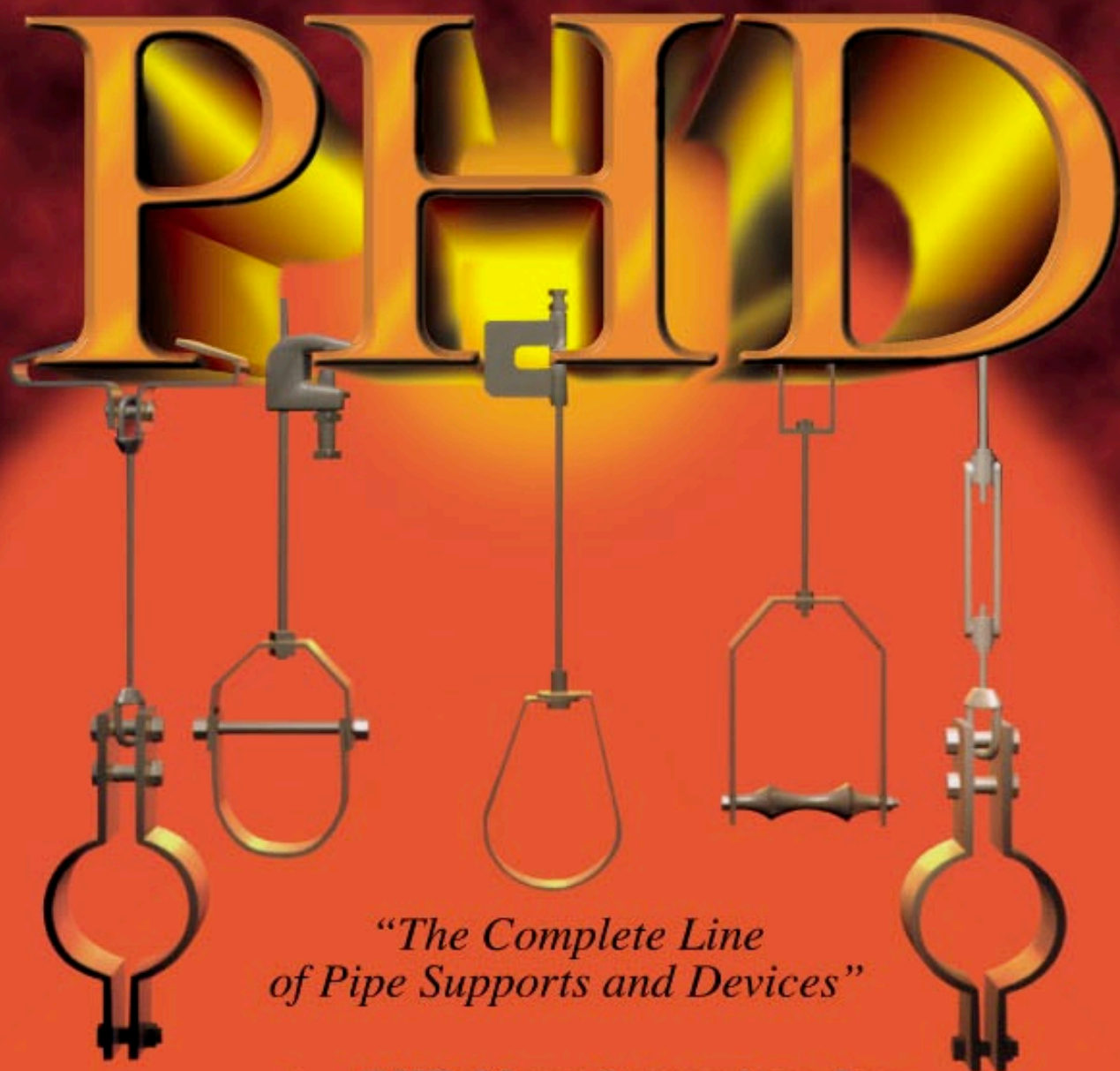


Pipe Hangers & Devices

Catalog No. 493



*"The Complete Line
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TERMS & CONDITIONS OF SALE

AGREEMENTS:

All agreements are subject to availability of material, strikes, accidents, or other causes beyond our control.

WARRANTY:

We warrant for one year from date of shipment our manufactured products to the extent that we will replace those having manufacturing defects when used for the purpose which we recommended. If goods are defective, the amount of damage is the price of the defective goods only and no allowance will be made for labor or expense of repairing defective goods or damage resulting from the same. We warrant the products we sell of other manufacturers to the extent of the warranties of their respective maker. This is the seller's sole warranty. Seller makes no other warranty of any kind, expressed or implied; and all implied warranties of merchantability and fitness for a particular purpose which exceed seller's aforestated obligation are hereby disclaimed by seller and excluded from this warranty.

For special order products made to the customer's specification, warranty is not valid and we are not responsible for load requirements or liable for damages incurred from product failure.

CLAIMS:

No claims for shortages allowed unless made in writing within ten days of receipt of goods. All goods sent out will be carefully examined, counted and packed. Claims for goods damaged or lost in transit should be made on the carrier, as our responsibility ceases on delivery to the carrier.

SPECIAL ORDERS:

Orders covering special or nonstandard goods are not subject to cancellation except on such terms as may be agreed upon.

TERMS AND DESIGN:

Subject to change without notice. Refer to current price list for terms of sale. PHD reserves the right to revise product design without notification.

RETURNS:

We cannot accept return of any goods unless PHD's written permission has been first obtained, in which case same will be credited as follows:

- 1) All goods must be received in our plant in first class condition, if not, the cost of putting in salable condition will be deducted from credit.
- 2) Twenty-five percent (25%) will be deducted from credit memoranda issued for handling and restocking, less any charges allowed or paid by PHD Mfg., Inc.
- 3) Goods must be returned prepaid.
- 4) P.O.A. items cannot be returned.
- 5) There will be no returns of goods after one year from purchase date. Customer must provide invoice number.
- 6) There will be no return of goods under \$50.00, unless it is the result of PHD's error.

TAXES:

To the price and terms quoted, there will be added any manufacturer's or sales taxes payable on the transaction under any effective statute.

MINIMUM INVOICE:

\$50.00 plus transportation.

FREIGHT ALLOWANCE:

All prices are F.O.B. point of shipment. On shipments of 2500 lbs. or more, rail freight or motor freight at the lowest published price is allowed to all U.S. highway points listed in published tariffs (Hawaii and Alaska excluded).

TERMS:

Net 30 days. Monthly settlements on all accounts. One and-a-half percent (1½%) per month or eighteen percent (18%) per annum will be charged on all past due accounts, starting on the 31st day after the date of invoice.

DIMENSIONS & WEIGHTS:

Although PHD Manufacturing tries to be as accurate as possible, all listed dimensions and weights are an approximation and are not guaranteed.

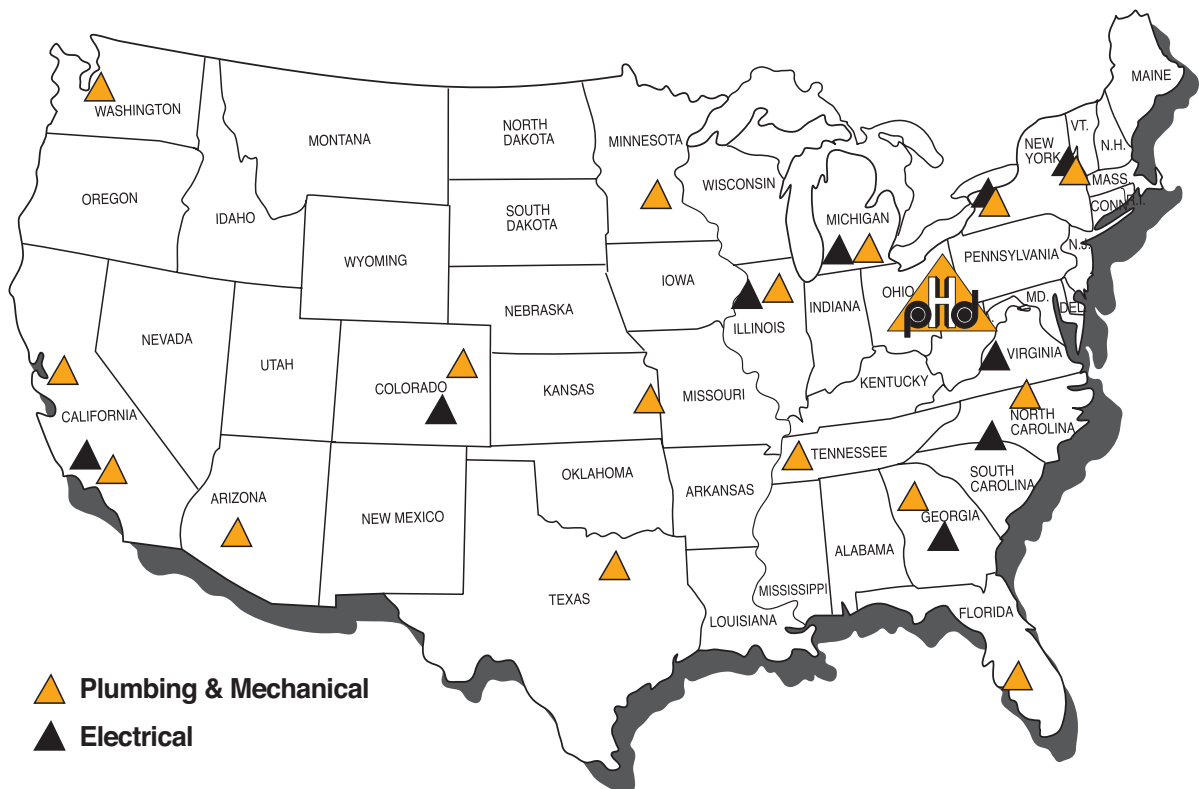
PHD Manufacturing, Inc. was founded in 1972 by a group of industry veterans with strong management, financial, sales and manufacturing backgrounds. The entrepreneurial vision of this close group used the talents they acquired over the years to forge something special in a business that needed a different purpose. This core group continues to manage PHD today, ensuring the original commitment to quality and excellence.

Our 33 professional sales representatives supporting the plumbing, mechanical and electrical industries are ready to serve your needs. Our manufacturing plant in Columbiana, Ohio, together with our 24 stocking warehouses throughout the United States, gives us one of the largest inventories in the industry.

Many of our products are Underwriter's Laboratories listed and Factory Mutual approved. All PHD products are manufactured to meet or exceed industry standards set for their design and manufacture.

If you need a product not listed in this catalog, please call the factory or your local PHD representative to check availability and pricing.

PHD Plumbing & Mechanical Stock Locations PHD Electrical Stock Locations





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THREADED ACCESSORIES

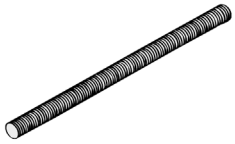


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Fig. 15
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Fig. 25
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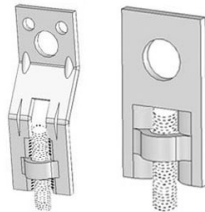


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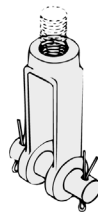


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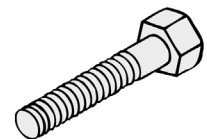


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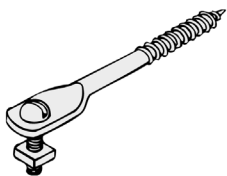


Fig. 43
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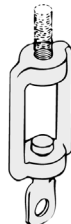


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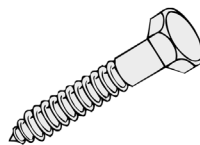


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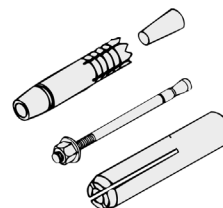


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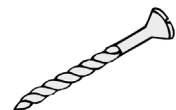


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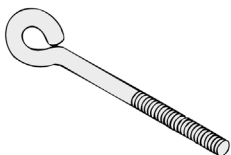


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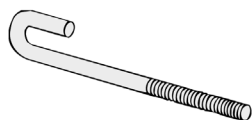


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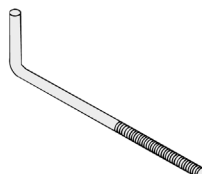


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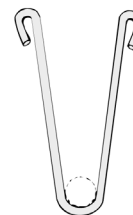


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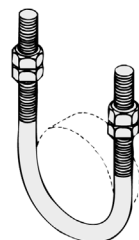


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ROD COUPLINGS, HEX NUTS & WASHERS

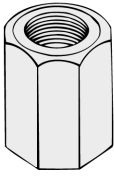


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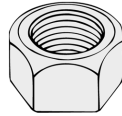


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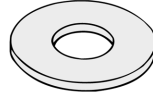


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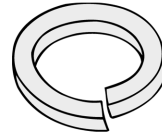


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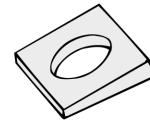


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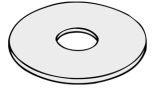


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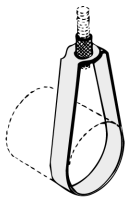


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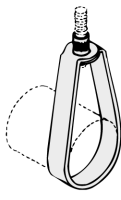


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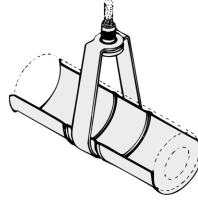


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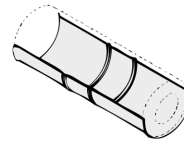


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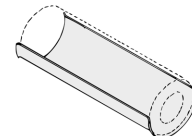


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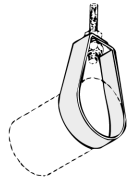


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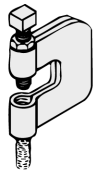


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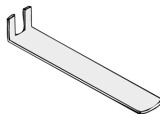


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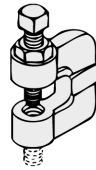


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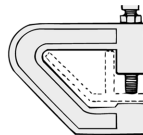


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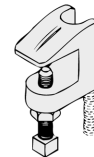


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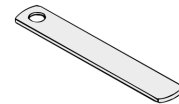


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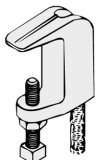


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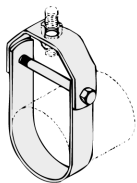


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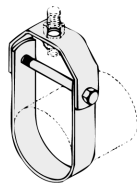


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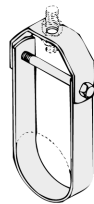


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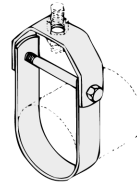


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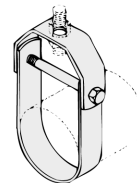


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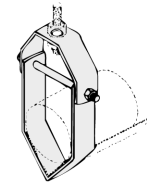


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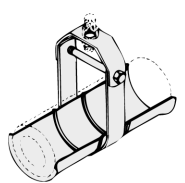


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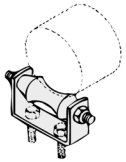


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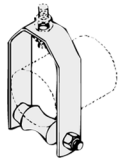


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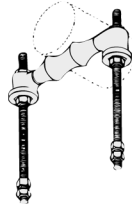


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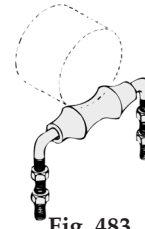


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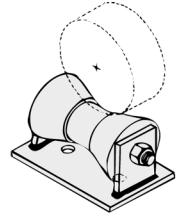


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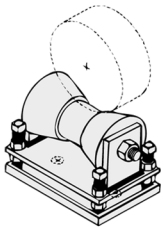


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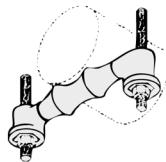


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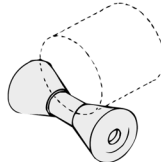


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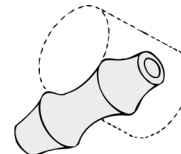


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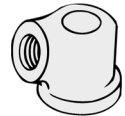


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SPLIT RING HANGERS

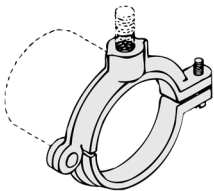


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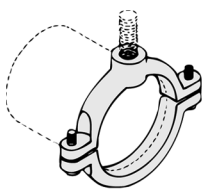


Fig. 510R
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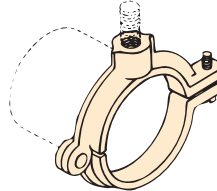


Fig. 512 & 512H
Copper Tubing Extension
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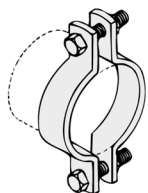


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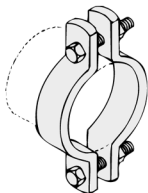


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Heavy Duty
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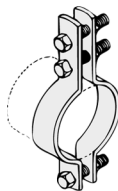


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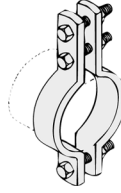


Fig. 526
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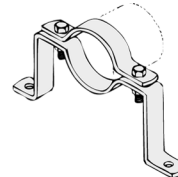


Fig. 535
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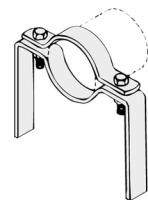


Fig. 545
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PIPE CLAMPS

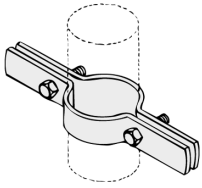


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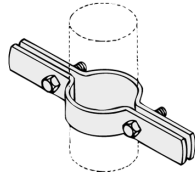


Fig. 552 & 554
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Clamp
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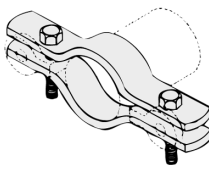


Fig. 580
Two Bolt Underground
Pipe Clamp
Page 61

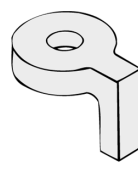


Fig. 585
Washer
for Fig. 580
Page 61

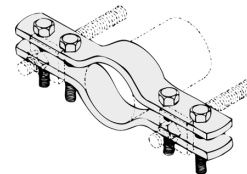


Fig. 590
Four Bolt Underground
Pipe Clamp
Page 62

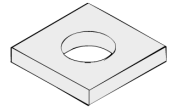


Fig. 595
Washer
for Fig. 590
Page 62

CENTER LOAD CLAMPS

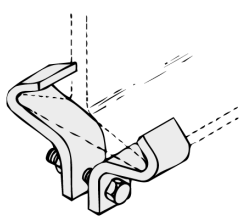


Fig. 610 & 620
Steel Center Load
Beam Clamp
Page 63

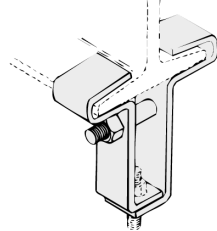


Fig. 625
Steel Center Load
Beam Clamp
Page 64

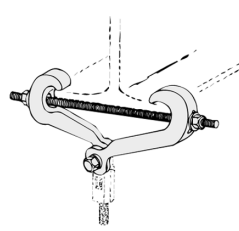


Fig. 630
Malleable Center Load
Beam Clamp
Page 64



Fig. 632-633
Steel Center Load
Beam Clamp
Page 65

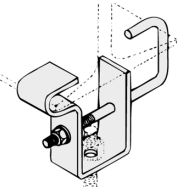


Fig. 635
Adjustable Steel
Beam Clamp
Page 65

PIPE SADDLES, GUIDES & SLIDES

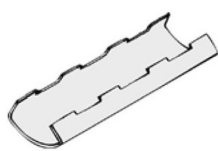


Fig. 651 & 653
Pipe Saddle
Page 66

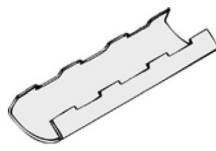


Fig. 654 & 655
Pipe Saddle
Page 67

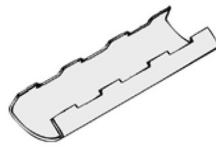


Fig. 656 & 658
Pipe Saddle
Page 68

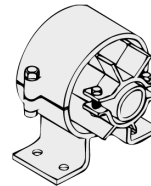


Fig. 670 - 678
Pipe Alignment Guide
Page 69

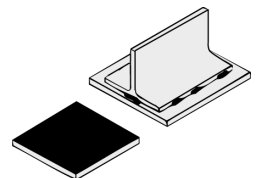


Fig. 690
Pipe Slide
Page 71

J-HOOKS, STRAPS & CLAMPS

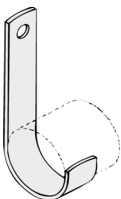


Fig. 810
Return Line J-Hook
Page 72

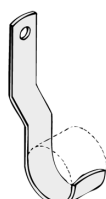


Fig. 820
Offset J-Hook
Page 72

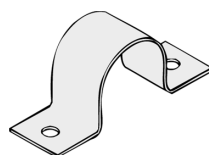


Fig. 825
Two Hole Pipe Strap
Page 73

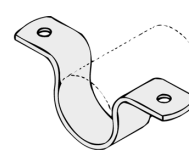


Fig. 830
Short Pipe Strap
Page 73

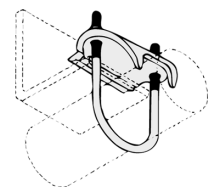


Fig. 840
Right Angle Clamp
Page 74



PICTORIAL INDEX

WALL BRACKETS

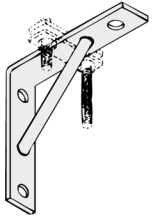


Fig. 850
Light Duty
Wall Bracket
Page 75

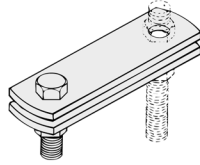


Fig. 850C
Clip for Fig. 850
Wall Bracket
Page 75

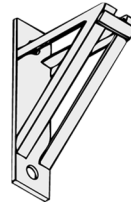


Fig. 855
Medium Duty
Wall Bracket
Page 76

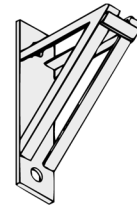


Fig. 860
Heavy Duty
Wall Bracket
Page 76

PIPE SUPPORTS

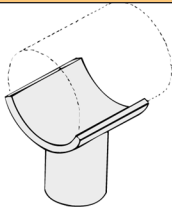


Fig. 870
Pipe Saddle Support
with Coupling
Page 77

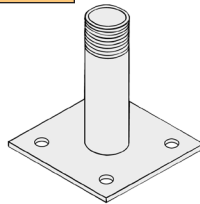


Fig. 871
Threaded Base
Stand
Page 77

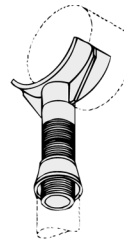


Fig. 875
Adjustable Pipe
Saddle Support
Page 78

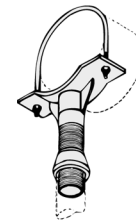


Fig. 876
Adjustable Pipe Saddle
Support with U-Bolt
Page 78

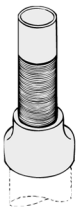


Fig. 877
Pipe Support
Adjuster
Page 79

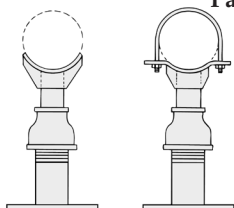


Fig. 878 & 879
Pipe Support
Adjusters
Page 79

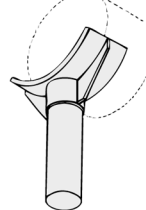


Fig. 880
Pipe Saddle
Support
Page 80

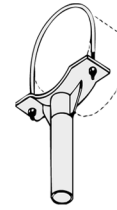


Fig. 882
Pipe Saddle
Support with U-Bolt
Page 80

MISCELLANEOUS

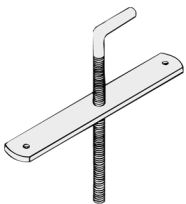


Fig. 885
Adjustable
Q-Deck Insert
Page 81

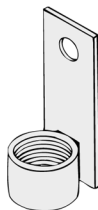


Fig. 890
Seismic Brace
Page 81

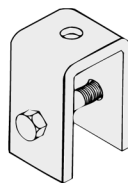


Fig. 900 & 900-1
Welded Beam
Attachment
Page 82

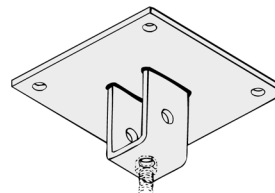


Fig. 903
Concrete Rod
Attachment Plate
Page 83

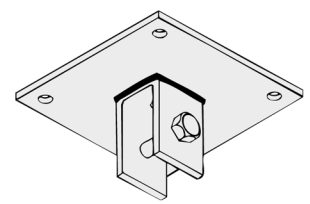


Fig. 904
Concrete
Clevis Plate
Page 84

MISCELLANEOUS

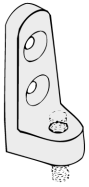


Fig. 905
Side Beam
Connector
Page 85

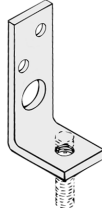


Fig. 906
Steel Side Beam
Connector
Page 85



Fig. 910
Reversible
Angle Bracket
Page 85

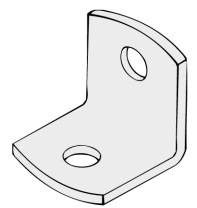


Fig. 920
Side Beam
Angle Bracket
Page 86

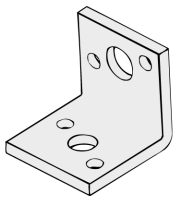


Fig. 925
Reversible Side
Beam Angle Bracket
Page 86

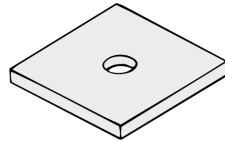


Fig. 930
Square Plate
Washer
Page 87

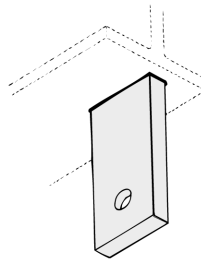


Fig. 935 & 936
Welding Lug
Page 87

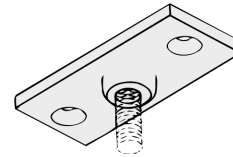


Fig. 940-942
Ceiling Flange
Page 88

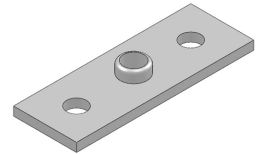


Fig. 945 & 946
Steel Ceiling Plate
Page 88

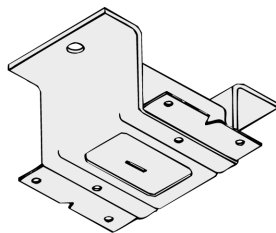


Fig. 950-951N
Concrete Insert
Page 88



Fig. 960
Turnbuckle
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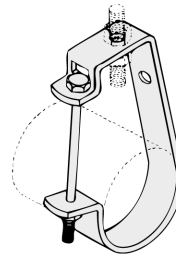


Fig. 970-973
J-Hanger
Page 89

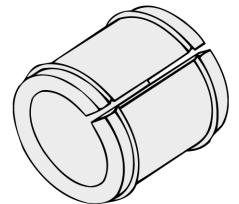
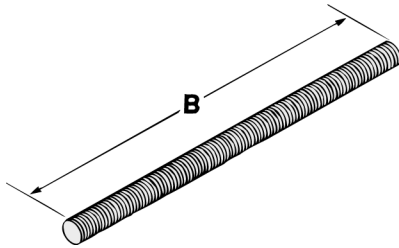


Fig. 980 & 982
Felt Isolator
Page 90



THREADED ACCESSORIES

**Fig. 10
THREADED STUDS**



FUNCTION: Designed for use in pipe hanger assembly.

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

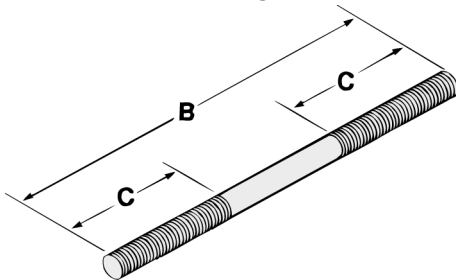
ORDERING: Specify rod size, length (B) and figure number.

Rod Size	Max. Rec. Load/lbs.		Wt. Per Inch/lbs.
	650°F	750°F	
$\frac{3}{8} \times B$	730	572	.02
$\frac{1}{2} \times B$	1350	1057	.04
$\frac{5}{8} \times B$	2160	1692	.07
$\frac{3}{4} \times B$	3230	2530	.11
$\frac{7}{8} \times B$	4480	3508	.14

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

**Fig. 15 & 15L
MACHINE THREAD
HANGER ROD**

Fig. 15 RIGHT-HAND THREADS
Fig. 15L RIGHT- AND LEFT-HAND THREADS



FUNCTION: Designed for use in pipe hanger assembly.

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size, length (B) and figure number.

Rod Size	Thread Length C	Max. Rec. Load/lbs.		Wt. Per Inch/lbs.
		650°F	750°F	
$\frac{3}{8} \times B$	2½	730	572	.03
$\frac{1}{2} \times B$	2½	1350	1057	.06
$\frac{5}{8} \times B$	2½	2160	1692	.09
$\frac{3}{4} \times B$	3	3230	2530	.13
$\frac{7}{8} \times B$	3½	4480	3508	.17
1 x B	4	5900	4620	.22

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

**Fig. 20 & 21
CONTINUOUS
THREADED ROD**

Fig. 20* PLAIN
Fig. 21 ELECTRO-GALVANIZED



*Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

FUNCTION: Useful in applications where stud lengths cannot be predetermined.

MATERIAL: Low carbon steel

ORDERING: Specify rod size, length and figure number.

Rod Size	Packaging Feet Per Bundle			Max. Rec. Load/lbs.		Wt. Per Foot/lbs.
	6 ft.	10 ft.	12 ft.	650°F	750°F	
$\frac{1}{4}$ -20	300	500	600	240	188	.12
$\frac{3}{8}$ -16	150	250	240	730	572	.29
$\frac{1}{2}$ -13	72	120	144	1350	1057	.54
$\frac{5}{8}$ -11	48	80	96	2160	1692	.83
$\frac{3}{4}$ -10	30	50	60	3230	2530	1.25
$\frac{7}{8}$ -9	24	40	48	4480	3508	1.65
1-8	12	20	24	5900	4620	2.25

THREADED ACCESSORIES



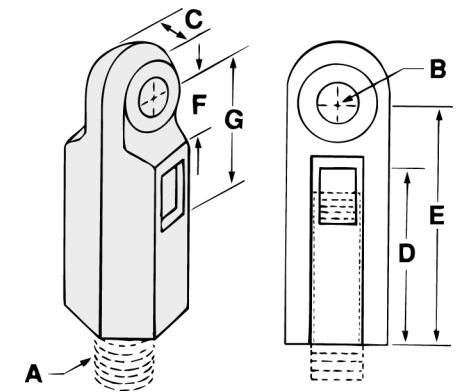
FUNCTION: Designed for attaching hanger rod to various types of attachments. Allows a 1" vertical adjustment of the rod. Frequently used in conjunction with Fig. 630 malleable iron beam clamp.

ORDERING: Specify rod size and figure number.

Rod Size A	For Pipe Sizes	B	C	D
3/8	1/2 to 2	1/2	1/2	1 1/4
1/2	2 1/2 to 3 1/2	1/2	5/8	1 3/8
5/8	4 & 5	1/2	5/8	1 1/2
3/4	6 & 8	1/2	5/8	1 3/4
7/8	10 & 12	9/16	3/4	1 7/8

Rod Size A	E	F	G	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
3/8	2 1/16	9/16	1 1/4	730	.20
1/2	2 5/16	1 1/16	1 3/8	1350	.43
5/8	2 7/16	3/4	1 7/16	1550	.46
3/4	2 7/8	7/8	1 11/16	2100	.63
7/8	3	7/8	1 3/4	2350	.67

**Fig. 25
EXTENSION PIECE**



MATERIAL: Malleable iron
FINISH: Plain or Electro-galvanized

FUNCTION: Designed for attaching hanger rod to various types of hanger attachments.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 16) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 16).

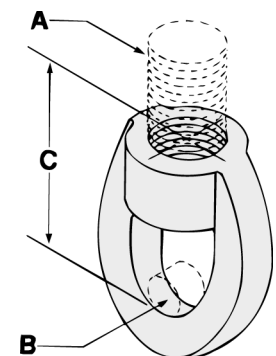
MATERIAL: Malleable iron

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.

Rod Size A	For Pipe Sizes	Max. Bolt Size B	C	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/4	3/8	1/4	1 3/8	240	.08
3/8	1/2 to 2	1/4	1 3/8	610	.08
1/2	2 1/2 to 3 1/2	1/4	1 9/16	1000	.11
5/8	4 to 5	3/8	1 3/4	1400	.22
3/4	6 & 8	1/2	2 1/4	2200	.30
7/8	10 & 12	1/2	2 7/16	2300	.32

**Fig. 30
EYE SOCKET**

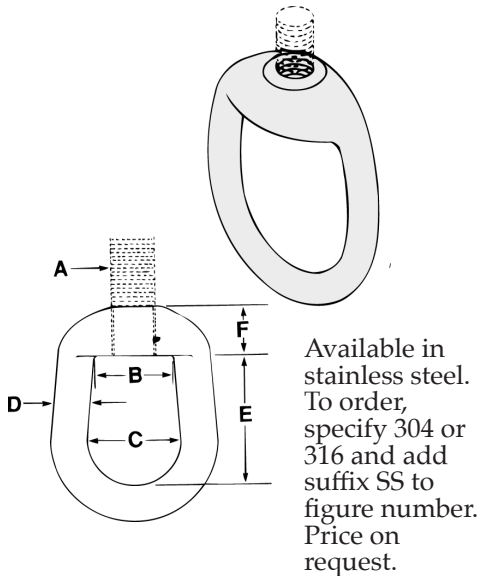




THREADED ACCESSORIES

Fig. 35 & 35L WELDLESS EYE NUT

Fig. 35 RIGHT-HAND THREADS
Fig. 35L LEFT-HAND THREADS



FUNCTION: Designed for use in high strength and high temperature piping applications. Fig. 35L is designed to be used in conjunction with Fig. 960 forged steel turnbuckle, in applications where a vertical adjustment may be necessary.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 17) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 17).

ORDERING: Specify rod size and figure number.

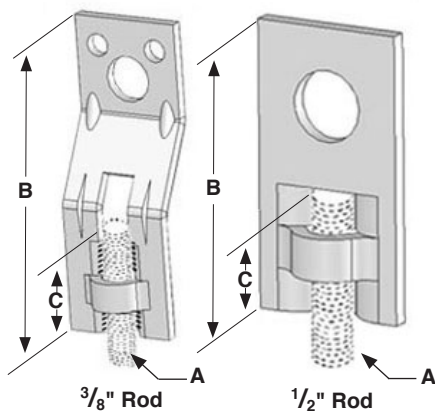
Rod Size A	B	C	D	E	F	Max. Rec. Load/lbs.		Wt. Each (in lbs.)
						650°F	750°F	
3/8	1 1/4	1 1/2	1/2	2	1 1/16	730	572	.64
1/2	1 1/4	1 1/2	1/2	2	1 1/16	1350	1057	.61
5/8	1 1/4	1 1/2	1/2	2	1 1/16	2160	1692	.59
3/4	1 1/4	1 1/2	1/2	2	1 1/16	3230	2530	.57
7/8	1 11/16	2	3/4	2 5/8	1	4480	3508	1.67
1	1 11/16	2	3/4	2 5/8	1	5900	4620	1.65
1 1/8	2 1/4	2 1/2	1	3 3/8	1 1/4	7450	5834	3.68
1 1/4	2 1/4	2 1/2	1	3 3/8	1 1/4	9500	7440	3.57
1 1/2	2 1/4	2 1/2	1	3 3/8	1 1/4	13800	10807	3.43

MATERIAL: Forged steel

FINISH: Plain or Electro-galvanized

Note: Supports loads equal to the full limitation of the hanger rod.

Fig. 37 STEEL EYE SOCKET



FUNCTION: Designed for attaching hanger rod to wood structures. Secured with Fig. 45 lag screw or two Fig. 48 wood drive screws, see chart.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL) and Canada (CUL) for 3/8" and 1/2" rod sizes. Factory Mutual Approved for 3/8" rod size only.

ORDERING: Specify rod size and figure number.

Rod Size A	Max. Pipe Size	Screw Size	B	C	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
3/8	2	(2) #16 x 2	3 1/4	1 1/4	400	.10
3/8	4	1/2 x 2 1/2	3 1/4	1 1/4	730	.10
1/2	6	1/2 x 3	2 3/4	1 3/16	1350	.11

Note: The 3/8" offset design provides full vertical rod adjustment.



MATERIAL: Low carbon steel

FINISH: Electro-galvanized

THREADED ACCESSORIES



FUNCTION: Designed for use as a convenient method of connecting hanger rods to pipe lugs, angles, etc. As a structural attachment it is most commonly used in conjunction with Fig. 935 welding lug.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 14) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 14).

ORDERING: Specify size number, rod size, with or without pin and figure number. If other than standard combination is required, specify size number, rod size, pin size and grip.

Size No.	Rod Size A	Pin Size	Grip	B	C	D
2	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$3\frac{5}{8}$	$1\frac{1}{2}$	$\frac{5}{8}$
2	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{2}$	$3\frac{5}{8}$	$1\frac{1}{2}$	$\frac{5}{8}$
2	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	$3\frac{5}{8}$	$1\frac{1}{2}$	$\frac{5}{8}$
$2\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{3}{4}$	5	2	$\frac{7}{8}$
$2\frac{1}{2}$	$\frac{7}{8}$	1	$\frac{7}{8}$	5	2	$\frac{7}{8}$
3	1	$1\frac{1}{8}$	1	5	3	$1\frac{5}{16}$
3	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{4}$	5	3	$1\frac{5}{16}$
$3\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{1}{2}$	6	$3\frac{1}{2}$	$1\frac{5}{8}$
4	$1\frac{3}{4}$	$1\frac{7}{8}$	$1\frac{1}{2}$	6	4	$1\frac{3}{4}$
5	2	$2\frac{1}{4}$	$2\frac{1}{2}$	7	5	$2\frac{1}{4}$
6	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{1}{2}$	8	6	$2\frac{3}{4}$
6	$2\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{1}{2}$	8	6	$2\frac{3}{4}$
7	$2\frac{3}{4}$	3	$2\frac{1}{2}$	8	7	3
7	3	$3\frac{1}{4}$	$2\frac{1}{2}$	9	7	3

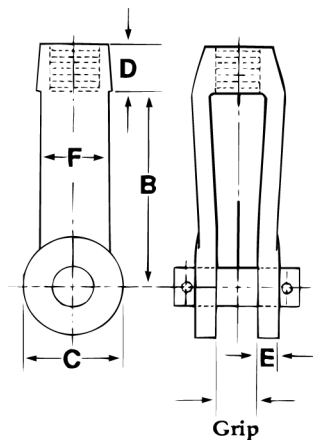
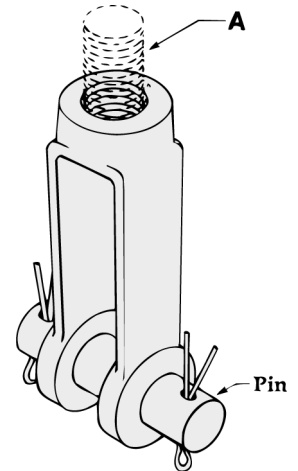
Size No.	Rod Size A	E	F	Max. Rec. Load/lbs.		Wt. Each (in lbs.)	
				650°F	750°F	w/o pin	with pin
2	$\frac{3}{8}$	$\frac{5}{16}$	$1\frac{1}{16}$	730	572	.9	1.0
2	$\frac{1}{2}$	$\frac{5}{16}$	$1\frac{1}{16}$	1350	1057	.7	.9
2	$\frac{5}{8}$	$\frac{5}{16}$	$1\frac{1}{16}$	2160	1692	.7	.9
$2\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{8}$	$1\frac{1}{4}$	3230	2530	2.5	3.0
$2\frac{1}{2}$	$\frac{7}{8}$	$\frac{3}{8}$	$1\frac{1}{4}$	4480	3508	2.5	3.4
3	1	$\frac{1}{2}$	$1\frac{1}{2}$	5900	4620	4.0	5.1
3	$1\frac{1}{4}$	$\frac{1}{2}$	$1\frac{1}{2}$	9500	7440	3.8	5.5
$3\frac{1}{2}$	$1\frac{1}{2}$	$\frac{1}{2}$	$1\frac{3}{4}$	13800	10807	6.0	8.5
4	$1\frac{3}{4}$	$\frac{1}{2}$	2	18600	14566	8.0	12.9
5	2	$\frac{5}{8}$	$2\frac{1}{2}$	24600	19265	16.0	23.3
6	$2\frac{1}{4}$	$\frac{3}{4}$	3	32300	25295	26.0	35.1
6	$2\frac{1}{2}$	$\frac{3}{4}$	3	39800	31169	25.5	36.0
7	$2\frac{3}{4}$	$\frac{7}{8}$	$3\frac{1}{2}$	49400	38687	36.0	50.0
7	3	$\frac{7}{8}$	$3\frac{1}{2}$	60100	47066	35.0	51.5

Note: Supports loads equal to the full limitation of the hanger rod.

Fig. 38
FORGED STEEL CLEVIS

Fig. 38 RIGHT-HAND THREADS

Fig. 38L LEFT-HAND THREADS



Regularly furnished with pin, unless specified otherwise.

MATERIAL: Forged steel
FINISH: Plain or Electro-galvanized



THREADED ACCESSORIES

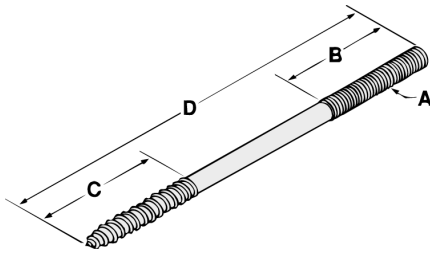
Fig. 40
COACH SCREW ROD

FUNCTION: Designed for use as a vertical hanger attachment to wood structures.

MATERIAL: Low carbon steel

FINISH: Plain or electro-galvanized

ORDERING: Specify rod size, length, finish and figure number.



Rod Size A	Minimum Length		Max. Rec. Load/lbs.	Wt. Each (in lbs.)				
	Machine B	Coach C		Length D (inches)				
				4	6	8	10	12
$\frac{3}{8}$	2	2	390	.12	.19	.25	.31	.37
$\frac{1}{2}$	2	$2\frac{1}{2}$	640	.22	.34	.44	.56	.67

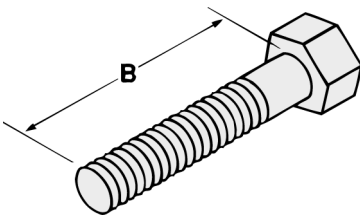
Fig. 41
HEX HEAD BOLT

FUNCTION: Designed for use as a fastening device.

MATERIAL: Low carbon steel

FINISH: Plain or electro-galvanized

ORDERING: Specify diameter, length, finish and figure number. If nuts are required, refer to Fig. 110 or 110H.



Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

Length (inches) B	Wt. Each (in lbs.)			
	Diameter (inches)			
	$\frac{5}{8}$ " Dia.	$\frac{3}{4}$ " Dia.	$\frac{7}{8}$ " Dia.	1" Dia.
2	.23	.35	—	—
$2\frac{1}{4}$	.25	.39	—	—
$2\frac{1}{2}$	.27	.42	.60	—
$2\frac{3}{4}$	.29	.45	.64	.85
3	.32	.48	.68	.92
$3\frac{1}{4}$	.34	.51	.72	.94
$3\frac{1}{2}$	.36	.54	.76	.96
$3\frac{3}{4}$	.38	.57	.80	1.10
4	.40	.60	.85	1.11

Note: Regularly furnished without nut.

THREADED ACCESSORIES



FUNCTION: Designed for attaching hangers to wood structures in light duty applications.

MATERIAL: Low carbon steel

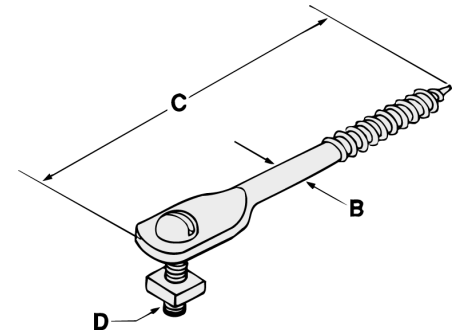
FINISH: Plain

ORDERING: Specify size and figure number.

Size B	C	Bolt Size D	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/4	3	3/16	230	.04
5/16	3	1/4	300	.07
3/8	4	1/4	360	.10

Note: Regularly furnished with bolt and nut.

Fig. 43
FLATTENED END
LAG SCREW



FUNCTION: Designed to provide an adjustable threaded connection for hanger rods.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 15) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 15).

