel In.	Dimen., In. Height Over All	Diam. of Bolts	Price Each	Diam. Wheel In.	Dimen., In. Height Over All	Diam. of Bolts	Price Each
2	2⅞	¼	$.38	5	6½	⅝	$1.08
2½	3⅝	5/16	.45	6	7⅝	⅞	2.00
3	4¼	⅜	.58	7	9⅜	½	3.65
4	5 5/16	⅜	.69	8	10	½	4.57

No. 59 Ball Bearing Swivel Casters

Rubber Tired Wheels



Diam. Wheel In.	Dimen., In. Height Over All	Diam. of Bolts	Price Each	Diam. Wheel In.	Dimen., In. Height Over All	Diam. of Bolts	Price Each
2	2⅞	¼	$.69	5	6½	⅜	$2.31
2½	3⅝	5/16	.97	6	7⅝	⅜	4.15
3	4¼	⅜	1.21	7	9⅜	½	5.32
4	5¾	⅜	1.56	8	10	½	6.22

No. A-646-W Fairbanks Contractors' Wheelbarrows



Hot pressed steel tray, with wire bound edge. Hardwood handles. Heavy channel steel legs, with heavy steel shoes. Fairbanks improved combination angle iron wheel guard and axle box. Steel wheel. Pressed steel tray braces. Wood parts painted yellow, iron parts black.

No.	Size Tray, Inches — Lgth. on Top	Width on Top	Depth at Wheel	Depth at Hdle.	Cap. Cu. Ft.	Tray Gauge No.	Wheel No.	Approx. Wt. Lbs.	Price Each
A646W	32	26	9½	5	3½	16	8	54	$8.85

Fairbanks Tubular Steel Wheelbarrows



Nos. 236 and 246 are intended for sand, gravel and light materials; No. 244 for general mill and factory purposes; No. X242 for mining and foundry use.

No.	Size Tray, Inches — Lgth. on Top	Width on Top	Depth at Wheel	Depth at Handles	Cap. Cu. Ft.	Tray Gauge No.	Wheel No.	Wt. Lbs.	Price Each
236	33¾	28	9	4	3	16	8	61	$9.55
246	35¼	28¾	10½	5¼	4	16	8	70	9.99
244	35¼	28¾	10½	5¼	4	14	8	76	10.71
X242	35¼	28¾	10½	5¼	4	12	12	91	12.20

No. 710 Buffalo Climax Rivet Forges

For general riveting and repair work. The fire pan is of the one-piece pressed steel type, mounted on four substantial steel pipe legs, strongly braced. A heavy round tuyere plate evenly distributes the blast so as to insure the best results in heating. The blower and legs are fastened to the hearth by means of sturdy clamps which are quickly released. The gear case is cast with a pear-shaped fan case, and the crank can be turned in either direction. Gear ratio is 47½ to 1.



No.	Diameter, In. Fire Pan	Fan	Ship. Wt. Pounds	Price Each
710	18	12	95	$21.00
712	24	12	120	24.00

Bufco Forges



Has a small blower of a new design with a gear ratio of 36 to 1, steel spur gears throughout, a 1-piece gear case, which is oil and dust tight, and a 5½-inch straight blade fan in a 7½-inch fan case.

Fan is made of sheet steel and is powerful enough to furnish a strong blast with little effort. Steel pipe legs.

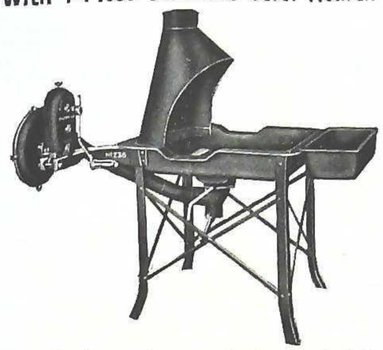
Hearth is 1-piece seamless pressed steel. Depth, 3 inches.

No. Forge	Diam. Hearth, In.	Kind of Hearth	Type of Hood	Wt., Lbs. in Carton	Price Each
061	18	Sheet Steel	Shield	48	$10.00
061-H	18	Sheet Steel	Half-Hood	52	11.50
062	24	Sheet Steel	Shield	56	14.00
062-H	24	Sheet Steel	Half-Hood	58	16.00

Hy-Tech Products

Buffalo Steel Plate Forges

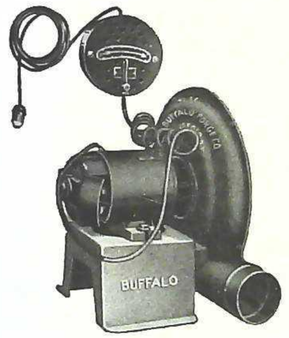
With 1-Piece Seamless Steel Hearth



The hearth is drawn from a single sheet of heavy rust-resisting steel, no corners to collect moisture, no cracks to widen out and allow distortion of the forge.

No.	Hearth Inches	Blower	Hood	Shipping Wt., Lbs.	Price Each
235	24x30x3	200	Windshield	171	$30.00
235H	24x30x3	200	Halfhood	181	33.00
236	24x30x6	200	Windshield	181	36.00
236H	24x30x6	200	Halfhood	191	39.00
535	24x30x3	500	Windshield	130	24.00
535H	24x30x3	500	Halfhood	140	27.00
536	24x30x6	500	Windshield	140	30.00
536H	24x30x6	500	Halfhood	150	33.00
735	24x30x3	700	Windshield	130	21.00
735H	24x30x3	700	Halfhood	140	24.00
736	24x30x6	700	Windshield	150	27.00
736H	24x30x6	700	Halfhood	160	30.00
835	24x30x3	Electric	Windshield	137	63.00
835H	24x30x3	Electric	Halfhood	147	66.00
836	24x30x6	Electric	Windshield	147	66.00
836H	24x30x6	Electric	Halfhood	157	69.00

Buffalo Variable Speed Electric Blowers



For blowing forge fires, small furnaces, organs, etc.

This outfit is equipped with specially designed, totally enclosed regulator giving six different speeds.

The motor operates on either d.c. or a.c. single phase, 25, 40 or 60 cycles. Ten feet of wire and a plug, together with the regulator described above, are furnished with this outfit.

No. 2-E has capacity for 1 large fire and No. 2-EH, 1 large or 2 small.

When ordering, specify whether 110 or 220-volt regulator is wanted.

No.	2-E	2-EH
Speed r.p.m.	2600	3400
Height inches	15	15
Diameter Outlet inches	3	3
Weight pounds	38	40
Price each	$37.50	48.50

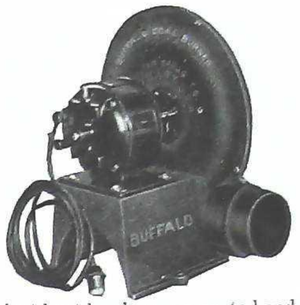
Buffalo Slide Pattern Blast Gates



Sizes 2 to 24-inch have cast iron frame; larger sizes, angle iron and steelplate.

Prices upon application.

Buffalo Coal Burners



When the cheaper grades of coal are burned natural draft is usually not sufficient unless a thin bed of coal is used. However, it is advisable to carry 4 to 6 inches of ashes on the grates to prevent the possibility of any of the smaller coal falling through before it is burned. If a small fan is used, the artificial draft supplied not only enables the coal to burn as rapidly as is desired, but when sufficient heat has been generated and the blower stopped, combustion stops and the fire does not continue to burn vigorously and overheat the building. This is due to the fact that the heavy bed of ashes below the fire prevents natural draft.

The Buffalo Coal Burner is a small motor driven fan arranged to supply forced draft to the ash pit to pep up the fire and to permit the use of the cheaper grades of fuel. The unit can readily be installed on any furnace or boiler already in use or when being erected. The motor requires the minimum of current, and is quiet in operation. Equipped with wool-packed bearings and requires oiling only once per season. Does not interfere with radio reception, yet the blower delivers ample air for this service and may be operated over long continued periods without the possibility of any motor trouble due to overloading.

No. 1

Equipped with 1–30 h.p. motor; speed, 1720 r.p.m.; 1-inch static pressure. Can serve 3 square feet or 22-inch diameter grate area. Will burn a maximum of 20 pounds of coal per hour. Delivers 80 cubic feet of air per minute.

Has 3-inch pipe to ash pit.

Height, 15 inches; width, 10½ inches.

Shipping weight, 40 pounds.

Price, No. 1 ..... each $50.00

No. 2

Equipped with 1/15 h.p. motor; speed, 1720 r.p.m.; 1-inch static pressure. Can serve 6 square feet or 33-inch diameter grate area. Will burn a maximum of 30 pounds of coal per hour. Delivers 120 cubic feet of air per minute.

Has 4-inch pipe to ash pit.

Height, 17 inches; width, 12 inches.

Shipping weight, 40 pounds.

Price, No. 2 ..... each $66.00

No. 3

Has ¼ h.p. motor; speed, 1720 r.p.m.; 1-inch static pressure. Can serve approximately 10 square feet of grate area. Will burn maximum of 75 pounds of coal per hour. Delivers 300 cubic feet of air per minute.

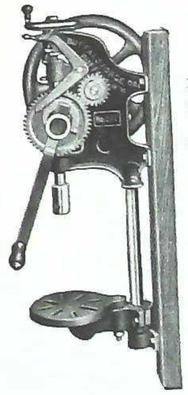
Has 6-inch pipe to ash pit.

Height, 15 inches; width, 16 inches.

Shipping weight, 110 pounds.

Price, No. 3 ..... each $100.00

No. 611R Ball Bearing Post Drills



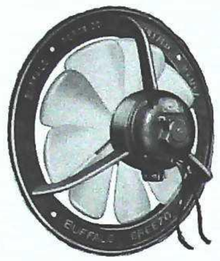
Has strongly ribbed cast iron frame mounted on a substantial post. Shaft and spindle are steel, extra heavy. All bearings are bored and reamed in the solid metal of the frame. Gears are carefully made and fitted. Hand and automatic feeds are provided, the latter being adjustable to three speeds.

Drills to center of 11-inch circle; drills holes up to ¾ inch; spindle diameter, ⅞ inch; run of feed, 3 inches; run of table, 10 inches. Length over all, 33 inches; shipping weight, 75 pounds.

Furnished with chuck for ½-inch straight shank bits. Can be bored for 4/64 or No. 1 or 2 Morse taper at extra charge.

Price, No. 611R ..... each $10.00

Buffalo Breezo Fans



Due to improved blade design and setting, this fan delivers the maximum amount of air directly forward. Bearings are of extra large dimensions, bronze bushed. Lubrication of bearings (of waste-packed type) is such that fan so equipped will run 2500 hours without recoiling.

No bolts are used in the assembly of the ring and arms. There is nothing to work loose.

The weight is less than that of fans made of cast iron, and even lighter than aluminum and far stronger.

The motor is of totally enclosed type to keep out dirt and water. Quiet in operation.

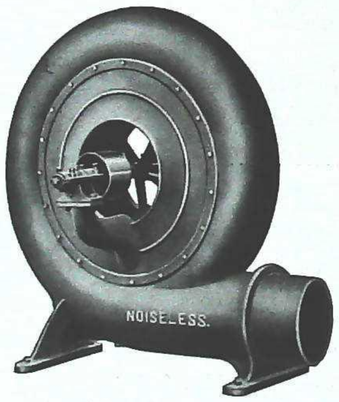
The prices cover d.c. 110 and 220 volts, also 60-cycle and 25-cycle a.c., either single or polyphase with the exception of the 36-inch which can be furnished for 110 and 220 volts d.c. and for 220 and 440-volt, 25 or 60-cycle, 3-phase a.c.

Size Fan Inches	Speed R.P.M.	Capacity Cubic Feet	Size Motor H.P.	Shipping Weight Pounds	Price Each
*12	750	600	1/70	25	$30.55
*12	1150	1000	1/50	25	30.55
16	850	1100	1/20	50	38.35
16	1150	1500	1/10	50	38.35
18	850	1800	1/10	60	60.45
18	1150	2400	1/6	60	60.45
24	670	3200	1/4	115	104.00
24	850	4000	1/3	115	104.00
30	670	6200	1/2	220	146.25
†36	575	10000	3/4	275	185.25

*Add $4.00 to price for pull switch. 1150-revolution motor on 12-inch is not reversible.

†Polyphase and d.c. only.

Buffalo Steel Pressure Blowers



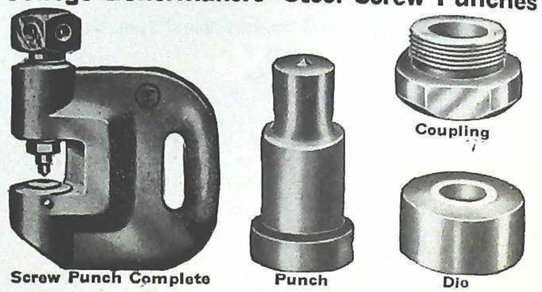
Has a cast iron solid peripheral shell which absolutely prevents leakage and assures a maximum air delivery.

Fan and motor can both be bolted to the same cast iron sub base, providing a compact, self contained outfit.

Motor and blast wheel may be connected by coupling, or wheel may be overhung on motor shaft.

No.	Heicht Inches	Diameter Outlet Inches	Pulley, Inches Diameter	Face	Weight Pounds	Price Each
1	12	3 1/2	2 1/4	1 3/4	55	$14.00
2	15 1/8	4	2 3/4	2 1/4	75	21.00
3	19 1/16	4 5/8	3	2 5/8	95	33.00
4	23 1/4	5	4	3	135	44.00
5	25 3/4	5 3/8	4 1/4	3	180	54.00
6	29 1/4	6 3/16	4 1/2	3 1/2	265	67.00
7	33	7 1/4	5	4 1/2	308	81.00
8	38 1/4	8 9/16	6	4 1/2	445	112.00
9	43 5/8	10	7	5	635	137.00
10	56 1/16	12 1/8	8	5 3/4	820	182.00
11	65 1/8	14 3/8	8 1/2	6 1/2	1400	294.00
11 1/2	75 1/4	16 3/4	10	7	1900	378.00
12	75 1/4	18	10	8	1950	392.00

Oswego Boilermakers' Steel Screw Punches



Body is of high grade electric steel casting, having a tensile strength of 80000 pounds. Parts are carefully machined and fitted. In ordering, specify rivet sizes of punches and dies wanted. Punches are 1/32-inch larger than rivet sizes up to 7/16-inch; 1/2-inch and above, 1/16-inch larger.

One punch and die furnished with each screw punch.

Screw Punch No.	Punches Hole Inches	Thickness Plate Inches	Distance from Edge Inches	Weight Pounds	Complete Price Each
A or 00	5/16	1/4	1 1/2	13	$20.00
B " 0	1/2	1/4	1 1/2	17	24.00
C " 1	1/2	5/16	1 1/2	25	30.00
D " 2	3/4	1/2	2	41	40.00
E " 3	3/4	3/4	2 1/2	64	60.00
F " 3 1/2	3/4	3/4	3 1/2	78	75.00
G " 4	3/4	3/4	4	92	80.00

Repair Parts

Screw Punch No.	Price, Each Body	Screw	Coupling	Punch	Die	Set Screw
A or 00	$12.00	$12.50	$2.00	$2.10	$1.40	$.50
B " 0	16.00	12.50	2.00	2.10	1.40	.50
C " 1	20.00	15.00	2.50	2.40	1.60	.60
D " 2	25.00	15.00	2.50	2.40	1.60	.60
E " 3	30.00	20.00	3.00	3.00	2.00	.75
F " 3 1/2	50.00	20.00	3.00	3.00	2.00	.75
G " 4	60.00	20.00	3.00	3.00	2.00	.75

No. 1 Whitney Punches



This punch has great capacity, is of simple construction, and strongly built.

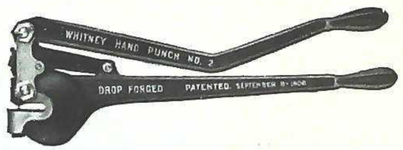
Punches and dies in 14 sizes, from 5/32 to 9/16 inch, by 32nds.

Insertable pipe handles.

One punch and one die are included with each punch as equipment.

No.	Lgth. In.	Cap., In. Hole	Thick. Iron	Wt. Lbs.	Price, Each Tool Complete	Extra Punches	Extra Dies
1	34	3/8	1/4	22	$19.00	$.45	$.45

No. 2 Whitney Punches



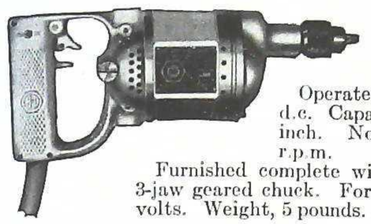
This punch gives excellent satisfaction in boiler shops, to furnace manufacturers, cornice, tank and stack builders, manufacturing plants and repair shops. One punch and one die included with each punch as equipment.

Punches and dies in 13 sizes, from 1/8 to 1/2 inch, by 1/32nds, also specially by 1/64th sizes.

Length	inches	23
Capacity Hole	inches	5/16
Thickness Iron	inches	1/4
Weight	pounds	13
Price, Tool Complete	each	$15.00
Price, Extra Punches	each	.45
Price, Extra Dies	each	.45

Black & Decker 1/4-Inch Light-Duty Portable Electric Drills

With the Pistol Grip and Trigger Switch



A general purpose drill for light work on intermittent service.

Operates on either a.c. or d.c. Capacity in steel, 0 to 1/4 inch. No load speed, 2000 r.p.m.

Furnished complete with cable, plug and 3-jaw geared chuck. For 32, 110, 220 or 250 volts. Weight, 5 pounds.

Price, Complete, All Voltages	each	$25.00
Price, No. 4 Bench Drill Stand for This Drill	each	12.00
Extra for Grinding Outfit	each	3.25

Black & Decker 1/4-Inch Heavy Duty Portable Electric Drills

With the Pistol Grip and Trigger Switch



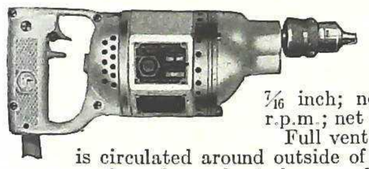
Designed for continuous production work and for all types of maintenance work where heavy duty performance is required.

Operates on a.c. or d.c. Capacity in steel, 0 to 1/4 inch; in wood, 0 to 3/8 inch; no load speed, 2500 r.p.m.; net weight, 7 1/4 pounds. Furnished with cable, plug and Ettco 3-jaw keyless chuck. For 32, 110, 220 or 250 volts. Grinding outfit, $4.00 extra.

Price, All Voltages	each	$44.00
Price, No. 5 Bench Stand for This Drill	each	14.00
Extra for Special Speed of 3000 R.P.M.	each	2.50

Black & Decker 5/16-Inch Portable Electric Drills

With the Pistol Grip and Trigger Switch



Operates on a.c. or d.c. Capacity in steel, 0 to 5/16 inch; in wood, 0 to 7/16 inch; no load speed, 1400 r.p.m.; net weight, 7 1/2 pounds. Full ventilation. Cooling air is circulated around outside of motor field as well as through gap due to hexagonal body design. With Ettco keyless 3-jaw chuck, cable and plug.

For 32, 110, 220 or 250 Volts	each	$48.00
Bench Drill Stand	each	12.00
Extra for Speed of 1800 R.P.M.	each	2.50

Black & Decker 1/2-Inch Ball Bearing Portable Electric Drills

With the Pistol Grip and Trigger Switch



Operates on a.c. or d.c. Capacity in steel up to 1/2 inch. No load speed, 400 r.p.m. Weight, 12 1/2 pounds.

Complete with cable, attachment plug and 3-jaw geared chuck. Chuck key holder in handle.

Bench stand, $24.00 extra.

For 32, 110, 220 and 250 volts.

For All Voltages	each	$53.00

Black & Decker 5/8-Inch Portable Electric Drills

With the Pistol Grip and Trigger Switch



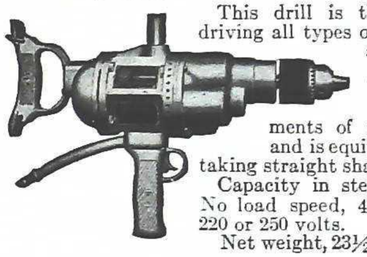
A general purpose tool for carbon or high-speed steel bits. Designed for cylinder honing with spring expanded hones. Operates on a.c. or d.c. Capacity in steel, 5/32 to 5/8 inch. No load speed, 500 r.p.m. Net weight, 17 1/2 pounds. Complete with 3-jaw geared chuck and chuck key holder in handle. For 32, 110, 220 or 250 volts.

Price, All Voltages	each	$68.00
Price, No. 3 Bench Drill Stand for This Drill	each	28.00
Price, No. 3 Post Drill Stand for This Drill	each	32.00

Black & Decker 3/4-Inch Ball-Bearing Electric Drills

Universal Motor—Operates on A.C. or D.C.

With the Pistol Grip and Trigger Switch

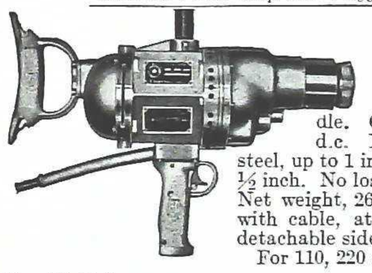


This drill is the ideal tool for driving all types of cylinder grinders and cylinder hones. Designed and built to withstand the heavy requirements of this type of work and is equipped with chuck for taking straight shanks up to 3/4 inch. Capacity in steel, up to 3/4 inch. No load speed, 425 r.p.m. For 110, 220 or 250 volts. Net weight, 23 1/2 pounds.

Price, All Voltages	each	$78.00

Black & Decker 1-Inch Ball Bearing Portable Electric Drills

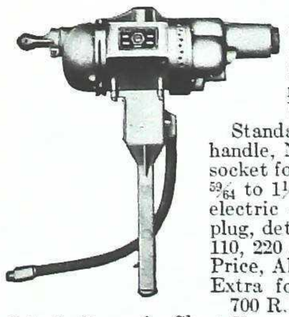
With the Pistol Grip and Trigger Switch



For taper shank drill bits and reamers. No. 3 Morse taper socket is secured in drill spindle. Operates on a.c. or d.c. Drilling capacity in steel, up to 1 inch; reaming, 1/16 to 1 1/2 inch. No load speed, 350 r.p.m. Net weight, 26 pounds. Complete with cable, attachment plug and detachable side handle. For 110, 220 or 250 volts.

For All Voltages	each	$98.00
Post Drill Stand	each	32.00
Bench Stand	each	28.00

No. 8 Black & Decker Portable Electric Drills



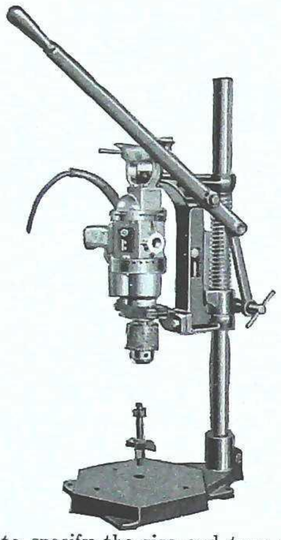
Drilling capacity in steel, 59/64 to 1 1/2 inches; reaming capacity in steel, 37/64 to 15/16 inch; no load speed, 350 r.p.m.; net weight, 66 pounds; Universal motor a.c. or d.c.

Standard equipment includes spade handle, No. 4 Morse taper removable socket for taper shank drill bits from 59/64 to 1 1/2 inches, 15 feet of duplex electric cable, separable attachment plug, detachable side handle. For 110, 220 or 250 volts.

Price, All Voltages	each	$200.00
Extra for Speeds of 500 or 700 R.P.M.	each	5.00
Spindle Sleeve for Short Taper Shank Drills, Extra		7.50

Hy-Tech Products

Black & Decker Bench Drill Stands



The No. 3 Bench Drill Stand is so designed that Black & Decker Electric Drills sizes ¾-inch and 1-inch can be readily attached, making a convenient drill press.

The No. 1 bench drill stand accommodates Black & Decker Electric Drill size ⅝-inch and Nos. 3 and 4 nut runners.

The bracket to which the electric drill is attached can be raised or lowered on the vertical column and is secured in any desired position by means of a split collar and clamping screw. It can also be swung around in a complete circle as there is no keyway on the column.

In ordering the bench drill stand, be sure to specify the size and type of electric drill so that the proper stand can be supplied.

Net weight of stand without drill, 50 pounds.

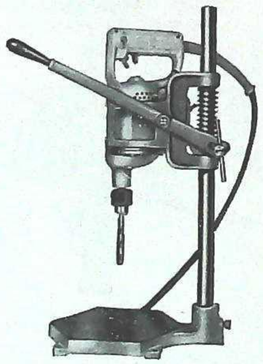
When the bench drill stand complete with the portable electric drill is desired, this should be specified and the price of the drill added to the price of the stand.

No. **1**, Bench Drill Stand Only.....each **$28.00**
No. **3**, Bench Drill Stand Only.....each **28.00**

Black & Decker Bench Drill Stands

Black & Decker Electric Drills can be readily attached to this stand, making a convenient drill press.

The bracket can be raised or lowered and also swung around in a complete circle.



No. 4

For ¼-inch light and ¼-inch standard drills, and No. 1 screwdriver.

Price, No. 4.....each **$12.00**

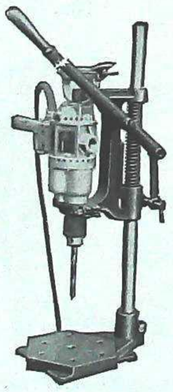
No. 5

For ¼-inch heavy duty and 5/16-inch standard drills, No. 2 screwdriver and No. 2 tapper.

Price, No. 5.....each **$14.00**

Black & Decker Bench Drill Stands

For ½-Inch Special Drills



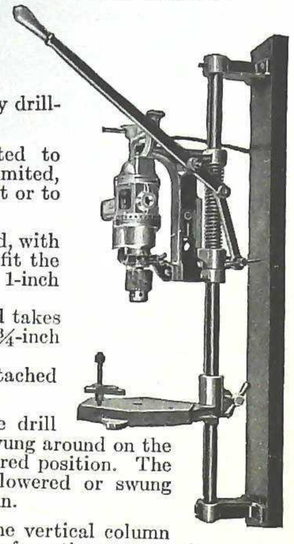
The drill is held in the stand by means of a bronze locking collar which works so easily that the drill can be attached in only a few seconds.

The bench stand and the ½-inch special drill make an ideal press for all types of work that can be done on the bench. A 6 to 1 leverage is obtained on the handle and the drill bracket is adjustable up and down the column or can be swung around in a complete circle.

This bench stand can only be used with the new type C ½-inch special drill.

Price, Drill Stand Only.....each **$18.00**

Black & Decker Post Drill Stands



This stand is designed especially for the purpose of adapting the Black & Decker electric drill for use as a drill press for heavy drilling or precision work.

It is particularly adapted to shops where bench space is limited, as it can be bolted to a post or to the wall.

The No. 3 Post Drill Stand, with proper adapter collar, will fit the Black & Decker ¾-inch and 1-inch drills.

The No. 1 Post Drill Stand takes Black & Decker ½, ⅝ and ¾-inch drills.

Drills can be quickly attached and detached.

The bracket carrying the drill can be raised, lowered or swung around on the vertical column to any desired position. The table can also be raised, lowered or swung around on the vertical column.

Standard brackets hold the vertical column of the post drill stand 5 inches from the post or wall.

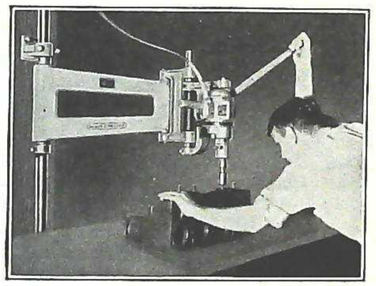
In the table are six tapped holes to accommodate ½-inch studs, used to clamp the work in place. One stud with nut and clamp is supplied with the stand.

Be sure to specify size and type of drill when ordering.

The stand is shipped lagscrewed to a board, size 1¾x5½x52 inches. The net weight of the stand without drill is 75 pounds.

No. **3** Post Drill Stand.....each **$32.00**
No. **1** Post Drill Stand.....each **32.00**

Black & Decker Radial Arms



The radial arm is furnished with heavy brackets that bolt or clamp to wall or post, and these brackets support a large steel vertical column which carries the arm. The arm has a vertical adjustment up and down the column and the weight is carried by a ball thrust bearing which makes it easy to swing the arm into any desired position.

The radial arm is particularly adaptable to chain production methods, as it relieves the operator of carrying the weight of the electric tool, takes all the torque of the electric tool from the operator, and has an operating range so wide as to enable the operator to either get ahead of the chain production or make up any loss in time due to emergencies.

Vertical travel of bracket, 4 inches. Travel of arm on column, 24 inches. Angle of swing, 180°. Distance, center of column to elbow, 22 inches; elbow to spindle of electric tool, 14 inches. Angular adjustment of electric tool bracket, 245°. Effective area of operation of arm is within radii from 19 to 36 inches from column.

In ordering, be sure to specify type and size of electric tool to be used so right adapter will be supplied.

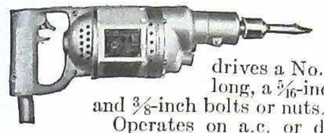
Weight, 180 pounds.

Price, Complete.....each **$120.00**

Hy-Tech Products

Black & Decker Electric Screwdriver and Socket Wrench

With the Pistol Grip and Trigger Switch



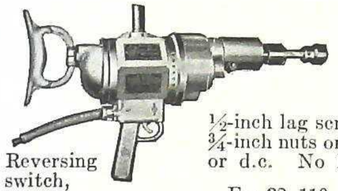
No. 1 drives a No. 12 wood screw 2 inches long in hardwood. No. 2 drives a No. 16 wood screw 3¼ inches long, a 5/16-inch lag screw 4 inches long, and ⅜-inch bolts or nuts.

Operates on a.c. or d.c. No load speed, 500 r.p.m. Complete with electric cable, plug and Nos. 10 and 14 flat bits with centering sleeves. For 32, 110, 220 or 250 volts. Reversing switch, $10.00 extra.

No.	1	2
Net Weight.....pounds	7	9
For All Voltages.....each	$48.00	$68.00
Bench Stand.....each	12.00	12.00

Black & Decker Electric Ball Bearing Nut Runners

With the Pistol Grip and Trigger Switch



Reversing switch, $10.00

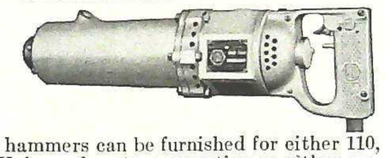
No. 3 drives a No. 20 wood screw 4 inches long, a ⅜-inch lag screw 4½ inches long, and ½-inch nuts or bolts. No. 4 drives a ½-inch lag screw 5½ inches long and ¾-inch nuts or bolts. Operate on a.c. or d.c. No load speed, 500 r.p.m.

For 32, 110, 220 or 250 volts.

No.	3	4
Net Weight.....pounds	18	27
For All Voltages.....each	$88.00	$108.00
Bench stand.....each	28.00	28.00

Black & Decker Portable Electric Hammers

With the Pistol Grip and Trigger Switch



These hammers can be furnished for either 110, 220 or 250 volts. Universal motors operating on either a.c. or d.c.

No. 2

This portable electric hammer is light in weight and is particularly suitable for drilling in concrete or brick for electrical work, sign and awning hanging and theater seat installation. Strikes 3300 blows per minute and has a capacity for drilling up to ⅝ inch in concrete or brick. Length over all, 16⅝ inches. Packed in fibre carrying case with one No. 0 chuck and turning wrench, one ⅝-inch star drill and one drift key. Net weight each, 10 pounds.

Price, No. **2**, All Voltages.....each **$145.00**

No. 4

Ideal for driving any type of tool where hammer action is desired such as star drills, steel chisels, wood working chisels, etc. Strikes 2300 blows per minute. Capacity in concrete or brick, up to 1¼ inch. Length over all, 18⅝ inches. Packed in fibre carrying case with one each Nos. 1 and 2 chucks and turning wrenches, one 1-inch star drill and one drift key. Net weight each, 15½ pounds.

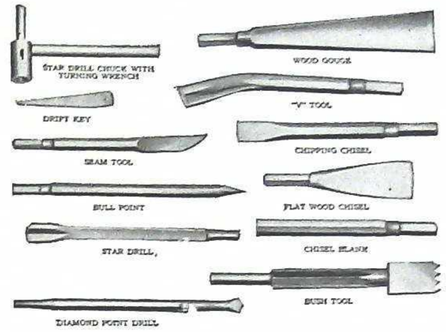
Price, No. **4**, All Voltages.....each **$185.00**

No. 6

This portable electric hammer has a larger capacity than the Nos. 2 and 4. Strikes 2900 blows per minute. Length over all, 20¾ inches. This hammer is equipped with an auxiliary perforated barrel which keeps the hammer cool at all times. Packed in fibre carrying case with one each Nos. 2 and 3 chucks and turning wrenches and one 1½-inch star drill and one drift key. Net weight each, 23 pounds.

Price, No. **6**, All Voltages.....each **$245.00**

Accessories for Nos. 2, 4 and 6 Black & Decker Electric Hammer Tools



No.	Description	Price Each
97167	¼x5-Inch Star Drill Point	$1.00
97168	5/16x5-Inch Star Drill Point	1.00
97160	⅜x5-Inch Star Drill Point	1.00
97169	7/16x5-Inch Star Drill Point	1.15
97161	½x9-Inch Star Drill Point	1.15
97170	9/16x9-Inch Star Drill Point	1.15
97162	⅝x9-Inch Star Drill Point	1.30
97171	11/16x9-Inch Star Drill Point	1.30
97163	¾x9-Inch Star Drill Point	1.30
97172	13/16x9-Inch Star Drill Point	1.50
97097	⅞x9-Inch Star Drill Point	1.50
97173	15/16x9-Inch Star Drill Point	1.50
97096	1x9-Inch Star Drill Point	1.50
10751	1¼x12-Inch Star Drill Point	2.25
10752	1¼x12-Inch Star Drill Point	2.50
10749	1⅜x12-Inch Star Drill Point	2.75
10750	1½x12-Inch Star Drill Point	3.00
10753	1¾x12-Inch Star Drill Point	3.50
10754	2x12-Inch Star Drill Point	4.00
97095	Steel Chipping Chisel Dressed to ¾x9-Inch	1.75
97267	Chisel Blanks, ¾x9 Inches	1.25
99036	Bull Point, ¾-Inch	2.25
11363	¼x5-Inch Diamond Point	1.00
11364	5/16x5-Inch Diamond Point	1.00
11365	⅜x5-Inch Diamond Point	1.00
11366	7/16x5-Inch Diamond Point	1.15
11367	½x9-Inch Diamond Point	1.15
11368	9/16x9-Inch Diamond Point	1.15
11369	⅝x9-Inch Diamond Point	1.30
11370	11/16x9-Inch Diamond Point	1.30
11371	¾x9-Inch Diamond Point	1.30
11372	13/16x9-Inch Diamond Point	1.50
11373	⅞x9-Inch Diamond Point	1.50
11374	15/16x9-Inch Diamond Point	1.50
11375	1x9-Inch Diamond Point	1.50
11376	1¼x12-Inch Diamond Point	2.25
11377	1¼x12-Inch Diamond Point	2.50
11378	1⅜x12-Inch Diamond Point	2.75
11379	1½x12-Inch Diamond Point	3.00
11380	1¾x12-Inch Diamond Point	3.50
11381	2x12-Inch Diamond Point	4.00
10651	No. 0 Star Drill Chuck (Takes Points from ¼ to ⅝-Inch Inclusive) with Turning Handle	3.50
99239	No. 1 Star Drill Chuck (Takes Points from ¼ to ¾ Inch Inclusive) with Turning Handle	3.50
99243	No. 2 Star Drill Chuck (Takes Points from 13/16 to 1-Inch Inclusive) with Turning Handle	4.50
99420	No. 3 Star Drill Chuck (Takes Points from 1⅜ Inches Up) with Turning Handle	5.50
97155	Drift Key	.50
10909	No. 2 Tool Retaining Spring	.25
10337	No. 4 Tool Retaining Spring	.25
10336	No. 6 Tool Retaining Spring	.25

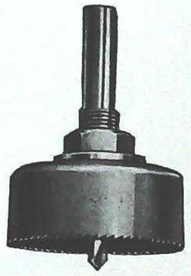
Extra length star drills and chisels, 12, 16, 20 and 24 inches, supplied at extra charge.

Prices of tools other than illustrated above, and of special tools upon request.

Black & Decker Hole Saws

For Use with ½, ⅝ and ¾-Inch Black & Decker Drills

The Black & Decker Hole Saw increases the range of a ½-inch electric drill to 3½ inches, and is used for cutting clean round holes in metal, wood, or any material that can be cut with a hack saw.



It is made of finest quality tungsten steel, carefully hardened. The mandrel automatically holds a ¼-inch twist drill which drills the pilot hole to serve as a guide for the saw. Holes up to ⅞ inch deep can be cut.

Hole Saws Only (without Mandrels)

No.	Each	Saw Size Inches	Pipe Tap Inches	Conduit Inches	Use with Mandrel No.
00906	$.60	¾	...	⅜	00903
00908	.60	⅞	¾	½	00903
00910	.60	1	...	...	00903
00912	.60	1⅛	1	¾	00903
00911	.60	1¼	...	...	00904
00913	.60	1⅜	...	1	00904
00914	.60	1½	1¼	...	00904
00915	.90	1⅝	...	...	00904
00916	.90	1¾	1½	1¼	00904
00917	.90	1⅞	...	...	00904
00918	.90	2	...	1½	00904
00919	.90	2 1/16	...	...	00904
00920	.90	2⅛	...	...	00904
00922	1.25	2¼	2	...	00904
00921	1.25	2⅜	...	...	00904
00923	1.25	2½	...	2	00904
00924	1.25	2⅝	...	...	00904
00925	1.25	2¾	...	...	00904
00927	1.25	2⅞	...	...	00904
00926	1.25	3	...	2½	00904
00929	1.25	3¼	...	...	00904
00928	1.25	3½	...	...	00904

Mandrels

No.	Description	Each
00903	With Pilot Drill (for ¾ to 1⅛-In. Saws)	$1.50
00904	With Pilot Drill (for 1¼ to 3½-In. Saws)	1.50

Special Assortments

00902	Plumbers' and Steamfitters' Set, with One Each Saw for ¾, 1, 1¼, 1½ and 2-Inch Pipe Taps, and Nos. 00903 and 00904 Mandrels	$6.50
00900	Electricians' Set, with ¾, ⅞, 1⅛, 1⅜, 1¾, 2, 2½ and 3-Inch Saws for Cutting Holes for Conduit, and Nos. 00903 and 00904 Mandrels	9.50
00901	Automotive Set, Consisting of ¾-Inch Saw for Cigar Lighters, 2-Inch Saw for Gauges and Ammeters, 2 1/16-Inch Saw for Dash Type Motometer, 2⅝-Inch Saw for Clocks, and 3½-Inch Saw for Speedometers, Together with Nos. 00903 and 00904 Mandrels	7.50

Black & Decker Portable Electric Grinders

With the Pistol Grip and Trigger Switch



6-Inch Size

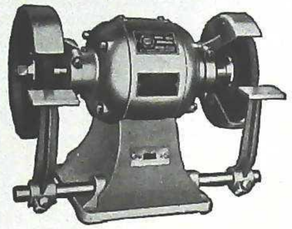
Powerful universal motor operates on a.c. or d.c. Armatures are mounted on ball bearings.

Complete with grinding wheel, adjustable wheel guard, and electric cable.

For 110, 220 or 250 volts.

		4	5	6
Size Grinder	inches	4x¾	5x¾	6x1
Grinding Wheel	inches	½	½	⅝
Hole in Grinding Wheel	inches	4800	3800	3300
No Load Speed	r.p.m.	10	15	24
Net Weight	pounds	$60.00	80.00	90.00
Price, All Voltages	each			

Black & Decker 7-Inch Electric Grinders



Without Pedestal



With Pedestal

An ideal ball-bearing grinder for sharpening all kinds of edge tools and for general purpose grinding.

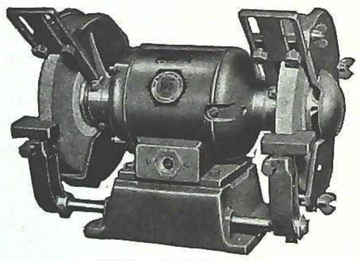
It is supplied complete as illustrated with two grinding wheels, one coarse and one fine, two wheel guards, two tool rests, electric cable fitted with attachment plug, and electric switch.

Furnished for 32, 110 or 220 volts.

This grinder does not have a universal motor; specify voltage and current when ordering.

Diameter of Wheels	inches	7
Face of Wheels	inches	¾
Hole in Wheels	inches	½
No Load Speed for 60-Cycle A.C. and D.C.	r.p.m.	3600
No Load Speed for 25-Cycle	r.p.m.	1500
No Load Speed for 40-Cycle	r.p.m.	2400
No Load Speed for 50-Cycle	r.p.m.	3000
Net Weight	pounds	50
Price, All Voltages	each	$56.00
Price, Pedestal for This Grinder, Extra	each	14.00

Black & Decker 10-Inch Electric Grinders



Without Pedestal



With Pedestal

A powerful ball bearing bench grinder designed for use on either bench or pedestal to take care of tool grinding and all types of general grinding and buffing.

Equipped with enclosed type safety wheel guards with an adjustable tongue to follow up the wheel wear. The electric switch is conveniently located in the base.

Two grinding wheels 10 inches in diameter, 1-inch face and ¾-inch hole, one coarse and one fine, supplied as standard equipment.

No load speed for d.c., 2000 r.p.m. For 25-cycle a.c., 1500 r.p.m.; 40-cycle a.c., 2400 r.p.m.; 50-cycle a.c., 1500 r.p.m.; 60-cycle a.c., 1800 r.p.m.

Furnished for 110 or 220 volts.

Not a universal motor. Specify voltage and current when ordering.

Weight, 120 pounds.

For All Voltages	each	$118.00
Pedestal, Extra	each	24.00

Hy-Tech Products

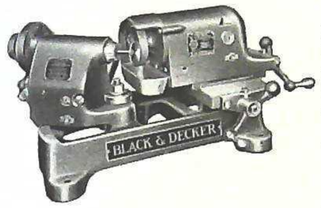
No. 5 Black & Decker Plumbers' and Electricians' Tool Kits

Tools are packed in a strong metal kit box and consist of: Black & Decker ½-inch ball bearing electric drill, hole saws in pipe tap sizes and outside pipe or conduit sizes from ⅞ to 2¼ inch; wood augers 1¼, 1½ and 1¾-inch; twist drill bits ¼, 5/16, ⅜, 7/16 and ½-inch.



No. 5, Complete ..... each $78.00

Black and Decker ½-Inch Electric Valve Refacers



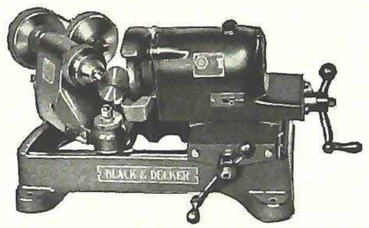
Can be used for grinding rocker arms and breaker points, squaring ends of valve stems and grinding valve seat reamers.

Capacity, 5/16 to ½ inch valve stems.

Standard equipment includes diamond dressing attachment, V block for squaring ends of valve stems, valve seat reamer grinding attachment and gauge pin.

For All Voltages	each	$98.00
No. 12277 Rocker Arm Grinding Attachment	each	9.50
No. 11338 Breaker Point Grinding Attachment	each	12.50
No. 12389 Micrometer Valve Stem Grinding Attachment	each	6.50

Black & Decker ⅝-Inch Electric Valve Refacers



This is a powerful heavy duty machine for automobile, truck, bus, tractor and aircraft engine valves.

Has powerful universal motor capable of refacing large, hard valves. The armature shaft, which is unusually large, is mounted on ball-bearings having automatic adjustment for wear. Another ball-bearing motor drives the chuck spindle through double belt reduction. Special rubber belts that require no tightening and will give long service are used. The chuck spindle revolves at low speed and has large, carefully-fitted bearings that will wear well without attention other than oiling.

The self-adjusting slides for feeding and traversing the grinding wheel are screw-operated.

The precision chuck is tested and guaranteed accurate within .001 inch. It is hand-tightened.

Machine has water pan attached which collects grit.

Standard equipment includes: The diamond dressing attachment for the grinding wheel, with which is combined a V-block for squaring off ends of valve stems; also a valve seat reamer grinding attachment complete with gauge pin to insure correct relief on reamers.

Capacity, 1/8 to 41/64-inch valve stems.

Angle adjustments, 15 to 90 degrees, graduated.

Price, for All Standard Voltages	each	$140.00
Price, Pedestal	each	34.00

No. 1 Clizbe Standard Pattern Grinders



The No. 1 Machine is intended for light work and is built with split cast iron bearings. Provision is made for attaching tool rests. Wheel guards attach to bench or to top plate of column where column is furnished, and are of cast iron open face type.

No.		1
Size Wheel	inches	6x1
Length Spindle	inches	11
Diameter Spindle in Bearing	inches	¾
Diameter Spindle on End	inches	⅝
Size Pulley	inches	1⅞x1½
Distance Between Wheels	inches	6
Height to Center of Spindle from Table	inches	5
Price, No. 1, Head Only	each	$4.50

No. 2 Clizbe Standard Pattern Grinders



The No. 2 machine is built with babbitted bearings and is fitted with tool rests of knuckle-jointed type. Bearings are dust proof and are fitted with nickel-plated oil cups. Guards of cast iron open face type for use with this machine attach to top plate of column or to bench when column is not used.

No.	Wheel Size Inches	Length Spindle Inches	Diam. Spindle in Bearing Inches	Diam. Spindle on End Inches	Size Pulley Inches	Distance Between Wheels Inches	Height to Center of Spindle from Table Inches	Head Only Price Each
2	8x1¼	14	⅞	¾	2⅜x2	8	6¼	$9.00

Clizbe Standard Pattern Grinders

Nos. 3, 4 and 5 machines are exactly alike as to design and construction, the only difference being in the size.

All three of these machines have babbitted bearings and are fitted with wick-oiling arrangement as insurance against faulty lubrication.

Rests are of the knuckle-jointed type. Wheel guards attach to top plate of column or to bench where column is not used in connection with head.

No. 3 countershaft recommended for use with No. 3 machine and No. 4 countershaft for use with Nos. 4 and 5 machines.

The use of cast iron column is strongly recommended as being the most satisfactory method of mounting these machines especially for the larger sizes.



No. 3

No.		3	4	5
Wheel Size	inches	10x1½	12x2	14x2
Bore of Wheels	"	1	1	1¼
Distance Between Wheels	"	10	14¾	16
Height Table to Center of Spindle	inches	7½	8	8¼
Height of Column	"	31	28⅛	27½
Size of Pulley	"	3½x2⅝	4¼x3½	4¾x4
Length of Spindle	"	18	24	27
Diameter of Spindle Bearing	"	1 1/16	1 1/16	1 5/16
Price, Head Only	each	$15.30	$21.15	$27.00
" Column Only	"	14.75	18.35	23.50
" Countershaft	"	13.30	17.55	22.50
Wheel Guards		4.15	5.95	8.10

Norton Grinding Wheels

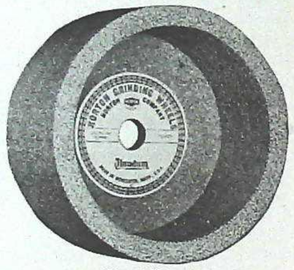
Alundum—Crystolon



Straight Wheel

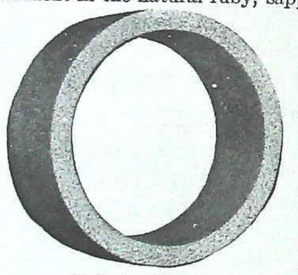
Norton Grinding Wheels are manufactured by processes known as vitrified, silicate, shellac, bakelite and rubber.

Vitrified bonds are mineral and clay mixtures which at high temperatures fuse either to a glass or a vitrified porcelain matrix. Most grinding can be best done with vitrified wheels. Silicate bonds are silicate of soda and mineral mixtures which form a hard cement at low temperatures. Silicate wheels are used for certain kinds of tool and surface grinding also, where wheels larger than 36 inches are required. Organic bonded wheels—shellac, bakelite and rubber—are used for certain classes of work, principally where a high degree of finish is desired or where very thin wheels are necessary as in cutting-off operations.



Cup Wheel

Alundum abrasive is electrically fused alumina made from the soft, clay-like mineral, bauxite, obtained from the Norton mines in Arkansas. Alundum abrasives are essentially crystalline aluminum oxide, the principal constituent in the natural ruby, sapphire and corundum. Alundum wheels are best suited for grinding materials of high tensile strength.

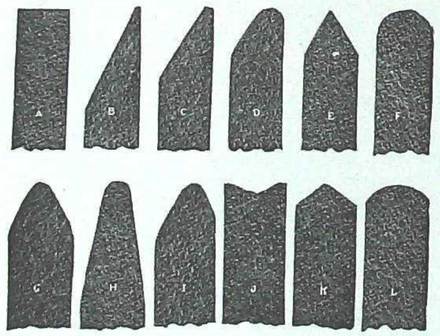


Cylinder Wheel

Crystolon abrasive is silicon carbide, made from pure silica sand and coke of the highest quality, to which is added a small quantity of sawdust to facilitate the reactions.

This mixture is heated in electric furnaces of special design. Crystolon abrasive is most efficient on cast iron and other materials of low tensile strength.

Standard Shapes of Wheel Faces



The different faces which are regularly furnished are specified by letters as illustrated above. When wheels are ordered with no particular face specified, straight or A face is furnished. If any special face or shape is required a dimensioned sketch should accompany the order.

Norton Grinding Wheels

Factors Affecting Grinding Wheel Selection

The selection of a grinding wheel for a given piece of work is not a guess—neither is it calculable by mathematics. In other words, grinding is still largely an art, although much progress is being made in uncovering and understanding certain scientific principles which apparently underlie correct grinding practice as we know it to-day.

The characteristics of a grinding wheel are completely described by listing the abrasive of which it is composed, its grit, grade, and the process used in its manufacture (vitrified, silicate, shellac, Bakelite or rubber).

It would perhaps be helpful to roughly chart the various factors that have a bearing on the selection of each of these elements. This chart will have to be general because the different kinds of grinding, such as cylindrical, surface, and internal grinding, also offhand grinding, are not treated separately.

Physical properties of the material to be ground.....	Use Alundum Grinding Wheels for materials of high tensile strength	Carbon steels Alloy steels High speed steels Annealed malleable iron Wrought iron Tough bronzes Tungsten, etc.
	Use Crystolon Grinding Wheels for materials of low tensile strength	Gray iron Chilled iron Brass and bronze Aluminum and copper Marble Granite Pearl Rubber Leather, etc.

The speed at which a grinding wheel revolves is important because too slow a speed means wastage of abrasive without getting much useful work in return whereas an excessive speed may retard cutting and if carried too far might become dangerous. As a general proposition it is better to operate a grinding wheel at somewhere near the speed recommended by the maker, as he has found by years of experience that certain speeds work better than others. The grits and grades usually recommended for certain grinding operations are based on the assumption that approximately the recommended speeds will be employed. If for some reason they cannot be, then the grade at least must be changed to suit this condition.

Recommended Wheel Speeds in Surface Feet Per Minute

Cylindrical Grinding	5,500– 6,500
*Internal "	2,000– 6,000
Snagging, Offhand Grinding	5,000– 6,000
Snagging, Rubber and Bakelite Wheels	7,000– 9,000
Surface Grinding	4,000– 5,000
Knife "	3,500– 4,000
Hemming Cylinders	2,100– 2,400
Wet Tool Grinding	5,000– 6,000
Cutlery Wheels	4,000– 5,000
Rubber, Shellac and Bakelite Cutting-off Wheels	9,000–12,000

*The higher speed is recommended only for the larger wheels.

Grades of Norton Wheels

	Vitrified	Silicate	Shellac	V-Shellac	Bakelite	T-Bakelite	S-Bakelite	Rubber
Very Soft	..	F	...	...	...	....	....	....
	G	G	1	...	...	....	....	....
	H	H	1½	...	1½	T1½	S1½	....
Soft	I	I	2	...	2	T2	S2	R2
	J	J	2½	...	2½	T2½	S2½	R2½
	K	K	...	...	...	....	....	....
	L	L	3	...	3	T3	S3	R3
Medium	M	M	4	V4	4	T4	S4	R4
	N	N	...	...	...	....	....	....
	O	O	...	...	...	....	....	....
	P	P	5	V5	5	T5	S5	R5
Hard	Q	Q	...	V6	6	T6	S6	R6
	R	R	...	...	...	....	....	....
	S	S	...	...	...	....	....	....
	T	T	...	V7	7	T7	S7	R7
	U	...	...	...	8	T8	S8	R8
Very Hard	W	...	...	...	9	T9	S9	R9
	Z	...	...	...	10	....	....	....

Hy-Tech Products

Standard Grinding Wheels
Straight Wheels
Vitrified and Silicate
Price, Each

Thickness, In.	Diameter, Inches: 1	1½	2	2½	3	3½	4
¼	$.55	$.60	$.80	$.90	$1.00	$1.15	$1.40
⅜	.65	.70	.90	1.05	1.15	1.30	1.50
½	.70	.80	1.00	1.15	1.25	1.45	1.70
⅝	.75	.85	1.10	1.25	1.40	1.60	1.85
¾	.85	.95	1.20	1.35	1.50	1.70	2.00
⅞	.90	1.00	1.30	1.45	1.65	1.85	2.20
1	1.00	1.10	1.40	1.55	1.75	1.95	2.35
1¼	1.15	1.30	1.60	1.80	2.00	2.25	2.70
1½	1.25	1.45	1.80	2.00	2.25	2.50	3.00
1¾	1.40	1.65	2.00	2.25	2.50	2.80	3.35
2	1.55	1.80	2.20	2.45	2.75	3.05	3.70
2¼	1.70	2.00	2.35	2.70	3.00	3.35	4.10
2½	1.85	2.15	2.55	2.90	3.25	3.60	4.45
2¾	2.00	2.35	2.75	3.15	3.50	3.90	4.80
3	2.15	2.50	2.95	3.35	3.75	4.15	5.10
3¼	2.25	2.70	3.15	3.60	4.00	4.45	5.45
3½	2.40	2.85	3.35	3.80	4.25	4.70	5.75
3¾	2.55	3.05	3.55	4.00	4.50	5.00	6.10
4	2.70	3.20	3.75	4.25	4.75	5.25	6.50

Thickness, In.	Diameter, Inches: 4½	5	6	7	8	9	10
¼	$1.60	$1.80	$2.30	$2.75	$3.25	$3.70	$4.30
⅜	1.75	2.00	2.60	3.15	3.75	4.35	5.15
½	2.00	2.30	2.90	3.55	4.25	5.00	5.90
⅝	2.20	2.50	3.20	3.90	4.75	5.60	6.70
¾	2.35	2.70	3.50	4.30	5.30	6.25	7.45
⅞	2.60	2.95	3.80	4.75	5.75	6.80	8.20
1	2.80	3.20	4.10	5.15	6.25	7.45	9.00
1¼	3.20	3.65	4.70	5.85	7.25	8.70	10.50
1½	3.55	4.10	5.30	6.70	8.30	10.10	12.25
1¾	3.95	4.55	5.90	7.50	9.30	11.40	14.00
2	4.35	5.00	6.50	8.25	10.30	12.70	15.75
2¼	4.80	5.45	7.10	9.00	11.30	14.00	17.50
2½	5.20	5.90	7.70	9.85	12.35	15.25	19.25
2¾	5.60	6.35	8.40	10.70	13.35	16.50	21.00
3	6.00	6.85	9.00	11.50	14.40	18.00	22.75
3¼	6.40	7.30	9.60	12.25	15.40	19.50	24.50
3½	6.75	7.70	10.20	13.00	16.45	21.00	26.25
3¾	7.15	8.15	10.80	13.75	17.50	22.50	27.50
4	7.60	8.65	11.40	14.75	18.60	24.00	29.25

Thickness, In.	Diameter, Inches: 12	14	16	18	20	22	24
¼	$5.50	....	.....	.....	.....	.....	.....
⅜	6.20	....	.....	.....	.....	.....	.....
½	7.25	$9.30	.....	.....	.....	.....	.....
⅝	8.25	10.80	.....	.....	.....	.....	.....
¾	9.35	12.30	$15.75	.....	.....	.....	.....
⅞	10.40	13.80	17.75	.....	.....	.....	.....
1	11.50	15.25	19.75	$24.35	.....	.....	.....
1¼	13.75	18.25	23.75	29.40	$36.10	$44.45	$53.00
1½	15.75	21.20	27.70	34.50	42.00	51.60	61.00
1¾	17.85	24.20	31.70	39.50	47.85	58.75	70.00
2	20.00	27.15	35.70	44.50	53.75	65.90	78.00
2¼	22.35	30.35	39.60	49.20	59.40	73.00	87.00
2½	24.75	33.60	43.55	53.90	65.00	80.00	95.00
2¾	27.25	36.85	47.45	58.55	70.70	87.00	104.00
3	29.50	40.00	51.35	63.25	76.40	94.00	112.00
3¼	31.90	43.30	55.25	68.00	82.00	101.00	120.00
3½	34.25	46.50	59.20	72.65	87.70	108.00	129.00
3¾	36.50	49.75	63.10	77.30	93.35	115.10	137.00
4	39.00	53.00	67.00	82.00	99.00	122.10	145.00

Thickness, In.	Diameter, Inches: 26	28	30	32	34	36	.....
1¼	$60.00	$69.00	$78.00	.....	.....	.....	.....
1½	70.00	83.00	92.00	$107.00	$123.00	$142.00	.....
1¾	80.00	97.00	107.00	124.00	143.00	164.00	.....
2	90.00	111.00	121.00	141.00	162.00	185.00	.....
2¼	101.00	123.00	135.00	158.00	182.00	207.00	.....
2½	111.00	136.00	149.00	175.00	201.00	229.00	.....
2¾	122.00	148.00	164.00	192.00	221.00	248.00	.....
3	133.00	160.00	178.00	210.00	240.00	266.00	.....
3¼	143.00	171.00	192.00	225.00	256.00	285.00	.....
3½	154.90	183.00	206.00	240.00	273.00	303.00	.....
3¾	165.00	194.00	221.00	255.00	289.00	322.00	.....
4	176.00	205.00	235.00	270.00	305.00	340.00	

Alundum and Crystolon Bricks



Alundum and Crystolon Bricks are manufactured in a variety of shapes, sizes and grits.

They are used principally for scouring castings, general foundry and machine shop work, dressing and smoothing granite and marble, scouring chilled iron rolls and work of like nature. They can be used dry or with water or oil.

Alundum

No.	Size Inches	Price per Dozen	No.	Size Inches	Price per Dozen
121	4x4x8	$60.00	112	1x2x6	$7.20
122	3x4x8	45.60	113	½x2x6	5.40
101	2x4x8	33.00	115	4x4x4	33.00
102	3x3x8	36.00	116	3x3x4	19.20
103	2x3x8	22.80	117	2x3x4	13.80
123	2x2x8	17.40	108	2x2x4	9.60
104	1x2x8	9.60	118	1x2x4	6.00
105	3x3x6	27.00	119	½x2x4	3.60
107	2x3x6	19.20	120	.....	....
106	2x2x6	13.80	114	.....	....

Crystolon

No.	Size Inches	Price per Dozen	No.	Size Inches	Price per Dozen
221	4x4x8	$60.00	212	1x2x6	$7.20
222	3x4x8	45.60	213	½x2x6	5.40
201	2x4x8	33.00	215	4x4x4	33.00
202	3x3x8	36.00	216	3x3x4	19.20
203	2x3x8	22.80	217	2x3x4	13.80
223	2x2x8	17.40	208	2x2x4	9.60
204	1x2x8	9.60	218	1x2x4	6.00
205	3x3x6	27.00	219	½x2x4	3.60
207	2x3x6	19.20	220	.....	....
206	2x2x6	13.80	214	.....	....

Huntington Grinding Wheel Dressers



For truing, shaping, sharpening and removing glaze from solid grinding wheels running at full speed and for use on the largest and hardest grinding wheels and where quick action is desired. A great time saver.

Price, Dressers.....each $1.00
Price, Extra Cutters.....per set .20

Star Sand Paper
In Sheets—8¾x10½ Inches



Grit No.	Reams in Bundle	Price per Ream	Grit No.	Reams in Bundle	Price per Ream
000 to 0	5	$6.75	2½	2	$11.70
½	4	7.20	3	1½	13.20
1	3½	8.10	3½	1	14.85
1½	3	9.15	Assorted	3	9.15
2	2	10.35	...	..	.....

Emery Cloth
In Sheets 9x11 Inches

Grit No.	Price per Ream	Grit No.	Price per Ream
Crocus	$30.00	2 or 60	$36.50
3/0 to 0 or		2½ " 46	39.40
180 " 100	30.00	3 " 36	42.50
½ or 90	31.20	3½ " 24	46.00
1 " 80	32.75	Assorted	33.25
1½ " 70	34.30	.....	.....

Clover Grinding and Lapping Compound



Single Grade Cans

Clover grinding and lapping compound is made of the sharpest abrasive powder known, carefully graded and mechanically mixed to a perfect uniformity with a specially made petroleum hard oil.

This specially made binder holds the abrasive suspended in mechanical mixture under a temperature of 250° Fahrenheit. Hence, Clover will not break down under friction; it will not melt, run or crumble; it is always uniform while doing its work. Costs less to use because there is no waste; it does better work and gives good results when used with a power driven tool, and Clover being non-magnetic, can be used on cast iron without danger of bad after effects.



4-Ounce Duplex Can

Clover compound gives to the mechanic something more than he can get by the use of dry abrasive and oil. Clover does not deteriorate.

The Clover 4-ounce duplex can contains two grades: D (coarse) for roughing and A (fine) for finishing. This can is fitted with quick grip covers and is intended to be carried in the kit. The compound in this can is suitable for grinding valves, lapping cylinders fitting piston rings, etc. The 2-ounce duplex can is similar to 4-ounce only smaller.

Clover is also put up in single grade cans, for shop garage and toolroom use.

Clover Grinding and Lapping Compound is made in the following eight grades:

2-A (Microscopic fine) for fine lapping, surfacing, fitting of parts.

1-A (very fine) for fine lapping, surfacing, fitting of parts lapping dies, gauges, fine polishing, etc.

A (fine) for finishing valve grinding, lapping cylinder rings into cylinders, grinding crank shafts into bearings, running together gearing, etc. B (medium fine) finishing grade, or on fine work used for roughing.

C (medium coarse) for cylinder lapping, light power grinding, etc.

D (coarse) for roughing valves, medium heavy roughing and grinding.

E (very coarse) for use on large surfaces, and for quick work. 50 special an exceedingly coarse compound for extra heavy work.

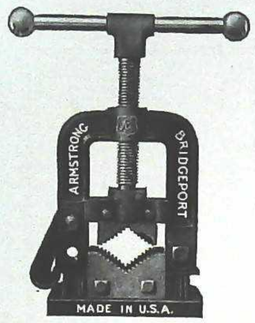
Both the 4 and 2-ounce duplex cans, the ¼ and ½-pound single grade cans are packed in units of 12, in wooden boxes for convenience in stocking.

Boxes are plainly marked on the cover, ends and sides with the name of the goods, and style and number of cans.

Price, 4-Ounce Duplex Can ..... each	$.50
" 2 " " " ..... "	.30
" ¼-Pound Any Grade ..... "	.50
" ½ " " " ..... "	.85
" 1 " " " ..... "	1.50
" 5 Pounds " " ..... "	6.00

The grades of Clover desired, should always be specified when ordering single grade cans.

Armstrong Standard Hinged Pipe Vises



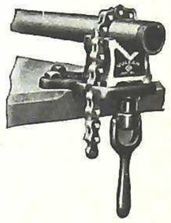
One piece slide holds upper jaw permanently in place. Slide runs on outside of frame assuring smooth even operation. Parts interchangeable.

No.	Holds Pipe Inches	Wt. Lbs.	Each
21	⅛ to 1¼	3	$2.50
22	⅛ to 2	6½	4.25
23	⅛ to 2½	11	5.00
24	⅛ to 3½	16	7.50
25	½ to 4½	25	11.00

Parts

No.	3 Extra Jaws	Hooks Each	Handle and Screw Each	Slide Each
21	$1.20	$.25	$.70	$.25
22	1.80	.30	1.20	.40
23	1.80	.35	1.40	.50
24	2.55	.50	2.20	.60
25	3.60	.75	3.00	.80

Williams Vulcan Drop-Forged Chain Pipe Vises



Unbreakable, compact, rapid in action and positive in grip.

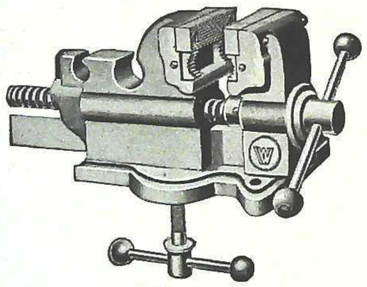
It is made entirely of wrought steel with drop-forged jaws, saw tempered for file sharpening.

The different sizes are equally serviceable upon and suitable for fastening to bench or post.

No.	Cap. Pipe In.	Approx. Size Folded In.	Approx. Wt. Lbs.	Price Complete Each	Price, Extra Parts, Each: Jaws per Pr.	Chain with Screws	Screws	Handle with Nuts	Nuts
1	⅛–2	4x5x6	4	$7.00	$3.00	$2.50	$.80	$2.20	$1.40
2	¼–4	6x8x8	10	15.00	7.00	4.80	1.40	4.20	2.70
3	½–6	8x9x11	18	27.00	12.00	9.00	2.50	7.00	4.00
4	½–8	8x10x12	30	36.00	18.00	12.00	2.50	7.00	4.00

Vanderman Improved Patented Combination Pipe Vises

Three Combinations in One



No. 1

A combination pipe vise with large jaw surface for holding pipe, irregular surface work, or fittings; forms for bending work; form or anvil surface to hammer on; arrangements of pipe jaws permit of holding or cutting close work. Pipe jaws may be instantly removed, reversed or repaired. All parts are made interchangeable.

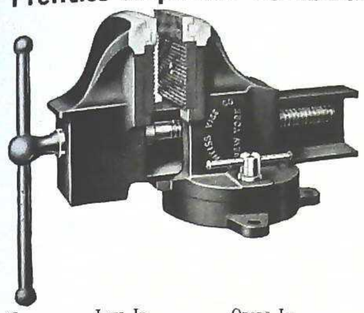
A combination pipe vise, to be useful and practical, must admit of each part of the combination being independent of the other. The combinations in this vise are independent of each other and do not conflict.

Strongly made, the sliding bar, screws, handles and jaws are of steel, and all the parts have been put to and have stood severe tests.

No.	Holds Pipe Inches	Bends Pipe Inches	Width Jaws Inches	Weight Pounds	Price Each
0	½ to 2½	1	4	40	$21.50
1	⅛ " 7	1½	5	90	28.50
3	⅛ " 10	2	6	160	42.50

Hy-Tech Products

Prentiss Improved Combination Pipe Vises



Vise has a wrought steel channel sliding bar.

Grip plates are made of best steel, carefully tempered and are deeply serrated at right angles.

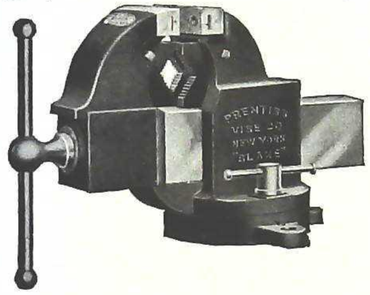
Jaws are reversible and interchangeable, and are full width of vise.

No.	Jaws, In.	Opens, In.	Wt., Lbs.	Price, Each
81	3½	⅛ to 2½	35	$16.00
82	4¼	⅛ " 4	55	22.00
83	5	⅛ " 6	100	36.00

Prentiss Blake Combination Pipe Vises

Stationary Jaw, Swivel Base

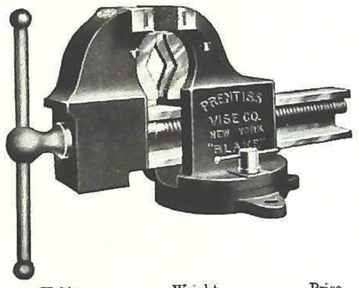
Pipe jaws are made of high-grade steel and are reversible. Has patent detachable and interchangeable steel jaw faces.



No.	Jaws In.	Holds Pipe In.	Wt. Lbs.	Price Each
180	2½	⅛ to 1	15	$10.00
180½	3	⅛ " 1½	22	12.00
181	3½	⅛ " 2½	55	16.00
182	4¼	⅛ " 3	80	22.00
182½	5	⅛ " 4	120	32.00

Prentiss Blake Combination Pipe Vises

Stationary Jaw Swivel Base



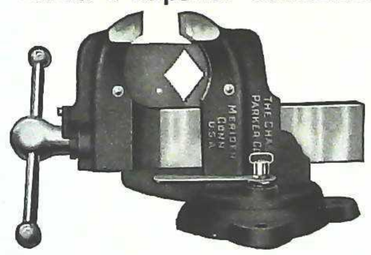
Made with wrought steel sliding bar. This bar cannot break.

An extra nut for tightening swivel base is placed on left hand side of body.

Equipped with patent detachable steel jaw faces.

No.	Jaws Inches	Holds Pipe, In.	Weight Pounds	Price Each
183	6	⅛ to 6	185	$45.00
185	7	⅛ " 8	240	60.00

Parker's Superior Combination Pipe Vises



Stationary Jaw Swivel Base

Castings Parko metal, renewable steel jaws, swivel base with 360° gripping power. Front pipe jaw is reversible, so that it may be turned end to end when worn.

No.	Width Jaw, In.	Jaws Open, In.	Holds Pipe Up to, In.	Weight Pounds	Price Each
87	3½	3	2	47	$16.00
88	4½	5	3	71	22.00
288½	5	6	4	116	32.00
289½	6	9½	6	185	45.00

Parker's Superior Machinists' Vises

Stationary Jaw, Swivel Base

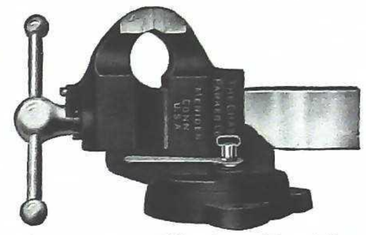


Special Parker mixture castings; solid steel bar-slide strengthener; renewable-milled to fit tool and pinned on steel jaws; saddle screw on outside of slide permitting a solid under portion of increased strength.

No.	Size Vise Jaw In.	Opens In.	Wt. Lbs.	Price Each	No.	Size Vise Jaw In.	Opens In.	Wt. Lbs.	Price Each
229X	3¼	4	39	$15.00	269X	5¼	9	151	$42.00
239X	3¾	6	61	17.00	279X	6¼	9½	187	60.00
249X	4¼	7	85	21.00	279½X	7	10½	228	70.00
259X	4¾	8	103	27.50	260X	8	13¾	351	105.00

Parker's Eclipse Machinists' Vises

Stationary Jaw Swivel Base



Parkco metal castings. Swivel base gives 360° gripping power. Renewable, milled and fitted tool steel faces. Extra size, strong cut-screw and nut. Saddle and saddle screw.

No.	Width Jaws, In.	Jaws Open, In.	Wt. Lbs.	Price Each	No.	Width Jaws, In.	Jaws Open, In.	Wt. Lbs.	Price Each
200	2	3½	16	$10.50	205	4½	7	76	$20.00
201	2½	3½	17	12.00	206	5	8	104	30.00
202	3	4½	26	13.00	206½	5½	9	130	38.00
203	3½	5½	42	15.00	207	6	10½	157	52.00
204	4	6½	59	17.00	208	8	13¾	298	98.00

Toledo Vise Mounts and Roller Supports



The Toledo Vise Mount is made in three sizes, all of which are portable.

The roller support shown in the illustration may be purchased or not, according to the individual's desire, although the roller support should be used with the vise mount, especially in the larger sizes. The vise mount and roller support can be connected by using a length of ¾-inch pipe inserted through holes in both the vise mount and the roller support for that purpose.

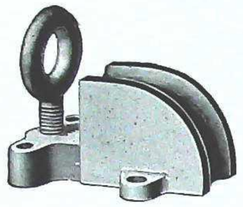
Vise Mounts

No.	For Pipe Inches	Ship. Wt. Pounds	Price Each
0	Up to 1	36	$12.00
1	Up to 2½	49	15.00
2	Up to 4½	85	18.00

Roller Supports

Price, Weight 18 Pounds..... each $5.00

Vanderman Pipe Benders



For straightening and bending pipe.

Has bolt holes so that bender can be readily attached to a bench or other substitute.

Made in two sizes. Has extension eye bolt so that pipe when bending is held close to make an accurate bend.

In making bends in light tubes or nickel-plated pipe a piece of sheet lead, rubber or leather placed on bender and eye bolt will prevent finished work from being marred.

No.	Takes Pipe Inches	Price Each	No.	Takes Pipe Inches	Price Each
1	⅛ to 1¼	$5.00	2	1 to 2	$6.50

Toledo Portable Tool Benches



Made in 2 sizes; the No. 5 is desirable for pipe up to 4½ inches, and the No. 4, a smaller size, for pipe up to 2 inches. Both are made of steel and malleable iron. No. 5 has carried loads of over 4000 pounds.

The table top of No. 5 is 25 inches long and 10 inches wide. Bored for the Toledo Pipe Vises, Williams Vulcan Chain Vises No. 2 and 3, Reed Vises No. 71 and 73 and others with corresponding bolt holes. Special drilling for other vises is charged for at cost. Also drilled for the bench clamp of the Toledo No. 100 P.D. Threading Device, and the Power Drive Helper.

No.		5	4
Shipping Weight	pounds	73	35
Price	each	$20.00	17.00

No. 518 Bilt-Rite Industrial Goggles



Chipping and grinding goggles. Frame is aluminum with perforated cups. The strap bridge and the head band are adjustable. Lens are interchangeable. Extra lenses, size 45.6 m/m, round, beveled.

Description	Price per Doz.	Extra Lenses per Doz Prs.
With Super-Safety Lenses	$27.50	$13.00
With Amber Non-Shattering Lenses	25.00	10.50
With Clear Laminated Lenses	23.00	8.50
With Clear Industrial Lenses	18.10	4.60
Price, Extra for Metal Cases	per dozen	$1.50

Diamond Respirators



Used to protect workmen and firemen from dust-laden air and smoke.

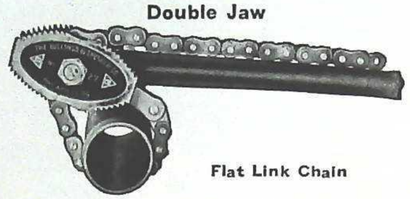
Constructed of high grade white rubber, light in weight and sanitary.

Furnished complete with elastic head straps, sponge and cloth filter disc, ready for use.

Price.....per dozen ....

Billings Chain Pipe Wrenches

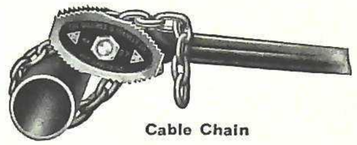
Double Jaw



Flat Link Chain

The feature of this wrench is its double-action or reversibility. Pipe can be turned in either direction without the process of removing and turning over the wrench. This is due to the angular position of the elliptical jaws, which allows the engagement of either the outer or inner teeth.

The combination feature of this wrench consists of its adaptability to pipe fittings and short connections, as well as ordinary pipe. By removing the outside elliptical jaws, thereby bringing into play the narrow jaw attached to the under part of the handle, the wrench is immediately converted into an efficient tool for narrow or irregular work where a broader wrench would be ineffectual.



Cable Chain

The elliptical jaws are serrated on all sides and may be easily changed end for end, thus giving double life to the wrench. With the outer jaws removed the wrench is available for nut and bolt heads, as well as pipe fittings.

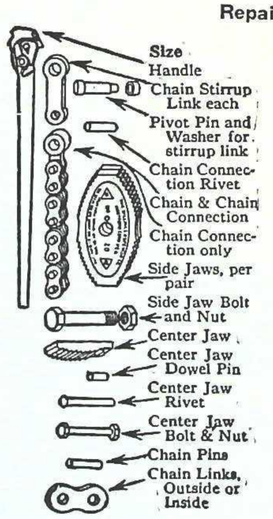
The handle is so designed as to give the necessary strength with minimum of weight. The handle and jaws are made from steel drop forgings of superior quality, the jaws being carefully hardened. All parts are interchangeable.

The tool is made with either a flat-link or cable chain.

In ordering cable chain wrenches precede the number with the letter A. Unless otherwise ordered, wrenches will be sent with flat link.

No.	Trade No.	Capacity Size Pipe Inches	Length Over All Inches	Length Chain Inches: Flat Link	Length Chain Inches: Cable	With Flat Link or Cable Chain Price, Each
14	30	⅛ to ¾	14	8	9½	$5.00
20	31	⅛ to 1½	20	12½	14	7.00
27	32	¼ to 2½	27	16½	19	10.00
37	33	¾ to 4	37	20¾	27½	14.00
47	33½	1 to 6	47	30¼	33½	18.00
57	34	1½ to 8	57	41	38½	22.00
67	35	2 to 12	67	55	66	36.00
87	..	4 to 18	87	76	78	80.00

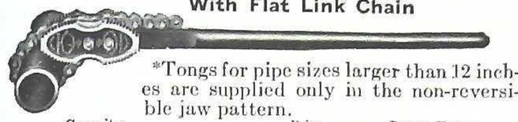
Repair Parts



Size	No. 14	No. 20	No. 27	No. 37	No. 47	No. 57	No. 67	No. 87
Handle	$2.80	4.00	6.00	8.00	10.00	20.00	30.00	42.00
Chain Stirrup Link each	.16	.24	.30	.40	.44	.54	.70	.90
Pivot Pin and Washer for stirrup link	.16	.28	.34	.42	.50	.58	.80	1.10
Chain Connection Rivet	.08	.08	.08	.12	.12	.20	.60	1.00
Chain & Chain Connection	1.50	2.00	3.00	5.00	7.00	9.00	15.00	40.00
Chain Connection only	.20	.30	.30	.50	.60	.70	1.00	3.00
Side Jaws, per pair	2.00	3.50	5.50	8.00	9.50	11.00	15.00	32.00
Side Jaw Bolt and Nut	.28	.36	.46	.60	.70	.90	1.30	2.50
Center Jaw	1.00	1.00	1.30	1.60	1.80	2.30	2.50	3.20
Center Jaw Dowel Pin	.04	.04	.06	.08	.10	.14	.20	.24
Center Jaw Rivet	.10	.10	.12	.16	.20	.28	.40	...
Center Jaw Bolt & Nut	.....							2.00
Chain Pins	.10	.10	.12	.16	.20	.28	.40	.50
Chain Links, Outside or Inside	.10	.10	.12	.16	.20	.28	.40	.50

Williams' Improved Vulcan Drop-Forged Chain Pipe Tongs

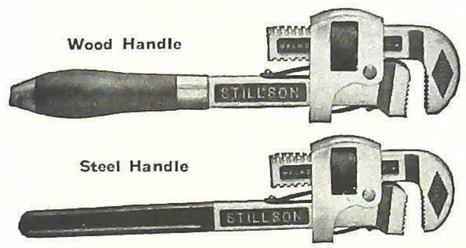
With Flat Link Chain



*Tongs for pipe sizes larger than 12 inches are supplied only in the non-reversible jaw pattern.

No.	Capacity Pipe Inches	Lgth. In.	Wt. Lbs.	Price Complete Each	Price, Extra: Chains Each	Jaws Nuts & Studs per Pair	Jaws Nuts & Studs per Set
30	⅛ to ¾	13¾	1¾	$5.00	$1.50	$2.00	$.40
31	⅛ to 1½	20	5¾	7.00	2.00	3.50	.50
32	¼ to 2½	27	10	10.00	3.00	5.50	.70
33	¾ to 4	37	16	14.00	5.00	8.00	.90
33½	1 to 6	44½	24	18.00	7.00	9.50	1.10
34	1½ to 8	50½	31	22.00	9.00	11.00	1.40
35	2 to 12	64½	50	36.00	15.00	15.00	1.80
*15½	4 to 16	85	98	60.00	30.00	24.00	....
*16	4 to 18	87	137	80.00	40.00	32.00	....

Walworth Master Stillson Wrenches

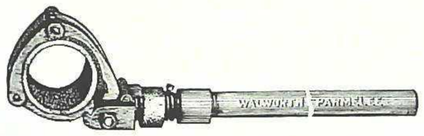


Sizes 6 to 48-inch, with steel handle; 6 to 14-inch, inclusive, also with wood handle; 10 and 14-inch sizes are furnished with steel handle unless otherwise specified.

Length Open Inches	Takes Pipe Inches	Price, Each: Wrench Complete Steel Handle	Wrench Complete Wood Handle	Extra Parts Bar with Springs	Extra Parts Jaws
6	⅛ to ½	$1.90	$2.00	$1.00	$.65
8	⅛ to ¾	2.20	2.30	1.15	.70
10	⅛ to 1	2.85	3.15	1.60	1.10
14	¼ to 1½	3.85	4.25	2.20	1.50
18	¼ to 2	5.50	....	3.25	2.15
24	¼ to 2½	8.50	....	5.15	3.50
36	¼ to 3½	15.00	....	10.50	5.70
48	1 to 5	25.00		17.00	9.00

For Wrench in.	Extra Parts—Price, Each: Frame and Pin	Frame Pin Only	Adjusting Nuts	Wood Handles, Ferrule	End Nuts	Front Springs Each	Back Springs Pair	Spring Pins or Rivets
6	$.45	$.03	$.15	$.23	$.15	$.10	....	$.01
8	.55	.03	.15	.25	.15	.10	....	.01
10	.70	.04	.20	.30	.20	.10	$.20	.02
14	.80	.04	.30	.36	.20	.10	.20	.02
18	.95	.04	.35	...	...	.10	.20	.02
24	1.75	.04	.55	...	...	.11	.22	.02
36	2.75	.05	1.10	...	...	.13	...	.02
48	3.50	.05	2.00	...	...	.13	...	.02

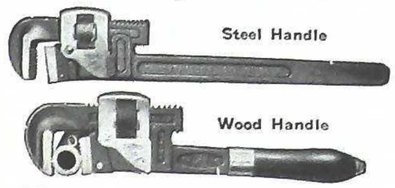
Parmelee Pipe Wrenches



Grips with equal pressure all around the pipe, which prevents crushing.

No.	Lgth. In.	Takes Pipe In.	Price, Each: Complete	Without Girths	Extra Girths Size In.	Price Each
1Sleeve Lock	10	⅜ to 1	$9.00	$3.50	⅜–½–¾–1	$1.75
1Nut Lock	10	⅜ to 1	8.50	2.75	⅜–½–¾–1	1.75
2	20	1 to 2	15.00	6.00	1–1¼	2.50
					1½–2	3.00
3	20	2 to 3	17.00	7.00	2–2½–3	4.00
4	37	3 and 4	52.00	21.00	3 and 4	17.00

Trimo Pipe Wrenches



Made with steel handle 6 to 48 inches long; with wood handle 6 to 14 inches long.

Length Open, In.	Takes Pipe, In.	Price, Each: With Steel Handle	With Wood Handle	Length Open, In.	Takes Pipe, In.	With Steel Handle	With Wood Handle
6	⅛ to ½	$1.90	$2.00	18	¼ to 2	$5.50	.....
8	⅛ to ¾	2.20	2.30	24	¼ to 2½	8.50	.....
10	⅛ to 1	2.85	3.15	36	½ to 3½	15.00	.....
12	⅛ to 1¼	3.35	3.60	48	1 to 5	25.00	.....
14	¼ to 1½	3.85	4.25	..	.....	.....	.....

Extra Parts



For Wrench In.	Price, Each: Movable Jaws	Inserted Jaws: Nuts and Pins	Frames	Springs	Frame Pins	Jaw Pins	Steel Handles	Wood Handles with Ferrule	Price Nut Guards per Pr.
6	$.65	$.15	$.50	$.45	$.03	$.03	$.03	$1.00	$.23	$.15
8	.70	.15	.55	.55	.03	.03	.03	1.15	.25	.15
10	1.10	.20	.65	.70	.03	.04	.04	1.60	.30	.20
12	1.25	.25	.75	.75	.03	.04	.04	1.80	.35	.30
14	1.50	.30	.85	.80	.03	.04	.04	2.20	.36	.30
18	2.15	.35	.95	.95	.04	.04	.04	3.25	...	.35
24	3.50	.55	1.10	1.75	.04	.04	.04	5.15	...	.45
36	5.70	1.10	1.50	2.75	.04	.05	.05	10.50	...	.55
48	9.00	2.00	2.00	3.50	.04	.05	.05	17.00	...	.65

Warnock Triple Wear Strap Wrenches



For brass and nickel-plated pipe. Has imported linen strap which is double where wear is greatest.

Linen grip only contact with the pipe, so will not scratch.

Curving nose will not crush the pipe.

When free from strain, swinging shackle gives double opening, making the Warnock the quick strap wrench.

A strongly made, practical wrench that will last indefinitely.

Length Inches	Takes Pipe Inches	Price, Each: Pipe Complete	Extra Straps
12	⅛ to 2	$2.50	$.50
18	1 to 5	5.00	1.00

Coes Knife-Handle Wrenches



The handle is a cast semi-steel frame with hard-wood handles.

Length..inches	6	8	10	12	15	18	21
Opens...inches	⅞	1¼	1¾	2¼	2⅝	3	4⅛
Price .per doz.	$15.00	18.00	22.00	28.00	38.00	48.00	58.00

Nye Closet Spud Wrenches



A light, handy tool for the plumber. Strong enough to stand any strain.

Sizes, 1¼x1½ and 1¼x2 inches.

Price, Shipping Weight, 1⅜ Pounds.....each $1.00

Hy-Tech Products

Ridgid End Pipe Wrenches



For coil work and tight places. One-hand adjustment. Has only three working parts. Jaws made of best tool steel hardened by most improved methods. Jaw housing and I-beam handle is one solid construction of certified malleable. Eliminates breaking of housings or saddles and handles.

Size Inches	Wt., Lbs. per Box of 6	Price Each	Size Inches	Wt., Lbs. per Box of 6	Price Each
E 6	2¾	$1.90	E18	32	$5.50
E 8	5½	2.20	E24	53	8.50
E10	11	2.85	E36	16½ Each	15.00
E14	19¾	3.85	....	.....	.....

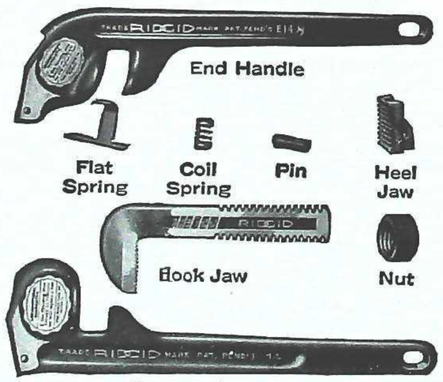
New Ridgid Pipe Wrenches



Jaws are of the best tool steel. Jaw-housing and I-beam handle are one solid construction of certified malleable iron. Adjusting nut rides in an open housing. This feature allows one a full finger and thumb grip on the nut, making possible a much easier and quicker adjustment.

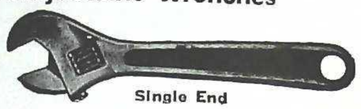
Size Inches	Price Each	Size Inches	Price Each
6	$1.90	18	$5.50
8	2.20	24	8.50
10	2.85	36	15.00
14	3.85	48	25.00

Repairs for Ridgid and New Ridgid Pipe Wrenches



Size In.	Handle Straight	Handle End	Hook Jaw	Heel Jaw	Pin	Coil Spring	Flat Spring	Knurled Nuts	Handle Assembled Straight	Handle Assembled End
	Price, Each									
6	$1.00	$1.00	$.65	$.35	.03	.03	$.20	$.15	$1.50	$1.50
8	1.15	1.15	.70	.40	.03	.03	.20	.15	1.65	1.65
10	1.60	1.60	1.10	.50	.04	.03	.20	.20	2.25	2.25
14	2.20	2.20	1.50	.60	.04	.03	.30	.30	2.85	2.85
18	3.25	3.25	2.15	.70	.04	.04	.40	.35	4.00	4.00
24	5.15	5.15	3.50	.80	.04	.04	.50	.55	6.00	6.00
36	10.50	10.50	5.70	1.10	.05	.04	.60	1.10	11.75	11.75
48	17.00	.....	9.00	2.00	.05	.04	.80	2.00	19.50	.....
60	20.00	.....	15.00	4.00	.05	.04	1.20	3.00	25.00	.....

Crescent Adjustable Wrenches



For use around automobiles, gas or gasoline engines, motor boats, machine shops, and in fact any place where a wrench is required that will take various sized nuts, the Crescent Wrench will prove indispensable.



Made of a special analysis carbon tool steel, hardened and toughened by special heat-treating process.

