

'WITCH'[®] PIPE HANGERS

Manufactured By
CARPENTER & PATERSON, INC.





Introduction

Since 1913, Carpenter & Paterson, Inc. has specialized in the manufacture and distribution of a complete line of pipe hangers and supports for commercial and industrial applications. Our hangers for fire protection are Underwriters Laboratory listed and Factory Mutual approved. Our designs have been load tested and are in accordance with the ANSI Code for Pressure Piping and the MSS Standard Practice SP 58. Many of the small popular hangers are pre-packaged for the convenience of our customers.

We maintain an Engineering Department to design hangers for special applications, assist engineers and architects in preparing hanger specifications, locate and design hangers and pipe supporting systems from piping plans and specifications.

Carpenter & Paterson, Inc. manufacturer's of Witch products, have been the synonym in the trade for "Quality". We shall continue to live up to this reputation and strive for greater efforts in this direction.

CAUTION The pipe hangers and supports offered for sale in this catalogue are designed to carry the static load of a pipe of appropriate size spaced on the pipe line in accordance with established engineering standards. These hangers and supports should not be used as tools of erection, for the suspension of apparatus other than pipe or to support moving or shock loads unless specifically approved by our engineering department. Beam clamps and other upper attachments should not be used on beams, etc. other than described in this catalogue. The suspension of pipe hangers one under the other should be avoided unless specifically approved by our engineering department.

MEMBER
apfa
AMERICAN PIPE FITTINGS ASSOCIATION

'WITCH'[®] PIPE HANGERS AND SUPPORTS

GENERAL CATALOGUE NO. 5A

Supersedes Catalogue No. 5



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PIPE ATTACHMENTS



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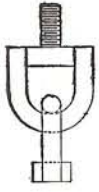
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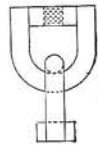


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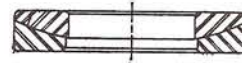
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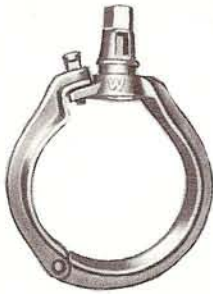
PLASTIC COATED
HANGERS

FABREKA LINED
HANGERS

TECHNICAL
DATA



ADJUSTABLE SWIVEL HANGER
Fig. 240 — Split Type — MALLEABLE IRON



The offset position of the arm hinge provides sufficient seating to support the pipe before closing the ring. The inspection slot shows adequate bearing on the rod. The spring washer on the swivel nut prevents its loss while in transit or stock.

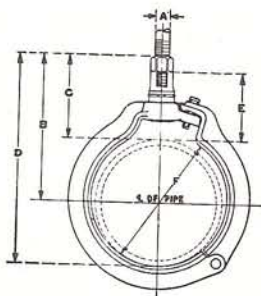
The locking device incorporated in the hanger prevents change of adjustment due to vibration and assures proper pitch of the lines. To adjust raise the weight of the pipe off the ring and turn the swivel nut.

Approvals: Underwriters' Laboratories listed and Factory Mutual approved. Complies with Federal Specification WW-H-171 (Type 6) and Manufacturers Standardization Society SP-69 (Type 6).

Regularly furnished black. Galvanized to order. Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lb.	A	B	C	D	E	Inside Diam. of Ring F	Weight per 100
3/4	300	3/8	2 7/8	2 3/8	3 7/16	1 15/16	1 3/16	30
1	300	3/8	2 7/8	2 1/4	3 3/16	1 3/4	1 7/16	32
1 1/4	300	3/8	3	2 3/16	3 7/8	1 11/16	1 13/16	37
1 1/2	300	3/8	3 1/8	2 3/16	4 1/8	1 11/16	2 1/16	42
2	300	3/8	3 1/2	2 5/16	4 11/16	1 13/16	2 1/2	47
2 1/2	500	1/2	3 15/16	2 1/2	5 3/8	1 7/8	3	75
3	500	1/2	4 3/8	2 5/8	6 1/8	2	3 3/4	93
4	900	5/8	5 13/16	3 1/16	8 1/16	2 7/8	4 13/16	180
5	900	5/8	6 3/8	3 5/8	9 3/16	2 15/16	5 15/16	257
6	1300	3/4	7 5/8	4 3/16	10 15/16	3 1/2	7 1/16	400
8	1800	7/8	9 1/8	4 7/8	13 1/2	3 7/8	9 1/16	612



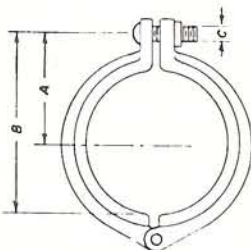
HINGE HANGER — Fig. 34 MALLEABLE IRON

The Malleable Iron Hinge Hanger sometimes known as the Blake Hanger is used with Beam Clamps, Eye Rods, Concrete Inserts, Extension Bar, etc. It is composed of two parts riveted together with a bolt at the top.

Regularly furnished in black. Galvanized only on order. Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lb.	A	B	Bolt Size C	Weight per 100
3/8	200	3/4	1 1/16	1/4	6
1/2	200	1 5/16	1 3/8	1/4	9
3/4	300	1 1/8	1 11/16	1/4	10
1	300	1 1/4	1 13/16	1/4	12
1 1/4	300	1 7/16	2 3/8	1/4	18
1 1/2	300	1 11/16	2 5/8	1/4	21
2	300	2 1/16	3 1/4	1/4	29
2 1/2	450	2 1/4	3 11/16	1/4	38
3	450	2 3/4	4 1/2	1/4	52
4	520	3 5/8	5 7/8	3/8	90
5	520	4 1/2	7 3/16	3/8	154
6	1300	5 1/16	8 5/8	1/2	252
8	1800	6 3/8	10 11/16	1/2	495



ADJUSTABLE SOLID RING

SWIVEL HANGER — Fig. 233 — MALLEABLE IRON

Adjustable Swivel Ring is made of malleable iron. The inspection slot shows adequate bearing on the rod. The spring washer on the swivel nut prevents its loss while in transit or stock.

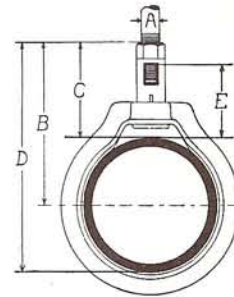
By turning, the swivel nut will raise or lower the pipe to the desired position and a locking nut on the supporting rod, being tightened after adjustment, will prevent loosening under excessive vibration and assures proper pitch of pipe line at all times.

Approvals: Underwriters' Laboratories listed and Factory Mutual approved. Complies with Federal Specification WW-H-171 (Type 5) and Manufacturers Standardization Society SP-69 (Type 5).

Regularly furnished black. Galvanized to order.
Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Recom. Safe Load, lb.	A	B	C	D	Adj. E	Weight per 100
3/4			2 7/8	2 3/8	3 1/2	2	23
1			2 3/4	2 1/8	3 3/8	1 1/8	28
1 1/4	300	3/8	3	2 1/8	3 3/8	1 3/4	28
1 1/2			3	2 1/8	4	1 5/8	28
2			3 3/8	2 1/4	4 3/8	1 3/4	33
2 1/2			4	2 1/2	5 3/8	2	51
3	500	1/2	4 3/8	2 5/8	6 1/8	2 1/8	52
4			5 3/8	3 1/8	7 5/8	2 1/2	99
5	900	5/8	6	3 1/4	8 3/4	2 5/8	120
6	1300	3/4	7 1/8	3 3/4	10 3/8	3	185
8	1800	7/8	8 3/4	4 1/2	13 1/8	3 3/8	530



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ADJUSTABLE SWIVEL RING — Fig. 800 STEEL

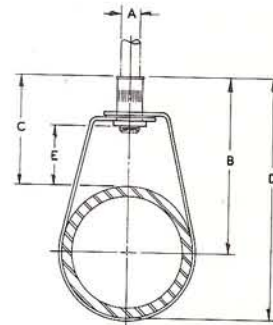
Our Adjustable Ring is constructed entirely of steel. The Swivel Nut is knurled to provide a gripping surface for the use of pliers when adjusting the pipe. The nut has a retainer to keep it from dropping out of the ring while it is in the open position being fitted onto the pipe.

Approvals: Underwriters' Laboratories listed and Factory Mutual approved. Federal Specification WWH-171 (type 10) and Manufacturers Standardization Society SP-69 (type 10)

Order by size and figure number. For copper tubing refer to Fig. 800CT

DIMENSIONS IN INCHES

Pipe Size	Maximum Recom. Load/lb.	A	B	C	D	E	Wt. 100 Pcs.
3/4	300	3/8	2 3/8	1 15/16	2 3/4	1 1/16	11
1	300	3/8	2 1/2	1 15/16	3 3/16	1 1/16	12
1 1/4	300	3/8	2 3/4	2	3 3/16	1 3/16	13
1 1/2	300	3/8	2 15/16	2	3 3/8	1 3/32	14
2	300	3/8	3 5/16	2 1/8	4 1/2	1 5/16	16
2 1/2	500	1/2	4	2 5/8	5 1/8	1 1/2	30
3	500	1/2	4 3/16	2 3/4	6 3/16	1 11/16	34
4	900	5/8	5 5/16	3 5/16	7 13/16	1 13/16	43
5	900	5/8	6 1/4	3 1/2	9 1/16	2	68
6	1300	3/4	7 3/16	3 7/8	10 5/8	2 3/8	114
8	1800	7/8	8 11/16	4 3/8	13 1/8	2 7/8	136





TYPE No. 1A BAND — Fig. 1A STEEL

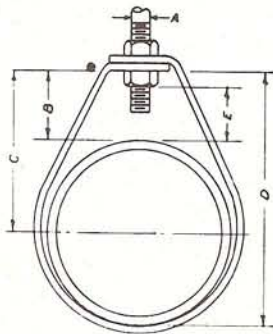
Type 1A Band is an all steel hanger formed in one piece giving a double thickness of stock at the point which carries the load. It has a vertical adjustment of 5/8 inches to 2 inches by means of a suspended steel rod threaded and two nuts. The lower nut adjusts the pipe line to the proper pitch and the top nut when locked into position prevents loosening due to vibration. The nuts are not included in the price of hanger.

Approvals: Complies with Federal Specification WWH-171 (Type 7) and Manufacturers Standardization Society SP 69 (Type 7)

For copper tubing refer to Fig. 1A CT

Order by size and figure number.

DIMENSIONS IN INCHES



Pipe Size	Recom. Safe Load, lb.	A	B	C	D	E	Hole Size	Steel Size	Weight per 100
1/2	610	3/8	1 3/16	1 5/8	2 1/16	1 3/16	7/16	16 ga. x 7/8	10
3/4	610	3/8	1 1/8	1 21/32	2 3/16	1 3/16	7/16	16 ga. x 7/8	12
1	610	3/8	1 3/16	2	2 5/8	1	7/16	16 ga. x 7/8	14
1 1/4	610	3/8	1 3/8	2 3/16	3	1 1/16	7/16	16 ga. x 7/8	16
1 1/2	610	3/8	1 5/8	2 1/2	3 1/16	1 1/4	7/16	16 ga. x 7/8	17
2	610	3/8	1 3/4	2 15/16	4 1/8	1 9/16	7/16	14 ga. x 1	32
2 1/2	970	1/2	1 5/8	3 1/16	4 1/2	1 1/8	9/16	14 ga. x 1	36
3	970	1/2	1 1/2	3 1/4	5	1 1/16	9/16	1/8 x 1	57
4	970	5/8	1 1/2	3 3/4	6	1 1/16	9/16	1/8 x 1 1/4	68
5	970	5/8	2 3/16	5	7 3/4	1 3/4	9/16	1/8 x 1 1/4	82
6	1250	3/4	2 3/8	5 11/16	9	1 13/16	1 1/16	1/8 x 1 1/2	120
8	1800	7/8	2 3/8	6 11/16	11	1 5/8	1 3/16	3/16 x 1 3/4	220



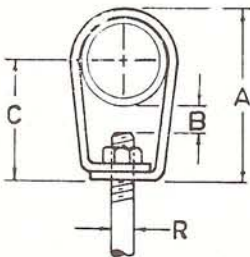
TRAPEZE HANGER BAND — Fig. 168 STEEL

The Trapeze Hanger Band is made of a heavier than normal stock size, with large diameter hanger rod take outs and is used to support lines which span in bays, and between beams.

Trapeze Hanger Band is used when pipe line runs parallel to beams or joists, but not directly under them.

Order by size, dimension "R" and figure number.

DIMENSIONS IN INCHES



Size	A	B	C	R	Steel Size	Weight per 100
1	2 5/8	7/16	1 3/16	3/8	3/16 x 7/8	36
		5/16		1/2		
1 1/4	3 5/8	15/16	2 5/8	1/2	3/16 x 1 1/4	62
		27/32		5/8		
1 1/2	3 13/16	31/32	2 11/16	1/2	3/16 x 1 1/4	68
		27/32		5/8		
2	4 5/8	7/8	3 3/16	3/4	1/4 x 1 1/2	130
		3/4		7/8		
2 1/2	5 1/4	1/2	3 3/16	3/4	1/4 x 1 3/4	175
		3/8		7/8		
3	6	3/16	3 3/4	3/4	1/4 x 1 3/4	200
		1/16		7/8		

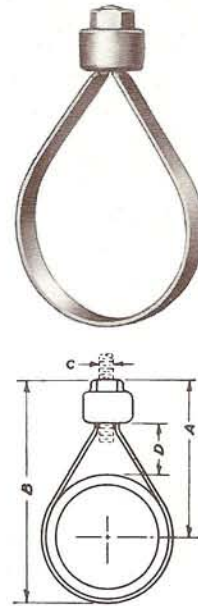
BAND WITH ADJUSTING NUT— Fig. 7 MALLEABLE IRON AND STEEL

For copper tubing refer to Fig. 7CT.

Approvals: Underwriters Laboratories listed 3/4" through 3 1/2" pipe size. Complies with Federal Specification WWH-171 (type 9) and Manufacturers Standardization Society SP 69 (type 9)

DIMENSIONS IN INCHES

Pipe Size	Recom. Safe Load, lbs.	A	B	C	D	Weight per 100
1/2	240	2 1/2	2 7/8	3/8	1 1/8	16
3/4	240	2 5/8	3 1/8	3/8	1 1/8	16 1/2
1	240	2 11/16	3 3/8	3/8	1 1/8	17
1 1/4	240	2 3/16	3 3/4	3/8	1 1/8	17 1/2
1 1/2	240	3	4	3/8	1 1/8	18
2	240	3 1/4	4 1/2	3/8	1 1/8	19
2 1/2	315	3 3/16	5 1/4	1/2	1 1/4	36
3	315	4 3/16	6	1/2	1 5/16	38
4	800	5 3/8	7 5/8	5/8	1 11/16	80
5	800	6	8 3/4	5/8	1 11/16	88
6	1100	7 1/8	10 1/2	3/4	2 3/16	135
8	1100	8 7/8	13 1/8	7/8	2 5/8	245



CLEVIS HANGER — Fig. 100 STEEL

The Clevis Hanger provides a vertical adjustment of approximately 1 1/2 inches after pipe is in place. The lower nut adjusts pipe line to the proper pitch and the top nut when locked into position prevents loosening due to vibration.

The nuts are not included in the price of hanger.

Hangers for 18 inch pipe and larger are furnished with spreaders on the cross bolts.

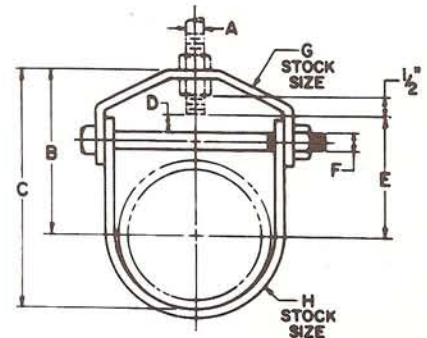
Approvals: Underwriters Laboratories listed and Factory Mutual approved for pipe sizes 3/4" through 8". Complies with Federal Specification WW-H-171 and Manufacturers Standardization Society SP69 (type 1)

Regularly furnished black. Galvanized or painted to order.

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lb.	A	B	C	D	E	F	G	H	Weight per 100
1/2	600	3/8	2 1/4	2 3/4	1/2	1 3/8	1/4	1/8 x 1	1/8 x 1	33
3/4	600	3/8	2 1/2	3	5/8	1 1/2	1/4	1/8 x 1	1/8 x 1	38
1	600	3/8	2 3/4	3 3/8	5/8	1 3/4	1/4	1/8 x 1	1/8 x 1	42
1 1/4	600	3/8	3	3 3/8	3/4	2	1/4	1/8 x 1	1/8 x 1	47
1 1/2	600	3/8	3 1/2	4 3/8	1	2 1/2	1/4	5/16 x 1	1/8 x 1	59
2	600	3/8	3 5/8	4 7/8	1 1/8	2 3/4	1/4	5/16 x 1	1/8 x 1	64
2 1/2	1100	1/2	4 3/8	6	7/8	3 1/4	3/16	3/16 x 1 1/4	3/16 x 1 1/4	110
3	1100	1/2	4 1/4	6 1/8	5/8	3	3/16	3/16 x 1 1/4	3/16 x 1 1/4	120
3 1/2	1100	1/2	4 1/2	6 3/8	5/8	3 1/8	3/8	3/16 x 1 1/4	3/16 x 1 1/4	135
4	1400	5/8	5 1/2	7 3/4	7/8	4 1/8	1/2	1/4 x 1 1/4	3/16 x 1 1/4	205
5	1400	5/8	6 1/4	9	7/8	4 7/8	1/2	1/4 x 1 1/4	3/16 x 1 1/4	285
6	1900	3/4	7 1/4	10 1/2	1 1/8	5 3/4	5/8	1/4 x 1 1/2	3/16 x 1 1/2	370
8	2000	7/8	8 1/2	12 3/4	1 1/8	6 3/4	5/8	1/4 x 1 3/4	3/16 x 1 3/4	510
10	3600	7/8	10	15 3/8	1 1/2	8 1/4	3/4	3/8 x 1 3/4	1/4 x 1 3/4	880
12	3800	7/8	11 1/8	17 1/2	1 1/2	9 1/4	3/4	3/8 x 2	1/4 x 2	1150
14	4200	1	12 1/2	19 1/2	1 1/2	10 5/8	7/8	1/2 x 2	1/4 x 2	1480
16	4800	1	15	23	2 1/8	13 1/8	1	1/2 x 2 1/2	1/4 x 2 1/2	2100
18	4800	1 1/8	15 3/4	24 3/4	3 1/4	13 3/4	1 1/8	1/2 x 2 1/2	1/4 x 2 1/2	2435
20	4800	1 1/4	17 3/8	27 3/8	3 1/2	15 1/4	1 1/4	5/8 x 3	3/8 x 3	4255
24	4800	1 1/4	19 3/8	31 1/8	3 3/4	17 1/2	1 1/4	5/8 x 3	3/8 x 3	4850

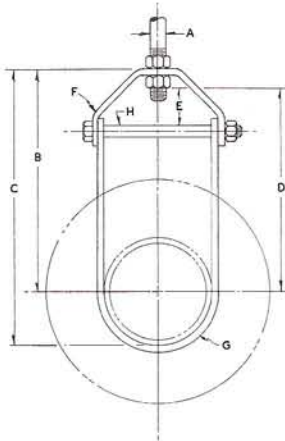




Elongated Clevis Hanger for Insulated Lines Fig. 100 EL STEEL

Designed for suspension of insulated stationary pipe lines. Will accommodate 2" of covering 3/4 through 1 1/2 pipe and 4 inches of insulation on 2 inch and larger pipe.

Approvals: Underwriters laboratories listed and Factory Mutual approved for pipe sizes 3/4" through 8". Complies with Federal Specification WW-H-171 and Manufacturers Standardization Society SP69 (type I).



DIMENSIONS SHOWING INCHES

Pipe Size	Maximum Recom. Load/lb.	A	B	C	D	Adj. E	H	Steel Size	
								F	G
1/2	600	3/8	3 3/8	3 13/16	3 1/16	1 1/16	1/4	1/8 x 1	1/8 x 1
3/4	600	3/8	3 7/16	4	3 3/8	1 5/16	1/4	1/8 x 1	1/8 x 1
1	600	3/8	4 1/16	5 1/4	4 1/4	1 5/16	1/4	1/8 x 1	1/8 x 1
1 1/4	600	3/8	4 7/8	5 1 1/16	4 9/16	1 1/16	1/4	1/8 x 1	1/8 x 1
1 1/2	600	3/8	5 5/8	6 1/16	5 5/16	1 1/16	1/4	5/32 x 1	1/8 x 1
2	600	3/8	8 1/16	9 1/4	7 3/4	1 1/16	1/4	5/32 x 1	1/8 x 1
2 1/2	1100	3/8	8 7/8	10 1/2	8 3/16	1 3/8	3/16	3/16 x 1 1/4	3/16 x 1 1/4
3	1100	1/2	9 7/16	11 3/8	8 3/4	1 1/8	3/16	3/16 x 1 1/4	3/16 x 1 1/4
4	1400	5/8	10 1/2	12 3/4	9 5/8	1 3/8	1/2	1/4 x 1 1/4	3/16 x 1 1/4
5	1400	5/8	11 1/2	14 1/4	10 5/8	1 3/8	1/2	1/4 x 1 1/4	3/16 x 1 1/4
6	1900	3/4	12 3/16	15 1/2	11 3/16	1 5/8	5/8	1/4 x 1 1/2	3/16 x 1 1/2
8	2000	7/8	13 13/16	18 1/8	12 5/16	1 7/8	5/8	1/4 x 1 3/4	3/16 x 1 3/4
10	3600	7/8	15 1/4	20 5/8	14	2	3/4	3/8 x 1 3/4	1/4 x 1 3/4
12	3800	7/8	16 1/2	17 7/8	15 5/8	2	3/4	3/8 x 2	1/4 x 2
14	4200	1	17 3/8	24 3/8	15 7/8	2 1/8	3/4	1/2 x 2	1/4 x 2
16	4800	1	18 5/8	26 5/8	17 1/8	2 5/16	7/8	1/2 x 2 1/2	1/4 x 2 1/2
18	4800	1	20 3/4	29 3/4	19 1/4	3	7/8	1/2 x 2 1/2	1/4 x 2 1/2

REFRIGERATION HANGER AND SHIELD — Fig. 100SH STEEL

This Hanger is a combination of our Fig. 100 Clevis Hanger and a Galvanized Shield. Refrigeration Hangers are used to prevent crushing the insulation or breaking the vapor barrier by the hanger or support. For dimensional data, see Fig. 100 on the preceding page.



DIMENSIONAL DATA

Fig. 100 — Refer to Page 4
Fig. 265P — Refer to Page 31

HGR SIZE	HANGER SIZING GUIDE					
	1/2"	1"	1 1/2"	2"	2 1/2"	3"
1 1/2	1/2					
2	3/4-1					
2 1/2	1 1/4-1 1/2	1/2				
3	2	3/4-1				
3 1/2	2 1/2	1 1/4-1 1/2	1/2-3/4			
4	3	2	1-1 1/4			
5	3 1/2-4	2 1/2-3	1 1/2-2	1/2-1 1/4		
6	5	3 1/2-4	2 1/2-3	1 1/2-2	1/2-1 1/4	
7	6	5	3 1/2-4	2 1/2-3	1 1/2-2	1/2-1 1/4
8	—	6	5	3 1/2-4	2 1/2-3	1 1/2-2
10	8	8	6	5-6	3 1/2-4	2 1/2-4
12	10	10	8	8	5-6	5-6
14	12	—	10	—	8	—
16	14	12-14	12	10	10	8
18	16	16	14	12-14	12	10
20	—	—	16	16	14	12-14
24	—	—	—	—	16	16

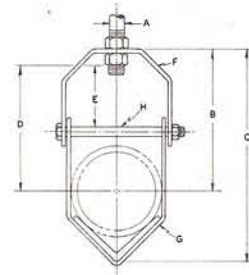
Clevis Hanger Fig. 200VT STEEL

Fig. 200 Vee Trough Clevis Hangers are used to suspend plastic pipes and rubber hose lines. This hanger has been designed to provide a vertical adjustment of 1 1/2" after the pipe line is in place. The lower nut adjusts the pipe line to the proper pitch and the top nut when locked in position prevents loosening of the installation due to vibration.

Standard finish is black. Galvanized to order.

DIMENSIONS IN INCHES

Pipe Size	Max. Load, Lbs.	Steel Size	A	B	C	D	E	F	Weight per 100
1/2-1 1/2	250	13ga x 7/8	3/8	3 3/16	4 1/16	2 3/8	1 1/4	1/4	28
2	250	13ga x 7/8	3/8	3 11/16	5 7/16	3	1 3/8	1/4	28
2 1/2-3	350	1/8 x 1 1/4	1/2	4 3/4	7 3/8	3 3/4	1 1/2	1/4	122
3 1/2-4	400	1/8 x 1 1/4	1/2	5 3/8	8 3/4	4 1/2	1 3/4	3/16	122
6	500	3/16 x 1 3/4	3/4	7 3/16	11 7/8	6 3/16	1 5/8	5/8	174



LIGHT DUTY CLEVIS HANGER — Fig. 200 STEEL

The Light Duty Clevis Hanger provides a vertical adjustment of approximately 1/4-inch to 1 1/2-inch according to size of hanger after the pipe is in place. The lower nut adjusts pipe line to the proper pitch and the top nut, when locked into position, prevents loosening due to vibration.

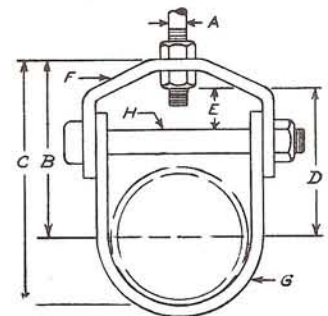
This hanger should not be used when maximum temperature exceeds 650° F.

Order by pipe size and figure number.

Approvals: Complies with Federal Specifications WW-H-171 (Type 12)

DIMENSIONS IN INCHES

PIPE SIZE	Max. Recom. Load, lb.	A	B	C	D	E	STEEL SIZE		BOLT H	WEIGHT per 100
							F	G		
3/8	150	3/8	2 7/8	2 7/8	2 1/8	1 1/8	16 ga x 7/8	16 ga x 7/8	1/4	11
1/2	150	3/8	2 7/8	2 7/8	2 1/8	1 1/8	16 ga x 7/8	16 ga x 7/8	1/4	13
3/4	250	3/8	2 11/16	3 3/8	2 3/8	1 1/8	16 ga x 7/8	16 ga x 7/8	1/4	28
1	250	3/8	2 5/8	3 3/8	2 1/4	1 1/8	16 ga x 7/8	16 ga x 7/8	1/4	31
1 1/4	250	3/8	3 1/8	3 7/8	2 11/16	1 3/8	16 ga x 7/8	16 ga x 7/8	1/4	33
1 1/2	250	3/8	3 3/4	4 1/8	2 7/8	1 3/8	13 ga x 7/8	16 ga x 7/8	1/4	36
2	250	3/8	3 13/16	5	3 3/8	1 3/8	13 ga x 7/8	13 ga x 7/8	1/4	37
2 1/2	350	1/2	4 1/4	5 11/16	3 11/16	1 7/8	1/8 x 1 1/4	1/8 x 1 1/4	1/4	89
3	350	1/2	4 1/4	6	3 11/16	1 1/4	1/8 x 1 1/4	1/8 x 1 1/4	1/4	98
3 1/2	350	1/2	4 1/2	6 1/2	3 13/16	1 3/8	1/8 x 1 1/4	1/8 x 1 1/4	3/16	107
4	400	3/8	5 3/8	7 13/16	4 13/16	2 1/4	3/16 x 1 1/4	1/8 x 1 1/4	3/8	130

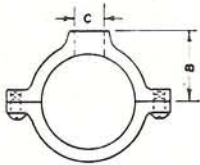




EXTENSION HANGER RING ONLY — Fig. 81 MALLEABLE IRON

Regularly furnished Electro Galvanized. Please specify bolt thread or pipe tapping.

Approvals: Complies to Federal Specification WW-H-171 (type 25)



DIMENSIONS IN INCHES

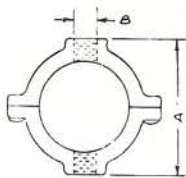
Pipe Size	Rec. Max. Load, lb.	B	C		Weight per 100
			Bolt	Pipe	
3/8	180	1 5/16	3/8	1/4	11
1/2	180	1	3/8	1/4	17
3/4	180	1 1/8	3/8	1/4	19
1	180	1 1/4	3/8	1/4	21
1 1/4	180	1 7/16	3/8	3/8	28
1 1/2	180	1 9/16	3/8	3/8	31
2	180	1 13/16	3/8	3/8	40
2 1/2	480	2 1/4	1/2	1/2	120
3	480	2 9/16	1/2	1/2	154
4	480	3 3/16	1/2	1/2	203

SPLIT RING HANGER DOUBLE TAPPING — Fig. 90 MALLEABLE IRON

MALLEABLE IRON

Split Ring with Double Tapping provides for supporting one pipe line under the other by means of pipe nipples or threaded rods.

Regularly furnished in electro galvanized. Please specify bolt thread or pipe tapping.



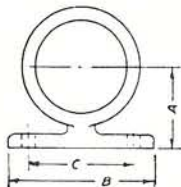
DIMENSIONS IN INCHES

Pipe Size	Rec. Max. Load, lb.	A	B		Weight per 100
			Bolt	Pipe	
3/8	180	1 7/8	3/8	1/4	13
1/2	180	2	3/8	1/4	23
3/4	180	2 1/4	3/8	1/4	24
1	180	2 1/2	3/8	1/4	27
1 1/4	180	2	3/8	1/4	35
1 1/2	180	3 1/8	3/8	1/4	37
2	180	3 5/8	3/8	1/4	48
2 1/2	460	4 1/2	1/2	1/2	131
3	460	5 1/8	1/2	1/2	171
4	460	6 5/8	1/2	1/2	225

SOLID RING HANGER — Fig. 74 CAST IRON

Solid Ring Hanger is used where plumbing pipes run close to ceiling or wall. Two holes are drilled in base of hanger for screws.

Finish: Electro Galvanized



DIMENSIONS IN INCHES

Pipe Size	A	B	C	Weight per 100
3/8	1 5/16	2 1/8	1 1/2	11
1/2	1 1/8	2 5/8	2 1/8	17
3/4	1 1/4	2 7/8	2 1/4	19
1	1 3/8	2 7/8	2 1/4	21
1 1/4	1 5/8	3 3/16	2 11/16	40
1 1/2	2	3 7/8	3 1/8	61
2	2 1/8	4 3/8	3 1/8	80

ONE HOLE PIPE CLAMP — Fig. 237 MALLEABLE IRON

One Hole Pipe Clamps are used to support piping on walls, ceilings or sides of beams. Clamps are cadmium plated.

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Outside Diameter of Pipe	Screw Hole	Weight per 100
3/8	.67	1/4	3.0
1/2	.84	5/16	4.5
3/4	1.05	5/16	5.5
1	1.31	5/16	8.5
1 1/4	1.66	3/8	12.0
1 1/2	1.90	7/16	15.5
2	2.37	7/16	24.0
2 1/2	2.87	1 1/16	50.0
3	3.50	1 1/16	69.0
4	4.50	3/4	140.0



GALVANIZED PIPE CLIPS — Fig. 72 STEEL

Our Pipe Clips are made from heavy galvanized strip steel with re-enforcing bead through center for added strength.

Order by size and figure number.

NUMBER PER POUND

Pipe Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Number	50	40	30	17	13	11	7



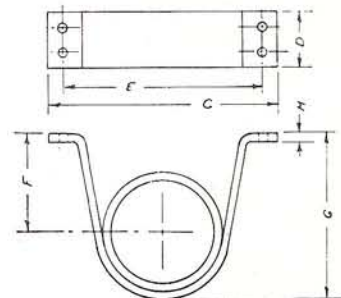
SPRINKLER SHORT CLIP — Fig. 114 STEEL

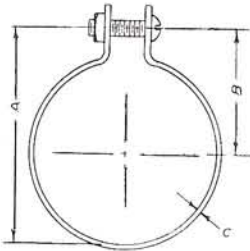
Sprinkler Clips are used where piping runs close to ceilings or beams. Holes are drilled for No. 18 wood screws and 1/4 inch bolts can be used on all sizes.

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Recom. Safe Load, lb.	C	D	E	F	G	H	Weight per 100
1/2	300	3 1/16	7/8	2 11/16	9/16	1 3/16	3/16	22
3/4	300	3 7/8	7/8	3	3/4	1 1/2	3/16	25
1	300	4 1/8	7/8	3 1/4	7/8	1 11/16	3/16	27
1 1/4	300	4 9/16	7/8	3 11/16	1 1/8	2 3/16	3/16	33
1 1/2	300	5 3/16	1	4 3/16	1 3/16	2 9/16	1/4	56
2	300	5 3/4	1	4 3/4	1 1/16	2 15/16	1/4	64
2 1/2	500	6 1/4	2	5 1/4	1 7/8	3 3/16	1/4	149
3	500	6 7/8	2	5 7/8	2	4	1/4	165
4	500	8	2	7	2 9/16	5 1/16	1/4	205





BAND CLAMP — Fig. 1 STEEL

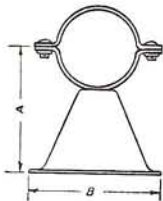
The Band Clamp is used on light duty applications with our Fig. 12 Eye Sockets, or Fig. 10 Strapping.

Regularly furnished Black, galvanized to order.

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Recom. Safe Load, lb.	A	B	C	Weight per 100
1/2		2 1/4	1 13/16		8
3/4		2 3/8	1 7/8		9
1	300	2 5/8	2	3/4 x 16 ga.	10
1 1/4		3	2 3/16		13
1 1/2		3 3/8	2 7/16		13
2	300	3 13/16	2 5/8	7/8 x 16 ga.	16
2 1/2	450	4 1/4	2 13/16		20
3	450	5	3 1/4	1 x 14 ga.	31
4		6 1/4	4	1 1/8 x 13 ga.	56
5	520	7 3/16	4 3/16		63
6	520	8 1/4	4 15/16	1 1/8 x 12 ga.	84



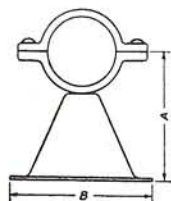
STAMPED STEEL HANGER — Fig. 66 GALVANIZED

Our Fig. 66 Stamped Steel Hanger makes a strong, neat and light concealed screw hanger. It supports the pipe one inch from back of pipe to wall and has only two parts and takes the place of rough unsightly looking hangers in a finished room and eliminates the use of ordinary galvanized pipe clips.

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	A	B	Weight per 100
3/8	1 3/8		7.5
1/2	1 7/16	1 5/8	8.0
3/4	1 11/16		8.5
1	1 11/16		9.0



STAMPED BRASS HANGER — Fig. 65

Our Fig. 65 Stamped Brass Hanger is strong, neat and light. It replaces the heavy cast brass concealed screw hanger. It is made to support pipes at various distances from the wall.

Furnished in Polished Brass, Chrome or Nickel Plated finish.

When ordering, specify pipe size, number, finish, and figure number.

DIMENSIONS IN INCHES

Pipe Size	Number	A	B	Weight per 100
3/8		1		6.0
1/2	No. 1	1	1 7/16	6.5
3/4		1 1/8		6.5
1		1 1/4		7.5

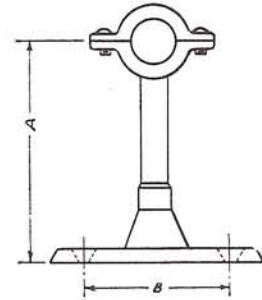
ADJUSTABLE STAMPED BRASS HANGER — Fig. 68

Our Fig. 68 Adjustable Stamped Brass Hanger can be adjusted from 1 1/2 inch to 3 1/4 inches from wall. The threaded post does not show as it is concealed by the tubing. This hanger can be furnished to support double or triple pipes 2 to 2 1/2 inches on centers

Furnished in Polished Brass, Chrome or Nickel Plated finish.
When ordering, specify pipe size, finish, and figure number.

DIMENSIONS IN INCHES

Pipe Size	A		B	Weight per 100
	Minimum	Maximum		
3/8	1 3/8	3 1/2		30
1/2	1 7/8	3 5/8		30
3/4	2 1/4	3 3/4	2 1/4	31
1	2 3/4	4 1/8		31
1 1/4	2 7/8	4 1/2		43
1 1/2	3 1/8	4 7/8		43



SOIL PIPE DRIVE HOOK — Fig. 97 STEEL

Soil Pipe Drive Hooks are used to support soil pipe drains running along brick walls in basements. The band is made of 3/16 inch by 5/8 inch steel and toe of 1/4 inch by 3/4 inch bar, welded so that the end of toe can be struck with hammer; then the toe is pointed like a wedge, so it can be driven between the courses of brick.

Order by size and figure number.

WEIGHT PER HUNDRED

Pipe Size	2	3	4	5	6
Weight	52	60	64	80	84



SOIL PIPE CLAMP — Fig. 95 STEEL

Soil Pipe Clamps are used to support vent and soil stacks. The clamps are placed on the pipe in position under the hub and are secured to wall by screws or nails.

These Clamps make an economical support for residences and small industrial buildings where wooden structure is used.

Order by size and figure number.

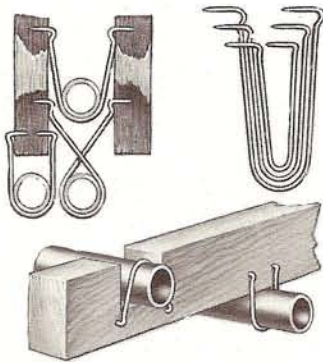
WEIGHT PER HUNDRED

Pipe Size	2	3	4
Weight per 100	42	52	66





WIRE PIPE HOOKS — Fig. 111 STEEL



The Wire Pipe Hook is made of special hard drawn wire, extra heavy gauge. The driving head is bent so as to make it easy to drive. The point is cut to a sharp nail point which will penetrate either soft or hard wood without bending. It can be used on pipes in any position as shown.

Furnished in pipe sizes from 1/2 inch to 2 inch, length 4 inch to 12 inch.
Order by size, length and figure number.

Standard finish: electro galvanized.
For copper tubing refer to Fig. 111CT.

WEIGHT PER HUNDRED

Pipe Size	Length of Hanger				
	4	6	8	10	12
1/2	6	8	10	12	14
3/4	6	8	10	12	14
1	6	8	10	12	14
1 1/4	8	10	12	14	16
1 1/2	8	10	12	14	16
2	10	12	14	16	18

U BOLTS — Fig. 222 STEEL



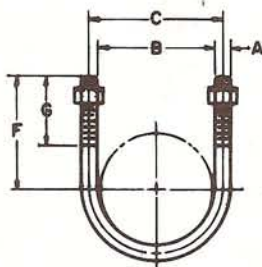
Fig. 222 U-Bolts are made of carbon steel, furnished with two hex nuts. Available on request in hot-dip galvanized from 2 1/2" through 12", electro galvanized 2" and below.

Approvals: Complies with Federal Specification WW-H-171 (type 24) and Manufacturers Standardization Society SP 69 (type 24)

Note: When furnished hot-dip galvanized, oversize hex nuts must be used.

Order by size and figure number.

DIMENSIONS IN INCHES



Pipe Size	Max. Recom. Load, lb.	A	B	C	F	G	Weight per 100
1/2	480	1/4	7/8	1 1/8	1 1/4	3/4	8
3/4	480	1/4	1 1/8	1 3/8	1 3/8	3/4	9
1	480	1/4	1 3/8	1 5/8	1 3/8	3/4	10
1 1/4	1200	3/8	1 3/4	2 1/8	1 3/4	1	27
1 1/2	1200	3/8	2	2 3/8	1 7/8	1	30
2	1200	3/8	2 1/2	2 7/8	2 1/4	1	34
2 1/2	2200	1/2	3	3 1/2	2 5/8	1 1/4	72
3	2200	1/2	3 5/8	4 1/8	3 1/4	1 1/4	80
4	2200	1/2	4 5/8	5 1/8	3 1/2	1 1/4	95
5	2200	1/2	5 5/8	6 1/8	4 1/4	1 1/4	113
6	3600	5/8	6 3/4	7 3/8	4 3/4	1 1/4	124
8	3600	5/8	8 3/4	9 3/8	5 3/8	1 1/4	210
10	5400	3/4	10 7/8	11 5/8	7	1 1/2	268
12	7500	7/8	12 7/8	13 3/4	7 7/8	1 1/2	320

U BOLTS — Fig. 283 STEEL

Fig. 283 U-Bolts are of carbon steel with four hex nuts. Galvanized on request. Alloy steels and Stainless Steels available on request.

Approvals: Complies with Federal Specification WW-H-171 (Type 24) and Manufacturers Standardization Society SP 69 (Type 24)

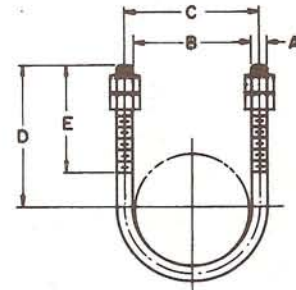
Note: When furnished hot-dip galvanized, oversize hex nuts must be used.

When ordering, specify pipe size and figure number.



DIMENSIONS IN INCHES

Pipe Size	Max. Load, lbs.	A	B	C	D	E	Weight per 100
1/2	480	1/4	3/8	1 1/8	2 1/2	2 1/2	12
3/4	480	1/4	1 1/8	1 3/8	2 5/8	2 1/2	13
1	480	1/4	1 3/8	1 5/8	2 3/4	2 1/2	14
1 1/4	1200	3/8	1 3/4	2 1/8	2 7/8	2 1/2	38
1 1/2	1200	3/8	2	2 3/8	3	2 1/2	39
2	1200	3/8	2 1/2	2 7/8	3 1/4	2 1/2	42
2 1/2	2200	1/2	3	3 1/2	3 3/4	3	90
3	2200	1/2	3 5/8	4 1/8	4	3	99
4	2200	1/2	4 5/8	5 1/8	4 1/2	3	115
5	2200	1/2	5 3/8	6 1/8	5	3	128
6	3600	5/8	6 3/4	7 3/8	6 1/8	3 3/4	239
8	3600	5/8	8 3/4	9 3/8	7 1/8	3 3/4	283
10	5400	3/4	10 3/8	11 5/8	8 3/8	4	479
12	7500	7/8	12 3/8	13 3/4	9 5/8	4 1/4	764
14	7500	7/8	14 1/8	15	10 1/4	4 1/4	820
16	7500	7/8	16 1/8	17	11 1/4	4 1/4	870
18	9800	1	18 1/8	19 1/8	12 5/8	4 3/4	1350
20	9800	1	20 1/8	21 1/8	13 5/8	4 3/4	1460
24	9800	1	24 1/8	25 1/8	15 5/8	4 3/4	1710



SPRINKLER U HOOKS — Fig. 44 STEEL

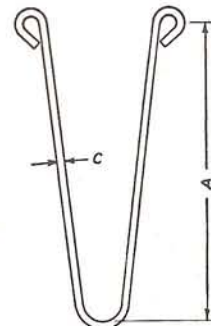
When ordering, specify pipe size, length which is from center of eyes to bottom of pipe and figure number.

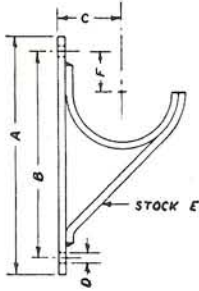
DIMENSIONS IN INCHES

Pipe Sizes	3/4-2	2 1/2-3	3 1/2-4	5	6	8
Dim. C	5/16	3/8	1/2	5/8	5/8	3/4
Size Screw	No. 16	3/8	1/2	1/2	1/2	5/8
Max. Load, lb.	250	300	300	550	750	1100

WEIGHT PER HUNDRED

Length A Inches	Pipe Sizes, Inches					
	3/4-2	2 1/2-3	3 1/2-4	5	6	8
6	36					
8	45					
10	54	82	159	273	278	
12	62	97	181	307	312	
14	71	107	204	343	347	531
16	80	120	226	378	381	582
18	88	132	248	411	416	632
20	100	147	271	447	450	663
24	108	166	315	481	520	762
30	134	213	382	532	618	908
36	160	251	448	584	722	1062





WALL PIPE SUPPORT — Fig. 221 STEEL

The Wall Pipe Supports are used to support steel or cast iron pipes close to walls, piers, or in a trench, and made of steel with all parts welded.

These supports can be made to carry pipe lines at various distances from the wall, also for Hot Water Tanks 12 inches to 36 inches in diameter. Prices furnished in accordance with specifications.

Order by size and figure number. Made special to customer order.

DIMENSIONS IN INCHES

Pipe Size	A	B	C	D	Steel Size E	Weight per 100
3	9 ¹ / ₈	7 ⁷ / ₈	2 ¹ / ₄	⁹ / ₁₆	1 ¹ / ₂ x ¹ / ₄	239
4	10 ¹ / ₂	9 ¹ / ₄	2 ³ / ₄	⁹ / ₁₆	1 ¹ / ₂ x ¹ / ₄	256
5	12 ³ / ₄	11 ¹ / ₄	3 ⁵ / ₁₆	⁹ / ₁₆	1 ¹ / ₂ x ¹ / ₄	405
6	14	12 ¹ / ₂	3 ¹³ / ₁₆	⁹ / ₁₆	1 ¹ / ₂ x ¹ / ₄	448
8	18	16	5 ³ / ₈	¹¹ / ₁₆	2 x ¹ / ₂	1530
10	22	19 ¹ / ₂	6 ³ / ₈	¹¹ / ₁₆	2 ¹ / ₂ x ¹ / ₂	2335
12	24 ¹ / ₂	22	7 ³ / ₈	¹¹ / ₁₆	2 ¹ / ₂ x ¹ / ₂	2690

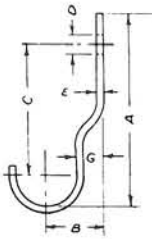
OFFSET HOOK RETURN LINES — Fig. 227 STEEL

Offset hooks are for light duty pipes that run on walls or beams. An offset of 1" is the clearance provided for fittings.

Approval: Complies with Federal Specifications WW-H-171 (type 27)

Offsets of greater than one inch can be furnished at an additional cost.

Order by size and figure number.



DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lb.	A	B	C	Hole D	Steel Size E	G	Weight per 100
¹ / ₂	180	6 ³ / ₁₆	1 ¹ / ₂	5	⁹ / ₁₆	³ / ₁₆ x 1 ¹ / ₄	1	50
³ / ₄	180	6 ³ / ₁₆	1 ⁵ / ₈	5	⁹ / ₁₆	³ / ₁₆ x 1 ¹ / ₄	1	56
1	390	6 ⁷ / ₁₆	1 ³ / ₄	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	1	82
1 ¹ / ₄	390	6 ⁹ / ₁₆	1 ⁷ / ₈	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	1	84
1 ¹ / ₂	610	6 ¹¹ / ₁₆	2	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	1	109
2	610	6 ¹⁵ / ₁₆	2 ¹ / ₄	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	1	115
2 ¹ / ₂	610	7 ³ / ₁₆	2 ¹ / ₂	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	1	123
3	610	7 ¹ / ₂	2 ¹³ / ₁₆	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	1	139
4	610	8	3 ⁵ / ₁₆	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	1	158

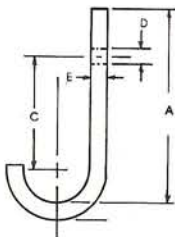
STRAIGHT J-HOOK Fig. 227S

Straight J-Hooks are designed for general piping running up against the wall.

Approval: Complies with Federal Specifications WW-H-171 (type 27)

Offsets of greater than one inch can be furnished at an additional cost.

Order by size and figure number.



DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lb.	A	C	Hole D	Steel Size E	Weight per 100
¹ / ₂	180	6 ³ / ₁₆	5	⁹ / ₁₆	³ / ₁₆ x 1 ¹ / ₄	50
³ / ₄	180	6 ³ / ₁₆	5	⁹ / ₁₆	³ / ₁₆ x 1 ¹ / ₄	56
1	390	6 ⁷ / ₁₆	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	82
1 ¹ / ₄	390	6 ⁹ / ₁₆	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	84
1 ¹ / ₂	610	6 ¹¹ / ₁₆	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	109
2	610	6 ¹⁵ / ₁₆	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	115
2 ¹ / ₂	610	7 ³ / ₁₆	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	123
3	610	7 ¹ / ₂	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	139
4	610	8	5	⁹ / ₁₆	¹ / ₄ x 1 ¹ / ₂	158

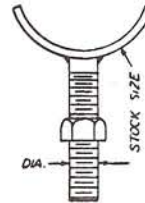
ADJUSTABLE PIPE SUPPORT — Fig. 137 STEEL

Adjustable Pipe Supports are used in conjunction with a pipe standard and flange at the base, to support piping where an overhead supporting member is not available. The stem is threaded its full length, with a nut to allow a vertical adjustment to take care of the pitch in the pipe line.

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Steel Size	Diameter and Length of Stem	Weight per 100
2	1½ x ¾	¾ x 8	192
3	1½ x ¾	¾ x 8	220
4	2 x ¾	1 x 8	323
5	2 x ¾	1 x 8	367
6	2 x ½	1¼ x 8	592
8	2 x ½	1¼ x 8	677
10	3 x ½	1½ x 8	1156
12	3 x ½	1½ x 8	1308



PIPE SUPPORT — Fig. 247 STEEL

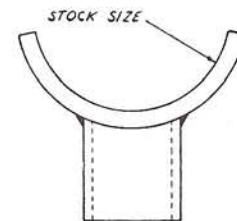
Pipe Supports are used in conjunction with a pipe standard and flange at base to support pipe where an overhead supporting member is not available.

The stem is a steel pipe coupling welded to yoke and tapped for the pipe standard shown in schedule.

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Steel Size	Pipe Size, Coupling	Weight per 100
2	¾ x 2	1¼	135
3	¾ x 2½	1½	245
4	¾ x 3	2	363
5	¾ x 3	2	430
6	½ x 3½	2½	703
8	½ x 3½	2½	853
10	½ x 4	3	1304
12	½ x 4	3	1507



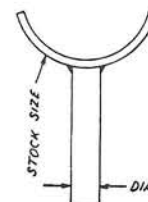
PIPE SUPPORT — Fig. 136 STEEL

Pipe Supports are used in conjunction with a pipe standard and flange at the base to support piping where an overhead supporting member is not available.

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Steel Size	Diameter and Length of Stem	Weight per 100
2	1½ x ¾	¾ x 6	157
3	1½ x ¾	¾ x 6	185
4	2 x ¾	1 x 6	270
5	2 x ¾	1 x 6	314
6	2 x ½	1¼ x 6	490
8	2 x ½	1¼ x 6	575
10	3 x ½	1½ x 6	988
12	3 x ½	1½ x 6	1140





ADJUSTABLE PIPE SUPPORT — Fig. 101 STEEL

Our Fig. 101 Adjustable Pipe Support is composed of a steel saddle, locknut nipple and cast iron reducer. It is used in conjunction with a pipe standard and flange at the base, to support piping where an overhead supporting member is not available.