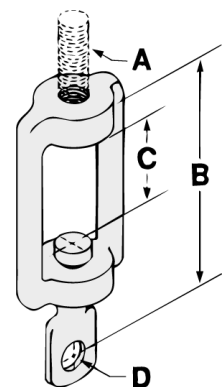
MATERIALS: Malleable Iron

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.

Rod Size A	For Pipe Sizes	B	C	D	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/4	3/8	2 1/2	1 1/4	7/32	230	.09
3/8	1/2 to 2	3 13/16	1 7/8	13/32	610	.28
1/2	2 1/2 to 3 1/2	3 13/16	1 13/16	13/32	710	.31
5/8	4 to 5	4 7/8	2 5/16	1/2	710	.72
3/4	6 & 8	4 15/16	2 5/16	9/16	860	.70

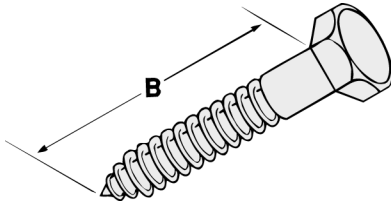
Fig. 44
TURNBUCKLE
ADJUSTER





THREADED ACCESSORIES

Fig. 45
LAG SCREW



FUNCTION: Designed for use as a fastening device to wood structures.

Length B	Wt. Each (in lbs.)			
	1/4 Rod	3/8 Rod	1/2 Rod	5/8 Rod
1 1/2	.02	.06	—	—
2	.03	.07	.14	.23
2 1/2	.03	.08	.16	.27
3	.04	.10	.19	.31
4	.05	.12	.23	.38

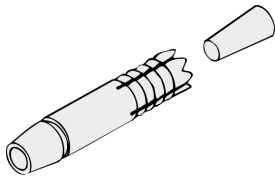
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size, length, and figure number.

Fig. 47
CONCRETE ANCHORS

**Fig. 47D SELF DRILLING
SNAP-OFF FLUSH**



FUNCTION: Designed to function as a drill, drilling its own hole and as an anchor. The tapered chuck end of the anchor is attached to an air hammer, then after drilling is complete, the tapered end snaps off leaving the anchor flush with the wall. Useful when a large number of anchors are to be installed.

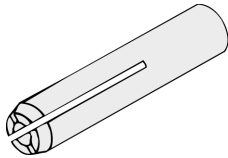
Rod Size	O.D.	Thread Depth	Hole Depth	Wt. Each (in lbs.)
3/8	9/16	9/16	1 17/32	.10
1/2	1 1/16	1 3/16	2 1/32	.18
5/8	2 7/32	1 5/16	2 15/32	.36

MATERIAL: Case hardened steel

FINISH: Electro-galvanized

ORDERING: Specify rod size and figure number.

Fig. 47S STEEL DROP-IN



FUNCTION: Designed to be inserted into a pre-drilled hole and set into place by means of a setting tool.

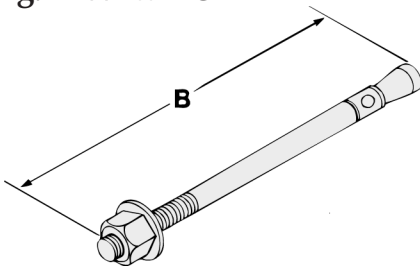
Rod Size	Hole Size	Anchor Length	Thread Length	Wt. Each (in lbs.)
3/8	1/2	1 9/16	5/8	.07
1/2	5/8	2	3/4	.13
5/8	3/4	2 1/2	1	.28

MATERIAL: Low carbon steel

FINISH: Electro-galvanized

ORDERING: Specify rod size and figure number.

Fig. 47W WEDGE



FUNCTION: Designed to be driven into a pre-drilled hole. The expansion of the case is controlled by the tightening of the nut, this eliminates the need for an exact hole size. Useful in applications where a high resistance to vibratory loads is desired.

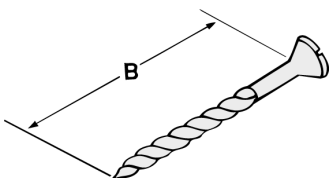
Rod Size	Thread Length	Minimum Embedment	Wt. Per Inch/lbs.
3/8 X B	1 1/8	1 5/8	.03
1/2 X B	1 1/4	2 1/4	.06
5/8 X B	1 1/2	2 3/4	.11

MATERIAL: Low carbon steel

FINISH: Electro-galvanized

ORDERING: Specify rod size, length (B) and figure number.

Fig. 48
WOOD DRIVE SCREW



FUNCTION: Designed for use as a fastening device to wood structures.

Size No.	Length B	Wt. Each (in lbs.)
12	1 1/2	.014
12	2	.015
14	1 1/2	.016
14	2	.018
16	2	.025

MATERIAL: Low carbon steel

FINISH: Plain or electro-galvanized

ORDERING: Specify size number length and figure number.

THREADED ACCESSORIES



FUNCTION: Designed for use in hanger assemblies. The welded design allows the eye to develop the full strength of the rod.

MATERIAL: Low carbon steel

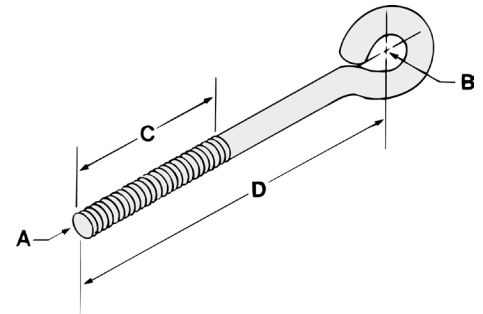
FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size, length and figure number.

Fig. 50 & 50L

Rod Size A	B	Thread Length C	Max. Rec. Load/lbs.
			650°F
3/8	1/2	2 1/2	240
1/2	5/8	2 1/2	440
5/8	3/4	2 1/2	705
3/4	7/8	3	1050
7/8	1	3 1/2	1470
1	1 1/8	4	1940

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.



**Fig. 50 & 50L
EYE ROD**

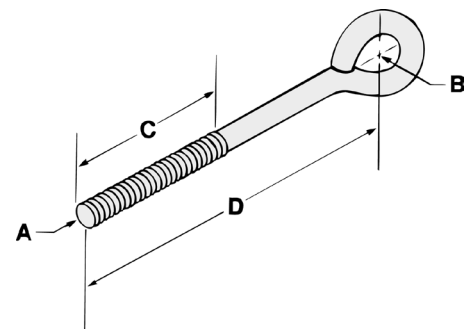
Fig. 50 RIGHT-HAND THREADS

Fig. 50L LEFT-HAND THREADS

Fig. 55 & 55L

Rod Size A	B	Thread Length C	Max. Rec. Load/lbs.	
			650°F	750°F
3/8	1/2	2 1/2	730	572
1/2	5/8	2 1/2	1350	1057
5/8	3/4	2 1/2	2160	1692
3/4	7/8	3	3230	2530
7/8	1	3 1/2	4480	3508
1	1 1/8	4	5900	4620

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.



**Fig. 55 & 55L
WELDED EYE ROD**

Fig. 55 RIGHT-HAND THREADS

Fig. 55L LEFT-HAND THREADS

Rod Size A	Wt. Each (in lbs.)													
	Length D (inches)													
	8	10	12	14	18	24	30	36	42	48	54	60	66	72
3/8	.32	.38	.44	.50	.63	.80	1.00	1.18	1.39	1.58	1.76	1.95	2.14	2.33
1/2	.60	.70	.82	.94	1.16	1.50	1.83	2.17	2.49	2.83	3.16	3.49	3.83	4.06
5/8	.97	1.14	1.31	1.49	1.84	2.36	2.88	3.40	3.92	4.44	4.96	5.48	6.00	6.52
3/4	1.44	1.68	1.94	2.19	2.68	3.44	4.19	4.94	5.70	6.45	7.20	7.95	8.70	9.45
7/8	2.04	2.32	2.68	3.02	3.73	4.72	5.74	6.76	7.81	8.83	9.85	10.87	11.89	12.91
1	2.67	3.11	3.56	4.00	4.89	6.78	8.18	8.89	10.48	11.87	13.19	14.51	15.91	17.25

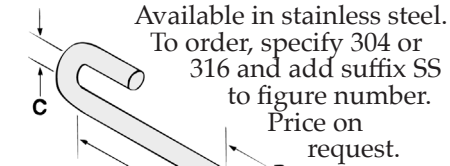
Note: Other lengths and thread lengths available upon request.

Fig. 60
J-BEAM BOLT

FUNCTION: Designed to provide a means of supporting pipe from the top flange of a beam. Useful in applications where headroom is limited.

ORDERING: Specify rod size, length and figure number.

Rod Size A	Thread Length B	C	Max. Rec. Load/lbs.	Wt. Each (in lbs.) Length D (inches)						
				4	5	6	7	8	10	12
$\frac{3}{8}$	2	$\frac{1}{2}$	240	.19	.22	.25	.28	.32	.38	.44
$\frac{1}{2}$	2	$\frac{5}{8}$	440	.33	.39	.45	.50	.56	.67	.78
$\frac{5}{8}$	$2\frac{1}{2}$	$\frac{3}{4}$	705	.52	.60	.70	.78	.87	1.00	1.20
$\frac{3}{4}$	$2\frac{1}{2}$	$\frac{7}{8}$	1050	.75	.88	1.00	1.10	1.26	1.50	1.75
$\frac{7}{8}$	$2\frac{1}{2}$	1	1500	1.02	1.20	1.35	1.53	1.70	2.00	2.40



MATERIAL: Low carbon steel

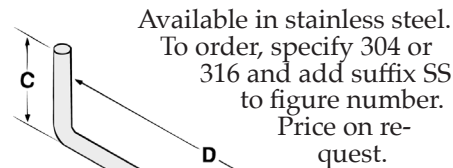
FINISH: Plain or Electro-galvanized

Fig. 70
ANCHOR BOLT

FUNCTION: Designed to be embedded in concrete to provide a means for fastening devices from concrete surfaces.

ORDERING: Specify rod size, length and figure number.

Rod Size A	Thread Length B	C	Wt. Each (in lbs.) Length D (inches)			
			6	8	10	12
$\frac{3}{8}$	2	2	.28	.34	.40	.46
$\frac{1}{2}$	2	2	.52	.63	.74	.85
$\frac{5}{8}$	$2\frac{1}{2}$	$2\frac{1}{2}$	.81	.99	1.16	1.34
$\frac{3}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	1.19	1.44	1.69	1.94
$\frac{7}{8}$	$2\frac{1}{2}$	3	1.69	2.00	2.39	2.70
1	3	$3\frac{1}{2}$	2.50	3.00	3.47	4.30



MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

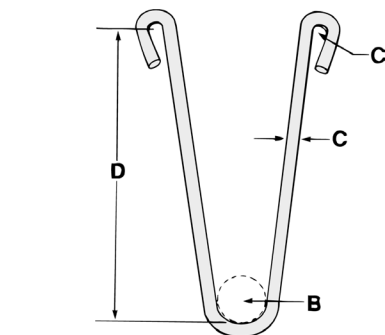
Fig. 80
U-HOOK

FUNCTION: Designed for the suspension of pipe below wood structures.

ORDERING: Specify pipe size, length and figure number.

MATERIAL: Low carbon steel

Pipe Size B	Rod & Eye C	Max. Rec. Load/lbs.	Wt. Each (in lbs.) Length D (inches)								
			6	8	10	12	14	16	18	20	24
$\frac{3}{4}$	$\frac{5}{16}$	250	.36	.45	.54	.62	.71	.80	.81	.96	1.08
1	$\frac{5}{16}$	250	.37	.46	.55	.62	.72	.81	.82	.98	1.16
$1\frac{1}{4}$	$\frac{5}{16}$	250	.37	.47	.55	.64	.73	.82	.90	.99	1.16
$1\frac{1}{2}$	$\frac{5}{16}$	250	.38	.47	.56	.65	.73	.83	.92	1.00	1.17
2	$\frac{5}{16}$	250	.41	.49	.58	.67	.76	.85	.93	1.02	1.19
$2\frac{1}{2}$	$\frac{3}{8}$	320	.59	.72	.84	.97	1.09	1.22	1.34	1.47	1.73
3	$\frac{3}{8}$	320	.60	.73	.85	.98	1.10	1.23	1.35	1.48	1.73
$3\frac{1}{2}$	$\frac{1}{2}$	560	1.14	1.36	1.59	1.81	2.03	2.25	2.48	2.70	3.15
4	$\frac{1}{2}$	560	1.17	1.39	1.61	1.84	2.06	2.28	2.50	2.73	3.17



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

FINISH: Plain

U-BOLTS



FUNCTION: Designed for use as a support, anchor, or guide for various types of pipe. The PVC coating on Fig. 93 protects the surface of the pipe from contact with the metal surface of the U-Bolt.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 24) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 24).

MATERIAL: Low carbon steel

ORDERING: Specify pipe size and figure number.

Fig. 90, 91, 93 & 94 STANDARD U-BOLT

Fig. 90 PLAIN
Fig. 91 ELECTRO-GALVANIZED
Fig. 93 PVC COATED
Fig. 94 STAINLESS STEEL

Pipe Size	Rod Size A	B	C	D	Tangent E	Max. Rec. Load/lbs.		Wt. Each (in lbs.)
						650°F	750°F	
1/2	1/4	15/16	13/16	23/8	23/4	580	454	.11
3/4	1/4	1 1/8	1 3/8	2 3/8	2 3/4	580	454	.12
1	1/4	1 3/8	1 5/8	2 3/8	2 3/4	580	454	.12
1 1/4	3/8	1 11/16	2 1/16	2 3/8	2 7/8	1460	1143	.28
1 1/2	3/8	2	2 3/8	2 1/2	3	1460	1143	.30
2	3/8	2 7/16	2 13/16	2 1/2	3 1/4	1460	1143	.33
2 1/2	1/2	2 5/16	3 7/16	3	3 3/4	2700	2114	.73
3	1/2	3 9/16	4 1/16	3	4	2700	2114	.78
3 1/2	1/2	4 1/16	4 9/16	3	4 1/4	2700	2114	.84
4	1/2	4 9/16	5 1/16	3	4 1/2	2700	2114	.90
5	1/2	5 5/8	6 1/8	3	5	2700	2114	1.01
6	5/8	6 3/4	7 3/8	3 3/4	6 1/8	4320	3383	2.00
8	5/8	8 3/4	9 3/8	3 3/4	7 1/8	4320	3383	2.33
10	3/4	10 7/8	11 5/8	4	8 3/8	6460	5059	4.91
12	7/8	12 7/8	13 3/4	4 1/4	9 5/8	8960	7017	7.73
14	7/8	14 1/8	15	4 1/4	10 1/4	8960	7017	8.30
16	7/8	16 1/8	17	4 1/4	11 1/4	8960	7017	9.20
18	1	18 1/8	19 1/8	4 3/4	12 5/8	11800	9241	13.50
20	1	20 1/8	21 1/8	4 3/4	13 5/8	11800	9241	14.60
24	1	24 1/8	25 1/8	4 3/4	15 5/8	11800	9241	16.90
30	1	30 1/8	31 1/8	4 3/4	18 5/8	11800	9241	19.10
36	1	36 1/8	37 1/8	4 3/4	21 5/8	11800	9241	23.20

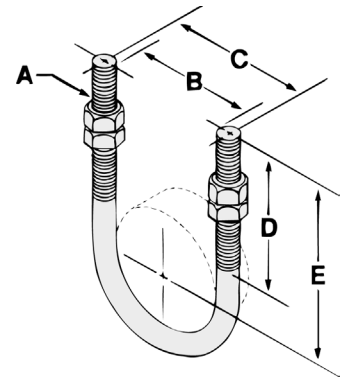


Fig. 90

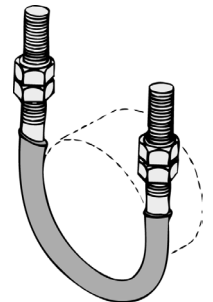
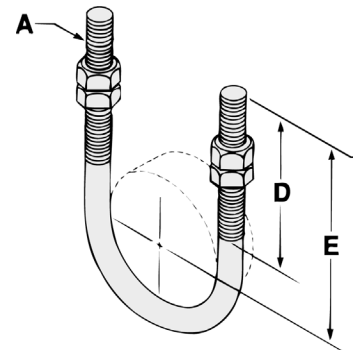


Fig. 93

Fig. 90S special U-Bolts are available upon request. Please specify:

- Pipe Size
- Rod Size A
- Length of threads D
- Tangent E
- Finish
- Type of material if other than low carbon steel

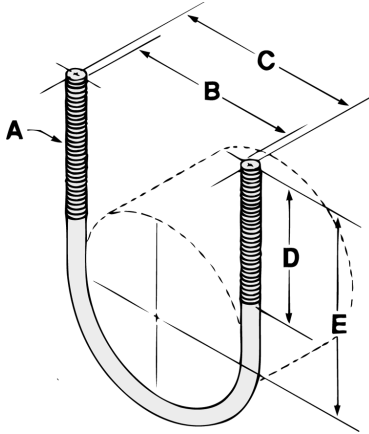
Fig. 90S SPECIAL U-BOLTS





U-BOLTS

Fig. 95
LIGHT DUTY U-BOLT



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

*Regularly furnished without nuts
unless specified otherwise.*

FUNCTION: Designed for use as a support, anchor, or guide for various types of pipe in light duty applications.

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size and figure number. If nuts are required, order Fig. 110 separately.

Pipe Size	Rod Size A	B	C	D	Tangent E	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	1/4	15/16	13/16	13/4	115/16	580	.06
3/4	1/4	11/8	13/8	13/4	21/16	580	.07
1	1/4	13/8	15/8	13/4	23/16	580	.07
1 1/4	1/4	111/16	115/16	13/4	23/8	580	.08
1 1/2	1/4	2	21/4	13/4	27/16	580	.09
2	1/4	27/16	211/16	13/4	211/16	580	.10
2 1/2	3/8	215/16	35/16	2	31/16	1460	.28
3	3/8	39/16	315/16	2	33/8	1460	.31
3 1/2	3/8	41/16	47/16	2	35/8	1460	.35
4	3/8	49/16	415/16	2	37/8	1460	.38
5	3/8	55/8	6	2 1/4	49/16	1460	.45
6	1/2	63/4	7 1/4	2 1/4	51/16	2700	.95
8	1/2	83/4	9 1/4	2 1/4	61/16	2700	1.20
10	5/8	107/8	11 1/2	2 1/2	7 1/4	4320	2.30

ROD COUPLINGS



FUNCTION: Designed to provide a means of connecting two lengths of rod with equal diameters.

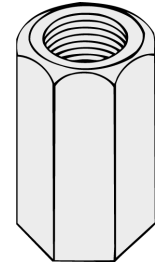
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size, finish and figure number.

Rod Size	Length	Hex Width	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{1}{4}$	$\frac{7}{8}$	$\frac{3}{8}$	240	.06
$\frac{3}{8}$	$1\frac{3}{4}$	$\frac{5}{8}$	730	.11
$\frac{1}{2}$	$1\frac{3}{4}$	$1\frac{1}{16}$	1350	.11
$\frac{5}{8}$	$2\frac{1}{8}$	$1\frac{3}{16}$	2160	.17
$\frac{3}{4}$	$2\frac{1}{4}$	1	3230	.28
$\frac{7}{8}$	$2\frac{1}{2}$	$1\frac{1}{4}$	4480	.56
1	$2\frac{3}{4}$	$1\frac{3}{8}$	5900	.72

Fig. 100
STANDARD ROD COUPLING



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

FUNCTION: Designed to provide a means of connecting two lengths of rod with equal diameters.

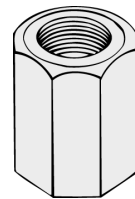
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size, and figure number.

Rod Size	Length	Hex Width	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$	$1\frac{1}{8}$	$\frac{1}{2}$	730	.04
$\frac{1}{2}$	$1\frac{1}{4}$	$\frac{5}{8}$	1350	.06

Fig. 104
SHORT PATTERN ROD COUPLING



FUNCTION: Designed to provide a means of connecting two lengths of rod with different diameters.

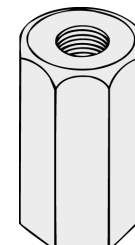
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size, and figure number.

Rod Size	Length	Hex Width	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8} \times \frac{1}{4}$	1	$\frac{1}{2}$	240	.04
$\frac{1}{2} \times \frac{3}{8}$	$1\frac{1}{4}$	$\frac{5}{8}$	730	.07
$\frac{5}{8} \times \frac{1}{2}$	$1\frac{1}{4}$	$1\frac{3}{16}$	1350	.14
$\frac{3}{4} \times \frac{5}{8}$	$1\frac{1}{2}$	1	2160	.13
$\frac{7}{8} \times \frac{3}{4}$	$1\frac{3}{4}$	$1\frac{1}{4}$	3230	.26

Fig. 105
REDUCING ROD COUPLING

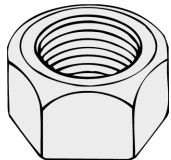




HEX NUTS & WASHERS

**Fig. 110 & 110H
HEX NUT**

Fig. 110 STANDARD HEX NUT
Fig. 110H HEAVY HEX NUT



MATERIAL: Low carbon steel

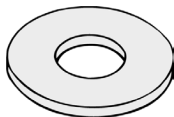
FINISH: Plain or electro-galvanized

ORDERING: Specify rod size, finish and figure number.

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

	Wt. Each (in lbs.)										
Rod Size	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2
Fig. 110	.01	.01	.02	.04	.07	.12	.19	.28	.40	.54	.94
Fig. 110H	—	—	.03	.07	.12	.19	.30	.43	.59	.79	1.31

**Fig. 130
FLAT WASHER**



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

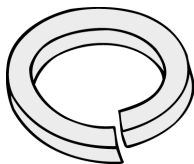
MATERIAL: Low carbon steel

FINISH: Plain or electro-galvanized

ORDERING: Specify rod size, finish and figure number.

Rod Size	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2
I.D.	5/16	7/16	9/16	11/16	13/16	15/16	1 1/16	1 1/4	1 3/8	1 5/8
O.D.	3/4	1	1 3/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/2
Wt. Each (in lbs.)	.01	.02	.04	.08	.11	.15	.19	.22	.26	.38

**Fig. 134
LOCK WASHER**



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

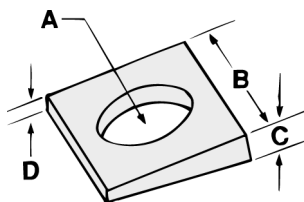
MATERIAL: Low carbon steel

FINISH: Plain or electro-galvanized

ORDERING: Specify rod size, finish and figure number.

Rod Size	I.D.	O.D.	Wt. Each (in lbs.)
3/8	7/16	11/16	.007
1/2	9/16	7/8	.015
5/8	11/16	1 1/16	.026
3/4	13/16	1 1/4	.043

**Fig. 135
BEVEL WASHER**



FUNCTION: Designed to be used on a tapered surface to permit the fastening of a bolt at a right angle.

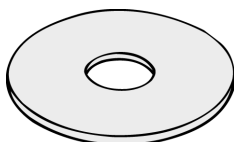
MATERIAL: Malleable iron

FINISH: Plain or electro-galvanized

ORDERING: Specify rod size, finish, and figure number.

Rod Size A	B	C	D	Wt. Each (in lbs.)
3/8	1 1/4	11/32	5/32	.09
1/2	1 1/4	11/32	5/32	.09
5/8	1 3/4	13/32	5/32	.14
3/4	1 1/2	15/32	7/32	.16
7/8	2	9/16	7/32	.33

**Fig. 136
FENDER WASHER**



FUNCTION: Designed to provide a greater bearing surface diameter.

MATERIAL: Low carbon steel

FINISH: Electro-galvanized

ORDERING: Specify rod size and figure number.

Rod Size	I. D.	O. D.	Wt. Each (in lbs.)
3/8	13/32	1 1/2	.03
1/2	17/32	2	.03

ADJUSTABLE SWIVEL RING HANGERS



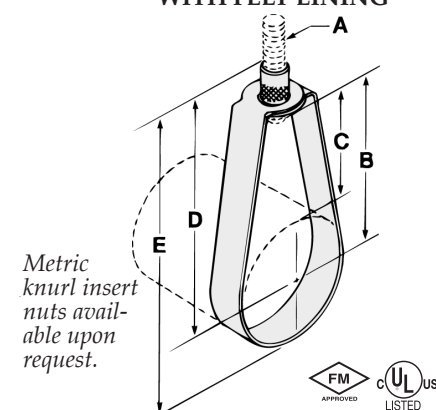
FUNCTION: Designed for the suspension of non-insulated stationary pipe lines. The knurled insert nut that allows a vertical adjustment after installation, is tapped to NFPA reduced rod size standards. Captured knurled insert nut present on pipe sizes 1/2" (15mm) to 2" (50mm). The capture is permanent in the bottom portion of the band, allowing the hanger to be opened during installation if desired, but preventing the knurled insert nut from falling completely out. Fig. 141F has a layer of felt which separates the pipe from the hanger to reduce vibration and sound.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL), Canada (CUL), for use with standard steel pipe sizes 3/4" to 8" and CPVC pipe sizes 3/4" - 4". Factory Mutual Approved for sizes 3/4" to 8". Complies with Federal Specifications A-A-1192A (Type 10), and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 10).

Pipe Size	Rod Size A	B	Adj. C	D	E	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	1 7/8	1 7/16	2 3/4	3 1/16	300	.10
3/4	3/8	1 11/16	1 1/8	2 1/2	3 1/16	300	.10
1	3/8	1 5/8	1	2 1/2	3 3/16	300	.10
1 1/4	3/8	1 15/16	1 1/16	2 13/16	3 9/16	300	.11
1 1/2	3/8	2 1/8	1 1/16	3 1/8	3 7/8	300	.11
2	3/8	2 7/16	1 1/8	3 5/16	4 3/8	300	.14
2 1/2	3/8	3 1/16	1 5/8	3 15/16	5 3/8	525	.19
3	3/8	3 11/16	1 7/8	4 9/16	6 5/16	525	.23
3 1/2	3/8	3 3/4	1 7/8	4 5/8	6 5/8	525	.25
4	3/8	4 3/16	1 7/8	5 1/16	7 5/16	650	.30
5	1/2	4 5/8	1 5/8	5 5/8	8 3/8	1000	.50
6	1/2	5 5/8	2 1/4	6 1/2	9 13/16	1000	.58
8	1/2	6 13/16	2 7/16	7 15/16	12 1/4	1000	.90

**Fig. 141 & 141F
NFPA SWIVEL
RING HANGER**

**Fig. 141 PRE-GALVANIZED
Fig. 141F PRE-GALVANIZED
WITH FELT LINING**



MATERIAL: Low carbon steel
ORDERING: Specify pipe size and figure number.

Note: If ordering Fig. 141F felt lined hangers for pipe sizes of 3 1/2" or under, order the next largest size to allow for the thickness of the felt lining.

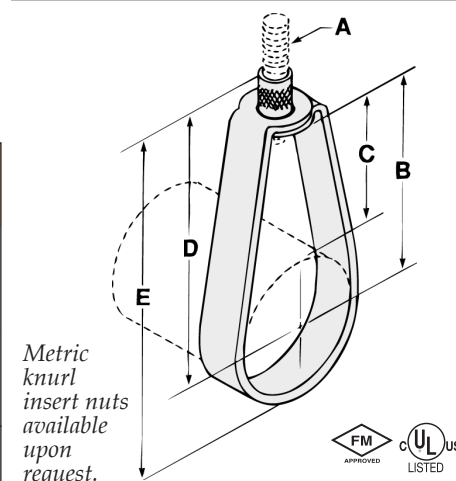
FUNCTION: Designed for the suspension of non-insulated stationary pipe lines. The PVC coating on Fig. 143 protects the pipe from contact with the metal surface of the hanger. Frequently used with Aluminum, Glass, Plastic, Brass or Copper pipe lines. This product is NOT compatible with CPVC pipe.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL), Canada (CUL), and Factory Mutual Approved for sizes 3/4" to 8". Complies with Federal Specifications A-A-1192A (Type 10) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 10).

MATERIAL: Low carbon steel

Pipe Size	Rod Size A	B	Adj. C	D	E	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	1 7/8	1 7/16	2 3/4	3 1/16	300	.11
3/4	3/8	1 11/16	1 1/8	2 1/2	3 1/16	300	.13
1	3/8	1 5/8	1	2 1/2	3 3/16	300	.13
1 1/4	3/8	1 15/16	1 1/16	2 13/16	3 9/16	300	.15
1 1/2	3/8	2 1/8	1 1/16	3 1/8	3 7/8	300	.17
2	3/8	2 7/16	1 1/8	3 5/16	4 3/8	300	.18
2 1/2	3/8	3 1/16	1 5/8	3 15/16	5 3/8	525	.19
3	3/8	3 11/16	1 7/8	4 9/16	6 5/16	525	.23
3 1/2	3/8	3 3/4	1 7/8	4 5/8	6 5/8	525	.25
4	3/8	4 3/16	1 7/8	5 1/16	7 5/16	600	.30
5	1/2	4 5/8	1 5/8	5 5/8	8 3/8	1000	.50
6	1/2	5 5/8	2 1/4	6 1/2	9 3/16	1000	.58
8	1/2	6 13/16	2 7/16	7 15/16	12 1/4	1000	.90

**Fig. 143
PVC COATED
SWIVEL RING**



FINISH: Pre-galvanized with PVC Coating
ORDERING: Specify pipe size and figure number.

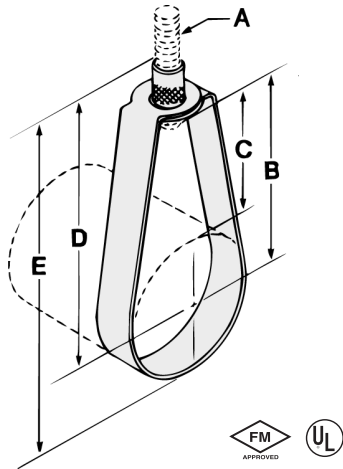


ADJUSTABLE SWIVEL RING HANGERS

Fig. 151 & 151F SWIVEL RING HANGER

Fig. 151 PRE-GALVANIZED

Fig. 151F PRE-GALVANIZED
WITH FELT LINING



FUNCTION: Designed for the suspension of non-insulated stationary pipe lines. The knurled insert nut, allows for vertical adjustment after installation. Fig. 151F has a layer of felt which separates the pipe from the hanger to reduce vibration and sound.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL) and Factory Mutual Approved for all sizes. Complies with Federal Specification A-A-1192A (Type 10), and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 10).

MATERIAL: Low carbon steel

ORDERING: Specify pipe size and figure number.

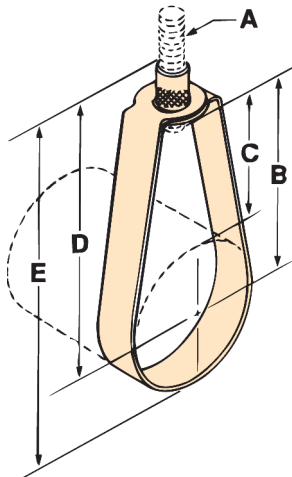
Pipe Size	Rod Size A	B	Adj. C	D	E	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
2 ¹ / ₂	1 ¹ / ₂	2 ³ / ₄	1 ¹ / ₄	3 ¹¹ / ₁₆	5 ¹ / ₈	600	.33
3	1 ¹ / ₂	3 ¹ / ₈	1 ¹ / ₈	4	5 ⁷ / ₈	600	.35
3 ¹ / ₂	1 ¹ / ₂	3 ⁵ / ₈	1 ¹ / ₂	4 ⁵ / ₁₆	6 ⁵ / ₈	600	.37
4	5 ⁵ / ₈	3 ⁷ / ₈	1 ¹ / ₄	4 ¹⁵ / ₁₆	7 ¹ / ₈	1000	.48
5	5 ⁵ / ₈	4 ³ / ₈	1 ³ / ₈	5 ⁵ / ₈	8 ¹ / ₂	1000	.57
6	3 ³ / ₄	5 ⁵ / ₁₆	2	6 ¹ / ₁₆	10 ¹ / ₈	1250	1.06
8	3 ³ / ₄	6 ¹⁵ / ₁₆	2 ⁵ / ₈	8 ⁵ / ₁₆	12 ⁷ / ₈	1250	1.32

Note: If ordering Fig. 151F felt lined hangers for pipe sizes of 3¹/₂" or under, order the next largest size to allow for the thickness of the felt lining.

Fig. 152 & 154 COPPER TUBING SWIVEL RING

Fig. 152 COPPER COLOR
EPOXY FINISH

Fig. 154 COPPER COLOR EPOXY
FINISH WITH PVC COATING



FUNCTION: Designed for the suspension of non-insulated stationary copper tubing. The knurled insert allows for vertical adjustment after installation. The PVC coating on Fig. 154 protects the tubing from contact with the metal surface of the hanger.

APPROVALS: Complies with Federal Specification A-A-1192A (Type 10) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 10).

MATERIAL: Low carbon steel

ORDERING: Specify tube size and figure number.

Tube Size	Rod Size A	B	Adj. C	D	E	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1 ¹ / ₂	3 ³ / ₈	1 ¹³ / ₁₆	1 ¹ / ₂	2 ¹¹ / ₁₆	3	300	.08
3 ³ / ₄	3 ³ / ₈	1 ⁵ / ₈	1 ³ / ₁₆	2 ¹ / ₂	2 ¹⁵ / ₁₆	300	.08
1	3 ³ / ₈	1 ⁹ / ₁₆	1	2 ⁹ / ₁₆	3	300	.08
1 ¹ / ₄	3 ³ / ₈	1 ⁵ / ₈	1 ⁵ / ₁₆	2 ¹ / ₂	3 ³ / ₁₆	300	.09
1 ¹ / ₂	3 ³ / ₈	1 ¹¹ / ₁₆	7 ⁷ / ₈	2 ⁹ / ₁₆	3 ³ / ₈	300	.09
2	3 ³ / ₈	2 ⁷ / ₁₆	1 ³ / ₈	3 ⁵ / ₁₆	4 ³ / ₈	300	.11
2 ¹ / ₂	3 ³ / ₈	2 ¹³ / ₁₆	1 ¹ / ₂	3 ⁷ / ₈	5 ⁹ / ₁₆	525	.26
3	3 ³ / ₈	3 ¹ / ₈	1 ⁹ / ₁₆	4 ³ / ₁₆	5 ³ / ₄	525	.28
3 ¹ / ₂	1 ¹ / ₂	3 ¹ / ₂	1 ¹¹ / ₁₆	4 ⁹ / ₁₆	6 ³ / ₈	525	.33
4	3 ³ / ₈	3 ³ / ₄	1 ¹¹ / ₁₆	4 ¹³ / ₁₆	6 ¹⁵ / ₁₆	650	.33
5	1 ¹ / ₂	4 ¹ / ₈	1 ⁹ / ₁₆	5 ³ / ₁₆	7 ¹³ / ₁₆	1000	.56
6	1 ¹ / ₂	4 ⁵ / ₈	1 ⁹ / ₁₆	5 ¹¹ / ₁₆	8 ¹⁵ / ₁₆	1000	.65

INSULATION SHIELDS



FUNCTION: Designed for the suspension of insulated pipe lines. Fig 155 is a combination of our Fig. 160 shield welded to a Fig. 151 hanger, which ensures that the shield will be installed in conjunction with the hanger. Fig. 155 allows vertical adjustment after installation and offers maximum protection from crushing of the insulation by the hanger.

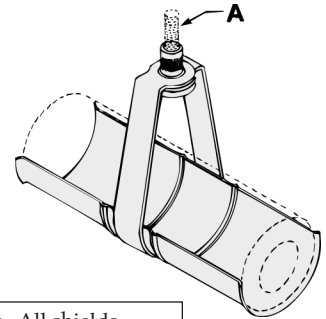
MATERIAL: Low carbon steel

ORDERING: Specify size number and figure number.

Size No.	Rod Size A	Shield I.D.	Shield Length	Shield Gauge	Hanger Size	Wt. Each (in lbs.)
1	3/8	2 3/8	8	18	2	.55
2	1/2	2 5/8	8	18	2 1/2	.80
3	1/2	2 7/8	8	18	2 1/2	.84
4	1/2	3 1/2	8	18	3	.99
5	1/2	4	8	18	3 1/2	1.12
6	5/8	4 1/2	8	18	4	1.26
7	5/8	5	8	18	5	1.58
8	5/8	5 5/8	8	18	5	1.70
9	3/4	6	8	18	6	2.20
10	3/4	6 5/8	8	18	6	2.35
11	3/4	7 5/8	12	18	8	3.40
12	3/4	8 5/8	12	18	8	3.67

Note: To determine proper size consult shield selection guide on page 28.

Fig. 155 ADJUSTABLE SWIVEL RING HANGER WITH SECURED INSULATION SHIELD



Note: All shields furnished with flared ends.

FINISH: Pre-galvanized

FUNCTION: Designed to provide maximum protection to the insulation. The centering ribs are spaced to center the hanger on the shield, providing equal load distribution. The shield is furnished with flared ends to prevent it from cutting into the insulation.

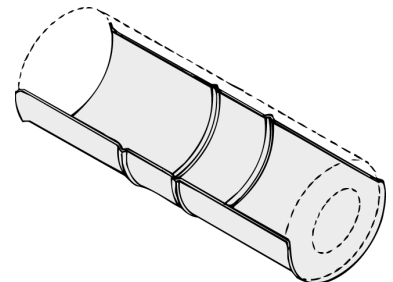
ORDERING: Specify shield number and figure number.

Shield No.	Shield I.D.	Shield Length	Shield Gauge	Use with Hanger Size	Rib Spacing	Wt. Each (in lbs.)
1	2 3/8	8	18	2	1 1/4	.35
2	2 5/8	8	18	2 1/2	1 1/4	.37
3	2 7/8	8	18	2 1/2	1 1/4	.42
4	3 1/2	8	18	3	1 1/4	.56
5	4	8	18	3 1/2	1 1/4	.63
6	4 1/2	8	18	4	1 1/4	.72
7	5	8	18	5	1 1/4	.82
8	5 5/8	8	18	5	1 1/4	.92
9	6	8	18	6	2	.98
10	6 5/8	8	18	6	2	1.08
11	7 5/8	12	18	8	2	2.16
12	8 5/8	12	18	8	2	2.43
13	9 5/8	12	18	10	2	2.73
14	10 3/4	12	18	10	2	3.06
15	11 3/4	12	18	12	2 1/4	3.34
16	12 3/4	12	18	12	2 1/4	3.60
17	14	12	18	14	2 1/4	3.96
18	15	12	18	16	2 3/4	4.23
19	16	12	18	16	2 3/4	4.35
20	17	12	18	18	2 3/4	4.80
21	18	12	18	18	2 3/4	5.08
22	19	12	18	20	3 1/4	5.36
23	20	12	18	20	3 1/4	5.56
24	21	12	18	24	3 1/4	5.90

Note: To determine proper size consult shield selection guide on page 28.

Fig. 160 SELF CENTERING INSULATION SHIELD

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.



Note: All shields furnished with flared ends.

MATERIAL: Low carbon steel

FINISH: Pre-galvanized



SHIELD SELECTION GUIDE

SHIELD SELECTION GUIDE

For Fig. 155, 160, 170 & 455

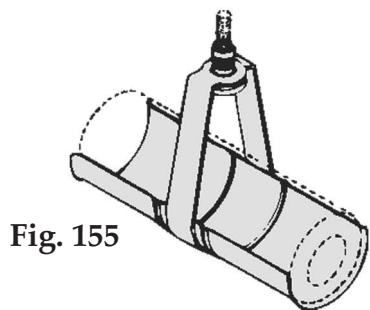


Fig. 155

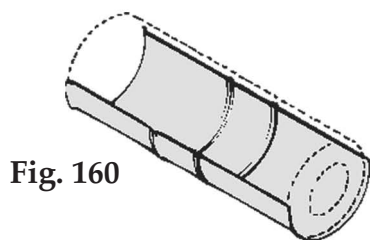


Fig. 160

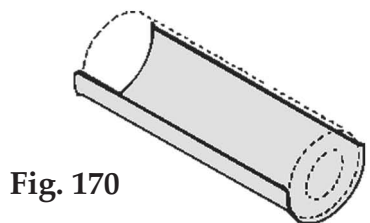


Fig. 170

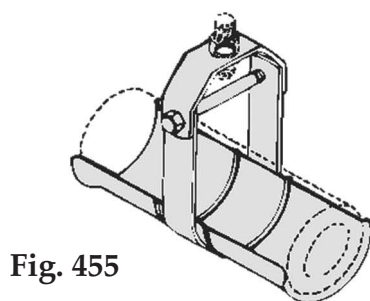


Fig. 455

For Model 170
Specify Shield Type & Shield Number

Shield Type	Length	Gauge
A	12	18
B	12	16
C	18	16
D	24	14
E	24	12

TO DETERMINE PROPER SHIELD SIZE FOR SIZES NOT LISTED:

Add 2 times the thickness of the insulation plus the O.D. of the pipe. Select shield with I.D. no smaller than the sum total of pipe and insulation.

SHIELD NUMBER FOR STEEL PIPE

Pipe Size	Pipe O.D.	Insulation Thickness (inches)								
		1/2	3/4	1	1 1/2	2	2 1/2	3	3 1/2	4
1/2	.840	1	1	3	5	7	9	11	—	—
3/4	1.050	1	2	4	5	7	10	11	—	—
1	1.315	1	3	4	6	8	10	11	12	13
1 1/4	1.660	3	4	5	7	8	10	11	12	13
1 1/2	1.900	3	4	5	7	9	11	12	13	14
2	2.375	4	5	6	8	10	11	12	13	14
2 1/2	2.875	5	6	7	9	11	12	13	14	15
3	3.500	6	7	8	10	11	12	13	14	15
3 1/2	4.000	7	8	9	11	12	13	14	15	16
4	4.500	8	9	10	11	12	13	14	15	16
5	5.563	10	11	11	12	13	14	15	16	17
6	6.625	11	12	12	13	14	15	16	17	18
8	8.626	13	14	14	15	16	17	18	19	20
10	10.750	15	16	16	17	18	19	20	21	22
12	12.750	17	18	18	19	20	21	22	23	24

SHIELD NUMBER FOR COPPER TUBING

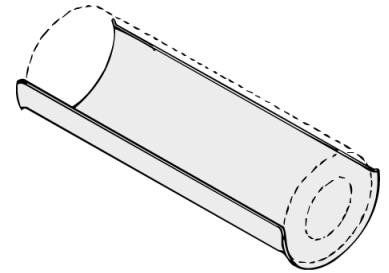
Tube Size	Tube O.D.	Insulation Thickness (inches)						
		1/2	3/4	1	1 1/2	2	2 1/2	3
1/2	.625	1	1	2	5	7	8	10
3/4	.875	1	1	3	5	7	9	11
1	1.125	1	2	4	6	8	10	11
1 1/4	1.375	1	3	4	6	8	10	11
1 1/2	1.625	2	4	5	7	8	10	11
2	2.125	4	5	6	8	10	11	12
2 1/2	2.625	5	6	7	8	10	11	12
3	3.125	6	7	8	10	11	12	13
3 1/2	3.625	7	8	8	10	11	12	13
4	4.125	8	8	10	11	12	13	14
5	5.125	10	10	11	12	13	14	15
6	6.125	11	11	12	13	14	15	16

INSULATION SHIELDS



Shield No.	Shield I.D.	Shield Gauge	Size Length	Hanger Size	Wt. Each (in lbs.)
1A	2 ³ / ₈	18	12	2	.55
2A	2 ⁵ / ₈	18	12	2 ¹ / ₂	.64
3A	2 ⁷ / ₈	18	12	2 ¹ / ₂	.66
4A	3 ¹ / ₂	18	12	3	.89
5A	4	18	12	3 ¹ / ₂	.91
6A	4 ¹ / ₂	18	12	4	1.12
7A	5	18	12	5	1.15
8A	5 ⁵ / ₈	18	12	5	1.35
8B	5 ⁵ / ₈	16	12	5	2.00
9A	6	18	12	6	1.45
9B	6	16	12	6	2.10
10A	6 ⁵ / ₈	18	12	6	1.50
10B	6 ⁵ / ₈	16	12	6	2.37
11A	7 ⁵ / ₈	18	12	8	2.02
11B	7 ⁵ / ₈	16	12	8	2.50
11C	7 ⁵ / ₈	16	18	8	3.75
12A	8 ⁵ / ₈	18	12	8	2.28
12B	8 ⁵ / ₈	16	12	8	2.83
12C	8 ⁵ / ₈	16	18	8	4.25
13A	9 ⁵ / ₈	18	12	10	2.54
13B	9 ⁵ / ₈	16	12	10	3.15
13C	9 ⁵ / ₈	16	18	10	4.73
14A	10 ³ / ₄	18	12	10	2.84
14B	10 ³ / ₄	16	12	10	3.53
14C	10 ³ / ₄	16	18	10	5.30
14D	10 ³ / ₄	14	24	10	9.63
15B	11 ³ / ₄	16	12	12	4.00
15C	11 ³ / ₄	16	18	12	6.00
15D	11 ³ / ₄	14	24	12	10.00
16B	12 ³ / ₄	16	12	12	4.18
16C	12 ³ / ₄	16	18	12	6.28
16D	12 ³ / ₄	14	24	12	10.90
17B	14	16	12	14	4.58
17D	14	14	24	14	12.25
18B	15	16	12	16	4.90
18D	15	14	24	16	13.00
19B	16	16	12	16	5.20
19D	16	14	24	16	13.81
20B	17	16	12	18	5.53
20D	17	14	24	18	14.56
21B	18	16	12	18	6.20
21D	18	14	24	18	15.46
21E	18	12	24	18	21.25
22B	19	16	12	20	6.50
22D	19	14	24	20	16.32
22E	19	12	24	20	22.41
23B	20	16	12	20	7.25
23D	20	14	24	20	17.18
23E	20	12	24	20	24.75
24B	21	16	12	24	7.30
24E	21	12	24	24	24.75
25B	22	16	12	24	7.60
25E	22	12	24	24	25.92
26B	23	16	12	24	7.75
26E	23	12	24	24	26.50
27B	24	16	12	24	8.00
27E	24	12	24	24	27.20
28E	26	12	24	30	28.00
29E	27	12	24	30	30.20
30E	28	12	24	30	32.50

Fig. 170
INSULATION
PROTECTION SHIELD



Note: 12" length shields furnished with flared ends.