Single End

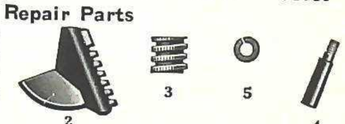
Length . . inches	4	6	8	10	12	15	18
Capacity. "	½	¾	15/16	1⅛	1 5/16	1 11/16	2 1/16
Price, Polished ...per dozen	$7.80	7.80	9.60	12.00	18.00	27.00	39.00

Double End

Length.....inches	4 and 6	6 and 8	8 and 10	10 and 12
Capacity..... "	½ " ¾	¾ " 15/16	15/16 " 1⅛	1⅛ " 1 5/16
Price, Polished...per doz.	$13.20	$15.00	$18.00	$24.00
" Nickeled... "	16.20	19.20	22.80	31.80

Repair Parts

Repair parts for the regular single end wrench are interchangeable with the double.



Length Inches	No. 2 Jaw	No. 3 Thumbscrew	No. 4 Pin	No. 5 Spring
	Price, Each			
4	$.25	$.10	$.05	$.05
6	.25	.10	.05	.05
8	.30	.12	.05	.05
10	.40	.15	.05	.05
12	.60	.25	.10	.05
15	.85	.35	.10	.05
18	1.15	.55	.10	.05

Westcott Adjustable S Nut Wrenches



A convenient wrench for general use. Can be used in many places inaccessible to the monkey wrench.

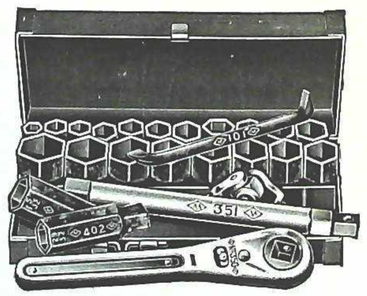
Made of first-class material. Strong and durable.

Handle is of malleable iron; jaw, forged steel.

Packed 6 in a box.

No.	Size Inches	Opens Inches	Wt., Lbs. per Box	Price per Doz.
76	6	¾	2 7/8	$8.00
78	8	1	5½	10.00
80	10	1⅜	9¾	12.00
82	12	1⅝	16½	18.00
84	14	2	25½	24.00

No. 10 Mossberg Socket Wrench Sets



Box contains: 1 No. 350 ratchet wrench; 1 No. 351 extension bar, 9½ in. long; 1 No. 336 universal joint; 1 No. 101 offset screwdriver; 21 hexagon pressed steel sockets: 15/32, ½, 17/32, 19/32, 5/8, 21/32, 11/16, 23/32, 25/32, 15/16, 27/32, ⅞, 29/32, 31/32, 1, 1 1/32, 1 3/32, 1 5/32, 1 9/32, and two special spark plug sockets 4 inches long; No. 402, 29/32-inch opening and No. 422, 1 5/32-inch opening. Enamel steel box, Frostine finish.

Price, No. 10, Complete.....each $10.00

Hy-Tech Products

Billings Drop-Forged Engineers' Wrenches

15° Angle, Double Head



No.	Trade No.	U.S. Standard Bolt, Size Inches	Hex. Head Cap Screw Size, In.	S.A.E. Standard Screw and Nut, In.	Milled Opening Inches	Lgth. In.	Price, Each Hard-ened	Price, Each Black Finish
1100A	....	.. – ⅛	. . – ⅛	.. – ..	¼ – 5/16	3½	$.26	$.32
1100	721	⅛ – ..	⅛ – 3/16	.. – ..	5/16 – ⅜	4	.28	.34
1101	21	⅛ – 3/16	⅛ – ..	.. – ..	5/16 – 13/32	4	.28	.34
1102	722	⅛ – ..	⅛ – ¼	.. – ¼	5/16 – 7/16	4½	.34	.42
1103	22	⅛ – ¼	⅛ – 5/16	.. – 5/16	5/16 – ½	4½	.34	.42
1104	723	.. – ..	3/16 – ¼	.. – ¼	3/8 – 7/16	4½	.34	.42
1105	723a	.. – ¼	3/16 – 5/16	.. – 5/16	3/8 – ½	4½	.34	.42
1107	23	3/16 – ¼	.. – 5/16	.. – 5/16	13/32 – ½	4½	.34	.42
1106	724	.. – ..	3/16 – 3/8	.. – 3/8	3/8 – 9/16	5	.40	.50
1108	24	3/16 – 5/16	.. – ..	.. – ..	13/32 – 19/32	5	.40	.50
1109	725	.. – ¼	¼ – 5/16	¼ – 5/16	7/16 – ½	5	.40	.50
1110	725a	.. – ..	¼ – 3/8	¼ – 3/8	7/16 – 9/16	5	.40	.50
1111	725b	¼ – ..	5/16 – 3/8	5/16 – 3/8	½ – 9/16	5½	.40	.50
1112	25	¼ – 5/16	5/16 – ..	5/16 – ..	½ – 19/32	5½	.40	.50
1113	726	¼ – ..	5/16 – 7/16	5/16 – 7/16	½ – 5/8	6	.50	.62
1114	26	¼ – 3/8	5/16 – ..	5/16 – ..	½ – 11/16	6	.50	.62
1116	727	.. – ..	3/8 – 7/16	3/8 – 7/16	9/16 – 5/8	6	.50	.62
1118X	27c	.. – 3/8	3/8 – ..	3/8 – ..	9/16 – 11/16	6½	.50	.62
1118	27	5/16 – 3/8	.. – ..	.. – ..	19/32 – 11/16	6½	.50	.62
1117	728	.. – ..	3/8 – ½	3/8 – ½	9/16 – ¾	7	.60	.74
1119	28	5/16 – 7/16	.. – ..	.. – ..	19/32 – 25/32	7	.60	.74
1119X	....	.. – 3/8	7/16 – ..	7/16 – ..	5/8 – 11/16	7	.60	.74
1120	729	.. – ..	7/16 – ½	7/16 – ½	5/8 – ¾	7	.60	.74
1120X	28s	.. – 7/16	7/16 – ..	7/16 – ..	5/8 – 25/32	7	.60	.74
1123X	..	3/8 – ..	.. – ½	.. – ½	11/16 – ¾	7	.60	.74
1123	29	3/8 – 7/16	.. – ..	.. – ..	11/16 – 23/32	7	.60	.74
1121	730	.. – ..	7/16 – 9/16	7/16 – ..	5/8 – 13/16	8	.74	.90
1122	730a	.. – ½	7/16 – 5/8	7/16 – 9/16	5/8 – ⅞	8	.74	.90
1124	30	3/8 – ½	.. – 5/8	.. – 9/16	11/16 – ⅞	8	.74	.90
1125	731	.. – ..	½ – 9/16	½ – ..	¾ – 13/16	9	.74	.90
1126	731a	½ – ..	½ – 5/8	½ – 9/16	¾ – ⅞	9	.74	.90
1128	31	7/16 – ½	.. – 5/8	.. – 9/16	25/32 – ⅞	9	.74	.90
1130	731b	.. – ½	9/16 – 5/8	.. – 9/16	13/16 – ⅞	9	.74	.90
1129	32	7/16 – 9/16	.. – ..	.. – ..	25/32 – 31/32	10	.90	1.10
1131	732	.. – ..	9/16 – ¾	.. – 11/16	13/16 – 1	10	.90	1.10
1131X	33a	½ – ..	5/8 – ..	9/16 – 5/8	⅞ – 15/16	10	.90	1.10
1132	33	½ – 9/16	5/8 – ..	.. – 9/16	⅞ – 31/32	10	.90	1.10
1132X	33c	.. – ..	.. – ¾	5/8 – 11/16	15/16 – 1	10	.90	1.10
1133	733	.. – ½	5/8 – ¾	9/16 – 11/16	⅞ – 1	10	.90	1.10
1134	34	½ – 5/8	5/8 – ..	9/16 – ¾	⅞ – 1 1/16	11	1.12	1.36
1135	734	½ – ..	5/8 – ⅞	9/16 – ..	⅞ – 1 1/8	11	1.12	1.36
1136X	34a	.. – 5/8	.. – ..	5/8 – ¾	15/16 – 1 1/16	11	1.12	1.36
1136	35	9/16 – 5/8	.. – ..	.. – ¾	31/32 – 1 1/16	11	1.12	1.36
1138	735	.. – ..	¾ – ⅞	11/16 – ..	1 – 1 1/8	11	1.12	1.36
1137	36	9/16 – ¾	.. – 1	.. – ⅞	31/32 – 1 1/4	12	1.62	1.92
1139	736	.. – ¾	¾ – 1	11/16 – ⅞	1 – 1 1/4	12	1.62	1.92
1140	37	5/8 – ¾	.. – 1	¾ – ⅞	1 1/16 – 1 1/4	12	1.62	1.92
1140X	737	.. – ¾	⅞ – 1	.. – ⅞	1 1/8 – 1 1/4	12	1.62	1.92
1141	38	5/8 – ⅞	.. – ..	¾ – 1	1 1/16 – 1 7/16	14	2.40	2.80
1145	739	¾ – ..	1 – 1 1/8	⅞ – ..	1 1/4 – 1 3/8	14	2.40	2.80
1146	39	¾ – ⅞	1 – ..	⅞ – 1	1 1/4 – 1 7/16	14	2.40	2.80
1148	40	¾ – 1	1 – ..	⅞ – 1 1/8	1 1/4 – 1 5/8	16	3.30	3.80
1150	41	⅞ – 1	.. – ..	1 – 1 1/8	1 7/16 – 1 5/8	16	3.30	3.80
1151	42	⅞ – 1 1/8	.. – ..	1 – 1 1/4	1 7/16 – 1 13/16	18	4.60	5.30
1153	43	1 – 1 1/8	.. – ..	1 1/8 – 1 1/4	1 5/8 – 1 13/16	18	4.60	5.30
1154	44	1 – 1 1/4	.. – ..	1 1/8 – 1 3/8	1 5/8 – 2	21	6.25	7.20
1155	45	1 1/8 – 1 1/4	.. – ..	1 1/4 – 1 3/8	1 13/16 – 2	21	6.25	7.20
1156	46	1 1/8 – 1 3/8	.. – ..	1 1/4 – 1 1/2	1 13/16 – 2 3/16	23	9.30	10.50
1157	47	1 1/4 x 1 3/8	.. – ..	1 3/8 – 1 1/2	2 – 2 3/16	23	9.30	10.50
1158	48	1 1/4 – 1 1/2	.. – ..	1 3/8 – ..	2 – 2 3/8	24	12.50	14.00
1159	49	1 3/8 – 1 1/2	.. – ..	1 1/2 – ..	2 3/16 – 2 3/8	24	12.50	14.00
1160	50	1 3/8 – 1 5/8	.. – ..	1 1/2 – ..	2 3/16 – 2 9/16	26	16.25	18.00
1161	51	1 1/2 – 1 5/8	.. – ..	.. – ..	2 3/8 – 2 9/16	26	18.00	19.80
1162	52	1 1/2 – 1 3/4	.. – ..	.. – ..	2 3/8 – 2 3/4	27	20.00	22.00
1163	53	1 5/8 – 1 3/4	.. – ..	.. – ..	2 9/16 – 2 3/4	27	22.00	24.00
1164	55	1 3/4 – 2	.. – ..	.. – ..	2 3/4 – 3 1/8	32	28.75	31.00
1165	56	1 3/4 x 2 1/4	.. – ..	.. – ..	2 3/4 – 3 1/2	34	37.50	40.00
1166	57	2 – 2 1/4	.. ..	.. – ..	3 1/8 – 3 1/2	36	44.25	47.00

Billings Drop-Forged Heavy Duty S Wrenches

22½° Angle, Double Head

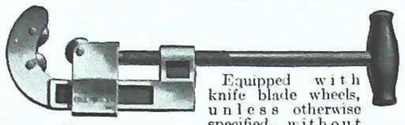


Designed for shop use, and are shorter and sturdier than the 2000 line. Milled for U. S. Bolts and hexagon head cap screws with openings from 5/16 to 2 inches.

Number and model must be specified in ordering.

No.	Trade No.	U S S Bolt Size Inches	Hex. Head Cap. Sc. Size, Inches	Milled Opening Inches	Length Inches	Price, Each Hard-ened	Price, Each Black Finish
1400	661D	⅛ – ..	⅛ – 3/16	5/16 – ⅜	4	$.37	$.44
1401	661A	⅛ – 3/16	.. – ..	5/16 – 13/32	4	.37	.44
1402	661E	⅛ – ..	⅛ – ¼	5/16 – 7/16	4	.37	.44
1403	661B	⅛ – ¼	.. – 5/16	5/16 – ½	4	.37	.44
1404	661F	.....	3/16 – ¼	3/8 – 7/16	4	.37	.44
1405	661G	.. – ¼	3/16 – 5/16	3/8 – ½	4	.37	.44
1406	....	.....	3/16 – 3/8	3/8 – 9/16	4	.37	.44
1407	661C	3/16 – ¼	.. – 5/16	13/32 – ½	4	.37	.44
1408	662A	3/16 – 5/16	.....	13/32 – 19/32	5	.49	.58
1409	662D	.. – ¼	¼ – 5/16	7/16 – ½	5	.49	.58
1410	662E	.....	¼ – 3/8	7/16 – 9/16	5	.49	.58
1411	662F	¼ – ..	5/16 – 3/8	½ – 9/16	5	.49	.58
1412	662B	¼ – 5/16	5/16 – ..	½ – 19/32	5	.49	.58
1413	662G	¼ – ..	5/16 – 7/16	½ – 5/8	5	.49	.58
1414	662C	¼ – 3/8	5/16 – ½	½ – ¾	5	.49	.58
1415	....	¼ – ..	5/16 – 9/16	½ – 25/32	6¼	.68	.78
1416	663D	.....	3/8 – 7/16	9/16 – ¾	6¼	.68	.78
1417	663E	.....	3/8 – ½	9/16 – 25/32	6¼	.68	.78
1418	663A	5/16 – 3/8	.....	13/32 – 11/16	6¼	.68	.78
1419	663B	5/16 – 7/16	.....	13/32 – 25/32	6¼	.68	.78
1420	663F	.....	7/16 – ½	5/8 – 13/16	6¼	.68	.78
1421	663G	.....	7/16 – 9/16	5/8 – ⅞	6¼	.68	.78
1422	....	.. – ½	7/16 – 5/8	5/8 – 15/16	6¼	.68	.78
1423	663C	3/8 – 7/16	.....	11/16 – 25/32	6¼	.68	.78
1424	664A	3/8 – ½	.. – 5/8	11/16 – ⅞	7½	.92	1.06
1425	664D	.....	½ – 9/16	¾ – ⅞	7½	.92	1.06
1426	664E	.. – ½	½ – 5/8	¾ – 1	7½	.92	1.06
1427	....	.....	½ – ¾	¾ – 1	7½	.92	1.06
1428	664B	7/16 – ½	.. – 5/8	25/32 – 7/8	7½	.92	1.06
1429	664C	7/16 – 9/16	.....	25/32 – 31/32	7½	.92	1.06
1430	664F	.....	½ – ..	13/16 – 1	9	1.25	1.44
1431	665D	.....	9/16 – ¾	7/8 – 1	9	1.25	1.44
1432	665A	½ – 9/16	.....	7/8 – 1 1/32	9	1.25	1.44
1433	665E	½ – 5/8	5/8 – ¾	7/8 – 1 1/16	9	1.25	1.44
1434	665B	½ – ..	5/8 – ..	7/8 – 1 1/8	9	1.25	1.44
1435	665F	½ – ..	5/8 – 7/8	7/8 – 1 5/16	9	1.25	1.44
1436	665C	9/16 – 5/8	.....	31/32 – 1 1/4	10½	1.75	2.00
1437	666A	9/16 – ¾	.. – 1	1 – 1 1/8	10½	1.75	2.00
1438	665G	.....	¾ – ⅞	1 – 1 1/8	10½	1.75	2.00
1439	666D	.....	¾ – 1	1 – 1 1/4	10½	1.75	2.00
1440	666B	5/8 – ¾	.. – 1	1 1/16 – 1 1/4	10½	1.75	2.00
1441	666C	5/8 – ⅞	.....	1 1/16 – 1 7/16	10½	1.75	2.00
1442	666E	.. – ¾	⅞ – 1	1 1/8 – 1 1/4	10½	1.75	2.00
1443	666F	.....	⅞ – 1 1/8	1 1/8 – 1 3/8	10½	1.75	2.00
1444	667D	¾ – ..	1 – 1 1/8	1 1/4 – 1 3/8	12	2.60	2.90
1445	667A	¾ – ⅞	1 – ..	1 1/4 – 1 7/16	12	2.60	2.90
1446	667E	¾ – 1	1 – 1 1/4	1 1/4 – 1 5/8	12	2.60	2.90
1447	667B	¾ – 1	1 – 1 3/8	1 3/8 – 1 1/2	12	2.60	2.90
1448	667F	.....	1 1/8 – 1 1/4	1 3/8 – 1 5/8	12	2.60	2.90
1449	667C	⅞ – 1	..... – 1 3/8	1 7/16 – 1 5/8	12	2.60	2.90
1450	668A	⅞ – 1 1/8	.....	1 7/16 – 1 13/16	14	4.45	5.00
1451	668B	1 – 1 1/8	1 3/8 – ..	1 5/8 – 1 13/16	14	4.45	5.00
1452	668C	1 – 1 1/4	1 3/8 – ..	1 5/8 – 2	14	4.45	5.00
1453	....	1 1/8 – 1 1/4	.....	1 15/16 – 2	14	4.45	5.00

Barnes Type Pipe Cutters



Nos. 1 to 2

Equipped with knife blade wheels, unless otherwise specified, without extra charge.

Three wheel style, suitable for use where cutter cannot be revolved entirely around pipe.

No.	Cuts Pipe Inches	Price Each	Price Pins per Dozen	Price, Each — Wheels	Body	Slide and Wheel	Handle and Screw
1B	⅛ to 1	$4.50	$1.00	$.50	$1.75	$ .75	$1.00
2B	⅛ to 2	6.00	1.00	.60	2.60	1.00	1.25
3B	1½ to 3	10.00	1.00	.80	4.55	2.00	2.25
4B	2½ to 4	20.00	2.00	1.00	9.50	4.50	4.50
5B	4 to 6	30.00	2.00	1.10	13.75	7.00	7.00
6B	6 to 8	40.00	2.00	1.10	20.00	8.50	9.25
6½B	8 to 10	45.00	2.00	1.10	23.00	9.50	10.25
7B	9 to 12	50.00	2.00	1.10	25.00	11.25	11.50

Saunders Type Pipe Cutters



Roller style especially good where cutter can be revolved entirely around pipe. Cuts without leaving burr. Cutter has hardened tool steel facing in the swinging block at the point where the screw bears on it to prevent wear. It is extra strong at foot of sleeve handle.

No.	Cuts Pipe Inches	Price Each	Price Wheels Each	Price, per Dozen — Rollers	Pins	Price, Each — Blocks and Wheels	Handles and Screws
1S	⅛ to 1	$3.00	$.50	$2.88	$1.20	$1.25	$1.00
2S	1 to 2	4.50	.60	3.84	1.20	1.75	1.25
3S	2 to 3	11.00	1.10	6.00	1.80	2.75	1.75
4S	2½ to 4	18.00	1.10	6.00	1.80	3.50	3.50
5S	4 to 6	28.00	1.10	7.20	1.80	4.00	5.00

Trimo Pipe Cutters

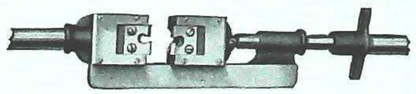


Made with one cutting wheel and two rolls or with three cutting wheels.

The wheels are of chrome vanadium steel. Has no thread in the frame or roll block. A small case-hardened nut adjusts handle screw which can be replaced when worn. Converted into a three-wheel cutter by substituting two wheels for the two rolls.

No.	Cuts Pipe Inches	Price, Each — Complete	Knife Edge Wheels	Knurled Edge Wheels	Rolls	Nuts	Handle Only without Screw Rod
1	⅛ to 1¼	$5.00	$.60	$.60	$.30	$.35	$.50
2	¼ to 2	6.00	.60	.60	.30	.35	.50
3	1 to 3	10.00	.90	.90	.40	.40	.50
4	1 to 4	20.00	1.20	1.20	.40	.60	.60

Beaver Square End Pipe Cutters



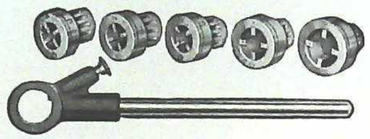
This pipe cutter cuts like a lathe tool, each turn removing a thin shaving until the pipe is severed. Leaves no burr to be reamed or filed, or to reduce the capacity of the pipe, and threading dies start easily and with less wear.

Rigid, simple and fool-proof in construction.

The knives give hundreds of cuts on the hardest pipe, and are easily resharpened.

No.	1	5
Capacity Pipe, inches	⅛–1	½–2
Price Complete, each	$18.00	$20.00
Price Knives, per set	1.20	1.50

No. 00 Toledo Ratchet Pipe Threading Devices

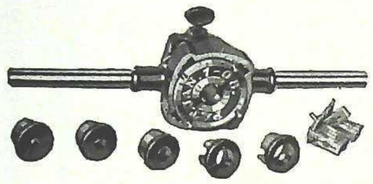


Threads ⅛ to ¾-inch pipe.

Die heads are instantly changed from one size to another by pulling ratchet pawl knob and allowing one head to drop out and another in. Complete tool consists of ratchet handle and ⅛, ¼, ⅜, ½ and ¾-inch die heads complete with r.h. dies, all packed in a strong carton.

Price, No. 00, Ship. Wt. 10 Lbs., each	$19.00
Price, Ratchet Only, each	3.00
Price, ⅛, ¼, or ⅜-Inch Die Head with Dies, each	3.00
Price, ½ or ¾-Inch Die Head with Dies, each	3.50
Price, Dies, per Set of 4 Segments	2.00

No. 0 Toledo Adjustable Pipe Threading Devices

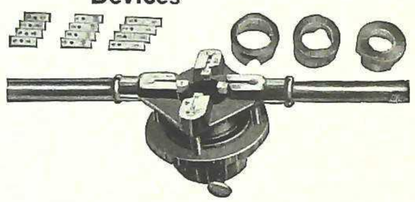


Threads ½ and ¾-inch with one set of dies; ¼ and ⅜-inch threads with another set, and ⅛-inch threads with another set. Uses the receding-die principle for threading ½ and ¾-inch pipe, making it an easy operating tool.

Light and compact, being only 24 inches long from tip to tip of the handles.

No. of Sets of Dies to Stock	3
Price, No. 0, Complete, each	$16.00
" Dies per Set of Four Segments	2.50

No. 1 Toledo Adjustable Pipe Threading Devices



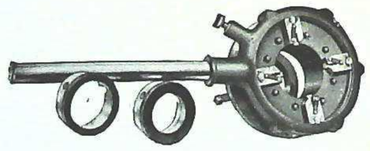
Threads 1, 1¼, 1½ and 2-inch pipe. With this device one man can easily cut 2-inch threads. The No. 1 has a minimum of working parts and is exceedingly strong and durable. It is made both as a right-hand and a left-hand tool—neither will do both.

Right-hand is furnished unless otherwise specified.

Left-hand is slightly higher in price.

No. of Sets of Dies to Stock	4
Price, No. 1, Complete, each	$24.00
Price, Dies, per Set of Four Segments	2.50

No. 1½R Toledo Adjustable Ratchet Threading Devices

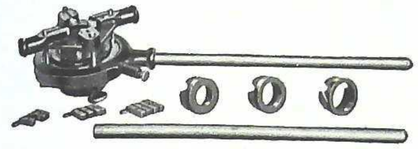


A ratchet operated mechanism, light and compact, for threading 2½ to 3-inch pipe, 8 threads to the inch. Also made as a special tool for threading oil well tubing for 2, 2½ and 3-inch sizes, 11½ threads to the inch. In ordering, be sure to state whether the standard pipe thread tool or the special oil well tubing tool is desired.

No. and Thread	Threads, Inches — Pipe	Tubing	No. of Sets of Dies to Stock	Ship. Wt. Lbs.	Complete Price Each	Price Dies per Set of 4 Segments
1½R— 8 –Thread	2½, 3	.....	2	45	$45.00	$4.00
1½R—11½–Thread	.....	2, 2½, 3	3	47	50.00	4.00

Hy-Tech Products

No. 1A Toledo Adjustable Ratchet Pipe Threading Devices



Threads 1, 1¼, 1½, and 2-inch pipe; equipped with a ratchet. The No. 1A may be used with two handles as an ordinary die stock, or with one handle inserted in the ratchet case. It is desirable for threading pipe down a trench, or against walls, between rafters, etc.

Right-hand is furnished unless otherwise specified.

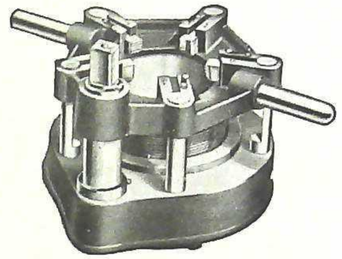
No. of Sets of Dies to Stock	4
Price, No. 1A, Complete, each	$30.00
" Dies, per Set of Four Segments	2.50

No. 2 Toledo Geared Adjustable Pipe Threading Devices

Threads 2½ to 4-inch pipe. This tool is light, compact and easy to operate.

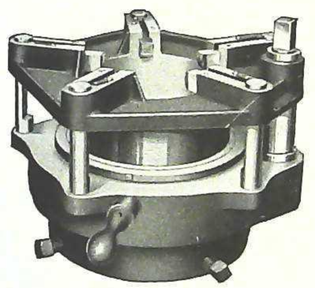
It takes only a few minutes to cut a thread with it, and it can be put on a pipe in most any place or position.

It is furnished complete with dies and ratchet.



No. of Sets of Dies to Stock	4
Price, No. 2, Complete, each	$100.00
Price, Dies, per Set of Five Segments	8.00

No. 2½ Toledo Geared Adjustable Pipe Threading Devices



Capacity 4½ to 6-inch pipe, inclusive. Furnished complete with ratchet handle.

Uses separate set of dies for each size pipe and cuts perfect threads on either wrought iron or steel pipe.

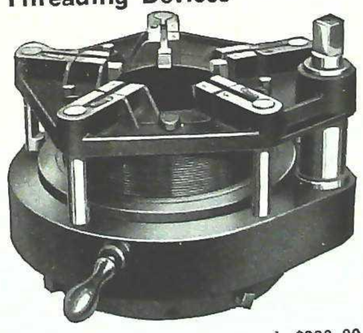
Three sets of dies to the stock. Extra dies of 5 segments, $12.00 each.

Price, No. 2½, Ship. Wt. 185 Lbs., each $200.00

No. 3 Toledo Geared Adjustable Pipe Threading Devices

Light, compact and easy in operation. Strictly portable. One man can easily and quickly cut an 8-inch thread with it. Complete with dies and ratchet handle.

Will thread pipe from 4½ to 8-inch diameter; 5 sets of dies supplied. Extra dies of 5 segments can be supplied for $12.00 each.



Price, No. 3, Ship. Wt. 228 Lbs., each $300.00

Toledo 3-Way Pipe Threading Devices



A 3-way tool, light, small and easy to operate. It is made in two sizes, No. 30 and No. 31.

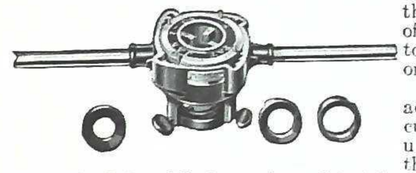
No. 30 threads ⅜, ½ and ¾ inch and weighs 4¾ pounds.

No. 31 threads ½, ¾ and 1 inch and weighs 7 pounds.

Each die head is on center thereby insuring a perfectly balanced tool. The dies are removable and can be reground when dull or replaced at a small expense.

No	30	31
Shipping Weight, pounds	5¾	8¼
Price, Complete, each	$15.00	$18.00
Price, ⅜-Inch Dies, per Set of 4 Segments	2.00	....
Price, ½, ¾-Inch Dies, per Set of 4 Segments	2.00	2.00
Price, 1-Inch Dies, per Set of 4 Segments	....	2.50

No. 10 Toledo Adjustable Pipe Threading Devices



No. 10 threads the entire range of sizes from 1 to 2 inches with one set of dies.

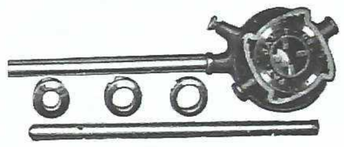
This tool is adjustable for cutting over or undersize threads as well as standard. Furnished complete with right-hand dies.

Left-hand dies can be used in this tool and can be furnished on special order. It requires, however, a separate set of left-hand dies for each size pipe. Shipping weight, 25 pounds.

No. of Sets of Dies to Stock	1
Price, No. 10, Complete, each	$28.00
Price, Dies, per Set of 4 Segments	2.75

No. 10A Toledo Adjustable Ratchet Pipe Threading Devices

This tool threads the entire range of sizes from 1 to 2 inches with one set of dies and also has a ratchet attachment, making it desirable for use in restricted places.



Left-hand dies can be used and can be furnished on special order. It requires, however, a separate set of left-hand dies for each size pipe.

No.	Threads Pipe Inches	No. of Sets of Dies to Stock	Price Complete Each	Price, Die per Set of 4 Segments
10A	1 to 2	1	$34.00	$2.75

No. 11 Toledo Ratchet Pipe Threading Devices



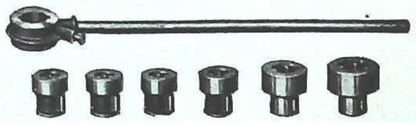
Threads ½ to 1¼-inch pipe.

This tool is light and compact and reaches the most difficult corner job.

Die heads are instantly changed from one size to another by pulling the ratchet pawl knob. Die segments can be removed when dull and easily reground. Complete tool consists of ratchet handle, ½, ¾, 1 and 1¼-inch r.h. die heads with dies, all packed in a strong carton. If complete tool is not desired any combination of die heads may be ordered.

Price, No. 11, Ship. Wt. 13 Lbs., each	$24.00
Price, Ratchet Only, each	4.00
Price, ½, ¾, 1 or 1¼-Inch Die Head with Dies, each	5.00
Price, ½ or ¾-Inch Dies Only, per Set of 4 Segments	2.00
Price, 1 or 1¼-Inch Dies Only, per Set of 4 Segments	2.50

No. 3 Beaver Junior Ratchet Die Stocks



Consists of a ratchet handle holding separate heads for each size die. Ratchet mechanism entirely encased in head. Right or left hand as specified.

Threads Pipe	inches	1/8 to 1
Price, No. 3, 1/8 to 1, Complete	each	$24.00
Price, No. 3, 1/4 to 1, Complete	each	21.00
Price, No. 3, 3/8 to 1, Complete	each	18.00
Price, No. 3, 1/2 to 1, Complete	each	15.00
Price, Extra Dies (4 Chasers) Any Size Range	each	2.50
Price, Die Heads, 1/8, 1/4 or 3/8-Inch	each	3.00
Price, Die Heads, 1/2 or 3/4-Inch	each	3.50
Price, Die Heads, 1-Inch	each	4.00
Price, Ratchet Handle Only	each	4.00

No. 6 Beaverette Easy Working Die Stocks



Threads all 4 sizes, 1/4 to 3/4-inch, without changing dies or bushings. A thread may be cut while changing dies in other tools. The 2 sets of dies covering the different thread pitches are held in one plate, instantly adjusted to any size by the single handle.

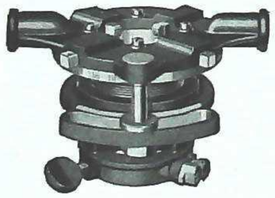
A universal centering device does away with loose bushings.

The No. 6 is a compact tool, complete without loose parts. Right or left hand, as specified.

Price, No. 6, Complete	each	$15.00
Price, Extra Dies, R. or L., 1/8 or 1/4x3/8 or 1/2x3/4 Inches	per set	3.00

Beaver Self-Contained and Adjustable Die Stocks

No. 11 Plain and No. 11-A Ratchet 1 to 2-Inch



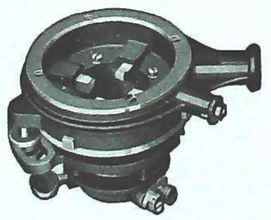
No. 11, Plain

These die stocks pay for themselves by saving time and labor. They are fully self-contained, light in weight, easy working and simple in construction.

One set of dies is quickly set to thread 1, 1¼, 1½ or 2 inches, saving time in changing dies. Dies cannot become lost; they are always in the tool. They are quickly adjusted to thread under or over standard, without affecting length of thread.

Dies are high grade alloy steel, specially heat treated.

These tools accurately center the pipe in the tool for straight threads but the tool can be purposely adjusted to cut drip threads when desired. Two knurled screws are quickly set and held firmly to pipe size, leaving only the thumb screw to be tightened after the die stock is placed on the pipe. They eliminate loose parts. Will grip any size coupling for threading short nipples.

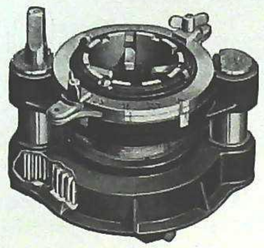


No. 11-A, Ratchet

Price, No. 11, Plain Stock Complete	each	$25.00
Price, No. 11-A, Ratchet Stock Complete	each	30.00

Extra dies, $3.00 per set.
Left-hand tools and dies, add 15 per cent to list prices.

No. 41 Beaver Die Stocks



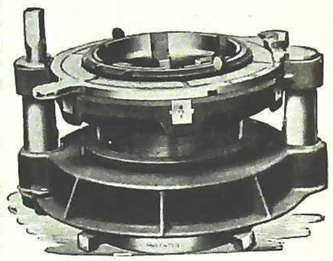
Threads sizes, 2½, 3, 3½ and 4-inch, or variations from standard without changing dies.

Gears are cut steel and covered which protects tool and operator. No dies to look for—they are all in the tool. Threads are easily cut on pipe in a ditch as well as at the bench. Driving pinion rigidly supported on both ends.

Has bushings and grip screws.

Threads Pipe	inches	2½ to 4
Price, No. 41, Complete	each	$110.00
Price, Extra Dies, R.H.	per set	9.00

No. 61 Beaver Die Stocks



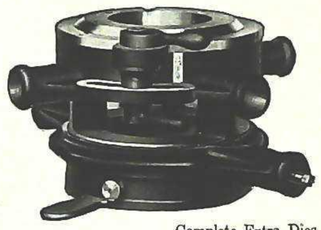
Two sets of dies are used to cover the unusually large range. One set cuts 2½, 3 and 3½-inch, and the other cuts 4, 4½, 5 and 6-inch.

Can be used in a ditch or at the bench.

Bearings are bronze bushed. Driving pinion rigidly supported on both ends. Has bushings and grip screws.

Threads Pipe	inches	2½ to 6
Price, No. 61, Complete	each	$220.00
Price, Extra Dies, R. H. (2½ to 3½), (4 to 6)	per set	20.00

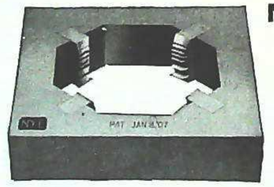
Oster Bull Dog Ratchet Die Stocks



Prices include the stock or die holder, a complete set of right-hand dies and a set of tubular handles. No bushings are furnished because the guides are adjustable for all sizes.

Four handles are used on all numbers except the 105R and 105½R which have only two handles.

No.	Threads Pipe, Inches	Complete Price, Ea.	Extra Dies Price, per Set
105 R	1½ to 2, 2½ to 3	$50.00	$5.00
105½R	1 to 1¼, 1½ to 2, 2½, 3	53.00	5.00
107 R	2½ to 3, 3½ to 4	60.00	6.00
107½R	1½ to 2, 2½ to 3, 3½, 4	63.50	6.00
108 R	2½ to 3, 3½ to 4, 4½, 5	75.00	10.00
108½R	1½ to 2, 2½ to 3,3½,4,4½,5	80.00	10.00



Nye Improved Solid Dies

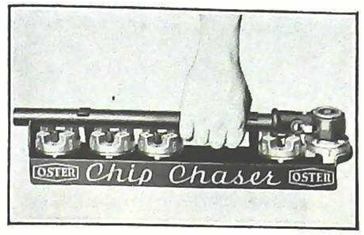
The Nye patented feature of removing every alternate tooth in the back of the die to reduce friction, and of relieving or backing off each chaser is used in the Nye Solid Die. It is hardened and tempered in oil.

No.	Dimensions, Inches	Size Dies Inches	Price Each
Junior	2 x2 x ¾	1/8, 1/4, 3/8, 1/2, 3/4	$2.75
0	2 x2 x ½	1/8, 1/4, 3/8, 1/2	2.75
1	2½x2½x ¾	1/8, 1/4, 3/8, 1/2, 3/4, 1	3.00
1½	3 x3 x ¾	1/8, 1/4, 3/8, 1/2, 3/4, 1, 1¼, 1½	4.00
2	4 x4 x ⅞	½, ¾, 1, 1¼, 1½, 2	5.00
4	5 x5 x1¼	2½, 3	15.00

Dies are made in both Briggs (American) and Whitworth (English) Standard. Right hand and the Briggs Standard dies furnished unless otherwise specified.

Hy-Tech Products

No. 00 Oster Chip Chaser Die Stocks



Chips cannot collect around the dies and ruin threads. The open spaces between the projecting dies permit the chips to fall away as fast as they curl off the pipe.

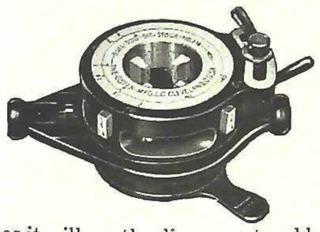
Finger tip control makes the Chip Chaser Ratchet a simple, easy working device. A flip of the finger changes it from forward to reverse or to neutral, where it is set when changing heads. Stronger and more rigid assembly is obtained by use of the bayonet lock which holds the head in the ratchet handle without depending on the ratchet pawl.

Free oiling spaces permit the oil to be dropped on the cutting edge of the dies.

To lighten and strengthen it and to make it unbreakable, pressed steel is used wherever possible. In the ratchet device and in the head this steel is hardened to resist wear.

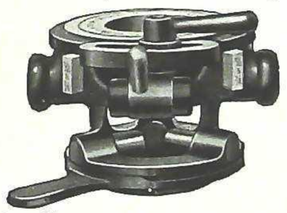
Price, No. 00, Complete with Ratchet Handle, 5 Die Heads for Threading 1/8, 1/4, 3/8, 1/2, and 3/4-Inch Pipe, and Carrying Case	each	$20.00
Price, No. 00, Complete with Ratchet Handle and 3 Die Heads for Threading 3/8, 1/2, and 1/4-Inch Pipe	each	12.00
Price, Extra Die Heads, Complete with Dies	each	3.00
Price, Die Head Holder—Ratchet Type with One Handle	each	3.00
Price, Die Head Holder—Plain Type with Two Handles	each	3.00

Oster Improved Bulldog Die Stocks



This line of stocks has a positive setting arrangement without the use of any thumb-screws or friction devices of any kind. The dies are controlled by the lever handle on top.

By moving this handle to the right as far as it will go, the dies are set and held in place while cutting. One movement of the top lever handle will open or close the dies, no resetting or backing off threads. The tool is equipped with adjustable guides which do away with loose bushings.



Guides are held in any position without locking.

Prices include stock or die holder, complete set of right hand dies and set of tubular handles.

Regular Die Stocks

No.	Complete Each	Extra Dies per Set	Threads, Pipe, Inches
111	$13.00	$2.50	1/8, 1/4 and 3/8, 1/2 and 3/4
112	17.00	3.00	1/4 and 3/8, 1/2 and 3/4, 1 and 1¼
113	22.00	3.50	1 and 1¼, 1½ and 2
114	25.00	3.50	½ and ¾, 1 and 1¼, 1½ and 2
114½	28.00	3.50	¼ and 3/8, ½ and ¾, 1 and 1¼, 1½ and 2

Die Stocks with Ratchet

112R	$20.00	$3.00	¼ and 3/8, ½ and ¾, 1 and 1¼
113R	27.00	3.50	1 and 1¼, 1½ and 2
114R	30.00	3.50	½ and ¾, 1 and 1¼, 1½ and 2
114½R	33.00	3.50	¼ and 3/8, ½ and ¾, 1 and 1¼, 1½ and 2

Genuine Armstrong Adjustable Pipe Stocks and Dies



No. 2

Note.—All dies can be supplied with U.S.S. or Whitworth threads.

No. 1

Price, 1/8 to ½-Inch, Right Hand, with 4 Dies	each	$9.00
Price, 1/8 to ½-Inch R. and L. Hand, with 8 Dies	each	14.00

Extra Parts for No. 1

Price, Dies, Right or Left Hand	each	$1.60
Price, Bushings	each	.30
Price, Stocks with Screws, Handle and Wrench	each	3.25

Unless otherwise specified, packed 1/8 to ½ inch, R. H.

No. 2

Price, ½ to ¾-Inch, with 2 Dies	each	$6.50
Price, ½ to 1 -Inch, with 3 Dies	each	8.25
Price, 3/8 to 1 -Inch, with 4 Dies	each	10.00
Price, ¼ to 1-Inch, Right Hand, with 5 Dies	ea.	12.00
Price, ¼ to 1-Inch, R. and L. Hand, with 10 Dies	ea.	20.00
Price, 1/8 to 1-Inch, Right Hand, with 6 Dies	ea.	14.00
Price, 1/8 to 1-Inch, R. and L. Hand, with 12 Dies	ea.	22.00

Extra Parts for No. 2

Price, Dies, Right or Left Hand	each	$2.00
Price, Bushings	each	.40
Price, Stocks with Screws, Handle and Wrench	each	4.00

Unless otherwise specified, packed ¼ to 1 inch, R. H.

No. 2½



Price, ½ to 1¼-Inch, Right Hand, with *2 Dies	each	$14.00
Price, ½ to 1¼-Inch, R. and L. Hand, with 4 Dies	each	21.00
Price, ¼ to 1¼-Inch, Right Hand, with †4 Dies	each	19.00
Price, ¼ to 1¼-Inch, R. and L. Hand, with 8 Dies	each	27.00

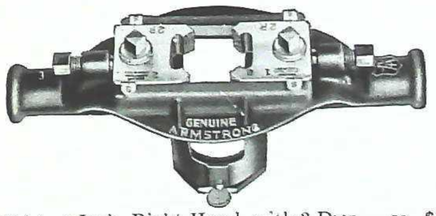
*Double end, ½x¾ and 1x1¼ inch.
†Two double end, ½x¾, and 1x1¼, two single, ¼ and 3/8 inch.

Extra Parts for No. 2½

Price, Double End Dies, Right or Left Hand	each	$3.50
Price, Single End	each	2.50
Price, Bushings	each	.60
Price, Stocks, with Screws, Handle and Wrench	each	5.25

Unless otherwise specified, packed ½ to 1¼ inches, R. H.

No. 3



Price, 1¼ to 2-Inch, Right Hand, with 3 Dies	ea.	$18.00
Price, 1¼ to 2-Inch, R. and L. Hand, with 6 Dies	ea.	30.00
Price, 1 to 2-Inch, Right Hand, with 4 Dies	ea.	21.00
Price, 1 to 2-Inch, R. and L. Hand, with 8 Dies	ea	37.00
Price, ¾ to 2-Inch, Right Hand, with 5 Dies	ea.	24.00
Price, ¾ to 2-Inch, R. and L. Hand, with 10 Dies	ea.	44.00
Price, ½ to 2-Inch, Right Hand, with 6 Dies	ea.	27.00
Price, ½ to 2-Inch, R. and L. Hand, with 12 Dies	ea.	51.00

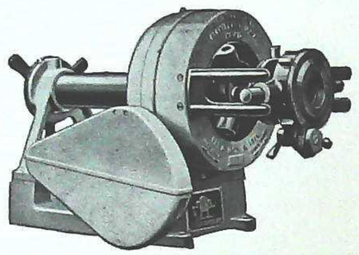
Extra Parts for No. 3

Price, Dies, Right or Left Hand	each	$4.50
Price, Bushings	each	.75
Price, Stocks, with Screws, Handle and Wrench	each	7.00

Unless otherwise specified, packed 1 to 2 inches, R. H.

No. 412 Oster Power Boy Electric Drive

For Pipe Tools



In the shop or on the job the Oster Power Boy is always ready to thread cut-off, and make up fittings on all sizes of pipe from ¼ to 2 inches, inclusive. It also handles the larger sizes of pipe up to 4 inches by means of a drive shaft.

Its aluminum alloy frame, brings its weight down to only 150 pounds and makes it easy to carry from job to job.

The Power Boy can be run from any ordinary electric current. The machine is furnished complete, less the die stock. Although the Oster Bull-Dog Die Stock is recommended for use with the Power Boy, nearly any tool can be used.

The ½-H.P. universal motor furnished with the Oster Power Boy can be run from any 110 or 115-volt circuit, either d.c. or a.c. of from 25 to 60 cycles, single phase. This motor automatically speeds up on the smaller sizes of pipe and holds the necessary speed on the larger sizes.

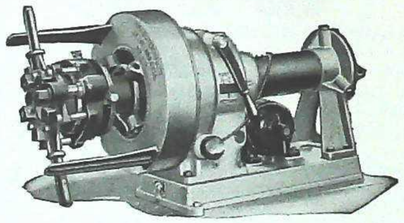
Total height of machine is 18⅛ inches, total width is 14½ inches and total length is 30 1/16 inches.

Shipping weight is 200 pounds.

Price, No. **412**, Machine Complete with Universal, Variable Speed, Reversible Motor, 10 Feet of Electric Light Cord and Socket Connection, Capable of Driving Pipe Tools from ½ to 2-Inch Capacity, but Less Die Stock ..... each **$280.00**
Price, No. **114** Bull-Dog Die Stock, Capacity ½ to 2 Inches, Extra ..... each **20.00**
Price, Universal Drive Shaft for Die Stock up to 4-inch Capacity, Extra ..... each **35.00**
Price, All Metal Stand, Extra ..... each **60.00**

No. 414 Oster Power Boy Electric Drives

For Pipe Sizes ½ to 4 Inches



Driving No. 44 Geared Die-Stock on 4-Inch Pipe

A portable heavy duty pipe threader, of aluminum alloy. Can be run from ordinary light socket. A 2-speed gear shift added to variable speeds of motor gives necessary power.

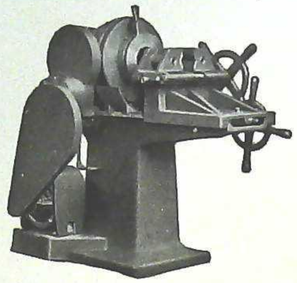
By means of special drive shaft will operate geared die-stocks from 4½ to 12 inches in capaity.

Over all height, 24¾ inches; width, 20 inches; length, 47 inches. Shipping weight, 565 pounds.

No. **414**, Complete with Universal, Reversible, Variable Speed Motor for 115 Volts D.C. and 110 Volts, 25–60 Cycles, Single-Phase A.C. with 10-Foot Electric Cord, Reversing Snap Switch and Socket Connection, without Die Stock ..... each **$525.00**
No. **114**, Bull-Dog Stock and Dies Complete with Short Handles and Complete Set Consisting of 3 Individual Sets of Right-Hand Pipe Dies from ½ to 2 Inches, Inclusive ..... each **20.00**
No. **44**, Geared Die Stock and Dies Complete with Short Handles and Complete Set Consisting of 4 Individual Sets of Right-Hand Pipe Dies from 2½ to 4 Inches, Inclusive ..... each **85.00**
Auxiliary Drive Shaft for Driving 4½ to 12-Inch Geared Die Stocks ..... each **45.00**
All Metal Lift-Wheel Type Stand ..... each **60.00**
Reamer and Holder Complete, Cap. ½ to 2 In. each **16.00**

No. 304B Oster Motor Driven Pipe Machines

Capacity 1 to 4-Inch Pipe



Special features of this machine are the lever operating die head and open type pipe vise, which make the machine a rapid producer.

Furnished complete with motor, geared oil pump, automatic cut-off apparatus, automatic die release, adjustable pipe rest stand, and four sets of right hand pipe dies: 1 and 1¼, 1½ and 2, 2½ and 3, 3½ and 4. Machine is not supplied without motor.

Height of machine, 46⅝ inches; length, 41¾ inches; width, 31 inches; height to center of dies, 38½ inches; floor space of base, 24x32 inches.

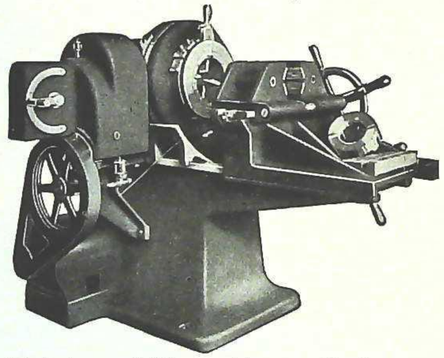
Motor speed, 1800 r.p.m.; 1½ h. p. Net weight, 1290 pounds.

Can also furnish dies for threading ten sizes of bolts ¾ to 1⅝ inches.

Price, No. **304B**, Complete ..... each **$950.00**
Price, Extra Dies, Right or Left ..... per set of 4 **8.00**
Price, Extra Cutting-Off Blades ..... each **1.25**
Price, Bolt Dies, R. or L. ..... per each size of bolt **8.00**
Price, Extra Vise Jaws for 1-Inch Bolt or Under ... **15.00**

No. 316B Oster Motor Driven Pipe Machines

1¼ to 6-inch Pipe



Special features of this machine are the lever operating die head and open type pipe vise, which make the machine a rapid producer.

Furnished complete with motor, geared oil pump, automatic cut-off apparatus, automatic die release, adjustable pipe rest stand, and six sets of right hand pipe dies: 1¼, 1½ and 2, 2½ and 3, 3½ and 4, 4½ and 5, and 6. Machine is not supplied without motor.

Height of machine, 48¾ in.; length, 53½ in., width, 46 inches; height to center of dies, 38¾ inches; floor space of base, 25½x30 inches. Motor speed 1800 revolutions per minute; 1½ horse power. Net weight, 1975 pounds.

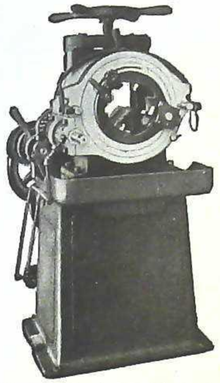
Can also furnish dies for threading nine sizes of bolts 1 to 2 inches.

Price, No. **316B**, Complete ..... each **$1350.00**
" Extra Dies, Right or Left ..... per set of 6 **16.00**
" " Cutting-off Blades ..... each **1.25**
" Bolt Dies, R. or L. ..... per each size of bolt **16.00**
" Extra Vise Jaws for 1⅝-inch Bolts and under. **25.00**

Hy-Tech Products

Curtis Pipe Cutting and Threading Machines

With Opening and Adjustable Dies



These machines require but little power to operate, take up little floor space and are light in weight. Pipe bends may be threaded as easily as straight pipe. Machines are equipped with automatic oiling device and die release. Dies are interchangeable.

Curtis Hand Machines

Dies are adjustable to allow for variations of fittings. Special dies for any pitch or taper of thread, supplied if desired. Regular equipment consists of adjustable pipe rest, ratchet wrench, dies, cut-off tools and wrenches. Small machines up to and including 4-inch are designed to stand on the plumber's bench. Cabinet base and high adjustable pipe rest, $100.00 additional to list price.

Combined Hand and Power Belt Driven Machines

Same as hand machine with countershaft and spur gears added. Equipped with standard countershaft, pipe rest, dies, cut-off tools and wrenches. For machines 6-inches and less, iron cabinet base and high adjustable pipe rest $100.00 list extra. All machines above 6 inches include floor base.

Direct Connected Electric Machines

Similar to hand machine with die head rotated by electric motor. Base is provided with oil drip pan and reservoir into which the oil is strained, then pumped through system. Machines up to 4 inches designed to stand on bench. Floor base and adjustable pipe rest $100.00 list extra. State motor requirements, whether a.c. or d.c., phase and cycle. All furnished with commercial motor, ratchet wrench for hand operation, dies, cut-off tools and necessary wrenches.

Hand Machines

No.	Range Inches (Right-Hand)	Bench or Floor Space Inches	Ht. In.	Die Sets	H.P.	No. Dies per Set	Cut-off Tools	Net Wt. Lbs.	Price Each
30	¼-2	14x14	17	4	..	3	4	190	**$205.00**
37	½-3	13x15	19	4	..	4	4	235	**275.00**
42	1 -4	17x18	22	4	..	4	4	325	**370.00**
58	1 -6	23x21	26	4	..	4	3	670	**635.00**
65	1 -8	27x24	30	4	..	4	3	1040	**1200.00**
69	2½-12	38x32	45	4	..	6	3	2400	**2170.00**
69B	8 -16	45x32	57	4	..	*	2	3000	**3000.00**

Belt Driven Machines

70	¼-2	22x16	21	4	..	3	4	392	**$370.00**
77	½-3	24x17	23	4	..	4	4	428	**440.00**
84	1 -4	24x20	28	4	..	4	4	668	**535.00**
96	1 -6	38x27	34	4	..	4	3	1545	**835.00**
98A	1 -8	43x30	58	4	..	4	3	2350	**1785.00**
108	2½-12	50x34	64	4	..	6	3	3300	**3000.00**
120	8 -16	60x36	82	4	..	*	2	5150	**4500.00**

†There is an extra set of dies in a No. 108 Machine. Whitworth Std. to make the 2½–12-inch range, for which there is an extra charge of $70.00 list (this price only included when customer requests Whitworth Std. dies).

Above specifications for machines Nos. 70 to 96 inclusive are for bench style. With floor base, specifications are as follows: Nos. 70, 77 and 84, floor space 27x20 inches, height 25 inches, weight 156 pounds; No. 96, floor space 38x27 inches, height 21 inches, weight 240 pounds.

Direct Connected Electric Machines

Speed 1800 R.P.M.

430	¼-2	24x16	21	4	1	3	4	425	**$725.00**
437	½-3	27x17	23	4	2	4	4	469	**880.00**
442	1 -4	29x21	28	4	2	4	4	680	**975.00**
258	1 -6	27x39	58	4	3	4	3	1435	**1585.00**
265	1 -8	40x38	62	4	3	4	3	2400	**2420.00**
269	2½-12	46x43	72	4	5	6	3	4025	**4000.00**
269B	8 -16	52x48	86	4	7½	*	2	6000	**5200.00**

Floor base and high pipe rest for machines Nos. 430, 437 and 442 (bench type) $100.00 extra. Equipped with floor base: Floor space 27x20 inches, height 25 inches (extra). Weight 155 pounds extra.

*8 to 11 inches—6; 12 to 16 inches—12.

No. 1446 Yankee Double Speed Plain Hand Drills



Has fast and slow speeds, also a spindle lock for drill changing. Quick and handy speed shift by knurled sliding collar. Gears with cut teeth; large gear 4 inches in diameter. Malleable iron frame in dead black finish.

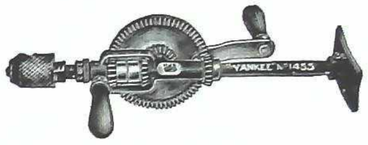
Three-jaw chuck, nickel-plated. Hardwood handle, detachable at milled nut, with deep drill magazine inside. Ball bearing on spindle. Chuck holds up to ⅜ inch.

Length, 14½ inches.

Packed one in a paper box. Net weight, 2⅜ pounds.

Price, No. **1446** ..... each **$8.00**

No. 1455 Yankee Plain Breast Drills



Capacity, 0 to ½ inch round shank drills. Three-jaw chuck. Two speeds, changed by moving small shifter on main frame between small gears. Speed changed without removing drill from work. Steel spindle, adjustable ball bearings. Cut gears; steel pinions.

Black malleable iron frame; bright parts polished and nickel-plated. Side handle has screwdriver bit to adjust screws. Adjustable breast plate with polished face.

Length, 16½ inches.

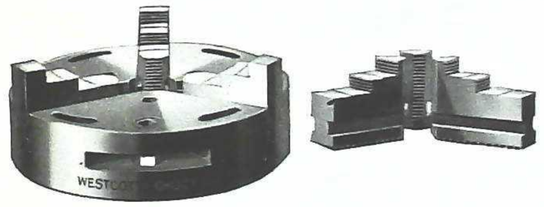
Packed one in box. Weight, 5¼ pounds.

Price, No. **1455** ..... each **$10.40**

Westcott Spur Geared Scroll Universal Lathe Chucks

With 2 Sets of Jaws

No. 423—3-Jaw No. 424—4-Jaw



Furnished with 2 sets of solid jaws, one set for inside chucking and one set for outside chucking.

Body is of semi-steel, in one piece, carefully proportioned to provide strength where needed. Face of chuck is plain and ground true to straight edge.

Jaws are case-hardened steel and are in one piece. After being case-hardened they are accurately ground and fitted. Scroll is cut from a steel forging. Spur pinions are of special steel.

Bolts and wrenches necessary are included.

Size Inches	Approx. Diam., Inches Center Hole	Face Plate Recess	Approx. Weight Pounds	Price, Each No. 423 3-Jaw	Price, Each No. 424 4-Jaw
6	*	17/32	17	**$41.00**	**$45.00**
8	1¼	17/32	37	**48.00**	**53.00**
10	2 1/16	5	84	**57.00**	**64.00**
13	2 7/16	6	120	**75.00**	**83.00**
16	3¼	7 9/16	168	**107.00**	**115.00**
18	3¼	9 5/16	223	**140.00**	**153.00**
†21	3 3/8	9 3/8	295	**200.00**	**220.00**
†24	4⅛	10	362	**267.00**	**287.00**

*Has no center hole regularly, but can be bored not larger than 1¼ inches if so specified.

Prices for unfinished face plates upon application.

†Universal chucks above 18-inch made to order only.

Jacobs Drill Chucks

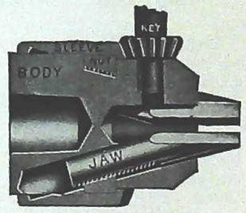
Improved Drill Chucks



Exterior View

Recommended for use on portable drills, drill presses, bench grinders and tapping devices where its combination of simplicity, ruggedness and gripping power for sensitive, high speed or any other form of light precision drilling is unsurpassed except by the Ball Bearing Super Chuck.

The toothed sleeve and key distinguishes this chuck from other makes and by means of this key a drill tap or other tool can be easily and securely tightened; but the action of the key differs from that of the ordinary spanner in that it is not inclined to revolve the spindle. The jaws may be easily taken apart by forcing the sleeve off over the jaw end of the chuck, when the nut, which is made in halves, may be taken out, leaving the jaws free to be removed. When the jaws are receded, they extend into the recess in the sleeve, therefore, it is necessary that the jaws be partially extended before forcing off the sleeve.

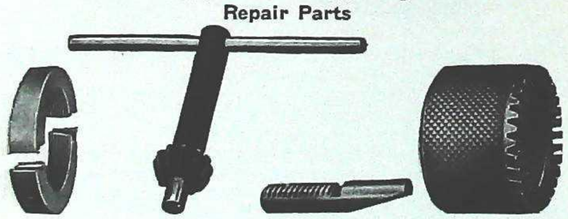


Sectional View

Model No.	Capacity Inches	Taper No.	Price Each
0	0–1/8	0	$6.00
1	0–3/16	1	4.50
7	0–1/4	2	4.50
30	0–5/16	2	5.50
32	0–3/8	2	5.50
34	0–1/2	6	9.00
3A	1/8–5/8	3	9.00
36	3/16–3/4	3	12.00

Threaded Model No.	Capacity Inches	Threaded Arbor Holes	Price Each
7B	0–1/4	3/8″-x24p	$4.50
7B	0–1/4	1/2″-x20p	4.50
30B	0–5/16	3/8″-x24p	5.50
30B	0–5/16	1/2″-x20p	5.50
32B	0–3/8	1/2″-x20p	5.50
32B	0–3/8	5/8″-x16p	5.50
34B	0–1/2	45/64″-x16p	9.00
34B	0–1/2	5/8″-x16p	9.00
3B	1/8–5/8	5/8″-x16p	9.00
3B	1/8–5/8	45/64″-x16p	9.00

Repair Parts



Nut Key Jaw Sleeve

Model No.	Price, Each: Keys	Nuts	Sleeves	Price per Set
0	$.30	$.60	$.60	$1.80
1	.30	.50	.50	1.50
2	.40	.60	.60	1.80
3	.50	.90	.90	2.70
4	.75	1.50	1.50	4.50
5	1.25	2.25	2.25	6.75
6	.50	.90	.90	2.70
7	.30	.50	.50	1.50
30	.40	.60	.60	1.80
32	.40	.60	.60	1.80
34	.50	.90	.90	2.70
36	.75	1.20	.75	3.60

Taper Shank Twist Drills

Carbon Steel — High Speed Steel



Diam. Inches	Decimal Equivalent	Length Over All Inches	Carbon Steel: Taper Shank No.	Carbon Steel: Price Each	High Speed Steel: Taper Shank No.	High Speed Steel: Price Each
1/8	.1250	5 1/8	1	$.45	1	$.90
9/64	.1406	5 3/8	1	.45	1	.90
5/32	.1562	5 3/8	1	.45	1	.90
11/64	.1719	5 3/4	1	.50	1	.90
3/16	.1875	5 3/4	1	.50	1	.90
13/64	.2031	6	1	.55	1	1.00
7/32	.2187	6	1	.55	1	1.00
15/64	.2344	6 1/8	1	.60	1	1.10
1/4	.2500	6 1/8	1	.60	1	1.10
17/64	.2656	6 1/4	1	.65	1	1.20
9/32	.2812	6 1/4	1	.65	1	1.20
19/64	.2969	6 3/8	1	.70	1	1.30
5/16	.3125	6 3/8	1	.70	1	1.30
21/64	.3281	6 1/2	1	.75	1	1.40
11/32	.3437	6 1/2	1	.75	1	1.40
23/64	.3594	6 3/4	1	.80	1	1.50
3/8	.3750	6 3/4	1	.80	1	1.50
25/64	.3906	7	1	.90	1	1.65
13/32	.4062	7	1	.90	1	1.65
27/64	.4219	7 1/4	1	1.00	1	1.75
7/16	.4375	7 1/4	1	1.00	1	1.75
29/64	.4531	7 1/2	1	1.10	1	1.90
15/32	.4687	7 1/2	1	1.10	1	1.90
31/64	.4844	7 5/8	1	1.20	2	2.00
1/2	.5000	7 5/8	1	1.20	2	2.00
33/64	.5156	7 7/8	1	1.30	2	2.15
17/32	.5312	7 7/8	1	1.30	2	2.15
35/64	.5469	8 1/4	1	1.40	2	2.25
9/16	.5625	8 1/4	1	1.40	2	2.25
37/64	.5781	8 3/4	2	1.50	2	2.40
19/32	.5937	8 3/4	2	1.50	2	2.40
39/64	.6094	8 3/4	2	1.60	2	2.50
5/8	.6250	8 3/4	2	1.60	2	2.50
41/64	.6406	9	2	1.70	2	2.75
21/32	.6562	9	2	1.70	2	2.75
43/64	.6719	9 1/4	2	1.80	2	3.00
11/16	.6875	9 1/4	2	1.80	2	3.00
45/64	.7031	9 1/2	2	1.90	2	3.25
23/32	.7187	9 1/2	2	1.90	2	3.25
47/64	.7344	9 3/4	2	2.00	2	3.50
3/4	.7500	9 3/4	2	2.00	2	3.50
49/64	.7656	9 7/8	2	2.10	2	3.75
25/32	.7812	9 7/8	2	2.10	2	3.75
51/64	.7969	10	2	2.20	3	4.00
13/16	.8125	10	2	2.20	3	4.00
53/64	.8281	10	2	2.40	3	4.40
27/32	.8437	10	2	2.40	3	4.40
55/64	.8594	10	2	2.60	3	4.75
7/8	.8750	10	2	2.60	3	4.75
57/64	.8906	10	2	2.80	3	5.15
29/32	.9062	10	2	2.80	3	5.15
59/64	.9219	10 3/4	3	3.00	3	5.50
15/16	.9375	10 3/4	3	3.00	3	5.50
61/64	.9531	11	3	3.25	3	5.90
31/32	.9687	11	3	3.25	3	5.90
63/64	.9844	11	3	3.50	3	6.25
1	1.0000	11	3	3.50	3	6.25
1 1/64	1.0156	11 1/8	3	3.75	3	6.75
1 1/32	1.0312	11 1/8	3	3.75	3	6.75
1 3/64	1.0469	11 1/4	3	4.00	3	7.25
1 1/16	1.0625	11 1/4	3	4.00	3	7.25
1 5/64	1.0781	11 1/2	3	4.25	4	7.75
1 3/32	1.0937	11 1/2	3	4.25	4	7.75
1 7/64	1.1094	11 3/4	3	4.50	4	8.25
1 1/8	1.1250	11 3/4	3	4.50	4	8.25
1 9/64	1.1406	11 7/8	3	4.75	4	8.90
1 5/32	1.1562	11 7/8	3	4.75	4	8.90
1 11/64	1.1719	12	3	5.00	4	9.50
1 3/16	1.1875	12	3	5.00	4	9.50
1 13/64	1.2031	12 1/8	3	5.25	4	10.15
1 7/32	1.2187	12 1/8	3	5.25	4	10.15

Hy-Tech Products

Straight Shank Twist Drills

Long Series

Carbon Steel — High Speed Steel



Diam. Inches	Decimal Equivalent	Length Over All Inches	Price, Each: Carbon Steel	Price, Each: High Speed Steel
1/8	.1250	5 1/8	$.45	$.90
9/64	.1406	5 3/8	.45	.90
5/32	.1562	5 3/8	.45	.90
11/64	.1719	5 3/4	.50	.90
3/16	.1875	5 3/4	.50	.90
13/64	.2031	6	.55	1.00
7/32	.2187	6	.55	1.00
15/64	.2344	6 1/8	.60	1.10
1/4	.2500	6 1/8	.60	1.10
17/64	.2656	6 1/4	.65	1.20
9/32	.2812	6 1/4	.65	1.20
19/64	.2969	6 3/8	.70	1.30
5/16	.3125	6 3/8	.70	1.30
21/64	.3281	6 1/2	.75	1.40
11/32	.3437	6 1/2	.75	1.40
23/64	.3594	6 3/4	.80	1.50
3/8	.3750	6 3/4	.80	1.50
25/64	.3906	7	.90	1.65
13/32	.4062	7	.90	1.65
27/64	.4219	7 1/4	1.00	1.75
7/16	.4375	7 1/4	1.00	1.75
29/64	.4531	7 1/2	1.10	1.90
15/32	.4687	7 1/2	1.10	1.90
31/64	.4844	7 5/8	1.20	2.00
1/2	.5000	7 5/8	1.20	2.00
33/64	.5156	7 7/8	1.30	2.15
17/32	.5312	7 7/8	1.30	2.15
35/64	.5469	8 1/4	1.40	2.25
9/16	.5625	8 1/4	1.40	2.25
37/64	.5781	8 3/4	1.50	2.40
19/32	.5937	8 3/4	1.50	2.40
39/64	.6094	8 3/4	1.60	2.50
5/8	.6250	8 3/4	1.60	2.50
41/64	.6406	9	1.70	2.75
21/32	.6562	9	1.70	2.75
43/64	.6719	9 1/4	1.80	3.00
11/16	.6875	9 1/4	1.80	3.00
45/64	.7031	9 1/2	1.90	3.25
23/32	.7187	9 1/2	1.90	3.25
47/64	.7344	9 3/4	2.00	3.50
3/4	.7500	9 3/4	2.00	3.50
49/64	.7656	9 7/8	2.10	3.75
25/32	.7812	9 7/8	2.10	3.75
51/64	.7969	10	2.20	4.00
13/16	.8125	10	2.20	4.00
53/64	.8281	10	2.40	4.40
27/32	.8437	10	2.40	4.40
55/64	.8594	10	2.60	4.75
7/8	.8750	10	2.60	4.75
57/64	.8906	10	2.80	5.15
29/32	.9062	10	2.80	5.15
59/64	.9219	10 3/4	3.00	5.50
15/16	.9375	10 3/4	3.00	5.50
61/64	.9531	11	3.25	5.90
31/32	.9687	11	3.25	5.90
63/64	.9844	11	3.50	6.25
1	1.0000	11	3.50	6.25
1 1/64	1.0156	11 1/8	3.75	6.75
1 1/32	1.0311	11 1/8	3.75	6.75
1 3/64	1.0469	11 1/4	4.00	7.25
1 1/16	1.0625	11 1/4	4.00	7.25
1 5/64	1.0781	11 1/2	4.25	7.75
1 3/32	1.0937	11 1/2	4.25	7.75
1 7/64	1.1094	11 3/4	4.50	8.25
1 1/8	1.1250	11 3/4	4.50	8.25
1 9/64	1.1406	11 7/8	4.75	8.90
1 5/32	1.1562	11 7/8	4.75	8.90
1 11/64	1.1719	12	5.00	9.50
1 3/16	1.1875	12	5.00	9.50
1 13/64	1.2031	12 1/8	5.25	10.15
1 7/32	1.2187	12 1/8	5.25	10.15
1 15/64	1.2344	12 1/2	5.50	10.75
1 1/4	1.2500	12 1/2	5.50	10.75
1 9/32	1.2812	14 1/8	5.75	11.50
1 5/16	1.3125	14 1/4	6.00	12.25
1 11/32	1.3437	14 3/8	6.25	13.00
1 3/8	1.3750	14 1/2	6.50	13.75
1 13/32	1.4062	14 5/8	7.00	14.65
1 7/16	1.4375	14 3/4	7.50	15.50
1 15/32	1.4687	14 7/8	8.00	16.40
1 1/2	1.5000	15	8.50	17.25
1 9/16	1.5625	15 1/4	9.50	19.00
1 5/8	1.6250	15 5/8	10.50	21.00
1 11/16	1.6875	15 3/4	11.50	23.00
1 3/4	1.7500	16 1/4	12.50	25.00
1 13/16	1.8125	16 1/4	14.00	27.50
1 7/8	1.8750	16 1/2	15.50	30.00
1 15/16	1.9375	16 5/8	17.00	32.50
2	2.0000	16 5/8	18.50	35.00

Straight Shank Twist Drills

Jobbers' or Short Series

Carbon Steel — High Speed Steel



Diam. Inches	Decimal Equivalent	Length Over All Inches	Length Twist Inches	Price, per Dozen: Carbon Steel	Price, per Dozen: High Speed Steel
1/32	.0312	1 1/2	5/8	$1.50	....
3/64	.0469	1 3/4	7/8	1.55	....
1/16	.0625	2 1/2	1 1/4	1.60	$5.70
5/64	.0781	2 5/8	1 3/8	1.65	5.70
3/32	.0937	2 3/4	1 1/2	1.70	5.70
7/64	.1094	2 7/8	1 5/8	1.75	5.90
1/8	.1250	3	1 3/4	1.80	5.90
9/64	.1406	3 1/8	1 7/8	1.85	6.10
5/32	.1562	3 1/4	2	1.90	6.10
11/64	.1719	3 3/8	2 1/8	2.00	6.30
3/16	.1875	3 1/2	2 1/4	2.25	6.30
13/64	.2031	3 5/8	2 3/8	2.50	7.00
7/32	.2187	3 3/4	2 1/2	2.75	7.00
15/64	.2344	3 7/8	2 5/8	3.00	7.35
1/4	.2500	4	2 3/4	3.25	7.35
17/64	.2656	4 1/8	2 7/8	3.50	9.10
9/32	.2812	4 1/4	2 31/32	3.80	9.10
19/64	.2969	4 3/8	3 3/32	4.00	10.50
5/16	.3125	4 1/2	3 3/16	4.35	10.50
21/64	.3281	4 5/8	3 5/16	4.70	12.00
11/32	.3437	4 3/4	3 13/32	5.05	12.00
23/64	.3594	4 7/8	3 17/32	5.50	13.50
3/8	.3750	5	3 5/8	6.00	13.50
25/64	.3906	5 1/8	3 3/4	6.50	15.00
13/32	.4062	5 1/4	3 27/32	7.00	15.00
27/64	.4219	5 3/8	3 31/32	7.75	17.00
7/16	.4375	5 1/2	4 1/16	8.50	17.00
29/64	.4531	5 5/8	4 3/16	9.25	18.75
15/32	.4687	5 3/4	4 9/32	10.00	18.75
31/64	.4844	5 7/8	4 13/32	11.00	20.00
1/2	.5000	6	4 1/2	12.00	20.00

Straight Shank Twist Drills

Letter Sizes

Carbon Steel — High Speed Steel



Size	Decimal Equivalent	Length Over All Inches	Length Twist Inches	Price, per Dozen: Carbon Steel	Price, per Dozen: High Speed Steel
A	.2340	3 15/16	2 29/32	$3.00	$7.35
B	.2380	3 15/16	2 29/32	3.05	7.35
C	.2420	3 15/16	2 29/32	3.10	7.35
D	.2460	3 15/16	2 29/32	3.15	7.35
E	.2500	3 15/16	2 29/32	3.25	7.35
F	.2570	4 1/4	3	3.35	9.10
G	.2610	4 1/4	3	3.45	9.10
H	.2660	4 1/4	3	3.55	9.10
I	.2720	4 1/4	3	3.65	9.10
J	.2770	4 1/4	3	3.70	9.10
K	.2810	4 1/4	3	3.80	9.10
L	.2900	4 1/4	3	3.90	10.50
M	.2950	4 1/4	3	4.00	10.50
N	.3020	4 1/4	3	4.25	10.50
O	.3160	4 1/4	3	4.40	10.50
P	.3230	4 5/8	3 5/16	4.60	12.00
Q	.3320	4 3/4	3 7/16	4.75	12.00
R	.3390	4 3/4	3 7/16	5.00	12.00
S	.3480	4 7/8	3 1/2	5.15	13.50
T	.3580	4 7/8	3 1/2	5.30	13.50
U	.3680	5	3 5/8	5.50	13.50
V	.3770	5	3 5/8	6.00	13.50
W	.3860	5 1/8	3 3/4	6.50	15.00
X	.3970	5 1/4	3 27/32	6.75	15.00
Y	.4040	5 1/4	3 27/32	7.00	15.00
Z	.4130	5 3/8	3 31/32	7.25	17.00

Put up, sizes A to K, one dozen of a size, in envelopes.
Put up, sizes L to Z, one-half dozen of a size, in envelopes.

Straight Shank Wire Gauge Twist Drills



Nos. by Gauge	Decimal Equivalent	Length Over All Inches	Length Twist Inches	Price, per Dozen Carbon Steel	Price, per Dozen High Speed Steel
1	.2280	4	2 21/32	$2.75	$7.00
2	.2210	3 15/16	2 5/8	2.75	7.00
3	.2130	3 15/16	2 5/8	2.75	7.00
4	.2090	3 7/8	2 19/32	2.75	7.00
5	.2055	3 13/16	2 9/16	2.75	7.00
6	.2040	3 13/16	2 17/32	2.50	7.00
7	.2010	3 3/4	2 1/2	2.50	7.00
8	.1990	3 11/16	2 15/32	2.50	7.00
9	.1960	3 11/16	2 7/16	2.50	7.00
10	.1935	3 5/8	2 3/8	2.50	7.00
11	.1910	3 9/16	2 11/32	2.25	6.30
12	.1890	3 9/16	2 5/16	2.25	6.30
13	.1850	3 1/2	2 9/32	2.25	6.30
14	.1820	3 7/16	2 1/4	2.25	6.30
15	.1800	3 7/16	2 7/32	2.25	6.30
16	.1770	3 3/8	2 3/16	2.00	6.30
17	.1730	3 5/16	2 5/32	2.00	6.30
18	.1695	3 5/16	2 1/8	2.00	6.30
19	.1660	3 1/4	2 3/32	2.00	6.30
20	.1610	3 3/16	2 1/16	2.00	6.30
21	.1590	3 3/16	2 1/16	1.90	6.10
22	.1570	3 1/8	2	1.90	6.10
23	.1540	3 1/16	1 31/32	1.90	6.10
24	.1520	3 1/16	1 15/16	1.90	6.10
25	.1495	3	1 29/32	1.90	6.10
26	.1470	2 15/16	1 7/8	1.80	6.10
27	.1440	2 15/16	1 27/32	1.80	6.10
28	.1405	2 7/8	1 13/16	1.80	6.10
29	.1360	2 13/16	1 3/4	1.80	6.10
30	.1285	2 13/16	1 23/32	1.80	6.10
31	.1200	2 3/4	1 11/16	1.75	5.90
32	.1160	2 11/16	1 5/8	1.75	5.90
33	.1130	2 11/16	1 5/8	1.75	5.90
34	.1110	2 5/8	1 9/16	1.75	5.90
35	.1100	2 9/16	1 1/2	1.75	5.90
36	.1065	2 9/16	1 1/2	1.75	5.90
37	.1040	2 1/2	1 7/16	1.75	5.90
38	.1015	2 7/16	1 3/8	1.75	5.90
39	.0995	2 7/16	1 11/32	1.75	5.90
40	.0980	2 3/8	1 13/32	1.75	5.90
41	.0960	2 5/16	1 5/16	1.70	5.70
42	.0935	2 5/16	1 1/4	1.70	5.70
43	.0890	2 1/4	1 7/32	1.70	5.70
44	.0860	2 3/16	1 3/16	1.70	5.70
45	.0820	2 3/16	1 1/8	1.70	5.70
46	.0810	2 1/8	1 1/8	1.65	5.70
47	.0785	2 1/16	1 3/32	1.65	5.70
48	.0760	2 1/16	1 1/16	1.65	5.70
49	.0730	2	1	1.65	5.70
50	.0700	1 15/16	31/32	1.65	5.70
51	.0670	1 15/16	15/16	1.60	5.70
52	.0635	1 7/8	7/8	1.60	5.70
53	.0595	1 13/16	27/32	1.60	5.70
54	.0550	1 13/16	27/32	1.60	5.70
55	.0520	1 3/4	13/16	1.60	5.70
56	.0465	1 11/16	25/32	1.55	5.70
57	.0430	1 11/16	23/32	1.55	5.70
58	.0420	1 5/8	23/32	1.55	5.70
59	.0410	1 9/16	11/16	1.55	5.70
60	.0400	1 9/16	11/16	1.55	5.70
61	.0390	1 1/2	5/8	1.50	....
62	.0380	1 1/2	5/8	1.50	....
63	.0370	1 1/2	5/8	1.50	....
64	.0360	1 7/16	5/8	1.50	....
65	.0350	1 1/2	5/8	1.50	....
66	.0330	1 3/8	5/8	1.50	....
67	.0320	1 5/16	5/16	1.50	....
68	.0310	1 1/4	5/16	1.50	....
69	.0292	1 1/4	5/16	1.50	....
70	.0280	1 1/4	5/16	1.50	....
71	.0260	1 1/8	1/2	1.50	....
72	.0250	1 1/8	7/16	1.50	....
73	.0240	1 1/16	5/16	1.50	....
74	.0225	1	5/16	1.50	....
75	.0210	31/32	1/4	1.50	....
76	.0200	15/16	1/4	1.50	....
77	.0180	31/32	1/4	1.50	....
78	.0160	15/16	1/4	1.50	....
79	.0145	31/32	5/16	1.50	....
80	.0135	3/4	5/16	1.50	....

Nye Ratchet Reamers

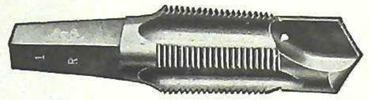


A high class three-blade reamer. The blades, which are firmly imbedded in the body to prevent misalignment, are made of the highest grade alloy steel obtainable.

Will ream from 1/4 to 3-inch pipe, which makes this tool take the place of two reamers.

Price.....each **$7.50**

Combined Drill and Tap



Diameter...inches	1/2	3/4	1	1 1/4	1 1/2	2
Price.....each	$3.75	5.00	6.25	7.50	9.25	12.00

Pipe Taps and Reamers



Pipe Tap



Pipe Reamer

Diameter.....inches	1/8	1/4	3/8	1/2	3/4
Price.....each	$1.00	1.20	1.60	2.00	2.80
Diameter.....inches	1	1 1/4	1 1/2	2	....
Price.....each	$4.40	5.00	6.60	10.00	....

G T D Bit Brace Burring Reamers

Spiral Fluted



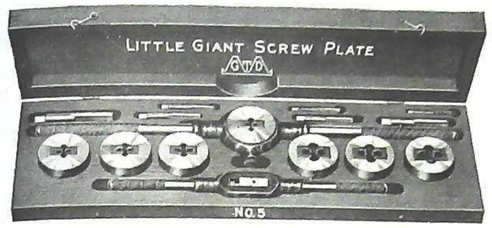
This burring reamer is made of high grade steel and is designed especially for removing burrs caused by cutting pipe. Also used extensively for countersinking.

Great care is taken in grinding this tool to adapt it for use in a variety of materials.

No.	Capacity Pipe, In.	Price Each	No.	Capacity Pipe, In.	Price Each
241	1/8 to 1/2	$1.00	242 1/2	1/4 to 1 1/4	$1.50
242	1/8 " 1	1.25	244	1/4 " 2	3.00

We are in position to supply many items not shown in this catalogue and shall be pleased to receive your inquiries.

Little Giant Single Stock Screw Plates



Contain one taper tap and one die and collet for each cutting size. Nos. 0 and 1 contain bit brace shanks.

No. 0

Cuts 6 sizes U. S. Standard: 3/16[24], 1/4[20], 5/16[18], 3/8[16], 7/16[14], 1/2[13]; 2-inch diameter collet. Stock, 14 1/2 inches long. Tap wrench No. 5. Plug tap for 3/16-inch size. Weight, 9 1/2 pounds.
Price, No. 0.....per set **$20.00**

No. 1

Cuts 5 sizes U. S. Standard: 1/4[20], 5/16[18], 3/8[16], 7/16[14], 1/2[13]; 2-inch diameter collet. Stock, 14 1/2 inches long. Tap wrench No. 5. Weight, 9 pounds.
Price, No. 1.....per set **$18.50**

No. 2

Cuts 5 sizes U. S. Standard: 1/4[20], 3/8[16], 1/2[13], 5/8[11], 3/4[10]; 2 3/4-inch diameter collet. Stock, 23 inches long. Tap wrench No. 6. Weight, 17 pounds.
Price, No. 2.....per set **$22.75**

No. 3

Cuts 4 sizes U. S. Standard: 5/8[11], 3/4[10], 7/8[9], 1[8]; 2 3/4-inch diameter collet. Stock, 26 inches long. Tap wrench No. 7. Weight, 18 pounds.
Price, No. 3.....per set **$26.25**

No. 4

Cuts 5 sizes U. S. Standard: 1/2[13], 5/8[11], 3/4[10], 7/8[9], 1[8]; 2 3/4-inch diameter collet. Stock, 26 inches long. Tap wrench No. 7. Weight, 20 1/2 pounds.
Price, No. 4.....per set **$29.25**

No. 5

Cuts 7 sizes U. S. Standard: 1/4[20], 5/16[18], 3/8[16], 7/16[14], 1/2[13], 5/8[11], 3/4[10]; 2 3/4-inch diameter collet. Stock, 23 inches long. Tap wrench No. 6. Weight, 20 pounds.
Price, No. 5.....per set **$27.50**

No. 5 1/2

Cuts 8 sizes U. S. Standard: 1/4[20], 5/16[18], 3/8[16], 7/16[14], 1/2[13], 9/16[12], 5/8[11], 3/4[10]; 2 3/4-inch diameter collet. Stock, 23 inches long. Tap wrench No. 6. Weight, 22 pounds.
Price, No. 5 1/2.....per set **$30.75**

No. 6

Cuts 7 sizes U. S. Standard: 3/8[16], 7/16[14], 1/2[13], 5/8[11], 3/4[10], 7/8[9], 1[8], 2 3/4-inch diameter collet. Stock, 26 inches long. Tap wrench No. 7. Weight, 23 pounds.
Price, No. 6.....per set **$35.00**

No. 7

Cuts 9 sizes U. S. Standard: 1/4[20], 5/16[18], 3/8[16], 7/16[14], 1/2[13], 5/8[11], 3/4[10], 7/8[9], 1[8]; 2 3/4-inch diameter collet. Stock, 26 inches long. Tap wrenches Nos. 5 and 7. Weight, 27 pounds.
Price, No. 7.....per set **$42.00**

No. 7 1/2

Cuts 10 sizes U. S. Standard: 1/4[20], 5/16[18], 3/8[16], 7/16[14], 1/2[13], 9/16[12], 5/8[11], 3/4[10], 7/8[9], 1[8]; 2 3/4-inch diameter collet. Stock, 26 inches long. Tap wrenches Nos. 5 and 7. Weight, 29 pounds.
Price, No. 7 1/2.....per set **$44.25**

No. 20

Cuts 6 sizes U. S. Standard: 5/8[11], 3/4[10], 7/8[9], 1[8], 1 1/8[7], 1 1/4[7]; 4-inch diameter collet. Stock, 40 inches long. Tap wrench No. 7 1/2. Weight, 49 1/2 pounds.
Price, No. 20.....per set **$53.50**

No. 25

Cuts 6 sizes U. S. Standard: 7/8[9], 1[8], 1 1/8[7], 1 1/4[7], 1 3/8[6], 1 1/2[6]; 4 1/2-inch diameter collet. Stock, 52 inches long. Tap wrench No. 8. Weight, 71 pounds.
Price, No. 25.....per set **$70.00**

No. 30

Cuts 4 sizes U. S. Standard: 1 1/8[7], 1 1/4[7], 1 3/8[6], 1 1/2[6]; 4 1/2-inch diameter collet. Stock, 52 inches long. Tap wrench No. 8. Weight, 58 pounds.
Price, No. 30.....per set **$59.00**

Simonds Hand and Power Hack Saw Blades



Simonds Blades are the direct result of many years of concentrated effort to produce the best blade possible. Careful, painstaking methods and the exclusive Simonds process steel produces blades which are scientifically correct, uniform in quality, giving the longest possible wear.

They have the quality which holds the cutting edge, cuts with less resistance and removes the metal quicker with less effort.

An exceptionally high grade blade, made from the best steel obtainable, is toughened by a special process.

Hard Edge and All Hard Tungsten Steel Hand Hack Saw Blades

Lgth. Inches	Width Inches	Gauge	Teeth per Inch Regular	Medium	Fine	Extra Fine	Gross in Box	Price per Gross
8	7/16	23-.025	..	18	24	32	1/2	$8.00
10	1/2	23-.025	14	18	24	32	1/2	10.00
12	1/2	23-.025	14	18	24	32	1/2	12.00
12	9/16	23-.025	14	18	24	..	1/2	12.00

Regular—for cutting soft steel, iron solids and rails.
Medium—for cutting tool steel, iron pipe, hard metals, and light angle iron.
Fine—for cutting brass, copper, drill rod, medium tubing and sheet metals.
Extra fine—for cutting thin tubing and thin sheet metals.
Unless specified regular blades will be sent.

All Hard Tungsten Steel Light Power Hack Saw Blades

Length Inches	Width Inches	Gauge	Teeth per Inch Regular	Medium	Gross in Box	Price per Gross
12	5/8	21-.032	14	18	1/2	$17.88
12	3/4	21-.032	14	18	1/2	21.36

Regular—for cutting solids in iron or steel, and for general shop saw work.
Medium—for cutting brass, castings, iron pipe, heavy tubing, etc.

All Hard Tungsten Steel Heavy Power Hack Saw Blades

Length Inches	Width Inches	Gauge	Teeth per Inch Regular	Medium	Gross in Box	Price per Gross
12	3/4	18-.049	10	14	1/3	$28.92
12	1	18-.049	10	14	1/3	37.92
14	3/4	18-.049	10	14	1/3	33.12
14	1	18-.049	10	14	1/3	43.56
14	1 1/4	16-.065	4-6-10	..	1/4	61.32
17	1	18-.049	....	14	1/3	51.72
17	1 1/4	16-.065	4-6-10	..	1/4	71.76
18	1 1/4	16-.065	6-10	..	1/4	75.48
21	1 1/2	16-.065	4-6-10	..	1/4	104.64
24	1 1/2	16-.065	6-10	..	1/4	119.04

Red Streak High Speed Steel Hand Hack Saw Blades

Length Inches	Width Inches	Gauge Thickness	Teeth Per Inch Regular	Medium	Fine	Gross in Box	Price per Gross
10	9/16	23-.025	18	24	32	1/2	$40.32
12	9/16	23-.025	18	24	32	1/2	48.96

Red Streak High Speed Steel Power Machine Blades

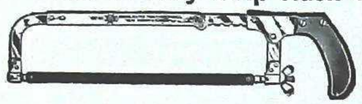
Length Inches	Width Inches	Gauge Thickness	Teeth per Inch	No. in Box	Price per Gross
12	1	18-.049	14	12	$172.80
12	1	16-.065	6-10	12	172.80
14	1	18-.049	14	12	201.60
14	1	16-.065	6-10	12	201.60
14	1 1/4	16-.065	4-6	12	252.00
17	1	18-.049	14	12	244.80
17	1	16-.065	6-10	12	244.80
17	1 1/4	16-.065	4-6	12	306.00
18	1	16-.065	10	12	259.20
18	1 1/4	16-.065	4-6	12	324.00
21	1 1/2	16-.065	4-6-10	12	453.60
24	1 1/2	16-.065	6-10	12	518.40

Unless specified regular blades will be sent.