Approvals: Complies with Federal Specification WW-H-171 (type 39) and Manufacturers Standardization Society SP-69 (type 38)

An adjustment of approximately 4 inches is possible by turning the locknut nipple. When nipple and reducer are assembled, retaining spots are welded to bottom end of nipple to prevent separation during adjustment.

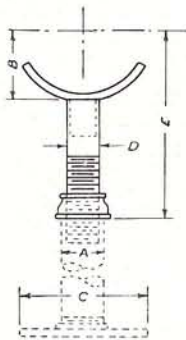
When complete assembly is required, furnish pipe size and distance from floor to center of pipe. Prices on application.

Order by size and figure number.



DIMENSIONS IN INCHES

Pipe Size	Pipe A	B	C	Pipe Size D	E		Weight per 100
					Min.	Max.	
2½	2½	1¾	9	2	8	13	817
3	2½	2	9	2	8¾	13¼	834
4	3	2⅝	9	2½	9⅛	14⅛	1309
5	3	3⅛	9	2½	9⅝	14⅝	1374
6	3	3¾	9	2½	10¼	15¼	1420
8	3	4¾	9	2½	11¼	16¼	1515
10	3	5⅝	9	2½	12⅜	17⅜	1790
12	3	6⅞	9	2½	13⅝	18⅝	1940
14	4	7½	11	3	15½	20½	2900
16	4	8⅝	11	3	16⅝	21⅝	3310
18	6	9⅝	13½	4	19⅞	24⅞	5675
20	6	10⅝	13½	4	20⅞	25⅞	5945
24	6	12¾	13½	4	22¼	27¼	8400
30	6	15¾	13½	4	25¼	30¼	9550
36	6	18¾	13½	4	28¼	33¼	10770



PIPE SADDLE WITH YOKE — Fig. 125 STEEL

Pipe Saddle with Yoke is made entirely of steel with U Bolt of sufficient size to clamp pipe tight to saddle. On 20 inch pipe and larger two U Bolts are furnished.

Approvals: Complies with Federal Specification WW-H-171 (type 38) and Manufacturers Standardization Society SP-69 (type 37)

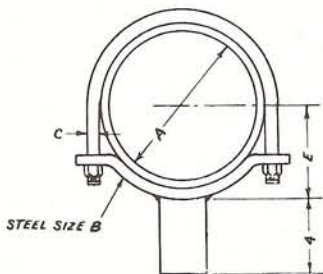
The 4-inch long stem fits inside diameter of supporting pipe D shown in schedule.

When complete assembly is required, furnish pipe size and distance from floor to center of pipe. Prices on application.

Order by size and figure number. Made special to customer order.

DIMENSIONS IN INCHES

Pipe Size	Steel Size B	U Bolt C	Support Pipe D	E	Weight per 100
4	¼ x 3½	½	3	2½	515
5	¼ x 3½	½	3	3⅛	561
6	⅜ x 3½	⅝	3	3⅝	730
8	⅜ x 3½	⅝	3	4⅛	925
10	½ x 3½	¾	3	5⅞	1375
12	½ x 3½	¾	3	6⅞	1550
14	⅝ x 4½	⅞	4	7⅞	2535
16	⅝ x 4½	1	4	8⅞	3080
18	¾ x 4½	1	4	9¾	3764
20	¾ x 8	(2)-1	6	10¾	7535
24	1 x 8	(2)-1⅞	6	13	11280
30	1 x 8	(2)-1⅞	6	16	13730
36	1 x 10	(2)-1¼	8	19	21015

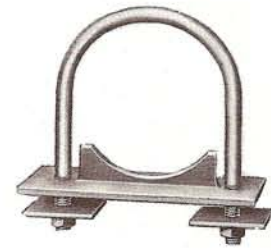


ANCHOR CHAIR — Fig. 127 STEEL

Anchor Chair is made entirely of steel. The chair is composed of two plates, one notched for correct pipe size and the other has holes punched for U Bolt, both pieces are welded together. The U Bolt has sufficient thread to allow for tightening to pipe with hexagon nuts.

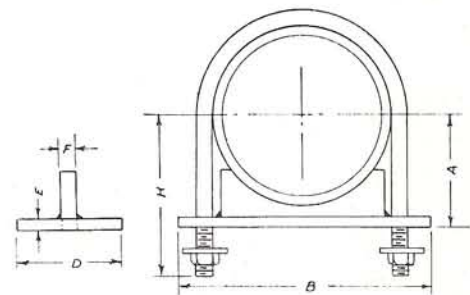
This anchor is used in conjunction with our Fig. 84 and 139 Welded Steel Brackets. The 3 inch square washers are set under the lips of angle iron sections of bracket and nuts tightened on U Bolt prevents movement of the anchor.

Order by size and figure number. Made special to customer order.



DIMENSIONS IN INCHES

Pipe Size	A	B	U Bolt Dia. C	D	E	F	H	Weight per 100
4	3	8	5/8	4	3/8	5/8	5	628
5	3 5/8	9 1/8	5/8	4	3/8	5/8	5 5/8	732
6	4 1/16	10 1/4	3/4	5	3/8	3/4	6 1/2	1055
8	5 5/16	12 1/4	3/4	5	1/2	3/4	7 3/4	1525
10	6 1/2	14 1/2	7/8	5	1/2	7/8	9 1/4	2130
12	7 5/8	16 1/2	7/8	5	1/2	7/8	10 3/8	2550
14	8 1/2	18	1	5	1/2	1	11 1/4	3150
16	9 5/8	20	1	5	5/8	1	12 3/8	4000
18	10 7/8	22	1	6	5/8	1	13 3/8	4950
20	12	24 1/2	1 1/8	6	5/8	1 1/4	15	6590
24	14	28 1/2	1 1/8	6	5/8	1 1/4	17	8100



PIPE CHAIR — Fig. 145 CAST IRON OR STEEL

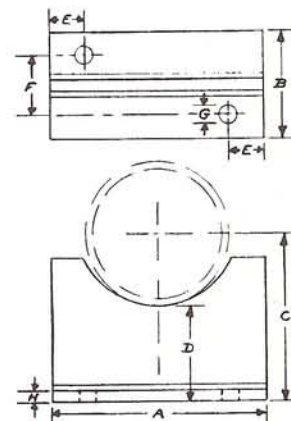
Pipe Chairs are used to support piping in underground trenches or on top of piers above or below ground. There are two holes diagonally across the bottom of base for our Fig. 177 Anchor Bolts or Fig. 52 Closed Back Expansion Shields. This chair allows from 2 1/2 inches to 4 inches clearance under pipe line. It is ideal for supporting underground water piping in marshy land as cast iron will not deteriorate from rusting.

Order by size and figure number. Made special to customer order.



DIMENSIONS IN INCHES

Pipe Size	A	B	C	D	E	F	Hole G	H	Approx. Weight per 100
3	4 1/4	3 1/8	4 5/16	2 5/16	3/4	2 1/8	7/16	3/8	275
4	6 1/4	3 3/16	5 3/8	3 1/8	15/16	2 5/16	9/16	1/2	525
5	7 1/2	4 1/16	6 1/16	3 1/4	1	2 11/16	5/16	1/2	790
6	8 13/16	4 1/2	6 9/16	3 1/4	1	3 3/16	5/16	1/2	1000
8	10 3/4	5 1/2	7 15/16	3 5/8	1 5/16	4	1 1/16	5/8	1625
10	13	6 1/2	9 1/16	3 11/16	1 1/4	5	5/8	5/8	2575
12	15	7 5/16	10 1/2	4 1/8	1 1/2	5 5/16	1 1/16	5/8	3325



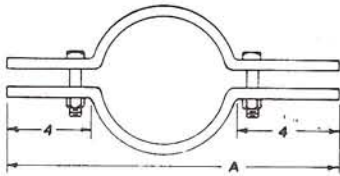


PIPE CLAMP OR RISER CLAMP — Fig. 126 STEEL

Fig. 126 Riser Clamps are designed for standard steel pipe O.D. which must be considered when used for other types of piping.

Approvals: Complies with Federal Specifications WW-H-171 (type 8) and Manufacturers Standardization Society SP 69 (type 8)

Order by size and figure number. For copper tubing refer to Fig. 250.



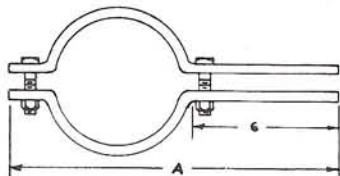
DIMENSIONS IN INCHES

Pipe Size	Recom. Safe Load, lb.	A	Steel Size	Bolt Size	Weight per 100
1/2	255	9 3/8	3/16 x 1 1/4	3/8 x 1 1/4	130
3/4	255	9 3/8	3/16 x 1 1/4	3/8 x 1 1/4	136
1	255	9 5/8	3/16 x 1 1/4	3/8 x 1 1/4	138
1 1/4	255	10	1/4 x 1 1/2	3/8 x 1 1/4	195
1 1/2	255	10 3/8	1/4 x 1 1/2	3/8 x 1 1/4	201
2	255	10 3/4	1/4 x 1 1/2	7/16 x 1 1/2	217
2 1/2	390	11 1/4	1/4 x 1 1/2	7/16 x 1 1/2	229
3	530	12	1/4 x 1 1/2	7/16 x 1 1/2	250
4	810	13 1/2	1/4 x 1 1/2	1/2 x 1 1/2	342
5	1160	14 1/2	1/4 x 2	1/2 x 1 1/2	510
6	1570	15 1/2	1/4 x 2	1/2 x 1 1/2	550
8	2500	18 1/2	3/8 x 2	5/8 x 2	1000
10	2500	20 3/4	3/8 x 2	5/8 x 2	1140
12	2700	22 3/4	1/2 x 2	5/8 x 2 1/2	1760
14	2700	24	1/2 x 2	5/8 x 2 1/2	1925
16	2900	26	5/8 x 2 1/2	3/4 x 3	3250
18	2900	28	5/8 x 2 1/2	3/4 x 3	3375
20	2900	30	5/8 x 2 1/2	3/4 x 3	3500

PIPE CLAMP OR RISER CLAMP — Fig. 89 STEEL

Fig. 89 Riser Clamps are the same as the Fig. 126 except for leg dimensions.

Order by size and figure number. Made special to customer order.



DIMENSIONS IN INCHES

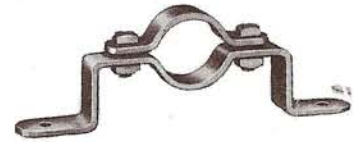
Pipe Size	Recom. Safe Load, lb.	A	Steel Size	Bolt Size	Weight per 100
1/2	255	9 3/8	3/16 x 1 1/4	3/8 x 1 1/4	130
3/4	255	9 3/8	3/16 x 1 1/4	3/8 x 1 1/4	136
1	255	9 5/8	3/16 x 1 1/4	3/8 x 1 1/4	138
1 1/4	255	10	1/4 x 1 1/2	3/8 x 1 1/4	195
1 1/2	255	10 3/8	1/4 x 1 1/2	3/8 x 1 1/4	201
2	255	10 3/4	1/4 x 1 1/2	7/16 x 1 1/2	217
2 1/2	390	11 1/4	1/4 x 1 1/2	7/16 x 1 1/2	229
3	530	12	1/4 x 1 1/2	7/16 x 1 1/2	250
4	810	13 1/2	1/4 x 1 1/2	1/2 x 1 1/2	342
5	1160	14 1/2	1/4 x 2	1/2 x 1 1/2	510
6	1570	15 1/2	1/4 x 2	1/2 x 1 1/2	550
8	2500	18 1/2	3/8 x 2	5/8 x 2	1000
10	2500	20 3/4	3/8 x 2	5/8 x 2	1140
12	2700	22 3/4	1/2 x 2	5/8 x 2 1/2	1760
14	2700	24	1/2 x 2	5/8 x 2 1/2	1925
16	2900	26	5/8 x 2 1/2	3/4 x 3	3250
18	2900	28	5/8 x 2 1/2	3/4 x 3	3375
20	2900	30	5/8 x 2 1/2	3/4 x 3	3500

OFFSET PIPE CLAMP — Fig. 179 STEEL

Offset Pipe Clamps are used to support pipe lines running at a definite distance from the wall or floor of building. The standard clearance is two inches from back of pipe to wall or floor line.

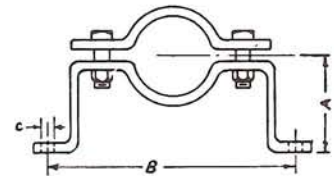
When other clearances are desired clamps will be furnished to order.

Order by size and figure number. Made special to customer order.



DIMENSIONS IN INCHES

Pipe Size	A	B	C	Steel Size	Bolt Size	Weight per 100
3/4	2 1/2	7 5/16	3/16	1 1/4 x 3/16	3/8 x 1 1/4	125
1	2 5/8	7 3/16	3/16	1 1/4 x 3/16	3/8 x 1 1/4	133
1 1/4	2 13/16	7 7/8	3/16	1 1/4 x 3/16	3/8 x 1 1/4	142
1 1/2	2 15/16	8 1/4	3/16	1 1/4 x 3/16	3/8 x 1 1/4	149
2	3 3/16	9 1/8	3/16	1 1/2 x 1/4	3/8 x 1 1/2	202
2 1/2	3 7/16	10 1/2	3/16	1 1/2 x 1/4	3/8 x 1 1/2	222
3	3 3/4	11 1/8	3/16	1 1/2 x 1/4	3/8 x 1 1/2	249
4	4 1/4	12 1/2	3/16	1 1/2 x 1/4	1/2 x 1 1/2	368
5	4 3/4	13 3/4	3/16	1 1/2 x 1/4	1/2 x 1 1/2	422
6	5 5/16	16 1/2	3/16	1 1/2 x 3/8	1/2 x 1 1/2	679
8	6 5/16	18 5/8	3/16	1 1/2 x 3/8	1/2 x 1 1/2	824



EXTENDED PIPE CLAMP — Fig. 267 STEEL

Extended Pipe Clamps are used on piping where definite distances cannot be determined until pipes are in position. The extended legs can be fabricated in the field to suit conditions.

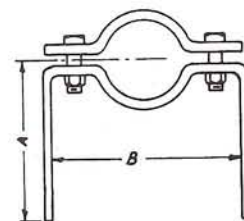
Legs of longer lengths can be furnished on order.

Order by size and figure number. Made special to customer order.



DIMENSIONS IN INCHES

Pipe Size	A	B	Steel Size	Bolt Size	Weight per 100
3/4	12	4 7/16	3/16 x 1	3/8	185
1	12	4 11/16	3/16 x 1 1/4	3/8	234
1 1/4	12	5	3/16 x 1 1/4	3/8	240
1 1/2	12	5 1/4	3/16 x 1 1/4	3/8	245
2	12	6	3/16 x 1 1/2	1/2	313
2 1/2	12	7 1/4	1/4 x 1 1/2	1/2	421
3	12	7 7/8	1/4 x 1 1/2	1/2	447
4	12	9 1/4	1/4 x 1 1/2	1/2	490
5	12	10 1/2	1/4 x 1 1/2	1/2	532
6	12	12 1/2	3/8 x 2	5/8	1116
8	12	14 5/8	3/8 x 2	5/8	1266





ADJUSTABLE GANG HANGER — Fig. 342 STEEL

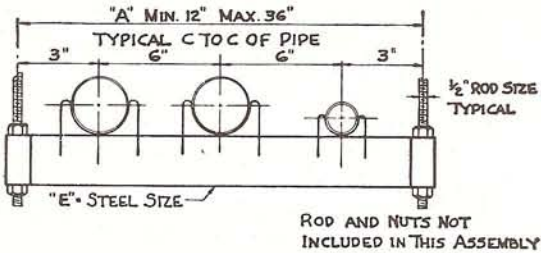
LICENSED UNDER PATENT NO. 2,801,064

This hanger has been especially designed to provide an Economical, Dependable and Practical Gang Hanger.

Use of this product results in improved appearance and appreciably reduced material and labor costs for supporting groups of smaller parallel lines run at the same invert elevation, commonly found in Hospitals, Schools and Public Buildings.

Interchangeability of clip sizes, optional centerline locations and ease of installation.

When ordering specify number of pipes to be supported, the size of pipe or tubing clips required and figure number.



EYE BARS

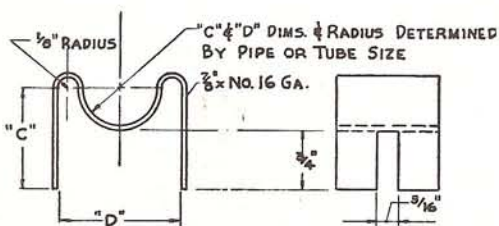
DIMENSIONS IN INCHES

Eye Bar Size	"A"	Steel Size "F"	Capacity with Concentrated Load at Center	Weight per 100
2-Pipe	12	3/16" x 1 1/4"	425 lbs.	168
3-Pipe	18		284 lbs.	224
4-Pipe	24	3/16" x 2"	266 lbs.	320
5-Pipe	30		222 lbs.	384
6-Pipe	36	3/16" x 2 1/2"	290 lbs.	557

CLIPS All clips are furnished copper coated to provide interchangeability.

DIMENSIONS IN INCHES

Copper Tubing Size	Iron Pipe Size	C	D	Weight per 100
1/2	3/8	1 1/8	1 1/2	7
3/4	1/2	1 1/4	1 1/2	7
1	3/4	1 3/8	2	8
1 1/4	1	1 1/2	2	8
1 1/2	1 1/4	1 5/8	2 3/4	13
2	1 1/2	1 7/8	2 3/4	13
2 1/2	2	2 1/8	3 3/8	15
3	2 1/2	2 3/8	3 3/8	15
3 1/2	3	2 5/8	4 3/4	30
4	3 1/2	2 7/8	4 3/4	30



SPLIT PIPE CLAMP — Fig. 175

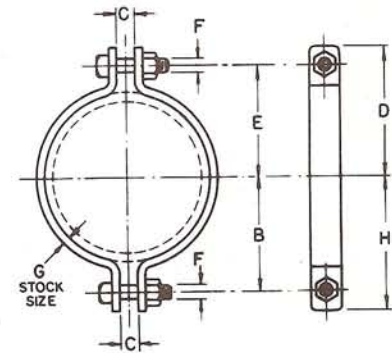
Fig. 175 Pipe Clamps are of carbon steel. Normally furnished in black, galvanized to order. To be used with Fig. 33 Eye Rods or Fig. 279 Weldless Eye Nuts.

Approvals: Underwriters Laboratories listed through 8" pipe size. Complies with Federal Specification WW-H-171 (type 4) and Manufacturers Standardization Society SP-69 (type 4). **Order by size and figure number.**



DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lbs.		B	C	D	E	F	Stock Size G	H	Weight lbs. per 100
	650°F.	750°F.								
1½	1000	900	1⅞	½	2½	1⅞	¾	¾ x 1¼	2½	63
2	1000	900	2⅞	½	2¾	2⅞	½	¾ x 1¼	2¾	99
2½	1000	900	2½	⅝	3¼	2⅝	½	¾ x 1¼	3⅞	116
3	1000	900	2⅞	⅝	3½	2⅞	½	¾ x 1¼	3½	134
4	1000	900	3½	¾	4⅞	3⅝	⅝	¼ x 1½	4¼	238
5	1000	900	4	¾	4⅞	4⅞	⅝	¼ x 1½	4¾	276
6	1600	1400	4⅞	⅞	5⅞	5	¾	¾ x 1½	5¾	542
8	1600	1400	6	1	7	6⅞	¾	¾ x 1½	6⅞	651
10	2400	2200	7⅞	1	8⅝	7½	⅞	½ x 2	8½	1360
12	2400	2200	8¼	1	9⅞	8½	⅞	½ x 2	9¾	1605
14	2400	2200	9	1⅞	10⅞	9¼	⅞	½ x 2½	10⅞	1721
16	2400	2200	10	1⅞	11⅝	10¼	⅞	½ x 2½	11⅞	1901
18	3000	2700	11½	1¼	13	11⅝	1	⅝ x 2½	12⅞	2764
20	3000	2700	12½	1⅝	14⅞	12¾	1⅞	⅝ x 2½	13⅞	4642
24	3000	2700	15	1⅝	16⅞	15¼	1¼	⅝ x 3	16⅞	5290
30	3500	3100	18¼	2	20¾	18½	1½	¾ x 4	20½	10000



HEAVY PIPE CLAMP — Fig. 298 STEEL

Fig. 298 Heavy Pipe Clamps are of carbon steel. Normally furnished black, galvanized to order. This clamp is used to hang heavy loads that exceed the load ranges of our Fig. 175 Pipe Clamps.

Approvals: Complies with Federal Specification WW-H-171 (type 4) and Manufacturers Standardization Society SP-69 (type 4).

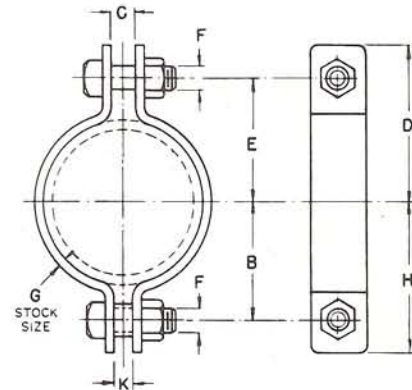
When ordering, specify pipe size and figure number.

Made special to customer order.



DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lbs.		B	C	D	E	F	Stock Size G	H	K	Weight per 100
	650°F.	750°F.									
3	3400	3000	3	1	4	3⅞	¾	¼ x 1½	3¾	⅝	318
4	3550	3150	3½	1	4⅞	3¾	⅞	¾ x 2	4⅝	⅝	691
5	3550	3150	4⅞	1	5½	4⅞	⅞	¾ x 2	5¼	⅝	760
6	4900	4350	5	1⅞	6⅞	5¼	1	½ x 2½	6⅞	⅞	1428
8	4900	4350	6⅞	1⅞	7⅝	6¼	1	½ x 2½	7½	⅞	1668
10	6000	5400	7½	1¼	9⅞	7¾	1¼	⅝ x 2½	8⅞	⅞	2594
12	8700	7750	9	1⅝	10⅞	9¼	1½	¾ x 3	10⅞	⅞	4470
14	9150	8150	9¾	1⅝	11⅞	10	1½	¾ x 3½	11⅞	⅞	5481
16	9150	8150	10¾	1⅝	12⅞	11	1½	¾ x 3½	12⅞	⅞	5946
18	9150	8150	11¾	1⅝	13⅞	12	1½	¾ x 3½	13⅞	⅞	6100
20	9150	8150	12¾	1⅝	14⅞	13	1½	¾ x 3½	14⅞	⅞	6550





PIPE CLAMP — Fig. 304 CARBON STEEL

Fig. 304 Pipe Clamps are made of carbon steel, designed for hot insulated lines up to 750°F. The pipe spacer on the lower top bolt allows uniform space for the eye rod or weldless eye nut to be applied.

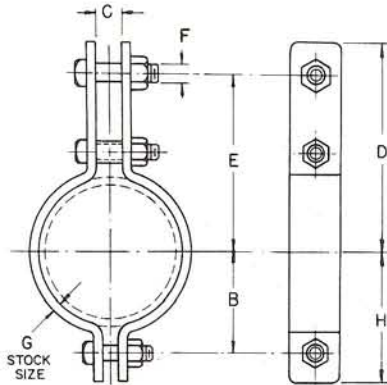
When higher temperatures than 750 degrees are required, please refer to our Figure 304Z Alloy Steel Pipe Clamp.

Approvals: Complies with Federal Specification WW-H-171 (Type 3) and Manufacturers Standardization Society SP-69 (Type 3)



DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load lb. 750°F	B	C	D	E	F	G	H	Weight per 100
1½	1400	1¾	1	4⅞	4	⅝	¼ x 1¼	2¾	200
2	1400	2⅞	1	5⅞	5	⅝	¼ x 1¼	2¾	225
2½	1400	2¼	1	6⅜	5½	⅝	¼ x 1¼	3	260
3	1400	2¾	1	6⅞	6	⅝	¼ x 1¼	3½	290
4	2200	3⅞	1	7⅞	6½	¾	¾ x 2	4½	750
5	2200	4	1	8⅞	7	¾	¾ x 2	5	815
6	2500	4¾	1½	10	8½	1	¾ x 2½	6⅞	1315
8	2500	5¾	1½	11	9½	1	¾ x 2½	7⅞	1470
10	2900	7	1½	12½	11	1	½ x 2½	8¼	2170
12	2900	8	1½	13½	12	1	½ x 2½	9¼	2385
14	3800	9	2	14⅞	13	1¼	⅝ x 3	10¾	3985
16	3800	10	2	15⅞	14	1¼	⅝ x 3	11¾	4320
18	3800	11	2	16⅞	15	1¼	⅝ x 3	12¾	4650
20	4900	12¾	2	18	16	1⅝	¾ x 3	14	5090
24	5300	14¾	2	20¼	18	1½	¾ x 4	16	9000
30	7000	18	2	26½	24	1¾	1 x 5	20	18000
36	7000	21½	2	30	27½	1¾	1 x 5	23½	20900



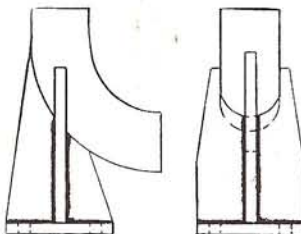
WELDED BASE ANCHOR SUPPORT — Fig. 375

STEEL

When piping running in a horizontal position and changes its direction to a vertical position by means of a bend and requires part of the load to be carried at the bend our Welded Base Anchor can be used.

For the correct support a drawing should be furnished showing:

- No. 1 Pipe size
- No. 2 Distance from base to center of horizontal run of pipe
- No. 3 Temperature of pipe line
- No. 4 Thickness of plate
- No. 5 Whether carbon or alloy steel



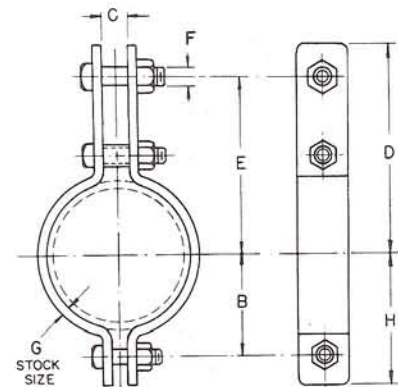
PIPE CLAMP — Fig. 304Z ALLOY STEEL

Fig. 304Z Pipe Clamps are made of alloy steel to ASTM-A 387 Grad D 2 1/4 Cr. 1 Mo. Designed for hot insulated lines with temperatures above 900° F. The pipe spacer on the lower top bolt allows uniform space for the eye rod or weldless eye nut to be applied.

Approvals: Complies with Federal Specification WW-H-171 (Type 3) and Manufacturers Standardization Society SP-69 (Type 3)

DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load lb. 950°F	B	C	D	E	F	G	H	Weight per 100
1 1/2	1400	1 3/4	1	4 7/8	4	5/8	1/4 x 1 1/4	2 3/8	200
2	1400	2 1/8	1	5 7/8	5	5/8	1/4 x 1 1/4	2 3/4	225
2 1/2	1400	2 1/4	1	6 3/8	5 1/2	5/8	1/4 x 1 1/4	3	260
3	1400	2 3/4	1	6 7/8	6	5/8	1/4 x 1 1/4	3 1/2	290
4	2300	3 3/8	1	7 3/8	6 1/2	3/4	3/8 x 2	4 1/2	750
5	2300	4	1	8 1/8	7	3/4	3/8 x 2	5	815
6	2600	4 3/4	1 1/2	10	8 1/2	1	3/8 x 2 1/2	6 1/8	1315
8	2600	5 3/4	1 1/2	11	9 1/2	1	3/8 x 2 1/2	7 1/8	1470
10	3000	7	1 1/2	12 1/2	11	1	1/2 x 2 1/2	8 1/4	2170
12	3000	8	1 1/2	13 1/2	12	1	1/2 x 2 1/2	9 1/4	2385
14	3900	9	2	14 7/8	13	1 1/4	5/8 x 3	10 3/4	3985
16	3900	10	2	15 7/8	14	1 1/4	5/8 x 3	11 3/4	4320
18	3900	11	2	16 7/8	15	1 1/4	5/8 x 3	12 3/4	4650
20	5000	12 3/8	2	18	16	1 3/8	3/4 x 3	14	5090
24	5500	14 3/8	2	20 1/4	18	1 1/2	3/4 x 4	16	9000
30	7200	18	2	26 1/2	24	1 3/4	1 x 5	20	18000
36	7200	21 1/2	2	30	27 1/2	1 3/4	1 x 5	23 1/2	20900



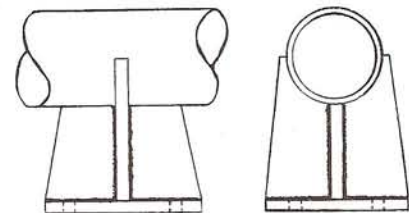
WELDED PLATE ANCHORS — Fig. 376

STEEL

Welded Plate Anchor is made to anchor pipe lines to structural steel by welding or bolting to other types of construction in either vertical or horizontal positions.

For the correct anchor a drawing should be furnished showing:

- No. 1 Pipe size
- No. 2 Distance from base to center of pipe
- No. 3 Temperature of pipe line
- No. 4 Thickness of plate
- No. 5 Whether carbon or alloy steel



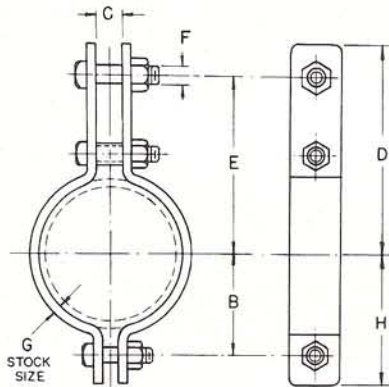


HEAVY PIPE CLAMP — Fig. 91 CARBON STEEL

Fig. 91 Heavy Pipe Clamps are made heavier than the Fig. 304 pipe clamps to accommodate heavier than normal loads. Normally used on hot insulated lines at temperatures that do not exceed 750° F.

Standard finish black. Galvanized or painted to order.

Order by pipe size and figure number.



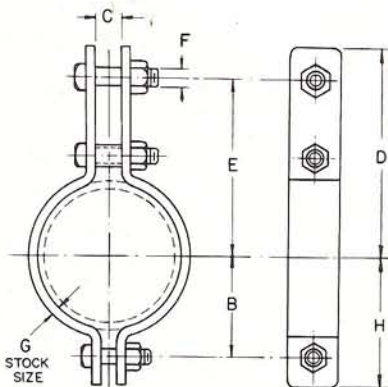
DIMENSIONS IN INCHES

Pipe Size	recom. safe load pounds	B	C	D	E	F	G	H	Weight Per 100
6	7100	5¼	1¾	11	9	1½	½ x 4	7	2800
8	7100	6⅝	1¾	12	10	1½	½ x 4	8½	3300
10	9800	7⅞	2	14	12	1¾	¾ x 4	10	5300
12	9800	9⅜	2	15	13	1¾	¾ x 4	11¼	6500
14	11300	9⅞	2¼	16¼	14	1⅞	⅞ x 4½	12	8800
16	11300	11	2¼	17¼	15	1⅞	⅞ x 4½	13	9500
18	11300	12	2¼	18¼	16	1⅞	⅞ x 4½	14	10300
20	15000	13½	2¼	20½	18	2	1 x 5	15½	14200
24	15000	15¾	2¼	23	20	2	1⅞ x 6	18	21300
30	15000	19	2¼	28	25	2	1¼ x 6	21½	30000
36	15000	22	2¼	31	28	2	1¼ x 6	24½	34000

HEAVY PIPE CLAMP — Fig. 91Z ALLOY STEEL

Fig. 91Z Heavy alloy pipe clamps are made heavier than the Fig. 304Z pipe clamps to accommodate heavier than normal loads. Material is alloy steel to ASTM A 387 Grade D.

Order by pipe size and figure number.



DIMENSIONS IN INCHES

Pipe Size	recom. safe load lbs. at 950° F	B	C	D	E	F	G	H	Weight Per 100
6	7300	5¼	1¾	11	9	1½	½ x 4	7	2800
8	7300	6⅝	1¾	12	10	1½	½ x 4	8½	3300
10	10000	7⅞	2	14	12	1¾	¾ x 4	10	5300
12	10000	9⅜	2	15	13	1¾	¾ x 4	11¼	6500
14	11600	9⅞	2¼	16¼	14	1⅞	⅞ x 4½	12	8800
16	11600	11	2¼	17¼	15	1⅞	⅞ x 4½	13	9500
18	11600	12	2¼	18¼	16	1⅞	⅞ x 4½	14	10300
20	15000	13½	2¼	20½	18	2	1 x 5	15½	14200
24	15000	15¾	2¼	23	20	2	1⅞ x 6	18	21300
30	15000	19	2¼	28	25	2	1¼ x 6	21½	30000
36	15000	22	2¼	31	28	2	1¼ x 6	24½	34000

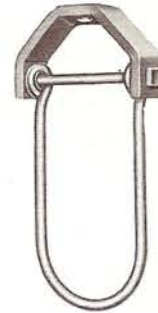
"U" PIPE CLAMP — Fig. 91U ALLOY AND CARBON STEEL

"U" Pipe Clamps are used on extremely high temperature pipe lines. On the sizes 3/2" and smaller the top yoke is made of hot rolled steel M-1020. The bottom is made from A.I.S.I. Spec. 4140 alloy steel. On pipe sizes 4" and above the top yoke is made of carbon steel to A.S.T.M. A-36 with 1/4" continuous fillet welds. The U-Bolt is made from Chrome Moly Alloy Steel Spec A-193 B7 A.I.S.I. Spec 4140 with heavy hex nuts to A.S.T.M. A-194 Class 2 fit.

Approvals: Complies with Federal Specification WW-H-171 (Type 2) and Manufacturers Standardization society SP-69 (type 2)

When ordering specify pipe size and figure number.

Made special to customer order.



FOR PIPE SIZES 3 1/2 INCH AND SMALLER

The U Bolt with eyes is made from Alloy Steel Spec. 4140

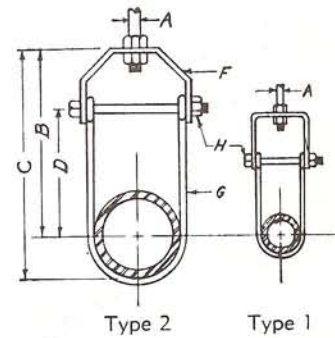
Type No. 1 for pipe sizes 1/2 inch to 1 1/2 inch.

Type No. 2 for pipe sizes 2 inch to 3 1/2 inch.

When ordering specify size and figure number.

DIMENSIONS IN INCHES

Type No.	Pipe Size	Recom. Safe Load Pounds	A	B	C	D	E	Steel F	Alloy G	Bolt H	App. Weight per 100
1	1/2	500	3/8	4 7/8	4 13/16	2 3/4	1	3/16 x 7/8	1/4	1/4	42
	3/4		4 5/8	5 1/16	3	1 13/16	44				
	1		5 1/8	5 3/4	3 1/4	1 1/2	47				
1	1 1/4	500	3/8	5 3/8	6 1/8	3 3/8	1 1/16	1/4 x 1 1/4	1/4	3/8	90
	1 1/2		6 3/16	6 3/2	3 1/2	1 1/8	92				
2	2	500	3/8	6 1/16	7 3/4	4 3/4	1 1/16	1/4 x 1 1/4	1/4	3/8	98
2	2 1/2	1000	1/2	7 1/8	8 7/16	5	1 3/16	1/4 x 1 1/4	3/8	3/8	125
2	3	1000	1/2	7 7/8	9 5/8	5 1/4	1 5/8	3/8 x 1 1/4	3/8	3/8	185



FOR PIPE SIZES 4" AND LARGER

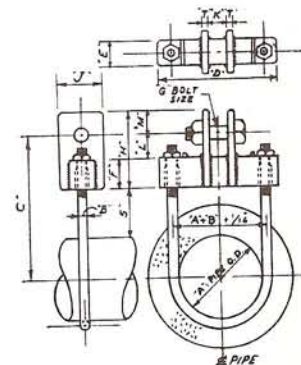
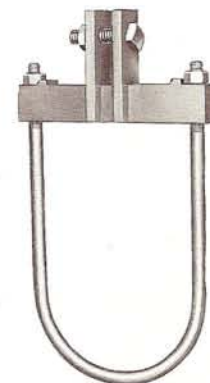
DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load lbs. (@ 1000°F)	A	B	C	D	E	F	G
4	2000	4 1/2	5/8	10 1/2	6 3/8	1 1/4	1 1/4	3/4
6	3200	6 5/8	3/4	12 5/8	8 7/8	1 1/2	2	7/8
8		8 5/8		13 3/8	10 7/8			
10	4800	10 3/4	7/8	13 7/8	13 3/8	2	2	1
12	6500	12 3/4	1	16 1/16	15 3/4	2	3	1 1/8
14		14		16 1 1/16	17			
16		16		17 1 1/16	19			

DIMENSIONS IN INCHES

Pipe Size	H	J	K	L	M	N	T	Approx. Weight per 100
4	4 3/8	2 1/2	1	2	1 3/8	3/8	3/8	805
6	6	2 1/2	1 1/8	2 1/2	1 1/2	3/4	3/8	1493
8			1 1/4	2 1/2	1 1/2	3/4	1/2	1856
10	5 1/2	3	1 1/4	1 3/4	1 3/4	3/4	1/2	2823
12	7	3	1 3/8	2	2	1	1/2	4356
14			1 3/4	2	2	1	1/2	4663
16			1 7/8	2	2	1	1/2	5117

Special outside diameters of pipe and heavy loadings can be made to order.



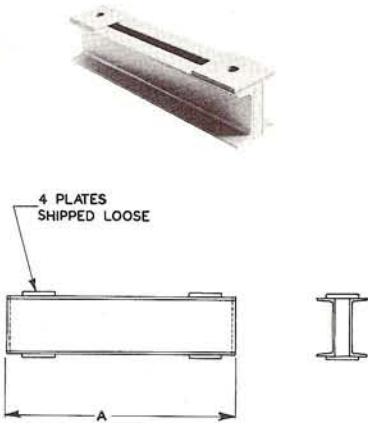


CHANNEL ASSEMBLY — Fig. 371 STEEL

Channel Assembly is composed of two channels back to back with a spacer welded on each end. Washer plates are shipped loose.

When ordering, specify channel size, rod diameter, dimension "A".

Recommended Safe Loads for concentrated load at center of span provide a factor of safety of 5 for channels only. Rods recommended safe load see Fig. 133.



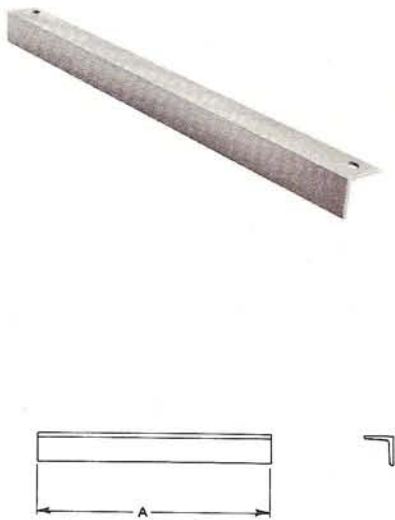
SIZE	ALLOWABLE CONCENTRATED LOAD AT CENTER OF SPAN F/S 5									
	12"	18"	24"	30"	36"	42"	48"	60"	72"	
3 | 4.1	10000	6800	5100	4100	3400	2900	2500	2000	1700	
4 | 5.4	17500	11600	8800	7000	5800	5000	4400	3500	2900	
5 | 6.7	27600	18400	13800	11000	9200	7900	6900	5500	4600	
6 | 8.2	39500	26300	19800	15800	13200	11300	9900	7900	6600	
8 | 11.5	74500	49600	37300	29800	24800	21300	18650	14900	12400	
12 | 20.7			98500	78800	65600	56300	49200	39400	32800	

ANGLE IRON SUPPORT — Fig. 374 STEEL

Angle Iron Supports are used to form a trapeze when supporting more than one pipe line at the same time.

When ordering, specify size of angle, rod size, center to center of drop rods also, whether center hole will be required. Made special to customer order.

ALLOWABLE CONCENTRATED LOAD AT CENTER SPAN IN POUNDS
DIMENSION "A" IN INCHES



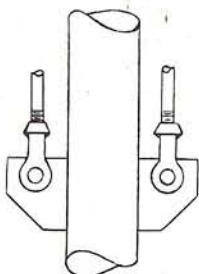
Size	6"	12"	18"	24"	30"	36"	42"	48"	72"
1 x 1 x 1/4	670	330	220	160	130	100	—	—	—
1 1/2 x 1 1/2 x 1/4	1000	500	350	250	200	—	—	—	—
2 x 2 x 1/4	1940	1470	980	730	580	480	410	355	225
2 x 2 x 3/8	2750	1350	925	775	550	—	—	—	—
2 1/2 x 2 1/2 x 1/4	1980	1800	1570	1170	935	775	660	575	370
3 x 3 x 1/4	1840	1740	1640	1550	1370	1140	970	845	545
3 x 3 x 1/2	—	4350	2925	2175	1750	—	—	—	—

PLATE LUGS FOR RISERS — Fig. 378

STEEL

Plate Lugs for Risers are used in conjunction with a rigid, variable spring or counterpoise hanger.

For the correct lugs a drawing should be furnished showing:



- No. 1 Pipe size
- No. 2 Total load to be carried
- No. 3 Temperature of pipe line
- No. 4 Center to center of drop rods
- No. 5 Whether carbon or alloy steel
- No. 6 Thickness of plate

UNDERGROUND PIPE CLAMP — Fig. 158 STEEL

Underwriter's Laboratories listed 4 inch to 8 inch pipe size.
Our Fig. 258 Socket Clamp Washer should be used with these clamps.

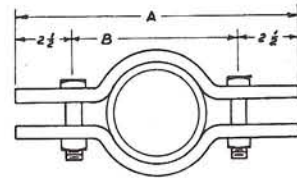
Underground Pipe Clamps are made of carbon steel with bolts fully threaded to compensate for the different classes of Cast Iron water Pipe.

The clamps are used to securely anchor lead caulked joints, by means of two clamps, four Fig. 258 Washers and threaded rods. After the installation is complete, exposed threads should be painted with asphaltum.



DIMENSIONS IN INCHES

Pipe Size	Pipe O.D.	A	B	Steel	Bolts	Rod Size	Weight per 100
4	5	13 ³ / ₈	8 ³ / ₈	1/2 x 2	5/8 x 3 1/2	3/4	900
6	7 ¹ / ₁₆	15 ³ / ₈	10 ³ / ₈	1/2 x 2	5/8 x 3 1/2	3/4	1068
8	9 ³ / ₁₆	17 1/2	12 1/2	1/2 x 2	5/8 x 3 1/2	3/4	1221
10	11 ³ / ₈	20	15	1/2 x 2	5/8 x 3 1/2	3/4	1463
12	13 1/2	22 1/4	17 1/4	1/2 x 2	5/8 x 3 1/2	3/4	1660
14	15 ³ / ₄	25 1/2	19 ³ / ₈	3/4 x 3	7/8 x 4 1/2	1 1/8	4187
16	17 ⁷ / ₈	28	22	3/4 x 4	1 x 4 1/2	1 1/8	6192
18	20	31 1/2	24 ³ / ₈	3/4 x 4	1 1/4 x 5	1 1/4	6512
20	22 1/8	33 ³ / ₄	26 1/2	3/4 x 4 1/2	1 1/4 x 5	1 3/8	9220
24	26 ³ / ₈	39 ³ / ₄	31 1/2	3/4 x 5	1 1/2 x 5 1/2	1 1/2	12274

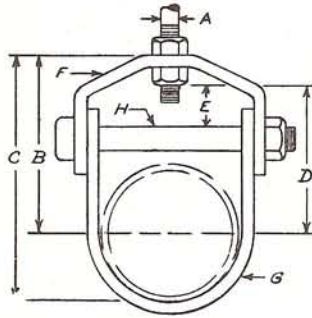


UNDERGROUND SOCKET CLAMP WASHER — Fig. 258 CAST IRON

The Socket Clamp Washer is made of cast iron and used with our Fig. 158 Underground Clamps. When installed the lug bears against the bolt which prevents washer from sliding off the clamp.

Size	Weight per 100	Used with Clamp Size
3/4	125	4-12
1 1/8	225	16
1 1/4	285	18
1 3/8	462	20
1 1/2	706	24





CAST IRON PIPE FIG. 100 C.I. CLEVIS HANGER

Figure 100CI is designed for suspension of cast iron pipe. Size 12" and larger is furnished with pipe spacers on the cross rod. Order by size and figure number.

DIMENSION IN INCHES

Pipe Size	Recom. load pounds	A	B	C	D	E	H	STEEL SIZE		Wt. Per 100
								F	G	
4	1400	5/8	5 1/16	8 3/16	4 3/16	1 3/8	1/2	1/4 x 1 1/4	3/16 x 1 1/4	223
6	1900	3/4	7	10 1/2	5 3/4	1 3/4	1/2	1/4 x 1 1/2	3/16 x 1 1/2	360
8	2000	7/8	8 3/8	13	7	1 3/4	3/8	1/4 x 1 3/4	3/16 x 1 3/4	506
10	3600	7/8	10 1/8	15 3/4	8 5/8	2 1/4	3/8	3/8 x 1 3/4	3/16 x 1 3/4	792
12	3800	7/8	10 1/2	17 1/4	9	1 1/4	3/4	3/8 x 2	1/4 x 2	1226
14	4200	1	13 1/2	21 1/2	11 3/4	2 1/2	3/4	1/2 x 2	1/4 x 2	1757
16	4600	1	15 1/4	24 1/4	13 1/2	3 3/8	7/8	1/2 x 2 1/2	1/4 x 2 1/2	2484
18	4800	1 1/8	16 3/4	26 3/4	14 7/8	3 1/4	7/8	1/2 x 2 1/2	1/4 x 2 1/2	2899
20	4800	1 1/4	18 1/2	29 3/4	16 3/8	3 3/4	1	5/8 x 3	3/8 x 3	4822
24	4800	1 1/4	20 3/4	34	18 5/8	4	1	5/8 x 3	3/8 x 3	5532



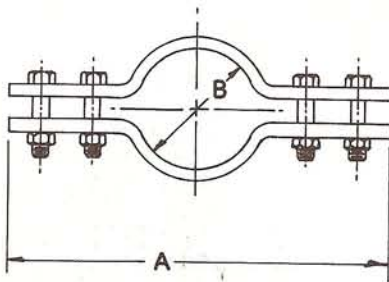
DB DOUBLE BOLT UNDERGROUND PIPE CLAMP — Fig. 158

STEEL

For Washer Plates refer to our Figure 258 or 260 Steel Plates

DIMENSION IN INCHES

Pipe Size	A	B	Steel Size	Bolt Size	Weight Per 100
4	14 5/8	5	1/2 x 2	5/8 x 3 1/2	1000
6	16 7/8	7 1/8	1/2 x 2	5/8 x 3 1/2	1200
8	19 1/8	9 5/8	5/8 x 2 1/2	5/8 x 3 3/4	2100
10	21 3/8	11 1/2	5/8 x 2 1/2	3/4 x 3 3/4	2400
12	25 1/4	13 1/2	3/4 x 3	7/8 x 4 1/2	3600
14	28 1/4	15 3/4	3/4 x 3	7/8 x 4 1/2	4860
16	31 1/2	17 7/8	3/4 x 4	1 x 4 1/2	7175
18	35 1/4	20	3/4 x 4	1 1/4 x 5	8530
20	37 3/4	22 1/8	3/4 x 4 1/2	1 1/4 x 5	10200
24	44 1/2	26 3/8	3/4 x 5	1 1/2 x 5 1/2	13660



PIPE SLEEVE — Fig. 259 GALVANIZED STEEL

Galvanized nailing sleeves are available in all sizes. Covers are available on request.

Ordering: Specify inside diameter "A" and dimension "B" 18 gage or 22 gage galvanized steel.

