PHS

Industries, Inc.

HARDWARE CATALOG

CLICK HERE TO START

Manufacturers of Pipe Hangers & Supports

434 Latigue Road, Waggaman, LA 70094

Phone – (504) 431-7722 Fax – (504) 431-7900 Watts – (800) 256-9383

www.phsind.com

TABLE OF CONTENTS

Simply click on the subject to go to the appropriate page

Catalog No. 2002e

Revision 0

Please check our Web Site at http://www.phsind.com for the most current revision**.**

PICTORIAL INDEX

PIPE ATTACHMENTS

PICTORIAL INDEX

PIPE ATTACHMENTS

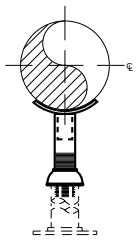


Figure 101
Adjustable
Pipe Support
Page 28

Figure 101U
Adjustable
Floor Support
Page 29

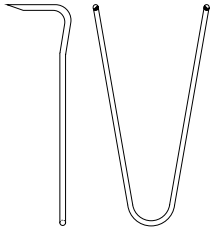


Figure 111
Wire Pipe Hook
Page 29

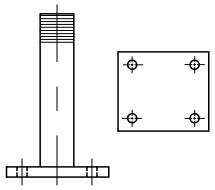


Figure 138
Threaded
Base Stand
Page 30

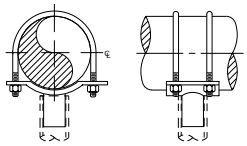


Figure 125
Pipe Stanchion
with U-Bolt
Page 31

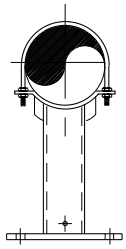


Figure 125SP
Floor Support
Page 32

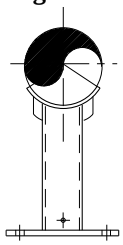


Figure 136SP
Floor Support
Page 32

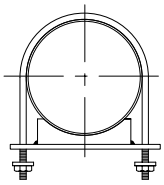


Figure 127
Anchor Chair
Page 32

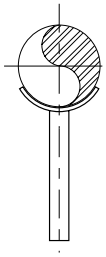


Figure 136
Pipe Support
Page 33

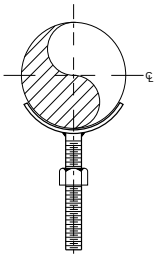


Figure 137
Adjustable
Pipe Support
Page 33

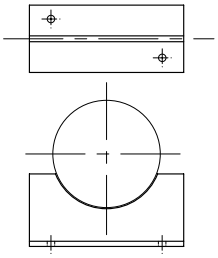


Figure 145
Pipe Chair
Page 34

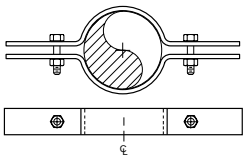


Figure 126
Extension
Riser Clamp
Page 35

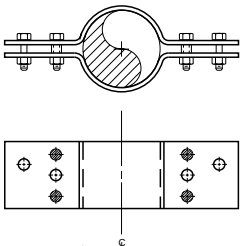


Figure 124
Riser Clamp
Page 37

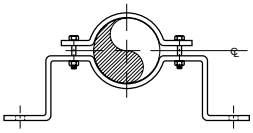


Figure 179
Offset Pipe Clamp
Page 38

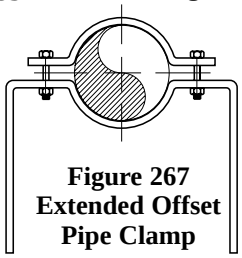
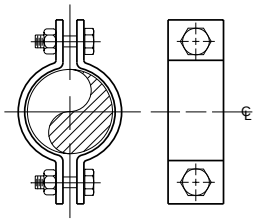


Figure 267
Extended Offset
Pipe Clamp
Page 38



Figures 175, 175SP
Two Bolt
Pipe Clamp
Page 39

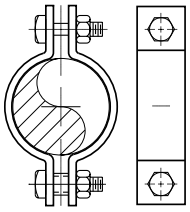


Figure 298
Heavy Duty Two
Bolt Pipe Clamp
Page 40

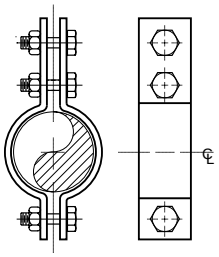


Figure 304
Three Bolt
Pipe Clamp
Page 41

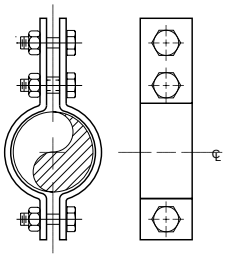
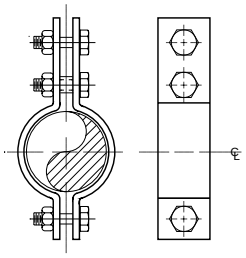


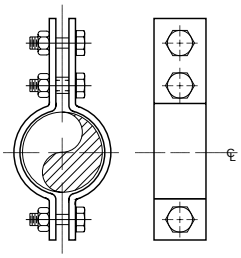
Figure 304Z
Alloy Three Bolt
Pipe Clamp
Page 42

PICTORIAL INDEX

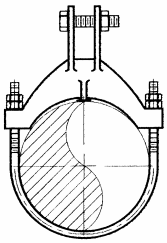
PIPE ATTACHMENTS



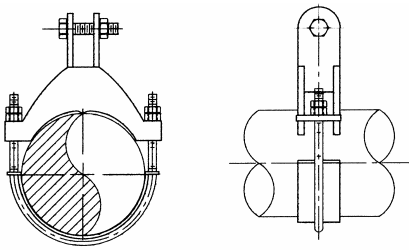
Figures 91
Heavy Duty Three Bolt Pipe Clamp
Page 43