The 14, 17 and 18-inch power blades measure 13 1/2, 16 1/2 and 17 1/2 inches between center of holes respectively. All other power blades measure from center to center of holes.

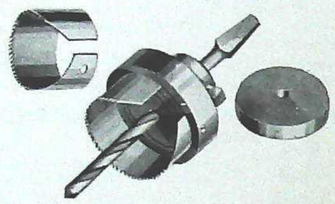
Hy-Tech Products

No. 40 Easy Grip Hack Saw Frames



Blade tightened by means of wing nut. Nickeled and buffed; black enameled handle. Stock, 5/8-inch; depth, 2½ inches. Adjustable for 8 to 12-inch blades. Furnished without blades. Packed 1 in a box; 6 dozen in a case.
Price, No. 40 ..... each .....

Excelso Rotary Hack Saw Tools



Rapidly and easily cuts holes through metal to fit pipe size taps. One tool cuts holes for 1, 1¼, 1½ or 2-inch pipe tap holes by inserting proper size blade. Cuts labor cost 75 per cent for making holes through metal or other material. Its operation is simple. Used in an ordinary hand brace.
Price, Including 2 Blades of Each Size ..... each $7.50
Price, Extra Blades ..... each .35

No. 300 Hammers



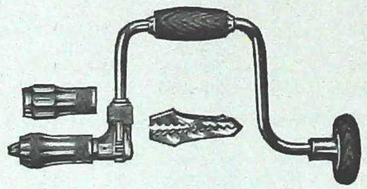
Weight Pounds	Weight Ounces	Price Each
..	8	$1.20
..	12	1.30
1	0	1.40
1	4	1.50
1	8	1.60
1	12	1.70
2	0	1.80

Screwdrivers



Length of Blade Inches	Price per Dozen	Length of Blade Inches	Price per Dozen	Length of Blade Inches	Price per Dozen
3	$3.50	5	$5.00	8	$8.00
4	4.25	6	6.00	10	10.00

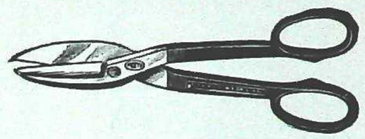
Ratchet Braces



No.	Sweep In.	Price Each
422	10	$2.95
421	12	3.05

Forged Steel Tinners' Snips

No. 1819 Regular Pattern



Length of Cut Inches	Length Over All Inches	Price per Pair	Length of Cut Inches	Length Over All Inches	Price per Pair
4½	17	$4.50	2½	11	$1.60
4½	15¾	3.00	2¼	10¼	1.20
4	14¼	2.50	2	8½	1.00
3½	13½	2.00	1¾	8	.90
3	12	1.75	..	....	.....

Mill Files



Sizes 3 to 10-inch inclusive are packed 12 in a box; 12-inch and larger, 6 in a box.

Bastard

Length ..inches	3	4	5	6	7	8
Price ..per doz.	$3.00	3.00	3.20	3.50	3.90	4.30
Length ..inches	9	10	12	14	16	18
Price ..per doz.	$4.90	5.60	7.50	10.70	14.70	20.20

Second Cut

Length .....inches	4	5	6	7	8
Price .....per doz.	$3.50	3.80	4.00	4.60	4.90
Length .....inches	9	10	12	14	16
Price .....per doz.	$5.80	6.40	8.60	12.20	16.80

Smooth

Length ..inches	6	8	10	12	14	16
Price ..per doz.	$4.50	5.40	7.00	9.40	13.10	17.90

One Round Edge—Bastard

Length ....in.	6	7	8	9	10	12	14
Price ..per doz.	$3.90	4.40	4.80	5.50	6.30	8.40	12.00

One Round Edge—Second Cut

Length ....inches	6	7	8	9	10	12
Price ....per doz.	$4.50	5.20	5.50	6.50	7.20	9.70

Two Round Edges—Bastard

Length ....inches	6	7	8	9	10	12
Price ....per doz.	$4.40	4.90	5.40	6.10	7.00	9.40

Two Round Edges—Second Cut

Length .....inches	6	8	10	12
Price .....per doz.	$5.00	6.10	8.00	10.80

Blunt—Bastard

Length .....inches	6	7	8	10
Price .....per doz.	$3.90	4.30	4.90	6.70

Blunt—Second Cut

Length .....inches	6	7	8	10
Price .....per doz.	$4.60	4.90	5.80	7.80

Flat Files



Bastard

Length .....inches	4	5	6	7	8	9
Price .....per dozen	$3.70	3.90	4.30	4.80	5.30	6.30
Length .....inches	10	12	14	16	18	20
Price .....per dozen	$7.00	9.70	13.30	17.80	23.90	31.50

Second Cut

Length .....inches	4	5	6	7	8	9
Price .....per dozen	$4.30	4.60	4.80	5.50	6.10	7.20
Length .....inches	10	12	14	16	18	....
Price .....per dozen	$8.10	11.00	15.30	20.10	26.80	....

Smooth

Length .....inches	4	5	6	7	8	9
Price .....per dozen	$4.70	4.90	5.30	6.10	6.60	7.90
Length .....inches	10	12	14	16	18	....
Price .....per dozen	$8.70	12.10	16.70	22.30	29.20	....

Pillar Files



The 6-inch size is packed 12 in a box; 8-inch and longer, 6 in a box.

Bastard

Length .....inches	6	8	10	12	14	16
Price .....per doz.	$4.30	5.40	7.50	10.70	15.00	20.10

Second Cut

Length .....inches	6	8	10	12
Price .....per doz.	$5.10	6.30	8.70	12.30

Smooth

Length .....inches	6	8	10	12
Price .....per doz.	$5.60	6.70	9.40	13.50

Hy-Tech Products

Half-round Files



Bastard

Length .....inches	4	5	6	7	8
Price .....per doz.	$4.80	5.40	6.10	7.00	7.50
Length .....inches	10	12	14	16	18
Price .....per doz.	$9.10	11.80	15.50	20.60	27.50

Second Cut

Length .....inches	4	5	6	7	8
Price .....per doz.	$5.60	6.10	6.70	7.70	8.30
Length .....inches	10	12	14	16	18
Price .....per doz.	$10.10	13.00	17.00	22.50	29.90

Smooth

Length .....inches	4	5	6	7	8
Price .....per doz.	$6.10	6.40	7.10	8.20	8.90
Length .....inches	10	12	14	16	18
Price .....per doz.	$10.70	13.90	18.30	24.20	32.00

Round Files



Sizes 4 to 10-inch inclusive are packed 12 in a box; 12-inch and larger, 6 in a box.

Bastard

Length ....inches	4	5	6	7	8	9
Price.....per doz.	$3.00	3.20	3.50	3.90	4.30	4.90
Length ....inches	10	12	14	16	18	20
Price.....per doz.	$5.60	7.50	10.70	14.70	20.20	27.40

Second Cut

Length ....inches	4	5	6	7	8	9
Price.....per doz.	$3.50	3.80	4.00	4.60	4.90	5.80
Length ....inches	10	12	14	16	18	.....
Price.....per doz.	$6.40	8.60	12.60	16.80	22.70	.....

Smooth

Length ....inches	4	5	6	7	8	9
Price.....per doz.	$3.90	4.10	4.50	4.90	5.40	6.30
Length ....inches	10	12	14	16	18	.....
Price.....per doz.	$7.00	9.40	13.10	17.90	24.30	.....

Blunt—Bastard

Length .....inches	8	10	12	14
Price .....per doz.	$5.60	7.50	10.70	14.70

Square Files



Sizes 4 to 10-inch inclusive are packed 12 in a box; 12-inch and larger, 6 in a box.

Bastard

Length .....inches	4	5	6	7	8	10
Price .....per doz.	$3.80	4.10	4.60	5.10	5.50	7.40
Length .....inches	12	14	16	18	20	....
Price .....per doz.	$10.20	13.90	18.70	25.10	32.80	....

Second Cut

Length .....inches	4	5	6	7	8
Price .....per doz.	$4.60	4.80	5.10	5.80	6.30
Length .....inches	10	12	14	16	18
Price .....per doz.	$8.50	11.50	16.10	21.20	28.20

Smooth

Length .....inches	4	5	6	7	8
Price .....per doz.	$4.90	5.30	5.50	6.30	7.00
Length .....inches	10	12	14	16	18
Price .....per doz.	$9.10	12.80	17.50	23.30	30.40

Blunt—Bastard

Length .....inches	8	10	12
Price .....per doz.	$7.40	10.20	13.90
Length .....inches	14	16	18
Price .....per doz.	$18.70	25.10	32.80

Taper Files



Sizes 3 to 10-inch inclusive are packed 12 in a box; 12-inch, 6 in a box.

Taper—Single Cut

Length .....inches	3	3½	4	4½	5	5½
Price .....per doz.	$2.10	2.10	2.20	2.40	2.60	3.00
Length .....inches	6	7	8	10	12	....
Price .....per doz.	$3.40	4.30	5.40	8.10	12.50	....

Taper—Double Cut

Length .....inches	4	4½	5	6	7	8
Price .....per doz.	$2.90	3.10	3.50	4.70	5.60	6.70

Slim

Length .....inches	3	3½	4	4½	5	5½
Price .....per doz.	$2.10	2.10	2.20	2.30	2.50	2.90
Length .....inches	6	7	8	10	12	....
Price .....per doz.	$3.10	3.80	4.50	6.40	9.50	....

Extra Slim

Length .....inches	4	4½	5	5½	6	7	8
Price .....per doz.	$2.20	2.30	2.50	2.90	3.10	3.80	4.50

Double Extra Slim

Length .....inches	4	4½	5	5½
Price .....per doz.	$2.20	2.30	2.50	2.90
Length .....inches	6	7	8	....
Price .....per doz.	$3.10	3.80	4.50	....

Double Ender Files



Regularly packed 12 in a box; can also be packed 6 in a box.

Length .....inches	7	8	9	10	12
Price ..... per doz.	$3.50	3.90	4.40	4.90	6.00

Crosscut Files



Sizes 6 to 10-inch inclusive are packed 12 in a box; 12-inch, 6 in a box.

Length .....inches	6	7	8	9	10	12
Price, Regular...per doz.	$6.10	....	7.50	8.50	9.10	11.80
" Special... "			3.90	4.30	4.90	....	6.70	.....

Planer Knife Files



Packed 12 in a box.

Length .....inches	8	10
Price .....per doz.	$6.40	8.60

Cabinet Files



Sizes 6 and 8-inch are packed 12 in a box; 10-inch and larger, 6 in a box.

Length .....inches	6	8	10	12	14
Price ..... per doz.	$8.10	10.10	13.70	18.70	24.80

Flat Shoe Rasps



Packed 6 in a box.

Length .....inches	8	9	10
Price .....per doz.	$10.10	12.20	13.70

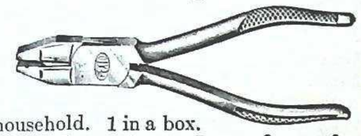
Crescent Combination Pliers



Slip joint. Made of special steel, hardened and oil-tempered. Nickel finish.

No.	Size Inches	Capacity Inches	No. in Box	Weight Ounces	Price per Dozen
E26	6	1	1	8	$15.60
E28	8	1¼	1	11	18.00
E210	10	1½	1	18	21.60

No. 30 Pexto Side Cutting Pliers



Box joint. Knurled gun barrel handles; full polished head. Adapted for linemen's use, for general use by mechanics or for the household. 1 in a box.

Length.....inches	5	6	7	8	9
No. 30.....per doz.	$27.00	29.70	35.70	41.90	62.80

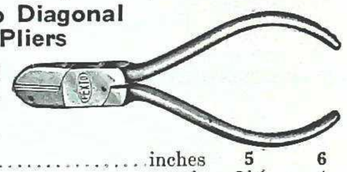
No. 300 Pexto Side Cutting Pliers



Box joint; black insulated handles, tested to insulate against 2500 volts; full polished head. One in a box.

Length.....inches	6	7	8
Price, No. 300.....per doz.	$50.60	57.60	64.50

No. 270 Pexto Diagonal Cutting Pliers

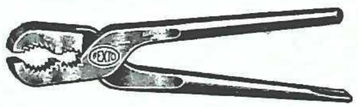


Lap joint. Full polished head; gun barrel handles. Packed 1 in a box.

Length.....inches	5	6
Weight per Dozen.....pounds	2¼	4
Price, No. 270.....per dozen	$15.80	18.50

No. 13 Pexto Gas Pliers

Polished



For use by plumbers, gas-fitters and allied trades. Are exceptionally strong and well-made, with great range in sizes. Packed 6 in a carton. One gross in a case.

Size In.	Wt., Lbs. per Doz.	Price per Doz. No. 13 Polished	Size In.	Wt., Lbs. per Doz.	Price per Doz. No. 13 Polished
7	4½	$9.70	10	11¼	$13.40
8	7½	10.80	12	16	15.30
9	10	12.40	14	21	18.80

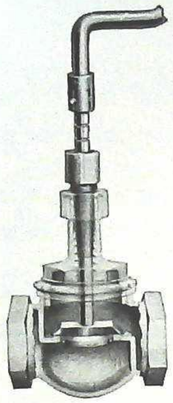
Porter's New Easy Bolt Clippers



The handles are of japanned malleable iron, tough and strong; the buffers are rubber; the jaws are tool steel, of a temper shown by long experience to be the best for cutting annealed bolts and rivets. The jaws can be dressed when necessary with a mill file. Nos. 0 and 1 have open handle grips. Nos. 2 and 3 have solid grips. Adjusted by set screw. No special wrench or shims required.

No.	0-NE	1-NE	2-NE	3-NE
For Annealed Bolts in Thread .....inches	5/16	3/8	1/2	5/8
Approximate Length.....inches	18	24	30	36
Weight.....pounds	3¼	5¼	8½	12½
Price.....each	$4.00	5.00	7.00	9.00

Skinner Valve Reseating Tools



For reseating all flat and taper seat, globe or angle valves, in place, accurately and quickly. This tool lines up through the bonnet insuring an accurate cut. Each cutter has 2 parallel blades—producing an offset or shaving cut. Fits all globe valves.

This is the only inexpensive tool with mechanical screw feed. It can not chatter.

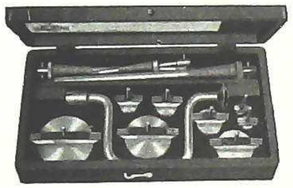
Good valves can be reseated 10 to 20 times.

The first 2 or 3 jobs pay for the tool.

Operated with bit brace provided.

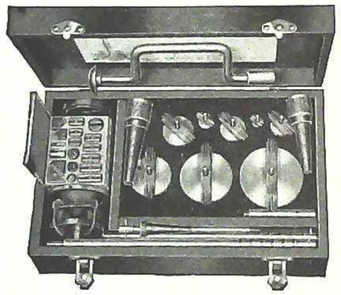
For taper seat valves, turn cutter other side up.

Packed in hardwood case and is guaranteed against defects.



Range Inches	Weight Pounds	Size of Box Inches	Price Each
½ to 2	6	9¾x5¾x2¼	$20.00
½ to 3	12	13¼x7¼x2¼	30.00

Skinner Combined Reseating Tools



For all globe and angle valves, flat or taper seat, ½ to 3 inches, all small reseating, flat, taper or oval seat from ⅛ to 1 inch. This tool is equipped with screw feed, which, combined with the positive alignment, insures absolutely accurate work. Reseating operation takes only a few minutes and the valve seat is left smooth and level.

The following cutters are made of Swedish steel and are guaranteed to stay sharp for life:
45° cutters: ⅛ to ¼, 3/16 to ⅜, ¼ to ⅝, ½ to 1 inch.
Adjustable oval seat cutter, ⅛ to ¾ inch.
Flat cutter (round): ⅛, 3/16 and ¼ inch.
Flat cutter (bar): 5/16, ⅜, 7/16, ½, 9/16, ⅝, ¾-⅞, 1 inch.
Globe valve type (flat and taper): ½, ¾, 1, 1¼, 1½, 2, 2½ and 3 inches.

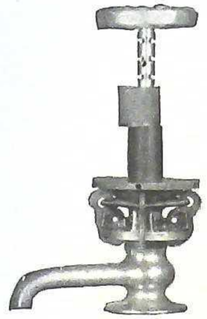
Operating spindles carry 6 adjustments for high and low valves and fixtures and a 3-inch extension is included for abnormally deep bathroom faucets, etc.

Packed in Duco finished hardwood case, complete with 24 cutters, bit brace, spanner, extension and full directions.

Price, Shipping Weight, 14 Pounds.....each $45.00

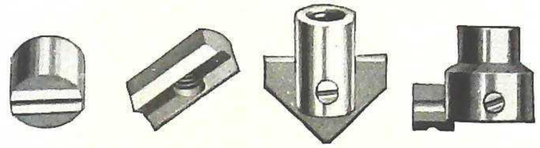
Hy-Tech Products

Skinner Utility Reseaters



This set reseats anything and everything from 1-inch down in bibbs, ¾-inch down in valves, flat, taper, or oval seat. Queer-shaped bibbs, expensive deep bath cocks, hard-to-replace ball cocks, small valves and gauge cocks are re-cut with ease.

Has an external chuck with four dogs which contract at a turn of the cone and seize the body of the valve in a solid chuck grip. Having a fixed chuck to work from, the mechanical feed on this reseater holds the cutter down to its work and by an occasional slight turn of the feed nut, advances the cut a few thousandths of an inch at a time.



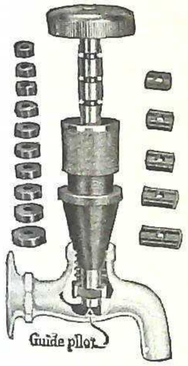
Round Cutter ⅛ to ⅜ inch — **Parallel Cutter** ⅜ to 1 inch — **45° Cutter** ⅛ to 1 inch — **Oval Cutter** ¼ to ¾ inch

There are 16 cutters giving a range of sizes and shapes as shown.

The oval seat cutter may be used for cutting a new raised seat where a fixture has been reseated so many times that the raised seat is entirely cut off.

Price, Complete, with 16 Cutters, Packed in a Case ..... each $20.00

Skinner Self-Aligning Bibb Reseaters



For reseating flat seat bibbs in place.

Five Skinner cutters and 12 pilots cover all flat seat bibbs, ¼ to ¾ inch. Cutters are guaranteed to stay sharp.

In operating, cutter is held down to seat by a feed screw. Tool cannot chatter; leaves the seat smooth as glass.

Packed in a strong canvas bag; the cutters and guide pilots are strung on a special wire clip.

Price, Complete.....each $4.50

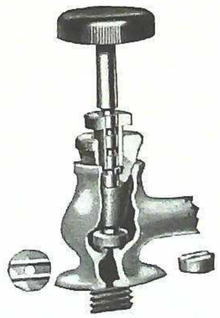
Skinner Bibb Reseaters

The Skinner Bibb Reseater is fed by a thread, making good mechanical results.

The bonnet is slipped off the leaky faucet and the tool inserted, fitted with proper cutter. Turn the feed screw down until the cutter rests lightly on the bibb seat. Then turn the wheel steadily, unyieldingly with occasional slight twists of the feed screw.

Equipped with 4 cutters. For ¼, ⅜, ½, ⅝ and ¾-inch bibbs of the same material and workmanship as the cutters furnished with the Skinner Valve Reseater.

Price .....each $2.00



Irons

No. 1 Stub Caulking Irons



Length, 8¼ inches.
Diam.. in ½ ⅝ ¾
No.1...each $.50 .55 .60

No. 2 Regular Caulking Irons

Length, 8½ inches.
Diam. in. ½ ⅝ ¾
No. 2.ea. $.50 .55 .60



No. 3 Offset Caulking Irons



Made for right or left hand.
Length 10 inches.
Diam.. in. ⅝ ¾
No. 3.each $.95 1.00

No. No. 5 Yarning Irons

Length,10inches.
Diam..
. in. ½ ⅝ ¾
No.5 . .
.each $.50 .55 .60



No. 4 Yarning Irons



Length, 15 inches.

Diameter	½	⅝	¾
No. 4.....each	$.65	.70	.75

Finishing and Packing Irons



	No. 16 Inside Finishing Iron	No. 17 Outside Finishing Iron
Diameter.....inches		⅝
No. 16.....each	$.75	
No. 17.....each		.75

No. 18 Packing Irons



Length, 10 inches.

Diameter	⅝	¾
No. 18.....each	$1.00	1.15

No. 6 Spring Packing Irons



Length, 18 inches.

Diameter	⅝
No. 6.....each	$1.15

No. 43 Cold Chisels



Length.....inches	5½	6	7	8	8	8	9
Size of Steel.....“	½	½	¾	¾	⅞	1	1
Width of Cut.....“	⅝	⅝	⅞	⅞	1	1⅛	1⅛
Price.....each	$.40	.40	.52	.60	.75	1.00	1.20



Half Round Nose Chisels

Point.....inches	5/32	3/16	7/32	¼	9/32
Stock.....“	1/4x4½	5/16x5½	3/8x5¾	7/16x6	½x6
Price.....per dozen	$13.80	14.40	14.40	15.00	15.60
Point.....inches	5/16	11/32	⅜	½	⅝
Stock.....“	9/16x6½	5/8x6¾	¾x7½	⅞x8	1x8¼
Price.....per dozen	$16.20	16.80	18.60	21.00	24.00

Diamond Point Chisels



Point.....in.	3/16x7/32	7/32x9/32	1/4x5/16	11/32x13/32	3/8x7/16
Stock..... "	1/4x4 1/2	5/16x5 1/2	3/8x5 3/4	7/16x6	1/2x6
Price...per doz.	$13.80	14.40	14.40	15.00	15.60
Point.....in.	13/32x1/2	7/16x9/16	1/2x5/8	5/8x25/32	13/16x15/16
Stock..... "	9/16x6 1/2	5/8x6 3/4	3/4x7 1/2	7/8x8	1x8 1/4
Price...per doz.	$16.20	17.40	19.20	22.20	25.20

No. 38 Cape Chisels



Made from best octagon tool steel.

Size of Steel.....inches	8 1/2x1/2	8 1/2x5/8	8 1/2x3/4
Price.....each	$.75	.80	.90

No. 19 Hand Punches



Size In.	Point In.	Length In.	Price per Doz.	Size In.	Point In.	Length In.	Price per Doz.
1/4	5/32	4	$2.40	7/16	5/32	4	$3.40
5/16	3/32	4	2.40	1/2	6/32	4	3.60
3/8	4/32	4	3.00	5/8	8/32	4	4.80

No. 47 Floor Chisels

Length..... inches	12	15	15	15	16	16
Width of Face. "	1 1/2	2	2 1/2	3	3 1/2	4
Price.....each	....	....	....	....	....	....

No. 605 Mound Special Beading Tools



Made of high-grade crucible tool steel. Octagon shaped.

Price, No. 605, Size 5/8 Inch.....each $1.40
" " 605 " 3/4 " ..... " 1.60
" " 605 " 7/8 " ..... " 1.80

No. 61 Plumbers' Ceiling Tools

Hand Forged



Size Inches	Wt., Lbs. per Dozen	Price per Dozen
5/8 x 14	15 1/2	$20.00

Trimo Basin Wrenches



Description	Price Each
Wrenches	$1.25
Extra Jaws	.50
Extra Nuts	.20
Extra Springs ...	.10
Extra Screws ...	.20

Soldering Coppers

Pointed Pattern



Furnished in 1/2, 1, 1 1/2, 2, 2 1/2, 3, 4, 5, 6, 7, 8, 10, 12 and 14 pounds to the pair. When ordering state weight.

Prices upon application.

No. 7 Bending Springs



Size, In	Price, Ea.
1 1/4	$.60
1 1/2	.75
2	.95

No. 5 Bending Pins



Price, No. 5.....each $.30

Climax Double Soil Test Plugs



No. 17

The double plug is for two ends of sanitary tee or Y. Will make a perfect joint on standard or extra heavy pipe.

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
2	$4.20	4	$7.50	6	$12.40	10	$23.00
3	5.80	5	10.00	8	18.20	12	28.10

Extra Rubbers for Test Plugs

Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
2	$.17	4	$.64	6	$1.28	10	$4.33
3	.44	5	.93	8	2.34	12	6.44

No. 43 Climax Y Branch Test Plugs



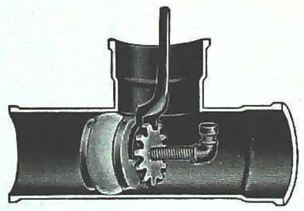
To insert this plug in the fitting, sustain the weight of plug while entering, keeping it well up against the top of the branch opening. It will then slip easily into position, and is removed in same manner.

Has threaded pipe connection for filling stack. Water will waste into sewer by relieving tension on lower plug rubber.

Size Inches	Price Each	Size Inches	Price Each
2	$4.40	6	$13.20
3	6.20	7	15.90
4	8.00	8	19.40
5	10.60	10	24.70

No. 11 Climax Test Plugs

Ratchet Style

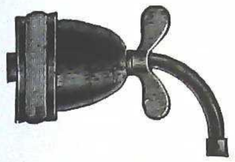


Size In.	Price Each	Extra Rubbers Price, Ea.
1 1/2	$1.40	$.10
2	1.40	.14
3	1.80	.34
3 1/2	2.50	.60
4	2.50	.64
5	2.90	.95
5 1/2	3.40	1.05
6	3.40	1.10
7	4.70	1.66
8	5.90	2.91
9	8.00	3.94
10	10.00	5.03
12	21.50	7.21

Price, Wrenches for Ratchet Nut Plugs.....each $.30

Hy-Tech Products

No. 9 Regular Soil Pipe Test Plugs

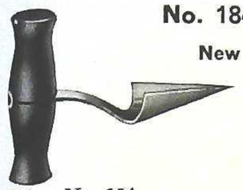


Makes a perfect joint on standard or extra heavy soil pipe.

Size Inches	Price Each	Size Inches	Price Each
2	$1.40	6	$3.40
3	1.80	8	5.90
4	2.50	10	10.00
5	2.90	12	21.50

No. 184 Tap Borers

New York Pattern



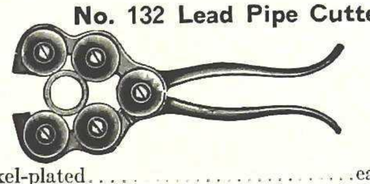
Price, No. 184.....each $.40

No. 164 Oval Shave Hooks



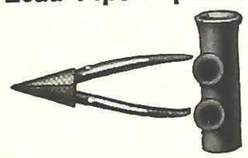
Price, No. 164.....each $.40

No. 132 Lead Pipe Cutters



Price, Nickel-plated.....each $2.30
" Japanned..... " 1.80

No. 142 Lead Pipe Expanding Pliers



Price.....each $3.50

No. 195 Turn Pins



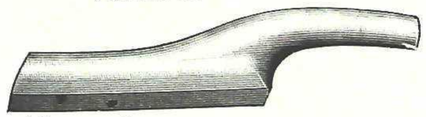
Price, Size 1, 2 and 3 Dogwood.....each $.30

No. 85 Drift Plugs



Price, 1, 1 1/4, 1 1/2 and 2-inch Dogwood.each $.15

Hardwood Dressers



Made of lignum vitae.

Weight, 12 3/4 pounds per dozen.

Price upon application.

Nye Wiping Cloths



Size Inches		16-Ply Herringbone Dry	16-Ply Herringbone Prepared	8-Ply Moleskin Dry	8-Ply Moleskin Prepared
2 x2	..per doz.	$4.40	$6.00	$6.40	$7.60
2 1/2x2 1/2	..per doz.	4.40	6.00	6.40	7.60
2 x3	..per doz.	4.40	6.00	6.40	7.60
2 1/2x3	..per doz.	4.40	6.00	6.40	7.60
3 x3	..per doz.	4.40	6.00	6.40	7.60
3 1/2x3 1/2	..per doz.	5.00	6.40	7.00	8.00
4 x4	..per doz.	5.35	6.75	7.50	8.70

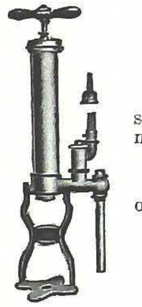
Coleman Flexible Closet Augers



A practical device for removing obstructions from water closets and drain pipes. It will go through any closet.

Lgth. Coil Ft.	Sherardized No.	Sherardized Price Each	Black Enam. No.	Black Enam. Price Each
3	C510	$5.50	C516	$4.00
6	C515	6.50	C517	5.00
9	....	....	C518	6.00
12	....	....	C519	8.00

Perkes Combination Test Pumps



This pump is especially adapted for testing soil pipe, proving gas pipe and cleaning water mains.

There are no stuffing boxes and all valves are on the outside. It works with air or water.

Price.....each $15.00

Coleman Improved Force Pumps



With Strainer

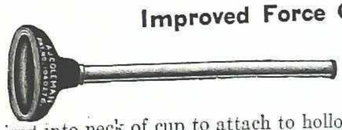
This is a powerful pump with a suction of 50 pounds and a force of 100 pounds or more. Made expressly for removing obstructions from plumbing fixtures. The large red rubber cup, with cast brass screw connections, is reversible, so that the same is adaptable for sinks with strainer and for open drains. It will cover any opening up to five inches in diameter. Pump barrel is made of seamless brass tubing. Piston, handle and all screw connections are cast brass. Piston packed with graphite pacing rings.

Price, Pump with Cup..each $12.00
" Cup only..... " 1.50
" Graphite Packing Rings .....per set 1.50



For Open Drain

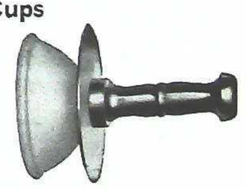
Improved Force Cups



High grade red rubber, with cast brass thimble, has internal screw threads vulcanized into neck of cup to attach to hollow steel tubing handle 18 inches long with sealed end, increasing sucking action.

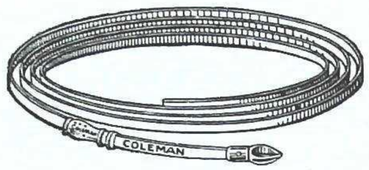
Price, 5 1/2-inch Cup with Handle.....each $2.00
" 5 1/2 " " Only..... " 1.50

Force Cups



No.	Size	Price Each
1	Small	$.50
2	Medium	.60
3	Large	.70

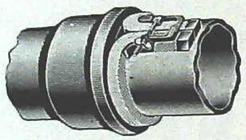
Coleman Sewer Rods with Spear and Handle



For cleaning out straight sewers or drains. Made of special oil tempered, flat spring, steel wire. No. 536 has no spear point or automatic grip handle.

No.	Size Inches	Length, Feet—Price, Each 25	50	75	100
536	¼x1/16	$1.85	$3.50	$5.00	$7.00
537	½x1/16	2.40	4.50	6.00	8.00
538	¾x1/16	4.00	6.00	8.00	10.00
539	¾x⅛	5.00	7.00	10.00	14.00
540	1¼x⅛	6.00	9.00	12.00	16.00
542	1½x⅛	7.00	10.00	15.00	20.00

Vanderman's Asbestos Lead Joint Runners



It is adapted for soil, water or gas pipes, or a bell pipe of any description where a joint is poured with moulten lead. Always ready, and not affected by heat or cold.

Red-hot lead does not affect it.

No.	Size Inches	For Pipe Inches	Price Each
5	1¼	8, 10, 12	$8.75
6	1¼	10, 12, 14	9.75
7	1¼	16, 18, 20	12.00
8	1¼	24	13.20
9	1¼	30	14.50
10	1¼	36	16.50
11	1¼	40	17.85
12	1¼	42	18.00
13	1¼	48	19.50

Hercules Drain Pipe Solvent



Will remove stoppages in drains, bath tubs, sinks, water closets, grease traps, etc. Destroys lint, cloth, hair, vegetable matter, etc., but not glass, metal and other similar substances.

Effective for thawing pipes, traps, etc.

Price, 1-lb. Cans.....per doz. $3.50
" 2 " Cans..... " 6.00

Blue Seal Drain Pipe Solvent



Blue Seal Solvent is poured directly in the drain or clogged pipe and requires no mixing in a bucket.

A scientifically prepared chemical compound, a drain pipe solvent that is guaranteed to clear any drain pipe stoppage not caused by glass, metal or other solid substances.

Blue Seal Drain Pipe Solvent is also effective for thawing frozen drain pipes, stacks, flush tanks, traps, etc.

Put up in friction top cans.

Will not injure the finest plumbing.

Price, 1-Pound Cans.....each $.60
Price, 2-Pound Cans.....each 1.00

Sani-Flush Closet Bowl Cleaner



Sprinkle a little Sani-Flush in the closet bowl and follow directions on can; stains and incrustations will disappear leaving the bowl clean, white and odorless.

Price.....per dozen $4.00

Porcela Cleaning Compound



Made especially for cleaning bath tubs, washstands, sinks and bathroom tile. As it contains no grit or acid, it will not leave a sediment to stop up traps or waste pipes or injure the plumbing. It will not scratch the enamel or remove the luster.

Put up in 1 and ½-pound cans. Two dozen in a case.

Price, ½-Pound Cans.....per case $3.60
Price, 1 -Pound Cans.....per case 4.50

Superior Cleanser



Will remove dirt, grease, rust stains, etc., from enameled iron ware without injurious effects, and without destroying the lustre of fixtures.

It requires only to sift a small quantity on a damp cloth with which it is to be applied to enameled surface.

Price, 2 Dozen ½-Pound Cans.....per case $4.80

Kohler Washing Compound



Kohler Washing Compound has been developed especially for use in washing dishes. It softens the water, dissolves grease, and has certain sterilizing properties that make it highly desirable. Ordinarily one tablespoonful is required for a washing of dishes.

It is also effective in washing clothes when used with sufficient soap to produce suds.

It is easy to use, and is entirely free from grit or harmful substances.

Prices upon application.

Leadite

For Jointing Cast Iron Water Mains

A self-caulking substitute for pig lead. Leadite is melted and poured into the joint but requires no caulking.

One pound of Leadite is equivalent to four pounds of lead because it is so much lighter than lead.

Its use saves 50 to 75 per cent over lead.

Approximate Quantities for Making Joints Based on A.W.W.A. Standard Bell and Spigot C.I. Pipe

Nominal Diameter Pipe, In.	Material, Lbs. per Joint: Depth In.	Lead	Leadite	Nominal Diameter Pipe, In.	Material, Lbs. per Joint: Depth In.	Lead	Leadite
4	2.5	8.56	2.00	18	2.5	36.88	9.25
6	2.5	11.71	3.00	20	2.5	40.71	10.50
8	2.5	14.63	4.00	24	2.5	53.02	13.00
10	2.5	17.70	5.00	30	2.75	65.36	16.00
12	2.5	20.86	6.00	36	2.75	77.96	19.00
14	2.5	24.02	7.00	42	3.5	95.82	26.00
16	2.5	33.07	8.25	48	3.5	121.15	30.00

Hy-Tech Products

Magnolia Anti-Friction Babbitt Metal



Standard high-grade babbitt.
Packed in 28, 56 or 112-pound boxes.
Price.....per pound .....

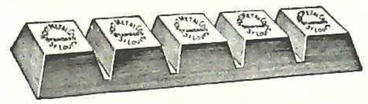
Genuine Babbitt



Made exactly to the genuine formula and recommended for the highest speed engine work.
Price.....per pound ....

Babbitt Metal

No. 1



No. 1 Babbitt Metal is a free flowing, clean babbitt suitable for use in line shaftings, in conveying and other classes of machinery which are not fast running and where bearings are not subject to severe pressure. This is a fine babbitt for these purposes.
Prices upon application.

No. 4

No. 4 Babbitt Metal is a clean, free running metal and is recommended as an excellent quality for its price.
Prices upon application.

Frictionless Babbitt Metal



This metal is used by steam and electric railways, saw and planing mills, mining and brick plants, etc.

Manufactured from new raw materials, under a process whereby the vitality of each ingredient is preserved. Has a minimum frictional coefficient. Being of a lead base, a soft, tough metal, largely self-lubricating, it does not generate heat when in service, even under a pressure up to 2000 pounds per square inch, in bearings where the shaft is turning as much as 1600 r.p.m.

Wearing qualities depend to some extent on perfect installation and proper mechanical adjustment. Frictionless Babbitt Metal will wear well under unusual conditions.

Packed in 28, 56 and 112-pound yellow boxes.
Price.....per pound ....

Bearing-Oy



Bearing-Oy is a bearing metal with great heat dissipation, lubricating and bearing properties. It has a lower Brinell value and carries greater loads per square inch of projected area.

Bearing-Oy can be melted and poured in the same manner as ordinary babbitt with the same equipment. A Bearing-Oy bearing needs no machining; take it as it comes from the mandrel or it can be poured to the shaft in place. Close fitting is recommended.

Price, AA Grade.....per pound $.25
Price, AAA Grade.....per pound .35
Price, Genuine.....per pound .60

Metals

Pig Lead



Pigs weigh about 100 pounds.

Caulking Lead



Pig Tin



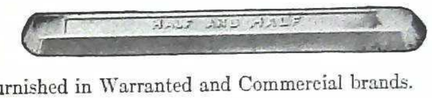
Banca and Straights; pigs weigh about 85 pounds.

Bar Tin



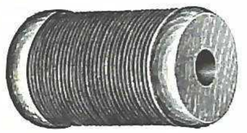
In 500-pound cases.

Half and Half Solder



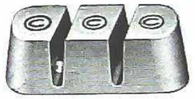
Furnished in Warranted and Commercial brands.

Wire Solder



Furnished in Half and Half.

Copper Ingots



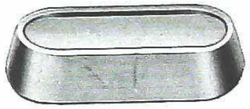
In ingots, 15 to 20 pounds.

Spelter Solder

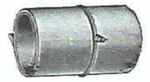


Fine, Medium and Coarse.

Wiping Solder



Silver Solder



Furnished in sheets 7/8x48 inches.

Antimony



In slabs, 35 to 40 pounds.

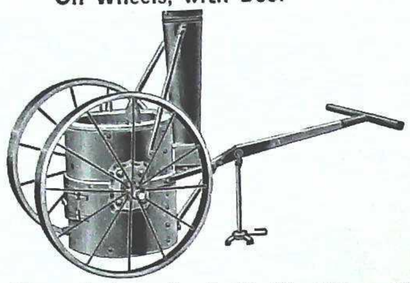
Spelter or Zinc



Aluminum
Bronze
Bismuth
Phosphor Tin
Sheet Zinc
Nickel

Prices on Application

Lead Melting Furnaces
On Wheels, with Door



No.	Diam. In.	Ht. In.	Pot Dimensions Diam.	Depth	Capacity Lead, Lbs.	Ship. Wt. Lbs.	Price Each	Extra for Pot Rack
1	21½	24	16¾	11	700	530	$90.00	$10.00
2	16	24	11½	8	280	385	80.00	10.00

No. 111 Ladles



Size	2½	3	3½	4	5	6
Capacity Lead, lbs.	1	1½	2½	4	8	13
Price, each	$.50	.60	.70	.80	1.00	1.20

No. 135 Solder Pots



Size In.	Cap. Lead Lbs.	Price Each	Size In.	Cap. Lead Lbs.	Price Each
4	10	$1.00	9	80	$3.00
5	15	1.20	10	110	4.00
6	20	1.50	12	180	7.00
7	40	2.00	13¼	200	9.00
8	60	2.50	....	...	....

Rapid Tap Plugs



Invaluable for every plumber, engineer, steam fitter and all repair men generally. It makes and taps its own hole.

Size Thd. In.	Price per Doz.	Size Thd. In.	Price per Doz
¼	$3.25	7/16	$4.00
5/16	3.50	½	4.00
⅜	3.50	9/16	4.25

No. 96 Dietz Spherical Roadside Torches



This torch will burn kerosene, light fuel oil or crude distillate.

Has a weighted bottom which causes torch to return to position if tipped or knocked over.

Torch is provided with a cast steel burner, heavy carrying loop and an automatic lock which prevents the wick from dropping inside.

Capacity, 96 fluid ounces (3 quarts); burns more than 24 hours.

Height, 7 inches; diameter, 7¾ inches. Diameter of wick, ⅞ inch.

Enameled black.

Packed 3 in a carton. Weight, 21 pounds.

Price, No. 96 ..... per dozen $24.00

Send Us Your Mail Orders
We Assure You Your Orders Will
Be Handled Promptly and Carefully

Nokorode Soldering Paste

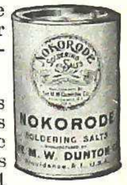
This paste will flux all metals except aluminum. It takes the place of acid in all soldering jobs. Non-corrosive, safe as resin and rapid as acid. Not affected by heat and does not spatter. The solder will not turn dark after using.



Size Can	Standard Package	Price Each	Price per Carton
2 Oz.	36 to Carton	$.15	$3.60
1 Lb.	6 to Carton	.90 Lb.	4.50
10 Lb.	Any Quantity	.50 Lb.	....
25 Lb.	Any Quantity	.45 Lb.	....
50 Lb.	Any Quantity	.43 Lb.	....
500 Lb.	In Barrel	.40 Lb.	....

Nokorode Soldering Salts

Nokorode Soldering Salts eliminates the use of corrosive soldering acid and is the remedy for all soldering troubles. It makes lasting and non-corrosive joints.



It is extensively used by plumbers, tinsmiths and leading manufacturers in all lines. It is economical and has no disagreeable fumes while under heat. Will not burn the operator's hands or clothing. It is recommended to dissolve 1 pound of salts in 1 gallon of water.

Size Can	Standard Package	Price per Lb.	Price per Carton
1 Lb.	6 to Carton	$.60	$3.00
5 "	Any Quantity	.45	....
25 "	" "	.35	....
50 "	" "	.32	....
500 "	In Barrel	.20	...

No. 208 C & L Double Needle Torches

1-Quart Capacity
For Gasoline



The improved double needle burner generates from 200 to 300 degrees more heat. Both needles are blunt, which makes it impossible to ruin the burner by enlarging the orifice. The upper needle has a wire tip that cleans the orifice; lower needle regulates the flame. Ideal for cold and windy weather.

Shipping weight, 5¼ pounds.

Price, No. 208 .....each $19.00

No. 144 C & L Single Needle Torches



1-Quart Capacity
For Gasoline

The heavy gauge drawn brass tank is made with funnel shaped bottom. Burner is of bronze and has the open type generator that injects the air which mixes with the gas, producing a steady blue flame. Has hook and support for holding a soldering iron. Hook is removable. The automatic brass pump quickly produces the required air pressure.

Shipping weight, 4½ pounds.

Price, No. 144 .....each $15.00

Hy-Tech Products

No. 91 C & L Single Needle Fire Pots
For Gasoline

The burner has great generating power and burns either high or low test gasoline. A swivel permits turning the burner up or down. The top section is of steel and can be quickly removed by loosening a set screw, and base with burner used as an open fire.

The heavy gauge drawn steel tank is tinned inside and out, which prevents rust. It is strongly reinforced and fitted at base with patented cushion band. Heats a pair of 12-pound soldering coppers and pot of lead at same time.



Capacity 1 Gallon

No.	91
Shipping Weight, pounds	14½
Price, each	$33.00

No. 1 C & L Double Needle Fire Pots
1-Gallon Capacity
For Gasoline

Fitted with patented double blunt needle burner having great generating power. Fire is controlled by lower needle; upper needle is used to clear gas orifice should it become clogged. A pair of large soldering coppers can be quickly heated and a 6-inch pot of metal melted at the same time. By removing top section, base with burner may be used as a torch or brazing fire.

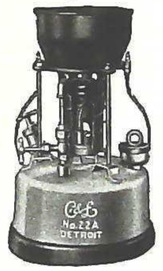


Tank is heavy gauge seamless drawn steel, tinned inside and out; base is protected with patented cushion band.

No.	1
Capacity	1 Gal.
Shipping Weight, pounds	14½
Price, each	$34.60

C & L Coil Fire Pots
No. 22A, Pump Type—No. 12A, Bulb Type
1-Gallon Capacity
For Gasoline

The drawn steel tank is leak-proof and heavily coated with tin inside and out. This prevents rust that works up into the coil and burner. Improved quick detachable coil unit and hinged door coil cup make it easy to clean and repair. Pump is extra large and powerful, producing air pressure quickly. Uprights and fittings are extra heavy.



No. 12A is exactly like No. 22A but fitted with air valve and bulb.

No.	22A	12A
Capacity	1 Gal.	1 Gal.
Ship. Wt. lbs.	12¾	12½
Price, each	$25.00	24.80

C & L Single Needle Torches
No. 32, 1-Quart Capacity
No. 38, 1-Pint Capacity
For Gasoline

Burner produces a greater degree of heat and is self-cleaning. Valve seat is away from orifice in jet block, hence it is impossible to enlarge orifice by forcing needle into it, thus ruining the burner. Torch burns the lower grades of fuel perfectly. Not affected by wind or cold.



Tank is heavy gauge drawn brass reinforced both inside and out.

No.	32	38
Capacity	1 Qt.	1 Pt.
Ship. Wt. lbs.	5	4
Price, each	$18.00	17.00

Dietz Hy-Lo Lanterns
Hot Blast—For Kerosene



Wherever great public works, railroads, sewers, dams, etc., are in the course of building, Hy-Lo Lanterns are in demand. The simple globe-lift construction and low price make them practical for the work. Hot blast. Oil used 150° kerosene. Fitted with Dietz Fitzall globes. Bright tin finish.

Height Over All in.	13½
Volume of Light by Test c.p.	4
Size of Wick in.	5/8
Fount Capacity hrs.	20
Patented Steel Burner, No.	421
Price, Complete with White Globe per doz.	$12.50
Price, Complete with Solid Ruby, Blue or Green Globes. per doz.	15.60

No. 2 Dietz D-lite Lanterns
Cold Blast—For Kerosene

Fitted with a D-Lite Loc-Nob globe, having wide openings, into which the hand may be inserted with ease for cleaning. Has the new Dietz braced lift guide and reinforced tubes.



Height Over All in.	13¼
Volume of Light by Test c. p.	10
Size of Wick in.	1
Fount Capacity hrs.	20
Patented Steel Burner No.	262
With White Globes	
Price, Bright Tin per doz.	$20.00
" Brass Fount and Top "	28.00
With Ruby, Blue or Green Globes	
Price, Bright Tin per doz.	$23.10
" Brass Fount and Top "	31.10

No. 2 Dietz Large Fount Blizzard Lanterns
Cold Blast—For Kerosene

Has an enlarged fount, which holds kerosene for 35 hours continuous burning. Oil used, 150°.

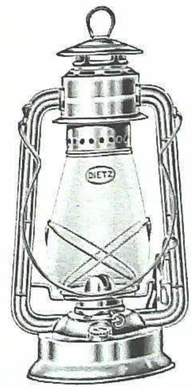


Bead reinforced tubes, a specially braced globe lift and Dietz Fitzall Loc-Nob globe. Bright tin finish.

High candle power and long burning qualities make the Large Fount Blizzard popular.

Height Over All in.	15
Volume of Light by Test c.p.	10
Size of Wick in.	1
Fount Capacity hrs.	35
With White Globes	
Price, No. 2 per doz.	$22.00
With Ruby, Blue or Green Globes	
Price, No. 2 per doz.	$25.10

No. 2 Dietz Blizzard Lanterns



Cold blast. Oil used, 150° kerosene. Fitted with Dietz Fitzall Loc-Nob globes. Bright tin finish.

Height Over All in.	14¾
Volume of Light by Test c.p.	10
Size of Wick in.	1
Fount Capacity hrs.	20
Patented Steel Burners No.	262
With White Globes	
Bright Tin per doz.	$20.00
With Brass Fount and Top per doz.	28.00
With Ruby, Blue or Green Globes	
Bright Tin per doz.	$23.10
With Brass Fount and Top per doz.	31.10

Steel Tool Chests



Style A

Made from 1/16-inch cold rolled sheet steel with malleable iron corner pieces and hard wood braces. Fitted with heavy wrought iron hinges and hasp, with cover so arranged as to be held open by support from the back of chest.

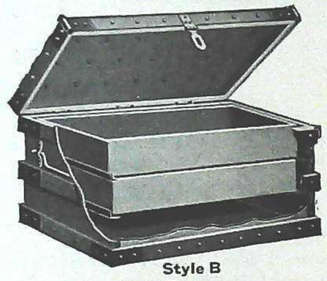
Each chest is furnished with a first-class brass lock and 2 keys and bolts to screw down cover at front corners.

Nos. 3, 4, and 5 have handles on 4 sides.

Style A has either 1 or 2 drawers. Sent with 1 drawer unless specified with 2.

Style B sent with 2 trays unless ordered with 1.

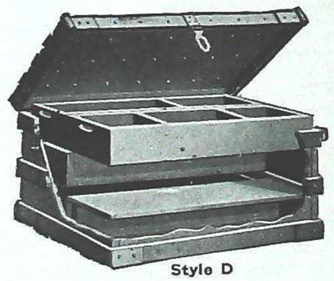
This chest is lighter and stronger than a wood chest.



Style B

No.	Dimensions, Inches: Length	Width	Depth	Price, Each: Style A 1 Drawer	Style A 2 Drawers	Style B 1 Drawer	Style B 2 Drawers
1	24	12	11	$26.00	$30.00	$27.00	$32.00
2	30	15	14	35.50	39.00	38.00	42.00
3	36	17	16	39.00	42.00	43.00	47.00
4	42	20	19	45.50	47.00	48.00	52.00
5	48	22	20	51.00	55.00	53.00	58.00

Steel Tool Chests



Style D

Made from 1/16-inch cold rolled sheet steel with malleable iron corner pieces and hard wood braces. Fitted with heavy wrought iron hinges and hasp, with cover so arranged as to be held open by support from the back of chest.

Furnished with a first-class brass lock and two keys, and bolts to screw down cover at front corners.

Style D is the same as shown in illustration. Style C has only one compartment.

Style C

No.	Dimensions, Inches: Length	Width	Depth	Price Each
0	24	12	11	$22.50
1	30	12	11	26.00
2	36	12	11	31.00
3	42	12	11	36.00
4	48	12	11	41.50
5	54	12	11	45.00
6	60	12	11	50.00
7	66	12	11	54.00
8	72	12	11	58.00

Style D

No.	Dimensions, Inches: Length	Width	Depth	Price Each
1	24	12	11	$33.00
2	30	15	14	44.00
3	36	17	16	48.00
4	42	20	19	54.00
5	48	22	20	60.00

Hamburg Mill Brooms



All Corn

Supplied with or without wire band, the wire band on a broom taking the place of the first tie. Extra charge for wire band. Last tie is extra heavy twine.

No.	No. Ties	Wt. Lbs. per Doz.	Price per Doz.	No.	No. Ties	Wt. Lbs. per Doz.	Price per Doz.
6	4	247	$6.50	8XXX	5	35	$8.00
7	4	278	6.75	9XXXX	5	40	8.75
7XX	4	308	7.25	.....	..	..	.....

Corn and Rattan Mixed

Adapted to mill and railroad use. Mixed with round rattan, if desired. Extra charge is made to cover the additional cost of the round rattan. Supplied with or without wire bands, extra charge being made for wire band. Last tie is extra heavy twine.

No.	No. Ties	Wt. Lbs. per Doz.	Price per Doz.	No.	No. Ties	Wt. Lbs. per Doz.	Price per Doz.
7XX	4	30	$7.25	9XXXX	5	40	$8.75
8XXX	5	35	8.00	.....	..	..	.....

Split Bamboo and Corn Mixed

An unusually stiff split bamboo and corn mixed broom. It is especially adapted to rough work, and to mill and railroad use.

Made with a metal top.

No.	No. Ties	Wt. Lbs. per Doz.	Price per Doz.	No.	No. Ties	Wt. Lbs. per Doz.	Price per Doz.
124B	2	24	....	135B	2	35	....
130B	2	30	....	140B	2	40	....

No. 322 Counter or Bench Dusters



This brush is suitable for factory or machine shop work. Simple in design, but strong in construction. The stock being compact on the brushing surface or face gives long life to the duster.

It is made of all black fibre 2⅞ inches long, staple set. Length, 9 inches.

Price, No. **322**.....per dozen $8.25

No. 451 Radiator Brushes



Has plain handle. Brush part of black hair, 1 row; length stock, 2 inches; brush part, 9 in.; over all, 24 in.

Price, No. **451**.....each .....

No. 330 Osborn Sanitary Brushes



Made of grey Tampico fibre; curved handle. Brush diameter 3½ inches; 5½ inches long. Length over all, 28 inches.

Price, No. **330**.....per dozen $7.00

Hy-Tech Products

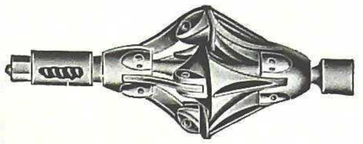
Engineer's Favorite Tube Cleaners



1¾" to 4½", per inch $1.00; 1¾" Size, each $2.00

Ingalls Flue Cleaners

Size Inches	Price Each	Size Inches	Price Each
1½	$2.00	3	$3.00
1¾	2.00	3¼	3.25
2	2.00	3½	3.50
2¼	2.25	3¾	3.75
2½	2.50	4	4.00
2¾	2.75	4½	4.50



Combination Flue Scrapers and Brushes

Brush can be renewed if scraper outlasts it.

Sizes: 1½, 1¾, 2, 2¼, 2½, 2¾, 3, 3¼, 3½, 3¾, 4 and 4½ inches.



Price...per inch $1.25 Minimum, 2-inch size ..each $2.50

Criss Cross Tube Cleaners

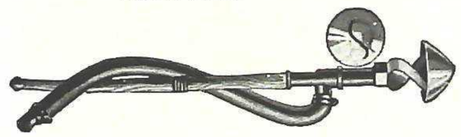


Flexible and self-conforming.

It has a multitude of cutting edges placed at right angles to the surface of the tube. Requires no brush attachment.

For Tubes O. D. Inches	Price Each	For Tubes O. D. Inches	Price Each	For Tubes O. D. Inches	Price Each
1¼	$2.00	2½	$2.50	3¾	$3.75
1½	2.00	2¾	2.75	4	4.00
1¾	2.00	3	3.00	4½	4.50
2	2.00	3¼	3.25	5	5.00
2¼	2.25	3½	3.50	6	6.00

Cyclone Steam Flue Cleaners for Horizontal Boilers



The Cyclone Steam Flue Cleaner is simple in construction and operation. Steam is taken from the dome of boiler through a steam pipe with globe valve, to which is attached the steam hose by a malleable coupling furnished with the cleaner.

When the steam is turned on, the operator sweeps off the face of the boiler and then directs the nozzle into the tubes. The dry column of steam under pressure of 70 to 150 pounds is presented to the tubes in a solid, unbroken, flat sheet with cyclonic motion, through their entire length, thereby removing all soot, scale or gums down to the iron.

The head of the steam nozzle is cast in steel with a mushroom shape, which excludes cold air and is provided with an auger shaped steam passage of the exact area of steam supply pipe and hose.

No.	Steam Hose Diam. In.	For Tubes Outside Diameter Inches	Price, Each: Equipped but without Hose	Equipped 10-foot Hose Incl.	Extra Heads Only	Steam Hose Price per Ft.
1	¾	1¼ to 2¼	$20.00	$31.00	$15.00	$1.10
2	¾	2½ " 3½	22.00	33.00	16.00	1.10
3	1	4 " 5	25.00	38.00	18.00	1.30

Ruggles Perfection Flue Cleaners



Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each	Size In.	Price Each
1¼-2	$2.00	2½	$2.50	3	$3.00	3½	$3.50	4½	$5.00
2¼	2.25	2¾	2.75	3¼	3.25	4	4.00	5	6.00

Spiral Tube Brushes



Made either of steel wire or whalebone. Sizes 1 to 6 inches.

Price, 1 to 2½ Inches.....each $1.25

Price, Larger Sizes.....per inch .50

Round or Flat Wire Spiral Flue Brushes



Steel wire, single or double spiral.

Length of brush part, five inches.

Furnished in any diameter from 1 to 4 inches.

Price.....per inch diameter $1.00

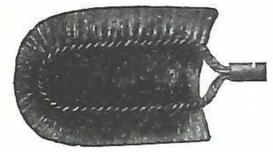
Boiler and Heater Brushes

Rectangular



No.	Brush In.	Nipple In.	Price Each
1900	1¾x4 x4½	¼x2½	$1.00
1901	2¼x6 x4½	¼x2½	1.50
1902	3¼x6⅝x4½	¼x2½	2.00

No. 1903 Boiler and Heater Brushes



Flat

Size of brush, 1¾x4x5½ inches; nipple, ¼x2½ inches.

Price, No. **1903**..each $1.50

Boiler and Heater Brushes

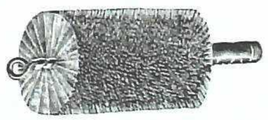
Rectangular



No.	Brush In.	Nipple In.	Price Each
1915	2x4x4½	¼x2½	$1.00
1916	3x5x4½	¼x2½	1.20

No. 1953 Wire Flue Brushes

Round Steel



Round steel wire double spiral flue brushes for 2 to 6-inch flues.

Price, No. **1953**, 1 to 6-inch.....per inch .....

We are in position to supply many items not shown in this catalogue and shall be pleased to receive your inquiries.

Wiedeke Ideal Quality Expanders

For railroads, boiler manufacturers and repairmen. They have large range and are adaptable for various size tubes and thicknesses of tube sheets.

Constructed entirely of selected steel, heat treated. Frame and collar is one piece, with substantial bearing for guard, which straddles beaded tube bearing against tube sheet. Suitable for narrow bridges, close to rivet line or shell. Can be removed to expand farther into tube. The long, reversible rolls give double life, expand easier and will not cut into mandrel. No cap or screws in front to become loose or lost due to severe pressure of rolls. The mandrels illustrated below are interchangeable, as well as the rolls, in these and many other types of Ideal expanders, a feature appreciated by storekeepers and repairmen, avoiding costly delays through stocked parts not fitting.

When ordering specify number of expander or parts and largest size to enter extra heavy or swedged tubes, List gives smallest inside diameter expanders enter and expand.

Extra Mandrels



No. 36-M

Hand Mandrels No. 36-M, round heads.



No. 40-M

Hand or Power Mandrels, Combination No. 40-M and Power Mandrels, No. 50-M.
Sizes 1" to 1½", Square Shank ½".
" 1⅝" " 2¾", " " ⅝".
" 3" " 6", " " 1".



No. 50-M



No. 53-M

Morse Taper Power Mandrels, No. 53-M.
Sizes 1⅝" to 2¼", Morse Taper Shank No. 3.
" 2⅜" " 4", " " " 4.

No. 40 Wiedeke Ideal Self-Feed Roller Tube Expanders

For Power or Hand Use



Expander all steel, tempered. With phosphor bronze bearing (cannot get out of order) reduces friction, doubling production. Rolls cannot fall in or out of frame when mandrel is removed, easily reversed and replaced. Rolls set at proper angle gradually feeding mandrel in, when power is applied, insuring uniform expansion without use of hammer. To release, reverse power.

Mandrels and rolls are interchangeable with expanders Nos. 36. 15, and other types.

Size of Expander for O.D. Tubes Inches	Enters I. D. Tubes and Expands to, In.	Approx. Ship. Wt., Lbs.	Price, Each: Expander Complete	Extra Mandrels	Extra Rolls
1	27/32 to 1	3½	$16.00	$3.50	$.30
1 1/16	7/8 " 1 1/16	3½	16.00	3.50	.30
1 1/8	15/16 " 1 1/8	4	16.00	3.50	.30
1 3/16	1 " 1 3/16	4	16.00	3.50	.30
1 1/4	1 1/16 " 1 1/4	4	16.00	3.50	.30
1 5/16	1 3/32 " 1 5/16	4	16.00	3.50	.30
1 3/8	1 5/32 " 1 3/8	4½	16.00	3.50	.30
1 7/16	1 7/32 " 1 7/16	4½	16.00	3.50	.30
1 1/2	1 9/32 " 1 1/2	4½	16.00	3.50	.30
1 5/8	1 3/8 " 1 5/8	6½	16.00	3.50	.30
1 3/4	1 1/2 " 1 3/4	7	16.00	3.50	.30
1 7/8	1 39/64 " 1 7/8	7½	16.00	3.50	.30
2	1 23/32 " 2	8	16.00	3.50	.30
2 1/8	1 15/16 " 2 1/8	8½	18.00	3.50	.30
2 1/4	1 15/16 " 2 1/4	9	18.00	3.50	.30
2 3/8	2 1/16 " 2 3/8	10½	19.50	4.50	.30
2 1/2	2 5/32 " 2 1/2	11	19.50	4.50	.30
2 5/8	2 9/32 " 2 5/8	13½	22.00	4.50	.60
2 3/4	2 13/32 " 2 3/4	14½	22.00	4.50	.60
3	2 5/8 " 3	17	22.00	5.50	.60
3 1/4	2 7/8 " 3 1/4	18½	24.50	5.50	.70
3 1/2	3 1/8 " 3 1/2	21	24.50	6.50	.70
3 3/4	3 3/8 " 3 3/4	23	27.00	6.50	.80
4	3 5/16 " 4	28	27.00	7.50	.80

No. 3 Wiedeke Standard Roller Tube Expanders

For Hand Use



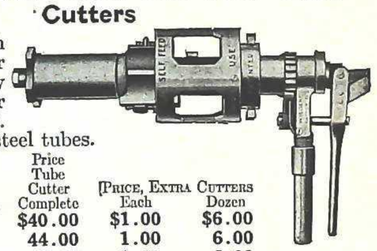
This expander, for hand use only, is designed for those having only an occasional use for an expander. The mandrel and rolls are made of tool steel and hardened. The frame and rear collar is one piece furnishing a substantial bearing at all times for the guard, which can be removed if necessary. No separate collar or locking pin required, these generally becoming loose from service and throwing expander out of commission.

Tables show smallest inside diameter any expander passes into and what it will expand to, enabling one to select an expander with proper range.

Size of Expander for O.D. Tubes, In.	Enters I.D. Tubes and Expands to Inches	Approx. Ship. Wt., Lbs.	Price, Each: Expander Complete	Extra Mandrels	Extra Rolls
1	27/32 to 1	2½	$10.00	$2.00	$.20
1¼	1 1/16 " 1¼	2¾	10.00	2.00	.20
1½	1 9/32 " 1½	3	10.00	2.00	.20
1¾	1½ " 1¾	4¼	10.00	2.00	.20
2	1 23/32 " 2	5	10.00	2.00	.20
2¼	1 15/16 " 2¼	6	12.00	2.00	.20
2½	2 5/32 " 2½	7½	14.00	2.50	.20
2¾	2 13/32 " 2¾	8½	16.00	3.25	.35
3	2 5/8 " 3	10½	18.00	3.75	.35
3¼	2 7/8 " 3¼	14	20.00	4.25	.50
3½	3 1/8 " 3½	17	23.00	4.75	.50
3¾	3 3/8 " 3¾	17½	25.00	5.50	.60
4	3 9/16 " 4	20½	30.00	5.75	.60
4¼	3 13/16 " 4¼	24½	40.00	6.50	.80
4½	4 1/16 " 4½	25	50.00	8.50	.80
5	4½ " 5	34½	60.00	10.00	1.00
6	5 3/8 " 6	49½	70.00	11.00	1.75

No. 375 Wiedeke Ideal Self-Feed Tube Cutters

Cuts old tubes with scarfing edge for welding. Cuts new tubes with flare or bevel for beading. Avoids cracking of steel tubes.



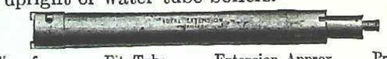
Size Tube Cutter O.D. Tubes Inches	Enters and Cuts Tubes I.D. Inches	Approx. Ship. Wt., Lbs.	Price Tube Cutter Complete	Price, Extra Cutters Each	Price, Extra Cutters Dozen
2	1 23/32	18	$40.00	$1.00	$6.00
2¼	1 31/32	19	44.00	1.00	6.00
2½	2 5/32	20	46.00	1.00	6.00
2¾	2 7/16	20	50.00	1.00	6.00
3	2 11/16	29	60.00	1.00	6.00
3¼	2 27/32	30	66.00	1.00	6.00
3½	3 1/8	32	68.00	1.00	6.00
4	3 5/8	33	70.00	1.00	6.00
4½	4 1/16	51	110.00	2.00	12.00
5	4½	54	126.00	2.60	15.00
5½	4 15/16	55	128.00	2.60	15.00
6	5 3/8	56	130.00	2.60	15.00

No. 377 Extensions

Connect proper length extension to tube cutter No. 375 for smoke box, upright or water tube boilers.





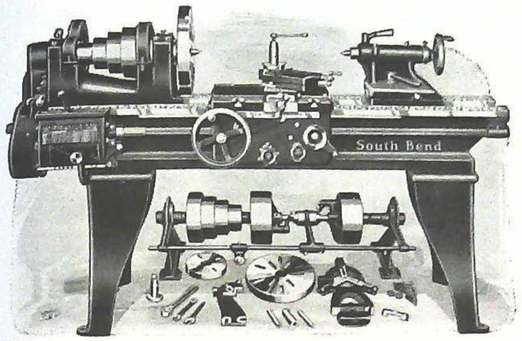


Size of Lettered Extension	Fits Tube Cutters Size Inches	Extension Length Inches	Approx. Ship Wt., Lbs.	Price Extension Complete
D1½	2 to 2¾	19	9	$10.00
D3	2 " 2¾	38	25	20.00
D6	2 " 2¾	72	37	40.00
D8	2 " 2¾	96	49	45.00
E1½	3 " 4	19	12	12.00
E3	3 " 4	38	31	25.00
E6	3 " 4	72	41	45.00
E8	3 " 4	96	55	50.00
F1½	4½ " 6	19	25	45.00
F3	4½ " 6	38	35	55.00

Hy-Tech Products

New Model South Bend Lathes

Quick and Standard Change Gear Countershaft Drive



The equipment regularly furnished and included in the price of each South Bend Lathe is: Double friction countershaft, large face plate, small face plate, tool post complete, adjustable thread cutting stop, two tool steel lathe centers and spindle sleeve, center rest, follower rest, necessary wrenches and lag screws for fastening countershaft and lathe.

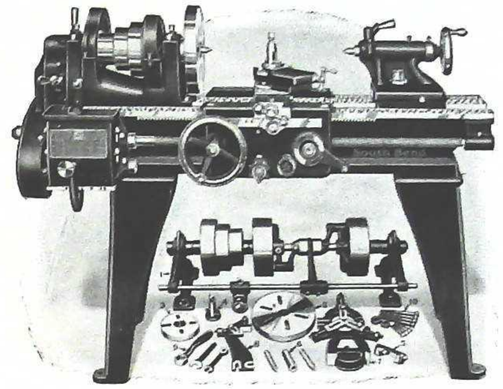
*9-Inch Swing

Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Approx. Shipping Weight Pounds	Quick Change Gear Lathes: No. of Lathe	Quick Change Gear Lathes: Price Each	Standard Change Gear Lathes: No. of Lathe	Standard Change Gear Lathes: Price Each
9¼	2½	11	470	82-X	$288.00	31-X	$243.00
9¼	3	18	490	82-Y	294.00	31-Y	249.00
9¼	3½	23	510	82-Z	300.00	31-Z	255.00
9¼	4	29	530	82-A	307.00	31-A	262.00
9¼	4½	36	550	82-R	315.00	31-R	270.00
			*11-Inch Swing				
11¼	3	12	675	84-Y	$345.00	33-Y	$295.00
11¼	3½	18	700	84-Z	352.00	33-Z	302.00
11¼	4	24	725	84-A	359.00	33-A	309.00
11¼	5	36	805	84-B	375.00	33-B	325.00
11¼	5½	42	845	84-S	384.00	33-S	334.00
			*13-Inch Swing				
13¼	4	16	1060	86-A	$428.00	35-A	$368.00
13¼	5	28	1110	86-B	443.00	35-B	383.00
13¼	6	40	1160	86-C	458.00	35-C	398.00
13¼	7	52	1210	86-D	475.00	35-D	415.00
13¼	8	64	1260	86-E	494.00	35-E	434.00
			15-Inch Swing				
15¼	5	24½	1475	88-B	$525.00	39-B	$450.00
15¼	6	36½	1550	88-C	543.00	39-C	468.00
15¼	7	48½	1625	88-D	561.00	39-D	486.00
15¼	8	60½	1735	88-E	581.00	39-E	506.00
15¼	10	84½	1900	88-G	625.00	39-G	550.00
			16-Inch Swing				
16¼	6	34	1875	92-C	$598.00	41-C	$518.00
16¼	7	46	1955	92-D	618.00	41-D	538.00
16¼	8	58	2035	92-E	638.00	41-E	558.00
16¼	10	82	2195	92-G	682.00	41-G	602.00
16¼	12	106	2355	92-H	745.00	41-H	665.00
			18-Inch Swing				
18¼	6	29½	2440	94-C	$713.00	43-C	$623.00
18¼	7	41½	2540	94-D	738.00	43-D	648.00
18¼	8	53½	2640	94-E	763.00	43-E	673.00
18¼	10	77½	2840	94-G	817.00	43-G	727.00
18¼	12	101½	3140	94-H	895.00	43-H	805.00
18¼	14	125½	3540	94-K	957.00	43-K	867.00

*If bench legs are wanted in place of floor legs, deduct $10.00 from these prices. Bench legs are not furnished on 15, 16 and 18-inch sizes.

South Bend New Model 11-Inch Screw-Cutting Lathes

Quick-Change and Standard-Change Gear Types



No. 84, 11-Inch New Model Quick-Change Gear Lathe

The new 11-inch back geared screw cutting lathe is an excellent tool for light production work in manufacturing. It has the precision and accuracy for fine tool room work and the capacity for a variety of small machine work.

The new head stock is back geared, reinforced and webbed, insuring strength and rigidity. Six spindle speeds are provided—three direct cone drive and three back geared.

The new head stock spindle has a ⅞-inch hole its entire length. The spindle bearings are made of high quality phosphor bronze and are adjustable for wear.

The new tail stock is provided with a set-over for taper turning.

The new carriage is provided with automatic cross and longitudinal turning feeds and half nuts for thread cutting. An improved Automatic Safety interlock prevents the split nuts and automatic feeds from being engaged at the same time. Four felt wipers keep the outer V ways of the bed clean and oiled. The cross feed screw has Acme thread and a micrometer graduated collar.

The new compound rest is graduated 180 degrees. The compound rest screw has Acme thread and a micrometer graduated collar for adjusting the depth of the cut.

The new lead screw has eight Acme threads per inch. The finest precision thread gauges, taps, etc. can be made to meet the most exacting requirements.

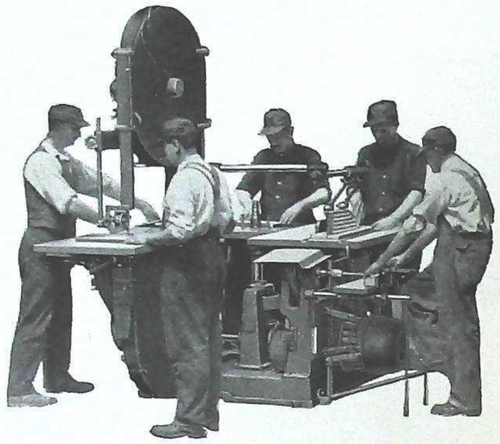
The quick change gear lathe provides 48 changes for cutting right and left hand screw threads from 2 to 112 per inch without removing a gear. The gear box also provides for adjustment of the automatic cross and longitudinal feeds.

The equipment regularly furnished and included in the price of each South Bend Lathe is: Double friction countershaft, large face plate, small face plate, semi-machined chuck back, tool post, ring, wedge and wrench, adjustable thread cutting stop, two tool steel lathe centers, center rest, follower rest, necessary wrenches and lag screws for fastening countershaft and lathe.

The standard change gear lathe is the same as the quick change gear lathe, except that the quick change gear box is omitted and a set of loose change gears are supplied for cutting standard threads from 4 to 40, right or left, including 11½ pipe thread. Gears are also supplied for adjusting the automatic cross feed and automatic longitudinal feed. By compounding the gears many screw threads other than those listed can be cut.

Quick-Change Gear: No. of Lathe	Quick-Change Gear: Each	Standard-Change Gear: No. of Lathe	Standard-Change Gear: Each	Swing over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Approx. Weight Crated Pounds
84-Y	$345.00	33-Y	$295.00	11¼	3	12	675
84-Z	352.00	33-Z	302.00	11¼	3½	18	700
84-A	359.00	33-A	309.00	11¼	4	24	725
84-B	375.00	33-B	325.00	11¼	5	36	805
84-S	384.00	33-S	334.00	11¼	5½	42	845

Crescent Universal Woodworkers



This machine is composed of 5 units consisting of band saw, jointer, saw table with tilting top, borer, reversible single spindle shaper and is equipped with ball bearings throughout.

The jointer on this woodworker may be 8, 12 or 16 inches. Tables have vertical adjustment on inclined ways which are attached to sliding sash so they may be drawn horizontally away from the head.

If desired, the band saw or the shaper or both of them may be left off the machine. Holes are drilled and tapped so these units may be added later without any difficulty or inconvenience to the user.

Each band saw is furnished with one anti-friction guide above table, one plain guide below table, one brazing tong, one brazing clamp, endless leather belt for driving the band saw from drive shaft on machine and one saw blade, ⅜ inch wide for 26-inch machine, ½ inch wide for 32-inch machine. Purchaser may choose any other width of blade up to 1 inch.

The jointer is furnished with the patent round safety head, one set of knives, one tilting fence fitted with thickness scale, one hold-down spring, one wrench and an endless leather belt to drive jointer from drive shaft on machine.

Each shaper is furnished with a pair of 2-inch plain knives, 2 guide pins, collars to fill the spindle, 2 throat collars, pin to hold spindle and an endless leather belt to drive spindle from reverse shaft. Mandrel wrench for saw table will fit nut on the shaper spindle.

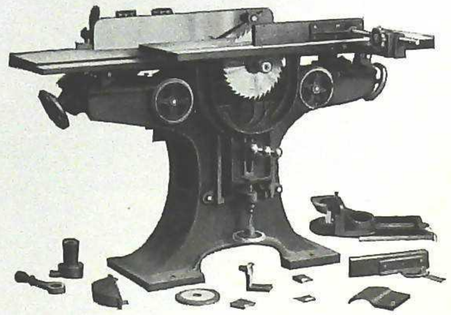
Each borer is furnished with hollow chisel mortising attachment, one self-centering chuck and an endless leather belt to drive spindle from the drive shaft on the machine.

No.	H.P. Req.	Size Jointer In.	Size Band Saw In.	Floor Space Over All In.	Floor Space When Borer is Removed In.	Speed of Main Driveshaft R.P.M.	Ship. Wt. Lbs. Each
151	5–7½	8	26	93x80	93x72	1750	3800
152	5–7½	8	32	101x80	101x72	1750	4000
153	5–7½	8	None	72x80	72x72	1750	3300
154	5–7½	12	26	93x85	93x77	1750	3890
155	5–7½	12	32	101x85	101x76	1750	4100
156	5–7½	12	None	75x85	75x77	1750	3385
157	5–7½	16	26	93x89	93x80	1750	4020
158	5–7½	16	32	101x89	101x80	1750	4225
159	5–7½	16	None	75x89	75x80	1750	3500
160	5–7½	8	26	93x80	93x72	1750	3500
161	5–7½	8	32	101x80	101x72	1750	3700
162	5–7½	8	None	72x80	72x72	1750	2990
163	5–7½	12	26	93x85	93x77	1750	3570
164	5–7½	12	32	101x85	101x76	1750	3780
165	5–7½	12	None	75x85	75x77	1750	3065
166	5–7½	16	26	93x89	93x80	1750	3700
167	5–7½	16	32	101x89	101x80	1750	3910
168	5–7½	16	None	75x89	75x80	1750	3190

Prices and full information on application.

Crescent Variety Woodworkers

Jointer, Borer, Saw-table, Pole-rounder, Hand Feed Molder and Emery Grinder



The regular 8-inch Crescent Jointer is used for the body of this machine, and in adding the various attachments, its use as a jointer is in no way changed or impaired.

The countershaft may be placed where most convenient; on ceiling above the machine, or under the floor, or to front or rear of the machine. The machine can be used as a jointer, a borer and a saw-table without making any adjustments or changes whatever in the machine, as these three features are practically independent of each other.

The change from saw-table to pole-rounder is made as follows: Raise the saw-table to extreme height with hand-wheel to take off the saw. Then remove one hand-screw and set saw-table aside; put knives on where saw was; put the pole-rounder to place and fasten with the hand-screw. Can be done without the use of a wrench, except for the mandrel-nut for which a wrench is furnished with machine.

The saw-table is fastened to front side of machine. By means of a sliding yoke and hand-wheel it adjusts up and down in planed ways; and is held rigidly at any point by a hand-screw. The size of table is 12x30 inches, planed off true on top, and has a wooden throat-piece inserted. Grooves of any exact depth may be cut. Size of mandrel hole in saws is one inch. The fence will open to a distance of 12 inches from saw.

Pole-rounder attachment consists of a sliding yoke fastened to same bracket, and in same manner, as saw-table.

When the pole-guides are removed, a suitable rest is fastened to the pole-rounder yoke, then a small emery wheel is placed on the spindle, thus forming a convenient grinder for grinding cutters and other light work. Emery wheels larger than 5 inches in diameter should not be used, owing to the high speed of the machine.

The hand-feed molder consists of a table that fastens to the same yoke as the pole-rounder, and the table is easily attached and adjusted to position.

The borer is attached to a bracket at the rear side of machine, where its adjustments need not be disturbed in any way when using the machine for other purposes.

Each jointer is furnished with a two-knife round safety head, one countershaft having self-oiling loose pulley, one fence, one hold-down spring, one steel wrench for knife bolts, one collar guard and one knife guard.

With each borer is furnished one self-centering chuck. (Bits are not included.)

With each saw table is furnished one 10-inch ripsaw, one mandrel wrench, one ripping fence, one cut-off gauge, loose collars to fill saw stub and one saw guard.

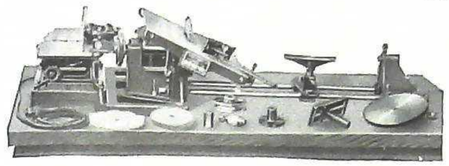
With each pole-rounder is furnished two pole-guides, one pair of 2-inch straight knives, two pair of rounder knives (for 1-inch and 1½-inch radius), one mandrel wrench, collars to fill spindle, one molder table, one pressure spring, one emery wheel 5x1½ inches, and one grinding rest.

Size of Tight and Loose Pulleys	inches	8x3
Speed of Countershaft	r.p.m.	800
Giving Head a Speed of	"	3650
Diameter of Pulley on Head	inches	3½
Width of Belt, to Head	"	2½
Floor Space	"	58x64
Power Required	h.p.	2 to 3
Shipping Weight	pounds	1100

Prices upon application.

Hy-Tech Products

Wallace Workace Electric Woodworkers



The Workace Electric Woodworker has been designed to handle, electrically, practically every woodworking operation which the mechanic may wish to perform in a small shop—it is a complete electric tool chest. This outfit is portable and can be operated wherever an electric light socket is available.

It has the power, strength and capacity to handle, quickly and economically, any operation likely to be required in such a shop. Properly aligned bearings, accurately machined tables, fences and parts, with the quickest adjustments, give the accuracy required for doing precise work, even on the smallest pieces.

The Workace Electric Woodworker is composed of a number of interchangeable units and attachments, all of which may be purchased at one time in a complete outfit, or the units may be purchased separately from time to time.

The complete outfit includes the following: 4-inch planer; 8-inch circular saw; 6x36-inch lathe; 8-inch disc sander; 6-inch buffing wheel; 5-inch emery grinder; ¼-inch drill chuck; ¼-h.p. G-E motor, 110 volts a.c., 60 or 25 cycles; endless V belt, one 4 and two 2¼-inch V belt pulleys, cast iron sub base and 10 feet of cable with separable plug. Can be furnished with or without motor.

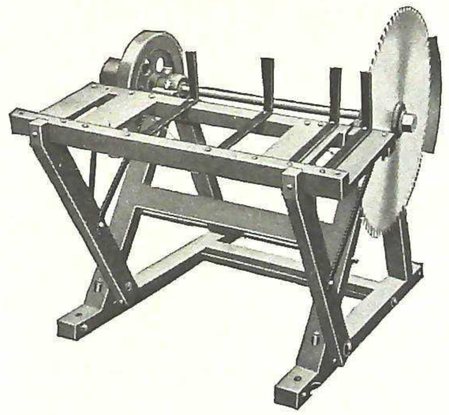
Space required, 63x26 inches.

Shipping weight, 165 pounds.

Prices upon application.

No. 700 Jumbo Saw Frames

With Tilting Table



Built specially for sawing poles and cordwood with ease and in fastest time—right or left hand. Mandrel of finest cold rolled steel, 1 7/16 inches diameter, 49 inches long—fitted for saw with 1⅜-inch hole.

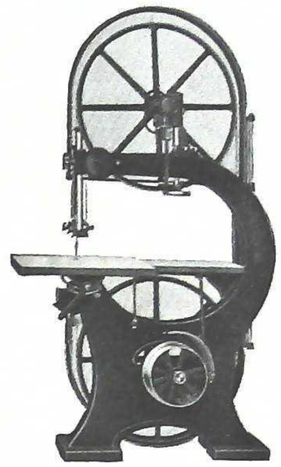
Flywheel is accurately machined and carefully balanced, 15½ inches diameter, weight 65 pounds, (95-pound flywheel can be furnished at an extra cost).

Standard pulley size 6x6 inches. Special self-aligning bearings lubricated with hard oilers. Wood sections from selected A-1 lumber, carefully inspected and securely bolted together. Has 4-pole guides and special saw guard for safety.

Shipping weight complete, 250 pounds.

Prices upon application.

Crescent Band Saws



The 38-inch machine is made for those who require a band-saw unusually heavy and strong. The 36-inch machine is for all regular work in factories, planing mills, pattern shops and other woodworking establishments; this is usually considered the standard size machine. The 32-inch machine is used where the work to be done is not of extremely large dimensions, or where the amount of work would not justify the purchase of a more expensive machine. The 26-inch machine is intended for those whose requirements do not demand a machine of larger size.

The 38-inch machine can be furnished left hand when specially ordered.

Ball bearings and hinged guards are regular equipment on all band saws.

Each machine is furnished with one anti-friction roller saw-guide above table, one plain guide below table, one brazing tongs, one brazing clamp, and one saw blade.

Size	inches	**38**	**36**
Diam. and Face of Wheels	inches	38x2	36x2
Distance Clear from Saw to Frame	inches	38	36
Height Clear under Guide when Raised	in.	19	16
Size of Table (Iron)	inches	30x36	28x32
Size of Tight and Loose Pulleys	inches	16x4	12x4
Speed	r.p.m.	450	600
Length of Saw Blade	feet	20⅓	18½
Height of Table from Floor	inches	42	40
Height, Over All	inches	102	92
Floor Space, Over All	inches	44x62	39x57
Power Required	h.p.	3 to 5	2 to 3
Shipping Weight	pounds	1475	1200
Size	inches	**32**	**26**
Diam. and Face of Wheels	inches	32x1¾	26x1½
Distance Clear from Saw to Frame	inches	32	26
Height Clear under Guide, when Raised	in.	13	9
Size of Table (Iron)	inches	24x28	20x24
Size of Tight and Loose Pulleys	inches	12x3½	10x3
Speed	r.p.m.	600	720
Length of Saw Blade	feet	16⅓	13¾
Height of Table from Floor	inches	40	40
Height, Over All	inches	86	78
Floor Space, Over All	inches	35x50	30x40
Power Required	h.p.	2	1½
Ship. Wt., Belt Power	pounds	950	*700

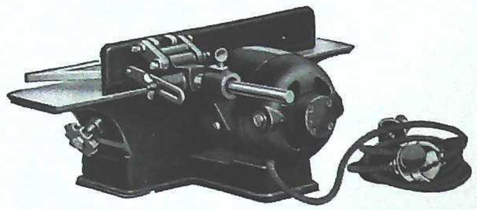
Saw Blade Regularly Furnished

Size Saw In.	No. of Blades	Size Blades In.	Size Saw In.	No. of Blades	Size Blades In.
38	1	¾	**32**	1	½
36	1	¾	**26**	1	⅜

Any other width of saw up to 1 inch can be furnished without extra charge.

Prices upon application.

Crescent 4-Inch Bench Jointers



Equipped with a 2-knife ball-bearing safety head, tilting fence and has built-in motor. The motor is ¼ h.p. and in placing the order it is only necessary to state whether it is to be operated on 110 or 220 volts.

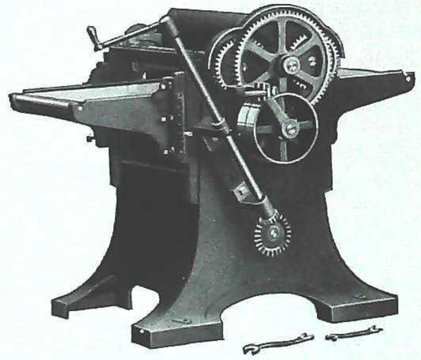
Guard is automatic; it is attached to rear table and does not need to be removed from machine for doing rabbeting. Tables are accurately machined and may be adjusted independently of each other.

Each belt-driven machine is furnished with knives, tilting fence, guard and countershaft. Each motor-driven machine is furnished with knives, tilting fence, guard, motor, 10-foot cord, attachment plug and switch.

No		402 Belt-Driven	414 Motor-Driven
Style of Drive			
Length of Knives	in.	4	4
Length of Machine Over All	in.	20	20
Width of Machine Over All	in.	10	18
Height of Machine Over All	in.	7	7
Height to Top of Table	in.	5	7
Width of Tables	in.	5½	5½
Size of Drive Pulley on Countershaft	in.	8x1¾	....
Size of Tight and Loose Pulleys	in.	4x1¾	....
Size of Pulley on Head, 1-Inch Belt	in.	2x1¼	....
Speed of Countershaft	r.p.m.	1000	....
Speed of Head	r.p.m.	4000	8000
Shipping Weight	pounds	85	120

Prices furnished upon application.

Crescent Planers



These planers are identical in design and detail the only difference being in width. Feed is driven from pulley on countershaft and tight and loose pulleys on machine.

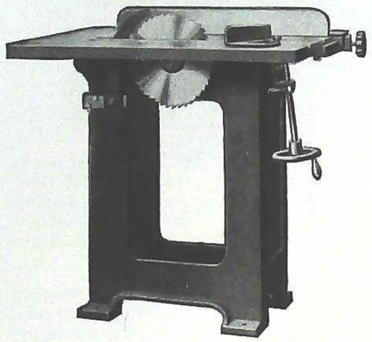
Has 4-knife round safety head mounted in ball bearings. Guard rail placed in front of upper front roll prevents accident to operator when feeding short stock.

No		118	124
Width and Thickness Will Plane	inches	17¾x6	23¾x6
Length of Table	inches	44	44
Width of Drive Belt	inches	4	4
Diameter of Pulley on Head	inches	4	4
Size of Tight and Loose Pulley	inches	10x5	10x5
Size of Drive Pulley on Countershaft	inches	20x4	20x4
Speed of Countershaft	r.p.m.	825	825
Giving Head a Speed	r.p.m.	4000	4000
Width of Feed Belt	r.p.m.	2	2
Floor Space, Exclusive of Countershaft	r.p.m.	44x45	44x51
Horsepower Required		5–7½	7½–10
Shipping Weight	pounds	1250	1400

Prices upon application.

No. 0 Crescent Saw-Tables

Belt or Motor Drive



Machine may be belted direct to mandrel from a line-shaft below the floor, or from countershaft or a motor set to the rear.

Front end of table raises and lowers to suit for cutting through different thicknesses of material and for changing saws. Ripping fence opens up to admit a board up to 19 inches wide. Cut-off fence may be used on either side of the saw and may be adjusted to suit for cutting any angle up to 45 degrees right or left bevel.

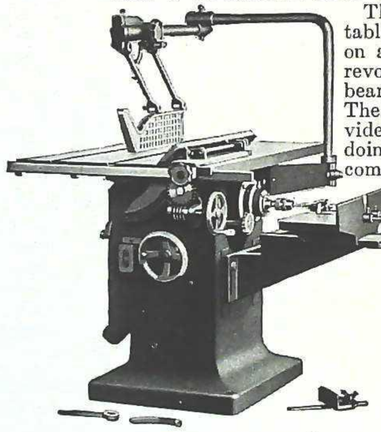
Each machine is furnished with one 12-inch rip saw, one ripping fence, one cut-off gauge, one spreader, one mandrel wrench. No belt or countershaft furnished unless ordered.

Guards and countershaft supplied at slight additional cost. A 3-h.p. motor running 1800 r.p.m. with pulley 6 inches in diameter, 4¼-inch face may be belted direct to mandrel pulley if it is desirable to drive with motor.

Size of Table	inches	30x38
" " Mandrel Hole in Saw	"	1
" " " Bearings	"	1¼x4
Speed of "	r.p.m.	3000
Size of Pulley on Saw Mandrel	inches	3½x4¼
Floor Space Over All	"	34x38
Shipping Weight	pounds	625

Prices upon application.