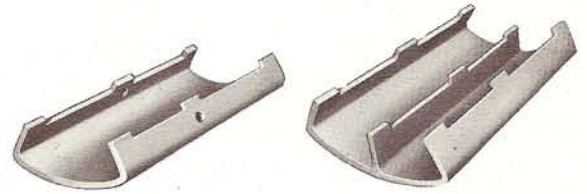
PIPE COVERING PROTECTION SADDLES — Fig. 351 STEEL

FOR 1-INCH THICK COVERING

Approvals: Complies with Federal Specification WW-H-171 (type 40-A or Type 40-B) and Manufacturers Standardization Society SP-69 (Type 39A or Type 39B)

DIMENSIONS IN INCHES

Pipe Size	Thick-ness Cov.	Saddle with Fig. 173 Roll	A	Dim. B	Saddle with Fig. 67 Roll	A	Dim. B	Approx. Weight per 100
3/4	1 1/2	2 1/2	2 1/8	1 5/8	2-3 1/2	2 5/16	1 5/8	115
1		2 1/2	2 1/4	1 3/4		2 7/16	1 3/4	115
1 1/4		3	2 1/2	2		2 9/16	2	125
1 1/2		3	2 1/2	2		2 11/16	2	150
2		3 1/2	2 7/8	2 3/8		2 13/16	2 3/8	163
2 1/2		4	3	2 1/2		3 1/16	2 1/2	175
3		4	3 1/2	2 7/8		3 1/16	2 7/8	175
4	1 1/2	6	4 1/4	3 1/2	4-6	4	3 1/2	213
5		6	4 7/8	4 1/8		4 1/8	4 1/8	238
6		7	5 3/8	4 5/8		5 1/8	4 5/8	385
8	1 1/2	10	7	6	7-10	6 1/16	6	505
10	1 1/2	12	8 1/4	7 1/4	12-15	8 1/4	7 1/4	590
12		14	9 3/8	8 1/8		9 1/4	8 1/8	730



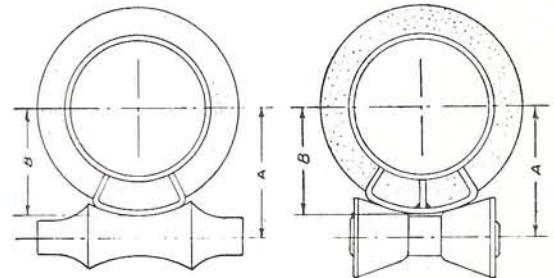
PIPE COVERING PROTECTION SADDLES — Fig. 352 STEEL

FOR 1 1/2-INCH THICK COVERING

Approvals: Complies with Federal Specification WW-H-171 (Type 40-A or Type 40-B) and Manufacturers Standardization Society SP-69 (Type 39A or Type 39-B)

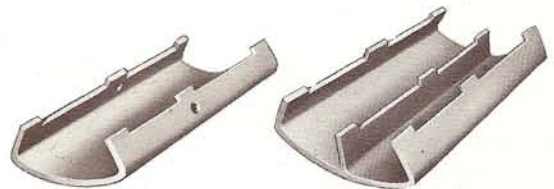
DIMENSIONS IN INCHES

Pipe Size	Thick-ness Cov.	Saddle with Fig. 173 Roll	A	Dim. B	Saddle with Fig. 67 Roll	A	Dim. B	Approx. Weight per 100
3/4	1 1/2	3	2 5/8	2 1/8	2-3 1/2	2 11/16	2 1/8	210
1		3	2 7/8	2 3/8		2 13/16	2 3/8	210
1 1/4		3 1/2	3	2 1/2		3 1/16	2 1/2	210
1 1/2		4	3 1/8	2 5/8		3 3/16	2 5/8	210
2		5	3 3/8	2 7/8		3 5/16	2 7/8	240
2 1/2		5	4 1/8	3 3/8		3 3/4	3 3/8	240
3	1 1/2	6	4 1/2	3 3/4	4-6	4 1/16	3 3/4	275
4		7	4 3/4	4		4 1/16	4	300
5		7	5 1/2	4 3/4		5 1/16	4 3/4	300
6	1 1/2	8	5 7/8	5	7-10	6 3/16	5	475
8		10	7	6		7 3/16	6	525
10	1 1/2	12	8 1/4	7 1/4	12-15	8 15/16	7 1/4	635
12		14	9 3/8	8 1/8		9 7/8	8 1/8	735
14	1 1/2	16	10 1/4	9	16-20	10 3/8	9	825
16		18	11 1/8	9 3/4		11 1/4	9 3/4	825
18		20	12 1/4	10 3/4		12 1/4	10 3/4	935
20	1 1/2	24	13 1/2	11 3/4	22-24	13	11 3/4	1105
24	1 1/2	30	15 3/4	13 1/2	26-30	15 1/2	13 1/2	1290



Saddle with Fig. 173 Roll

Saddle with Fig. 67 Roll



3/4" - 10" Pipe

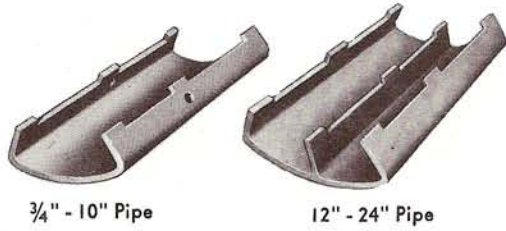
12" - 24" Pipe



PIPE COVERING PROTECTION SADDLES — Fig. 353 STEEL

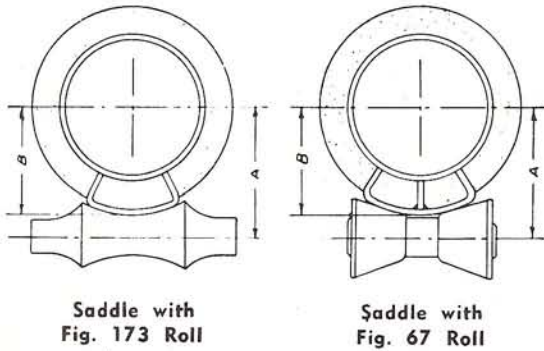
FOR 2-INCH THICK COVERING

Approvals: Complies with Federal Specification WW-H-171 (Type 40-A or Type 40-B) and Manufacturers Standardization Society SP-69 (Type 39A or Type 39B)



DIMENSIONS IN INCHES

Pipe Size	Thick-ness Cov.	Saddle with Fig. 173 Roll	A	Dim. B	Saddle with Fig. 67 Roll	A	Dim. B	Approx. Weight per 100
3/4	2	4	3 1/4	2 5/8	2-3 1/2	3 3/8	2 5/8	187
1		4	3 3/8	2 3/4		3 1/2	2 3/4	187
1 1/4		5	3 5/8	3 1/8		3 1 1/16	3 3/8	187
1 1/2		5	4 1/8	3 3/8		3 3/4	3 3/8	187
2	2	6	4 1/4	3 1/2	4-6	3 7/8	3 1/2	312
2 1/2		6	4 3/8	3 7/8		4 3/16	3 7/8	312
3		7	4 3/4	4		4 7/16	4	350
4		7	5 3/8	4 5/8		5 1/8	4 5/8	350
5	2	8	6	5 1/4	7-10	6	5 1/4	362
6		10	6 3/8	5 1/2		6 1/2	5 1/2	628
8		12	7 1/2	6 1/2		7 1 1/16	6 1/2	700
10	2	14	9 5/8	7 7/8	12-15	8 7/8	7 7/8	850
12		16	10	8 5/8		9 1 1/16	8 5/8	920
14	2	18	10 3/4	9 3/8	16-20	10 3/4	9 3/8	920
16		20	11 3/4	10 1/4		11 5/8	10 1/4	920
18	2	24	13 1/8	11 5/8	22-24	12 3/8	11 5/8	1200
20		24	14	12 1/4		13 1/2	12 1/4	1240
24	2	30	16 3/8	14 1/8	26-30	15 3/4	14 1/8	1385



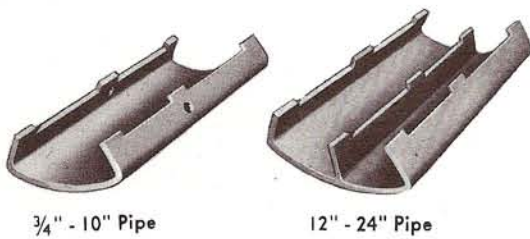
PIPE COVERING PROTECTION SADDLES — Fig. 354 STEEL

FOR 2 1/2-INCH THICK COVERING

Approvals: Complies with Federal Specification WW-H-171 (Type 40-A or Type 40-B) and Manufacturers Standardization Society SP-69 (Type 39A or Type 39B)

DIMENSIONS IN INCHES

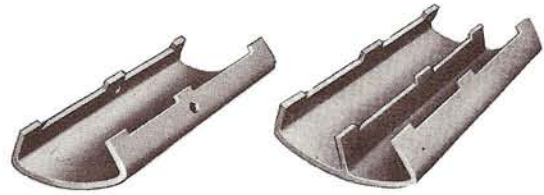
Pipe Size	Thick-ness Cov.	Saddle with Fig. 173 Roll	A	Dim. B	Saddle with Fig. 67 Roll	A	Dim. B	Approx. Weight per 100
3/4	2 1/2	5	—	—	4-6	3 13/16	—	325
1		5	—	—		3 7/8	—	325
1 1/4		6	4 1/4	3 1/2		4 1/16	3 1/2	325
1 1/2		6	4 5/8	3 7/8		4 3/16	3 7/8	325
2	2 1/2	7	4 3/4	4	7-10	4 13/16	4	363
2 1/2		7	5 1/8	4 3/8		5 1/16	4 3/8	363
3		8	5 3/8	4 5/8		5 3/8	4 5/8	393
4		10	6	5 1/8		5 7/8	5 1/8	393
5		10	6 5/8	5 3/4		6 7/16	5 3/4	406
6	2 1/2	12	7	6	12-15	7 5/8	6	709
8		14	8 1/4	7		8 1 1/16	7	755
10	2 1/2	16	9 5/8	8 1/8	16-20	9 1 1/16	8 1/8	875
12		18	10 1/2	9 1/8		10 3/16	9 1/8	1004
14		18	11 3/8	9 7/8		11 1/4	9 7/8	1004
16		20	12 1/4	10 3/4		12 1/4	10 3/4	1369
18	2 1/2	24	13 1/2	11 3/4	22-24	13	11 3/4	1419
20		24	14 5/8	12 7/8		14 1/8	12 7/8	1419
24	2 1/2	30	17	14 3/4	26-30	16 5/8	14 3/4	1807



PIPE COVERING PROTECTION SADDLES — Fig. 355 STEEL

FOR 3-INCH THICK COVERING

Approvals: Complies with Federal Specification WW-H-171 (Type 40-A or Type 40-B) and Manufacturers Standardization Society SP-69 (Type 39A or Type 39B) **Order by size and figure number.**



3/4" - 8" Pipe

10" - 24" Pipe

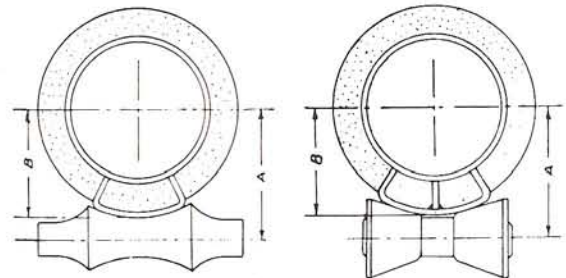
DIMENSIONS IN INCHES

Pipe Size	Thick-ness Cov.	Saddle with Fig. 173 Roll	A	Dim. B	Saddle with Fig. 67 Roll	A	Dim. B	Approx. Weight per 100
2	3	7	5 1/4	4 1/2	7-10	5 1/6	4 1/2	440
2 1/2		7	5 5/8	4 7/8		5 1/6	4 7/8	440
3		8	5 7/8	5		6	5	440
4		10	6 3/8	5 3/4		6 3/8	5 3/4	500
5		10	7 1/8	6 1/4		7 1/2	6 1/4	500
6		12	7 3/4	6 1/2		7 1/2	6 1/2	810
8	3	12	8 7/8	7 3/8	12-15	8 7/32	7 3/8	990
10	3	16	10 1/8	8 7/8	16-20	10 3/8	8 7/8	1070
12		18	11 1/4	9 3/4		11 1/8	9 3/4	1100
14		18	12	10 1/2		11 3/4	10 1/2	1100
16	3	24	12 7/8	11 1/8	22-24	12 1/2	11 1/8	1465
18		24	14	12 1/4		13 1/2	12 1/4	1525
20	3	24	15 1/4	13 3/4	26-30	14 7/8	13 3/4	1525
24		30	17 1/2	15 1/4		17 1/8	15 1/4	1935

PIPE COVERING PROTECTION SADDLES — Fig. 356 STEEL

FOR 4-INCH THICK COVERING

Approvals: Complies with Federal Specification WW-H-171 (Type 40-A or Type 40-B) and Manufacturers Standardization Society SP-69 (Type 39A or Type 39B) **Made special to customer order.**



Saddle with Fig. 173 Roll

Saddle with Fig. 67 Roll

DIMENSIONS IN INCHES

Pipe Size	Thick-ness Cov.	Saddle with Fig. 173 Roll	A	Dim. B	Saddle with Fig. 67 Roll	A	Dim. B	Approx. Weight per 100
4	4	12	7 3/4	6 1/2	7-10	7 1/6	6 1/2	630
5		12	8 1/4	7		8 3/32	7	630
6	4	12	8 7/8	7 3/8	12-15	8 13/16	7 3/8	630
8		16	10	8 3/4		9 1/16	8 3/4	1310
10	4	18	11 1/8	9 3/4	16-20	11 1/6	9 3/4	1388
12		20	12 1/4	10 3/4		12 1/6	10 3/4	1445
14	4	24	13 1/4	11 3/4	22-24	12 3/8	11 3/4	1550
16		24	14	12 1/4		13 1/6	12 1/4	1550
18		24	15 3/8	13 3/8		14 3/8	13 3/8	1550
20	4	30	16 1/2	14 1/4	26-30	15 3/4	14 1/4	1660
24		30	18 3/4	16 1/2		18	16 1/2	1720

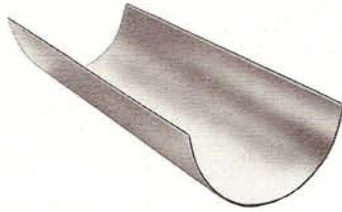


10" - 24" Pipe



INSULATION SHIELD — Fig. 265P

Insulation Shields are of galvanized steel formed to a 180 degree arc. Normally used with Fig. 100 Clevis Hangers. Type H furnished unless otherwise specified. For the Lock In Shield refer to Fig. 265F



Shield Inside Diameter	Use with Hanger Size	Weight per 100 Pcs.				
		Type H 18 ga. x 12	Type LA 16 ga. x 12	Type L-C 16 ga. x 18	Type L-D 14 ga. x 24	Type L-E 12 ga. x 24
2.375	2	70				
2.875	2½	84				
3.500	3	108				
4.000	3½	121				
4.500	4	135				
5.000	5	160				
5.625	5	169				
6.000	6	180				
6.625	6	195				
7.625	7		277	402		
8.625	8		310	453		
9.625	10		385	507		
10.750	10		396	565	965	
11.750	12		457	616	1050	
12.750	12		465	668	1140	
14.000	14		509		1250	
15.000	16		550		1342	3020
16.000	16		579		1425	3210
17.000	18		635		1520	3430
18.000	18		647			3620
19.000	20		716			3820
21.000	24		858			4210

INSULATION SHIELD WITH NOTCH — Fig. 265F

LOCKS INTO HANGER — ELIMINATES WELDING



Insulation Shields with Notch are of 18 gauge x 12" galvanized steel, formed to an 180° ARC in sizes 2-3/8" through 6-5/8" I.D. and 16 gauge x 12" in sizes 7-5/8" through 24". Designed to be used with our Fig. 100 Clevis Hangers Assembled with Clevis Hangers during installation to eliminate welding. The Shield is held firmly in place until the covering is installed.

For weights per 100 refer to the chart above.

TEAMSTER'S OR WAREHOUSE ROLL — Fig. 289

The Teamster's or Warehouse Roll is a labor saving device wherever pipe, bar iron or other rod or tubular stock is handled.

Its small size and light weight enable it to be carried around or placed anywhere. The roll is made of cast iron, with steel pin. Frame is made of malleable iron. Weight 27 pounds.



IRON PIPE SHIELD — Fig. 265 CVB

COPPER TUBE SHIELD — Fig. 365 CVB

Insulation Saddles are composed of a galvanized steel shield, insulation filler, and vapor barrier. This design does not permit the hanger to come in direct contact with the pipe, providing a perfect moisture seal. Chilled water lines will not drip on floors or through hung ceilings.

Type "A" High Density Urethane Low Temperature use -200 Deg. F to + 250 Deg. F

Type "B" Calcium Silicate, High Temperature use + 250 Deg. F to + 1200 Deg. F

Ordering: Specify pipe size, covering thickness. Type A is normally furnished. Type B only when requested.



Pipe Size	Tube Size	Shield Stock Size	Vapor Barrier Length	Nominal Insulation Approximate Weight per 100							
				3/4		1		1 1/2		2	
				Type A	Type B	Type A	Type B	Type A	Type B	Type A	Type B
1/2	1/2	18 ga. x 6	10	48	50	60	60	97	100	156	146
3/4	3/4	18 ga. x 6	10	54	56	62	64	102	104	158	153
1	1	18 ga. x 6	10	61	62	77	78	137	140	173	174
1 1/4	1 1/4	18 ga. x 6	10	75	76	80	82	151	155	176	181
1 1/2	1 1/2	18 ga. x 6	10	77	78	92	94	160	165	214	215
2	2	18 ga. x 6	10	99	90	126	129	182	188	229	233
2 1/2	2 1/2	18 ga. x 6	10	118	123	140	143	216	222	317	324
3	3	18 ga. x 6	10	147	136	157	161	230	224	337	328
4	4	16 ga. x 6	10	174	162	211	197	332	300	406	363
5	5	16 ga. x 6	10	304	259	244	277	358	333	511	434
6	6	16 ga. x 6	10	275	293	320	311	443	417	590	526
8		14 ga. x 8	12	315	364	325	327	347	695	878	736
10		14 ga. x 8	12	395	410	405	417	427	745	895	870
12		14 ga. x 8	12	467	474	477	487	497	775	904	884
14		14 ga. x 8	12	519	529	529	535	545	795	917	975
16		14 ga. x 8	12	594	615	614	625	635	804	944	947
18		14 ga. x 8	12	657	667	668	675	685	827	947	960
20		14 ga. x 8	12	864	875	875	885	895	888	960	967

ROLLER SUPPORT — Fig. 71 STEEL — CAST IRON ROLL

Fig. 71 Roller Support is used to support piping on structural steel brackets and frames.

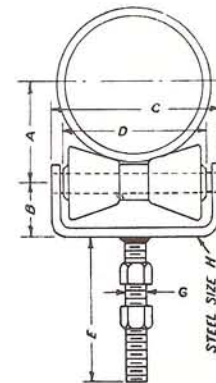
Roller Supports are sized for bare pipe. If Pipe Saddles are to be used, refer to the sizing chart shown in Fig. 17.

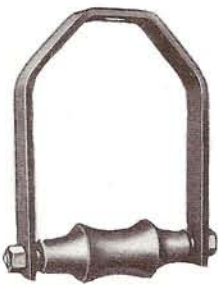
Order by pipe size and figure number. Made special to customer order.



DIMENSIONS IN INCHES

No	Max Load, Pounds	Pipe Size	A	B	C	D	E	G	Steel Size H	Weight per 100
1A	390	2 2 1/2 3	1 13/16 2 1/16 2 7/16	1 1/16	3 1/4	2 11/16	5	5/8	3/16 x 1 1/2	233
1	600	4 5 6	2 13/16 3 3/16 4	1 1/2	4 3/8	3 3/4	6	3/4	1/4 x 2	368
2	800	8 10	5 1/4 6 3/8	2 1/4	6 7/8	6	6	7/8	3/8 x 2	919
3	1300	12 14	7 1/2 8 1/8	2 3/4	9 1/8	8	7	1	1/2 x 2	1660
4	2300	16	9 1/4	3	10 1/8	9 1/8	8	1 1/8	1/2 x 2	2250





HARVARD ROLL HANGER — Fig. 140 STEEL AND CAST IRON

Harvard Roll Hangers are used on high pressure steam lines, suspended from a single rod. Frame of steel, roll of cast iron.

Approvals: Complies with Federal Specification WW-H-171 (type 44) and Manufacturers Standardization Society SP-69 (type 43)

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lbs.	A	B	D	F	Steel Size	Roll Rod	Weight per 100
2	150	1/2	4 1/4	1 5/8	3 1/4	3/16 x 1 1/2	3/8	163
2 1/2	225	1/2	4 7/8	2	3 1/4	3/16 x 1 1/2	3/8	202
3	310	1/2	6 1/4	2 1/4	4	3/16 x 1 1/2	1/2	236
4	475	5/8	7 1/2	2 3/4	5 1/4	1/4 x 2	1/2	406
5	685	5/8	8 3/8	3 1/2	6 1/2	1/4 x 2	5/8	534
6	780	3/4	9 7/8	4	7 3/8	1/4 x 2	3/4	709
7	780	3/4	11 1/8	4 5/8	8 3/8	1/4 x 2	3/4	943
8	780	7/8	12 5/8	5 1/8	9 3/8	3/8 x 2	7/8	1235
10	965	7/8	15	6 3/8	11 1/4	1/2 x 2	7/8	1934
12	965	7/8	17 1/8	7 1/2	13 1/2	1/2 x 2	7/8	2313
14	1200	1	18 3/8	8 3/8	15	1/2 x 2 1/2	7/8	3550
16	1400	1	20 1/2	9 1/2	17	1/2 x 3	1	4650

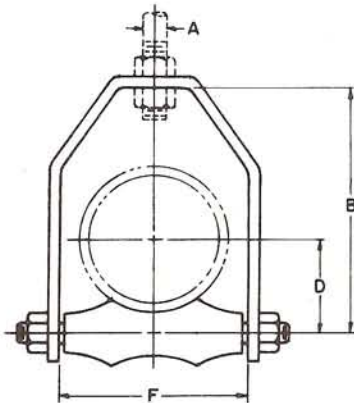


Fig. 140 Roll Hangers are sized for bare pipe. A larger Roll Hanger is required when Pipe Saddles are used. To select the correct combination, use the Sizing Chart below.

Sizing Chart

Fig. 140 Pipe Size of Roll	Pipe Size of Covering Protection Saddle to be used with Fig. 140 Roll Hanger					
	1" Cov.	1 1/2" Cov.	2" Cov.	2 1/2" Std. Cov.	3" Cov.	4" Cov.
	Fig. 351	Fig. 352	Fig. 353	Fig. 354	Fig. 355	Fig. 356
2 1/2	3/4					
3	1-1 1/2					
4	2-2 1/2	1-1 1/2				
5	3-3 1/2	2-2 1/2	3/4-1 1/2			
6	4	3-3 1/2	2-2 1/2	3/4-1		
7	5	4	3-3 1/2	1 1/4-1 1/2	2	
8	6	5	4	2-3	2 1/2	
10	8	6	5-6	3 1/2-5	3-4	
12	10	8	8	6	5-6	4
14	12	10		8		5-6
16	14	12	10	10	8	8

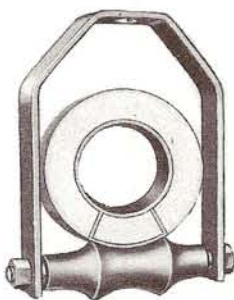


Fig. 140
When used with a
Pipe Saddle

ADJUSTABLE SWIVEL ROLL HANGER — Fig. 16

STEEL — CAST AND MALLEABLE IRON

Adjustable Swivel Roll Hangers are used on high pressure steam lines, suspended from a single rod. Frame of steel, roll of cast iron, swivel nut malleable iron.

Approvals: Complies with Federal Specification WW-H-171 (type 43) and Manufacturers Standardization Society SP-69 (type 42)

Order by size and figure number.

DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lbs.	A	B	C	D	Steel Size	Roll Rod	Weight per 100
2	150	1 5/8	4 1/4	3 1/4	1/2	3/16 x 2	3/8	211
2 1/2	225	1 5/8	4 7/8	3 3/4	1/2	3/16 x 2	3/8	253
3	310	2 1/4	6 1/4	4	1/2	3/16 x 2	1/2	297
4	475	2 13/16	7 1/2	5 1/4	5/8	1/4 x 2 1/2	1/2	503
5	685	3 1/16	8 3/8	6 1/2	5/8	1/4 x 2 1/2	5/8	624
6	780	4 1/16	9 7/8	7 3/8	3/4	1/4 x 2 1/2	3/4	831
7	780	4 5/8	11 1/8	8 3/8	3/4	1/4 x 2 1/2	3/4	933
8	780	5 1/8	12 5/8	9 3/8	7/8	3/8 x 2 1/2	7/8	1438
10	965	6 3/8	15	11 1/4	7/8	1/2 x 2 1/2	7/8	2225
12	965	7 1/16	17 1/8	13 1/2	7/8	1/2 x 2 1/2	7/8	2607

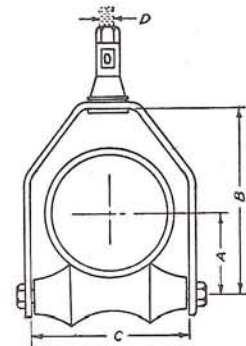
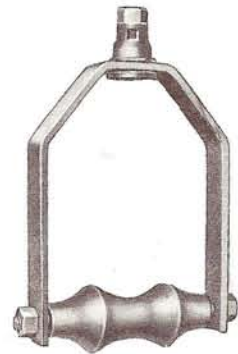


Fig. 16 Roll Hangers are sized for bare pipe. A larger Roll Hanger is required when Pipe Saddles are used. To select the correct combination, use the Sizing Chart below. **Order Pipe Covering Protection Saddles separately.**

Sizing Chart

Fig. 16 Pipe Size of Roll	Pipe Size of Covering Protection Saddle to be used with Fig. 16 Roll Hanger					
	1" Cov.	1 1/2" Cov.	2" Cov.	2 1/2" Cov.	3" Cov.	4" Cov.
	Fig. 351	Fig. 352	Fig. 353	Fig. 354	Fig. 355	Fig. 356
2 1/2	3/4					
3	1-1 1/2					
4	2-2 1/2	1-1 1/2				
5	3-3 1/2	2-2 1/2	3/4-1 1/2			
6	4	3-3 1/2	2-2 1/2	3/4-1		
7	5	4	3-3 1/2	1 1/4-1 1/2	2	
8	6	5	4	2-3	2 1/2	
10	8	6	5-6	3 1/2-5	3-4	
12	10	8	8	6	5-6	4

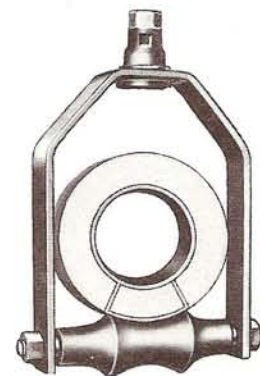


Fig. 16
When used with a Pipe Saddle

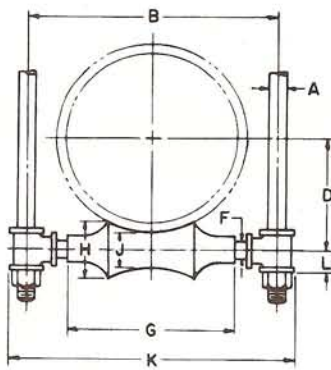
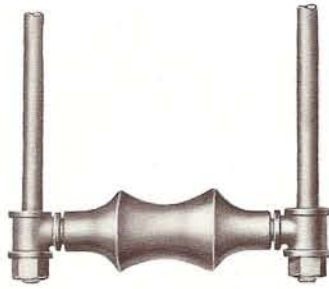


TWO ROD ROLL TYPE HANGER — Fig. 142
CAST IRON AND MALLEABLE IRON

Two Rod Roll Type Hangers are especially designed to support high pressure steam mains and other pipe lines where two rod adjustable roll supports are required to take care of expansion and contraction.

Approvals: Complies with Federal Specification WW-H-171 (type 42) and Manufacturers Standardization Society (type 41)

When ordering specify pipe size and figure number.



DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load Lbs.	A	B	D	F	G	H	J	K	L	Weight Lbs. Per 100
1	600	3/8	3	1	3/8	1 1/2	1	3/4	4 1/8	5/8	45
1 1/4	600	3/8	3 3/8	1 1/4	3/8	1 7/8	1	3/4	4 1/2	5/8	48
1 1/2	600	3/8	3 5/8	1 3/8	3/8	2 1/8	1 1/8	3/4	4 3/4	5/8	51
2	600	3/8	4 1/8	1 5/8	3/8	2 5/8	1 1/4	3/4	5 1/4	5/8	57
2 1/2	600	1/2	5 1/2	2	1/2	3 3/8	1 3/8	7/8	7	7/8	148
3	700	1/2	6 1/8	2 1/4	1/2	3 3/4	1 1/2	7/8	7 5/8	7/8	148
4	700	5/8	7 1/8	2 1/8	1/2	4 3/4	1 3/4	1	8 5/8	7/8	178
5	700	5/8	8 3/8	3 1/2	5/8	5 3/4	2	1 1/8	9 7/8	7/8	242
6	1000	3/4	9 5/8	4	3/4	6 7/8	2 3/8	1 3/8	11 3/8	1	396
7	1200	3/4	10 3/4	4 3/4	3/4	8	2 7/8	1 3/8	12 1/2	1	599
8	1300	7/8	12	5 1/8	7/8	9	2 3/4	1 1/2	14	1 1/8	643
10	1700	7/8	14 1/8	6 1/4	7/8	11	3 3/8	1 3/4	16	1 1/8	845
12	2400	7/8	16 1/8	7 1/2	7/8	13	4	2	18	1 1/8	1030
14	3100	1	17 3/4	8 3/8	1	14 1/4	4 3/4	2 5/8	20	1 5/8	2090
16	3900	1	19 7/8	9 1/2	1	16 1/4	5	2 5/8	22 1/8	1 3/8	2607
18	4200	1	22 1/8	10 1/2	1	18 1/4	5 1/2	2 3/4	24 3/8	1 3/8	3659
20	4500	1 1/4	24 1/8	11 5/8	1 1/4	20 1/4	6	3	26 5/8	1 1/2	3900
24	6100	1 1/2	28 3/8	14	1 1/2	24 1/4	7 1/4	3 5/8	32 1/8	1 3/4	6690
30	7200	1 5/8	35 1/2	17 1/2	1 1/2	30 1/4	9	4 1/2	39 7/8	2 1/8	13400

Fig. 142 Roll Hangers are sized for bare pipe. A larger Roll Hanger is required when Pipe Saddles are used.

To select the correct combination, use the sizing chart below.

Sizing Chart

Fig. 142 Pipe Size of Roll	Pipe Size of Covering Protection Saddle to be used with Fig. 142 Roll Hanger					
	1" Cov.	1 1/2" Cov.	2" Cov.	2 1/2" Cov.	3" Cov.	4" Cov.
	Fig. 351	Fig. 352	Fig. 353	Fig. 354	Fig. 355	Fig. 356
2 1/2	3/4-1					
3	1 1/4-1 1/2	3/4-1				
4	2 1/2-3	1 1/2	3/4-1			
5	3 1/2	2-2 1/2	1 1/4-1 1/2	3/4-1		
6	4-5	3-3 1/2	2-2 1/2	1 1/4-1 1/2		
7	6	4-5	3-4	2-2 1/2	2-2 1/2	
8		6	5	3-3 1/2	3-3 1/2	
10	8	8	6	4-5	4-5	
12	10	10	8	6	6-8	4-6
14	12	12	10	8		
16	14	14	12-14	10	10	8
18	16	16	16	12-14	12-14	10
20	18	18		16		12
24	20	20	18-20	18-20	16-20	14-18
30	24	24	24	24	24	20-24

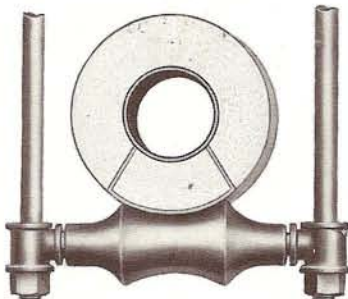


Fig. 142 when used with a Pipe Saddle

ROLLER CHAIR — Fig. 54 STEEL — CAST IRON ROLL

Roller Chair is fabricated from steel with Fig. 173 Cast Iron Pipe Roll and provided with two bolts for rigidly anchoring chair to any base.

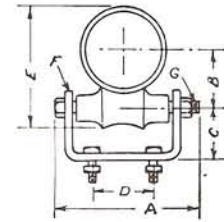
To select the correct size Roller Chair for use with Covered Piping and Pipe Covering Protection Saddles refer to sizes shown in Fig. 142 table.

Order by size and figure number. Made special to customer order.



DIMENSIONS IN INCHES

Pipe Size	Recom. Load, lbs.	A	B	C	D	Bolt Size	Steel Size F	G	Weight per 100
2	300	3 ⁷ / ₈	1 ⁵ / ₈	1 ¹ / ₂	2	³ / ₈	1/4 x 1 ¹ / ₂	³ / ₈	106
2 ¹ / ₂	600	5	1 ⁵ / ₁₆	1 ⁵ / ₈	2	³ / ₈	1/4 x 1 ¹ / ₂	1/2	153
3	600	5 ³ / ₈	2 ¹ / ₄	1 ³ / ₄	2	³ / ₈	1/4 x 1 ¹ / ₂	1/2	179
3 ¹ / ₂	600	6 ¹ / ₄	2 ⁵ / ₁₆	2 ¹ / ₁₆	2	³ / ₈	3/8 x 1 ¹ / ₂	1/2	252
4	700	6 ³ / ₄	2 ¹³ / ₁₆	2 ⁵ / ₁₆	2 ¹ / ₂	³ / ₈	3/8 x 1 ¹ / ₂	1/2	288
5	700	8 ¹ / ₄	3 ¹ / ₁₆	2 ¹ / ₂	3	1/2	3/8 x 1 ¹ / ₂	5/8	400
6	1000	9 ⁵ / ₈	4 ¹ / ₁₆	2 ³ / ₄	3 ¹ / ₄	1/2	3/8 x 2	3/4	644
8	1300	11 ¹ / ₄	5 ⁵ / ₈	3	4 ¹ / ₂	5/8	3/8 x 2	7/8	731
10	1700	14 ¹ / ₄	6 ¹ / ₄	3 ⁵ / ₈	5	3/4	1/2 x 2	7/8	1156
12	2300	16 ¹ / ₄	7 ⁷ / ₁₆	4 ¹ / ₈	6	3/4	1/2 x 2	7/8	1525



ADJUSTABLE ROLL SUPPORT — Fig. 109 STEEL — CAST AND MALLEABLE IRON

Our Adjustable Roll Support is composed of our Fig. 142 Roll Hanger and two threaded full length rods with eight nuts.

It is used to support piping from brackets, structural members, etc. The upright rods are locked at the base by four hexagon nuts and adjustment is obtained by lowering or raising the nuts under the roll sockets and then locked into position by tightening the top nuts.

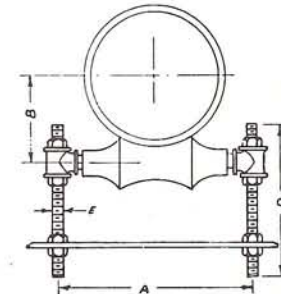
To select the correct size Roll Hanger for use with Covered Piping and Pipe Covering Protection Saddles refer to sizes shown in Fig. 142 table.

Order by size and figure number. Made special to customer order.



DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, lbs.	A	B	E	D	Weight per 100
1 ¹ / ₄	300	3 ³ / ₈	1 ¹ / ₄	³ / ₈	7 ¹ / ₄	108
1 ¹ / ₂	300	3 ⁵ / ₈	1 ³ / ₈	³ / ₈	7 ¹ / ₄	111
2	300	4 ¹ / ₈	1 ⁵ / ₈	³ / ₈	7 ¹ / ₄	165
2 ¹ / ₂	600	5 ¹ / ₂	1 ⁵ / ₁₆	1/2	8	272
3	600	6 ¹ / ₈	2 ¹ / ₄	1/2	8	272
4	700	7 ¹ / ₈	2 ¹³ / ₁₆	5/8	8 ¹ / ₂	391
5	700	8 ¹ / ₄	3 ¹ / ₁₆	5/8	9	463
6	1000	9 ⁵ / ₈	4 ¹ / ₁₆	3/4	9	707
7	1000	10 ³ / ₄	4 ⁵ / ₈	3/4	9	910
8	1300	12	5 ¹ / ₈	7/8	10	1136
10	1700	14 ³ / ₈	6 ³ / ₈	7/8	11	1371
12	2300	16 ¹ / ₈	7 ¹ / ₁₆	7/8	12	1590
14	3075	17 ³ / ₄	8 ³ / ₈	1	12 ¹ / ₂	2866





ROLLER SUPPORT — Fig. 110 STEEL — CAST IRON ROLL

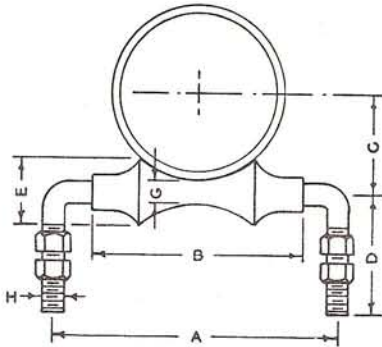
Fig. 110 Roller Support is used on steam or hot water systems where pipe is to be supported in tunnels, trenches and on structural brackets and frames. Adjustment is obtained by raising or lowering the top nut on the legs and locked into position by tightening the lower nut.

Regularly furnished black. Galvanized to special order.

Order by pipe size and figure number. Made special to customer order.

DIMENSIONS IN INCHES

Pipe Size	Max. Recom. Load, Pounds	A	B	C
2	300	4½	2⅝	1⅝
2½ 3	600	5 5⅞	3⅝ 3¾	1 ⅝ 2¼
4 5	700	7 8½	4¾ 5⅞	2⅓ 3⅞
6	1000	10	6⅞	4⅞
8	1300	12	8⅞	5⅞
10	1700	14	11	6¼
12	2300	16	13	7⅞
14 16	3075	17 19	14¼ 16¼	8⅞ 9⅞



Pipe Size	D	E	G	H	Approx. Weight per 100
2	3¾	1⅞	¾	¾	79
2½ 3	4½	1⅞ 1⅞	⅞	½	144 162
3½ 4	4½	1⅞ 1⅞	1	½	164 182
5 6	4½	2 2⅞	1⅞ 1⅞	⅝ ¾	290 466
8 10 12	5¼ 5½ 6	2¼ 3⅞ 3⅞	1½ 1¾ 2	⅞	729 1023 1227
14 16	7 8	4¾ 5⅞	2⅞	1	2139 2776

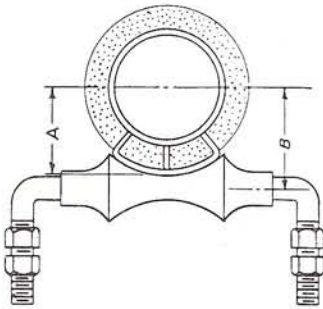
To select the correct size Roll Support for use with Covered Piping and Pipe Covering Protection Saddles.

Example:—8 inch pipe to be covered with 2 inch thickness of Covering. Follow down on column No. 4 to 8 inch pipe size and you will find the correct hanger to be used is 12 inch pipe size shown in Column No. 1.

Order Pipe Covering Protection Saddles separately.

DIMENSIONS IN INCHES

Fig. 110 Pipe Size of Roll	Pipe Size of Covering Protection Saddle to be used with Fig. 110 Roller Support					
	1" Cov.	1½" Cov.	2" Cov.	2½" Cov.	3" Cov.	4" Cov.
	Fig. 351	Fig. 352	Fig. 353	Fig. 354	Fig. 355	Fig. 356
4 5	2½-3 3½	2-2½				
6 7	4-5 6	3-3½ 4-5	2-2½ 3-4	2-2½	2-2½	
8 10	8	6 8	5 6	3-3½ 4-5	3-3½ 4-5	
12 14 16	10 12 14	10 12 14	8 10 12-14	6 8 10	6-8 10	4-6 8



ROLL AND PLATE — Fig. 63 STEEL — CAST IRON ROLL

The plate is made of steel with holes for anchoring to piers. It is used for supporting pipe lines where vertical adjustment is not required.

Approvals: Complies with Federal Specification WW-H-171 (type 46) and Manufacturers Standardization Society SP-69 (type 45)

To select the correct size Roll and Plate for use with Covered Piping and Pipe Covering Protection Saddle refer to sizes shown in Fig. 17 table.

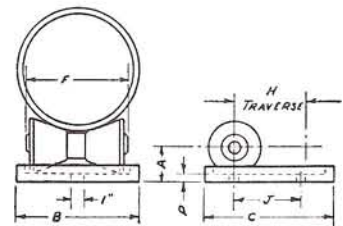
For Roll dimensions refer to Fig. 67 table.

Order by size and figure number.



DIMENSIONS IN INCHES

Plate No.	Pipe Sizes	Recom. Load, lb.	A	B	C	F	H	J	P	Weight per 100
1A	2-3	390	1¼	3⅜	6⅞	2⅛	4⅞	3⅞	⅝	316
1	4-6	950	1⅞	4⅞	7⅞	3¼	5¼	4¼		475
2	8-10	2100	2	6½	8½	6	5⅞	5¼	¾	1140
3	12-14	3075	2½	8⅞	9⅞	8	6¼	6½		2190
4	16-20	4980	2¾	9⅞	10⅞	9⅞	7	7½	½	2815
5	24	6100	2⅞	10¾	11¾	10	8	8½	⅝	3885
6	30	7500	3⅞	13½	13	12½	8½	9½		5895



PIPE ROLL — Fig. 67 CAST IRON

Our Fig. 67 Pipe Roll is used with Fig. 17, 39, 40, and 53 Adjustable and Nonadjustable Chairs and Rolls, also on various types of hangers and supports.

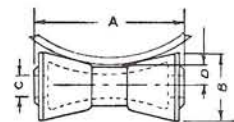
To select the correct size Roll for use with Covered Piping and Pipe Covering Protection Saddles refer to sizes shown in Fig. 17 table.

Order by size and figure number.



DIMENSIONS IN INCHES

Roll No.	Pipe Sizes	A	B	Rod C	Weight per 100
1A	2-3	2⅛	1⅞	½	102
1	4-6	3¼	2⅞	½	126
2	8-10	6	3¼	¾	442
3	12-14	8	4	⅞	882
4	16-20	9⅞	4½	1⅞	1219
5	24	10	4⅞	1⅞	1450
6	30	12½	5½	1¾	2359





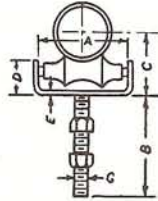
ROLLER SUPPORT — Fig. 333 STEEL AND CAST IRON

The adjustment of the pipe line is had by turning the top nut which raises or lowers the pipe to desired pitch. The lower nut is then tightened locking support into position and prevents loosening due to vibration.

To select the correct size Roller Support for use with Covered Piping and Pipe Covering Protection Saddles refer to sizes shown in Fig. 142 table.

Order by size and figure number.

Made special to customer order.



DIMENSIONS IN INCHES

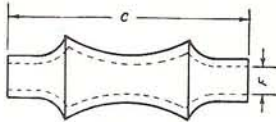
Pipe Size	Recom. Load, lb.	A	B	C	D	Steel Size E	Rod G	Weight per 100
2	400	2 ⁷ / ₈	6	2 ⁷ / ₈	1 ⁷ / ₈	1/4 x 1 1/4	1/2	209
2 1/2		3 ³ / ₈		3 1/4	1 15/16			243
3		4		3 5/8	2			265
3 1/2		4 1/2		4	2 1/16			272
4	600	5 1/8	6	4 5/16	2 1/4	1/4 x 1 1/2	5/8	343
5		6 1/8		5 1/16	2 3/8			426
6	900	7 1/4	6	6	2 15/16	3/8 x 2	3/4	771
8		9 3/8		7 1/4	3 3/8			993
10	1100	11 1/2	6	8 13/16	3 1/16	1/2 x 2	1	1665
12	1100	13 1/2		10 5/16	3 7/8			1934

CAST IRON PIPE ROLL — Fig. 173

Pipe Rolls are used in conjunction with our Fig. 140, 142, 333 Roll Hangers. The inside of roll is cored, with minimum bearings in each end of rod.

To select the correct size Roll for use with Covered Piping and Pipe Covering Protection Saddles refer to sizes shown in Fig. 140 and 142 tables.

Order by size and figure number.



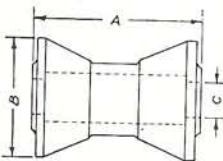
DIMENSIONS IN INCHES

Pipe Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
C	1 1/2	1 7/8	2 1/8	2 15/32	3 1/8	3 3/4	4 3/16
F	1 5/32	1 5/32	1 5/32	1 5/32	3 3/64	3/16	3/16
Weight per 100	12	15	17	35	53	66	64
Pipe Size	4	5	6	7	8	10	12
C	4 3/4	5 13/16	6 7/8	7 29/32	8 13/16	11 1/16	13
F	9/16	3/4	13/16	1 1/16	1 1/16	1	1 1/16
Weight per 100	80	115	196	228	296	547	700
Pipe Size	14	16	18	20	24	30	
C	14 1/4	16 1/4	18 1/4	20 1/4	24 1/4	30 1/4	
F	1 3/16	1 3/16	1 1/4	1 1/16	1 5/8	1 7/8	
Weight per 100	1375	1924	2900	2700	4266	8800	

PIPE ROLL — Fig. 171 CAST IRON

Pipe Roll is used in conjunction with our Fig. 183 Adjustable Roll Stand, also on various styles of hanger and supports.

Order by size and figure number.



DIMENSIONS IN INCHES

Roll No.	Pipe Sizes	A	B	Rod Size C	Weight per 100
1	4-6	3 3/8	2 3/16	3/4	149
2	7-10	5	3 1/2	1	383
3	12-15	7	4 1/4	1 1/4	922
4	16-20	8 1/8	4 3/4	1 1/4	1445
5	24	9	4 7/8	1 1/4	1825

CHAIR AND ROLL — Fig. 17 CAST IRON

The Fig. 17 Chair and Roll is used for supporting pipe lines in trenches and on structural brackets where there is expansion or contraction and when vertical adjustment is not necessary.

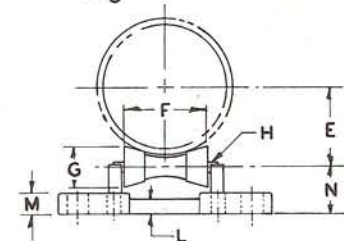
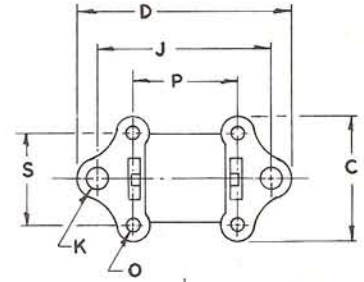
Approvals: Complies with Federal Specification WW-H-171 (Type 45) and Manufacturers Standardization Society SP-69 (Type 44)

Order by size and figure number.

DIMENSIONS IN INCHES

Chair No.	Max. Load, Lbs.	Pipe Size	C	D	E	F	G	H	Weight per 100
1A	390	2 2½ 3 3½	5¾	8½	1½ 1¾ 2½ 2¾	2¾	1⅞	½	700
1	950	4 5 6	5¾	10⅞	2¾ 3¾ 3¾	3¾	2⅞	½	1050
2	2100	8 10	6⅞	8⅞	5⅞ 6¼	6⅞	3¼	¾	1650
3	3075	12 14	7⅞	11	7¾ 8	8	4	⅞	2675
4	4980	16 18 20	8¾	12½	8⅞ 10 11	9⅞	4½	1⅞	4050
5	6100	24	8⅞	13¾	13	10	4½	1¼	5100
6	7500	30	10¾	17¼	16¼	12½	5½	1¾	8975

Chair No.	J	K	L	M	N	O	P	S
1A	6½	1	⅝	¾	2	⅞	3½	4⅞
1	8	1	¾	⅞	2¾	⅞	4¾	4¼
2	4	⅞	¾	1	3¾	⅞	7	5
3	5¾	⅞	¾	1	4¾	⅞	9¼	6
4	6¾	1	⅞	1	4¾	¾	10¼	6½
5	7½	1	1	1⅞	4¾	⅞	11½	6¾
6	10	1	1¼	1½	5⅞	1	14¾	8



PIPE SIZES 2" TO 6"

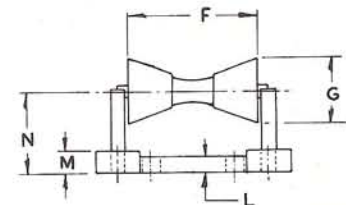
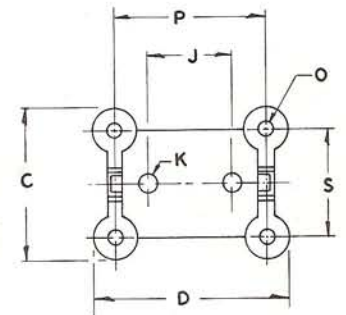
To select the correct size Roll Stand for use with covered pipe and pipe covering protection saddles.

Example:—10 inch and 12 inch pipe to be covered with 1½ inches of covering. Follow down on column No. 4 to 10 to 12 and you will find the correct roll stand to be used is No. 3 shown in column No. 1.

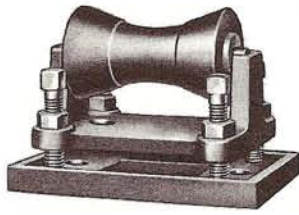
Order Pipe Covering Protection Saddles separately.

SIZING CHART

Fig. 17 Chair No.	Bare Pipe Size	Pipe Size of Covering Protection Saddles to be used with Fig. 17 Chair and Roll					
		1" Cov.	1½" Cov.	2" Cov.	2½" Cov.	3" Cov.	4" Cov.
		Fig. 351	Fig. 352	Fig. 353	Fig. 354	Fig. 355	Fig. 356
No. 1A	2 2½ 3 3½	¾ to 3	¾ to 2½	¾ to 1½			
No. 1	4 5 6	3½ to 6	3 to 5	2 to 4	¾ to 1½		
No. 2	8 10	8	6 to 8	5 to 8	2 to 5	2 to 6	4 to 5
No. 3	12 14	10 to 12	10 to 12	10 to 12	6 to 8	8	6 to 8
No. 4	16 18 20	14 to 18	14 to 18	14 to 16	10 to 16	10 to 14	10 to 12
No. 5	24	20	20	18 to 20	18 to 20	16 to 18	14 to 18
No. 6	30	24	24	24	24	20 to 24	20 to 24



PIPE SIZES 8" TO 30"



ADJUSTABLE CHAIR AND ROLL — Fig. 53 CAST IRON

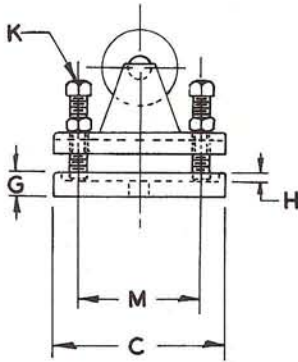
The correct height can be obtained by adjusting the screws at each corner. The sliding on the ends of adjusting screws provides for the lateral movement.

Approvals: Complies with Federal Specification WW-H-171 (Type 47) and Manufacturers Standardization Society SP-69 (Type 46)

DIMENSIONS IN INCHES

Chair No.	Max Load, Lbs.	Pipe Size	B	C	D	E	G	Weight per 100
1A	390	2 2½ 3	6¾	5½	3¾	1½ 1¾ 2½	1	1550
1	950	4 5 6	8½	5¾	5½	2¾ 3¾ 3¾	1	2070
2	2100	8 10	10½	6¾	7¾	5½ 6¼	1½	3430
3	3075	12 14	13	8	9½	7¾ 8	1½	5060
4	4980	16 18 20	14¾	8½	11½	8¾ 10 11	1¼	7360
5	6100	24	15¾	8½	12¼	13	1¾	8870
6	7500	30	19¼	10½	15¾	16¼	1½	16600

Chair No.	H	J	K	L	M	N	
						Min.	Max.
1A	¼	1	⅝	3½	4½	3	3¾
1	¼	1	⅝	4¾	4¾	3¾	4½
2	⅜	1	¾	7	5	4¾	6½
3	⅜	1	⅞	9¼	6	5¾	7½
4	⅜	1¼	1	10¼	6½	5¾	7¾
5	⅜	1¼	1	11½	6¾	6½	8
6	⅜	1¾	1¼	14¾	8	7¼	10½



Refer to Figure 17 for Dimensions of Chair and Roll.

To select the correct size roll stand for use with covered pipe and pipe covering protection saddles.

Example:—10 inch and 12 inch pipe to be covered with 1½ inches of covering. Follow down on column No. 4 to 10 to 12 and you will find the correct roll stand to be used is No. 3 shown in column No. 1.

For additional dimensions refer to Fig. 17. Order by size and figure number. Order Pipe Covering Protection Saddles separately.