FUNCTION: Designed for use in the suspension of insulated pipe lines to protect the insulation from being crushed by the hanger.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 40) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 40).

MATERIAL: Low Carbon Steel

FINISH: Pre-galvanized

ORDERING: Specify shield number and figure number.

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

Note: To determine proper size consult shield selection guide on page 28.

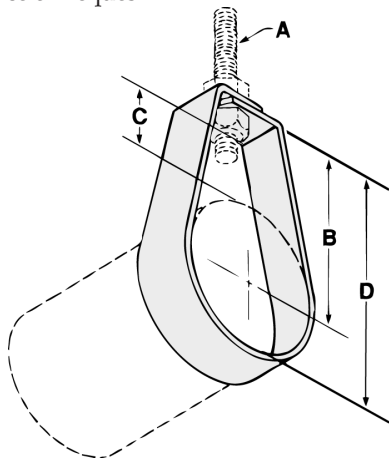


BAND HANGERS

**Fig. 180, 180F, 181 & 183
BAND HANGER**

- Fig. 180*** PLAIN
Fig. 180F* FELT LINED
Fig. 181 ELECTRO-GALVANIZED
Fig. 183 PLAIN WITH
 PVC COATING

*Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number.
 Price on request.



FUNCTION: Designed for the suspension of non-insulated stationary pipe lines. Fig. 180F has a layer of felt which separates the pipe from the hanger to reduce vibration and sound. The PVC coating on Fig. 183 protects the pipe from the metal surface of the hanger.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 7) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 7).

MATERIAL: Low carbon steel

ORDERING: Specify pipe size and figure number.

Pipe Size	Rod Size A	B	Adj. C	D	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	2 1/4	1 3/8	2 11/16	610	.13
3/4	3/8	2 1/8	1 1/8	2 11/16	610	.13
1	3/8	2 1/8	1 1/16	2 13/16	610	.14
1 1/4	3/8	2 5/16	1	3 3/16	610	.16
1 1/2	3/8	2 7/16	1 1/16	3 7/16	610	.18
2	3/8	2 7/8	1 3/16	4 1/16	610	.20
2 1/2	1/2	3 1/8	7/8	4 7/16	970	.37
3	1/2	3 3/4	1 3/8	5 1/2	970	.43
3 1/2	1/2	3 7/8	1 1/4	5 7/8	970	.47
4	1/2	4 1/4	1 3/8	6 1/2	1250	.69
5	1/2	4 13/16	1 1/2	7 5/8	1250	.82
6	3/4	5 15/16	1 11/16	9 1/4	1600	1.50
8	3/4	7 15/16	2 1/2	12 1/4	1800	1.89

Note: Use of an upper locknut ensures proper performance. If ordering felt lined hangers for 3 1/2 pipe or less, order the next largest size to allow for the thickness of the felt lining.

**Fig. 182
COPPER TUBING
BAND HANGER**

FUNCTION: Designed for the suspension of non-insulated stationary copper tubing. When proper adjustment has been obtained, the hanger should be locked in place with an upper locknut.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 7) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 7).

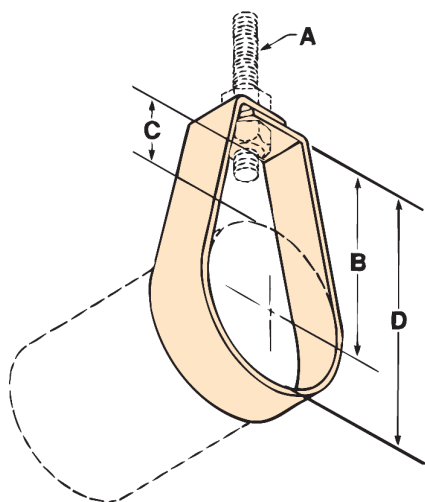
MATERIAL: Low carbon steel

FINISH: Copper color epoxy finish

ORDERING: Specify tube size and figure number.

Tube Size	Rod Size A	B	Adj. C	D	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	2 5/16	1 9/16	2 5/8	610	.12
3/4	3/8	2 1/8	1 1/4	2 9/16	610	.12
1	3/8	2	1	2 9/16	610	.12
1 1/4	3/8	2 1/16	1 5/16	2 13/16	610	.13
1 1/2	3/8	2 5/16	1 1/16	3 1/8	610	.14
2	3/8	2 5/8	1 1/8	3 11/16	610	.16
2 1/2	1/2	3 3/16	1 1/4	4 1/2	610	.28
3	1/2	3 1/2	1 5/16	5	970	.35
3 1/2	1/2	3 13/16	1 3/8	5 9/16	970	.46
4	1/2	4	1 5/16	6 1/16	1130	.54

Note: Use of an upper locknut ensures proper performance.



BEAM CLAMPS



- FUNCTION:** Designed for attaching hanger rod to the bottom flange of a beam. The hanger rod should make contact with the beam flange to ensure full engagement.
- APPROVALS:** Underwriters' Laboratories Listed in the U.S. (UL) for $\frac{3}{8}$ " and $\frac{1}{2}$ " sizes only. Factory Mutual Approved for $\frac{3}{8}$ " rod size only. Complies with Federal Specifications A-A-1192A (Type 23) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 23) (Approvals are only for Fig. 250 with locknut).
- MATERIAL:** Low carbon steel with hardened steel cup point set screw.
- FINISH:** Plain or Electro-galvanized
- ORDERING:** Specify rod size, finish and figure number.

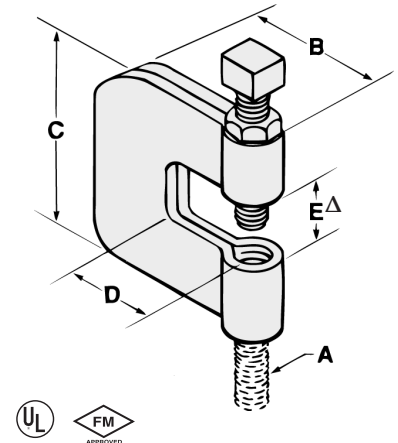
Fig. 250 & 250-1 STEEL C-CLAMP

Fig. 250 WITH LOCKNUT Fig. 250-1 WITHOUT LOCKNUT

*Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

Set Screw Torque						Caution should be taken not to over tighten the set screw	<i>Note: When a torque wrench is unavailable, the setscrew should be tightened so it contacts the I-beam and then an additional 1/4 to 1/2 turn added.</i>		
Nominal Thread Size		3/8	1/2	5/8	3/4				7/8
Rec. Torque	(in lbs.)	60	125	250	400				665

Rod Size A	B	C	D	E ^Δ	Max. Pipe Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)	
							w/o nut	with nut
3/8*	2 1/4	2 3/8	7/8	3/4	4	400	.36	.38
1/2*	2 1/4	2 3/8	7/8	3/4	4	500	.36	.38
5/8*	2 3/8	2 3/8	3/4	3/4	5	550	.63	.68
3/4*	2 1/4	2 3/8	3/4	3/4	6	600	.72	.79
7/8	3 1/4	3	1 1/4	1	8	900	1.65	1.83



Δ Reduced by $\frac{1}{8}$ " when used in conjunction with Fig. 259 retaining strap.

- FUNCTION:** Designed for use with Fig. 250, 250-1, 270 and 270-1 to eliminate possible movement of the beam clamp due to vibration.
- MATERIAL:** Low carbon steel
- FINISH:** Plain or electro-galvanized
- ORDERING:** Specify type number, length, finish and figure number.
- NOTE:** 1 inch should be added to beam flange width to determine length.

Fig. 259 RETAINING STRAP For Fig. 250 & 270

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

Type No.	Wt. Each (in lbs.)						Type No. Selection Chart		
	Length C (inches)						Size	Model No.	
	4½	6	8	10	12	14		250	270
1	.15	.22	.33	.36	.43	.50	3⁄8	1	2
2	.21	.28	.36	.45	.52	.59	1⁄2	1	2
							5⁄8	1	2
							3⁄4	1	2

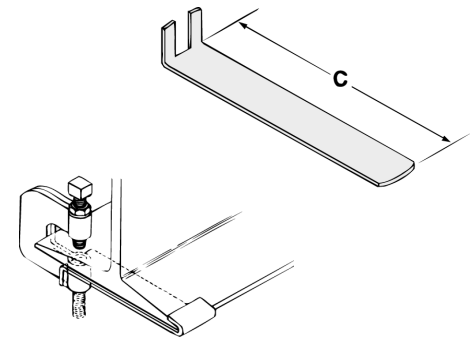
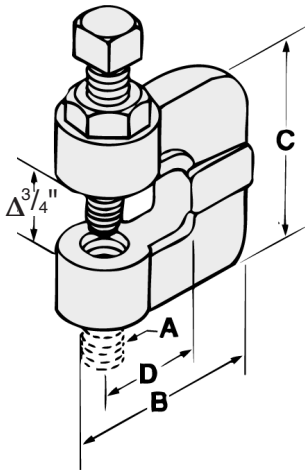


Fig. 270
MALLEABLE IRON
C-CLAMP



FUNCTION: Designed for attaching hanger rod to the bottom flange of a beam. The hanger rod should make contact with the beam flange to ensure full engagement.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 23) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 23).

MATERIAL: Malleable iron with hardened steel cup point set screw and locknut.

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size, finish and figure number.

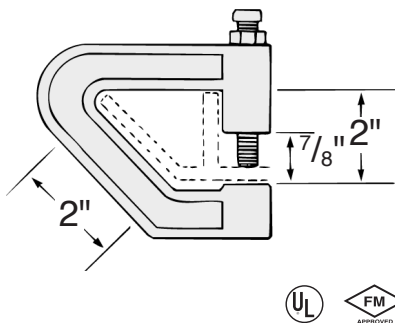
Set Screw Torque			
Nominal Thread Size	3/8	1/2	
Rec. Torque (in lbs.)	60	125	Caution should be taken not to over tighten the set screw

Note: When a torque wrench is unavailable, the setscrew should be tightened so it contacts the I-beam and then an additional 1/4 to 1/2 turn added.

Rod Size A	B	C	D	For Pipe Sizes	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
3/8	1 3/4	1 3/4	5/8	1/2 to 2	400	.33
1/2	1 3/4	1 3/4	5/8	2 1/2 to 3 1/2	400	.39
5/8	2	2	3/4	4 to 5	440	.46
3/4	2	2	3/4	6 & 8	500	.52

Δ Reduced by 1/8" when used in conjunction with Fig. 259 retaining strap.

Fig. 290
PURLIN CLAMP



FUNCTION: Designed for use with large-lip rolled steel purlins to eliminate the need to modify steel purlin for standard C-clamp.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL) and Factory Mutual Approved. Complies with Federal Specifications A-A-1192A (Type 23) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 23).

MATERIAL: Malleable iron with hardened steel cup point set screw and locknut.

FINISH: Plain or Electro-galvanized

ORDERING: Specify figure number.

Set Screw Torque			
Nominal Thread Size	3/8		
Rec. Torque (in lbs.)	60	Caution should be taken not to over tight the set screw	

Note: When a torque wrench is unavailable, the setscrew should be tightened so it contacts the I-beam and then an additional 1/4 to 1/2 turn added.

Rod Size	Max. Pipe Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
3/8	4	400	.82

BEAM CLAMPS



FUNCTION: Designed for attaching hanger rod to the top flange of a beam or bar joist at least $\frac{3}{16}$ inch thick, and where the flange thickness does not exceed $\frac{3}{4}$ inch. The open U design permits rod adjustment.

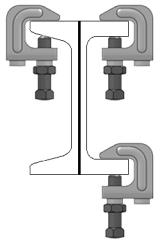
APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL), Canada (CUL), and Factory Mutual Approved. Complies with Federal Specifications A-A-1192A (Type 19) and Manufacturers' Standardization Society ANSI/SP-69 and ANSI/SP-58 (Type 19).

MATERIAL: Low carbon steel with hardened steel cup point set screw and locknut.

Set Screw Torque		
Nominal Thread Size	$\frac{3}{8}$	Caution should be taken not to over tighten the set screw
Rec. Torque (in lbs.)	60	

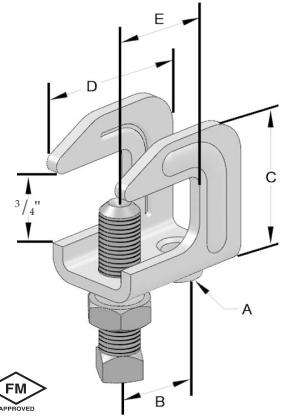
Note: When a torque wrench is unavailable, the setscrew should be tightened so it contacts the I-beam and then an additional $\frac{1}{4}$ to $\frac{1}{2}$ turn added.

Rod Size A	B	C	D	E	Max. Pipe Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$	$\frac{3}{4}$	$1\frac{9}{16}$	$1\frac{1}{2}$	$\frac{9}{16}$	4	610	.20



Note: Set screw must contact the sloped side of the I-beam, channel, or other applicable building structure. Clamp must always be installed in top orientation, with the arrow mark on clamp pointing up. The illustration at left displays the only acceptable installation positions. On parallel flange surfaces, the clamp may be attached to the upper or lower flange but must be in the top orientation as shown.

**Fig. 345
TOP BEAM CLAMP**



FINISH: Pre-galvanized

ORDERING: Specify figure number.

FUNCTION: Designed for use with Fig. 345, Fig. 350, and Fig. 360 to offer more secure fastening of beam clamps to beam where seismic protection is provided.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL) and Canada (CUL) for $\frac{3}{8}$ " and $1\frac{1}{2}$ " rod sizes only. Meets NFPA13 requirements for hangers and fasteners subject to earthquakes.

MATERIAL: Low carbon steel

FINISH: Electro-galvanized

ORDERING: Specify rod size, length, finish and figure number.

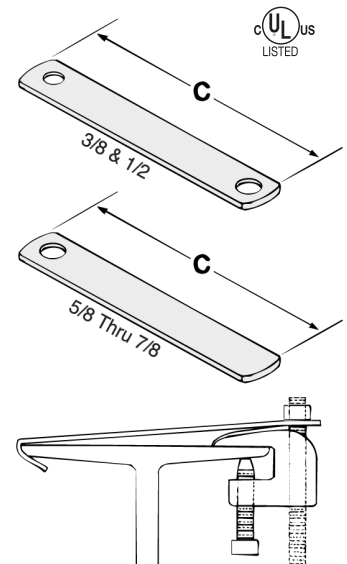
NOTE: 2 inches should be added to beam flange width to determine length.

Rod Size	Wt. Each (in lbs.)					
	Length C (inches)					
	$4\frac{1}{2}$	6	8	10	12	14
$\frac{3}{8}$ & $1\frac{1}{2}$	.09	.12	.15	.21	.22	.29
$\frac{5}{8}$	.19	.25	.34	.42	.50	.59
$\frac{3}{4}$	.19	.25	.33	.41	.49	.57
$\frac{7}{8}$	.28	.37	.50	.62	.75	.87

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

Note: Use jam nut over hanger rod to secure retaining strap.

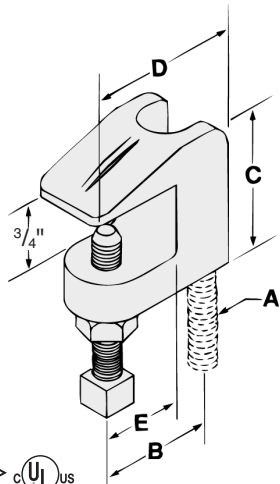
**Fig. 359
RETAINING STRAP
For Fig. 350 & 360**





BEAM CLAMPS

**Fig. 350
IMPORT
BEAM CLAMP**



ORDERING: Specify rod size, finish and figure number.

$\frac{1}{4}$ ", $\frac{3}{8}$ ", and $\frac{1}{2}$ " Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

FUNCTION: Designed for attaching hanger rod to the top flange of a beam or bar joist, where the flange thickness does not exceed $\frac{3}{4}$ inch. The open U design permits rod adjustment.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL), Canada (CUL), for sizes $\frac{1}{2}$ " to $\frac{7}{8}$ " malleable iron only. Factory Mutual Approved for rod size $\frac{1}{2}$ " malleable iron only. Complies with Federal Specifications A-A-1192A (Type 19) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 19). (Approvals are only for Fig. 350 with locknut).

MATERIAL: Malleable iron with hardened steel cup point set screw and locknut.

FINISH: Plain or electro-galvanized

Set Screw Torque			
Nominal Thread Size		$\frac{3}{8}$	$\frac{1}{2}$
Rec. Torque	(in lbs.)	60	125

Caution should be taken not to over tighten the set screw

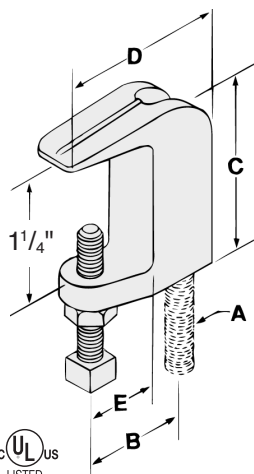
Note: When a torque wrench is unavailable, the setscrew should be tightened so it contacts the I-beam and then an additional $\frac{1}{4}$ to $\frac{1}{2}$ turn added.

Rod Size A	B	C	D	E	Max. Pipe Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{1}{4}$	$\frac{7}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$\frac{1}{2}$	N/A	250	.34
$\frac{3}{8}$	$\frac{7}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$\frac{1}{2}$	4	400	.33
$\frac{1}{2}$	1	$1\frac{1}{2}$	$1\frac{11}{16}$	$\frac{1}{2}$	8	500	.34
$\frac{5}{8}$	$1\frac{1}{16}$	$1\frac{1}{2}$	$1\frac{7}{8}$	$\frac{5}{8}$	8	600	.39
$\frac{3}{4}$	$1\frac{5}{16}$	$1\frac{3}{4}$	$2\frac{3}{8}$	$\frac{5}{8}$	8	800	.63
$\frac{7}{8}$	$1\frac{5}{16}$	$1\frac{3}{4}$	$2\frac{3}{8}$	$\frac{5}{8}$	8	1200	.60

* $\frac{1}{4}$ " Not UL or FM approved.

$\Delta \frac{3}{8}$ " Available in Stainless Steel only, not UL or FM approved. For non stainless steel $\frac{3}{8}$ " rod sizes, see Fig. 345 Steel Top Beam and Fig. 353 Malleable Domestic Beam Clamp.

**Fig. 360
IMPORT WIDE MOUTH
BEAM CLAMP**



ORDERING: Specify rod size, finish and figure number.

FUNCTION: Designed for attaching hanger rod to the top flange of a beam or bar joist, where the flange thickness does not exceed $1\frac{1}{4}$ inches. The open U design permits rod adjustment.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL), Canada (CUL), and Factory Mutual Approved for rod sizes $\frac{3}{8}$ " and $\frac{1}{2}$ " only. Complies with Federal Specifications A-A-1192A (Type 19) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 19). (Approvals are only for Fig. 360 with locknut).

MATERIAL: Malleable iron with hardened steel cup point set screw and locknut.

FINISH: Plain or Electro-galvanized

Set Screw Torque			
Nominal Thread Size		$\frac{3}{8}$	
Rec. Torque	(in lbs.)	60	

Caution should be taken not to over tighten the set screw

Note: When a torque wrench is unavailable, the setscrew should be tightened so it contacts the I-beam and then an additional $\frac{1}{4}$ to $\frac{1}{2}$ turn added.

Rod Size A	B	C	D	E	Max. Pipe Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$	1	$1\frac{7}{8}$	$1\frac{5}{8}$	$\frac{1}{2}$	4	400	.37
$\frac{1}{2}$	1	$1\frac{7}{8}$	$1\frac{5}{8}$	$\frac{1}{2}$	8	500	.35
$\frac{5}{8}$	$1\frac{3}{8}$	$2\frac{5}{16}$	$2\frac{1}{4}$	$\frac{3}{4}$	8	850	.74
$\frac{3}{4}$	$1\frac{1}{2}$	$2\frac{3}{8}$	$2\frac{3}{8}$	$\frac{3}{4}$	8	900	.87

CLEVIS HANGERS



FUNCTION: Designed for the suspension of stationary (A.W.W.A.) ductile iron and cast iron pipe.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 1) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 1).

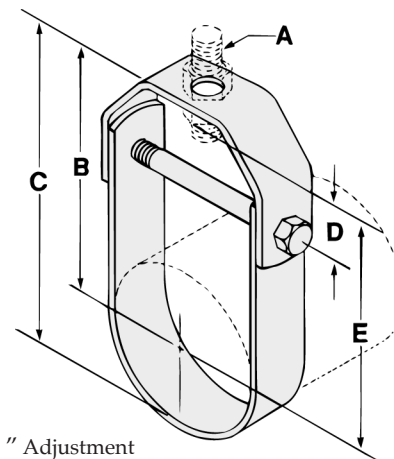
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify A.W.W.A. pipe size and figure number.

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.

Fig. 420
A.W.W.A. CLEVIS
HANGER



"D" Adjustment
(Top of cross bolt to
bottom of hanger rod nut.)

A.W.W.A. Pipe Size	Pipe O.D.	Rod Size A	B	C	Adjustment D	E	Cross Bolt	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
3	3.96	$\frac{1}{2}$	$4\frac{1}{2}$	$6\frac{1}{2}$	$1\frac{1}{4}$	$3\frac{7}{8}$	$\frac{3}{8}$	1350	1.22
4	4.80	$\frac{5}{8}$	$5\frac{3}{4}$	$8\frac{1}{8}$	$1\frac{3}{8}$	$4\frac{5}{8}$	$\frac{3}{8}$	1430	2.08
6	6.90	$\frac{3}{4}$	$6\frac{15}{16}$	$10\frac{3}{8}$	$1\frac{3}{8}$	$5\frac{5}{8}$	$\frac{1}{2}$	1940	2.78
8	9.05	$\frac{3}{4}$	$9\frac{1}{4}$	$13\frac{3}{4}$	$2\frac{1}{2}$	$7\frac{7}{8}$	$\frac{5}{8}$	2000	4.47
10	11.10	$\frac{7}{8}$	$11\frac{1}{8}$	$16\frac{5}{8}$	$2\frac{1}{2}$	$9\frac{5}{8}$	$\frac{3}{4}$	3600	8.87
12	13.20	$\frac{7}{8}$	$12\frac{5}{8}$	$19\frac{1}{4}$	$2\frac{7}{8}$	$11\frac{1}{8}$	$\frac{3}{4}$	3800	12.03
14	15.30	1	$14\frac{1}{8}$	$21\frac{3}{4}$	$3\frac{1}{8}$	$12\frac{3}{8}$	$\frac{7}{8}$	4200	15.15
16	17.40	1	$14\frac{7}{8}$	$23\frac{5}{8}$	$2\frac{3}{4}$	$13\frac{1}{8}$	1	4600	23.61
18	19.50	$1\frac{1}{8}$	$16\frac{1}{2}$	$26\frac{1}{4}$	$3\frac{1}{4}$	$14\frac{5}{8}$	$1\frac{1}{8}$	4800	25.90
20	21.60	$1\frac{1}{4}$	$18\frac{11}{16}$	$29\frac{1}{2}$	$3\frac{5}{8}$	$16\frac{13}{16}$	$1\frac{1}{4}$	4800	44.30
24	25.80	$1\frac{1}{4}$	$21\frac{13}{16}$	$34\frac{3}{4}$	$4\frac{5}{8}$	$19\frac{15}{16}$	$1\frac{1}{4}$	4800	52.45
30	32.00	$1\frac{1}{4}$	$33\frac{1}{2}$	$46\frac{1}{2}$	$6\frac{1}{2}$	$30\frac{3}{8}$	$1\frac{1}{4}$	4800	76.90
36	38.30	$1\frac{1}{2}$	$38\frac{1}{8}$	$53\frac{1}{4}$	$7\frac{1}{4}$	$31\frac{1}{4}$	$1\frac{1}{2}$	7000	202.00

Note: Use of an upper locknut ensures proper performance. For sizes of 10" and larger, a pipe spacer is added over the cross bolt.

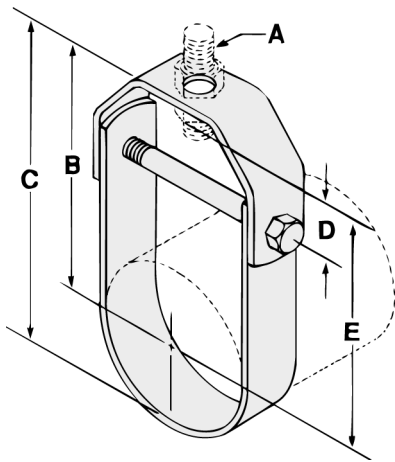


CLEVIS HANGERS

Fig. 425 & 426 STAINLESS STEEL CLEVIS HANGER

Fig. 425 304 Stainless Steel

Fig. 426 316 Stainless Steel



"D" Adjustment
(Top of cross bolt to bottom
of hanger rod nut.)

FUNCTION: Designed for the suspension of non-insulated stationary pipe lines in applications where protection from corrosive environments is desired. Frequently specified for areas requiring the ultimate in sanitation. Another benefit includes a reduction of long term maintenance costs, due to the corrosive resistant properties of stainless steel.

APPROVALS: Complies with Federal Specification A-A-1192A (Type 1) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 1).

MATERIAL: Type 304 or 316 stainless steel clevis, cross bolt and nut.

FINISH: Plain

ORDERING: Specify pipe size, figure number, and type.

Note: When an over-sized clevis is used, a pipe spacer should be placed over the clevis bolt to prevent the lower u-strap from moving inward.

Pipe Size	Rod Size A	B	C	Adjustment D	E	Cross Bolt	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	27/16	27/8	11/8	2	1/4	730	.34
3/4	3/8	25/8	31/8	11/4	23/16	1/4	730	.35
1	3/8	31/16	33/4	15/8	25/8	1/4	730	.41
1 1/4	3/8	33/8	43/16	15/8	215/16	1/4	730	.45
1 1/2	3/8	31/2	47/16	11/2	31/16	1/4	730	.48
2	3/8	33/4	5	15/8	35/16	1/4	730	.53
2 1/2	1/2	37/8	53/8	11/8	31/4	3/8	1350	.97
3	1/2	41/4	6	11/8	35/8	3/8	1350	1.10
3 1/2	1/2	41/2	61/2	11/4	37/8	3/8	1350	1.10
4	5/8	51/2	711/16	13/4	411/16	3/8	1430	1.48
5	5/8	61/8	91/8	17/8	55/16	1/2	1430	1.98
6	3/4	67/8	101/8	15/8	6	1/2	1940	2.67
8	3/4	83/4	127/8	21/8	77/8	5/8	2000	4.48
10	7/8	103/8	153/4	23/8	91/8	3/4	3600	8.22
12	7/8	115/8	18	21/2	101/2	3/4	3800	10.38
14	1	123/4	193/4	25/8	111/4	7/8	4200	12.97
16	1	141/8	221/8	25/8	135/8	1	4600	20.85
18	1 1/8	161/2	251/2	31/2	15	1 1/8	4800	24.75
20	1 1/4	18	28	41/8	161/8	1 1/4	4800	42.45
24	1 1/4	201/4	321/4	43/4	183/8	1 1/4	4800	48.65
30	1 1/4	241/2	387/8	51/2	211/2	1 1/4	6000	69.83
36	1 1/2	32	50	83/4	30	1 1/2	9500	175.00

Note: Use of an upper locknut ensures proper performance. Pipe spacers provided on 30" and larger clevises.

CLEVIS HANGERS



FUNCTION: Designed for the suspension of insulated stationary pipe lines. The elongated design permits the insulation to encompass the hanger, while maintaining a clearance between the insulation and the cross bolt. This allows the installation of the insulation to be more economical due to the fact that less cutting and fitting is required.

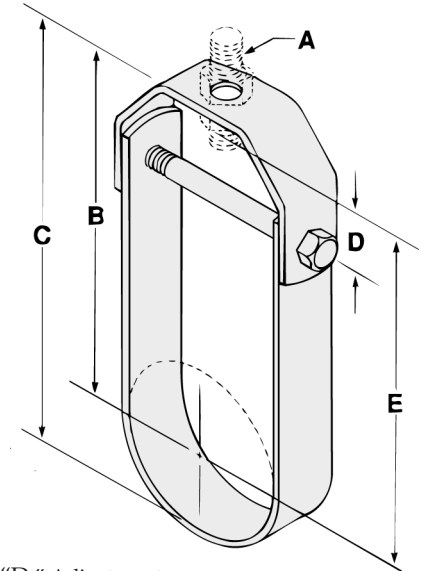
APPROVALS: Complies with Federal Specification A-A-1192A (Type 1) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 1).

MATERIAL: Low carbon steel

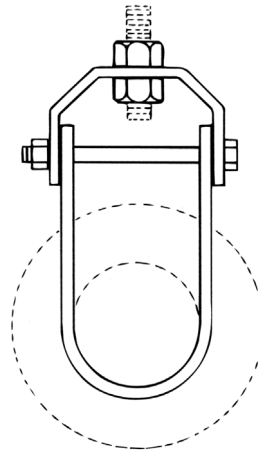
FINISH: Plain

ORDERING: Specify pipe size and figure number. Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

Fig. 430
CLEVIS HANGER
FOR INSULATED
PIPE LINES



"D" Adjustment
(Top of cross bolt to bottom
of hanger rod nut.)



Pipe Size	Rod Size A	B	C	Adjustment D	E	Cross Bolt	Max. Insulation Thickness	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	3 3/4	4 1/4	9/16	3 7/16	1/4	2	730	.47
3/4	3/8	4 1/4	4 7/8	5/8	3 7/8	1/4	2	730	.48
1	3/8	5 1/8	5 3/4	1 5/8	4 11/16	1/4	2	730	.55
1 1/4	3/8	5 5/16	6 1/8	1 5/8	4 7/8	1/4	2	730	.56
1 1/2	3/8	5 7/16	6 3/8	1 1/2	5	1/4	2	730	.61
2	3/8	7 9/16	8 3/4	1 5/8	7 1/8	1/4	4	730	.84
2 1/2	1/2	7 13/16	9 1/4	1 1/8	7 3/16	3/8	4	1350	1.65
3	1/2	8 1/8	9 7/8	1 1/8	7 1/2	3/8	4	1350	1.69
3 1/2	1/2	8 3/8	10 3/8	1 1/4	7 3/4	3/8	4	1350	1.77
4	5/8	9 5/8	11 7/8	1 3/4	8 7/8	3/8	4	1430	2.07
5	5/8	10 5/16	13 1/8	1 7/8	6 13/16	1/2	4	1430	2.99
6	3/4	10 13/16	14 1/8	1 5/8	9 15/16	1/2	4	1940	3.25
8	3/4	12 9/16	16 7/8	2 1/8	11 9/16	5/8	4	2000	4.60
10	7/8	14 1/8	19 1/2	2 5/8	13 3/8	3/4	4	3600	8.97
12	7/8	15 3/4	22 1/8	2 5/8	14 5/8	3/4	4	3800	11.12

Note: Use of an upper locknut ensures proper performance.



CLEVIS HANGERS

Fig. 440, 440F, 441 LIGHT DUTY CLEVIS HANGER

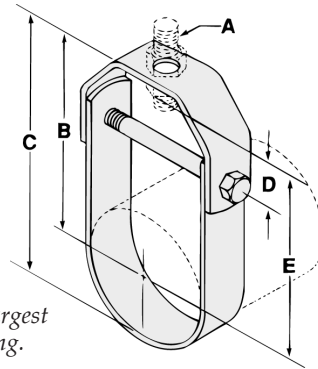
Fig. 440 PLAIN

Fig. 440F PLAIN WITH FELT LINING

Fig. 441 ELECTRO-GALVANIZED

Note: If ordering Fig. 440F felt lined hangers for pipe sizes of 3¹/₂" or under, order the next largest size to allow for the thickness of the felt lining.

Note: Use of an upper locknut ensures proper performance.



FUNCTION: Designed for the suspension of non-insulated stationary pipe lines in light duty applications. Fig. 440F has a layer of felt which helps to reduce sound and vibration.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 1) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 1)

MATERIAL: Low carbon steel

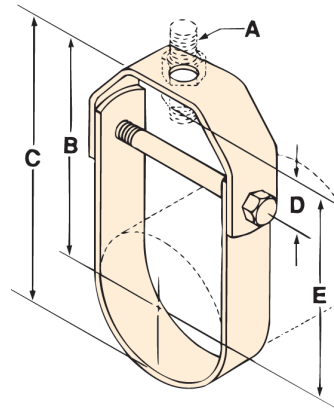
ORDERING: Specify pipe size and figure number.

"D" Adjustment

(Top of cross bolt to bottom of hanger rod nut.)

Pipe Size	Rod Size A	B	C	Adjustment D	E	Cross Bolt	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	2 ⁹ / ₁₆	3	1 ¹ / ₄	2 ³ / ₁₆	1/4	150	.17
3/4	3/8	2 ⁵ / ₈	3 ¹ / ₈	1 ⁵ / ₁₆	2 ¹ / ₄	1/4	250	.22
1	3/8	3 ¹ / ₁₆	3 ³ / ₄	1 ¹¹ / ₁₆	2 ¹¹ / ₁₆	1/4	250	.22
1 ¹ / ₄	3/8	3 ⁵ / ₁₆	4 ¹ / ₈	1 ⁹ / ₁₆	2 ⁷ / ₈	1/4	250	.29
1 ¹ / ₂	3/8	3 ⁷ / ₁₆	4 ³ / ₈	1 ⁹ / ₁₆	3	1/4	250	.30
2	3/8	3 ¹¹ / ₁₆	4 ⁷ / ₈	1 ¹¹ / ₁₆	3 ¹ / ₄	1/4	250	.34
2 ¹ / ₂	1/2	4 ⁹ / ₁₆	6	1 ¹ / ₄	3 ¹ / ₄	3/8	350	.68
3	1/2	4 ⁷ / ₈	6 ⁵ / ₈	1 ¹ / ₄	3 ⁹ / ₁₆	3/8	350	.72
3 ¹ / ₂	1/2	4 ¹ / ₂	6 ¹ / ₂	1 ⁵ / ₁₆	3 ¹⁵ / ₁₆	3/8	350	.84
4	5/8	5 ⁵ / ₈	7 ⁷ / ₈	1 ¹⁵ / ₁₆	5	3/8	400	.97

Fig. 442 COPPER TUBING CLEVIS HANGER



FUNCTION: Designed for the suspension of non-insulated stationary copper tubing.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 1) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 1)

MATERIAL: Low carbon steel

FINISH: Copper Color Epoxy Finish

ORDERING: Specify tube size and figure number.

"D" Adjustment

(Top of cross bolt to bottom of hanger rod nut.)

Note: Use of an upper locknut ensures proper performance.

Tube Size	Rod Size A	B	C	Adjustment D	E	Cross Bolt	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	1 ⁷ / ₈	2 ³ / ₁₆	1/2	1 ¹ / ₈	1/4	150	.12
3/4	3/8	1 ³ / ₄	2 ¹ / ₈	1/2	1	1/4	250	.12
1	3/8	1 ¹³ / ₁₆	2 ⁵ / ₁₆	1/2	1 ¹ / ₁₆	1/4	250	.13
1 ¹ / ₄	3/8	2 ¹ / ₈	2 ³ / ₄	3/4	1 ⁵ / ₁₆	1/4	250	.15
1 ¹ / ₂	3/8	2 ¹ / ₂	3 ¹ / ₄	1 ⁵ / ₁₆	1 ³ / ₄	1/4	250	.17
2	3/8	2 ¹⁵ / ₁₆	4	1 ¹ / ₁₆	2 ³ / ₁₆	1/4	250	.24
2 ¹ / ₂	1/2	3 ⁵ / ₈	4 ¹⁵ / ₁₆	2 ¹ / ₁₆	3 ³ / ₈	1/4	350	.69
3	1/2	3 ¹⁵ / ₁₆	5 ¹ / ₂	2	3 ⁷ / ₁₆	1/4	350	.77
3 ¹ / ₂	1/2	4 ³ / ₄	6 ¹ / ₈	1 ¹³ / ₁₆	3 ¹¹ / ₁₆	1/4	350	.89
4	1/2	4 ⁹ / ₁₆	6 ⁵ / ₈	2 ⁹ / ₁₆	4 ³ / ₄	5/16	400	.91
5	5/8	5 ⁵ / ₁₆	7 ⁷ / ₈	1 ⁵ / ₈	4 ³ / ₄	3/8	550	1.90
6	5/8	5 ¹⁵ / ₁₆	9	1 ¹ / ₂	4 ³ / ₄	3/8	550	2.20

CLEVIS HANGERS



FUNCTION: Designed for the suspension of non-insulated stationary pipe lines. Fig. 450F has a layer of felt which separates the pipe from the hanger to reduce vibration and sound. The PVC coating on Fig. 453 protects the pipe from the metal surface of the hanger.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL) and Factory Mutual Approved for 2 1/2" to 8" only. Complies with Federal Specifications A-A-1192A (Type 1) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 1).

MATERIAL: Low carbon steel

ORDERING: Specify pipe size and figure number.

Note: When an over-sized clevis is used, a pipe spacer should be placed over the clevis bolt to prevent the lower U-strap from moving inward.

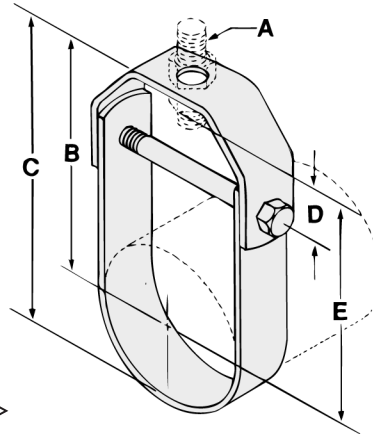


Fig. 450, 450F, 451, 453 & 454 STANDARD CLEVIS HANGER

Fig. 450 PLAIN

Fig. 450F PLAIN WITH FELT LINING

Fig. 451 ELECTRO-GALVANIZED

Fig. 451F ELECTRO-GALVANIZED
WITH FELT LINING

Fig. 453 PLAIN WITH PVC COATING

Fig. 454 HOT DIPPED GALVANIZED
W/ELECTRO-GALVANIZED
HARDWARE

"D" Adjustment
(Top of cross bolt to bot-
tom of hanger rod nut.)

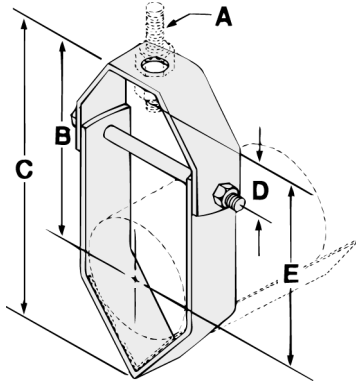
Pipe Size	Rod Size A	B	C	Adjustment D	E	Cross Bolt	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	2 7/16	2 7/8	1 1/8	2	1/4	730	.24
3/4	3/8	2 5/8	3 1/8	1 1/4	2 3/16	1/4	730	.24
1	3/8	3 1/16	3 3/4	1 5/8	2 5/8	1/4	730	.28
1 1/4	3/8	3 3/8	4 3/16	1 5/8	2 15/16	1/4	730	.32
1 1/2	3/8	3 1/2	4 7/16	1 1/2	3 1/16	1/4	730	.40
2	3/8	3 3/4	5	1 5/8	3 5/16	1/4	730	.52
2 1/2	1/2	4 5/8	6 1/16	2	4 1/16	3/8	1350	.72
3	1/2	4 7/8	6 5/8	1 13/16	4 1/4	3/8	1350	.78
3 1/2	1/2	4 1/2	6 1/2	1 1/4	3 7/8	3/8	1350	1.16
4	5/8	5 1/2	7 11/16	1 3/4	4 11/16	3/8	1430	1.35
5	5/8	6 1/8	9 1/8	1 7/8	5 5/16	1/2	1430	1.88
6	3/4	6 7/8	10 1/8	1 5/8	6	1/2	1940	2.76
8	3/4	8 3/4	12 7/8	2 1/8	7 7/8	5/8	2000	4.35
10	7/8	10 3/8	15 3/4	2 3/8	9 1/8	3/4	3600	8.22
12	7/8	11 5/8	18	2 1/2	10 1/2	3/4	3800	10.05
14	1	12 3/4	19 3/4	2 5/8	11 1/4	7/8	4200	12.97
16	1	14 1/8	22 1/8	2 5/8	13 5/8	1	4600	20.85
18	1 1/8	16 1/2	25 1/2	3 1/2	15	1 1/8	4800	24.75
20	1 1/4	18	28	4 1/8	16 1/8	1 1/4	4800	42.45
24	1 1/4	20 1/4	32 1/4	4 3/4	18 3/8	1 1/4	4800	48.65
30	1 1/4	24 1/2	38 7/8	5 1/2	21 1/2	1 1/4	6000	69.83
36	1 1/2	32	50	8 3/4	30	1 1/2	9500	175.00

Note: Use of an upper locknut ensures proper performance. Pipe spacers provided on 30" and larger clevises. If ordering Fig. 450F felt lined hangers for pipe sizes of 3 1/2" or under, order the next largest size to allow for the thickness of the felt lining.



CLEVIS HANGERS

**Fig. 450V
PLASTIC PIPE
CLEVIS HANGER**



FUNCTION: Designed for the suspension of flexible plastic pipe lines. Used in conjunction with Fig. 450T.

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify size number and figure number.

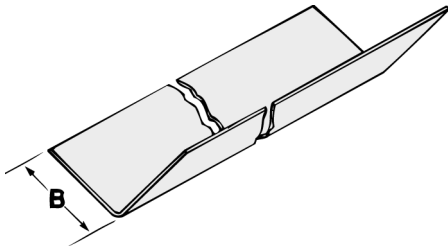
Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.

"D" Adjustment
(Top of cross bolt to bot-
tom of hanger rod nut.)

Size No.	Pipe Size	Rod Size A	B	C	Adj. D	E	Cross Bolt	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1	1/2	3/8	4 ³ / ₄	5 ¹ / ₂	1 ⁵ / ₈	4 ⁵ / ₁₆	1/4	150	.38
1	3/4	3/8	4 ⁹ / ₁₆	5 ¹ / ₂	1 ⁵ / ₈	4 ¹ / ₈	1/4	150	.38
1	1	3/8	4 ³ / ₈	5 ¹ / ₂	1 ⁵ / ₈	3 ¹⁵ / ₁₆	1/4	150	.38
1	1 ¹ / ₄	3/8	4 ¹ / ₈	5 ¹ / ₂	1 ⁵ / ₈	3 ¹¹ / ₁₆	1/4	150	.38
1	1 ¹ / ₂	3/8	4	5 ¹ / ₂	1 ⁵ / ₈	3 ⁹ / ₁₆	1/4	150	.38
1	2	3/8	3 ¹¹ / ₁₆	5 ¹ / ₂	1 ⁵ / ₈	3 ¹ / ₄	1/4	150	.38
2	2 ¹ / ₂	5/8	6 ⁵ / ₈	8 ³ / ₄	1 ³ / ₄	5 ¹³ / ₁₆	3/8	150	1.15
2	3	5/8	6 ³ / ₁₆	8 ³ / ₄	1 ³ / ₄	5 ³ / ₈	3/8	150	1.15
2	3 ¹ / ₂	5/8	5 ¹³ / ₁₆	8 ³ / ₄	1 ³ / ₄	5	3/8	150	1.15
2	4	5/8	5 ⁷ / ₁₆	8 ³ / ₄	1 ³ / ₄	4 ⁵ / ₈	3/8	150	1.15

Note: Use of an upper locknut ensures proper performance.