No. 9 Crescent Saw-Tables



This compact saw-table with motor built on arbor, has but one revolving part and 2 bearings to lubricate. The 4 h.p. motor provides ample power for doing any work that comes within the range of the machine, and the simple rugged construction adapts it for general use. There are no belts, belt shifter, loose pulleys and the machine includes just those parts necessary.

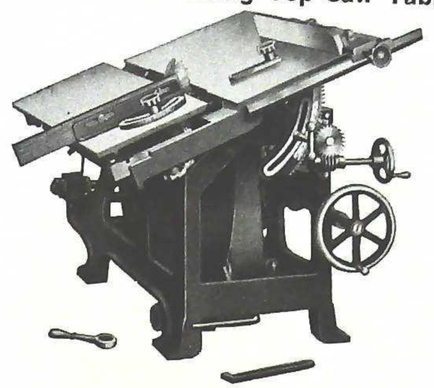
Furnished with motor, 14-inch rip saw, tilting ripping fence, cut-off gauge, spreader, mandrel wrench and enclosed magnetic switch with push button for starting.

Guard, boring attachment and mortising attachment will not be included unless mentioned on the order.

Size of Table	inches	32x44	
Width Fence Opens From Saw to Right	inches	20	
Width Fence Opens From Saw to Left	inches	8	
Size of Mandrel Hole in Saw	inches	1	
Height of Table From Floor	inches	36	
Speed of Mandrel, Per Minute	revolutions	3600	
Vertical Adjustment of Saw Mandrel	inches	5	
		Boring Attachment With	Without
Floor Space Required Over All	inches	32x44	44x51
Travel of Boring Table, Horizontally	inches	.....	9
Travel of Mortising Table, Horizontally	inches	.....	3½
Vertical Adjustment of Boring Table	inches	.....	4
Shipping Weight	pounds	1100	1175

Hy-Tech Products

No. 5 Crescent Sliding Top Saw Tables



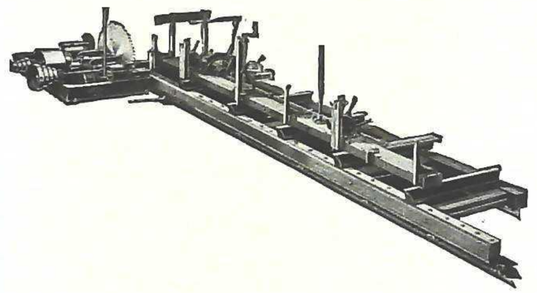
Sliding table runs on seven rollers that are adjustable to keep sliding table on exact level with rigid table.

Each machine is furnished with one 12-inch rip-saw, one ripping fence, one cut-off gauge, two spreaders, two segment stops, one mandrel wrench, dust partition and dust spout, and one 5-inch leather belt from countershaft to mandrels.

Size of Main Table	inches	22x52
" " Sliding "	"	16x52
" " Entire "	"	38x52
Width Fence Opens from Saw	"	22
Height of Table from Floor	"	34
Size of Mandrel Bearings	"	1 1/2x4
" " Tight and Loose Pulleys	"	10x5
Speed of Countershaft	r. p. m.	640
Giving Saw a Speed of	"	3000
Size of Pulley on Mandrel	inches	4¼x5¼
Floor Space	"	49x80
Power Required	h. p.	5 to 7½
Shipping Weight	pounds	1675

Prices upon application.

No. 1 Lane Single and Double Saw Mills



Made both right and left hand. Capacity from 8000 to 12000 feet per day of 10 hours. Iron frame. Hardwood used with single mill only. Arbor, $2^{15}/_{16}$ inches by 6 feet or up; saw collar 6-inch diameter. Drive pulley, 15½ to 28-inch diameter by 15-inch face; 18-inch diameter usually furnished. Maximum diameter of saw, 54 inches, 2-inch eye. Rack and pinion feed, variable from 0 to 6 inches. Hard pine carriage, in lengths from 15 to 60 feet. Lane Patent Set Works, will open 36 inches with sawyer's set, and 34 inches with double acting setback.

Furnished with iron frame, rack and pinion feed as illustrated or with trucks and rope feed.

Double mill has heavy cast legs. Lower arbor $2^{15}/_{16}$ inches by 8 feet. With outbearings and stand. Upper arbor $2^{7}/_{16}$ inches by 5 feet 9 inches. Arbor pulleys 20-inch diameter by 8-inch face on lower arbor; 16-inch diameter by 8-inch face on upper arbor. Maximum diameter upper saw, 34 inches, 2-inch eye.

Furnished with either Friction Feed and belt Gig or Belt Feed and Belt Gig.

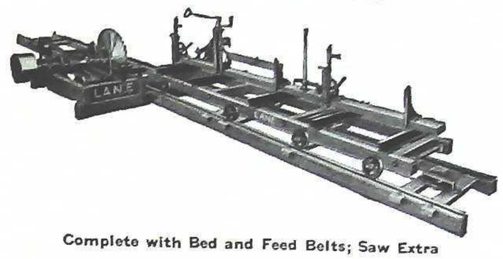
Headblock Type

This mill also is built in headblock type with general specifications same as above.

Special bulletins and prices upon application.

Lane Tractor Saw Mills

With Log Beam Set Works



Complete with Bed and Feed Belts; Saw Extra

The Heacock belt feed of the improved type is used in this saw mill, it being easy in operation, and positive on variable feeds. Proper feed belts are supplied with the mill.

The set works is the well-known Lane pattern, to be operated by the sawyer, setting by 16ths, 8ths and 4ths of an inch, and with the improved elevated scale board, perfect lumber of any thickness can be sawed without loss of time or waste of timber. The scale board quickly teaches an inexperienced operator to become an efficient sawyer.

The set racks which control the position of the uprights are made independent from the rack head blocks and means are provided for adjusting these racks in a vertical direction, keeping the set works accurate at all times. The racks also have an adjustment in a horizontal direction for aligning both ends of the set works to the saw.

Specifications

Capacity 500 to 1000 board feet per hour, or 250 to 350 railroad ties per day, depending on conditions. Longest cut possible, 24 feet. Dogs recede from saw-line, 30 inches. Horsepower required, 15 to 30. Husk frame, 3½x8 inches selected hard wood, 7 feet long by 3 feet 7 inches wide.

Arbor, $2^{3}/_{16}$ inches by 5 feet 10 inches, turned and ground steel, taking a standard saw with 2-inch eye, and having two ⅝-inch lug pin holes on a 3-inch circle; diameter of saw collar, 6 inches; largest diameter of saw admitted, 56 inches. Arbor boxes, two pivoted, adjustable, wick-oiling boxes, lined with high grade babbitt.

Drive pulley, standard steel split, 16 inches in diameter with an 8-inch face. Other sizes if required at a slight additional cost. Balance wheel, 26 inches in diameter with a 4-inch face, weighing approximately 350 pounds, furnished as an extra, adding 5 to 8 effective h.p.; rim may be used for driving blower, slab saw, etc. Saw guide, quickly adjustable, and allowing immediate removal of saw at any time. Splitter plate, revolving and eliminating all tendency of boards to pinch the saw.

Feed works, an improved type of Heacock feed and gig is furnished, the rate of feeding being up to 4½ inches to each revolution of saw, with rapid gig, or return of carriage. Belts, required for feed works, for feed, 18 feet 2 inches, and for gig, 8 feet 5 inches; 4-ply canvas belting, 4 inches wide, is furnished. Carriage, 15 feet long, of 3½x5½-inch hard pine, having 4 sets of 8-inch trucks with $1^{3}/_{16}$-inch axles, carried in Hyatt roller bearing, Alemite oiling system, on 12 pound steel rail. Length of carriage travel, 30 feet; length of rails, 45 feet, cut in 3 sections. Carriage movement, by flexible steel rope attached to carriage and winding over grooved drum, and around horizontal sheaves attached to bed or ties at either end; rope, 95 feet of ⅜ inch. Set works, Lane lever-set, with pawls and pin-and-quadrant, allowing setting by quarters, eighths and sixteenths. Set beam, 3½x8-inch hard pin, adjustable for alignment and wear.

Compound uprights, 2 furnished, each equipped with top or hand dog, underhook dog, and taper slide. Also 2 plain uprights, screw dog with underhook and post dog. A power receder, operated by a foot pedal and automatic pawl release, by which set beam may be quickly returned to rear of blocks to receive next log can be furnished at a slight additional cost.

Approximate weight, 3250 pounds; boxed, 3800 pounds.

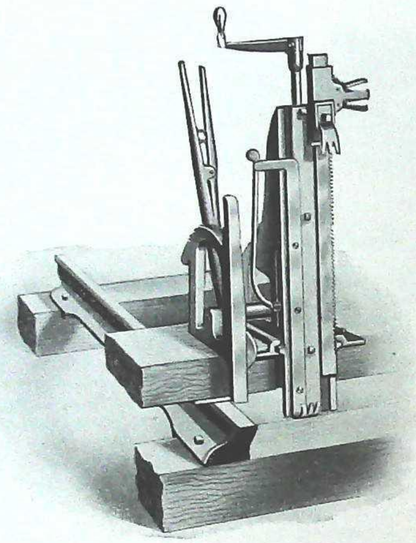
Prices upon application.

Headblock Type

This mill also is built in headblock type with general specifications same as above.

Prices upon application.

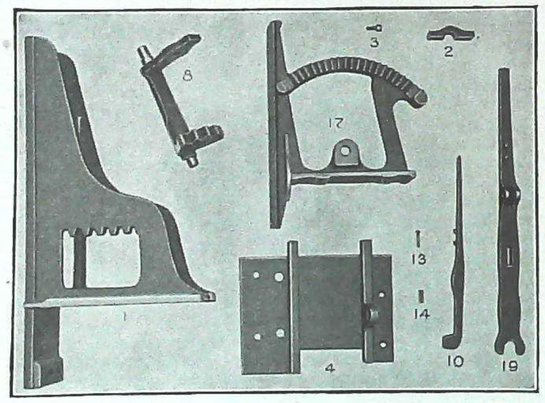
Sawyer's Favorite Sawmill Dogs



The entire dog slides forward to meet crooked or taper log. Top dog is lowered and lower dog raised to log, and driven in by turn of crank. Under dog is forged in one piece and with machine-cut ratchet riveted on, automatically drops to position by pressure on spring lever.

Prices upon application.

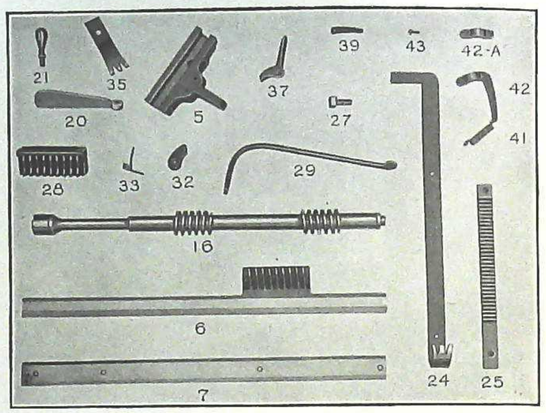
Sawyer's Favorite Dog Repair Parts



Part No.	Name of Part	Price Each
SFD- 1-C	Main Frame, with Cap and Cap Screws..	$21.00
SFD- 1	Main Frame Only	20.50
SFD- 2	Main Frame Cap	.45
SFD- 3	Main Frame Screw, 7/16x1½ Inches	.10
SFD- 4	Bed Plate	5.25
SFD-17	Quadrant	5.25
SFD- 9	Screw to Attach Quadrant to Plate, ½x1¼ In	.10
SFD- 8	Rocker Shaft	3.25
SFD-11	Rocker Shaft Screw with Washer, 5/8x1½ In.	.16
SFD-12	Outset Lever, with Pawl and Springs	2.75
SFD-19	Outset Lever Only	1.90
SFD-10	Outset Lever Pawl	.55
SFD-13	Outset Lever Pawl Rivet, ¼x1½ Inches.	.05
SFD-14	Outset Lever Spring, Coil Spring for Pawl	.15

When ordering give name of dog, part number, name of part.

Sawyer's Favorite Dog Repair Parts

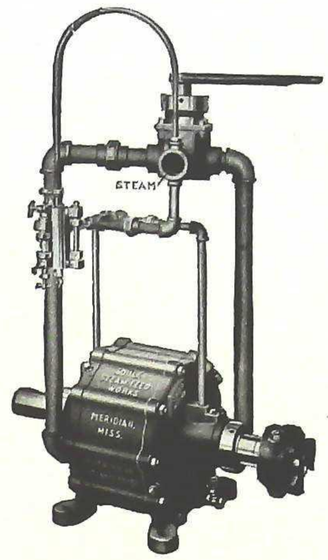


Part No.	Name of Part	Price Each
SFD- 7	Center Strap	$4.75
SFD-15	Screw to Attach Center Strap, 7/16x1 Inch	.05
SFD-16	Main Screw	15.00
SFD-18	Main Screw Crank and Handle	2.60
SFD-20	Main Screw Crank Only	1.45
SFD-21	Main Screw Handle	1.25
SFD-22	Rivet to Attach Screw and Handle, 5/16x2 Inches	.05
SFD-23	Underhook Dog, with Ratchet Attached	6.75
SFD-24	Underhook Dog Only	3.75
SFD-25	Underhook Dog Ratchet Only	2.75
SFD-26	Rivet to Attach Dog and Ratchet, 5/16x1⅜ Inches	.05
SFD-27	Underhook Dog Stop Screw, with Nut, 9/16x1⅜ Inches	.18
SFD-27-A	Underhook Dog Stop Screw Nut	.03
SFD-28	Underhook Dog Half Nut	1.05
SFD-29	Underhook Dog Half Nut Lever	1.05
SFD-32	Underhook Dog Half Nut Lever Catch	.50
SFD-31	Underhook Dog Half Nut Lever Catch Set Screw, ¼x½ Inch	.05
SFD-33	Underhook Dog Half Nut Lever Catch Spring	.35
SFD- 6	Hand Dog Rack	8.00
SFD-34	Hand Dog, Complete	8.00
SFD- 5	Hand Dog Frame	4.50
SFD-35	Hand Dog Point	1.75
SFD-36	Hand Dog Point Stud with Washer, 5/8x1 Inch	.20
SFD-37	Hand Dog Pawl (Semi-Steel)	.75
SFD-38	Hand Dog Pawl (Forged)	2.50
SFD-39	Flat Spring for Pawl	.10
SFD-40	Rivet to Attach Pawl, ¼x1½ Inches	.05
SFD-40-A	Rivet to Attach Spring to Pawl	.03
SFD-41	Spring to Keep Screw Crank Vertical	.35
SFD-42	Clamp Hook to Attach Spring to Main Screw	.75
SFD-42-A	Cap for Clamp Hook	.35
SFD-43	Screw to Attach Spring to Crank	.05
SFD-47	Spring for Crank (Slips into Hook on Main Screw)	.35
SFD-48	Forged Hook on Main Screw	.50
SFD-49	Spring Screw on Crank, No. 14x½ Inch	.05
SFD-44	Stop Bracket on Carriage	.60
SFD-45	Screw to Attach Bracket, ½x3 Inches	.05
SFD-46	Bolts with Washers to Attach Dog to Set Beam, ½x5½ Inches, per Set of 4	.25

When ordering give name of dog, part number and name of part.

Hy-Tech Products

Series C Soule Steam Feeds.



This Steam Feed is a double rotary steam engine of a novel type.

The runner is in effect a plain cylinder mounted upon a shaft and has eight radial slots cut through its periphery in which the pistons work.

The pistons are plain, flat pieces fitted therein. The interior of the case is a modification of an ellipse in form, and the runner is just an easy fit in the smallest diameter of the case. The heads have four ports each, changing from steam to exhaust.

This machine is equipped with a disc type throttle valve which takes up the wear automatically.

There is always one piston between each steam and exhaust port to be acted upon by pressure, and as it is also one-eighth of the circle between the smaller ends of the ports there is always likewise one piston between the ports there, to prevent the steam passing backward, hence no need that the runners make a tight joint with the case. This construction gives a direct and positive rotary impulse to the runner, the same on two opposite points, thus there is no pressure or strain on the journals of the shaft, and only torsional strain to the power imparted on the shaft itself.

Each machine is shipped with all the fixtures needful to go to work, ready for pinion shaft and for main steam and exhaust pipes. These fixtures include, besides the short pipes connected to the machines, a sight-feed lubricator with condenser pipes, spanner wrench, coupling puller, valve handle, and a complete dental coupling, one half clamped and keyed to the shaft of the machine, the other half to be keyed to the pinion shaft.

The loose half of the dental couplings for sizes Nos. 1, 2 and 3 is bored 1⅝ inches, for No. 4 size, 2⅞ inches, and will be so shipped unless otherwise specified in the order.

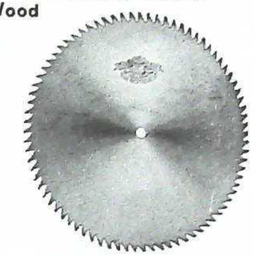
Size No.	Size of Connecting Pipe Inches	Height of Center Inches	Floor Space Inches	Shaft Diameter and Length from Center to Out. of Coupling Inches	Height from Floor to Valve Handle Inches	Extreme Height Inches	Cap. of Mill	Weight Pounds	Price Each
1	1¼	9	11x18	2½x16	44	45	10000	450	$160.00
2	1½	9	13x18	2½x17	46	47	20000	525	200.00
3	2	9	15x18	3 x19	47	48	35000	600	250.00
4	2½	13	19x24	3½x19	49	50	60000	900	400.00

Simonds Solid Tooth Circular Saws

For Wood



Rip



Crosscut

All saws filed and set ready for use.

Diam. In.	Thickness Gauge	Size Hole In.	Price Each	Price Extra for Each Gauge Heavier	Price Beveling New Saws per Gauge
6	18	¾	$3.30	$.07	$.25
8	18	⅞	4.40	.10	.35
10	16	1	5.60	.20	.45
12	15	1	7.00	.30	.55
14	14	1⅛	8.50	.40	.65
16	14	1⅛	10.50	.50	.75
18	13	1¼	12.50	.60	.90
20	13	1⅝	15.00	.75	1.05
22	12	1⅝	17.50	.90	1.20
24	11	1⅜	20.50	1.05	1.35
26	11	1⅜	24.00	1.25	1.55
28	10	1½	28.00	1.50	1.75
30	10	1½	32.00	1.75	1.95
32	10	1⅝	36.50	2.00	2.15
34	9	1⅝	41.00	2.25	2.35
36	9	1⅝	47.00	2.60	2.55
38	9	1⅝	54.00	3.00	2.75
40	9	2	62.00	3.40	2.95
42	8	2	71.00	3.80	3.25
44	8	2	83.00	4.40	3.55
46	8	2	98.00	5.15	3.85
48	8	2	112.00	5.90	4.15
50	7	2	127.00	6.65	4.45
52	7	2	142.00	7.40	4.80
54	7	2	157.00	8.80	5.15
56	7	2	180.00	10.25	5.50
58	7	2	200.00	11.75	5.95
60	6	2	224.00	13.25	6.40
62	6	2	250.00	14.75	6.85
64	6	2	280.00	17.60	7.35
66	6	2	310.00	22.00	7.85
68	5	2	350.00	26.40	8.45
70	5	2	400.00	30.80	9.05
72	5	2	450.00	35.20	9.65
74	5	2	510.00	39.60	10.30
76	5	2	575.00	44.00	11.00
78	5	2	690.00	49.85	11.85
80	5	2	810.00	55.75	12.90
82	5	2	940.00	63.05	14.10
84	5	2	1075.00	70.40	15.40

All saws less than 6 inches in diameter take list of 6-inch saw.

All saws of odd diameters not listed take list of next larger size.

No extra charge for saws one gauge thicker than list.

No extra charge for saws one to three gauges thinner than list; when more than three gauges thinner than list add 5 per cent for each gauge.

Saws 48 inches and under, and 62 inches and over, in diameter, more than two gauges thinner than list; not warranted. Saws 52 inches to 60 inches in diameter thinner than 10 gauge not warranted.

Saws 42 inches or less in diameter beveled one gauge without extra charge; 44 inches or larger beveled two gauges without extra charge.

Saws hollow or concave ground, add for each gauge hollow or concave ground, double the list for beveling.

Saws for cutting bone, horn or ivory, add 50 per cent to the above list. When these saws are hollow or bevel ground, the 50 per cent advance is to apply only on the list of a straight gauge saw, and not on the extras for hollow or bevel grinding

No. 25 Hoe New Improved Chisel Tooth Circular Saws



Designed especially for fast feeds. Good up to 40,000 feet per day.

The manner of locking bit in saw renders the bit itself rigid.

Backs of saws are made higher and strengthen rim of saw, at same time providing better bearing for bits.

The resting place on shoulder of saw for heel of bit is on a receding angle, so that part of strain in cutting is absorbed directly by shoulder of saw instead of falling entirely on head of shank. Head of shank, also, has been considerably enlarged and raised so as to grip bit at a point closer to the shoulder of saw, which further relieves shank of strain.

The throat of the bit is entirely rounded and the point tapered to a keener cutting edge, so that saw will cut easier. Bit is made heavier through throat, which gives it added strength.

One extra set of bits furnished with each saw.

Two extra shanks are supplied with saws up to 40 inches in diameter and three extra shanks with saws 42 inches in diameter and larger.

A wrench is included with each saw.

Diameter Inches	Gauge at Rim	Greatest No. of Teeth that Can be Put in Saw	Price, Each: Complete Saw	Extra Bits	Extra Shanks
10	12	10	$27.00	$.05	$.44
12	11	12	32.00	.05	.44
14	10	14	37.00	.05	.44
16	10	16	43.00	.05	.44
18	10	20	49.00	.05	.44
20	9	22	55.00	.05	.44
22	9	24	61.00	.05	.44
24	9	26	68.00	.05	.44
26	9	28	75.00	.05	.44
28	9	30	82.00	.05	.44
30	9	32	90.00	.05	.44
32	8	34	100 00	.05	.44
34	8	36	110 00	.05	.44
36	8	38	120.00	.05	.44
38	8	42	130.00	.05	.44
40	8	44	140.00	.05	.44
42	8	46	150.00	.05	.44
44	8	50	165 00	.05	.44
46	8	52	180 00	.05	.44
48	8	54	200 00	.05	.44
50	8	56	220.00	.05	.44
52	7	60	245.00	.05	.44
54	7	62	275.00	.05	.44
56	7	64	310.00	.05	.44
58	7	66	340.00	.05	.44
60	7	70	375.00	.05	.44
62	6	74	420.00	.05	.44
64	6	76	470.00	.05	.44
66	6	78	520.00	.05	.44
68	6	80	575.00	.05	.44
70	6	82	630.00	.05	.44
72	6	84	685.00	.05	.44

Hoe Chisel Tooth Saws



No. 2½

No. 2½ is designed for heavy feeds, and used for both hard and soft wood. Excellent for bolting, edger, lath and bench work.

No. 2 pattern chisel tooth saw is no longer manufactured and when ordered No. 2½ pattern is furnished because it is strongest and best adapted for edger, bolter and lath work.

No. 3 is a good all-around size, especially adapted for hard wood and frozen timber.

The gauges shown are standard. However, No. 2½ saws can be made as thin as 13 gauge or as thick as six gauge and No. 3 can be made as thin as 11 gauge or as thick as six gauge. Saws over 48 inches in diameter when made thinner than 10 gauge are not guaranteed.

As many teeth as possible are put in a No. 2½ saw.

A small additional charge is made for saws beveled more than two gauges.

One extra set of bits is supplied with each saw.

Two extra shanks are furnished with saws 10 to 40 inches diameter; three with saws 42 inches and larger.

Diam. In.	Gauge at Rim	Greatest No. of Teeth that can be put in Saw: No. 2½	No. 3	Price, Each: Complete Saws No. 2½	No. 3	Extra Bits	Extra Shanks
10	12	10	..	$27.00	.....	$.05	$.44
12	11	12	..	32.00	.....	.05	.44
14	10	14	..	37.00	.....	.05	.44
16	10	16	12	43.00	$39.00	.05	.44
18	10	20	14	49.00	44.00	.05	.44
20	9	22	16	55.00	50.00	.05	.44
22	9	24	18	61.00	56.00	.05	.44
24	9	26	18	68.00	62.00	.05	.44
26	9	28	20	75.00	68.00	.05	.44
28	9	30	22	82.00	74.00	.05	.44
30	9	32	24	90.00	80.00	.05	.44
32	8	34	26	100.00	88.00	.05	.44
34	8	36	28	110.00	97.00	.05	.44
36	8	38	30	120.00	106.00	.05	.44
38	8	42	32	130.00	115.00	.05	.44
40	8	44	34	140.00	125.00	.05	.44
42	8	46	36	150.00	137.00	.05	.44
44	8	50	38	165.00	150.00	.05	.44
46	8	52	40	180.00	165.00	.05	.44
48	8	54	42	200.00	180.00	.05	.44
50	8	56	44	220.00	200.00	.05	.44
52	7	60	44	245.00	220.00	.05	.44
54	7	62	46	275.00	250.00	.05	.44
56	7	64	48	310.00	280.00	.05	.44
58	7	66	50	340.00	310.00	.05	.44
60	7	70	52	375.00	340.00	.05	.44
62	6	74	54	420.00	380.00	.05	.44
64	6	76	56	470.00	425.00	.05	.44
66	6	78	58	520.00	470.00	.05	.44
68	6	80	60	575.00	520.00	.05	.44
70	6	82	62	630.00	570.00	.05	.44
72	6	84	64	685.00	620.00	.05	.44

Hy-Tech Products

No. 22 Simonds Crescent Ground Crosscut Saws



A lance tooth saw with 4 cutting teeth to each raker tooth. Crescent ground, preventing binding in the kerf, making this saw unusually easy and fast cutting. It is 15-gauge on the tooth edge and 20-gauge on the back in lengths under 6-foot. Length 6-foot and over, 14-gauge on the tooth edge and 19-gauge on the back.

Length Feet	Weight Pounds	Price Each	Length Feet	Weight Pounds	Price Each
5	4⅛	$8.10	6½	6⅞	$12.15
5½	5¾	9.00	7	8	13.80
6	6⅜	10.50	...	...	.....

No. 207 Simonds Bay State Crosscut Saws



No. 207, 14x18 gauge; No. 207A, 14x16 gauge.

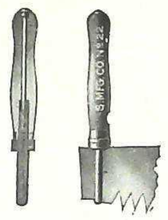
Length Feet	Weight Pounds	Price, Each: No. 207	No. 207A	Length Feet	Weight Pounds	Price, Each: No. 207	No. 207A
4	3¼	$4.45	$4.00	5½	6¼	$6.10	$5.50
4½	4¼	4.95	4.45	6	7½	6.60	5.95
5	5¼	5.55	4.95	...	...	....	.....

No. 216 Simonds Bay State Hollow Back Cross-Cut Saws



Length Feet	Each	Length Feet	Each	Length Feet	Each
4	$2.00	5½	$2.85	7	....
4½	2.30	6	3.10	7½	....
5	2.55	6½	....	8	....

No. 22 Simonds Crosscut Saw Handles

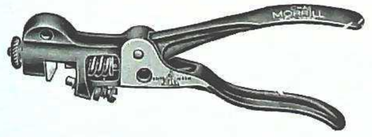


Made of seasoned hardwood with extra steel bolt running down from top of handle to screw into ferrule of heavy steel loop.

Weight per case of 100 pairs, 199 pounds.

Price, No. 22 ..... per 100 pairs $111.40

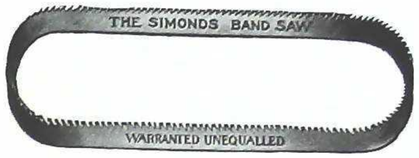
No. 3 Morrill Saw Sets



Has sliding anvil and pointed plunger for crosscut and circular saws, single tooth, 14 to 20 gauge. Packed six in box.

Price, No. 3, Shipping Weight, 16 Lbs. ..... per dozen $33.00

Simonds Wide Band Saws



As this saw is ground with practically no variation in gauge throughout the entire length of the saw, filers and mechanics will readily appreciate that with this accuracy of manufacture the saw can be kept in such condition that the strain will be divided equally throughout the saw, and consequently add life and durability.

Width Inches	Regular Gauge	Price per Foot	Width Inches	Regular Gauge	Price per Foot
2	19 or 20	$1.00	9	15 or 16	$4.30
3	19 or 20	1.40	10	14, 15 or 16	4.80
3½	19	1.60	11	14 or 15	5.40
4	19 or 20	2.00	12	13 or 14	6.00
4½	19 or 20	2.20	13	13 or 14	7.20
5	18 or 19	2.40	14	12, 13 or 14	8.40
6	18 or 19	3.00	15	11 or 12	10.20
7	18 or 19	3.40	16	11 or 12	12.00
8	16, 17 or 18	3.80	..	.....	.....

Saws of odd widths, not listed, take next wider size listed.

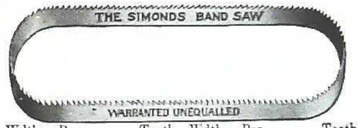
For saws of heavier gauge than listed add 5 per cent to list for each gauge heavier.

No extra charge for saws one or two gauges thinner than list; when more than two gauges thinner, add 5 per cent to list for each gauge.

Double Edge Band Saws.—List price per foot, all widths, advance 10 per cent over list prices of single edge saws as above.

Toothed Blanks.—Same price as finished saws.

Band Saw Blanks.—Bright, of any width, furnished to order, but not warranted.



Simonds Narrow Band Saws

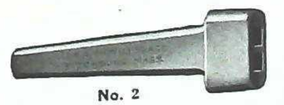
For Wood

Wdth. In.	Per Ft.	Teeth Ga.	per In.	Wdth. In.	Per Ft.	Teeth Ga.	per In.	Wdth. In.	Per Ft.	Teeth Ga.	per In.
⅛	$.13	22	6	⅜	$.14	21	4	¾	$.18	20	2
⅛	.13	25	6	⅜	.14	22	4	¾	.18	20	3
3/16	.13	22	4	⅜	.14	22	5	¾	.18	21	3
3/16	.13	22	5	⅜	.14	25	6	¾	.18	21	4
3/16	.13	22	6	½	.15	21	2	¾	.18	21	5
3/16	.13	25	6	½	.15	21	3	1	.22	19	2
¼	.13	21	4	½	.15	21	4	1	.22	20	3
¼	.13	21	5	½	.15	21	5	1	.22	20	4
¼	.13	22	4	½	.15	22	5	1¼	.26	20	2
¼	.13	22	5	½	.15	25	6	1¼	.26	20	3
¼	.13	22	6	⅝	.16	20	2	1½	.32	20	2
¼	.13	25	6	⅝	.16	21	3	1½	.32	20	3
⅜	.14	21	3	⅝	.16	21	4	...	...	..	.

Simonds Swages



No. 1



No. 2



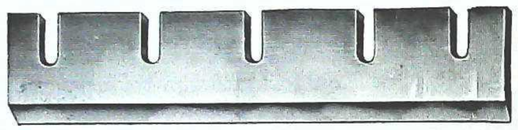
No. 3

Price, No. 1, for Saws 10 Gauge and Heavier ....each $5.50
" " 2 " " 11 " " Lighter .... " 4.50
" " 3 ..... " 3.50
Special, for Wide Band Saws ..... " 4.50

Machine Knives

Planer and Barking Knives with Straight Edges and all Ordinary Straight Knives of Same Finish not Otherwise Provided For

⅜-inch Thick or Less



Width, Inches	Price, per Inch — Length, Inches: Over 11 to 31 Long	Over 31 to 40	Over 40 to 50	Over 50 to 60	Over 60 to 70	Over 70 to 80	Over 80 to 90	Over 90 to 100
4 or Less	$.42	$.48	$.56	$.64	$.78	$.92	$1.06	$1.20
Over 4 to 4½	.48	.56	...	...	...	...	....	....
Over 4½ to 5	.56							
Over 5 to 5½	.64							
Over 5½ to 6	.72							
Over 6 to 6½	.80							
Over 6½ to 7	.90							
Over 7 to 7½	.98							
Over 7½ to 8	1.06							
Over 8 to 8½	1.18							
Over 8½ to 9	1.32							
Over 9 to 9½	1.46							
Over 9½ to 10	1.60							
Over 10 to 10½	1.74							
Over 10½ to 11	1.88							
Over 11 to 11½	2.02							
Over 11½ to 12	2.16							

IMPORTANT.—Knives a fraction over the even inch in length, figure as one-half inch; knives over the half-inch, figure as the full inch; viz., a knife 14⅜ inches long takes the price of a knife 14½ inches; a knife 20⅛ inches long takes the price of a knife 21 inches, etc.

Knives wider or thicker in one part than another, figure by widest and thickest measurement. Measure by longest length, whether cutting edge or back. All knives longer or wider than in this list unless otherwise provided for, figure by special list. Knives with counter-bored slots, add 10 per cent.

Advance for Extra Thickness

Over	⅜ to 7/16	per cent	10
"	7/16 " ½	"	15
"	½ " ⅝	"	20
"	⅝ " ¾	"	25
"	¾ " ⅞	"	30
"	⅞ " 1	"	35
"	1 " 1¼	"	50
"	1¼ " 1½	"	75
"	1½ " 2	"	100

Solid steel planer knives, etc., over 11 inches long, 5/16 inch thick or less, advance 25 per cent; ⅜ inch thick or more, 50 per cent.

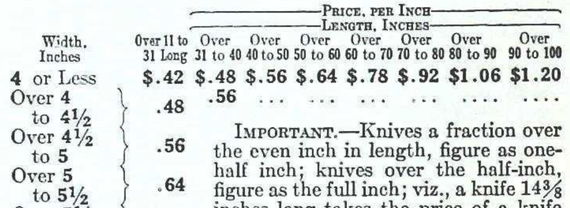
Straight Knives

11 Inches Long or Less, ⅜ Inch Thick or Less

Price, 2 In. Long or Less, 4 In. Wide or Less....each	$2.00
" Over 2 to 4 In. Long, 4 In. Wide or Less. "	2.40
" " 4 " 6 " " 4 " " " " " "	3.00
" " 6 " 11 " " " 4 " " " " " per in.	.48

If over 4 inches wide, increase 1/6 for each additional inch or fraction thereof. Add 50 per cent for knives plated all over one face. Advance for extra thickness. Counterbored slots, add 10 per cent. Beveled ends add 30 cents per knife to list.

Flat Knives



Outside Planer Knife — Inside Planer Knife

All flat knives (⅜ inch thick or less) with irregular edges (not moulding knives) add 50 per cent to list of straight knives. This covers knives not otherwise provided for, with slightly convex, concave, angular or irregular edges, such as stave planer, flat tenoner, chair bottom and all similar knives which can be ground on an ordinary grindstone. Figure by widest part of knife.

Advance for extra thickness. Counterbored slots add 10 per cent. Beveled ends add 30 cents per knife.

Rubber Bands for Band Saw Wheels



Width In.	For Wheels, Diameter Inches	Price Each
1½	20, 26, 32, 36, 38, 40	.....
1¾	20, 26, 32, 36, 38, 40	.....
2	.. .. 32, 36, 38, 40	.....
2¼	.. .. .. 36, 38, 40, 42, 48	.....
2½	.. .. 40, 42, 48	.....

Dixon's Lumber Crayons

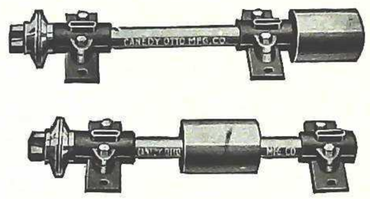
Size, 4½x½ inch. Hexagonal shape.

Packed 1 dozen in a box.



No.	Grade	Color	Per Gross
361	Medium	Black Graphite	$8.00
365	Very Soft	Black Graphite	8.00
365½	Soft	Black Graphite	8.00
492	Regular	Pink	14.40
494	Regular	Carbon Black	14.40
495	Regular	Brown	14.40
496	Regular	Yellow	14.40
497	Regular	Terra Cotta	14.40
520	Regular	Red	14.40
521	Regular	Blue	14.40
521½	Soft	Blue	14.40
522	Regular	Green	14.40
523	Regular	White	14.40

Canedy-Otto Saw Mandrels



The Canedy-Otto Saw Mandrel is extra heavy in design, incorporating high grade cold-rolled shafting, the cast parts being made of iron, the physical properties of which are adapted to this tool.

Bearings are of high grade metal, extra length and are made with hydraulically pressed graphite cones which increases the life of bearing 300 to 400 per cent.

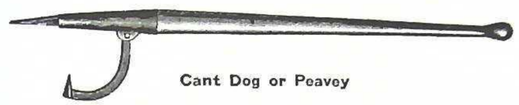
Furnished with pulley on right hand side, when saw is running toward the operator, having left hand thread or with pulley on end.

When ordering specify style desired, pulley on end center or left hand. Always shipped with pulley on right hand side with left hand thread, unless otherwise specified.

No.	Pulley, In. Diam.	Face	Diam. Flange In.	Diam. Shaft In.	Hole in Saw In.	Length Shaft Inches	Ship. Wt. Lbs.	Price Each
0	2	3	2½	⅞	¾	16	14	$3.00
1	2½	3½	3	1 1/16	1	16	22	4.10
2	3	4	3	1 3/16	1⅛	19	30	4.60
3	3½	4½	3½	1 5/16	1¼	21	35	6.70
4	4	5	4½	1 7/16	1 5/16	24	45	7.80
5	4½	5½	4½	1 7/16	1 5/16	26	46	9.25
6	5	6	5	1 7/16	1⅜	28	53	9.75
7	5½	6½	5	1 7/16	1⅜	30	57	10.30
8	6	7	6	1 9/16	1½	32	95	12.35
9	7	8	6	1 11/16	1½	37	113	14.55
10	8	8	6	1¾	1⅝	41	127	16.45
11	9	10	6	2 3/16	2	41	190	24.70

Hy-Tech Products

Lumbermen's Tools



Cant Dog or Peavey

In ordering always give length of handle wanted, as well as the diameter.

2¼-inch Diam. with Handle 3, 3½, 4, 4½, 5, 5½, 6 Feet.
2⅜ " " " " 3, 3½, 4, 4½, 5, 5½, 6 "
2½ " " " " 3, 3½, 4, 4½, 5, 5½ Feet.
2¾ " " " " 4, 4½, 5, 5½ Feet.



Mill Dog or Cant Hook with Crow Foot

Also can be made with hog nose.

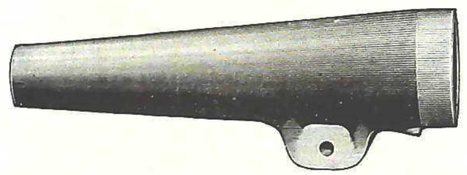
2¼-inch Diameter with Handle 2½, 3, 3½, 4, 4½, 5 Feet.
2⅜ " " " " 2½, 3, 3½, 4, 4½, 5 "
2½ " " " " 2½, 3, 3½, 4, 4½ Feet.



Cant Dog Handle

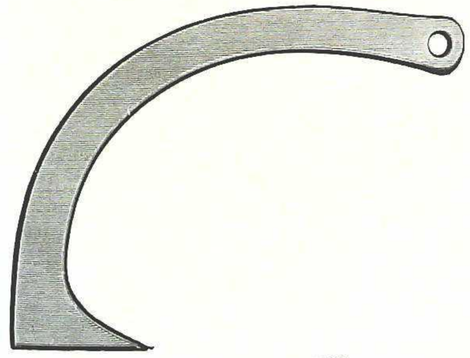
These are made from the best quality rock maple.

2¼-inch Diameter 2½, 3, 3½, 4, 4½, 5, 5½ or 6 Feet.
2⅜ " " 2½, 3, 3½, 4, 4½, 5, 5½ " 6 "
2½ " " 3, 3½, 4, 4½, 5, 5½ Feet.
2¾ " " 4, 4½, 5, 5½ Feet.



Cant Dog Socket

These are made of the best quality malleable iron.



Cant Dog Hook, Flat Bill

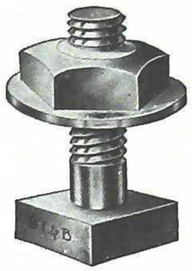
Furnished also with round bill.



Cant Dog Pick

Prices upon application.

Steel Planer Head Bolts, Nuts and Washers



Bolts are furnished with or without nut and washer, as ordered. Square or hexagon head made to order.

Orders for bolts should state width and thickness of head and length under head, diameter of screws and if nuts and washers are wanted, so specify. All V threads of 12 threads to the inch unless otherwise specified.

Special planer, sticker, moulder or shaper bolts can be made to order on receipt of sample with specifications.

Add 6 cents each to price given for planer bolts, case-hardened.

Price, per Hundred, without Nuts or Washers

Diam. Screw ... in.		3/8	½	½	9/16	5/8	¾
Square Head "		1	1	1⅛	1⅛	1⅛	1¼
Thickness Head.. "		¼	5/16	5/16	5/16	⅜	⅜
Length Under Head to Extreme Point Inches	1	$30.00	$34.00	$34.00	$37.50	$37.50	$42.50
	1¼	31.00	35.00	36.00	39.00	39.00	44.00
	1½	32.00	36.00	37.50	40.00	40.00	45.00
	1¾	34.00	37.50	39.00	41.00	41.00	46.00
	2	35.00	40.00	40.00	42.50	42.50	47.50
	2½	37.50	42.50	42.50	44.00	44.00	49.00

Planer Head Bolt Nuts—Case-hardened

Diamter Screw Inches	Short Diameter of Nuts Inches	Thickness of Nut Inches	Price per 100
7/16	1¼	⅜	$24.00
½	1½	⅜	28.00
9/16	1½	⅜	31.00
⅝	1¼	⅜	34.00
11/16	1¼	⅜	37.50
¾	1¼	½	41.00

Planer Head Bolt Washers

Accurately made of cold-drawn bar stock.

Price.....each $.08

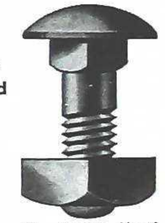
Elevator Bolts



No. 1 Large Countersunk Head

With Finished Points and Manufacturers' Standard Square Nuts

Effective April 1, 1927



No. 2 Oval Head



No. 3 Slotted Key Head



No. 4 Corrugated Head



No. 5 Slotted Button Head

Manufacturers' Standard List—Price, per 100

Length Inches	Diameter, Inches 3/16 and ¼	5/16	⅜	Length Inches	Diameter, Inches 3/16 and ¼	5/16	⅜
¾	$3.30	$4.50	$6.00	2	$4.05	$5.75	$8.00
⅞	3.45	4.75	6.40	2¼	4.20	6.00	8.40
1	3.45	4.75	6.40	2½	4.35	6.25	8.80
1¼	3.60	5.00	6.80	2¾	4.50	6.50	9.20
1½	3.75	5.25	7.20	3	4.65	6.75	9.60
1¾	3.90	5.50	7.60	...	....	....	....

STANDARD PACKAGE QUANTITY.—3/16 and ¼ inch, 100; 5/16, ⅜ and 7/16 inch, 50; ½ inch to 10 inches long, inc., 50; ½ inch longer than 10 inches to 20 inches, inc., 25; ⅝ inch to 5 inches long, inc., 50; ⅝ inch longer than 5 inches to 20 inches, 25; ¾ inch up to 20 inches long, inc., 25.

Less than standard container quantities take 10% higher list.

Machine Bolts

With Manufacturers' Standard Square Heads and Square Nuts

Effective April 1, 1927



Manufacturers' Standard List—Price, per 100

Length Inches	Diameter, Inches: 3/16 and 1/4	5/16	3/8	7/16	1/2	9/16 and 5/8
3/4	$1.40	$2.00	$2.45	$4.15	.....	.....
1	1.45	2.10	2.60	4.35	$5.20	$8.10
1 1/4	1.55	2.20	2.75	4.55	5.40	8.35
1 1/2	1.60	2.30	2.95	4.75	5.65	8.60
2	1.80	2.60	3.25	5.20	6.10	9.10
2 1/2	2.00	2.85	3.60	5.70	6.55	9.60
3	2.15	3.05	3.90	6.10	7.00	10.10
3 1/2	2.35	3.30	4.25	6.55	7.45	10.60
4	3.05	3.55	4.60	7.00	7.90	11.10
4 1/2	3.20	4.25	4.90	7.40	8.35	11.60
5	3.35	4.50	5.55	7.85	8.80	12.10
5 1/2	3.50	4.70	5.85	8.30	9.25	12.60
6	3.65	4.90	6.20	8.75	9.70	13.10
6 1/2	3.80	5.10	6.50	9.20	10.15	13.60
7	4.00	5.35	6.85	9.65	10.60	14.10
7 1/2	4.15	5.55	7.15	10.10	11.05	14.60
8	4.35	5.80	7.50	10.55	11.50	15.10
8 1/2	4.50	6.00	7.80	11.00	11.95	15.60
9	4.70	6.25	8.15	11.45	12.40	16.10
9 1/2	4.85	6.45	8.45	11.95	12.85	16.60
10	5.05	6.70	8.80	12.35	13.30	17.10
11	5.40	7.15	9.50	13.20	14.70	18.10
12	5.75	7.60	10.20	14.05	15.60	19.10
13	6.30	8.25	11.30	15.35	16.50	20.10
14	6.60	8.70	11.95	16.20	17.40	21.10
15	6.95	9.15	12.60	17.15	18.30	22.10
16	7.25	9.60	13.25	18.05	19.20	23.10
17	7.60	10.05	13.90	18.95	20.10	24.10
18	7.90	10.50	14.55	19.85	21.00	25.10
19	8.25	10.95	15.20	20.75	21.90	26.10
20	8.60	11.40	15.85	21.65	22.80	27.10
21	Standard Package Quantity:—3/8 and 1/4",				23.70	28.10
22	100; 5/16, 3/8 and 7/16", 50; 1/2" to 10" long, inc., 50; 1/2"				24.60	29.10
23	longer than 10" to 20", inc., 25; 5/8" to 5" long, inc.,				25.50	30.10
24	50; 5/8" longer than 5" to 20" inc., 25; 3/4" to 20" long,				26.40	31.10
25	inc., 25.				27.30	32.10

Length Inches	Diameter, Inches: 3/4	7/8	1	1 1/8	1 1/4
1 1/2	$10.95	$16.70	$23.25	.....	.....
2	11.60	17.60	24.40	.....	.....
2 1/2	12.25	18.50	25.55	.....	.....
3	12.90	19.40	26.70	$45.90	$54.45
3 1/2	13.55	20.30	27.85	47.20	56.10
4	14.20	21.20	29.00	48.50	57.75
4 1/2	14.85	22.10	30.15	49.80	59.40
5	15.50	23.00	31.30	51.10	61.05
5 1/2	16.15	23.90	32.45	52.40	62.70
6	16.80	24.80	33.60	53.70	64.35
6 1/2	17.45	25.70	34.75	55.00	66.00
7	18.10	26.60	35.90	56.30	67.65
7 1/2	18.75	27.50	37.05	57.60	69.30
8	19.40	28.40	38.20	58.90	70.95
8 1/2	20.05	29.30	39.35	60.20	72.60
9	20.70	30.20	40.50	61.50	74.25
9 1/2	21.35	31.10	41.65	62.80	75.90
10	22.00	32.00	42.80	64.10	77.55
11	23.30	33.80	45.10	66.70	80.85
12	24.60	35.60	47.40	69.30	84.15
13	25.90	37.40	49.70	71.90	87.45
14	27.20	39.20	52.00	74.50	90.75
15	28.50	41.00	54.30	77.10	94.05
16	29.80	42.80	56.60	79.70	97.35
17	31.10	44.60	58.90	82.30	100.65
18	32.40	46.40	61.20	84.90	103.95
19	33.70	48.20	63.50	87.50	107.25
20	35.00	50.00	65.80	90.10	110.55
21	36.30	51.80	68.10	92.70	113.85
22	37.60	53.60	70.40	95.30	117.15
23	38.90	55.40	72.70	97.90	120.45
24	40.20	57.20	75.00	100.50	123.75
25	41.50	59.00	77.30	103.10	127.05
26	42.80	60.80	79.60	105.70	130.35
27	44.10	62.60	81.90	108.30	133.65
28	45.40	64.40	84.20	110.90	136.95
29	46.70	66.20	86.50	113.50	140.25
30	48.00	68.00	88.80	116.10	143.55

Less than standard container quantities take 10% higher list. Intermediate lengths take next higher list. Bolts with rolled threads up to and including 3/8x6" will take 10% lower lists.

Bolt Extras

Effective April 1, 1927

Special Heads and Styles—Gross Extras to Be Added to Machine, Blank and Tap Bolt Lists

Add, per 100 Extra—Diameter, Inches: 3/16, 1/4	5/16	3/8	7/16	1/2	9/16, 5/8	3/4	7/8	1	1 1/8	1 1/4
Manufacturers' Standard Hexagon Heads										
$.15	$.20	$.30	$.45	$.65	$1.00	$1.40	$2.20	$3.00	$5.00	$7.00
U. S. Standard Square Heads										
.33	.45	.65	.95	1.40	2.10	2.60	3.60	5.20	7.70	10.75
U. S. Standard Hexagon Heads										
.30	.40	.60	.90	1.30	2.00	2.50	3.50	5.00	7.50	10.50
Manufacturers' Standard T, Askew and Eccentric Heads										
.70	1.00	1.40	2.00	3.00	4.50	6.50	10.00	15.00	25.00	35.00
Manufacturers' Standard Button and Round Countersunk Heads and Round Neck for Lots of Less Than 5000 Pieces										
.35	.50	.70	1.00	1.50	2.25	3.25	5.00	7.50	12.50	17.50
Joint Bolts with Square Nuts										
.05	.10	.15	.20	.30	.50	.70	1.10	1.50	2.50	3.50
Joint Bolts with Oblong Nuts										
.15	.30	.45	.60	.90	1.50	2.10	3.30	4.50	7.50	10.50
Boiler or Fitting-Up Bolts, Swelled Neck, Half Cone Point Recessed Square Nuts										
...	1.25	1.60	2.20	3.00	4.70	6.70	9.40	14.00	22.00	32.00
Boiler or Fitting-Up Bolts, Plain Neck Half Cone Point U. S. Standard Square Nuts										
...	.60	.80	1.10	1.50	2.35	3.35	4.70	7.00	11.00	16.00
Button or Countersunk Head, Round Neck with One Sawed Slot Across Head										
.50	.70	1.00	1.50	2.25	3.25	5.00	7.50	12.50	17.50	25.00
Square or Hexagon Head Machine with One Sawed Slot Across Head										
.70	1.00	1.40	2.00	3.00	4.50	6.50	10.00	15.00	25.00	35.00

For Bolts with Nuts Other Than Manufacturers' Standard Common Square—Gross Extras to Be Added to Machine, Carriage, Plow, Step, Elevator and Hanger Bolt Lists

3/16, 1/4	5/16	3/8	7/16	1/2	9/16, 5/8	3/4	7/8	1	1 1/8	1 1/4
Manufacturers' Standard Common Hexagon Nuts										
$.10	$.20	$.30	$.45	$.50	$.90	$1.30	$2.00	$2.90	$3.80	$5.00
Manufacturers' Standard Cold Pressed Hexagon Nuts										
.10	.20	.30	.45	.50	.95	1.65	3.25	4.50	5.25	6.50
U. S. Standard Hot Pressed Square Nuts										
.25	.40	.65	.80	.95	1.00	1.30	2.10	2.90	3.10	4.00
U. S. Standard Hot Pressed Hexagon Nuts										
.30	.50	.80	1.00	1.10	1.20	1.70	2.75	3.80	$4.00	$5.30
U. S. Standard Cold Pressed Square Nuts										
.25	.40	.65	.80	1.00	1.30	2.10	3.30	4.60	4.70	7.60
U. S. Standard Cold Pressed Hexagon Nuts										
.35	.50	.80	1.00	1.30	1.65	2.60	4.10	5.80	6.00	9.30
U. S. Standard Semi-Finished Hexagon Nuts										
.50	.70	1.00	1.25	1.60	2.20	3.30	4.80	6.70	7.10	10.70
Gross Amount to Be Deducted for Bolts without Nuts										
.25	.35	.40	.70	.95	1.90	2.40	3.90	5.30	8.75	11.60

Bolts 1 1/8 and 1 1/4-inch diameter are fitted with U. S. Standard square nuts as standard.

Maximum Lengths of Thread Furnished without Extra Charges

Carriage, Machine and Plow Bolts

Effective April 1, 1927

Length Bolt, Inches	Diameter, Inches: 3/16, 1/4	5/16	3/8	7/16	1/2	9/16, 5/8	3/4	7/8	1	1 1/8	1 1/4
3/4	3/8	3/8	7/16	1/2	...	...	...	...	...	...	...
7/8 to 1 1/2	3/4	3/4	3/4	13/16	1	1 1/8	1 1/8	...	...	...	...
1 3/4 to 2 3/4	13/16	13/16	13/16	7/8	1	1 1/4	1 1/2	1 1/2	1 1/2	1 3/4	2
3 to 4	13/16	13/16	13/16	1	1 1/8	1 1/2	1 1/2	1 3/4	2	2 1/4	2 1/4
4 1/4 to 6 1/2	1 1/8	1 1/8	1 1/8	1 1/8	1 1/4	1 5/8	1 3/4	1 7/8	2 1/4	2 1/4	2 1/4
6 3/4 to 8	1 1/8	1 1/8	1 1/4	1 1/4	1 3/8	1 5/8	1 7/8	2	2 1/4	2 1/2	2 1/2
8 1/4 to 10 1/2	1 1/8	1 1/8	1 1/4	1 3/8	1 3/8	1 3/4	2	2	2 1/2	2 1/2	2 1/2
10 3/4 to 20	1 1/8	1 1/8	1 1/4	1 3/8	1 1/2	2	2 1/8	2 3/8	2 3/4	2 3/4	2 3/4
20 1/4 to 30	....	....	....	....	1 1/2	2	2 1/4	2 1/2	2 3/4	2 3/4	2 3/4

Gross Extras to Be Added to Lists

3/16, 1/4	5/16	3/8	7/16	1/2	9/16, 5/8	3/4	7/8	1	1 1/8	1 1/4
For Each Additional 1/4-Inch of Thread										
$.10	$.10	$.10	$.15	$.15	$.20	$.30	$.35	$.40	$.45	$.50
For Machine, Carriage and Plow Bolts with Threads Other Than U. S. Std., such as S. A. E., V, Acme, etc.										
.20	.30	.40	.55	.75	1.05	1.40	2.10	3.00	4.25	5.75
For Left Hand Thread										
.20	.30	.40	.55	.75	1.05	1.40	2.10	3.00	4.25	5.75

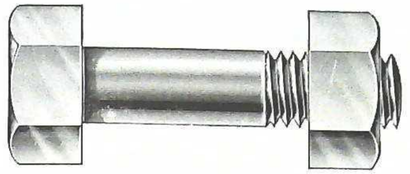
All threads will be cut to National Screw Thread Commission's No. 2 table.

Hy-Tech Products

Brass Machine Bolts

With Hexagon Head and Nut

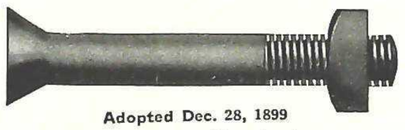
Effective September 1, 1927



Price, per 100

Length under Head Inches	Diameter Bolt, Inches: 1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
1	$12.50	$14.50	$16.25	.....	.....	.....	.....	.....	.....
1 1/2	12.50	14.50	16.65	....	$21.90	$31.50	.....	.....	.....
1 3/4	12.75	14.90	17.05	....	22.50	32.90	.....	.....	.....
2	13.00	15.30	17.45	$20.50	23.10	33.80	$49.00	$75.00	$109.00
2 1/4	13.25	15.70	17.85	21.00	23.70	34.80	.....	.....	.....
2 1/2	13.50	16.10	18.25	21.50	24.30	35.80	51.85	79.00	114.10
2 3/4	13.75	16.50	18.65	22.00	24.90	36.80	.....	.....	.....
3	14.00	16.90	19.05	22.50	25.50	37.80	54.70	83.00	119.20
3 1/4	14.25	17.30	19.45	23.00	26.10	38.80	.....	.....	.....
3 1/2	14.50	17.70	19.85	23.50	26.70	39.80	57.55	87.00	124.30
3 3/4	14.75	18.10	20.25	24.00	27.30	40.80	.....	.....	.....
4	15.00	18.50	20.65	24.50	27.90	41.80	60.40	91.00	130.00
4 1/2	15.50	19.30	21.45	25.50	29.10	43.80	63.25	95.00	136.00
5	16.00	20.10	22.25	26.50	30.30	45.80	66.10	99.00	142.00
5 1/2	16.50	20.90	23.05	27.50	31.50	47.80	68.95	103.00	148.00
6	17.00	21.70	23.85	28.50	32.70	49.80	71.80	107.00	154.00
7	18.00	23.30	25.45	30.50	35.10	53.80	77.50	115.00	166.00
8	19.00	24.90	27.05	32.50	37.50	57.80	83.20	123.00	178.00
9	20.00	26.50	28.65	34.50	39.90	61.80	88.90	131.00	190.00
10	21.00	28.10	30.25	36.50	42.30	65.80	94.60	139.00	202.00
11	22.00	29.70	31.85	38.50	44.70	69.80	100.30	147.00	214.00
12	23.00	31.30	33.45	40.50	47.10	73.80	106.00	155.00	226.00

Common Tire Bolts



Adopted Dec. 28, 1899

Price, per Hundred

Length Inches	Diameter, Inches: 1/8	3/16	1/4	5/16	3/8
1	$.60	$.60	$.95	$1.40	$2.20
1 1/4	.60	.60	.95	1.40	2.20
1 1/2	.60	.60	.95	1.40	2.20
1 3/4	.65	.65	1.00	1.40	2.20
2	.70	.70	1.05	1.47	2.20
2 1/4	.75	.75	1.10	1.54	2.30
2 1/2	.80	.80	1.15	1.61	2.40
2 3/4	.85	.85	1.20	1.68	2.50
3	.90	.90	1.25	1.75	2.60
3 1/4	.95	.95	1.30	1.82	2.70
3 1/2	1.00	1.00	1.35	1.89	2.80
3 3/4	1.05	1.05	1.40	1.96	2.90
4	1.10	1.10	1.45	2.03	3.00
4 1/4	1.15	1.15	1.50	2.10	3.10
4 1/2	1.20	1.20	1.55	2.17	3.20
4 3/4	1.25	1.25	1.60	2.24	3.30
5	1.30	1.30	1.65	2.31	3.40
5 1/4	1.35	1.35	1.70	2.38	3.50
5 1/2	1.40	1.40	1.75	2.45	3.60
5 3/4	1.45	1.45	1.80	2.52	3.70
6	1.50	1.50	1.85	2.59	3.80

Hexagon nuts, 15 per cent extra.

For larger diameters, use carriage bolt list.

Common Carriage Bolts

Effective April 1, 1927



Manufacturers' Standard List

With Manufacturers' Standard Square Nuts

Price, per 100

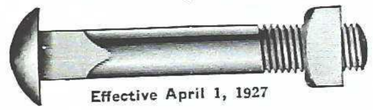
Length Inches	Diameter, Inches: 3/16, 1/4	5/16	3/8	7/16	1/2	9/16, 5/8	3/4
3/4	$1.35	$1.90	$2.30	.....	.....	.....	.....
1	1.40	2.00	2.45	$3.40	$4.80	.....	.....
1 1/4	1.45	2.10	2.60	3.60	5.00	$8.35	.....
1 1/2	1.50	2.20	2.80	3.80	5.25	8.60	$12.45
2	1.65	2.40	3.10	4.25	5.70	9.10	13.10
2 1/2	1.85	2.65	3.45	4.75	6.15	9.60	13.75
3	2.00	2.85	3.75	5.15	6.60	10.10	14.40
3 1/2	2.20	3.10	4.10	5.60	7.05	10.60	15.05
4	2.90	3.35	4.45	6.05	7.50	11.10	15.70
4 1/2	3.05	4.05	4.75	6.45	7.95	11.60	16.35
5	3.20	4.30	5.35	6.90	8.40	12.10	17.00
5 1/2	3.35	4.50	5.65	7.35	8.85	12.60	17.65
6	3.50	4.70	6.00	7.80	9.30	13.10	18.30
6 1/2	3.65	4.90	6.30	8.25	9.75	13.60	18.95
7	3.85	5.15	6.65	8.70	10.20	14.10	19.60
7 1/2	4.00	5.35	6.95	9.15	10.65	14.60	20.25
8	4.20	5.60	7.30	9.60	11.10	15.10	20.90
8 1/2	4.35	5.80	7.60	10.05	12.05	15.60	21.50
9	4.55	6.05	7.95	10.50	12.50	16.10	22.20
9 1/2	4.70	6.25	8.25	10.95	12.95	16.60	22.85
10	4.90	6.50	8.60	11.40	13.40	17.10	23.50
11	5.25	6.95	9.30	12.25	14.30	18.10	24.80
12	5.60	7.40	10.00	13.10	15.20	19.10	26.10
13	6.15	8.05	11.10	14.40	16.10	20.10	27.40
14	6.45	8.50	11.75	15.25	17.00	21.10	28.70
15	6.80	8.95	12.40	16.20	17.90	22.10	30.00
16	7.10	9.40	13.05	17.10	18.80	23.10	31.30
17	7.45	9.85	13.70	18.00	19.70	24.10	32.60
18	7.75	10.30	14.35	18.90	20.60	25.10	33.90
19	8.10	10.75	15.00	19.80	21.50	26.10	35.20
20	8.45	11.20	15.65	20.70	22.40	27.10	36.50

Intermediate lengths take next higher list. Bolts with rolled threads up to and including 3/4x6" will take 10% lower lists. Larger diameters and longer lengths than listed take machine bolt lists.

Less than standard container quantities take 10% higher list.

Number of Bolts per Package or Carton:—3/4 and 1/4-inch diameters, all lengths, 100; 5/16, 3/8 and 7/16-inch diameters, all lengths, 50; 1/2-inch diameter, to 8 inches long inc., 50; 1/2-inch diameter, longer than 8 to 20 inches inc., 25; 5/8-inch diameter, to 5 inches long inc., 50; 5/8-inch diameter, longer than 5 to 20 inches inc., 25; 3/4-inch diameter, all lengths up to 20 inches inc., 25.

Turned Head Eagle Carriage Bolts



Effective April 1, 1927

Manufacturers' Standard List—Price, per 100

Length Inches	Diameter, Inches: 3/16 and 1/4	5/16	3/8	7/16	1/2	9/16 and 5/8	3/4
1	$3.00	$4.00	$6.00	$9.00	$11.00	.....	.....
1 1/4	3.15	4.20	6.25	9.30	11.40	.....	.....
1 1/2	3.30	4.40	6.50	9.60	11.80	.....	.....
1 3/4	3.45	4.60	6.75	9.90	12.20	.....	.....
2	3.60	4.80	7.00	10.20	12.60	$18.50	.....
2 1/4	3.75	5.00	7.25	10.50	13.00	19.20	.....
2 1/2	3.90	5.20	7.50	10.80	13.40	19.90	.....
2 3/4	4.05	5.40	7.75	11.10	13.80	20.60	.....
3	4.20	5.60	8.00	11.40	14.20	21.30	$23.50
3 1/4	4.35	5.80	8.25	11.70	14.60	22.00	24.50
3 1/2	4.50	6.00	8.50	12.00	15.00	22.70	25.50
3 3/4	4.65	6.20	8.75	12.30	15.40	23.40	26.50
4	4.80	6.40	9.00	12.60	15.80	24.10	27.50
4 1/4	4.95	6.60	9.25	12.90	16.20	24.80	28.50
4 1/2	5.10	6.80	9.50	13.20	16.60	25.50	29.50
4 3/4	5.25	7.00	9.75	13.50	17.00	26.20	30.50
5	5.40	7.20	10.00	13.80	17.40	26.90	31.50
5 1/2	5.70	7.60	10.50	14.40	18.20	28.30	33.50
6	6.00	8.00	11.00	15.00	19.00	29.70	35.50
6 1/2	....	8.40	11.50	15.60	19.80	31.10	37.50
7	....	8.80	12.00	16.20	20.60	32.50	39.50
7 1/2	....	9.20	12.50	16.80	21.40	33.90	41.50
8	....	9.60	13.00	17.40	22.20	35.30	43.50
8 1/2	....	10.00	13.50	18.00	23.00	36.70	45.50
9	....	10.40	14.00	18.60	23.80	38.10	47.50
9 1/2	....	.....	14.50	19.20	24.60	39.50	49.50
10	....	.....	15.00	19.80	25.40	40.90	51.50
10 1/2	....	.....	.....	20.40	26.20	42.30	53.50
11	....	.....	.....	21.00	27.00	43.70	55.50
11 1/2	....	.....	.....	21.60	27.80	45.10	57.50
12	....	.....	.....	22.20	28.60	46.50	59.50

Less than standard container quantities, 10% higher list.

Number of Bolts per Package or Carton.—3/8 and 1/4-inch diameters, all lengths, 100; 5/16, 3/8 and 7/16-inch diameters, all lengths, 50; 1/2-inch diameter, to 8 inches long inc., 50; 1/2-inch diameter, longer than 8 to 20 inches inc., 25; 5/8-inch diameter, to 5 inches long inc., 50; 5/8-inch diameter, longer than 5 to 20 inches inc., 25; 3/4-inch diameter, all lengths up to 20 inches inc., 25.

Coach and Lag Bolts

With Manufacturers' Standard Square Heads and Cone or Gimlet Points



Effective April 1, 1927
Manufacturers' Standard List—Price, per 100

Length Inches	Diameter, Inches: ¼ and 5/16	3/8	7/16	½	5/8	¾	7/8	1
1	$2.35	$2.85	$4.25	$5.25	....	....	....	....
1½	2.15	2.60	3.90	4.85	$7.95	$12.50	....	....
2	2.35	2.85	3.55	4.45	7.40	11.75	$18.60	$28.40
2½	2.55	3.10	3.90	4.85	6.85	11.00	17.60	27.10
3	2.80	3.40	4.30	5.30	7.50	11.90	16.80	26.05
3½	3.05	3.70	4.70	5.75	8.15	12.80	18.00	25.00
4	3.30	4.00	5.10	6.20	8.80	13.70	19.20	26.55
4½	3.55	4.30	5.50	6.65	9.45	14.60	20.40	28.10
5	3.80	4.65	5.90	7.10	10.10	15.50	21.60	29.65
5½	4.05	5.00	6.30	7.55	10.75	16.40	22.80	31.20
6	4.35	5.35	6.70	8.00	11.40	17.30	24.00	32.75
6½	4.65	5.70	7.10	8.45	12.05	18.20	25.20	34.30
7	4.95	6.05	7.50	8.90	12.70	19.10	26.40	35.85
7½	5.25	6.40	7.90	9.35	13.35	20.00	27.60	37.40
8	5.55	6.75	8.30	9.80	14.00	20.90	28.80	38.95
9	6.15	7.45	9.10	10.70	15.20	22.05	31.00	41.80
10	6.75	8.15	9.90	11.60	16.40	24.40	33.20	44.65
11	....	8.90	10.80	12.50	17.70	26.25	35.50	47.65
12	....	9.65	11.70	13.60	19.00	28.10	37.90	50.75
13	Standard Package Quantity.—¼				20.30	29.95	40.50	54.25
14	and 5/16", 100; 3/8, 7/16, ½ and 5/8" up				21.60	31.85	43.10	57.75
15	to 6" inc., 50; 5/8" longer than 6", ¾, 7/8,				22.90	33.75	45.75	61.35
16	and 1" up to 10" inc., 25; 1" longer than 10", 10.				24.20	35.65	48.40	64.95

Less than standard container quantities take 10% higher list. Intermediate lengths take next higher list.

Add for Skein Bolts, per 100

.... $.50 $.70 $1.00 $1.50 $2.25 $3.25 $5.00 $7.00

Add for Mfr's. Standard Hexagon Head, per 100

.... $.20 $.30 $.45 $.65 $1.00 $1.40 $2.20 $3.00

Add for U.S. Standard Hexagon Head, per 100

.... $.40 $.60 $.90 $1.30 $2.00 $2.50 $3.50 $5.00

Hanger Bolts

Cut Thread with Manufacturers' Standard Square Nuts, Gimlet Points

Effective April 1, 1927

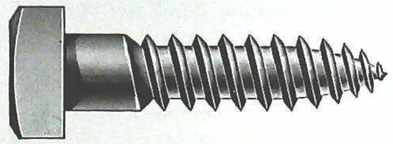


Manufacturers' Standard List—Price, per 100

Length Inches	Diameter, Inches: ¼	5/16	3/8	7/16	½	5/8	¾	7/8	1
2	$3.00	$3.40	$4.25	$5.20	$6.50	$8.70	....	....	....
2½	3.15	3.60	4.55	5.60	7.00	9.35	$14.50	....	....
3	3.30	3.80	4.85	6.00	7.50	10.00	15.35	....	....
3½	3.45	4.00	5.15	6.40	8.00	10.65	16.20	$25.00	....
4	3.60	4.20	5.45	6.80	8.50	11.30	17.05	26.30	....
4½	3.75	4.40	5.75	7.20	9.00	11.95	17.90	27.60	....
5	3.90	4.60	6.05	7.60	9.50	12.60	18.75	28.90	$38.00
5½	4.05	4.80	6.35	8.00	10.00	13.25	19.60	30.20	39.90
6	4.20	5.00	6.65	8.40	10.50	13.90	20.45	31.50	41.80
6½	....	....	6.95	8.80	11.00	14.55	21.30	32.80	43.70
7	....	....	7.25	9.20	11.50	15.20	22.15	34.10	45.60
7½	....	....	7.85	9.60	12.00	15.85	23.00	35.40	47.50
8	....	....	....	10.00	12.50	16.50	23.85	36.70	49.40
9	....	....	....	10.80	13.50	17.80	25.55	39.30	53.20
10	....	....	....	.....	14.50	19.10	27.25	41.90	57.00
11	....	....	....	.....	.....	20.40	28.95	44.50	60.80
12	....	....	....	.....	.....	21.70	30.65	47.10	64.60

Intermediate lengths take next higher list.

Standard Brass Coach Screws



Price, per 100

Length Under Head Inches	Diameter of Screw, Inches: ¼	5/16	3/8	7/16	½	5/8	¾
1½	$11.00	$12.00	$12.90	.....	.....	.....	.....
2	11.50	12.50	13.25	$16.20	$17.75	$26.00	$38.50
2½	12.00	13.15	14.20	17.05	18.85	28.00	40.75
3	12.50	13.80	15.00	17.90	20.00	30.00	43.00
3½	13.00	14.45	15.80	18.75	21.20	32.00	45.85
4	13.50	15.10	16.60	19.60	22.40	34.00	48.70
4½	14.00	15.75	17.40	20.50	23.60	36.00	51.55
5	14.50	16.40	18.20	21.50	24.80	38.00	54.40
5½	15.00	17.05	19.00	22.50	26.10	40.00	57.25
6	15.50	17.70	19.80	23.50	27.40	42.00	60.10
7	16.50	19.00	21.40	25.50	30.00	46.00	65.85
8	17.50	20.30	23.00	27.50	32.60	50.00	71.55
9	18.50	21.60	24.60	29.50	35.20	54.00	77.25
10	19.50	22.90	26.20	31.50	37.80	58.00	82.95
11	20.50	24.20	27.80	33.50	40.40	62.00	88.65
12	21.50	25.50	29.40	35.50	43.00	66.00	94.35

Bronze Lag Screws



Per 100

Length Under Head	Diameter, Inches: ¼	5/16	3/8	7/16	½	5/8	¾
1½	$11.00	$12.00	$12.90	.....	.....	.....	.....
2	11.50	12.50	13.25	$16.20	$17.75	.....	.....
2½	12.00	13.15	14.20	17.05	18.85	.....	.....
3	12.50	13.80	15.00	17.90	20.00	$30.00	.....
3½	13.00	14.45	15.80	18.75	21.20	32.00	.....
4	13.50	15.10	16.60	19.60	22.40	34.00	$48.70
4½	.....	.....	17.40	20.50	23.60	.....	.....
5	14.50	16.40	18.20	21.50	24.80	38.00	54.40
6	15.50	17.70	19.80	23.50	27.40	42.00	60.10
7	.....	.....	.....	.....	30.00	46.00	65.85
8	.....	.....	.....	.....	32.60	50.00	71.55
9	.....	.....	.....	.....	.....	54.00	77.25
10	.....	.....	.....	.....	.....	58.00	82.95

Bolt Ends

Fitted with Square Nuts



Dimensions, Inches: Diam.	Length	Length Thread	Weight Pounds per 100	Price per Pound	Dimensions, Inches: Diam.	Length	Length Thread	Weight Pounds per 100	Price per Pound
5/16	6	1	15	$.20	1⅛	13	4½	420	$.10
3/8	7	1¼	22	.18	1¼	14	5	550	.11
7/16	7	1½	31	.16	1⅜	15	5½	720	.11
½	8	2½	45	.14	1½	16	6	940	.11
5/8	9	3	90	.12	1⅝	17	6½	1165	.12
¾	10	3½	140	.10	1¾	18	7	1405	.12
⅞	11	3½	212	.10	1⅞	19	7½	1800	.12
1	12	4	310	.10	2	20	8	2045	.12

The following extras are understood as a part of this list:

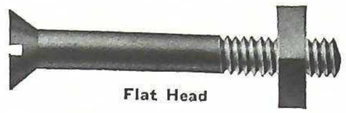
With hexagon nuts, 10 per cent extra.

Bolt ends ordered longer than above standard lengths take above list.

Shorter lengths take machine bolt list.

Hy-Tech Products

Stove Bolts



Flat Head



Round Head

Price per 100—Manufacturers' Standard List of Nov. 1, 1923

Length Inches	Diameter, Inches: 1/8, 5/32	3/16	7/32, ¼	9/32, 5/16	3/8	½
3/8	$.85	$.85	....	....	....	....
½	.85	.85	$1.20	....	....	....
5/8	.85	.85	1.20	....	....	....
¾	.85	.85	1.20	$1.75	$2.65	....
⅞	.90	.90	1.25	1.80	2.75	....
1	.90	.90	1.30	1.85	2.85	$9.50
1⅛	.95	.95	1.35	1.90	2.95	9.50
1¼	1.00	1.00	1.40	1.95	3.05	9.50
1⅜	1.05	1.05	1.45	2.00	3.15	9.50
1½	1.10	1.10	1.50	2.05	3.25	9.50
1¾	1.20	1.20	1.60	2.25	3.45	9.80
2	1.30	1.30	1.70	2.45	3.85	10.10
2¼	....	1.45	1.85	2.60	4.05	10.35
2½	....	1.60	2.00	2.75	4.25	10.65
2¾	....	1.70	2.10	2.90	4.45	10.90
3	....	1.80	2.20	3.05	4.65	11.20
3½	....	2.00	2.40	3.40	5.15	.....
4	....	2.20	2.70	3.70	5.65	.....
4½	....	2.40	3.00	4.00	6.15	.....
5	....	2.60	3.30	4.40	6.65	.....
5½	....	2.80	3.60	4.80	7.15	.....
6	....	3.05	3.90	5.20	7.65	.....

Gross Amounts to Be Deducted from Stove Bolt List for Stove Bolts without Any Nuts

Diameters, Inches: 1/8, 5/32	3/16	7/32, ¼	9/32, 5/16	3/8	7/16	½
$.10	$.15	$.20	$.25	$.30	$.50	$.65

Gross Extras to Be Added to Stove Bolt List for Bolts Fitted with Hexagon Nut

Diameters, Inches: 1/8, 5/32	3/16	7/32, ¼	5/16	3/8	7/16, ½
$.15	$.15	$.20	$.40	$.55	$.90

Standard Length of Thread on Stove Bolts

¼-Inch and Smaller Diameters, 1¾-Inch and Shorter.....Rolled to Head

5/32 and ⅛-Inch Diameters, Longer than 1¾-Inch.....1 Inch of Thread

¼, 7/32 and 3/16-Inch Diameters, Longer than 1¾-Inch.....1½ Inches of Thread

½ and 5/16-Inch Diameters, 1½-Inch and Shorter.....Rolled to Head

Longer Lengths.....1½ Inches of Thread

Gross Extras to Be Added to Stove Bolt List for Threads Longer than Standard

Length, Inches	Diameters, Inches: 1/8, 5/32	7/32, 3/16, ¼	5/16, 3/8	7/16, ½
Longer than 1½–3 Inches...	$.10	$.15	$.20	$.25
Longer than 3 –4 Inches...	....	.20	.25	.30
Longer than 4 –5 Inches...	....	.50	.55	.60
Longer than 5 –6 Inches...	....	1.00	1.25	1.50

Steel Studs



Effective February 1, 1924

Price, per 100

Oval of Point, in Addition to Listed Length	Diameter.....inches / Threads to Inch.....	3/8 / 16	7/16 / 14	½ / 13	9/16 / 12	5/8 / 11
	1¼	$5.40	$6.50	$7.05	$8.20	.....
	1½	5.60	6.75	7.40	8.50	$10.10
	1¾	5.85	7.00	7.70	8.80	10.40
	2	6.10	7.20	8.05	9.15	10.75
	2¼	6.35	7.35	8.35	9.45	11.05
	2½	6.60	7.70	8.65	9.80	11.40
	2¾	6.80	7.95	9.00	10.10	11.75
	3	7.05	8.20	9.30	10.40	12.05
	3¼	....	8.40	9.65	10.75	12.40
	3½	....	8.65	9.95	11.05	12.75
	3¾	....	8.90	10.25	11.40	13.05
	4	....	9.25	10.60	11.70	13.40
	4¼	....	....	10.75	11.85	13.65
	4½	....	....	10.90	12.00	13.90
	4¾	....	....	11.20	12.20	14.15
	5	....	....	11.55	12.35	14.40
	5¼	....	....	.....	12.50	14.60
	5½	....	....	.....	.....	14.85
	5¾	....	....	.....	.....	15.10
	6	....	....	.....	.....	15.35

Oval of Point, in Addition to Listed Length	Diameter..... inches / Threads to Inch.....	¾ / 10	⅞ / 9	1 / 8	1⅛ / 7	1¼ / 7
	2	$15.40	.....	.....	.....	.....
	2¼	15.95	.....	.....	.....	.....
	2½	16.45	$24.00	.....	.....	.....
	2¾	17.00	25.00	.....	.....	.....
	3	17.50	26.00	$34.00	$43.20	.....
	3¼	18.05	27.00	35.50	45.20	.....
	3½	18.60	28.00	37.00	47.20	$62.15
	3¾	19.10	29.00	38.50	49.25	64.40
	4	19.60	30.00	40.00	51.25	66.75
	4¼	20.05	30.80	41.00	52.80	68.40
	4½	20.40	31.50	42.00	53.40	70.20
	4¾	20.85	32.60	43.00	55.90	72.85
	5	21.20	33.00	44.00	57.40	73.60
	5¼	21.70	33.80	45.00	58.90	75.35
	5½	22.00	34.50	46.00	60.50	77.20
	5¾	22.45	35.30	47.00	62.00	78.75
	6	22.75	36.00	48.00	63.65	80.50

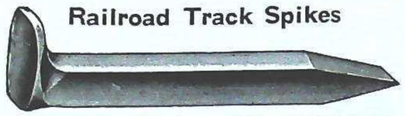
Length of Threads on Regular Studs

Oval of Point, in Addition to Listed Length	Diam. / Length	3/8 N	3/8 T	7/16 N	7/16 T	½ N	½ T	5/8 N	5/8 T	¾ N	¾ T	⅞ N	⅞ T	1 N	1 T
	1	1½	1½	1½	1½	..	..	..	..	..	..	..	..	..	..
	1¼	1½	1½	1½	1½	..	..	1½	1½	..	..	..	..	..	..
	1½	1½	1½	1½	1½	..	..	1½	1½	..	..	..	..	..	..
	1¾	1½	1½	1½	1½	..	..	1½	1½	1½	1½	..	..	..	..
	2	1½	1½	1½	1½	..	..	1½	1½	1½	1½	1½	1½	..	..
	2¼	1½	1½	1½	1½	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	2½	1½	1½	1½	1½	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	2¾	1½	1½	1½	1½	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	3	1½	1½	1½	1½	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	3¼	..	..	1½	1½	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	3½	..	..	1½	1½	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	3¾	..	1	1½	1½	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	4	..	1	1½	1½	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	4¼	..	..	..	..	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	4½	..	..	..	..	..	..	1½	1½	1½	1½	1½	1½	1½	1½
	4¾	..	..	..	..	..	..	1½	1½	1½	1½	1½	1½	1¾	1½
	5	..	..	..	..	..	..	1½	1½	1½	1½	1½	1½	1¾	1½
	5¼	..	..	..	..	..	..	1½	1½	1½	1½	1½	1½	1¾	1½
	5½	..	..	..	..	..	..	1½	1½	1½	1½	1½	1½	1¾	1½
	5¾	..	..	..	..	..	..	1½	1½	1½	1½	1½	1½	1¾	1½
	6	..	..	..	..	..	..	1½	1½	1½	1½	1½	1½	1¾	1½

(N—Nut End; T—Tap End.)

U. S. standard threads will be furnished unless otherwise specified.

Railroad Track Spikes

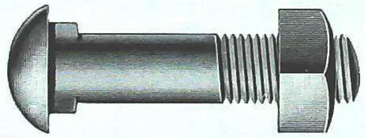


Approximate Number of Railroad Spikes to 200-Pound Keg

Size Under Head Inches	Approx. Number per Keg	Ties 2 Feet Between Centers 4 Spikes per Tie Makes per Mile Pounds	Kegs	Extra Over Base Price per 100 Pounds
5½x9/16	340	6212	31.06	Base
5 x½	460	4592	22.96	$.25
4½x½	528	4000	20.00	.25
4 x½	592	3568	17.84	.25
3½x½	660	3200	16.00	.50
3 x½	732	2886	14.43	.50
2½x½	814	2596	12.98	.65
5 x7/16	664	3178	15.89	*
4½x7/16	712	2966	14.83	.65
4 x7/16	764	2766	13.83	.65
3½x7/16	854	2474	12.37	.65
3 x7/16	1032	2048	10.24	.75
2½x7/16	1210	1746	8.73	*
5 x⅜	908	2326	11.63	*
4½x⅜	1000	2112	10.56	.90
4 x⅜	1092	1934	9.67	.90
3½x⅜	1200	1760	8.80	.90
3 x⅜	1342	1574	7.87	.90
2½x⅜	1600	1320	6.60	1.15
2¼x⅜	1750	1206	6.03	*
2 x⅜	1902	1112	5.56	1.25
4 x5/16	1630	1308	6.54	1.70
3½x5/16	1810	1168	5.84	1.70
3 x5/16	2066	1024	5.12	1.70
2½x5/16	2380	888	4.44	1.70
2¼x5/16	2760	766	3.83	1.70
2 x5/16	2912	726	3.63	1.70
1½x5/16	4200	504	2.52	*
3 x¼	3266	646	3.23	1.85
2½x¼	4120	512	2.56	2.00
2¼x¼	4600	460	2.30	2.00
2 x¼	4778	442	2.21	2.00
1½x¼	6000	352	1.76	2.25
1¼x¼	7920	266	1.33	2.50

*Prices upon application.
Reversed points ¼ cent per pound extra.

Standard Railroad Track Bolts



Standard button head, oval neck 3½ inches and longer by ¾ inch and larger with United States Standard square nuts and rolled threads.....Base

Extras for Size per 100 Pounds

Diameter Inches	Length Inches	Square Nut	Hexagon Nut
¾ and Larger	3½ and Longer	Base	$.30
¾ and Larger	3¼	$.20	.40
¾ and Larger	3	.30	.50
¾ and Larger	2¾	.40	.60
⅝	3	.40	.65
⅝	2¾	.50	.75
⅝	2½	.60	.85
½	2½	1.15	1.60
½	2¼	1.20	1.75
½	2	1.35	1.90
½	1¾	1.55	2.10
⅜	2	2.65	3.20
⅜	1¾	2.90	3.45
⅜	1½	3.15	3.70

Additional Extras

Bolts with Cut Threads.....per 100 lbs. $.10
Bolts with Ideal Square Nuts (Not Recessed).....per 100 lbs. .05
Bolts with Square Recessed Nuts.....per 100 lbs. .10
Bolts with Ideal Square Recessed Nuts....per 100 lbs. .15
Open-Hearth Quenched Carbon Bolts.....per 100 lbs. .25

Note.—On rolled thread and Harvey grip bolts, dimensions shown represent diameter through threaded portion, diameter through shank being 1/16 inch less.

On cut thread bolts, dimensions shown represent diameter through both threaded portion and shank.

Drift Bolts

Hot Galvanized or Plain

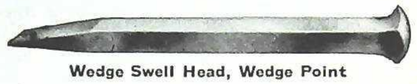
Square



Plain, No Head, No Point



Wedge Point, No Head



Wedge Swell Head, Wedge Point

Round



Plain, No Head, No Point

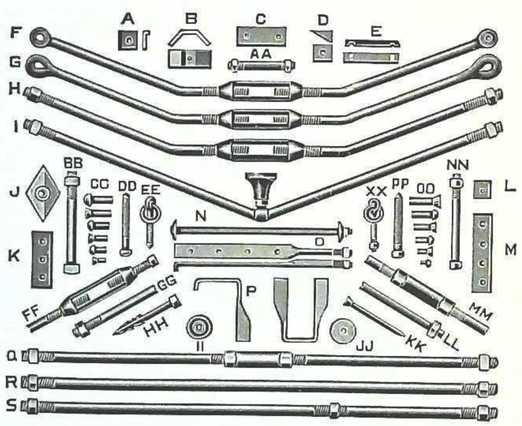


Wedge Point, No Head

Furnished in any diameter or any length desired.

Prices upon application.

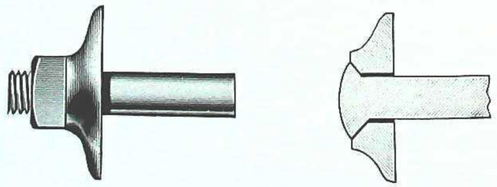
Builders' Iron Work



Prices given on receipt of specifications.

Bridge Rods and Bolts

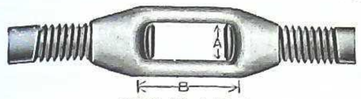
Combination



State quantity and sizes wanted.

Hy-Tech Products

Turnbuckles with or without Stubs



With Stub Ends



Without Stub Ends

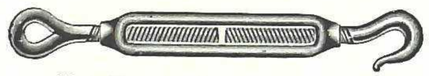
Diam. Screw In.	Price, Each — Inside Opening, Inches 3	6	9	12	18	24	36	48
¼	$.36	....	....	....	....	....	....	....
5/16	.38	....	....	....	....	....	....	....
⅜	.45	$.45	....	....	....	....	....	....
½	.50	.50	$.75	$.88	....	....	....	....
⅝	.75	.60	.90	1.05	$1.50	....	....	....
¾	.75	.75	1.13	1.31	1.88	$2.63	....	....
⅞	1.10	.90	....	1.58	2.25	3.15	....	....
1	1.10	1.10	....	1.93	2.75	3.85	$4.40	....
1⅛	1.70	1.40	....	2.45	3.50	4.90	5.60	....
1¼	1.70	1.70	....	2.98	4.25	5.95	6.80	....
1⅜	....	2.10	....	....	....	....	....	....
1½	....	2.50	....	4.38	6.25	8.75	10.00	$15.00
1⅝	....	3.25	....	....	....	....	....	....
1¾	....	4.00	....	....	10.00	14.00	16.00	24.00
2	....	6.25	....	....	....	21.88	25.00	37.50
2¼	....	9.25	....	....	....	32.38	37.00	55.50
2½	....	13.00	....	....	....	45.50	52.00	78.00

On lots less than $10.00 and more than $5.00, add 10 per cent; less than $5.00 net value, add 20 per cent. Sizes heretofore shown can still be had but to order only.

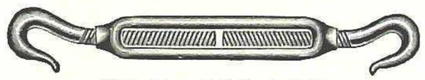
Turnbuckles



With Threaded Eye Bolts



With Threaded Hook and Eye Bolts



With Threaded Hook Bolts

Turnbuckles can be fitted with eye and eye, eye and hook, eye and jaw, hook and hook, hook and jaw, and jaw and jaw.

Diam. In.	Price, Each — Inside Opening, Inches 3	6	9	12	18	24	36	48
¼	$.42	....	....	....	....	....	....	....
5/16	.45	....	....	....	....	....	....	....
⅜	.60	$.60	....	....	....	....	....	....
½	.80	.80	$1.20	$1.40	....	....	....	....
⅝	1.25	.95	1.43	1.67	$2.14	....	....	....
¾	1.25	1.25	1.88	2.20	2.92	$3.45	....	....
⅞	....	....	....	2.80	3.60	4.40	....	....
1	....	....	....	3.50	4.50	5.50	$7.00	....
1⅛	....	....	....	4.20	5.40	6.60	8.40	....
1¼	....	....	....	5.70	7.30	8.95	11.35	....
1½	....	....	....	7.70	9.90	12.10	15.40	$19.80
1¾	....	....	....	....	16.90	20.65	26.25	33.75
2	....	....	....	....	....	32.50	35.00	45.00
2¼	....	....	....	....	....	43.10	46.40	59.65
2½	....	....	....	....	....	61.75	66.50	85.50

Above list applies to turnbuckles either black or galvanized.