DIMENSIONS IN INCHES

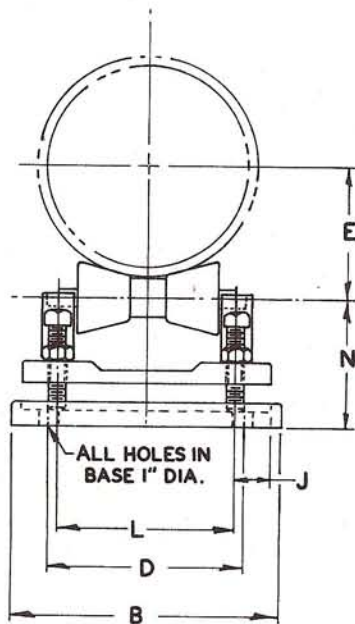


Fig. 53 Chair No.	Bare Pipe Size	Pipe Size of Covering Protection Saddles to be used with Fig. 53 Adj. Chair and Roll					
		1" Cov.	1½" Cov.	2" Cov.	2½" Cov.	3" Cov.	4" Cov.
		Fig. 351	Fig. 352	Fig. 353	Fig. 354	Fig. 355	Fig. 356
No. 1A	2 2½ 3	¾ to 3	¾ to 2½	¾ to 1½			
No. 1	4 5 6	4 to 6	3 to 5	2 to 4	¾ to 1½		
No. 2	8 10	8	6 to 8	5 to 8	2 to 5	2 to 6	4 to 5
No. 3	12 14	10 to 12	10 to 12	10 to 12	6 to 8	8	6 to 8
No. 4	16 18 20	14 to 18	14 to 18	14 to 16	10 to 16	10 to 14	10 to 12
No. 5	24	20	20	18 to 20	18 to 20	16 to 18	14 to 18
No. 6	30	24	24	24	24	20 to 24	20 to 24

STEEL CHAIR AND ROLL — Fig. 39 STEEL — CAST IRON ROLL

Our Fig. 39 Chair is fabricated from steel plate with all parts securely welded. The Roll is made of cast iron and is removable from chair. It is used to support pipe lines on structural supports and can either be bolted or welded to the members.

Order by size and figure number. Made special to customer order.

DIMENSIONS IN INCHES

Chair No.	Max. Load, Lbs.	Pipe Size	C	D	E	F	G	H	Weight per 100
1A	390	2 2½ 3	5¾	8½	1½ 1¾ 2½	2¾	1⅞	½	700
1	950	4 5 6	5¾	10⅞	2¾ 3⅞ 3⅞	3¾	2⅞	½	1050
2	2100	8 10	6⅞	8⅞	5⅞ 6¼	6⅞	3¼	¾	1650
3	3075	12 14	7⅞	11	7⅞ 8	8	4	⅞	2675
4	4980	16 18 20	8¾	12½	8⅞ 10 11	9⅞	4½	1⅞	4050
5	6100	24	8⅞	13¾	13	10	4½	1¼	5100
6	7500	30	10¾	17¼	16¼	12½	5½	1¾	8975

Chair No.	J	K	M	N	O	P	S
1A	6½	1	¼	2	⅞	3½	4⅞
1	8	1	¼	2⅞	⅞	4¾	4¼
2	4	⅞	⅜	3¾	⅞	7	5
3	5¾	⅞	⅜	4¾	⅞	9¼	6
4	6¾	1	½	4⅞	¾	10¼	6½
5	7½	1	⅝	4¾	1⅜	11½	6¾
6	10	1	⅝	5⅝	1	14¾	8

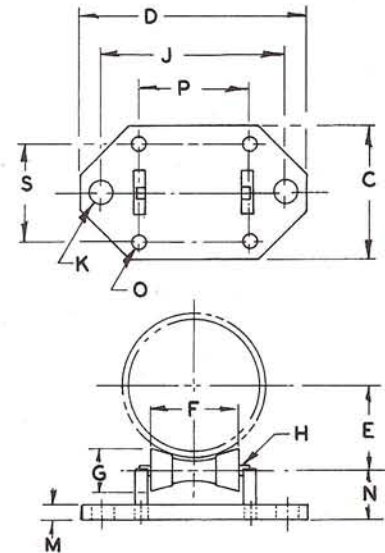
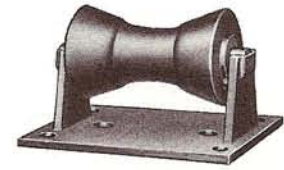
To select the correct size roll stand for use with covered pipe and pipe covering protection saddles.

Example:—10 inch and 12 inch pipe to be covered with 1½ inches of covering. Follow down on column No. 4 to 10 to 12 and you will find the correct roll stand to be used is No. 3 shown in column No. 1.

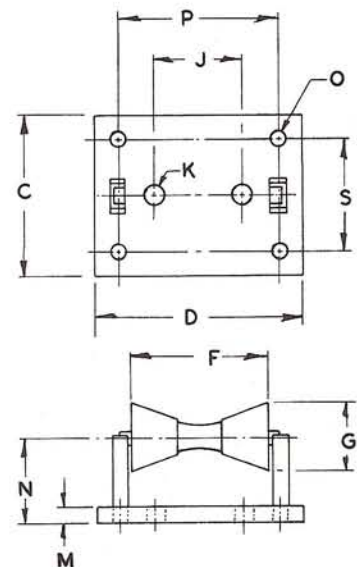
Order Pipe Covering Protection Saddles separately.

DIMENSIONS IN INCHES

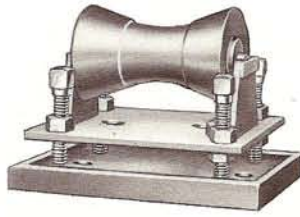
Fig. 39 Chair No.	Bare Pipe Size	Pipe Size of Covering Protection Saddles to be used with Fig. 39 Steel Roll and Chair					
		1" Cov.	1½" Cov.	2" Cov.	2½" Cov.	3" Cov.	4" Cov.
		Fig. 351	Fig. 352	Fig. 353	Fig. 354	Fig. 355	Fig. 356
1A	2 2½ 3	¾ to 3	¾ to 2½	¾ to 1½			
1	4 5 6	4 to 6	3 to 5	2 to 4	¾ to 1½		
2	8 10	8	6 to 8	5 to 8	2 to 5	2 to 6	4 to 5
3	12 14	10 to 12	10 to 12	10 to 12	6 to 8	8	6 to 8
4	16 18 20	14 to 18	14 to 18	14 to 16	10 to 16	10 to 14	10 to 12
5	24	20	20	18 to 20	18 to 20	16 to 18	14 to 18
6	30	24	24	24	24	20 to 24	20 to 24



PIPE SIZES 2" TO 6"



PIPE SIZES 8" TO 30"



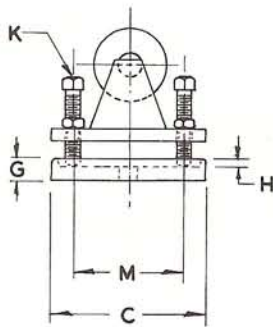
ADJUSTABLE STEEL CHAIR AND ROLL — Fig. 40
STEEL — CAST IRON ROLL

The correct height can be obtained by adjusting the screws at each corner. The sliding on the ends of adjusting screws provides for the lateral movement. Made special to customer order.

DIMENSIONS IN INCHES

Chair No.	Max Load, Lbs.	Pipe Size	B	C	D	E	G	Weight per 100
1A	390	2 2½ 3	6⅞	5½	3 ⅛	1½ 1¾ 2½	1	1550
1	950	4 5 6	8⅞	5¾	5⅞	2¾ 3⅜ 3⅞	1	2070
2	2100	8 10	10⅞	6¾	7⅞	5⅞ 6¼	1⅞	3430
3	3075	12 14	13	8	9½	7⅞ 8	1⅞	5060
4	4980	16 18 20	14⅞	8⅞	11⅞	8⅞ 10 11	1¼	7360
5	6100	24	15¾	8⅞	12¼	13	1⅜	8870
6	7500	30	19¼	10½	15¾	16¼	1⅞	16600

Chair No.	H	J	K	L	M	N	
						Min.	Max.
1A	¼	1	⅝	3½	4⅞	3	3⅞
1	¼	1	⅝	4¾	4⅜	3⅜	4½
2	⅜	1	¾	7	5	4⅞	6⅞
3	⅜	1	⅞	9¼	6	5⅞	7⅞
4	⅜	1¼	1	10¼	6½	5⅞	7¾
5	⅜	1¼	1	11½	6¾	6⅞	8
6	⅜	1⅜	1¼	14⅞	8	7¼	10½



Refer to Figure 17 for Dimensions of Chair and Roll.

To select the correct size roll stand for use with covered pipe and pipe covering protection saddles.

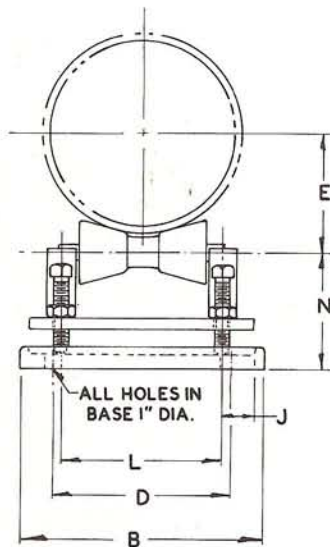
Example:—10 inch and 12 inch pipe to be covered with 1½ inches of covering. Follow down on column No. 4 to 10 to 12 and you will find the correct roll stand to be used is No. 3 shown in column No. 1.

For additional dimensions refer to Fig. 39. Order by size and figure number.

Order Pipe Covering Protection Saddles separately.

DIMENSIONS IN INCHES

Fig. 40 Chair No.	Bare Pipe Size	Pipe Size of Covering Protection Saddles to be used with Fig. 40 Adj. Chair and Roll					
		1" Cov.	1½" Cov.	2" Cov.	2½" Cov.	3" Cov.	4" Cov.
		Fig. 351	Fig. 352	Fig. 353	Fig. 354	Fig. 355	Fig. 356
No. 1A	2						
	2½ 3	¾ to 3	¾ to 2½	¾ to 1½			
No. 1	4						
	5 6	4 to 6	3 to 5	2 to 4	¾ to 1½		
No. 2	8						
	10	8	6 to 8	5 to 8	2 to 5	2 to 6	4 to 5
No. 3	12						
	14	10 to 12	10 to 12	10 to 12	6 to 8	8	6 to 8
No. 4	16						
	18	14 to 18	14 to 18	14 to 16	10 to 16	10 to 14	10 to 12
	20						
No. 5	24	20	20	18 to 20	18 to 20	16 to 18	14 to 18
No. 6	30	24	24	24	24	20 to 24	20 to 24



PIPE GUIDE — Fig. 1007 SPLIT-SLEEVE TYPE — STEEL

This guide has been designed to offer a minimum of friction and to occupy the smallest possible cross sectional area. Its use will allow pipe lines to be kept closer together in trenches and tunnels where space is at a premium. It may be installed on floors, walls and ceilings against concrete, steel or wood. It can be furnished without the feet or with modified methods of mounting, if desired.

Guides should be installed immediately adjacent to expansion joints in runs of piping, and at reasonable intervals between the expansion joint and the anchor point, to hold the pipe concentric with the expansion joint throughout its length; thus controlling and guiding the expansion in the desired direction. This prevents failure of the expansion point due to misalignment.

Sleeve can be made longer than 8 inches for extreme travel conditions.

Sleeve can be split at plus or minus 45 degrees as shown in drawing if minimum "C" measure is required for clearance.

When ordering, specify Figure Number, Pipe Size, Thickness of Insulation and Guide Size Number.

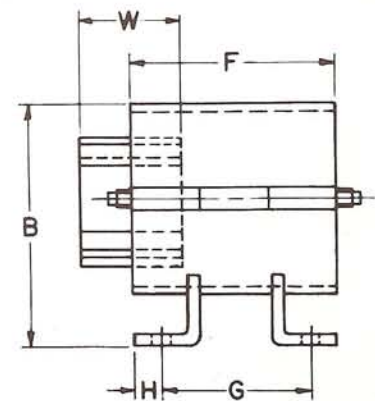
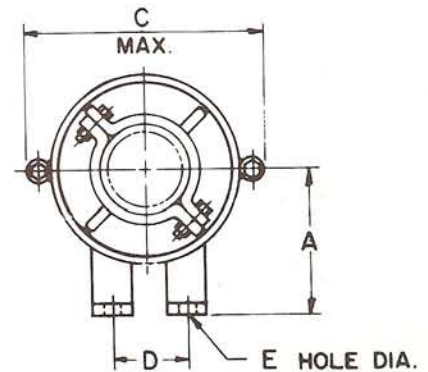
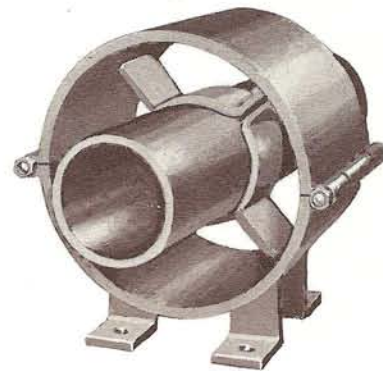
DIMENSIONS IN INCHES

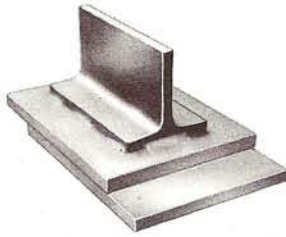
Size No.	A	B	C	D	E	1007S 4"-6" Barrel		1007R 8" Barrel		1007L 12" Barrel		Spider	
						F	G	F	G	F	G	H	W
1	3 3/4	6	5 7/8	2 1/4	5/8	4	2	8	6	12	10	1	2
2	4 3/8	7 1/8	7	2 7/8	5/8	4	2	8	6	12	10	1	2 1/2
3	4 7/8	8 1/8	8	3 3/8	5/8	4	2	8	6	12	10	1	2 1/2
4	5 3/8	10 1/8	10 3/8	4 3/8	5/8	4	2	8	6	12	10	1	3
5	6 3/8	12 1/4	12 1/2	5 3/8	5/8	6	4	8	6	12	10	1	4
6	7 3/8	14 1/4	14 1/2	6 3/8	5/8	6	4	8	6	12	10	1	4
7	8 3/8	16 1/4	16 1/2	7 3/8	3/4	—	—	8	6	12	10	1	4
8	9 3/8	18 1/4	18 1/2	8 3/8	3/4	—	—	8	6	12	10	1	4
9	11	20 1/2	20 3/4	9 1/2	3/4	—	—	8	6	12	10	1	4
10	12	22 1/2	22 3/4	10 1/2	7/8	—	—	8	6	12	10	1	4
11	13	24 1/2	24 3/4	11 1/2	7/8	—	—	8	6	12	10	1	4
12	15 1/8	28 3/4	32 1/8	13 3/8	1	—	—	—	—	12	10	2	6
13	17 1/8	32 3/4	36 1/8	15 3/8	1	—	—	—	—	12	10	2	6
14	20 1/4	39	42 3/8	18 3/8	1 1/4	—	—	—	—	12	10	2	6
15	23 1/4	45	48 3/8	21 3/4	1 1/4	—	—	—	—	12	10	2	6

To select the correct size Guide for use with Covered Piping.

Example:—8 inch pipe to be covered with 2 inch thickness of covering. Follow down on Column No. 4 to 8 inch pipe size and you will find the correct guide to be used is No. 7 shown in Column No. 1.

Size No.	Thickness of Insulation in Inches					
	1	1 1/2	2	2 1/2	3	4
1	1					
2	1 1/4-2	1				
3	2 1/2	1 1/4-2	1			
4	3-4	2 1/2-3 1/2	1 1/4-2 1/2	1-2	1	
5	5-6	4-5	3-4	2 1/2-3 1/2	1 1/4-2 1/2	1
6	8	6	5-6	4-5	3-4	1 1/4-2 1/2
7	10	8	8	6	5-6	3-4
8	12	10	10	8	8	5-6
9	14	12-14	12	10	10	8
10	16	16	14	12-14	12	10
11			16	16	14	12
12	20	20	18-20	18-20	16-18	14-16
13	24	24	24	24	20	18-20
14	30	30	30	30	24	24
15	36	36	36	36	30	30



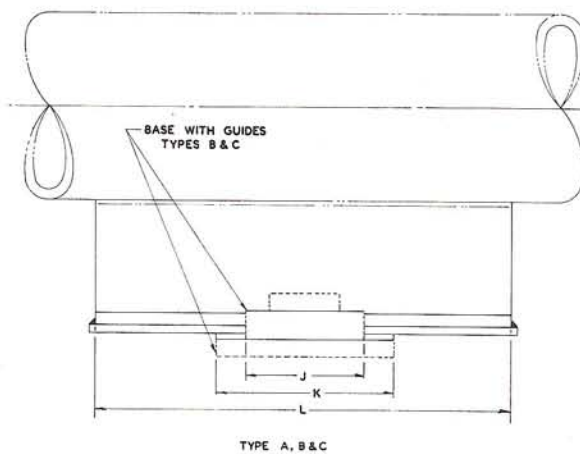
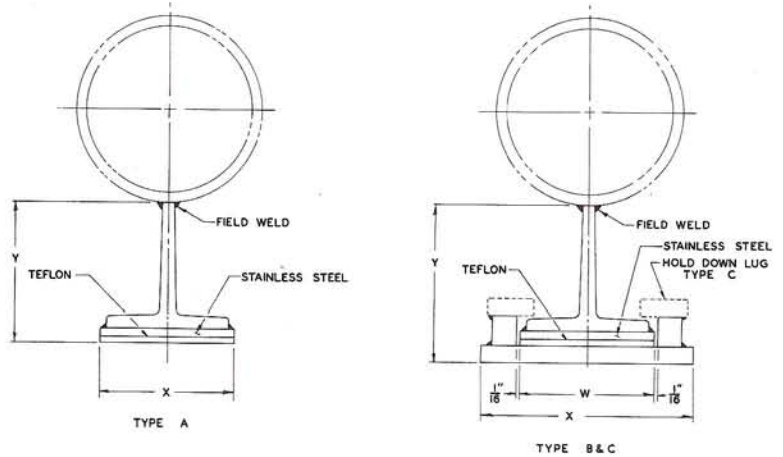


PIPE SLIDE ASSEMBLY — Fig. 1010

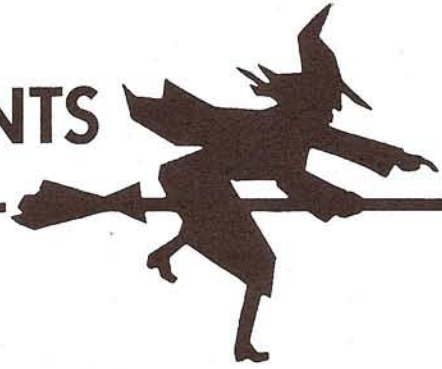
Material: Steel with teflon filled pad.

Our figure 1010 pipe slide assembly consists of a carbon steel tee (to ASTM-A-36) mounted on a stainless steel plate, resting on a carbon steel plate bonded with teflon. There is no lubrication required, performance is not affected by high humidity or corrosives in the atmosphere.

Pipe Size	Travel	Y		L Type ABC	K Type ABC	W Type ABC	X	
		Type A	Type B & C				Type A	Type BC
up to 8	5	3¾	4¼	8½	4	3½	3½	6
	10			13½				
	15			18½				
	20			23½				
10 to 24	5	3¾	4¼	10½	6	4½	4½	7
	10			15½				
	15			20½				
	20			25½				



STRUCTURE ATTACHMENTS



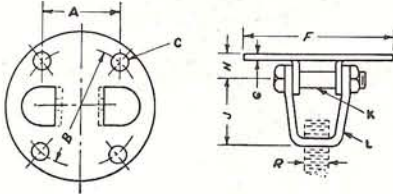
STRUCTURE
ATTACHMENTS



ADJUSTABLE SWINGING HANGER FLANGE — Fig. 73 STEEL

Our Adjustable Swinging Hanger Flanges are made of heavy gauge steel of sufficient strength to carry the various sizes of pipe. These flanges provide means for hanging pipe where a swing through a radius of 180 degrees or less is required and provides a vertical adjustment of 1-3/8 inches where rod enters flange.

Order by size and figure number.



DIMENSIONS IN INCHES

No.	Pipe Size	R	A	B	Hole C	F	G	H	J	Bolt K	Steel L	Weight per 100
6	3/4-2	3/8	2 1/8	3	5/16	4 1/16	5/16	1 5/16	1 7/8	7/16	3/16 x 1	95
7	2 1/2-3 1/2	1/2										100
8	4-5	5/8	2 5/8	3 1/16	1 3/32	4 3/4	1/4	1 5/16	2 3/8	1/2	1/4 x 1 1/4	205
9	6	3/4										

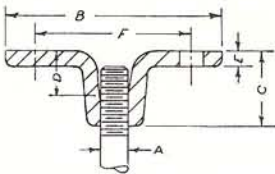


PIPE HANGER FLANGE — Fig 185 CAST IRON

UNDERWRITERS' LABORATORIES LISTED 3/8 TO 3/4 INCH

Pipe Flanges are designed primarily for use on level ceilings or bottom of wood beams and provides an adjustment of 1 to 2 inches where rod enters flange. Size No. 1 has two holes for wood screws. Sizes No. 2 to 5 have three holes for coach screws. Order by size and figure number.

DIMENSIONS IN INCHES



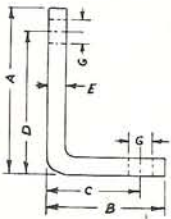
Size	Pipe Sizes	Max. Load, lb.	A	B	C	D	E	Bolt Cir. F	Screw Size	Weight per 100
3/8	3/4-2	300	3/8	2 3/4	1 7/16	3/4	3/16	2	No. 18	39
1/2	2 1/2-3 1/2	600	1/2	3 7/8	1 1/2	3/4	1/4	2 3/4	3/8	75
5/8	4-5	700	5/8	4 5/8	1 5/8	1	5/16	3 1/4	1/2	138
3/4	6	800	3/4	5 1/8	1 7/8	1 1/8	3/8	3 1/2	1/2	207
7/8	8-12	1000	7/8	5 7/8	2 3/16	7/8	1/2	4 1/4	5/8	319



RETURN LINE ANGLES — Fig. 152 STEEL

Return Line Angles are formed to enable the mechanic to obtain different distances from wall to center of pipe line by turning the angle to distance required. They are made in light and heavy material and will support pipes 2, 3 or 4 inches from wall to center.

Order by size and figure number.



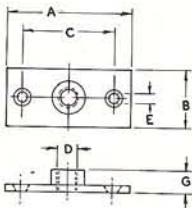
DIMENSIONS IN INCHES

No.	Max. Recom. Load, lb.	A	B	C	D	Steel E	G	Weight per 100
1	180	3 5/8	2 5/8	2	3	1/4 x 1 1/4	3/16	53
2		4 5/8	3 3/8	3	4			71
3	390	3 5/8	2 5/8	2	3	3/8 x 1 1/2	3/16	92
4		4 5/8	3 3/8	3	4			123



SINGLE PLATE — Fig. 85 MALLEABLE IRON

Fig. 85 Plates are used with our Fig. 81 Split Rings. Standard finish is galvanized.



DIMENSIONS IN INCHES

Size	A	B	C	E	G	Weight per 100
3/8" Bolt	2 3/8	1	1 3/4	3/16	1/2	13
1/4" Pipe	2 3/8	1	1 3/4	3/16	1/2	13
1/2" Pipe	4 7/16	2 3/8	3 3/8	1/4	7/8	90

RETURN LINE SUPPORT — Fig. 248 MALLEABLE IRON

Our Fig. 248 Malleable Return Line Support is made in two parts; the bracket member which has slot cast to allow for adjustment, and the adjusting member slides on the bracket which is sufficiently braced for strength. The hole for drop rod is cored for one half inch diameter rod with socket provided for three eighths inch square nut. When adjustment has been made, the bolt is tightened, thus locking support in position.

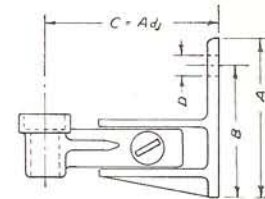
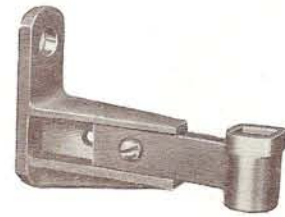
It provides a simple, practical and adjustable means of supporting steam return lines and other pipes from walls and side of beams.

No. 1 Hanger supports pipes from 2 to 3 inches from wall to center of pipe. No. 2 from 3 to 4 inches. No. 3 from 4 to 6 inches.

Order by size and figure number.

DIMENSIONS IN INCHES

No.	Max. Recom. Load, lb.	A	B	C		D	Weight per 100
				Min.	Max.		
1	390	2¾	2¼	2	3	7/16	42
2	390	3	2¼	3	4	7/16	50
3	640	3½	2¾	4	6	7/16	82



CEILING STIRRUP — Fig. 151

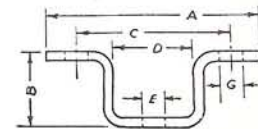
STEEL — UNDERWRITERS' LABORATORIES LISTED

Our Ceiling Stirrups are made of steel, designed for use on level ceilings or beams and provide an adjustment of 1-1/2 inches where rod enters stirrup.

Order by size and figure number.

DIMENSIONS IN INCHES

No.	Recom. Safe Load, lb.	A	B	C	D	Hole E	Holes G	Steel Size	Weight per 100
1	600	5½	2	4½	2¼	7/16	9/16	¼ x 1¼	76
2	880	6	2½		2½	11/16		3/8 x 1½	136



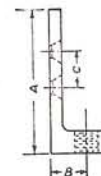
SIDE BEAM CONNECTOR — Fig. 153 MALLEABLE IRON

These connectors are used on buildings of wood construction. They can be secured to side of beam or joist by means of our Fig. 166 Drive Screws.

The supporting rods are screwed into the tapped hole which allows the desired vertical adjustment. Order by size and figure number.

DIMENSIONS IN INCHES

Size	A	B	C	Weight per 100
¾ Rod	2¾	¾	¾	13
½ Rod ¼ Pipe	2¾	¾	¾	25





SIDE BEAM BRACKET — Fig. 303 STEEL

Our Steel Side Beam Bracket is designed for use in supporting pipe hanger to the side of beams and joists, etc.

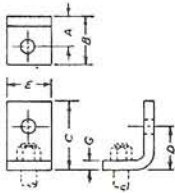
Prices do not include rods or nuts. Order separately.

Order by size and figure number.

DIMENSIONS IN INCHES

Size	Max. Load, lb.		for Pipe Sizes	A	B	Weight per 100
	Lag Screw	Bolt to Steel				
3/8	390	580	3/4 to 2	7/8	1 1/8	25
1/2	640	960	2 1/2 to 3 1/2	1 3/16	1 7/8	40
5/8	760	1500	4 to 5	1 7/16	2 1/4	70
3/4	830	2500	6	1 11/16	2 1/2	107
7/8	830	3600	8 to 12	2	3	164

Size	C	D	E	G	Holes
3/8	1 7/8	1 1/4	1 1/4	1/4	3/16
1/2	2 3/8	1 5/8	1 1/2	1/4	3/16
5/8	2 7/8	1 7/8	1 1/2	3/8	1 1/16
3/4	3 1/4	2 1/8	2	3/8	1 3/16
7/8	3 3/4	2 1/2	2	1/2	1 5/16



SIDE BEAM BRACKET — Fig. 337 MALLEABLE IRON

Side Beam Bracket is designed to secure hangers to side of beams, etc.

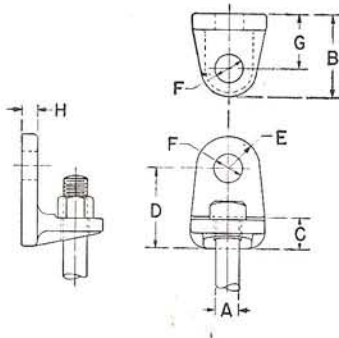
Approvals: Complies with Federal Specification WW-H-171 (type 35) and Manufacturers Standardization Society SP-69 (Type 34)

Order by size and figure number.

DIMENSIONS IN INCHES

Size	Pipe Size	Max. Rec. Load, lb.		A	B	C
		with Lag Screw	with Bolt to Steel			
3/8	3/4-2	390	610	3/8	1 3/8	5/8
1/2	2 1/2-3 1/2	640	1130	1/2	1 13/16	3/4
5/8	4-5	760	1810	5/8	2 3/16	7/8
3/4	6	830	2710	3/4	2 7/16	1
7/8	8-12	830	3770	7/8	3	1 1/16

Size	Pipe Size	D	E	F	G	H	Weight per 100
3/8	3/4-2	1 7/16	1 1/32	7/16	7/8	1/4	26
1/2	2 1/2-3 1/2	1 7/8	2 1/32	7/16	1 3/16	1 1/32	54
5/8	4-5	2 1/8	7/8	3/4	1 7/16	7/16	96
3/4	6	2 1/2	1	3/8	1 11/16	1/2	149
7/8	8-12	3	1 1/8	1	2	1 1/32	244

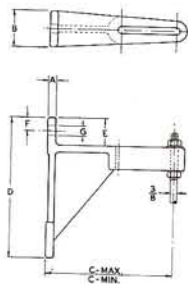


CAST IRON BRACKET — Fig. 340

Fig. 340 Cast Iron Brackets are used on small pipe lines, "C" is adjustable.

DIMENSIONS IN INCHES

C	D	E	F	G	Maximum Load	Weight per 100
3 7/8 to 7	7 3/4	1 1/2	3/4	1/2	180	310



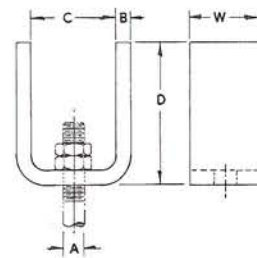
I BEAM WELDING ATTACHMENT — Fig. 113A STEEL

Fig. 113A Welding Attachments are made of steel and is designed to be used on standard or wide flange beams regardless of size.

Order by rod size and figure number.

DIMENSIONS IN INCHES

Rod Size A	Max. Rec. Load, Lbs.	B	C	D	W	Weight Lbs. per 100
3/8	600	3/8	1 1/4	2 7/8	3	215
1/2	1100	3/8	1 1/4	2 7/8	3	215
5/8	1800	3/8	1 1/4	3	3	215
3/4	2700	3/8	1 1/2	3 1/8	3	230
7/8	3700	1/2	2	4 1/4	3	405
1	4900	1/2	2	4 1/2	4	570
1 1/8	6200	5/8	2 1/4	4 3/4	4	750
1 1/4	8000	5/8	2 1/2	5	5	1010
1 1/2	11600	3/4	3	6 1/2	6	1875
1 3/4	15700	3/4	3 3/4	7 3/4	6	2240
2	20700	3/4	3 3/4	8 1/4	6	2280
2 1/4	27200	3/4	4 1/4	9 1/2	6	2310
2 1/2	33500	3/4	4 1/2	9 3/4	6	2350



I BEAM WELDING ATTACHMENT — Fig. 113B STEEL

The I Beam Welding Attachment is made of wrought steel and is designed for use on standard or wide flange beams regardless of their size.

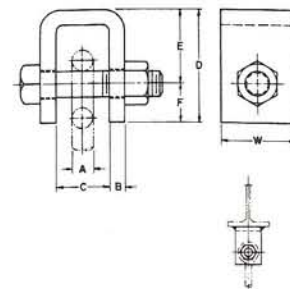
It is furnished with a machine bolt. When welded to the bottom flange of the I Beam it takes full advantage of the carrying load of the beam also, allows the eye rod to swing in all directions according to the movement of the pipe line.

This attachment is used extensively on Power Plant Installations.

Order by rod size and figure number.

DIMENSIONS IN INCHES

Rod Size A	Max. Recom. Load Lbs.	B	C	D	E	F	W	Bolt Size	Wt. Lbs. Per 100
3/8	600	3/8	1 1/4	2 7/8	2	7/8	3	1/2 x 2 1/2	232
1/2	1100	3/8	1 1/4	2 7/8	2	7/8	3	5/8 x 3	260
5/8	1800	3/8	1 1/4	3	2	1	3	3/4 x 3	285
3/4	2700	3/8	1 1/2	3 1/8	2	1 1/8	3	7/8 x 3	341
7/8	3700	1/2	2	4 1/4	3	1 1/4	3	1 x 4	577
1	4900	1/2	2	4 1/2	3	1 1/2	4	1 1/8 x 4 1/2	800
1 1/8	6200	5/8	2 1/4	4 3/4	3	1 3/4	4	1 1/4 x 5	1068
1 1/4	8000	5/8	2 1/2	5	3	2	5	1 3/8 x 5 1/2	1488
1 1/2	11600	3/4	3	6 1/2	4	2 1/2	6	1 5/8 x 6 1/2	2646
1 3/4	15700	3/4	3 3/4	7 3/4	5	2 3/4	6	1 7/8 x 7 1/2	3373
2	20700	3/4	3 3/4	8 1/4	5	3 1/4	6	2 1/4 x 8	4080
2 1/4	27200	3/4	4 1/4	9 1/2	6	3 1/2	6	2 1/2 x 8 1/2	5240
2 1/2	33500	3/4	4 1/2	9 3/4	6	3 3/4	6	2 3/4 x 9	5970





Male Ceiling Mount Bolt — Fig. 104 M

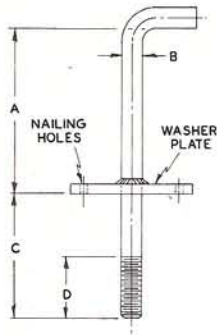


Fig. 104 Male Ceiling Mount Bolts normally furnished black. Galvanized to order. Order Fig. 123 Rod Couplings separately.

Size No.	Max. Rec. Load Lb.	A	B
1	610	3/8	3
2	1130	1/2	3
3	1810	5/8	3 1/2
4	2710	3/4	3 1/2
5	3770	7/8	4
6	4960	1	4
7	6230	1 1/8	4 1/2
8	8000	1 1/4	5
9	11630	1 1/2	6

Female Ceiling Mount Bolt — Fig. 104 F

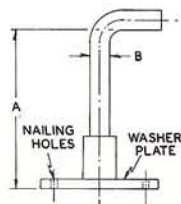


Fig. 104 Female Ceiling Mount Bolts are normally furnished black, galvanized to order.

Size No.	Max. Rec. Load Lb.	A	B
1	610	3	3/8
2	1130	3	1/2
3	1810	3 1/2	5/8
4	2710	3 1/2	3/4
5	3770	4	7/8
6	4960	4	1
7	6230	4 1/2	1 1/8
8	8000	5	1 1/4
9	11630	6	1 1/2

"Q" Deck — Fig. 57

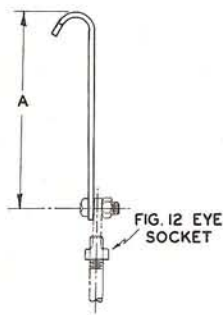


Fig. 57 "Q" Deck Hangers are used to hang light loads on pan type construction. When ordering: specify dimension "A" and eye socket size required.

PIPE STANCHION SOCKET CONCRETE INSERT — Fig. 262 STEEL

Pipe Stanchion Socket Concrete Insert is used in pipe tunnels or connecting corridors. It is placed on the wooden forms, and when concrete is poured, provides a socket of sufficient depth to allow for the added length of upright pipe stanchion.

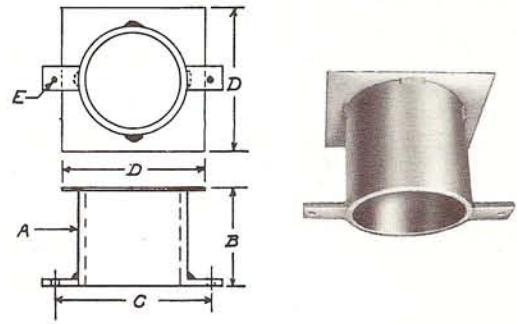
The 4 inch steel pipe sleeve has a 6 inch square plate welded on one end at four points and two lugs with nailing holes welded on other end.

When installing upright pipes, slide to top of socket insert to allow it to drop over the 2 inch pipe cast in tunnel floor.

Order by figure number. Made special to customer order.

DIMENSIONS IN INCHES

A	B	C	D	Weight per 100
4-inch Pipe	4 $\frac{1}{8}$	6 $\frac{1}{2}$	6	517



PIPE STANCHION SADDLE — Fig. 263 MALLEABLE IRON — GALVANIZED

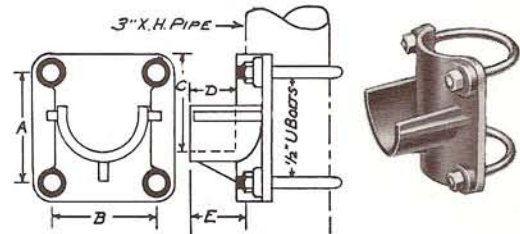
The Pipe Stanchion Saddle casting is furnished with two 1/2 inch cadmium plated U Bolts and hexagon nuts.

Regularly furnished galvanized, black to order.

Order by figure number. Made special to customer order.

DIMENSIONS IN INCHES

A	B	C	D	E	Weight per 100
4 $\frac{3}{4}$	4 $\frac{5}{16}$	4	2	2 $\frac{5}{16}$	910



PIPE STANCHION CHANNEL SADDLE — Fig. 287 MALLEABLE IRON

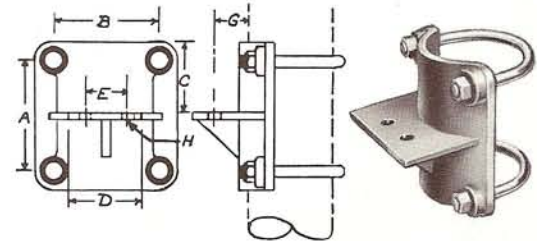
The Channel Saddle casting is furnished with two 1/2 inch U Bolts.

Regularly furnished black, galvanized to order.

Order by figure number. Made special to customer order.

DIMENSIONS IN INCHES

A	B	C	D	E	G	H	Weight per 100
4 $\frac{3}{4}$	4 $\frac{5}{16}$	2 $\frac{1}{4}$	3 $\frac{3}{8}$	1 $\frac{3}{4}$	1 $\frac{5}{8}$	$\frac{9}{16}$	865



PIPE STANCHION BEARING PLATE — Fig. 264 STEEL

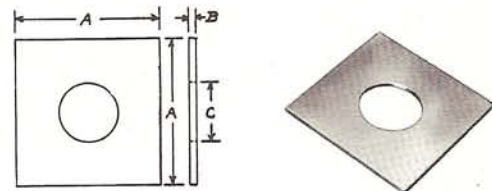
When installing upright pipe stanchion, the Fig. 264 Plate slides over the pipe sleeve to form a bearing for the end of upright pipe and distributes the load on the stanchion over a greater area on the concrete floor.

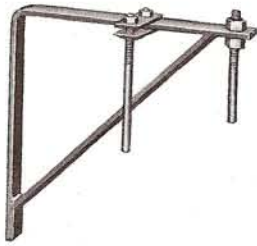
Prices do not include 2 inch pipe sleeve.

Order by figure number. Made special to customer order.

DIMENSIONS IN INCHES

A	B	C	Weight per 100
6	$\frac{1}{4}$	2 $\frac{1}{2}$	220





LIGHT WELDED STEEL BRACKET — Fig. 69 — 78

MAXIMUM LOAD — 750 POUNDS

Light Welded Steel Bracket is used to support piping up to 6 inches in size and can be installed as shown or in a suspended position. The holes for hanger rods up to 3/4 inch in diameter at each end of bracket allows for use in either position.

The Fig. 78 Clip can be used to support piping 3-1/2 inches or smaller from the horizontal member of the bracket. The Clip is composed of two steel plates and one bolt and nut.

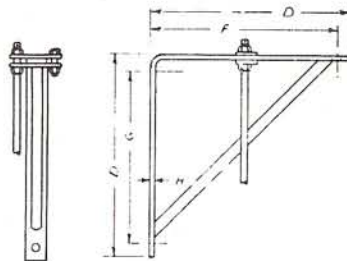
Approvals: Complies with Federal Specification WW-H-171 (Type 32) and Manufacturers Standardization Society SP-69 (Type 31).

Order by size and figure number.

Made special to customer order.

DIMENSIONS IN INCHES

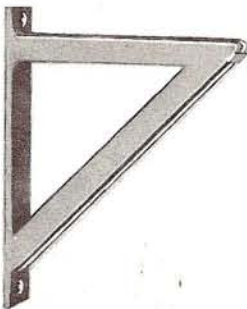
Bracket No.	D	F	G	Holes	Steel H	Weight per 100
1	9	8	6 1/2	13/16	3/8 x 2	699
2	13	12	10 1/2	13/16	3/8 x 2	1014
3	19	18	16 1/2	13/16	3/8 x 2	1045



STEEL BRACKET CLIP — Fig. 78

DIMENSIONS IN INCHES

Clip No.	Pipe Sizes	Steel Size	Rod Size	Weight per 100
1	3/4 to 2	1/4 x 1 1/4	3/8	80
2	2 1/2 to 3 1/2	3/16 x 1 1/2	1/2	124



MEDIUM WELDED STEEL BRACKET — Fig. 84

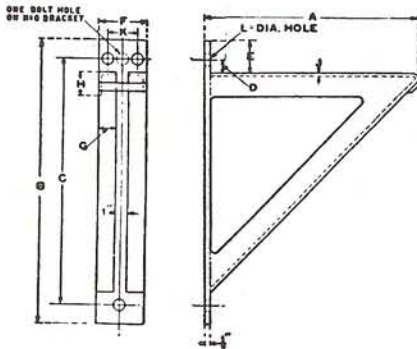
MAXIMUM LOAD — 1500 POUNDS

Medium Welded Steel Bracket is identical in construction to our Fig. 139 Heavy Welded Steel Bracket, except that it is made from lighter steel, also has one hole at the top and bottom of bracket.

Approvals: Complies with Federal Specification WW-H-171 (Type 33) and Manufacturers Standardization Society SP-69 (Type 32)

Order by size and figure number.

Made special to customer order.



DIMENSIONS IN INCHES

No.	A	B	C	D	E	F	G	H	J	L	Weight per 100
0	12	18	15 1/2	1 1/4	2 1/2	4	1 1/2	1 1/2	3/16	13/16	1600
1	18	24	21 1/2	1 1/4	2 1/2	4 1/2	1 3/4	1 3/4	3/16	13/16	2870
2	24	30	27 1/2	1 1/4	2 1/2	5	2	2	1/4	13/16	4630

HEAVY WELDED STEEL BRACKET — Fig. 139

MAXIMUM LOAD — 3000 POUNDS

Heavy Welded Steel Brackets are light in weight as compared with the usual cast iron brackets. The top of bracket and supporting brace is constructed from two angle irons with one inch space between.

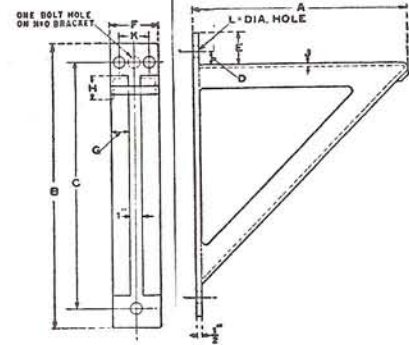
When brackets are to be bolted to walls, Back Plates must be ordered separately of such size and thickness as to properly distribute the load over the wall taking into consideration the nature and condition of the wall.

Approvals: Complies with Federal Specification WW-H-171 (Type 34) and Manufacturers Standardization Society SP-69 (Type 33).

Order by size and figure number. Made special to customer order.

DIMENSIONS IN INCHES

No	A	B	C	D	E	F	G	H	J	K	L	Weight per 100
0	12	18	15 1/4	1 1/4	2 3/4	4	1 1/2	2	1/4		1 3/16	2275
1	18	24	21 3/8	1 3/8	2 3/4	5	2	2	3/8	2 3/4	1 3/16	5015
2	24	30	27 1/2	1 1/2	2 3/4	5	2	2 1/2	5/16	2 1/2	1 1/16	5550
3	30	36	33 1/4	1 1/2	3	5	2	2 1/2	3/16	2 1/2	1 1/16	8450
4	36	42	39	1 1/2	3	6	2 1/2	3 1/2	3/8	3 1/2	1 1/16	13050
5	42	50	46	1 1/2	3 1/2	6	2 1/2	3 1/2	3/8	3 1/2	1 1/16	15720



STEEL BRACKET — Fig. 219

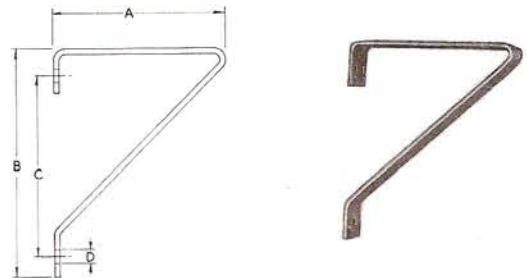
Fig. 219 Bracket can be used as a supporting bracket with our Fig. 17 or 39 Chair and Roll, or be inverted to support piping by means of suspended steel rods with Fig. 142 Two Rod Roll Type Hanger, which allows for adjustment after pipe is in place.

Order by size and figure number. Made special to customer order.

Maximum Recommended Load — 500 pounds

DIMENSIONS IN INCHES

Size No.	A	B	C	D	Steel Size E	Weight per 100
1	12	15	12	5/16	3/8 x 4	1200
2	18	21	18	5/16	3/8 x 4	2040
3	24	27	24	1 1/16	1/2 x 4	3100
4	30	33	30	1 1/16	1/2 x 4	4350
5	36	39	36	1 3/16	5/8 x 4	6440



STEEL BRACKET — Fig. 150

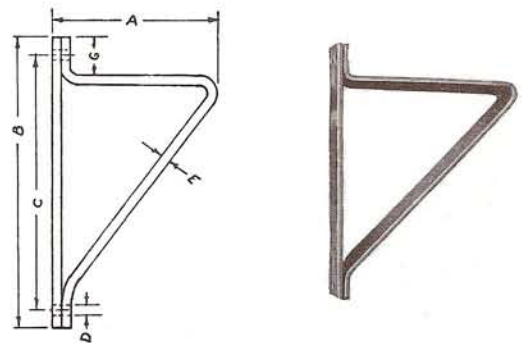
Fig. 150 Bracket is similar to Fig. 219 Bracket with the exception that a back plate is furnished for use on brick walls to distribute the load over a larger area. It can be used as a supporting bracket with our Fig. 183 Adjustable Chair and Roll and the adjustable roll support on Fig. 138 or can be inverted to support piping by means of steel rods with our Fig. 142 Two Rod Roll Hanger, which allows for adjustment after pipe is in place.

Order by size and figure number. Made special to customer order.

Maximum Recommended Load — 500 pounds.

DIMENSIONS IN INCHES

Size No.	A	B	C	D	Steel Size E	G	Weight per 100
1	12	18	12	5/16	3/8 x 4		1830
2	18	24	18	5/16	3/8 x 4		3040
3	24	30	24	1 1/16	1/2 x 4	3	4575
4	30	36	30	1 1/16	1/2 x 4		6360
5	36	42	36	1 3/16	5/8 x 4		9380





STEEL BRACKET — Fig. 159

Our Fig. 159 Bracket is made of two pieces of angle iron bent to 90 degree angle with a gusset plate between them welded, which makes this bracket a complete unit in itself. The design and construction of the bracket is such that it is one of the strongest known. It can be used with a V Block with two U Bolt Straps and guy rods to the wall making a substantial anchor for steam mains.

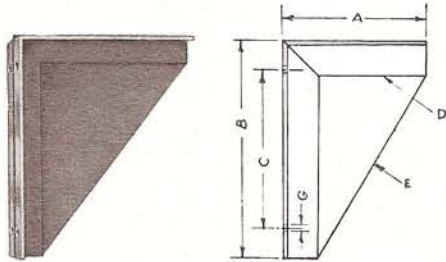
Order by size and figure number. Specify size of pipe to be supported, distance from wall to center of pipe, and whether top supporting or inverted.

Made special to customer order.

DIMENSIONS IN INCHES

Size No.	A	B	C	Angle Irons D	Plate E	G	Weight per 100
1	12	12	9	2 x 2 x 3/16	1/8	3/16	1310
2	18	18	15	2 x 2 x 1/4	3/16	3/16	2950
3	24	24	21	2 x 2 x 3/16	3/16	1 1/16	4910
4	30	30	27	2 1/2 x 2 1/2 x 3/8	1/4	1 1/16	9590
5	36	36	33	3 x 3 x 1/2	5/16	1 3/16	17330

Note—We can furnish brackets in all sizes of steel and will furnish detail drawings to specifications.

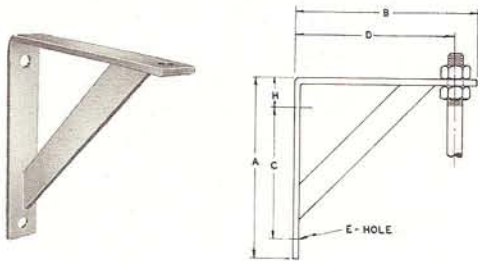


BRACKET — Fig. 49

This bracket is used on light duty applications where no horizontal adjustment is required.

DIMENSIONS IN INCHES

Size	Max. Rec. Load, lb.	A	B	Half Size	Stock Size	Wgt./C Approx.
1	610	9	6 1/2	9/16	1/4 x 1 1/2	288
2	610	13	10 1/2	1 1/16	1/4 x 1 1/2	565
3	610	19	16 1/2	1 3/16	3/8 x 2	1330

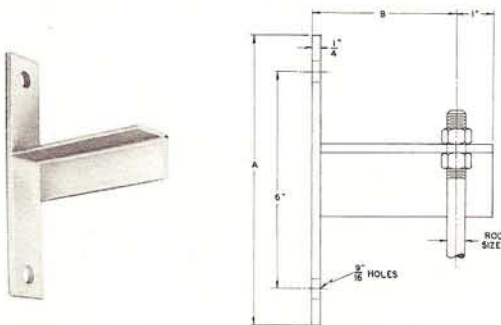


BRACKET — Fig. 83

This bracket is used on light duty applications. Dimension "B" is revised on request.

DIMENSIONS IN INCHES

Size	Max. Rec. Load, lb.	A	B	Max. Rod Size	Angle Size	Wgt./C Approx.
1	610	4	8	1/2	2 x 2 x 1/4	270
2	610	6	8	1/2	2 1/2 x 2 x 1/4	320
3	610	9	8	1/2	3 x 2 x 1/4	440



Top Beam Clamp — Fig. 192

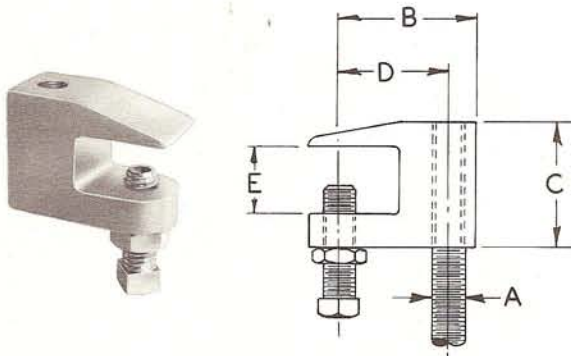
Fig. 192 Top Beam Clamps are to be used on the top sections of beams and bar joists, where the roof rests flat on top of the beam.

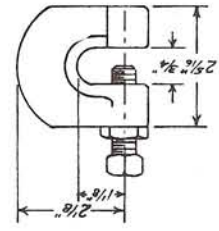
Ordering: Order by figure number and size.

Approvals: Underwriters approved 3/8 rod.