Figures 91Z
Heavy Alloy Three Bolt Pipe Clamp
Page 44



Figures 134
Standard Alloy Yoke Clamp
Page 45



Figures 246
Heavy Alloy Yoke Clamp
Page 46

Figure 371
Back-to-Back Channel Assembly
Page 47

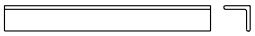


Figure 374
Angle Iron Support
Page 47

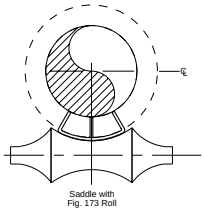


Figure 351 thru 357Z
Pipe Covering Protection Saddles
Page 48

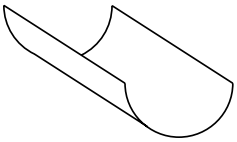


Figure 265P
Insulation Shield
Page 52

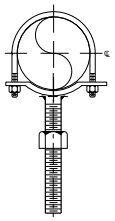


Figure 191
Adjustable Pipe Stanchion with U-Bolt
Page 11

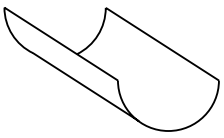


Figure 265GS
Insulation Shield
Page 53

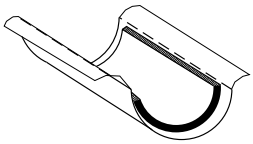


Figure 465 CVB
Iron Pipe Insulation Shield
Page 54

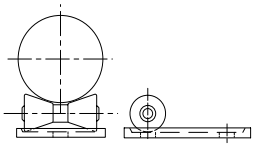


Figure 63
Roll and Plate
Page 64

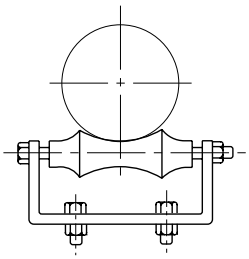


Figure 54
Roller Chair
Page 60

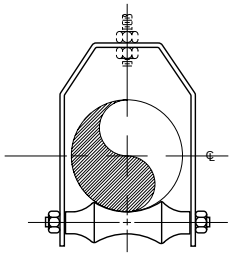


Figure 140
Harvard Roll Hanger
Page 55

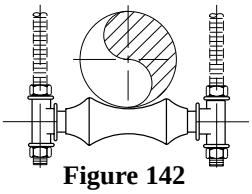


Figure 142
Adjustable Roll Support
Page 57

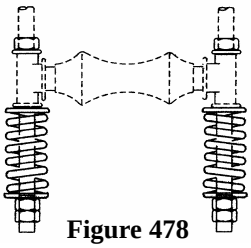


Figure 478
Cushion Spring Assembly
Page 59

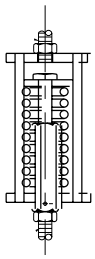


Figure 399
Spring Hanger
Page 59

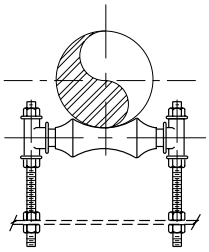


Figure 109
Adjustable Roll Support
Page 61

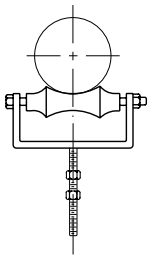


Figure 333
Roller Support
Page 62

Figure 173
Pipe Roll
Page 63

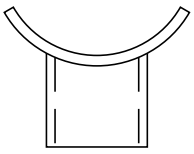


Figure 247
Pipe Support
Page 10

PICTORIAL INDEX

PIPE ATTACHMENTS

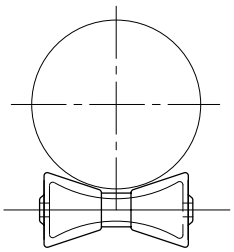


Figure 67
Pipe Roll
Page 65

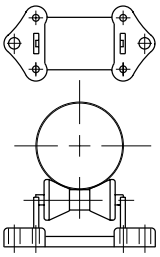


Figure 17
Chair and Roll
Page 66

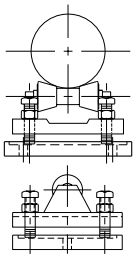


Figure 53
Adjustable Chair and Roll
Page 67

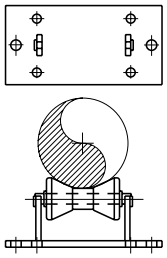


Figure 39
Chair and Roll
Page 68

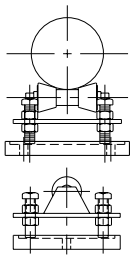


Figure 40
Adjustable Chair and Roll
Page 71

STRUCTURE ATTACHMENTS

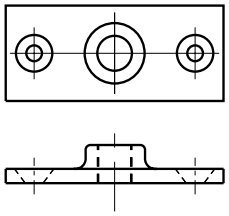


Figure 85RT
Single Plate
Page 73

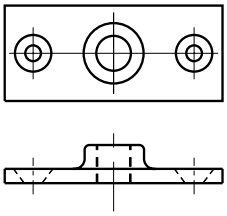


Figure 85CT
Single Plate
Page 109

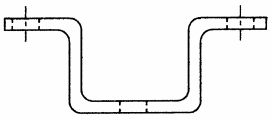


Figure 151
Ceiling Stirrup
Page 74

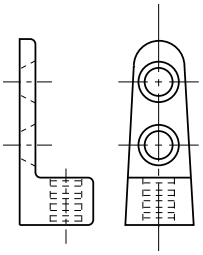


Figure 153, 153S
Side Beam Connector
Page 74

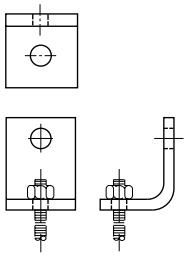


Figure 303
Side Beam Angle Bracket
Page 73

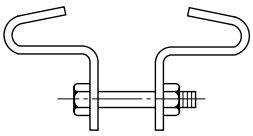


Figure 15
Beam Clamp
Page 75

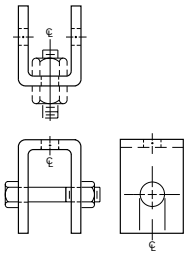


Figure 113A, 113B
Welded Beam Attachment
Page 76

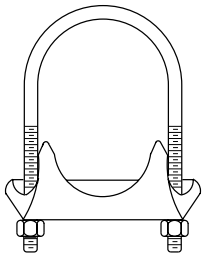


Figure 282
Right Angle Beam Clamp
Page 77

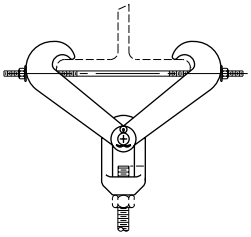


Figure 297
Steel Beam Clamp with Eyenut
Page 78

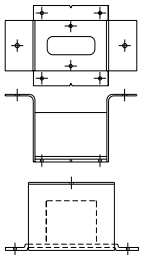


Figure 75 , 75N
Steel Concrete Insert and Nut
Page 79

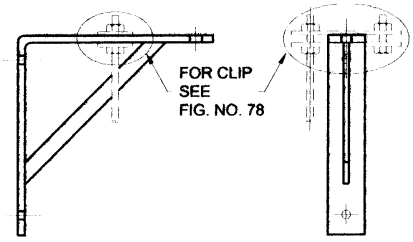


Figure 69
Light Welded Steel Bracket
Page 80

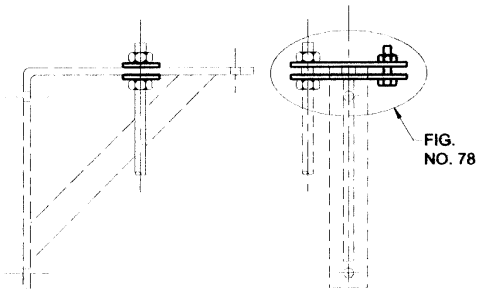


Figure 78
Steel Bracket Clip
Page 80

PICTORIAL INDEX

STRUCTURE ATTACHMENTS

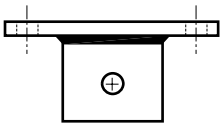