Add to the above list prices: For 1 locknut, 5 per cent; for 2 locknuts, 10 per cent; for 1 jaw end, 15 per cent; for 2 jaw ends, 30 per cent.

On lots less than $10.00 and more than $5.00, add 10 per cent. On lots of less than $5.00 net value, add 20 per cent. No charge less than 50 cents.

Sizes heretofore shown can still be had but to order only. Prices upon application with quantity desired.

Wrought Iron Washers

Adopted January 20, 1910



U. S. Standard Sizes

Size Bolt Inches	Outside Diam. Inches	Size Hole Inches	Thickness Wire Gauge No.	No. in 100 Pounds	Weight per 1000 Pieces Pounds	Price in 200-Lb. Kegs per Lb.
3/16	7/16	¼	18	39400	2 53	$.14
¼	¾	5/16	16	15600	6 4	.122
5/16	7/8	⅜	16	11250	8.8	.114
⅜	1	7/16	14	6800	14.7	.105
7/16	1¼	½	14	4300	21.	.098
½	1⅜	9/16	12	2600	38.4	.094
9/16	1½	⅝	12	2250	44.4	.093
⅝	1¾	11/16	10	1300	77.	.092
¾	2	13/16	9	900	111.	.091
⅞	2¼	15/16	8	782	153.	.09
1	2½	1 1/16	8	568	176.	.09
1⅛	2¾	1¼	8	473	211.	.09
1¼	3	1⅜	8	364	261.	.092
1⅜	3¼	1½	7	275	364.	.092
1½	3½	1⅝	7	256	390.	.092
1⅝	3¾	1¾	7	220	454.	.095
1¾	4	1⅞	7	197	508.	.095
1⅞	4¼	2	7	174	575.	.095
2	4½	2⅛	7	160	625.	.095
2¼	4¾	2⅜	5	122	820.	.105
2½	5	2⅝	4	106	943.	.107

Net Extras

Extra for 100-Pound Kegs.....per 100 pounds $.25
Extra for 50 to 100-Pound Boxes.....per 100 pounds .35
Extra for 25 to 50-Pound Boxes.....per 100 pounds .50
Extra for 5-Pound Boxes.....per 100 pounds 1.50
Extra for 1-Pound Boxes.....per 100 pounds 2.00

Cast Iron Washers



Size Bolt In.	O.D. In.	Size Hole In.	Thickness In.	Wt. Lbs.	Size Bolt In.	O.D. In.	Size Hole In.	Thickness In.	Wt. Lbs.
½	2¼	5/8	11/16	½	1	4	1⅛	15/16	1⅝
5/8	2¾	⅜	¾	⅝	1⅛	4½	1¼	1	2¼
¾	3	⅞	13/16	¾	1¼	5	1⅜	1⅛	3
⅞	3½	1	⅞	1¼	1½	6	1¾	1¼	5

Price per 100 pounds upon application.

We are in a position to furnish Special Screws, Nuts and Bolts of every description. Try us.

Lock Washers



Plain Pattern



Positive Pattern

Plain Pattern, for Round Head Machine Screws

Screw Size Inches	Steel Size Inches	Price per 1000	Screw Size Inches	Steel Size Inches	Price per 1000
2	1/2x1/32	$4.00	8	5/64x3/64	$3.00
4	1/16x1/32	3.75	10	3/32x3/64	3.00
6	5/64x1/32	3.50	12	3/32x1/16	3.50

Positive Pattern, for Standard Bolts

Bolt Size Inches	Steel Size Inches	Price per 1000	Bolt Size Inches	Steel Size Inches	Price per 1000
1/4	3/32x3/64	$5.20	3/4	1/4x1/8	$36.40
5/16	1/8x3/64	6.80	7/8	17/64x5/32	64.00
3/8	1/8x1/16	8.00	1	5/16x3/16	110.40
7/16	5/32x1/16	10.40	1 1/8	3/8x3/16	148.80
1/2	11/64x1/16	11.60	1 1/4	7/16x3/16	188.80
9/16	3/16x3/32	16.40	1 3/8	7/16x1/4	223.60
5/8	13/64x3/32	22.00	1 1/2	1/2x1/4	284.80
11/16	7/32x1/8	32.00	...	.....	.....

Plain Pattern, for Standard Bolts

Bolt Size Inches	Steel Size Inches	Price per 1000	Bolt Size Inches	Steel Size Inches	Price per 1000
3/16	1/16x3/64	$2.50	9/16	3/16x1/8	$15.40
1/4	3/32x1/16	3.00	5/8	13/64x3/32	25.80
5/16	1/8x1/16	4.40	3/4	1/4x3/16	40.00
3/8	1/8x3/32	5.80	7/8	17/64x3/16	53.00
7/16	5/32x1/8	10.40	1	5/16x1/4	95.00
1/2	11/64x1/8	12.40	1 1/4	7/16x1/4	169.60

Malleable Iron Washers

Standard Patterns



Made of certified malleable iron in the established standard diameter of cast-iron washers, but only 1/2 as thick, which saves from 1/2 to 1 inch on each bolt.

About 1/3 as heavy as cast-iron washers, therefore freight, drayage and handling costs are reduced.

The holes are clean and surfaces smooth. The nut may be securely locked by driving a nail through the small hole in the washer. Practically indestructible.

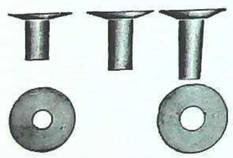
Washers other than standard sizes can be furnished.

Packed in kegs of 200 pounds each.

No.	Size Bolt Inches	Diam. Inches	Thickness Inches	Approx. Wt., Lbs. per 100 Malleable Washers	Cast-Iron Washers
37	1/2	2 1/2	1/4	14	45
38	5/8	2 3/4	5/16	21	66
40	3/4	3	7/16	32	100
42	7/8	3 1/2	7/16	42	150
43	1	4	1/2	65	200
44	1 1/8	4 1/2	1/2	75	262
45	1 1/4	5	5/8	115	450
48	1 1/2	6	3/4	175	575

Prices upon application.

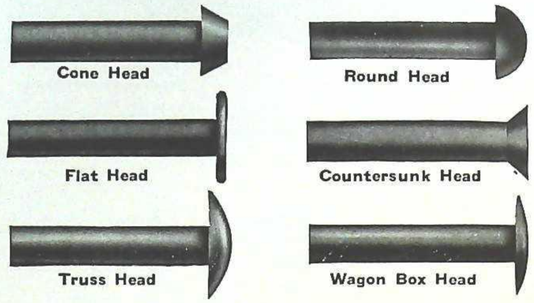
Copper Rivets and Burrs



No.	Price, per Lb. In 1 or 4-Lb. Boxes	In 1/2 or 3/4-Lb. Boxes	No.	Price, per Lb. In 1 or 4-Lb. Boxes	In 1/2 or 3/4-Lb. Boxes
3 to 7	$.49	$.52	12	$.58	$.61
8	.50	.53	13	.60	.63
9	.52	.55	14	.65	.68
10	.54	.57	15	.70	.73
11	.56	.59	..	...	...

Small Steel or Iron Rivets

Standard Heads



Adopted May 19, 1920

Price, per Pound—In 200-Pound Kegs

Diameter	Approx. Decimal	Length, Inches: 6 to 3 3/4	3 1/2 to 2 1/4	2 to 1	7/8 to 3/4	5/8 to 1/2	7/16	3/8
7/16	.437	$.17	$.17	$.15	$.15 1/2	$.16	$.17	$.18
3/8	.375	.17	.17	.15	.15 1/2	.16	.17	.18
11/32	.344	.18 1/2	.17 1/2	.15 1/2	.16	.16 1/2	.17	.18
5/16	.312	.18 1/2	.17 1/2	.15 1/2	.16	.16 1/2	.18	.18
No. 1	.300	.19	.18	.16	.16 1/2	.17	.19	.19
No. 2	.284	.19	.18	.16	.16 1/2	.17	.19	.19
No. 3	.259	.19	.18	.16	.16 1/2	.17	.19	.19
1/4	.250	.19	.18	.16	.16 1/2	.17	.19	.19
No. 4	.238	.22	.20	.17	.17 1/2	.18	.19	.20
No. 5	.219	.22	.20	.17	.17 1/2	.18	.20	.20
No. 6	.203	.22	.20	.17	.17 1/2	.18	.20	.21
3/16	.187	.22	.20	.17	.17 1/2	.18	.20	.21
No. 7	.180	...	...	.17	.17 1/2	.19	.20	.21
No. 8	.165	...	...	.18	.18 1/2	.19	.21	.22
No. 9	.148	...	...	.19	.19 1/2	.20	.22	.23
No. 10	.134	...	...	.20	.20 1/2	.21	.23	.25
1/8	.125	...	...	.21	.21 1/2	.22	.26	.29
No. 12	.109	...	...	.22	.22 1/2	.23	.28	.31
No. 13	.095	...	...	.26	.26 1/2	.27	.32	.36
No. 14	.083	...	...	.28	.28 1/2	.29	.37	.42

Diameter	Approx. Decimal	Length, Inches: 11/32	5/16	9/32	1/4	7/32	3/16	5/32	1/8	3/32
7/16	.437	$.19	$.20	$.20	...	...	...	...	...	...
3/8	.375	.19	.20	.20	...	...	...	...	...	...
11/32	.344	.19	.20	.20	...	...	...	...	...	...
5/16	.312	.19	.20	.20	...	...	...	...	...	...
No. 1	.300	.19	.20	.20	...	...	...	...	...	...
No. 2	.284	.19	.20	.20	$.20	$.21	...	...	...	...
No. 3	.259	.19	.20	.20	.20	.21	...	...	...	...
1/4	.250	.19	.20	.20	.20	.21	$.21	...	...	...
No. 4	.238	.20	.20	.20	.20	.21	.21	$.22	...	...
No. 5	.219	.20	.21	.22	.22	.23	.23	.24	$.24	$.25
No. 6	.203	.21	.22	.22	.23	.24	.25	.25	.25	.26
3/16	.187	.21	.22	.22	.23	.24	.25	.26	.27	.28
No. 7	.180	.21	.22	.22	.23	.24	.25	.26	.27	.28
No. 8	.165	.22	.23	.23	.24	.25	.26	.27	.28	.29
No. 9	.148	.23	.25	.25	.25	.26	.27	.29	.31	.32
No. 10	.134	.27	.29	.30	.30	.32	.35	.37	.39	.40
1/8	.125	.30	.32	.33	.33	.35	.39	.42	.44	.47
No. 12	.109	.32	.34	.36	.37	.38	.43	.47	.52	.57
No. 13	.095	.37	.39	.41	.42	.43	.47	.52	.57	.62
No. 14	.083	.47	.52	.54	.57	.60	.60	.62	.65	.67

5/64 (Min. Wire Diam. .074) same list as No. 14; 3/32 (.088) same as No. 13; 7/64 (.104) same as No. 12; No. 11 (.113) same as 1/8; 9/64 (.136) same as No. 9; 5/32 (.151) same as No. 8; 11/64 (.165) same as No. 7; 7/32 (.211) same as No. 5; 9/32 (.272) same as No. 2.

Intermediate lengths and diameters take list of nearest higher list. Rivets made from smaller wire than No. 14 quoted on application. Standard heads are round, wagon box, truss, cone, flat, countersunk and pan heads. All other shaped heads and headless, shoulder and pointed rivets are special on which prices will be quoted on application.

The following extras are a part of the rivet list: For 100-pound kegs, add 1 cent per pound to list. For 50-pound boxes, add 3 cents per pound to list. For 25-pound boxes, add 4 cents per pound to list. For 5 or 10-pound packages add 5 cents per pound to list. For 1 pound add 8 cents to list.

Extra for metallic tinning or wash tinning on application.

Hy-Tech Products

Steel Spring Cotters

Beveled Points



Price per 1000

Lgth. In.	Diameter, Inches: 1/16	3/32	1/8	5/32	3/16	1/4	5/16	3/8	1/2	5/8
1/2	$.35	$.40	$.55	....	....	....	....	.....	.....	.....
3/4	.45	.53	.75	$1.20	$1.70	....	....	.....	.....	.....
1	.55	.65	.90	1.45	2.05	$3.40	$5.30	.....	.....	.....
1 1/4	.65	.78	1.10	1.70	2.40	4.00	6.20	.....	.....	.....
1 1/2	.75	.90	1.25	1.95	2.75	4.60	7.10	$10.50	.....	.....
1 3/4	.95	1.03	1.45	2.20	3.10	5.20	8.05	.....	.....	.....
2	1.05	1.15	1.60	2.45	3.45	5.80	9.00	13.00	$25.00	.....
2 1/4	....	....	....	2.70	3.80	6.40	9.90	.....	.....	.....
2 1/2	....	1.55	2.00	2.95	4.15	7.00	10.80	15.50	30.00	.....
3	....	....	2.50	3.45	5.00	7.80	11.70	18.00	35.00	$57.50
3 1/2	....	....	....	....	5.75	8.60	13.90	20.50	40.00	64.75
4	....	....	....	....	6.50	9.40	16.10	23.00	45.00	72.00
5	....	....	....	....	....	....	18.30	27.00	55.00	85.00
6	....	....	....	....	....	....	....	31.00	65.00	98.00

All measurements made under the eye.

Number of Cotters in a Box

1/16 In. Diameter, All Lengths	1000
3/32 and 1/8 In. Diam., Lengths to 1 1/2 Inches, Incl.	1000
3/32 and 1/8 In. Diam., Lengths Longer Than 1 1/2 Inches.	500
5/32 and 3/16 In. Diam., Lengths to 1 Inch, Incl.	1000
5/32 and 3/16 In. Diam., 1 1/4 and 1 1/2-Inch Lengths	500
5/32 and 3/16 In. Diam., Longer Than 1 1/4 and 1 1/2 In.	250
1/4 Inch Diameter, Lengths to 1 Inch Inclusive	500
1/4 Inch Diameter, Lengths Longer Than 1 Inch	250
5/16 Inch Diameter, Lengths to 2 Inches, Inclusive	250
5/16 Inch Diameter, Lengths 2 1/4 to 3 Inches, Incl.	125
5/16 Inch Diameter, Lengths Longer Than 2 1/4 to 3 In.	Bulk

Diameters, 3/8, 7/16, 1/2, 5/8 and 3/4 inches, all lengths, packed in bulk.

Prices are for standard packages; extra for other than standard packing. Brass cotter list, 8 times steel list.

Efficiency Cotter Pins

Assorted in Screw Top Tin Boxes



No. 1 Automobile Assortments	No. 3 Automobile Assortments	No. 4 Tractor Assortments	No. 5 Automobile Assortments
20–1/16x 1/2	15–1/16x1 1/4	20–3/32x3/4	10–1/16x 1/2
30–5/64x 1/2	15–3/32x 1/2	20–3/32x1	20–1/16x1 1/4
20–5/32x 1/2	15–3/32x1 1/2	10–1/8x1	15–3/32x 1/2
20–3/32x1	5–1/8x 1/2	10–1/8x1 1/4	10–3/32x 3/4
5–1/8x 3/4	5–1/8x1	10–3/16x1 1/4	10–3/32x1
5–1/8x1	20–1/8x1 1/4	10–3/16x1 1/2	10–3/32x1 1/4
.....	5–1/8x2	5–1/4x1 3/4	15–1/8x 3/4
.....	15–5/32x1	10–1/4x2	10–1/8x1
.....	5–3/16x1 1/2	5–5/16x2	.....

Contents and Weights per Case of Assorted Cotters

Assortment No.	Contents (No. of Boxes)	Wt. Lbs.	Assortment No.	Contents (No. of Boxes)	Wt. Lbs.
1	100	25	4	100	120
3	100	50	5	100	28

All assortments are packed by weight, therefore the count shown is approximate.

Prices upon application.

Malleable Iron Thumb Screws



Blank



Threaded

Threaded Price, per 100

Diam. of Screw...in.	Style No.	Width of Head...in.	Thread to Inch	Length of Screws, Inches	1/8 or No. 8: 1	3/16 or No. 10: 1	1/4: 1	5/16: 1	3/8: 1	7/16: 1	1/2: 1	5/8: 1	3/4: 1
		5/8	40	3/8	....	$1.10	$1.40	....	....	....	....	....	....
		11/16	24	1/2	$2.10	1.20	1.50	$2.00	$2.70	....	....	....	....
		7/8	20	5/8	2.60	1.45	1.80	2.35	3.00	....	....	....	....
		1	18	3/4	2.60	1.45	1.80	2.35	3.00	....	....	....	....
		1 1/16	16	7/8	3.10	1.70	2.10	2.70	3.40	....	....	....	....
		1 1/4	14	1	3.10	1.70	2.10	2.70	3.40	$4.60	$5.80	$9.00	....
		1 5/16	13	1 1/4	....	1.95	2.40	3.05	3.80	5.20	6.50	10.00	....
		1 3/16	11	1 1/2	....	2.20	2.70	3.40	4.20	5.80	7.20	11.00	....
		1 1/2	10	1 3/4	....	2.55	3.00	3.75	4.60	6.40	7.90	12.00	....
		1 5/8	9	2	....	2.80	3.30	4.10	5.00	7.00	8.60	13.00	$22.00
		1 3/4	8	2 1/4	....	....	3.80	4.65	5.60	7.80	9.50	14.25	23.50
		1 7/8	8	2 1/2	....	....	4.30	5.20	6.20	8.60	10.40	15.50	25.00
		2	8	2 3/4	....	....	4.80	5.75	6.80	9.40	11.30	16.75	26.50
		2 1/4	7	3	....	...	5.30	6.30	7.40	10.20	12.20	18.00	28.00
		2 1/2	7	3 1/2	....	....	6.50	7.70	9.00	11.60	14.00	20.50	31.00
		2 3/4	6	4	....	....	7.70	9.10	10.60	13.40	15.80	23.00	34.00
		3	6	4 1/2	....	....	....	....	....	....	17.60	25.50	37.00
		3 1/4	6	5	....	....	....	....	....	....	....	28.00	40.00

Prices for blank thumb screws quoted upon application.

Malleable Iron Thumb Nuts



No.	Size In.	Threads	Price per 100 Threaded	Price per Lb. Blanks	No.	Size In.	Threads	Price per 100 Threaded	Price per Lb. Blanks
29	5/32	32	$1.10	$.70	33 1/2	3/8	16	$2.75	$.32
30	3/16	24	1.10	.55	34	7/16	14	2.75	.33
30 1/2	7/32	24	1.30	.55	35	1/2	13	3.70	.32
31	1/4	20	1.30	.38	36	5/8	11	6.00	.30
31 1/2	1/4	20	1.60	.36	37	3/4	10	7.00	.28
32	5/16	18	1.60	.36	38	7/8	9	10.00	.27
32 1/2	5/16	18	2.15	.34	39	1	8	11.80	.26
33	3/8	16	2.15	.34	....	...	..	.....	...

Hexagon and Square Stove Bolt Nuts

Effective October 11, 1928



Size Inches	Threads per Inch	Diameter of Flat Inches	Thickness Inches	Price, per 100 Hexagon	Square
1/8	32	5/16	7/64	$.25	$.22
5/32	32	11/32	1/8	.28	.24
3/16	24	3/8	1/8	.30	.26
7/32	24	7/16	5/32	.38	.32
1/4	18	1/2	3/16	.50	.43
1/4	20	7/16	3/16	.50	.43
5/16	18	7/16	7/32	.85	.72
3/8	16	5/8	1/4	1.10	.94

In paper packages add 15 per cent.



Square Cold Pressed Nuts

U. S. Standard
Chamfered and Trimmed

Packed in 200-Pound Kegs

Effective July 1, 1927

For nuts with left hand threads and for tapping other than U. S. standard thread, prices upon application.

Manufacturers' Standard Lists—Price per 100 in 200-Lb. Kegs

Size Bolt Inches	Width Inches	Thickness Inches	Hole Inches	Blank Wt., Lbs. per 1000	Blank Price per 100	Tapped Wt., Lbs. per 1000	Tapped Price per 100
1/4	1/2	1/4	3/16	14.4	$.50	13.8	$.55
5/16	19/32	5/16	1/4	23.9	.70	22.8	.75
3/8	11/16	3/8	19/64	39.2	1.00	37.4	1.05
7/16	25/32	7/16	11/32	58.5	1.40	55.7	1.50
1/2	7/8	1/2	13/32	82.6	1.85	78.6	2.00
9/16	31/32	9/16	29/64	116.0	2.60	109.8	2.80
5/8	1 1/16	5/8	33/64	154.3	3.05	147.0	3.25
3/4	1 1/4	3/4	5/8	250.0	4.40	237.1	4.60
7/8	1 7/16	7/8	47/64	384.0	6.75	371.0	7.20
1	1 5/8	1	27/32	542.8	9.50	518.1	10.00
1 1/8	1 13/16	1 1/8	15/16	760.0	13.30	725.4	14.00
1 1/4	2	1 1/4	1 1/16	1004.0	18.50	957.0	19.60
1 3/8	2 3/16	1 3/8	1 5/32	1324.3	32.00	1257.6	33.50
1 1/2	2 3/8	1 1/2	1 9/32	1684.0	43.30	1604.9	45.20



Hexagon Cold Pressed Nuts

U. S. Standard
Chamfered and Trimmed

Packed in 200-Pound Kegs

Effective July 1, 1927

For nuts with left hand threads and for tapping other than U. S. standard thread, prices upon application.

Manufacturers' Standard Lists—Price per 100 in 200-Lb. Kegs

Size Bolt Inches	Width Inches	Thickness Inches	Hole Inches	Blank Wt., Lbs. per 1000	Blank Price per 100	Tapped Wt., Lbs. per 1000	Tapped Price per 100
1/4	1/2	1/4	3/16	12.8	$.60	12.2	$.65
5/16	19/32	5/16	1/4	21.0	.85	19.9	.90
3/8	11/16	3/8	19/64	34.5	1.15	32.7	1.20
7/16	25/32	7/16	11/32	51.2	1.65	48.4	1.75
1/2	7/8	1/2	13/32	72.4	2.10	68.4	2.25
9/16	31/32	9/16	29/64	100.0	2.90	97.2	3.10
5/8	1 1/16	5/8	33/64	129.6	3.40	122.3	3.60
3/4	1 1/4	3/4	5/8	212.3	4.80	202.3	5.10
7/8	1 7/16	7/8	47/64	331.9	7.50	314.1	8.00
1	1 5/8	1	27/32	467.7	10.55	441.4	11.15
1 1/8	1 13/16	1 1/8	15/16	654.9	14.80	617.2	15.55
1 1/4	2	1 1/4	1 1/16	866.3	20.50	819.3	21.40
1 3/8	2 3/16	1 3/8	1 5/32	1143.2	27.80	1077.5	28.80
1 1/2	2 3/8	1 1/2	1 9/32	1450.0	37.30	1371.0	38.70
1 5/8	2 9/16	1 5/8	1 13/32	1822.0	53.90	1722.0	56.05
1 3/4	2 3/4	1 3/4	1 1/2	2264.0	73.35	2135.0	75.70
1 7/8	2 15/16	1 7/8	1 5/8	2738.0	91.65	2588.0	94.95
2	3 1/8	2	1 23/32	3182.0	108.85	2994.0	112.90
2 1/4	3 1/2	2 1/4	1 61/64	4558.0	159.55	4314.0	168.40
2 1/2	3 7/8	2 1/2	2 3/16	6274.0	238.40	5942.0	252.60
2 3/4	4 1/4	2 3/4	2 7/16	8089.0	307.40	7603.0	326.00
3	4 5/8	3	2 11/16	10815.0	410.80	10234.0	438.00
3 1/4	5	3 1/4	2 15/16	13114.0	611.40	12362.0	640.00
3 1/2	5 3/8	3 1/2	3 5/32	16442.0	781.00	15363.0	816.70
3 3/4	5 3/4	3 3/4	3 3/8	19750.0	983.30	18503.0	1026.70
4	6 1/8	4	3 7/16	23829.0	1186.70	22310.0	1236.70

Number of Blank or Tapped Nuts in Standard Containers 200-Lb. Kegs

Less than standard container quantities, 10% higher list.

Size U.S.S. In.	Sq.	Hex.	Size U.S.S. In.	Sq.	Hex.	Size U.S.S. In.	Sq.	Hex.	Size U.S.S. In.	Sq.	Hex.
1/4	11000	12000	3/4	850	1000	1 5/8	100	120	3	16	20
5/16	6400	7500	7/8	550	650	1 3/4	80	95	3 1/4	13	15
3/8	4000	4500	1	400	500	1 7/8	65	80	3 1/2	12	12
7/16	4000	4700	1 1/8	300	350	2	55	65	3 3/4	8	10
1/2	2800	3200	1 1/4	225	270	2 1/4	45	48	4	6	8
9/16	2000	2300	1 3/8	175	200	2 1/2	35	42	...	...	...
5/8	1400	1600	1 1/2	130	150	2 3/4	25	25	...	...	...

Number of Tapped Nuts in Standard Cartons and Cases

Nuts packed in cartons, as listed below, take 15% higher list than when packed in bulk.

Size Nut In.	Contents Carton	Contents Case	Square Nuts Weight, Pounds Case Carton	Square Nuts Weight, Pounds Case Net	Square Nuts Weight, Pounds Case Gross	Hexagon Nuts Weight, Pounds Case Carton	Hexagon Nuts Weight, Pounds Case Net	Hexagon Nuts Weight, Pounds Case Gross
1/4	100	8000	1.5	121	129	1.3	104	112
5/16	100	5000	2.5	126	134	2.2	109	117
3/8	100	5600	4.0	224	237	3.5	194	207
7/8	50	3400	3.0	204	217	2.5	172	185
1/2	50	2800	4.2	234	247	3.5	198	211
9/16	50	1800	5.4	194	204	4.8	172	182
5/8	50	2000	7.3	292	307	5.9	236	251
3/4	50	1000	12.5	251	265	9.5	190	203
7/8	25	600	9.3	221	235	7.3	175	189
1	25	400	13.6	218	232	11.0	176	190

Hexagon Cold Pressed Semi-Finished Nuts



U. S. Standard—Single Chamfer
Single Countersink—Tapped
U. S. Standard

Packed in 200-Pound Kegs

Effective April 1, 1927

Manufacturers' Standard List

Price, per 100

Size Bolt In.	No. of Threads	Width In.	Thickness In.	In 200-Lb. Kegs Contents	In 200-Lb. Kegs Price per 100	Packed in Cartons Carton Contents	Carton Wt. Lbs.	Case Contents	Case Gross Wt.
1/4	20	1/2	1/4	12000	$.75	100	1 24	12000	156
5/16	18	19/32	5/16	7500	1.00	100	2.17	6300	151
3/8	16	11/16	3/8	4500	1.35	100	3.3	6000	212
7/16	14	25/32	7/16	4700	1.90	50	2.49	4200	222
1/2	13	7/8	1/2	3200	2.40	50	3.45	3000	221
9/16	12	31/32	9/16	2300	3.30	50	4 75	1700	173
5/8	11	1 1/16	5/8	1600	4.00	50	6.3	1800	242
3/4	10	1 1/4	3/4	1000	5.70	50	10.48	1200	265
7/8	9	1 7/16	7/8	650	8.75	50	15.81	600	203
1	8	1 5/8	1	500	12.00	50	23.7	400	200
1 1/8	7	1 13/16	1 1/8	350	16.70				
1 1/4	7	2	1 1/4	270	22.70				
1 3/8	6	2 3/16	1 3/8	200	32.00				
1 1/2	6	2 3/8	1 1/2	150	41.90				
1 5/8	5 1/2	2 9/16	1 5/8	120	61.20				
1 3/4	5	2 3/4	1 3/4	95	80.90				
1 7/8	5	2 15/16	1 7/8	80	100.00				
2	4 1/2	3 1/8	2	65	118.00				
2 1/4	4 1/2	3 1/2	2 1/4	48	183.50				
2 1/2	4	3 7/8	2 1/2	42	274.00				
2 3/4	4	4 1/4	2 3/4	25	358.00				
3	3 1/2	4 5/8	3	20	475.00				
3 1/4	3 1/2	5	3 1/4	15	693.00				
3 1/2	3 1/4	5 3/8	3 1/2	12	875.00				
3 3/4	3	5 3/4	3 3/4	10	1093.00				
4	3	6 1/8	4	8	1300.00				

Nuts packed in cartons, as above listed, take 15% higher list than when packed in bulk.

Less than standard container quantities take 10% higher list.

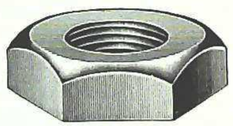
For nuts with left hand thread, for tapping other than U. S. std. thread, and for semi-finished nuts with double countersink, prices on application. Double chamfered nuts take 10% higher lists.

Cold Pressed Hexagon Check or Jam Nuts

Single Chamfer

Packed in 200-Pound Kegs

Effective July 1, 1927



Manufacturers' Standard Lists—Price per 100 in 200-Pound Kegs

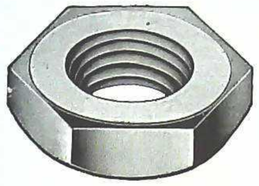
Size Bolt In.	Width In.	Thickness In.	Hole In.	No. in 200-Lb. Kegs	Blank Wt., Lbs. per 1000	Blank Price per 100	Tapped Wt., Lbs. per 1000	Tapped Price per 100
1/4	1/2	3/16	13/64	18000	9.0	$.55	8.6	$.60
5/16	19/32	7/32	1/4	10000	14.0	.70	13.3	.80
3/8	11/16	1/4	19/64	7000	22.2	1.00	21.4	1.10
7/16	25/32	9/32	11/32	4000	37.5	1.50	36.5	1.60
1/2	7/8	5/16	13/32	5300	46.0	1.70	44.7	1.90
9/16	31/32	11/32	29/64	3600	61.2	2.30	58.8	2.60
5/8	1 1/16	3/8	33/64	3000	79.8	2.50	75.6	2.80
3/4	1 1/4	7/16	5/8	1800	126.0	4.10	119.6	4.60
7/8	1 7/16	1/2	47/64	1200	188.4	5.80	179.6	6.40
1	1 5/8	9/16	27/32	750	256.5	7.80	241.2	8.50
1 1/8	1 13/16	5/8	15/16	640	370.5	11.70	353.8	12.50
1 1/4	2	3/4	1 1/16	440	561.6	17.00	537.6	18.00
1 3/8	2 3/16	13/16	1 5/32	350	.....	23.50	.....	24.50
1 1/2	2 3/8	7/8	1 9/32	260	.....	31.50	.....	33.00
1 5/8	2 9/16	15/16	1 25/64	220	.....	40.60	.....	42.50
1 3/4	2 3/4	1	1 1/2	160	.....	55.00	.....	57.00
1 7/8	2 15/16	1 1/16	1 5/8	140	.....	65.50	.....	68.00
2	3 1/8	1 1/8	1 23/32	110	.....	75.60	.....	79.00

Less than standard container quantities take 10% higher list.

Double chamfered nuts take 10% higher lists.

For nuts with left hand threads and for tapping other than U. S. standard thread, prices upon application.

Hy-Tech Products



Hexagon Cold Pressed Semi-Finished Check or Jam Nuts

Single Chamfer
Single Countersink
Tapped U. S. Standard

Packed in 200-Pound Kegs

Effective April 1, 1927

Manufacturers' Standard List

Price, per 100

Size Bolt In.	No. of Threads	Width In.	Thickness In.	In 200-Lb. Kegs Contents	In 200-Lb. Kegs Price per 100	Packed in Cartons Carton Contents	Carton Wt. Lbs.	Case Contents	Case Gross Wt.
1/4	20	1/2	3/16	18000	$.75	100	1.24	12000	156
5/16	18	19/32	7/32	10000	1.00	100	2.17	6300	151
3/8	16	11/16	1/4	7000	1.35	100	3.3	6000	212
7/16	14	25/32	9/32	4000	1.90	50	2.49	4200	222
1/2	13	7/8	5/16	5300	2.40	50	3.45	3000	221
9/16	12	31/32	11/32	3600	3.30	50	4.75	1700	173
5/8	11	1 1/16	3/8	3000	4.00	50	6.3	1800	242
3/4	10	1 1/4	7/16	1800	5.70	50	10.48	1200	265
7/8	9	1 7/16	1/2	1200	8.75	50	15.81	600	203
1	8	1 5/8	9/16	750	12.00	50	23.7	400	200
1 1/8	7	1 13/16	5/8	640	16.70				
1 1/4	7	2	3/4	440	22.70				
1 3/8	6	2 3/16	13/16	350	32.00				
1 1/2	6	2 3/8	7/8	260	41.90				
1 5/8	5 1/2	2 9/16	15/16	220	61.20				
1 3/4	5	2 3/4	1	160	80.90				
1 7/8	5	2 15/16	1 1/16	140	100.00				
2	4 1/2	3 1/8	1 1/8	110	118.00				
2 1/4	4 1/2	3 1/2	....	...	183.50				
2 1/2	4	3 7/8	....	...	274.00				
2 3/4	4	4 1/4	....	...	358.00				
3	3 1/2	4 5/8	....	...	475.00				
3 1/4	3 1/2	5	....	...	693.00				
3 1/2	3 1/4	5 3/8	....	...	875.00				
3 3/4	3	5 3/4	....	...	1093.00				
4	3	6 1/8	....	...	1300.00				

Nuts packed in cartons, as above listed, take 15% higher list than when packed in bulk.

Less than standard container quantities take 10% higher list.

For nuts with left-hand thread, for tapping other than U. S. std. thread, and for semi-finished nuts with double countersink prices on application. Double chamfered nuts take 10% higher lists.

Semi-Finished Hexagon Brass Nuts



These nuts are chamfered on the top and countersunk on the bottom. They are used wherever a heavy, highly finished brass nut is required.

Milled from hexagon brass rod.

Bolt Size	Diam. In.	Thickness In.	Price per 100	Bolt Size	Diam. In.	Thickness In.	Price per 100
3/16–24	3/8	3/16	$1.40	1/2–13	7/8	1/2	$9.60
1/4–20	1/2	1/4	2.40	9/16–12	15/16	9/16	15.00
5/16–18	19/32	5/16	3.20	5/8–11	1 1/16	5/8	17.00
3/8–16	11/16	3/8	5.20	3/4–10	1 1/4	3/4	27.00
7/16–14	3/4	7/16	7.20	7/8– 9	1 7/16	7/8	45.00
.....	..	..	....	1– 8	1 5/8	1	68.00

Semi-Finished Brass Jam Nuts



These nuts are chamfered on top and countersunk on bottom, and are used wherever a heavy, highly finished brass nut is required.

They are milled from hexagon brass rod.

Bolt Size	Diameter Inches	Thickness Inches	Std. Pkg.	Price per 100
1/4, 20	1/2	3/16	100	$2.40
5/16, 18	19/32	7/32	100	3.20
3/8, 16	11/16	1/4	100	5.20
7/16, 14	3/4	9/32	100	7.20
1/2, 12	7/8	5/16	100	9.60
1/2, 13	7/8	5/16	100	9.60
5/8, 11	1 1/16	3/8	100	17.00
3/4, 10	1 1/4	7/16	50	27.00
7/8, 9	1 7/16	1/2	50	45.00
1, 8	1 5/8	9/16	25	68.00

Hexagon Semi-Finished Castellated Nuts

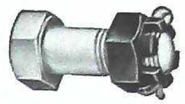


S.A.E. Standard

Packed in 200-Pound Kegs

Effective April 1, 1927

Manufacturers' Standard List



Price, per 100

Size Bolt In.	No. of Thread	Total Thick In.	Diameter Across Flats In.	Depth Slot In.	Width Slot In.	Diam. Cotter Pin, In.	In 200-Lb. Kegs No. of Nuts	In 200-Lb. Kegs Price per 100
1/4	28	9/32	7/16	3/32	5/64	1/16	20000	$1.15
5/16	24	21/64	1/2	3/32	5/64	1/16	14000	1.35
3/8	24	13/32	9/16	1/8	1/32	3/32	8500	1.60
7/16	20	29/64	5/8	1/8	1/32	3/32	9000	2.00
1/2	20	9/16	3/4	3/16	1/8	3/32	5000	2.85
9/16	18	37/64	7/8	3/16	5/32	1/8	3300	4.20
5/8	18	23/32	15/16	1/4	5/32	1/8	2500	4.90
3/4	16	13/16	1 1/16	1/4	5/32	1/8	1600	7.80
7/8	14	29/32	1 1/4	1/4	5/32	1/8	950	10.75
1	14	1	1 7/16	1/4	5/32	1/8	650	16.00

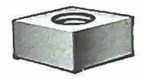
Less than standard container quantities take 10% higher list. Nuts in cartons or small packages, 15% higher lists.

For nuts with left-hand thread and for tapping other than S.A.E. thread, prices upon application.

Number of Nuts Packed in Cartons or Wooden Boxes

1/4, 5/16 and 3/8-Inch	100 Nuts per Carton
7/16, 1/2, 9/16 and 5/8-Inch	50 Nuts per Carton
3/4, 7/8 and 1-Inch	50 Nuts per Wood Box
1 1/8 and 1 1/4-Inch	25 Nuts per Wood Box
1 3/8 and 1 1/2-Inch	10 Nuts per Wood Box

Machine Screw Nuts



Square and Hexagon



Screw Size	Thread Coarse	Thread Fine	Diam. Flats In.	Thickness In.	Price, per Gross Iron Square	Iron Hexagon	Brass Square	Brass Hexagon
2	56	64	3/16	1/16	$.42	$.50	$1.28	$1.51
3	48	56	3/16	1/16	.42	.50	1.28	1.51
4	40	48	1/4	3/32	.31	.36	.92	1.08
5	40	44	5/16	7/64	.31	.36	.92	1.08
6	32	40	5/16	7/64	.31	.36	.92	1.08
8	32	36	11/32	1/8	.35	.40	1.11	1.30
10	24	32	3/8	1/8	.37	.43	1.47	1.73
12	24	28	7/16	5/32	.46	.55	1.83	2.16
1/4	20	28	1/2	3/16	.62	.72	2.39	2.81
5/16	18	24	9/16	7/32	1.04	1.22	5.14	6.05
3/8	16	24	5/8	1/4	1.35	1.58	6.98	8.21
7/16	14	20	3/4	9/32	1.94	2.30	9.79	11.52
1/2	13	20	13/16	5/16	2.81	3.31	14.04	16.56

Brass Cap Screws

Hexagon Head—U.S. Standard



Price, per 100

Diam. Screw in.	1/4	5/16	3/8	7/16	1/2	5/8
Diam. Head in.	7/16	17/32	9/16	5/8	3/4	7/8
Ht. of Head in.	3/16	15/64	9/32	21/64	3/8	15/32
Threads per Inch.	20	18	16	14	13	11
Length, Inches 1/2	$4.70	$6.70	.....	.....	.....	.....
5/8	4.90	6.90	$8.80	.....	.....	.....
3/4	5.10	7.10	9.10	$12.10	$17.90	.....
7/8	5.30	7.30	9.40	.....	.....	.....
1	5.50	7.60	9.80	13.10	19.00	$26.10
1 1/4	6.00	8.20	10.60	14.20	20.20	28.50
1 1/2	6.50	8.90	11.50	15.40	21.50	31.00
1 3/4	7.10	9.70	12.50	16.70	22.90	33.60
2	7.80	10.80	13.60	18.10	24.40	36.40
2 1/2	9.80	12.90	16.10	21.20	27.70	42.70
3	12.00	15.40	19.00	25.00	31.70	50.30

Prices of screws not listed furnished on application.

Hexagon Head Cap Screws

U. S. Standard Thread

Effective July 1, 1927



Price, per 100

Diam. Screw...in.	1/4	5/16	3/8	7/16	1/2	9/16
Diam. Hex. Head. in.	7/16	1/2	9/16	5/8	3/4	13/16
Height Head ...in.	3/16	15/64	9/32	21/64	3/8	27/64
Threads to Inch...	20	18	16	14	13	12
Length of Screw, Inches: 3/4	$4.35	$4.85	$5.80	$7.50	$9.55	.....
7/8	4.55	5.00	6.00	7.70	9.75	.....
1	4.70	5.25	6.20	7.90	9.95	$15.85
1 1/4	5.10	5.60	6.70	8.50	10.80	16.10
1 1/2	5.45	6.00	7.15	9.10	11.50	16.35
1 3/4	5.90	6.55	7.85	9.75	12.35	17.50
2	6.25	7.15	8.50	10.45	13.15	18.55
2 1/4	6.80	7.75	9.15	11.20	14.05	19.80
2 1/2	7.20	8.35	9.80	11.95	15.00	20.85
2 3/4	7.60	8.90	10.50	12.65	15.90	22.30
3	8.05	9.50	11.15	13.40	17.00	23.80
3 1/4	....	....	.....	14.15	18.20	24.95
3 1/2	....	....	.....	14.90	19.30	26.20
3 3/4	....	....	.....	15.65	20.55	27.40
4	....	....	.....	16.35	21.80	28.60
Add for Each 1/4-Inch	.90	1.10	1.60	2.00	2.50	3.00

Diam. Screw...in.	5/8	3/4	7/8	1	1 1/8	1 1/4
Diam. Hex. Head in.	7/8	1	1 1/8	1 5/16	1 1/2	1 11/16
Height Head ...in.	15/32	9/16	21/32	3/4	27/32	15/16
Threads to Inch...	11	10	9	8	7	7
Length of Screw, Inches: 1	$16.40	.....	.....	.....	.....	.....
1 1/4	16.65	$26.65	.....	.....	.....	.....
1 1/2	16.90	26.85	$41.50	.....	.....	.....
1 3/4	18.10	27.15	41.90	$60.15	.....	.....
2	19.15	27.45	42.30	60.65	$81.70	$110.45
2 1/4	20.40	29.00	45.40	62.90	85.20	115.20
2 1/2	21.30	30.55	48.40	65.35	88.25	119.10
2 3/4	23.00	32.10	51.50	67.60	91.00	123.20
3	24.55	33.70	54.30	69.90	94.50	127.80
3 1/4	25.70	35.80	56.60	73.60	99.40	134.60
3 1/2	26.90	38.00	58.65	77.20	104.35	140.70
3 3/4	28.10	40.20	60.65	80.85	109.25	147.50
4	29.20	42.25	62.85	84.60	114.20	154.25
4 1/4	30.40	45.85	67.35	88.00	118.85	160.40
4 1/2	31.65	49.40	72.00	91.20	123.10	166.00
4 3/4	.....	52.95	76.60	94.40	127.75	172.20
5	.....	.....	81.20	97.80	132.10	179.00
Add for Each 1/4-Inch	4.00	5.00	8.00	11.00	14.00	18.00

These screws are made to American Engineering Standards Committee specifications.

U.S. standard threads will be furnished unless otherwise specified.

On all screws one inch and less in diameter, and four inches and less in length, threads are cut 3/4 of the length of the body. Beyond four inches in length threads are cut 1/2 length of the body.

Cap screws with heads, diameters or threads other than listed are special and made to order.

Special price on black heads, extra finished heads and case hardened screws.

Fillister and Flat Fillister Head Cap Screws



Fillister Head



Flat Fillister Head

Effective February 1, 1924

Price, per 100

Diam. Screw...in.	1/4	5/16	3/8	7/16	1/2
Diam. Head....in.	3/8	7/16	9/16	5/8	3/4
Lgth. Head....in.	1/4	5/16	3/8	7/16	1/2
Threads to Inch..	20	18	16	14	13
Extreme Point, Inches: 3/4	$2.70	$3.00	$3.75	$4.90	$6.10
1	3.05	3.35	4.15	5.30	6.50
1 1/4	3.35	3.55	4.45	5.65	6.85
1 1/2	3.65	3.80	4.80	6.05	7.35
1 3/4	3.80	4.10	5.20	6.50	7.80
2	4.00	4.35	5.60	6.90	8.30
2 1/4	4.15	4.65	6.00	7.50	9.00
2 1/2	4.35	4.95	6.40	8.05	9.75
2 3/4	4.55	5.25	6.80	8.60	10.50
3	4.70	5.55	7.20	9.15	11.20
3 1/4	....	5.85	7.60	9.75	12.05
3 1/2	....	.....	8.00	10.35	12.80
3 3/4	....	.....	.....	10.95	13.60
4	....	.....	.....	.....	14.40

Diam. Screw...in.	9/16	5/8	3/4	7/8	1
Diam. Head....in.	13/16	7/8	1	1 1/8	1 1/4
Lgth. Head....in.	9/16	5/8	3/4	7/8	1
Threads to Inch..	12	11	10	9	8
Extreme Point, Inches: 1	$9.80	.....	.....	.....	.....
1 1/4	10.15	$10.50	.....	.....	.....
1 1/2	10.50	10.85	$15.95	.....	.....
1 3/4	11.15	11.50	16.35	$25.70	.....
2	11.80	12.15	16.75	26.20	$33.60
2 1/4	12.60	13.00	17.80	27.60	35.75
2 1/2	13.50	13.90	18.80	29.10	38.00
2 3/4	14.25	14.65	19.80	30.60	40.20
3	15.00	15.40	20.90	32.15	42.40
3 1/4	15.70	16.10	22.10	34.10	45.00
3 1/2	16.45	16.85	23.15	36.95	47.80
3 3/4	17.15	17.50	24.40	37.90	50.40
4	17.85	18.35	25.60	39.80	53.20
4 1/4	18.60	19.00	26.30	41.50	55.75
4 1/2	.....	19.75	27.00	43.15	58.60
4 3/4	.....	.....	27.80	44.80	61.20
5	.....	.....	.....	46.50	63.90

U. S. standard threads will be furnished unless otherwise specified. For steel, add 25 per cent to net price of regular. Round heads, made to order only. Special price on extra finished heads and case hardened screws.

Screws one inch and less in diameter, and four inches and less in length, have threads cut 3/4 length of the body. Beyond four inches in length, threads are cut 1/2 length of the body.

Hy-Tech Products

S.A.E. Hexagon Head Cap Screws

Effective July 1, 1927



Price, per 100

Diam. Screw....in.	1/4	5/16	3/8	7/16	1/2	9/16
Diam. Hex.Head in.	7/16	1/2	9/16	5/8	3/4	13/16
Height Head....in.	3/16	15/64	9/32	21/64	3/8	27/64
Threads to Inch...	28	24	24	20	20	18
Length of Screw, Inches: 3/4	$4.35	$4.85	$5.80	$7.50	$9.55	.....
7/8	4.55	5.00	6.00	7.70	9.75	.....
1	4.70	5.25	6.20	7.90	9.95	$15.85
1 1/4	5.10	5.60	6.70	8.50	10.80	16.10
1 1/2	5.45	6.00	7.15	9.10	11.50	16.35
1 3/4	5.90	6.55	7.85	9.75	12.35	17.50
2	6.35	7.15	8.50	10.45	13.15	18.55
2 1/4	6.80	7.75	9.15	11.20	14.05	19.80
2 1/2	7.20	8.35	9.80	11.95	15.00	20.85
2 3/4	7.60	8.90	10.50	12.65	15.90	22.30
3	8.05	9.50	11.15	13.40	17.00	23.80
3 1/4	....	....	.....	14.15	18.20	24.95
3 1/2	....	....	.....	14.90	19.30	26.20
3 3/4	....	....	.....	15.65	20.55	27.40
4	....	....	.....	16.35	21.80	28.60
Add for Each 1/4-Inch	.90	1.10	1.60	2.00	2.50	3.00

Diam. Screw....in.	5/8	3/4	7/8	1	1 1/8	1 1/4
Diam. Hex. Head in.	7/8	1	1 1/8	1 5/16	1 1/2	1 11/16
Height Head....in.	15/32	9/16	21/32	3/4	27/32	15/16
Threads to Inch....	18	16	14	14	12	12
Length of Screw, Inches: 1	$16.40	.....	.....	.....	.....	.....
1 1/4	16.65	$26.55	.....	.....	.....	.....
1 1/2	16.90	26.85	$41.50	.....	.....	.....
1 3/4	18.10	27.15	41.90	$60.15	.....	.....
2	19.15	27.45	42.30	60.65	$81.70	$110.45
2 1/4	20.40	29.00	45.40	62.90	85.20	115.00
2 1/2	21.30	30.55	48.40	65.35	88.25	119.10
2 3/4	23.00	32.10	51.50	67.60	91.00	123.20
3	24.55	33.70	54.30	69.90	94.50	127.80
3 1/4	25.70	35.80	56.60	73.60	99.40	134.60
3 1/2	26.90	38.00	58.65	77.20	104.35	140.70
3 3/4	28.10	40.20	60.65	80.85	109.25	147.50
4	29.20	42.25	62.85	84.60	114.20	154.25
4 1/4	30.40	45.85	67.35	88.00	118.85	160.40
4 1/2	31.65	49.40	72.00	91.20	123.10	166.00
4 3/4	.....	52.95	76.60	94.40	127.75	172.20
5	.....	.....	81.20	97.80	132.10	179.00
Add for Each 1/4-Inch	4.00	5.00	8.00	11.00	14.00	18.00

These screws are made to American Engineering Standards Committee specifications.

Screws are furnished with head slotted or with cotter pin hole at additional cost.

Cap screws with heads, diameters or threads other than listed are special and made to order.

Special price on black heads, extra finished heads and case hardened screws.

Case-Hardened Square Head Set Screws





Effective February 1, 1924

Price, per 100

Diam. Head ...in.	1/4	5/16	3/8	7/16	1/2	9/16
Ht. Head .....in.	3/16	15/64	9/32	21/64	3/8	27/64
Diam. Screw ..in.	1/4	5/16	3/8	7/16	1/2	9/16
Threads to Inch ..	20	18	16	14	13	12
Length under Head to Extreme Point, Inches: 1/2	$2.80	$3.15	$3.65	.....	.....	.....
5/8	2.85	3.20	3.70	$5.35	$6.55	.....
3/4	2.90	3.25	3.75	5.45	6.65	$11.15
7/8	3.10	3.40	4.00	5.55	6.75	11.35
1	3.25	3.55	4.30	5.65	6.85	11.55
1 1/4	3.60	3.90	4.80	6.15	7.60	11.75
1 1/2	3.95	4.20	5.25	6.65	8.35	11.95
1 3/4	4.25	4.70	5.90	7.25	9.10	12.90
2	4.55	5.20	6.55	7.90	9.80	13.80
2 1/4	4.80	5.65	7.15	8.65	10.60	14.85
2 1/2	5.10	6.15	7.75	9.45	11.40	16.00
2 3/4	5.35	6.60	8.40	10.15	12.15	17.15
3	5.65	7.10	9.00	10.90	12.35	18.25
3 1/4	....	....	....	11.70	14.15	19.75
3 1/2	....	....	....	12.45	15.35	21.20
3 3/4	....	....	....	13.25	16.60	22.70
4	....	....	....	14.00	17.85	24.20

Diam. Head ...in.	5/8	3/4	7/8	1	1 1/8	1 1/4
Ht. Head .....in.	15/32	9/16	21/32	3/4	27/32	15/16
Diam. Screw ..in.	5/8	3/4	7/8	1	1 1/8	1 1/4
Threads to Inch ..	11	10	9	8	7	7
Length under Head to Extreme Point, Inches: 3/4	$11.55	.....	.....	.....	.....	.....
7/8	11.75	.....	.....	.....	.....	.....
1	11.95	$21.10	.....	.....	.....	.....
1 1/4	12.15	21.50	$35.70	.....	.....	.....
1 1/2	12.35	21.90	36.20	$47.50	.....	.....
1 3/4	13.30	22.30	36.70	48.10	$62.55	.....
2	14.20	22.70	37.20	48.70	63.25	$82.25
2 1/4	15.30	24.40	39.80	51.50	66.90	87.00
2 1/2	16.50	26.10	42.30	53.35	70.70	91.85
2 3/4	17.65	27.80	44.80	57.20	74.45	96.70
3	18.85	29.35	47.40	59.85	77.80	101.25
3 1/4	20.40	31.30	50.00	63.25	82.20	106.95
3 1/2	21.90	33.20	52.80	66.65	86 65	112.70
3 3/4	23.30	35.20	55.60	69.75	90.70	118.00
4	24.85	37.10	58.25	73.20	95.10	123.80
4 1/4	25.40	39.50	61.15	77.50	100.65	130.85
4 1/2	27.95	41.85	63.85	82.15	106.75	138.85
4 3/4	.....	44.35	66.70	86.40	112.35	146.15
5	.....	.....	69.60	90.85	118.20	153.70

U. S. Standard threads will be furnished unless otherwise specified.

Cup point set screws, case-hardened, are regular. Points of other shapes are special and made to order. Prices based on quantity. Cup points furnished unless otherwise specified.

Headless set screws take same list as regular, measurements being taken over all.

Allen Safety Set Screws



One wrench is furnished with each 25 screws.

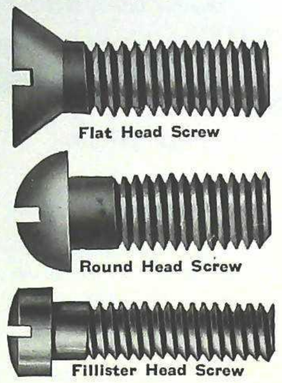
Diam. Screw, in.	1/4	5/16	3/8	7/16	1/2	9/16	5/8
U. S. S. Thrds. per Inch	20	18	16	14	13	12	11
S. A. E. Thrds. per Inch	28	24	24	20	20	18	18
Whitworth Thrds. per Inch	20	18	16	14	12	12	11
Size of Hex. Hole ... in.	1/8	5/32	3/16	7/32	1/4	1/4	5/16
Length Over All, Inches — Up to 1/4	$5.00	$5.50	.....	.....	.....	.....	.....
5/16	5.00	5.00	$6.25	.....	.....	.....	.....
3/8	5.00	5.00	5.00	$7.50	$8.75	.....	.....
7/16	5.00	5.00	5.00	6.00	8.75	.....	.....
1/2	5.50	5.60	5.00	6.00	7.00	$10.00	$12.50
9/16	5.50	5.60	6.95	7.00	7.00	8.00	12.50
5/8	5.50	5.60	6.95	7.00	7.00	10.00	10.00
3/4	6.00	6.20	7.65	8.30	9.65	11.10	10.00
7/8	6.00	6.20	7.65	8.30	9.65	11.10	12.00
1	6.50	6.80	8.35	9.10	10.55	12.20	14.70
1 1/4	7.00	8.00	9.05	9.90	11.45	13.30	15.80
1 1/2	7.50	8.00	9.75	10.70	12.35	14.40	16.90
1 3/4	8.00	8.60	10.45	11.50	13.25	15.50	18.00
2	8.50	9.20	11.15	12.30	14.15	16.60	19.10
2 1/4	9.00	9.80	11.85	13.10	15.05	17.70	20.20
2 1/2	9.50	10.40	12.55	13.90	15.95	18.80	21.30
2 3/4	10.00	11.00	13.25	14.70	16.85	19.90	22.40
3	10.50	11.60	13.95	15.50	17.75	21.00	23.50
3 1/4	11.00	12.20	14.65	16.30	18.65	22.10	24.60
3 1/2	11.50	12.80	15.35	17.10	19.55	23.20	25.70
3 3/4	12.00	13.40	16.05	17.90	20.45	24.30	26.80
4	12.50	14.00	16.75	18.70	21.35	25.40	27.90
Extra Wrenches ....each	.03	.04	.05	.06	.07	.07	.08

Diam. Screw, in.	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
U. S. S. Thrds. per Inch	10	9	8	7	7	6	6
S. A. E. Thrds. per Inch	16	14	14	12	12	12	12
Whitworth Thrds. per Inch	10	9	8	7	7	6	6
Size of Hex. Hole ... in.	3/8	1/2	9/16	9/16	5/8	5/8	5/8
Length Over All, Inches — 1/2	$15.00	.....	.....	.....	.....	.....	.....
9/16	15.00	.....	.....	.....	.....	.....	.....
5/8	15.00	.....	.....	.....	.....	.....	.....
3/4	12.00	$20.00	$25.00	.....	.....	.....	.....
7/8	13.00	15.00	25.00	.....	.....	.....	.....
1	12.00	15.00	20.00	.....	.....	.....	.....
1 1/4	18.00	20.00	22.00	$36.65	$40.00	.....	.....
1 1/2	19.50	25.55	31.75	39.95	48.00	$50.00	$50.00
1 3/4	21.00	27.25	35.00	42.25	56.00	60.00	62.00
2	22.50	28.95	36.25	45.55	60.00	65.00	68.00
2 1/4	24.00	30.60	38.50	48.85	64.00	70.00	74.00
2 1/2	25.50	32.35	40.75	52.15	68.00	75.00	80.00
2 3/4	27.00	34.05	43.00	55.45	72.00	80.00	86.00
3	28.50	35.75	45.25	58.75	76.00	85.00	92.00
3 1/4	30.00	37.45	47.50	62.05	80.00	90.00	98.00
3 1/2	31.50	39.15	49.75	65.35	84.00	95.00	104.00
3 3/4	33.00	40.85	52.00	68.65	88.00	100.00	110.00
4	34.50	42.55	54.25	71.95	92.00	105.00	116.00
Extra Wrenches ....each	.10	.12	.15	.15	.20	.20	.20

Iron Machine Screws

Flat, Round and Fillister Heads

Revised April, 2, 1928



Packed 1 gross in a carton.

Price, per Gross

*Threads per Inch / Diameter	56 / 64 / 2	48 / 56 / 3	40 / 48 / 4	32 / 40 / 6	32 / 36 / 8
Length, Inches — 1/8	$.24	$.25	$.26	$.28	....
3/16	.25	.26	.27	.29	$.35
1/4	.26	.27	.28	.30	.36
5/16	.27	.28	.29	.31	.37
3/8	.28	.29	.30	.32	.39
7/16	.29	.30	.31	.34	.41
1/2	.30	.31	.32	.36	.43
5/8	.32	.33	.34	.40	.47
3/4	.33	.34	.36	.43	.49
7/8	.34	.36	.38	.46	.53
1	...	...	.42	.50	.57
1 1/8	...	...	.46	.54	.63
1 1/4	...	...	.52	.58	.69
1 1/2	...	...	.60	.68	.82
1 3/4	...	...	...	.82	.95
2	...	...	...	.96	1.08
2 1/4	...	...	...	...	1.25
2 1/2	...	...	...	...	1.45
2 3/4	...	...	...	...	1.65
3	...	...	...	...	1.85

*Threads per Inch / Diameter	24 / 32 / 10	24 / 28 / 12	20 / 28 / 1/4	18 / 24 / 5/16	16 / 24 / 3/8
Length, Inches — 3/16	$.45	....	....	....	....
1/4	.46	$.64	....	....	....
5/16	.48	.66	$.80	....	....
3/8	.50	.68	.84	$1.55	....
7/16	.52	.70	.88	1.60	....
1/2	.54	.74	.92	1.65	$2.20
5/8	.58	.82	1.00	1.75	2.40
3/4	.62	.86	1.05	1.80	2.50
7/8	.66	.92	1.10	1.90	2.65
1	.70	.98	1.20	2.00	2.85
1 1/8	.76	1.04	1.30	2.10	3.05
1 1/4	.82	1.10	1.40	2.25	3.25
1 1/2	.95	1.24	1.60	2.45	3.55
1 3/4	1.12	1.40	1.80	2.75	3.95
2	1.30	1.60	2.00	3.05	4.40
2 1/4	1.50	1.80	2.25	3.35	4.85
2 1/2	1.70	2.05	2.50	3.65	5.40
2 3/4	1.95	2.30	2.75	4.00	6.00
3	2.15	2.60	3.10	4.40	6.60

*The thread pitches (threads per inch) shown above are standard coarse and standard fine pitches, respectively, as recommended by the National Screw Thread Commission.

Screws up to and including one inch long, threaded to head; over one inch, threaded three quarters of length.

Machine screws are furnished to A. S. S. T. dimensions unless otherwise specified. Samples or measurements are necessary for other than these.

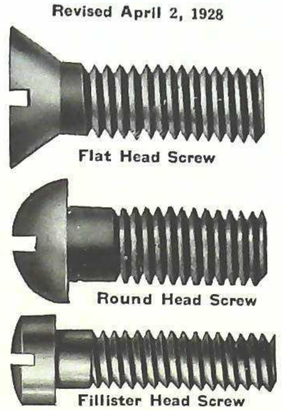
Prices of screws not listed, extras for annealing, oiling, bluing, galvanizing, nickeling or other finishes, will be furnished on application.

Hy-Tech Products

Brass Machine Screws

Flat, Round and Fillister Heads

Revised April 2, 1928



Packed 1 gross in a carton.

Price, per Gross

*Threads per Inch / Diameter	56 / 64 / 2	48 / 56 / 3	40 / 48 / 4	32 / 40 / 6	32 / 36 / 8
Length, Inches — 1/8	$.28	$.34	$.40	$.52	....
3/16	.30	.36	.42	.54	$.70
1/4	.32	.38	.44	.58	.76
5/16	.34	.40	.46	.62	.82
3/8	.36	.42	.48	.66	.88
7/16	.38	.44	.50	.70	.94
1/2	.40	.46	.54	.76	1.02
5/8	.44	.52	.62	.92	1.20
3/4	.50	.58	.68	1.00	1.30
7/8	.56	.66	.74	1.10	1.45
1	...	...	.82	1.20	1.60
1 1/8	...	...	.90	1.30	1.75
1 1/4	...	...	1.00	1.45	1.90
1 1/2	...	...	1.25	1.65	2.15
1 3/4	...	...	....	1.95	2.45
2	...	...	....	2.25	2.75
2 1/4	...	...	....	....	3.10
2 1/2	...	...	....	....	3.45
2 3/4	...	...	....	....	3.80
3	...	...	....	....	4.15

*Threads per Inch / Diameter	24 / 32 / 10	24 / 28 / 12	20 / 28 / 1/4	18 / 24 / 5/16	16 / 24 / 3/8
Length, Inches — 3/16	$.95	....	....	....	....
1/4	1.05	$1.60	....	....	....
5/16	1.15	1.70	$2.30	....	....
3/8	1.25	1.80	2.40	$4.60	....
7/16	1.35	1.90	2.50	4.80	....
1/2	1.45	2.00	2.65	5.00	$7.10
5/8	1.75	2.20	2.95	5.40	7.70
3/4	1.90	2.40	3.15	5.80	8.20
7/8	2.05	2.60	3.45	6.30	8.90
1	2.20	2.80	3.75	6.80	9.60
1 1/8	2.35	3.00	4.05	7.30	10.30
1 1/4	2.55	3.25	4.35	7.80	11.00
1 1/2	2.90	3.75	4.95	8.50	12.10
1 3/4	3.35	4.25	5.55	9.30	13.40
2	3.80	4.75	6.15	10.40	14.70
2 1/4	4.25	5.25	6.75	11.50	16.20
2 1/2	4.75	5.75	7.35	12.60	17.80
2 3/4	5.25	6.25	8.00	13.70	19.50
3	5.75	6.75	8.65	14.90	21.60

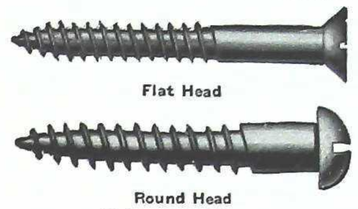
*The thread pitches (threads per inch) shown above are standard coarse and standard fine pitches, respectively, as recommended by the National Screw Thread Association.

Screws up to and including one inch long, threaded to head; over one inch, threaded three-fourths of length.

Machine screws are furnished to A.S.M.E. dimensions unless otherwise specified. Samples or measurements are necessary for other than these.

Prices of screws not listed, extras for annealing, oiling, bluing, galvanizing, nickeling and other finishes will be furnished on application.

Iron and Brass Wood Screws



Price, per Gross

Prices Effective January 3, 1928

No.	1/4-Inch Price Iron	1/4-Inch Price Brass	No.	1-Inch—Cont. Price Iron	1-Inch—Cont. Price Brass	No.	2 1/4-inch—Cont. Price Iron	2 1/4-inch—Cont. Price Brass
0	$.24	$.26	5	$.36	$.70	11	$.85	$2.55
1	.24	.28	6	.38	.80	12	.90	3.00
2	.24	.30	7	.40	.90	14	1.20	3.65
3	.24	.32	8	.44	1.00	16	1.40	4.45
4	.24	.34	9	.46	1.10	18	1.60	5.40
	3/8-Inch		10	.50	1.20	20	2.05	....
0	$.26	$.28	11	.55	1.30		2 1/2-Inch	
1	.26	.30	12	.60	1.55	6	$.65	....
2	.26	.32	14	.75	1.95	7	.70	....
3	.26	.34	16	.90	....	8	.75	....
4	.26	.36		1 1/4-Inch		9	.80	....
5	.26	.40	4	$.38	....	10	.85	$2.55
6	.28	.45	5	.40	....	11	.90	2.80
7	.30	...	6	.42	$.90	12	1.00	3.25
8	.32	...	7	.44	1.00	14	1.30	4.25
	1/2-Inch		8	.46	1.10	16	1.60	5.00
1	$.28	$.34	9	.50	1.25	18	1.90	6.00
2	.28	.36	10	.55	1.40	20	2.30	....
3	.28	.38	11	.60	1.55		2 3/4-Inch	
4	.28	.40	12	.65	1.80	8	$.75	....
5	.28	.45	14	.80	2.30	9	.80	....
6	.30	.50	16	1.00	....	10	.90	....
7	.32	.55	18	1.15	....	11	1.00	....
8	.34	.65		1 1/2-Inch		12	1.10	....
9	.36	...	4	$.40	....	14	1.45	....
10	.38	...	5	.44	....	16	1.80	....
	5/8-Inch		6	.46	$1.00	18	2.20	....
2	$.30	$.38	7	.48	1.20	20	2.60	....
3	.30	.40	8	.50	1.30		3-Inch	
4	.30	.45	9	.55	1.40	8	$.80	....
5	.30	.50	10	.60	1.65	9	.85	....
6	.32	.55	11	.65	1.80	10	1.00	....
7	.34	.60	12	.70	2.10	11	1.15	....
8	.36	.70	14	.90	2.65	12	1.35	$3.90
9	.38	.80	16	1.10	....	14	1.70	4.95
10	.40	.90	18	1.25	....	16	2.05	5.90
11	.42	...	20	1.60	....	18	2.50	7.20
12	.46	...		1 3/4-Inch		20	2.90	....
	3/4-Inch		6	$.50	....	24	4.00	....
2	$.32	$.42	7	.55	....		3 1/2-Inch	
3	.32	.45	8	.60	$1.45	10	$1.25	....
4	.32	.50	9	.65	1.65	11	1.40	....
5	.32	.55	10	.70	1.85	12	1.60	$4.80
6	.34	.60	11	.75	2.05	14	2.00	6.00
7	.36	.70	12	.80	2.40	16	2.40	7.10
8	.38	.80	14	1.00	3.00	18	2.80	8.75
9	.40	.90	16	1.20	....	20	3.20	....
10	.42	1.00	18	1.35	....	24	4.50	....
11	.46	1.10	20	1.75	....		4-Inch	
12	.50	1.25		2-Inch		12	$1.90	....
14	.65	....	6	$.55	....	14	2.30	....
	7/8-Inch		7	.60	....	16	2.70	....
3	$.34	....	8	.65	$1.65	18	3.10	....
4	.34	$.55	9	.70	1.85	20	3.60	....
5	.34	.60	10	.75	2.05	24	5.10	....
6	.36	.70	11	.80	2.30		4 1/2-Inch	
7	.38	.80	12	.85	2.70	14	$2.60	....
8	.40	.90	14	1.10	3.45	16	3.00	....
9	.44	1.00	16	1.30	4.10	18	3.50	....
10	.46	1.10	18	1.45	4.80	20	4.10	....
11	.50	1.20	20	1.95	....	24	5.60	....
12	.55	1.40		2 1/4-Inch			5-Inch	
14	.70	....	6	$.60	....	14	$2.90	....
	1-Inch		7	.65	....	16	3.30	....
3	$.36	....	8	.70	....	18	4.00	....
4	.36	$.60	9	.75	....	20	4.70	....
			10	.80	$2.30	24	6.20	....

Diamond Malleable Iron Expansion Shields



In ordering specify diameter of screw to be used and whether short standard or long standard is wanted.
Prices do not include lag screw.

Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100	Diam. Screw Inches	Length Inches	Outside Diam. Inches	Price per 100
1/4	1 1/2	1/2	$15.00	5/8	3 1/2	7/8	$45.00
5/16	1 3/4	9/16	18.00	3/4	3 1/2	1 1/8	65.00
3/8	2 3/4	5/8	25.00	7/8	5	1 3/8	95.00
7/16	2 3/4	11/16	32.00	1	5	1 1/2	110.00
1/2	3 1/2	3/4	38.00	...	...	...	.....

Keystone Interlocking Expansion Shields


Double

Prevents the nut being drawn out of the shield when heavy loads are applied. Guides the mechanic in determining when to stop tightening up the bolt. Prevents the nut being drawn past the point of maximum expansion. Locks the two shields and the nut into a unit of resistance against the load, making it impossible to pull out the nut without extracting the shield, also thus increasing the holding power of the expansion.
Made of malleable iron for durability and strength.

Diam. Screw or Bolt Inches	Length Shield Inches	O. D. and Size Drill to Use Inches	Price Shields Only per 100	Diam. Screw or Bolt Inches	Length Shield Inches	O. D. and Size Drill to Use Inches	Price Shields Only per 100
1/4	1 1/2	1/2	$15.00	1/2	2 1/2	7/8	$38.00
5/16	1 3/4	9/16	18.00	5/8	2 7/8	1	45.00
3/8	2	11/16	25.00	3/4	3 1/4	1 1/8	65.00
7/16	2 1/2	7/8	32.00	..	...		.....

Keystone Single Expansion Shields

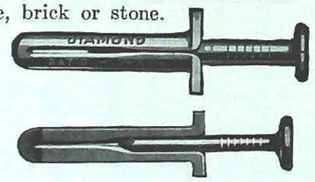
For Machine Bolts and Machine Screws



Diam. of Screw or Bolt Inches	Length Inches	Outside Diam. and Size Drill to Use, Inches	Price per 100
1/4	1 5/16	1/2	$15.00
5/16	1 1/2	9/16	18.00
3/8	1 5/8	11/16	25.00
1/2	1 7/8	7/8	38.00
5/8	2	1	45.00
3/4	2 3/4	1 3/16	65.00
7/8	3 3/4	1 3/8	95.00
1	3 3/4	1 7/16	110.00

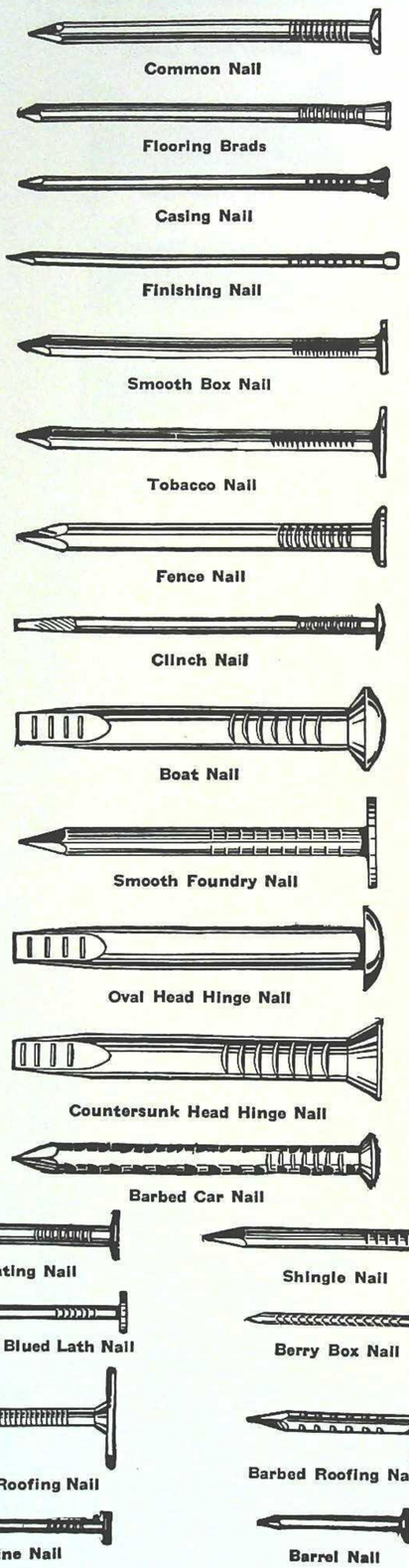
Diamond D H D Hammer Drive Anchors

For nailing to concrete, brick or stone. Shields are zinc, non-rusting; made of one piece of metal, forming a single unit which cannot become disarranged. Heavily galvanized nails are supplied with shields, packed in the same container.



Diam. and Lgth. of Shield In.	Diam. Drill to Use In.	Std. Pkg.	Wt. Lbs. per 100	Price per 100	Diam. and Lgth of Shield In.	Diam. Drill to Use In.	Std. Pkg.	Wt. Lbs. per 100	Price per 100
3/16x 7/8	3/16	100	1 1/4	$8.00	5/16x2 1/4	5/16	100	6	$18.00
3/16x1 1/4	3/16	100	1 1/2	9.00	5/16x2 3/4	5/16	100	7 1/2	20.00
1/4 x1	1/4	100	2 1/4	10.00	3/8 x2	3/8	100	8	20.00
1/4 x1 1/4	1/4	100	2 3/4	11.00	3/8 x3 1/4	3/8	100	14	25.00
1/4 x1 1/2	1/4	100	3 1/2	12.00	1/2 x2 1/4	1/2	50	17	30.00
5/16x1 1/4	5/16	100	3 1/2	14.00	1/2 x3 1/2	1/2	50	25	35.00

Wire Nails



For prices of all nails, see Standard Nail Card.

Hy-Tech Products

Standard Wire Nail Card

Extras on Standard Wire Nails in 100-Pound Kegs

American Steel & Wire Company List
Effective December 1, 1927

Common Nails

Size	Extra per 100 Pounds
2d	$1.65
3d	1.15
4d	.80
5d	.70
6d	.60
7d	.55
8d	.50
9d	.45
10d	.40
12d	.35
16d	.30
20d–60d	.25

Casing Nails

2d	$1.70
3d	1.20
4d	1.05
5d	.95
6d	.70
7d	.65
8d	.60
9d	.55
10d	.50
12d	.45
16d	.40
20d–40d	.30

Flooring Brads

6d	$.65
7d	.60
8d	.55
9d	.50
10d	.45
12d	.40
16d	.35
20d	.30

Boat Nails Bright

	Light	Heavy
4d	$.95	$.95
6d	.80	.80
8d	.75	.75
10d	.70	.80
12d	.65	.75
16d	.60	.70
20d	.55	.65

Common Brads

2d	$1.70
3d	1.20
4d	.85
5d	.75
6d	.65
7d	.60
8d	.55
9d	.50
10d	.45
12d	.40
16d	.35
20d–60d	.30

Shingle Nails

3d	$1.05
3½d	.85
4d	.80
5d	.70
6d	.65

Smooth Box Nails

Size	Extra per 100 Pounds
2d	$1.65
3d	1.15
4d	1.00
5d	.90
6d	.65
7d	.60
8d	.55
9d	.50
10d	.45
12d	.40
16d	.35
20d–40d	.25

Siding Nails
Same advance as smooth box nails

Slating Nails

2d	$1.20
3d	1.00
4d	.85
5d	.75
6d	.65

Barbed Roofing Nails
Regular Head

¾-In.	$1.55
⅞-In.	1.30
1 -In.	1.20
1⅛-In.	1.10
1¼-In.	.95
1⅜-In.	.90
1½-In.	.80
1¾-In.	.75
2 -In.	.65

Fence Nails

5d	$.60
6d	.55
7d	.45
8d	.45
9d	.40
10d	.40
12d	.35
16d	.30
20d	.25

Hinge Nails Bright

	Light	Heavy
4d	$.95	$.95
6d	.80	.80
8d	.75	.75
10d	.70	.80
12d	.65	.75
16d	.60	.70
20d	.55	.65

Finishing Nails

2d	$2.25
3d	1.60
4d	1.45
5d	1.35
6d	.80
7d	.75
8d	.65
9d	.60

Finishing Nails Cont.

Size	Extra per 100 Pounds
10d	$.55
12d	.50
16d	.45
20d	.35

Fine Nails

2d	$2.20
*2d	2.40
3d	1.60
*3d	2.15

Clinch Nails Bright

2d	$1.55
3d	1.35
4d	1.10
5d	1.00
6d	.90
7d	.85
8d	.80
9d	.75
10d	.70
12d	.65
16d	.60
20d	.55

Barbed Car Nails Bright

	Light	Heavy
4d	$1.05	$.95
5d	.85	.80
6d	.80	.75
7d	.70	.70
8d	.70	.70
9d	.65	.65
10d	.65	.65
12d	.60	.60
16d	.55	.55
20d	.50	.50
30d	.50	.50
40d	.50	.50
50d	.50	.50
60d	.50	.50

Clout Nails Bright

¾-In.	$2.40
⅞-In.	1.75
1 -In.	1.55
1⅛-In.	1.50
1¼-In.	1.35
1⅜-In.	1.25
1½-In.	1.20

Sterilized Blued Lath Nails

2d	$2.55
†2d	2.75
3d	1.95
†3d	2.50

Barrel Nails

⅝ In.	$2.45
¾-In.	2.10
⅞-In.	1.45
1 In.	1.25
1⅛-In.	1.20
1¼-In.	1.15
1⅜ In.	.95
1½-In.	.90

Berry Box Nails
Smooth

Size In.	No. 16	No. 17
¾	$2.80	$3.00
⅞	2.55	2.75
1	2.35	2.55
1⅛	2.30	2.50
1¼	2.25	2.45

Spikes

Size	
10d	$.40
12d	.35
16d	.30
20d	.25
30d	.25
40d	.25
50d	.25
60d	.25
7-In.	.25
8-In.	.35
9-In.	.35
10-In.	.45
12-In.	.45

Barbed Dowel Pins

Size In.	No. 8	No. 9
⅝	$1.75	$1.90
¾	1.50	1.65
⅞	1.35	1.50
1	1.25	1.40
1⅛	1.15	1.30
1¼	1.10	1.25
1⅜	1.05	1.20
1½	1.00	1.15
1⅝	.95	1.10
1¾	.90	1.05
2	.85	1.00

Size In.	No. 10	No. 11
⅝	$2.00	$2.20
¾	1.75	1.90
⅞	1.60	1.75
1	1.50	1.65
1⅛	1.40	1.50
1¼	1.35	1.45
1⅜	1.30	1.40
1½	1.25	1.35
1⅝	1.20	1.30
1¾	1.15	1.25
2	1.10	1.20

Size In.	No 12
⅝	$2.45
¾	2.15
⅞	2.00
1	1.90
1⅛	1.75
1¼	1.70
1⅜	1.65
1½	1.60
1⅝	1.55
1¾	1.50
2	1.45

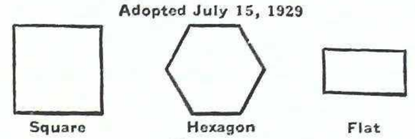
*Extra fine. †Light.

Special Extras on Standard Wire Nails

Annealed nails, 25 cents per 100 pounds extra.
Blued nails, 35 cents per 100 pounds extra.
Barbing nails, 25 cents per 100 pounds extra.
Special heads, 15 cents per 100 pounds extra.
Special points, 15 cents per 100 pounds extra.
Galvanizing, prices upon application.

Cold Finished Steel

Adopted July 15, 1929


Square Hexagon Flat

Squares

Thickness Inches	Extras per 100 Pounds	Thickness Inches	Extras per 100 Pounds	Thickness Inches	Extras per 100 Pounds
1/8 to 5/32	$5.00	9/16	$1.00	2 1/16 to 2 7/16	$1.25
3/16 to 7/32	4.00	5/8	.85	2 1/2 to 3	1.50
1/4 to 5/16	2.50	11/16 to 13/16	.75	3 1/16 to 4	2.00
3/8 to 7/16	1.75	7/8 to 15/16	.70	.....	.....
1/2	1.15	1 3/8 to 2	.90	.....	.....

Hexagons

1/8 to 5/32	$5.00	9/16	$.80	1 5/16 to 1 7/16	$.65
3/16 to 7/32	4.00	5/8	.70	1 1/2 to 2	.90
1/4 to 5/16	2.50	11/16 to 13/16	.60	2 1/16 to 2 7/16	1.25
3/8	1.75	7/8 to 15/16	.55	2 1/2 to 3	1.50
7/16	1.25	1 to 1 1/16	.50	3 1/16 to 4	2.00
1/2	.90	1 1/8 to 1 1/4	.45	.....	.....

Flats

Thickness Inches	Extras, per 100 Pounds — Width, Inches: 1/4	5/16 to 1/2	9/16 to 23/32	3/4 to 1
1/8 and 5/32	$8.50	$6.50	$5.50	$4.50
3/16 to 5/16	7.75	5.75	5.25	3.75
3/8 to 7/16	....	4.75	4.25	2.75
1/2 to 9/16	....	....	3.25	1.75
5/8 to 11/16	....	....	2.75	1.50
3/4 to 15/16	....	....	....	1.50

Thickness Inches	Extras, per 100 Pounds — Width, Inches: 1 1/16 to 1 1/2	1 9/16 to 3	Wider than 3	
1/8 and 5/32	$3.50	$3.00	$3.50	....
3/16 to 5/16	2.75	1.75	3.00	....
3/8 to 7/16	2.75	1.75	2.50	....
1/2 to 9/16	1.75	1.50	2.50	....
5/8 to 11/16	1.50	1.50	2.50	....
3/4 to 15/16	1.50	1.50	2.50	....
1 to 1 7/16	1.50	1.50	2.50	....
1 1/2 to 1 11/16	....	1.50	2.50	....
1 3/4 to 1 15/16	....	1.50	2.50	....
2 to 2 15/16	....	1.50	2.50	....

Extras for Long and Short Lengths

Length Inches	Extras, per 100 Pounds — Squares	Hexagons	Flats
3 to 5 15/16	$2.50	$2.50	$5.00
6 to 11 15/16	1.25	1.25	2.50
12 to 23 15/16	.50	.50	1.00
24 to 35 15/16	.40	.40	.75
36 to 47 15/16	.35	.35	.60
48 to 59 15/16	.30	.30	.40
60 to 83 15/16	.25	.25	.35
84 to 119 15/16	.20	.20	.30

Lengths Longer than 24 Feet and Less than 30 Feet ..... per 100 pounds $.50
Lengths 30 Feet and Less than 35 Feet per 100 pounds 1.00
Lengths 35 Feet and Less than 40 Feet per 100 pounds 1.50
Lengths 40 Feet and Less than 45 Feet per 100 pounds 2.00
Lengths 45 Feet and Longer ..... per 100 pounds 2.50

When squares, hexagons or flats are furnished in coils, deduct 15 cents per 100 pounds from the net price.

It is understood that the buyer will accept shorts up to 10 per cent, not less than 5 feet in length for screw steel and other grades used for automatic screw machine work in squares and hexagons 5/8 inch and smaller.

Quantity Differentials

All specifications for less than 4000 pounds of a size and grade for shipment at one time will be subject to these extras. The total weight of a size and grade ordered for shipment at one time will determine the extra, regardless of length or exact quantity actually shipped:

Less than 500 Pounds ..... per 100 pounds net $1.50
500 to 999 Pounds ..... per 100 pounds net .90
1000 to 1999 Pounds ..... per 100 pounds net .40
2000 to 3999 Pounds ..... per 100 pounds net .20

Shipments less than 24000 pounds will be invoiced at an advance of 10 cents per 100 pounds.

Extras for Chemical Composition

Prices upon application.

Cumberland Turned and Ground Shafts

Also Extras on Cold Drawn Steel Rounds 1 1/16 Inch and Smaller, Flats, Squares and Hexagons

Standard Classification of Net Extras per 100 Pounds

Adopted July 15, 1929

Extras for Size

Rounds

Size, In.	Per 100 Lbs.	Size, In.	Per 100 Lbs.
1/8 to 5/32	$3.00	1 1/2 to 2 3/16	$.25
3/16 to 7/32	2.00	2 1/4 to 2 7/8	.15
1/4	1.25	2 15/16 to 3 3/8	.35
5/16	1.00	3 7/16 to 3 7/8	.50
3/8	.90	3 15/16 to 4 3/8	.80
7/16 to 9/16	.70	4 7/16 to 4 7/8	1.00
5/8	.55	4 15/16 to 5 3/8	1.25
11/16 to 3/4	.40	5 7/16 to 5 7/8	1.75
13/16 to 1 1/16	.35	5 15/16 to 6 3/8	2.25
1 1/8 to 1 7/16	.30	6 7/16 to 7	3.00

Squares

1/8 to 5/32	$5.00	11/16 to 13/16	$.75
3/16 to 7/32	4.00	7/8 to 15/16	.70
1/4 to 5/16	2.50	1 3/8 to 2	.90
3/8 to 7/16	1.75	2 1/16 to 2 7/16	1.25
1/2	1.15	2 1/2 to 3	1.50
9/16	1.00	3 1/16 to 4	2.00
5/8	.85		

Hexagons

1/8 to 5/32	$5.00	7/8 to 15/16	$.55
3/16 to 7/32	4.00	1 to 1 1/16	.50
1/4 to 5/16	2.50	1 1/8 to 1 1/4	.45
3/8	1.75	1 5/16 to 1 7/16	.65
7/16	1.25	1 1/2 to 2	.90
1/2	.90	2 1/16 to 2 7/16	1.25
9/16	.80	2 1/2 to 3	1.50
5/8	.70	3 1/16 to 4	2.00
11/16 to 13/16	.60	....	....

Flats

Thickness Inches	Width, Inches: 1/4	5/16 to 1/2	9/16 to 23/32	3/4 to 1	1 1/16 to 1 1/2	1 9/16 to 3	Wider Than 3
1/8 and 5/32	$8.50	$6.50	$5.50	$4.50	$3.50	$3.00	$3.50
3/16 to 5/16	7.75	5.75	5.25	3.75	2.75	1.75	3.00
3/8 to 7/16	....	4.75	4.25	2.75	2.75	1.75	2.50
1/2 to 9/16	....	....	3.25	1.75	1.75	1.50	2.50
5/8 to 11/16	....	....	2.75	1.50	1.50	1.50	2.50
3/4 to 15/16	....	....	....	1.50	1.50	1.50	2.50
1 to 1 7/16	....	....	....	....	1.50	1.50	2.50
1 1/2 to 1 11/16	....	....	....	....	....	1.50	2.50
1 3/4 to 1 15/16	....	....	....	....	....	1.50	2.50
2 to 2 15/16	....	....	....	....	....	1.50	2.50

The smallest dimension is the thickness. Intermediate sizes (all shapes) subject to next higher extra.

Extra for Odd and Intermediate Sizes

The following sizes in rounds, hexagons and squares shall be considered standard: By 64ths to 1 inch, inclusive; by 32nds, over 1 to 2 inches, inclusive; by 16ths, over 2 inches to maker's limit.

All odd and intermediate sizes are subject to a net extra of 25 cents per 100 pounds in addition to the usual extra for size, accuracy, etc. However, the extra for odd and intermediate sizes shall not apply on 20,000 pounds or more of a size and grade for shipment at one time. (In other words, the extra will be charged on all specifications on less than 20,000 pounds of one size and grade for shipment at one time.)

Extras for Chamfering—For Automatic Screw Machine Use Only

Size ...inches	7/16 to 5/8	11/16 to 15/16	1 to 2	2 1/16 & Larger
Rounds.....	$.13	$.10	$.065	$.04
Hexagons and Squares....	.15	.13	.115	.10

These extras apply on lengths 10 feet and longer and one end of bar only. If both ends of bars are chamfered, these extras are doubled. For sizes smaller than 7/16 inch and bars shorter than 10 feet, special prices will also be quoted. Special prices will also be quoted on chamfering for other than automatic screw machine use.

Cumberland Turned and Ground Shafts

Also Extras on Cold Drawn Steel Rounds 1 1/16-Inch and Smaller, Flats, Squares and Hexagons

Standard Classification of Net Extras per 100 Pounds

Adopted July 15, 1929

Extras for Size

Boxing and Burlapping

Boxing (minimum 75 cents), domestic shipment, 50 cents.
Boxing (minimum $1.00), export shipments, 75 cents.
Burlapping (minimum 25 cents), full length, 25 cents.