DIMENSIONS IN INCHES

Rod Size	B	C	D	E	Set Screw	Approx. Weight per 100
3/8	1 1/16	1 7/16	1 1/4	3/4	3/8-16	38
1/2	1 1/16	1 7/16	1 1/4	3/4	3/8-16	38
5/8	1 3/4	1 11/16	1 1/4	3/4	1/2-13	75
3/4	1 3/4	1 11/16	1 1/4	3/4	1/2-13	75



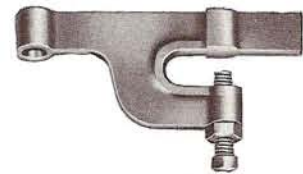
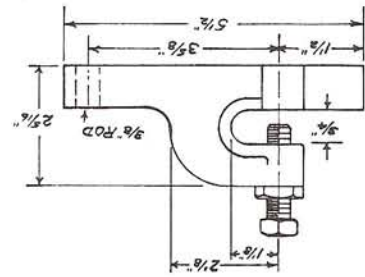


Size	Recommended Maximum Load, Lbs.	Rod Size	Set Screw Size	Approximate Weight per 100
3/4	400	3/8	3/8 x 2	44
1/2	500	1/2	1/2 x 2	52
5/8	550	5/8	5/8 x 2	63
3/4	630	3/4	3/4 x 2	87

DIMENSIONS IN INCHES

This clamp is identical to Fig. 193 I Beam "C" Clamp. The locking nut when tightened prevents loosening of the clamp due to vibration, thus eliminating the necessity of using Retaining Clips.
When installing clamp care should be taken so as not to over-tighten the set screw. Order by size and figure number.

"C" CLAMP WITH LOCKING NUT — Fig. 196 MALLEABLE IRON

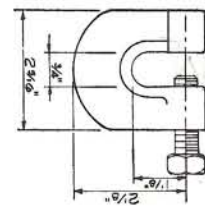


Extension "C" Clamp is used on branch lines of sprinkler systems when the required hanger location comes just beyond the edge of beam flange. The locking-nut when tightened prevents loosening due to vibration, thus eliminating the necessity of the use of retaining clips.
Maximum Recommended Safe Load — 260 pounds.
Approximate Weight per Hundred — 69 pounds.
When installing clamp care should be taken so as not to over-tighten the set screw.

Order by figure number.

EXTENSION "C" CLAMP — Fig. 194

MALLEABLE IRON



Size	Recommended Maximum Load, Lbs.	Rod Size	Set Screw Size	Approximate Weight per 100
3/4	400	3/8	3/8 x 1 1/2	42
1/2	500	1/2	1/2 x 1 1/2	48
5/8	550	5/8	5/8 x 1 1/2	54
3/4	630	3/4	3/4 x 1 1/2	75

DIMENSIONS IN INCHES

Our Fig. 193 I Beam "C" Clamp is made of malleable iron and designed for use on standard or wide flange beams. The hardened cup point set screw secures the clamp to the supporting member. The use of Retaining Clips for safety is recommended which eliminates the possibility of the clamp sliding in the event of vibration.
When installing clamp care should be taken so as not to over-tighten the set screw. Order by size and figure number.

I BEAM "C" CLAMP — Fig. 193 MALLEABLE IRON

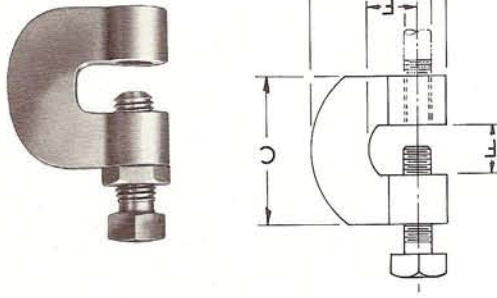


Size	Rec. Max. Load, Lbs.	Steel Size	A	C	D	E	F	Set Screw Size	Approx. Weight Per 100
3/4"	400	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	3/4"	3/8" x 2"	45
1/2"	500	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	3/4"	1/2" x 2"	54
3/8"	600	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	3/4"	3/8" x 2"	73
3/4"	800	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	3/4"	3/4" x 2"	78
1"	1200	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	3/4"	3/4" x 2"	160

DIMENSIONS IN INCHES

Approvals: Underwriters Laboratories listed and Factory Mutual approved. This clamp is identical to Fig. 238 I Beam "C" Clamp. The locking nut when tightening prevents loosening due to vibration, thus eliminating the necessity of using Retaining Clips. Order by size and figure number.

"C" CLAMP WITH LOCKING NUT — Fig. 47



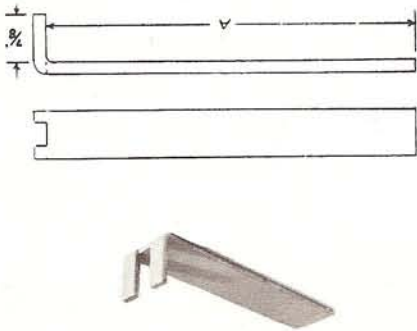
Type No.	Rod Size	A	Steel Size — B	Weight per 100
C-G	3/4 and 1/2"	4 1/2"	1/2" x 1"	16
D-H	3/4 and 1/2"	8"	1/2" x 1"	25
E-J	3/4 and 1/2"	10"	1/2" x 1"	36
F-K	3/4 and 1/2"	14"	1/2" x 1"	45
L-R	3/4 and 3/8"	4 1/2"	1/2" x 1 1/4"	20
M-S	3/4 and 3/8"	8"	1/2" x 1 1/4"	37
O-T	3/4 and 3/8"	10"	1/2" x 1 1/4"	42
P-U	3/4 and 3/8"	14"	1/2" x 1 1/4"	61
W	3/4"	4 1/2"	1/2" x 2"	31
X	3/4"	8"	1/2" x 2"	60
Y	3/4"	10"	1/2" x 2"	74
Z	3/4"	14"	1/2" x 2"	100

DIMENSIONS IN INCHES

Approvals: Underwriters Laboratories listed and Factory Mutual approved under Fig. 238A. Order by size and figure number.

The Retaining Clip is used with C Clamps and fits flush with the bottom of beam flange and the formed section with notched hole slips over the C Clamp body. The other end is bent over beam flange. To obtain the correct size Retaining Clip required, add 1/2 inch to the flange width which equals "A". If length required is not standard, order next longest standard length.

"C" CLAMP RETAINING CLIP — Fig. 22 STEEL

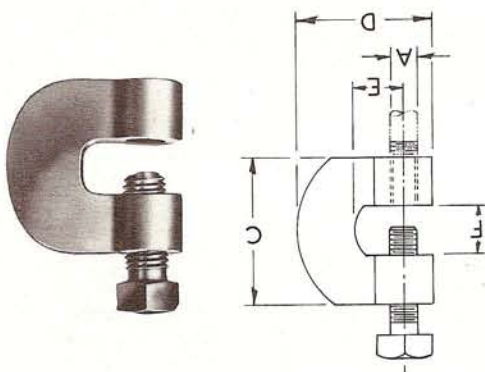


Size	Rec. Max. Load, Lbs.	Steel Size	C	D	E	F	Set Screw Size	Approx. Weight Per 100
3/4"	400	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	3/8" x 1 1/2"	42
1/2"	500	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	3/8" x 1 1/2"	49
3/8"	600	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	5/8" x 1 1/2"	65
3/4"	800	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	3/4" x 1 1/2"	68
1"	1200	3/4"	2 1/4"	2 3/8"	2 3/8"	1"	3/4" x 1 1/2"	148

DIMENSIONS IN INCHES

Fig. 238 C-Clamps are of steel, and hardened steel cup point set screws. Maximum flange thickness is 3/4", when used with a Fig. 22 Retaining Clip, the maximum flange thickness is reduced to 5/8" thick. Approvals: Underwriters Laboratories listed, and Factory Mutual approved. Complies with Federal Specification WW-H-171 (Type 23) and Manufacturers Standardization Society SP-69 (Type 23). Order by size and figure number.

I BEAM "C" CLAMP — Fig. 238



MALLEABLE ADJUSTABLE BEAM CLAMP — Fig. 148

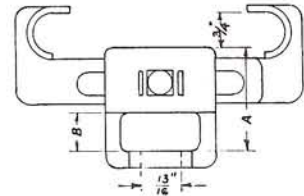
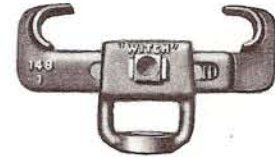
MALLEABLE IRON

The hook parts slide through the center support to desired position. The bolt is then tightened, which engages the teeth on the inside of slide bars, thus eliminating the possibility of slipping. The lock washer prevents the nut from loosening.

Underwriters' Laboratories listed and Factory Mutual approved.
Order by size and figure number.

DIMENSIONS IN INCHES

No.	Max. Recom. Load, lb.	A	B	Adjustment		Weight per 100
				Min.	Max.	
1				3	7	163
2	300	2 ³ / ₁₆	1 ³ / ₁₆	8	12	214



ADJUSTABLE BEAM CLAMP — Fig. 14 STEEL

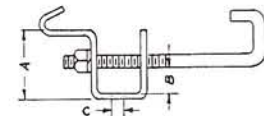
The "Witch" Adjustable Beam Clamp is made of steel with threaded rod for adjustment and locked into position with a hexagon nut and lock washer.

Approvals: Complies with Federal Specification W-H-171 (Type 54) and Manufacturers Standardization Society SP-69 (Type 27)

Adjustable from 8 inch to 12 inch flange of beam on special order.
Order by size and figure number.

DIMENSIONS IN INCHES

Size	Max. Recom. Load, lb.	Pipe Size	A	B	C	Steel Size	Adjustment		Weight per 100
							Min.	Max.	
3/8	300	3/4-2		1 ¹ / ₁₆	7/16	1/4 x 1 1/4			119
1/2	700	2 1/2-4	2 3/4	1	9/16	1/4 x 1 1/2	3 1/2	8	167
5/8	1000	5-8		1 5/16	1 3/16	1/4 x 1 3/4			223



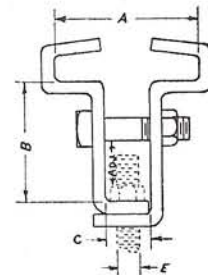
BEAM CLAMP — Fig. 268 STEEL

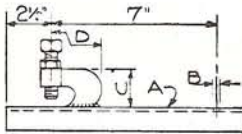
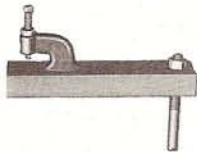
Beam Clamp Fig. 268 can be used on beams regardless of which direction the pipe line is running and has holes in the bottom of clamp for a machine thread rod and nut which affords approximately 1-1/2 inches of vertical adjustment. This clamp cannot be furnished for flange widths of less than 3 inches.

When ordering, specify figure number, width of beam flange A, thickness of flange, and type number of clamp.

DIMENSIONS IN INCHES

Size	Max. Rec. Load, lbs.	B	C	Adj. D	E	Steel Size	Bolt Size
1	700	4	2	2 13/16	1/2	1/4 x 1 1/4	3/8
2	1500	4	2	2 3/4	3/4	3/8 x 2	1/2
3	2600	4	2	2 3/4	7/8	1/2 x 2	1/2
4	4300	5	2	3 1/4	1	1/2 x 2 1/2	5/8
5	6100	5 1/2	2 1/2	3 1/4	1 1/8	5/8 x 3	5/8
6	8000	1 1/4	2 1/2	3 1/4	1 1/4	5/8 x 4	5/8





"C" CLAMP WITH EXTENSION — Fig. 64 STEEL

"C" Clamp with Extension is used on branch pipe lines of sprinkler systems when the required hanger location comes just beyond the edge of the beam flange.

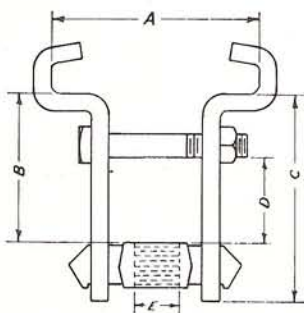
It is furnished with two holes in the channel bar. Dimensions of 3-5/8 inches and 7 inches from center of drop rod to center line of set screw in "C" clamp.

Approvals: Underwriters' Laboratories listed and Factory Mutual approved.

Order by figure number.

DIMENSIONS IN INCHES

Type No.	Channel A	Recom. Safe Load, lb.	B	C	D	Set Screw Size	Weight per 100
1	2	260	7/16	1 1/2	2	3/8	250



BEAM CLAMP — Fig. 2 STEEL AND MALLEABLE IRON

Our Fig. 2 Beam Clamp can be used on beams regardless of which direction the pipe line is running. It has a malleable iron swing nut tapped for rod size and allows for vertical adjustment by turning the rod through the nut.

Where beams are installed at an angle or in an upright position such as columns, by turning the swing nut to the proper position will allow the supporting rod to be vertical at all times.

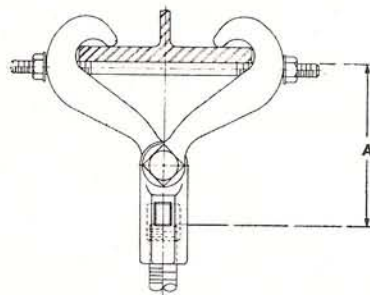
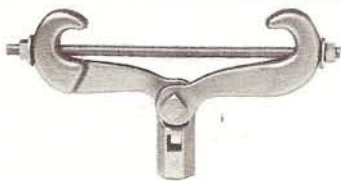
When ordering specify width of beam flange - A, thickness of beam flange, Type No. and Figure number. Made special to customer order.

DIMENSIONS IN INCHES

Type No.	Rec. Max. Load Pounds	B	C	Adj. D	Rod Size	Steel Size	Bolt Size
1	500	2 3/4	3 11/16	1 11/16	3/8	3/16 x 1 1/4	3/8
2	700	2 13/16	3 3/4	1 11/16	1/2	1/4 x 1 1/4	3/8
3	900	3	4 1/16	1 3/4	5/8	3/8 x 1 1/2	1/2
4	1000	3	4 1/2	1 3/4	3/4	3/8 x 2	1/2
5	1500	3 1/8	4 5/8	1 3/4	7/8	1/2 x 2	1/2

APPROX. WEIGHT PER 100

No.	Beam Width Dimension — A					
	3	4	5	6	7	8
1	115	119	132	145	158	172
2	125	142	160	177	195	212
3	208	240	272	304	336	368
4	335	377	420	462	505	547
5	438	495	552	609	666	723



ADJUSTABLE BEAM CLAMP — Fig. 82

Fig. 82 Beam Clamps are made of malleable iron, and will fit beams from 2-3/8" to 7" in all flange thicknesses not to exceed .60" thick. Clamping effect is by "ice tong" action of arms with locking provided by thru bolt located directly below the flange.

Approvals: Complies with Federal Specification WW-H-171 (Type 30) and Manufacturers Standardization Society (Type 30) Order by rod diameter.

DIMENSIONS IN INCHES

Rod Size	Max. Load/Lbs.	For Width of Flange "A"						Bolt Diameter	Weight per 100
		2 3/8	3	4	5	6	7		
3/8	610	4 3/4	4 11/16	4 3/8	4 3/16	3 13/16	3 1/8	7/16	243
1/2	1130	4 7/8	4 13/16	4 11/16	4 5/8	3 15/16	3 1/4	7/16	265
5/8	1365	4 15/16	4 7/8	4 3/4	4 3/8	4	3 5/8	7/16	267
3/4	1365	4 3/8	5 1/8	5	4 5/8	4 1/4	3 3/8	7/16	289
7/8	1365	5 1/4	5 3/8	5 1/8	4 11/16	4 5/8	3 5/8	7/16	302

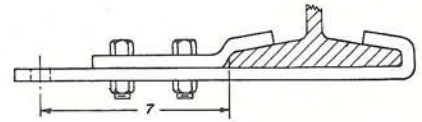
EXTENSION SIDE BEAM CLAMP — Fig. 92 STEEL

It is used on branch lines of sprinkler systems where the hanger location comes just beyond the edge of the beam flange. This clamp is made only for piping 3/4 inch to 2 inch diameter.

When ordering specify width of flange, thickness of flange.
Made special to customer order.

DIMENSIONS IN INCHES

Width of I Beam Flange	Steel Size	Bolt Size	Weight per 100
2 to 4	3/8 x 1 3/4	3/8 x 1 1/4	360
4 1/2 to 6			400
6 1/2 to 8			435
8 1/2 to 12			503



TOP BEAM CLIP — Fig. 6 STEEL

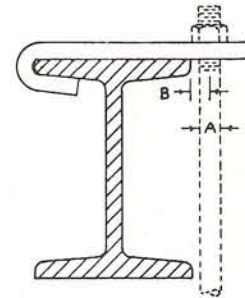
The Top Beam Clip is designed to support piping from top members of Angle Iron Trusses or from the top flange of I Beams.

When installed on beam flange and the supporting rod installed, it will be impossible to dislodge the clip from its position.

When ordering, furnish the following dimensions to obtain correct clip: Width of I Beam flange, Thickness of I Beam flange, also specify figure and clamp number. Made special to customer order.

DIMENSIONS IN INCHES

Clip No.	Max. Recom. Load lb.	For Pipe Sizes	A	B	Steel Size	Weight per Hundred			
						Width of I Beam Flange			
						4	6	8	12
1	300	3/4 to 2	3/8	5/16	3/16 x 1 1/4	46	59	73	99
2	500	2 1/2 to 3 1/2	1/2	3/8	1/4 x 1 1/4	62	80	97	133
3	700	4 to 5	5/8	7/16	3/8 x 1 1/2	105	134	162	221
4	1000	6	3/4	1/2	3/8 x 2	159	201	242	329
5	2000	8 to 12	7/8	5/8	1/2 x 2 1/2	277	351	422	564



SIDE OR TOP BEAM CLAMP — Fig. 18 STEEL

This clamp is made in two parts, the clamp and the clip, and, when bolted together, prevents the movement of clamp from its position. The supporting rod is installed close to the flange of beam.

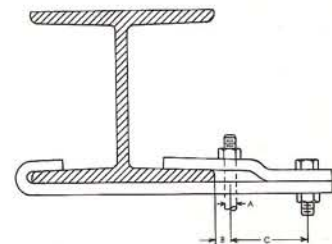
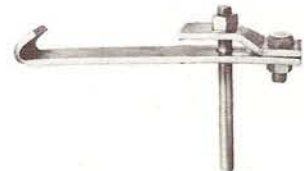
Approvals: Complies with Federal Specification WW-H-171 (Type 53) and Manufacturers Standardization Society SP-69 (Type 25).

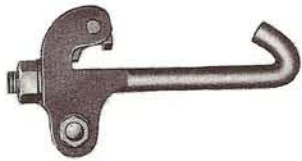
When ordering, specify clamp number, width of flange, thickness of flange and figure number. Made special to customer order.

DIMENSIONS IN INCHES

Clamp No.	Max. Recom. Load, lb.	For Pipe Sizes	Steel Size	A	B	C
1	300	3/4-2	1 1/4 x 3/16	3/8	3/16	1 3/4
2	500	2 1/2-3 1/2	1 1/4 x 1/4	1/2	3/8	2 1/4
3	700	4 -5	1 1/2 x 3/8	5/8	7/16	2 1/2
4	1000	6	2 x 3/8	3/4	1/2	2 3/4
5	2000	8 -12	2 1/2 x 1/2	7/8	5/16	3 1/2

Clamp No.	Weight per hundred			
	Width of I Beam Flange			
	4	6	8	12
1	92	104	112	145
2	139	156	166	211
3	253	281	298	372
4	390	432	457	562
5	735	808	848	1013





SIDE I BEAM CLAMP — Fig. 45 MALLEABLE IRON

To obtain correct clamp size refer to dimension "B" shown in Structural Channel and Beam Shapes Table and pipe size. The hook rod length is obtained by adding "P" to width of beam flange.

Recommended for beam flange thicknesses of 13/16 inch or less.

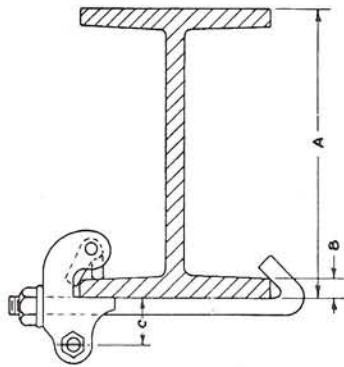
Approvals: Complies with Federal Specification WW-H-171 (Type 20) and Manufacturers Standardization Society SP-69 (Type 20)

Order by figure number, clamp letter and length of hook rod.

Our Fig. 157 Extension Piece should be used with this clamp.

DIMENSIONS IN INCHES

Clamp Number	Max. Recom. Load, lbs.	C	Dia. of Hook Rod	Approx. Weight per 100
A B C	390	1 1/8	3/8	110 120 125
D E F	770	1 5/8	1/2	220 250 280
G H J	1140	1 3/4	1/2	310 330 360



Pipe Size	Recommended Clamp Size			Dim. P
	B = Thickness of Flange			
	B-Less than 1 1/32	B-Greater than 1 1/32 B-Less than 5/8	B-Greater than 5/8 B-Less than 1 1/16	
3/4 to 2	A	B	C	2
2 1/2 to 6	D	E	F	2 1/2
8 to 12	G	H	J	2 3/4



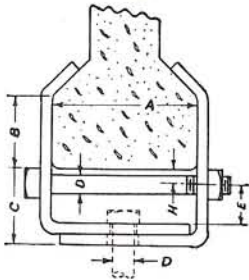
CONCRETE JOIST BEAM CLAMP — Fig. 305 STEEL

Fig 305 Beam Clamp is used on the new style Precast Concrete Joist. It is made in two pieces and formed to fit the contour of the concrete joist. The supporting hanger rod, when locked into position by means of two hexagon nuts, provides a rigid connection.

When ordering, specify clamp number, dimension A — width of joist, dimension B — height of flange and figure number.

Made special to customer order.

DIMENSIONS IN INCHES



No.	Pipe Size	A-B	Steel Size	C	D	E	H	Weight per 100
1	3/4-2		1 1/4 x 3/16	1 3/16	3/8	5/8	5/16	100
2	2 1/2-3 1/2	Field	1 1/4 x 1/4	1 5/8	1/2	3/4	3/8	142
3	4-5	Dim.	2 x 3/8	2 1/16	5/8	7/8	7/16	325
4	6		2 x 1/2	2 1/2	3/4	1	1/2	435

ANGLE AND CHANNEL IRON CLAMPS — Fig. 235 STEEL

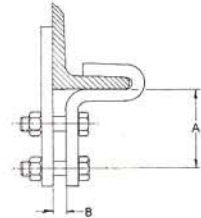
Fig. 235 Angle and Channel Clamps are designed to support pipe lines from roof trusses and supplementary steel sections.

When ordering specify figure number, width of flange, thickness of flange, and type number of clamp.



DIMENSIONS IN INCHES

Type No.	A	B	Bolt Size	Steel Size	Weight per 100
1	3¾	7/16	¾ x 1¾	¼ x 1¼	400
2	4	9/16	½ x 2¼	¾ x 1½	600
3	4½	1½	¾ x 2½	½ x 2	800



**BEAM CLAMP — Fig. 15
UNDERWRITER'S LABORATORIES LISTED**

Fig. 15 Beam Clamp is used with our Fig. 12 Eye Socket or Fig. 33 Eye Rod.

Approvals: Complies with Federal Specification WW-H-171 (Type 21) and Manufacturers Standardization Society SP-69 (Type 21)

When ordering, specify figure number, width of beam flange, thickness of flange, and type number of clamp.

Made special to customer order.

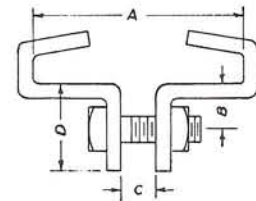
DIMENSIONS IN INCHES

Type No.	Rec. Maximum Load Pounds	B	C	D	Steel Size	Bolt Size
1	500	7/8	½	1½	¾ x 1¼	¾
2	700	1½	¾	1¾	¼ x 1¼	½
3	900	1¼	¾	2	¾ x 1½	½
4	1000	1¾	¾	2¾	¾ x 2	¾
5	1500	1¾	7/8	2¾	½ x 2	¾
6	2000	1¾	1	3¼	½ x 3	7/8
7	2500	2½	1½	4½	¾ x 4	1



APPROX. WEIGHT PER 100

No.	Beam Width Dimension — A							
	2	3	4	5	6	7	8	10
1	52	62	78	88	95			
2	74	82	109	121	131	139		
3	126	149	189	212	229	245	269	
4		232	285	318	339	360	392	
5		340	408	452	480	510	551	623
6			600	645	700	740	790	880
7				1195	1275	1355	1435	1595





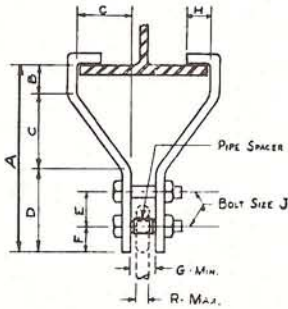
EXTENDED BEAM CLAMPS — Fig. 314 — 316 STEEL

Extended Beam Clamps are used where I Beam is to be covered with fire-proofing material. The bottom bolt has a spacer to allow free movement of Eye Rod or Weldless Eye Nut and supporting rod can be removed without disturbing the clamp from beam. **Fig. 316 Clamp is furnished with a Weldless Eye Nut.**

When ordering specify Clamp and Figure Number.
Made special to customer order.

DIMENSIONS IN INCHES

No.	Flange Width	Steel Size	J	A	B	C	D	E	F	Min. G	H	Max. R	Approx. Safe Load, Lb.
1	4			6 ⁵ / ₈		1 ¹³ / ₁₆							1500
2	5-6			7 ¹ / ₈		2 ³ / ₁₆							
3	6 ¹ / ₂ -7 ¹ / ₂	3/8 x 3	5/8	7 ⁷ / ₈	1 ¹ / ₄	3 ¹ / ₁₆	3 ³ / ₁₆	1 ³ / ₄	1 ³ / ₁₆	5/8	1 ¹ / ₂	1/2	
4	8-9			8 ⁵ / ₈		3 ¹³ / ₁₆							
5	10-10 ¹ / ₂			9 ⁵ / ₈		4 ¹³ / ₁₆							
6	4			7 ¹ / ₁₆		1 ⁷ / ₈							3000
7	5-6			7 ⁷ / ₁₆		2 ³ / ₈							
8	6 ¹ / ₂ -7 ¹ / ₂	1/2 x 3	3/4	8 ³ / ₁₆	1 ¹ / ₄	3 ³ / ₈	3 ¹⁵ / ₁₆	1 ⁷ / ₈	1 ⁵ / ₁₆	3/4	2	5/8	
9	8-9			9 ¹ / ₁₆		3 ⁷ / ₈							
10	10-10 ¹ / ₂			9 ¹³ / ₁₆		4 ³ / ₈							
11	4			9 ³ / ₈		1 ⁷ / ₈							6000
12	5-6			9 ⁷ / ₈		2 ³ / ₈							
13	6 ¹ / ₂ -7 ¹ / ₂	5/8 x 4	1 ¹ / ₈	10 ⁵ / ₈	1 ¹ / ₄	3 ³ / ₈	6 ¹ / ₄	2 ³ / ₁₆	1 ¹ / ₄	1	2	7/8	
14	8-9			11 ³ / ₈		3 ⁷ / ₈							
15	10-10 ¹ / ₂			12 ¹ / ₈		4 ³ / ₈							



BEAM CLAMP WITH SWING NUT — Fig. 702 STEEL

Fig. 702 Beam Clamps are the same as the Fig. 15 Beam Clamps, except for the Swing Nut which comes with the Fig. 702.

Approvals: Complies with Federal Specification WW-H-171 (Type 21) and Manufacturers Standardization Society SP-69 (Type 21)

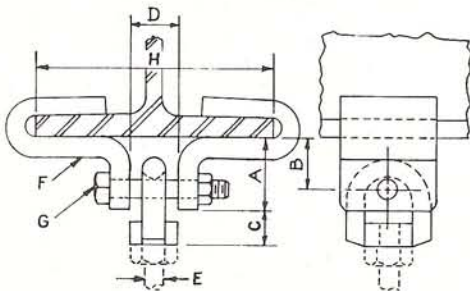
When ordering, specify figure number, width of beam flange, thickness of flange, and type number of clamp. Made special to customer order.

DIMENSIONS IN INCHES

Type No.	Rec. Load Pounds	A	B	C	D	E	Steel Size F	Bolt G
1	500	1 ⁵ / ₈	1	3/4	5/8	3/8	3/16 x 1 ¹ / ₄	3/8
2	700	1 ³ / ₄	1 ¹ / ₈	1	3/4	1/2	1/4 x 1 ¹ / ₄	1/2
3	900	2	1 ¹ / ₄	1 ¹ / ₄	7/8	5/8	3/8 x 1 ¹ / ₂	5/8
4	1000	2 ³ / ₈	1 ³ / ₈	1 ¹ / ₂	1	3/4	3/8 x 2	3/4
5	1500	2 ⁷ / ₈	1 ⁵ / ₈	1 ³ / ₄	1 ¹ / ₄	7/8	1/2 x 2	7/8
6	2500	3 ¹ / ₄	1 ³ / ₄	2	1 ¹ / ₄	1	1/2 x 3	1
7	5000	4 ¹ / ₈	2 ¹ / ₈	2 ¹ / ₄	1 ³ / ₈	1 ¹ / ₈	5/8 x 4	1 ¹ / ₈

WEIGHT PER HUNDRED

No. 1 for 3/4- to 2-inch pipe								
Dimension — H	3	4	5	6	7	8	10	
Pounds	69	79	90	95	108	115	130	
No. 2 for 2 ¹ / ₂ - to 3 ¹ / ₂ -inch pipe								
Dimension — H	3	4	5	6	7	8	10	
Pounds	113	125	141	150	164	173	193	
No. 3 for 4- to 5-inch pipe								
Dimension — H	4	5	6	7	8	9	10	
Pounds	244	267	284	306	328	348	358	
No. 4 for 6-inch pipe								
Dimension — H	4	5	6	7	8	9	10	
Pounds	367	400	421	458	480	507	527	
No. 5 for 8- to 12-inch pipe								
Dimension — H	5	6	7	8	9	10	12	
Pounds	583	611	643	681	717	746	823	
No. 6 for 14- to 16-inch pipe								
Dimension — H	5	6	7	8	9	10	12	
Pounds	955	997	1061	1104	1157	1200	1319	
No. 7 for 20- to 24-inch pipe								
Dimension — H	6	7	8	9	10	11	12	
Pounds	1686	1756	1827	1899	1971	2096	2164	



STEEL BEAM CLAMP WITH WELDLESS EYE NUT — Fig. 297

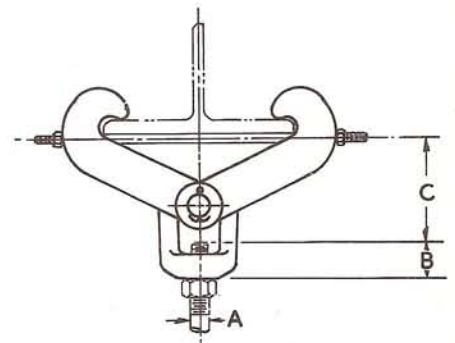
Fig. 297 Beam Clamps are made of Steel, Weldless Eye Nuts of Forged Steel to ASTM-A-235 Class C. Clamping effect is by "ice tong" action of arms with locking provided by the thru bolt located directly below the flange.

Approvals: Complies with Federal Specifications WW-H-171 (Type 28) and Manufacturers Standardization Society SP-69 (Type 28)

Ordering: Specify figure number, clamp number and rod size tapping (right hand or left hand)

Fig. 297 APPROX. DIM. C INCHES

Clamp No.	Beam Flange Width									
	3	4	5	6	7	8	9	10	11	12
1	4 7/8	4 3/4	4 1/2	4 1/8	3 5/8	3 1/4				
2				6 1/8	5 7/8	5 5/8	5 1/8	4 5/8	4 3/8	
3	5 1/4	5 1/8	4 7/8	4 1/2	4	3 5/8				
4				6 1/2	6 1/4	6	5 1/2	5	4 3/4	
5				8 1/4	7 7/8	7 3/4	7 1/4	7	6 3/4	6



DIMENSIONS IN INCHES for Figures 293 & 297

Clamp No.	Max. Rec. Load/Lb.	Max. Rod Size A	Fig. 297 B	Fig. 293 D	Flange Size		Fig. 297 Weight per 100	Fig. 293 Weight per 100
					Width	Max. Tkns.		
1	1810	5/8	1 1/2	1 1/2	3 - 8	5/8	390	360
2*	1810	5/8	1 1/2	1 1/2	6 - 11	5/8	615	585
3	3750	7/8	2	2 1/2	3 - 8	5/8	650	550
4*	3750	7/8	2	2 1/2	6 - 11	5/8	1100	1000
5	11500	1 1/2	2 3/4	4	6 - 12	1	2390	1930

*Supplied with links

STEEL BEAM CLAMP WITH SWIVEL NUT — Fig. 293

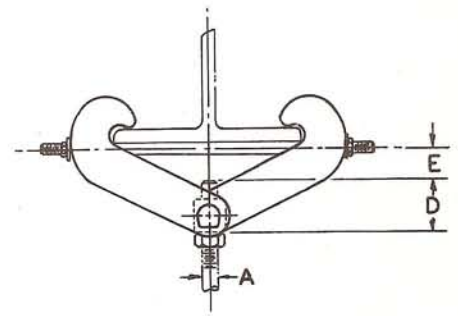
Fig. 293 Beam Clamps are made of Steel, Swivel Nuts of Malleable Iron. Furnished is the same five body sizes as Fig. 297, clamping action as described above.

Approvals: Complies with Federal Specification WW-H-171 (Type 30) and Manufacturers Standardization Society SP-69 (Type 28).

Ordering: Specify figure number, clamp number and rod size tapping. (right hand or left hand)

Fig. 293 APPROX. DIM. E INCHES

Clamp No.	Beam Flange Width									
	3	4	5	6	7	8	9	10	11	12
1	2 7/8	2 3/4	2 1/2	2 1/8	1 5/8	1 1/4				
2				4 1/8	3 7/8	3 5/8	3 1/8	2 5/8	2 3/8	
3	2 1/4	2 1/8	1 7/8	1 1/2	1	5/8				
4				3 1/2	3 1/4	3	2 1/2	2	1 3/4	
5				4 1/8	3 3/4	3 5/8	3 1/8	2 7/8	2 5/8	1 7/8





MALLEABLE CONCRETE INSERT — Fig. 108 MALLEABLE IRON

The Malleable Concrete Insert is used for supporting pipe lines up to 12 inch diameter and where it is desired to install the supporting rods after the insert has been set.

Nuts can be furnished tapped for 3/8, 1/2, 5/8, 3/4 or 7/8 inch rod diameter.

Lateral adjustment of 1-11/16 inches on rod sizes 3/8 inch to 3/4 inches and 1-1/8 inches on 7/8 inch rod sizes.

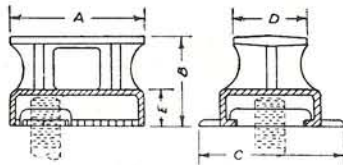
Approvals: Complies with Federal Specification WW-H-171 (Type 18) and Manufacturers Standardization Society SP-69 (Type 18).

Maximum recommended loads. Rod sizes 3/8 inch — 610 pounds, 1/2 inch — 1130 pounds, 5/8 inch to 7/8 inch — 1430 pounds.

Furnished in black; Galvanized only on order.

Specify rod size tapping in nut.

Order by figure number.



DIMENSIONS IN INCHES

A	B	C	D	E	Weight per 100
3 3/8	2 3/8	3 3/8	1 7/8	1 1/8	154



CONTINUOUS CONCRETE INSERT — Fig. 1480 STEEL

Our Continuous Concrete Insert is made from heavy gauge steel and can be furnished in lengths of one foot to twenty feet.

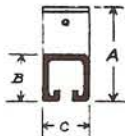
Fig. 650 Concrete Insert Nut is used when insert is in a horizontal position and a special insert nut is furnished when insert is used in tunnel walls or vertical position to prevent slippage of the supporting member.

This insert is manufactured in 20 foot lengths and be cut to specific lengths to job conditions with closure caps installed on each end.

Nuts can be furnished tapped for 1/4 inch thru 3/4 inch diameter.

Standard finish plain; furnished green or galvanized to order.

Order by length and figure number.



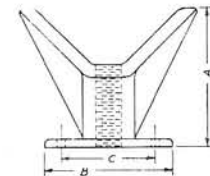
DIMENSIONS IN INCHES

Type	A	B	C
1	2 3/8	7/8	1 3/8
2	2 3/8	1 3/8	1 3/8

"Y" TYPE INSERT — Fig. 20 CAST IRON

The "Y" Type Concrete Insert is made of cast iron. It is used where lateral adjustment is not necessary.

It has four holes in the base for nailing to forms and is not easily dislodged. The concrete in pouring, completely surrounds the insert, thus anchoring it firmly in the finished ceiling. **Order by size and figure number.**



DIMENSIONS IN INCHES

Rod Size	A	B	C	Weight per 100
3/8	2 1/8	1 7/8 x 2 1/16	1 3/8 x 1 1/16	49
1/2				47
5/8	2 1/2	1 7/8 x 2 1/16	1 3/8 x 1 1/16	75
3/4				71

STEEL CONCRETE INSERT — Fig. 650

The Fig. 650 Insert is made of heavy steel to accommodate rod diameters from 1/4 inch to 3/4 inch.

The mechanic can set the insert without regard to size of drop rod to be used as all nuts fit the insert. It is held in place by four nails to the forms when building is under construction and is not easily dislodged.

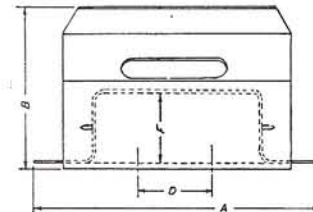
Approvals: Underwriters Laboratories listed. Complies with Federal Specification WW-H-171 (Type 19) and Manufacturers Standardization Society SP-69 (Type 19)

Specify black or galvanized. Order by figure number.

Recom. Max. Load, Pounds, 3/8" - 610, 1/2" - 1130, 5/8", 3/4" - 1200.

DIMENSIONS IN INCHES

No.	A	B	Adjustment D	F	Insert Width	Steel Size	Approx. Weight per 100
1	3 7/8	2 5/16	1 1/2	1 1/16	3 3/8	12 Gauge	82



STEEL CONCRETE INSERT — Fig. 266

This insert is made of heavy gauge steel to accommodate rod diameters 3/4-inch to 1-inch.

The mechanic can set the insert without regard to size of drop rod to be used as all nuts fit the insert. It is held in place by four, nails to the forms when building is under construction and is not easily dislodged.

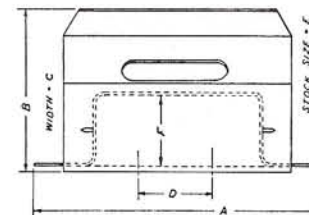
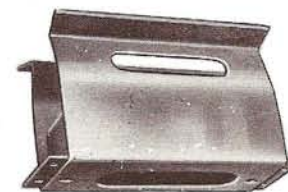
Approvals: Complies with Federal Specification WW-H-171 (Type 19) and Manufacturers Standardization Society SP-69 (Type 19)

Specify black or galvanized. Order by size and figure number.

Maximum Recommended Load = 1200 pounds.

DIMENSIONS IN INCHES

No.	A	B	C	D	E	F	Weight per 100
2	5	2 13/16	2 1/16	1 1/2	12 Gauge	1 7/16	100





STEEL CONCRETE INSERT — Fig. 75

Fig. 75 Inserts have an overall height of 1-5/8" to permit its use in 2" thick concrete. It should be noted that this insert has a maximum rod take out of 5/8" diameter.

Approvals: Underwriters Laboratories listed. Complies with Federal Specification WW-H-171 (Type 19) and Manufacturers Standardization Society SP-69 (Type 19).

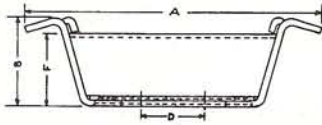
Regularly furnished black. Galvanized to order.

Order by figure number.

Recom. Max. Load Pounds 3/8" — 610, 1/2" and 5/8" — 1130

DIMENSIONS IN INCHES

No.	A	B	Insert Width	Adjustment D	Steel Size	F	Approx. Weight per 100
1	4 13/16	1 5/8	2 5/16	1 1/16	12 Gauge	1 3/8	48

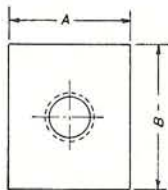


CONCRETE INSERT NUTS — Fig. 650 — 266 — 75 STEEL

Order by size and figure number.

DIMENSIONS IN INCHES

Rod Size	Fig. 650		Weight per 100	Fig. 266		Weight per 100	Fig. 75		Weight per 100
	A	B		A	B		A	B	
1/4			9						
3/8			13						8
1/2			15						10
5/8	1 1/4	1 1/2	19	1 7/16	1 7/16		1 1/8	1 1/8	11
3/4			22						14
7/8						20			
1						18			

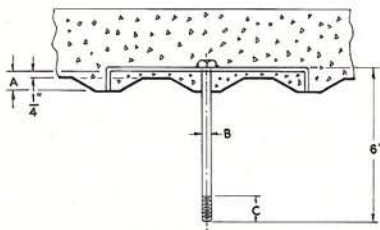


Metal Deck Ceiling Bolt — Fig. 143

Fig. 143 Metal Deck Ceiling Bolts are used with our Fig. 123 Rod Couplings ordered separately.

Ordering: Specify Size and dimension "A"

Size No.	B	Stock	C	A	Max. Rec. Load Lbs.
1	3/8	1 1/4 x 1/8	1	SPECIFY	610
2	1/2	1 1/2 x 1/8	1 1/4		1130
3	5/8	1 1/2 x 3/16	1 1/2		1810
4	3/4	1 1/2 x 1/4	1 3/4		2710
5	7/8	2 x 1/4	2		3770
6	1	2 x 1/4	2 1/4		4960



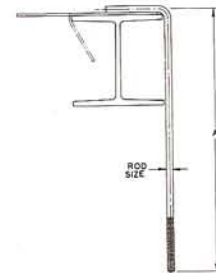
Anchor Rod — Fig. 141

Fig. 141 Anchor Rods are designed for heavy piping which must be anchored securely to the building steel, before being covered with fireproofing cement. Anchor straps furnished flat, to be formed to fit over the beam in the field. Threads have a protective coating of plastic.

Ordering: Specify body size, rod size, figure number and finish.

Body Size	Beam Range
1	36" and 33" WF beam, all weights
2	30" and 27" WF beam, all weights
3	24" and 21" WF beam, all weights
4	18" and 16" WF beam, all weights
5	14" WF 87 through 14" WF 426 inclusive
6	14" WF 30 through 14" WF 84 inclusive and 12" WF, all weights
7	10" and 8" WF beams, all weights
8	6" and 5" WF beams, all weights

Rod Size	Max. Rec. Load Lb.
3/8	450
1/2	850
5/8	1360
3/4	2050
7/8	2850
1	3750
1 1/8	4680
1 1/4	6000
1 1/2	8720



ACCESSORIES



ACCESSORIES



ROUND HANGER ROD — Fig. 224 STEEL

Our Round Hanger Rod is made of mild low carbon steel and rolled special to our specifications. It is .007 undersize to permit easy threading; thus eliminating unnecessary wear on die equipment. **Order by size and figure number.**



Dia. Rod	Maximum Safe Load, lbs. Rod Temperature °F		Weight per 100 feet
	650°F	750°F	
1/4	240	215	17
3/8	610	510	38
1/2	1130	940	67
5/8	1810	1510	104
3/4	2710	2260	150
7/8	3770	3150	204
1	4960	4150	267
1 1/4	8000	6660	417
1 1/2	11630	9700	601

ALL-THREAD HANGER ROD — Fig. 94 STEEL

All Thread Hanger Rod has a standard machine thread running its entire 6-foot length.

Normally furnished black. Electro Galvanized to order. Order by size and figure number.



Rod Diameter	Max. Recom. Load, lbs.	Feet per bundle	Approx. Weight per 100 ft.
1/4	240	600	12
3/8	300	450	20
1/2	610	300	30
5/8	1130	150	54
3/4	1810	90	85
7/8	2710	60	120
1	3700	34	170
1 1/8	4960	36	225
1 1/4	6230	36	280
1 1/2	8000	30	350
1 3/8	9000	24	450
1 1/2	11600	18	500

J BEAM HOOK — Fig. 31 STEEL

The J Beam Hook is used in conjunction with our Fig. 33 Machine Thread Eye Rod when it is necessary to support piping from the top flange of beam which allows pipe to run close to the bottom flange of beam where headroom is limited.

Length equals distance from end of threaded end to inside of hook.

When ordering give rod diameter, length, thickness of flange and figure number. Made special to customer order.

WEIGHT PER HUNDRED

Length, Inches	4	5	6	7	8	10	12
Rod Dia. — 3/8	19	22	25	28	32	38	44
Rod Dia. — 1/2	33	39	45	50	56	67	78
Rod Dia. — 5/8	52	61	70	78	87	102	122
Rod Dia. — 3/4	75	89	101	113	126	150	175
Rod Dia. — 7/8	102	120	136	153	171	204	239



MACHINE THREAD RODS — Fig. 133 STEEL

Machine Thread Rods are carried in stock in sizes from 3/8 inch to 3/4 inch in diameter. In addition 3/8 inch and 1/2 inch rods are stocked every inch in length from 4 inches to 7 inches.

Should lengths not listed be desired, they will be furnished at price for next longer length.

When rods are ordered with machine threads longer than the standard length shown or with left hand threads, an additional charge will be made.

Order by size, length, and figure number.

DIMENSIONS IN INCHES

A	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2
D	2 1/2	2 1/2	2 1/2	3	3 1/2	4	4 1/2	5	6

MAXIMUM RECOMMENDED LOAD IN POUNDS

A	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2
(@ 450°F.)	610	1130	1810	2710	3770	4960	6230	8000	11630
(@ 750°F.)	510	940	1510	2260	3150	4150	5200	6660	9700

WEIGHT PER HUNDRED

B	8	10	12	14	18	24	30
A- 3/8	25	32	38	44	57	76	94
A- 1/2	44	56	67	78	100	134	167
A- 5/8	69	87	104	122	136	208	260
A- 3/4	100	125	150	175	225	300	375
A- 7/8	136	170	204	238	306	408	510
A-1	178	223	267	311	400	534	668

WEIGHT PER HUNDRED

B	36	42	48	54	60	66	72
A- 3/8	113	132	150	169	188	207	226
A- 1/2	200	234	248	301	334	368	401
A- 5/8	312	364	418	468	520	572	624
A- 3/4	450	525	600	675	750	825	900
A- 7/8	612	714	816	918	1020	1122	1224
A-1	801	835	1068	1202	1335	1469	1602





MACHINE THREAD EYE RODS — Fig. 33 STEEL — EYE NOT WELDED

Machine Thread Eye Rods are furnished in sizes and lengths listed in table. The inside diameter of eye is 1/8 inch larger than rod diameter.

Should lengths not listed be desired, they will be furnished at price for next longer length.

When Eye Rods are ordered with machine thread longer than the standard length shown or with left hand threads, an additional charge will be made.

Order by size, length, and figure number. Made special to customer order.



DIMENSIONS IN INCHES

A	3/8	1/2	5/8	3/4	7/8	1
C	1/2	5/8	3/4	7/8	1	1 1/8
D	2 1/2	2 1/2	2 1/2	3	3 1/2	4

MAXIMUM RECOMMENDED LOAD IN POUNDS

A	3/8	1/2	5/8	3/4	7/8	1
@ 450°F.	240	440	705	1050	1470	1940

WELDED EYE ROD — Fig. 93 STEEL — WELDED

Welded Eye Rods are furnished in sizes and lengths listed in table. The end of rod is cut at an angle to allow for sufficient space to properly fuse the ends, so that the welded eye will be equal to the full strength of the rod.

MAXIMUM RECOMMENDED LOAD IN POUNDS

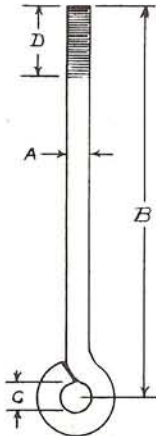
A	3/8	1/2	5/8	3/4	7/8	1
@ 450°F	610	1130	1810	2710	3770	4960
@ 750°F	510	940	1510	2260	3150	4150

WEIGHT PER HUNDRED

A in Inches	Dimension — B in Inches						
	8	10	12	14	18	24	30
3/8	32	38	45	51	64	82	101
1/2	60	71	82	94	116	149	182
5/8	98	114	132	150	184	236	288
3/4	144	168	193	219	270	345	420
7/8	204	239	271	306	373	475	577
1	299	347	390	433	523	677	817

WEIGHT PER HUNDRED

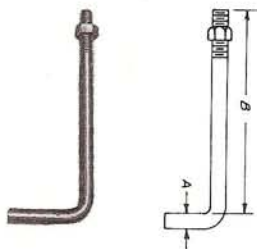
A in Inches	Dimension — B in Inches						
	36	42	48	54	60	66	72
3/8	120	139	158	176	195	214	233
1/2	216	249	283	316	349	383	406
5/8	340	392	444	496	548	600	652
3/4	495	570	645	720	795	870	945
7/8	679	781	883	985	1087	1189	1291
1	924	1057	1191	1324	1458	1591	1725



ANCHOR BOLTS — Fig. 177 STEEL

Order by size and figure number. Made special to customer order.

DIMENSIONS IN INCHES



Diameter A	Weight per Hundred			
	3/8	1/2	5/8	3/4
B-6	28	52	81	119
B-8	34	63	99	144
B-10	40	74	116	169
B-12	46	85	134	194

LINKED EYE RODS — Fig. 306 — 341 STEEL

Fig. 306 Rods the eyes are not welded. Fig. 341 Rods the eyes are welded.

Linked Eye Rods are a combination of two Fig. 33 Machine Thread Eye Rods linked together forming one complete unit.

It provides universal movement of the pipe line without the bending of the straight rods.

The inside diameter of eyes are 1/8 inch larger than the rod diameter.

When eye rods are ordered with machine threads longer than the standard thread shown or with left hand threads, an additional charge will be made.

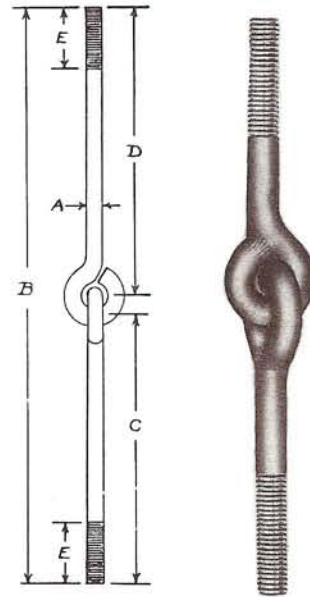
When ordering, specify length overall dimensions—B, dimensions C or D, rod size, and figure number. Made special to customer order.