Figure 1022
Concrete Single
Plate Lug
Page 83

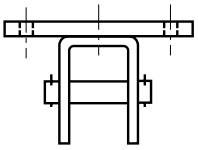


Figure 1020
Concrete
Attachment
Page 85

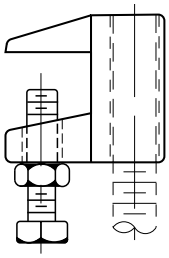


Figure 192
Top Beam Clamp
with Locking Nut
Page 85

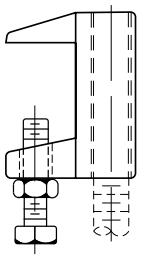


Figure 192W
Wide Mouth Top
Beam Clamp
Page 85

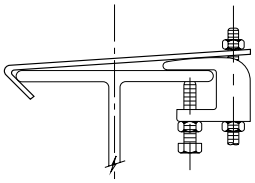


Figure 192RS
Top Beam Clamp
Retaining Clip
Page 86

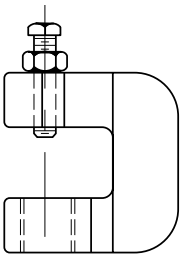
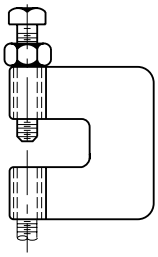


Figure 196
C-Clamp with
Locking Nut
Page 86



Figures 47, 47SS
C-Clamp
with Locking Nut
Page 87

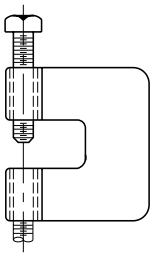


Figure 238
C-Clamp without
Locking Nut
Page 87

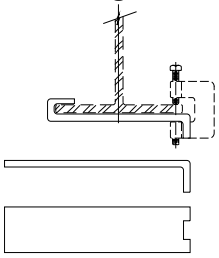


Figure 22
C-Clamp
Retaining Clip
Page 88

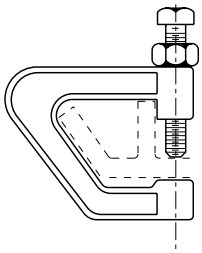
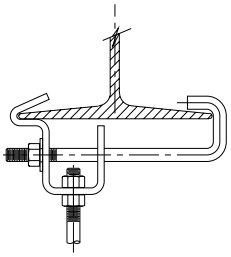


Figure 290
Purlin Clamp
Page 88



Figures 14 , 14A
Adjustable
Beam Clamp
Page 89

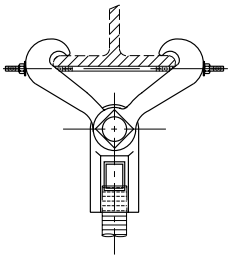


Figure 82
Adjustable
Beam Clamp
Page 90

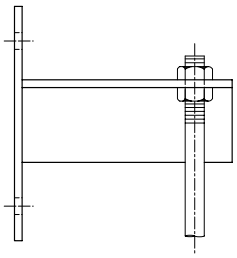


Figure 83
Bracket
Page 81

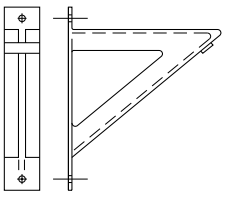


Figure 84
Medium Welded
Steel Bracket
Page 81

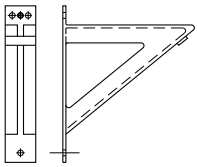
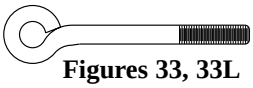


Figure 139
Heavy Welded
Steel Bracket
Page 82

ACCESSORIES

Figure 94, 94SS
All-Thread
Hanger Rod
Page 91

Figures 133, 133L
Machine Thread
Rod
Page 91



Figures 33, 33L
Machine Thread Eye
Rod (Unwelded)
Page 92

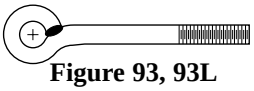
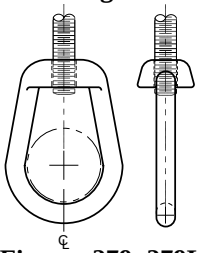
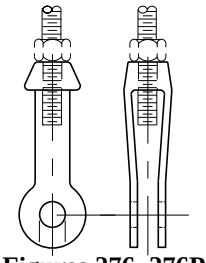


Figure 93, 93L
Welded Eyerod
Page 92

Figure 28
Lag Rod
Page 93



Figures 279, 279L
Forged Weldless Eyenut
Page 93



Figures 276, 276P
Forged Steel Clevis
Page 94

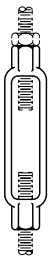


Figure 132
Turnbuckle
Page 94

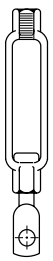


Figure 38
Hanger Adjuster
Page 95

PICTORIAL INDEX

ACCESSORIES

COPPER TUBING HANGERS

PICTORIAL INDEX

PVC COATED ATTACHMENTS

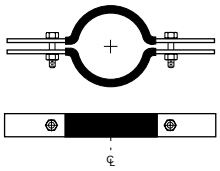


Figure 126PVC
PVC Coated
Riser Clamp
Page 107

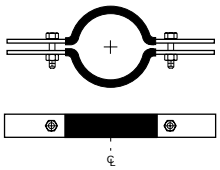


Figure 126LD PVC
Plastic Pipe
Riser Clamp
Page 36

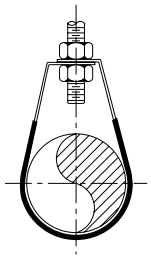


Figure 1A PVC
PVC Band Hanger
Page 14

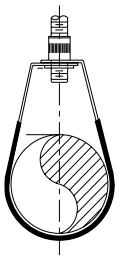


Figure 800PVC
PVC Coated
Adjustable Swivel Ring
Page 16

DUCTILE IRON - CAST IRON HANGERS

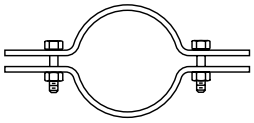


Figure 158
Ductile Iron
Pipe Clamp
Page 110

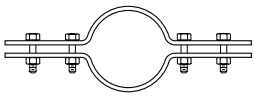


Figure 158DB
Double Bolt Ductile
Iron Pipe Clamp
Page 110

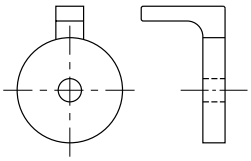


Figure 258
Underground Socket
Clamp Washer
Page 111

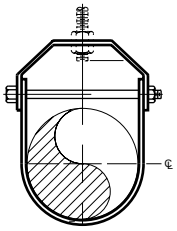


Figure 100DI
Clevis Hanger for
Ductile Iron Pipe
Page 112

PIPE ALIGNMENT GUIDES

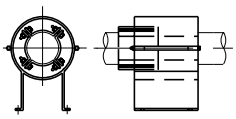


Figure 1006
Pipe Alignment
Guide
Page 113

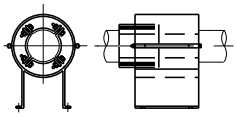
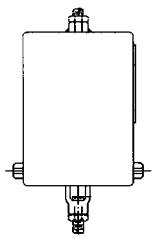
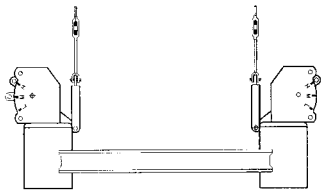