Extras for Chemical Composition

Screw Stock, Bessemer or Open Hearth—Standard Analysis (Sulphur Content not Higher Than .100 Per Cent Minimum, with 7 Point Range)	per 100 lbs.	$.10
Screw Stock, Bessemer or Open Hearth—Special Analysis (Sulphur Content .110 to .200 Per Cent Inclusive, Minimum with 10 Point Range)	per 100 lbs.	.25
Screw Stock, High Manganese Open Hearth—Not to Exceed .25 Per Cent Carbon; Minimum Manganese .80 Per Cent and Higher	per 100 lbs.	.35
Screw Stock, High Manganese Open Hearth—Carbon .26 to .50 Per Cent; Minimum Manganese .80 Per Cent and Higher	per 100 lbs.	.50
S.A.E. Specifications—1010 to 1030, Inclusive, Including All Specifications Falling Within the Same Carbon Range and Excepting High Manganese Specifications	per 100 lbs.	.15
S.A.E. Specifications—1035 to 1045, Inclusive, Including All Specifications Falling Within the Same Carbon Range and Excepting High Manganese Specifications	per 100 lbs.	.25
Specified Analysis—Carbon—.51 to .75 Per Cent	per 100 lbs.	1.00
Specified Analysis—Carbon—.76 to 1.00 Per Cent	per 100 lbs.	2.00
Special Case Carburizing Steel (In Addition to Usual Extra for Chemical Composition)	per 100 lbs.	.60
Annealing	per 100 lbs.	.75
Annealing (Pipe or Pot)	per 100 lbs.	1.50

Extras for Long and Short Lengths

Length Inches	Per 100 Pounds: Rounds	Squares	Hexagons	Flats
3 to 5 15/16	$2.50	$2.50	$2.50	$5.00
6 to 11 15/16	1.25	1.25	1.25	2.50
12 to 23 15/16	.50	.50	.50	1.00
24 to 35 15/16	.40	.40	.40	.75
36 to 47 15/16	.35	.35	.35	.60
48 to 59 15/16	.30	.30	.30	.40
60 to 83 15/16	.25	.25	.25	.35
84 to 119 15/16	.20	.20	.20	.30

Extra Lengths Longer than 24 Feet and Less than 30 Feet	per 100 lbs.	$.50
Extra, 30 Feet and Less than 35 Feet	per 100 lbs.	1.00
Extra, 35 Feet and Less than 40 Feet	per 100 lbs.	1.50
Extra, 40 Feet and Less than 45 Feet	per 100 lbs.	2.00
Extra, 45 Feet and Longer	per 100 lbs.	2.50

When rounds, squares, hexagons or flats are furnished in coils, deduct 15 cents per 100 pounds from net price.

It is understood that the buyer will accept shorts up to 10 per cent, not less than 5 feet in length for screw steel and other grades used for automatic screw machine work in rounds, squares and hexagons, 5/8 inch and smaller.

Quantity Differentials

All specifications for less than 4000 pounds of a size and grade for shipment at one time will be subject to these extras. The total weight of a size and grade ordered for shipment at one time will determine the extra, regardless of length or exact quantity actually shipped:

Less than 500 Pounds	per 100 lbs. Net	$1.50
500 to 999 Pounds	per 100 lbs. Net	.90
1000 to 1999 Pounds	per 100 lbs. Net	.40
2000 to 3999 Pounds	per 100 lbs. Net	.20

Shipments less than 24000 pounds will be invoiced at an advance of 10 cents per 100 pounds.

Extras for Accuracy

Prices upon application.

Turned and polished extras, also special finish extras do not apply on Cumberland Turned and Ground Shafting

Hy-Tech Products

Iron Bars and Small Shapes

National Classification of Extras Adopted January 15, 1924

Extras per 100 Pounds Rounds and Squares

1 to 1 7/8 In	Base
2 " 2 7/8 "	$.20
3 " 3 1/2 "	.50
3 5/8 " 4 "	.80
4 1/8 " 4 1/2 "	1.00
4 5/8 " 5 "	1.30
5 1/8 " 6 "	1.80
6 1/8 " 6 1/2 "	2.20
6 5/8 " 7 1/4 "	2.50
3/4 " 15/16 "	.05
5/8 " 11/16 "	.10
9/16	.15
1/2	.20
7/16	.30
3/8	.40
11/32	.55
5/16	.70
9/32	.85
1/4	1.00
15/64	1.25
7/32	1.50
3/16	2.00

Ovals

3/4 to 2 1/2x3/8 and Over	$.30
3/4 " 2 1/2x1/4 to 5/16	.40
3/4 " 2 1/2x5/16 " 3/16	.70
5/8 " 11/16x5/16 and Over	.50
5/8 " 11/16x3/16 to 1/4	.70
5/8 " 11/16x1/8 " 5/32	1.00
1/2 " 9/16x1/4 and Over	1.00
1/2 " 9/16x1/8 to 3/16	1.30
1/2 " 9/16x3/32	1.60
3/4 " 7/16x3/16 and Over	1.60
3/8 " 7/16x1/8 to 5/32	2.00
3/8 " 7/16x3/32	2.40

Half Ovals

1 to 4x1/4 and Over	$.40
1 " 4x Nos. 7, 8, 9 and 3/16	.50
1 " 4x Nos. 10, 11, 12 and 1/8	.70
3/4 " 15/16x3/16 and Over	.70
3/4 " 15/16x Nos. 10, 11, 12 and 1/8	.90
3/4 " 15/16x " 13, 14 and 15	1.20
5/8 " 11/16x5/32 and Over	.90
5/8 " 11/16x Nos. 10, 11, 12 and 1/8	1.20
5/8 " 11/16x " 13, 14, 15	1.40
1/2 " 9/16x1/8 and Over	1.20
1/2 " 9/16x Nos. 13, 14 and 15	1.60
3/8 " 7/16x3/32 and Over	2.00
3/8 " 7/16x Nos. 14, 15	2.40

Half Rounds—Solid

1 to 3	$.30
3/4 " 15/16	.50
5/8 " 11/16	.70
1/2 " 9/16	1.00
3/8 " 7/16	1.50

Hexagons

3/4 to 3 1/16	$.25
5/8 " 11/16	.40
1/2 " 9/16	.60
7/16	.80
3/8	1.00
5/16	1.20
1/4	1.50

Flats

1 1/2 to 4x 3/8 to 1	Base
4 1/4 " 6x 3/8 " 1	$.10
6 1/4 " 8x 3/8 " 1	.60
8 1/4 " 10x 3/8 " 1	.80
1 3/8 " 4x1 1/16 " 1 1/2	.20
4 1/4 " 6x1 1/16 " 1 1/2	.30
6 1/4 " 8x1 1/16 " 1 1/2	.60
8 1/4 " 10x1 1/16 " 1 1/2	.90
2 " 4x1 5/8 " 2	.50
4 1/4 " 6x1 5/8 " 2	.60

Iron Bars and Small Shapes

National Classification of Extras Adopted January 15, 1924

Extras per 100 Pounds Flats—Continued

6 1/4 to	8x1 5/8 to 2	$.80
8 1/4 "	10x1 5/8 " 2	1.00
2 "	4x2 1/8 " 3	.60
4 1/4 "	6x2 1/8 " 3	.80
6 1/4 "	8x2 1/8 " 3	1.00
2 "	4x3 1/8 " 3 1/4	.70
4 1/4 "	6x3 1/4 " 4	1.00
2 "	4x3 3/8 " 3 3/4	.80
	12x 3/8 " 1	1.30
	12x1 1/8 " 1 1/2	1.40
	12x1 9/16 " 2	1.60
1 1/8 to	1 3/8x3/8 " 1	.05
1 "	1 1/16x3/8 " 7/8	.10
7/8 "	15/16x3/8 " 7/8	.20
3/4 "	13/16x3/8 " 3/4	.30
5/8 "	11/16x3/8 " 5/8	.40
9/16	x3/8 " 1/2	.50
1/2	x3/8 " 7/16	.70
12	x1/4 " 5/16	1.30
8 1/4 to 10	x1/4 " 5/16	1.00
7 " 8	x1/4 " 5/16	.70
6 1/4 " 6 3/4	x1/4 " 5/16	.50
4 1/4 " 6	x1/4 " 5/16	.30
1 1/2 " 4	x1/4 " 5/16	.20
1 " 1 3/8	x1/4 " 5/16	.25
3/4 "	15/16x1/4 " 5/16	.40
5/8 "	11/16x1/4 " 5/16	.60
1/2 "	9/16x1/4 " 5/16	.90
3/8 "	7/16x1/4 " 5/16	1.40

Bands

1 7/16 to 6 In.	x	Nos. 7, 8, 9 and 3/16 In	Base
4 1/16 " 6 "	x	" 10, 11, 12 and 1/8 In	$.10
1 7/16 " 4 "	x	" 10, 11, 12 " 1/8 "	.05
1 " 1 3/8 "	x	" 7, 8, 9 and 3/16 In	.05
1 1/16 " 1 3/8 "	x	" 10, 11, 12 and 1/8 In	.10
15/16	x	" 7, 8, 9 and 3/16 In	.10
15/16 " 1	x	" 10, 11, 12 and 1/8 In	.15
7/8 In.	x	Nos. 7, 8, 9 and 3/16 In	.15
7/8 "	x	" 10, 11, 12 and 1/8 In	.25
13/16 "	x	" 7, 8, 9 and 3/16 In	.20
13/16 "	x	" 10, 11, 12 and 1/8 In	.30
11/16	to 3/4 In.	x Nos. 7, 8, 9 and 3/16 In	.30
3/4 In.	x	Nos. 10, 11, 12 and 1/8 In	.35
11/16 "	x	" 10, 11, 12 " 1/8 "	.40
9/16	to 5/8 In.	x Nos. 7, 8, 9 and 3/16 In	.40
9/16 "	5/8 "	x " 10, 11, 12 and 1/8 In	.45
1/2	In.	x Nos. 7, 8, 9 and 3/16 In	.45
1/2 "	x	" 10, 11, 12 and 1/8 In	.55
7/16 "	x	" 7, 8, 9 and 3/16 In	.70
7/16 "	x	" 10, 11, 12 and 1/8 In	.85
3/8 "	x	" 7, 8, 9 and 3/16 In	.75
3/8 "	x	" 10, 11, 12 and 1/8 In	1.00

Quantity Differentials

All specifications for less than 2000 pounds of a size will be subject to the following extras, the total weight of a size ordered to determine the extra, regardless of length and regardless of exact quantity actually shipped.

Quantities from 1 to 2000 Pounds	$.20
" Less Than 1000 "	.50

Straightening

Machine Straightening	$.10

Machine-cutting to Specified Lengths Rounds and Squares 1 1/2 Inches and Larger

Machine-cutting to Lengths Over 48 Inches	$.20
" " " " 24-48 " Inc	.30
" " " " 12-24 " "	.40
" " " " 12 Inches and Less, Extra Furnished on Application, Not Less Than	.70

Extra for Machine-cutting Rounds and Squares Under 1 1/2 Inches, Prices Furnished on Application

Cutting to Specified Lengths Other than Machine-cutting

Cutting to Lengths Over 48 Inches	$.10
" " " " 24-48 " Inc	.15
" " " " 12-24 " "	.30
" " " 12 Inches and Less, Extra Furnished on Application, Not Less Than	.40

Standard Steel Classification

Extras per 100 Pounds

Steel Structural Shapes

Adopted December 1, 1924

Base

Beams and Channels 3 to 15 Inches, Inclusive.
Angles, 3 to 6 Inches on One or Both Legs, ¼-Inch Gauge and Heavier.
Zees, 3 Inches and Over, ¼-Inch Gauge and Heavier.

Section

Supplementary Beams 15 Inches and Under	$.05
Supplementary Beams Over 15 Inches	.15
Standard Beams Over 15 Inches	.10
Standard Angles Over 6 Inches on One or Both Legs	.10
Standard Tees 3 Inches and Over	.10
Bulb Angles	.30

Special sections to be submitted for price.

Length

Under 5 Feet to 3 Feet, Inclusive	$.10
Under 3 Feet to 2 Feet, Inclusive	.25
Under 2 Feet to 1 Foot, Inclusive	.50
Under 1 Foot	1.55
Over 80 Feet to 100 Feet	.25

100 Feet, 25 Cents Plus 5 Cents for Every Additional 2 Feet or Fraction thereof.

The provision for the longer lengths covers only the limited number of sizes that can be rolled to these lengths.

Steel Bars and Small Shapes

Adopted January 2, 1928

Flats

Width Inches	Width, Inches: 4 to 3 1/16	3 to 2 1/16	2 to 1 1/16	1 to 13/16	3/4 to 1/2	7/16 to 3/8	5/16 to 1/4
3/8	...	...	...	....	....	....	$1.40
7/16	...	...	...	....	....	$1.00	1.20
1/2	...	...	...	....	....	.70	.90
9/16	...	...	...	....	....	$.50	.50 .75
5/8 to 11/16	...	...	...	....	.40	.40	.60
3/4 to 13/16	...	...	...	....	.30	.30	.40
7/8 to 15/16	...	...	...	....	$.20	.20	.20 .30
1 to 1 3/8	...	...	$.10	Base	Base	Base	Base .15
1 7/16 to 2	...	...	.10	Base	Base	Base	Base .15
2 1/16 to 2 1/2	...	$.20	.10	Base	Base	Base	Base .15
2 9/16 to 3	...	.20	.10	Base	Base	Base	Base .15
3 1/16 to 3 1/2	$.30	.20	.10	Base	Base	Base	Base .15
3 9/16 to 4	.30	.20	.10	Base	Base	Base	Base .15
4 1/16 to 5	.30	.20	.10	Base	Base	Base	Base .15
5 1/16 to 6	.30	.20	.10	Base	Base	Base	Base .15

Rounds and Squares

6 5/8 to 7 1/4	$.75	3 1/8 to 3 9/16	$.10	11/32	$.55
6 1/8 to 6 9/16	.65	3/4 to 3 1/16	Base	5/16	.70
5 5/8 to 6 1/16	.55	5/8 to 11/16	.10	9/32	.85
5 1/8 to 5 9/16	.45	9/16	.15	1/4	1.00
4 5/8 to 5 1/16	.35	1/2	.20	15/64	1.25
4 1/8 to 4 9/16	.25	7/16	.30	7/32	1.50
3 5/8 to 4 1/16	.15	3/8	.40	3/16	2.00

Hexagons

1 5/8 to 3 1/16	$.25	1/2 to 9/16	$.35	5/16	$1.20
3/4 to 1 9/16	.125	7/16	.60	1/4	1.50
5/8 to 11/16	.20	3/8	.90	..	....

Equal Leg Angles

1 1/2x1 1/2 Inches and Wider, but Under 3x3/16 Inches and Over	$.15
1 1/2x1 1/2 Inches and Wider, but Under 3x1/8 Inches	.25
1x1 to 1 1/4x1 1/4x3/16 Inches and Over	.25
1x1 to 1 1/4x1 1/4x1/8 Inches	.30
7/8x7/8x3/16 Inches	.35
7/8x7/8x1/8 Inches	.40
3/4x3/4x3/16 Inches	.45
3/4x3/4x1/8 Inches	.60
5/8x5/8x1/8 Inches	1.50
5/8x5/8x3/32 Inches	2.00
1/2x1/2x1/8 Inches	2.20
1/2x1/2xLess than 1/8 Inches	2.50
3x3x3/16 Inches	.35
3x3x1/8 Inches	.50

Standard Steel Classification

Extras per 100 Pounds

Adopted January 2, 1928

Unequal Leg Angles

3 1/2x2 Inches by Less than 1/4 Inch Thick	$.30
3x2 1/2 Inches and 3x2 Inches by Less than 1/4 Inch Thick	.35
2x1x3/16 Inches Thick	.30
2x1x1/8 Inches Thick	.40
1x5/8x3/16 Inches Thick	.50
1x5/8x1/8 Inches Thick	.60

Other unequal leg angles subject to special prices which will be furnished upon application.

Channels

1 1/2 Inches and Wider, but Under 3x3/16 Inches and Over	$.25
1 1/2 Inches and Wider, but under 3x1/8 Inches	.40
1 to 1 1/4x3/16 Inches and Over	.40
1 to 1 1/4x1/8 Inches	.50
1 to 1 1/4x7/64 Inches	.70
3/4 and 7/8x3/16 Inches and Over	.50
3/4 and 7/8x1/8 Inches	.60
3/4 and 5/8x7/64 Inches	.80
3/4 Inches x No. 15	1.00
5/8x1/8 Inches and Over	1.70
5/8x3/32 Inches	2.00
1/2x7/64 Inches and Over	2.50
1/2x5/64 Inches	3.00

Tees

1 1/2x1 1/2 Inches and Wider, but under 3x3/16 Inches and Over	$.30
1x1 to 1 1/4x1 1/4x3/16 Inches and Over	.55
1x1 to 1 1/4x1 1/4x1/8 Inches	.70
7/8x7/8x3/16 Inches	.70
7/8x7/8x1/8 Inches	.90
3/4x3/4x3/16 Inches	.90
3/4x3/4x1/8 Inches	1.10
5/8x5/8x1/8 Inches	1.80
1/2x1/2x1/8 Inches	2.50

Unequal Tees are subject to special prices which will be furnished upon application.

Half Rounds—Solid

1 to 3	$.30	1/2 to 9/16	$1.00
3/4 to 15/16	.50	3/8 to 7/16	1.50
5/8 to 11/16	.70	.....	....

Half Ovals

Prices upon application.

Ovals

Prices upon application.

Quantity Differentials

Lump Sum Extras

All specifications for less than 4000 pounds of a size will be subject to the following Lump Sum extras for handling and assembling. These extras shall be added to the net price of the material and shall be determined by the total weight of a size ordered.

Quantities Less than 4000 Pounds but Not Less than 2000 Pounds	$4.00
Quantities Less than 2000 Pounds, but Not Less than 1000 Pounds	8.00
Quantities Less than 1000 Pounds	12.00

For intermediate sizes, the next higher extra to be charged in all cases.

Steel Bands

Adopted March 2, 1925

Gauge	Width, Inches: 3/8	7/16	1/2	9/16	5/8 to 1 1/16	3/4 to 1 3/16	7/8 to 1 5/16	1 to 1 3/8	1 7/16 to 2	2 1/16 to 10 Inc'l.
3/16, 7, 8, 9,	$1.20	$.90	$.70	$.55	$.40	$.25	$.15	$.10	$.05	Base
10, 1/8, 11,	1.30	1.00	.75	.60	.45	.30	.20	.15	.10	$.05
12	1.40	1.10	.85	.65	.50	.35	.25	.20	.15	.10

Gauge designated in fractional inches or Birmingham wire gauge.

Quantity Extras

Less than 2000 Pounds, but Not Less than 1000 Pounds of One Size, per 100 pounds	$.25
Less than 1000 Pounds of One Size, per 100 pounds	.50

Cutting extras, prices upon application.

Hy-Tech Products

Armco Ingot Iron Blue Annealed Sheets



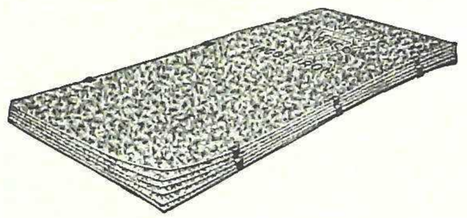
Ordinarily hot rolled jobbing sheets are too stiff to be used for certain purposes where the sheet is subjected to severe strains. The process of softening these sheets, called blue annealing, occurs in a gas furnace through which the sheets pass after leaving the finishing mill. In this furnace they are kept at a moderate heat for a short time and allowed to cool slowly, which effectually removes the stiffness and produces a soft ductile plate.

Blue annealed Armco Ingot Iron is a high grade material to use where resistance to corrosion is a factor. Armco Ingot Iron resists rust and in addition has good working qualities. It is especialy adapted to the manufacture of water and oil tanks, range boilers, gas containers, electrical switch boxes, mine cars, grave vaults, etc.

Gauge No.	Size Inches	Approximate Weight Pounds per Sheet	Gauge No.	Size Inches	Approx. Weight Pounds per Sheet
16	30x 96	51	14	48x120	128
16	36x120	77	12	48x120	179
16	48x120	102	12	60x144	268
16	48x144	123	10	48x120	230
14	30x 96	64	10	60x144	345
14	36x120	96	..	.....	...

Prices upon application.

Armco Ingot Iron Galvanized Sheets

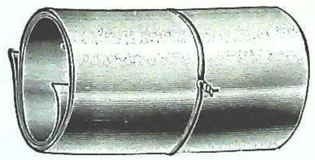


Used where rust-resistance is essential. Armco Ingot Iron is long lasting; easy-working and has the added protection of a heavy galvanized coating.

Armco Ingot Iron galvanized sheets can be furnished in all gauges from No. 10 to No. 28, inclusive, up to 48 inches in width and 144 inches in length.

Prices upon application.

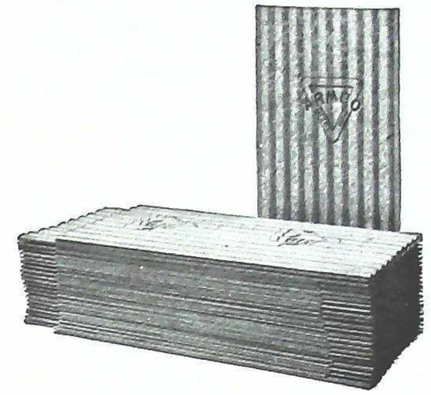
Roll and Sheet Brass



We are prepared to furnish roll and sheet brass in any size sheet desired.

Prices upon application.

Armco Ingot Iron Galvanized Corrugated Sheets



Armco Ingot Iron Corrugated Sheets not only impart great strength to the building to which they are applied, but are unequaled in rust resistance.

For roofing, sheets 27½ inches wide after corrugating are recommended. This size allows 1½ corrugations for lap. For siding, ceiling, arches and awnings, sheets 26 inches wide after corrugating are recommended, allowing one corrugation for laps.

It requires about one-half pound of nails and one-quarter pound of lead washers to properly lay one square of corrugated roofing.

Roofing and siding sheets carried in stock in 26, 24, 22 and 20-gauge, in foot lengths from 5 to 10 ft., 2½-in. corrugation. Other widths, lengths and corrugations furnished to order.

Prices upon application.

Armco Ingot Iron Polished Sheets

Armco Ingot Iron polished sheets have a uniform blue color with a smooth velvety surface and a dense, firm oxide which permits rough handling and bending. These sheets are resquared to size and oiled. They can be stretcher leveled when necessary.

Armco Ingot Iron polished sheets are uniform in color across the width and length of the sheet, free from buckles, and possess remarkable working qualities.

These sheets are used to a great extent in the manufacture of stoves, bake pans, locomotive jackets and engine lagging. For each of these purposes the corrosion resistance of Armco Ingot Iron makes it an ideal material.

Sizes not shown can be quoted on and shipped direct from the mill.

Gauge Number	Size Inches	Approx. Weight Pounds per Sheet	Gauge Number	Size Inches	Approx. Weight Pounds per Sheet
26	30x96	15	22	30x96	25
24	30x96	20	20	30x96	30

Prices upon application.

Armco Ingot Iron Black Sheets

Extensively used for stove pipe, heaters, stoves and in work not requiring polished surface. Has lasting qualities.

Gauge Number	Size Inches	Number Sheets to Bundle	Wt., Lbs. per Sheet	Wt., Lbs. per Bundle
26	30x96	10	15	150
24	30x96	7	20	140
22	30x96	6	25	150
20	30x96	5	30	150
18	30x96	4	40	160

Galvanized Sheets

Table of Weights without Bands and Number of Sheets per Bundle, Square Feet and Weight of Sheets

Size Inches	Sq. Ft. per Sheet	Gauge No. 10 — Wt., Lbs., per Sq. Ft. 5 781 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 11 — Wt., Lbs., per Sq. Ft. 5 156 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 12 — Wt., Lbs., per Sq. Ft. 4 531 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle
24x 72	12 00	69.4	2	139	61.9	3	186	54.4	3	163
26x 72	13.00	75 2	2	150	67.0	2	134	58.9	3	177
28x 72	14.00	80 9	2	162	72.2	2	144	63.4	2	127
30x 72	15.00	86.7	2	173	77 3	2	155	68.0	2	136
36x 72	18.00	104.1	*	*	92.8	2	186	81.6	2	163
24x 84	14.00	80.9	2	162	72.2	2	144	63.4	2	127
26x 84	15.17	87.7	2	175	78.2	2	156	68.7	2	137
28x 84	16 33	94 4	2	189	84.2	2	168	74.0	2	148
30x 84	17 50	101.2	*	*	90 2	2	180	79.3	2	159
36x 84	21.00	121 4	*	*	108.3	*	*	95.2	2	190
24x 96	16 00	92.5	2	185	82.5	2	165	72.5	2	145
26x 96	17 33	100.2	*	*	89.4	2	179	78.5	2	157
28x 96	18 67	107.9	*	*	96.3	2	193	84.6	2	169
30x 96	20.00	115.6	*	*	103.1	*	*	90.6	2	181
36x 96	24 00	138.8	*	*	123.8	*	*	108.8	*	*
24x108	18 00	104.1	*	*	92 8	2	186	81.6	2	163
26x108	19 50	112 7	*	*	100.5	*	*	88.4	2	177
28x108	21 00	121.4	*	*	108 3	*	*	95.2	2	190
30x108	22 50	130.1	*	*	116 0	*	*	102.0	*	*
36x108	27.00	156.1	*	*	139.2	*	*	122.3	*	*
24x120	20.00	115 6	*	*	103.1	*	*	90.6	2	181
26x120	21 67	125.3	*	*	111.7	*	*	98.2	*	*
28x120	23 33	134 9	*	*	120 3	*	*	105.7	*	*
30x120	25 00	144.5	*	*	128.9	*	*	113.3	*	*
36x120	30.00	173.4	*	*	154.7	*	*	135.9	*	*

Size Inches	Sq. Ft. per Sheet	Gauge No. 13 — Wt., Lbs., per Sq. Ft. 3 905 — Wt., Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 14 — Wt., Lbs., per Sq. Ft. 3 281 — Wt., Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 15 — Wt., Lbs., per Sq. Ft. 2.969 — Wt., Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle
24x 72	12 00	46.9	3	141	39.4	4	158	35.6	4	143
26x 72	13.00	50.8	3	152	42.7	4	171	38.6	4	154
28x 72	14.00	54.7	3	164	45.9	3	138	41.6	4	166
30x 72	15 00	58.6	3	176	49 2	3	148	44.5	3	134
36x 72	18 00	70.3	2	141	59.1	3	177	53.4	3	160
24x 84	14.00	54.7	3	164	45 9	3	138	41.6	4	166
26x 84	15.17	59.2	3	178	49 8	3	149	45 0	3	135
28x 84	16 33	63.8	2	128	53.6	3	161	48.5	3	145
30x 84	17 50	68.4	2	137	57.4	3	172	52.0	3	156
36x 84	21.00	82 0	2	164	68 9	2	138	62 3	2	125
24x 96	16.00	62.5	2	125	52.5	3	158	47.5	3	143
26x 96	17.33	67 7	2	135	56.9	3	171	51.5	3	154
28x 96	18 67	72.9	2	146	61.3	3	184	55.4	3	166
30x 96	20.00	78.1	2	156	65.6	2	131	59.4	3	178
36x 96	24.00	93.8	2	188	78.8	2	158	71.3	2	143
24x108	18.00	70.3	2	141	59.1	3	177	53.4	3	160
26x108	19.50	76 2	2	152	64.0	2	128	57.9	3	174
28x108	21.00	82.0	2	164	68.9	2	138	62.3	2	125
30x108	22.50	87 9	2	176	73 8	2	148	66.8	2	134
36x108	27.00	105 5	*	*	88 6	2	177	80.2	2	160
24x120	20.00	78 1	2	156	65.6	2	131	59.4	3	178
26x120	21.67	84.6	2	169	71.1	2	142	64.3	2	129
28x120	23.33	91 1	2	182	76.6	2	153	69.3	2	139
30x120	25.00	97.7	2	195	82 0	2	164	74.2	2	148
36x120	30.00	117.2	*	*	98.4	*	*	89.1	2	178

Size Inches	Sq. Ft. per Sheet	Gauge No. 16 — Wt., Lbs., per Sq. Ft. 2 656 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 17 — Wt., Lbs., per Sq. Ft. 2 406 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 18 — Wt., Lbs., per Sq. Ft. 2 156 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle
24x72	12 00	31 9	5	159	28.9	5	144	25.9	6	155
26x72	13.00	34.5	4	138	31.3	5	156	28.0	5	140
28x72	14.00	37.2	4	149	33.7	5	168	30.2	5	151
30x72	15.00	39.8	4	159	36.1	4	144	32.3	5	162
36x72	18 00	47 8	3	143	43 3	4	173	38.8	4	155
24x84	14 00	37.2	4	149	33.7	5	168	30 2	5	151
26x84	15 17	40 3	4	161	36.5	4	146	32.7	5	163
28x84	16.33	43.4	4	174	39 3	4	157	35.2	4	141
30x84	17.50	46.5	3	139	42 1	4	168	37.7	4	151

*Sheets weighing more than 98 pounds each, approximately, are not banded as general practice.

Galvanized Sheets

Table of Weights without Bands and Number of Sheets per Bundle, Square Feet and Weight of Sheets

Continued

Size Inches	Square Feet per Sheet	Gauge No. 16 — Wt., Lbs., per Sq. Ft. 2 656 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 17 — Wt., Lbs., per Sq. Ft. 2 406 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 18 — Wt., Lbs., per Sq. Ft. 2 156 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle
36x 84	21.00	55.8	3	167	50.5	3	152	45.3	3	136
24x 96	16.00	42.5	4	170	38.5	4	154	34.5	4	138
26x 96	17.33	46.0	3	138	41.7	4	167	37.4	4	150
28x 96	18.67	49.6	3	149	44.9	4	180	40.3	4	161
30x 96	20.00	53.1	3	159	48 1	3	144	43 1	4	173
36x 96	24.00	63.8	2	128	57.8	3	173	51.8	3	155
24x108	18.00	47.8	3	143	43.3	3	130	38.8	4	155
26x108	19.50	51 8	3	155	46 9	3	141	42 0	4	168
28x108	21.00	55.8	3	167	50 5	3	152	45.3	3	136
30x108	22 50	59 8	3	179	54.1	3	162	48 5	3	146
36x108	27.00	71 7	2	143	65.0	2	130	58 2	3	175
24x120	20.00	53.1	3	159	48 1	3	144	43 1	3	129
26x120	21.67	57 5	3	173	52.1	3	156	46.7	3	140
28x120	23.33	62.0	3	186	56.1	3	168	50.3	3	151
30x120	25.00	66.4	2	133	60.2	3	180	53 9	3	162
36x120	30 00	79.7	2	159	72.2	2	144	64.7	2	129

Size Inches	Square Feet per Sheet	Gauge No. 19 — Wt., Lbs., per Sq. Ft. 1 906 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 20 — Wt., Lbs., per Sq. Ft. 1 656 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 21 — Wt., Lbs., per Sq. Ft. 1 531 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle
24x 72	12 00	22.9	7	160	19.9	8	159	18.4	8	147
26x 72	13 00	24.8	6	149	21.5	7	151	19.9	8	159
28x 72	14.00	26.7	6	160	23.2	7	162	21.4	7	150
30x 72	15.00	28.6	5	143	24.8	6	149	23 0	7	161
36x 72	18.00	34.3	4	137	29.8	5	149	27.6	6	165
24x 84	14 00	26.7	6	160	23.2	7	162	21.4	7	150
26x 84	15.17	28.9	5	145	25.1	6	151	23.2	7	163
28x 84	16.33	31.1	5	156	27.1	5	135	25.0	6	150
30x 84	17.50	33 4	5	167	29.0	5	145	26.8	6	161
36x 84	21.00	40 0	4	160	34.8	4	139	32 2	5	161
24x 96	16.00	30.5	5	153	26.5	6	159	24.5	6	147
26x 96	17.33	33 0	5	165	28.7	5	144	26.5	6	159
28x 96	18.67	35.6	4	142	30 9	5	155	28.6	5	143
30x 96	20.00	38.1	4	153	33.1	5	166	30.6	5	153
36x 96	24.00	45.8	3	137	39.8	4	159	36.8	4	147
24x108	18.00	34.3	4	137	29.8	5	149	27.6	5	138
26x108	19.50	37.2	4	149	32.3	5	161	29.9	5	149
28x108	21.00	40.0	4	160	34 8	4	139	32.2	5	161
30x108	22 50	42.9	3	129	37.3	4	149	34.5	4	138
36x108	27.00	51.5	3	154	44.7	3	134	41.3	4	165
24x120	20.00	38.1	4	153	33.1	5	166	30.6	5	153
26x120	21.67	41.3	4	165	35 9	4	144	33.2	5	166
28x120	23.33	44.5	3	133	38 6	4	155	35.7	4	143
30x120	25.00	47 7	3	143	41 4	4	166	38.3	4	153
36x120	30.00	57.2	3	172	49.7	3	149	45.9	3	138

Size Inches	Square Feet per Sheet	Gauge No. 22 — Wt., Lbs., per Sq. Ft. 1.406 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 23 — Wt., Lbs., per Sq. Ft. 1 281 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 24 — Wt., Lbs., per Sq. Ft. 1 156 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle
24x 72	12 00	16.9	9	152	15.4	10	154	13.9	11	153
26x 72	13.00	18.3	8	146	16.7	9	150	15 0	10	150
28x 72	14.00	19.7	8	158	17.9	8	144	16.2	9	146
30x 72	15.00	21.1	7	148	19 2	8	154	17 3	9	156
36x 72	18.00	25.3	6	152	23 1	7	161	20 8	7	146
24x 84	14.00	19.7	8	158	17.9	8	144	16.2	9	146
26x 84	15 17	21 3	7	149	19 4	8	155	17.5	8	140
28x 84	16.33	23 0	7	161	20.9	7	146	18.9	8	151
30x 84	17.50	24.6	6	148	22 4	7	157	20.2	7	142
36x 84	21 00	29.5	5	148	26.9	6	161	24.3	6	146
24x 96	16.00	22.5	7	158	20.5	7	144	18.5	8	148
26x 96	17.33	24.4	6	146	22.2	7	155	20.0	8	160
28x 96	18.67	26.3	6	158	23.9	6	144	21.6	7	151
30x 96	20.00	28.1	5	141	25.6	6	154	23.1	7	162
36x 96	24 00	33.8	5	169	30.8	5	154	27.8	6	167
24x108	18.00	25.3	6	152	23.1	7	161	20.8	7	146
26x108	19.50	27.4	5	137	25.0	6	150	22.5	7	158

Galvanized Sheets

Table of Weights without Bands and Number of Sheets per Bundle, Square Feet and Weight of Sheets

Concluded

Size Inches	Square Feet per Sheet	Gauge No. 22 — Wt., Lbs., per Sq. Ft. 1 406 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 23 — Wt., Lbs., per Sq. Ft. 1 281 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 24 — Wt., Lbs., per Sq. Ft. 1 156 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle
28x108	21.00	29.5	5	148	26.9	6	161	24.3	6	146
30x108	22 50	31 6	5	158	28 8	5	144	26 0	6	156
36x108	27.00	38.0	4	152	34 6	4	138	31.2	5	156
24x120	20.00	28.1	5	141	25.6	6	154	23 1	7	162
26x120	21 67	30.5	5	152	27 8	6	167	25.1	6	150
28x120	23.33	32 8	5	164	29.9	5	149	27 0	6	162
30x120	25 00	35 2	4	141	32 0	5	160	28 9	5	145
36x120	30.00	42.2	4	169	38.4	4	154	34.7	5	173

Size Inches	Square Feet per Sheet	Gauge No. 25 — Wt., Lbs., per Sq. Ft. 1 031 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 26 — Wt., Lbs., per Sq. Ft. 906 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 27 — Wt., Lbs., per Sq. Ft. 844 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle
24x 72	12.00	12.4	12	149	10.9	14	152	10 1	15	152
26x 72	13 00	13.4	11	147	11 8	13	153	11 0	14	154
28x 72	14.00	14 4	11	159	12.7	12	152	11 8	13	154
30x 72	15.00	15 5	10	155	13 6	11	150	12.7	12	152
36x 72	18.00	18 6	8	149	16 3	9	147	15 2	10	152
24x 84	14 00	14 4	11	159	12 7	12	152	11 8	13	154
26x 84	15 17	15 6	10	156	13.7	11	151	12 8	12	154
28x 84	16.33	16 8	9	152	14 8	10	148	13 8	11	152
30x 84	17 50	18 0	8	144	15 9	10	159	14 8	10	148
36x 84	21.00	21 7	7	152	19 0	8	152	17 7	9	159
24x 96	16 00	16 5	9	149	14 5	10	145	13 5	11	149
26x 96	17 33	17.9	8	143	15 7	10	157	14 6	10	146
28x 96	18.67	19.3	8	154	16 9	9	152	15.8	10	158
30x 96	20.00	20.6	7	144	18.1	8	145	16.9	9	152
36x 96	24.00	24.8	6	149	21.8	7	152	20.3	8	162
24x108	18 00	18 6	8	149	16 3	9	147	15.2	10	152
26x108	19 50	20 1	8	161	17 7	8	141	16 5	9	148
28x108	21.00	21 7	7	152	19 0	8	152	17.7	8	142
30x108	22 50	23 2	7	162	20 4	7	143	19 0	8	152
36x108	27 00	27 8	5	139	24 5	6	147	22.8	7	159
24x120	20 00	20.6	7	144	18.1	8	145	16 9	9	152
26x120	21 67	22.3	7	156	19 6	8	157	18.3	8	146
28x120	23 33	24 1	6	144	21 1	7	148	19 7	8	158
30x120	25 00	25 8	6	155	22.7	7	159	21 1	7	148
36x120	30.00	30.9	5	155	27 2	6	163	25 3	6	152

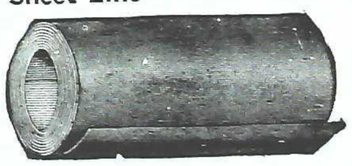
Size Inches	Square Feet per Sheet	Gauge No. 28 — Wt., Lbs., per Sq. Ft. 781 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 29 — Wt., Lbs., per Sq. Ft. 719 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle	Gauge No. 30 — Wt., Lbs., per Sq. Ft. 656 — Wt. Lbs. per Sheet	Sheets per Bundle	Wt. per Bundle
24x 72	12 00	9 4	16	150	8 6	17	147	7 9	19	150
26x 72	13.00	10 2	15	152	9 3	16	150	8.5	17	145
28x 72	14 00	10 9	14	153	10 1	15	151	9 2	16	147
30x 72	15 00	11.7	13	152	10 8	15	162	9 8	15	148
36x 72	18.00	14 1	11	155	12 9	12	155	11 8	13	154
24x 84	14.00	10 9	14	153	10 1	15	151	9 2	16	147
26x 84	15.17	11 8	13	154	10.9	14	153	10 0	15	149
28x 84	16 33	12 8	12	153	11 7	13	153	10 7	14	150
30x 84	17 50	13.7	11	150	12.6	12	151	11.5	13	149
36x 84	21.00	16.4	9	148	15.1	10	151	13 8	11	152
24x 96	16 00	12.5	12	150	11 5	13	150	10 5	15	158
26x 96	17.33	13.5	11	149	12 5	12	150	11 4	13	148
28x 96	18.67	14 6	10	146	13 4	11	148	12.3	12	147
30x 96	20 00	15.6	10	156	14.4	10	144	13.1	11	144
36x 96	24.00	18.8	8	150	17.3	9	155	15.8	10	158
24x108	18.00	14.1	11	155	12 9	12	155	11 8	13	154
26x108	19 50	15.2	10	152	14.0	11	154	12.8	12	154
28x108	21 00	16.4	9	148	15 1	10	151	13 8	11	152
30x108	22 50	17.6	8	141	16.2	9	146	14 8	10	148
36x108	27.00	21.1	7	148	19.4	8	155	17 7	8	142
24x120	20 00	15.6	10	156	14 4	10	144	13 1	11	144
26x120	21.67	16.9	9	152	15.6	10	156	14 2	11	156
28x120	23.33	18.2	8	146	16.8	9	151	15 3	10	153
30x130	25.00	19.5	8	156	18.0	9	162	16 4	9	148
36x120	30.00	23.4	7	164	21.6	7	151	19.7	8	158

Weights of Sheet Iron and Steel

U. S. Standard Gauge

No. of Gauge	Thickness, Inches — Fractions	Thickness, Inches — Decimals	Weight, Pounds per Square Foot — Iron	Weight, Pounds per Square Foot — Steel
0000000	1/2	.5	20	20.4
000000	15/32	.46875	18.75	19.125
00000	7/16	.4375	17.50	17.85
0000	13/32	.40625	16.25	16.575
000	3/8	.375	15.	15.30
00	11/32	.34375	13.75	14.025
0	5/16	.3125	12.50	12.75
1	9/32	.28125	11.25	11.475
2	17/64	.265625	10.625	10.8375
3	1/4	.25	10.	10.2
4	15/64	.234375	9.375	9.5625
5	7/32	.21875	8.75	8.925
6	13/64	.203125	8.125	8.2875
7	3/16	.1875	7.5	7.65
8	11/64	.171875	6.875	7.0125
9	5/32	.15625	6.25	6.375
10	9/64	.140625	5.625	5.7375
11	1/8	.125	5.	5.1
12	7/64	.109375	4.375	4.4625
13	3/32	.09375	3.75	3.825
14	5/64	.078125	3.125	3.1875
15	9/128	.0703125	2.8125	2.86875
16	1/16	.0625	2.5	2.55
17	3/160	.05625	2.25	2.295
18	1/20	.05	2.	2.04
19	7/160	.04375	1.75	1.785
20	3/80	.0375	1.50	1.53
21	11/320	.034375	1.375	1.4025
22	1/32	.03125	1.25	1.275
23	9/320	.028125	1.125	1.1475
24	1/40	.025	1.	1.02
25	7/320	.021875	.875	.8925
26	3/160	.01875	.75	.765
27	11/640	.0171875	.6875	.70125
28	1/64	.015625	.625	.6375
29	9/640	.0140625	.5625	.57375
30	1/80	.0125	.5	.51
31	7/640	.0109375	.4375	.44625
32	13/1280	.01015625	.40625	.414375
33	3/320	.009375	.375	.3825
34	11/1280	.00859375	.34375	.350625
35	5/640	.0078125	.3125	.31875
36	9/1280	.00703125	.28125	.286875
37	25/4000	.006640625	.265625	.2709375
38	1/160	.00625	.25	.255

Sheet Zinc



Sheets. 36x84 and 48x84 inches.

We carry zinc in various weights and will cut sizes to suit requirements.

Prices upon application.

Sheet Tin



Sheets, 20 x 28 inches.

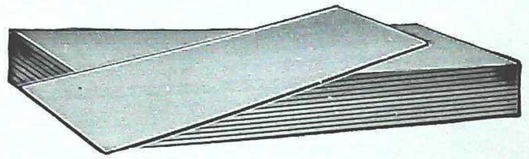
Weights, 8 to 40 pound coats.

Packed 200 to 300 to box.

Prices upon application.

Hy-Tech Products

Soft Sheet Copper



Ounces per Square Foot	Stub's Gauge No.	Weight, Pounds per Sheet — Size, Inches 30x60	30x96	48x96
8	31	6¼	...	....
10	28	7¾	12½	....
12	27	...	15	....
14	26	...	17½	....
16	25	...	20	....
18	24	...	22½	....
20	22	...	25	....
24	21	...	30	....
32	19	...	40	....
48	16	...	60	....
64	14	...	80	....
48	16	...	....	96
64	14	...	....	128
81	12	...	....	162
100	10	...	....	200

Prices upon application.

Extras for Hot Rolled Sheet Copper

Circles

Over 10-inch diameter to 20 inches both inclusive, 8 cents per pound advance over prices of sheet copper required to cut them from.

Over 20-inch diameter 8 cents per pound advance over price of sheet copper required to cut them from.

Less than 10-inch diameter, special prices.

Segments and Patterns

Special prices upon application.

Cold Rolling

One quarter-inch and thicker sheets, 1½ cents per pound; circles, 3 cents per pound.

Fourteen ounces per square foot to ¼ inch thick, sheets, 3 cents per pound; circles, 4½ cents per pound.

Lighter than 14-ounce sheets, 6 cents per pound; circles 8 cents per pound.

Cold rolled tinned sheets and circles, ½ cent per pound extra over above prices.

Cold rolled and annealed copper sheets and circles take same prices as cold rolled or hard copper of corresponding dimensions and gauge.

Special prepared copper, special prices upon application.

Copper wider than 72 inches or longer than 148 inches cannot be furnished patent leveled.

Polishing

Description	Extra per Sq. Ft. 60 In. and Under	Over 60 In.
16 Inches Wide and Under	$.05	$.06
Over 16 to 36 Inches, Inclusive	.06	.07
Over 36 Inches	.08	.09

Double the above prices if polished on both sides.

Over 96-inch lengths, special prices.

Lacquered copper, 1½ cents per square foot over price for polished copper.

Sheets suitable for polishing, add to price of plain cold rolled 3 cents per pound list.

Tinning

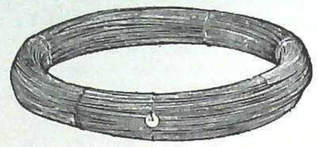
Description	Extra per Sq. Ft. 60 In. and Under	Over 60 In.
16 Inches Wide and Under	$.07	$.08
Over 16 to 36 Inches, Inclusive	.08	.09
Over 36 Inches	.09	.11

Double the above prices if tinned on both sizes.

For tinning the edges of sheets, one or both sides, price shall be the same as for tinning all of one side of the specified sheet.

For tinning or polishing circles, the prices per square foot are based upon the square of the circle or the sheet from which it is cut.

Liquor Bright Annealed Basic Wire



Put up in catch weight coils about 16 inches in diameter, papered. Coils will weigh from 60 to 100 pounds.

Prices upon application.

Lime Bright Annealed Basic Wire

Put up in bare catch weight coils about 16 inches in diameter.

Coils will weigh from 60 to 100 pounds.

Prices upon application.

Coil Springs



Open or Compression



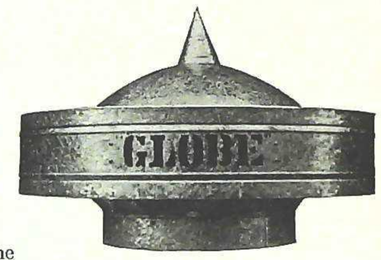
Closed or Extension

Made of oil tempered steel spring wire. Brass spring wire deteriorates with exposure to the atmosphere, and the coppered spring wire is uncertain as to quality.

Springs are made of wire that is approximately ⅛ of the outside diameter of the spring.

Prices upon application

Globe Ventilators



Extensively used to correct downward drafts in chimneys.

Provides positive ventilation for garages, barns and other farm buildings. Assures dependable ventilation for schools, theatres, factories, power plants, etc.

Made of Keystone copper steel, Toncan metal, Armco iron, copper, and with glass top when desired.

Diameter Pipe Inches	Outside Diam. Inches	Height Ventilator Inches	Gauge of Iron	Weight of Copper Ounces	Area Square Inches	Net Weight Pounds	Price Each
3	6¾	5¾	26	18	7.06	1	$1.50
4	7¾	6½	26	18	12.56	1½	1.75
5	10	7½	26	18	19.63	2½	2.50
6	11	9	26	18	28.27	3	3.40
8	14	11	26	18	50.26	5	4.65
10	17	13	24	18	78.54	7	5.75
12	19	14	24	18	113.10	9	6.75
14	25	18	20 & 24	18	153.94	17	13.00
16	28	20	20 & 24	18	201.06	21	20.00
18	32	23	20 & 24	20 & 18	254.47	30	27.00
20	36	25	20 & 24	20 & 18	314.16	36	33.00
24	43	30	20 & 22	24 & 20	452.39	51	40.00
30	52	35	18 & 22	24	706.8	80	65.00
36	66	50	18 & 20	24	1017.9	150	120.00
40	74	57	18 & 20	24	1256.6	170	180.00
48	84	64	18 & 20	24 & 28	1809.6	250	240.00
54	92	67	18 & 20	28	2290.2	275	300.00
60	99	70	18 & 20	28	2827.4	325	360.00
72	111	80	18 & 20	28	4071.5	425	480.00

Hy-Tech Products

Round Conductor Pipe



Plain



Corrugated

Gauges 28 to 24.

Gauge No.	Price, per Lineal Foot — Size, Inches 1½	*2	2½	3	3½	*4	*5	*6
28	$.13	$.15	$.16	$.17	$.20	$.23	$.28	$.33
26	...	.19	.20	.21	.24	.28	.34	.40
24	...	...	...	.27	.31	.35	.44	.52

*Corrugated made in these sizes only.

Square Corrugated Conductor Pipe



Gauges 28 to 24.

Size In.	Dimensions Inches	Price, per Lineal Foot — Gauge No. 28	26	24
2	1¾x2¼	$.23	$.29	...
3	2⅜x3¼	.24	.30	$.40
4	2¾x4¼	.31	.38	.50
5	3¾x5	.42	.50	.65

Slip Joint Eaves Trough



Made of galvanized Armco Ingot Iron sheets. Gauge 28 and 26, in 10-foot lengths. Packed 25 full length pieces in a crate, half right and half left unless otherwise ordered.

Size In.	Size Bead, In.	Gauge No.—Price per Lineal Foot 28	26	24
3½	½	$.19	$.23	...
4	½	.21	.25	$.35
5	½	.22	.26	.36
6	½	.27	.33	.42
7	⅞	.34	.42	.52
8	⅞	.44	.52	.62

Wheeling Adjustable Elbows



Made of galvanized steel.

Size In.	Price per Doz.	Size In.	Price per Doz.	Size In.	Price per Doz.
1½	$2.40	3½	$4.20	5½	$7.80
2	2.40	4	4.80	6	8.40
2½	3.00	4½	5.40	7	10.20
3	3.60	5	6.60	...	.....

We are in position to supply many items not shown in this catalogue and shall be pleased to receive your inquiries.

Square Corrugated Elbows



Style A, Ordinary Curve
No. 3—75 Degrees



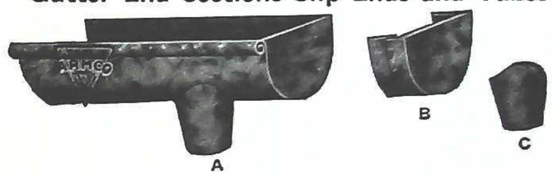
Style B, Side Curve
No. 3—75 Degrees

By proper combination of styles A and B, a square pipe can be made to turn the corner of a building as easily as a round pipe.

Order elbows and shoes by size and number.

Size In.	Galvanized Ingot Iron Elbows	Galvanized Ingot Iron Shoes	Galvanized Steel Elbows	Galvanized Steel Shoes	14-oz. Copper Elbows No. 0, 1 and 2, 3	14-oz. Copper Shoes No. 4 Elbows	16-oz. Copper Elbows No. 0 and 1, 2, 3	16-oz. Copper Shoes No. 4 Elbows
2	$.60	$.75	$.40	$.50	$.85	$.90	$.90	$1.05
3	.70	.85	.50	.60	1.10	1.20	1.20	1.35
4	.90	1.10	.65	.80	1.60	1.80	1.80	2.00
5	1.35	1.60	1.00	1.25	2.40	2.75	2.75	3.00
6	1.70	2.00	....	....	3.40	3.75	3.75	4.20

Gutter End Sections Slip Ends and Tubes



A shows a section of eave trough with tube and end soldered in it. Twelve-inch section furnished in lap joint.

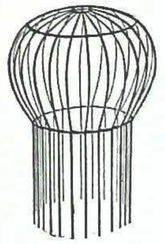
B shows slip joint end-piece. Can be used either right or left.

C shows a tube or outlet.

Gauges 28 to 24. In ordering drops, state for what size eaves trough they are wanted. Extra for double bead gutter ends, 26 and 24-gauge, 50 cents dozen.

Size In.	Price, per Dozen — Gauge 28 S. B.	Gauge 28 D. B.	Gauge 26 S. B.	Gauge 24 S. B.	Ends Caps	Drops or Outlets
2	....	....	....	....	....	$.60
2½	....	....	....	....	....	.75
3	$2.80	$3.30	$3.30	$4.30	$.95	.75
3½	2.80	3.30	3.30	4.30	.95	.80
4	3.10	3.60	3.60	4.60	1.10	.85
4½	3.45	3.95	3.95	4.95	1.20	.95
5	3.45	3.95	3.95	4.95	1.20	.95
6	4.15	4.65	4.65	5.65	1.45	1.20
7	4.70	5.20	5.20	6.20	1.70	....
8	5.25	5.75	5.75	6.75	2.10	....

Round Wire Spout Protectors



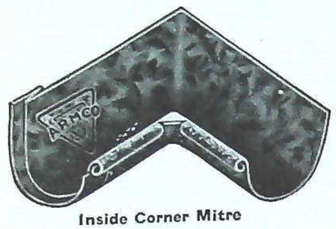
These spouts are used to prevent leaves and other rubbish from stopping up the pipe or going into the cistern, thereby preserving gutters and keeping them clean.

Size Inches	Price, per Dozen — Copper Wire	Galvanized Wire
2	$5.00	$1.60
3	6.00	2.00
4	8.50	2.50
5	13.00	3.50
6	15.00	5.00

Galvanized Eaves Trough Mitres

Made of Armco Ingot Iron sheets. Gauges 28 to 24.

When ordering, state whether right or left hand is wanted, and whether for inner or outer corner, otherwise half rights and half lefts and half inner and half outer will be shipped.



Inside Corner Mitre

Single Bead, Lap Joint

Size In.	Price, Lineal Ft. Gauge No. Std.	26	24
3½	$3.25	$4.00	$4.75
4	3.50	4.25	5.50
4½	4.00	4.75	6.50
5	4.00	4.75	6.50
6	5.00	6.00	7.50
7	6.50	8.00	9.00
8	8.00	9.50	11.00

Single Bead, Slip Joint

Size In.	Price, Lineal Foot Gauge No. Std.	26	24
3½	$4.25	$5.00	$5.75
4	4.50	5.25	6.50
4½	5.00	5.75	7.50
5	5.00	5.75	7.50
6	6.00	7.00	8.50
7	7.50	9.00	10.00
8	9.00	10.50	12.00



Outside Corner Mitre

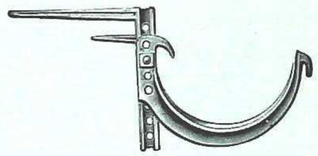
Double Bead

Size In.	Gauge No.—Price, per Lineal Foot—Lap Joint Std.	26	24	Slip Joint Std.	26	24
3½	$4.25	$5.00	$5.75	$5.25	$6.00	$6.75
4	4.50	5.25	6.50	5.50	6.25	7.50
4½	5.00	5.75	7.50	6.00	6.75	8.50
5	5.00	5.75	7.50	6.00	6.75	8.50
6	6.00	7.00	8.50	7.00	8.00	9.50
7	7.50	9.00	10.00	8.50	10.00	11.00
8	9.00	10.50	12.00	10.00	11.50	13.00

B. B. Gutter Hangers

Gem Circles

For Single Bead Gutters



With No. 7 Shank

Fig. 3313

With Bolts and Straps

No. 7 is made to drive from 3 to 4 inches square in the cornice. The lower prong forms a brace for the upper, and makes it strong and firm.

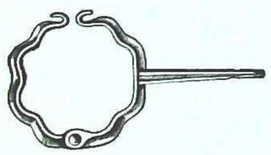
Additional bolts and straps are charged extra. Always state kind and size of circles wanted, also if tinned or black.

Black always sent when kind is not specified.

Shanks extra, assorted, per 100, black $5.40; tinned $6.75.

Size Inches	Price, per 100 Black	Tinned	Size Inches	Price, per 100 Black	Tinned
3½	$5.55	$6.95	5	$7.15	$8.95
3¾	5.80	7.25	6	9.45	11.80
4	5.85	7.30	7	13.60	17.00
4½	6.95	8.70	8	15.50	19.40

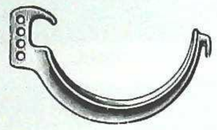
Round Corrugated Hinged Hooks



Size In.	Tinned, Price per 100 Short Wood Drive	Long Wood Drive
2	$7.85	$8.65
3	10.35	11.40
4	14.50	17.50
5	.....	20.75
6	.....	28.50

B. B. Gutter Hangers

Penn Circles for Double Bead Cutters



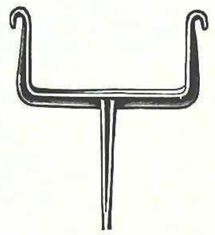
Furnished with bolts and straps.

Always state kind and size of circles wanted, also if tinned or black. Black is always sent when tinned is not specified.

Size Inches	Price, per 100 Black	Tinned	Size Inches	Price, per 100 Black	Tinned
3½	$6.25	$7.30	6	$9.45	$11.80
4	6.60	8.25	7	14.00	17.50
4½	7.25	9.10	8	16.20	20.25
5	7.90	9.90	..	.....	.....

Squared Wired Hooks

Tinned



Size In.	Price, per 100 For Wood	For Brick	Size In.	Price, per 100 For Wood	For Brick
3	$6.80	$8.80	5	.....	$12.20
4	8.50	10.80	6	.....	16.80

Wire Hangers for Eaves Troughs



Double and Triple Twist

Effective January 1, 1922

Made from No. 11 galvanized wire.

For all sizes of eaves troughs in both single and double bead.

Packed 1 gross in a box with 7 and 9-inch stems.

Prices shown are for triple twist, 3 cross bar, single bead.

Size.....in.	3	3½	4	4½	5	6	7	8
Price..... per gross	$2.75	2.75	2.75	3.00	3.00	3.50	4.00	4.50

For double bead add 25 cents to above list.

For all 9-inch stems add 25 cents to above list.

For all 11-inch stems add 50 cents to above list.

For double twist 2 cross bar hangers, deduct 25 cents from above list.

Steel Eaves Trough Hangers

With Galvanized Cross Bars



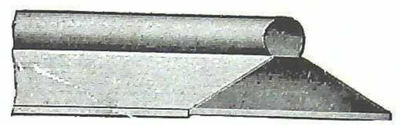
Hangers are furnished with rods and nuts, unless otherwise specified.

The prices given are for single bead; for double bead add 50 cents per gross.

Size In.	Price, per Gross With Rods and Nuts	Straps Riveted on Cross Bars	Size In.	Price, per Gross With Rods and Nuts	Straps Riveted on Cross Bars
...	.....	.....	5	$9.00	$8.00
3½	$8.00	$7.00	6	10.00	9.00
4	8.50	7.50	7	12.00	11.00
...	.....	.....	8	16.00	15.00

Hy-Tech Products

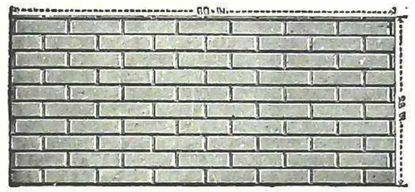
Plain Ridge Rolls



Made from black, painted or galvanized sheets, No. 16 gauge and lighter, in any length up to 10 feet. Standard length 8 feet; standard girt 12 inches with 2½-inch diameter roll; proportional girt for other rolls of 1¼ to 3 inches diameter.

Prices upon application.

Pressed Brick Siding



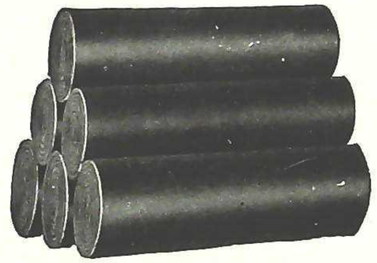
Steel, galvanized, or painted.

Size on single brick, 2⅛x8¼ inches. Sheets, 60x28 inches.

A square of brick siding consists of 8 and 4-7 sheets 60 inches long by 28 inches wide.

Prices upon application.

Tarred Roofing Felt



No. 1 weighs about 20 pounds per square.
No. 2 weighs about 15 pounds per square.

Price, No. 1.....per square ...
" " 2..... " ...

Threaded Tarred Felt

Size of Roll.....square feet	250	500
Weight per Roll.....pounds	25	50
Price.....per square	...	...

Deadening Felt

Width, 36 inches. Weight, about 1½ pounds per square yard and about 75 pounds per roll.

Price.....per pound ....

Blue Plaster Board

Size of Roll.....square feet	250	500
Weight per Roll.....pounds	25	50
Price.....per square	...	...

Roofing Supplies

One Roll of Roofing Requires				Price per Pound
1	Pound of	Tin Caps		$.10
1½	"	"	Nails	.08
2	"	"	Large Head Nails, no Caps	.10
3	"	"	Nails and Caps Combined	.15

Prepared Roofing



A smooth-surfaced roofing with an exceptionally heavy weather coating. Made in light, medium and heavy. Medium is generally used. Heavy is best for large roofs exposed to unusual weather conditions.

Is 36 inches wide and roll contains 108 square feet, sufficient to cover 100 square feet.

A sufficient quantity of large headed nails and cement is included with roll.

Weight	Approx. Wt. Lbs. per Roll	Price per Roll
Light	35	.....
Medium	45	.....
Heavy	55	.....

Blako Green Surfaced Asphalt Roofing

Made with green surfaced finish which is fadeless. Not recommended for use on a roof having a pitch of less than 3 inches to foot.

In rolls 36 in. in width containing 108 sq. ft., sufficient for covering 100 sq. ft. of roof surface with full allowance for 2-inch laps. Nails and lap cement furnished. Weight, 85 pounds.

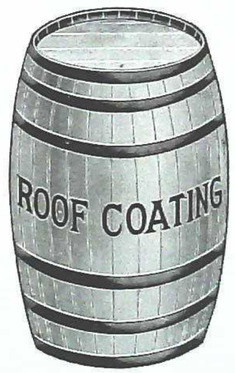
Price .....per roll .....



Fig. 3325

Roof and Graphite Paints

Roof Coating



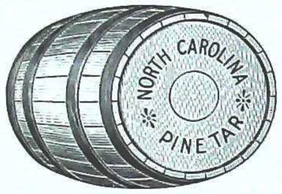
Price, 5 and 10-lb. Packages .....per lb. $.20
" 25-lb. Packages..... " .16
" Bbls. and ½ Bbls..... " .14

Graphite Ready Mixed Paints

Made from floated graphit and pure linseed oil, most durable coat for finishing coat on metal surfaces known.

Description	Price, per Gallon 1 Gal.	5 Gal.	½ Bbl.	1 Bbl.
Natural.....	$5.00	$4.90	$4.80	$4.60
Slate.....	5.00	4.90	4.80	4.60
Olive Green.....	5.00	4.90	4.80	4.60
Red.....	5.00	4.90	4.80	4.60

Pine Tar



Packed in iron-bound barrels.
Price, Full Barrel ..... per gallon ....
" Half " ..... " ....
" 1-gallon Cans ..... per can ....
" ½ " " ..... " ....

Coal Tar



Packed in iron-bound barrels.
Price, Full Barrel ..... per barrel ....
" Half " ..... " ....

Navy Deck or Pine Pitch

Packed in barrels weighing about 200 pounds.
Price ..... per barrel ....

Roofing Pitch

Packed in barrels and half barrels.
Price ..... per pound ....

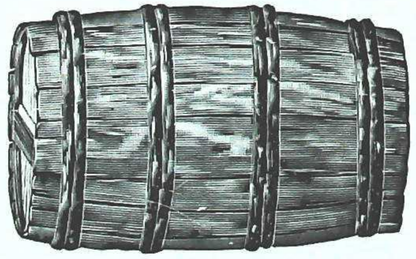
Asphalt Pitch

Price, Full Barrels, about 500 Pounds ..... per pound ....
" Half " " 300 " ..... " ....

Asphaltum Roof Coating

Style of Container	Price per Gal.	Style of Container	Price per Gal.
Full Barrel	....	10-Gal. Keg	....
Half "	....	15-Gal. Keg	....

Rosin



Approximately 400 pounds in a barrel.
Price ..... per pound ....

Sulphur

For Commercial Purposes

Packed in barrels, half-barrels, and 5, 10 and 25-pound boxes.
Price ..... per pound ....

Bitumastic Solution

Bitumastic Solution is a brilliant black, quick-drying bituminous paint of great durability and effectiveness.

It forms an impervious film over metal or other surfaces, excluding the causes of corrosion and deterioration.

Bitumastic Solution resists high temperatures, without losing its lustrous finish and is, therefore, used for painting boiler fronts, breechings, stacks, pipes, etc.

It is weather and water proof and is therefore, an effective protection for metal roofs and buildings, for steel window sash, fire escapes, air washers, cooling towers, tanks, hydraulic machinery and structures.

It fills every pinhole and crack and presents a smooth impermeable surface, highly resisting the attack of chemical fumes. Against acid and alkaline conditions it is used in dyehouses, bleacheries, paper mills, tanneries, pickling rooms and chemical plants.

It is exceptionally long-lived. It does not dry out leaving a porous coating of pigment, but retains its integrity for a prolonged time.

Price, 1-gallon ..... per gallon ....
" 5 " ..... " ....
" 50 " Drums ..... " ....

Bitumastic Colored Paints

The durable protection of refined bituminous paint is no longer confined to natural black color. Bitumastic Paints in red, gray, green and tan are made from the bituminous base, refined and colored by an exclusive process and offer an efficient protective coating for use where a color is preferred.

These are all-round paints for all-round work. They will do all that an oil paint can do and, in addition, much that no oil paint should be expected to do.

Bitumastic Colored Paints spread easily, dry quickly and form a tough elastic film of full body and attractive finish with a pleasing gloss.

Price, 1-gallon ..... per gallon ....
" 5 " ..... " ....
" 50 " Drums ..... " ....

Bitumastic and Hermastic Enamels

Bitumastic and Hermastic Enamels are solids and must be melted in roofer's kettles or suitable tanks. While in this molten state they may be applied by brushing, dipping or pouring. They harden immediately, forming a tough, tenacious coating of any desired thickness.

This Enamel affords ideal protection for penstocks, water mains, head gates, steel dams, tanks, coal bunkers, etc.

It has been used on many of the largest engineering structures and leading engineers have long recognized Bitumastic and Hermastic coatings as the best for such protection.

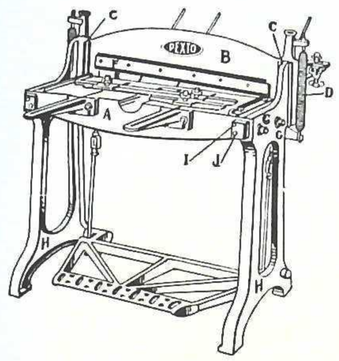
As considerable experience and skill are required to apply these Enamels in a satisfactory manner, we recommend that the coatings be applied by the field organization of the manufacturers.

Approximate costs and further information upon request.

Hy-Tech Products

Pexto Sheet Metal Squaring Shears

Silver City Pattern



Capacity, No. 18 gauge iron and lighter.

These new patterns are preferred over other shears owing to their extra wide bed plate; they are so proportioned that they will cut up to the full rated capacity much more easily than other similar shears of the same capacity.

Guaranteed to give excellent service; Pexto high grade quality material, combined with thorough workmanship make them a desirable medium weight shears.

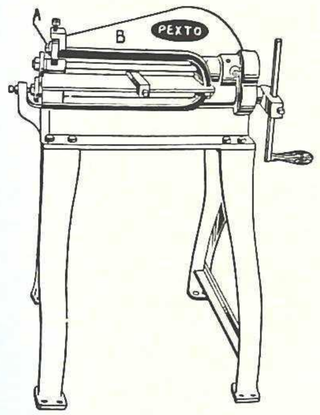
No. 122 is furnished with short front arms. Other numbers are furnished with long front arms.

Nos. 137 and 142 have hold-down attachment.

Complete gauge equipment furnished with all numbers.

No.	Length, Inches: Cutting Blades	Short Front Arms	Long Front Arms	Rear Gauge Arms	Width Bed Plate In.	Approx. Ship. Wt. Lbs.	Without Side Tables Price Each
122	22	12½	....	24	12	375	**$79.20**
132	30	....	19	30	14	540	**93.50**
137	36	....	25¼	30	14	650	**137.50**
142	42	....	25¼	30	14	800	**177.10**

No. 255A Pexto Rotary Slitting Shears



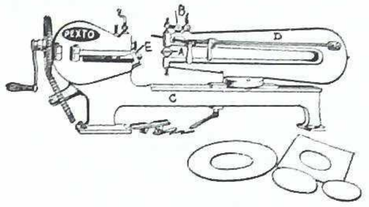
Capacity, No. 16 gauge iron and lighter.

The crank is adjustable to different leverages, bearings (A) are adjustable to take up wear o the cutters and the cutting head (B) is of construction and is mounted on heavy cast iron legs.

No.	255A
Diameter Cutters ..... inches	3⅛
Depth Cutting Head to Gauge ..... "	18
" " " " Frame ..... "	19
Size Table	20x8
Shipping Weight ..... pounds	325
Price ..... each	$82.50

We are as near as your nearest telephone.

Pexto Ring and Circular Shears



Capacity, No. 20 gauge iron and lighter.

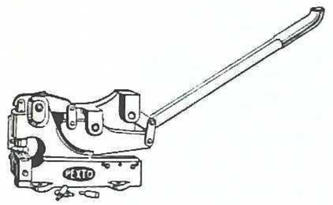
This improved pattern makes an efficient and useful bench ring and circular shears, for cutting circles or internal rings and irregular curves.

In circular cutting, blanks are clamped between rubber covered discs A, by means of a quick-acting eccentric lever device, B, adjustable for exerting uniform pressure to prevent work slipping and insuring more accurate cutting. This method permits clamping and removing blanks with rapidity.

Bed C, on which tail piece D, slides, is graduated in inches and fractions of inches for quick setting of tail piece D for size circle to be cut. The angular position of cutters E allows for clean cutting on inside and outside of circle.

No.	Diam., In. Clamping Cutters	Clamping Discs	Depth Cutting Head, In. To Gauge	To Frame	Depth Circle Arm In.	Will Circle from Square Blanks, In.	Approx. Ship. Wt. Lbs.	Price Each
298	1⅝	2¼	9⅛	10	16¼	3¼ to 22	195	$77.00
299	1⅝	2¼	9⅛	10	30½	3¼ " 38	290	99.00

No. 679 Pexto Combined Shears and Punches

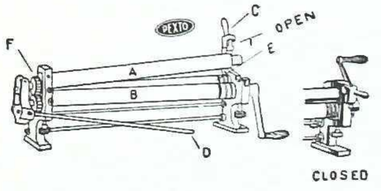


Shears and punches of high-grade quality with wide range of punching and cutting usefulness possessing a combination of individual features that make them highly adaptable for general use.

Furnished with one combination die and five punches: 1/8, 3/16, 1/4, 5/16 and 3/8-inch.

No.	Will Punch Iron In.	Depth Punching Gap In.	Will Center Sheets In.	Lgth. Cut In.	Will Cut Iron In.	Will Cut Narrow Bars In.	Approx. Ship. Wt., Lbs.	Price Each
679	3/16	2¾	5½	4¾	1/8	3/16 and 1/4	120	$49.50

Pexto Slip Roll Forming Machines



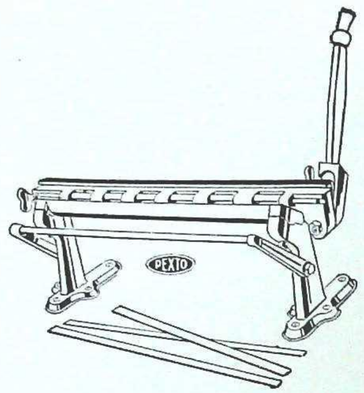
Capacity, Nos. 383 to 0381, 22 gauge sheet; Nos. 390 and 400, 16 gauge.

Gripping rolls have an extreme clearance of ½ inch. Grooves cut in rolls are intended to allow work with a wire to be formed. Tight pulleys, or tight and loose pulleys and iron floor legs can be fitted at an extra charge.

No.	Rolls, In. Lgth.	Diam.	Approx. Ship. Wt., Lbs.	Price Each
383	31	1¾	160	$34.65
382	31	2	165	36.85
381	37	2	180	39.45

No.	Rolls, In. Lgth.	Diam.	Approx. Ship. Wt. Lbs.	Price Each
0381	43	2	200	$47.30
390	37	2½	350	95.70
...	..	...	...	...

Pexto Pipe Folding Machines



Capacity, No. 24 gauge iron and lighter.

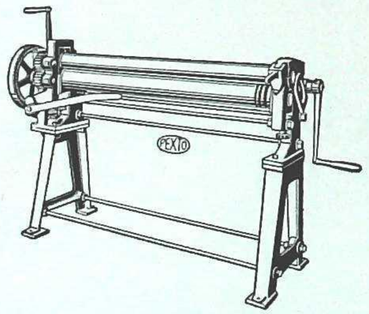
This folder folds the edges of sheets formed in cylindrical shape; will prove desirable as a machine for edging sheets while in the flat as well.

A round steel rod attachment permits the turning of edges on sheets of any length; is fitted to Nos. 12A and 14.

To turn an edge longer than the machine, the round rod is placed in the machine so that the sheet will pass over it, allowing the folding bar to turn against the round surface. Steel strips are furnished with the machines for turning locks wider than ⅜ inch.

No.	Length Inches	Will Form Locks Inches	Approx. Ship. Wt. Lbs.	Price Each
0	42	¼ and ⅜	135	$55.00
1	30½	¼ " ⅜	85	33.00
12A	30½	¼, ⅜, ½, ⅝	90	38.50
14	42	¼, ⅜, ½, ⅝	140	63.80

Pexto Slip Roll Forming Machines



Capacity, No. 14 gauge iron and lighter.

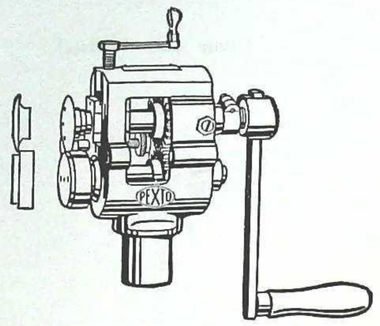
Constructed for heavy duty, having finely polished rolls made from a special piston rod hard steel, with large driving gear cut from solid cast iron, and steel machine cut connecting gears.

When furnished for hand power, heavy cranks are fitted on both ends. Adjustment of clamping and rear forming rolls is secured through screws. Grooves are cut in rolls for receiving wired sheets. Rolls are of the slip type, permitting the work to be removed readily from roll after being formed.

Furnished regularly for hand power, less legs. Pulleys and legs are not fitted unless specified. Tight and loose pulleys furnished at an extra charge. Longer rolls will be quoted on receipt of full particulars. When making inquiries state gauge iron to be used and diameters of cylinders to be formed.

No.	Rolls, In. Lgth.	Rolls, In. Diam.	Gear Ratio	Size Pulley In.	Speed Pulley R.P.M.	Approx. Ship. Wt., Lbs.	Price Each
416	36	3	3 " 1	18x4	60	590	$122.10
417	42	3	3 " 1	18x4	60	650	134.20
418	48	3	3 " 1	18x4	60	700	143.00

Pexto Burring Machines



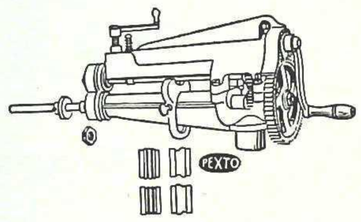
Capacity, No. 22 gauge iron and lighter.

Open pattern, with solid frame of improved design. The rolls are turned from a special high grade steel, giving extreme wearing qualities to the fine edge in the rolls necessary to produce a satisfactory uniform flange on a number of blanks.

Regular offset standard No. 975 is furnished.

No.	Each	Description	Diam. Rolls In.	Widest Flange or Burr that Can Be Turned, In.	Approx. Ship. Wt. Lbs.
576	$16.00	Small	1½	3/16	21
577	17.00	Large	2⅛	¼	25

Pexto Beading Machines

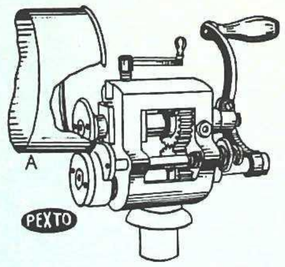


Capacity, No. 20 gauge iron and lighter. Caps and frames are reinforced for maximum strength. Driving gears are cut from solid cast iron. Connecting gears are machine cut steel. When ordering special single-bead rolls, sketches showing the depth of bead required must be submitted. Also mention gauge of material to be used, or submit sample.

Furnished with three pairs of regular rolls and improved extra heavy bench standard.

No.	Depth Throat Inches To Frame	Depth Throat Inches To Gauge	Distance Between Shaft Centers In.	Size Bead in Rolls Inches Rolls, In. Diam.	Width	Single	Ogee	Triple	Approx. Ship. Weight Lbs.	Price Each
617	13	12	2⅝	2¾	1⅞	3/8	1	1	140	$60.50
619	7½	6¾	2¼	2⅜	1⅝	9/16	⅞	⅞	85	49.50

Pexto Elbow Edging Machines



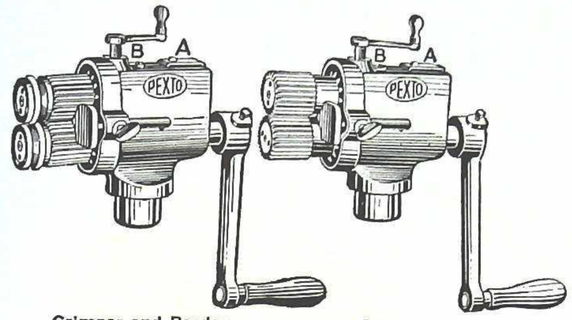
Capacity, No. 24 gauge iron and lighter.

When specifications do not accompany orders, rolls in design No. 1 will be furnished regularly. Regular turning rolls are interchangeable with this machine. Furnished with regular offset standard No. 975.

No.	Diameter Rolls Inches	Approx. Ship. Wt. Pounds	Price Each
550	1½	21	$18.00
551	2⅛	25	16.00

Hy-Tech Products

Pexto Common Sense Combination Crimping and Beading Machines



Crimper and Beader — As a Plain Crimper

This combination crimper and beader is compact, well-constructed and simple, and will make a uniform crimp and bead in pipe of black or galvanized iron. Designed for large and small sheet metal shops and for hardware stores.

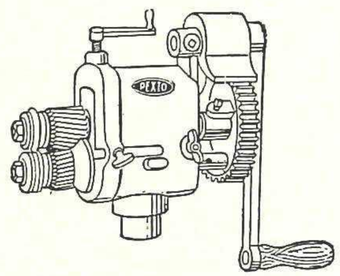
Beading and crimping rolls are countersunk and held with round nuts which leaves the face flush with the arbors. A pair of steel black collars accompany each machine, and when these collars are substituted for the beading rolls the same machine is converted into a plain cornice makers' crimper.

Capacity, No. 24 gauge iron and lighter.

The Pexto Common Sense Combination Crimping and Beading Machine is furnished complete with one pair of steel blank collars and offset bench standard.

Dimensions, Inches Width Rolls Crimping	Width Rolls Beading	Diam. Rolls Beading	Diam. Rolls Crimping	Size Ogee Head	Ship Wt. Lbs.	Price, Each No. 581 Spiral Crimp	No. 0581 Straight Crimp
1¾	1	1 15/16	1 13/16	½	30	$13.25	$13.25

Pexto Crimping and Beading Machines



Capacity, No. 20 gauge iron and lighter. Gear ratio, 3 to 1.

For producing a neat, uniform crimp and bead or crimp without bead. Nos. 587 and 0587 furnished with foot treadle attachment in place of crank screw for depressing rolls. Furnished with No. 975 standard.

Blank collars to substitute for beading rolls are furnished.

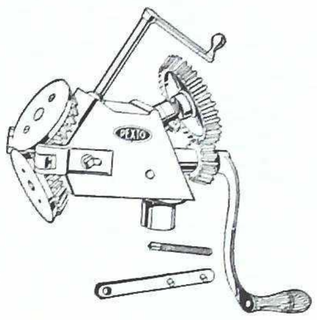
A practical feature is offered in the arrangement of the driving gears. Two speeds are provided for; back geared for heavy stock and direct drive when lighter gauge of materials are used. The driving gear can be removed and the machine converted instantly into a direct acting crimper by attaching the crank to lower shaft. Connecting gears are of machine cut steel, the frame and cap machined to insure perfect fit of all working parts for accurate and uniform work.

No.	Style Crimping Rolls	Diam., Rolls Inches Beading	Diam., Rolls Inches Crimping	Width, Rolls Inches Beading	Width, Rolls Inches Crimping	Size Ogee Bead In.	Approx. Ship. Wt. Lbs.	Price Each
585	Spiral	1 15/16	1 13/16	1	1¾	½	65	$28.60
0585	Straight	1 15/16	1 13/16	1	1¾	½	65	28.60
587	Spiral	1 15/16	1 13/16	1	1¾	½	85	39.60
0587	Straight	1 15/16	1 13/16	1	1¾	½	85	39.60

Pexto Setting Down Machines

The inclined position of both upper and lower faces, allows work to be held up or down, seams to be started inward while setting down.

Adjustable gauges with idler rollers are fitted. Standard offset furnished.



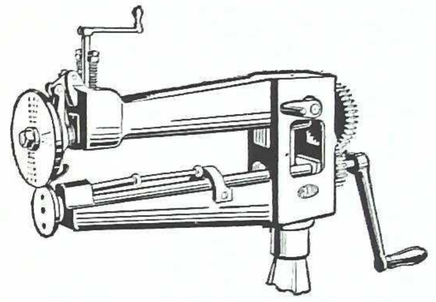
No. 561, Small

Cap. Ga. Iron	For Seams In.	Ship. Wt. Lbs.	Price Each
24	⅜	60	$28.00

No. 562, Large

18	½	100	$50.00

Pexto New Moore's Double Seamers



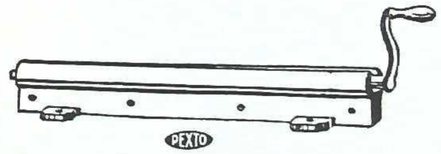
This double seaming machine is adapted for general use. It is well suited to the wants of the trade who desire a machine for small work as follows: No. 646 will take in work 3¼ inches diameter up to 6 inches deep and 3½ inches diameter up to 10 inches deep; No. 644 will take in work 3½ inches diameter up to 6 inches deep, 4 inches diameter up to 12 inches deep and 4⅜ inches diameter up to 15½ inches deep.

The frame is of solid casting. Arbors are heavy and the gears are cut from solid metal. The small wheel behind the upper roll holds seams from springing open until the seam is laid over sufficiently to close down hard, and this wheel is controlled through a lever. A slight turn of this wheel shifts the upper roll to proper position.

Capacity, No. 26 gauge iron and lighter.

No.	Receives Work in Depth Inches	Lower Seaming Roll Inches	Ship. Wt. Lbs.	Price Each
644	15½	2¾	100	$55.00
646	10	2¾	65	50.00

Pexto Gutter Beading Machines

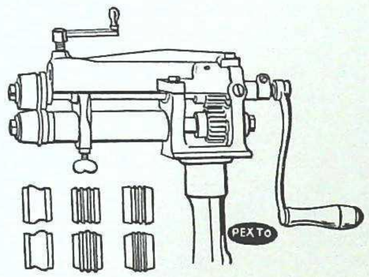


Intended for forming a bead on the edges of gutters.

The jaws on these machines do not open for the purpose of removing rod and work. The rod is enclosed. In ordering, specify size of rod desired. Unless otherwise specified, ½-inch rod will be sent.

No.	Length Inches	Will Receive Rods in One Size, Diam. In.	Approx. Ship. Wt., Lbs.	Price Each
708	42	½ to 1	27	$18.75
709	31	⅜ " ¾	27	13.20

No. 620 Pexto Beading Machines



Capacity, No. 24 gauge iron and lighter.

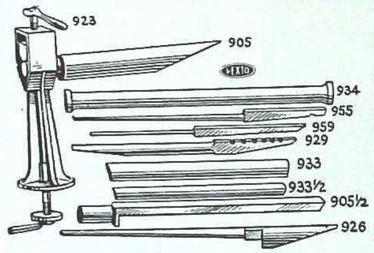
Constructed with re-enforced frame and cap. Connecting gears are cut from solid steel.

Furnished with four pairs rolls; one pair each Ogee ¾ inch, triple ⅝ inch, single ¼ inch and single ⅜ inch. Improved standard No. 975 is furnished.

Extra attachments, such as, regular beading rolls, special single bead rolls, ¼, 5/16, ⅜ and ½ inch; straight crimping rolls, guide rest, foot treadle attachment in place of crank screw furnished on application.

No.	Depth, In. Throat to Frame	Depth, In. Throat to Gauge	Diam. Rolls In.	Width Rolls In.	Distance Between Shaft Centers, In.	Approx. Ship. Wt. Lbs.	Price Each
620	6¼	5½	1 15/16	1 7/16	1⅞	50	$30.80

Pexto Universal Stake Holders
With Wrought Iron and Steel Faced Stakes

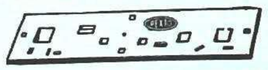


This holder enables the workman to use the stakes in any position. One stake may be substituted for another with ease. It is convenient, solid, substantial, and will give satisfaction.

When ordering these stakes other than in full sets, be careful to mention, for use in Universal Stake Holders, to avoid confusion with regular stakes.

No.	Description	Wt. Lbs.
923	Stake Holder	21
905, 905½	Beakhorn for Stake Holder, Two Pieces	47
926	Blowhorn " " "	10
929	Creasing and Horn for Stake Holder	8
934	Double Seaming for Stake Holder	23
933, 933½	Conductor for Stake Holder, Two Pieces	26
955	Candle Mould for Stake Holder	4½
959	Needle Case for Stake Holder	4
964	Full Set as Above, Complete, with Stake Holder	145
Price, No. 964	per set	$60.00

Pexto Bench Plates



No.	Length Inches	Width Inches	Weight Pounds	Price Each
980	48	12	85	$14.60
981	37½	8	46	10.20
982	30	8	31	7.15

Pexto Bevel Edge Square Stakes



Wrought Iron with Steel Faces

No.	Size, Face Inches	Weight Pounds	Price Each
931	3 x5	16	$10.00
932	2½x4½	14	9.00

No. 935 Pexto Coppersmiths' Square Stakes



Wrought iron, with steel face.

No.	Size, Face Inches	Weight Pounds	Price Each
935	2¾x4½	11	$8.80

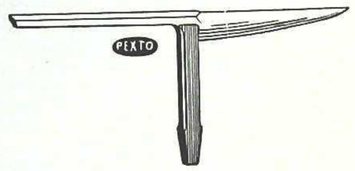
Pexto Hatchet Stakes



Made of good quality wrought iron; has steel face. Indispensable for coppersmiths and other metal workers.

No.	Length Blade In.	Width Blade, In. At Center	Width Blade, In. At Ends	Wt. Lbs.	Price Each
941	16	2½	1⅝	14	$9.90
943	13	2⅛	1¼	8½	8.80
944	11	2⅛	1⅜	6½	7.70

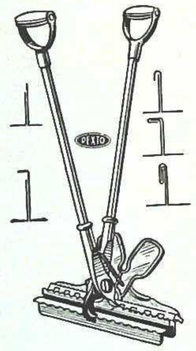
Pexto Beakhorn Stakes



Wrought iron with steel face.

No.	Length, In. Round End	Length, In. Flat End	Flat End Tapers Inches	Diam. at Smallest End, In. Smallest Point	Diam. at Smallest End, In. Longest Point	Wt. Lbs.	Price Each
901	16½	21½	2½x1⅞	⅞	2½	46	$26.40
904	14	19	2 x1½	⅝	2	27	23.10

Pexto Roofing Double Seamers



Furnished in three styles. Nos. 742 and 742½ are fitted for I. C. tin. No. 0742 is fitted for iron roofing not heavier than 28 gauge for single or double seam. Common gauge seamer No. 742 follows 1 and 1¼-inch tongs, finishing a lock ¾ inch high. Wide gauge seamer No. 742½ follows 1¼ and 1½-inch tongs, finishing a lock 1 inch high. No. 0742 is made in wide gauge only and follows 1½ and 1¾-inch tongs, finishing a double seam 1 inch high. Order by number. Where ordered in half sets, specify whether first or second set. Weight, per set of two, 40 pounds.

Price, Any Style..... per set of two pairs $23.10

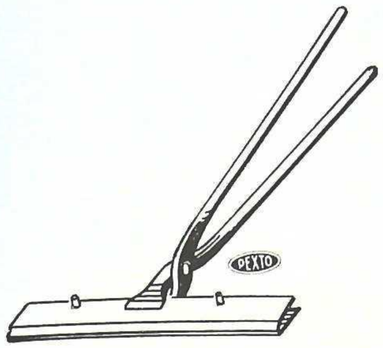
Pexto Roofing Double Seamers



No.	Size Inches	Match up with Roofing Tongs, Inches	Weight Pounds	Price per Set of Two Pairs
743	½x ¾	¾x1	14	$3.05
744	¾x1	1 x1¼	16	3.05
745	1 x1¼	1¼x1½	19	3.30
746	1¼x1½	1½x1¾	22	3.60

Hy-Tech Products

Pexto Regular Roofing Tongs



Will turn one size of lock only. Length handles, 21 inches; length blades, 18½ inches.

No.	Will Turn Lock In.	Width Blades In.	Wt. Lbs.
770½	½	1½	8
770¾	¾	1½	8
771	1	1½	8
771¼	1¼	1¾	9
771½	1½	2	9½
771¾	1¾	2¼	10
772	2	2½	10½

Price, Any Size each $5.25

Hand Groovers

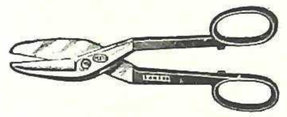


Forged from a special, tough, high grade steel, scientifically hardened. Heads are highly polished.

Designed especially for the use of sheet metal workers and tinsmiths. Packed 2 in a box.