Fig. 306 with Eyes not Welded

MAXIMUM RECOMMENDED LOAD IN POUNDS						
A	3/8	1/2	5/8	3/4	7/8	1
@ 450°F	240	440	700	1000	1500	1900

Fig. 341 with Eyes Welded

MAXIMUM RECOMMENDED LOAD IN POUNDS						
A	3/8	1/2	5/8	3/4	7/8	1
@ 450°F	610	1130	1810	2710	3770	4960
@ 750°F	510	940	1510	2260	3150	4150



LAG ROD — Fig. 28 STEEL — MACHINE THREADED ON OPPOSITE END

DIMENSIONS IN INCHES			
Rod Size — B	3/8	1/2	5/8
Coach Screw — C	2	2 1/2	2 1/2
Machine Thread — D	2 1/2	2 1/2	2 1/2
Max. Load, lb.	380	630	750

WEIGHT PER HUNDRED										
A	4	5	6	7	8	10	12	14	18	24
B-3/8	12	16	19	22	25	32	38	44	57	76
B-1/2	22	28	34	39	44	56	67	78	100	134
B-5/8	35	43	52	61	69	87	104	122	136	208

WEIGHT PER HUNDRED									
A	30	36	42	48	54	60	66	72	
B-3/8	94	113	132	150	169	188	207	226	
B-1/2	167	200	234	248	301	334	368	401	
B-5/8	260	312	364	418	468	520	572	624	



MACHINE THREAD RODS — Fig. 133 STEEL

Machine Thread Rods are carried in stock in sizes from 3/8 inch to 3/4 inch in diameter. In addition 3/8 inch and 1/2 inch rods are stocked every inch in length from 4 inches to 7 inches.

Should lengths not listed be desired, they will be furnished at price for next longer length.

When rods are ordered with machine threads longer than the standard length shown or with left hand threads, an additional charge will be made.

Order by size, length, and figure number.

DIMENSIONS IN INCHES

A	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2
D	2 1/2	2 1/2	2 1/2	3	3 1/2	4	4 1/2	5	6

MAXIMUM RECOMMENDED LOAD IN POUNDS

A	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2
(at 450°F.)	610	1130	1810	2710	3770	4960	6230	8000	11630
(at 750°F.)	510	940	1510	2260	3150	4150	5200	6660	9700

WEIGHT PER HUNDRED

B	8	10	12	14	18	24	30
A- 3/8	25	32	38	44	57	76	94
A- 1/2	44	56	67	78	100	134	167
A- 5/8	69	87	104	122	136	208	260
A- 3/4	100	125	150	175	225	300	375
A- 7/8	136	170	204	238	306	408	510
A-1	178	223	267	311	400	534	668

WEIGHT PER HUNDRED

B	36	42	48	54	60	66	72
A- 3/8	113	132	150	169	188	207	226
A- 1/2	200	234	248	301	334	368	401
A- 5/8	312	364	418	468	520	572	624
A- 3/4	450	525	600	675	750	825	900
A- 7/8	612	714	816	918	1020	1122	1224
A-1	801	835	1068	1202	1335	1469	1602





MACHINE THREAD EYE RODS — Fig. 33 STEEL — EYE NOT WELDED

Machine Thread Eye Rods are furnished in sizes and lengths listed in table. The inside diameter of eye is 1/8 inch larger than rod diameter.

Should lengths not listed be desired, they will be furnished at price for next longer length.

When Eye Rods are ordered with machine thread longer than the standard length shown or with left hand threads, an additional charge will be made.

Order by size, length, and figure number. Made special to customer order.



DIMENSIONS IN INCHES

A	3/8	1/2	5/8	3/4	7/8	1
C	1/2	5/8	3/4	7/8	1	1 1/8
D	2 1/2	2 1/2	2 1/2	3	3 1/2	4

MAXIMUM RECOMMENDED LOAD IN POUNDS

A	3/8	1/2	5/8	3/4	7/8	1
@ 450°F.	240	440	705	1050	1470	1940

WELDED EYE ROD — Fig. 93 STEEL — WELDED

Welded Eye Rods are furnished in sizes and lengths listed in table. The end of rod is cut at an angle to allow for sufficient space to properly fuse the ends so that the welded eye will be equal to the full strength of the rod.

MAXIMUM RECOMMENDED LOAD IN POUNDS

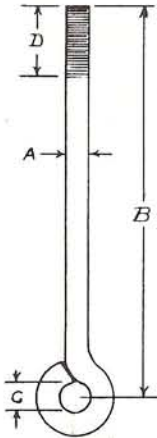
A	3/8	1/2	5/8	3/4	7/8	1
@ 450°F	610	1130	1810	2710	3770	4960
@ 750°F	510	940	1510	2260	3150	4150

WEIGHT PER HUNDRED

A in Inches	Dimension — B in Inches						
	8	10	12	14	18	24	30
3/8	32	38	45	51	64	82	101
1/2	60	71	82	94	116	149	182
5/8	98	114	132	150	184	236	288
3/4	144	168	193	219	270	345	420
7/8	204	239	271	306	373	475	577
1	299	347	390	433	523	677	817

WEIGHT PER HUNDRED

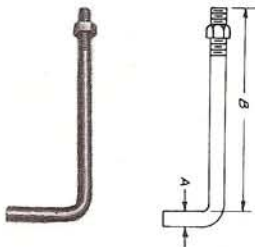
A in Inches	Dimension — B in Inches						
	36	42	48	54	60	66	72
3/8	120	139	158	176	195	214	233
1/2	216	249	283	316	349	383	406
5/8	340	392	444	496	548	600	652
3/4	495	570	645	720	795	870	945
7/8	679	781	883	985	1087	1189	1291
1	924	1057	1191	1324	1458	1591	1725



ANCHOR BOLTS — Fig. 177 STEEL

Order by size and figure number. Made special to customer order.

DIMENSIONS IN INCHES



Diameter A	Weight per Hundred			
	3/8	1/2	5/8	3/4
B-6	28	52	81	119
B-8	34	63	99	144
B-10	40	74	116	169
B-12	46	85	134	194

LINKED EYE RODS — Fig. 306 — 341 STEEL

Fig. 306 Rods the eyes are not welded. Fig. 341 Rods the eyes are welded.

Linked Eye Rods are a combination of two Fig. 33 Machine Thread Eye Rods linked together forming one complete unit.

It provides universal movement of the pipe line without the bending of the straight rods.

The inside diameter of eyes are 1/8 inch larger than the rod diameter.

When eye rods are ordered with machine threads longer than the standard thread shown or with left hand threads, an additional charge will be made.

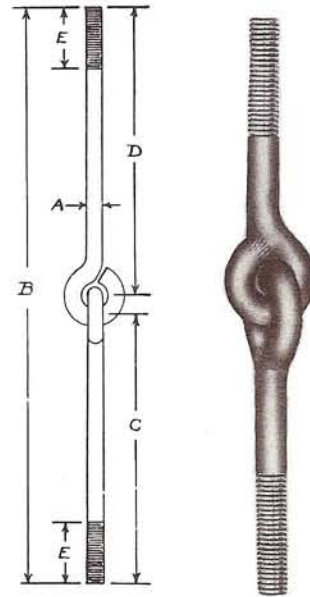
When ordering, specify length overall dimensions—B, dimensions C or D, rod size, and figure number. Made special to customer order.

Fig. 306 with Eyes not Welded

MAXIMUM RECOMMENDED LOAD IN POUNDS						
A	3/8	1/2	5/8	3/4	7/8	1
@ 450°F	240	440	700	1000	1500	1900

Fig. 341 with Eyes Welded

MAXIMUM RECOMMENDED LOAD IN POUNDS						
A	3/8	1/2	5/8	3/4	7/8	1
@ 450°F	610	1130	1810	2710	3770	4960
@ 750°F	510	940	1510	2260	3150	4150



LAG ROD — Fig. 28 STEEL — MACHINE THREADED ON OPPOSITE END

DIMENSIONS IN INCHES			
Rod Size — B	3/8	1/2	5/8
Coach Screw — C	2	2 1/2	2 1/2
Machine Thread — D	2 1/2	2 1/2	2 1/2
Max. Load, lb.	380	630	750

WEIGHT PER HUNDRED										
A	4	5	6	7	8	10	12	14	18	24
B-3/8	12	16	19	22	25	32	38	44	57	76
B-1/2	22	28	34	39	44	56	67	78	100	134
B-5/8	35	43	52	61	69	87	104	122	136	208

WEIGHT PER HUNDRED									
A	30	36	42	48	54	60	66	72	
B-3/8	94	113	132	150	169	188	207	226	
B-1/2	167	200	234	248	301	334	368	401	
B-5/8	260	312	364	418	468	520	572	624	



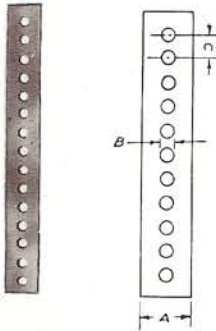


EXTENSION BAR — Fig. 10 STEEL

Our Extension Bar is made of first quality soft steel. Stock, well oiled can easily be cut with cold chisel to any length desired, twisted, bent or otherwise manipulated without breaking, yet retaining its tensile strength.

Furnished in either five or ten foot lengths.

Specify size and length when ordering.



DIMENSIONS IN INCHES

Size No.	A	B	C	Feet per Bundle	Weight per bundle
0	3/4 x No. 18 ga.				28
1	7/8 x No. 16 ga.	1/4	1/2	250	45
2	1 x No. 14 ga.				67

SPRING CEILING PLATE — Fig. 182 STEEL

The Spring Ceiling Plate is unique in as much as plate is so held to the rod by five points that it can easily be pushed up against the ceiling, but cannot be pulled downward. The spring and plate are stamped from sheet steel and are strongly made.

It is used on rods that are inserted into a finished ceiling or wall and covers the small fractures around the hole making a neat finish at the ceiling or wall.

Once the plate is installed in place, it will never work loose. It eliminates entirely the need of set screws for fastening ceiling plate to hanger rod.

Order by size and figure number.

DIMENSIONS IN INCHES

Rod Size	Outside Diameter	Depth	Weight per 100
3/8	1 3/16	9/16	6
1/2	2 3/16	5/8	8
5/8	2 1/2	1 1/16	12
3/4	2 1/2	1 1/16	12



PLASTIC CEILING PLATE — Fig. 182P

Plastic Ceiling Plates are only available for 3/8 and 1/2 rod diameters. They are applied in the same way as our regular Fig. 182 Spring Ceiling Plates.

Order by size and figure number.

DIMENSIONS IN INCHES

Rod Size	Outside Diameter	Depth	Weight per 100
3/8	1 13/16	1/2	6
1/2	1 13/16	1/2	6



MALE AND FEMALE SWING ROD FITTING — Fig. 701 STEEL

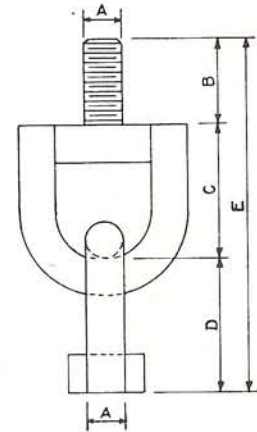
This fitting is used where flexible movement of the pipe line is required. The threaded lug "C" can be installed into a concrete insert or bolted to flange of I Beam, angle or channel.

Furnished black, Galvanized to order. Made special to customer order.

When ordering specify size and figure number.

DIMENSIONS IN INCHES

Size No.	A	B	C	D	E	Weight per 100
1	3/8	1	1 3/8	1 3/8	3 3/4	30
2	1/2					57
3	5/8	1 1/4	1 5/8	1 5/8	4 1/2	112
4	3/4	1 1/4	2 1/8	2 1/8	5 1/2	196
5	7/8	2	3	3	8	355



FEMALE AND FEMALE SWING ROD FITTING — Fig. 704 STEEL

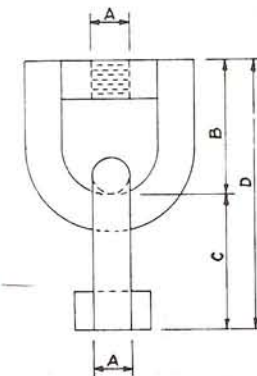
This fitting is used where flexible movement of the pipe line is required. Threaded rod or stud of sufficient length to pass through two angles or channels back to back and secured by plate washer and nuts.

Furnished Black, Galvanized to order. Made special to customer order.

When ordering specify size and figure number.

DIMENSIONS IN INCHES

Size No.	A	B	C	D	Weight per 100
1	3/8	1 3/8	1 3/8	2 3/4	28
2	1/2				53
3	5/8	1 5/8	1 5/8	3 1/4	104
4	3/4	2 1/8	2 1/8	4 1/4	179
5	7/8	3	3	6	318



WELDLESS EYE NUT — Fig. 279

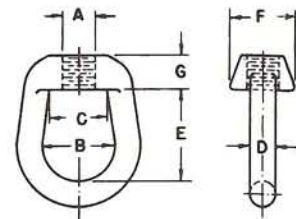
Fig. 279 Weldless Eye Nuts are of Forged Steel to ASTM-A-235 Class C.

Approvals: Complies with Federal Specification WW-H-171 (Type 17) and Manufacturers Standardization Society SP 69 (Type 17)

Ordering: Specify tapping size "A" and left hand thread if required.

DIMENSIONS IN INCHES

Rod Tap A	B	C	D	E	F	G	Max. Recom. 650° F	Load, Lbs. 750° F	Weight per 100
1/4	3/4	2 1/32	1/4	1 1/16	3/4	1/2	520	405	20
3/8	1	3/4	5/16	1 1/4	3/4	1/2	610	540	20
1/2	1 1/4	1	3/8	1 1/2	7/8	5/8	1130	1010	31
5/8	1 1/2	1 1/16	1/2	2	1 3/8	11/16	1810	1610	55
3/4	1 3/4	1 3/8	5/8	2 3/8	1 1/2	11/16	2710	2420	100
7/8	2	1 5/8	3/4	2 5/8	1 15/16	1	3770	3360	155
1	2 1/4	1 7/8	7/8	3 1/16	2	1 1/8	4960	4420	245
1 1/8	2 1/4	1 7/8	7/8	3 1/16	2	1 1/4	6230	5560	245
1 1/4	2 1/2	1 15/16	1	3 1/2	2 3/8	1 1/4	8000	7140	375
1 3/8	2 3/4	2	1 1/8	3 3/4	2 5/8	1 3/8	11630	10370	500
1 1/2	3 1/8	2 3/8	1 1/4	4	2 3/4	1 3/8	15700	14000	675
2	4	4	1 1/2	6 1/4	3 3/4	2 1/4	20700	18460	1675
2 1/4	4	4	1 1/2	6 1/4	3 3/4	2 1/4	27200	24260	1675
2 1/2	4	4	1 1/2	6 1/4	3 3/4	2 1/4	33500	29880	1675





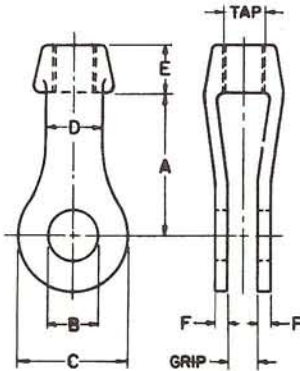
FORGED WELDLESS STEEL CLEVIS — Fig. 276

The Fig. 276 Clevis is made of Forged Steel to ASTM-A-235 Class C.

Approvals: Complies with Federal Specification WW-H-171 (Type 14) and Manufacturers Standardization Society SP-69 (Type 14)

Ordering: Order by figure number, size number, rod tapping, pin size and grip. Specify left hand tapping as required. If pins and cotter pins are required, specify "with pin."

If welding lugs are required, refer to the Fig. 220 Welding Lug which is designed to be used with the Fig. 276 Forged Steel Clevis. The complete assembly may be ordered as a Fig. 216.



DIMENSIONS IN INCHES

Size No.	A	Max. B	C	D	E	F	Max. Tap	Weight per 100
2	3 3/4	5/8	1 7/16	1	5/8	5/16	5/8	77
2 1/2	4	1 1/4	2 1/2	1 1/4	7/8	5/16	7/8	250
3	5	1 1/2	3	1 1/2	1 3/8	1/2	1 1/4	400
3 1/2	6	1 3/4	3 1/2	1 3/4	1 5/8	1/2	1 1/2	600
4	6	2	4	2	1 3/4	1/2	1 3/4	800
5	7	2 1/2	5	2 1/2	2 1/4	5/8	2	1600
6	8	3	6	3	2 3/4	3/4	2 1/2	2600
7	9	3 1/2	7	3 1/2	3	7/8	3	3600

Grip equals thickness of plate plus 1/4".

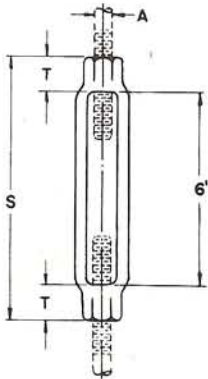


TURNBUCKLES — Fig. 132 DROP FORGED STEEL

The Fig. 132 Turnbuckles are made of forged steel to ASTM-A-235 Class C, Stub ends of steel to ASTM-A-36. Normally furnished black, galvanized to order.

Approvals: Complies with Federal Specification WW-H-171 (Type 13) and Manufacturers Standardization Society SP-69 (Type 13)

Ordering: Specify figure number, rod size, stub ends if required, otherwise furnished without stub ends.



DIMENSIONS IN INCHES

Rod Size	Max. Recom. Load, Lbs.		S	T	Weight* Lbs. per 100
	650°F	750°F			
3/8	610	510	7 1/4	5/8	34
1/2	1130	940	7 1/2	3/4	47
5/8	1810	1510	7 3/4	7/8	86
3/4	2710	2260	8 1/4	1 1/8	134
7/8	3370	3150	8 1/2	1 1/4	190
1	4960	4150	9	1 1/2	247
1 1/8	6230	5560	9 1/4	1 5/8	338
1 1/4	8000	7140	9 1/4	1 5/8	330
1 1/2	11630	10370	9 3/4	1 7/8	530
1 3/4	15700	14000	10 1/2	2 1/4	780
2	20700	18460	11	2 1/2	1195
2 1/4	27200	24260	12 1/4	3 1/8	2700
2 1/2	33500	29880	12 1/4	3 1/8	2690

HANGER ADJUSTER — Fig. 38 MALLEABLE IRON — STEEL

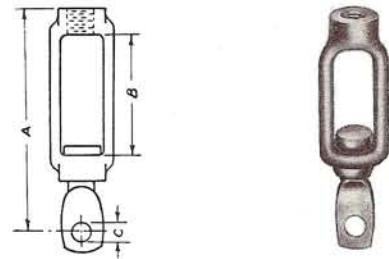
Fig. 38 Adjustors are used in lieu of turnbuckles with our Fig. 1 Bands and Fig. 34 Split Rings.

Approvals: Complies with Federal Specification WW-H-171 (Type 15) and Manufacturers Standardization Society SP-69 (Type 15).

Order by rod size tapping and figure number.

DIMENSIONS IN INCHES

Rod Tapping	Rec. Max. Load/Lb.	A	B	C	Weight per 100
1/4	230	3 1/16	1 1/16	1 1/32	26
3/8	610	3 1/16	1 1/16	1 1/32	26
1/2	710	3 1/16	1 1/16	1 1/32	26
5/8	710	4 7/8	2 5/8	1/2	58
3/4	860	5 1/4	2 5/8	5/16	65



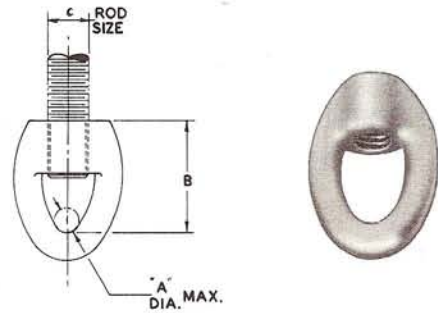
EYE SOCKETS — Fig. 12 MALLEABLE IRON

Malleable Eye Sockets are used on all types of split hangers. Normally furnished in rod tap. Regularly furnished in black. Galvanized to order.

Order by size tapping and figure number.

DIMENSIONS IN INCHES

Bolt Thread Tapping Size C	Max. Rec. Load/Lb.	A	B	Weight per 100
1/4	230	1/4	1 11/32	7
3/8	610	1/4	1 11/32	7
1/2	1130	1/4	1 11/32	13
5/8	1810	3/8	1 11/16	19
3/4	2400	1/2	2 5/32	31
7/8	2800	1/2	2 3/8	44



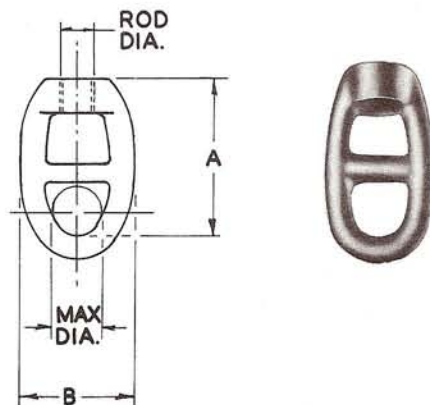
EYE SOCKETS — Fig. 12L

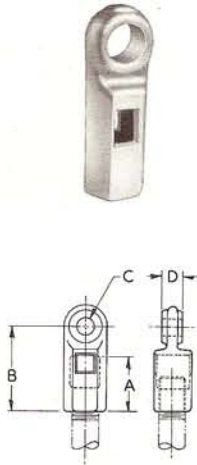
Figure 12L Eye Sockets are normally used on Figure 15 Beam Clamps and applications that require a longer body length than furnished on the Figure 12 Eye Socket. Regularly furnished black. Galvanized to order.

Order by tapping and figure number.

DIMENSIONS IN INCHES

Rod Tapping	Max. Rec. Load/Lbs.	A	B	Max. Dia.	Weight per 100
1/4	230	1 11/16	1 3/16	1/4	12
3/8	610	1 11/16	1 3/16	1/4	12
1/2	1130	2 1/4	1 7/16	1/4	18
5/8	1810	2 3/16	1 11/16	3/8	36
3/4	2400	2 7/8	2 1/32	1/2	47





EXTENSION PIECE — Fig. 157 MALLEABLE IRON

Figure 157 Extension Pieces are used on beam clamps and assemblies when an inch of adjustment is required.
Order by size and figure number.

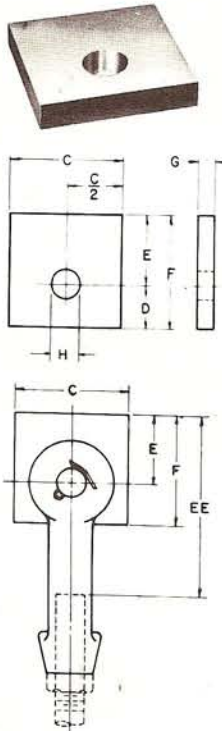
DIMENSIONS IN INCHES

Rod Tapping	Rec. Max. Load/Lb.	A	B	C	D	Weight per 100
3/8	610	1 1/4	2 1/16	1/2	1/2	20
1/2	1130	1 3/8	2 3/16	1/2	5/8	40
5/8	1810	1 1/2	2 7/16	1/2	5/8	44
3/4	2710	1 3/4	2 7/8	1/2	5/8	65
7/8	2950	1 7/8	3	5/16	3/4	78

WELDING LUG — Fig. 220

Fig. 220 Welding Lugs are made of carbon steel to ASTM-A-36, and are properly proportioned attachments for welding to the underside of structural members for the support of Type "C" Variable Spring Hangers or to receive Fig. 276 Forged Steel Clevises for rod attachment. The size denotes the supported rod diameter.

Ordering: by size number and figure number.



DIMENSIONS IN INCHES

Size No.	C	D	E	EE	F	G	H	Fig. 276 Size No.	Fig. 220 Weight Per 100	Fig. 216 Weight Per 100
4	3	1	2	4 1/2	3	3/8	1 1/16	2	92	200
5/8	3	1	2	4 1/2	3	3/8	1 3/16	2 1/2	90	450
3/4	4	1 1/4	2 1/4	5	3 1/2	1/2	1 5/16	2 1/2	188	550
7/8	4	1 1/4	2 1/4	5	3 1/2	1/2	1 1/8	2 1/2	186	550
1	4	1 1/2	2 1/2	6	4	5/8	1 1/4	3	261	825
1 1/8	4	1 1/2	2 1/2	6	4	3/4	1 3/8	3	309	875
1 1/4	4	2	2 3/4	6 1/2	4 3/4	3/4	1 1/2	3	344	925
1 1/2	5	2	3 1/4	7 1/2	5 1/4	1	1 3/4	3 1/2	639	1450
1 3/4	5	2 1/2	3 1/4	7 1/2	5 3/4	1	2	4	678	1750
2	6	3	3 3/4	9	6 3/4	1 1/8	2 3/8	5	1100	3200
2 1/4	8	3 1/4	4 1/4	10	7 1/2	1 1/4	2 5/8	6	1930	5400
2 1/2	8	3 1/4	4 1/2	10	7 3/4	1 1/2	2 7/8	6	2270	5800
2 3/4	10	4	5	11 1/2	9	1 1/2	3 1/8	7	2590	7800

WELDING CLEVIS ATTACHMENT — Fig. 216

The Fig. 216 is an assembly of the Fig. 220 and Fig. 276 for ordering convenience.

See table above for dimensions.



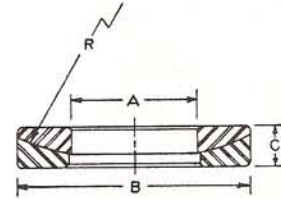
ROCKER WASHER ASSEMBLY — Fig. 705 ALLOY STEEL

Rocker Washer Assembly is used where a rocking movement of the supporting rod is required.

It is made from Alloy Steel, hardened and ground to insure free movement and is rust-proof, black finish. **Order by rod size and figure number.**

DIMENSIONS IN INCHES

Rod Size	Radius R	A	B	C	Approx Weight per 100
3/8	1 1/2	1 1/32	1 1/16	1/4	3
1/2	1 3/4	1 7/32	1 3/16	5/16	9
5/8		2 1/32	1 3/8		13
3/4	2 3/4	2 5/32	1 5/8	3/8	21
7/8		1 9/16	1 7/8		23
1	2 3/4	1 1/16	2		44
1 1/8	3	1 3/16	2 1/4	1/2	56
1 1/4	3 3/8	1 3/16	2 5/8		76
1 1/2	3 1/2	1 1/16	2 7/8	5/16	92



STEEL SQUARE PLATES — Fig. 102

Fig. 102 Steel Square Plates or Fish Plates are normally used on the ends of rods instead of round washers to gain more bearing surface. Fig. 260 Washer Plates are used on heavy duty applications on back to back channels.

Order by figure number, size, and rod size.

DIMENSIONS IN INCHES

Weight per 100	Thickness of plates			
	1/8	3/16	1/4	5/8
2 x 2	28	42	56	85
3 x 3	32	48	64	96
4 x 4	57	83	113	170
5 x 5	89	133	177	266
6 x 6	128	191	255	383

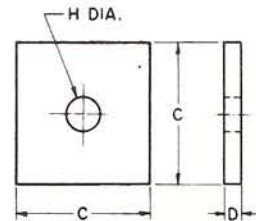


WASHER PLATE — Fig. 260 STEEL

Washer plates are properly proportioned to receive the rod diameter noted for each size plate. They are used in conjunction with back to back channels or angles for supporting pipe with rods or U-Bolts.

Ordering: order by figure number and rod diameter.

Rod Diameter	C	D	H Diameter	Weight per 100
3/8	3	1/4	7/16	64
1/2	3	1/4	9/16	63
5/8	3	3/8	1 1/16	95
3/4	4	3/8	1 3/16	169
7/8	4	1/2	1 5/16	227
1	4	1/2	1 1/16	225
1 1/8	4	1/2	1 1/4	223
1 1/4	5	1/2	1 3/8	333
1 1/2	5	5/8	1 5/8	405
1 3/4	5	5/8	1 7/8	393
2	5	5/8	2 1/8	380
2 1/4	6	5/8	2 3/8	560
2 1/2	6	5/8	2 5/8	540
2 3/4	6	5/8	2 7/8	525





SPRING HANGER — Fig. 399 STEEL

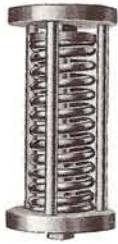


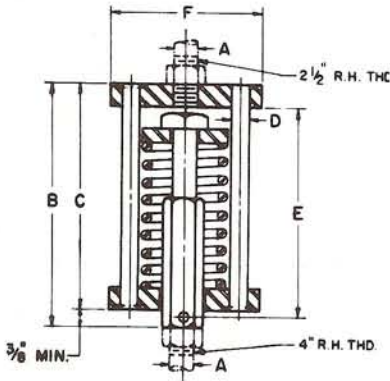
Fig. 399 Spring Hanger is recommended for use on steam mains in industrial buildings or drain lines and small piping in power plants.

In selecting correct spring assembly, consideration should be given to weight of pipe, covering, and other attachments.

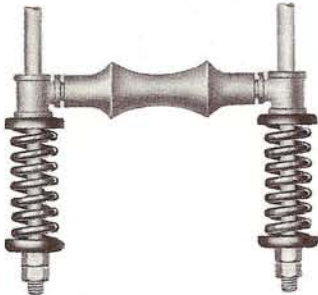
When ordering, specify spring size and figure number.

DIMENSIONS IN INCHES

Spring Size No.	A	B		C	D	E	F	Maximum Deflection	Maximum Load Pounds	Spring Deflection Lbs. per in.	Weight Lbs. per 100
		Min.	Max.								
1	3/8	4 1/2	6 1/2	4 1/8	1/4	3 3/4	2 3/8	2	52	26	160
2	3/8	4 1/2	6 1/4	4 1/8	3/16	3 3/4	3 1/8	1 3/4	115	66	238
3	1/2	5 7/8	7 3/4	5 1/2	3/8	5	2 3/4	1 7/8	163	87	287
4	1/2	5 7/8	7 3/8	5 1/2	3/8	5	3 1/4	1 3/4	266	152	350
5	5/8	6 3/4	8 3/4	6 3/8	1/2	5 3/4	4 1/8	2	400	200	680
6	3/4	8 3/8	10 7/8	8	1/2	7 3/8	4 5/8	2 1/2	600	240	982



CUSHION SPRING ASSEMBLY — Fig. 478 STEEL



Cushion Springs are used in conjunction with our Fig. 142 Two Rod Roll Type Hanger and other similar suspended hangers and provide a means of absorbing vibration conveyed to pipe lines.

It is composed of two springs and four steel cups.

In selecting correct spring assembly, consideration should be given to weight of pipe, covering, and other attachments.

The Fig. 142 Roll Hanger and drop rods shown must be ordered separately.

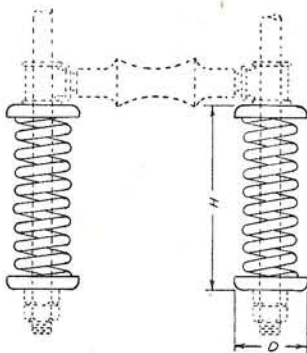
Total deflection for all springs — 1-1/2 inches.

Tabulated maximum load per hanger (two springs) listed at recommended maximum deflection of 1-1/4 inches.

When ordering, specify size of drop rods to secure proper holes in spring cups, spring number, and figure number.

DIMENSIONS IN INCHES

Spring No.	Deflection in Pounds per inch per Spring	Maximum Load at 1 1/4 Inch Deflection Two Springs	Diameter Cup D	Spring Height H	Weight per 100
A	26	65	2 3/8	3 1/4	110
B	66	165	2 3/8	3 1/4	142
C	87	218	2 3/8	4 1/4	156
D	152	380	2 3/8	4 1/4	218
1	214	535	2 3/8	6 1/4	408
2	600	1500	4	5 3/4	1074
3	1200	3000	4 1/2	8 3/8	2600



FLANGE BOLTS — Fig. 162 STEEL

Flange Bolts are furnished with square head and cold punched American Standard Heavy Hexagon Nuts.

Hex Head Machine bolts are also available in all sizes with or without heavy hex nuts. **Order by size and figure number.**

WEIGHT PER HUNDRED

Dia. of Bolt	Length of Bolt in Inches									
	2	2¼	2½	2¾	3	3¼	3½	3¾	4	5
⅜	36	38	40	42	44	46	48	50	52	60
¾	57	60	62	65	68	71	74	77	80	92
⅞	86	90	94	99	103	107	111	115	118	135
1	127	133	138	143	148	153	158	163	169	190



HEAVY HEX NUT — Fig. 165

DIMENSIONS IN INCHES

Rod Size	Width	Thickness	Weight per 100
¼	⅞	⅜	.77
⅜	1	⅜	2.2
½	1⅜	⅞	4.8
⅝	1	⅞	8.9
¾	1⅞	1⅜	12.7
⅞	2	1⅜	19.9
1	2⅜	1⅞	29.4
1⅞	2⅞	2	41.9
1¼	3	2⅜	59.3
1½	3⅜	2⅞	101.5



STEEL ROUND WASHERS — Fig. 103

DIMENSIONS IN INCHES

Size of Bolt	Outside Diameter	Diameter of Hole	Weight per 100
¼	¾	⅜	.67
⅜	1	⅞	1.50
½	1⅞	⅞	3.90
⅝	2	1⅞	7.80
¾	2	2	11.00
⅞	2⅜	2	15.00
1	2⅞	2⅜	19.00
1⅞	3	2⅞	22.00
1¼	3	3	26.00
1½	3⅜	3	38.00



LOCK WASHERS — Fig. 176 STEEL

DIMENSIONS IN INCHES

Rod Size	Inside Diameter	Width of Steel	Thickness of Steel	Weight per 1000
⅜	⅞	.141	.094	7
½	1	.171	.125	15
⅝	1⅞	.203	.156	26
¾	2	.234	.188	43





SELF DRILLING FLUSH SHELL — Fig. 511

Widely used on new construction by plumbing, heating, ventilating and electrical contractors to fasten fixtures and equipment to walls, ceilings and floors.

Order by size and figure number.



DIMENSIONS IN INCHES

Rod Size	Recom. Safe Load, lb. 1-2-4 Concrete	O. D. of Shell	Length of Shell	Depth of Thread	Qty. per box	Approx. Weight per 100
1/4	293	7/16	1 1/4	7/16	100	4 1/2
3/8	414	9/16	1 7/16	9/16	50	8
1/2	595	1 1/16	1 9/16	7/8	50	15
5/8	864	2 7/32	2 3/8	1	25	28
3/4	1174	1	3	1 1/4	25	48

Safe Load Factor of 10 to 1

SELF DRILLING SPECIAL FLUSH SHELL — Fig. 512

The Special Flush Shell is preferred where large quantities of shells are to be installed with power hammers. Has tapered chucking end for mounting on hammer chuck while drilling hole and expanding shell. Chucking end is broken off flush with surface after shell is installed by a quick lateral strain on chuck or by striking shell with hand hammer after chuck is removed. Cuttings pass through shell and chuck without removal for cleaning, greatly reducing drilling time.

Order by size and figure number.



DIMENSIONS IN INCHES

Rod Size	Recom. Safe Load, lb. 1-2-4 Concrete	O. D. of Shell	Depth of Shell in stone	Depth of Thread	Qty. per Box	Approx. Weight per 100
1/4	293	7/16	1 1/32	13/32	100	5
3/8	414	9/16	1 7/32	9/16	50	11
1/2	595	1 1/16	2 1/32	7/8	50	18
5/8	864	2 7/32	2 15/32	1	25	32
3/4	1174	1	3 1/4	1 1/16	25	56
7/8	1425	1 1/8	3 11/16	1 1/2	25	74

Safe Load Factor of 10 to 1

SELF DRILLING ROD HANGER SHELL — Fig. 513

Assures a neat, positive fastening for threaded hanger rods and are easily installed with a motor or spring hammer. Order by size and figure number.



DIMENSIONS IN INCHES

Rod Size	Recom. Safe Load, lb. 1-2-4 Concrete	O. D. of Shell	Length of Shell	Depth of Thread	Qty. per box	Approx. weight per 100
1/4	293	7/16	1 1/16	1 1/16	100	5 1/2
3/8	414	9/16	1 7/8	3/4	50	11
1/2	595	1 1/16	2 1/2	1	50	18
5/8	864	2 7/32	3	1 1/8	25	34
3/4	1174	1	3 3/4	1 1/16	25	56

Safe Load factor of 10 to 1

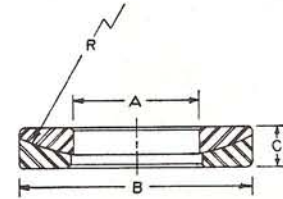
ROCKER WASHER ASSEMBLY — Fig. 705 ALLOY STEEL

Rocker Washer Assembly is used where a rocking movement of the supporting rod is required.

It is made from Alloy Steel, hardened and ground to insure free movement and is rust-proof, black finish. **Order by rod size and figure number.**

DIMENSIONS IN INCHES

Rod Size	Radius R	A	B	C	Approx Weight per 100
3/8	1 1/2	1 1/32	1 1/16	1/4	3
1/2	1 3/4	1 7/32	1 3/16	5/16	9
5/8		2 1/32	1 3/8		13
3/4	2 3/4	2 5/32	1 5/8	3/8	21
7/8		1 9/16	1 7/8		23
1	2 3/4	1 1/16	2		44
1 1/8	3	1 3/16	2 1/4	1/2	56
1 1/4	3 3/8	1 5/16	2 5/8		76
1 1/2	3 1/2	1 1/16	2 7/8	5/16	92



STEEL SQUARE PLATES — Fig. 102

Fig. 102 Steel Square Plates or Fish Plates are normally used on the ends of rods instead of round washers to gain more bearing surface. Fig. 260 Washer Plates are used on heavy duty applications on back to back channels.

Order by figure number, size, and rod size.

DIMENSIONS IN INCHES

Weight per 100	Thickness of plates			
	1/8	3/16	1/4	5/8
2 x 2	28	42	56	85
3 x 3	32	48	64	96
4 x 4	57	83	113	170
5 x 5	89	133	177	266
6 x 6	128	191	255	383

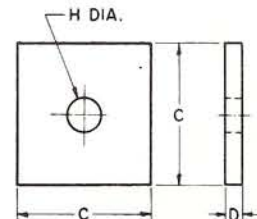


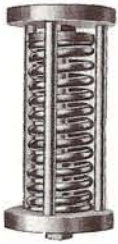
WASHER PLATE — Fig. 260 STEEL

Washer plates are properly proportioned to receive the rod diameter noted for each size plate. They are used in conjunction with back to back channels or angles for supporting pipe with rods or U-Bolts.

Ordering: order by figure number and rod diameter.

Rod Diameter	C	D	H Diameter	Weight per 100
3/8	3	1/4	7/16	64
1/2	3	1/4	9/16	63
5/8	3	3/8	1 1/16	95
3/4	4	3/8	1 3/16	169
7/8	4	1/2	1 5/16	227
1	4	1/2	1 1/16	225
1 1/8	4	1/2	1 1/4	223
1 1/4	5	1/2	1 3/8	333
1 1/2	5	5/8	1 5/8	405
1 3/4	5	5/8	1 7/8	393
2	5	5/8	2 1/8	380
2 1/4	6	5/8	2 3/8	560
2 1/2	6	5/8	2 5/8	540
2 3/4	6	5/8	2 7/8	525





SPRING HANGER — Fig. 399 STEEL

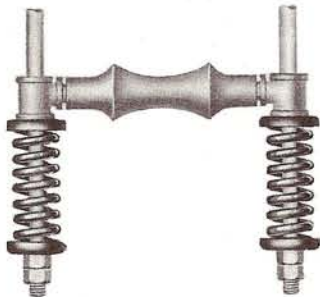
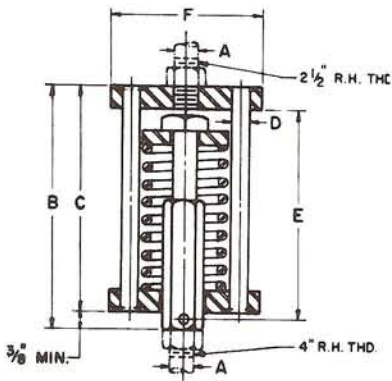
Fig. 399 Spring Hanger is recommended for use on steam mains in industrial buildings or drain lines and small piping in power plants.

In selecting correct spring assembly, consideration should be given to weight of pipe, covering, and other attachments.

When ordering, specify spring size and figure number.

DIMENSIONS IN INCHES

Spring Size No.	A	B		C	D	E	F	Maximum Deflection	Maximum Load Pounds	Spring Deflection Lbs. per in.	Weight Lbs. per 100
		Min.	Max.								
1	3/8	4 1/2	6 1/2	4 1/8	1/4	3 3/4	2 3/8	2	52	26	160
2	3/8	4 1/2	6 1/4	4 1/8	3/16	3 3/4	3 1/8	1 3/4	115	66	238
3	1/2	5 7/8	7 3/4	5 1/2	3/8	5	2 3/4	1 7/8	163	87	287
4	1/2	5 7/8	7 3/8	5 1/2	3/8	5	3 1/4	1 3/4	266	152	350
5	5/8	6 3/4	8 3/4	6 3/8	1/2	5 3/4	4 1/8	2	400	200	680
6	3/4	8 3/8	10 7/8	8	1/2	7 3/8	4 5/8	2 1/2	600	240	982



CUSHION SPRING ASSEMBLY — Fig. 478 STEEL

Cushion Springs are used in conjunction with our Fig. 142 Two Rod Roll Type Hanger and other similar suspended hangers and provide a means of absorbing vibration conveyed to pipe lines.

It is composed of two springs and four steel cups.

In selecting correct spring assembly, consideration should be given to weight of pipe, covering, and other attachments.

The Fig. 142 Roll Hanger and drop rods shown must be ordered separately.

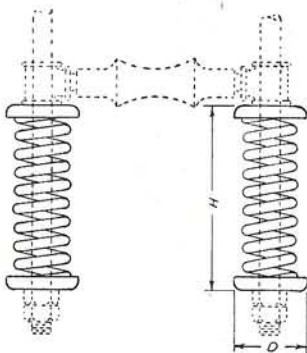
Total deflection for all springs — 1-1/2 inches.

Tabulated maximum load per hanger (two springs) listed at recommended maximum deflection of 1-1/4 inches.

When ordering, specify size of drop rods to secure proper holes in spring cups, spring number, and figure number.

DIMENSIONS IN INCHES

Spring No.	Deflection in Pounds per inch per Spring	Maximum Load at 1 1/4 Inch Deflection Two Springs	Diameter Cup D	Spring Height H	Weight per 100
A	26	65	2 3/8	3 1/4	110
B	66	165	2 3/8	3 1/4	142
C	87	218	2 3/8	4 1/4	156
D	152	380	2 3/8	4 1/4	218
1	214	535	2 3/8	6 1/4	408
2	600	1500	4	5 3/4	1074
3	1200	3000	4 1/2	8 3/8	2600



FLANGE BOLTS — Fig. 162 STEEL

Flange Bolts are furnished with square head and cold punched American Standard Heavy Hexagon Nuts.

Hex Head Machine bolts are also available in all sizes with or without heavy hex nuts. **Order by size and figure number.**

WEIGHT PER HUNDRED

Dia. of Bolt	Length of Bolt in Inches									
	2	2¼	2½	2¾	3	3¼	3½	3¾	4	5
¾	36	38	40	42	44	46	48	50	52	60
¾	57	60	62	65	68	71	74	77	80	92
¾	86	90	94	99	103	107	111	115	118	135
1	127	133	138	143	148	153	158	163	169	190



HEAVY HEX NUT — Fig. 165

DIMENSIONS IN INCHES

Rod Size	Width	Thickness	Weight per 100
¼	⅞	⅜	.77
⅜	1	⅜	2.2
½	1 ⅛	⅞	4.8
⅝	1 ¼	1 ⅛	8.9
¾	1 ½	1 ¼	12.7
⅞	1 ⅝	1 ½	19.9
1	1 ¾	1 ⅝	29.4
1 ⅛	1 ¾	1 ¾	41.9
1 ¼	2	1 ¾	59.3
1 ½	2 ¼	1 ¾	101.5



STEEL ROUND WASHERS — Fig. 103

DIMENSIONS IN INCHES

Size of Bolt	Outside Diameter	Diameter of Hole	Weight per 100
¼	¾	⅜	.67
⅜	1	⅞	1.50
½	1 ⅛	1	3.90
⅝	1 ¼	1 ⅛	7.80
¾	1 ½	1 ¼	11.00
⅞	1 ⅝	1 ½	15.00
1	1 ¾	1 ½	19.00
1 ⅛	2	1 ¾	22.00
1 ¼	2 ¼	1 ¾	26.00
1 ½	2 ¾	1 ¾	38.00



LOCK WASHERS — Fig. 176 STEEL

DIMENSIONS IN INCHES

Rod Size	Inside Diameter	Width of Steel	Thickness of Steel	Weight per 1000
¾	⅞	.141	.094	7
½	⅞	.171	.125	15
⅝	1 ⅛	.203	.156	26
¾	1 ¼	.234	.188	43





SELF DRILLING FLUSH SHELL — Fig. 511

Widely used on new construction by plumbing, heating, ventilating and electrical contractors to fasten fixtures and equipment to walls, ceilings and floors.

Order by size and figure number.

DIMENSIONS IN INCHES



Rod Size	Recom. Safe Load, lb. 1-2-4 Concrete	O. D. of Shell	Length of Shell	Depth of Thread	Qty. per box	Approx. Weight per 100
1/4	293	7/16	1 1/4	7/16	100	4 1/2
3/8	414	9/16	1 1/2	9/16	50	8
1/2	595	1 1/16	1 3/4	7/8	50	15
5/8	864	2 7/32	2 3/8	1	25	28
3/4	1174	1	3	1 1/4	25	48

Safe Load Factor of 10 to 1

SELF DRILLING SPECIAL FLUSH SHELL — Fig. 512

The Special Flush Shell is preferred where large quantities of shells are to be installed with power hammers. Has tapered chucking end for mounting on hammer chuck while drilling hole and expanding shell. Chucking end is broken off flush with surface after shell is installed by a quick lateral strain on chuck or by striking shell with hand hammer after chuck is removed. Cuttings pass through shell and chuck without removal for cleaning, greatly reducing drilling time.

Order by size and figure number.

DIMENSIONS IN INCHES



Rod Size	Recom. Safe Load, lb. 1-2-4 Concrete	O. D. of Shell	Depth of Shell in stone	Depth of Thread	Qty. per Box	Approx. Weight per 100
1/4	293	7/16	1 1/32	1 3/32	100	5
3/8	414	9/16	1 17/32	9/16	50	11
1/2	595	1 1/16	2 1/32	7/8	50	18
5/8	864	2 7/32	2 15/32	1	25	32
3/4	1174	1	3 1/4	1 1/16	25	56
7/8	1425	1 1/8	3 11/16	1 1/2	25	74

Safe Load Factor of 10 to 1.

SELF DRILLING ROD HANGER SHELL — Fig. 513

Assures a neat, positive fastening for threaded hanger rods and are easily installed with a motor or spring hammer. Order by size and figure number.

DIMENSIONS IN INCHES



Rod Size	Recom. Safe Load, lb. 1-2-4 Concrete	O. D. of Shell	Length of Shell	Depth of Thread	Qty. per box	Approx. weight per 100
1/4	293	7/16	1 1/16	1 1/16	100	5 1/2
3/8	414	9/16	1 7/8	3/4	50	11
1/2	595	1 1/16	2 1/2	1	50	18
5/8	864	2 7/32	3	1 1/8	25	34
3/4	1174	1	3 3/4	1 1/16	25	56

Safe Load factor of 10 to 1

STEEL ROD COUPLING — Fig. 123

Our Fig. 123 Rod coupling is tapped U. S. Standard machine thread. When a solid connection is necessary, the coupling can be welded to rod after assembly.

Order by figure number, specify size of rod.

Rod Size	Maximum Rec. Load	Length	Weight per 100
1/4	230	1 1/2	9
3/8	610	1 3/4	12
1/2	1130	1 3/4	12
5/8	1810	2 1/4	20
3/4	2710	2 1/4	31
7/8	3770	2 1/4	61
1	4150	2 1/4	77
1 1/8	5200	3	158
1 1/4	6660	3 1/4	180



STEEL ROD COUPLINGS — Fig. 123W

Fig. 123W Rod Couplings are made to comply with jobs that require a hole for inspection.

Order by figure number, specify size of rod.

Rod Size	Maximum Rec. Load	Length	Weight per 100
1/4	230	1 1/2	9
3/8	610	1 3/4	12
1/2	1130	1 3/4	12
5/8	1810	2 1/4	20
3/4	2710	2 1/4	31
7/8	3770	2 1/4	61
1	4150	2 1/4	77
1 1/8	5200	3	158
1 1/4	6660	3 1/4	180



STEEL REDUCING ROD COUPLINGS — Fig. 123R

Reducing Rod Couplings are designed to reduce rod sizes. Couplings are made to step up or down one size.

Order by figure number and size of rod.

Rod Size	Maximum Rec. Load	Length	Weight per 100
1/4 x 3/8	230	1	8
3/8 x 1/2	610	1 3/4	12
1/2 x 5/8	1130	2	16
5/8 x 3/4	1810	2 1/4	31
3/4 x 7/8	2710	2 1/4	39
7/8 x 1	3770	2 5/8	41





ROD COUPLING — Fig. 167

MALLEABLE IRON



Fig. 167 Rod Couplings are tapped with a straight bolt thread tapping.

Order by figure number and size of rod.

Rod Size	Maximum Load Lbs.	Length	Approx. Weight per 100
1/4	230	1 3/8	6
3/8	610	1 5/8	10
1/2	1130	2 1/8	20
5/8	1810	2 1/2	30
3/4	2710	2 3/8	44
7/8	3770	3 3/16	96

REDUCING ROD COUPLING — Fig. 167R

MALLEABLE IRON



Reducing Rod Couplings are designed to reduce rod sizes. Couplings are made to step up or down one size.

Order by figure number and size of rod.

Rod Size	Maximum Load Lbs.	Length	Approx. Weight per 100
1/4 x 3/8	230	1 5/8	10
3/8 x 1/2	610	1 5/8	21
1/2 x 5/8	1130	2 1/2	35
5/8 x 3/4	1810	2 5/8	44
3/4 x 7/8	2710	3 3/16	104

BEVEL WASHER — FIG. 706

Bevel Washers are made of malleable iron.

Order by rod size.

DIMENSIONS IN INCHES



ROD DIA.	SIZE	THICKNESS		WEIGHT PER 100
		SMALL END	LARGE END	
3/8	1 1/4	5/32	11/32	9
1/2	1 1/4	5/32	11/32	9
5/8	1 1/2	5/32	13/32	15
3/4	1 1/2	7/32	13/32	16
7/8	2	7/32	9/16	33
1	2	7/32	9/16	31
1 1/8	2 1/4	9/32	5/8	49
1 1/4	2 1/2	5/16	23/32	68

SPRING TOGGLE BOLT — Fig. 59

The spring toggle bolt is the most popular hollow wall fastener used today. The wings are fitted with coil springs that open when inserted into the wall. Gravity is not a factor making it possible to be used in any position.

*Also available as toggle heads only.

When ordering ask for head only.