Figure 1007
Pipe Alignment
Guide
Page 115

ENGINEERED PRODUCTS



Figures
910, 920, 940, 960
Variable Springs
Upon Request



Figures 880H, 880V
Constant Springs
Upon Request

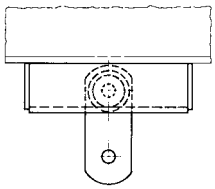


Figure 7054
Horizontal Traveler
Upon Request

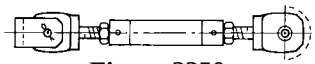


Figure 2250
Rigid Struts
Upon Request

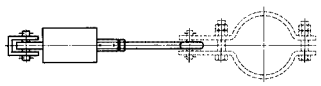


Figure 2301, 2302
Sway Brace Assemblies
Upon Request

PICTORIAL INDEX

ENGINEERED PRODUCTS

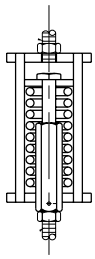


Figure 399
Spring Hanger

Page 59

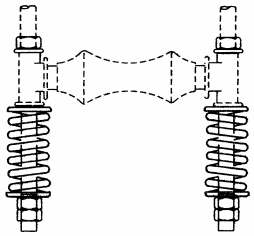


Figure 478
Cushion
Spring Assembly

Page 59

PIPE SUPPORT

Figure 247

The Figure 247 is used in conjunction with a pipe stand and flange at the base to support piping from below. Both pipe stand and base must be ordered separately.

Load Rating: Up to 650° F (343° C).

Compliance: Federal Specification A-A-1192A Type 38, MSS-SP-69 Type 38.

Finish: Plain, Painted, Electro-Galvanized, Hot-Dip Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M247.

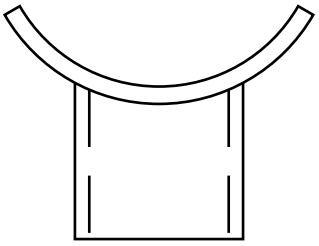


FIGURE 247 – PIPE SUPPORT

PIPE SIZE	COUPLING PIPE SIZE	WEIGHT EACH
2 50	1¼ 32	1.35 0.61
3 80	1½ 40	2.45 1.11
4 100	2 50	3.63 1.65
5 125	2 50	4.30 1.95
6 150	2½ 65	7.03 3.19
8 200	2½ 65	8.53 3.87
10 250	3 80	13.00 5.91
12 300	3 80	15.10 6.84

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

ADJUSTABLE PIPE STANCHION WITH U-BOLT

Figure 191

The Figure 191 is used for support of piping from below without welding to the pipe with the added adjustment feature and a U-bolt for increased stability. The lower supporting pipe "B" must be ordered separately. A hardened flat washer (not furnished) should be used under the adjusting nut.

Rated loads are for up to 650° F (343° C).

Material: Carbon Steel.

Compliance: Federal Specification WW-H-171 (Type 38), MSS-SP-69 (Type 37), and BSPSS-BS3974.

Finish: Plain, Electro-Galvanized.

Ordering: Specify figure number, finish, and pipe size. For Metric applications specify Figure M191.

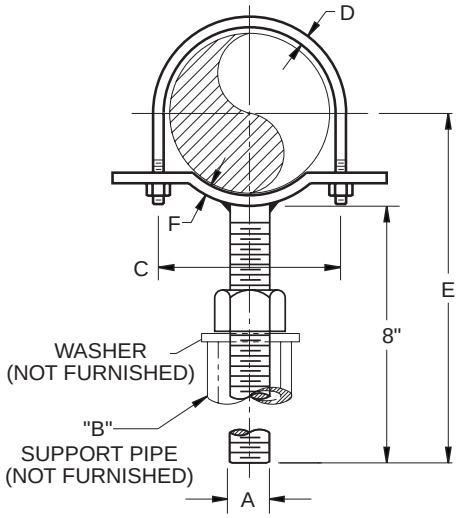


FIGURE 191 – ADJUSTABLE PIPE STANCHION WITH U-BOLT

PIPE SIZE	A	SUPPORT PIPE B	C	D	E	STEEL SIZE F	WEIGHT EACH
2	5/8	1	2 7/8	1/4	9 1/2	1/4 x 1	1.2
50	M16	25	73	6	241	6 x 25	0.5
2 1/2	5/8	1	3 3/8	3/8	9 3/4	1/4 x 1	1.4
65	M16	25	86	10	248	6 x 25	0.6
3	5/8	1	4	3/8	10 1/8	1/4 x 1	1.6
80	M16	25	102	10	257	6 x 25	0.7
3 1/2	5/8	1	5	3/8	10 3/8	1/4 x 1	2.6
90	M16	25	127	10	264	6 x 25	1.2
4	7/8	1	5 1/8	1/2	10 5/8	1/4 x 1 1/4	3.0
100	M20	25	130	13	270	6 x 32	1.4
5	7/8	1	6 1/8	1/2	11 1/8	1/4 x 1 1/4	3.2
125	M20	25	156	13	283	6 x 32	1.5
6	1	1 1/4	7 3/8	5/8	11 3/4	3/8 x 1 1/2	4.9
150	M24	32	187	16	298	10 x 38	2.2
8	1	1 1/4	9 3/8	5/8	12 3/4	3/8 x 1 1/2	6.2
200	M24	32	238	16	324	10 x 38	2.8
10	1 1/4	1 1/2	11 5/8	5/8	14	1/2 x 2	10.5
250	M30	38	295	16	356	13 x 51	4.8
12	1 1/4	1 1/2	13 3/4	5/8	15	1/2 x 2	11.8
300	M30	38	349	16	381	13 x 51	5.4

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ADJUSTABLE SPLIT SWIVEL HANGER

Figure 240

Designed to support non-insulated, stationary lines from above. The hinged design is easier to install making it ideal for retrofit needs. Vertical adjustment is made by turning the swivel. Pipe sizes ¾" to 2" do not have the window cutout.

Material: Malleable Iron.

Compliance: MSS-SP-69 (Type 6)

Finish: Plain, Electro-Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M240.