No.	Size Groove In.	Weight Lbs.	Price Each	No.	Size Groove In.	Weight Lbs.	Price Each
0000	10/32	1½	$2.25	3	9/32	1	$1.10
000	17/32	1½	2.25	4	7/32	1	1.10
00	7/16	1¼	1.30	5	5/32	¾	1.10
0	3/8	1¼	1.30	6	1/8	¾	1.10
1	11/32	1¼	1.15	7	7/64	¾	1.10
2	5/16	1¼	1.15	8	3/32	¾	1.10

Pexto Samson Snips



Blued or japanned handles and polished heads. Blued handles furnished unless otherwise specified.

Left Hand Cut, Straight Pattern

No.	Cuts Iron No.	Lgth. Cut In.	Lgth. Over All In.	Price Each	No.	Cuts Iron No.	Lgth. Cut In.	Lgth. Over All In.	Price Each
46	24	4½	15¾	$3.00	50	28	2½	11¾	$1.60
47	25	4	14½	2.50	51	28	2¼	10½	1.20
48	26	3½	14	2.00	52	28	2	8½	1.00
49	27	3	12¾	1.75	53	28	1¾	8	.90

Left Hand Cut, Circular Pattern

C46	24	4½	15¾	$4.00	C50	28	2½	11	$2.50
C47	25	4	14½	3.50	C51	28	2¼	10½	2.00
C48	26	3½	14	3.00	C52	28	2	8½	1.75
C49	27	3	12¾	2.75	C53	28	1¾	8	1.65

Pexto Tinners' Bench Shears

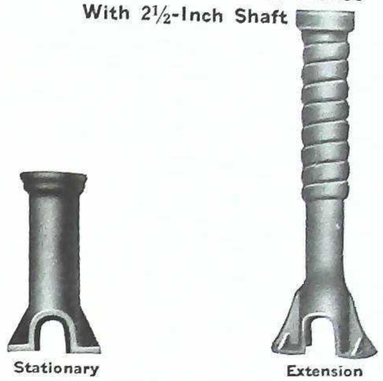
Has black handles and polished heads.

Has right hand cut with lower blade on right side.



No.	Cuts Iron No.	Length Cut Inches	Length Over All Inches	Price Each
00	18	11½	46	$35.50
0	18	10½	42½	32.50
1	18	9	39	22.70
2	19	8¾	37	20.50
4	20	7⅜	30	16.80
5	21	6¼	27	15.90
6	22	5¼	25	13.30
Elbow 31	18	4	26	15.10
" 32	16	6	39	28.40
" 33	14	7½	46	39.90

Buffalo Pattern Service Boxes
With 2½-Inch Shaft



No.	Extension Inches	Price Each	No.	Extension Inches	Price Each
88	12, Stationary	$1.00	94-D	42 to 57	$2.20
89-A	12 to 20	1.25	94-E	42 " 60	2.30
90-B	18 " 26	1.35	95-E	48 " 66	2.45
91-C	21 " 33	1.55	95-G	48 " 84	2.95
92-C	24 " 38	1.65	100-E	54 " 72	2.65
92-D	24 " 42	1.85	100-F	54 " 78	2.80
93-D	36 " 48	2.00	100-G	54 " 90	3.15
93-E	36 " 54	2.15	.....	.....	....

With 3-Inch Shaft

0	10, Stationary	$1.10	3	32 to 48	$2.60
1	13 to 21½	1.55	4	34 " 58	2.85
1½	18 " 28	1.95	5	42 " 66	2.95
2	24 " 36	2.20	7	48 " 72	3.30





Covers



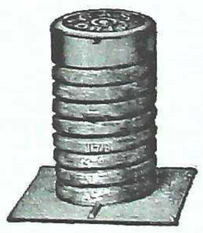
Extension Sections

For 2½-Inch Service Boxes. No.	Increases Length, In.	Price Each	For 3-Inch Service Boxes. No.	Increases Length, In.	Price Each
151	9½	$.60	155	20	$.90
152	16½	.75	156	24	1.00
153	28	.95	157	30	1.15
154	33	1.05	...	..	....

Covers, Bolts and Keys

Price, Keys	each	$.15
" Extra Covers for 2½-inch Shaft	"	.12
" " " " 3 " "	"	.18
" Brass Bolts	"	.08

Gas Drip Boxes
With Lock Cover

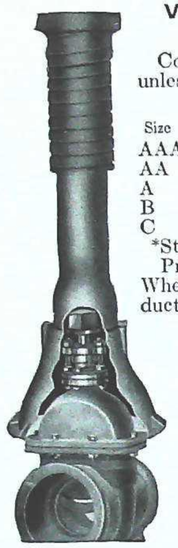


Length Inches	Inside Diameter Inches	Round Flange Inches	Price Each
16	7½	16	$5.00

Extension Valve Boxes and Parts

Valve Boxes with 5¼-Inch Shafts

For Gas and Water Mains



Covers marked "Water" will be furnished unless otherwise specified.

Size	Extension Length Inches	Price Each	Size	Extension Length Inches	Price Each
AAA	*17	$6.00	CC	48–60	$9.00
AA	22–28	7.25	D	42–66	9.45
A	28–40	7.55	E	48–72	10.20
B	36–48	8.20	F	60–84	10.95
C	42–54	8.55	G	72–96	11.90

*Stationary length.

Prices are for boxes with No. 6 base. When furnished with other bases, add or deduct as follows:

Base No.	Shape of Base	Fits Valve Max. Size Inches	Add to Above Price	Deduct from Above Price
4	Round	4 or Smaller	....	$.25
†140	Dome	Up to 24	....	...
8	Round	10 or Smaller	$.50	...
16	Round	12 or 16	3.50	...
160	Oval	16 or Smaller	.50	...
162	Oval	20 or Smaller	3.00	...

†Same as with No. 6.



Regular Cover



Flanged Cover



Extension Section

Covers for Valve Boxes

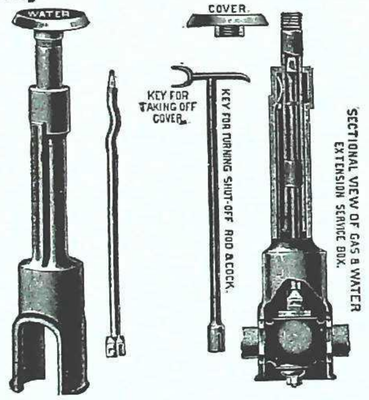
Price, Regular and Flanged.....each ....
Price, Lock.....each ....

Valve Box Extension Sections

For 5¼-Inch Boxes

Price, No. 58, Increasing Length, 14 Inches.....each $1.75

Hays Extension Service Boxes



Size Feet	Extension Feet	Price, Each No. 2 for ½, ¾, 1-in. Stop	No. 3 for 1, 1¼, 1½-in. Stop	No. 4 for 1½, 2-in. Stop	Extra Covers	Extra Keys
2½	1½ to 2½	$2.00	$2.30	$2.75	$.50	$1.00
3	2 " 3	2.10	2.40	2.90	.50	1.00
3½	2½ " 3½	2.20	2.50	3.05	.50	1.00
4	3 " 4	2.30	2.60	3.20	.50	1.00
4½	3½ " 4½	2.40	2.70	3.35	.50	1.00
5	4 " 5	2.50	2.80	3.50	.50	1.00
5½	4½ " 5½	2.60	2.90	3.65	.50	1.00
6	5 " 6	2.70	3.00	3.80	.50	1.00
6½	5½ " 6½	2.80	3.10	3.95	.50	1.00
7	6 " 7	2.90	3.20	4.10	.50	1.00
7½	6½ " 7½	3.00	3.30	4.25	.50	1.00
8	7 " 8	3.10	3.40	4.40	.50	1.00
8½	7½ " 8½	3.20	3.50	4.55	.50	1.00
9	8 " 9	3.30	3.60	4.70	.50	1.00
9½	8½ " 9½	3.40	3.70	4.85	.50	1.00
10	9 " 10	3.50	3.80	5.00	.50	1.00

Round Head Roadway Boxes



With Open Base 4¼-inch Shaft

No.	Extension Inches	Price Each
141Q	18–24	$3.75
142Q	27–34	4.15
142R	27–42	4.85
143R	34–48	5.15
144R	39–54	5.30
145R	46–60	5.70

Extension Sections

No.	Increases Length of Box Inches	Price Each
49	18	$1.55

Covers, Bolts and Keys



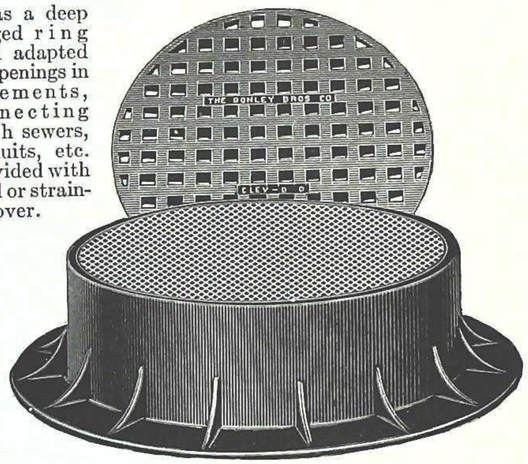




Price, Keys.....each $.10
" Extra Covers ..... " .65
" Brass Bolts..... " .15

Donley Street Manhole Covers

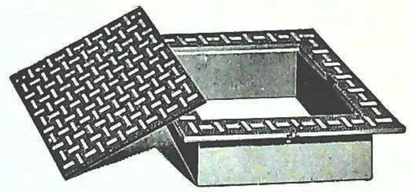
Has a deep flanged ring and adapted for openings in pavements, connecting with sewers, conduits, etc. Provided with solid or strainer cover.



Diameter of cover, 24 inches; diameter of ring, 33⅝ inches; depth of ring, 8 inches. Shipping weight, 265 pounds. Cover holds 8000 pounds stationary load; 4000 pounds impact.
Price, No. 31, Solid Cover.....each $22.00
Price, No. 31, Strainer Cover .....each 22.00

Coal Hole Covers and Frames

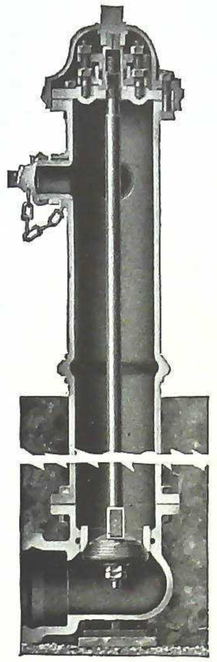
No. 100



Size Frame Outside Inches	Size Cover Inches	Weight Pounds	Price Each
32x32	24x24	452	. . .

Hy-Tech Products

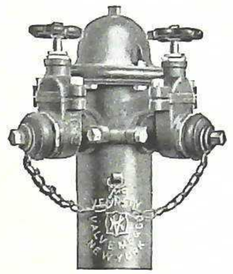
Kennedy Newtype Compression Fire Hydrants



No. 108 Fire Hydrant



No. 109 Independent Hose Gate Valve



Hose Gate Valve Bolted on Hydrant



No. 111 Spanner Wrench

A standard hydrant for 5-foot trench has one or two hose nozzles with either 4 or 6-inch hub and standard pipe connections.

Hydrants can be furnished, however, with two, three or four 2½-inch hose nozzles or gate valves, and with steamer nozzle. A 2½-inch independent hose gate valve permits the use of as many or as few of the hose nozzles on a hydrant as may be desired, without shutting off main inlet valve.

One spanner wrench is supplied with every hydrant.

When ordering, give the following particulars: Number and size of nozzles; length from pavement to bottom of connection or depth of trench; size of connection to main; whether bell, screw or flange connection; size and shape of operating nut at top (nozzle caps generally have nuts corresponding to top nut, so that one wrench operates all)—pentagon shape measuring 1½-inches from point to flat regularly furnished; size of inlet valve.

Unless otherwise specified, all hydrants are furnished without frost cases and to open to the left. If wanted otherwise send specifications. For threading nozzles the National Standard is recommended. For different threading, send a sample, such as hose coupling, nozzle cap, etc.

Size In.	Depth Trench Inches	Size Hub End Connection Inches	No. of 2½-inch Hose Nozzles	Standard Hydrant Price Each	Add or Deduct for Each 6-inch *Variation	Secondary Gate Valves without Boxes Size In.	Price, Each
4	5	4 or 6	1 or 2	$90.00	$2.00	4	$29.00
4½	5	4 " 6	1 " 2	102.00	2.50	5	46.00
5	5	4 " 6	1 " 2	114.00	3.00	6	50.00
6	5	4 " 6	1 " 2	140.00	3.50	8	84.00

*Increase or decrease in depth of trench.

Hydrant Differentials

To Be Added to Above Prices

Price, Extra Steamer Nozzle.....each $11.00
" " Hose Nozzle ..... " 4.50
" Inside Hose Nozzle Valve..... " 15.00
" Outside Hose Nozzle Valve..... " 23.00
" Inside Steamer Nozzle Valve..... " 24.00
" Outside " " " ..... " 44.00
" Extra for Jones or Fehy Couplings..... " 3.00
" " " Anderson Coupling ..... " 5.00
" " " 8-inch Hub Connection..... " 2.00

Flanged, Universal or Wood Pipe Joints

To Be Added to Above Prices

Size.....inches	4 and Under	5	6	8
Price.....each	$2.00	2.50	3.00	3.50

Total Eclipse Hydrants



No. 1 Compression Type Anti-Freezing

Valve and working parts are of brass. Positive automatic drain closes against the pressure. Sand cup valve protector furnished with each hydrant. Removal of nozzle and top cap permits withdrawal of interior parts for replacement with ease and without digging up or disturbing connection to supply pipe.

Plunger operates up and down without twisting movement or torsional strain. When water is admitted into the valve the drain outlet is completely sealed by cup washer on plunger without waste of water. When the valve is closed after operating, the drain outlet is unsealed or opened, allowing all water in stand-pipe to escape, preventing possibility of freezing.



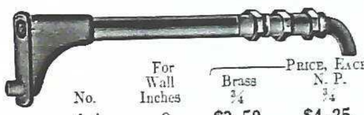
No. 7 Self-Closing Type Anti-Freezing

No. 1 Hydrants

Set in Ground Feet	Price, Each—Size, Inches ¾	1	1¼
1½	$9.80	$12.70	$19.70
2	10.10	13.50	20.50
3	10.60	14.30	21.80
4	11.00	14.75	22.25
5	11.50	15.30	22.80
6	12.10	16.00	23.75
8	13.50	18.50	27.00
10	16.00	21.00	30.00

No. 7 Hydrants

Set in Ground Feet	Price, Each—Size, Inches ¾	1	Set in Ground Feet	Price, Each—Size, Inches ¾	1
1½	$10.80	$13.70	5	$12.50	$16.30
2	11.10	14.50	6	13.10	17.00
3	11.60	15.30	8	14.50	19.50
4	12.00	15.75	10	17.00	22.00



No. 4 Eclipse Wall Hydrants

No.	For Wall Inches	Price, Each—Size Inches Brass ¾	N. P. ¾	Brass 1	N. P. 1
4-A	9	$3.50	$4.25	$7.00	$8.00
4-B	11	3.75	4.50	7.50	8.50
4-C	13	4.00	4.75	8.00	9.00
4-D	15	4.25	5.00	8.50	9.50
4-E	16	4.25	5.00	8.75	9.75
4-F	18	4.50	5.25	9.00	10.00
4-G	20	4.75	5.50	9.50	10.50
4-H	22	5.00	5.75	9.75	10.75
4-I	24	5.25	6.00	10.00	11.00
4-J	26	5.50	6.25	10.25	11.25
4-K	28	5.75	6.50	10.50	11.50
4-L	30	6.00	6.75	10.75	11.75
4-M	32	6.15	6.90	10.90	11.90
4-N	34	6.30	7.05	11.05	12.05
4-O	36	6.50	7.25	11.25	12.25

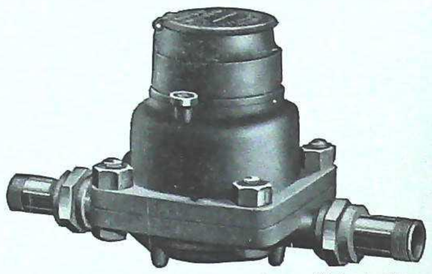
No. 122 Kennedy Valve Wrenches or Keys



Specify size of valve and length of wrench or size of valve and depth of trench.
Price, No. 122 .....each $6.00
Price is for wrench for use with valves set in 5-foot trench or shallower. For each foot or fractional foot increased length add 40 cents per foot.

We are in position to supply many items not shown in this catalogue and shall be pleased to receive your inquiries.

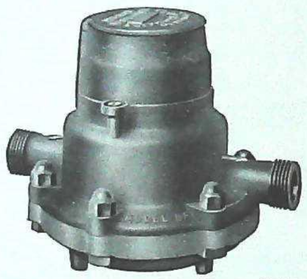
Niagara and American Water Meters



Niagara Solid Casing Type Meter, ⅝-Inch Size

The Niagara Solid Casing Type Meter has an outside casing of cast iron carefully hot zinc coated. This type is for general waterworks use. Especially recommended for heavy pressure, hard water, alkaline water and corrosive water.

The American Solid Casing Type Meter has an outside casing made entirely of bronze. Regularly furnished with external threads for brass union meter couplings. The 1½ and 2-inch sizes may also be furnished with internal pipe threads without extra charge.



Niagara Frost Bottom Type Meter, ⅝-Inch Size

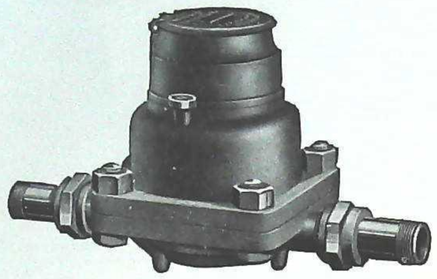
The Niagara Frost Bottom Type Meter has its outside casing made of cast iron hot zinc coated. When this meter freezes up and the ice pressure reaches 450 pounds per square inch the frost bottom bursts. This releases the intermediate gearing and the disc chamber so their parts may separate and move with the ice, thereby relieving each part from injurious strain. A new ⅝-inch frost bottom costs 40 cents. This type of casing is good for all general waterworks use but is especially recommended for hard water and for services liable to freezing.

The American Frost Bottom Type Meter has an outside casing of bronze and frost bottom of galvanized cast iron. When freezing bursts the frost bottom the submerged working parts are released and separated. Intermediate gears are separable. Disc chamber seat is renewed after each freezing. This meter assembles right side up.

Size Inches	Greatest Proper Capacity U.S. Gal. per Min.	Price, Each — Niagara Either Type	American — Solid Casing Type	American — Frost Bottom Type	Couplings Extra Price per Pair
⅝x½	20	$16.00	$20.00	$18.00	$1.00
⅝x¾	20	16.00	20.00	18.00	1.50
¾	34	24.00	30.00	27.00	1.50
1	53	35.20	44.00	39.60	2.20
1¼	75	*48.00	60.00	.....	3.00
1½	100	*64.00	80.00	.....	4.00
2	160	*96.00	120.00	.....	6.00
2½	240	*140.00	175.00	.....	8.75
3	315	*200.00	240.00	.....	No Extra Charge for Flanges
† 3	375	†*240.00	.....	.....	
† 4	500	†*400.00	.....	.....	
† 6	1000	†*800.00	.....	.....	

†Heavy duty type.
*Made in solid casing type only.

Niagara Oil Meters



Niagara Oil Meters are used to measure and compare the quantity of oil and gasoline delivered in tank cars or otherwise with the amount invoiced; they are used to show the consumption and to regulate the flow of oil to burners under boilers, furnaces and ovens; they measure gasoline pumped or forced from gasoline retailing systems. They may be adjusted when so specified to measure alcohol, paint and varnish products, grease, etc. They will operate on pressures of a pound per square inch or higher and on oil of any temperature, and thus are adapted for use under almost all conditions.

The register is all metal straight reading type indicating U. S. gallons, imperial gallons or litres. Each meter is tested and adjusted to measure within one per cent of absolute accuracy at its rated capacity.

All meters except the A size can be supplied with vertical dial 6 inches in diameter having large set-back hand. On the small meters this hand indicates pints, quarts and gallons from 0 to 10 gallons. On the large sizes the hand indicates gallons from 0 to 100. The dial face is white with clear black figures.

A knurled thumb piece projects through the dial glass so the hand may be turned back and automatically stopped at nought. A straight reading register which cannot be set back counts the total gallons from one to one hundred thousand and repeats. The dial may be turned on the body of the meter to face any quarter.

The minimum capacities are the smallest rates of flow which the meters should be expected to measure accurately. The maximum capacities are the highest rates of flow for continuous operation without undue wear. Meters used only occasionally may be safely operated on flows twice the maximum capacities.

The size of meter required is not determined by the size of pipe on which it is to be set, but by the flow to be measured. To facilitate setting on different sizes of pipes each meter may be furnished with either of the two sizes of openings and connections listed.

Each Niagara oil meter is furnished, without extra charge, with a Niagara trap strainer to protect the meter from sediment, pipe scale or other foreign matter. The strainer has the same size pipe connections as the meter.

Size of Meter	Capacity Gallons per Hour Uniform Flow	Pipe Connections Size Inches	Style	Weight with Couplings and Strainer Boxed Pounds	Price, Each Horizontal Dial Type	Vertical Dial Type
A	2 to 300	½	Unions	17	$20.00	.....
B	100 to 500	½ or ¾	Unions	20	20.00	$40.00
C	250 to 1000	¾ or 1	Unions	28	30.00	50.00
DV	400 to 1600	1 or 1¼	Unions	39	44.00	64.00
EV	600 to 2400	1¼ or 1½	Unions	54	60.00	80.00
FV	800 to 3200	1½	Unions	74	80.00	100.00
GV	1000 to 4000	2	Unions	112	120.00	140.00
G	1600 to 6400	2 or 2½	Unions	196	160.00	180.00
G	1600 to 6400	3	Flanges	250	200.00	220.00
IV	3000 to 12000	3	Flanges	340	240.00	260.00
JV	5000 to 20000	4	Flanges	650	400.00	420.00
LV	10000 to 40000	6	Flanges	1020	800.00	820.00

Hy-Tech Products

Myers Brass Cylinder Pitcher Pumps



A brass cylinder pitcher pump, built in a reliable manner. The cylinder is of seamless drawn brass.

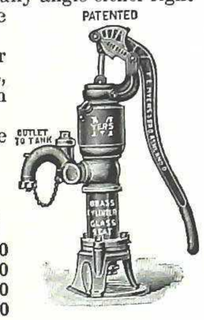
Has patent glass valve seat, rubber fibre check and revolving top.

Drop valve arrangement to prevent water from freezing.

The base is a new and novel design, and is attached to the cylinder by means of three heavy bolts.

No.	Cylinder Inches	Size Pipe Inches	Shipping Weight Pounds	Price Each
220	3	1¼	22	$6.00

Myers Long Stroke Cog Gear Double Acting House Force Pumps



Adapted to forcing water to an elevation or into a tank.

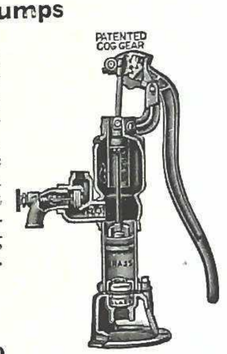
A reversible handle can be located at any angle either right or left hand or straight away from the pump as desired.

Heavy seamless brass upper and lower cylinders, with patented glass valve seat, fibre rubber check valve and expansion plunger bucket.

The cock spout and plain spout are interchangeable on the same pump.

No.	Type Spout	Lower Cylinder In.	Suction Pipe In.	Price Each
R251	Plain	3	1¼	$9.00
R251CS	Cock	3	1¼	10.00
R253	Plain	3½	1½	10.50
R253CS	Cock	3½	1½	11.50

Myers Long Stroke Cog Gear Double-acting House Force Pumps



Reversible handle can be located at any angle, right or left hand or straight away from the pump as desired. The pump has heavy seamless brass upper and lower cylinders, with patented glass valve seat, fibre rubber check valve and expansion plunger bucket. It is compactly built and powerful and the cog gear attachment makes it adapted to forcing water to an elevation or into a tank.

Aluminum and gold finish.

No.	Lower Cylinder Inches	Suction Pipe Inches	Weight Pounds	Price Each
R251CS	3	1¼	34	$10.00
R253CS	3½	1½	37	11.50

Myers Long Stroke Pitcher Pumps

5-Inch Long Stroke



A large capacity pump fitted with plain brass valve seat. The cylinder is bored and highly polished. The handle is adjustable to any angle.

Arranged to drop the water to prevent freezing.

Shipping weights: No. 416, 25 pounds; No. 417, 23 pounds; No. 418, 26 pounds.

Price, No. 416, with 3-Inch Polished Cylinder, Tapped for 1¼-Inch Pipe.....each $4.00

Price, No. 417, Same as Above, with 3-Inch Brass-Lined Cylinder.....each 5.50

Price, No. 418, with 3½-Inch Polished Cylinder, Tapped for 1½-Inch Pipe.....each $5.00

Myers Cog Gear Lift Pumps

With Adjustable Base and Reversible Spout



The new lift pump with rolling motion gear handle. This style handle is especially adapted to deep well work, owing to the advantage of the superior leverage, with short fulcrum and long handle. The spout is attached to the pump head by means of a bolted flange union, making it reversible. The base is adjustable and can be located at any point desired. Anti-freezing. 4-foot set length.

The pump rod is held by a set screw. This permits the adjustment of rod and plunger, after which the rod can be cut off. This does away with the careful fitting of rod before putting pump together.

No.	Diam. Cyl. In.	Tapped for Pipe In.	Cap. per Hour Gal.	Price Each
R1050	*2½	1¼	306	$11.00
R1051	§2½	1¼	306	11.50
R1052	*3	1¼	440	11.50
R1053	§3	1¼	440	12.00
R1054	*3½	1½	600	13.00
R1056	†3	1¼	440	9.50
R1057	†3½	1½	600	10.50
R1058	‡3	1¼	440	9.00
R1059	‡3½	1½	600	10.00

*Brass lined cylinder with glass seat.
†Polished iron cylinder with glass seat.
‡Polished iron cylinder with plain brass seat.
§Brass cylinder with glass seat.

Myers Cog Gear Single Acting Force Pumps

With Adjustable Base and Reversible Spout

4-foot Set Length



The handle allows the piston to move in a direct line without swaying from side to side, as is necessary with the ordinary handle. This extra leverage adapts the pump to deep wells.

The spout is attached to the pump head by means of bolted flanged union, making it reversible.

The water flows from the spout in a smooth, even stream. The pump is anti-freezing.

The pump rod is held by set screw. This permits the adjustment of rod and plunger after which the rod can be cut off. This does away with the careful fitting of rod before putting pump together.

With Brass Lined Cylinder

No.	Size Cyl. In.	Kind of Seat	For Pipe Inches	Cap. Gal. per Hr.	Price Each
R1070	2½	Glass	1¼	306	$12.50
R1072	3	"	1¼	440	13.00
R1074	3½	"	1½	600	14.50

With Polished Iron Cylinder

R1076	3	Glass	1¼	440	$11.00
R1077	3½	"	1½	600	12.00
R1078	3	Pl. Brass	1¼	440	10.50
R1079	3½	Pl. "	1½	600	11.50

With Brass Body Cylinder

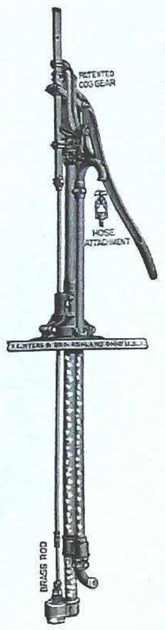
B1071	2½	Glass	1¼	306	$13.00
B1073	3	"	1¼	440	13.50

Myers Cog Gear Branch Pipe 3-way Single-acting Force Pumps

Fitted with Stuffing Box or Plunger Tube

10-inch Stroke for Windmill and 7-inch Stroke for Hand Use

For Tubular or Open Wells



Anti-freezing.

Steel coupling, ⅛x⅜-inch rod by ⅜-inch pipe, regular.

Fitted with cog gear handle for windmill and hand use. Rolling motion cog gear increases leverage 33⅓ per cent. This special leverage adapts pump to very deep wells. Pump is fitted with regular 3-way. Has large brass rod and stuffing box or 1¼-inch plunger tube. Bottom tapped for 1¼, 1½, 2 or 2½-inch pipe; state which is wanted. Always fitted with 1¼-inch unless other size is specified.

Made with galvanized pipe only.

Fitted with stuffing box or plunger tube; 10-inch stroke for windmill and 7-inch stroke for hand use.

Four-foot set length.

With Stuffing Box

Price, No. R225, Tapped for 1¼-inch Pipe.....each **$16.50**

With 1¼-inch Brass Plunger Tube

Price, No. R227, without Lower Cylinder, Tapped for 1¼-inch Pipe.....each **$16.50**

Price, No. R228, with 2½ or 3x18-inch Brass Cylinder, State Which.....each **24.00**

Nos. R226 and R228 when furnished with brass lined cylinder instead of brass cylinder, deduct $1.00 from price.

No. 1208 Wrought Forged Sucker Rod Couplings



No.	For Wood Rod, In.	Box and Pin, In.	Price Each
1208	1⅛	⅝	$1.50
1208	1⅝	⅞	2.50
1208	1⅞	1	3.40
1208	2¼	1⅛	5.75

Wood Rods

Hardwood rod without couplings.

Size.....inches	1⅛	1⅝	1⅞	2¼	3½
Price.....per ft.	$.08	.12	.18	.30	.90

No. 360 Malleable Wood Rod Couplings



No.	For Wood Rod, In.	Pin Threaded for	Price, per Set Plain	Galv.
360	1 and 1⅛	⅜-In. Pipe	$.30	$.45
360	1 " 1⅛	⅝-In. Rod	.30	.45

Galvanized and Polished Steel Pump Rod



Price, ⅜-inch, Random Lengths.....per ft. $.06
" 7/16 " " " ..... " .06½
" ⅜ " Fitted..... " .07
" 7/16 " " ..... " .09½

Made of stiff steel and drawn to 1/1000 part of an inch, in 20-foot lengths.

No. 2480 Myers Brass Lined Working Barrels

With Bronze Ball Valves
3 or 4-Leather All Brass Plungers

Shell is steel pipe lined with seamless drawn hard brass tubing. Space between brass lining and steel shell is filled with thin cement and lead, forming a solid body.

Length stroke: Provision is made for a clearance of 3½ inches or more.



I.D. Cyl. In.	Lgth. Stroke In.	Lgth. Barrel In.	Cap. Gal. 1 Rev. of Crankshaft	Pin in Plunger In.	Can be Used in Well Pipe Diam. In.	Price, Each With 3-Leather Plunger	With 4-Leather Plunger
1 13/16	6	18	.06	⅝	3	$9.50	$11.00
1 13/16	12	24	.12	⅝	3	10.00	11.75
1 13/16	18	30	.18	⅝	3	10.50	12.50
1 13/16	24	36	.24	⅝	3	11.75	13.25
2¼	6	18	.105	⅝	3½	14.50	16.50
2¼	12	24	.205	⅝	3½	15.50	17.50
2¼	18	30	.31	⅝	3½	16.50	18.50
2¼	24	36	.41	⅝	3½	17.50	19.50
2¾	12	25	.31	⅞	4½	20.00	23.00
2¾	18	31	.46	⅞	4½	21.50	24.50
2¾	24	37	.62	⅞	4½	23.00	26.00
3¼	12	26	.43	⅞	5	28.50	32.50
3¼	18	32	.64	⅞	5	30.50	34.50
3¼	24	38	.86	⅞	5	32.50	36.50
3¾	12	27	.57	1⅛	6	38.50	43.50
3¾	18	33	.86	1⅛	6	41.00	46.00
3¾	24	39	1.14	1⅛	6	43.50	48.50
4¾	12	30	.92	1⅛	7	75.00	81.00
4¾	18	38	1.38	1⅛	7	79.00	85.00
4¾	24	42	1.84	1⅛	7	83.00	89.00
5¾	12	32	1.35	1⅛	8	114.00	121.00
5¾	18	38	2.02	1⅛	8	119.00	126.00
5¾	24	44	2.70	1⅛	8	124.00	131.00
7 7/16	24	60	4.59	1½	10	.....	.....
9½	24	64	7.34	1½	12	.....	.....

Myers Improved Brass Lined Pump Cylinders



No. 976 with Glass Valve Seat

Glass Seat

Perfection Brass Seat

No. 2079 with Plain Brass Seat

The 6-inch stroke cylinders have single leather plunger, 10-inch stroke cylinders, double leather plunger. All plungers are fitted regularly with brass cage and valve.

The glass valve seat will not corrode or rust.

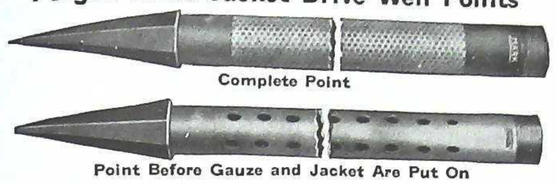
Perfection brass valve seat interchanges with glass seat in the same cap.

No. 976 glass seat cylinders will be furnished unless otherwise ordered.

I. D. In.	Lgth. Stroke In.	Lgth. Shell In.	Can be Used in Well Diam. In.	Tapped Size of Pipe In.	Pump Rod In.	Price, Each No. 976 with Patented Glass Seat	No. 976 with Perfection Brass Seat	No. 2079 with Plain Brass Seat
2½	6	10	4	1¼	⅜	$5.00	$5.00	$4.50
3	6	10	4½	1¼	⅜	5.50	5.50	5.00
3½	6	10	5	1½	⅜	7.00	7.00	6.50
4	6	10	6	2	½	9.50	9.50	8.50
2½	10	15	4	1¼	⅜	6.25	6.25	5.75
3	10	15	4½	1¼	⅜	6.75	6.75	6.25
3½	10	16	5	1½	⅜	9.00	9.00	8.50
4	10	16	6	2	½	12.00	12.00	11.50
4½	10	16	6	2	½	16.50	17.00	.....
5	10	18	7	2½	⅝	.....	27.00	.....
6	10	18	8	3	¾	.....	38.00	.....

Hy-Tech Products

Forged Brass Jacket Drive Well Points



Galvanized forged steel drive points. Made in one piece, with no loose plug or rivet. No split pipe from insertion of plug, causing sand leaks.

Made of wrought pipe, perforated by automatic machines, so that the holes are uniform in size and spacing.

Maximum inlet with full driving strength.

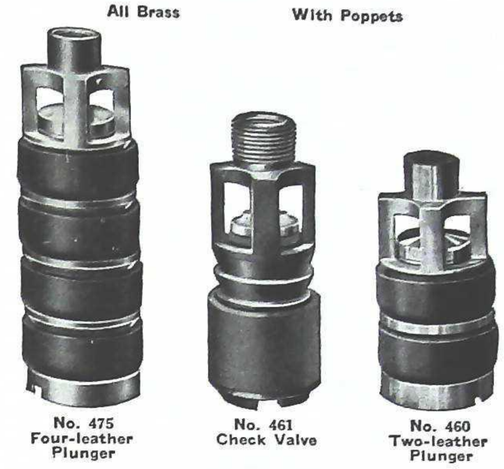
Covered with brass wire cloth, protected by heavy perforated brass jacket.

No.	Size Pipe In.	Lgth., In. Point	Jacket	Price, per Dozen Gauze No. 60	70	80	90	100	120
74	1	24	18	$33.0	$40.0	$46.0	$52.0	$62.0	$74.0
76	1	30	24	42.0	49.0	56.0	64.0	78.0	94.0
78	1	36	30	51.0	59.0	66.0	76.0	94.0	114.0
80	1	42	36	60.0	68.0	76.0	88.0	120.0	134.0
82	1	48	42	69.0	78.0	86.0	100.0	136.0	154.0
84	1	54	48	78.0	87.0	96.0	112.0	152.0	174.0
86	1¼	20	14	30.0	36.0	42.0	50.0	64.0	80.0
90	1¼	24	18	36.0	44.0	52.0	60.0	80.0	105.0
94	1¼	30	24	46.0	55.0	64.0	75.0	100.0	130.0
98	1¼	36	30	56.0	66.0	76.0	90.0	120.0	155.0
100	1¼	42	36	66.0	77.0	88.0	105.0	140.0	180.0
102	1¼	48	42	76.0	88.0	100.0	120.0	160.0	205.0
106	1¼	54	48	86.0	99.0	112.0	135.0	180.0	230.0
110	1¼	60	54	96.0	110.0	124.0	150.0	200.0	255.0
112	1¼	66	60	106.0	121.0	136.0	165.0	220.0	280.0
114	1¼	72	66	116.0	132.0	148.0	180.0	240.0	305.0
136	1½	24	18	48.0	57.0	65.0	78.0	94.0	112.0
140	1½	30	24	60.0	70.0	80.0	96.0	118.0	139.0
144	1½	36	30	72.0	84.0	95.0	114.0	142.0	166.0
146	1½	42	36	84.0	97.0	110.0	132.0	166.0	193.0
148	1½	48	42	96.0	111.0	125.0	150.0	188.0	220.0
150	1½	54	48	108.0	124.0	140.0	168.0	204.0	247.0
152	1½	60	54	120.0	138.0	155.0	186.0	228.0	274.0
154	1½	66	60	132.0	151.0	170.0	204.0	252.0	301.0
156	1½	72	66	144.0	165.0	185.0	222.0	276.0	328.0
160	2	24	18	75.0	85.0	94.0	110.0	130.0	150.0
164	2	30	24	90.0	101.0	112.0	132.0	160.0	185.0
168	2	36	30	105.0	118.0	130.0	154.0	190.0	220.0
170	2	42	36	120.0	134.0	148.0	176.0	220.0	255.0
172	2	48	42	135.0	151.0	166.0	198.0	250.0	290.0
174	2	54	48	150.0	167.0	184.0	220.0	280.0	325.0
176	2	60	54	165.0	184.0	202.0	242.0	310.0	360.0
178	2	66	60	180.0	200.0	220.0	264.0	340.0	395.0
180	2	72	66	195.0	217.0	238.0	286.0	370.0	430.0
180	2	78	72	210.0	234.0	256.0	308.0	400.0	465.0
182	2	84	78	225.0	251.0	274.0	330.0	430.0	500.0
182	2	90	84	240.0	268.0	292.0	352.0	460.0	535.0
183	2	96	90	255.0	285.0	310.0	374.0	490.0	570.0
183	2½	30	24	155.0	175.0	195.0	220.0	250.0	290.0
184	2½	36	30	180.0	205.0	230.0	260.0	300.0	350.0
188	2½	48	42	230.0	265.0	300.0	340.0	400.0	470.0
192	2½	60	54	280.0	325.0	370.0	420.0	500.0	590.0
196	2½	72	66	330.0	385.0	440.0	500.0	600.0	710.0
197	2½	84	78	380.0	445.0	510.0	580.0	700.0	830.0
199	2½	96	90	430.0	505.0	580.0	660.0	800.0	950.0
200	3	36	30	240.0	275.0	310.0	340.0	410.0	490.0
204	3	48	42	300.0	345.0	390.0	430.0	520.0	630.0
208	3	60	54	360.0	415.0	470.0	520.0	630.0	770.0
212	3	72	66	420.0	485.0	550.0	610.0	740.0	910.0
214	3	84	78	480.0	555.0	630.0	700.0	850.0	1050.0
215	3	96	90	540.0	625.0	710.0	790.0	960.0	1190.0
202	3⅓	36	30	300.0	345.0	390.0	430.0	520.0	610.0
206	3⅓	48	42	360.0	415.0	470.0	520.0	630.0	750.0
210	3⅓	60	54	420.0	485.0	550.0	610.0	740.0	890.0
213	3⅓	72	60	480.0	555.0	630.0	700.0	850.0	1030.0
218	3½	84	72	555.0	640.0	725.0	805.0	960.0	1170.0
219	3½	96	84	630.0	735.0	820.0	900.0	1070.0	1310.0
216	4	48	36	480.0	520.0	560.0	600.0	700.0	810.0
220	4	72	60	630.0	695.0	760.0	840.0	1000.0	1270.0
224	4	96	84	780.0	870.0	960.0	1080.0	1300.0	1610.0
228	4	120	108	930.0	1045.0	1160.0	1320.0	1600.0	2010.0

Please order by number, stating mesh of gauze.

Tubular Well Valves

All Brass — With Poppets



No. 475 Four-leather Plunger

No. 461 Check Valve

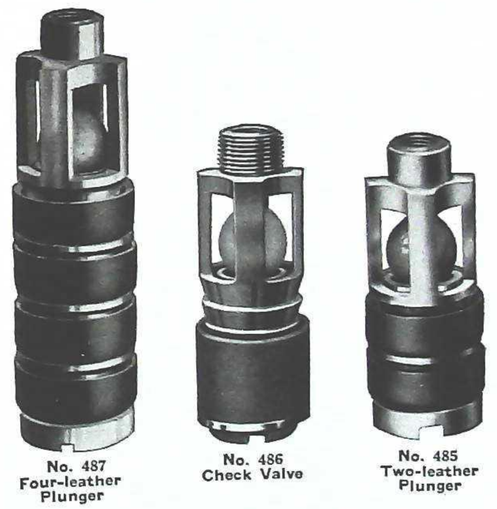
No. 460 Two-leather Plunger

Standard tubular well valves. Usually sold in sets, a plunger and check valve making a set.

The material and workmanship are high-grade.

Size Inches	Price, Each Two-Leather Plunger	Four-Leather Plunger	Check Valve
2	$4.00	$5.00	$2.00
2½	6.40	8.00	3.20
3	9.40	11.50	4.70
4	19.00	23.00	9.50
5	34.00	38.00	17.00
6	44.00	50.00	22.00

With Bronze Balls



No. 487 Four-leather Plunger

No. 486 Check Valve

No. 485 Two-leather Plunger

Made for use in deep wells and where heavy service is required. They have an extra heavy cage and hard bronze balls fitting perfectly on their seats. High-grade leathers are used on the plungers.

Size Inches	Price, Each Two-Leather Plunger	Four-Leather Plunger	Check Valve
2	$5.00	$6.00	$2.50
2½	8.00	10.00	4.00
3	12.00	14.50	6.00
4	30.00	36.00	15.00

Crimped Plunger Leathers

Standard



Size Inches	Per Gross	Size Inches	Per Gross	Size Inches	Per Gross
1	$7.50	2¾	$29.00	4½	$75.00
1¼	9.50	3	32.50	4¾	85.00
1½	13.00	3¼	39.00	5	95.00
1¾	17.00	3½	48.00	5¼	100.00
2	20.00	3¾	54.00	5½	108.00
2¼	21.50	4	62.00	5¾	118.00
2½	26.00	4¼	68.00	6	128.00

No. 700 Lower Valve Leathers



Outside Diam. Inches	Per Gross	For Cylinder Inches	Outside Diam. Inches	Per Gross	For Cylinder Inches
2	$10.00	1½	4½	$47.50	4
2¼	12.00	1¾	5	52.50	4¼
2½	14.50	2	5¼	60.00	4½
2¾	18.00	2¼	5¾	80.00	5
3	21.00	2½	6¾	115.00	6
3¼	25.00	2¾	7¾	160.00	7
3½	27.50	3	8¾	200.00	8
3¾	33.00	3¼	9¾	240.00	9
4	37.50	3½	10¾	300.00	10
4¼	42.50	3¾	....	.....	....

No. 701 Flat Plunger Leathers



Outside Diam. Inches	For Cylinder Inches	Price per Gross	Outside Diam Inches	For Cylinder Inches	Price per Gross	Outside Diam. Inches	For Cylinder Inches	Price per Gross
2	1½	$10.00	3¾	3¼	$33.00	6¾	6	$115.00
2¼	1¾	12.00	4	3½	37.50	7¾	7	160.00
2½	2	14.50	4¼	3¾	42.50	8¾	8	200.00
2¾	2¼	18.00	4½	4	47.50	9¾	9	240.00
3	2½	21.00	5	4¼	52.50	10¾	10	300.00
3¼	2¾	25.00	5¼	4½	60.00	....	..	....
3½	3	27.50	5¾	5	80.00	....	..	.....

Leather Packing Rings

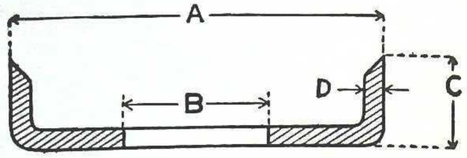


O.D. In.	For Cylinder, In.	Price per Gross	O. D. In.	For Cylinder, In.	Price per Gross	O. D. In.	For Cylinder, In.	Price per Gross
2	1½	$7.00	3½	3	$16.00	5¾	5	$38.00
2¼	1¾	8.00	3¾	3¼	19.00	6¾	6	50.00
2½	2	9.00	4	3½	23.00	7¾	7	70.00
2¾	2¼	10.00	4½	4	26.00	8¾	8	90.00
3	2½	12.00	5	4¼	28.00	9¾	9	120.00
3¼	2¾	14.00	5¼	4½	30.00	10¾	10	150.00

Wear Well Leather Packings



Cup Packing



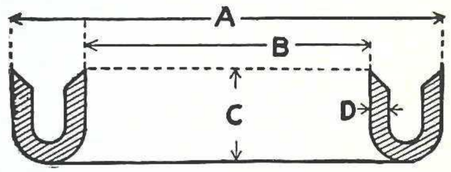
Cup Packing Diagram



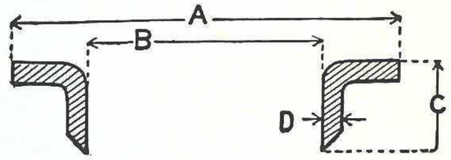
U Packing



Flange Packing



U Packing Diagram



Flange Packing Diagram

A—Outside diameter.
B—Diameter of piston or center hole.
C—Depth.
D—Thickness of leather.

In ordering, state style of packing, outside diameter, size hole, outside depth, thickness of leather, whether packings are used in connection with water, air or oil, as well as the amount of pressure to which they will be subjected.

Prices upon application.

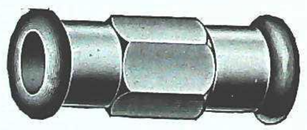
No. 9302 Walworth Malleable Iron Strainers



Strainers are covered with No. 60 brass wire gauze.

Size ..... inches	1	1¼	1½	2
No. 9302, Galvanized. . each	$.28	.32	.36	.50

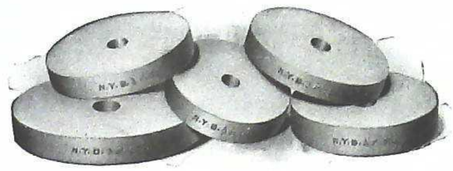
No. 226 Steel Pump Rod Couplings



Size In.	Thrds. per Inch	Price, Each Plain	Gal.
⅜	14	$.35	$.50
7/16	14	.35	.50
½	12	.35	.50
⅝	11	.35	.50
¾	10	.35	.50

Hy-Tech Products

Rubber Pump Valves

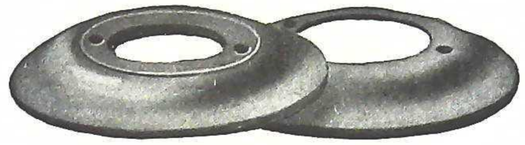


The manufacturer's experience in furnishing valves for marine blower engines, acid, mining, boiler feed, cold water and other pumps, enables them to furnish the proper valves and places them in a position to make any special valve that may be desired. It is essential that the conditions under which the valves are to be used, the size of the hole, the thickness, also working pressure, are stated explicitly.

Price ..... per pound .....

Trench Pump Diaphragms

For Edson, Loud and Gould Pumps



The Loud pattern diaphragm fits Deming trench pumps, and the Edson pattern fits Rumsey trench pumps.

Kind	Outside Diam. In.	Price Each	Kind	Outside Diam. In.	Price Each
No. 2 Edson	11⅛	.....	No. 3 Gould	12¾	.....
" 3 "	12⅞	.....	" 4 "	14½	.....
" 4 "	14¾	.....	" 1 Loud	9¾	.....
" 2 Gould	11	.....	" 2 "	13	.....

Diaphragms for Damper and Steam Regulators



For either high or low pressure, made of selected high grade stocks and specially woven duck, and warranted not to burst. When ordering, state pressure which diaphragms are required to stand. Special sizes and shapes to order at short notice.

Low Pressure No.	Outside Diameter Inches	Price Each	High Pressure No.	Outside Diameter Inches	Price Each
111	6½	$.50	1	6¾	$.55
6937	7	.55	2	9	.85
6191	7⅞	.70	3	11⅝	1.45
5624	9	.85	4	15	2.65

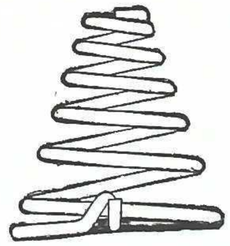
Pump Valve Springs

Brass, Phosphor Bronze and Steel

When ordering pump valve springs, state if size given is size of valve or the diameter of base of spring.

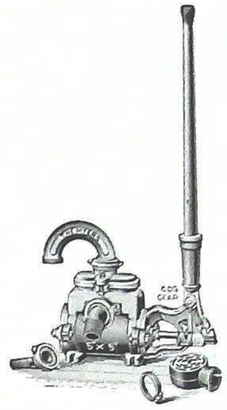
Send a sample with order if possible; otherwise send sketch showing height of spring, outside diameter of base, inside diameter of top and size of wire, specifying name of gauge used or the decimal size in order to avoid error; also specify if the springs are to be made of brass, phosphor bronze or steel.

Prices upon application.



No. R479 Myers Giant Double Acting Force Tank Pumps

Cog Gear, Low Down



For filling thresher tanks, washing out boilers, irrigation purposes, pumping water from trenches, shallow wells, cellars, barnyards, etc.

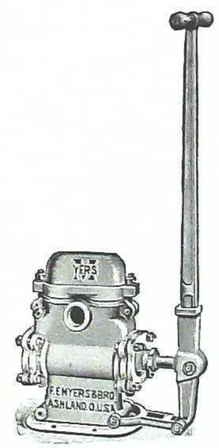
Has 5x5-inch cylinder capacity, 2000 gallons per hour.

It is an entirely new design of low down construction. Has many desirable features, especially the reversible cog gear head by means of which the power required to operate is reduced one-third, and the piston guide is located so that it causes the piston rod to move in a direct line with the cylinder without carrying the weight of the handle which naturally reduces the friction and eliminates wear on rod and stuffing nut. Short fulcrum with a full 5-inch stroke.

This pump was designed so that all working parts can be easily reached for inspection or repairs. By simply loosening one bolt and removing cap all valves are exposed which permits quick removal when necessary. A wrench is the only tool needed. It is fitted for 2-inch suction hose, and both suction and discharge are union nutted and are tapped for 2-inch iron pipe. Drip cocks are provided for draining cylinder to prevent freezing. The spout is reversible.

Price, No. R479, with Hose Nipple, Hose Band and Strainer ..... each		$14.50
Price, No. R479C, Complete as in No. R479. Fitted with 20 Feet of 2-Inch Spiral Suction Hose, 10 Feet of 1-Inch Discharge Hose and Nozzle..... each		29.00
Price, No. R479½, Brass Lined General Pump, with Hose Nipple, Hose Band and Strainer..... each		17.50
Price, 2-Inch Spiral Wire Suction Hose, 15, 20 and 25-Foot Lengths ..... per foot		.60

Myers Handy Billy Double Acting Force Pumps



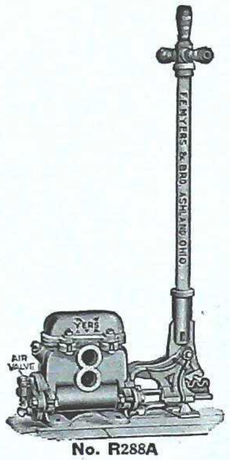
Built in accordance with U. S. Navy requirements. Designed for use on ships, in mines, and factories, or any place where a strong and ruggedly built pump is required.

Has brass lined cylinder; 1⅛-inch brass covered piston rod, outside packed, with brass packing follower; valves and seats are brass, bevel ground; cylinder heads flanged for packing and telescoping into cylinder body to insure alignment of all working parts. Has one packing joint to reach valves, which is recessed for circular packing gasket. Handle is malleable iron. The wood bar is of sufficient length to allow two men to operate pump and of such size that it can be replaced by 1¼-inch pipe.

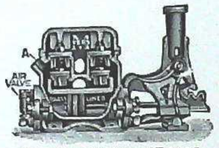
The discharge line is taken from the body of the pump instead of the air chamber. All valves can be reached without disconnecting any of the piping or hose. All parts connected with heavy through bolts, can be entirely dismantled by use of an ordinary wrench. Provided with priming and drain plugs.

No.	Size Pump Inches	Suction In.	Discharge Pipe In.	Gallons per Stroke	Ship. Wt. Lbs.	Price Each	Extra for Brass Hose Nipples for Suction and Discharge
476	4x5½	2	2	.30	127	$35.00	$2.25
477	5x5½	2½	2½	.463	145	45.00	4.75
478	6x5½	3	3	.673	255	60.00	4.75

Myers Cog Gear Double-acting Force Pumps



No. R288A



Sectional View, R288A with Air Valve

Fitted with brass lined cylinder, brass valve seats and rubber faced valves. The suction valves are located immediately below the discharge valves. All 4 of the valves are reached by removing the air dome, which is located directly over them, and without disturbing either the suction or discharge pipe. The piston rod is brass covered with heavy brass stuffing nut. The pump, when necessary, can be primed by removing the plug through which opening water can be poured direct into the cylinder. The suction and discharge pipes attach to either side of the pump.

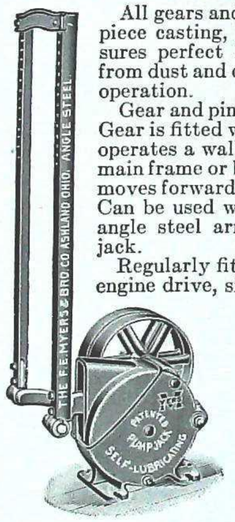
R288A is same as R288 except it is equipped with an air valve attached directly to the cylinder head, through which air is admitted direct to the body of the pump, and forced into the pressure tank through the regular water line, doing away with all independent piping.

Weight No. R288, 55 pounds; No. R288A, 60 pounds.

Price, No. R288, with 3x4½-inch Brass Lined Cylinder, with 1¼-inch Suction and Discharge . . . . . each **$13.50**

Price, No. R288A, Hydro-Pneumatic Force Pump, with 3x4½-inch Brass Lined Cylinder, with 1¼ inch Suction and Discharge . . . . . each **15.00**

Myers Self-Lubricating Pump Jacks



No. 422, Engine Driven

All gears and moving parts are enclosed in a one-piece casting, forming the oil reservoir. This insures perfect lubrication, protects moving parts from dust and dirt, and guarantees perfect safety in operation.

Gear and pinion are machine cut and move in oil. Gear is fitted with an eccentric cast integral which operates a walking beam hinged at one end to the main frame or base. The revolving of the eccentric moves forward end of the walking beam vertically. Can be used with any make of pump stand. Has angle steel arms, making a most durable pump jack.

Regularly fitted with tight and loose pulleys for engine drive, single pulley for motor drive.

Back geared 6 to 1.

Maximum: 1½-h.p. engine; ¾-h.p. motor.

Recommended Service

Total Lift Feet	Diam. Cylinder In.	Cap. Gal. per Min.	Strokes
250	1¾	3	30
200	2¼	4	30
150	2½	5	30
125	3	7	30
75	3½	10	30
60	4	12½	30

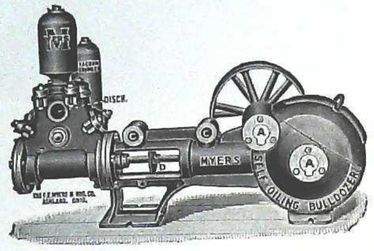
Engine Driven

No.	Stroke Inches	T. & L. Pulleys Inches	Tight Pulley Inches	Shipping Weight Pounds	Price Each
422	6	12x2	.....	108	**$18.00**
422½	8	12x2	.....	108	**18.00**
For Motor Drive					
422M	6	....	24x2½	113	***$18.00**
422½M	8	....	24x2½	113	***18.00**

*Prices do not include motor.

Myers Self-Oiling Bulldozer Power Pumps

Back-Geared 5 to 1



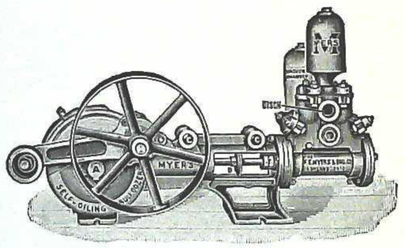
No. 912 Series
As Equipped with Tight and Loose Pulleys for Engine Drive

A single cylinder, double acting power pump for general service on plantations, country estates, in mines, apartment houses, hotels, mills, factories, railways, tanks, stations, or wherever from 260 to 9000 gall ons of water per hour are required against a pressure up to 100 pounds or 230 feet elevation.

The power end consists of a one-piece casting which forms the base of the pump and oil reservoir, and in connection with a lid encloses all working parts, protecting them from dirt or injury, and securing safety of operation. Both gear and pinion are machine cut from the solid. The gear is cast iron and the pinion steel. From the oil reservoir in the base, oil is carried by the main gear to the highest parts of the pump, and by a system of channels distributed to all moving parts and returned again to the reservoir. This system of flood lubrication contributes quiet operation and long life, with a minimum of attention.

The cylinder is brass lined. Large rubber valves on bronze grid seats are all located above the cylinder, insuring priming. Suction and discharge valves are easily accessible for inspection and repair without disturbing pipe connections. Suction and discharge piping may be taken from either side.

Pump No.	Cylinder Brass Lined Diam. In.	Stroke	Cap. in One Rev. of Plunger Gal.	Max. Plgr. Speed R.P.M	Max. Gal. per Min. at Pump	Max. H.P.	T & L Pulley In.	Suction and Discharge	Wt. Lbs. Each	Price Each
912	2½	3	.128	70	9	1	12x2	1¼	162	**$53.00**
913	3	4	.245	70	17	2	14x2½	1½	274	**83.00**
914	4	5	.544	65	35	4	16x4	2	502	**130.00**
915	5	5	.85	60	51	6	16x4	2½	537	**145.00**
916	6	6	1.47	52	76	7	24x4	3	894	**225.00**



No. 912M Series
As Equipped with Belt Tightener for Belt Drive with Motor Mounted on Floor

912M	2½	3	.128	70	9	1	15x2½	1¼	174	**$58.00**
913M	3	4	.245	70	17	2	20x3	1½	269	**92.00**
914M	4	5	.544	65	35	4	24x4	2	537	**141.00**
915M	5	5	.85	60	51	6	24x4	2½	587	**156.00**
916M	6	6	1.47	52	76	7	30x4	3	959	**239.00**

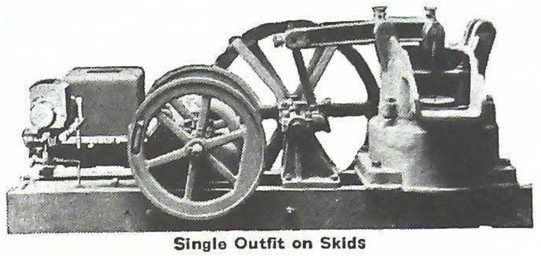
Each Pump Tested Under 125 Pounds Pressure

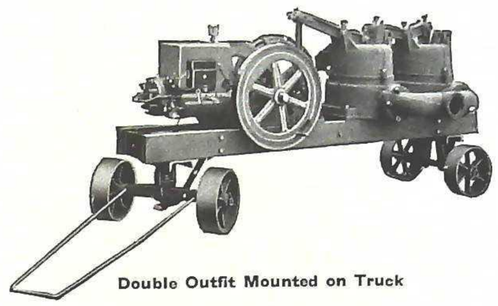
Feet Elevation or Head	25	50	75	100	150	200
H.P. Required, 2½x3-In. Cylinder	½	½	½	¾	¾	1
H.P. Required, 3x4-In. Cylinder . .	½	¾	¾	1	1½	2
H.P. Required, 4x5-In. Cylinder . .	1	1½	1¾	2	3	4
H.P. Required, 5x5-In. Cylinder . .	1	1½	2½	3	4½	6
H.P. Required, 6x6-In. Cylinder . .	1½	2½	3½	5	7	8½

Hy-Tech Products

Jumbo Diaphragm Pumping Outfits

Single and Double


Single Outfit on Skids


Double Outfit Mounted on Truck

Jumbo Pumping Outfits are built as individual power units. Engine and pump are securely bolted to rigid channel steel base—designed to secure a compact vibrationless pumping unit. These outfits can be used on flooded trenches, ditches, cellars, sewers, foundations, cofferdams, irrigation systems; for bilge pumping on barges, lighters and schooners, and to pump any liquid or sewage no matter how gritty, sludgy or squdgy it may be.

With outfits Nos. 113, 114, and 123 standard 1¾ H.P., 1927 model Jumbo engine is used. It has a normal speed of 500 R.P.M. and is equipped with speed regulator by which the speed can be varied 100 R.P.M. while engine is operating. Bore and stroke, 3½x5 inches; crankshaft 1¼ inches; flywheel 16 inches. With outfits Nos. 313, 314, 323 and 324 standard 3 H.P. Jumbo engine is used. Speed 450 R.P.M. which can be varied by regulator 75 R.P.M. while engine is running. Bore and stroke 4½x6 inches; crankshaft 1⅝ inches; flywheel 21 inches.

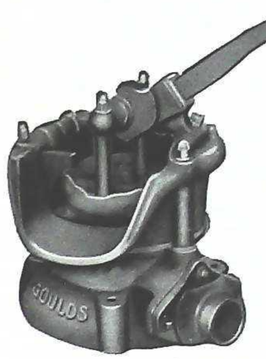
The jack is simple but massive in construction. A strong box type frame carries 1¼-inch crankshaft of drop forged steel having a 5-inch throw. Bearings are removable die castings 2½ inches long. Malleable iron connecting rod with die cast bearings at large end and removable bronze bushing at small end. Large machine cut gear is 21.6 inches in diameter, 1¾-inch face, and is equipped with gear guard. Jack gives 65 strokes per minute with 1¾ H.P. engine and 70 strokes with 3 H.P.

The suction lift on these outfits ranges from 20 feet to a maximum of 25 feet under favorable conditions. Suction hose in 10, 15 and 20-foot lengths complete with couplings, foot valves and strainer can be furnished at extra cost. Specify size of suction hose. A standard truck for mounting any of the outfits can be furnished at extra cost.

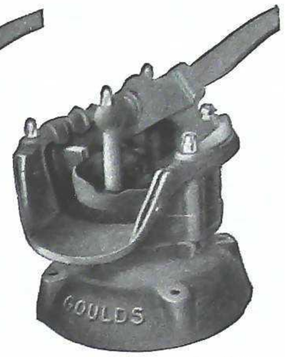
Outfit No.	No. of Pumps	Pump No.	Intake Pipe In.	Eng. H.P.	Approx. Cap. per Hour, Gal.	Length Over All In.	Width Over All In.	Ship. Wt. Lbs.
113	1	3	3	1¾	4000	62	28	720
114	1	4	4	1¾	8500	68	32	830
123	2	3	3	1¾	8000	80	28	940
313	1	3	3	3	4300	72	28	950
314	1	4	4	3	9000	78	32	1040
323	2	3	3	3	8600	92	28	1190
324	2	4	4	3	18000	100	32	1400

Prices upon application.

Goulds Diaphragm Suction Pumps



No. 1223, Side Suction



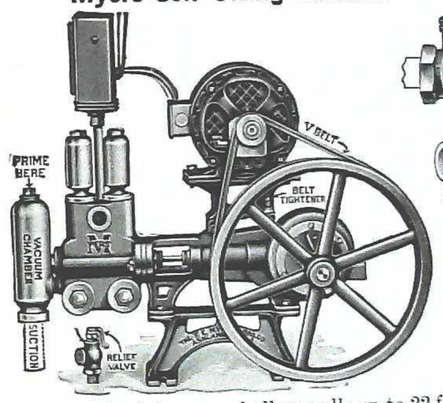
No. 1222, Bottom Suction

For suction lift of 25 feet.

The diaphragm is made of the best quality of rubber and is guaranteed to stand hard service. The suction valve is of metal, rubber faced and easily removable. It rests on an inclined seat and therefore offers the least obstruction to the passage of semi-fluid or solid matter. The waterways are large and permit an easy flow to fluid. The lever is made of wrought iron and is reversible; it can be used vertically or horizontally from either side of the pump. This is the type most widely used by contractors and builders who have to pump out excavations.

Size No.	Stroke In.	Suction I.P. In.	Approx. Cap. per Hour Gal.	No. 1222 Approx. Wt. Lbs.	No. 1222 Price Each	No. 1223 Approx. Wt. Lbs.	No. 1223 Price Each
2	3	2½	1800	115	**$20.60**	127	**$23.75**
3	3	3	3500	170	**26.85**	178	**30.60**
4	4	4	6000	256	**45.60**	266	**50.00**

Myers Self-Oiling Electric Pumps



Fresh Water Valve

For use in cisterns or shallow wells up to 22 feet in depth. The fresh water valve can be connected in discharge line from pump to the tank. Automatically controlled. Valves independently removable. Brass lined cylinder.

For Pressure Tank Systems

Complete with motor, vacuum chamber, relief valve, air valve, pressure control switch and V type belt.

No.	Each	Cap., Gal. per Hr.	Motor H.P.	Motor Current	Pipe, In. Suction	Pipe, In. Discharge	Wt Lbs
906A	**$75.00**	250	⅙	A.C. or D.C.	¾	¾	12
909A	**80.00**	300	¼	A.C. or D.C.	1	¾	13

For Open Tank Systems

Same equipment as for pressure tank systems except pressure control switch and air valve are not included.

906	**$67.00**	250	⅙	A.C. or D.C.	¾	¾	11
909	**72.00**	300	¼	A.C. or D.C.	1	¾	13

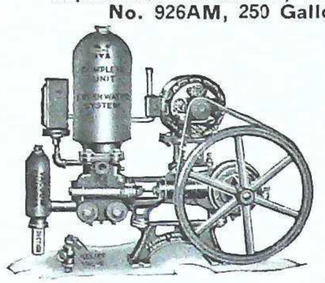
Foot Valve with Brass Gauze Strainer . . . . . each **$1.3**

Extra V-Belt for Any of Above Pumps . . . . . each **1.5**

If frequency and voltage are other than specified abov an extra charge is made. Specify current used.

Myers Junior Automatic Self-Oiling Direct Water Systems

Capacities: No. 925AM, 300 Gallons per Hour
No. 926AM, 250 Gallons per Hour



For shallow wells or cisterns up to 22 feet in depth.

Has an extra large air chamber of sufficient size to properly cushion the stream and at the same time not to allow any unnecessary surplus water. It is never necessary to draw more than ½ gallon of water until the pump starts, after which it pumps fresh water direct from the supply to the faucets.

It is of sufficient capacity to pump directly against the faucets supplying an ordinary residence. The opening of any faucet starts the pump.

The only thing necessary for installation is to connect the discharge to the house line. Floor space, 13″x25″x30″.

When ordering, specify current used. If a.c. give phase, frequency, and voltage; d.c. give voltage.

No. 925AM

300 G.P.H. Will Supply a Gem Nozzle Wide Open at 35 Lbs. Press.

Complete as shown, including ¼ h.p., 110–220 volt, 60-cycle, single-phase, a.c. or with 32, 110 or 220-volt d.c. motor, V-belt, electric switch, air chamber and relief valve. Shipping weight, 240 pounds.

No. 925AM, Complete ..... each **$80.00**

No. 926AM

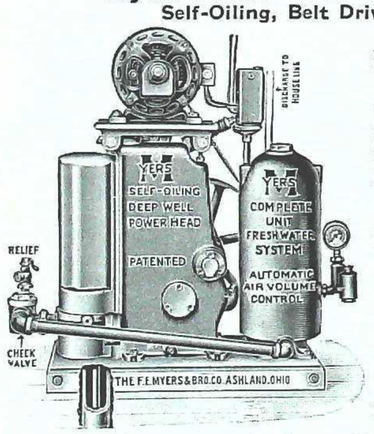
250 G.P.H. Will Supply One Faucet Only

Complete as shown, including ⅓ h.p., 110–220-volt, 60-cycle, single-phase, a.c. or with 32, 110 or 220-volt d.c. motor, V-belt, electric switch, air chamber and relief valve. Shipping weight, 214 pounds.

No. 926AM, Complete ..... each **$75.00**
Foot Valve with Brass Gauze Strainer ..... each **1.30**

Myers Direct Water Systems

Self-Oiling, Belt Driven



For deep wells 24 feet or more in depth. The opening of a faucet anywhere in the building starts the pump and delivers fresh water to all parts of the building.

Floor space, 15x37 inches. Height, 35 inches. Suction tapped 2½ inches and bushed to 1¼ in. Discharge, 1 inch.

A 2¼-inch cylinder has sufficient capacity to supply a gem nozzle for lawn sprinkling at 30 lbs. pressure. Specify current used. If a.c., give phase, frequency and voltage. If d.c., give voltage.

No. 2955AM.—Complete as shown, except cylinder, including ½-h.p., 110–220-volt, 60-cycle, single phase, a.c. or 32, 110 or 220-volt d.c. motor, belt, pressure gauge, electric switch, air chamber and relief valve. Mounted on plank base. Shipping weight, 388 pounds.

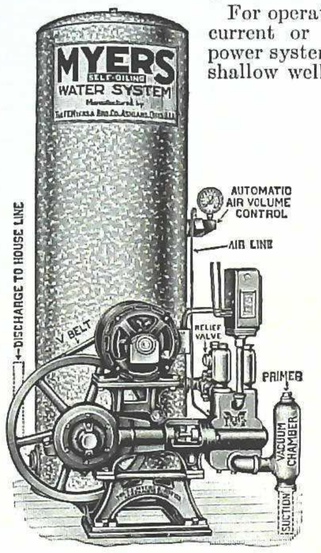
Price, No. 2955AM ..... each **$155.00**

No. 2955AMS.—Same as above with 4-foot anti-freezing set length. Plank base not included. Shipping weight, 466 pounds.

Price, No. 2955AMS ..... each **$159.00**
Either of Above Outfits Fitted with ⅓-H.P., 60-Cycle, Single Phase A.C. or 32, 110 or 220-Volt D.C. Motor, Deduct from List ..... each **15.00**
Either of Above Outfits Fitted with ¾-H.P., 60-Cycle, Single Phase, A.C. or 110 or 220-Volt D.C. Motor, Add to List **$13.00**
Extra Belt for Above Pumps ..... each **4.00**

Myers Self-Oiling Home Water Systems

Motor Driven, Automatic
Capacities: No. 906AT, 250 Gallons per Hour,
No. 909AT, 300 Gallons per Hour



For operation from any kind of city current or from farm lighting and power systems. For use in cisterns or shallow wells up to 22 feet in depth. Has oil level overflow.

Controlled by electric switch which automatically starts pump when pressure in tank falls to 20 lbs. and stops pump when pressure reaches 40 lbs. Air supply in tank is controlled by the automatic air volume control.

With motor, vacuum chamber, relief valve, air valve, pressure control switch, pressure gauge, V-type belt, base, 42-gal. galvanized tank and connecting fittings

No. 909AT will supply a ¾-inch gem nozzle wide open at 35 pounds pressure for sprinkling.

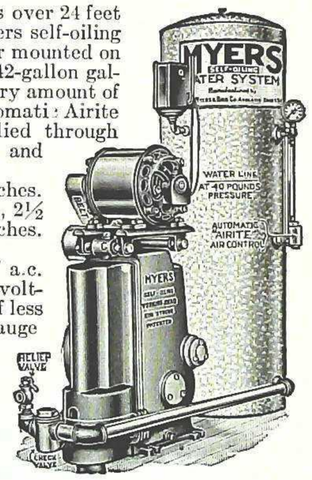
Floor space, 25x29x52 inches.

No.	Capacity Gallon per Hr.	Motor H.P.	Motor Current	Pipe, Inches Suction	Pipe, Inches Discharge	Ship. Wt. Lbs.	Price Each
906AT	250	⅓	A.C. or D.C.	¾	¾	239	**$105.00**
909AT	300	¼	A.C. or D.C.	1	¾	259	**110.00**

Extra charge for frequency and voltage other than specified. Give current used. If A.C. give phase, frequency and voltage. If D.C. give voltage.

Myers Deep Well Water Systems

Self-Oiling, Belt Driven



A complete unit for wells over 24 feet in depth made up of a Myers self-oiling working head with a motor mounted on gear case, connected to a 42-gallon galvanized tank. The necessary amount of air is controlled by the automatic Airite air control. Air is supplied through water line between pump and tank.

Floor space, 22x46 inches. Height, 51 inches. Suction, 2½ inches bushed to 1¼ inches. Discharge, 1 inch.

Specify current used. If a.c. give phase, frequency and voltage. If d.c. give voltage. If less pressure tank and water gauge and air control, deduct from lists, $17.00.

No. 2950AMT

Complete as shown, including ½ h.p., 110-220 volt, 60-cycle, single-phase, a.c. or 32, 110 or 220 volt d.c. motor, belt, pressure gauge, electric switch, relief valve and 42-gal. galvanized tank. (Cyl. not included.) Wt., 415 lbs.

Price, No. 2950AMT ..... each **$162.00**

No. 2950AMTS

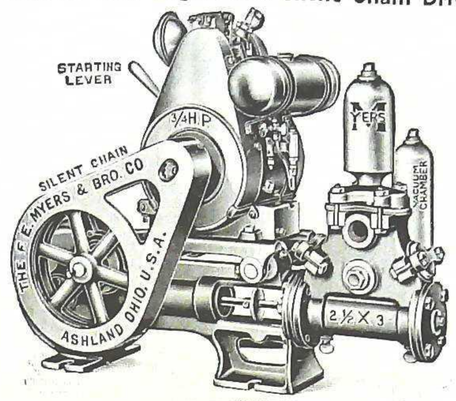
Same as above with 4-foot anti-freezing set length. Plank base not included. Shipping weight, 433 pounds.

Price, No. 2950AMTS ..... each **$166.00**
Either of Above Outfits Fitted with ⅓-H.P., 60-Cycle, Single Phase, A.C. or 32, 110 or 220-Volt D.C. Motor, Deduct from List **15.00**
Either of Above Outfits Fitted with ¾-H.P., 60-Cycle, Single Phase, A.C. or 110 or 220-Volt, D.C. Motor, Add to List **13.00**
Extra Belt for Above Pumps ..... each **4.00**

Hy-Tech Products

No. C912E Myers Self-Oiling Bulldozer Power Pumps

For Open Tank Work
Complete with Engine and Silent Chain Drive



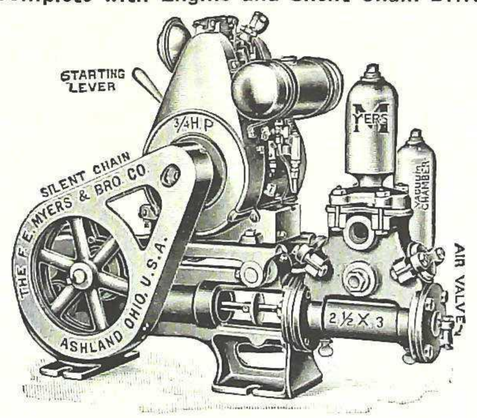
Furnished with ¾ h.p. gas engine with hot spark high tension magneto built in. All moving parts are fully enclosed. The engine can be arranged to stop automatically by the use of a circuit breaker. Back geared 5 to 1.

If an electric line is built after this outfit has been installed, all that is necessary is to change the engine for a motor, as the pump is built to use either.

Diameter of Brass Lined Cylinder	inches	2½
Stroke	inches	3
Speed of Plunger	r.p.m.	70
Maximum Capacity per Minute at Pump	gallons	9
Size Head	feet	115
Suction and Discharge	inches	1¼
Floor Space	inches	17x35x27
Weight	pounds	305
Price, No. C912E	each	$160.00

No. C912AE Myers Self-Oiling Bulldozer Power Pumps

For Pneumatic Pressure Tank Service
Complete with Engine and Silent Chain Drive



Equipped with a ¾ h.p. gas engine with high tension magneto built in. Fly wheels are fully enclosed, no moving parts exposed. The engine can be arranged to stop automatically by the use of a circuit breaker. Back geared 5 to 1.

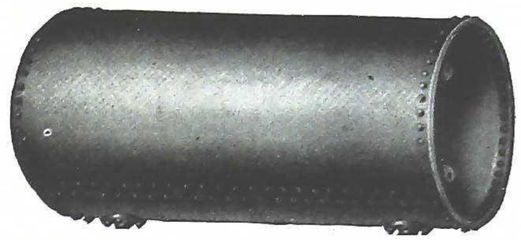
Tanks not less than 300 gallons capacity are recommended, as the engine has to be started by hand and the tank will deliver only ⅕ of its capacity before restarting the engine.

Diameter Cylinder	inches	2½
Stroke Cylinder	inches	3
Plunger Speed	r.p.m.	70
Maximum Capacity per Minute at Pump	gallons	9
Tank Pressure	pounds	50
Suction and Discharge	inches	1¼
Floor Space	inches	17x35x27
Price, No. C912AE	each	$162.00
Price, Circuit Breaker	each	10.00

Hydro-pneumatic Pressure Tanks

Horizontal or Vertical
Double Riveted—For Domestic Water Supply Systems

Tested to 125 Pounds Air Pressure and Guaranteed For 75 Pounds Working Pressure



This tank is made from the highest quality of steel plate adapted for the purpose; heavily and closely riveted throughout, by experienced boilermakers. The latest improved machinery is employed in the manufacture and it is safeguarded to prevent accidents.

Size Diam. Inches	Size Length Feet	Approx. Capacity Gallons	Approx. Weight Pounds	Price Black Each
24	5	120	390	$120.00
24	6	140	440	135.00
24	10	245	660	204.00
30	6	220	590	172.00
30	8	295	720	212.00
30	10	365	850	244.00
36	6	315	730	205.00
36	8	420	890	255.00
36	10	525	1050	295.00
36	12	630	1200	330.00
36	14	735	1380	380.00
42	8	575	1370	365.00
42	10	720	1630	425.00
42	12	865	1880	480.00
42	14	1000	2150	545.00
48	10	940	1930	490.00
48	14	1300	2540	620.00
48	16	1500	2830	690.00
48	20	1880	3440	835.00
48	24	2260	4018	965.00

Water Glasses

Vertical tanks are tapped for 14-inch water glass.

All horizontal tanks are tapped for water gauge in concave head as follows:

Diameter Tank ..... inches	24	30	36	42	48
Length Water Glass ..... "	12	14	16	20	24

Tanks 24 and 30 inches in diameter have 1-inch tappings. 36-inch tanks have 1¼-inch tappings, 42-inch tanks have 1¼-inch tappings and 48-inch tanks have 1½-inch tappings, located as shown in cuts.

All water gauge tappings are one-half inch.

Manholes

Price, in Head ..... each **$30.00**
" " Shell ..... " **45.00**

Manhole in head adds to weight of tank 100 pounds, and in shell 200 pounds.

Handholes

Price, in Head ..... each **$8.00**
" " Shell ..... " **8.00**

Flanged Openings

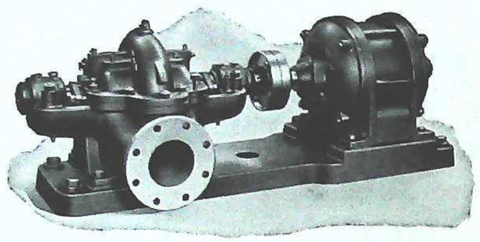
Size ..... inches	1½	2	2½	3	
Price ..... each	$6.00	8.00	8.00	9.00	
Size ..... inches	3½	4	5	6	
Price ..... each	$9.00	10.00	15.00	18.00	

Reliance Steel Tanks are regularly furnished with flanged openings. For special and extra openings add the above list prices.

When ordering, unless specified horizontal, tanks six feet long will be shipped vertical pattern.

Allis-Chalmers Centrifugal Pumping Units

All Heads and Capacities—Any Service—Complete Units with Motor, Turbine or Gasoline Engine



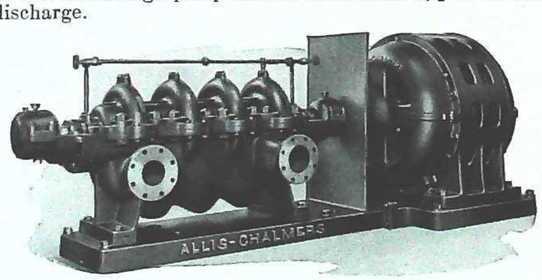
Small Type S Pump Direct Connected to Allis-Chalmers Type AR Motor

Uses

Allis-Chalmers efficient and durable Centrifugal Pumps are adapted to most any kind of pumping service including: City water supply; mill and factory water supply; power plant pumps for boiler feed, condenser, heater and general service; high pressure fire pumps; Underwriter fire pumps; drainage pumps; irrigation pumps; sewage pumps; paper mill pumps; sugar mill pumps; mine pumps; ice plant pumps; sluicing pumps; oil pumps; and pumps for handling liquids in many different processes.

Types

The types of pumps manufactured as standard are horizontal single stage Type S built in sizes from 1-inch discharge to 24-inch discharge with capacities ranging from 25 gallons per minute to 20,000 gallons per minute and good for heads up to 200 feet. The multistage Type ST is built in sizes from 2-inch discharge to 14-inch discharge for capacities from 50 gallons per minute to 6,000 gallons per minute and for normal heads up to 500 feet, also the improved high efficiency double suction multistage pump, Type M, has recently been added to the multistage pump line in sizes from 2½ to 14-inch discharge.



Type M Double Suction Multistage Pump Built of Bronze for Coal Mine Service

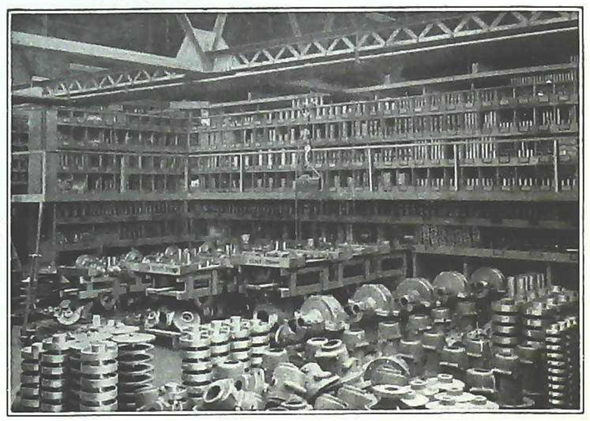
A complete line of larger single stage pumps is also built for special conditions up to 72-inch discharge and high head pumps can be furnished for boiler feed service and other high pressure service up to 1200 feet head and higher.

Many special pumps are also available such as: Rubber lined slimes and tailings pumps; open runner paper stock and sewage pumps; small types SS and SSU pumps with the runner mounted on the motor shaft extension (no pump bearings or coupling); acid bronze mine pumps; special fitted pumps for handling corrosive liquors. In fact for all except the most special requirements a suitable Allis-Chalmers Pump can be obtained.

Design

Allis-Chalmers has built centrifugal pumps for 50 years. The present designs are the results of elaborate series of tests and development work and wide experience in the field. Efficiencies are uniformly high and the pumps are built to exacting standards in modern shops with labor saving tools and on a production basis.

All strictly standard types of pumps have cast iron horizontally split casings and are bronze fitted with bronze impellers, bronze shaft sleeves and bronze wearing rings.

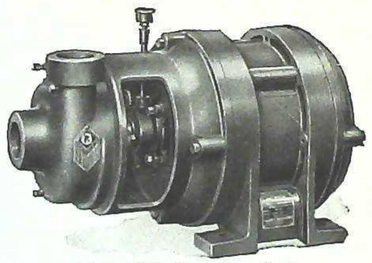


Corner in One of the Centrifugal Pump Part Stock Store Rooms

The new design Type S pumps which are the most commonly used type have the following noteworthy features: High efficiency; split casing combining the suction and discharge nozzles, volute, and suction nozzles in two parts of upper and lower half casing which provides a simple and reinforced construction of great strength; bronze fittings of Allis-Chalmers tough durable pump bronze, including cast bronze sleeves, not tubing; improved double ring-oiling bearing construction with better oil circulation, bearing tighter against entrance of dust and water and the throwing out of oil; bronze split stuffing box glands; liberal center collar rigidly held thrust arrangement; improved flexible couplings; substantial base plates; fine finish.

Combined Units

Allis-Chalmers Centrifugal Pumps can be supplied with Allis-Chalmers motors or steam turbines for the drive, which makes the ideal unit with both the pump and drive properly proportioned and guaranteed by one manufacturer so there is no division of responsibility.



Type SSU Pumping Unit

Service

Nowadays the selection of the most economical pumping unit for each individual case is a separate engineering problem. Careful consideration of every customer's requirements, the selection of the most suitable combined unit from the complete line of products, prompt shipment of carefully designed and economically produced pumps and a careful test of the pumps before shipment go to make up a service which insures the buyer pump satisfaction.

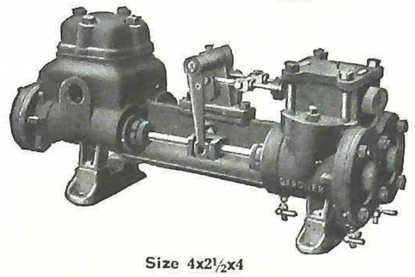
Information

Complete information on Allis-Chalmers Centrifugal Pumps cannot be conveniently given in a catalogue of this kind, but special bulletins and any other information will gladly be furnished on request.

Hy-Tech Products

Gardner-Denver Duplex General Service Packed Piston Pumps

Tube Lined Pattern



Size 4x2½x4

Pumps, 4-inch stroke and larger, are equipped with fork levers. These give double the wearing surface in the crossheads and are so arranged that the piston rods cannot turn. Pumps with steam cylinders 8 inches in diameter and larger are equipped with roller bearings in the crosshead which reduce friction and wear.

Unless otherwise specified brass valves are furnished on pumps up to and including the 7x4½x10; pumps larger than the 7x4½x10 are equipped with medium rubber valves.

Companion flanges furnished with all flanged openings.

Each pump is furnished with all necessary air and drain cocks, drip valves and plugs, spanners and a set of wrenches. Grease cups are put in the rocker shaft bearings.

Regular Fitted.—4½x3x4 and smaller pumps are regularly fitted with brass inserted tube liners and one-piece bronze piston rods. 5¼x3½x5 and larger pumps have brass inserted tube linings and one-piece steel rods. All pumps are furnished with water pistons packed but no other packing is included.

Brass Fitted.—6x4x6 and smaller are fitted with one-piece bronze piston rods. 7x4½x10 and larger have bronze rods on water end and steel rods on steam end; 12-inch stroke pumps are also provided with brass lined stuffing box glands on water end. Brass water pistons are not included in brass fittings but can be supplied at an extra cost; except the 4½x3x4 and smaller which are regularly furnished with brass pistons.

Bed plates, lubricator and other accessories supplied as extras and are not furnished unless especially ordered.

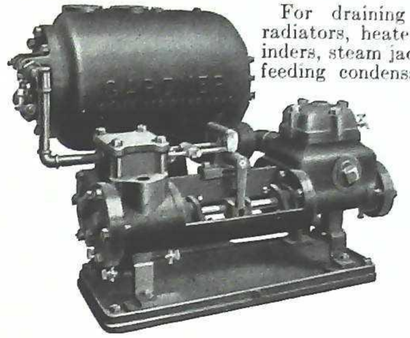
No.	Diam. Cylinder, Inches Steam	Water	Length Stroke Inches	*Pipe Connections, Inches Steam	Exhaust	Suction	Discharge
0	2½	1½	3	⅜	½	1	¾
00	3	2	3	⅜	½	1¼	1
2	4½	3	4	½	1	2	1½
3	5¼	3½	5	¾	1¼	2½	2
4	6	4	6	1	1½	3	2
5	7	4½	10	1½	2	4	3
6A	8	5	10	1½	2	4	3
7	10	6	10	2	2½	5	4
8	12	7	12	2½	3	6	5
9	12	8	12	2½	3	6	5

No.	Max. Water Pressure Lbs.	Displacement Normal: Gal. per Stroke of Each Piston	Normal: No. of Single Strokes of Each Piston	Normal: Gal. per Min.	Maximum: No. of Single Strokes of Each Piston	Maximum: Gal. per Min.	H.P. Boiler Pump Will Feed	Approx Ship. Wt. Lbs.
0	200	.023	100	4.5	200	9	48	110
00	200	.04	100	8	200	16	85	175
2	200	.12	100	24	200	48	234	350
3	200	.21	90	38	180	75	351	500
4	200	.33	90	59	180	118	492	635
5	200	.69	60	83	120	166	918	1100
6A	200	.85	60	100	120	200	1136	1650
7	200	1.22	60	147	120	294	1625	1900
8	150	2 00	50	200	100	400	2262	3250
9	150	2.61	50	261	100	522	....	3470

*For short lengths; to be increased as length increases.

Prices upon application.

Gardner Automatic Feed Pump and Receiver



For draining steam coils, radiators, heaters, drying cylinders, steam jackets, etc., and feeding condensation into the boiler.

The pump is automatic in its action, returning the water into the boiler as fast as it accumulates in the receiver. It can also be used to regulate brine circulation in refrigerating machinery, and for other circulating purposes where an automatic action is required.