**Fig. 450T
PLASTIC PIPE
SUPPORT TROUGH**



FUNCTION: Designed for use with Fig. 450V as a support for plastic or other flexible pipe systems. Hangers should be placed as close to the trough joints as possible.

MATERIAL: Low carbon steel

FINISH: Pre-galvanized

ORDERING: Specify size number and figure number.

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.

Size No.	For Pipe Sizes	B	Steel Gauge	Trough Length	Max. Rec. Load/lbs.	Wt. (per ft.)
1	1/2 - 2	1 ¹ / ₂	18 ga.	10 ft.	150	.54
2	2 ¹ / ₂ - 4	3	18 ga.	10 ft.	150	1.08

CLEVIS HANGERS



FUNCTION: Designed for the suspension of stationary insulated pipe lines. Fig. 455 is a combination of our Fig. 160 shield welded to a Fig. 450 clevis hanger which ensures that the shield will be installed in conjunction with the hanger. The shield is furnished with flared ends to prevent it from cutting into the insulation.

MATERIAL: Low carbon steel

FINISH: Plain or electro-galvanized low carbon steel clevis with pre-galvanized shield

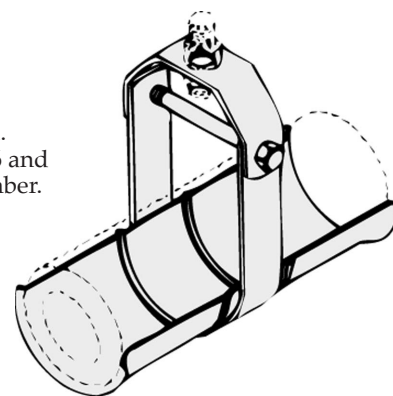
ORDERING: Specify size number and figure number.

Fig. 455 & 456 CLEVIS WITH SECURED INSULATION SHIELD

Fig. 455* PLAIN WITH PRE-GALVANIZED SHIELD

Fig. 456 ELECTRO-GALVANIZED WITH PRE-GALVANIZED SHIELD

*Available in stainless steel.
To order, specify 304 or 316 and
add suffix SS to figure number.
Price on request.



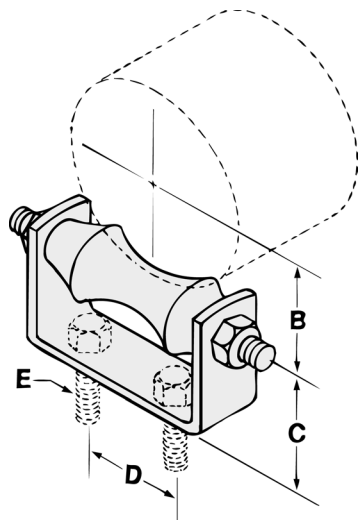
Size No.	Rod Size A	Shield I.D.	Shield Length	Shield Gauge	Hanger Size	Wt. Each (in lbs.)
1	$\frac{3}{8}$	$2\frac{3}{8}$	8	18	2	.95
2	$\frac{1}{2}$	$2\frac{5}{8}$	8	18	$2\frac{1}{2}$	1.50
3	$\frac{1}{2}$	$2\frac{7}{8}$	8	18	$2\frac{1}{2}$	1.54
4	$\frac{1}{2}$	$3\frac{1}{2}$	8	18	3	1.62
5	$\frac{1}{2}$	4	8	18	$3\frac{1}{2}$	1.95
6	$\frac{5}{8}$	$4\frac{1}{2}$	8	18	4	2.38
7	$\frac{5}{8}$	5	8	18	5	2.98
8	$\frac{5}{8}$	$5\frac{5}{8}$	8	18	5	3.10
9	$\frac{3}{4}$	6	8	18	6	3.77
10	$\frac{3}{4}$	$6\frac{5}{8}$	8	18	6	3.92
11	$\frac{3}{4}$	$7\frac{5}{8}$	12	18	8	6.33
12	$\frac{3}{4}$	$8\frac{5}{8}$	12	18	8	6.66
13	$\frac{7}{8}$	$9\frac{5}{8}$	12	18	10	10.84
14	$\frac{7}{8}$	$10\frac{3}{4}$	12	18	10	11.17
15	$\frac{7}{8}$	$11\frac{3}{4}$	12	18	12	13.39
16	$\frac{7}{8}$	$12\frac{3}{4}$	12	18	12	13.65
17	1	14	12	18	14	16.93
18	1	15	12	18	16	25.08
19	1	16	12	18	16	25.20
20	$1\frac{1}{8}$	17	12	18	18	29.55
21	$1\frac{1}{8}$	18	12	18	18	29.83
22	$1\frac{1}{4}$	19	12	18	20	47.81
24	$1\frac{1}{4}$	21	12	18	24	53.73

Note: To determine proper size, consult shield selection guide on page 28. Use of an upper locknut ensures proper performance.



PIPE ROLLER SUPPORTS

Fig. 460
PIPE ROLLER CHAIR



FUNCTION: Designed for supporting pipe in applications where horizontal movement, due to expansion and contraction, will occur but vertical adjustment is not necessary. The chair can be welded directly to the steel structure or secured in place through bolt holes.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 44) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 44).

MATERIAL: Cast iron pipe roller with low carbon steel chair, axle and hex nuts.

FINISH: Plain or Electro-galvanized

SIZING: Pipe roller size shown is for bare pipe. For proper sizing with insulation, refer to pipe roller selection guide on page 49, which is for use with pipe covering protection saddles.

ORDERING: Specify pipe roller size and figure number. Order mounting bolts separately.

"B" Center of axle
to center of pipe

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.

Pipe Roller Size	B	C	D	Recommended Bolt Size (Not Included) E	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
2	1 ⁵ / ₈	1 ¹ / ₂	1 ¹ / ₄	³ / ₈ X 1 ¹ / ₂	300	.90
2 ¹ / ₂	2	1 ⁵ / ₈	1 ¹ / ₄	³ / ₈ X 1 ¹ / ₂	600	1.19
3	2 ¹ / ₄	1 ³ / ₄	2	³ / ₈ X 1 ¹ / ₂	600	1.48
3 ¹ / ₂	2 ⁵ / ₈	2	2	³ / ₈ X 1 ¹ / ₂	600	2.44
4	2 ³ / ₄	2 ¹ / ₄	2	¹ / ₂ X 1 ¹ / ₂	700	2.85
5	3 ¹ / ₂	2 ¹ / ₂	3	¹ / ₂ X 1 ¹ / ₂	700	3.75
6	4	2 ³ / ₄	3 ¹ / ₄	¹ / ₂ X 1 ¹ / ₂	1000	5.76
8	5 ¹ / ₈	3	3 ³ / ₈	⁵ / ₈ X 1 ¹ / ₂	1300	8.10
10	6 ³ / ₈	3 ⁵ / ₈	5 ¹ / ₄	⁵ / ₈ X 2	1700	12.28
12	7 ¹ / ₂	4 ¹ / ₈	5 ¹ / ₂	⁵ / ₈ X 2	2300	20.54
14	8 ³ / ₈	4 ¹¹ / ₁₆	6 ¹ / ₂	³ / ₄ X 2	3100	25.63
16	9 ¹ / ₂	5 ³ / ₈	8 ¹ / ₄	³ / ₄ X 2 ¹ / ₂	3900	37.38
18	10 ¹ / ₂	6	9 ¹ / ₄	³ / ₄ X 2 ¹ / ₂	4200	45.26
20	11 ⁵ / ₈	6 ³ / ₈	10 ³ / ₈	³ / ₄ X 2 ¹ / ₂	4500	52.35
24	14	7 ¹ / ₄	12 ¹ / ₄	⁷ / ₈ X 3 ¹ / ₂	6000	88.00

PIPE ROLLER SUPPORTS



FUNCTION: Designed for suspending pipe in applications where horizontal movement, due to expansion and contraction, will occur and vertical adjustment is necessary. The knurled insert provided with Fig. 475 allows easier vertical adjustment.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 43) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 43).

MATERIAL: Cast iron pipe roller with low carbon steel frame, axle and hex nuts.

FINISH: Plain or Electro-galvanized

SIZING: Pipe roller size is for bare pipe. For proper sizing with insulation, refer to pipe roller selection guide on page 49, which is for use with pipe covering protection saddles.

ORDERING: Specify pipe roller size and figure number.

Fig. 470 & 475 PIPE ROLLER HANGER

Fig. 470* WITHOUT SWIVEL

Fig. 475 WITH ADJUSTING SWIVEL

*Available in stainless steel.

To order, specify 304 or 316 and add suffix SS to figure number.

Price on request.

Fig. 475
Available
up to 8"
Pipe
Roller Size

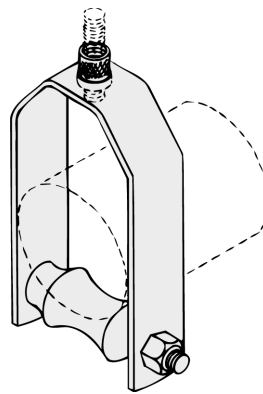


Fig. 475

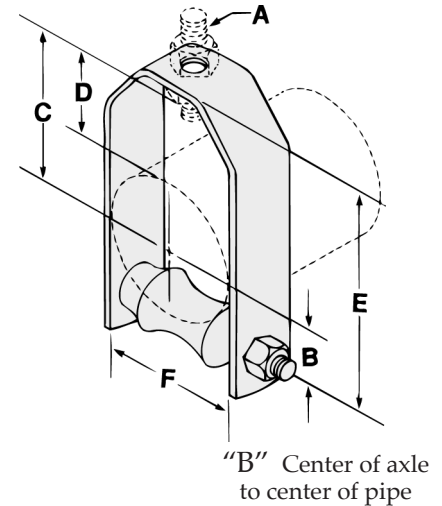


Fig. 470

Pipe Roller Size	Rod Size A	B	C	Adjustment D	E	F	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
2	$\frac{3}{8}$	$1\frac{5}{8}$	$2\frac{5}{8}$	$1\frac{1}{16}$	$4\frac{3}{8}$	3	150	1.05
2 $\frac{1}{2}$	$\frac{1}{2}$	2	$2\frac{3}{8}$	$1\frac{3}{16}$	5	3 $\frac{1}{4}$	225	1.29
3	$\frac{1}{2}$	2 $\frac{1}{4}$	3 $\frac{1}{2}$	1 $\frac{3}{4}$	$6\frac{3}{8}$	3 $\frac{7}{8}$	310	1.56
3 $\frac{1}{2}$	$\frac{1}{2}$	$2\frac{5}{8}$	3 $\frac{3}{4}$	1 $\frac{3}{4}$	7	$4\frac{3}{8}$	390	1.83
4	$\frac{5}{8}$	$2\frac{3}{4}$	3 $\frac{15}{16}$	1 $\frac{11}{16}$	7 $\frac{1}{2}$	5	475	2.81
5	$\frac{5}{8}$	3 $\frac{1}{2}$	$4\frac{5}{16}$	1 $\frac{9}{16}$	$8\frac{5}{8}$	6	685	4.42
6	$\frac{3}{4}$	4	$5\frac{3}{8}$	2 $\frac{1}{16}$	10 $\frac{1}{4}$	7 $\frac{1}{8}$	780	5.98
8	$\frac{3}{4}$	$5\frac{1}{8}$	6 $\frac{1}{2}$	2 $\frac{3}{16}$	12 $\frac{3}{4}$	9 $\frac{1}{4}$	780	11.42
10	$\frac{7}{8}$	$6\frac{3}{8}$	7 $\frac{3}{8}$	2	15	11 $\frac{1}{4}$	965	17.36
12	$\frac{7}{8}$	7 $\frac{1}{2}$	8 $\frac{3}{4}$	2 $\frac{3}{8}$	17 $\frac{3}{8}$	13 $\frac{1}{4}$	1200	24.62
14	1	8 $\frac{3}{8}$	9	2	18 $\frac{7}{8}$	14 $\frac{3}{4}$	1200	36.00
16	1	9 $\frac{1}{2}$	9 $\frac{3}{4}$	1 $\frac{3}{4}$	20 $\frac{3}{4}$	16 $\frac{7}{8}$	1200	44.00
18	1	10 $\frac{1}{2}$	11 $\frac{3}{4}$	2 $\frac{3}{4}$	23 $\frac{3}{4}$	18 $\frac{7}{8}$	1400	54.00
20	1 $\frac{1}{4}$	11 $\frac{5}{8}$	12 $\frac{1}{2}$	2 $\frac{1}{2}$	26	20 $\frac{7}{8}$	1600	74.00
24	1 $\frac{1}{2}$	13 $\frac{13}{16}$	16 $\frac{1}{2}$	4 $\frac{1}{2}$	31	25	1600	126.00

Note: For Fig. 470 use of an upper locknut ensures proper performance.



PIPE ROLLER SUPPORTS

Fig. 480 & 480D ADJUSTABLE PIPE ROLLER SUPPORT

Fig. 480 SINGLE PIPE ROLLER
Fig. 480D DOUBLE PIPE ROLLER

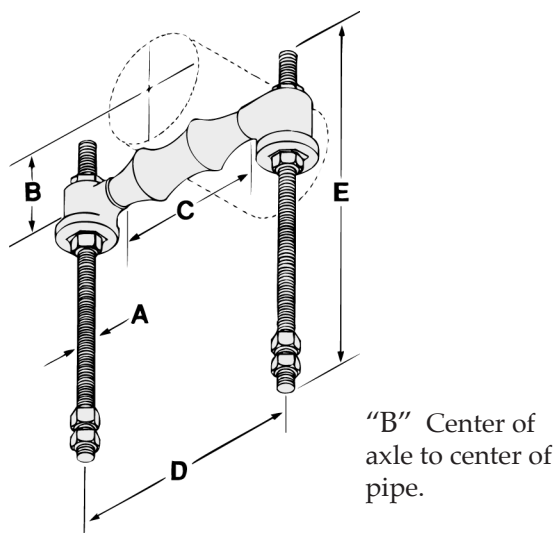


Fig. 480

FUNCTION: Designed to support pipe in applications where horizontal movement, due to expansion and contraction, will occur and a vertical adjustment of up to 6 inches may be required. Fig. 480D is designed for supporting and guiding pipe where longitudinal movement and vertical adjustment are required.

APPROVALS: Fig. 480 only, complies with Federal Specifications A-A-1192A (Type 41) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 41).

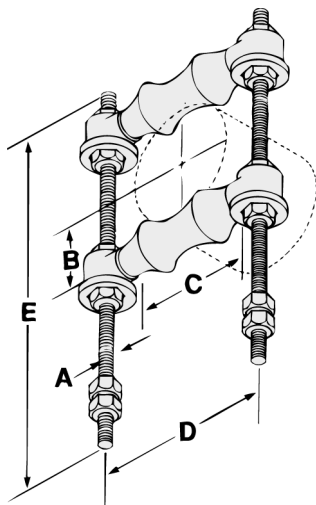


Fig. 480D

MATERIAL: Cast iron pipe roller and sockets with low carbon steel rods, axles and hex nuts.

FINISH: Plain or Electro-galvanized

SIZING: Pipe roller size shown is for bare pipe. For proper sizing with insulation, refer to pipe roller selection guide on page 49, which is for use with pipe covering protection saddles.

ORDERING: Specify pipe roller size and figure number. Shipped with rods and nuts unassembled.

Pipe Roller Size	Rod Size A	B*	C	D	E		Max. Rec. Load/lbs.	Wt. Each (in lbs.)	
					480	480D		480	480D
1	3/8	1	1 1/2	3	7 1/4	—	600	1.08	—
1 1/4	3/8	1 1/4	1 7/8	3 1/2	7 1/4	—	600	1.17	—
1 1/2	3/8	1 3/8	2 1/8	3 5/8	7 1/4	—	600	1.20	—
2	3/8	1 5/8	2 7/8	4 1/2	7 1/4	12	600	1.25	3.23
2 1/2	1/2	2	3 1/8	5 1/16	8	14	600	2.25	4.65
3	1/2	2 1/4	3 3/4	5 9/16	8	14	700	2.36	5.01
3 1/2	1/2	2 5/8	4 1/4	6 1/16	8	14	750	2.60	5.25
4	5/8	2 3/4	4 3/4	6 3/4	9	18	750	3.65	7.57
5	5/8	3 1/2	5 3/4	8 3/8	9	18	750	4.59	8.72
6	3/4	4	6 7/8	9 7/8	10	24	1070	7.50	16.87
8	7/8	5 1/8	8 7/8	12	10	24	1350	11.00	22.77
10	7/8	6 3/8	11	14	11	30	1730	13.68	28.30
12	7/8	7 1/2	13	16 1/2	11	30	2400	19.30	38.17
14	1	8 3/8	14 3/8	17 3/4	12	36	3130	31.20	64.13
16	1	9 1/2	16 3/8	20 3/4	18	—	3970	42.40	—
18	1	10 1/2	18 3/8	22 3/8	18	—	4200	46.55	—
20	1 1/4	11 5/8	20 3/8	24 1/2	18	—	4550	66.00	—
24	1 1/2	14	24 3/8	28 13/16	24	—	6160	102.50	—
30	1 1/2	17 1/2	30 3/8	35	24	—	7290	186.80	—

*Due to the inconsistent dimensions associated with cast parts, please contact the factory if the "B" dimension is critical for installation.

PIPE ROLLER SUPPORTS



FUNCTION: Designed to support pipe in applications where horizontal movement, due to expansion and contraction, will occur and a vertical adjustment is required. The roller assembly is attached by means of the threaded support rods and locked in place after correct alignment with the hex nuts provided.

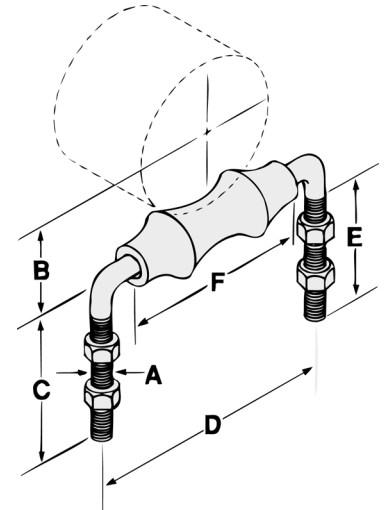
MATERIAL: Cast iron pipe roller with low carbon steel rod with four hex nuts.

FINISH: Plain or Electro-galvanized

SIZING: Pipe roller size shown is for bare pipe. For proper sizing with insulation, refer to pipe roller selection guide on page 49, which is for use with pipe covering protection saddles.

ORDERING: Specify pipe roller size and figure number.

Fig. 483
ADJUSTABLE PIPE
ROLLER SUPPORT



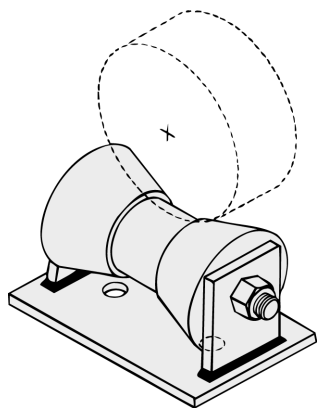
"B" Center of axle to center of pipe.

Pipe Roller Size	Rod Size A	B	C	D	E	F	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
2	$\frac{3}{8}$	$1\frac{5}{8}$	$4\frac{1}{4}$	$4\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{7}{8}$	450	.56
$2\frac{1}{2}$	$\frac{1}{2}$	2	$4\frac{1}{2}$	$4\frac{3}{8}$	$3\frac{1}{2}$	$3\frac{1}{8}$	450	.93
3	$\frac{1}{2}$	$2\frac{1}{4}$	$4\frac{1}{2}$	$5\frac{1}{8}$	$3\frac{1}{2}$	$3\frac{3}{4}$	450	1.01
$3\frac{1}{2}$	$\frac{1}{2}$	$2\frac{5}{8}$	$4\frac{1}{2}$	$5\frac{7}{8}$	$3\frac{1}{2}$	$4\frac{1}{4}$	450	1.26
4	$\frac{1}{2}$	$2\frac{3}{4}$	$4\frac{1}{2}$	$6\frac{3}{4}$	$3\frac{1}{2}$	$4\frac{3}{4}$	560	1.32
5	$\frac{5}{8}$	$3\frac{1}{2}$	$4\frac{1}{2}$	$7\frac{1}{2}$	$3\frac{1}{2}$	$5\frac{3}{4}$	560	2.39
6	$\frac{3}{4}$	4	$4\frac{1}{2}$	$8\frac{1}{2}$	$3\frac{1}{2}$	$6\frac{7}{8}$	780	3.56
8	$\frac{7}{8}$	$5\frac{1}{8}$	$5\frac{3}{4}$	11	4	$8\frac{7}{8}$	1800	5.88
10	$\frac{7}{8}$	$6\frac{3}{8}$	$5\frac{1}{4}$	$13\frac{1}{2}$	4	11	1800	9.23
12	1	$7\frac{1}{2}$	6	$15\frac{1}{4}$	5	13	1800	12.97
14	$1\frac{1}{8}$	$8\frac{3}{8}$	7	$17\frac{1}{2}$	$5\frac{1}{2}$	$14\frac{3}{8}$	3075	22.46
16	$1\frac{1}{4}$	$9\frac{1}{2}$	8	20	6	$16\frac{3}{8}$	3075	28.35



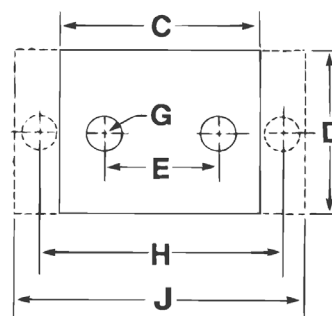
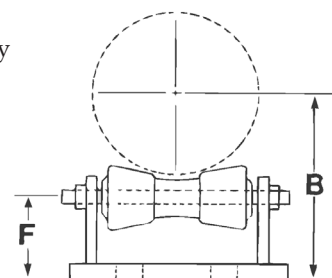
PIPE ROLLER SUPPORTS

Fig. 486
PIPE ROLLER STAND



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

- FUNCTION:** Designed to support pipe in applications where horizontal movement, due to expansion and contraction, will occur.
- APPROVALS:** Complies with Federal Specifications A-A-1192A (Type 44) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 44).
- MATERIAL:** Cast iron pipe roller with low carbon steel stand and axle.
- FINISH:** Plain or Electro-galvanized
- SIZING:** Pipe roller size shown is for bare pipe. For proper sizing with insulation, refer to pipe roller selection guide on page 49, which is for use with pipe covering protection saddles. The two cored holes "G" on roller sizes 2 thru 6 are on the outside of the stand.
- ORDERING:** Specify pipe roller size and figure number.



Pipe Roller Size	B	C	D	E	F	G	H	J	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
2	3 ¹ / ₂									
2 ¹ / ₂	3 ⁷ / ₈	—	6	—	1 ³ / ₄	1	6 ³ / ₈	8 ³ / ₈	390	4.48
3	4 ¹ / ₈									
3 ¹ / ₂	4 ³ / ₈									
4	4 ¹³ / ₁₆									
5	5 ⁷ / ₁₆	—	6	—	2 ¹ / ₁₆	1	7 ⁷ / ₈	9 ⁷ / ₈	950	6.85
6	6 ¹ / ₁₆									
8	8 ¹¹ / ₁₆	8 ⁵ / ₈	7	4 ¹ / ₈	3 ⁷ / ₁₆	1	—	—	2100	14.09
10	9 ¹³ / ₁₆									
12	11 ³ / ₈	10 ⁷ / ₈	8	5 ¹³ / ₁₆	3 ⁷ / ₈	1	—	—	3075	22.09
14	12									
16	13 ⁵ / ₈									
18	14 ⁵ / ₈	12 ¹ / ₂	9	6 ⁷ / ₈	4 ¹ / ₄	1	—	—	4980	32.00
20	15 ⁵ / ₈									
24	17 ³ / ₄	13 ¹ / ₂	9	7 ⁵ / ₈	4 ³ / ₈	1	—	—	6100	41.43
30	21 ⁷ / ₈	17	12	10	5 ¹ / ₈	1	—	—	7500	80.00
36	25 ³ / ₄	20	12	12	5 ³ / ₄	1	—	—	12000	125.00
42	28 ⁷ / ₈									

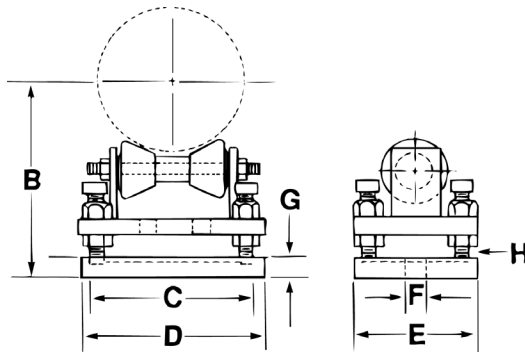
PIPE ROLLER SUPPORTS



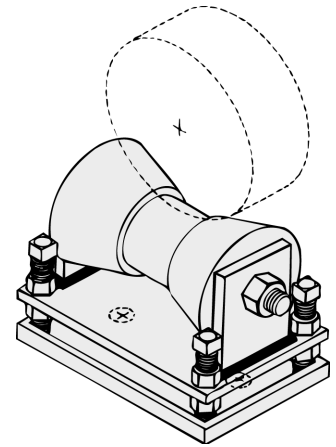
- FUNCTION:** Designed to support pipe in applications where horizontal movement, due to expansion and contraction, will occur and vertical adjustment is required.
- APPROVALS:** Complies with Federal Specifications A-A-1192A (Type 46) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 46).
- MATERIAL:** Cast iron pipe roller and base with low carbon steel stand, axle and adjusting screws with locknuts.
- FINISH:** Plain or Electro-galvanized
- SIZING:** Pipe roller size shown is for bare pipe. For proper sizing with insulation, refer to pipe roller selection guide on page 49, which is for use with pipe covering protection saddles.
- ORDERING:** Specify pipe roller size and figure number.

Fig. 487
ADJUSTABLE PIPE
ROLLER STAND
WITH BASE

Note: Refer to Fig. 486 for measurements of roller stand.



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.



Pipe Roller Size	B		C	D	E	Hole Size F	G	Bolt Size H	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
	Min.	Max.								
2	5 ¹ / ₈	5 ³ / ₈	3 ⁷ / ₈	7	5 ¹ / ₂	1	1	5 ⁵ / ₈	390	12.03
2 ¹ / ₂	5 ³ / ₈	5 ⁵ / ₈								
3	5 ³ / ₄	6								
3 ¹ / ₂	6	6 ¹ / ₄								
4	6 ¹ / ₂	7	5 ¹ / ₈	8 ³ / ₈	5 ³ / ₄	1	1	5 ⁵ / ₈	950	15.24
5	7	7 ¹ / ₂								
6	7 ⁵ / ₈	8 ¹ / ₈								
8	10 ³ / ₈	11 ⁵ / ₈								
10	11 ¹ / ₂	12 ³ / ₄	7 ³ / ₈	10 ³ / ₄	6 ³ / ₄	1	1 ¹ / ₈	3 ³ / ₄	2100	30.59
12	13	14 ¹ / ₄								
14	13 ⁵ / ₈	14 ⁷ / ₈								
16	15 ¹ / ₄	16 ⁵ / ₈								
18	16 ³ / ₈	17 ³ / ₄	11 ¹ / ₈	14 ¹ / ₂	8 ⁵ / ₈	1	1 ³ / ₈	1	4980	64.10
20	17 ³ / ₈	18 ³ / ₄								
24	19 ⁵ / ₈	21								
30	24	26 ³ / ₄								
36	23 ³ / ₁₆	29 ³ / ₁₆	16	22	11 ¹ / ₂	1	1 ⁵ / ₈	1 ¹ / ₂	12000	156.23
42	29 ¹ / ₄	32 ¹ / ₄								



PIPE ROLLER SUPPORTS

Fig. 490
PIPE ROLLER
WITH SOCKETS

FUNCTION: Designed to suspend pipe in applications where horizontal movement, due to expansion and contraction, will occur.

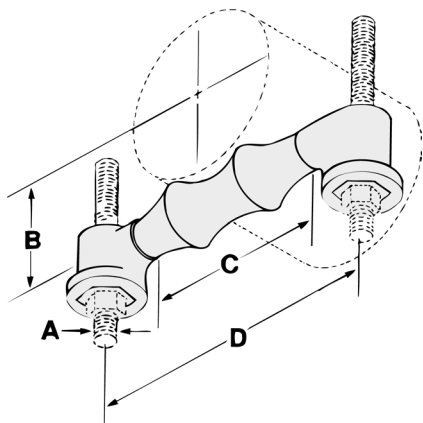
APPROVALS: Complies with Federal Specifications A-A-1192A (Type 41) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 41).

MATERIAL: Cast iron pipe roller and sockets with low carbon steel axle

FINISH: Plain or Electro-galvanized

SIZING: Pipe roller size shown is for bare pipe. For proper sizing with insulation, refer to pipe roller selection guide on page 49, which is for use with pipe covering protection saddles.

ORDERING: Specify pipe roller size and figure number.



"B" Center of axle
to center of pipe.

Pipe Roller Size	Rod Size A	B*	C	D	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1	$\frac{3}{8}$	1	$1\frac{1}{2}$	3	600	.44
$1\frac{1}{4}$	$\frac{3}{8}$	$1\frac{1}{4}$	$1\frac{7}{8}$	$3\frac{1}{2}$	600	.48
$1\frac{1}{2}$	$\frac{3}{8}$	$1\frac{3}{8}$	$2\frac{1}{8}$	$3\frac{5}{8}$	600	.50
2	$\frac{3}{8}$	$1\frac{5}{8}$	$2\frac{7}{8}$	$4\frac{1}{2}$	600	.57
$2\frac{1}{2}$	$\frac{1}{2}$	2	$3\frac{1}{8}$	$5\frac{1}{16}$	660	.98
3	$\frac{1}{2}$	$2\frac{1}{4}$	$3\frac{3}{4}$	$5\frac{9}{16}$	700	1.10
$3\frac{1}{2}$	$\frac{1}{2}$	$2\frac{5}{8}$	$4\frac{1}{4}$	$6\frac{1}{16}$	750	1.36
4	$\frac{5}{8}$	$2\frac{3}{4}$	$4\frac{3}{4}$	$6\frac{3}{4}$	750	1.62
5	$\frac{5}{8}$	$3\frac{1}{2}$	$5\frac{3}{4}$	$8\frac{3}{8}$	750	2.60
6	$\frac{3}{4}$	4	$6\frac{7}{8}$	$9\frac{7}{8}$	1070	4.42
8	$\frac{7}{8}$	$5\frac{1}{8}$	$8\frac{7}{8}$	12	1350	7.20
10	$\frac{7}{8}$	$6\frac{3}{8}$	11	14	1730	9.50
12	$\frac{7}{8}$	$7\frac{1}{2}$	13	$16\frac{1}{2}$	2400	16.00
14	1	$8\frac{3}{8}$	$14\frac{3}{8}$	$17\frac{3}{4}$	3130	24.20
16	1	$9\frac{1}{2}$	$16\frac{3}{8}$	$20\frac{3}{4}$	3970	31.80
18	1	$10\frac{1}{2}$	$18\frac{3}{8}$	$22\frac{3}{8}$	4200	35.15
20	$1\frac{1}{4}$	$11\frac{5}{8}$	$20\frac{3}{8}$	$24\frac{1}{2}$	4550	47.00
24	$1\frac{1}{2}$	14	$24\frac{3}{8}$	$28\frac{13}{16}$	6160	76.20
30	$1\frac{1}{2}$	$17\frac{1}{2}$	$30\frac{3}{8}$	35	7290	130.00

*Due to the inconsistent dimensions associated with cast parts, please contact the factory if the "B" dimension is critical for installation.

PIPE ROLLER SELECTION GUIDE



For use with pipe covering protection saddle figures 651-658 on pages 65-67.

Pipe Size	Insulation Thickness	Pipe Roller Size		
		Use With Fig. No.		
		460, 480 483, 490	470 475	486 487
1/2	1	2	2 1/2	2 - 3 1/2
	1 1/2	3	3 1/2	2 - 3 1/2
	2	4	5	2 - 3 1/2
	2 1/2	—	—	—
	3	—	—	—
	4	—	—	—
3/4	1	2	2 1/2	2 - 3 1/2
	1 1/2	3	3 1/2	2 - 3 1/2
	2	4	5	2 - 3 1/2
	2 1/2	—	—	—
	3	—	—	—
	4	—	—	—
1	1	2 1/2	3	2 - 3 1/2
	1 1/2	3	4	2 - 3 1/2
	2	4	5	2 - 3 1/2
	2 1/2	—	—	—
	3	—	—	—
	4	—	—	—
1 1/4	1	2 1/2	3	2 - 3 1/2
	1 1/2	3 1/2	5	2 - 3 1/2
	2	4	5	2 - 3 1/2
	2 1/2	5	6	4 - 6
	3	—	—	—
	4	—	—	—
1 1/2	1	3	3 1/2	2 - 3 1/2
	1 1/2	3 1/2	5	2 - 3 1/2
	2	5	6	4 - 6
	2 1/2	6	8	4 - 6
	3	—	—	—
	4	—	—	—
2	1	3 1/2	4	2 - 3 1/2
	1 1/2	4	5	2 - 3 1/2
	2	5	6	4 - 6
	2 1/2	6	8	4 - 6
	3	8	8	4 - 6
	4	—	—	—
2 1/2	1	3 1/2	5	2 - 3 1/2
	1 1/2	5	6	4 - 6
	2	6	8	4 - 6
	2 1/2	8	8	4 - 6
	3	8	10	4 - 6
	4	—	—	—
3	1	4	5	2 - 3 1/2
	1 1/2	5	6	4 - 6
	2	6	8	4 - 6
	2 1/2	8	8	4 - 6
	3	8	10	8 - 10
	4	—	—	—
3 1/2	1	5	6	4 - 6
	1 1/2	6	8	4 - 6
	2	8	8	4 - 6
	2 1/2	8	10	8 - 10
	3	10	10	8 - 10
	4	—	—	—
4	1	5	6	4 - 6
	1 1/2	6	8	4 - 6
	2	8	8	4 - 6
	2 1/2	8	10	8 - 10
	3	10	10	8 - 10
	4	10	12	—

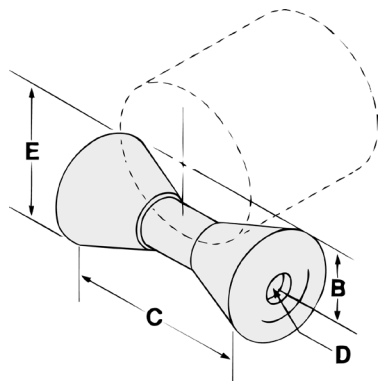
Pipe Size	Insulation Thickness	Pipe Roller Size		
		Use With Fig. No.		
		460, 480 483, 490	470 475	486 487
5	1	6	8	4 - 6
	1 1/2	8	8	4 - 6
	2	8	10	8 - 10
	2 1/2	10	10	8 - 10
	3	10	12	8 - 10
	4	12	14	8 - 10
6	1	8	8	4 - 6
	1 1/2	8	10	8 - 10
	2	10	10	8 - 10
	2 1/2	10	12	8 - 10
	3	12	12	8 - 10
	4	14	16	12 - 14
8	1	10	12	8 - 10
	1 1/2	10	12	8 - 10
	2	10	12	8 - 10
	2 1/2	12	14	8 - 10
	3	14	16	12 - 14
	4	16	18	12 - 14
10	1	12	14	8 - 10
	1 1/2	12	14	8 - 10
	2	14	16	12 - 14
	2 1/2	14	16	12 - 14
	3	16	18	16 - 20
	4	18	20	16 - 20
12	1	14	16	12 - 14
	1 1/2	14	16	12 - 14
	2	16	18	16 - 20
	2 1/2	16	18	16 - 20
	3	18	20	16 - 20
	4	20	—	16 - 20
14	1	—	—	—
	1 1/2	16	18	12 - 14
	2	16	18	16 - 20
	2 1/2	18	20	16 - 20
	3	18	20	16 - 20
	4	20	—	24
16	1	—	—	—
	1 1/2	18	20	16 - 20
	2	18	20	16 - 20
	2 1/2	20	—	16 - 20
	3	20	—	24
	4	24	—	24
18	1	—	—	—
	1 1/2	20	—	16 - 20
	2	20	—	24
	2 1/2	24	—	24
	3	24	—	24
	4	24	—	24
20	1	—	—	—
	1 1/2	24	—	24
	2	24	—	24
	2 1/2	24	—	24
	3	24	—	24
	4	30	—	30
24	1	—	—	—
	1 1/2	30	—	30
	2	30	—	30
	2 1/2	30	—	30
	3	30	—	30
	4	30	—	30



PIPE ROLLER SUPPORTS

Fig. 485

SHORT PIPE ROLLER



MATERIAL: Cast iron

FINISH: Plain or Electro-galvanized

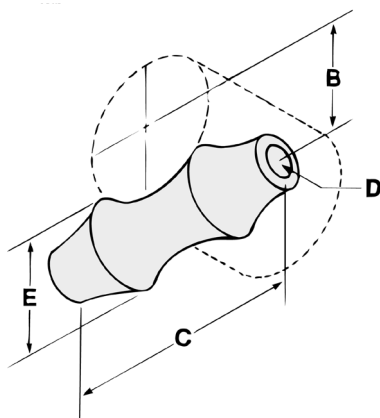
FUNCTION: Designed for supporting pipe in applications where horizontal movement, due to expansion and contraction, will occur.

ORDERING: Specify pipe roller size and figure number.

Pipe Roller Size	B	C	Hole Size D	E	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
2	1 ¹³ / ₁₆	2 ³ / ₄	9/ ₁₆	1 ¹⁵ / ₁₆	390	.81
2 1/2	2 ¹ / ₈	2 ³ / ₄	9/ ₁₆	1 ¹⁵ / ₁₆	390	.81
3	2 ⁷ / ₁₆	2 ³ / ₄	9/ ₁₆	1 ¹⁵ / ₁₆	390	.81
3 1/2	2 ¹¹ / ₁₆	2 ³ / ₄	9/ ₁₆	1 ¹⁵ / ₁₆	390	.81
4	3	3 ³ / ₄	9/ ₁₆	2 ¹ / ₄	950	.94
5	3 ⁹ / ₁₆	3 ³ / ₄	9/ ₁₆	2 ¹ / ₄	950	.94
6	4 ¹ / ₈	3 ³ / ₄	9/ ₁₆	2 ¹ / ₄	950	.94
8	5 ¹ / ₄	6	1 ³ / ₁₆	3 ³ / ₁₆	2100	3.19
10	6 ³ / ₈	6	1 ³ / ₁₆	3 ³ / ₁₆	2100	3.19
12	7 ¹ / ₂	8	1	4	3075	6.64
14	8 ³ / ₁₆	8	1	4	3075	6.64
16	9 ⁵ / ₁₆	9	1 1/4	4 1/2	4980	8.31
18	10 ³ / ₈	9	1 1/4	4 1/2	4980	8.31
20	11 ⁷ / ₁₆	9	1 1/4	4 1/2	4980	8.31
24	13 ⁷ / ₁₆	10	1 1/2	4 ³ / ₈	6100	8.40
30	16 ⁹ / ₁₆	12 1/4	1 ⁷ / ₈	5 ³ / ₁₆	7500	14.40
36	19 ¹¹ / ₁₆	14	2 ¹ / ₈	6	12000	16.80
42	22 ³ / ₄	14	2 ¹ / ₈	6	12000	16.80

Fig. 495

LONG PIPE ROLLER



MATERIAL: Cast iron

FINISH: Plain or Electro-galvanized

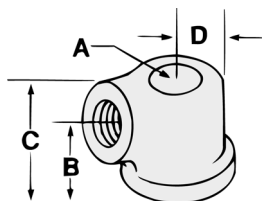
FUNCTION: Designed for supporting pipe in applications where horizontal movement, due to expansion and contraction, will occur.

ORDERING: Specify pipe roller size and figure number.

Pipe Roller Size	B	C	Hole Size D	E	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1	1	1 1/2	7/ ₁₆	1	600	.10
1 1/4	1 1/4	1 ⁷ / ₈	7/ ₁₆	1 ¹ / ₈	600	.18
1 1/2	1 ³ / ₈	2 ¹ / ₈	7/ ₁₆	1 ³ / ₁₆	600	.22
2	1 ⁵ / ₈	2 ⁷ / ₈	7/ ₁₆	1 ³ / ₁₆	600	.22
2 1/2	2	3 ¹ / ₈	9/ ₁₆	1 ⁷ / ₁₆	700	.33
3	2 ¹ / ₄	3 ³ / ₄	9/ ₁₆	1 ¹ / ₂	700	.43
3 1/2	2 ⁵ / ₈	4 ¹ / ₄	9/ ₁₆	1 ⁵ / ₈	750	.53
4	2 ³ / ₄	4 ³ / ₄	9/ ₁₆	2	750	.56
5	3 ¹ / ₂	5 ³ / ₄	1 ¹ / ₁₆	2 ¹ / ₈	750	.94
6	4	6 ⁷ / ₈	1 ³ / ₁₆	2 ⁷ / ₁₆	1100	1.59
8	5 ¹ / ₈	8 ⁷ / ₈	1 ⁵ / ₁₆	2 ⁷ / ₈	1350	2.64
10	6 ³ / ₈	11	1 ⁵ / ₁₆	3 ¹ / ₂	1750	4.50
12	7 ¹ / ₂	13	1 ¹ / ₈	4 ¹ / ₄	2400	7.55
14	8 ³ / ₈	14 ³ / ₈	1 ¹ / ₄	4 ⁵ / ₈	3100	13.00
16	9 ¹ / ₂	16 ³ / ₈	1 ³ / ₈	4 ⁷ / ₈	4000	17.44
18	10 ¹ / ₂	18 ³ / ₈	1 ³ / ₈	5 ⁵ / ₁₆	4200	21.60
20	11 ⁵ / ₈	20 ³ / ₈	1 ³ / ₈	6 ¹ / ₁₆	4550	27.13
24	14	24 ³ / ₈	1 ⁵ / ₈	7 ¹ / ₁₆	6100	43.29
30	17 ¹ / ₂	30 ³ / ₈	1 ⁷ / ₈	9 ¹ / ₁₆	7300	82.00

Fig. 496

ROLLER SOCKET



MATERIAL: Cast iron

FINISH: Plain or Electro-galvanized

FUNCTION: Designed for use with Fig. 495.

ORDERING: Specify socket number and figure number.

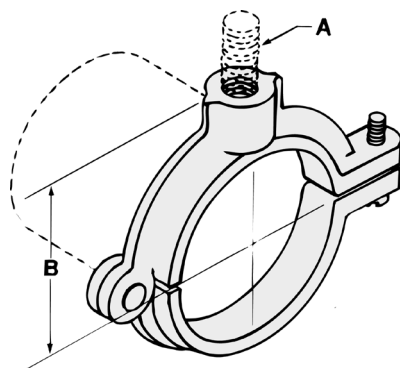
Socket Number	Rod Size A	Use With Pipe Roller Size	Axle Size	B	C	D	Wt. Each (in lbs.)
1	3/ ₈	1 to 2	3/ ₈	5/ ₈	1	1 ¹ / ₁₆	.12
2	1/ ₂	2 1/2 to 3 1/2	1/ ₂	3/ ₄	1 1/4	1 ¹ / ₁₆	.27
2A	5/ ₈	4	1/ ₂	7/ ₈	1 1/4	1 ³ / ₁₆	.25
3	5/ ₈	5	5/ ₈	1	1 ⁹ / ₁₆	1	.53
4	3/ ₄	6	3/ ₄	1 1/4	1 ¹³ / ₁₆	1 ¹ / ₈	.92
5	7/ ₈	8 to 10	7/ ₈	1 1/4	2 ¹ / ₈	1 ¹ / ₈	1.44
6	7/ ₈	12	1	1 ³ / ₈	2 ¹ / ₄	1 ³ / ₈	1.34
7	1	14	1 ¹ / ₈	1 ³ / ₄	2 ³ / ₈	1 ³ / ₈	2.03
8	1	16 to 18	1 1/4	1 ¹³ / ₁₆	3	1 ⁵ / ₈	2.60
8A	1 1/4	20	1 1/4	1 ¹³ / ₁₆	3	1 ⁵ / ₈	2.56
9B	1 1/2	24	1 1/2	2 ³ / ₁₆	3 ³ / ₈	2 ¹ / ₁₆	4.96
10	1 1/2	30	1 ³ / ₄	2 ⁹ / ₃₂	4	2 ⁵ / ₁₆	6.94



SPLIT RING HANGERS

Fig. 508R HINGED EXTENSION SPLIT CLAMP

Fig. 508R BOLT THREAD



FUNCTION: Designed for non-insulated stationary pipe lines in either a horizontal or vertical position. The hinged design allows for a quick installation.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 12) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 12).