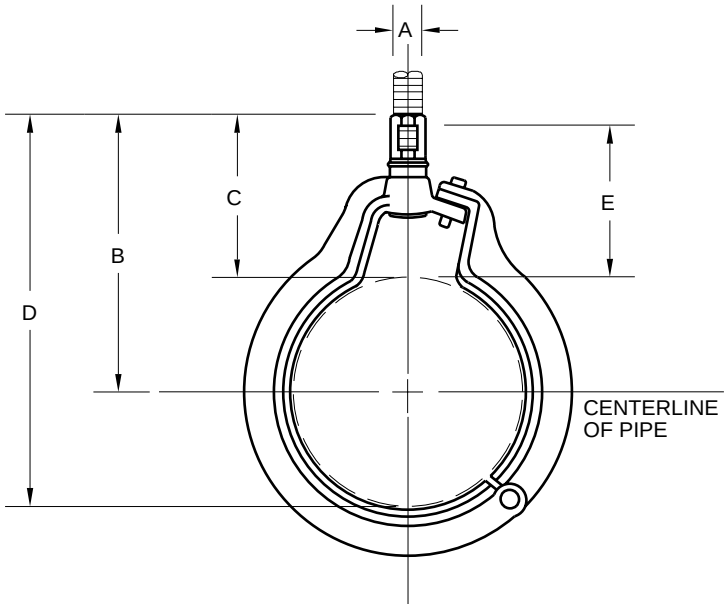


FIGURE 240 – ADJUSTABLE SWIVEL HANGER

PIPE SIZE	MAXIMUM LOAD	ROD SIZE A	B	C	D	E	WEIGHT EACH
¾	300	⅜	2⅛	2⅜	2⅝	2	0.23
20	1335	10	54	60	67	51	0.10
1	300	⅜	2⅜	2¼	3	1¾	0.25
25	1335	10	60	57	76	44	0.11
1¼	300	⅜	2⅝	2¼	3⅜	1¾	0.30
32	1335	10	67	57	86	44	0.14
1½	300	⅜	2¾	2¼	3¾	1¾	0.32
40	1335	10	70	57	95	44	0.15
2	300	⅜	3⅛	2⅜	4¼	1⅞	0.34
50	1335	10	79	60	108	48	0.15
2½	500	½	4⅜	2⅛	5¼	1⅞	0.65
65	2224	13	111	54	146	48	0.29
3	500	½	4⅝	2⅛	6⅜	2	0.78
80	2224	13	117	54	162	51	0.35
3½	500	½	5	2¼	7	2⅞	0.85
90	2224	13	127	57	178	73	0.39
4	900	⅝	6	2⅞	8¼	2⅞	1.54
100	4004	16	152	73	210	73	0.70
5	900	⅝	6¾	3	9½	3	2.00
125	4004	16	171	76	241	76	0.91
6	1300	¾	7¾	3⅜	11	3½	3.20
150	5783	19	197	86	279	89	1.45
8	1800	⅞	9¾	4⅜	14	3⅞	5.00
200	8007	22	248	111	356	98	2.27

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

HINGE HANGER

Figure 34

Designed to support non-insulated, stationary lines from above. The hinged design is easier to install making it ideal for retrofit needs. The Figure 38 Hanger Adjustor is commonly used to connect to this part. For Copper Tubing please see the Figure 34CT.

Material: Malleable Iron.

Compliance: Federal Specification A-A-1192A Type 11, MSS-SP-69 Type 11.

Finish: Plain, Electro-Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M34.

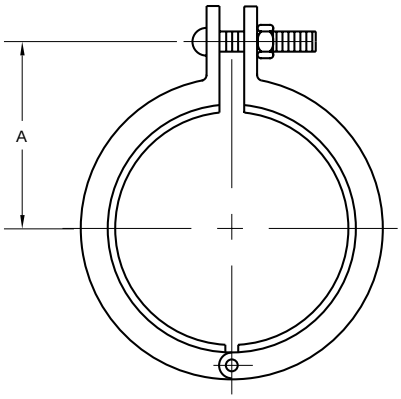


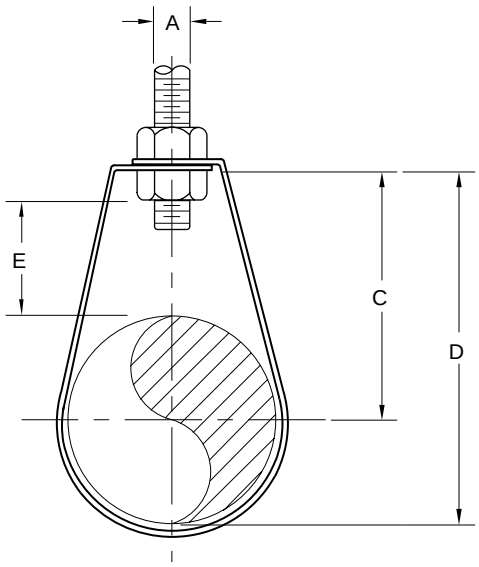
FIGURE 34 – HINGE HANGER

PIPE SIZE	MAX LOAD	A	WEIGHT EACH
⅜ 10	200 890	¾ 19	0.07 0.03
½ 15	200 890	15⁄16 24	0.08 0.04
¾ 20	300 1335	1⅛ 29	0.11 0.05
1 25	300 1335	1¼ 32	0.12 0.05
1¼ 32	300 1335	1 9⁄16 40	0.17 0.08
1½ 40	300 1335	1 11⁄16 43	0.20 0.09
2 50	300 1335	2 1⁄16 52	0.32 0.15
2½ 65	450 2002	2¼ 57	0.43 0.20
3 80	450 2002	2¾ 70	0.67 0.30
3½ 90	450 2002	3⅛ 79	0.86 0.39
4 100	520 2313	3⅝ 92	0.93 0.42
5 125	520 2313	4½ 114	1.52 0.69
6 150	1300 5783	5 1⁄16 138	2.64 1.20
8 200	1800 8007	6⅜ 162	3.84 1.74

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

BAND HANGER

Figure 1A



Designed to support non-insulated, stationary lines from above. The lower nut (not furnished) adjusts the pipe line to the proper elevation, while the top nut (not furnished) prevents loosening due to vibration, and must be tightened securely to assure proper hanger performance. For copper tubing please see our Figure 1A CT. For plastic coated please see our Figure 1A PVC.

Material: Carbon Steel.

Finish: Electro-Galvanized.

Compliance: Federal Specification A-A-1192A Type 7, MSS-SP-69 Type 7.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M1A.

PVC BAND HANGER

Figure 1A PVC

This product is designed to protect the pipe from coming into direct contact with the hanger by having the contact surface PVC coated. Install the same as a Figure 1A.

Material: Carbon Steel

Operating temperature: Should not exceed 140° F / 60° C.

Compliance: Federal Specification A-A-1192A Type 7, MSS-SP-69 Type 7.

Finish: Electro-Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M1A PVC. See Figure 1A for plain and electro-galvanized finishes. For Copper Tubing see Figure 1A CT.