Size	Drill Size	Weight per 100
$\frac{3}{16} \times 4$	$\frac{1}{2}$	5
$\frac{3}{16} \times 5$		6
$\frac{3}{16} \times 6$		6
$\frac{1}{4} \times 4$	$\frac{5}{8}$	8
$\frac{1}{4} \times 5$		9
$\frac{1}{4} \times 6$		10
$\frac{3}{8} \times 4$	$\frac{7}{8}$	19
$\frac{3}{8} \times 5$		22
$\frac{3}{8} \times 6$		24
$\frac{1}{2} \times 4$	$1 \frac{1}{4}$	32
$\frac{1}{2} \times 5$		35
$\frac{1}{2} \times 6$		40

TUMBLE TOGGLE BOLT — Fig. 60

Figure 60 toggle bolts are used on vertical walls since it is of the gravity type of bolt. For heavy duty refer to the figure 62 toggle bolt.

Size	Drill Size	Weight per 100
$\frac{3}{16} \times 4$	$\frac{1}{2}$	5
$\frac{3}{16} \times 5$		5
$\frac{3}{16} \times 6$		6
$\frac{1}{4} \times 3$		
$\frac{1}{4} \times 4$	$\frac{5}{8}$	
$\frac{1}{4} \times 5$		10
$\frac{1}{4} \times 6$		10
$\frac{3}{8} \times 4$	$\frac{7}{8}$	19
$\frac{3}{8} \times 5$		22
$\frac{3}{8} \times 6$		24

DISCONTINUED



TUMBLE TOGGLE BOLT — Fig. 62

Figure 62 toggle bolts are used in heavy duty applications to mount brackets and fixtures on vertical walls.

Order by size and figure number.

Size	Drill Size	Weight per 100
$\frac{3}{8} \times 3$	$1 \frac{1}{16}$	16
$\frac{3}{8} \times 4$		19
$\frac{3}{8} \times 5$		22
$\frac{3}{8} \times 6$		
$\frac{1}{2} \times 4$	$\frac{7}{8}$	
$\frac{1}{2} \times 5$		35
$\frac{1}{2} \times 6$		40

DISCONTINUED





STEEL COACH SCREWS — Fig. 107

Fig. 107 Steel Coach Screws are normally used on our Figures' 303, 337 and 340 brackets.

Order by size and figure number.



Length in Inches	Diameter in Inches				
	1/4	3/8	1/2	5/8	3/4
1 1/2	2.3	6.0	11.8	19.4	32.3
2	2.8	7.0	14.4	23.2	38.3
2 1/2	3.3	8.3	16.2	27.0	44.0
3	3.9	9.8	18.6	31.0	47.7
3 1/2	4.4	11.4	21.2	34.8	56.3
4	5.0	12.5	23.3	37.6	58.5
4 1/2	5.7	14.0	26.1	42.6	64.0
5	6.3	15.4	29.0	45.5	68.0
5 1/2	7.0	16.4	31.5	49.3	74.0
6	7.4	18.3	34.0	53.0	77.0

STEEL DRIVE SCREWS — Fig. 166

Drive Screws are normally used on our Figure 44 U-Hooks and Figure 153 Side Beam Connectors.

When ordering, specify size, length, and figure number.



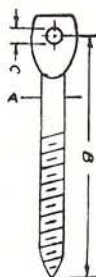
DIMENSIONS IN INCHES	
Size of Screw	Weight per 100
1 1/2 -No. 12	1.5
2 -No. 16	3

FLATTENED END LAG SCREW — Fig. 11 STEEL

Flattened End Lag Screw is furnished complete with bolt and nut. It has a gimlet pointed lag screw on one end and flattened with hole for bolt on other end.

This screw is used with perforated extension bar to connect lag screw with hanger.

Order by size and figure number.



DIMENSIONS IN INCHES			
Size A	B	C	Weight per 100
1/4	3	1/4	5
5/16	3	1/4	6
3/8	4	1/4	11

COPPER TUBING HANGERS



COPPER TUBING
HANGERS



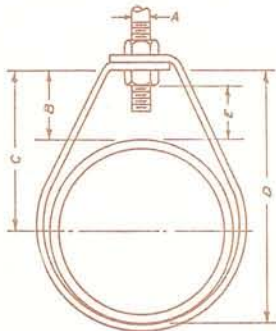
BAND HANGER — Fig. 1A CT STEEL — COPPER PLATED

Band Hanger is used to support copper tubing. It is an all steel hanger formed in one piece giving a double thickness of stock at the point which carries the load.

Approvals: Complies with Federal Specification WW-H-171 (Type 7) and Manufacturers Standardization Society SP-69 (Type 7)

Order by size and figure number.

DIMENSIONS IN INCHES



Pipe Size	Recom. Safe Load, lb.	A	B	C	D	E	Hole Size	Steel Size	Weight per 100
1/2	610	3/8	1 3/16	1 5/8	2 1/16	1 3/16	3/16	16 ga. x 7/8	10
3/4	610	3/8	1 1/8	1 7/16	2 3/16	1 3/16	3/16	16 ga. x 7/8	12
1	610	3/8	1 5/16	2	2 5/8	1	3/16	16 ga. x 7/8	14
1 1/4	610	3/8	1 3/8	2 3/16	3	1 1/16	3/16	16 ga. x 7/8	16
1 1/2	610	3/8	1 3/8	2 1/2	3 1/16	1 1/4	3/16	16 ga. x 7/8	17
2	610	3/8	1 3/4	2 5/16	4 1/8	1 3/16	3/16	14 ga. x 1	32
2 1/2	970	1/2	1 5/8	3 1/16	4 1/2	1 1/8	3/16	14 ga. x 1	36
3	970	1/2	1 1/2	3 3/4	5	1 1/16	3/16	1/8 x 1	57
4	970	5/8	1 1/2	3 3/4	6	1 1/16	3/16	1/8 x 1 1/4	68
5	970	5/8	2 3/16	5	7 3/4	1 3/4	3/16	1/8 x 1 1/4	82
6	1250	3/4	2 3/8	5 1/16	9	1 3/16	1 1/16	1/8 x 1 1/2	120

COPPER TUBING HANGERS



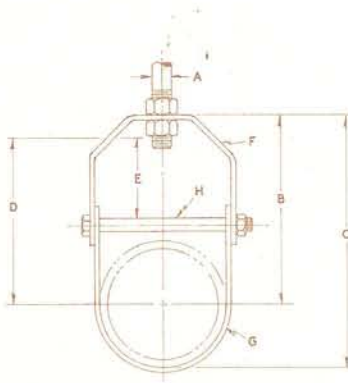
CLEVIS HANGER — Fig. 100CT STEEL — COPPER PLATED

The Clevis Hanger is used to support copper tubing and copper plated to match tube. It is made of steel and of sufficient weight to carry whatever load its size requires. It provides a vertical adjustment of approximately 1 1/2 inches after pipe is in place.

Approvals: Complies with Federal Specification WW-H-171 (Type 12)

Order by size and figure number.

DIMENSIONS IN INCHES



TUBE SIZE	Rec. Safe Load, lb.	A	B	C	D	E	STEEL SIZE		BOLT H	WEIGHT per 100
							F	G		
1/2	450	3/8	2 1/4	2 5/16	1 7/8	3/16	16 ga x 7/8	16 ga x 7/8	1/4	14
3/4	450	3/8	2 3/8	2 13/16	2	1	16 ga x 7/8	16 ga x 7/8	1/4	15
1	450	3/8	2 5/8	3 1/16	2 1/4	1 1/16	16 ga x 7/8	16 ga x 7/8	1/4	18
1 1/4	450	3/8	2 1/2	3 3/16	2 1/8	1 1/4	16 ga x 7/8	16 ga x 7/8	1/4	20
1 1/2	450	3/8	2 7/8	3 11/16	2 1/2	1 1/16	13 ga x 7/8	16 ga x 7/8	1/4	27
2	450	3/8	3 7/16	4 1/2	3 1/16	1 3/16	13 ga x 7/8	13 ga x 7/8	1/4	32
2 1/2	450	1/2	3 7/16	4 3/4	2 7/8	1 3/16	1/8 x 1 1/4	1/8 x 1 1/4	1/4	71
3	600	1/2	4 1/16	5 5/8	3 1/2	1 3/16	1/8 x 1 1/4	1/8 x 1 1/4	1/4	80
3 1/2	600	1/2	4	5 13/16	3 3/16	1 13/16	1/8 x 1 1/4	1/8 x 1 1/4	1/4	110
4	600	1/2	4 1 1/16	6 3/4	4 1/16	1 7/16	3/16 x 1 1/4	1/8 x 1 1/4	3/16	123
5	900	5/8	5 1/16	7 5/8	4 3/16	1 3/8	3/16 x 1 1/4	3/16 x 1 1/4	3/8	190
6	900	5/8	6 3/8	9 7/16	5 5/8	2 1/8	3/16 x 1 1/4	3/16 x 1 1/4	3/8	220

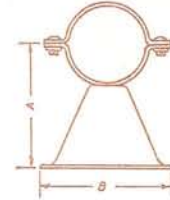
STAMPED STEEL HANGER — Fig. 66CT COPPER PLATED

Our Fig. 66CT Stamped Steel Hanger for copper tubing is a strong, neat, and light concealed screw hanger. It supports the tubing one inch from back of tube to wall and has only two parts. It takes the place of rough unsightly-looking hangers in a finished room and eliminates the use of ordinary pipe clips.

Order by size and figure number.

DIMENSIONS IN INCHES

Tube Size	A	B	Weight per 100
3/8	1 1/8	1 5/8	7.5
1/2	1 3/16	1 5/8	7.5
3/4	1 5/16	1 5/8	8.0
1	1 7/16	1 5/8	8.5
1 1/4	1 9/16	1 5/8	9.0



COPPER TUBING HANGERS

WIRE PIPE HOOKS — Fig. 111CT STEEL — COPPER PLATED

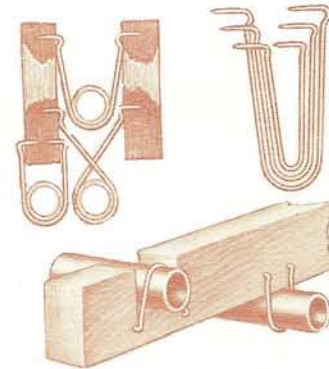
The Wire Pipe Hooks are made of special hard drawn wire extra heavy gauge. The driving head is bent so as to make it easy to drive. The point is cut to a sharp nail point which will penetrate either soft or hard wood without bending. It can be used on tubing in any position as shown.

Furnished in tubing sizes from 1/2 inch to 2 inch, lengths 4 inch to 12 inch.

Order by size, length, and figure number.

WEIGHT PER HUNDRED

Tube Size Inches	Length of Hanger, Inches				
	4	6	8	10	12
1/2					
3/4	6	8	10	12	14
1					
1 1/4					
1 1/2	8	10	12	14	16
2					



COPPER TUBING HANGERS

BAND WITH ADJUSTING NUT—Fig. 7CT STEEL — COPPER PLATED

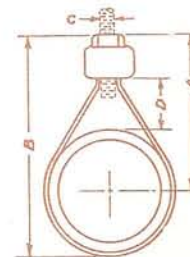
Figure 7CT bands can be assembled while the pipe line is in place. Rod "C" must be threaded through the nut in order to support the load.

Approvals: Complies with Federal Specification WW-H-171 (Type 9) and Manufacturers Standardization Society SP-69 (Type 9)

Order by tubing size and figure number.

DIMENSIONS IN INCHES

Tubing Size	Max. Recom Load, lb.	A	B	C	D	Weight per 100
1/2		2 5/8	2 7/8			16
3/4		2 7/16	2 7/8			16
1		2 9/16	3 1/8			17
1 1/4	240	2 11/16	3 3/8	3/8	1 1/4	17
1 1/2		2 13/16	3 3/4			18
2		3 1/16	4			18
2 1/2	320	3 3/16	4 1/2			19
3	320	3 1/16	5 1/4			36
3 1/2		4 3/16	6	1/2	1 1/16	38
4	820	4 7/16	6 1/2			40



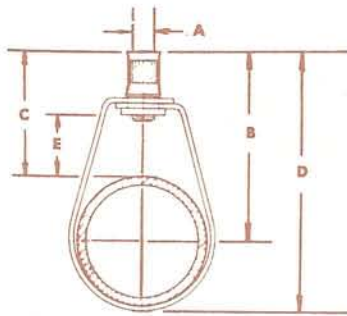


ADJUSTABLE SWIVEL RING — Fig. 800CT FOR COPPER TUBING

Our Adjustable Ring is constructed entirely of steel. The Swivel Nut is knurled to provide a gripping surface for the use of pliers when adjusting the pipe. The nut has a retainer to keep it from dropping out of the ring while it is in the open position being fitted onto the pipe.

Approvals: Underwriters' Laboratories listed and Factory Mutual approved. Federal Specification WW-H-171 (type 10) and Manufacturers Standardization Society SP-69 (type 10)

Copper plated finish for suspension of copper tubing lines.



DIMENSIONS IN INCHES

Tubing Size	Max. Load/Lb.	A	B	C	D	E	Weight per 100
1/2	300	3/8	2 3/16	2 3/16	3 1/16	1 3/8	11
3/4	300	3/8	2 5/16	1 7/8	2 13/16	1 1/16	11
1	300	3/8	2 5/16	1 7/8	2 3/4	1 1/16	12
1 1/4	300	3/8	2 1/2	1 7/8	3 1/16	1 1/16	13
1 1/2	300	3/8	2 3/4	1 15/16	3 1/16	1 3/16	14
2	300	3/8	2 7/8	1 15/16	3 7/8	1 5/32	16
2 1/2	500	1/2	4 3/16	3 1/8	5 3/4	2	30
3	500	1/2	5 1/8	3 3/16	6 11/16	2 5/16	34
3 1/2	500	1/2	5 1/16	3 3/16	7 1/4	2 1/16	39
4	900	5/8	5 1/8	7 3/16	7 3/16	2 3/16	43
5	900	5/8	6 7/8	9 1/16	9 1/16	2 13/16	68
6	1300	3/4	7 3/4	11 1/8	11 1/8	3 1/4	114
8	1800	7/8	9 3/16	13 3/16	13 3/16	3 5/8	136

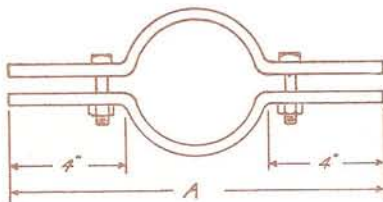
COPPER TUBING HANGERS

COPPER TUBE RISER CLAMP — Fig. 126CT STEEL — COPPER PLATED

Copper Tubing Riser Clamps are made of steel sized for copper tubing.

Approvals: Complies with Federal Specification WW-H-171 (Type 8) and Manufacturers Standardization Society (Type 8)

Order by size and figure number.



DIMENSIONS IN INCHES

Pipe Size	Recom. Safe Load, lb.	A	Steel Size	Bolt Size	Weight per 100
1/2	220	9 1/4	1/8 x 1	1/4 x 1	70
3/4	220	9 1/4	1/8 x 1	1/4 x 1	74
1	220	9 1/4	1 1/8 x 1	1/4 x 1	75
1 1/4	220	10	1/8 x 1	1/4 x 1	77
1 1/2	220	10 1/4	1/8 x 1	1/4 x 1	80
2	220	10 5/8	1/8 x 1	1/4 x 1	84
2 1/2	390	11	3/16 x 1 1/4	3/8 x 1 1/4	160
3	530	11 5/8	3/16 x 1 1/4	3/8 x 1 1/4	180
4	530	13	3/16 x 1 1/4	3/8 x 1 1/4	204
5	810	14	1/4 x 1 1/2	1/2 x 1 1/2	350
6	1570	15	1/4 x 2		525

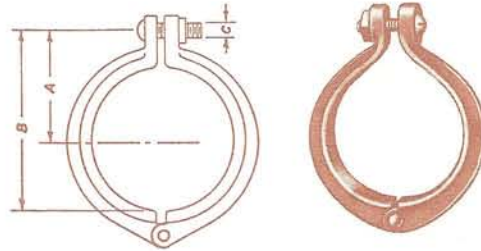
HINGE HANGER — Fig. 34CT MALLEABLE IRON — COPPER PLATED

Hinge Hanger is used with eye rods, adjusters, eye sockets, and extension bars.

Order by size and figure number.

DIMENSIONS IN INCHES

Tube Size	Recom. Safe Load, lb.	A	B	Bolt Size	Weight per 100
1/2	200	3/4	1 1/8	1/4	7
3/4	300	1 1/16	1 3/8	1/4	9
1	300	1 3/16	1 3/4	1/4	11
1 1/4	300	1 5/16	2	1/4	13
1 1/2	300	1 7/16	2 3/8	1/4	18
2	300	1 13/16	2 7/8	1/4	24
2 1/2	450	2	3 3/16	1/4	26
3	450	2 5/8	3 7/8	1/4	40



COPPER TUBING HANGERS

STEEL HEXAGON NUTS — Fig. 165CT COPPER PLATED

In self colored refer to figure 165

DIMENSIONS IN INCHES

Rod Size	Width	Thickness	Weight per 100
3/8	5/8	2 1/4	2.2
1/2	1 1/16	7/16	4.8
5/8	1	3 5/4	8.9



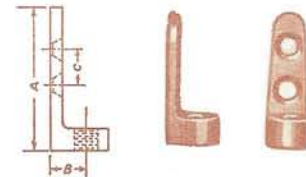
COPPER TUBING HANGERS

SIDE BEAM CONNECTOR — Fig. 153CT MALLEABLE IRON — COPPER PLATED

In self colored refer to figure 153

DIMENSIONS IN INCHES

Machine Thread Tapping	A	B	C	Weight per 100
3/8	2 5/8	7/16	3/4	13
1/2	2 3/4	3/4	3/4	25



COPPER TUBING HANGERS

COPPER STRAPS — Fig. 72CT

Straps are used for holding tubing directly to a flat surface.

Order by size and figure number.

WEIGHT PER HUNDRED

Tube Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Weight	1.00	1.25	1.50	1.75	2.00	2.50	3.00	4.00



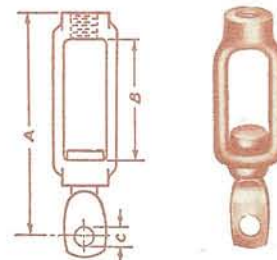
COPPER TUBING HANGERS

HANGER ADJUSTER — Fig. 38CT MALLEABLE IRON AND STEEL — COPPER PLATED

Adjusters are used on our Fig. 34CT Hangers. Order by size and figure number.

DIMENSIONS IN INCHES

Size Thread	A	B	C	Weight per 100
3/8	3 7/16	1 1/16	1 1/32	25
1/2	3 3/16	1 1/16	1 1/32	25



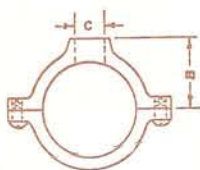


EXTENSION HANGER RING ONLY — Fig. 81CT

MALLEABLE IRON — COPPER PLATED

Our Figure 81CT Rings are manufactured to fit copper tubing.

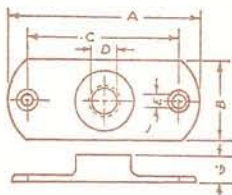
Approvals: Complies with Federal Specification WW-H-171 (Type 25) and Manufacturers Standardization Society SP-69 (Type 12)



DIMENSIONS IN INCHES

Tube Size	Recom. Max. Load, lb.	B	Tapping C Bolt	Weight per 100
1/4	180	9/16	3/8	11
3/8	180	5/8	3/8	12
1/2	180	23/32	3/8	13
5/8	180	3/4	3/8	14
3/4	180	13/16	3/8	15
1	180	15/16	3/8	16
1 1/4	180	1 5/32	3/8	19
1 1/2	180	1 7/32	3/8	22
2	180	1 7/16	3/8	27
2 1/2	480	1 15/16	1/2	72
3	480	2 3/16	1/2	107

COPPER TUBING HANGERS



SINGLE PLATE — Fig. 85CT

MALLEABLE IRON — COPPER PLATED

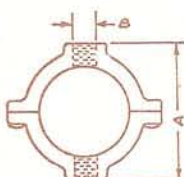
Single plate is used as a fastener for Fig. 81CT Extension Hanger Ring only. A nipple or threaded machine rod allows for proper distance from wall or ceiling. Copper Plated after machining.

Order by tapping size and figure number.

DIMENSIONS IN INCHES

Tapping	A	B	C	E	G	Weight per 100
3/8 Bolt	2 3/8	1	1 3/4	3/16	1/2	13
1/2 Bolt	3 1/4	1 1/2	2 3/8	3/16	5/8	25

COPPER TUBING HANGERS



SPLIT RING HANGER DOUBLE TAPPING — Fig. 90CT

MALLEABLE IRON — COPPER PLATED

Split Ring with Double Tapping provides for supporting tubing one line under the other.

Order by size, tapping size, and figure number.

DIMENSIONS IN INCHES

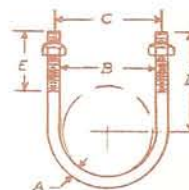
Tube Size	Max. Rec. Load/Lb.	A	Bolt Tapping B	Weight per 100
1/4	180	1 1/8	3/8	13
3/8	180	1 1/4	3/8	15
1/2	180	1 1/16	3/8	17
5/8	180	1 1/2	3/8	17
3/4	180	1 5/8	3/8	17
1	180	1 7/8	3/8	18
1 1/4	180	2 3/16	3/8	22
1 1/2	180	2 1/16	3/8	27
2	180	2 7/8	3/8	31
2 1/2	480	3 7/8	1/2	79
3	480	4 3/8	1/2	126

COPPER TUBING U-BOLT — Fig. 222 CT

Our Figure 222 Copper Tubing U-Bolts are made of 1/4" diameter stock, copper plated.

DIMENSIONS IN INCHES

Tubing Size	Max. Rec. Load/Lbs.	A	B	C	D	E	Weight per 100
1/2	485	1/4	1 1/16	1 5/16	1 15/16	1 1/2	5
3/4	485	1/4	1 3/16	1 3/16	1 13/16	1 3/4	6
1	485	1/4	1 3/8	1 1/8	1 3/8	1 3/4	7
1 1/4	485	1/4	1 1/2	1 1/2	2 1/16	1 3/4	7
1 1/2	485	1/4	1 11/16	1 13/16	2 3/16	1 3/4	8
2	485	1/4	2 3/16	2 1/16	2 3/16	1 3/4	9



COPPER TUBING HANGERS

ALL-THREAD ROD — Fig. 94CT STEEL — COPPER PLATED

All Thread Rod has a standard machine thread running its entire length. It eliminates the necessity of cutting threads on rods in the field. Furnished in five foot lengths only.

Order by size and figure number.

Diameter of Rod, Inches	Max. Recom. Load, lbs.	Weight per Hundred, Feet
3/8	610	37
1/2	1130	66



COPPER TUBING HANGERS

EYE SOCKET — Fig. 12CT MALLEABLE IRON — COPPER PLATED

Order by size and figure number.

DIMENSIONS IN INCHES

Bolt Thread Size	Max. Recom. Load, lb.	Tapping Bolt Thread	B	Weight per 100
3/8	610	3/8	7/16	7
1/2	1130	1/2	1/2	11



**PLASTIC
COATED HANGERS**



PLASTIC COATED
HANGERS



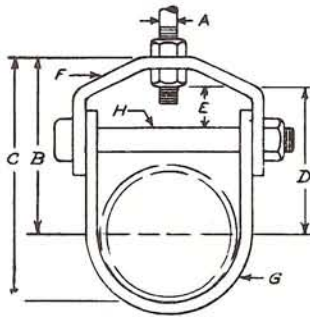
PVC CLEVIS HANGER — Fig. 100 PVC

To protect glass pipes and special pipes from coming in contact with the hanger.

Approvals: Underwriters Laboratories listed 3/4" through 8" pipe size and Factory Mutual approved. Complies with Federal Specification WW-H-171 (Type 1) and Manufacturers Standardization Society (Type 1).

DIMENSIONS IN INCHES

Pipe Size	A	B	C	D	E	F	G	H	Weight per 100
1/2	3/8	2 1/4	2 3/4	1/2	1 3/8	1/4	1/8 x 1	1/8 x 1	33
3/4	3/8	2 1/2	3	3/8	1 1/2	1/4	1/8 x 1	1/8 x 1	38
1	3/8	2 3/4	3 3/8	3/8	1 3/4	1/4	1/8 x 1	1/8 x 1	42
1 1/4	3/8	3	3 7/8	3/4	2	1/4	1/8 x 1	1/8 x 1	47
1 1/2	3/8	3 1/2	4 3/8	1	2 1/2	1/4	3/32 x 1	1/8 x 1	59
2	3/8	3 5/8	4 7/8	1 1/8	2 3/4	1/4	3/32 x 1	1/8 x 1	64
2 1/2	1/2	4 3/8	6	7/8	3 1/4	3/16	3/16 x 1 1/4	3/16 x 1 1/4	110
3	1/2	4 1/4	6 1/8	3/8	3	3/16	3/16 x 1 1/4	3/16 x 1 1/4	120
4	5/8	5 1/2	7 3/4	7/8	4 1/8	1/2	1/4 x 1 1/4	3/16 x 1 1/4	205
5	5/8	6 1/4	9	7/8	4 7/8	1/2	1/4 x 1 1/4	3/16 x 1 1/4	285
6	3/4	7 1/4	10 1/2	1 1/8	5 3/4	5/8	1/4 x 1 1/2	3/16 x 1 1/2	370



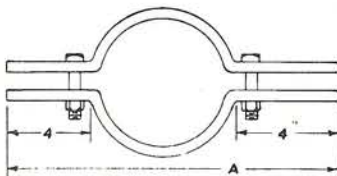
PVC RISER CLAMPS — Fig. 126 PVC

To protect glass pipes and special pipes from coming in contact with the hanger.

Approvals: Complies with Federal Specification WW-H-171 (Type 8) and Manufacturers Standardization Society SP-69 (Type 8)

DIMENSIONS IN INCHES

Pipe Size	Recom. Safe Load, lb.	A	Steel Size	Bolt Size	Weight per 100
1/2	255	9 3/8	3/16 x 1 1/4	3/8 x 1 1/4	130
3/4	255	9 3/8	3/16 x 1 1/4	3/8 x 1 1/4	136
1	255	9 5/8	3/16 x 1 1/4	3/8 x 1 1/4	138
1 1/4	255	10	1/4 x 1 1/2	3/8 x 1 1/4	195
1 1/2	255	10 3/8	1/4 x 1 1/2	3/8 x 1 1/4	201
2	255	10 3/4	1/4 x 1 1/2	3/16 x 1 1/2	217
2 1/2	390	11 1/4	1/4 x 1 1/2	3/16 x 1 1/2	229
3	530	12	1/4 x 1 1/2	3/16 x 1 1/2	250
4	810	13 1/2	1/4 x 1 1/2	1/2 x 1 1/2	342



ADJUSTABLE SWIVEL RING — Fig. 800PVC

FOR GLASS PIPE

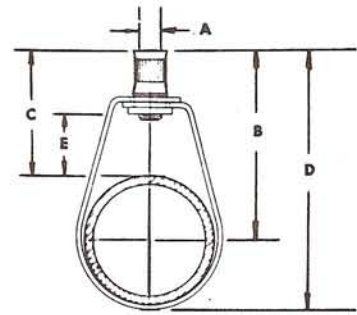
To protect glass pipes and special pipes from coming in contact with the hanger. (PVC) Polyvinyl Chloride Coating .030 to .050 thick. Operating temperatures are not recommended to exceed 225°.

Approvals: Underwriters Laboratories listed 3/4" through 8". Factory Mutual Approved. Complies with Federal Specification WW-H-171 (Type 10)



DIMENSIONS IN INCHES

Pipe Size	Max. Rec. Load/Lb.	A	B	C	D	E	Weight per 100
3/4	300	3/8	2 3/8	1 13/16	2 3/4	1 1/16	11
1	300	3/8	2 1/2	1 13/16	3 3/16	1 1/16	12
1 1/4	300	3/8	2 3/4	2	3 3/16	1 3/16	13
1 1/2	300	3/8	2 13/16	2	3 7/8	1 5/32	14
2	300	3/8	3 5/16	2 1/8	4 1/2	1 5/16	16
2 1/2	500	1/2	4	2 5/8	5 1/8	1 1/2	30
3	500	1/2	4 9/16	2 3/4	6 5/16	1 11/16	34
4	900	5/8	5 1/16	3 5/16	7 13/16	1 13/16	43
5	900	5/8	6 1/4	3 1/2	9 1/16	2	68
6	1300	3/4	7 3/16	3 7/8	10 5/8	2 3/8	114
8	1800	7/8	8 11/16	4 3/8	13 1/8	2 7/8	136



BAND PVC — Fig. 1A PVC

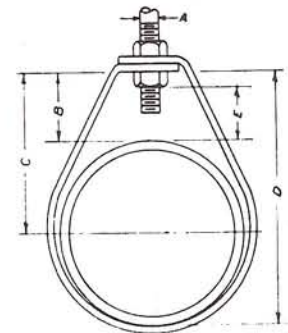
To protect glass pipes and special pipes from coming in contact with the hanger. (PVC) Polyvinyl Chloride Coating .030 to .050 thick. Operating temperatures are not to exceed 225°

Approvals: Complies with Federal Specification WW-H-171 (Type 7) and Manufacturers Standardizations Society SP-69 (Type 7)



DIMENSIONS IN INCHES

Pipe Size	Recom. Safe Load, lb.	A	B	C	D	E	Hole Size	Steel Size	Weight per 100
1/2	610	3/8	1 3/16	1 5/8	2 1/16	1 3/16	7/16	16 ga. x 7/8	10
3/4	610	3/8	1 1/8	1 21/32	2 3/16	1 3/16	7/16	16 ga. x 7/8	12
1	610	3/8	1 3/16	2	2 5/8	1	7/16	16 ga. x 7/8	14
1 1/4	610	3/8	1 3/8	2 3/16	3	1 1/16	7/16	16 ga. x 7/8	16
1 1/2	610	3/8	1 9/16	2 1/2	3 3/16	1 1/4	7/16	16 ga. x 7/8	17
2	610	3/8	1 3/4	2 13/16	4 1/8	1 9/16	7/16	14 ga. x 1	32
2 1/2	970	1/2	1 5/8	3 1/16	4 1/2	1 1/8	9/16	14 ga. x 1	36
3	970	1/2	1 1/2	3 1/4	5	1 1/16	9/16	1/8 x 1	57
4	970	5/8	1 1/2	3 3/4	6	1 1/16	9/16	1/8 x 1 1/4	68
5	970	5/8	2 3/16	5	7 3/4	1 3/4	9/16	1/8 x 1 1/4	82
6	1250	3/4	2 3/8	5 11/16	9	1 13/16	1 1/16	1/8 x 1 1/2	120
8	1800	7/8	2 3/8	6 11/16	11	1 5/8	1 3/16	3/16 x 1 3/4	220



**FABREEKA
LINED HANGERS**



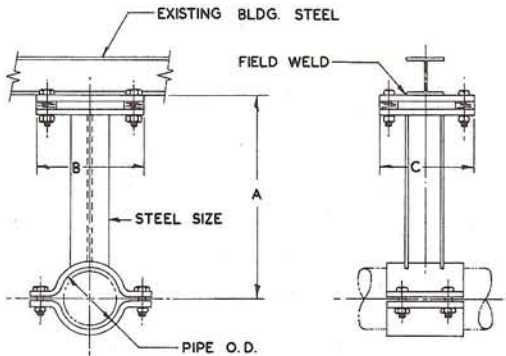
FABREEKA LINED
HANGERS



FABREEKA MOUNTED PIPE GUIDE — Fig. 189

Fig. 189 Fabreeka Mounted Pipe Guides are designed to anchor horizontal pipe lines from existing steel, without vibration. Fabreeka is a new material designed for vibration and noise reduction. This material is resistant to heat and cold and has design capabilities of 1500 PSI in compression.

Fabreeka's fine properties make it an excellent material to be used on our Fig. 1007 Pipe Guides to reduce the transmission of sound in the piping system that would otherwise be absorbed in the structure of the building.



Anchor Size	Steel Size	A" DIMENSION (Max. Anchor Force KIPS)					Base B	Plates C
		12"	18"	24"	36"	48"		
1	3I 5.7	2.84	1.90	1.42	.95	.71	9	9
2	4I 7.7	5.00	3.32	2.50	1.66	1.25	9	10
3	5I 10.0	6.74	5.24	3.37	2.62	2.00	9	11
4	6I 12.5	9.00	8.00	4.50	4.00	3.00	10	12
5	7I 15.3	17.48	11.50	8.74	5.75	4.37	10	13
6	4 wf 13.0	8.65	5.74	4.33	2.87	2.16	10	10
7	6 wf 15.5	12.42	11.04	6.21	5.52	4.14	12	12
8	8 wf 17.0	23.48	12.00	11.74	6.00	5.87	12	14
9	8 wf 24.0	35.00	23.00	17.50	11.50	8.75	13	14
10	8 wf 31.0	46.00	30.00	23.00	15.00	11.50	14	14
11	10 wf 21.0	31.00	24.00	15.50	12.00	7.75	12	14
12	10 wf 33.0	58.00	36.00	29.00	18.00	14.50	14	16
13	10 wf 49.0	88.00	61.00	44.00	30.50	22.00	16	16
14	12 wf 27.0	58.00	36.00	29.00	18.00	14.50	13	18
15	12 wf 40.0	87.00	58.00	43.50	29.00	21.75	14	18
16	12 wf 53.0	108.00	79.00	54.00	39.50	27.00	16	18
17	14 wf 30.0	70.00	46.50	35.00	23.25	17.50	13	20
18	14 wf 43.0	105.00	70.00	52.50	35.00	26.25	14	20
19	16 wf 36.0	94.00	62.00	47.00	31.00	23.50	13	22
20	18 wf 50.0	148.00	99.00	74.00	49.50	37.00	14	24



FABREEKA LINED PIPE CLAMP — Fig. 190

Fabreeka lined pipe clamps are available in all pipe sizes. For dimensional data refer to Figure 126 Riser Clamps on page 17.

TECHNICAL DATA



TECHNICAL
DATA



SPACING OF PIPE SUPPORTS

STRESSES CALCULATED FOR STANDARD WEIGHT PIPE

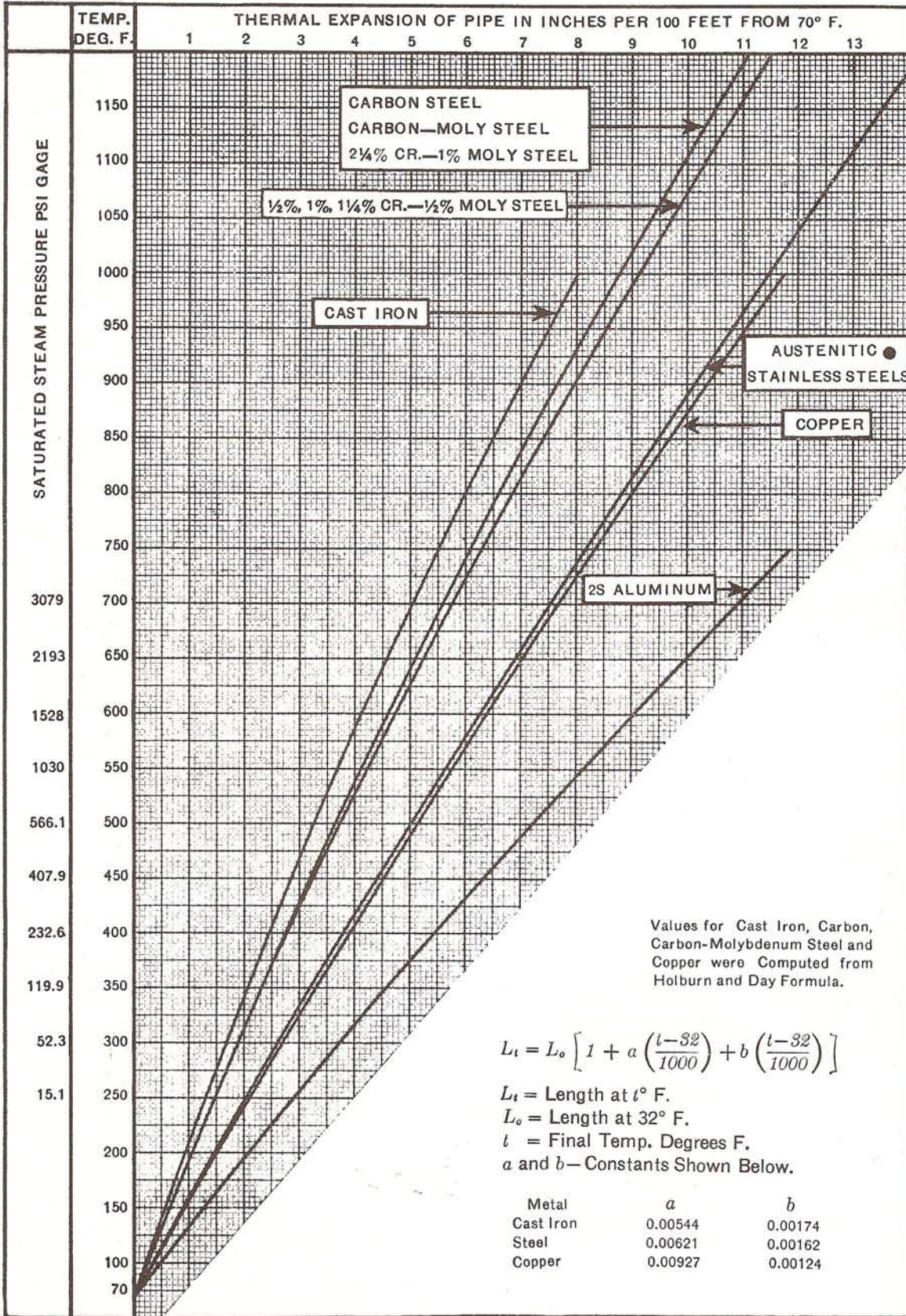
Table I—Stress Due to Sag—Pipe Filled with Water

Pipe Size Inches	SPAN BETWEEN SUPPORTS, FEET													Pounds of Water per Lineal Foot	
	10	12	14	16	18	20	24	30	36	42	48	54	60		
1/2	2387	3438	4680	6113	7736	9551	.....	.....	.....	.....	.....	.....	.....	.....	.13164
1	1531	2205	3002	3921	4962	6126	8822	13785	.....	.....	.....	.....	.....	.....	.37345
1 1/2	1342	1932	2630	3436	4349	5369	7731	12081	.....	.....	.....	.....	.....	.....	.88260
2	903	1301	1771	2313	2927	3614	5205	8133	11711	15941	.....	.....	.....	.....	1.4541
3	620	892	1215	1587	2008	2480	3571	5580	8035	10936	14284	.....	.....	.....	3.0032
4	503	725	986	1288	1631	2013	2900	4531	6525	8881	11600	14681	.....	.....	5.5172
5	424	610	831	1085	1373	1696	2442	3816	5495	7480	9769	12365	15265	.....	8.6666
6	368	530	721	942	1192	1472	2120	3313	4771	6495	8483	10736	13255	.....	12.530
8	319	459	625	816	1033	1276	1837	2871	4135	5628	7351	9304	11487	.....	22.206
10	283	407	554	724	917	1132	1630	2547	3668	4993	6522	8254	10191	.....	35.454
12	238	343	467	610	772	954	1374	2146	3091	4207	5496	6955	8587	.....	49.760
14 O.D.	213	308	419	547	701	855	1232	1925	2772	3774	4929	6239	7702	.....	60.000
16 O.D.	197	284	387	506	640	790	1138	1778	2561	3486	4554	5763	7115	.....	79.187
18 O.D.	181	261	355	464	588	726	1045	1633	2353	3201	4182	5292	6534	.....	100.48
20 O.D.	173	250	340	444	562	694	1000	1563	2251	3064	4003	5066	6254	.....	125.30

Table II—Stress Due to Sag—Pipe Empty

Pipe Size Inches	SPAN BETWEEN SUPPORTS, FEET													
	10	12	14	16	18	20	24	30	36	42	48	54	60	
1/2	2063	2971	4044	5282	6685	8254	11886	.....	.....	.....	.....	.....	.....	.....
1	1249	1799	2449	3199	4049	4998	7198	11247	.....	.....	.....	.....	.....	.....
1 1/2	1010	1454	1979	2586	3273	4040	5818	9091	13092	.....	.....	.....	.....	.....
2	644	977	1262	1649	2087	2577	3711	5798	8350	11365	14844	.....	.....	.....
3	434	625	851	1111	1406	1736	2500	3907	5627	7659	10003	12661	15631	.....
4	331	477	650	849	1075	1327	1911	2986	4390	5853	7644	9675	11945	.....
5	265	381	519	678	858	1060	1526	2385	3435	4675	6106	7728	9541	.....
6	220	317	432	566	667	823	1186	1853	2669	3893	5085	6436	7945	.....
8	167	240	327	427	541	668	962	1503	2165	2998	3915	4956	6118	.....
10	131	189	258	337	426	526	758	1185	1706	2323	3034	3840	4741	.....
12	110	159	217	283	359	443	638	997	1436	1955	2554	3232	3990	.....
14 O.D.	101	145	198	259	332	405	583	911	1312	1786	2333	2953	3646	.....
16 O.D.	88	127	172	225	285	352	508	793	1143	1555	2032	2571	3175	.....
18 O.D.	78	112	153	200	253	313	450	704	1014	1380	1802	2281	2817	.....
20 O.D.	70	100	137	179	226	280	403	630	907	1235	1613	2041	2520	.....

Expansion of Pipe





STANDARD WELDING SYMBOLS

Basic Weld Symbols and Their Location Significance

LOCATION SIGNIFICANCE	FILLET	PLUG OR SLOT	SPOT OR PROJECTION	SEAM	SQUARE GROOVE, FLASH OR UPSET	GROOVE						BACK OR BAKING	SURFACING	FLANGE	
						V	BEVEL	U	J	FLARE V	FLARE-BEVEL			EDGE	CORNER
ARROW SIDE													NOT USED		
OTHER SIDE													NOT USED		
BOTH SIDES		NOT USED	NOT USED	NOT USED								NOT USED	NOT USED	NOT USED	NOT USED
NO ARROW SIDE OR OTHER SIDE SIGNIFICANCE	NOT USED	NOT USED			NOT USED EXCEPT FOR FLASH AND UPSET WELDS	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED		NOT USED	NOT USED

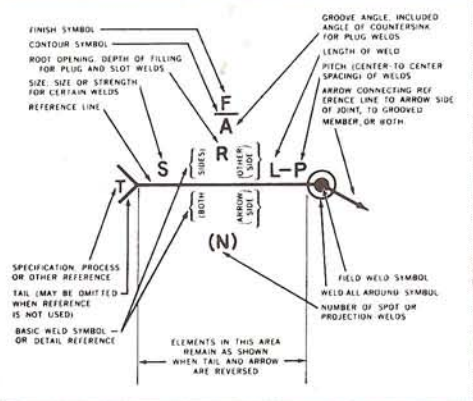
Supplementary Symbols

WELD ALL AROUND	FIELD WELD	MELT-THRU	CONTOUR		
			FLUSH	CONVEX	CONCAVE

Typical Welding Symbols

BACK OR BAKING WELD SYMBOL ANY APPLICABLE SINGLE GROOVE WELD SYMBOL.	SINGLE-V GROOVE WELDING SYMBOL INDICATING ROOT PENETRATION SIZE: DEPTH OF CHAMFERING PLUS ROOT PENETRATION. ROOT OPENING. GROOVE ANGLE.	PROCESS REFERENCE SYMBOL PROCESS REFERENCE MUST BE USED. SIZE (STRENGTH IN LB PER WELD) DIA OF WELD MAY BE USED INSTEAD FOR CIRCULAR PROJECTION WELDS.	PROJECTION WELDING SYMBOL PITCH (DISTANCE BETWEEN CENTERS) OF WELDS. NUMBER OF WELDS.
SURFACING WELD SYMBOL INDICATING BUILT-UP SURFACE SIZE (HEIGHT OF DEPOSIT) OMISSION INDICATES NO SPECIFIC HEIGHT DESIRED. ORIENTATION, LOCATION AND ALL DIMENSIONS OTHER THAN SIZE ARE SHOWN ON THE DRAWING.	DOUBLE-BEVEL GROOVE WELDING SYMBOL OMISSION OF SIZE DIMENSION INDICATES A TOTAL DEPTH OF CHAMFERING EQUAL TO THICKNESS OF MEMBERS. GROOVE ANGLE.	SEAM WELDING SYMBOL LENGTH OF WELDS OR INCREMENTS. OMISSION INDICATES THAT WELD EXTENDS BETWEEN ABRUPT CHANGES IN DIRECTION OR AS DIMENSIONED. PITCH (DISTANCE BETWEEN CENTERS) OF INCREMENTS.	
DOUBLE FILLET WELDING SYMBOL SIZE (LENGTH OF LEG) SPECIFICATION, PROCESS. LENGTH OF INCREMENTS. OMISSION INDICATES THAT WELD EXTENDS BETWEEN ABRUPT CHANGES IN DIRECTION OR AS DIMENSIONED. PITCH (DISTANCE BETWEEN CENTERS) OF INCREMENTS.	WELDING SYMBOLS FOR COMBINED WELDS SIZE (LENGTH OF LEG) SPECIFICATION, PROCESS. GROOVE ANGLE.	FLASH OR UPSET WELDING SYMBOL PROCESS REFERENCE MUST BE USED TO INDICATE PROCESS DESIRED.	
CHAIN INTERMITTENT FILLET WELDING SYMBOL SIZE (LENGTH OF LEG) SPECIFICATION, PROCESS. LENGTH OF INCREMENTS. PITCH (DISTANCE BETWEEN CENTERS) OF INCREMENTS.	PLUG WELDING SYMBOL SIZE (DIA OF HOLE AT ROOT). PITCH (DISTANCE BETWEEN CENTERS) OF WELDS. DEPTH OF FILLING IN INCHES. OMISSION INDICATES FILLING IS COMPLETE.	SQUARE-GROOVE WELDING SYMBOL OMISSION OF SIZE DIMENSION INDICATES COMPLETE PENETRATION.	
STAGGERED INTERMITTENT FILLET WELDING SYMBOL SIZE (LENGTH OF LEG) SPECIFICATION, PROCESS. LENGTH OF INCREMENTS. PITCH (DISTANCE BETWEEN CENTERS) OF INCREMENTS.	SLOT WELDING SYMBOL DEPTH OF FILLING IN INCHES. OMISSION INDICATES FILLING IS COMPLETE. ORIENTATION, LOCATION AND ALL DIMENSIONS OTHER THAN DEPTH OF FILLING ARE SHOWN ON THE DRAWING.	FLARE-V AND FLARE-BEVEL GROOVE WELD SYMBOL SIZE IS CONSIDERED AS EXTENDING ONLY TO THE TANGENT POINTS. ROOT OPENING.	
SINGLE-V GROOVE WELDING SYMBOL SIZE (DEPTH OF CHAMFERING) OMISSION INDICATES DEPTH OF CHAMFERING EQUAL TO THICKNESS OF MEMBERS. ROOT OPENING. GROOVE ANGLE.	SPOT WELDING SYMBOL NUMBER OF WELDS. SIZE (DIA OF WELD) STRENGTH IN LB PER WELD MAY BE USED INSTEAD. PITCH (DISTANCE BETWEEN CENTERS) OF INCREMENTS. PROCESS REFERENCE MUST BE USED TO INDICATE PROCESS DESIRED.	EDGE- AND CORNER-FLANGE WELD SYMBOLS RADIUS. SIZE OF WELD. HEIGHT ABOVE POINT OF TANGENCY.	