MATERIAL: Malleable iron

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size, finish and figure number.

Pipe Size	Bolt Thread A	B	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$	$\frac{3}{8}$	$\frac{13}{16}$	180	.13
$\frac{1}{2}$	$\frac{3}{8}$	$\frac{7}{8}$	180	.14
$\frac{3}{4}$	$\frac{3}{8}$	1	180	.16
1	$\frac{3}{8}$	$1\frac{1}{8}$	180	.18
$1\frac{1}{4}$	$\frac{3}{8}$	$1\frac{5}{16}$	180	.22
$1\frac{1}{2}$	$\frac{3}{8}$	$1\frac{7}{16}$	180	.38
2	$\frac{3}{8}$	$1\frac{11}{16}$	180	.44
$2\frac{1}{2}$	$\frac{1}{2}$	$2\frac{1}{8}$	300	.45
3	$\frac{1}{2}$	$2\frac{7}{16}$	300	.55
4	$\frac{1}{2}$	3	300	.95

SPLIT RING HANGERS



FUNCTION: Designed for non-insulated stationary pipe lines in either a horizontal or vertical position.

APPROVALS: Complies with Federal Specification A-A-1192A (Type 12) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 12).

MATERIAL: Malleable iron

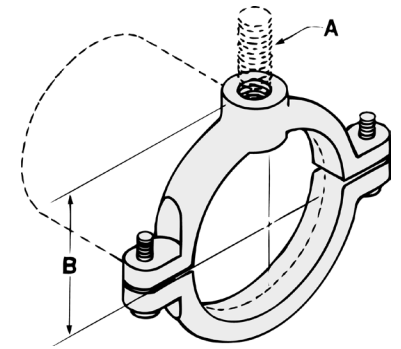
FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size, finish and figure number.

Pipe Size	Bolt Thread A	B	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
3/8	3/8	13/16	180	.13
1/2	3/8	7/8	180	.14
3/4	3/8	1	180	.16
1	3/8	1 1/8	180	.18
1 1/4	3/8	1 5/16	180	.22
1 1/2	3/8	1 7/16	180	.38
2	3/8	1 11/16	180	.44
2 1/2	1/2	2 1/8	300	.45
3	1/2	2 7/16	300	.55
4	1/2	3 11/32	300	.70

Fig. 510R EXTENSION SPLIT CLAMP

Fig. 510R BOLT THREAD



Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request

FUNCTION: Designed for non-insulated stationary tubing lines in either a horizontal or vertical position. The hinged design of Fig. 512H allows for a quicker installation.

APPROVALS: Complies with Federal Specification A-A-1192A (Type 12) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 12).

MATERIAL: Malleable iron

FINISH: Copper color epoxy finish

ORDERING: Specify tube size and figure number.

Tube Size	Rod Size A	B	Max. Rec. Load/lbs.	Wt. Each (in lbs.)	
				Fig. 512	Fig. 512H
3/8	3/8	9/16	180	.07	.08
1/2	3/8	1 1/16	180	.09	.09
3/4	3/8	7/8	180	.09	.12
1	3/8	1	180	.10	.11
1 1/4	3/8	1 1/8	180	.12	.15
1 1/2	3/8	1 5/16	180	.13	.20
2	3/8	1 1/2	180	.18	.25
2 1/2	1/2	1 7/8	300	.65	.45
3	1/2	2 1/8	300	1.00	.55
4	1/2	2 3/4	300	1.40	.90

Fig. 512 & 512H COPPER TUBING EXTENSION SPLIT CLAMP

Fig. 512 TWO PIECE DESIGN
Fig. 512H HINGED DESIGN

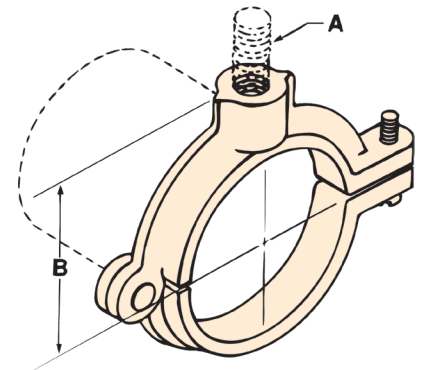


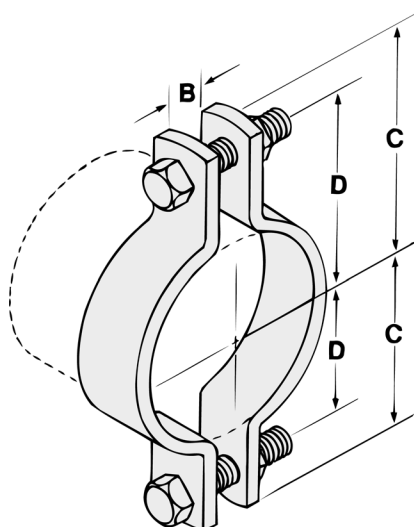
Fig. 512H shown



PIPE CLAMPS

Fig. 520 & 521 STANDARD PIPE CLAMP

Fig. 520* PLAIN
Fig. 521 ELECTRO-GALVANIZED



FUNCTION: Designed to be used in the suspension of non-insulated pipe lines. Normally used in conjunction with Fig. 35 weldless eye nut, Fig. 50 eye rod or Fig. 55 welded eye rod to allow flexibility at the rod attachment.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 4) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 4).

MATERIAL: Low carbon steel

ORDERING: Specify pipe size and figure number.

*Available in stainless steel.
To order, specify 304 or 316 and
add suffix SS to figure number.
Price on request.

Pipe Size	B	C	D	Bolt Size	Max. Rec. Load/lbs.		Wt. Each (in lbs.)
					650°F	750°F	
1/2	3/8	1 ⁹ / ₁₆	1 ¹ / ₁₆	3/8	500	445	.31
3/4	3/8	1 ³ / ₄	1 ¹ / ₄	3/8	500	445	.35
1	3/8	1 ⁷ / ₈	1 ³ / ₈	3/8	500	445	.39
1 ¹ / ₄	3/8	2 ¹ / ₈	1 ⁵ / ₈	3/8	500	445	.40
1 ¹ / ₂	3/8	2 ¹ / ₄	1 ³ / ₄	3/8	800	715	.45
2	1/2	2 ⁹ / ₁₆	2 ¹ / ₁₆	1/2	1040	930	.90
2 ¹ / ₂	5/8	2 ¹³ / ₁₆	2 ⁵ / ₁₆	1/2	1040	930	1.10
3	5/8	3 ⁵ / ₁₆	2 ¹³ / ₁₆	1/2	1040	930	1.20
3 ¹ / ₂	5/8	3 ¹ / ₂	3 ³ / ₁₆	1/2	1040	930	1.25
4	3/4	4 ¹ / ₈	3 ³ / ₈	5/8	1040	930	1.85
5	3/4	4 ³ / ₄	4	5/8	1040	930	2.05
6	7/8	5 ⁷ / ₈	4 ⁷ / ₈	3/4	1615	1440	5.06
8	1	7	6	3/4	1615	1440	6.08
10	1	8 ¹³ / ₁₆	7 ⁹ / ₁₆	7/8	2490	2220	12.81
12	1	9 ⁷ / ₈	8 ⁷ / ₈	7/8	2490	2220	13.08
14	1 ¹ / ₈	11 ⁵ / ₁₆	9 ¹⁵ / ₁₆	7/8	2490	2220	16.70
16	1 ¹ / ₈	12 ⁵ / ₈	10 ⁷ / ₈	7/8	2490	2220	23.19
18	1 ¹ / ₄	13 ³ / ₈	11 ⁵ / ₈	1	3060	2730	33.12
20	1 ³ / ₈	14 ⁵ / ₁₆	12 ⁹ / ₁₆	1 ¹ / ₈	3060	2730	38.66
24	1 ⁵ / ₈	17 ¹ / ₂	15 ¹ / ₂	1 ¹ / ₄	3060	2730	52.27
30	2	20 ⁷ / ₈	18 ⁵ / ₈	1 ¹ / ₂	4000	3520	105.13

PIPE CLAMPS



FUNCTION: Designed to be used in the suspension of non-insulated pipe lines where heavier loads are to be suspended. Normally used in conjunction with Fig. 35 weldless eye nut or Fig. 55 welded eye rod to allow flexibility at the rod attachment.

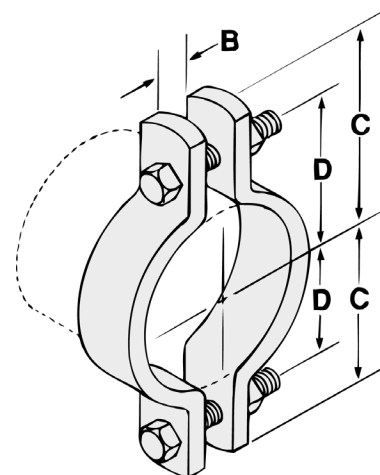
APPROVALS: Complies with Federal Specifications A-A-1192A (Type 4) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 4).

MATERIAL: Low carbon steel.

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size and figure number.

**Fig. 522
HEAVY DUTY
PIPE CLAMP**



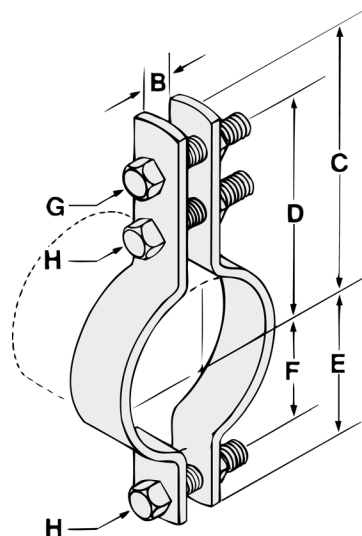
Available in stainless steel.
To order, specify 304 or 316 and
add suffix SS to figure number.
Price on request.

Pipe Size	B	C	D	Bolt Size	Max. Rec. Load/lbs.		Wt. Each (in lbs.)
					650°F	750°F	
3	1	4 ¹ / ₈	3 ¹ / ₈	³ / ₄	3370	3005	4.96
3 ¹ / ₂	1	4 ³ / ₈	3 ³ / ₈	³ / ₄	3370	3005	5.36
4	1	4 ¹⁵ / ₁₆	3 ¹⁵ / ₁₆	⁷ / ₈	3515	3135	5.74
5	1	5 ⁹ / ₁₆	4 ⁹ / ₁₆	⁷ / ₈	3515	3135	7.13
6	1 ¹ / ₈	6 ¹¹ / ₁₆	5 ³ / ₁₆	1	4865	4340	13.48
8	1 ¹ / ₈	8 ¹ / ₄	6 ³ / ₄	1	4865	4340	15.78
10	1 ¹ / ₄	9 ⁷ / ₈	8 ¹ / ₄	1 ¹ / ₄	6010	5360	24.20
12	1 ⁵ / ₈	11 ⁷ / ₈	9 ³ / ₄	1 ¹ / ₂	8675	7740	41.54
14	1 ⁵ / ₈	12 ¹ / ₄	10 ¹ / ₈	1 ¹ / ₂	9120	8135	53.25
16	1 ⁵ / ₈	13 ¹⁵ / ₁₆	11 ¹³ / ₁₆	1 ¹ / ₂	9120	8135	56.35
18	1 ⁵ / ₈	15 ¹ / ₄	13 ¹ / ₈	1 ¹ / ₂	9150	8160	70.12
20	1 ⁵ / ₈	15 ⁷ / ₁₆	13 ⁵ / ₁₆	1 ¹ / ₂	9150	8160	74.68
24	1 ³ / ₄	17 ³ / ₄	15 ³ / ₈	1 ¹ / ₂	9200	8205	126.29
28	3 ¹ / ₄	23 ¹ / ₂	20 ¹ / ₂	2 ¹ / ₄	18000	—	302.80
30	3 ¹ / ₂	26	22 ¹ / ₂	2 ¹ / ₂	20500	—	365.40
32	3 ¹ / ₂	27	23 ¹ / ₂	2 ¹ / ₂	23750	—	431.70
34	3 ¹ / ₂	28 ¹ / ₂	25	2 ¹ / ₂	25000	—	533.80
36	3 ¹ / ₂	30 ¹ / ₄	26 ¹ / ₂	2 ³ / ₄	28000	—	575.10
42	3 ¹ / ₂	33 ³ / ₄	30	2 ³ / ₄	35000	—	915.70



PIPE CLAMPS

Fig. 525
DOUBLE BOLT PIPE
CLAMP



FUNCTION: Designed for the suspension of high temperature insulated pipe lines. Normally used in conjunction with Fig. 35 weldless eye nut or Fig. 55 welded eye rod to allow flexibility at the rod attachment. The clamp can be used with up to 4 inches of insulation and temperatures up to 750° F.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 3) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 3).

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size, finish and figure number.

Available in stainless steel.
To order, specify 304 or 316 and
add suffix SS to figure number.
Price on request.

Pipe Size	B	C	D	E	F	Bolt Size		Max. Rec. Load/lbs.		Wt. Each (in lbs.)
						G	H	650° F	750° F	
3/4	5/8	37/16	213/16	2	13/8	3/8	3/8	950	850	.83
1	5/8	31/2	27/8	2	13/8	3/8	3/8	950	850	1.02
11/4	5/8	39/16	215/16	21/16	17/16	3/8	3/8	950	850	1.07
11/2	1	51/4	45/8	25/8	2	5/8	1/2	1545	1380	2.30
2	1	53/8	43/4	23/4	21/8	5/8	1/2	1545	1380	2.60
21/2	1	511/16	51/16	31/16	27/16	5/8	1/2	1545	1380	2.71
3	1	6	53/8	33/8	23/4	5/8	1/2	1545	1380	3.03
31/2	1	65/16	511/16	311/16	31/16	5/8	1/2	1545	1380	3.28
4	1	81/16	71/16	51/16	41/16	3/4	5/8	2500	2230	6.67
5	1	85/8	75/8	55/8	45/8	3/4	5/8	2500	2230	7.05
6	11/2	97/8	85/8	63/8	51/8	7/8	3/4	2865	2555	11.45
8	11/2	111/8	97/8	75/8	63/8	7/8	3/4	2865	2555	13.15
10	11/2	123/8	111/8	87/8	75/8	1	7/8	3240	2890	19.80
12	11/2	133/4	121/2	101/4	9	1	7/8	3240	2890	22.25
14	11/2	151/16	139/16	117/16	915/16	11/4	7/8	4300	3835	37.68
16	11/2	1513/16	145/16	123/16	1011/16	11/4	7/8	4300	3835	41.40
18	11/2	1611/16	157/16	135/16	1113/16	11/4	1	4300	3835	44.87
20	2	18	161/2	141/2	13	13/8	11/8	5490	4900	57.25
24	2	201/4	183/4	163/4	151/4	13/8	11/4	4500	4015	65.90

PIPE CLAMPS



FUNCTION: Designed for the suspension of high temperature pipe lines. The increased material and bolt sizes allow Fig. 526 to be used in applications where heavier loads will be encountered. Normally used in conjunction with Fig. 35 weldless eye nut or Fig. 55 welded eye rod to allow flexibility at the rod attachment. The clamp can be used with up to 4 inches of insulation and temperatures up to 750° F.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 3) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 3).

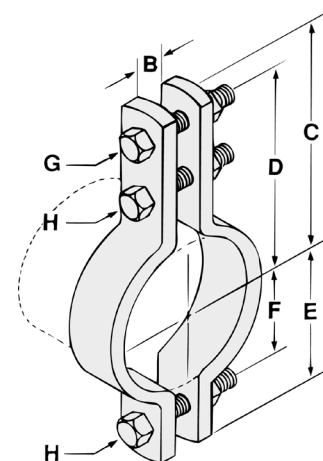
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size and figure number.

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

**Fig. 526
HEAVY DUTY DOUBLE
BOLT PIPE CLAMP**

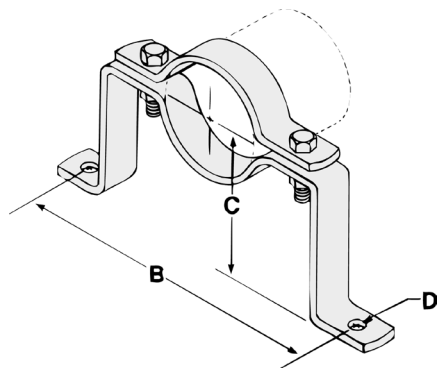


Pipe Size	B	C	D	E	F	Bolt Size		Max. Rec. Load/lbs.		Wt. Each (in lbs.)
						G	H	650° F	750° F	
6	1 ³ / ₄	11 ¹ / ₈	8 ⁷ / ₈	6 ¹ / ₁₆	4 ³ / ₁₆	1	⁷ / ₈	3500	3125	14.14
8	2	11 ³ / ₁₆	9 ¹⁵ / ₁₆	7 ⁷ / ₁₆	6 ³ / ₁₆	1 ¹ / ₈	1	4800	4285	20.99
10	2 ¹ / ₄	12 ¹⁵ / ₁₆	11 ³ / ₁₆	9 ³ / ₁₆	7 ⁷ / ₁₆	1 ¹ / ₄	1 ¹ / ₈	5500	4910	33.71
12	2 ¹ / ₂	14	12 ¹ / ₄	10 ¹¹ / ₁₆	8 ¹⁵ / ₁₆	1 ¹ / ₂	1 ¹ / ₄	7000	6250	48.17
14	2 ¹ / ₂	15 ¹ / ₈	13 ¹ / ₁₆	12	10	1 ¹ / ₂	1 ¹ / ₄	9500	8485	70.50
16	3	16 ¹³ / ₁₆	14 ⁹ / ₁₆	13 ⁷ / ₁₆	11 ³ / ₁₆	1 ³ / ₄	1 ¹ / ₂	10000	8930	93.90
18	3 ¹ / ₂	18 ¹³ / ₁₆	16 ⁵ / ₁₆	15 ⁵ / ₁₆	12 ¹³ / ₁₆	2	1 ³ / ₄	13800	12325	123.72
20	3 ¹ / ₂	19 ¹⁵ / ₁₆	17 ⁷ / ₁₆	16 ⁷ / ₁₆	13 ¹⁵ / ₁₆	2	1 ³ / ₄	15300	13665	156.43
24	3 ¹ / ₂	22 ¹ / ₂	19 ¹ / ₂	19	16	2	1 ³ / ₄	16300	14555	204.65
28	4	31 ³ / ₄	27 ¹ / ₄	23 ³ / ₈	18 ⁷ / ₈	2 ¹ / ₄	2 ¹ / ₄	18000	—	354.00
30	4 ¹ / ₄	32 ³ / ₄	28 ¹ / ₄	24 ³ / ₈	19 ⁷ / ₈	2 ¹ / ₄	2 ¹ / ₄	20500	—	406.00
32	4 ¹ / ₄	36	31	26 ³ / ₄	21 ³ / ₄	2 ¹ / ₂	2 ¹ / ₂	23750	—	555.00
34	4 ¹ / ₄	37 ¹ / ₂	32 ¹ / ₂	28 ³ / ₈	23 ³ / ₈	2 ¹ / ₂	2 ¹ / ₂	25000	—	604.00
36	4 ¹ / ₂	40 ¹ / ₄	34 ³ / ₄	30 ¹ / ₈	24 ⁵ / ₈	2 ³ / ₄	2 ³ / ₄	28000	—	678.00



PIPE CLAMPS

**Fig. 535
OFFSET PIPE
CLAMP**



Available in stainless steel.
To order, specify 304 or 316 and
add suffix SS to figure number.
Price on request.

FUNCTION: Designed to be used in the clamping of pipe lines at a fixed distance away from the floor or wall.

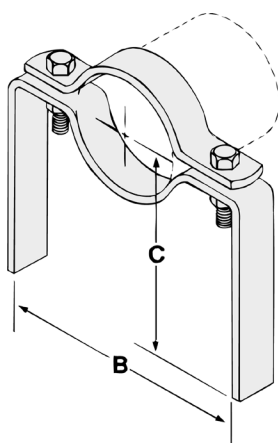
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size and figure number.

Pipe Size	B	C	D	Bolt Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{4}$	$5\frac{7}{8}$	$2\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	190	.87
1	6	$2\frac{5}{8}$	$\frac{7}{16}$	$\frac{3}{8}$	190	.92
$1\frac{1}{4}$	$6\frac{1}{2}$	$2\frac{3}{4}$	$\frac{7}{16}$	$\frac{3}{8}$	190	1.15
$1\frac{1}{2}$	$6\frac{9}{16}$	3	$\frac{7}{16}$	$\frac{3}{8}$	190	1.24
2	$7\frac{11}{16}$	$3\frac{3}{16}$	$\frac{7}{16}$	$\frac{3}{8}$	420	1.56
$2\frac{1}{2}$	$8\frac{3}{8}$	$3\frac{7}{16}$	$\frac{7}{16}$	$\frac{3}{8}$	420	1.78
3	$8\frac{13}{16}$	$3\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	420	1.98
$3\frac{1}{2}$	$9\frac{3}{4}$	4	$\frac{7}{16}$	$\frac{3}{8}$	420	2.45
4	11	$4\frac{1}{4}$	$\frac{9}{16}$	$\frac{1}{2}$	610	3.00
5	$12\frac{1}{8}$	$4\frac{3}{4}$	$\frac{9}{16}$	$\frac{1}{2}$	610	3.50
6	$14\frac{3}{8}$	$5\frac{5}{16}$	$\frac{9}{16}$	$\frac{1}{2}$	870	6.50
8	$16\frac{1}{2}$	$6\frac{5}{16}$	$\frac{9}{16}$	$\frac{1}{2}$	870	7.90
10	$19\frac{1}{8}$	$7\frac{3}{4}$	$\frac{11}{16}$	$\frac{5}{8}$	870	12.70
12	$25\frac{1}{2}$	$8\frac{7}{8}$	$\frac{11}{16}$	$\frac{5}{8}$	870	21.20

**Fig. 545
EXTENDED PIPE
CLAMP**



Available in stainless steel.
To order, specify 304 or 316 and
add suffix SS to figure number.
Price on request.

FUNCTION: Designed to be used in the suspension or support of pipe lines where exact distance between the structure and the pipe is unknown until time of installation.

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size and figure number.

Pipe Size	B	C	Bolt Size	Wt. Each (in lbs.)
$\frac{3}{4}$	$4\frac{3}{16}$	12	$\frac{3}{8}$	1.82
1	$4\frac{5}{16}$	12	$\frac{3}{8}$	2.25
$1\frac{1}{4}$	$4\frac{13}{16}$	12	$\frac{3}{8}$	2.39
$1\frac{1}{2}$	$4\frac{15}{16}$	12	$\frac{3}{8}$	2.44
2	$5\frac{15}{16}$	12	$\frac{3}{8}$	3.19
$2\frac{1}{2}$	$6\frac{9}{16}$	12	$\frac{3}{8}$	3.34
3	$7\frac{1}{16}$	12	$\frac{3}{8}$	3.54
4	$8\frac{15}{16}$	12	$\frac{1}{2}$	4.75
5	$10\frac{1}{8}$	12	$\frac{1}{2}$	5.38
6	$12\frac{1}{16}$	12	$\frac{1}{2}$	8.38
8	$14\frac{1}{8}$	12	$\frac{1}{2}$	9.25

RISER CLAMPS



FUNCTION: Designed for supporting and stabilizing vertical pipe runs. The PVC coating on Fig. 553 protects the pipe from the metal surface of the clamp. This product is not intended for use with hanger rods. Clamp is designed for standard iron pipe O.D. and must be considered when sizing other types of piping.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL) and Factory Mutual Approved for sizes $\frac{3}{4}$ " to 8" only. Complies with Federal Specifications A-A-1192A (Type 8) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 8).

MATERIAL: Low carbon steel

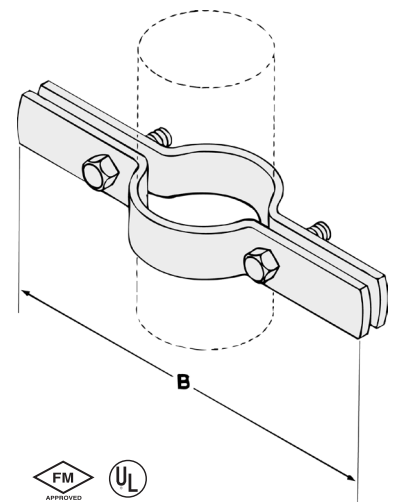
ORDERING: Specify pipe size and figure number.

Fig. 550, 551 & 553 RISER CLAMP

Fig. 550* PLAIN
Fig. 551 ELECTRO-GALVANIZED
Fig. 553 PLAIN WITH PVC COATING

*Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

Pipe Size	B	Bolt Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{1}{2}$	9	$\frac{3}{8} \times 1\frac{1}{4}$	220	1.05
$\frac{3}{4}$	$8\frac{7}{8}$	$\frac{3}{8} \times 1\frac{1}{4}$	220	1.05
1	$8\frac{3}{4}$	$\frac{3}{8} \times 1\frac{1}{4}$	220	1.05
$1\frac{1}{4}$	$9\frac{1}{4}$	$\frac{3}{8} \times 1\frac{1}{4}$	250	1.10
$1\frac{1}{2}$	10	$\frac{3}{8} \times 1\frac{1}{4}$	250	1.17
2	$10\frac{1}{4}$	$\frac{3}{8} \times 1\frac{1}{4}$	300	1.20
$2\frac{1}{2}$	$11\frac{1}{8}$	$\frac{3}{8} \times 1\frac{1}{2}$	400	1.89
3	$11\frac{3}{4}$	$\frac{3}{8} \times 1\frac{1}{2}$	500	1.99
$3\frac{1}{2}$	$12\frac{1}{2}$	$\frac{3}{8} \times 1\frac{1}{2}$	600	2.17
4	13	$\frac{1}{2} \times 1\frac{3}{4}$	750	2.21
5	$14\frac{1}{4}$	$\frac{1}{2} \times 1\frac{3}{4}$	1500	3.24
6	$15\frac{3}{8}$	$\frac{1}{2} \times 1\frac{3}{4}$	1600	3.89
8	$18\frac{1}{2}$	$\frac{5}{8} \times 2$	2500	7.60
10	$20\frac{1}{2}$	$\frac{5}{8} \times 2$	2500	11.10
12	$22\frac{1}{2}$	$\frac{5}{8} \times 2\frac{1}{2}$	2700	16.50
14	$25\frac{1}{8}$	$\frac{5}{8} \times 3$	2700	17.70
16	$26\frac{1}{4}$	$\frac{3}{4} \times 3\frac{1}{2}$	2900	30.40
18	$27\frac{7}{8}$	$\frac{3}{4} \times 3\frac{1}{2}$	2900	33.30
20	30	$\frac{3}{4} \times 3\frac{1}{2}$	2900	36.30
24	35	$\frac{7}{8} \times 3\frac{1}{2}$	2900	48.68
30	$42\frac{3}{8}$	$\frac{7}{8} \times 3\frac{1}{2}$	2900	60.16



Installation practice for Model 550 Riser Clamps

When possible the clamp should be placed under a coupling, hub or welded lugs on steel pipe. Bolt torques should be per industry standards.

Recommended Torque For Pipe Clamp Hardware

$\frac{1}{4}$ "-20 6 ft/lbs	$\frac{5}{16}$ "-18 11 ft/lbs	$\frac{3}{8}$ "-16 19 ft/lbs	$\frac{1}{2}$ "-13 50 ft/lbs	$\frac{5}{8}$ "-11 65 ft/lbs	$\frac{3}{4}$ "-10 & Larger 75 ft/lbs
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RISER CLAMPS

Fig. 552 & 554 COPPER TUBING RISER CLAMP

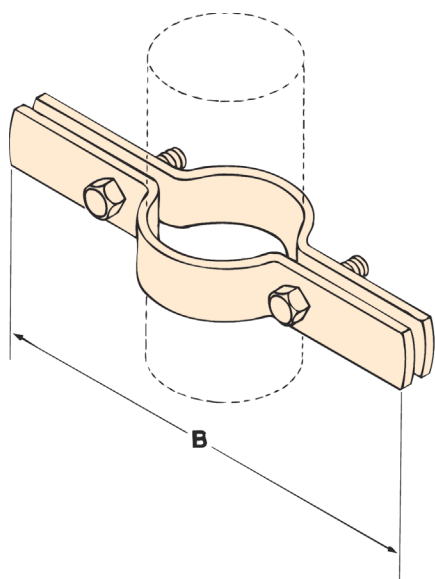
Fig. 552* COPPER COLOR EPOXY FINISH
Fig. 554 COPPER COLOR EPOXY FINISH
WITH PVC COATING

FUNCTION: Designed for supporting and stabilizing vertical tubing runs. The PVC coating on Fig. 554 protects the tube from the metal surface of the clamp.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 8) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 8).

MATERIAL: Low carbon steel

ORDERING: Specify tube size and figure number.



Tube Size	B	Bolt Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	6 ¹¹ / ₁₆	1/4	75	.50
3/4	7	1/4	75	.52
1	8 ³ / ₄	1/4	120	.64
1 1/4	9	1/4	150	.65
1 1/2	9 ³ / ₈	1/4	150	.70
2	9 ¹⁵ / ₁₆	3/8	150	.98
2 1/2	10 ¹ / ₂	3/8	300	1.09
3	11	3/8	300	1.17
3 1/2	12 ³ / ₁₆	3/8	300	1.53
4	12 ⁵ / ₈	3/8	300	1.67
5	14 ¹ / ₈	1/2	500	2.42
6	15	1/2	500	2.68

Recommended Torque For Pipe Clamp Hardware

1/4"-20 6 ft/lbs	5/16"-18 11 ft/lbs	3/8"-16 19 ft/lbs	1/2"-13 50 ft/lbs	5/8"-11 65 ft/lbs	3/4"-10 & Larger 75 ft/lbs
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UNDERGROUND PIPE CLAMPS



FUNCTION: Designed for clamping the caulked joints of underground A.W.W.A. ductile iron water pipes to prevent separation of joints.

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

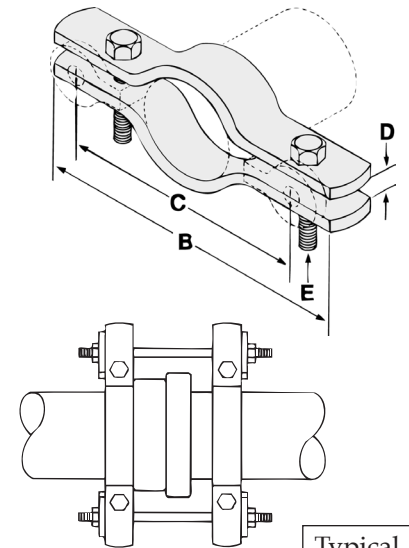
ORDERING: Specify pipe size and figure number. Order Fig. 585 washer separately.

Pipe Size	Max. Pipe O.D.	B	C	D	Bolt Size E	Recom. Tie Rod Size	Wt. Each (in lbs.)
3	3.96	11 ³ / ₄	9	1 ¹ / ₄	5/8 X 3	3/4	6.18
4	4.80	13	10 ¹ / ₄	1 ¹ / ₄	5/8 X 3	3/4	8.80
6	6.90	14 ⁷ / ₈	12	1 ¹ / ₄	5/8 X 3	3/4	10.50
8	9.05	17 ¹ / ₄	14 ¹ / ₂	1 ¹ / ₄	5/8 X 3	3/4	12.34
10	11.10	19 ¹ / ₂	16 ³ / ₄	1 ¹ / ₄	5/8 X 3	3/4	14.80
12	13.20	21 ³ / ₄	19	1 ¹ / ₄	5/8 X 3 ¹ / ₂	3/4	16.03
14	15.30	27 ⁷ / ₈	23 ³ / ₈	1 ³ / ₈	7/8 X 4	1	44.37
16	17.40	29 ¹ / ₈	25 ¹ / ₂	1 ¹ / ₂	1 X 4 ¹ / ₂	1 ¹ / ₈	64.74
18	19.50	32 ¹ / ₄	28	1 ¹ / ₂	1 ¹ / ₄ X 4 ¹ / ₂	1 ¹ / ₄	73.69
20	21.60	33 ¹ / ₄	29 ³ / ₄	1 ⁵ / ₈	1 ¹ / ₄ X 4 ¹ / ₂	1 ³ / ₈	86.00
24	25.80	37 ³ / ₄	34	1 ³ / ₄	1 ¹ / ₂ X 5	1 ¹ / ₂	113.00
30	32.00	45 ¹ / ₈	41 ³ / ₈	2	1 ¹ / ₂ X 5 ¹ / ₂	1 ³ / ₄	136.78
36	38.30	50 ³ / ₄	46 ¹ / ₂	2 ¹ / ₂	1 ¹ / ₂ X 5	1 ³ / ₄	155.50

Note: Clamps must be connected by means of threaded tie rods and the nuts drawn tight on the washers to assure a tight joint.

Fig. 580 TWO BOLT UNDERGROUND PIPE CLAMP

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.



Typical
Installation

FUNCTION: Designed to secure tie rods when used in conjunction with Fig. 580 two bolt underground pipe clamp.

MATERIAL: Low carbon steel. Cast Iron (3/4" Tie Rod Only)

FINISH: Plain or Electro-galvanized

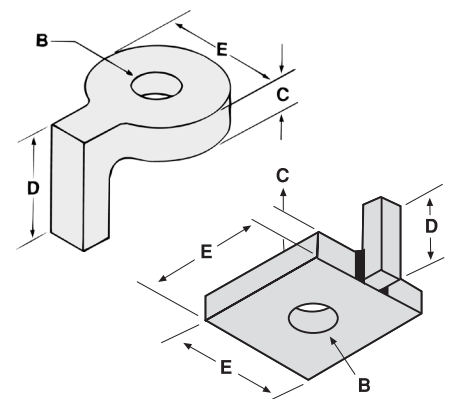
ORDERING: Specify tie rod size and figure number.

Tie Rod Size	Dia. B	C	D	E	For Pipe Sizes	Wt. Each (in lbs.)
3/4	7/8	5/8	1 ³ / ₄	2 ⁵ / ₁₆	3 - 12	.80
1	1 ¹ / ₈	1/2	1 ⁷ / ₈	3 ³ / ₁₆	14	1.45
1 ¹ / ₈	1 ¹ / ₄	5/8	3	4	16	2.31
1 ¹ / ₄	1 ³ / ₈	5/8	3	4	18	2.26
1 ³ / ₈	1 ¹ / ₂	3/4	3	4	20	2.87
1 ¹ / ₂	1 ⁵ / ₈	3/4	3	4	24	2.71
1 ³ / ₄	1 ⁷ / ₈	1	3	4	30 - 36	4.17

Note: Tie rod size 3/4" made of cast iron material.

Fig. 585 WASHER For Fig. 580

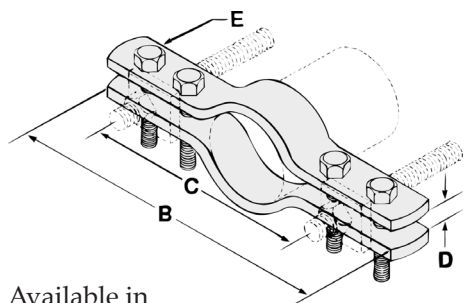
Available in stainless steel except for 3/4" tie rod.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.



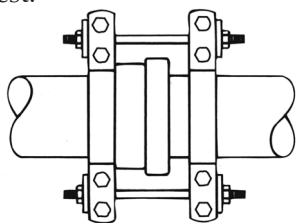


UNDERGROUND PIPE CLAMPS

**Fig. 590
FOUR BOLT
UNDERGROUND PIPE
CLAMP**



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.



Typical
Installation

FUNCTION: Designed for clamping the caulked joints of underground A.W.W.A. ductile iron water pipe lines to prevent separation of joints.

APPROVALS: Complies with National Fire Protection Association Standard 24 for 4" thru 12" pipe

MATERIAL: Low carbon steel

FINISH: Plain

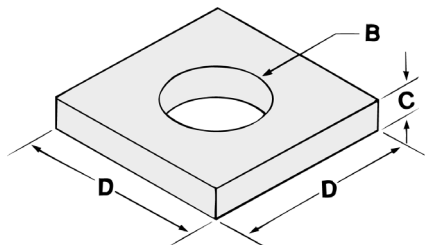
ORDERING: Specify pipe size and figure number. Order Fig. 595 washer separately.

Pipe Size	Max. Pipe O.D.	B	C	D	Bolt Size E	Recom. Tie Rod Size	Max. Test Pressure P.S.I.	Force On Clamp (in lbs.)	Wt. Each (in lbs.)
3	3.96	13 ³ / ₈	9 ³ / ₈	1 ¹ / ₄	5/8 X 3	3/4	250	4550	8.60
4	4.80	14 ¹ / ₂	10 ¹ / ₈	1 ¹ / ₄	5/8 X 3	3/4	250	4550	9.38
6	6.90	17	12 ⁵ / ₈	1 ¹ / ₄	5/8 X 3	3/4	250	9340	11.50
8	9.05	19 ³ / ₈	15 ³ / ₈	1 ¹ / ₄	5/8 X 3 ¹ / ₂	3/4	250	16080	20.54
10	11.10	22	17 ¹ / ₈	1 ¹ / ₄	3/4 X 3 ¹ / ₂	3/4	250	24180	23.15
12	13.20	25 ⁵ / ₈	20 ¹ / ₂	1 ¹ / ₄	7/8 X 3 ¹ / ₂	1	250	34230	35.85
14	15.30	27 ³ / ₄	23 ¹ / ₈	1 ³ / ₄	7/8 X 4	1	120	22200	46.78
16	17.40	31 ⁷ / ₈	25 ⁷ / ₈	1 ³ / ₄	1 X 4	1 ¹ / ₈	115	27760	70.53
18	19.50	35 ⁵ / ₈	29	1 ³ / ₄	1 ¹ / ₄ X 4 ¹ / ₂	1 ¹ / ₄	100	23900	84.65
20	21.60	38 ¹ / ₈	31 ¹ / ₈	1 ³ / ₄	1 ¹ / ₄ X 4 ¹ / ₂	1 ³ / ₈	75	27500	98.65
24	25.80	44 ¹ / ₂	36 ¹ / ₂	1 ³ / ₄	1 ¹ / ₂ X 5	1 ¹ / ₂	50	26200	135.50

Note: Clamps must be connected by means of threaded tie rods and the nuts drawn tight on the washers to assure a tight joint.

**Fig. 595
WASHER
For Fig. 590**

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.



FUNCTION: Designed to secure tie rods when used in conjunction with Fig. 590 four bolt underground pipe clamp.

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify tie rod size and figure number.

Tie Rod Size	Dia. B	C	D	For Pipe Sizes	Wt. Each (in lbs.)
3/4	7/8	1/2	3	3 - 10	1.19
1	1 ¹ / ₈	1/2	3 ¹ / ₂	12 - 14	1.49
1 ¹ / ₈	1 ¹ / ₄	5/8	3 ¹ / ₂	16	1.57
1 ¹ / ₄	1 ³ / ₈	3/4	3 ¹ / ₂	18	2.15
1 ³ / ₈	1 ¹ / ₂	3/4	3 ¹ / ₂	20	1.92
1 ¹ / ₂	1 ⁵ / ₈	3/4	3 ¹ / ₂	24	1.85

CENTER LOAD BEAM CLAMPS



FUNCTION: Designed to be used in the suspension of a hanger rod from the center of an I-beam. The clamp's design allows the load to be distributed equally on either side of the beam. Normally used in conjunction with Fig. 50 eye rod, Fig. 55 welded eye rod or Fig. 35 weldless eye nut.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 21) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 21).

ORDERING: Specify type number, width of flange and figure number.

Type No.	B	C	Bolt Size	Max. Rec. Load/lbs.
1	1/2	1 1/2	3/8	1000
2	1/2	1 1/2	1/2	1250
3	5/8	1 1/2	1/2	1500

Flange Width	Max. Flange Thickness	Wt. Each (in lbs.)		
		Type 1	Type 2	Type 3
3	7/16	.85	—	—
4	1/2	.88	1.10	1.63
5	5/8	1.10	1.28	2.06
6	3/4	1.13	1.44	2.21
7	7/8	1.23	1.57	2.47
8	7/8	1.25	1.66	2.53
9	1	1.43	1.77	2.69
10	1	1.52	1.86	2.81
11	1	1.63	1.98	3.06
12	1 1/4	1.71	2.10	3.18

FUNCTION: Designed to be used in the suspension of a hanger rod from the center of an I-beam. The clamp's design allows the load to be distributed equally on either side of the beam. Normally used in conjunction with Fig. 55 welded eye rod or Fig. 35 weldless eye nut.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 21) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 21).

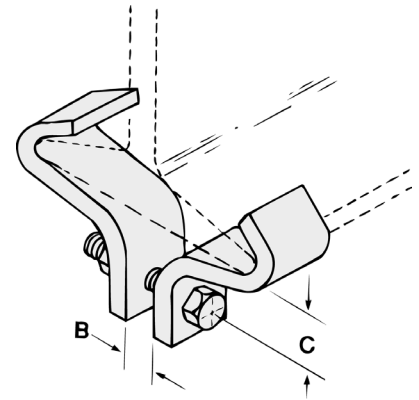
ORDERING: Specify type number, width of flange and figure number.

Type No.	B	C	Bolt Size	Max. Rec. Load/lbs.
4	3/4	2 1/4	5/8	3000
5	3/4	2 1/4	5/8	3250
6	3/4	2 1/4	3/4	3500

Flange Width	Max. Flange Thickness	Wt. Each (in lbs.)		
		Type 4	Type 5	Type 6
4	1/2	3.92	—	—
5	5/8	4.28	5.23	—
6	3/4	4.45	5.52	7.27
7	7/8	4.76	5.91	7.63
8	7/8	5.25	6.12	8.57
9	1	5.73	6.57	9.21
10	1	5.94	6.98	9.81
11	1	6.53	7.95	10.52
12	1 1/4	6.97	8.50	11.13

Fig. 610
STANDARD DUTY
CENTER LOAD
BEAM CLAMP

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

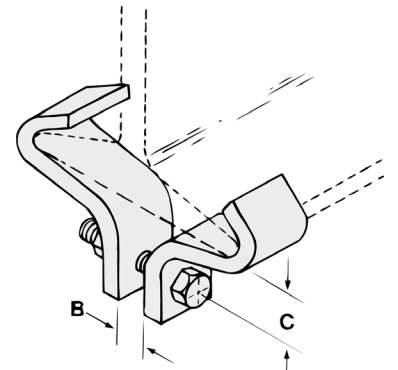


MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

Fig. 620
HEAVY DUTY
CENTER LOAD
BEAM CLAMP

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.



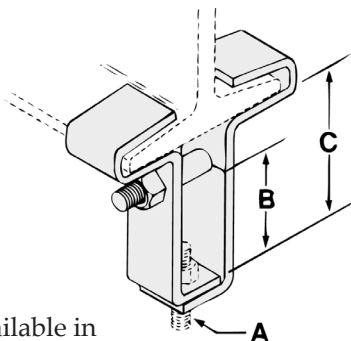
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized



CENTER LOAD BEAM CLAMPS

**Fig. 625
STEEL CENTER LOAD
BEAM CLAMP**



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

FUNCTION: Designed to be used in the suspension of a hanger rod from the center of an I-beam. The clamp provides a vertical adjustment of approximately 2".

ORDERING: Specify rod size, flange width and figure number.

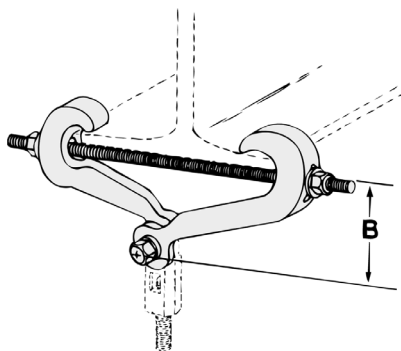
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

Rod Size A	B	C	Max. Rec. Load/lbs.	Wt. Each (in lbs.)						
				Flange Width (inches)						
				4	5	6	7	8	10	12
$\frac{3}{8}$	3	4	550	1.68	1.81	1.93	2.05	2.14	2.35	2.59
$\frac{1}{2}$	3	4	850	2.01	2.17	2.31	2.46	2.56	2.82	3.11
$\frac{5}{8}$	$3\frac{1}{4}$	$4\frac{1}{2}$	1100	3.28	3.52	3.73	3.95	4.11	4.49	4.93
$\frac{3}{4}$	$3\frac{1}{4}$	$4\frac{1}{2}$	1500	4.34	4.66	4.95	5.25	5.46	5.96	6.55
$\frac{7}{8}$	$3\frac{1}{2}$	5	2600	6.57	6.67	7.05	7.44	7.73	8.40	9.18
1	$3\frac{1}{2}$	5	4300	7.97	8.24	8.77	9.26	9.62	10.46	11.43
$1\frac{1}{8}$	$3\frac{1}{2}$	$5\frac{1}{2}$	6100	14.46	13.69	13.74	15.07	15.60	16.86	18.32
$1\frac{1}{4}$	$3\frac{1}{2}$	$5\frac{1}{2}$	8000	18.76	18.17	18.45	19.82	20.36	22.21	24.18

NOTE: Box style furnished on some sizes.