FIGURE 1A – BAND HANGER

PIPE SIZE	MAXIMUM LOAD	ROD SIZE A	C	D	ADJ. E	WEIGHT EACH
½ 15	610 2714	⅜ M10	2¼ 57	2 11⁄16 68	1⅜ 35	0.13 0.06
¾ 20	610 2714	⅜ M10	2⅛ 54	2 11⁄16 68	1⅛ 29	0.13 0.06
1 25	610 2714	⅜ M10	2⅛ 54	2 13⁄16 71	1 1⁄16 27	0.14 0.06
1¼ 32	610 2714	⅜ M10	2 5⁄16 59	3 3⁄16 81	1 25	0.16 0.07
1½ 40	610 2714	⅜ M10	2 7⁄16 62	3 7⁄16 87	1 1⁄16 27	0.18 0.08
2 50	610 2714	⅜ M10	2⅞ 73	4 1⁄16 103	1 3⁄16 30	0.20 0.09
2½ 65	970 4315	½ M12	3⅛ 79	4 7⁄16 113	⅞ 22	0.37 0.17
3 80	970 4315	½ M12	3¾ 95	5½ 140	1⅜ 35	0.43 0.20
3½ 90	970 4315	½ M12	3⅜ 98	5⅞ 149	1¼ 32	0.47 0.21
4 100	1250 5560	½ M12	4¼ 108	6½ 165	1⅜ 35	0.69 0.31
5 125	1250 5560	½ M12	4 15⁄16 125	7⅝ 194	1½ 38	0.82 0.37
6 150	1600 7117	¾ M20	5 15⁄16 151	9¼ 235	1 11⁄16 43	1.50 0.68
8 200	1800 8007	⅞ M20	7 15⁄16 202	12¼ 311	2½ 64	1.89 0.86

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

NFPA SWIVEL RING

Figure 800FP

Designed for the support of non-insulated static pipe lines. The swivel nut is knurled to provide a gripping surface when adjusting the tubing elevation and is tapped to the reduced rod standards of NFPA.

Compliance: Federal Specification A-A-1192A Type 10, MSS SP-69 Type 10, Underwriters Laboratory listed, and Factory Mutual approved (¾" through 8"), and NFPA standards.

We also offer Swivel Ring hangers that are for standard commercial pipe (Figure 800), copper tubing (Figure 800CT), and PVC coated (Figure 800PVC), in this catalog.

Material: Carbon Steel.

Finish: Electro-Galvanized.

Ordering: Specify pipe size, figure number and finish. For Metric applications specify Figure M800FP.

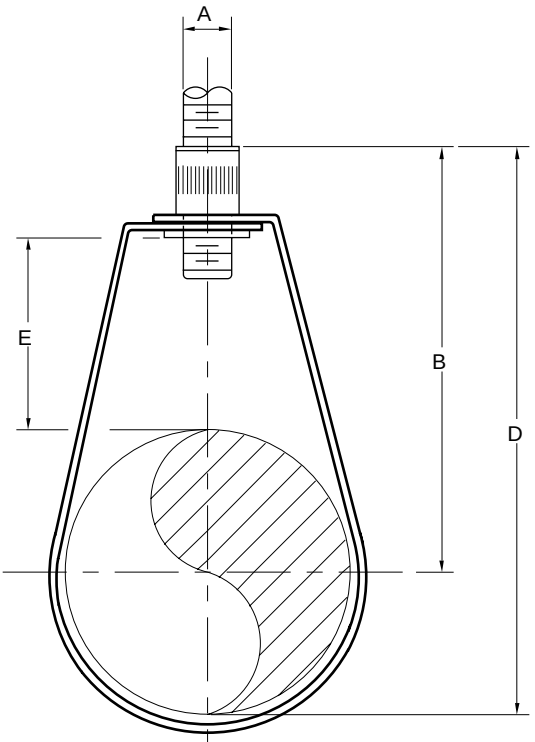


FIGURE 800FP – NFPA ADJUSTABLE SWIVEL RING

FORMERLY FIGURE 800N

PIPE SIZE	MAXIMUM LOAD	A	B	D	E	WEIGHT EACH
½	300	⅜	2¼	3 1/16	1 7/16	0.09
10	1335	M10	70	78	37	0.04
¾	300	⅜	2½	3 1/16	1⅛	0.10
20	1335	M10	64	78	29	0.05
1	300	⅜	2½	3 1/16	1	0.10
25	1335	M10	64	81	25	0.05
1¼	300	⅜	2 13/16	3 5/16	1 1/16	0.10
32	1335	M10	71	90	27	0.05
1½	300	⅜	3⅛	3⅞	1 1/16	0.11
40	1335	M10	79	98	27	0.05
2	300	⅜	3 5/16	4⅜	1⅛	0.12
50	1335	M10	84	111	29	0.05
2½	525	⅜	3 11/16	5	1¼	0.25
65	2335	M10	94	127	32	0.11
3	525	⅜	3¾	5 5/16	1⅛	0.30
80	2335	M10	95	141	29	0.14
3½	525	⅜	4 5/16	6 5/16	1½	0.33
90	2335	M10	110	160	38	0.15
4	650	⅜	4½	7	1⅝	0.41
100	2891	M10	114	178	41	0.19
5	1000	½	5⅝	8⅜	2¼	0.58
125	4448	M12	143	213	57	0.26
6	1000	½	6½	9 13/16	2 7/16	0.92
150	4448	M12	165	249	62	0.42
8	1000	½	7 15/16	12¼	2⅝	1.16
200	4448	M12	202	311	67	0.53

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

PVC COATED ADJUSTABLE SWIVEL RING

Figure 800PVC

Designed for the support of non-insulated static pipe lines and to protect the pipe from coming into direct contact with the hanger by having the contact surface PVC coated.. The swivel nut is knurled to provide a gripping surface when adjusting the pipe elevation.

Compliance: Federal Specification A-A-1192A Type 10, MSS SP-69 Type 10, Underwriters Laboratory listed, and Factory Mutual approved (3/4" through 8").

We also offer Swivel Ring hangers that are for Copper Tubing (Figure 800CT) and for NFPA requirements (Figure 800FP) in this catalog.

Operating temperature should not exceed 140° F / 60° C.

Material: Carbon Steel.

Finish: Electro-Galvanized.

Ordering: Specify pipe size, and figure number.
For Metric applications specify Figure M800PVC.