The action of this pump is automatically controlled by a seamless copper float within the receiver, dispensing with the use of cast-iron bucket floats with counterweights and balanced valves.

The receiving tank is heavy, guaranteed and tested for 200 pounds. It is provided with a sediment compartment to catch the sediment and chips from return pipes, radiators, etc., which prevent them from being drawn through the pump, with disastrous results to valves, seats, linings, etc. This compartment can be easily drained.

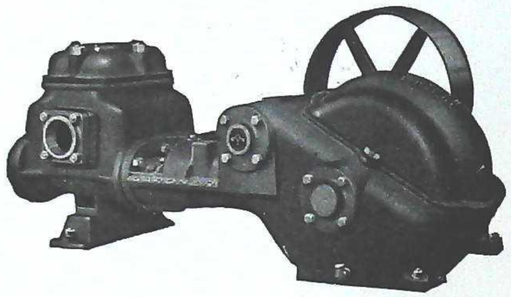
Each size has three openings in top for returns; when more are required they can be connected into the end of the receiving tank. Particular attention is directed to the large capacities of the receiving tanks. All pumps are full brass-fitted, having Tobin bronze piston rods, drawn brass tube liners and brass valves, seats and springs.

No		1	2
Diam. Cyl., Steam	in.	3	4½
Diam. Cyl., Water	in.	2	3
Length Stroke	in.	3	4
Steam Pipe Connections	in.	⅜	½
Exhaust Pipe Con	in.	½	1
Suction Pipe Con	in.	1¼	2
Discharge Pipe Con	in.	1	1½
Inside Dimensions of Receiver	in.	12½x18½	14½x21
*Radiating Surface Drained per Hour	square feet	5880	16160
Gallons per Minute		5.9	16.1
No. Suction and Discharge Valves	in.	8	8
Diameter Valves	in.	1½	2½
Valve Area per Deck	square inches	.60	2.3
Length, Floor Space	in.	37	43
Width, Floor Space	in.	26	32
Weight	pounds	440	800
No.		3	4
Diam. Cyl., Steam	in.	5¼	6
Diam. Cyl., Water	in.	3½	4
Length Stroke	in.	5	6
Steam Pipe Connections	in.	¾	1
Exhaust Pipe Con	in.	1¼	1½
Suction Pipe Con	in.	2½	3
Discharge Pipe Con	in.	2	2
Inside Dimensions of Receiver	in.	16¾x24½	16¾x24½
*Radiating Surface per Hour	in.	24200	33950
Gallons per Minute		24.2	34.
No. of Suction and Discharge Valves		8	8
Diameter Valves	in.	3	3½
Valve Area per Deck	square inches	3.5	5.25
Length, Floor Space	in.	46	49
Width, Floor Space	in.	34	39
Weight	pounds	1050	1300

*Based on 5 pounds per square foot.

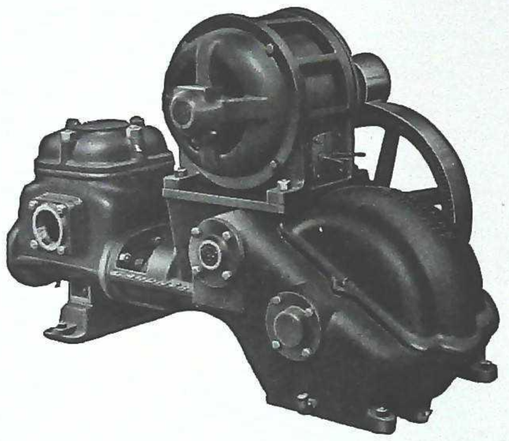
Prices and further information upon application.

Gardner-Denver Duplex Self Lubricating Power Pumps



Belt Drive

This duplex pump is a general service pump for boiler feeding, water circulation and similar services. It is especially popular for installations where only occasional attention can be given.



Motor Drive

The power end is totally enclosed with gears and eccentrics running in oil. Oil is thrown by the gears to channels leading to all bearings so that all moving parts run in a bath of oil.

The eccentrics in place of crank shaft have proven highly successful with this flood lubrication. The advantage of this mechanism is its compactness and simplicity. The eccentrics are cast with the gear, no power being transmitted through the main shaft which takes only the thrust of the water piston.

Diam. Cyl. x Stroke In.	Max. Pressure Lbs.	R.P.M.	Gals. per Rev.	Gals. per Min.	H.P.	Ship. Wt. Lbs.
2 x 4	350	50 to 75	.22	11 to 16.5	3. - 4.5	680
3 x 4	250	50 " 75	.48	24 " 36	4.7- 7.	700
3¾x 4	150	50 " 75	.76	38 " 57	4.5- 6.7	750
3½x 5	250	40 " 60	.84	33 " 50	6.4- 9.6	875
4¾x 5	130	40 " 60	1.52	61 " 91	6.1- 9.1	1000
4 x 6	250	40 " 60	1.32	53 " 79	10. -15.	1400
5¾x 6	120	40 " 60	2.68	107 " 160	9.7-14.5	1575
4½x10	200	40 " 50	2.74	110 " 137	16.4-20-5	2700
*5 x10	160	40 " 50	3.40	136 " 170	16.2-20.3	2725
6 x10	110	40 " 50	4.88	196 " 245	16.1-20.2	2875
*6 x10	200	40 " 50	4.90	196 " 245	28. -35.	4875
7 x10	100	40 " 50	6.66	268 " 334	19.2-24.	4750
8 x10	100	40 " 50	8.72	350 " 436	25.2-31.5	4900
*7 x10	200	40 " 50	6.66	268 " 334	38. -48.	5500
*8 x10	150	40 " 50	8.72	350 " 436	37.6-47.	5550

*Fitted with removable, bolted-in cylinder liners.

Prices upon application.

Wood and Galvanized Steel Tanks

Wood Tanks



Round Wood Tank

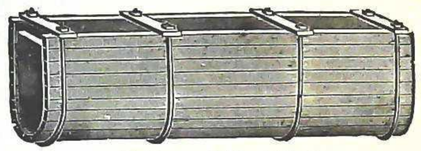
Cypress is everywhere recognized as the ideal wood for tank purposes.

It is the most durable wood known and, being very straight grained, will warp and twist but little.

It also shrinks and swells less than any other woods and it will not give off any taste, odor or color.

White Pine is used almost altogether for water tanks where something cheaper than cypress is wanted, and for brine tanks in pickle works.

Of late years the use of yellow pine for tanks has increased to large extent, and particularly for acid tanks, stuff chests, etc., for paper mill work. While cypress gives better results for hot acids, yellow pine is superior to it for cold or warm acids. It is also extensively employed in the manufacture of the ordinary water tank.



Half-round Wood Tank

Yellow poplar, like cypress, does not impart taste, odor or color to liquids that comes into contact with it.

Poplar is very close grained and is used especially for tanks to hold medicines and other volatile liquids.

Galvanized Steel Tanks



Round Galvanized Steel Storage Tank

Galvanized tanks are better than wood tanks because they have no hoops to get loose and do not leak after a long dry spell.

They are better than plain iron tanks, because they are galvanized and do not have to be painted.

Mosquitoes and wigglers do not breed in metal tanks.

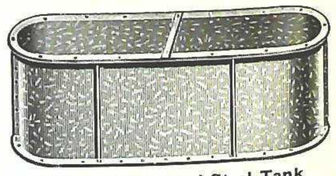
Galvanized tanks do not decay, and the water never rots or spoils in them even though they are used with tight covers. They are cleaner and neater in appearance. They will last a good deal longer than wooden tanks, and cost less.

These tanks are correctly constructed.

They are made of select material and are strong and durable.

Good for underground or above ground use.

Made for all purposes.



Oblong Galvanized Steel Tank

If tanks are kept well filled with water they will last much longer than if allowed to be partly dry.



Rectangular Galvanized Steel Tank

In ordering state exactly what is wanted.

Give height and diameter or width, height and length, and state whether a round end, square or round tank is desired.

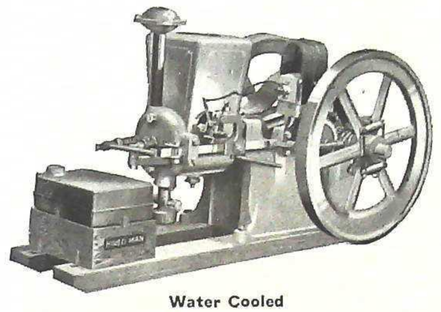
Prices and specifications upon application.

Hy-Tech Products

Iowa Hired Man Gasoline Engines

2½ Horsepower

Water Cooled or Air Cooled



Water Cooled

The Iowa Hired Man is built to last a lifetime. It runs at a moderate speed for a medium duty engine. It has good heavy flywheels and the crank shaft is of the best material and has extra good length. It is easy to operate and delivers a sturdy power with small fuel consumption. Regularly equipped with Iowa magneto. It is trouble proof and will give 55 per cent greater voltage than the average magneto found on other makes.

The engine is easy to start, whether it is summer or winter, dry weather or wet weather.

The cylinder is cast separately from the frame and is made of semi-steel.

The cylinder head is of the valve-in-head type and is accurately made. The valve is of automatic type, fitted with lock lever that holds the valve tightly closed. The cylinder head of the Iowa oversize is 40 per cent larger and heavier than the average head.

Piston is of high-grade iron, fitted and finished in the best possible manner. Provided with 4 rings and oil groove through which the piston pin is lubricated. The piston pin is chrome nickel steel, hardened and ground to size. Piston is 30 per cent larger than the average.

Crank shaft is made from a single piece of forged steel without welds. It is 40 per cent heavier than the average crank shaft. The crank pin is of large diameter, giving ample wearing surface. Connecting rod is built to give excessive strength. It is 30 per cent larger than the average. Crank end of the connecting rod is of divided type with white metal bearings which are adjustable to wear.

Gasoline mixer is securely bolted to the cylinder head. The throttle needle is fitted with brass seat and is located at the correct distance from the inlet valve to allow gas to mix properly under all conditions of load before entering the cylinder. The air inlet is fixed, the gasoline feed is the only adjustment required to give the proper mixture. This makes a simple and effective mixer device, one that is easily understood and operated.

The Iowa Hired Man can be furnished on skids, mounted on wheel-barrow truck, or on the special steel hand truck. It is built in both the water-cooled and air-cooled type.

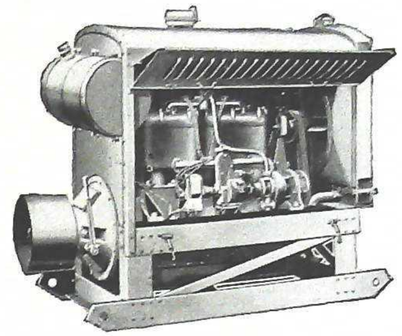
Speed, 475 r.p.m. Cylinder has 4-inch bore, 5-inch stroke. Flywheels are 20 inches in diameter, 1⅝-inch face. Crank shaft is 1⅜ inches in diameter, 24 inches long. Pulley, 6x4 inches. Length over all, 44 inches; width, 24 inches; height, 20 inches.

Base, 10x19 inches.

Shipping weight, 360 pounds.

Prices upon application.

Climax Gasoline Engines



A medium-speed, heavy duty, high-torque engine, designed and built for hard service.

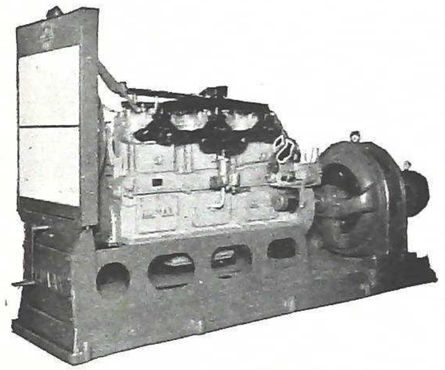
Climax Power Units come with complete equipment, ready to start. A Climax Unit is light and compact; it requires no permanent foundation and is easily moved.

Climax Engines are noted for their ease in starting. Magnetos with impulse couplings are used. Electric starting equipment may be had if desired.

Parts are easily reached for inspection, adjustment or repairs.

Bearings are bronze-backed, quickly removable.

Engines have especially reliable lubricating systems. Pressure to all crankshaft, camshaft and connecting rod bearings.



Engine for Pump and Generator Units

Models R4U and R6U have been tested and specifically approved for fire pump service; available for 500, 750 and 1000-g.p.m. pumps.

For pump and generator units the engine is supported on a cast iron rail or frame for mounting on cast iron subbase with extension for pump or generator. If sub-base is to be provided and mounting to be done, a certified blueprint is necessary for machining the base, boring the bolt holes, fitting the flexible coupling, etc.

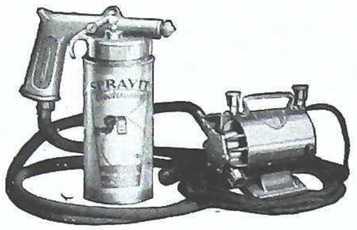
Used for sand and gravel pumps, cotton gins, rock crushers, saw mills, compressors, generators, etc.

Model	H.P.	Description	Cylinder	Size Inches
KU	45- 57	L-Head	4	5 x6½
TU	57- 77	L-Head	4	5½x7
R4U	72- 97	L-Head	4	6 x7
R14	83-110	Valve-in-Head	4	6 x7
RBU	85-117	L-Head	6	5½x7
R6U	105-142	L-Head	6	6 x7
R6U	114-155	Dual Carb. & Mag	6	6 x7
R16	124-165	Valve-in-Head	6	6 x7

Engines are furnished as power units, either for portable or stationary use. Available with or without electric starting equipment, radiators, clutches, power pulleys, vacuum fuel pumps, air cleaners and other optional equipment.

Prices and further information upon application.

Agitator Type Electric Sprayits



This machine is designed to handle any material of spraying consistency. Combines all the advantages of easy portability, low initial investment, and small operating cost. In addition to these advantages, it offers another feature, namely, positive agitation of materials in the container, which keeps them thoroughly mixed and assures real utilization of all the ingredients.

This equipment consists of a small rotary motor compressor unit weighing only 5 pounds which produces a pressure of 25 to 30 pounds to the square inch. This pressure is further stepped up by a specially designed fluid tube and nozzle assembly. This assures a positive break-up of materials.

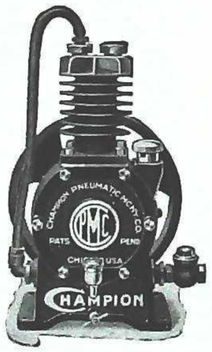
The agitator type gun weighs one pound and relieves the operator of any strain while using it. It is equipped with an instantaneous air control which operates in conjunction with the positive agitation feature. By changing the nozzles, the spray can be regulated from a thin strip ½ inch in width, to a wide, even fan spray 7 inches in width, for covering wide surfaces quickly, or to any width desired.

This Sprayit is equipped with 110-volt universal motor and will operate from either d.c. or a.c. of 25 to 60 cycles. Other voltages such as 220, 250 or 32 volts can be furnished at an additional cost of $5.00.

Weight complete, 6 pounds.

Price, Complete.....each **$39.50**

No. S-1 Champion Ball Bearing Air Compressors



Cylinder and head cast in one piece in baked sand mold. No gaskets. Cooling area about twice that of the usual air compressor, due to thinner and more cooling fins on both cylinder and cylinder head. Honed finish.

Valves are plate type, non-corrosive. Only one moving part. No springs. Wrist pin of alloy steel, hardened and ground. Securely clamped to connecting-rod. Connecting rod bearing bronze-backed, babbitt-lined and provided with brass laminated shims.

Check valve of non-pulsating type. Seats only once during each pumping operation.

Filtering trap embodied in base of the compressor. Moisture in air passing through is condensed. In conjunction with automatic pressure unloader used on complete automatic models, discharges accumulated moisture and condensation at the end of each pumping operation.

Controlled system of oiling provides a positive distribution of oil to all bearing surfaces.

Designed to give unusual accessibility to all working parts. All parts fit instantly, due to standardization. Parts are machined in specially constructed fixtures and are interchangeable.

Includes self-oiling compressor with single fan fly-wheel, sight oil gauge, check valve, filtering trap and drain valve.

Displacement, 1 to 1½ cubic feet. Size of cylinder, 1¾x2 inches. Motor required, ¼ h.p. and up. Speed, 400 to 600 r.p.m. Maximum working pressure, 150 pounds.

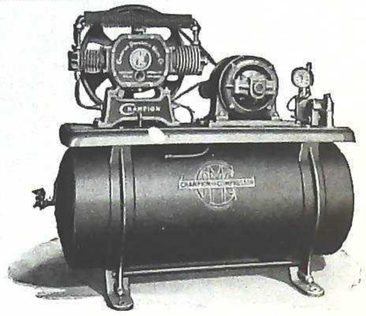
Length, 10 inches; width, 10 inches; height, 17 inches.

Shipping weight, 55 pounds.

Prices upon application.

Champion Ball Bearing Air Compressors

2-Stage Automatic Equipments—Nos. N13-60, N-23



Will accommodate a limited number of truck tires and has sufficient capacity for the average service station, garage, or tire shop. Equipment No. N-23 is identical with the No. N13-60 except that it is equipped with 1 h.p. motor instead of ¾ h.p. which affords greater speed and a larger volume of air. Will handle tire inflation demands above the average and is especially adapted for giant truck tire service.

Equipment includes: Compressor with fan fly-wheel, clear vision oil gauge, filtering trap, check valve, safety valve, air gauge, automatic electric controller, automatic pressure unloader, belt and automatic belt idler, motor with adjustable sliding motor rail, all mounted on metal base; 60-gallon tank, needle valve and 25-foot air hose and chuck with fittings all complete, ready to run when wired to electric current.

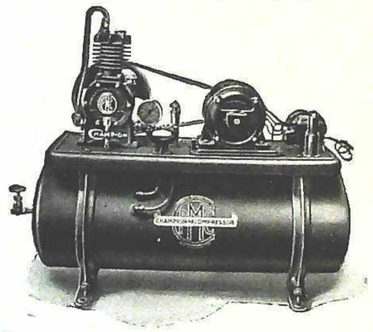
Automatic controller is set to maintain constant tank pressure between 130 and 170 pounds unless otherwise specified.

No.	Displacement Cu. Ft.	Size Cylinders In.	Motor H.P.	Maximum Working Pressure Lbs.	Lgth. In.	Wdth. In.	Ht. In.	Wt. Lbs.
N13-60	3¼	3x3, 1½x3	¾	200	51	24	45	690
N-23	4	3x3, 1½x3	1	200	51	24	45	700

Prices upon application.

No. S-21 Champion Ball Bearing Air Compressors

Single Stage Automatic Equipment



For use in medium size service stations, tire shops and garages where air pressure not exceeding 150 pounds is required, according to size. Particularly recommended for operation in connection with the 32-volt d.c. lighting systems. It is compact, quiet running, fully automatic.

Equipment includes: Compressor with fan fly-wheel, clear vision oil gauge, filtering trap, check valve, safety valve, air gauge, automatic electric controller, automatic pressure unloader, belt, motor with adjustable sliding motor rail to permit easy belt adjustment, all mounted on metal base; 32-gallon tank, needle valve, and 25-foot air hose and chuck with fittings, all complete, ready to run when wired to electric current.

Automatic controller is set to maintain constant tank pressure between 120 and 150 pounds unless otherwise ordered.

Motor ½ h.p. Size cylinders, 2½x2 inches. Displacement, 2.75 cubic feet. Maximum working pressure, 150 pounds.

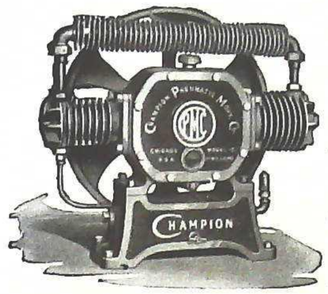
Length, 51 inches; width, 18 inches; height, 36 inches.

Shipping weight, 345 pounds.

Prices upon application.

Hy-Tech Products

No. N-4 Champion Ball Bearing Air Compressors



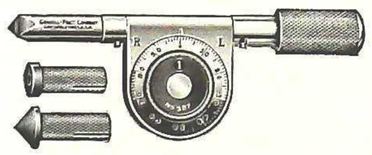
This Model N-4 is intended for installation where compressor is to be operated off of line shaft or run by gasoline engine.

Includes self-oiling compressor with single fan fly-wheel, filtering trap, clear vision oil gauge, check valve and safety valve.

Displacement, 3 to 4 cubic feet. Size cylinders, 3x3, 1½x3 inches. Motor, ¾ h.p. Length, and width, 10 inches; height, 17 inches. Weight, 160 pounds.

Prices upon application.

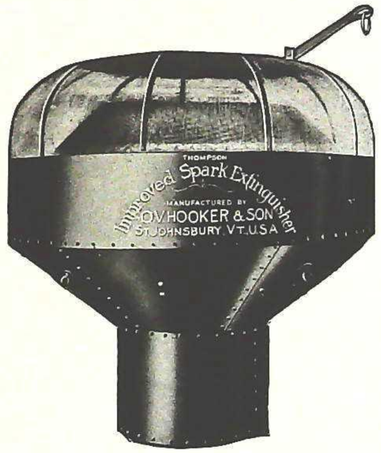
No. 387 Goodell-Pratt Speed Indicators



This speed indicator has 2 separate distinct dials, 1 recording the units, and another recording the hundreds up to 1000. The dial for recording the hundreds is fitted with a friction ratchet mechanism so that it can instantly be set back to 0 by turning knurled ring. Spindle has a double end for taking either right or left hand shaft. Both ends of spindle are hardened. Tool is fully polished and nickel-plated. Two rubber points are furnished. Packed 1 in box.

Price, No. **387** ..... each **$2.90**
" Leather Case ..... " **1.50**

Thompson Improved Spark Extinguishers

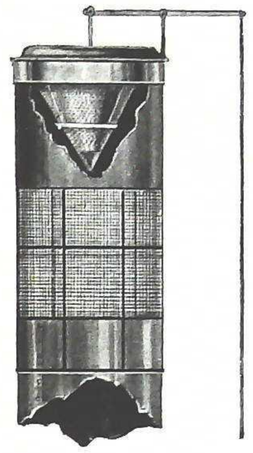


A substantial, reliable device, endorsed by insurance companies and guaranteed to consume all dangerous sparks without choking the draft. Works successfully on wood-burning locomotives, the most severe test possible.

Prices for machines to fit brick chimneys, upon application. Prices for machines not listed, take prices of next larger size listed.

Size Stack Inches	Price Each	Size Stack Inches	Price Each	Size Stack Inches	Price Each
12	$65.00	22	$94.00	36	$150.00
14	72.00	24	100.00	40	200.00
16	75.00	26	110.00	48	250.00
18	82.00	28	120.00	..	.....
20	87.00	30	135.00	..	..

South Bend Natural Draught Spark Arresters



Consists of a heavy steel frame so formed as to combine the whole together in a most substantial manner, which provides for attaching to the smoke stack by means of a heavy iron band encircling the stack and drawn firmly to same with draw bolts. The upper portion is composed of sheet metal and the lower of wire cloth. It is provided with a cone-shaped screen at top which can be raised or lowered, thus allowing an open stack in wet weather.

The wire cloth section prevents the escape of cinders large enough to cause damage by fire. Successfully used on stacks where the force draught or exhaust is not used and where a blower is used to increase the draught, which causes the sparks and cinders to be thrown out of the top of the stack, descending and setting fire to buildings, lumber, etc.

Give diameter, circumference and height of smoke stack to which the spark arrester is to be attached, kind of fuel to be used in firing boiler, etc.

No. 1—6 Feet High

For smoke stacks from 10 to 62 inches in diameter. Price includes spark arrester 6 feet high above stack attachment, 4 feet of wire screen and two feet of sheet metal at the top.

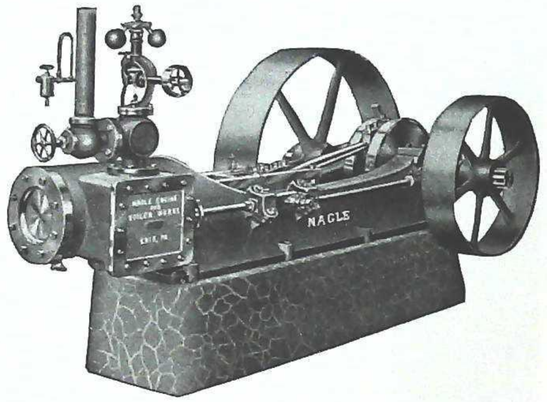
Size Inches	Price Each	Size Inches	Price Each
10 to 12	$28.00	37 to 38	$80.00
13 " 14	32.00	39 " 40	84.00
15 " 16	36.00	41 " 42	88.00
17 " 18	40.00	43 " 44	92.00
19 " 20	44.00	45 " 46	96.00
21 " 22	48.00	47 " 48	100.00
23 " 24	52.00	49 " 50	104.00
25 " 26	56.00	51 " 52	108.00
27 " 28	60.00	53 " 54	112.00
29 " 30	64.00	55 " 56	120.00
31 " 32	68.00	57 " 58	124.00
33 " 34	72.00	59 " 60	132.00
35 " 36	76.00	61 " 62	140.00

No. 2—4 Feet High

Spark arrester 4 feet high above stack attachment, 2 feet of sheet metal at top and 2 feet of wire screen. Manufactured for smoke stacks from 10 to 62 inches in diameter.

Size Inches	Price Each	Size Inches	Price Each
10 to 12	$22.00	37 to 38	$70.00
13 " 14	24.00	39 " 40	74.00
15 " 16	26.00	41 " 42	78.00
17 " 18	30.00	43 " 44	82.00
19 " 20	34.00	45 " 46	86.00
21 " 22	38.00	47 " 48	90.00
23 " 24	42.00	49 " 50	94.00
25 " 26	46.00	51 " 52	98.00
27 " 28	50.00	53 " 54	102.00
29 " 30	54.00	55 " 56	110.00
31 " 32	58.00	57 " 58	114.00
33 " 34	62.00	59 " 60	122.00
35 " 36	66.00	61 " 62	130.00

Class A Nagle Center Crank Engines



These engines are of the best material and are well made. The frames are strong and heavy, with the metal well distributed in the lines of strain.

The cylinders have hot-air jackets, which decrease condensation in the cylinder.

The crank-shafts are of large diameter, cut out of solid forgings, and provided with counterbalancing disks attached in such a manner as to make it impossible for them to work loose.

Connecting rods are also of forged steel.

The pistons are fitted with self-adjusting steam packing rings.

All engines are thoroughly tested with steam before leaving the works.

Equipped with class A governors with automatic stop.

All engines are thoroughly tested with steam before leaving the works.

Governor, throttle, two pulleys, cylinder lubricator and all necessary oil cups and cylinder cocks are considered parts of the engine, and are included in the regular prices, but steam and exhaust pipes, governor belt, wrenches, and foundation bolts are not included, and will not be furnished unless specially ordered, and at additional prices.

Swift sight-feed lubricator will be furnished with engine unless otherwise ordered.

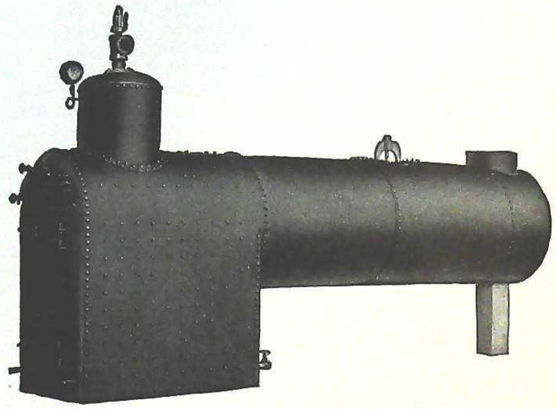
The stated number of revolutions may be largely increased and a proportionately higher power obtained.

Horse Power	Reg. Speed R.P.M.	Dimensions, Inches: Size Cyl.	Diam. Pulleys	Face Pulleys	Size Gov.	Approx. Weight Pounds
8	300	5x 8	14 & 32	7½ & 8½	1¼	1100
12	300	6x 8	16 " 36	7½ " 9½	1½	1200
15	275	7x10	20 " 44	8½ " 9½	2	1900
20	275	8x10	20 " 44	8½ " 10½	2¼	2000
30	250	9x12	32 " 48	8½ " 12½	2½	3000
40	250	10x12	32 " 54	8½ " 12½	3	3400
45	200	10x15	36 " 60	9½ " 12½	3	4400
50	200	11x15	36 " 60	9½ " 12½	3½	4900
55	200	12x15	36 " 60	9½ " 14½	3½	5400
60	190	12x16	36 " 60	9½ " 14½	3½	5600
70	180	13x16	36 " 72	9½ " 14½	4	6700
80	180	14x16	36 " 72	9½ " 16½	4	7800
100	175	15x16	36 " 72	12½ " 16½	4	9000
125	165	16x18	48 " 78	12½ " 16½	4½	11400

Prices upon application.

Deep Open Bottom Fire Box Portable Boilers

30 to 60 Horse Power



Boilers have 6 hand holes, one in front head above crown sheet, 4 in bottom of water leg, and 1 in rear head under tubes. Boilers 40 horse power and larger have manhole in shell above tubes.

Fire boxes thoroughly braced with screw stay-bolts. Heads above tubes braced with crow-foot braces. Dome heads dished. Longitudinal seams of shell and dome double riveted and dome flange double riveted over fire box. All other seams single riveted.

Domes are placed over the shell of the boiler instead of over the fire box as shown in the engraving.

Boilers have 2 fire doors, 1 close to crown sheet and the other just above the level of the grates. The water space surrounding fire box is 3 inches wide.

All boilers tested at 150 pounds hydrostatic pressure and made steam-tight before leaving the works.

Fixtures comprise smoke stack, galvanized iron guy wire, 4 times length stack, grates, safety valve, steam gauge, water gauge, gauge cocks, whistle, blow-off, check and stop valves.

This style of boiler is not regularly mounted on skids, but will be so mounted to order, at an additional price.

No.	Horse Power	Diameter Boiler Inches	Length Fire Box Inches	Width Fire Box Inches	Height Fire Box Inches	Number of 2-inch Tubes
91	30	40	60	33	60	68
92	35	40	60	33	60	68
93	40	44	60	37	60	90
94	45	44	60	37	60	90
95	50	44	60	37	60	90
96	55	48	60	41	60	100
97	60	48	60	41	60	100

No.	Length Tubes Feet	Thickness Steel in Shell Inches	Thickness Steel in Fire Box Inches	Thickness Steel in Heads Inches	Diameter Dome Inches
91	7	9/32	5/16	3/8	22
92	8	9/32	5/16	3/8	22
93	7	5/16	5/16	3/8	24
94	8	5/16	5/16	3/8	24
95	9	5/16	5/16	3/8	24
96	9	5/16	5/16	3/8	24
97	10	5/16	5/16	3/8	24

No.	Height Dome Inches	Heating Surface Square Feet	Diameter Smoke Stack Inches	Length Smoke Stack Feet	Approximate Weight of Boiler and Fixtures Pounds
91	24	340	18	30	7200
92	24	375	18	35	7500
93	24	426	20	30	8300
94	24	473	20	35	8700
95	24	520	20	35	9000
96	24	572	22	35	10600
97	24	624	22	40	11000

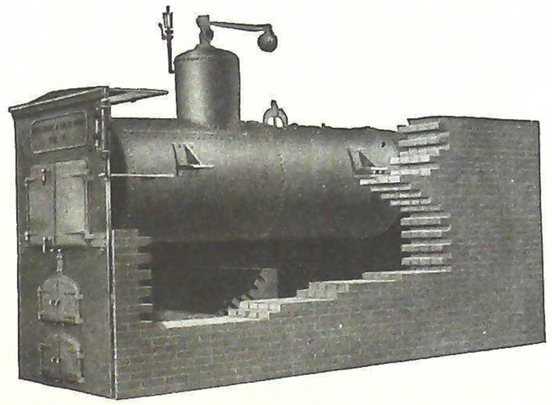
Hy-Tech Products

Nagle Stationary Return Tubular Boilers

For 100 Pounds Steam Working Pressure

With Flush Ends for Full Front Setting

With Shell Made of Plates In Circular Courses



These boilers are made throughout of homogeneous open hearth flange steel of from 55000 to 63000 pounds tensile strength, 45 to 56 per cent reduction of area, 22 to 26 per cent elongation in an 8-inch section; will bend over and close down solid when cold and after heating and plunging in water without fracture, and will not blister.

Tubes are of the best American makes, lap-welded steel, expanded in, beaded over at both ends, and properly spaced to insure good circulation and sufficient strength.

All rivets are of the best make, of proper diameter, and sufficient length to form heads equal to the pressed heads of same, so spaced as to secure the greatest strength, and driven with steam or hydraulic pressure wherever possible.

Rivet holes, except where marked off in actual place, are punched on a spacing machine, which reduces the variations to a minimum, and dispenses with the use of a drift pin; any holes which do not come fair are brought in line with a reamer.

Boiler fixtures comprise full front (style D) with dead plate and oval stack base, grates, grate bearer, rear arch bars, ash door and frame for rear end of arch, safety valve, steam gauge, water gauge with water column, gauge cocks, whistle and pipe, blow-off valve, check valve, stop valve, smoke stack and guy wire (four times the length of stack).

Grates for boilers having 7-foot and 8-foot tubes are 36 inches long; with 10-foot tubes, 42 inches long; with 14, 15 and 16-foot tubes, 60 inches long; and the width of the grates in all cases equals the diameter of the boiler. Sawdust or herring-bone grates will be substituted for regular grates, when ordered, without extra charge.

All smoke stacks 28 inches diameter and smaller are made of No. 16 steel, 30 and 34 inches diameter stacks of No. 14 steel. Heavier smoke stacks at additional prices.

Longitudinal seams of shell are double lap riveted, girth seams single riveted. On boilers 54 inches diameter and larger, the longitudinal and flange seams of dome are double riveted, and on boilers 48 inches diameter and smaller are single riveted.

Boilers 42 inches and over in diameter are made with man-hole in shell, as shown in cut. Boilers less than 42 inches in diameter are made without man-hole, except to order, at additional cost. All boilers with tubes 10 feet and shorter have a hand-hole in front head under tubes. Boilers with tubes longer than 10 feet have hand-hole in both front and rear heads.

Four heavy cast iron wall brackets are securely riveted to shell of each boiler, two on each side.

Binder bars and rods and anchor bolts are not furnished, except when specially ordered, and at additional prices.

Nagle Stationary Return Tubular Boilers

For 100 Pounds Steam Working Pressure

With Flush Ends for Full Front Setting

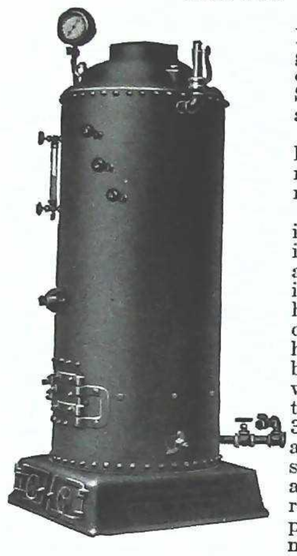
With Shell Made of Plates in Circular Courses

Continued

Horse Power	No. of 3-inch Tubes	Length Tubes Ft.	Dimensions Inches: Diam. Boiler	Dome: Diam.	Dome: Height	Sq. Ft. Heating Surface
10	20	7	30	18	20	151
12	20	8	30	18	20	180
15	28	8	36	20	22	226
20	28	10	36	20	22	290
25	28	12	36	20	22	354
20	38	8	42	22	24	300
25	38	10	42	22	24	375
30	38	12	42	22	24	450
30	46	10	44	22	24	446
35	46	12	44	22	24	524
40	46	14	44	22	24	602
40	52	12	48	26	28	600
45	52	14	48	26	28	690
50	52	16	48	26	28	780
50	64	12	54	30	34	720
60	64	14	54	30	34	840
65	64	15	54	30	34	900
70	64	16	54	30	34	960
60	82	12	60	32	36	900
70	82	14	60	32	36	1050
75	82	15	60	32	36	1125
80	82	16	60	32	36	1200
85	98	14	66	36	40	1250
90	98	15	66	36	40	1335
100	98	15	66	36	40	1420
110	98	18	66	36	40	1590
125	120	16	72	36	40	1710
150	120	18	72	36	40	1920

Horse Power	Thickness Steel, In. In Shell of Boiler	In Heads of Boiler	Smokestack Diam. In.	Smokestack Length Ft.	Approx. Wt., Lbs. Boiler Only	Boiler Fixtures Only	Boiler and Fixtures
10	1/4	3/8	14	24	1750	1750	3500
12	1/4	3/8	14	28	2000	1800	3800
15	1/4	3/8	16	28	2400	2300	4700
20	1/4	3/8	16	35	2900	2500	5400
25	1/4	3/8	16	40	3400	2600	6000
20	9/32	3/8	20	28	3400	2900	6300
25	9/32	3/8	20	35	3850	3150	7000
30	9/32	3/8	20	40	4350	3250	7600
30	9/32	3/8	22	35	4200	3200	7400
35	9/32	3/8	22	40	4800	3300	8100
40	9/32	3/8	22	50	5500	3600	9100
40	5/16	7/16	24	40	6000	3600	9600
45	5/16	7/16	24	50	6700	4000	10700
50	5/16	7/16	24	60	7400	4200	11600
50	5/16	7/16	26	40	6900	4000	10900
60	5/16	7/16	26	50	7800	4400	12200
65	5/16	7/16	26	50	8300	4400	12700
70	5/16	7/16	26	60	8700	4600	13300
60	11/32	7/16	28	40	8400	4600	13000
70	11/32	7/16	28	50	9600	5000	14600
75	11/32	7/16	28	50	10100	5000	15100
80	11/32	7/16	28	60	10600	5200	15800
85	3/8	7/16	30	50	11300	5600	16900
90	3/8	7/16	30	50	12000	5600	17600
100	3/8	7/16	30	60	12800	5900	18700
110	3/8	7/16	30	60	14300	6000	20300
125	7/16	1/2	34	50	15700	6600	22300
150	7/16	1/2	34	60	17200	7100	24300

Nagle Upright Tubular Boilers
With Full Length Tubes



Fixtures comprise base, grates, hood, steam gauge, water gauge, gauge cocks, safety valve, blow-off, check and stop valves. Smoke stack will be furnished at additional price per foot.

Bases are of cast iron and have double ash doors with registers. Cast iron hood is regularly furnished.

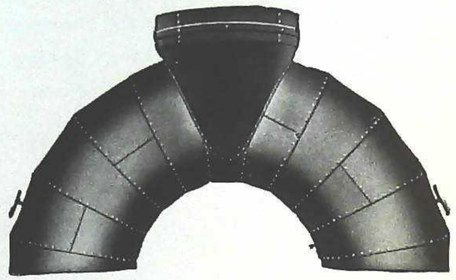
Boilers 24, 30 and 36 inches in diameter have two hand-holes in bottom of water leg and one above crown sheet. Boilers 42 inches in diameter and larger have three hand-holes in bottom of water leg and three hand-holes above crown sheet. Fire boxes are thoroughly braced with screw stay-bolts. Longitudinal seams of shell of boilers 30 inches in diameter and larger are double riveted; 24 inches, single riveted. All girth seams and fire box seams are single riveted. All boilers tested at 150 pounds hydrostatic pressure and made steam-tight.

Horse Power	Boiler: Diam. Inches	Boiler: Height Feet	Dimensions, Inches: Fire Box Diam.	Fire Box Height	Thickness Steel: Shell	Fire Box	Heads
4	24	4	20	24	1/4	1/4	3/8
5	24	5	20	24	1/4	1/4	3/8
6	24	6	20	24	1/4	1/4	3/8
8	30	5	25	27	1/4	1/4	3/8
10	30	6	25	27	1/4	1/4	3/8
12	30	7	25	27	1/4	1/4	3/8
15	36	6	31	27	1/4	9/32	3/8
18	36	7	31	27	1/4	9/32	3/8
20	36	8	31	27	1/4	9/32	3/8
25	42	7 1/2	37	30	9/32	5/16	3/8
30	42	8 1/2	37	30	9/32	5/16	3/8
35	42	9 1/2	37	30	9/32	5/16	3/8
40	48	9	43	30	5/16	5/16	3/8
45	48	9 1/2	43	30	5/16	5/16	3/8
50	48	10	43	30	5/16	5/16	3/8
60	54	9	48	30	11/32	5/16	3/8
70	54	10	48	30	11/32	5/16	3/8
70	60	9	54	30	3/8	11/32	7/16
80	60	10	54	30	3/8	11/32	7/16
90	60	11	54	36	3/8	11/32	7/16
100	66	10	60	30	3/8	11/32	7/16
110	66	11	60	36	3/8	11/32	7/16
125	66	12	60	36	3/8	11/32	7/16

Horse Power	No. of 2-inch Tubes	Length Tubes Inches	Sq. Ft. Heating Surface	Diam. Smoke Stack, In.	Weight, Pounds: Boiler Only	Base and Fixtures	Boiler Complete
4	28	24	43	10	900	300	1200
5	28	36	58	10	1000	300	1300
6	28	48	73	10	1100	300	1400
8	48	33	89	12	1400	550	1950
10	48	45	114	12	1550	550	2100
12	48	57	139	12	1700	550	2250
15	72	45	167	15	1900	800	2700
18	72	57	205	15	2150	800	2950
20	72	69	242	15	2400	800	3200
25	96	60	287	17	3000	1000	4000
30	96	72	338	17	3350	1000	4350
35	96	84	388	17	3700	1000	4700
40	130	78	486	20	4200	1600	5800
45	130	84	520	20	4500	1600	6100
50	130	90	554	20	4800	1600	6400
60	180	78	662	24	5500	2100	7600
70	180	90	757	24	6000	2100	8100
70	212	78	771	26	6800	2500	9300
80	212	90	883	26	7400	2500	9900
90	212	96	956	26	7800	2500	10300
100	270	90	1130	30	9000	2800	11800
110	270	96	1208	30	9500	2800	12300
125	270	108	1350	30	10400	2800	13200

Prices upon application.

Nagle Smoke Connections



No. 1, for Two Boilers Only

No. 1 is regularly furnished made of No. 14 steel for 48 and 54-inch boilers, and of No. 12 steel for boilers of larger diameter. No. 2 is regularly furnished made of No. 14 steel for two boilers 48 and 54-inch diameter, and No. 12 steel for larger boilers and for three or four boilers of any diameter.



No. 2, for Two or More Boilers

No. 2 is furnished long enough to carry the outlet and two feet beyond brick walls of boilers. Made with damper for each boiler. The diameters of smoke stacks given below are for two or more regular boilers set together.

Diameter Boiler Inches	Diam. Stack, Inches: No. of Boiler 2	3	4	Diameter Boiler Inches	Diam. Stack, Inches: No. of Boiler 2	3	4
48	34	42	48	66	42	52	60
54	36	46	52	72	48	60	68
60	40	48	56	..	..	..	..

Prices upon application.

Smoke Stacks

When ordering smoke stacks it is of utmost importance that the information concerning diameter of stack, gauge of steel and shape of base be clear and exact.

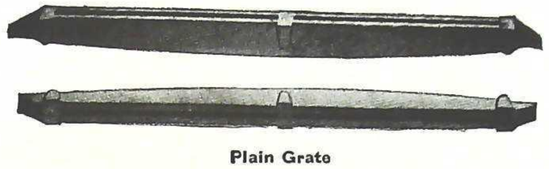
Always state if bottom end of stack is round or oval, square or oblong and give outside dimensions of stack plate or saddle on boiler and diameter of boiler, so that bottom of stack will be made of proper size to fit over same.

Approximate Weight, Pounds, per Foot of Steel Stacks

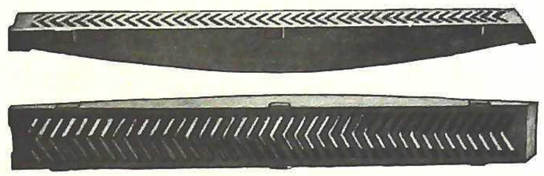
Diam. of Stack Inches	Thickness, Steel: 16 Ga.	14 Ga.	12 Ga.	10 Ga.	8 Ga.	3/16-in.	1/4-in.
10	7.54	9.40	13.20	17.32	.....	.....	.....
12	8.92	11.16	15.62	20.08	.....	.....	.....
14	10.50	13.12	18.37	23.62	.....	.....	.....
16	11.89	14.86	20.81	26.75	.....	.....	.....
18	13.59	17.00	22.74	30.59	.....	.....	.....
20	15.38	19.49	25.81	33.19	.....	.....	.....
22	16.22	20.27	28.40	36.50	.....	.....	.....
24	16.98	22.01	30.82	39.62	.....	.....	.....
26	19.21	24.02	33.63	43.23	.....	.....	.....
28	19.82	24.76	35.52	44.59	.....	.....	.....
30	.....	27.43	38.40	49.38	60.35	65.73	87.78
32	.....	29.72	41.55	53.48	65.49	71.34	95.13
34	.....	30.88	43.22	55.67	67.01	74.10	98.80
36	.....	33.14	46.40	59.65	72.91	79.53	106.05
38	.....	.....	48.83	62.77	76.73	83.71	111.61
40	.....	.....	51.57	66.39	81.14	88.51	118.02
42	.....	.....	52.83	68.44	83.01	90.56	122.85
44	.....	.....	56.82	73.06	89.29	97.41	129.88
46	.....	.....	.....	.....	93.05	101.51	135.34
48	.....	.....	.....	.....	97.45	106.31	141.75

Hy-Tech Products

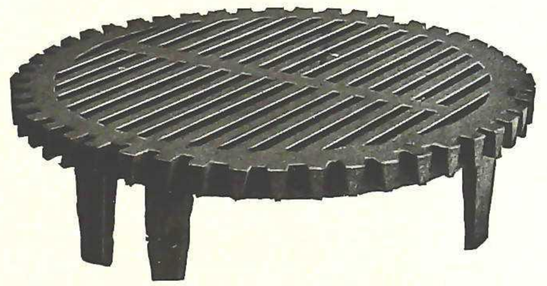
Grate Bars



Plain Grate



Tupper or Herring-bone Grate



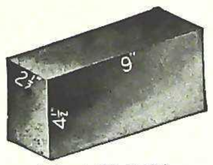
Round Grate for Vertical Boiler

Standard sizes of all styles of grates illustrated are carried in stock for immediate shipment.

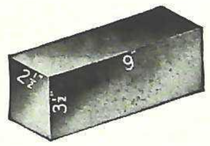
Only the best quality of iron is used in the manufacture of these grates. It has been learned by long experience that grate bars made from cheap or hard scrap iron are short lived and prove expensive to the purchaser.

Prices and further information upon application.

Fire Brick—9-inch Shapes



9-Inch Straight
9x4½x2½ Inches



Small 9-Inch Brick
9x3½x2½ Inches

We can supply fire brick in any of the standard 9-inch shapes.

When ordering, give full description and sizes of bricks desired.

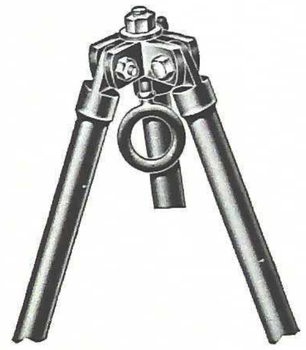
Prices upon application.

Engineers' Firing Tools



Length Feet	Diameter of Handle Inches	Price, Each: Hoe	Slice Bar	Clinker Hook	Poker
8	3/4	$6.50	$5.80	$7.10	$4.60

No. L5 Tripod Derricks



Constructed of black steel pipe and steel drop forged fittings. Ends of pipe are pointed.

Light but strong. Easily moved about and set up. Folds up close.

Nos. 1 and 2 suitable for hoisting ashes or lowering heavy cases. Larger sizes for contractors and builders.

No.	Size of Pipe: Diam. Inches	Length Feet	Safe Capacity Tons	Weight Pounds	Price Each
1	1	7	1/2	38	$13.00
2	1	8 1/2	1/2	45	14.50
3	1 1/2	10	1 1/4	88	22.00
4	1 1/2	12	1 1/4	100	25.00
5	2	12	2	145	35.00
6	2	14	2	165	39.00

Our plumbing show room is open every business day of the year.

We invite everyone to make free use of our show room service.

Useful Information

For Figuring Radiation for Hot Water Plants

Contents of Room Cu. Ft.	Radiation Reqd. Sq. Ft.	Contents of Room Cu. Ft.	Radiation Reqd. Sq. Ft.	Contents of Room Cu. Ft.	Radiation Reqd. Sq. Ft.	Contents of Room Cu. Ft.	Radiation Reqd. Sq. Ft.
350	6	1400	23	3200	53	6600	110
400	7	1500	25	3400	56	6800	113
450	8	1600	26	3600	60	7000	116
500	8	1700	28	3800	63	7200	120
550	9	1800	30	4000	66	7400	123
600	10	1900	31	4200	70	7600	126
650	11	2000	33	4400	73	7800	130
700	12	2100	35	4600	76	8000	133
750	13	2200	36	4800	80	8200	136
800	14	2300	38	5000	83	8400	140
850	14	2400	40	5200	86	8600	143
900	15	2500	41	5400	90	8800	146
950	16	2600	43	5600	93	9000	150
1000	17	2700	44	5800	96	9500	158
1100	18	2800	46	6000	100	10000	166
1200	20	2900	48	6200	103	.....	....
1300	21	3000	50	6400	106	.....	....
Exposed Wall Surface Sq Ft.	Radiation Reqd. Sq. Ft.	Exposed Wall Surface Sq Ft.	Radiation Reqd. Sq. Ft.	Exposed Wall Surface Sq. Ft.	Radiation Reqd. Sq. Ft.	Exposed Wall Surface Sq. Ft.	Radiation Reqd. Sq. Ft.
10	1	230	23	4	2	48	24
20	2	240	24	6	3	50	25
30	3	250	25	8	4	52	26
40	4	260	26	10	5	54	27
50	5	270	27	12	6	56	28
60	6	280	28	14	7	58	29
70	7	290	29	16	8	60	30
80	8	300	30	18	9	62	31
90	9	310	31	20	10	64	32
100	10	320	32	22	11	66	33
110	11	330	33	24	12	68	34
120	12	340	34	26	13	70	35
130	13	350	35	28	14	74	37
140	14	360	36	30	15	78	39
150	15	370	37	32	16	82	41
160	16	380	38	34	17	86	43
170	17	390	39	36	18	90	45
180	18	400	40	38	19	94	47
190	19	420	42	40	20	98	49
200	20	440	44	42	21	102	51
210	21	460	46	44	22	106	53
220	22	480	48	46	23	110	55

For Figuring Radiation for Steam Heating Plants

Contents of Room Cu. Ft.	Radiation Reqd. Sq. Ft.	Contents of Room Cu. Ft.	Radiation Reqd. Sq. Ft.	Contents of Room Cu. Ft.	Radiation Reqd. Sq. Ft.	Contents of Room Cu. Ft.	Radiation Reqd. Sq. Ft.
350	4	1400	14	3200	32	6600	66
400	4	1500	15	3400	34	6800	68
450	5	1600	16	3600	36	7000	70
500	5	1700	17	3800	38	7200	72
550	6	1800	18	4000	40	7400	74
600	6	1900	19	4200	42	7600	76
650	7	2000	20	4400	44	7800	78
700	7	2100	21	4600	46	8000	80
750	8	2200	22	4800	48	8200	82
800	8	2300	23	5000	50	8400	84
850	9	2400	24	5200	52	8600	86
900	9	2500	25	5400	54	8800	88
950	10	2600	26	5600	56	9000	90
1000	10	2700	27	5800	58	9500	95
1100	11	2800	28	6000	60	10000	100
1200	12	2900	29	6200	62	.....	...
1300	13	3000	30	6400	64	.....	...
Exposed Wall Surface Sq. Ft.	Radiation Reqd. Sq. Ft.	Exposed Wall Surface Sq. Ft.	Radiation Reqd. Sq. Ft.	Exposed Wall Surface Sq. Ft.	Radiation Reqd. Sq. Ft.	Exposed Wall Surface Sq. Ft.	Radiation Reqd. Sq. Ft.
16	1	368	23	4	1	48	16
32	2	384	24	6	2	50	17
48	3	400	25	8	3	52	17
64	4	416	26	10	3	54	18
80	5	432	27	12	4	56	19
96	6	448	28	14	5	58	19
112	7	464	29	16	5	60	20
128	8	480	30	18	6	62	21
144	9	496	31	20	7	64	21
160	10	512	32	22	7	66	22
176	11	528	33	24	8	68	23
192	12	544	34	26	9	70	23
208	13	560	35	28	9	74	25
224	14	576	36	30	10	78	26
240	15	592	37	32	11	82	28
256	16	608	38	34	11	86	29
272	17	624	39	36	12	90	30
288	18	640	40	38	13	94	31
304	19	656	41	40	13	98	33
320	20	672	42	42	14	102	34
336	21	688	43	44	15	106	35
352	22	704	44	46	15	110	37

Useful Information

Sizes of Steam Mains, Single Pipe

Direct Radiation—Pressure .5 Pounds

Radiating Surf. Sq. Ft	Length Steam Main, Feet 20	40	80	100	200	300	400	600	1000
20	1	1	1¼	1¼	1¼	1¼	1¼	1½	1½
40	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1½	1½
60	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1½	1½
80	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1½	2
100	1¼	1½	1½	1½	1½	1½	1½	1½	2
200	1½	1½	2	2	2	2	2	2½	3
300	2	2	2	2	2	2½	2½	3	3½
400	2	2	2½	2½	2½	3	3	3	4
500	2	2½	2½	3	3	3	3½	3½	4
600	2½	2½	3	3	3	3½	3½	4	4½
800	2½	3	3½	3½	3½	3½	4	4	5
1000	3	3½	3½	4	4	4	4	4½	6
1400	3½	3½	4	4	4	4½	4½	5	6
1800	4	4	4	4	4½	5	5	6	7
2000	4	4	4	4½	4½	5	5	6	7
3000	4½	4½	4½	5	5	6	6	7	8
4000	5	5	5	6	6	7	7	7	9
6000	5½	5½	6	7	7	7	7	8	10
8000	5½	5½	6	7	7	8	8	9	11
10000	6	6	6	7	8	8	9	10	12

For obtaining the size of steam main to be used in case there is a separate return, multiply the above by 0.82.

Allowance must be made for pipes hung low, with slight grade, or for long or crooked runs.

The size of branch connections to the radiators is usually determined by the tapping of the radiator supplied.

Useful Information

Size of Mains, Two-pipe Steam System

This table may be used for all ordinary conditions of domestic installations.

Main Assumed 100 Feet In Length

Size Main In.	Radiation Sq. Ft.	Diameter of Return Inches Dry	Sealed	Diam. Drip for Main In.
1¼	80	1	1	¾
1½	200	1¼	1	¾
2	400	1½	1¼	¾
2½	640	2	1½	¾
3	1000	2	2	1
3½	1500	2½	2	1
4	2000	3	2½	1
4½	2500	3	2½	1¼
5	3600	3½	3	1¼
6	5000	4	3½	1¼

Useful Information

Hot Water Systems

The following table will be found useful in computing the size of mains for hot water open tank system:

Quantity of Rad't'g Surface Up to Which the Ratio Can be Used	Ratio in Sq. In. Main to 100 Ft. Surface at Boiler	Ratio Main to 100 Feet Surface 15 Feet from Boiler	Ratio Main to 100 Feet Surface 30 Feet from Boiler	Ratio Main to 100 Feet Surface 45 Feet from Boiler	Ratio Main to 100 Feet Surface 60 Feet from Boiler	Ratio Main to 100 Feet Surface 75 Feet from Boiler	Ratio Main to 100 Feet Surface 90 Feet from Boiler
400	1.20	1.30	1.40	1.50	1.60	1.70	1.80
800	1.10	1.20	1.30	1.40	1.50	1.60	1.70
1200	1.00	1.10	1.20	1.30	1.40	1.50	1.60
2000	.90	1.00	1.10	1.20	1.30	1.40	1.50
3500	.80	.90	1.00	1.10	1.20	1.30	1.40
5700	.70	.80	.90	1.00	1.10	1.20	1.30
8500	.60	.70	.80	.90	1.00	1.10	1.20
12500	.50	.60	.70	.80	.90	1.00	1.10

Example: 350 feet of water radiation, find size of main required at boiler. 350x1.20 4.20 area of pipe.

Hy-Tech Products

Useful Information

Greenhouse Heating

While greenhouses may be satisfactorily heated with steam, hot water is generally preferred because of its ability to store large quantities of heat, and in case the fires are neglected or go out, this stored heat is given off gradually, and by preventing a sudden fall in temperature protects the plants from injury.

Table of Amounts of Radiating Surface Necessary to Heat a Given Amount of Glass Exposure to Various Temperatures in Zero Weather

Steam

Square Feet of Glass Exposure	No. of Square Feet of Radiation Required at 40°	45°	50°	60°	70°
25	2⅞	3⅛	3⅓	4⅙	5
50	5⅝	6¼	7⅐	8⅓	10
75	8	9	10	13	15
100	11	13	14	17	20
200	23	25	30	33	40
300	34	38	43	50	60
400	45	50	57	67	80
500	56	63	72	83	100
1000	112	125	143	167	200
2000	223	250	286	333	400
3000	334	375	429	500	600
4000	445	500	571	667	800
5000	556	625	714	833	1000
10000	1112	1250	1429	1667	2000
20000	2223	2500	2857	3333	4000

Hot Water

Square Feet of Glass Exposure	No. of Square Feet of Radiation Required at 40°	45°	50°	60°	70°
25	4⅙	5	6¼	7⅐	8⅓
50	8	10	13	14	16
75	13	15	19	21	25
100	17	20	25	29	33
200	33	40	50	57	67
300	50	60	75	86	100
400	67	80	100	114	133
500	83	100	125	143	167
1000	167	200	250	286	333
2000	333	400	500	572	667
3000	500	600	750	857	1000
4000	667	800	1000	1143	1333
5000	833	1000	1250	1429	1667
10000	1667	2000	2500	2857	3333
20000	3333	4000	5000	5714	6667

For poorly constructed houses add 10 per cent to the above amounts.

Do not use asphalt or tar paints in a greenhouse. They will injure the plants. Paint pipes with lampblack and boiled oil thinned with turpentine.

A most important part of a greenhouse is its chimney. This should be of brick or tile and of ample size, and should never be less than twenty-five feet high.

Useful Information

Temperature of Steam at Different Pressures

Pressure, Lbs. Steam Gauge	Above Atmosphere	Temperature Degrees	Pressure, Lbs. Steam Gauge	Above Atmosphere	Temperature Degrees	Pressure, Lbs. Steam Gauge	Above Atmosphere	Temperature Degrees
0	15	212	45	60	292	90	105	331
5	20	228	50	65	298	95	110	334
10	25	240	55	70	302	100	115	338
15	30	250	60	75	307	110	125	344
20	35	259	65	80	312	120	135	350
25	40	267	70	85	316	130	145	355
30	45	274	75	90	320	140	155	361
35	50	281	80	95	324	150	165	366
40	55	287	85	100	327	...	...	...

Boiling Points of Various Fluids

Water in Vacuum	98	Refined Petroleum	316
Water in Atmospheric Pressure	212	Turpentine	315
Alcohol	173	Sulphur	570
Sulphuric Acid	240	Linseed Oil	597
			...

Useful Information

Square Feet of Radiating Surface of Pipe per Lineal Foot

Length of Pipe Feet	Size of Pipe, Inches ¾	1	1¼	1½	2	2½
1	.275	.346	.434	.494	.622	.753
2	.5	.7	.9	1.	1.2	1.5
3	.8	1.	1.3	1.5	1.9	2.3
4	1.1	1.4	1.7	2.	2.5	3.
5	1.4	1.7	2.2	2.4	3.1	3.8
6	1.6	2.1	2.6	2.9	3.7	4.5
7	1.9	2.4	3.	3.4	4.4	5.3
8	2.2	2.8	3.5	3.9	5.	6.
9	2.5	3.1	3.9	4.4	5.6	6.8
10	2.7	3.5	4.3	4.9	6.2	7.5
11	3.	3.8	4.8	5.4	6.8	8.3
12	3.3	4.1	5.2	5.9	7.5	9.
13	3.6	4.5	5.6	6.4	8.1	9.8
14	3.8	4.8	6.1	6.9	8.7	10.5
15	4.1	5.2	6.5	7.4	9.3	11.3
16	4.4	5.5	6.9	7.9	10.	12.
17	4.7	5.9	7.4	8.4	10.6	12.8
18	5.	6.2	7.8	8.9	11.2	13.5
19	5.2	6.6	8.3	9.4	11.8	14.3
20	5.5	6.9	8.7	9.9	12.5	15.
21	5.8	7.3	9.1	10.4	13.	15.8
22	6.	7.6	9.6	10.9	13.7	16.5
23	6.3	8.	10.	11.3	14.3	17.3
24	6.6	8.3	10.4	11.9	14.9	18.
25	6.9	8.6	10.9	12.3	15.6	18.8
26	7.1	9.	11.3	12.8	16.2	19.5
27	7.4	9.4	11.7	13.3	16.8	20.3
28	7.7	9.7	12.2	13.8	17.4	21.
29	8.	10.	12.6	14.3	18.	21.8
30	8.3	10.4	13.	14.8	18.7	22.5
31	8.5	10.7	13.5	15.3	19.3	23.3
32	8.8	11.1	13.9	15.8	19.9	24.1
33	9.1	11.4	14.3	16.3	20.5	24.8
34	9.4	11.7	14.7	16.8	21.2	25.6
35	9.6	12.1	15.2	17.3	21.8	26.3
36	9.9	12.5	15.6	17.8	22.4	27.
37	10.2	12.8	16.1	18.3	23.	27.8
38	10.5	13.2	16.5	18.8	23.7	28.5
39	10.7	13.5	16.9	19.3	24.3	29.3
40	11.	13.8	17.4	19.8	24.9	30.1
41	11.3	14.2	17.8	20.3	25.5	30.8
42	11.5	14.5	18.2	20.8	26.1	31.6
43	11.8	14.9	18.7	21.3	26.8	32.3
44	12.1	15.2	19.1	21.8	27.4	33.1
45	12.4	15.6	19.5	22.2	28.	33.8
46	12.7	15.9	20.	22.7	28.6	34.6
47	12.9	16.3	20.4	23.2	29.2	35.3
48	13.2	16.6	20.8	23.7	29.9	36.1
49	13.5	17.	21.3	24.2	30.5	36.8
50	13.8	17.3	21.7	24.7	31.1	37.6

Length of Pipe Feet	Size of Pipe, Inches 3	4	5	6	7	8
1	.916	1.175	1.455	1.739	1.996	2.257
2	1.8	2.4	2.9	3.5	4.	4.5
3	2.7	3.5	4.4	5.2	6.	6.8
4	3.6	4.7	5.8	7.	8.	9.
5	4.6	5.8	7.3	7.7	10.	11.3
6	5.5	7.	8.7	10.5	12.	13.5
7	6.4	8.2	10.2	12.1	14.	15.8
8	7.3	9.4	11.6	13.9	16.	18.
9	8.2	10.6	13.1	15.7	18.	20.3
10	9.1	11.8	14.6	17.4	20.	22.6
11	10.	12.9	16.	19.1	22.	24.9
12	11.	14.1	17.4	20.9	24.	27.1
13	11.9	15.3	18.9	22.6	26.	29.4
14	12.8	16.5	20.3	24.3	28.	31.6
15	13.7	17.6	21.8	26.1	30.	33.9
16	14.6	18.8	23.2	27.8	32.	36.1
17	15.5	20.	24.7	29.5	34.	38.4
18	16.5	21.2	26.2	31.3	36.	40.6
19	17.4	22.3	27.6	33.1	38.	42.9
20	18.3	23.5	29.1	34.8	40.	45.2
21	19.2	24.7	30.5	36.5	42.	47.4
22	20.2	25.9	32.	38.3	44.	49.7
23	21.1	27.	33.5	40.	46.	52.
24	22.	28.2	34.9	41.7	48.	54.2
25	22.9	29.3	36.3	43.5	50.	56.4
26	23.8	30.5	37.8	45.2	52.	58.6
27	24.7	31.7	39.3	47.	54.	61.
28	25.6	32.9	40.7	48.7	56.	63.2
29	26.6	34.1	42.2	50.4	58.	65.5
30	27.5	35.3	43.6	52.1	60.	67.7
31	28.4	36.4	45.1	53.9	62.	70.
32	29.3	37.6	46.5	55.6	64.	72.2
33	30.2	38.8	48.	57.4	66.	74.4
34	31.1	40.	49.5	59.1	68.	76.7
35	32.	41.1	50.9	60.8	70.	79.
36	33.	42.3	52.4	62.6	72.	81.3
37	33.9	43.5	53.8	64.3	74.	83.5
38	34.8	44.6	55.2	66.	76.	85.8
39	35.7	45.8	56.7	67.8	78.	88.
40	36.6	47.	58.2	69.5	80.	90.2
41	37.6	48.2	59.6	71.3	82.	92.5
42	38.5	49.4	61.1	73.	84.	94.8
43	39.4	50.6	62.5	74.8	86.	97.
44	40.3	51.7	64.	76.5	88.	99.3
45	41.2	52.9	65.5	78.2	90.	101.6
46	42.2	54.	67.	80.	92.	103.8
47	43.	55.2	68.4	81.7	94.	106.
48	43.9	56.4	69.8	83.5	96.	108.4
49	44.8	57.6	71.2	85.1	98.	110.5
50	45.8	58.7	72.7	87.	100.	112.8

Useful Information

Friction of Water in Pipes

Loss of Head in Feet Per 100 Feet of Straight Pipe

Gal. per Min.	Nominal Size ¾ — Actual Diameter 0.824 — Vel. Ft. per Second	Friction	Nominal Size 1 — Actual Diameter 1.048 — Vel. Ft. per Second	Friction	Nominal Size 1¼ — Actual Diameter 1.380 — Vel. Ft. per Second	Friction	Nominal Size 1½ — Actual Diameter 1.611 — Vel. Ft. per Second	Friction
5	3.01	10.5	1.86	3.3	1.07	.84	....	.....
10	6.02	38.	3.72	11 7	2.14	3.1	1.57	1.5
15	9.02	80.	5.6	26.	3.22	6.6	2.36	3.1
20	12.03	136.	7.44	42.	4 29	11.1	3.15	5.2
25	.....	.....	9.3	64.	5.36	16.6	3.93	8.0
30	.....	.....	11.15	89.	6.43	23.5	4.72	11 0
35	.....	.....	13.02	119.	7.51	31.2	5.51	14.7
40	.....	.....	.....	.....	8.58	40.	6.3	18.8
45	.....	.....	.....	.....	9.65	51.	7.08	23.2
50	.....	.....	.....	.....	10.72	60.	7.87	28.4
60	.....	.....	.....	.....	12.87	85.	9.44	39.6
70	.....	.....	.....	.....	15.01	113.	11.02	53.
80	.....	.....	.....	.....	.....	.....	12 59	68.
90	.....	.....	.....	.....	.....	.....	14.17	84.
100	.....	.....	.....	.....	.....	.....	15.74	102.

Gal per Min.	Nominal Size 2 — Actual Diameter 2 — Vel. Ft. per Second	Friction	Nominal Size 2½ — Actual Diameter 2½ — Vel. Ft. per Second	Friction	Nominal Size 3 — Actual Diameter 3 — Vel. Ft. per Second	Friction	Nominal Size 4 — Actual Diameter 4 — Vel. Ft. per Second	Friction
15	1.54	1.1	....	.....	....	.....	....	....
20	2.04	1.9	1.31	.61	....	.....	....	....
25	2.55	2.8	1.63	.92	....	.....	....	....
30	3.06	3.9	1.96	1.3	1.36	.54	....	....
35	3.57	5.1	2.29	1.7	1.59	.71	....	....
40	4.08	6.6	2.61	2.2	1.82	.91	....	....
45	4.6	8.2	2.95	2.8	2.05	1.1	...	.....
50	5.11	9.9	3 27	3 3	2.27	1.4	1.28	.34
60	6.13	13.9	3.92	4.7	2.72	1.9	1.53	.47
70	7.15	18.4	4.58	6.2	3.18	2.6	1.79	.63
80	8.17	23.7	5.23	7 9	3.63	3.3	2.04	.81
90	9.19	29 4	5.88	9 8	4.09	4.1	2 3	1.0
100	10.21	35.8	6.54	12 0	4 54	5.0	2 55	1.22
110	11.23	42.9	7.2	14.5	5.0	6.0	2.81	1.46
120	12.25	50.	7.84	16.8	5.45	7.0	3.06	1.71
130	13.28	58.	8.5	19.7	5.9	8.2	3.32	2.0
140	14.3	67.	9.15	22.3	6.35	9.2	3.57	2.3
150	15.32	76.	9.8	25.5	6.8	10.5	3.83	2.6

Friction loss of standard elbows=loss in 8 feet of straight pipe. Friction loss of standard glove valves=loss in 25 feet of straight pipe.

Pounds per Square Inch to Head in Feet

For Water at 62° F., Weighing 62.364 Pounds per Cubic Foot

Pounds per Sq. In.	Head in Feet	Pounds per Sq. In.	Head in Feet	Pounds per Sq. In.	Head in Feet	Pounds per Sq. In.	Head in Feet	Pounds per Sq. In.	Head in Feet
1	2.309	23	53.12	45	103.9	67	154.7	89	205.5
2	4.619	24	55.43	46	106.2	68	157.0	90	207.8
3	6.928	25	57.74	47	108.5	69	159.3	91	210.2
4	9.238	26	60.05	48	110.8	70	161.7	92	212.5
5	11.55	27	62.36	49	113.2	71	163.0	93	214.8
6	13.86	28	64.66	50	115.5	72	166.3	94	217.1
7	16.17	29	66.97	51	117.8	73	168.6	95	219.4
8	18.48	30	69.28	52	120.1	74	170.9	96	221.7
9	20.78	31	71.59	53	122.4	75	173.2	97	224.0
10	23.09	32	73.90	54	124.7	76	175.5	98	226.3
11	25.40	33	76.21	55	127.0	77	177.8	99	228.6
12	27.71	34	78.52	56	129.3	78	180.1	100	230.9
13	30.02	35	80.83	57	131.6	79	182.4	105	242.4
14	32.33	36	83.14	58	133.9	80	184.8	110	254.0
15	34.64	37	85.45	59	136.3	81	187.1	115	265.5
16	36.95	38	87.76	60	138.6	82	189.4	120	277.1
17	39.26	39	90.07	61	140.9	83	191.7	125	288.6
18	41.57	40	92.38	62	143.2	84	194.0	130	300.2
19	43.88	41	94.69	63	145.5	85	196.3	135	311.7
20	46.19	42	97.00	64	147.8	86	198.6	140	323.3
21	48.50	43	99.31	65	150.1	87	200.9	145	334.8
22	50.81	44	101.6	66	152.4	88	203.2	150	346.4

Useful Information

Water

1 cubic inch weighs .0361 pounds.

1 pound=27.7 cubic inches.

1 cubic foot=62.4245 pounds at 39° F.; 7.48 gallons U.S.; 6.2321 gallons Imperial.

1 gallon U. S.=8.33111 pounds; 231 cubic inches; .113368 cubic feet.

1 Imperial gallon=10 pounds at 62° F.; 277.274 cubic inches; .16046 cubic feet.

1 pound pressure=2.31 feet in height.

1 foot in height=.433 pounds pressure.

Petroleum weighs 6½ pounds per U. S. gallon, 42 gallons to the barrel.

To convert Imperial gallons into U. S. gallons, multiply by the factor 1.2. To convert U. S. gallons into Imperial gallons, multiply by the factor .8333.

A miner's inch is a measure for flow of water, and is the quantity of water that will flow in one minute through an opening 1 inch square in a plank 2 inches thick under a head of 6½ inches to the center of the orifice. This is equivalent, approximately, to 1.53 cubic feet, or 11½ gallons per minute.

To find the diameter of pump plungers to a pump a given quantity of water at 100 feet piston speed per minute, divide the number of gallons by 4, then extract the square root and the result will be the diameter in inches of the plunger.

To find the number of gallons delivered per minute by a single double-acting pump at 100 feet piston speed per minute, square the diameters of the plungers then multiply by 4.

To find the horsepower necessary to elevate water to a given height, multiply the weight of the water elevated per minute by the height in feet and divide the product by 33000 (an allowance should be made for water friction and a further allowance for losses in the steam cylinder, say from 20 to 30 per cent).

The mean pressure of the atmosphere is usually estimated at 14.4 pounds per square inch, so that with a perfect vacuum it will sustain a column of mercury 29.9 inches,or a column of water 33.9 feet high at sea level.

To determine the proportion between the steam and the pump cylinder, multiply the given area of the pump cylinder by resistance on the pump in pounds per square inch and divide the product by the available pressure of steam in pounds per square inch. The product equals the area of the steam cylinder. To this must be added an extra area to overcome the friction, which is usually taken at 25 per cent.

The resistance of friction in the flow of water through pipes of uniform diameters is independent of the pressure and increases directly as the length and square of the velocity of the flow, and inversely as the diameter of the pipe. With wooden pipes the friction is 2.75 times greater than in metallic. Doubling the diameter increases the capacity 4 times.

To determine the velocity in feet per minute necessary to discharge a given volume of water in a given time, multiply the number of cubic feet of water by 144 and divide the product by the area of the pipe in inches.

To determine the area of a required pipe, the volume and velocity of water being given, multiply the number of cubic feet of water by 144 and divide the product by the velocity in feet per minute.

Water Required per Minute to Feed Boilers

Using the Centennial Standard 30 pounds or 3.6 gallons of water per h.p. per hour, evaporated from 100° Fahrenheit to 70 pounds steam pressure per square inch.

H.P. Boiler	Feed Water Gal.	H.P. Boiler	Feed Water Gal.	H.P. Boiler	Feed Water Gal.	H.P. Boiler	Feed Water Gal.	H.P. Boiler	Feed Water Gal.
20	1.2	60	3.6	110	6 6	190	11.4	400	24.0
25	1.5	65	3.9	120	7 2	200	12.0	450	27.0
30	1.8	70	4 2	130	7 8	225	13 5	500	30.0
35	2.1	75	4.5	140	8 4	250	15 0	600	36.0
40	2.4	80	4.8	150	9.0	275	16.5	700	42.0
45	2.7	85	5.1	160	9 6	300	18 0	800	48.6
50	3.0	90	5.4	170	10.2	325	19.5	900	54 0
55	3.3	100	6.0	180	10.8	350	21.0	1000	60.0

Hy-Tech Products

Useful Information

Miscellaneous

To find the diameter of a circle multiply the circumference by .31831.

To find the circumference of a circle multiply the diameter by 3.1416.

To find the area of a circle multiply the square of the diameter by .7854.

To find the surface of a ball multiply the square of the diameter by 3.1416.

To find the side of an equal square multiply the diameter by .8862.

To find the cubic inches in a ball multiply the cube of the diameter by .5236.

To double the diameter of a pipe increases its capacity four times.

Double riveting is from 16 to 20 per cent stronger than single.

One cubic foot of anthracite coal weighs about 53 pounds.

One cubic foot of bituminous coal weighs from 47 to 50 pounds.

One ton of coal is equivalent to two cords of wood for steam purposes.

A gallon of water (U. S. standard) weighs 8⅓ pounds and contains 231 cubic inches.

A cubic foot of water contains 7½ gallons, 1728 cubic inches, and weighs 62½ pounds.

To sharpen dull files lay them in dilute sulphuric acid until they are eaten deep enough.

A horse power is equivalent to raising 33,000 pounds 1 foot per minute or 550 pounds 1 foot per second.

To find the pressure in pounds per square inch of a column of water multiply the height of the column in feet by .434.

Steam rising from water at its boiling point (212 degrees) has a pressure equal to the atmosphere (14.7 pounds to the square inch).

To evaporate 1 cubic foot of water requires the consumption of 7½ pounds of ordinary coal or about 1 pound of coal to 1 gallon of water.

One-sixth of tensile strength of plate multiplied by thickness of plate and divided by one-half the diameter of boiler gives safe working pressure for tubular boilers. For square marine boilers add 20 per cent for drilled holes.

No plate or bars of either steel or iron should be worked at a black or blue heat (say about 500 degrees); the material will stand far more strain either red hot or cold, while at an intermediate point great risk will be run, and possible strains produced which result in rupture later on.

A miner's inch of water is approximately equal to a supply of 12 U. S. gallons per minute.

The mean pressure of the atmosphere is estimated at 14.7 pounds per square inch, so that with a perfect vacuum it will sustain a column of water 33.9 feet high.

A cubic inch of water evaporated under atmospheric pressure is approximately converted into 1 cubic foot of steam.

The horse power of boilers, as per standard adopted by the Am. S. M. E. is 30 pounds water evaporated per hour at a pressure of 70 pounds per square inch and from a temperature of 100 degrees Fahrenheit.

Well designed boilers, under successful operation, will evaporate from 7 to 10 pounds of water per pound of first-class coal.

Each square foot of heating surface is considered sufficient to evaporate 2 pounds of water; therefore, for an engine using 30 pounds water per horse power per hour, each horse power of the engine requires 15 square feet heating surface in the boiler.

On one square foot of fire grate can be burned on an average from 10 to 12 pounds hard coal, or 18 to 20 pounds soft coal, per hour, with natural draft.

Two and one-quarter pounds of dry wood is equal to 1 pound of average quality soft coal.

There is a saving of about 1 per cent in fuel burned for every 11 degrees feed water that is warmed. With sufficient exhaust steam available, if cold water at 70 degrees is raised to 210 degrees Fahrenheit, the saving of fuel will approximate 12 per cent.

Designers of steam piping figure on a steam travel of about a mile and a half per minute. Very often it is much more than this.

The friction of water in pipes is as the square of velocity.

The capacity of pipes is as the square of their diameters; thus doubling the diameter of a pipe increases its capacity four times.

The height of a column of fresh water, equal to a pressure of one pound per square inch, is 2.31 feet. (In usual computation this is taken at 2 feet, thus allowing for ordinary friction.)

To find the capacity of a cylinder, in gallons: Multiply the area in inches by the length of stroke in inches, will give the total amount of cubic inches; divide this amount by 231 (the cubical contents of a U. S. gallon in inches) and the product is the capacity in gallons.

Rules for Measuring Belts

To Find the Required Length of Belt

Multiply the sum of the diameters of the two pulleys by 1.57 and add twice the distance between shaft centers.

To Find the Length of Belt in a Roll

Add the diameter of the roll to the diameter of hole in center of the roll,—both in inches; multiply this by the number of coils in the roll; multiply this by .132 and the three figures at left will represent approximately the number of feet in the roll.

To Find the Speed of Belt

Multiply the diameter of either pulley by 3.1416 and the product of this by the number of revolutions per minute and the result will be the number of feet per minute the belt travels.

To Find the Change Required in Length of Belt

When the pulleys on which the belt runs have been changed to a different diameter, multiply the difference in the old and the new diameter, in feet, by 1.57 and the product is the number of feet necessary to put in or take out.

To Find the Diameter of Driving Pulley

The speed of shafting and the size of the driven pulley being known, multiply the diameter of the driven pulley by the number of its revolutions and divide by the required speed, or revolutions of the driving shaft.

To Find the Diameter of the Driven Pulley

Multiply the diameter of the driving pulley by the number of its revolutions and divide by the required number of revolutions of the driven pulley.

Useful Information

Distance Between Pulley Centers

Although it is impractical to offer a formula for computing this distance, the following values are the result of long experience and study of this point and will be found a valuable guide.

Belts Up to 4 Inches Wide..... 5 to 10-Foot Centers
Belts 4-8 Inches Wide..... 10 to 15-Foot Centers
Belts 8-24 Inches Wide..... 15 to 25-Foot Centers
Belts 24-36 Inches Wide..... 25 to 30-Foot Centers
Belts 36 Inches and Over in Width..... 30 to 40-Foot Centers

It is inadvisable to use greater than 50-foot centers under any consideration, as above this distance the belt is likely to begin swaying between the pulleys and it would not take much to lead the belt off the pulleys entirely when this swaying has once started.

Belts

The diameter of the pulleys should be as large as can be admitted. The pulley should be a little wider than the belt required for the work.

When it is not convenient to measure with the tape-line the length required, apply the following rule: Add the diameter of the 2 pulleys together, divide the result by 2, and multiply the quotient by 3¼, then add this product to twice the distance between the centers of the shafts, and the result is the length required.

The width of the belt needed depends on 3 conditions: Tension of belt, size of smaller pulley and proportion of surface touched by belt and speed of belt.

The working adhesion of the belt to pulley will be in proportion both to the number of square inches of belt contact with surface of pulley and also to arc of circumference of pulley touched by belt. This adhesion forms the basis of all right calculation in ascertaining the width of belt necessary to transmit a given h.p.

Strength of Belt Leather

The solid leather will sustain, per inch of width, 675 pounds. At the rivet holes of the splices, per inch of width, 382 pounds. At the lacing, per inch of width, 210 pounds. Safe working tension per inch of width, 55 pounds.

Rule for Finding Width of Belts

When Speed of Belt in Feet per Minute and Horse Power Wanted are Given

For Single Belts—Divide the speed of belt by 8. The horse power wanted divided by this quotient will give the width of belt required.

Example—Required the width of single belt to transmit 100 horse power. Engine pulley 72 inches in diameter; speed of engine, 220 revolutions per minute.

8)4144 (speed of belt per minute).

518)100$_{00}$ (horse power wanted).

19 inches (width of belt required).

For Double Belts—Divide the speed of belt in feet per minute by 56. Divide the horse power wanted by this quotient for the width of belt required.

Example—Required the width of double belt to transmit 500 horse power. Engine pulley, 72 inches in diameter; speed of engine, 220 revolutions per minute.

56)4144 (speed of belt per minute).

74)500$_{00}$ (horse power wanted)

67½ inches (width of belt required).

Tension

More belts and machinery are injured by lack of proper understanding of this subject, than by any other cause. Vertical belts require extra (not excessive) tension, as it is necessary to obtain sufficient friction on the lower pulley. As far as possible avoid vertical transmission.

There are no absolute rules on this subject, as the conditions under which belts are used vary in many respects. From observation made by engineers we suggest the following schedule:

No. of Plies	Tension, Lbs. per Inch of Width of Belt	No. of Plies	Tension, Lbs. per Inch of Width of Belt	No. of Plies	Tension, Lbs. per Inch of Width of Belt
3	30 to 40	5	70 to 90	7	110 to 130
4	50 " 70	6	90 " 110	8	130 " 150

Care should be taken that the tension is never sufficient to heat the bearings. Excessive tension is injurious.

Horse Power Transmitted by Leather Belts

Driving Power of Single Belts

Speed, Feet per Min.	Width of Belt, Inches 2	3	4	5	6	8	10	12	14
400	1	1½	2	2½	3	4	5	6	7
600	1½	2¼	3	3¾	4½	6	7½	9	10½
800	2	3	4	5	6	8	10	12	14
1000	2½	3¾	5	6¼	7½	10	12½	15	17½
1200	3	4½	7	7½	9	12	15	18	21
1500	3¾	5¾	7½	9½	11½	15	18¾	22½	26½
1800	4½	6¾	9	11¼	13½	18	22½	27	31½
2000	5	7½	10	12½	15	20	25	30	35
2400	6	9	12	15	18	24	30	36	42
2800	7	10½	14	17½	21	28	35	42	49
3000	7½	11¼	15	18¾	22½	30	37½	45	52½
3500	8¾	13	17½	22	26	35	44	52½	61
4000	10	15	20	25	30	40	50	60	70
4500	11¼	17	22½	28	34	45	57	69	78
5000	12½	19	25	31	37½	50	62½	75	87

Driving Power of Double Belts

Speed, Feet per Min.	Width of Belt, Inches 6	8	10	12	14	16	18	20	24
400	4¼	5¾	7¼	8½	10	11½	13	14½	17½
600	6½	8¾	11	13	15	17½	19½	22	26
800	8½	11½	14½	17½	20½	23	26	29	34½
1000	11	14½	18¼	21½	25½	29	32½	36	43½
1200	13	17½	22	26	30½	34½	39	44	52½
1500	16¼	21¾	27¼	32½	38	43½	49	54½	65½
1800	19½	26	32¾	39	45½	52	59	65½	78½
2000	21¾	29	36½	43½	50½	58	65½	72½	87
2400	26	34¾	44	52½	60½	69½	78½	88	105
2800	30½	40½	51	61	71	81	91½	102	122
3000	32½	43½	54½	65½	76	87½	98	108	131
3500	38	50¾	63½	76	89	101	114	127	153
4000	43½	58¼	72¾	87	101	116	131	145	174
4500	49	65	82	98	114	131	147	163	196
5000	54½	72¾	91	109	127	145	163	182	218

Useful Information

Horse Power and Strength of Shafting

The determination of proper shaft sizes for power transmission involves factors in addition to those of speed and horse power. The effect of the distance between bearings, the amount and direction of strains, due to the pull of belt or chain, as well as torsional strain and the weight of sprockets, gears and pulleys, should all be taken into account. For instance, a shaft may have sufficient strength to transmit a given amount of power without exceeding allowable fibre stresses, yet may deflect too much under the load imposed.

Therefore, plain horse power tables at various speeds must be limited to cases where the bending moments are kept low by supporting the shaft by bearings close to the sprockets, gears, pulleys, etc.

The use of hammered steel, which is more expensive than the standard, permits the transmission of about 20 per cent more power for the same diameter of cold drawn shafting.

Horse Power Transmitted by Cold Drawn Shafting

H. P.=Horse Power D=Diameter in inches
R=R. P. M.

For Simple Transmission of Power with No Bending Strains

$$\text{H. P.} = \frac{D^3 R}{50}$$

Diam. Shaft In.	Revolutions per Minute 50	100	150	200	250	300	400	500
15/16	1	1.5	2.5	3	4	5	6.5	8
1 3/16	1.5	3	5	7	8	10	13	17
1 7/16	3	6	9	12	15	18	24	30
1 11/16	5	10	14	19	24	29	38	48
1 15/16	7	15	22	29	36	44	58	73
2 3/16	10	21	31	42	52	63	84	105
2 7/16	14	29	43	58	72	87	116	145
2 11/16	19	39	58	78	97	116	155	194
2 15/16	25	51	76	101	127	152	202	253
3 7/16	41	81	122	163	203	244	325	406
3 15/16	61	122	183	244	305	367	489	610
4 7/16	87	175	262	350	437	524	699	...
4 15/16	120	241	361	482	602	722	963	...
5 7/16	161	322	483	644	805	966	...	...
6	216	432	648	864	1080	1296	...	...
6½	275	549	824	1099	1373	....	...	...
7	343	686	1029	1372	1715	....	...	...
7½	422	844	1266	1688	....	....	...	...
8	512	1024	1536	2048	....	....	...	...

For Line Shafts with Bearings Every 8 Feet

$$\text{H. P.} = \frac{D^3 R}{75}$$

Diam. Shaft In.	Revolutions per Minute 50	100	150	200	250	400	450	500
1 3/16	1	2	3	4	6	7	9	11
1 7/16	2	4	6	8	10	12	16	20
1 11/16	3	6	10	13	16	19	26	32
1 15/16	5	10	15	19	24	29	39	49
2 3/16	7	14	21	28	35	42	56	70
2 7/16	10	19	29	39	48	58	77	96
2 11/16	13	26	39	52	65	78	104	130
2 15/16	17	34	51	68	85	101	135	169
3 7/16	27	54	81	108	135	162	216	270
3 15/16	41	82	122	163	204	244	326	407
4 7/16	58	117	175	233	291	350	466	...
4 15/16	80	160	240	320	400	480	640	...
5 7/16	107	215	322	429	536	645	...	...
6	144	288	432	576	720	...	...	...
6½	183	366	550	733	917	...	...	...
7	229	457	686	915	1143	...	...	...
7½	284	568	852	1136	....	...	...	...
8	341	682	1023	1364	....	...	...	...

For Head Shafts, Heavy Strains, Shafts with Gears, etc., which are Closely Supported by Bearings

$$\text{H. P.} = \frac{D^3 R}{125}$$

Diam. Shaft In.	Revolutions per Minute 10	20	30	40	50	100
1 3/16	.1	.3	.4	.5	.7	1.3
1 7/16	.2	.5	.7	1.0	1.2	2.4
1 11/16	.4	.8	1.2	1.5	1.9	3.8
1 15/16	.6	1.2	1.7	2.3	2.9	5.8
2 3/16	.8	1.7	2.5	3	4	8
2 7/16	1.2	2	3	5	6	12
2 11/16	1.6	3	5	6	8	16
2 15/16	2	4	6	8	10	20
3 7/16	3	6	10	13	16	32
3 15/16	5	10	15	19	24	48
4 7/16	7	14	21	28	35	70
4 15/16	10	19	29	38	48	96
5 7/16	13	26	39	52	65	129
6	17	35	52	69	86	173
6½	22	44	66	88	110	220
7	27	55	82	110	137	274
7½	34	68	102	136	170	340
8	41	82	123	164	205	410

The above horse power values are derived from the purely empirical formulas given above. In many factory installations it is impossible to determine the amounts and position of the loads causing bending and twisting as well as probabilities that additional pulleys will be used. The formulas take some of these factors into consideration.

To determine exactly the size of shaft necessary, with known conditions, both bending and torsional strains should be calculated, particularly for heavy loads at slow speeds.

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