**Fig. 630
MALLEABLE IRON
CENTER LOAD
BEAM CLAMP**



FUNCTION: Designed to be used in the suspension of a hanger rod from the center of an I-beam. The clamp's design allows the load to be distributed equally on either side of the beam. The clamp is adjustable from $2\frac{3}{8}$ " to 7" and can be used with flange thicknesses up to .60 inches. Normally used in conjunction with Fig. 25 extension piece. An additional 1" or more of vertical adjustment is obtained when used with Fig 25.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 30) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 30)

ORDERING: Specify figure number. If extension piece is required, order Fig. 25 extension piece separately.

MATERIAL: Malleable iron

FINISH: Plain or Electro-galvanized

Max. Rod Size	B Rod Take Out (Clamp only)						Max. Rec. Load/lbs.	Wt. Each (in lbs.)
	Beam Flange Width (inches)							
	2 ³ / ₈	3	4	5	6	7		
7 ⁷ / ₈	3 ¹ / ₂	3 ⁷ / ₁₆	3 ⁵ / ₁₆	2 ¹⁵ / ₁₆	2 ⁹ / ₁₆	1 ⁷ / ₈	1365	2.49

CENTER LOAD BEAM CLAMPS



FUNCTION: Designed to be used in the suspension of a hanger rod from the center of an I-Beam. The clamp's design allows the load to be distributed equally on either side of the beam. The clamp is adjustable and normally used in conjunction with Fig. 35 weldless eye nut. An additional 1" (25.4) or more of vertical adjustment is obtained when used with Fig. 35.

APPROVALS: Complies with Federal Specifications WW-H-171E & A-A-1192A (Type 28 without links) (Type 29 with links) and Manufacturers' Standardization Society SP-69 (Type 28 without links) (Type 29 with links) when used with Fig. 35.

MATERIAL: Carbon steel

FINISH: Plain, Electro-galvanized or Hot Dipped Galvanized

ORDERING: Specify figure number, type, and finish.

**Fig. 632 & 633
STEEL CENTER LOAD
BEAM CLAMP**

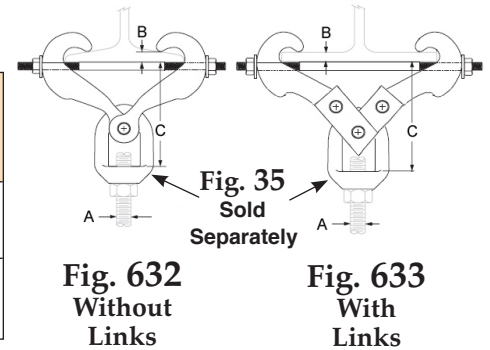


Fig. Number	Type Size	Max. Rod Size A	Flange Size		Max. Rec. Load (in lbs.)	Approx. Wt. Each (in lbs.)
			Width.	Max. Thickness B		
632	A	1	3-8	$\frac{3}{4}$	5000	9.8
632	B	1½	5-11	1	11500	25.0
633	A	1	7-15	$\frac{3}{4}$	5000	13.5
633	B	1½	8-16	1	11500	33.1

Fig. Number	Type Size	Rod Take-outs for Width of Beam Flange With Max. Rod Size C													
		3	4	5	6	7	8	9	10	11	12	13	14	15	16
632	A	$5\frac{3}{16}$	$5\frac{1}{8}$	5	$4\frac{13}{16}$	$4\frac{3}{8}$	$3\frac{15}{16}$	—	—	—	—	—	—	—	—
632	B	—	—	$7\frac{1}{2}$	7	$6\frac{3}{4}$	$6\frac{1}{2}$	$6\frac{1}{4}$	6	$5\frac{7}{8}$	—	—	—	—	—
633	A	—	—	—	—	$9\frac{1}{2}$	$9\frac{3}{8}$	$9\frac{1}{4}$	$9\frac{1}{8}$	$8\frac{7}{8}$	$8\frac{1}{2}$	$8\frac{1}{8}$	$7\frac{3}{4}$	$7\frac{1}{8}$	—
633	B	—	—	—	—	—	$11\frac{3}{4}$	$11\frac{1}{4}$	11	$10\frac{7}{8}$	$10\frac{3}{4}$	$10\frac{5}{8}$	$10\frac{1}{4}$	$9\frac{7}{8}$	$9\frac{3}{8}$

FUNCTION: Designed to be used in the suspension of a hanger rod from an I-Beam. The clamp is adjustable from 3½ to 8" and can be used with flange thicknesses up to .75 inches.

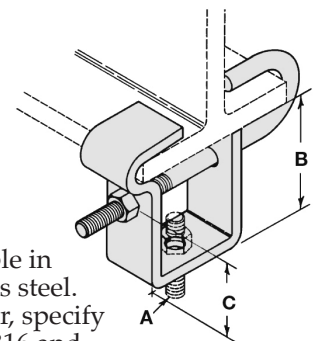
APPROVALS: Complies with Federal Specifications A-A-1192A (Type 27) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 27).

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.

**Fig. 635
ADJUSTABLE STEEL
BEAM CLAMP**



Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

Rod Size A	Flange Width (inches)		B	C	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
	Min.	Max.				
$\frac{3}{8}$	3½	8	$2\frac{3}{4}$	1½	300	1.04
$\frac{1}{2}$	3½	8	$2\frac{3}{4}$	1½	700	1.45
$\frac{5}{8}$	3½	8	$2\frac{3}{4}$	1½	1000	1.96
$\frac{3}{4}$	6	8	4	2	1800	6.50



PIPE COVERING PROTECTION SADDLES

**Fig. 651
PIPE SADDLE
FOR 1" INSULATION**

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.

FUNCTION: Designed to protect insulation on high temperature pipe lines.
The saddle is furnished with notches to minimize surface
contact with the pipe, thereby keeping heat loss to a minimum.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 39) and
Manufacturers' Standardization Society ANSI/SP-69 and SP-58
(Type 39).

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size, insulation size and figure number.

Pipe Size	Pipe Roller Size			Fig. 460 480 483 490 B	Fig. 470 475 B	C	Fig. 486 487 D	Actual Thickness of Covering	Max. Rec. Load (in lbs.)	Wt. Each (in lbs.)
	Use With Fig. No.									
	460, 480 483, 490	470 475	486 487							
³ / ₄	2	2 ¹ / ₂	2 - 3 ¹ / ₂	2 ¹ / ₁₆	2 ¹ / ₈	1 ⁵ / ₈	2 ¹ / ₄	⁷ / ₈	1200	1.41
1	2 ¹ / ₂	3	2 - 3 ¹ / ₂	2 ⁵ / ₁₆	2 ¹ / ₄	1 ¹³ / ₁₆	2 ⁷ / ₁₆	1 ¹ / ₁₆	1200	1.41
1 ¹ / ₄	2 ¹ / ₂	3	2 - 3 ¹ / ₂	2 ¹ / ₂	2 ⁷ / ₁₆	1 ¹⁵ / ₁₆	2 ⁹ / ₁₆	⁷ / ₈	1200	1.41
1 ¹ / ₂	3	3 ¹ / ₂	2 - 3 ¹ / ₂	2 ⁵ / ₈	2 ⁵ / ₈	2 ¹ / ₈	2 ¹¹ / ₁₆	1	1200	1.43
2	3 ¹ / ₂	4	2 - 3 ¹ / ₂	3	2 ¹⁵ / ₁₆	2 ³ / ₈	3 ¹ / ₁₆	1 ¹ / ₁₆	1200	1.52
2 ¹ / ₂	3 ¹ / ₂	5	2 - 3 ¹ / ₂	3 ¹ / ₄	3 ¹ / ₄	2 ¹¹ / ₁₆	3 ⁵ / ₁₆	1 ¹ / ₁₆	1200	1.52
3	4	5	2 - 3 ¹ / ₂	3 ¹ / ₂	3 ¹ / ₂	2 ¹⁵ / ₁₆	3 ⁹ / ₁₆	1	1200	1.63
3 ¹ / ₂	5	6	4 - 6	4	4	3 ⁵ / ₁₆	3 ¹⁵ / ₁₆	1 ¹ / ₄	1200	1.98
4	5	6	4 - 6	4 ¹ / ₄	4 ¹ / ₄	3 ⁹ / ₁₆	4 ³ / ₁₆	1 ¹ / ₁₆	1800	1.98
5	6	8	4 - 6	4 ¹³ / ₁₆	4 ¹³ / ₁₆	4 ¹ / ₈	4 ³ / ₄	1	1800	1.98
6	8	8	4 - 6	5 ³ / ₈	5 ³ / ₈	4 ¹ / ₂	5 ¹ / ₄	1	1800	3.91
8	10	12	8 - 10	7 ¹ / ₁₆	7 ¹ / ₁₆	6	7 ¹ / ₁₆	1 ¹ / ₂	1800	4.75
10	12	14	8 - 10	8 ⁵ / ₁₆	8 ¹ / ₂	7 ¹ / ₄	8 ⁵ / ₁₆	1 ⁹ / ₁₆	1800	4.75
12	14	16	12 - 14	8 ¹⁵ / ₁₆	8 ⁷ / ₈	7 ⁵ / ₈	8 ¹³ / ₁₆	1 ¹ / ₁₆	5000	6.88

Pipe Size	Pipe Roller Size			Fig. 460 480 483 490 B	Fig. 470 475 B	C	Fig. 486 487 D	Actual Thickness of Covering	Max. Rec. Load (in lbs.)	Wt. Each (in lbs.)
	Use With Fig. No.									
	460, 480 483, 490	470 475	486 487							
³ / ₄	3	3 ¹ / ₂	2 - 3 ¹ / ₂	2 ³ / ₄	2 ³ / ₄	2 ³ / ₁₆	2 ⁷ / ₈	1 ⁷ / ₁₆	1200	1.85
1	3	4	2 - 3 ¹ / ₂	2 ⁷ / ₈	2 ⁷ / ₈	2 ⁵ / ₁₆	3	1 ⁹ / ₁₆	1200	1.85
1 ¹ / ₄	3 ¹ / ₂	5	2 - 3 ¹ / ₂	3 ¹ / ₁₆	3 ¹ / ₁₆	2 ⁹ / ₁₆	3 ³ / ₁₆	1 ⁵ / ₈	1200	1.85
1 ¹ / ₂	3 ¹ / ₂	5	2 - 3 ¹ / ₂	3 ¹ / ₄	3 ¹ / ₄	2 ⁵ / ₈	3 ⁵ / ₁₆	1 ¹ / ₂	1200	1.85
2	4	5	2 - 3 ¹ / ₂	3 ¹ / ₂	3 ¹ / ₂	2 ⁷ / ₈	3 ⁹ / ₁₆	1 ⁹ / ₁₆	1200	1.98
2 ¹ / ₂	5	6	4 - 6	4	4	3 ⁵ / ₁₆	3 ¹⁵ / ₁₆	1 ⁷ / ₈	1200	2.25
3	5	6	4 - 6	4 ⁵ / ₁₆	4 ⁵ / ₁₆	3 ⁵ / ₈	4 ¹ / ₄	1 ⁹ / ₁₆	1800	2.25
3 ¹ / ₂	6	8	4 - 6	4 ⁹ / ₁₆	4 ⁹ / ₁₆	3 ¹¹ / ₁₆	4 ¹ / ₂	1 ¹³ / ₁₆	1800	2.50
4	6	8	4 - 6	4 ⁷ / ₈	4 ⁷ / ₈	4 ¹ / ₁₆	4 ³ / ₄	1 ⁹ / ₁₆	1800	2.50
5	8	8	4 - 6	5 ¹ / ₂	5 ¹ / ₂	4 ¹¹ / ₁₆	5 ³ / ₈	1 ¹ / ₂	1800	2.50
6	8	10	8 - 10	5 ⁷ / ₈	5 ¹¹ / ₁₆	5 ¹ / ₁₆	6	1 ¹ / ₂	1800	4.25
8	10	12	8 - 10	7 ¹ / ₁₆	7 ¹ / ₁₆	6	7 ¹ / ₁₆	1 ¹ / ₂	1800	5.50
10	12	14	8 - 10	8 ⁵ / ₁₆	8 ¹ / ₂	7 ¹ / ₄	8 ⁵ / ₁₆	1 ⁹ / ₁₆	1800	5.50
12	14	16	12 - 14	9 ¹ / ₂	9 ¹ / ₂	8 ¹ / ₁₆	9 ¹ / ₄	1 ⁹ / ₁₆	5000	8.33
14	16	18	12 - 14	10 ³ / ₁₆	10 ¹ / ₈	8 ³ / ₄	10 ¹ / ₁₆	1 ¹ / ₂	5000	8.33
16	18	20	16 - 20	11 ¹ / ₄	11 ¹ / ₄	9 ¹³ / ₁₆	11 ¹ / ₈	1 ¹ / ₂	5000	9.01
18	20	24	16 - 20	12 ⁵ / ₁₆	—	10 ¹³ / ₁₆	12 ³ / ₁₆	1 ¹ / ₂	5000	9.68
20	24	24	24	13 ⁹ / ₁₆	—	11 ⁵ / ₈	13 ¹ / ₁₆	1 ¹ / ₂	7200	11.00
24	30	—	30	16 ⁵ / ₁₆	—	13 ¹ / ₂	15 ¹ / ₄	1 ¹ / ₂	7200	13.00

PIPE COVERING PROTECTION SADDLES



FUNCTION: Designed to protect insulation on high temperature pipe lines. The saddle is furnished with notches to minimize surface contact with the pipe, thereby keeping heat loss to a minimum.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 39) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 39).

MATERIAL: Low carbon steel

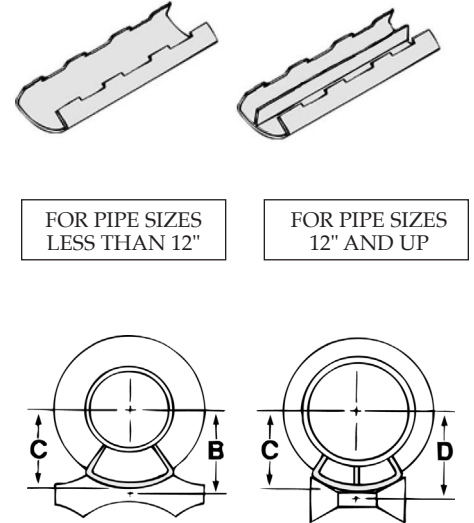
FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size, insulation size and figure number.

Pipe Size	Pipe Roller Size Use With Fig. No.			Fig. 460 480 483 490 B	Fig. 470 475 B	C	Fig. 486 487 D	Actual Thickness of Covering	Max. Rec. Load (in lbs.)	Wt. Each (in lbs.)
	460, 480 483, 490	470 475	486 487							
3/4	4	5	2 - 3 1/2	3 5/16	3 5/16	2 11/16	3 3/8	1 7/8	1200	2.58
1	4	5	2 - 3 1/2	3 1/2	3 1/2	2 7/8	3 1/2	2 1/8	1200	2.58
1 1/4	4	5	2 - 3 1/2	3 3/8	3 5/8	3	3 11/16	1 15/16	1200	2.58
1 1/2	5	6	4 - 6	4	4	3 5/16	3 7/8	2 5/16	1800	2.85
2	5	6	4 - 6	4 1/4	4 1/4	3 9/16	4 3/16	2 1/8	1800	2.85
2 1/2	6	8	4 - 6	4 1/2	4 5/8	3 7/8	4 1/2	2 5/16	1800	2.85
3	6	8	4 - 6	4 13/16	4 13/16	4 1/8	4 11/16	2 1/16	1800	3.30
3 1/2	8	8	4 - 6	5 1/8	5 1/8	4 5/16	5	2 1/4	1800	3.30
4	8	8	4 - 6	5 3/8	5 3/8	4 9/16	5 1/4	2 1/16	1800	3.30
5	8	10	8 - 10	6	6 1/16	5 3/16	6 1/8	2	1800	3.30
6	10	10	8 - 10	6 7/16	6 7/16	5 1/2	6 1/2	2	1800	5.25
8	10	12	8 - 10	7 9/16	7 9/16	6 1/2	7 9/16	2	1800	6.10
10	14	16	12 - 14	9 1/16	9	7 5/8	8 13/16	2 1/16	1800	7.05
12	16	18	16 - 20	10 3/16	10 1/16	8 5/8	10	2 1/2	5000	9.33
14	16	18	16 - 20	10 7/8	13 13/16	9 5/16	10 11/16	2	5000	9.33
16	18	20	16 - 20	11 3/16	11 3/4	10 3/16	11 9/16	2	5000	10.68
18	20	24	24	12 7/8	—	11 5/16	12 11/16	2	7200	10.68
20	24	24	24	13 9/16	—	12 1/4	13 5/8	2	7200	11.96
24	30	—	30	16 5/16	—	14	15 3/4	2	7200	13.95

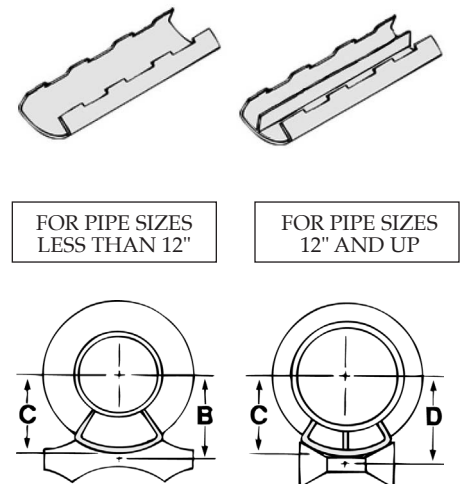
**Fig. 654
PIPE SADDLE
FOR 2" INSULATION**

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.



Pipe Size	Pipe Roller Size Use With Fig. No.			Fig. 460 480 483 490 B	Fig. 470 475 B	C	Fig. 486 487 D	Actual Thickness of Covering	Max. Rec. Load (in lbs.)	Wt. Each (in lbs.)
	460, 480 483, 490	470 475	486 487							
1 1/4	5	6	4 - 6	4 3/8	4 3/8	3 3/4	4 3/8	2 7/16	1200	3.25
1 1/2	6	8	4 - 6	4 1/2	4 5/8	3 7/8	4 1/2	2 13/16	1800	3.25
2	6	8	4 - 6	4 3/4	4 13/16	4 1/16	4 3/4	2 5/8	1800	3.25
2 1/2	8	8	4 - 6	5 1/8	5 1/8	4 1/4	5	2 7/8	1800	3.61
3	8	8	4 - 6	5 7/16	5 7/16	4 11/16	5 5/16	2 9/16	1800	3.61
3 1/2	8	10	8 - 10	5 5/8	5 5/8	4 11/16	5 11/16	2 3/4	1800	3.70
4	8	10	8 - 10	5 15/16	5 15/16	5	6	2 9/16	1800	3.70
5	10	10	8 - 10	6 9/16	6 9/16	5 5/8	6 5/8	2 9/16	1800	3.70
6	10	12	8 - 10	7 1/8	7 3/16	6 3/16	7 1/4	2 1/2	1800	6.10
8	12	14	8 - 10	8 5/16	8 1/2	7 1/4	8 5/16	2 11/16	1800	6.80
10	14	16	12 - 14	9 9/16	9 9/16	8 1/8	9 5/16	2 9/16	1800	7.10
12	16	18	16 - 20	10 11/16	10 9/16	9 1/8	10 1/2	2 5/8	5000	10.93
14	18	20	16 - 20	11 5/16	11 3/8	9 7/8	11 3/16	2 1/2	5000	10.93
16	20	24	16 - 20	12 5/16	—	10 13/16	12 3/16	2 1/2	7200	11.64
18	24	24	24	13 9/16	—	11 5/8	13 1/16	2 1/2	7200	12.92
20	24	—	24	14 11/16	—	12 3/4	14 3/16	2 1/2	7200	12.92
24	30	—	30	17 1/2	—	14 5/8	16 7/16	2 1/2	7200	14.91

**Fig. 655
PIPE SADDLE
FOR 2 1/2" INSULATION**

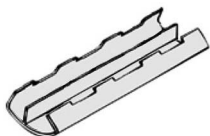
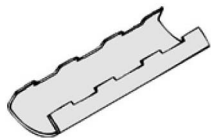




PIPE COVERING PROTECTION SADDLES

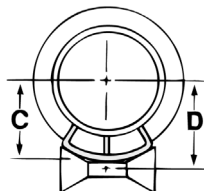
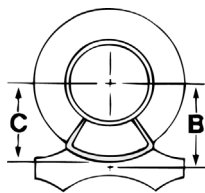
Fig. 656
PIPE SADDLE
FOR 3" INSULATION

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.



FOR PIPE SIZES
LESS THAN 12"

FOR PIPE SIZES
12" AND UP



FUNCTION: Designed to protect insulation on high temperature pipe lines. The saddle is furnished with notches to minimize surface contact with the pipe, thereby keeping heat loss to a minimum.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 39) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 39).

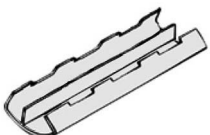
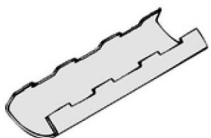
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size, insulation size and figure number.

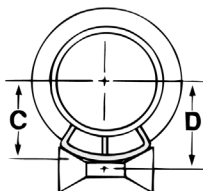
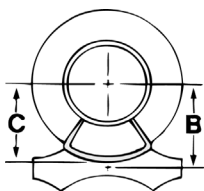
Pipe Size	Pipe Roller Size			Fig. 460 480 483 490 B	Fig. 470 475 B	C	Fig. 486 487 D	Actual Thickness of Covering	Max. Rec. Load (in lbs.)	Wt. Each (in lbs.)
	Use With Fig. No.			460, 480 483, 490	470 475	486 487				
2	8	8	4 - 6	5 ³ / ₈	5 ³ / ₈	4 ⁹ / ₁₆	5 ¹ / ₄	3 ¹ / ₈	1800	4.10
2 ¹ / ₂	8	10	4 - 6	5 ⁵ / ₈	5 ³ / ₄	4 ⁷ / ₈	5 ¹ / ₂	3 ³ / ₈	1800	4.10
3	8	10	8 - 10	6	6	5 ¹ / ₁₆	6 ¹ / ₁₆	3 ¹ / ₁₆	1800	4.32
3 ¹ / ₂	10	10	8 - 10	6 ⁵ / ₁₆	6 ⁵ / ₁₆	5 ³ / ₈	6 ³ / ₈	3 ⁵ / ₁₆	1800	4.32
4	10	10	8 - 10	6 ⁹ / ₁₆	6 ⁹ / ₁₆	5 ⁵ / ₈	6 ⁵ / ₈	3 ¹ / ₁₆	1800	4.32
5	10	12	8 - 10	7 ¹ / ₈	7 ¹ / ₄	6 ³ / ₁₆	7 ¹ / ₄	3 ¹ / ₁₆	1800	4.32
6	12	12	8 - 10	7 ⁵ / ₈	7 ⁵ / ₈	6 ⁹ / ₁₆	7 ⁵ / ₈	3	1800	8.10
8	14	16	12 - 14	9	9	7 ¹¹ / ₁₆	8 ³ / ₄	3 ¹ / ₈	1800	8.10
10	16	18	16 - 20	10 ¹ / ₈	10 ¹ / ₁₆	8 ¹¹ / ₁₆	10	3 ¹ / ₁₆	1800	8.40
12	18	20	16 - 20	11 ¹ / ₈	11 ¹ / ₄	9 ⁵ / ₈	11	3 ¹ / ₁₆	5000	11.88
14	18	20	16 - 20	11 ³ / ₄	11 ³ / ₄	10 ⁵ / ₁₆	11 ⁵ / ₈	3	5000	11.88
16	20	24	24	12 ⁷ / ₈	—	11 ¹ / ₁₆	12 ⁷ / ₁₆	3	7200	13.87
18	24	24	24	14 ³ / ₁₆	—	12 ¹ / ₄	13 ³ / ₈	3	7200	13.87
20	24	—	24	15 ¹ / ₄	—	13 ⁵ / ₁₆	14 ³ / ₄	3	7200	14.51
24	30	—	30	18 ¹ / ₁₆	—	15 ¹ / ₄	17	3	7200	15.86

Fig. 658
PIPE SADDLE
FOR 4" INSULATION



FOR PIPE SIZES
LESS THAN 12"

FOR PIPE SIZES
12" AND UP



Pipe Size	Pipe Roller Size			Fig. 460 480 483 490 B	Fig. 470 475 B	C	Fig. 486 487 D	Actual Thickness of Covering	Max. Rec. Load (in lbs.)	Wt. Each (in lbs.)
	Use With Fig. No.			460, 480 483, 490	470 475					
4	10	12	8 - 10	7 ⁵ / ₈	7 ⁵ / ₈	6 ¹ / ₂	7 ⁹ / ₁₆	4 ¹ / ₁₆	1800	5.90
5	12	14	8 - 10	8 ³ / ₁₆	8 ³ / ₈	7 ¹ / ₈	8 ³ / ₁₆	4 ³ / ₁₆	1800	5.90
6	14	16	12 - 14	9	9	7 ⁹ / ₁₆	8 ³ / ₄	4 ¹ / ₈	1800	10.68
8	16	18	12 - 14	10 ¹ / ₈	10 ¹ / ₈	8 ¹¹ / ₁₆	9 ⁷ / ₈	4 ³ / ₁₆	1800	10.68
10	18	20	16 - 20	11 ¹ / ₄	11 ¹ / ₄	9 ³ / ₄	11 ¹ / ₈	4 ¹ / ₁₆	1800	11.40
12	20	24	16 - 20	12 ³ / ₈	—	10 ¹³ / ₁₆	12 ³ / ₁₆	4 ¹ / ₈	5000	14.43
14	20	24	24	12 ⁷ / ₈	—	11 ⁵ / ₁₆	12 ⁵ / ₈	4	5000	14.43
16	24	24	24	14 ¹ / ₈	—	13 ⁵ / ₈	12 ³ / ₁₆	4	7200	15.79
18	24	—	24	15 ¹ / ₄	—	13 ³ / ₁₆	14 ³ / ₄	4	7200	15.79
20	30	—	30	17	—	14 ¹ / ₈	15 ⁷ / ₈	4	7200	16.90
24	30	—	30	19 ¹ / ₄	—	16 ⁷ / ₁₆	19 ¹ / ₄	4	7200	17.78

PIPE ALIGNMENT GUIDES



FUNCTION: Designed for use with insulated or non-insulated pipe lines to direct the axial expansion and contraction of the pipe. The use of two or more guides on both sides of the expansion joint is recommended to avoid a pivoting effect. The first pipe guide should be placed a maximum of 4 pipe diameters from an expansion joint. Pipe guides are not designed to support any of the piping system's weight therefore additional supports are required. The maximum operating temperature should not exceed 750°F.

MATERIAL: Carbon Steel

FINISH: Painted

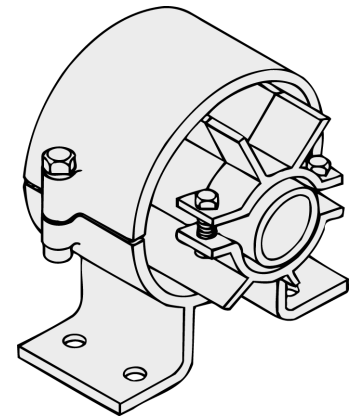
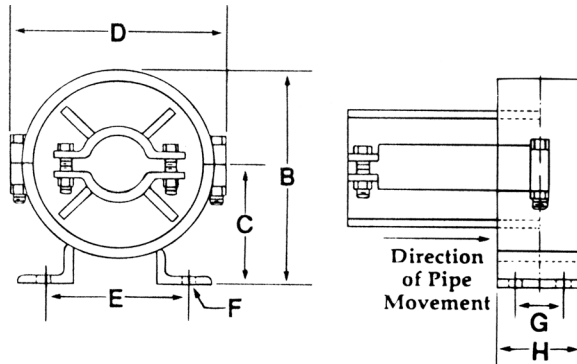
ORDERING: Specify pipe size and figure number.

INSTALL: The use of non-insulated guides with expansion joints shall be controlled by the recommendation of the expansion joint manufacturer (or in accordance with the Expansion Joint Manufacturers Association (EJMA) guidelines).

Fig. 670 - 678 PIPE ALIGNMENT GUIDES

INSULATION THICKNESS

Fig. 670	NONE
Fig. 671	1"
Fig. 673	1½"
Fig. 674	2"
Fig. 675	2½"
Fig. 676	3"
Fig. 677	3½"
Fig. 678	4"



Body No.	B	C	D	E	F	G	H	Axial Movement	Wt. Each (in lbs.)
4	5 ⁷ / ₈	3 ¹ / ₂	6 ¹ / ₈	4 ¹ / ₈	5 ⁵ / ₈	1 ³ / ₄	3	3	6
5	6 ³ / ₄	4	7 ¹ / ₈	4 ³ / ₈	5 ⁵ / ₈	1 ³ / ₄	3	3	8
6	7 ⁵ / ₈	4 ³ / ₈	8 ¹ / ₈	5 ¹ / ₈	5 ⁵ / ₈	1 ³ / ₄	3	3	10
8	9 ¹ / ₄	5 ¹ / ₄	10 ¹ / ₈	6 ¹ / ₈	5 ⁵ / ₈	1 ³ / ₄	3	3	13
10	11 ⁵ / ₈	6 ¹ / ₄	12 ¹ / ₈	7	5 ⁵ / ₈	2 ³ / ₄	4	4	20
12	13 ³ / ₈	7	14 ¹ / ₈	8 ¹ / ₄	5 ⁵ / ₈	2 ³ / ₄	4	4	25
14	15 ¹ / ₈	7 ⁷ / ₈	16 ¹ / ₈	9 ⁷ / ₈	3 ³ / ₄	4	6	6	40
16	17	8 ⁷ / ₈	18 ¹ / ₈	10 ⁷ / ₈	3 ³ / ₄	4	6	6	45
18	18 ³ / ₄	9 ³ / ₄	20 ¹ / ₈	11 ⁷ / ₈	3 ³ / ₄	4	6	6	55
20	21	10 ⁷ / ₈	22 ¹ / ₈	11 ³ / ₄	3 ³ / ₄	6	8	6	65
22	23 ¹ / ₈	12 ¹ / ₈	24 ¹ / ₈	14 ¹ / ₂	7 ⁷ / ₈	6	8	6	95
24	25	13	26 ¹ / ₈	15 ¹ / ₂	7 ⁷ / ₈	6	8	6	115
26	27 ³ / ₄	14 ³ / ₄	28 ¹ / ₈	17 ¹ / ₈	1 ¹ / ₈	6	8	6	135
30	31 ¹ / ₂	16 ¹ / ₂	32 ¹ / ₈	19 ¹ / ₄	1 ¹ / ₈	6	8	6	150

Note: Refer to pipe guide selection chart on page 70 to determine body number.



PIPE GUIDE CHARTS

PIPE GUIDE SELECTION CHART For Fig. 670 - 678

Use selection chart to determine body number for dimensional purposes on page 69.

Pipe Size	Body No.							
	Insulation Thickness							
	None	1	1½	2	2½	3	3½	4
½	4	4	4	5	6	8	8	10
¾	4	4	5	6	8	8	10	10
1	4	4	5	6	8	8	10	10
1¼	4	4	5	6	8	8	10	10
1½	5	5	5	6	8	8	10	10
2	5	5	6	8	8	10	10	12
2½	6	6	6	8	8	10	10	12
3	6	6	8	8	10	10	12	12
4	8	8	8	10	10	12	12	14
5	10	10	10	10	12	12	16	16
6	10	10	10	12	12	14	16	16
8	12	12	12	14	16	16	18	18
10	16	16	16	16	18	18	20	20
12	18	18	18	18	20	20	22	22
14	20	20	20	20	20	22	22	24
16	22	22	22	22	22	24	24	26
18	24	24	24	24	24	26	26	30
20	26	26	26	26	26	30	30	30
24	30	30	30	30	30	—	—	—
Fig. No.	670	671	673	674	675	676	677	678

PIPE GUIDE SPACING CHART

Pipe Size	Max. Distance between intermediate guides (in feet) for pressure (psig)									
	50	100	150	200	250	300	350	400	500	600
3	38	27	22	20	18	17	15	14	13	12
4	52	37	32	27	25	23	22	19	17	16
6	66	47	40	35	31	28	27	25	23	20
8	85	62	51	45	40	36	35	32	29	27
10	103	75	62	54	50	45	42	40	35	32
12	118	85	70	60	55	50	46	43	40	35
14	120	87	72	62	57	52	48	45	41	37
16	130	95	78	68	61	57	52	49	45	41
18	145	105	87	75	68	62	58	55	50	45
20	155	110	92	90	73	68	62	58	53	49
24	180	128	105	90	83	75	70	65	60	54

Note: The first pipe guide should be placed a maximum of 4 pipe diameters from an expansion joint.

PIPE SLIDE ASSEMBLY



FUNCTION: Designed to be welded directly to the pipe to allow for support from below and allow for horizontal movement with a low coefficient of friction.

The assembly consists of a carbon steel tee with a polished stainless bottom which rests on a PTFE (glass filled teflon) plate, bonded to a carbon steel plate. The base plate configuration will vary with the Type selected.

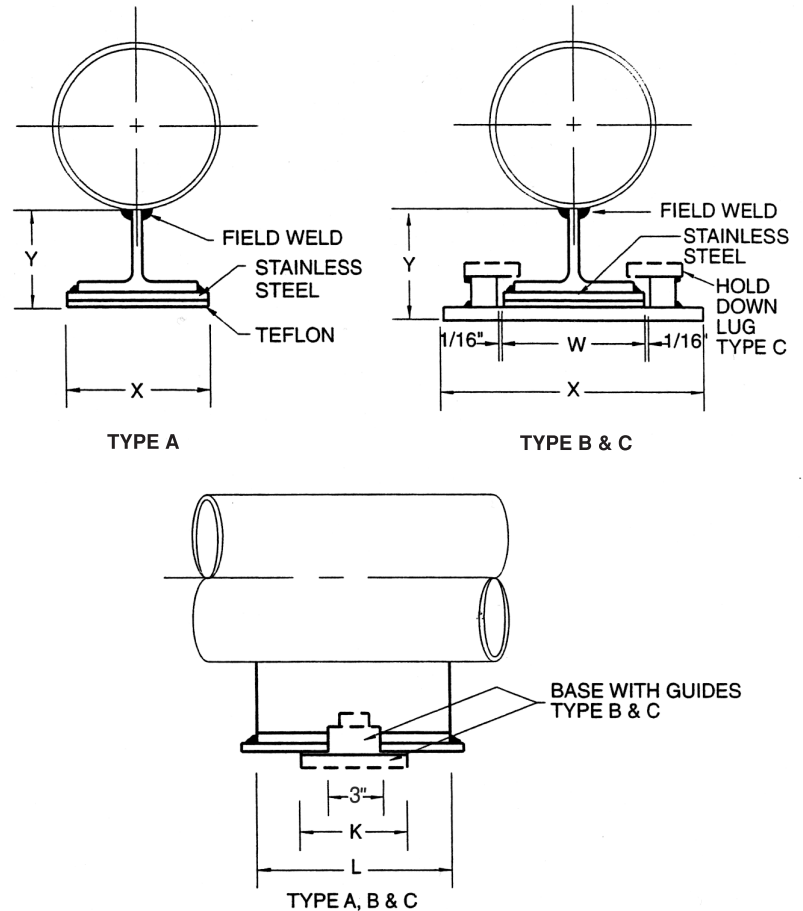
Maximum temperature: 200°F at the sliding surface.

Greater height dimensions, longer transverse and longitudinal movements, and other customer requirements can be supplied upon request.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 35) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 35).

MATERIAL: Carbon Steel, Stainless Steel, PTFE.

**Fig. 690
PIPE SLIDE ASSEMBLY**



Pipe Size	Max Load*	Travel	Y		L Types A,B,C	K Types A,B,C	W Types A,B,C	X		Weight Each
			Type A	Type B&C				Type A	Type B&C	
Up to 8"	7000	5	3-3/4	4-1/4	8-1/2	4	3-1/2	3-1/2	6	15.5
		10			13-1/2					
		15			18-1/2					
		20			23-1/2					
10" to 24"	13500	5	3-3/4	4-1/4	10-1/2	6	4-1/2	4-1/2	7	20.7
		10			15-1/2					
		15			20-1/2					
		20			25-1/2					

*Based upon 500 psi/35.2 Kg per sq. cm. pressure on the PTFE.

FINISH: Plain, Painted, Hot-Dip Galvanized.

ORDERING: Specify pipe size, figure number, travel, and type.

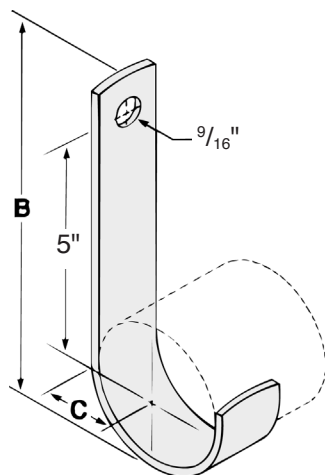
Dimensions	Temperature	Loads	Weight
Inches	Fahrenheit	Pounds	Pounds



J-Hooks

Fig. 810 RETURN LINE STRAIGHT J-HOOK

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.



FUNCTION: Designed to support pipe running along the wall, in applications where clearance between the pipe and the wall is not desired.

MATERIAL: Low carbon steel

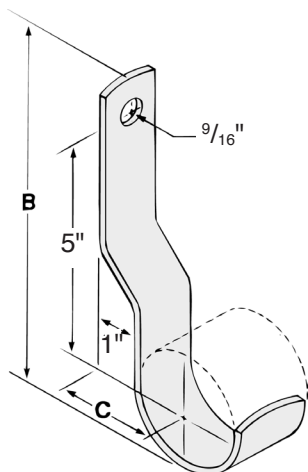
FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size and figure number.

Pipe Size	B	C	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	6 ⁹ / ₃₂	5/8	200	.51
3/4	6 ¹ / ₈	1 ¹ / ₁₆	200	.53
1	6 ⁹ / ₁₆	7/8	200	.80
1 1/4	6 ⁵ / ₈	1 ¹ / ₁₆	200	.83
1 1/2	6 ¹¹ / ₁₆	1 ³ / ₁₆	200	.87
2	7 ³ / ₃₂	1 ⁵ / ₈	200	.93
2 1/2	7 ¹⁵ / ₃₂	1 ¹¹ / ₁₆	350	1.16
3	7 ⁵ / ₈	2	350	1.27
3 1/2	8 ¹ / ₃₂	2 ¹ / ₄	350	1.37
4	8 ⁹ / ₁₆	2 ⁵ / ₈	450	2.19
5	9	3 ³ / ₁₆	450	3.50
6	9 ³ / ₈	3 ¹¹ / ₁₆	450	4.15

Fig. 820 RETURN LINE OFFSET J-HOOK

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.



FUNCTION: Designed to support pipe running along the wall, in applications where clearance between the pipe and the wall is desired.

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size and figure number.

Pipe Size	B	C	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	6 ⁹ / ₃₂	1 ⁵ / ₈	200	.53
3/4	6 ¹ / ₈	1 ¹¹ / ₁₆	200	.55
1	6 ⁹ / ₁₆	1 ⁷ / ₈	200	.81
1 1/4	6 ⁵ / ₈	2 ¹ / ₁₆	200	.84
1 1/2	6 ¹¹ / ₁₆	2 ³ / ₁₆	200	.89
2	7 ³ / ₃₂	2 ⁵ / ₈	200	.96
2 1/2	7 ¹⁵ / ₃₂	2 ¹¹ / ₁₆	350	1.26
3	7 ⁵ / ₈	3	350	1.38
3 1/2	8 ¹ / ₃₂	3 ¹ / ₄	350	1.47
4	8 ⁹ / ₁₆	3 ⁵ / ₈	450	2.39
5	9	4 ³ / ₁₆	450	3.90
6	9 ³ / ₈	4 ¹¹ / ₁₆	450	4.25

PIPE STRAPS



FUNCTION: Designed to hold pipe or conduit flush with mounting surface for light duty applications.

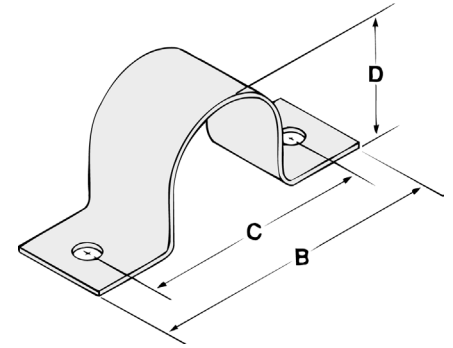
MATERIAL: Low carbon steel

FINISH: Electro-galvanized

ORDERING: Specify pipe size and figure number.

**Fig. 825
TWO HOLE
PIPE STRAP**

Pipe Size	B	C	D	Wt Each (in lbs.)
1/4	1 5/8	1 1/8	5/8	.01
3/8	2 3/8	1 5/8	1 1/16	.03
1/2	2 5/8	1 7/8	7/8	.04
3/4	2 3/4	2 1/8	1 1/8	.05
1	3 3/8	2 5/8	1 7/16	.06
1 1/4	4 1/4	3 3/16	1 13/16	.08
1 1/2	4 1/2	3 1/2	1 15/16	.10
2	5 3/8	4 1/8	2 9/16	.13
2 1/2	6	4 1/2	3 1/16	.20
3	7 1/4	5 3/4	3 3/4	.50
4	6 3/4	5 3/4	4 11/16	.51



*Note: Also available in copper tubing sizes with copper finish.
To order, specify figure 826 and tube size.*

FUNCTION: Designed to hold pipe flush with mounting surface.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 26) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 26).

MATERIAL: Low carbon steel

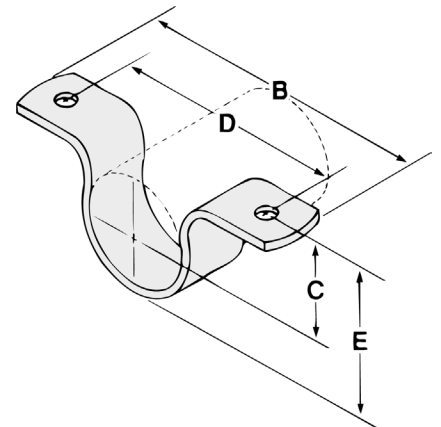
FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size and figure number.

**Fig. 830
SHORT
PIPE STRAP**

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

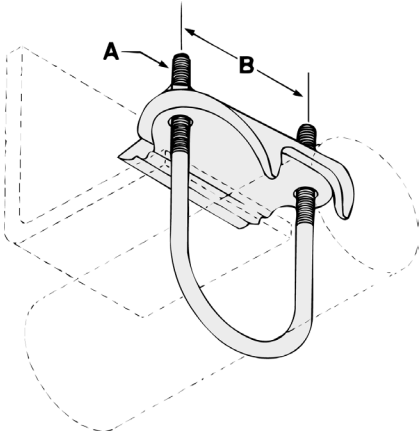
Pipe Size	B	C	D	E	Hole Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3 7/8	5/16	2 7/8	1 5/16	7/16	300	.25
3/4	4 1/6	7/16	3 1/16	1 1/8	7/16	300	.27
1	4 5/16	9/16	3 5/16	1 3/8	7/16	300	.29
1 1/4	4 11/16	1 1/16	3 11/16	1 5/8	7/16	300	.33
1 1/2	4 15/16	1 3/16	3 15/16	2	7/16	300	.35
2	5 1/2	1 5/16	4 1/2	2 1/4	7/16	300	.41
2 1/2	6	1 3/16	5	2 7/8	7/16	500	.89
3	6 5/8	1 1/2	5 5/8	3 1/2	7/16	500	1.06
3 1/2	7 1/8	1 3/4	6 1/8	4	7/16	500	1.23
4	8 3/8	2	7 1/8	4 1/2	9/16	500	1.58





PIPE CLAMPS

**Fig. 840
RIGHT ANGLE
CLAMP**



FUNCTION: Designed for anchoring pipe or conduit at a right angle to structural members.