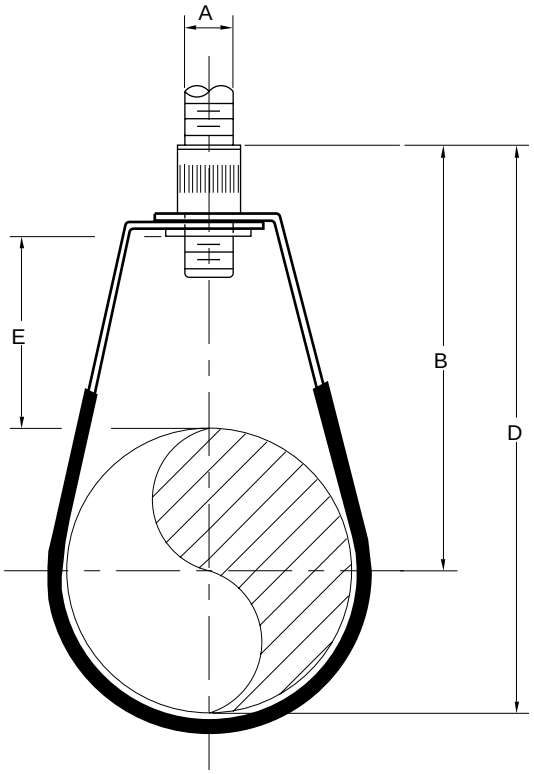


FIGURE 800PVC - PVC COATED ADJUSTABLE SWIVEL RING

PIPE SIZE	MAXIMUM LOAD	A	B	D	E	WEIGHT EACH
½	300	⅜	2¾	3 1/16	1 7/16	0.11
10	1335	M10	70	78	37	0.05
¾	300	⅜	2½	3 1/16	1⅛	0.13
20	1335	M10	64	78	29	0.06
1	300	⅜	2½	3 3/16	1	0.13
25	1335	M10	64	81	25	0.06
1¼	300	⅜	2 13/16	3 3/16	1 1/16	0.15
32	1335	M10	71	90	27	0.07
1½	300	⅜	3⅛	3⅞	1 1/16	0.17
40	1335	M10	79	98	27	0.08
2	300	⅜	3 5/16	4⅜	1⅛	0.18
50	1335	M10	84	111	29	0.08
2½	600	½	3 11/16	5⅛	1¼	0.34
65	2669	M12	94	130	32	0.15
3	600	½	4	5⅞	1⅛	0.39
80	2669	M12	102	149	29	0.18
3½	600	½	4 5/16	6⅝	1½	0.42
90	2669	M12	110	168	38	0.19
4	1000	⅝	4 15/16	7⅛	1¼	0.48
100	4448	M16	125	181	32	0.22
5	1000	⅝	5⅝	8½	1⅜	0.69
125	4448	M16	143	216	35	0.31
6	1250	¾	6 11/16	10⅛	2	1.13
150	5560	M20	170	257	51	0.51
8	1800	⅞	8 5/16	12⅞	2⅝	1.29
200	8007	M20	211	327	67	0.59

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ELONGATED CLEVIS HANGER

Figure 100EL

The 100EL is designed for the suspension of insulated stationary pipe lines. It will accommodate 2 inches (51mm) of insulation up to 1½" (40mm) pipe, and 4 inches (102mm) of insulation for pipe 2" (50mm) and larger.

Hanger locking nut above the clevis must be tightened securely to assure proper hanger performance. The nuts are not included.

Rated Loads are for up to 650° F (343° C).

Material: Carbon Steel.

Finish: Plain, Galvanized.

Approvals: Federal Specification A-A-1192A Type 1, MSS-SP-69 Type 1 and BSPSS-BS3974.

Ordering: Specify figure number, finish, and pipe size. For Metric applications specify Figure M100EL.

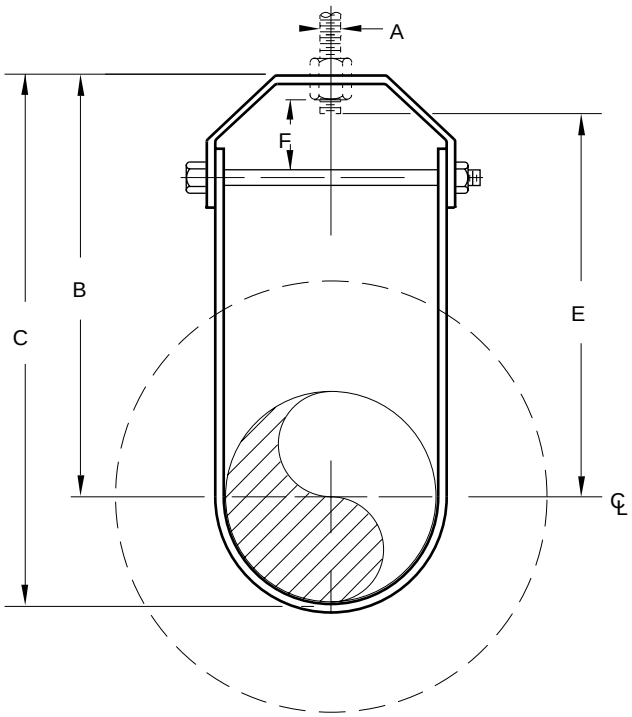


FIGURE 100EL – ELONGATED CLEVIS HANGER

PIPE SIZE	MAXIMUM LOAD	A	B	C	E	F	WEIGHT EACH
½ 15	600 2669	⅜ M10	3¾ 95	4¼ 108	3½ 89	⅝ 16	0.66 0.30
¾ 20	600 2669	⅜ M10	4¼ 108	4⅞ 124	3⅞ 98	⅝ 16	0.70 0.32
1 25	600 2669	⅜ M10	5⅛ 130	5¾ 146	4¾ 121	1⅝ 41	0.74 0.34
1¼ 32	600 2669	⅜ M10	5⅜ 137	6⅛ 156	4⅞ 124	1⅝ 41	0.78 0.35
1½ 40	600 2669	⅜ M10	5½ 140	6⅜ 162	5 127	1½ 38	0.81 0.37
2 50	600 2669	⅜ M10	7⅝ 194	8¾ 222	7⅛ 181	1⅝ 41	0.88 0.40
2½ 65	1100 4893	½ M12	7⅞ 200	9¼ 235	7¼ 184	1⅛ 29	1.83 0.83
3 80	1100 4893	½ M12	8⅛ 206	9⅞ 251	7½ 191	1⅛ 29	1.97 0.89
3½ 90	1100 4893	½ M12	8⅜ 213	10⅜ 264	7¾ 197	1¼ 32	2.06 0.93
4 100	1400 6228	⅝ M16	9⅝ 244	11⅞ 302	8⅞ 225	1¾ 44	2.57 1.17
5 125	1400 6228	⅝ M16	10⅜ 264	13⅛ 333	9⅝ 244	1⅞ 48	3.00 1.36
6 150	1900 8452	¾ M20	10⅞ 276	14⅛ 359	10 254	1⅝ 41	4.05 1.84
8 200	2000 8897	⅞ M20	12⅝ 321	16⅞ 429	11⅝ 295	2⅛ 54	6.00 2.72
10 250	3600 16014	⅞ M20	13¼ 337	18⅝ 562	12⅛ 308	2⅜ 60	10.10 4.58
12 300	3800 16904	⅞ M20	15¾ 400	22⅛ 562	14⅝ 371	2⅝ 67	12.90 5.85