Location of Elements of a Welding Symbol



Supplementary Symbols Used with Welding Symbols

WELD-ALL-AROUND SYMBOL WELD ALL AROUND SYMBOL INDICATES THAT WELD EXTENDS COMPLETELY AROUND THE JOINT.	FIELD WELD SYMBOL FIELD WELD SYMBOL INDICATES THAT WELD IS TO BE MADE AT A PLACE OTHER THAN THAT OF INITIAL CONSTRUCTION.	MELT-THRU SYMBOL MELT-THRU SYMBOL (EXCEPT HEIGHT) IS NOT DIMENSIONED.	FLUSH-CONTOUR SYMBOL FLUSH CONTOUR SYMBOL INDICATES FACE OF WELD TO BE MADE FLUSH WHEN USED WITHOUT A FINISH SYMBOL. INDICATES WELD TO BE WELDED FLUSH WITHOUT SUBSEQUENT FINISHING.	CONVEX-CONTOUR SYMBOL CONVEX CONTOUR SYMBOL INDICATES FACE OF WELD TO BE FINISHED TO CONVEX CONTOUR.	FINISH SYMBOL (USER'S SET) FINISH SYMBOL (USER'S SET) INDICATES METHOD OF OBTAINING SPECIFIED CONTOUR BUT NOT DEGREE OF FINISH.
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Basic Joints—Identification of Arrow Side and Other Side of Joint and Arrow-Side and Other-Side Member of Joint

BUTT JOINT ARROW OF WELDING SYMBOL. ARROW SIDE OF JOINT. OTHER SIDE OF JOINT.	CORNER JOINT ARROW OF WELDING SYMBOL. ARROW SIDE OF JOINT. OTHER SIDE OF JOINT.	TEE JOINT ARROW OF WELDING SYMBOL. ARROW SIDE OF JOINT. OTHER SIDE OF JOINT.	LAP JOINT ARROW OF WELDING SYMBOL. ARROW SIDE OF JOINT. OTHER SIDE OF JOINT.	EDGE JOINT ARROW OF WELDING SYMBOL. ARROW SIDE OF JOINT. OTHER SIDE OF JOINT.
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PIPE HANGERS AND SUPPORTS

DECIMALS OF A FOOT
For each 32nd of an inch

Inch	0	1	2	3	4	5
0	0	.0833	.1667	.2500	.3333	.4167
1/32	.0026	.0859	.1693	.2526	.3359	.4193
1/16	.0052	.0885	.1719	.2552	.3385	.4219
3/32	.0078	.0911	.1745	.2578	.3411	.4245
1/8	.0104	.0938	.1771	.2604	.3438	.4271
5/32	.0130	.0964	.1797	.2630	.3464	.4297
3/16	.0156	.0990	.1823	.2656	.3490	.4323
7/32	.0182	.1016	.1849	.2682	.3516	.4349
1/4	.0208	.1042	.1875	.2708	.3542	.4375
9/32	.0234	.1068	.1901	.2734	.3568	.4401
5/16	.0260	.1094	.1927	.2760	.3594	.4427
11/32	.0286	.1120	.1953	.2786	.3620	.4453
3/8	.0313	.1146	.1979	.2812	.3646	.4479
13/32	.0339	.1172	.2005	.2839	.3672	.4505
7/16	.0365	.1198	.2031	.2865	.3698	.4531
15/32	.0391	.1224	.2057	.2891	.3724	.4557
1/2	.0417	.1250	.2083	.2917	.3750	.4583
17/32	.0443	.1276	.2109	.2943	.3776	.4609
9/16	.0469	.1302	.2135	.2969	.3802	.4635
19/32	.0495	.1328	.2161	.2995	.3828	.4661
5/8	.0521	.1354	.2188	.3021	.3854	.4688
21/32	.0547	.1380	.2214	.3047	.3880	.4714
11/16	.0573	.1406	.2240	.3073	.3906	.4740
23/32	.0599	.1432	.2266	.3099	.3932	.4766
3/4	.0625	.1458	.2292	.3125	.3958	.4792
25/32	.0651	.1484	.2318	.3151	.3984	.4818
13/16	.0677	.1510	.2344	.3177	.4010	.4844
27/32	.0703	.1536	.2370	.3203	.4036	.4870
7/8	.0729	.1563	.2396	.3229	.4063	.4896
29/32	.0755	.1589	.2422	.3255	.4089	.4922
15/16	.0781	.1615	.2448	.3281	.4115	.4948
31/32	.0807	.1641	.2474	.3307	.4141	.4974

TECHNICAL DATA



TECHNICAL
DATA



SPACING OF PIPE SUPPORTS

STRESSES CALCULATED FOR STANDARD WEIGHT PIPE

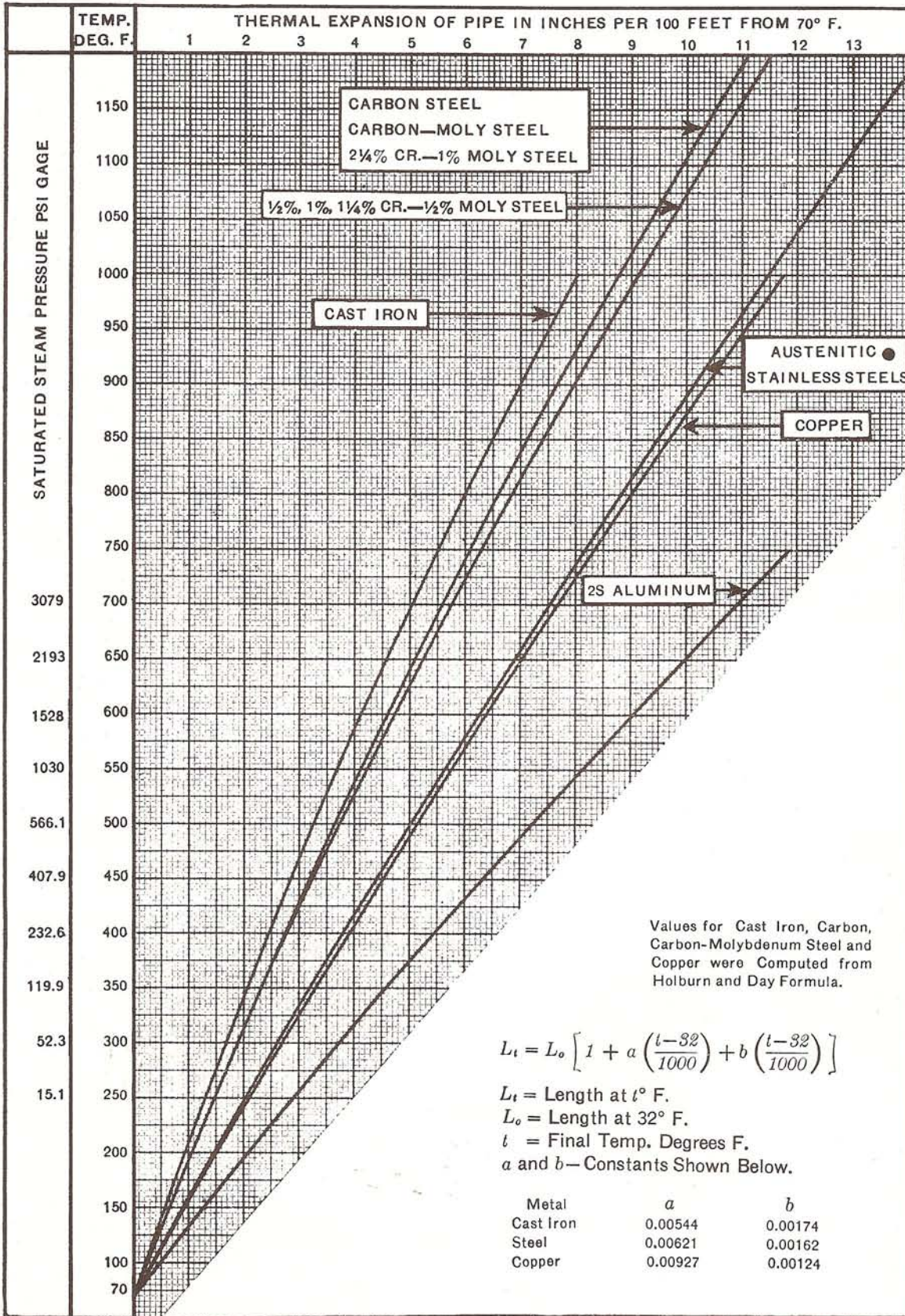
Table I—Stress Due to Sag—Pipe Filled with Water

Pipe Size Inches	SPAN BETWEEN SUPPORTS, FEET													Pounds of Water per Lineal Foot
	10	12	14	16	18	20	24	30	36	42	48	54	60	
1/2	2387	3438	4680	6113	7736	9551	.....	.....	.....	.....	.....	.....	.....	.13164
1	1531	2205	3002	3921	4962	6126	8822	13785	.....	.....	.....	.....	.....	.37345
1 1/2	1342	1932	2630	3436	4349	5369	7731	12081	.....	.....	.....	.....	.....	.88260
2	903	1301	1771	2313	2927	3614	5205	8133	11711	15941	.....	.....	.....	1.4541
3	620	892	1215	1587	2008	2480	3571	5580	8035	10936	14284	.....	.....	3.0032
4	503	725	986	1288	1631	2013	2900	4531	6525	8881	11600	14681	.....	5.5172
5	424	610	831	1085	1373	1696	2442	3816	5495	7480	9769	12365	15265	8.6666
6	368	530	721	942	1192	1472	2120	3313	4771	6495	8483	10736	13255	12.530
8	319	459	625	816	1033	1276	1837	2871	4135	5628	7351	9304	11487	22.206
10	283	407	554	724	917	1132	1630	2547	3668	4993	6522	8254	10191	35.454
12	238	343	467	610	772	954	1374	2146	3091	4207	5496	6955	8587	49.760
14 O.D.	213	308	419	547	701	855	1232	1925	2772	3774	4929	6239	7702	60.000
16 O.D.	197	284	387	506	640	790	1138	1778	2561	3486	4554	5763	7115	79.187
18 O.D.	181	261	355	464	588	726	1045	1633	2353	3201	4182	5292	6534	100.48
20 O.D.	173	250	340	444	562	694	1000	1563	2251	3064	4003	5066	6254	125.30

Table II—Stress Due to Sag—Pipe Empty

Pipe Size Inches	SPAN BETWEEN SUPPORTS, FEET												
	10	12	14	16	18	20	24	30	36	42	48	54	60
1/2	2063	2971	4044	5282	6685	8254	11886	.....	.....	.....	.....	.....	.....
1	1249	1799	2449	3199	4049	4998	7198	11247	.....	.....	.....	.....	.....
1 1/2	1010	1454	1979	2586	3273	4040	5818	9091	13092	.....	.....	.....	.....
2	644	977	1262	1649	2087	2577	3711	5798	8350	11365	14844	.....	.....
3	434	625	851	1111	1406	1736	2500	3907	5627	7659	10003	12661	15631
4	331	477	650	849	1075	1327	1911	2986	4390	5853	7644	9675	11945
5	265	381	519	678	858	1060	1526	2385	3435	4675	6106	7728	9541
6	220	317	432	566	667	823	1186	1853	2669	3893	5085	6436	7945
8	167	240	327	427	541	668	962	1503	2165	2998	3915	4956	6118
10	131	189	258	337	426	526	758	1185	1706	2323	3034	3840	4741
12	110	159	217	283	359	443	638	997	1436	1955	2554	3232	3990
14 O.D.	101	145	198	259	332	405	583	911	1312	1786	2333	2953	3646
16 O.D.	88	127	172	225	285	352	508	793	1143	1555	2032	2571	3175
18 O.D.	78	112	153	200	253	313	450	704	1014	1380	1802	2281	2817
20 O.D.	70	100	137	179	226	230	403	630	907	1235	1613	2041	2520

Expansion of Pipe



DECIMALS OF A FOOT
For each 32nd of an inch

Inch	0	1	2	3	4	5
0	0	.0833	.1667	.2500	.3333	.4167
1/32	.0026	.0859	.1693	.2526	.3359	.4193
1/16	.0052	.0885	.1719	.2552	.3385	.4219
3/32	.0078	.0911	.1745	.2578	.3411	.4245
1/8	.0104	.0938	.1771	.2604	.3438	.4271
5/32	.0130	.0964	.1797	.2630	.3464	.4297
3/16	.0156	.0990	.1823	.2656	.3490	.4323
7/32	.0182	.1016	.1849	.2682	.3516	.4349
1/4	.0208	.1042	.1875	.2708	.3542	.4375
9/32	.0234	.1068	.1901	.2734	.3568	.4401
5/16	.0260	.1094	.1927	.2760	.3594	.4427
11/32	.0286	.1120	.1953	.2786	.3620	.4453
3/8	.0313	.1146	.1979	.2812	.3646	.4479
13/32	.0339	.1172	.2005	.2839	.3672	.4505
7/16	.0365	.1198	.2031	.2865	.3698	.4531
15/32	.0391	.1224	.2057	.2891	.3724	.4557
1/2	.0417	.1250	.2083	.2917	.3750	.4583
17/32	.0443	.1276	.2109	.2943	.3776	.4609
9/16	.0469	.1302	.2135	.2969	.3802	.4635
19/32	.0495	.1328	.2161	.2995	.3828	.4661
5/8	.0521	.1354	.2188	.3021	.3854	.4688
21/32	.0547	.1380	.2214	.3047	.3880	.4714
11/16	.0573	.1406	.2240	.3073	.3906	.4740
23/32	.0599	.1432	.2266	.3099	.3932	.4766
3/4	.0625	.1458	.2292	.3125	.3958	.4792
25/32	.0651	.1484	.2318	.3151	.3984	.4818
13/16	.0677	.1510	.2344	.3177	.4010	.4844
27/32	.0703	.1536	.2370	.3203	.4036	.4870
7/8	.0729	.1563	.2396	.3229	.4063	.4896
29/32	.0755	.1589	.2422	.3255	.4089	.4922
15/16	.0781	.1615	.2448	.3281	.4115	.4948
31/32	.0807	.1641	.2474	.3307	.4141	.4974



DECIMALS OF A FOOT
For each 32nd of an inch

Inch	6	7	8	9	10	11
0	.5000	.5833	.6667	.7500	.8333	.9167
1/32	.5026	.5859	.6693	.7526	.8359	.9193
1/16	.5052	.5885	.6719	.7552	.8385	.9219
3/32	.5078	.5911	.6745	.7578	.8411	.9245
1/8	.5104	.5938	.6771	.7604	.8438	.9271
5/32	.5130	.5964	.6797	.7630	.8464	.9297
3/16	.5156	.5990	.6823	.7656	.8490	.9323
7/32	.5182	.6016	.6849	.7682	.8516	.9349
1/4	.5208	.6042	.6875	.7708	.8542	.9375
9/32	.5234	.6068	.6901	.7734	.8568	.9401
5/16	.5260	.6094	.6927	.7760	.8594	.9427
11/32	.5286	.6120	.6953	.7786	.8620	.9453
3/8	.5313	.6146	.6979	.7813	.8646	.9479
13/32	.5339	.6172	.7005	.7839	.8672	.9505
7/16	.5365	.6198	.7031	.7865	.8698	.9531
15/32	.5391	.6224	.7057	.7891	.8724	.9557
1/2	.5417	.6250	.7083	.7917	.8750	.9583
17/32	.5443	.6276	.7109	.7943	.8776	.9609
9/16	.5469	.6302	.7135	.7969	.8802	.9635
19/32	.5495	.6328	.7161	.7995	.8828	.9661
5/8	.5521	.6354	.7188	.8021	.8854	.9688
21/32	.5547	.6380	.7214	.8047	.8880	.9714
11/16	.5573	.6406	.7240	.8073	.8906	.9740
23/32	.5599	.6432	.7266	.8099	.8932	.9766
3/4	.5625	.6458	.7292	.8125	.8958	.9792
25/32	.5651	.6484	.7318	.8151	.8984	.9818
13/16	.5677	.6510	.7344	.8177	.9010	.9844
27/32	.5703	.6536	.7370	.8203	.9036	.9870
7/8	.5729	.6563	.7396	.8229	.9063	.9896
29/32	.5755	.6589	.7422	.8255	.9089	.9922
15/16	.5781	.6615	.7448	.8281	.9115	.9948
31/32	.5807	.6641	.7474	.8307	.9141	.9974

DECIMALS OF AN INCH
For each 64th of an inch
With Millimeter Equivalents

Fraction	1/64ths	Decimal	Millimeters (Approx.)	Fraction	1/64ths	Decimal	Millimeters (Approx.)
...	1	.015625	0.397	...	33	.515625	13.097
1/32	2	.03125	0.794	17/32	34	.53125	13.494
...	3	.046875	1.191	...	35	.546875	13.891
1/16	4	.0625	1.588	9/16	36	.5625	14.288
...	5	.078125	1.984	...	37	.578125	14.684
3/32	6	.09375	2.381	19/32	38	.59375	15.081
...	7	.109375	2.778	...	39	.609375	15.478
1/8	8	.125	3.175	5/8	40	.625	15.875
...	9	.140625	3.572	...	41	.640625	16.272
5/32	10	.15625	3.969	21/32	42	.65625	16.669
...	11	.171875	4.366	...	43	.671875	17.066
3/16	12	.1875	4.763	11/16	44	.6875	17.463
...	13	.203125	5.159	...	45	.703125	17.859
7/32	14	.21875	5.556	23/32	46	.71875	18.256
...	15	.234375	5.953	...	47	.734375	18.653
1/4	16	.250	6.350	3/4	48	.750	19.050
...	17	.265625	6.747	...	49	.765625	19.447
9/32	18	.28125	7.144	25/32	50	.78125	19.844
...	19	.296875	7.541	...	51	.796875	20.241
5/16	20	.3125	7.938	13/16	52	.8125	20.638
...	21	.328125	8.334	...	53	.828125	21.034
11/32	22	.34375	8.731	27/32	54	.84375	21.431
...	23	.359375	9.128	...	55	.859375	21.828
3/8	24	.375	9.525	7/8	56	.875	22.225
...	25	.390625	9.922	...	57	.890625	22.622
13/32	26	.40625	10.319	29/32	58	.90625	23.019
...	27	.421875	10.716	...	59	.921875	23.416
7/16	28	.4375	11.113	15/16	60	.9375	23.813
...	29	.453125	11.509	...	61	.953125	24.209
15/32	30	.46875	11.906	31/32	62	.96875	24.606
...	31	.484375	12.303	...	63	.984375	25.003
1/2	32	.500	12.700	1	64	1.000	25.400



PIPE DESIGN CHART

		WEIGHTS OF PIPING MATERIALS																															
		1" PIPE SIZE								1 1/4" PIPE SIZE																							
PIPE	Schedule No.	40				80				160				40				80				160				XXS							
	Wall Designation	STD.				XS				XXS				STD.				XS				XXS											
	Thickness-Inches	.133				.179				.250				.358				.140				.191				.250				.382			
	Pipe-Lbs./Ft.	1.68				2.17				2.84				3.66				2.27				3.00				3.76				5.22			
	Water-Lbs./Ft.	.37				.31				.23				.12				.65				.56				.46				.27			
	Outside Diameter O.D.	1.313																															
	Circumference /Cir.	4.125																															
WELDING SOCKET FITTINGS	90° Elbow	1.0 .3				1.0 .3				2.3 .3				2.6 .3				1.5 .3				1.6 .3				3.0 .3				3.3 .3			
	45° Elbow	1.0 .2				1.0 .2				2.0 .2				2.5 .2				1.3 .2				1.4 .2				2.5 .2				2.8 .2			
	Tee	1.3 .4				1.4 .4				3.2 .4				3.3 .4				2.0 .5				2.2 .5				3.8 .5				4.4 .5			
	Couplings	.6 1.1				.6 1.1				1.4 1.1				1.5 1.1				1.0 1.2				1.1 1.2				1.4 1.2				1.8 1.2			
	Cap	.5 .3				.5 .3				1.2 .3				1.5 .3				.9 .3				.9 .3				1.0 .3				1.4 .3			
PIPE COVERING	Temp. Range. °F.	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199														
	Thickness-Inches Calcium Silicate	1	1	1 1/2	2	2	2 1/2	2 1/2	3	3	1	1	1 1/2	2	2	2 1/2	2 1/2	3	3														
	Weight Lbs./Ft.	.7	.7	1.2	1.9	1.9	2.8	2.8	3.7	3.7	.7	.7	1.5	1.8	1.8	2.7	2.7	3.6	3.6														
	Thickness-Inches High Temp. Comb.						2 1/2	2 1/2	3	3						2 1/2	2 1/2	3	3														
	Thickness-Inches 85% Magnesia	1	1	1 1/2	2	2					1	1	1 1/2	2	2																		
	Total Wt./Ft.	.7	.7	1.2	1.9	1.9	3.3	3.3	4.7	4.7	.7	.7	1.5	1.8	1.8	3.2	3.2	5.8	5.8														
FLANGES	Pressure Rating	Cast Iron				Steel								Cast Iron				Steel															
	psi	125	250	150	300	400	600	900	1500	2500	125	250	150	300	400	600	900	1500	2500														
	Screwed or Slip-On	2.5 1.5	4 1.5	2 1.5	3 1.5		4 1.5		11 1.5	14 1.5	2.5 1.5	5 1.5	3 1.5	4 1.5		6 1.5		12 1.5	22 1.5														
	Welding Neck			3 1.5	4 1.5		6 1.5		11 1.5	15 1.5			3 1.5	6 1.5		7 1.5		11 1.5	24 1.5														
	Lap Joint			2 1.5	3 1.5		4 1.5		11 1.5	15 1.5			3 1.5	4 1.5		6 1.5		12 1.5	23 1.5														
Blind	2.5 1.5	4 1.5	3 1.5	5 1.5		4 1.5		11 1.5	16 1.5	3.5 1.5	5.0 1.5	3 1.5	6 1.5		6 1.5		13 1.5	24 1.5															
FLANGED FITTINGS	S.R. 90° Elbow	6 3.6					14 3.7		30 3.8	8 3.6			16 3.7		18 3.8		32 3.9																
	L.R. 90° Elbow	8 3.8								10 3.9			18 3.9																				
	45° Elbow	5 3.2					13 3.4		26 3.6	7 3.3			14 3.4		15 3.5		30 3.7																
	Tee	11 5.4					20 5.6		40 5.7	14 5.4			24 5.6		26 5.7		50 5.9																
VALVES	Flanged Bonnet Gate						8.5 1.5		67 4.3				34 3.8		18 4.0		95 4.4																
	Flanged Bonnet Globe or Angle						13 1.5		70 4.3						20 4.0		105 4.4																
	Flanged Bonnet Check												21 4																				
	Bonnetless-Gate						8.5 1.5		20 0.9						16 2.2		33 1.1																
	Bonnetless-Globe								28 1.2								38 1.1																
BOLTS	One Complete Flanged Joint	1	2	1	2		2		6	6	1	2	1	2		2		6	9														

PIPE DESIGN CHART

		WEIGHTS OF PIPING MATERIALS																															
		1½" PIPE SIZE									2" PIPE SIZE																						
PIPE	Schedule No.	40				80				160				40				80				160				XXS							
	Wall Designation	STD.				XS								STD.				XS				XXS											
	Thickness-Inches	.145				.200				.281				.400				.154				.218				.343				.436			
	Pipe-Lbs./Ft.	2.72				3.63				4.87				6.41				3.65				5.02				7.45				9.03			
	Water-Lbs./Ft.	.88				.77				.61				.41				1.46				1.28				.97				.77			
	Outside Diameter /O.D.	1.900																															
	Circumference /Cir.	5.97																															
WELDING SOCKET FITTINGS	90° Elbow	2.0 .4				2.5 .4				5.5 .4				6.0 .4				3.3 .5				3.8 .5				6.0 .5				6.4 .5			
	45° Elbow	1.7 .2				2.0 .2				4.2 .2				4.8 .2				2.7 .2				2.9 .2				5.0 .2				5.9 .2			
	Tee	2.7 .6				3.0 .6				6.5 .6				7.8 .6				3.8 .6				4.4 .6				7.8 .6				8.7 .6			
	Couplings	1.2 1.3				1.3 1.3				2.0 1.3				3.0 1.3				2.0 1.4				2.2 1.4				3.9 1.4				4.8 1.4			
	Cap	1.2 .3				1.8 .3				2.2 .3				2.5 .3				1.8 .4				2.0 .4				3.6 .4				4.0 .4			
PIPE COVERING	Temp. Range, °F.	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199														
	Thickness-Inches Calcium Silicate	1	1	1½	2	2	2½	2½	3	3	1	1	1½	2	2	2½	2½	3	3														
	Weight Lbs./Ft.	.8	.8	1.4	2.5	2.5	3.5	3.5	4.5	4.5	1.0	1.0	1.7	2.5	2.5	3.5	3.5	4.2	4.2														
	Thickness-Inches High Temp. Comb.						2½	2½	3	3						2½	2½	3	3														
	Thickness-Inches 85% Magnesia	1	1	1½	2	2					1	1	1½	2	2																		
	Total Wt./Ft.	.8	.8	1.4	2.5	2.5	4.2	4.2	5.6	5.6	1.0	1.0	1.7	2.5	2.5	4.3	4.3	5.9	5.9														
FLANGES	Pressure Rating	Cast Iron				Steel									Cast Iron				Steel														
	psi	125	250	150	300	400	600	900	1500	2500	125	250	150	300	400	600	900	1500	2500														
	Screwed or Slip-On	3.5 1.5	6 1.5	3 1.5	7 1.5		8 1.5		20 1.5	30 1.5	5 1.5	9 1.5	5 1.5	8 1.5		10 1.5		33 1.5	50 1.5														
	Welding Neck			4 1.5	8 1.5		10 1.5		18 1.5	32 1.5			6 1.5	10 1.5		12 1.5		31 1.5	50 1.5														
	Lap Joint			3 1.5	7 1.5		8 1.5		18 1.5	32 1.5			5 1.5	10 1.5		11 1.5		30 1.5	47 1.5														
	Blind	4.0 1.5	7 1.5	4 1.5	8 1.5		9 1.5		20 1.5	32 1.5	6 1.5	10 1.5	5 1.5	11 1.5		12 1.5		33 1.5	52 1.5														
FLANGED FITTINGS	S.R. 90° Elbow	10 3.7		13 3.7	24 3.8		28 3.9		50 4		16 3.8	24 3.8	19 3.8	28 3.8		42 4		80 4.2															
	L.R. 90° Elbow	12 4		14 4	26 4						18 4.1	28 4.1	23 4.1	31 4.1																			
	45° Elbow	9 3.4		12 3.4	20 3.5		24 3.5		44 3.7		15 3.4	23 3.5	17 3.4	25 3.5		35 3.7		70 3.9															
	Tee	18 5.6		21 5.6	33 5.7		37 5.8		70 6		24 5.7	38 5.7	28 5.7	40 5.7		50 6		120 6.3															
VALVES	Flanged Bonnet Gate	27 6.8			50 4		70 4.2		115 4.5		37 6.9	52 7.1	43 3.9	65 4.1		83 4.4		155 4.8															
	Flanged Bonnet Globe or Angle				40 4.1		46 4.2		110 4.5		30 7	64 7.3	42 4	58 4.3		80 4.4		160 4.8															
	Flanged Bonnet Check				32 4.1		33 4.2		80 4.5		26 7	51 7.3	27 4	55 4.3		47 4.4		110 4.8															
	Bonnetless-Gate						24 2.0		40 1.2							42 2.3		50 1.4															
	Bonnetless-Globe								44 1.2									55 2.1															
BOLTS	One Complete Flanged Joint	1	2.5	1	3.5		3.5		9	12	1.5	3.5	1.5	4		4.5		12.5	21														

PIPE DESIGN CHART

		WEIGHTS OF PIPING MATERIALS																			
		3 1/2" PIPE SIZE					4" PIPE SIZE														
PIPE	Schedule No.	40	80								40	80	120	160							
	Wall Designation	STD.	XS	XXS							STD.	XS			XXS						
	Thickness-Inches	.226	.318	.636							.237	.337	.437	.531	.674						
	Pipe-Lbs./Ft.	9.11	12.51	22.85							10.8	15.0	19.0	22.5	27.5						
	Water-Lbs./Ft.	4.28	3.85	2.53							5.51	4.98	4.47	4.02	3.38						
	Outside Diameter /O.D.	4.00					4.50														
	Circumference /Cir.	12.566					14.137														
BUTT WELDING FITTINGS	L.R. 90° Elbow	6.4 .9	8.7 .9	15.4 .9							8.7 1	11.9 1		17.6 1	21.2 1						
	S.R. 90° Elbow	4.3 .6	5.8 .6								5.8 .7	7.9 .7									
	45° Elbow	3.3 .4	4.4 .4	7.5 .4							4.3 .4	5.9 .4		8.5 .4	10.1 .4						
	Tee	9.9 .9	12.6 .9	20 .9							12.6 1	16.4 1		23 1	27 1						
	Lateral	19.2 1.8	25.6 1.8								30 2.1	45 2.1									
	Reducer	3.1 .3	4.1 .3	6.9 .3							3.6 .3	4.9 .3		6.6 .3	8.2 .3						
	Cap	2.1 .6	2.8 .6	5.5 .6							2.6 .6	3.4 .6		6.5 .6	6.7 .6						
PIPE COVERING	Temp. Range. °F.	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199		
	Thickness-Inches Calcium Silicate	1	1	1 1/2	2	2 1/2	2 1/2	3	3 1/2	3 1/2	1	1	1 1/2	2	2 1/2	2 1/2	3	3 1/2	3 1/2		
	Weight Lbs./Ft.	1.8	1.8	2.8	3.7	4.9	4.9	6.4	7.8	7.8	1.6	1.6	2.6	3.6	4.7	4.7	6.1	7.5	7.5		
	Thickness-Inches High Temp. Comb.						2 1/2	3	3 1/2	3 1/2						2 1/2	3	3 1/2	3 1/2		
	Thickness-Inches 85% Magnesia	1	1	1 1/2	2	2 1/2					1	1	1 1/2	2	2 1/2						
Total Wt./Ft.	1.8	1.8	2.8	3.7	4.9	6.5	8.7	10.8	10.8	1.6	1.6	2.6	3.6	4.7	6.1	8.3	10.6	10.6			
FLANGES	Pressure Rating	Cast Iron		Steel							Cast Iron		Steel								
	psi	125	250	150	300	400	600	900	1500	2500	125	250	150	300	400	600	900	1500	2500		
	Screwed or Slip-On	12 1.5	20 1.5	13 1.5	25 1.5		27 1.5				15 1.5	25 1.5	14 1.5	26 1.5	32 1.5	42 1.5	65 1.5	92 1.5	155 1.5		
	Welding Neck			13 1.5	26 1.5		27 1.5						15 1.5	27 1.5	38 1.5	42 1.5	58 1.5	80 1.5	157 1.5		
	Lap Joint			14 1.5	23 1.5		27 1.5						16 1.5	28 1.5	34 1.5	45 1.5	68 1.5	92 1.5	154 1.5		
Blind	13 1.5	22 1.5	16 1.5	27 1.5		35 1.5				17 1.5	29 1.5	18 1.5	32 1.5	38 1.5	48 1.5	67 1.5	94 1.5	160 1.5			
FLANGED FITTINGS	S.R. 90° Elbow	36 4	58 4.1	48 4			80 4.3				50 4.1	75 4.2	58 4.1	85 4.2	100 4.3	130 4.4	180 4.5	240 4.8			
	L.R. 90° Elbow	45 4.4	63 4.4	54 4.4						56 4.5	80 4.5	70 4.5	92 4.5								
	45° Elbow	31 3.6	52 3.7	37 3.6			78 3.9			44 3.7	60 3.8	50 3.7	75 3.8	90 3.9	118 4	160 4.1	210 4.2				
	Tee	60 6	84 6.2	68 6			140 6.4			74 6.1	110 6.3	84 6.1	124 6.3	153 6.4	195 6.6	250 6.8	350 7.2				
VALVES	Flanged Bonnet Gate	82 7.1	143 7.5	88 4.1			200 4.9			109 7.2	188 7.5	115 4.2	173 4.5	210 5	275 5.1	370 5.3	570 5.7				
	Flanged Bonnet Globe or Angle	74 7.3	137 7.7	99 4.3			160 4.9			97 7.4	177 7.8	127 4.4	168 4.8	194 5	220 5.1	380 5.3	550 5.7				
	Flanged Bonnet Check	71 7.3	125 7.7	54 4.3			120 4.9			80 7.4	146 7.8	104 4.4	146 4.8	180 5	160 5.1	256 5.3	350 5.7				
	Pressure Seal Bonnet-Gate														165 2.5	230 2.8	250 3				
	Pressure Seal Bonnet-Globe														175 2.5	260 2.8	375 3				
BOLTS	One Complete Flanged Joint	3.5	6.5	3.5			12			4	6.5	4	7.5	12	12.5	25	34	61			

PIPE DESIGN CHART

		WEIGHTS OF PIPING MATERIALS																	
		8" PIPE SIZE								10" PIPE SIZE									
PIPE	Schedule No.	30	40	60	80	100	120	140	160	30	40	60	80	100	120	140	160		
	Wall Designation		STD.		XS				XXS		STD.	XS							
	Thickness-Inches	.277	.322	.406	.500	.593	.718	.812	.875	.906	.307	.365	.500	.593	.718	.843	1.000	1.125	
	Pipe-Lbs./Ft.	24.70	28.55	35.64	43.4	50.9	60.6	67.8	72.4	74.7	34.24	40.5	54.7	64.3	76.9	89.2	104.1	115.7	
	Water-Lbs./Ft.	22.18	21.69	20.79	19.8	18.8	17.6	16.7	16.1	15.8	34.98	34.1	32.3	31.1	29.5	28.0	26.1	24.6	
	Outside Diameter/O.D.	8.625								10.75									
Circumference/Cir.	27.096								33.772										
BUTT WELDING FITTINGS	L.R. 90° Elbow		46 2		69 2				114 2	117 2							226 2.5		
	S.R. 90° Elbow		30.5 1.3		45.6 1.3														
	45° Elbow		22.8 .8		34 .8					55 .8	56 .8						109 1		
	Tee		53.7 1.8		76.4 1.8					118 1.8	120 1.8						222 2.1		
	Lateral		155 3.8		216 3.8														
	Reducer		13.9 .5		20 .5					32 .5	33 .5						58 .6		
	Cap		11.3 1		16.3 1					31 1	32 1						54 1.3		
PIPE COVERING	Temp. Range. °F.	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199
	Thickness-Inches Calcium Silicate	1½	1½	2	2	2½	3	3½	4	4	1½	1½	2	2½	2½	3	3½	4	4
	Weight Lbs./Ft.	4.1	4.1	5.6	5.6	7.9	9.5	11.5	13.8	13.8	5.2	5.2	7.1	8.9	8.9	11.0	13.2	15.5	15.5
	Thickness-Inches High Temp. Comb.						3	3½	4	4						3	3½	4	4
	Thickness-Inches 85% Magnesia	1½	1½	2	2	2½					1½	1½	2	2½	2½				
Total Wt./Ft.	4.1	4.1	5.6	5.6	7.9	12.9	16.2	20.4	20.4	5.2	5.2	7.1	8.9	8.9	15.4	19.3	23.0	23.0	
FLANGES	Pressure Rating	Cast Iron				Steel				Cast Iron				Steel					
	psi	125	250	150	300	400	600	900	1500	2500	125	250	150	300	400	600	900	1500	2500
	Screwed or Slip-On	32 1.5	61 1.5	34 1.5	66 1.5	82 1.5	135 1.5	205 1.5	320 1.5	600 1.5	52 1.5	98 1.5	52 1.5	101 1.5	117 1.5	210 1.5	295 1.5	530 1.5	1150 1.5
	Welding Neck			34 1.5	75 1.5	89 1.5	140 1.5	210 1.5	335 1.5	700 1.5			60 1.5	110 1.5	151 1.5	226 1.5	310 1.5	550 1.5	1300 1.5
	Lap Joint			36 1.5	68 1.5	85 1.5	130 1.5	225 1.5	345 1.5	590 1.5			52 1.5	110 1.5	136 1.5	210 1.5	325 1.5	580 1.5	1130 1.5
Blind	43 1.5	80 1.5	50 1.5	91 1.5	115 1.5	160 1.5	235 1.5	360 1.5	645 1.5	70 1.5	137 1.5	77 1.5	145 1.5	184 1.5	266 1.5	340 1.5	600 1.5	1250 1.5	
FLANGED FITTINGS	S.R. 90° Elbow	125 4.5	207 4.7	150 4.5	238 4.7	320 5	440 5.2	630 5.4	1000 5.7	210 4.8	340 4.9	240 4.8	350 4.9	475 5.2	700 5.6	1000 5.8			
	L.R. 90° Elbow	160 5.3	240 5.3	205 5.3	290 5.3					260 5.8	400 5.8	310 5.8	430 5.8						
	45° Elbow	102 3.9	170 4	125 3.9	200 4	235 4.1	360 4.4	530 4.5	900 4.8	170 4.1	280 4.2	185 4.1	300 4.2	385 4.3	570 4.6	750 4.7			
	Tee	182 6.8	300 7.1	225 6.8	350 7.1	465 7.5	600 7.8	970 8.1	1500 8.6	290 7.2	495 7.4	340 7.2	570 7.4	630 7.8	1000 8.4	1500 8.7			
VALVES	Flanged Bonnet Gate	250 7.5	580 8.1	330 4.5	550 5.1	730 6	1000 6.3	1350 6.6		470 7.7	900 8.3	500 4.7	890 5.3	1200 6.3	1575 6.9	2500 7.1			
	Flanged Bonnet Globe or Angle	320 8.4	550 8.6	410 5.4	510 5.6	575 5.9	1200 6.3			540 9.1	940 9.1		1000 6.1	1075 6.8	1350 6.9	2600 7.1			
	Flanged Bonnet Check	300 8.4	450 8.6	300 5.4	470 5.6	520 5.9	560 6.3	680 6.6		450 9.1	750 9.1	400 6	580 6.1	725 6.3	750 6.9				
	Pressure Seal Bonnet-Gate						700 4.2	900 4.3	1000 4.5							1000 5.0	1400 4.9	1800 5.2	
	Pressure Seal Bonnet-Globe						690 4.2	1100 4.3	1300 4.5							1100 5.0	1800 4.9	2400 5.2	
BOLTS	One Complete Flanged Joint	6.5	16	6.5	18	30	40	69	121	232	15	33	15	38	52	72	95	184	445



PIPE DESIGN CHART

		WEIGHTS OF PIPING MATERIALS																	
		12" PIPE SIZE									14" PIPE SIZE								
PIPE	Schedule No.	30		40		80	100	120	140	160	20	30	40		80	100	120	140	160
	Wall Designation		STD.		XS							STD.		XS					
	Thickness-Inches	.330	.375	.406	.500	.687	.843	1.000	1.125	1.312	.312	.375	.437	.500	.750	.937	1.093	1.250	1.406
	Pipe-Lbs./Ft.	43.8	49.6	53.5	65.4	88.5	107.2	125.5	139.7	160.3	45.7	54.6	63.4	72.1	106.1	130.7	150.7	170.2	189.1
	Water-Lbs./Ft.	49.7	49.0	48.5	47.0	44.0	41.6	39.3	37.5	34.9	60.92	59.7	58.7	57.5	53.2	50.0	47.5	45.0	42.6
	Outside Diameter/O.D.	12.75									14.0								
Circumference/Cir.	40.055									43.982									
BUTT WELDING FITTINGS	L.R. 90° Elbow		119 3		157 3					375 3		154 3.5		202 3.5					
	S.R. 90° Elbow		79.5 2		104 2							102 2.3		135 2.3					
	45° Elbow		60 1.3		78 1.3					181 1.3		77 1.5		100 1.5					
	Tee		132 2.5		167 2.5					360 2.5		159 2.8		203 2.8					
	Lateral		337 5.4		556 5.4							495 5.8		588 5.8					
	Reducer		33 .7		44 .7					94 .7		63 1.1		83 1.1					
	Cap		30 1.5		38 1.5					89 1.5		35 1.7		46 1.7					
PIPE COVERING	Temp. Range, ° F.	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199
	Thickness-Inches Calcium Silicate	1½	1½	2	2½	3	3	3½	4	5	1½	1½	2	2½	3	3	3½	4	5
	Weight Lbs./Ft.	6.0	6.0	8.1	10.5	12.7	12.7	15.1	17.9	23.8	6.2	6.2	8.4	10.7	13.1	13.1	15.8	18.5	25.5
	Thickness-Inches High Temp. Comb.						3	3½	4	5						3	3½	4	5
	Thickness-Inches 85% Magnesia	1½	1½	2	2½	3					1½	1½	2	2½	3				
Total Wt./Ft.	6.0	6.0	8.1	10.5	12.7	17.7	21.9	26.7	35.2	6.2	6.2	8.4	10.7	13.1	18.2	22.8	27.5	37.7	
FLANGES	Pressure Rating	Cast Iron			Steel						Cast Iron			Steel					
	psi	125	250	150	300	400	600	900	1500	2500	125	250	150	300	400	600	900	1500	2500
	Screwed or Slip-On	70 1.5	135 1.5	72 1.5	140 1.5	165 1.5	250 1.5	390 1.5	740 1.5	1410 1.5	93 1.5	185 1.5	100 1.5	195 1.5	230 1.5	300 1.5	480 1.5		
	Welding Neck			88 1.5	165 1.5	210 1.5	270 1.5	390 1.5	840 1.5	1840 1.5			120 1.5	210 1.5	245 1.5	400 1.5	480 1.5		
	Lap Joint			72 1.5	165 1.5	185 1.5	250 1.5	440 1.5	780 1.5	1410 1.5			115 1.5	220 1.5	260 1.5	310 1.5	495 1.5		
Blind	96 1.5	180 1.5	120 1.5	210 1.5	260 1.5	345 1.5	475 1.5	840 1.5	1600 1.5	126 1.5	240 1.5	150 1.5	280 1.5	350 1.5	415 1.5	600 1.5			
FLANGED FITTINGS	S.R. 90° Elbow	300 5	470 5.2	345 5	550 5.2	700 5.5	850 5.8	1500 6.2			400 5.3	620 5.5	500 5.3	640 5.5	670 5.7	950 5.9	1550 6.4		
	L.R. 90° Elbow	390 6.2	550 6.2	480 6.2	650 6.2			1600 6.2			520 6.6	770 6.6	620 6.6	770 6.6					
	45° Elbow	250 4.3	400 4.3	280 4.3	450 4.3	550 4.5	725 4.7	1130 4.8			300 4.3	500 4.4	380 4.3	580 4.4	640 4.6	880 4.8	1250 4.9		
	Tee	400 7.5	670 7.8	500 7.5	800 7.8	950 8.3	1300 8.7	2000 9.3			600 8	950 8.4	690 8	1000 8.3	1150 8.6	1700 8.9	2400 9.6		
VALVES	Flanged Bonnet Gate	690 7.8	1300 8.5	925 4.8	1350 5.5	1600 6.8	2275 7.1	3250 7.8			950 7.9	1800 8.8	850 4.9	1875 6.3	2000 7.1	3100 7.4	4000 8.1		
	Flanged Bonnet Globe or Angle	800 9.4	1200 9.5		1400 6.5	1500 6.8					1175 9.9								
	Flanged Bonnet Check	675 9.4	1160 9.5	700 6.5	875 6.5	1100 6.8	1175 7.1				900 9.9								
	Pressure Seal Bonnet-Gate						1700 5.2	2100 5.5	2500 5.9										
	Pressure Seal Bonnet-Globe						1750 5.2	2700 5.5	3000 5.9										
BOLTS	One Complete Flanged Joint	15	44	15	49	69	91	124	306	622	22	57	22	62	88	118	159		

PIPE DESIGN CHART

		WEIGHTS OF PIPING MATERIALS																			
		16" PIPE SIZE					18" PIPE SIZE														
PIPE	Schedule No.	20	30	40	80	100	120	140	160			20	30	40	60	80	120	160			
	Wall Designation		STD.	XS									STD.	XS							
	Thickness-Inches	.312	.375	.500	.843	1.031	1.218	1.437	1.593			.312	.375	.437	.500	.563	.750	.937	1.375	1.781	
	Pipe-Lbs./Ft.	52.4	62.6	82.8	136.5	164.8	192.3	223.6	245.1			59.0	70.6	82.1	93.5	104.8	138.2	170.8	244.1	308.5	
	Water-Lbs./Ft.	80.5	79.1	76.5	69.7	66.1	62.6	58.6	55.9			102.8	101.2	99.9	98.4	97.0	92.7	88.5	79.2	71.0	
	Outside Diameter/O.D.	16.0										18.0									
Circumference/Cir.	50.265										56.549										
BUTT WELDING FITTINGS	L.R. 90° Elbow		201 4	265 4									256 4.5	338 4.5							
	S.R. 90° Elbow		135 2.5	177 2.5									171 2.8	225 2.8							
	45° Elbow		100 1.7	132 1.7									128 1.9	168 1.9							
	Tee		202 3.2	257 3.2									258 3.6	328 3.6							
	Lateral		650 6.7	774 6.7									798 7.5	984 7.5							
	Reducer		78 1.2	102 1.2									94 1.3	123 1.3							
	Cap		44 1.8	58 1.8									57 2.1	75 2.1							
PIPE COVERING	Temp. Range, ° F.	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199		
	Thickness-Inches Calcium Silicate	1½	1½	2	2½	3	3	3½	4	5	1½	1½	2	2½	3	3	3½	4	5		
	Weight Lbs./Ft.	6.9	6.9	9.3	12.0	14.6	14.6	17.5	20.5	28.1	7.7	7.7	10.4	13.3	16.3	16.3	19.3	22.6	30.8		
	Thickness-Inches High Temp. Comb.							3	3½	4	5						3	3½	4	5	
	Thickness-Inches 85% Magnesia	1½	1½	2	2½	3						1½	1½	2	2½	3					
Total Wt./Ft.	6.9	6.9	9.3	12.0	14.6	20.3	25.2	30.7	41.6	7.7	7.7	10.4	13.3	16.3	22.7	28.0	33.8	45.6			
FLANGES	Pressure Rating	Cast Iron					Steel					Cast Iron					Steel				
	psi	125	250	150	300	400	600	900	1500	2500	125	250	150	300	400	600	900	1500	2500		
	Screwed or Slip-On	120 1.5	235 1.5	115 1.5	230 1.5	300 1.5	410 1.5	525 1.5			140 1.5	290 1.5	150 1.5	300 1.5	360 1.5	550 1.5	770 1.5				
	Welding Neck			155 1.5	290 1.5	355 1.5	550 1.5	600 1.5					170 1.5	370 1.5	430 1.5	650 1.5	830 1.5				
	Lap Joint			155 1.5	290 1.5	330 1.5	440 1.5	570 1.5					180 1.5	350 1.5	385 1.5	550 1.5	800 1.5				
Blind	175 1.5	308 1.5	195 1.5	340 1.5	440 1.5	580 1.5	700 1.5			210 1.5	400 1.5	240 1.5	450 1.5	525 1.5	750 1.5	1100 1.5					
FLANGED FITTINGS	S.R. 90° Elbow	550 5.5	830 5.8	660 5.5	950 5.8	1000 6	1400 6.3	1900 6.7			650 5.8	1100 6	710 5.8	1150 6	1300 6.2	1800 6.6	2800 7				
	L.R. 90° Elbow	725 7	1050 7	780 7	1100 7						980 7.4	1400 7.4	950 7.4	1450 7.4							
	45° Elbow	425 4.3	700 4.6	480 4.3	700 4.6	850 4.7	1200 5	1600 5			490 4.4	880 4.7	520 4.4	900 4.7	1050 4.8	1550 5	2300 5.2				
	Tee	750 8.3	1280 8.7	980 8.3	1400 8.6	1700 9	2150 9.4	3750 10			930 8.6	1650 9	1000 8.6	1400 9	1900 9.3	2700 9.9	4350 10.5				
VALVES	Flanged Bonnet Gate	1250 8	2350 9	1350 5	2500 7.1	2700 7.5	3700 7.9				1650 8.2	2600 9.3		3200 7.5	3600 7.8	5700 8.4					
	Flanged Bonnet Globe or Angle																				
	Flanged Bonnet Check	1200 10.5									1371 10.5										
	Pressure Seal Bonnet-Gate																				
	Pressure Seal Bonnet-Globe																				
BOLTS	One Complete Flanged Joint	31	76	31	83	114	152	199			41	93	41	101	139	193	299				



PIPE DESIGN CHART

WEIGHTS OF PIPING MATERIALS

		20" PIPE SIZE									24" PIPE SIZE									
PIPE	Schedule No.	20	30	40	60	80	100	120	140	160	20		40	60	80	100	120	140	160	
	Wall Designation	STD.	XS								STD.	XS								
	Thickness-Inches	.375	.500	.593	.812	1.031	1.281	1.500	1.750	1.968	.375	.500	.687	.968	1.218	1.531	1.812	2.062	2.343	
	Pipe-Lbs./Ft.	78.6	104.1	122.9	166.4	208.9	256.1	296.4	341.1	379.0	94.6	125.5	171.2	238.1	296.4	367.4	429	484	541	
	Water-Lbs./Ft.	126.0	122.8	120.4	115.0	109.4	103.4	98.3	92.6	87.9	183.8	180.1	174.3	165.8	158.3	149.3	141	134	127	
	Outside Diameter /O.D.	20.									24.0									
	Circumference /Cir.	62.832									75.398									
BUTT WELDING FITTINGS	L.R. 90° Elbow	317 5	419 5								458 6	606 6								
	S.R. 90° Elbow	212 3.4	278 3.4								305 3.7	404 3.7								
	45° Elbow	158 2.1	208 2.1								229 2.5	302 2.5								
	Tee	321 4	407 4								445 4.9	563 4.9								
	Lateral	1024 8.3	1221 8.3								1482 10	1769 10								
	Reducer	142 1.7	186 1.7								167 1.7	220 1.7								
	Cap	72 2.3	94 2.3								102 2.8	134 2.8								
PIPE COVERING	Temp. Range. °F.	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199	100 to 199	200 to 299	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 999	1000 to 1199	
	Thickness-Inches Calcium Silicate	1½	1½	2	2½	3	3	3½	4	5	1½	1½	2	2½	3	3	3½	4	5	
	Weight Lbs./Ft.	8.5	8.5	11.6	14.6	17.7	17.7	21.1	24.6	33.6	10.0	10.0	13.4	17.0	21.0	21.0	24.8	28.7	39.0	
	Thickness-Inches High Temp. Comb.							3	3½	4	5						3	3½	4	5
	Thickness-Inches 85% Magnesia	1½	1½	2	2½	3						1½	1½	2	2½	3				
Total Wt./Ft.	8.5	8.5	11.6	14.6	17.7	24.7	30.7	37.0	49.7	10.0	10.0	13.4	17.0	21.0	29.2	36.0	43.1	57.5		
FLANGES	Pressure Rating	Cast Iron			Steel						Cast Iron			Steel						
	psi	125	250	150	300	400	600	900	1500	2500	125	250	150	300	400	600	900	1500	2500	
	Screwed or Slip-On	175 1.5	350 1.5	190 1.5	370 1.5	450 1.5	650 1.5	950 1.5			250 1.5	540 1.5	250 1.5	560 1.5	650 1.5	1000 1.5	1800 1.5			
	Welding Neck			210 1.5	450 1.5	510 1.5	810 1.5	1010 1.5					300 1.5	660 1.5	750 1.5	1150 1.5	1900 1.5			
	Lap Joint			235 1.5	430 1.5	475 1.5	700 1.5	980 1.5					310 1.5	630 1.5	750 1.5	1000 1.5	1900 1.5			
Blind	275 1.5	540 1.5	310 1.5	550 1.5	700 1.5	950 1.5	1300 1.5			400 1.5	750 1.5	470 1.5	850 1.5	1050 1.5	1400 1.5	2500 1.5				
FLANGED FITTINGS	S.R. 90° Elbow	790 6	1350 6.3	930 6	1400 6.3	1700 6.5	2300 6.9	3600 7.3			1250 6.7	2050 6.8	1700 6.7	2200 6.8	2500 7.1	3500 7.6	6200 8.1			
	L.R. 90° Elbow	1300 7.8	1800 7.8	1350 7.8	1700 7.8						1850 8.7	2700 8.7	1850 8.7	2900 8.7						
	45° Elbow	590 4.6	1100 4.8	650 4.6	1100 4.8	1400 4.9	1900 5.2	2900 5.4			920 4.8	1650 5	1150 4.8	1630 5	2000 5.1	2800 5.5	5200 6			
	Tee	1100 9	2100 9.5	1400 9	1900 9.5	2400 9.7	3500 10.1	5500 11			1850 10	3100 10.2	2300 10	3200 10.2	3800 10.6	5200 11.4	9400 12.1			
VALVES	Flanged Bonnet Gate	2000 8.3	3850 9.5		4450 7.9	4750 8.2	6500 8.9				3100 8.5	6500 9.8		7000 8.7	7100 9.1	9300 9.9				
	Flanged Bonnet Globe or Angle																			
	Flanged Bonnet Check	1772 11									3000 12									
	Pressure Seal Bonnet-Gate																			
	Pressure Seal Bonnet-Globe																			
BOLTS	One Complete Flanged Joint	52	95	52	105	180	242	361			71	174	71	174	274	360	687			

LOAD RATINGS OF THREADED STEEL ROD

Nominal Rod Diameter, In.	Root Area Thread, In.	Maximum Safe Load, Lbs.
		Rod Temperature, F°
		650°
3/8	.068	610
1/2	.126	1130
5/8	.202	1810
3/4	.302	2710
7/8	.419	3770
1	.552	4960
1 1/8	.693	6230
1 1/4	.889	8000
1 1/2	1.293	11630
1 3/4	1.744	15700
2	2.300	20700
2 1/4	3.023	27200
2 1/2	3.719	33500
2 3/4	4.619	41580
3	5.621	50580
3 1/4	6.720	60480
3 1/2	7.918	71280
3 3/4	9.214	82890
4	10.608	95400
4 1/4	11.330	109000
4 1/2	12.741	123000
4 3/4	14.221	138000
5	15.766	154000

pipe size	rod size
3/4 to 2 inch inclusive	3/8 in.
2 1/2 to 3 1/2 inch inclusive	1/2 in.
4 and 5 inch	5/8 in.
6 inch	3/4 in.
8 to 12 inch inclusive	7/8 in.

MAX HANGER AND SUPPORT SPACING IN FEET

Nominal Pipe Size, In.	1/2	3/4	1	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
Water	5	6	7	9	10	11	12	13	14	16	17	19	22	23	25	27	28	30	32
Steam & Air			9	11	13	14	15	16	17	19	21	24	28	30	32	35	37	39	42

Nominal Tubing Size, In.	1/2	3/4	1	1 1/4	1 1/2	2	2 3/4	3	3 1/2	4
Maximum Span, Ft.	5	6	6	7	8	9	10	10	11	12



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