MATERIAL: Malleable iron with low carbon steel U-bolt and nuts

FINISH: Electro-galvanized

ORDERING: Specify pipe size and figure number.

Pipe Size	Rod Size A	B	Wt. Each (in lbs.)
1/2	5/16	1 3/16	.41
3/4	5/16	1 3/8	.42
1	5/16	1 5/8	.47
1 1/4	5/16	2 1/16	.54
1 1/2	5/16	2 3/8	.57
2	3/8	2 13/16	.85
2 1/2	3/8	3 7/16	1.06
3	3/8	4 1/16	1.10
3 1/2	3/8	4 9/16	1.28
4	3/8	5 1/16	1.40

WALL BRACKETS



FUNCTION: Designed to suspend hanger rod for support of light loads under 750 lbs. Normally used in conjunction with Fig. 850C wall bracket clip.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 31) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 31).

MATERIAL: Low carbon steel

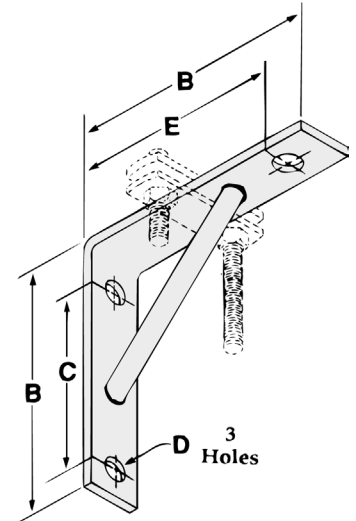
FINISH: Plain or Electro-galvanized

ORDERING: Specify type number and figure number.

Type Number	B	C	Hole Size D	E	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1	9	6 $\frac{1}{2}$	$\frac{13}{16}$	8	750	6.00
2	13	10 $\frac{1}{2}$	$\frac{13}{16}$	12	750	8.70
3	19	16 $\frac{1}{2}$	$\frac{13}{16}$	18	750	10.60

**Fig. 850
LIGHT DUTY
WALL BRACKET**

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.



FUNCTION: Designed for use in conjunction with Fig. 850 wall bracket, to allow the rod to be suspended at any point along the length of the bracket.

MATERIAL: Low carbon steel

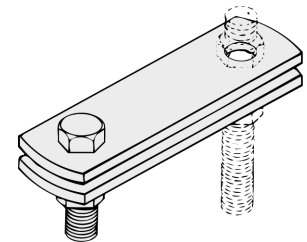
FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.

Rod Size	For Pipe Sizes	Wt. Each (in lbs.)
$\frac{3}{8}$	$\frac{1}{2}$ to 2	.73
$\frac{1}{2}$	2 $\frac{1}{2}$ to 3 $\frac{1}{2}$	1.44

**Fig. 850C
WALL BRACKET CLIP
For Fig. 850**

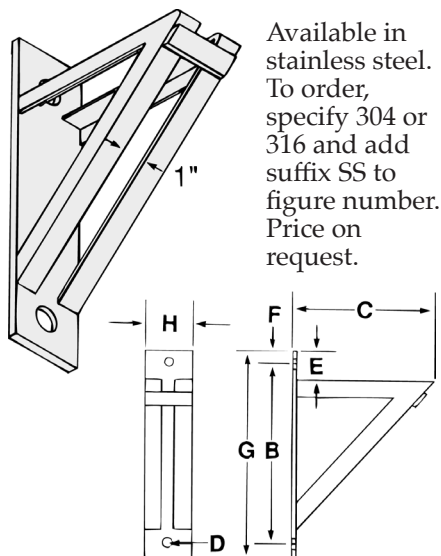
Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.





WALL BRACKETS

Fig. 855
MEDIUM DUTY
WALL BRACKET



FUNCTION: Designed for the support or suspension of loads up to 1500 lbs. from walls or structures. The 1" space between the angles allows the rod to be placed anywhere along the length of the brackets.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 32) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 32).

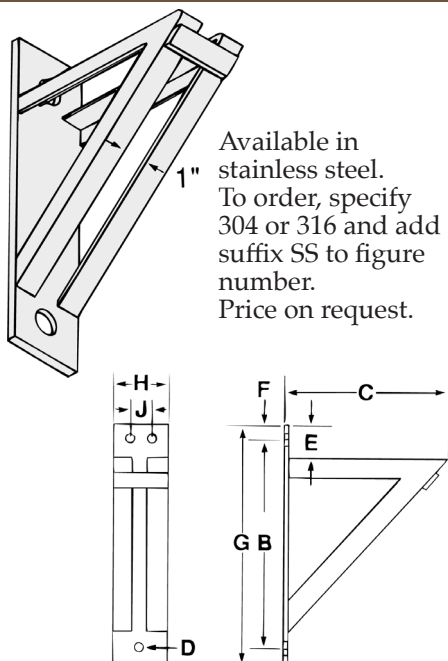
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify type number and figure number.

Type No.	B	C	Hole Size D	E	F	G	H	Angle Iron Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
0	15 $\frac{1}{2}$	12	$\frac{13}{16}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	18	4	1 $\frac{1}{2}$ X 1 $\frac{1}{2}$ X $\frac{3}{16}$	1500	17.40
1	21 $\frac{1}{2}$	18	$\frac{13}{16}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	24	4 $\frac{1}{2}$	1 $\frac{3}{4}$ X 1 $\frac{3}{4}$ X $\frac{3}{16}$	1500	27.30
2	27 $\frac{1}{2}$	24	$\frac{13}{16}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	30	5	2 X 2 X $\frac{1}{4}$	1500	47.60

Fig. 860
HEAVY DUTY
WALL BRACKET



FUNCTION: Designed for the support or suspension of loads up to 3000 lbs. from walls or structures. The 1" space between the angles allows the rod to be placed anywhere along the length of the brackets.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 33) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 33).

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify type number and figure number.

Type No.	B	C	Hole Size D	E	F	G	H	J	Angle Iron Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
0	15 $\frac{1}{4}$	12	$\frac{13}{16}$	2 $\frac{3}{4}$	1 $\frac{1}{2}$	18	4	*	2 X 1 $\frac{1}{2}$ X $\frac{1}{4}$	3000	24.33
1	21 $\frac{3}{8}$	18	$\frac{15}{16}$	2 $\frac{3}{4}$	1 $\frac{3}{8}$	24	5	2 $\frac{3}{4}$	2 X 2 X $\frac{1}{4}$	3000	51.80
2	27 $\frac{1}{2}$	24	1 $\frac{1}{16}$	2 $\frac{3}{4}$	1 $\frac{1}{4}$	30	5	2 $\frac{1}{2}$	2 $\frac{1}{2}$ X 2 X $\frac{5}{16}$	3000	65.84
3	33 $\frac{1}{4}$	30	1 $\frac{1}{16}$	3	1 $\frac{1}{2}$	36	5	2 $\frac{1}{2}$	2 $\frac{1}{2}$ X 2 X $\frac{5}{16}$	3000	82.10
4	39	36	1 $\frac{1}{16}$	3	1 $\frac{1}{2}$	42	6	3 $\frac{1}{2}$	3 $\frac{1}{2}$ X 2 $\frac{1}{2}$ X $\frac{3}{8}$	3000	140.52
5	46	42	1 $\frac{1}{16}$	3 $\frac{1}{2}$	2	50	6	3 $\frac{1}{2}$	3 $\frac{1}{2}$ X 2 $\frac{1}{2}$ X $\frac{3}{8}$	3000	166.40

*one hole

PIPE SUPPORTS



FUNCTION: Designed to support horizontal pipe from floor stanchions. Normally used in conjunction with Fig. 871 threaded base stand.

MATERIAL: Steel

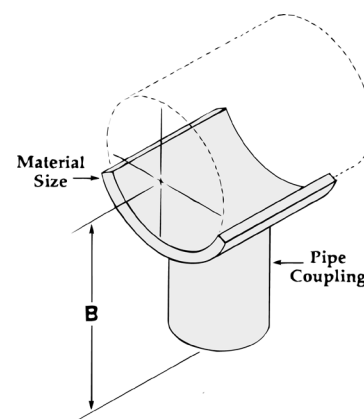
FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size and figure number.

Pipe Size	Coupling Pipe Size	B	Wt. Each (in lbs.)
1½	1¼	3¼	.85
2	1¼	3⅝	1.12
2½	1½	3⅞	1.62
3	1½	4⅜	1.79
3½	1½	4⅞	1.94
4	2	4¾	2.73
5	2	5⅝	3.09
6	2½	6⅝	5.86
8	2½	7⅝	6.88
10	3	9⅛	10.11
12	3	10⅛	11.28

Fig. 870 PIPE SADDLE SUPPORT WITH COUPLING

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.



FUNCTION: Designed for use as a base stand for pipe supports.

MATERIAL: Steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size, height and figure number.

Pipe Size	B	Hole Size C	Thread Length D	Plate Size	Wt. Each (in lbs.)
1	1	9/16	1½	¼ X 6 X 6	4.95
1¼	1	9/16	1½	¼ X 6 X 6	5.83
1½	1	9/16	1½	¼ X 6 X 6	6.49
2	1	9/16	1½	¼ X 6 X 6	7.85
2½	1¼	9/16	1½	⅜ X 8 X 8	15.24
3	1½	13/16	1½	⅜ X 12 X 12	26.24
4	1½	15/16	2	½ X 12 X 12	35.94
6	1½	1⅛	2	½ X 18 X 18	73.46

Note: Wt. based on a height of 18".

Fig. 871 THREADED BASE STAND

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

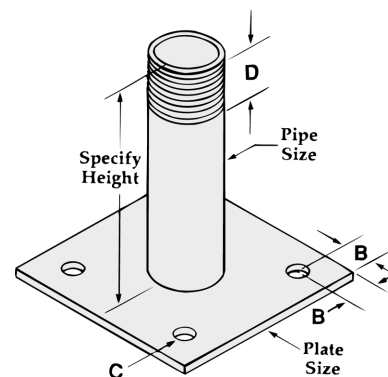
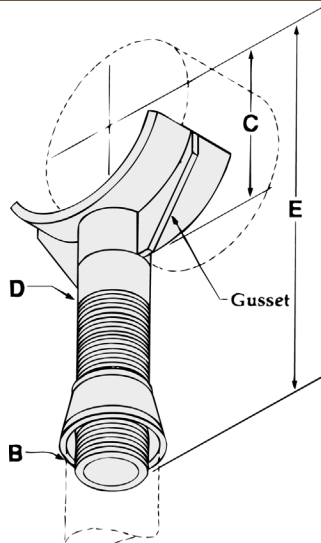


Fig. 875
ADJUSTABLE PIPE
SADDLE SUPPORT



MATERIAL: Steel with Malleable iron reducer

FINISH: Plain or Electro-galvanized

Note: Gussets furnished on 8" and larger.

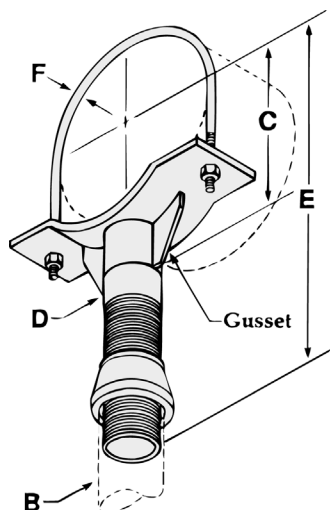
FUNCTION: Designed to support horizontal pipe. Normally used in conjunction with Fig. 871 threaded base stand to provide vertical adjustment of the pipe.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 38) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 38).

ORDERING: Specify pipe size and figure number.

Pipe Size	B	C	D	Adjustment E		Wt. Each (in lbs.)
				Min.	Max.	
2 1/2	2 1/2	3 11/16	1 1/2	9 7/16	13 15/16	5.25
3	2 1/2	4	1 1/2	9 3/4	14 1/4	5.50
3 1/2	2 1/2	4 1/4	1 1/2	10	14 1/2	5.50
4	3	4 1/2	2 1/2	10 3/4	15 1/4	10.60
5	3	5 1/16	2 1/2	11 5/16	15 13/16	10.81
6	3	5 11/16	2 1/2	11 15/16	16 7/16	12.34
8	3	6 11/16	2 1/2	12 15/16	17 7/16	15.00
10	3	7 7/8	2 1/2	14 1/8	18 5/8	16.14
12	3	8 7/8	2 1/2	15 1/8	19 5/8	17.68
14	4	11 5/8	3	17 3/8	21 7/8	28.18
16	4	12 5/8	3	18 3/8	22 7/8	30.10
18	6	14 3/4	4	20 1/2	25	49.98
20	6	15 3/4	4	21 1/2	26	52.00
24	6	18	4	23 3/4	28 1/4	63.47
30	6	21	4	26 3/4	31 1/4	92.24
36	6	24	4	29 3/4	34 1/4	110.77

Fig. 876
ADJUSTABLE PIPE
SADDLE SUPPORT
WITH U-BOLT



MATERIAL: Steel with Malleable iron reducer

FINISH: Plain or Electro-galvanized

Note: Gussets furnished on 8" and larger.

FUNCTION: Designed to support horizontal pipe. Normally used in conjunction with Fig. 871 threaded base stand to provide vertical adjustment of the pipe. The U-bolt is used to secure the pipe to the saddle.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 38) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 38).

ORDERING: Specify pipe size and figure number.

Pipe Size	B	C	D	Adjustment E		Dia. F	Wt. Each (in lbs.)
				Min.	Max.		
2 1/2	2 1/2	3 11/16	1 1/2	9 7/16	13 15/16	1/2	8.90
3	2 1/2	4	1 1/2	9 3/4	14 1/4	1/2	9.05
3 1/2	2 1/2	4 1/4	1 1/2	10	14 1/2	1/2	9.25
4	3	4 1/2	2 1/2	10 3/4	15 1/4	1/2	13.25
5	3	5 1/16	2 1/2	11 5/16	15 13/16	1/2	13.45
6	3	5 11/16	2 1/2	11 15/16	16 7/16	5/8	16.25
8	3	6 11/16	2 1/2	12 15/16	17 7/16	5/8	17.95
10	3	8	2 1/2	14 1/4	18 3/4	3/4	22.55
12	3	9	2 1/2	15 1/4	19 3/4	7/8	26.10
14	4	11 3/4	3	17 1/2	22	7/8	41.65
16	4	12 3/4	3	18 1/2	23	7/8	44.10
18	6	15	4	20 3/4	25 1/4	1	70.90
20	6	16	4	21 3/4	26 1/4	1	73.75
24	6	18 1/2	4	24 1/4	28 3/4	1	91.60
30	6	21	4	26 3/4	31 1/4	1	106.55
36	6	24	4	29 3/4	34 1/4	1	112.50

PIPE SUPPORTS



FUNCTION: Designed to provide up to 4½ inches of vertical adjustment after installation. Normally used in conjunction with Fig. 871 threaded base stand, Fig. 880 pipe saddle support or Fig. 882 pipe saddle support with U-bolt.

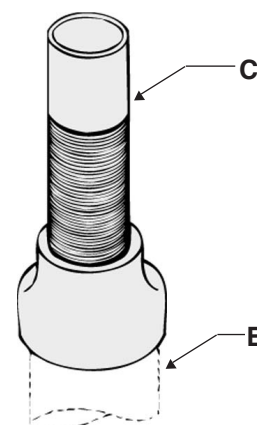
APPROVALS: Complies with Federal Specifications A-A-1192A (Type 38) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 38) when used with Fig. 880.

MATERIAL: Steel pipe with malleable iron reducer.

FINISH: Plain or Electro-galvanized

ORDERING: Specify adjuster size and figure number.

**Fig. 877
PIPE SUPPORT
ADJUSTER**



Adjuster Size	For Pipe Size	B	C	Max. Adjustment	Wt. Each (in lbs.)
1½	2½ to 3½	2½	1½	4½	4.05
2½	4 to 12	3	2½		8.30
3	14 to 16	4	3	4½	12.60
4	18 to 36	6	4		22.60

**Fig. 878 & 879
PIPE SUPPORT
ADJUSTERS**

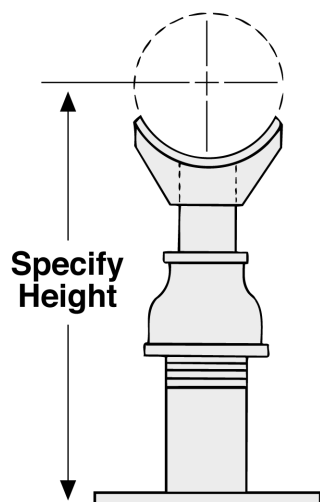


Fig. 878

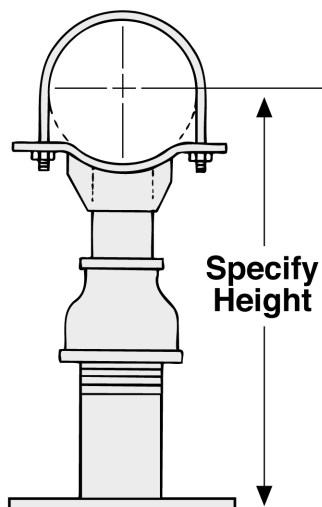


Fig. 879

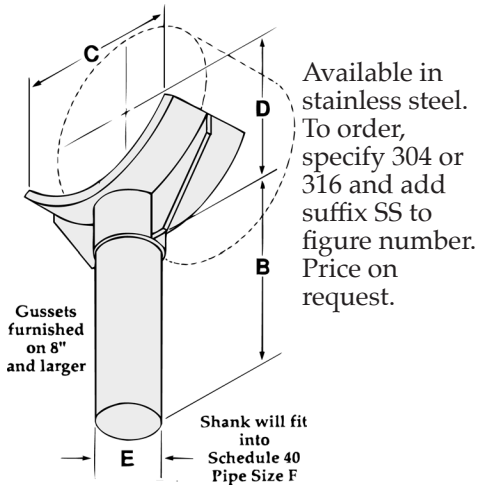
FUNCTION: Designed to provide up to 4½ inches of vertical adjustment after installation.

MATERIAL: Steel pipe with malleable iron reducer.

FINISH: Plain or Electro-galvanized

ORDERING: Specify pipe size, figure number, and height to center of pipe.

Fig. 880
PIPE SADDLE
SUPPORT



MATERIAL: Steel

FINISH: Plain or Electro-galvanized

FUNCTION: Designed to support horizontal pipe running close to the floor. Normally used in conjunction with floor stanchions.

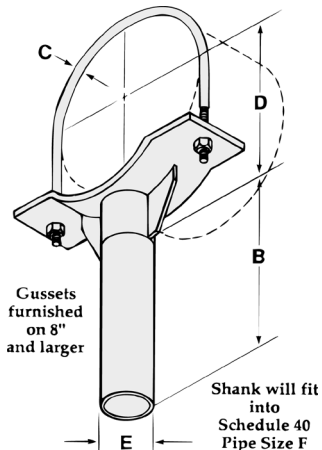
APPROVALS: Complies with Federal Specifications A-A-1192A (Type 36) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 36).

ORDERING: Specify pipe size and figure number.

Pipe Size	B	C	D	E	Pipe Size F	Wt. Each (in lbs.)
2 1/2	4	2 1/2	3 11/16	1 1/2	1 1/2	1.67
3	4	3 1/32	4	1 1/2	1 1/2	1.76
3 1/2	4	3 7/16	4 1/4	1 1/2	1 1/2	1.88
4	4	4 1/4	4 1/2	2 3/8	2 1/2	3.60
5	4	4 13/16	5 1/16	2 3/8	2 1/2	3.81
6	4	6 1/16	5 11/16	2 3/8	2 1/2	5.50
8	4	7 15/16	6 11/16	2 3/8	2 1/2	7.00
10	4	9 5/8	7 7/8	2 3/8	2 1/2	7.66
12	4	11 11/16	8 7/8	2 3/8	2 1/2	8.95
14	4	12 1/8	11 5/8	2 7/8	3	16.54
16	4	13 7/8	12 5/8	2 7/8	3	18.70
18	4	15 9/32	14 3/4	4	4	27.98
20	4	17 5/16	15 3/4	4	4	30.20
24	4	20 25/32	18	4	4	41.46
30	4	26	21	4	4	76.24
36	4	31 3/16	24	4	4	88.77

Fig. 882
PIPE SADDLE
SUPPORT
WITH U-BOLT

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.



MATERIAL: Steel

FINISH: Plain or Electro-galvanized

FUNCTION: Designed to support horizontal pipe running close to the floor. The U-bolt securely holds the pipe to the saddle.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 37) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 37).

ORDERING: Specify pipe size and figure number.

Pipe Size	B	C	D	E	Pipe Size F	Wt. Each (in lbs.)
2 1/2	4	1/2	3 11/16	1 1/2	1 1/2	4.85
3	4	1/2	4	1 1/2	1 1/2	5.00
3 1/2	4	1/2	4 1/4	1 1/2	1 1/2	5.20
4	4	1/2	4 1/2	2 3/8	2 1/2	4.95
5	4	1/2	5 1/16	2 3/8	2 1/2	5.15
6	4	5/8	5 11/16	2 3/8	2 1/2	7.95
8	4	5/8	6 11/16	2 3/8	2 1/2	9.65
10	4	3/4	8	2 3/8	2 1/2	14.25
12	4	7/8	9	2 3/8	2 1/2	17.80
14	4	7/8	11 3/4	2 7/8	3	29.05
16	4	7/8	12 3/4	2 7/8	3	31.50
18	4	1	15	4	4	48.30
20	4	1	16	4	4	53.15
24	4	1	18 1/2	4	4	69.00
30	4	1	21	4	4	83.95
36	4	1	24	4	4	96.50

ADJUSTABLE Q-DECK INSERT SEISMIC BRACE



FUNCTION: Designed for installation in metal concrete deck forms to provide a means to support piping and equipment.

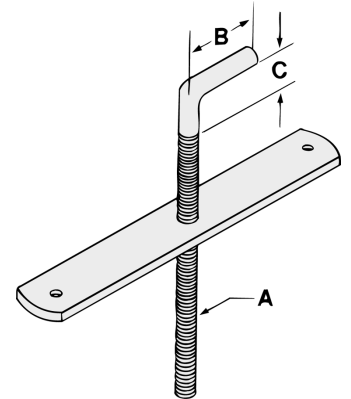
MATERIAL: Low carbon steel with electro-galvanized rod

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.

**Fig. 885
ADJUSTABLE
Q-DECK INSERT**

Rod Size A	B	Thread Length	C	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$	$1\frac{11}{16}$	7	1	730	.80
$\frac{1}{2}$	$1\frac{3}{4}$	7	1	1350	.99
$\frac{5}{8}$	$2\frac{5}{16}$	7	1	2160	1.29
$\frac{3}{4}$	$2\frac{3}{8}$	7	1	3230	2.38
$\frac{7}{8}$	$2\frac{3}{8}$	7	1	4480	2.84
1	$2\frac{3}{8}$	7	1	5900	2.97



FUNCTION: Designed for bracing pipe against sway due to seismic disturbance. Often used in conjunction with Fig. 520 pipe clamp and Fig. 920 angle bracket at each end of the sway brace.

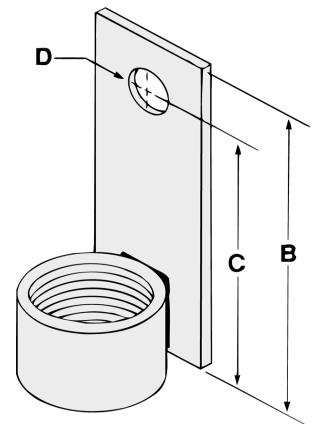
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify figure number.

**Fig. 890
SEISMIC
BRACE**

Tapped Pipe Size	B	C	D	Wt. Each (in lbs.)
1	4	$3\frac{1}{4}$	$\frac{9}{16}$	.51





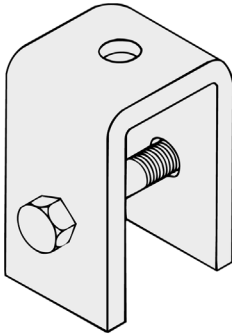
WELDED BEAM ATTACHMENT

Fig. 900 & 900-1 WELDED BEAM ATTACHMENT

Fig. 900 WITH BOLT AND NUT

Fig. 900-1 WITHOUT BOLT
AND NUT

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.



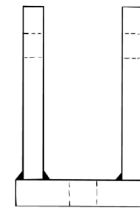
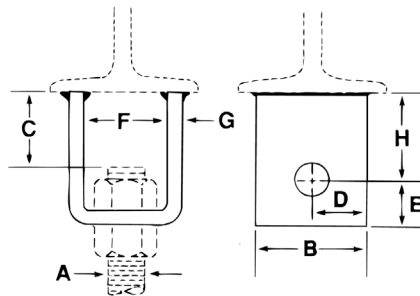
FUNCTION: Designed for attaching hanger rod to the bottom flange of a beam. If installed in the inverted position, the hanger rod can be vertically adjusted otherwise bolt and nut are required.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 22) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 22).

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.



Welded design
furnished on 1 1/2"
and larger.

Rod Size A	B	C	D	E	F	G	H	Bolt or Pin Size	Max. Rec. Load/lbs.		Wt. Each (in lbs.)	
									650°F	750°F	w/o B&N	with B&N
3/8	2	1 7/8	1	7/8	1 1/4	3 ga.	2	1/2 X 2 1/2	730	572	.87	1.13
1/2	2	1 3/4	1	7/8	1 1/4	3 ga.	2	5/8 X 2 1/2	1350	1057	.85	1.28
5/8	2	1 3/4	1	7/8	1 1/4	3 ga.	2	3/4 X 2 1/2	2160	1692	.84	1.50
3/4	2 1/2	2	1 1/4	1 1/4	2 1/4	3/8	2	7/8 X 4	3230	2530	2.00	3.04
7/8	2 1/2	3	1 1/4	1 1/4	2 3/8	3/8	3	1 X 4 1/2	4480	3508	2.50	4.02
1	3	3	1 1/2	1 1/2	2 3/4	1/2	3	1 1/8 X 5	5900	4620	4.14	6.30
1 1/8	3	3	1 1/2	1 3/4	3	1/2	3	1 1/4 X 5	7450	5834	4.37	7.15
1 1/4	4	3 1/2	2	2	3 1/2	5/8	3	1 3/8 X 6 1/2	9500	7440	8.50	12.62
1 1/2	5	4	2 1/2	2 1/2	3	3/4	4	1 5/8 X 6	13800	10807	16.41	23.23
1 3/4	5	5	2 1/2	2 3/4	3 3/4	3/4	5	1 7/8 X 7	18600	14566	18.70	24.20
2	6	5 1/4	3	3 1/4	3 3/4	3/4	5	2 1/4 X 7	24600	19265	22.80	30.60

Note: The 1" size and larger are furnished with pin and cotter on Fig. 900.

CONCRETE ATTACHMENTS



FUNCTION: Designed for attaching hanger rod to a concrete ceiling.

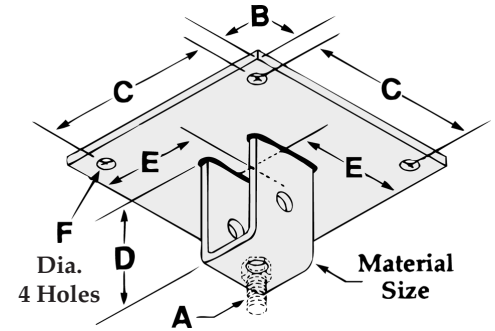
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.

**Fig. 903
CONCRETE ROD
ATTACHMENT PLATE**

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.



Rod Size A	B	C	D	E	F	Plate Size	Max. Rec. load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$	1	8	$2\frac{7}{8}$	5	$\frac{9}{16}$	10 X 10 X $\frac{3}{8}$	730	11.60
$\frac{1}{2}$	1	8	$2\frac{7}{8}$	5	$\frac{9}{16}$	10 X 10 X $\frac{3}{8}$	1350	11.60
$\frac{5}{8}$	1	8	$2\frac{7}{8}$	5	$\frac{9}{16}$	10 X 10 X $\frac{3}{8}$	2160	15.10
$\frac{3}{4}$	1	8	$3\frac{1}{4}$	5	$\frac{11}{16}$	10 X 10 X $\frac{1}{2}$	3230	16.10
$\frac{7}{8}$	1	8	$4\frac{1}{4}$	5	$\frac{11}{16}$	10 X 10 X $\frac{1}{2}$	4480	16.70
1	2	8	$4\frac{1}{2}$	6	$\frac{13}{16}$	12 X 12 X $\frac{1}{2}$	5900	34.90
$1\frac{1}{8}$	2	8	$4\frac{3}{4}$	6	$\frac{13}{16}$	12 X 12 X $\frac{1}{2}$	7450	35.25
$1\frac{1}{4}$	2	8	5	6	$\frac{15}{16}$	12 X 12 X $\frac{3}{4}$	9500	38.70
$1\frac{1}{2}$	2	8	$6\frac{1}{2}$	6	$1\frac{1}{16}$	12 X 12 X 1	13800	56.40
$1\frac{3}{4}$	2	10	$7\frac{3}{4}$	7	$1\frac{3}{8}$	14 X 14 X $1\frac{1}{4}$	18600	88.10
2	2	10	$8\frac{1}{4}$	7	$1\frac{3}{8}$	14 X 14 X $1\frac{1}{4}$	24600	92.20



CONCRETE ATTACHMENTS

**Fig. 904
CONCRETE
CLEVIS PLATE**

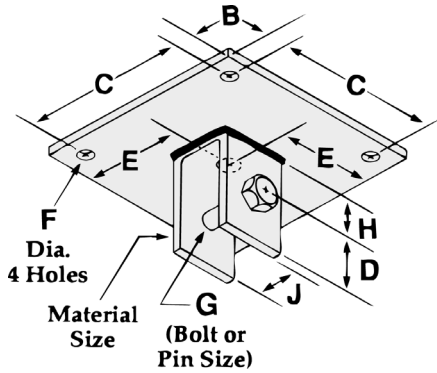
FUNCTION: Designed for use as a structural attachment to a concrete ceiling. Normally used in conjunction with Fig. 35 weldless eye nut or Fig. 55 welded eye rod.

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.



Rod Size	B	C	D	E	F	G	H	J	Plate Size	Max. Rec. load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$	1	8	$\frac{7}{8}$	5	$\frac{9}{16}$	$\frac{1}{2}$	2	$1\frac{1}{4}$	10 X 10 X $\frac{3}{8}$	730	11.80
$\frac{1}{2}$	1	8	$\frac{7}{8}$	5	$\frac{9}{16}$	$\frac{5}{8}$	2	$1\frac{1}{4}$	10 X 10 X $\frac{3}{8}$	1350	11.90
$\frac{5}{8}$	1	8	$\frac{7}{8}$	5	$\frac{9}{16}$	$\frac{3}{4}$	2	$1\frac{1}{4}$	10 X 10 X $\frac{3}{8}$	2160	15.70
$\frac{3}{4}$	1	8	$1\frac{1}{4}$	5	$\frac{11}{16}$	$\frac{7}{8}$	2	$2\frac{1}{4}$	10 X 10 X $\frac{1}{2}$	3230	16.90
$\frac{7}{8}$	1	8	$1\frac{1}{4}$	5	$\frac{11}{16}$	1	3	$2\frac{3}{8}$	10 X 10 X $\frac{1}{2}$	4480	18.10
1	2	8	$1\frac{1}{2}$	6	$\frac{13}{16}$	$1\frac{1}{8}$	3	$2\frac{3}{4}$	12 X 12 X $\frac{1}{2}$	5900	36.90
$1\frac{1}{8}$	2	8	$1\frac{3}{4}$	6	$\frac{13}{16}$	$1\frac{1}{4}$	3	3	12 X 12 X $\frac{1}{2}$	7450	37.75
$1\frac{1}{4}$	2	8	2	6	$\frac{15}{16}$	$1\frac{3}{8}$	3	$3\frac{1}{2}$	12 X 12 X $\frac{3}{4}$	9500	40.90
$1\frac{1}{2}$	2	8	$2\frac{1}{2}$	6	$1\frac{1}{16}$	$1\frac{5}{8}$	4	3	12 X 12 X 1	13800	59.80
$1\frac{3}{4}$	2	10	$2\frac{3}{4}$	7	$1\frac{3}{8}$	$1\frac{7}{8}$	5	$3\frac{3}{4}$	14 X 14 X $1\frac{1}{4}$	18600	93.60
2	2	10	$3\frac{1}{4}$	7	$1\frac{3}{8}$	$2\frac{1}{4}$	5	$3\frac{3}{4}$	14 X 14 X $1\frac{1}{4}$	24600	100.00

Note: The 1" size and larger are furnished with pin and cotter.

UPPER ATTACHMENTS



FUNCTION: Designed for attaching hanger rod to the side of wooden beams or walls. Normally secured in place with Fig. 48 wood drive screw.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 34) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 34).

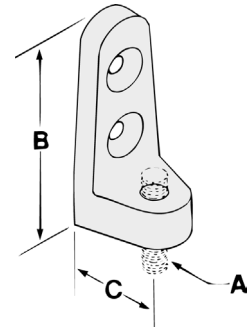
MATERIAL: Malleable iron

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.

Rod Size A	B	C	Drive Screw Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
3/8	2 ³ / ₁₆	9/16	#12 X 1 ¹ / ₂	250	.13
1/2	2 ³ / ₄	3/4	#14 X 1 ¹ / ₂	480	.25

**Fig. 905
SIDE BEAM
CONNECTOR**



FUNCTION: Designed for attaching hanger rod to wood structures. Secured with Fig. 45 lag screw or two Fig. 48 wood drive screws, see chart.

APPROVALS: Underwriters' Laboratories Listed in the U.S. (UL) and Canada (CUL), and Factory Mutual Approved. Complies with Federal Specifications A-A-1192A (Type 34) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 34).

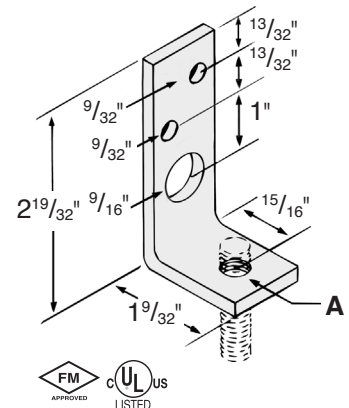
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify figure number and finish.

Rod Size A	Max. Pipe Size	UL Listed Fasteners	Max. Rec. Load/Lbs	Wt. Each (in lbs.)
3/8	2	(2) #16 X 2	400	.21
3/8	4	1/2 X 2 1/2	730	.21

**Fig. 906
STEEL SIDE
BEAM CONNECTOR**



FUNCTION: Designed to support pipe at various distances from a wall or column.

MATERIAL: Low carbon steel

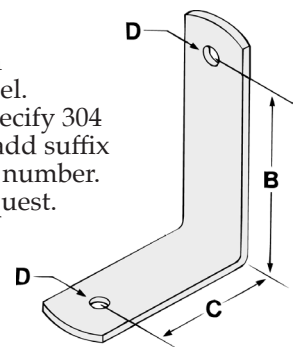
FINISH: Plain or Electro-galvanized

ORDERING: Specify size number and figure number.

Size No	B	C	Hole Size D	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1	3	2	7/16	180	.43
2	4	3	7/16	180	.58
3	3	2	9/16	390	1.00
4	4	3	9/16	390	1.25

**Fig. 910
REVERSIBLE
ANGLE BRACKET**

Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

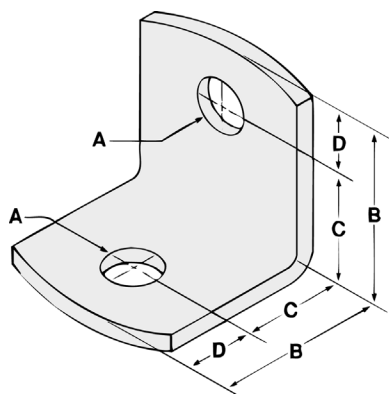




UPPER ATTACHMENTS

Fig.920
SIDE BEAM
ANGLE BRACKET

Available in stainless steel.
To order, specify 304 or 316 and add
suffix SS to figure number.
Price on request.



FUNCTION: Designed for use with wood, steel or concrete beams to provide a means for supporting hanger rod. When used on steel beams Fig. 920 can be welded or bolted in place.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 34) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 34).

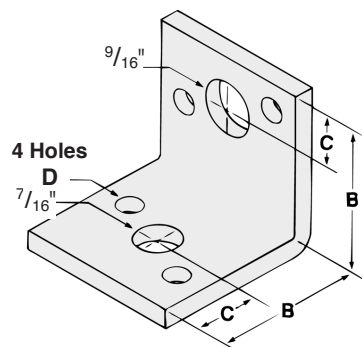
MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size, finish and figure number.

Rod Size A	For Pipe Size	B	C	D	Max. Rec. Load/lbs.		Wt. Each (in lbs.)
					Lag Screw	Bolted to Steel	
$\frac{3}{8}$	$\frac{1}{2}$ to 2	$2\frac{1}{8}$	$1\frac{1}{2}$	$\frac{5}{8}$	390	580	.52
$\frac{1}{2}$	$2\frac{1}{2}$ to $3\frac{1}{2}$	$2\frac{1}{8}$	$1\frac{1}{2}$	$\frac{5}{8}$	640	960	.50
$\frac{5}{8}$	4 to 5	$2\frac{1}{2}$	$1\frac{1}{2}$	1	760	1500	.75
$\frac{3}{4}$	6 to 8	$2\frac{1}{2}$	$1\frac{1}{2}$	1	830	2500	.73
$\frac{7}{8}$	10 to 12	$3\frac{1}{4}$	$2\frac{1}{4}$	1	830	3600	1.38

Fig. 925
REVERSIBLE SIDE
BEAM ANGLE BRACKET



FUNCTION: Designed for attaching hanger rod to the side of beams or walls. Fig. 925 can accommodate either $\frac{3}{8}$ or $\frac{1}{2}$ inch rod.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 34) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 34).

MATERIAL: Low carbon steel

FINISH: Plain or Electro-galvanized

ORDERING: Specify finish and figure number.

For Rod Size	B	C	D	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$ or $\frac{1}{2}$	2	$\frac{13}{16}$	$\frac{9}{32}$	500	.50

PLATE WASHER & WELDING LUG



FUNCTION: Designed as a heavy-duty washer to suspend hanger rods.

MATERIAL: Low carbon steel

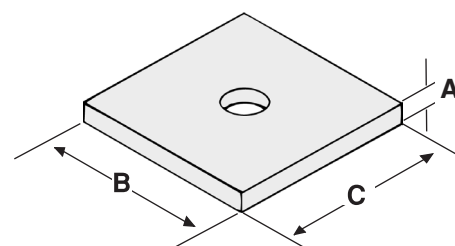
FINISH: Plain or Electro-galvanized

ORDERING: Specify rod size and figure number.

Standard Rod Size	A	B	C	Wt. Each (in lbs.)
3/8	1/4	2	2	.24
1/2	1/4	2	2	.23
5/8	1/4	2 1/2	2 1/2	.40
3/4	1/4	2 1/2	2 1/2	.39
7/8	3/8	3	3	.87
1	3/8	4	4	1.60
1 1/8	1/2	4	4	2.26
1 1/4	1/2	5	5	3.54
2	3/4	6	6	6.80

Fig. 930
SQUARE PLATE WASHER

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.



FUNCTION: Designed to be welded to the underside of structural members to provide a means of supporting rod attachments. Used in conjunction with Fig. 38 forged steel clevis.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 57) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 57).

MATERIAL: Low carbon steel

FINISH: Plain

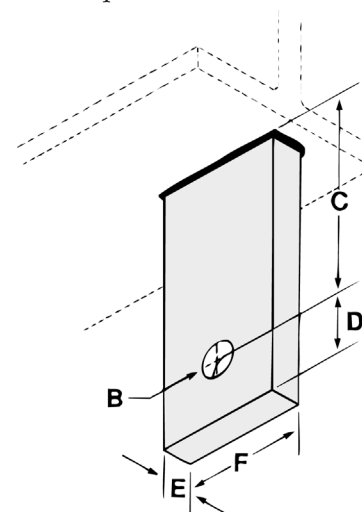
ORDERING: Specify rod size and figure number.

Rod Size	Pin or Bolt	Hole Size B	C		D	E	F	Max. Rec Load/lbs.	Wt. Each (in lbs.)	
			Short	Long					Short	Long
1/2	5/8	11/16	1 1/2	3	1 1/4	1/4	2 1/2	1130	.48	.75
5/8	3/4	13/16	1 1/2	3	1 1/4	1/4	2 1/2	1810	.41	.68
3/4	7/8	15/16	1 1/2	3	1 1/4	3/8	2 1/2	2710	.60	1.04
7/8	1	1 1/8	2	3	1 1/4	3/8	2 1/2	3770	.71	.98
1	1 1/8	1 1/4	2	3	1 1/2	1/2	3	4960	1.20	1.62
1 1/4	1 3/8	1 1/2	3	4	2	5/8	4	8000	3.03	3.73
1 1/2	1 5/8	1 3/4	3	4 1/2	2 1/2	3/4	5	11630	4.82	6.42

Fig. 935 & 936
WELDING LUG

Fig. 935 LONG WELDING LUG
Fig. 936 SHORT WELDING LUG

Available in stainless steel.
To order, specify 304 or 316 and add suffix SS to figure number.
Price on request.

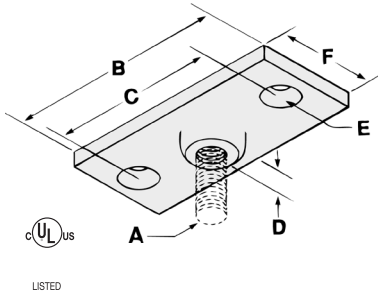




CEILING FLANGE & CONCRETE INSERT

Fig. 940, 941 & 942 CEILING FLANGE

Fig. 940 Plain
Fig. 941 Electro-galvanized
Fig. 942 Copper Color Epoxy Finish



FUNCTION: Designed to provide a means for attaching hanger rod to wood beams or ceilings.

MATERIAL: Malleable iron or Low carbon steel

ORDERING: Specify thread size and figure number.

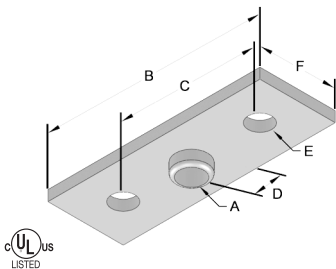
A Rod Size	B	C	D	E	F	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$	$2\frac{3}{4}$	2	$\frac{1}{2}$	$\frac{5}{16}$	$1\frac{3}{8}$	180	.18
$\frac{1}{2}$	$2\frac{3}{4}$	2	$\frac{1}{2}$	$\frac{5}{16}$	$1\frac{3}{8}$	180	.18

$\frac{3}{8}$ " Available in stainless steel. To order, specify 304 or 316 and add suffix SS to figure number. Price on request.

* For $\frac{3}{8}$ " size, see Fig. 945 EG or Fig. 946CP Steel Ceiling Plate.

Fig. 945 & 946 STEEL CEILING PLATE

Fig. 945 Galvanized Finish
Fig. 946 Copper Finish



FUNCTION: Designed to provide a means for attaching hanger rod to wood beams or ceilings. The copper finish is for product identification only and is not intended for corrosion resistance.

APPROVALS: Underwriters Laboratories Listed in the U.S. (UL) and Canada (CUL) for supporting up to 2" pipe max. (945 only)

MATERIAL: Low carbon steel

FINISH: Electro-galvanized

ORDERING: Specify figure number.

A Rod Size	B	C	D	E	F	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
$\frac{3}{8}$	$2\frac{13}{16}$	$1\frac{13}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	1	180	.10

Fig. 950, 951, 950N & 951N CONCRETE INSERT & NUT

Fig. 950 Plain
Fig. 951 Electro-galvanized
Fig. 950N Plain insert nut
Fig. 951N Electro-galvanized insert nut

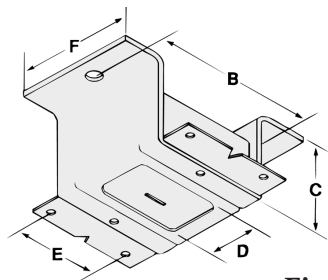


Fig. 950*

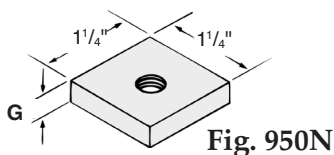


Fig. 950N

FUNCTION: Designed to be embedded in concrete to provide a means of suspending pipe from ceilings. The insert is held in place by nailing it to the forms, until the concrete is poured. The insert comes with a snap-out plug to keep the inner housing clean during pouring of the concrete. After the concrete has set, the plug is removed, exposing the inner housing. The rod should be tightened until it touches the top of the insert, but should not be forced further to avoid damage to the insert.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 18) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 18).

MATERIAL: Low carbon steel

ORDERING: Specify figure number. If insert nut is required order separately, include the rod size and figure number.

Rod Sizes	B	C	D	E	F	G	Max. Rec. Load/lbs.	Wt. Each (in lbs.)	
								Insert	Nut
$\frac{1}{4}$	$3\frac{1}{8}$	$1\frac{5}{8}$	$\frac{7}{8}$	$1\frac{1}{2}$	2	$\frac{1}{4}$	240	.44	.08
$\frac{3}{8}$	$3\frac{1}{8}$	$1\frac{5}{8}$	$\frac{7}{8}$	$1\frac{1}{2}$	2	$\frac{3}{8}$	600	.44	.10
$\frac{1}{2}$	$3\frac{1}{8}$	$1\frac{5}{8}$	$\frac{7}{8}$	$1\frac{1}{2}$	2	$\frac{1}{2}$	600	.44	.11
$\frac{5}{8}$	$3\frac{1}{8}$	$1\frac{5}{8}$	$\frac{7}{8}$	$1\frac{1}{2}$	2	$\frac{1}{2}$	600	.44	.14
$\frac{3}{4}$	$3\frac{1}{8}$	$1\frac{5}{8}$	$\frac{7}{8}$	$1\frac{1}{2}$	2	$\frac{1}{2}$	600	.44	.16

TURNBUCKLE & J-HANGER



FUNCTION: Designed for use as a hanger rod connection on heavy loads when an adjustment of up to 6 inches is required.

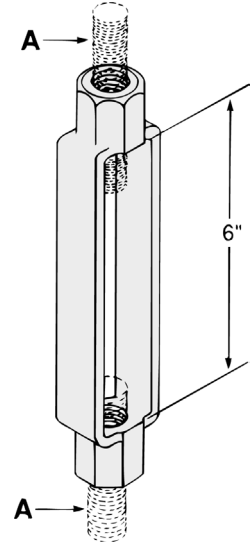
APPROVALS: Complies with Federal Specifications A-A-1192A (Type 13) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 13).

MATERIAL: Forged steel

FINISH: Plain or electro-galvanized

ORDERING: Specify rod size, finish and figure number.

Fig. 960
TURNBUCKLE



Rod Size A	Max. Rec. Load/lbs.		Wt. Each (in lbs.)
	650°F	750°F	
3/8	730	572	.50
1/2	1350	1057	.75
5/8	2160	1692	1.12
3/4	3230	2530	1.75
7/8	4480	3508	1.83
1	5900	4620	2.60
1 1/8	7450	5834	3.68
1 1/4	9500	7440	4.75
1 1/2	13800	10807	6.25

Note: Openings of 3", 9" and 12" are available upon request.

FUNCTION: Designed for the suspension of stationary piping systems. The "T" slot in the hanger permits the side bolt to be installed after installation and setting of pipe. The side hole permits optional wall mounting. Fig. 970F has a layer of felt which helps to reduce vibration and sound.

APPROVALS: Complies with Federal Specifications A-A-1192A (Type 5) and Manufacturers' Standardization Society ANSI/SP-69 and SP-58 (Type 5).

ORDERING: Specify pipe size and figure number.

Fig. 970, 970F & 973
J-HANGER

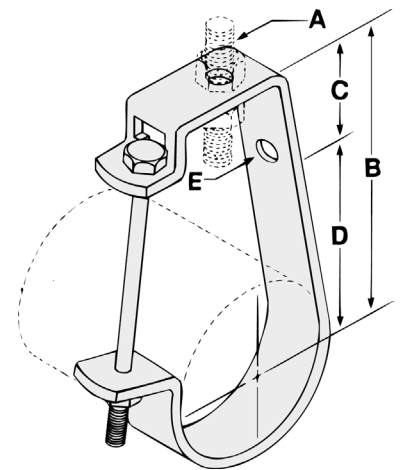
Fig. 970 ELECTRO-GALVANIZED

Fig. 970F ELECTRO-GALVANIZED WITH FELT LINING

Fig. 973 ELECTRO-GALVANIZED WITH PVC COATING

Pipe Size	Rod Size A	B	C	D	Hole Dia. E	Bolt Size	Max. Rec. Load/lbs.	Wt. Each (in lbs.)
1/2	3/8	2 5/8	1	1 15/16	13/32	1/4 X 2 1/4	400	.20
3/4	3/8	2 7/8	1	2 1/4	13/32	1/4 X 2 1/4	400	.23
1	3/8	3 1/16	1	2 3/8	13/32	1/4 X 2 1/2	400	.24
1 1/4	3/8	3 5/16	1 1/16	2 9/16	13/32	1/4 X 2 3/4	400	.27
1 1/2	3/8	3 9/16	1 1/16	2 11/16	13/32	1/4 X 3	400	.29
2	3/8	3 3/4	1 1/8	2 15/16	13/32	1/4 X 3 1/2	400	.32
2 1/2	1/2	4 7/16	1 1/8	3 9/16	9/16	3/8 X 4 1/2	800	.71
3	1/2	4 7/8	1 1/8	4	9/16	3/8 X 5	800	.77
3 1/2	1/2	5 3/16	1 1/8	4 1/4	9/16	3/8 X 6	800	.84
4	5/8	6 1/8	1 1/8	5 1/8	9/16	3/8 X 6	800	1.39
5	5/8	6 3/4	1 1/8	5 3/4	9/16	3/8 X 7 1/2	800	1.66
6	3/4	7 3/4	1 1/4	6 9/16	9/16	3/8 X 8 1/2	1000	2.26
8	3/4	9 1/4	1 1/4	7 15/16	9/16	3/8 X 10	1200	3.32

Note: If ordering Fig. 970F felt lined hangers for pipe sizes of 3-1/2" or under, order the next largest size to allow for the thickness of the felt lining.



MATERIAL: Low carbon steel

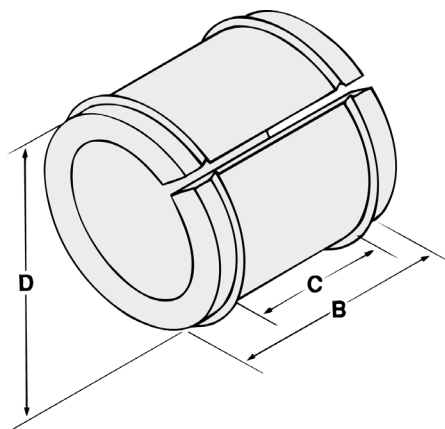


FELT ISOLATORS

Fig. 980
I.P.S.
FELT ISOLATOR

FUNCTION: Designed to dampen sound vibration and prevent transmission of sound to the building structure. The felt is coated with a non-conducting binder to resist effects of moisture, abrasion and temperature and is chemically treated to repel vermin.

ORDERING: Specify pipe size and figure number.



MATERIAL: Steel with felt lining

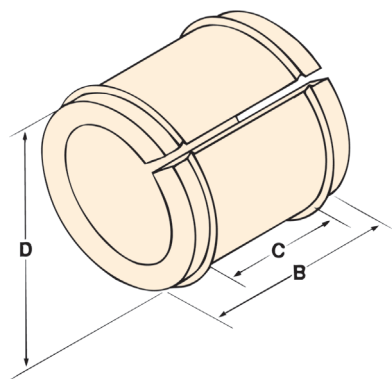
FINISH: Plain

Pipe Size	B	C	D	Use With Hanger Size	Wt. Each (in lbs.)
1/2	2	1 1/4	1 5/32	3/4	.045
3/4	2	1 1/4	1 5/16	1	.055
1	2	1 1/4	1 21/32	1 1/4	.070
1 1/4	2	1 1/4	1 29/32	1 1/2	.080
1 1/2	2	1 1/4	2 3/8	2	.100
2	2	1 1/4	2 7/8	2 1/2	.155
2 1/2	2 1/2	1 1/4	3 1/2	3	.235
3	2 1/2	1 1/4	4	3 1/2	.280
3 1/2	3 1/4	1 1/4	4 1/2	4	.460
4	3 5/8	1 3/8	5 9/16	5	.680
5	4	2	6 5/8	6	1.15
6	4 1/2	2	8 5/8	8	1.90

Fig. 982
COPPER TUBING
FELT ISOLATOR

FUNCTION: Designed to dampen sound vibration and prevent transmission of sound to the building structure. The felt is coated with a non-conducting binder to resist effects of moisture, abrasion and temperature and is chemically treated to repel vermin.

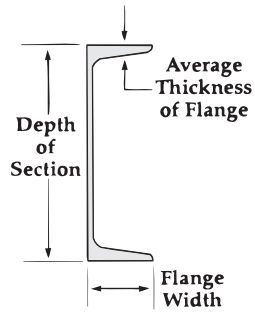
ORDERING: Specify tube size and figure number.



MATERIAL: Steel with felt lining

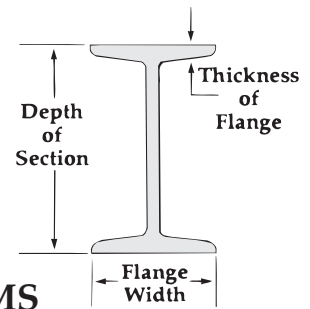
FINISH: Plain

Tube Size	B	C	D	Use With Hanger Size	Wt. Each (in lbs.)
1/2	2	1 1/4	1 5/32	3/4	.045
3/4	2	1 1/4	1 5/16	3/4	.045
1	2	1 1/4	1 5/16	1	.055
1 1/4	2	1 1/4	1 21/32	1 1/4	.070
1 1/2	2	1 1/4	1 29/32	1 1/2	.090
2	2	1 1/4	2 3/8	2	.100
2 1/2	2	1 1/4	2 7/8	2 1/2	.120
3	2 1/2	1 1/4	3 1/2	3	.255
3 1/2	2 1/2	1 1/4	4	3 1/2	.300
4	3 1/4	1 1/2	4 1/2	4	.460
5	3 5/8	1 3/8	5 9/16	5	.580
6	4	2	6 5/8	6	.950



CHANNELS AMERICAN STANDARD

Depth of section	Width of Flange	Average Thickness of Flange	Wt. Per Foot (in lbs.)
3	$1\frac{3}{8}$	.273	4.1
	$1\frac{1}{2}$		5.0
	$1\frac{5}{8}$		6.0
4	$1\frac{5}{8}$	.296	5.4
	$1\frac{3}{4}$		7.25
5	$1\frac{3}{4}$	.320	6.7
	$1\frac{7}{8}$		9.0
6	$1\frac{7}{8}$	.343	8.2
	2		10.5
	$2\frac{1}{8}$		13.0
7	$2\frac{1}{8}$	.366	9.8
	$2\frac{1}{4}$		12.25
	$2\frac{1}{4}$		14.75
8	$2\frac{1}{4}$	.390	11.5
	$2\frac{3}{8}$		13.75
	$2\frac{1}{2}$		18.75
9	$2\frac{3}{8}$	.413	13.4
	$2\frac{1}{2}$		15
	$2\frac{5}{8}$		20
10	$2\frac{5}{8}$	.436	15.3
	$2\frac{3}{4}$		20
	$2\frac{7}{8}$		25
	3		30
12	3	.501	20.7
	3		25
	$3\frac{1}{8}$		30
15	$3\frac{3}{8}$	.650	33.9
	$3\frac{1}{2}$		40
	$3\frac{3}{4}$		50
18	4	.625	42.7
	4		45.8
	$4\frac{1}{8}$		51.9
	$4\frac{1}{4}$		58



I BEAMS AMERICAN STANDARD

Depth of section	Width of Flange	Average Thickness of Flange	Wt. Per Foot (in lbs.)
3	$2\frac{3}{8}$	.260	5.7
	$2\frac{1}{2}$		7.5
4	$2\frac{5}{8}$	.293	7.7
	$2\frac{3}{4}$		9.5
5	3	.326	10
	$3\frac{1}{4}$		14.75
6	$3\frac{3}{8}$	.359	12.5
	$3\frac{5}{8}$		17.25
7	$3\frac{5}{8}$	.392	15.3
	$3\frac{7}{8}$		20
8	4	.425	18.4
	$4\frac{1}{8}$		23
10	$4\frac{5}{8}$	.491	25.4
	5		35
12	5	.544	31.8
	$5\frac{1}{8}$	.544	35
	$5\frac{1}{4}$	.659	40.8
	$5\frac{1}{2}$	.659	50
15	$5\frac{1}{2}$	.622	42.9
	$5\frac{5}{8}$		50
18	6	.691	54.7
	$6\frac{1}{4}$		70
20	$6\frac{1}{4}$	.789	65.4
	$6\frac{3}{8}$	.789	75
	7	.916	85
	$7\frac{1}{4}$	.916	95
24	7	.871	79.9
	$7\frac{1}{8}$	.871	90
	$7\frac{1}{4}$	.871	100
	$7\frac{7}{8}$	1.102	105.9
	8	1.102	120

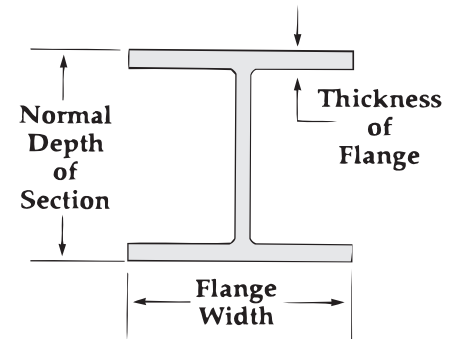


TECHNICAL DATA

WIDE FLANGE BEAMS

Nominal Depth of Section	Width of Flange	Thickness of Flange	Wt. Per Foot (in lbs.)
5	5	.360	16
	5	.430	19
6	4	.280	12
	4	.405	16
	6	.365	20
	6 1/8	.455	25
8	4	.255	13
	4	.315	15
	5 1/4	.330	18
	5 1/4	.400	21
	6 1/2	.400	24
	6 1/2	.465	28
	8	.435	31
	8	.495	35
	8 1/8	.560	40
	8 1/8	.685	48
10	8 1/4	.810	58
	8 1/4	.935	67
	4	.270	15
	4	.330	17
	4	.395	19
	5 3/4	.360	22
	5 3/4	.440	26
	5 3/4	.510	30
	8	.435	33
	8	.530	39
	8	.620	45
	10	.560	49
	10	.615	54
	10 1/8	.680	60
12	10 1/8	.770	68
	10 1/4	.870	77
	10 1/4	.990	88
	10 3/8	1.120	100
	10 3/8	1.250	112
	4	.265	16
	4	.350	19
	4	.425	22
14	6 1/2	.380	26
	6 1/2	.440	30
	6 5/8	.520	35
	8	.515	40
	8	.575	45
	8 1/8	.640	50
	10	.575	53
	10	.640	58
	12	.605	65
	12	.670	72
	12 1/8	.735	79
	12 1/8	.810	87
	12 1/8	.900	96
	12 1/4	.990	106
	12 3/8	1.100	120
	12 3/8	1.250	136
	12 1/2	1.400	152
	12 5/8	1.730	190

Nominal Depth of Section	Width of Flange	Thickness of Flange	Wt. Per Foot (in lbs.)
14	5	.335	22
	5	.420	26
	6 3/4	.385	30
	6 3/4	.455	34
	6 3/4	.515	38
	8	.530	43
	8	.595	48
	8	.660	53
	10	.645	61
	10	.720	68
	10 1/8	.785	74
	10 1/8	.855	82
	14 1/2	.710	90
	14 5/8	.780	99
	14 5/8	.860	109
	14 5/8	.940	120
	14 3/4	1.030	132
	15 1/2	1.090	145
	15 5/8	1.190	159
	15 5/8	1.310	176
16	15 3/4	1.440	193
	15 3/4	1.560	211
	15 7/8	1.720	233
	16	1.890	257
	16 1/8	2.070	283
	16 1/4	2.260	311
	16 3/8	2.470	342
	16 1/2	2.660	370
	16 5/8	2.840	398
	16 3/4	3.030	426
	5 1/2	.345	26
	5 1/2	.440	31
	7	.430	36
	7	.505	40
18	7	.565	45
	7 1/8	.630	50
	7 1/8	.715	57
	10 1/4	.665	67
	10 1/4	.760	77
	10 3/8	.815	89
	10 3/8	.985	100
	6	.425	35
	6	.525	40
	6 1/16	.605	46
21	7 1/2	.570	50
	7 1/2	.630	55
	7 1/2	.695	60
	7 5/8	.750	65
	7 5/8	.810	71
	11	.680	76
	11 1/8	.770	86
	11 1/8	.870	97
	11 1/4	.940	106
	11 1/4	1.060	119
	6 1/2	.450	44
	6 1/2	.535	50



Nominal Depth of Section	Width of Flange	Thickness of Flange	Wt. Per Foot (in lbs.)
21	6 1/2	.650	57
	8 1/4	.615	62
	8 1/4	.685	68
	8 1/4	.740	73
	8 3/8	.835	83
	8 3/8	.930	93
	12 3/8	.875	111
	12 3/8	.960	122
24	12 1/2	1.150	147
	7	.505	55
	7	.590	62
	9	.585	68
	9	.680	76
	9	.770	84
	9 1/8	.875	94
	12 3/4	.750	104
	12 3/4	.850	117
	12 7/8	.960	131
27	12 7/8	1.090	146
	13	1.220	162
	10	.640	84
	10	.745	94
	10	.830	102
	10 1/8	.930	114
	14	.975	146
	14	1.080	161
30	14 1/8	1.190	178
	10 1/2	.670	99
	10 1/2	.760	108
	10 1/2	.850	116
	10 1/2	.930	124
	10 1/2	1.000	132
	15	1.060	173
	15	1.180	191
	15 1/8	1.310	211
33	11 1/2	.740	118
	11 1/2	.855	130
	11 1/2	.960	141
36	12	.790	135
	12	.940	150
	12	1.020	160

Steel Pipe Data SCHEDULE 40 & 80

Pipe Size	Schedule No.	O.D.	Wall Thickness	Wt. Per Foot (in lbs.)	
				Water	Pipe
3/8	40	.675	.091	.083	.567
	80		.126	.061	.738
1/2	40	.840	.109	.132	.850
	80		.147	.101	1.087
3/4	40	1.050	.113	.230	1.130
	80		.154	.186	1.473
1	40	1.315	.133	.374	1.678
	80		.179	.311	2.171
1 1/4	40	1.660	.140	.647	2.272
	80		.191	.555	2.996
1 1/2	40	1.900	.145	.882	2.717
	80		.200	.765	3.631
2	40	2.375	.154	1.452	3.652
	80		.218	1.279	5.022
2 1/2	40	2.875	.203	2.072	5.790
	80		.276	1.834	7.660
3	40	3.500	.216	3.200	7.570
	80		.300	2.860	10.250
3 1/2	40	4.000	.226	4.280	9.110
	80		.318	3.850	12.510
4	40	4.500	.237	5.510	10.790
	80		.337	4.980	14.980

Pipe Size	Schedule No.	O.D.	Wall Thickness	Wt. Per Foot (in lbs.)	
				Water	Pipe
5	40	5.563	.258	8.660	14.620
	80		.375	7.870	20.780
6	40	6.625	.280	12.510	18.970
	80		.432	11.920	28.570
8	40	8.625	.322	21.600	28.550
	80		.500	19.800	43.390
10	40	10.750	.365	34.100	40.480
	80		.593	31.100	64.400
12	40	12.750	.406	48.500	53.600
	80		.687	44.000	88.600
14	40	14.000	.437	58.500	63.000
	80		.750	51.200	107.000
16	40	16.000	.500	76.500	83.000
	80		.843	69.700	137.000
18	40	18.000	.563	97.200	105.000
	80		.937	88.500	171.000
20	40	20.000	.593	120.400	123.000
	80		1.031	109.400	209.000
24	40	24.000	.687	174.200	171.000
	80		1.218	158.200	297.000
30	20	30.000	.500	286.000	158.000
	API		.500	417.000	190.000

Spacing of Hangers For Steel Pipe

Nominal Pipe Size, Inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
Maximum Span. Feet	7	7	7	7	9	10	11	12	13	14	16	17	19	22	23	25	27	28	30	32
Recommended Hanger Rod Sizes	3/8	3/8	3/8	3/8	3/8	3/8	1/2	1/2	1/2	5/8	5/8	3/4	3/4	7/8	7/8	1	1	1 1/8	1 1/4	1 1/4
																		OR TRAPEZE		

Note: Spacing and capacities are based on pipe filled with water. Additional valves and fittings increase the load and therefore closer hanger spacing is required.
Taken from MSS ANSI/SP-69 and SP-58 Table 3 & 4.

*Many Codes and specifications require pipe hangers to be spaced every 10 feet regardless of size. Check local codes.



TECHNICAL DATA

Copper Tube Data

TYPE L

Tube Size	Tubing O.D.	Wall Thickness	Wt. Per Foot (in lbs.)	
			Water	Pipe
1/4	.375	.030	.034	.126
3/8	.500	.035	.062	.198
1/2	.625	.040	.100	.285
5/8	.750	.042	.151	.362
3/4	.875	.045	.209	.455
1	1.125	.050	.357	.655
1 1/4	1.375	.055	.546	.884
1 1/2	1.625	.060	.767	1.140
2	2.125	.070	1.341	1.750
2 1/2	2.625	.080	2.064	2.480
3	3.125	.090	2.949	3.330
3 1/2	3.625	.100	3.989	4.290
4	4.125	.110	5.188	5.380
5	5.125	.125	8.081	7.610
6	6.125	.140	11.616	10.200
8	8.125	.200	20.289	19.260
10	10.125	.250	31.590	30.100
12	12.125	.280	45.426	40.400

TYPE K

Tube Size	Tubing O.D.	Wall Thickness	Wt. Per Foot (in lbs.)	
			Water	Pipe
1/4	.375	.035	.032	.145
3/8	.500	.049	.055	.269
1/2	.625	.049	.094	.344
5/8	.750	.049	.144	.418
3/4	.875	.065	.188	.641
1	1.125	.065	.337	.839
1 1/4	1.375	.065	.527	1.040
1 1/2	1.625	.072	.743	1.360
2	2.125	.083	1.310	2.060
2 1/2	2.625	.095	2.000	2.920
3	3.125	.109	2.960	4.000
3 1/2	3.625	.120	3.900	5.120
4	4.125	.134	5.060	6.510
5	5.125	.160	8.000	9.670
6	6.125	.192	11.200	13.870
8	8.125	.271	19.500	25.900
10	10.125	.338	30.423	40.300
12	12.125	.405	43.675	57.800

Spacing of Hangers For Copper Tubing

Tubing Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12
Span in Ft.	6	8	8	10	10	10	12	12	12	12	12	14	14	18	19

Note: Spacing and capacities are based on pipe filled with water. Additional valves and fittings increase the load and therefore closer hanger spacing is required.

AWWA Ductile Iron Pipe Data

Based on AWWA C108-70, Table 8.2.
Add flange weight for flanged cast iron pipe.

Nom. Pipe Size	Class	O.D. D.I. Pipe	Wall Thick.	Wt. Per Foot (in lbs.)	
				Pipe	Water
3	53	3.96	.31	11.20	3.80
4	53	4.80	.32	14.20	5.90
6	53	6.90	.34	22.00	13.10
8	53	9.05	.36	31.00	23.00
10	53	11.10	.38	40.40	36.40
12	53	13.20	.40	50.70	52.30
14	53	15.30	.42	62.40	71.10
16	53	17.40	.43	72.80	93.10
18	53	19.50	.44	83.60	117.90
20	53	21.60	.45	95.20	145.80
24	53	25.80	.47	119.20	210.20
30	53	32.00	.51	161.30	326.50
36	53	38.30	.58	219.50	469.30
42	53	44.50	.65	285.20	634.90
48	53	50.80	.72	360.30	828.90

Glass Pipe Data

REGULAR SCHEDULE

Nom. Pipe Size	O.D.	Wall Thickness	Wt. Per Foot (in lbs.)	
			Pipe	Water
1 1/2	1.84	.12	.64	.89
2	2.34	.14	.94	1.45
3	3.41	.17	1.60	3.19
4	4.53	.20	2.60	5.79
6	6.66	.24	4.70	12.78

HEAVY SCHEDULE

1	1.31	.16	.60	.35
1 1/2	1.84	.17	.87	.76
2	2.34	.17	1.10	1.36
3	3.41	.20	2.00	3.06
4	4.53	.26	3.40	5.44
6	6.66	.33	6.30	12.42

Spacing of Hangers for glass pipe support every 8-10 ft. Pad all hangers. Use only clevis or trapeze, do not tie down pipe.

PVC Plastic Pipe Data SCHEDULE 40 & 80

Pipe Size	Schedule No.	O.D.	Wall Thickness	Wt. Per Foot (in lbs.)	
				Water	Pipe
1/8	40	.405	.068	.025	.043
	80		.095	.016	.055
1/4	40	.540	.088	.045	.074
	80		.119	.031	.094
3/8	40	.675	.091	.083	.100
	80		.126	.061	.129
1/2	40	.840	.109	.132	.150
	80		.147	.101	.150
3/4	40	1.050	.113	.230	.199
	80		.154	.186	.259
1	40	1.315	.133	.374	.295
	80		.179	.311	.382
1 1/4	40	1.660	.140	.647	.400
	80		.191	.555	.527
1 1/2	40	1.900	.145	.882	.478
	80		.200	.765	.639
2	40	2.375	.154	1.452	.643
	80		.218	1.279	.884

Pipe Size	Schedule No.	O.D.	Wall Thickness	Wt. Per Foot (in lbs.)	
				Water	Pipe
2 1/2	40	2.875	.203	2.072	1.020
	80		.276	1.834	1.350
3	40	3.500	.216	3.200	1.333
	80		.300	2.860	1.804
3 1/2	40	4.000	.226	4.280	1.598
	80		.318	3.850	2.195
4	40	4.500	.237	5.510	1.899
	80		.337	4.980	2.636
5	40	5.563	.258	8.660	2.770
	80		.375	7.870	4.126
6	40	6.625	.280	12.150	3.339
	80		.432	11.290	5.028
8	40	8.625	.322	21.600	5.280
	80		.500	19.800	8.023
10	40	10.750	.366	34.100	7.505
	80		.593	31.100	11.894
12	40	12.750	.406	48.500	10.023
	80		.687	44.000	16.365

Spacing of Hangers For PVC Plastic Pipe

Schedule 40 Pipe Size	Support Spacings (In Feet)									
	Temperature									
	20°F	40°F	60°F	80°F	100°F	110°F	120°F	130°F	140°F	150°F
1/2 to 3/4	5.00	4.75	4.50	4.25	4.00	3.75	3.33	3.00	2.66	2.00
1 to 1 1/4	5.50	5.25	5.00	4.66	4.33	4.00	3.75	3.33	2.80	2.25
1 1/2 to 2	5.80	5.50	5.25	5.00	4.66	4.33	3.80	3.50	3.00	2.50
2 1/2	6.66	6.33	6.00	5.50	5.25	4.80	4.50	4.00	3.50	2.80
	6.80	6.50	6.25	5.80	5.50	5.25	4.75	4.25	3.66	3.00
4	7.33	7.00	6.50	6.25	5.80	5.50	5.00	4.50	3.80	3.25
6	7.80	7.50	7.00	6.80	6.33	5.80	5.33	4.80	4.25	3.50

Schedule 80 Pipe Size	Support Spacings (In Feet)									
	Temperature									
	20°F	40°F	60°F	80°F	100°F	110°F	120°F	130°F	140°F	150°F
1/2 to 3/4	5.75	5.50	5.25	4.80	4.50	4.33	3.80	3.50	3.00	2.50
1	6.33	6.00	5.75	5.33	5.00	4.60	4.33	3.80	3.33	2.75
1 1/4 to 1 1/2	6.66	6.33	6.00	5.66	5.25	4.80	4.50	4.00	3.50	3.00
2	7.00	6.50	6.25	6.00	5.50	5.12	4.75	4.33	3.66	3.12
2 1/2	7.80	7.50	7.00	6.66	6.33	5.80	5.33	4.75	4.25	3.33
3	8.20	7.75	7.33	7.00	6.50	6.00	5.50	5.00	4.33	3.50
4	8.66	8.25	7.80	7.33	6.80	6.33	5.80	5.25	4.66	3.75
6	9.80	9.33	8.80	8.33	7.80	7.33	6.50	6.00	5.12	4.25



TECHNICAL DATA

Conduit Data

ELECTRICAL METALLIC TUBING DATA

Nominal Size EMT Conduit	O.D. Conduit	O.D. Coupling	Weight Conduit W/C Plg. lbs./ft.	Approx. Max. Weight Conduit and Conductor lbs./ft.	
				Lead Covered	Not Lead Covered
1/2	.706	N/A	.29	N/A	.54
3/4	.922	—	.45	—	1.16
1	1.163	—	.65	—	1.83
1 1/4	1.510	—	.96	—	2.96
1 1/2	1.740	—	1.11	—	3.68
2	2.197	—	1.41	—	4.45
2 1/2	2.875	—	2.15	—	6.41
3	3.500	—	2.60	—	9.30
3 1/2	4.000	—	3.25	—	12.15
4	4.500	—	3.90	—	15.40

Note: 2 1/2 through 4" EMT same as steel rigid conduit.

STEEL RIGID CONDUIT DATA

Nominal Size EMT Conduit	O.D. Conduit	O.D. Coupling	Weight Conduit W/C Plg. lbs./ft.	Approx. Max. Weight Conduit and Conductor lbs./ft.	
				Lead Covered	Not Lead Covered
1/2	.840	1.010	.80	1.17	1.04
3/4	1.050	1.250	1.09	1.75	1.40
1	1.315	1.525	1.65	2.62	2.35
1 1/4	1.660	1.869	2.15	4.31	3.58
1 1/2	1.900	2.155	2.58	5.89	4.55
2	2.375	2.650	3.52	8.53	7.21
2 1/2	2.875	3.250	5.67	11.51	10.22
3	3.500	3.870	7.14	16.51	14.51
3 1/2	4.000	4.500	8.60	19.05	17.49
4	4.500	4.875	10.00	24.75	21.48
5	5.563	6.000	13.20	35.87	30.83
6	6.625	7.200	17.85	50.69	43.43

INTERMEDIATE METAL CONDUIT DATA

Nominal Size EMT Conduit	O.D. Conduit	O.D. Coupling	Weight Conduit W/C Plg. lbs./ft.	Approx. Max. Weight Conduit and Conductor lbs./ft.	
				Lead Covered	Not Lead Covered
1/2	.815	1.010	.60	.97	.84
3/4	1.029	1.250	.82	1.48	1.13
1	1.290	1.525	1.16	2.13	1.86
1 1/4	1.638	1.869	1.50	3.66	2.93
1 1/2	1.883	2.155	1.82	5.13	3.79
2	2.360	2.650	2.42	7.43	6.11
2 1/2	2.857	3.250	4.28	10.12	8.83
3	3.476	3.870	5.26	14.63	12.63
3 1/2	3.971	4.500	6.12	16.57	15.01
4	4.466	4.875	6.82	21.57	18.30

Threaded Rod Data

Nominal Rod Dia. (in inches)	Root Area Thread (in inches) ²	Max. Rec. Load/lbs.	
		650°F	750°F
1/4	.027	240	210
3/8	.068	730	572
1/2	.126	1350	1057
5/8	.202	2160	1692
3/4	.302	3230	2530
7/8	.419	4480	3508
1	.552	5900	4620
1 1/8	.693	7450	5830
1 1/4	.889	9500	7440
1 1/2	1.293	13800	10807
1 3/4	1.744	18600	14566
2	2.300	24600	19625
2 1/4	3.023	32300	25295
2 1/2	3.719	39800	31169

SERVICE WEIGHT CAST IRON SOIL PIPE DATA (Bell & Spigot Type)

Cast Iron Data

Nominal Pipe Size	O.D. of Cast Iron Pipe	Wall Thickness	Weight Per Foot (in lbs.)	
			Pipe	Water
2	2.25	.17	4.00	1.24
3	3.25	.17	6.00	2.88
4	4.25	.18	8.00	5.15
5	5.25	.18	10.40	8.14
6	6.25	.18	13.00	11.80
8	8.38	.23	20.00	21.34
10	10.50	.28	29.00	33.62
12	12.50	.28	38.00	48.51
15	15.62	.31	51.00	76.55

EXTRA WEIGHT CAST IRON SOIL PIPE DATA (Bell & Spigot Type)

Nominal Pipe Size	O.D. of Cast Iron Pipe	Wall Thickness	Weight Per Foot (in lbs.)	
			Pipe	Water
2	2.38	.190	5.00	1.36
3	3.50	.250	9.00	3.06
4	4.50	.250	12.00	5.44
5	5.50	.250	15.00	8.51
6	6.50	.250	19.00	12.25
8	8.62	.310	30.00	21.78
10	10.75	.375	43.00	34.02
12	12.75	.375	54.00	48.99
15	15.88	.440	75.00	76.55

NO-HUB CAST IRON SOIL PIPE DATA

Nominal Pipe Size	O.D. of Cast Iron Pipe	Wall Thickness	Weight Per Foot (in lbs.)	
			Pipe	Water
1½	1.90	.16	2.70	.85
2	2.35	.16	3.60	1.40
3	3.35	.16	5.20	3.12
4	4.38	.19	7.40	5.44
5	5.30	.19	9.60	8.24
6	6.30	.19	11.00	11.92
8	8.38	.23	18.00	21.34
10	10.50	.28	26.20	33.62
12	12.50	.28	35.50	48.51



FINISHES

ZINC COATING

PHD offers 3 basic forms of zinc coating on its products:

- 1) **Electro-Galvanized** (Electro-Plated Zinc)
- 2) **Pre-Galvanized**
- 3) **Hot-Dip Galvanized**

Note: The corrosion resistance of zinc is based on its thickness, the environment and the coating process used. The acceptability of galvanized coatings at temperatures above 450° is at the discretion of the end user.

For best results, a zinc rich paint should be applied to field cuts. The zinc rich paint will provide immediate protection for these areas and eliminate the short time period for galvanic action to "heal" the damaged coating.

Zinc offers two types of protection:

- **Barrier:** The zinc coating protects the steel substrate from direct contact with the environment
- **Sacrificial:** The zinc coating will protect scratches, cut edges, etc. through an anodic sacrificial process.

ELECTRO-GALVANIZED (ASTM B633 SC1 & SC3) "EG"

This type of coating is recommended for use indoors in relatively dry areas. The steel is submersed in a bath of zinc salts, through the process of electrolysis, a coating of pure zinc adheres to the steel with a molecular bond. A maximum of 0.5 mils of zinc per side can be applied using this method.

SC1 (Mild) is the standard finish thickness which has a Zinc coating of 0.2 mils per side. SC3 (Severe) has a Zinc coating of 0.5 mils per side.

PRE-GALVANIZED (ASTM A653 COATING G90) "PG"

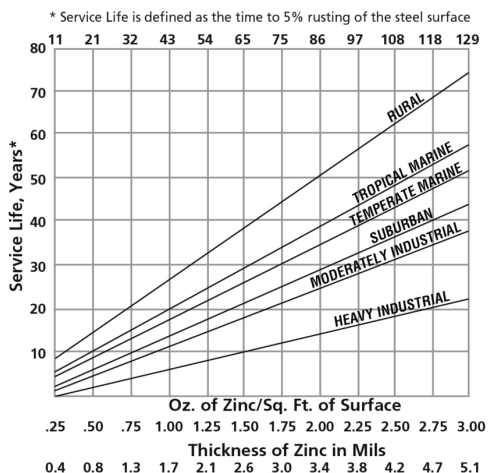
This type of coating is suitable for extended exposure in dry or mildly corrosive atmospheres but not generally recommended for use outdoors in industrial environments. Also known as "mill galvanized" or "hot-dipped mill galvanized", pre-galvanized zinc coatings are produced by rolling the steel coils or sheets through molten zinc, at the steel mill, the material is then cut or slit to size. Zinc near the uncoated edges or weld areas becomes a sacrificial anode which protects the bare areas.

The pre-galvanized material conforms to ASTM A653 with a G90 zinc coating. The zinc thickness per side is nominally 0.75 mils thick or 0.45 oz./sq. ft.

HOT-DIP GALVANIZED (ASTM A123) "HDG"

Recommended for prolonged outdoor exposure and will usually protect steel in most atmospheric environments. After fabrication the part is immersed in a bath of molten zinc. A metallurgical bond is formed resulting in a zinc coating that coats all surfaces including edges. Please note that some items cannot be hot-dipped galvanized due to design, tolerances, or threaded components. Check with the PHD factory or your local representative when questionable. Threaded components on hot dipped galvanized products will be electro-plated.

Life of Protection vs. Thickness of Zinc and Type of Atmosphere



The hot-dip galvanized coating is typically 2.6 mils or 1.5 oz./sq. ft. per side.

As shown in the graph at left, when the zinc coating is double, the service life is double under most conditions.

Comparison of Zinc Finishing

Finish	Zinc Thickness (mils)
Hot-Dip Galvanized	2.6
Pre-Galvanized	0.75
Electro-Galvanized (SC1)	0.2
Electro-Galvanized (SC3)	0.5

Plain finish designation means that the channel retains the oiled surface applied to the raw steel during the rolling process. The fittings have the original oiled surface of the bar stock material.

PLAIN "PL"

PHD offers a polyester powder coating that utilizes powder material conforming to ASTM D3451. It is applied by means of an electrostatic spray at ambient temperature.

POWDER COATING "PTD"

PVC coating helps reduce noise and protect the pipe or tubing from the metal surface of the hanger. Corrosion resistance protection is minimal.

PVC COATING "PVC"

Designed for use with copper tubing. This coating provides a better level of corrosion resistance than the traditional copper plated finish. It also acts as a protective barrier, avoiding contact between dissimilar metals. The copper color epoxy powder is applied by an electrostatic method, and the coated parts are baked at 180 degrees for 20 minutes.

COPPER COLOR EPOXY FINISH "CCEF"

Gauge	Nominal	
3	.239	(6.07)
7	.179	(4.55)
11	.120	(3.05)
12	.105	(2.67)
13	.090	(2.29)
14	.075	(1.91)
16	.060	(1.52)
18	.048	(1.22)

STEEL GAUGES

Unless otherwise specified, all dimensions on drawings and in charts are in inches and dimensions shown in parentheses are in millimeters.



COMPLIANCES & APPROVALS

Fig. Number	MSS ANSI/SP-69 MSS SP-58	Federal Spec A-A-1192A	U.S. (UL) Listed	CAN. (CUL) Listed	F.M. Approved
30	Type 16	Type 16	-	-	-
35	Type 17	Type 17	-	-	-
36	-	-	3/8"	3/8"	3/8"
37	-	-	3/8" & 1/2"	3/8" & 1/2"	3/8"
38	Type 14	Type 14	-	-	-
44	Type 15	Type 15	-	-	-
90	Type 24	Type 24	-	-	-
91	Type 24	Type 24	-	-	-
93	Type 24	Type 24	-	-	-
94	Type 24	Type 24	-	-	-
141 (1/2" thru 8")	Type 10	Type 10	3/4" thru 8"	3/4" thru 8"	3/4" thru 8"
141 F (1/2" thru 8")	Type 10	Type 10	3/4" thru 8"	3/4" thru 8"	3/4" thru 8"
143 (1/2" thru 8")	Type 10	Type 10	3/4" thru 8"	-	3/4" thru 8"
151	Type 10	Type 10	2-1/2" thru 8"	-	2-1/2" thru 8"
151F	Type 10	Type 10	2-1/2" thru 8"	-	2-1/2" thru 8"
152	Type 10	Type 10	-	-	-
154	Type 10	Type 10	-	-	-
170	Type 40	Type 40	-	-	-
180	Type 7	Type 7	-	-	-
180F	Type 7	Type 7	-	-	-
181	Type 7	Type 7	-	-	-
182	Type 7	Type 7	-	-	-
183	Type 7	Type 7	-	-	-
250 (3/8" thru 7/8")	Type 23	Type 23	3/8" & 1/2"	3/8" & 1/2"	3/8"
250-1 (3/8" thru 7/8")	Type 23	Type 23	-	-	-
270	Type 23	Type 23	-	-	-
290	Type 23	Type 23	3/8"	-	3/8"
345	Type 19	Type 19	3/8"	3/8"	3/8"
350/353	Type 19 & 23	Type 19&23	3/8"	3/8"	3/8"
350/354	Type 19	Type 19	1/2"	1/2"	1/2"
350/355	Type 19	Type 19	5/8"	5/8"	-
350/356	Type 19	Type 19	3/4"	3/4"	-
350/358	Type 19	Type 19	7/8"	7/8"	-
359 (3/8" thru 7/8")	-	-	3/8" & 1/2"	3/8" & 1/2"	-
360/363	Type 19	Type 19	3/8"	3/8"	3/8"
360/364	Type 19	Type 19	1/2"	1/2"	1/2"
420	Type 1	Type 1	-	-	-
425	Type 1	Type 1	-	-	-
426	Type 1	Type 1	-	-	-
430	Type 1	Type 1	-	-	-
440	Type 1	Type 1	-	-	-
440F	Type 1	Type 1	-	-	-
441	Type 1	Type 1	-	-	-
442	Type 1	Type 1	-	-	-
450 (1/2" thru 36")	Type 1	Type 1	2-1/2" thru 8"	-	2-1/2" thru 8"
450F (1/2" thru 36")	Type 1	Type 1	2-1/2" thru 8"	-	2-1/2" thru 8"
451 (1/2" thru 36")	Type 1	Type 1	2-1/2" thru 8"	-	2-1/2" thru 8"

COMPLIANCES & APPROVALS



Fig. Number	MSS ANSI/SP-69 MSS SP-58	Federal Spec A-A-1192A	U.S. (UL) Listed	CAN. (CUL) Listed	F.M. Approved
453 (1/2" thru 36")	Type 1	Type 1	2-1/2" thru 8"	-	2-1/2" thru 8"
454 (1/2" thru 36")	Type 1	Type 1	2-1/2" thru 8"	-	2-1/2" thru 8"
460	Type 44	Type 44	-	-	-
470	Type 43	Type 43	-	-	-
475	Type 43	Type 43	-	-	-
480	Type 41	Type 41	-	-	-
486	Type 44	Type 44	-	-	-
487	Type 46	Type 46	-	-	-
490	Type 41	Type 41	-	-	-
508R	Type 12	Type 12	-	-	-
510R	Type 12	Type 12	-	-	-
512	Type 12	Type 12	-	-	-
512H	Type 12	Type 12	-	-	-
520	Type 4	Type 4	-	-	-
521	Type 4	Type 4	-	-	-
522	Type 4	Type 4	-	-	-
525	Type 3	Type 3	-	-	-
526	Type 3	Type 3	-	-	-
550 (1/2" thru 30")	Type 8	Type 8	3/4" thru 8"	-	3/4" thru 8"
551 (1/2" thru 30")	Type 8	Type 8	3/4" thru 8"	-	3/4" thru 8"
552	Type 8	Type 8	-	-	-
553 (1/2" thru 30")	Type 8	Type 8	3/4" thru 8"	-	3/4" thru 8"
554	Type 8	Type 8	-	-	-
610	Type 21	Type 21	-	-	-
620	Type 21	Type 21	-	-	-
630 w/25	Type 30	Type 30	-	-	-
632 w/35	Type 28	Type 28	-	-	-
633 w/35	Type 29	Type 29	-	-	-
635	Type 27	Type 27	-	-	-
651	Type 39	Type 39	-	-	-
653	Type 39	Type 39	-	-	-
654	Type 39	Type 39	-	-	-
655	Type 39	Type 39	-	-	-
656	Type 39	Type 39	-	-	-
658	Type 39	Type 39	-	-	-
690	Type 35	Type 35	-	-	-
830	Type 26	Type 26	-	-	-
850	Type 31	Type 31	-	-	-
855	Type 32	Type 32	-	-	-
860	Type 33	Type 33	-	-	-
875	Type 38	Type 38	-	-	-
876	Type 38	Type 38	-	-	-
880	Type 36	Type 36	-	-	-
882	Type 37	Type 37	-	-	-
900	Type 22	Type 22	-	-	-
900-1	Type 22	Type 22	-	-	-
905	Type 34	Type 34	-	-	-



COMPLIANCES & APPROVALS

Fig. Number	MSS ANSI/SP-69 MSS SP-58	Federal Spec A-A-1192A	U.S. (UL) Listed	CAN. (CUL) Listed	F.M. Approved
906	Type 34	Type 34	3/8"	3/8"	3/8"
920	Type 34	Type 34	-	-	-
925	Type 34	Type 34	-	-	-
935	Type 57	Type 57	-	-	-
936	Type 57	Type 57	-	-	-
945	-	-	3/8"	3/8"	-
950	Type 18	Type 18	-	-	-
951	Type 18	Type 18	-	-	-
960	Type 13	Type 13	-	-	-
970	Type 5	Type 5	-	-	-

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70.....	20	290.....	32	521.....	54	830.....	73	970F	89
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