Dimensions	Temperature	Loads	Weight
Inches Millimeters	Fahrenheit Celsius	Pounds Newtons	Pounds Kilograms

CLEVIS HANGER

Figure 100
Figure 100PVC
Figure 100SS

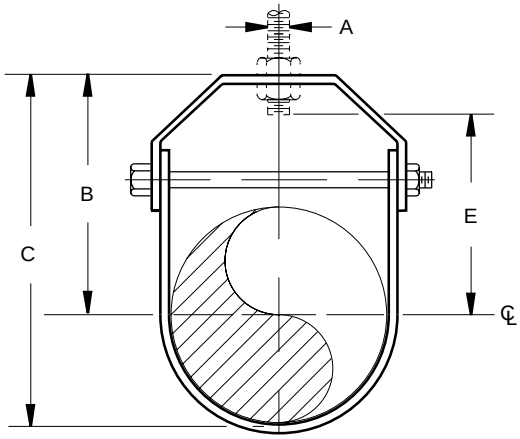
Designed to support non-insulated, stationary lines from above allowing for approximately 1" to 1½" of vertical adjustment after the pipe is in place. The lower nut (not furnished) adjusts the pipe line to the proper elevation, the top nut (not furnished) prevents loosening due to vibration, and must be tightened securely to assure proper hanger performance.

Rated Loads are for up to 650° F (343° C) for carbon steel. Maximum PVC temperature is 140° F (60° C).

Material: Carbon Steel (Also available in Stainless Steel as Figure 100SS).

Compliance: Federal Specification A-A-1192A Type 1, MSS-SP-69 Type 1, BSPSS-BS3974, U.L. and F.M.

Finish: Plain, Galvanized, Plastic Coated, Stainless Steel.



Ordering: Specify figure number, finish and pipe size. For Metric applications specify Figure M100 OR M100SS.

FIGURE 100 – CLEVIS HANGER

PIPE SIZE	MAXIMUM LOAD	A	B	C	ROD TAKE OUT E	WEIGHT EACH
½	610	⅜	2⅛	2¾	1½	0.27
15	2714	M10	54	70	38	0.12
¾	610	⅜	2¾	3⅛	1⅞	0.29
20	2714	M10	70	79	48	0.13
1	610	⅜	3	3¾	2¼	0.33
25	2714	M10	76	95	57	0.15
1¼	610	⅜	3⅛	4	2¼	0.36
32	2714	M10	79	102	57	0.16
1½	610	⅜	3¼	4¼	2⅜	0.42
40	2714	M10	83	108	60	0.19
2	610	⅜	3⅜	4⅝	3⅛	0.52
50	2714	M10	86	117	79	0.24
2½	1130	½	4⅛	5⅝	3⅛	0.61
65	5027	M12	105	143	79	0.28
3	1130	½	5	6⅞	4⅛	0.90
80	5027	M12	127	175	105	0.41
3½	1130	½	4½	6⅝	3⅝	0.99
90	5027	M12	114	168	92	0.45
4	1430	⅝	5⅜	7¾	4⅜	1.40
100	6361	M16	137	197	111	0.64
5	1430	⅝	6	8⅞	5	2.10
125	6361	M16	152	225	127	0.95
6	1940	¾	7	10½	5⅞	3.00
150	8630	M20	178	267	149	1.36
7	2000	¾	7⅝	11¾	6½	5.25
	8897	M20	194	298	165	2.38
8	2000	¾	8½	12¾	6¾	5.42
200	8897	M20	216	324	171	2.46
10	3600	⅞	10	15⅜	8¼	9.10
250	16014	M20	254	391	210	4.13
12	3800	⅞	11⅛	17½	9¼	11.75
300	16904	M20	283	445	235	5.33
14	4200	1	12½	19½	10⅝	14.25
350	18683	M24	318	495	270	6.46
16	4800	1	15	23	13⅛	20.75
400	21352	M24	381	584	333	9.41
18	4800	1¼	15¾	24¾	13¾	23.00
450	21352	M30	400	629	349	10.43
20	4800	1¼	17⅜	27⅜	15¼	41.50
500	21352	M30	441	695	387	18.82
24	4800	1¼	19⅝	31⅝	17½	50.00
600	21352	M30	498	803	445	22.68
30	6000	1¼	24¾	40¾	21¾	68.08
750	26690	M30	629	1035	552	30.88
36	9500	1½	32⅞	50⅞	30	68.68
900	42260	M36	835	1292	762	31.15

LIGHT DUTY CLEVIS HANGER

Figure 200

Designed to support non-insulated, stationary lines from above allowing for approximately 1" to 1½" of vertical adjustment after the pipe is in place. The lower nut (not furnished) adjusts the pipe line to the proper elevation, the top nut (not furnished) prevents loosening due to vibration, and must be tightened securely to assure proper hanger performance.

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 1, MSS-SP-69 Type 1.

Finish: Plain, Electro-Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M200.

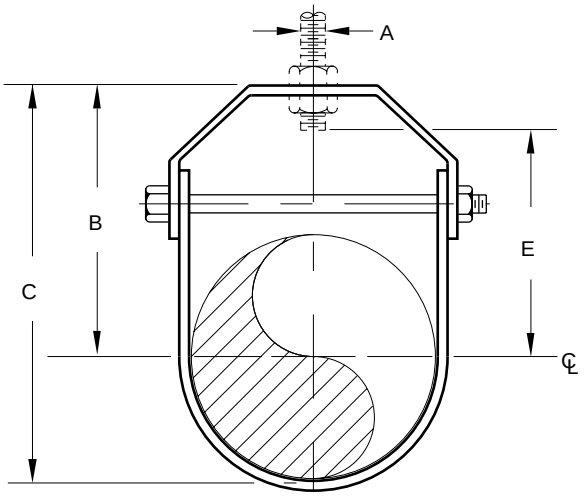


FIGURE 200 – LIGHT DUTY CLEVIS HANGER

PIPE SIZE	MAXIMUM LOAD	A	B	C	E	WEIGHT EACH
½	150	⅜	1⅞	2⅜	¾	0.27
15	667	M10	48	60	19	0.12
¾	250	⅜	2⅜	2⅞	1½	0.29
20	1112	M10	60	73	38	0.13
1	250	⅜	2⅜	3⅞	1⅝	0.33
25	1112	M10	60	79	41	0.15
1¼	250	⅜	2⅞	3¾	2⅛	0.36
32	1112	M10	73	95	54	0.16
1½	250	⅜	3	4	2¼	0.42
40	1112	M10	76	102	57	0.19
2	250	⅜	3½	4¾	2¾	0.52
50	1112	M10	89	121	70	0.24
2½	350	½	4	5½	2⅞	0.81
65	1557	M12	102	140	73	0.37
3	350	½	4¼	6⅛	3¼	0.90
80	1557	M12	108	156	83	0.41
3½	350	½	4⅜	6½	3⅜	0.99
90	1557	M12	111	165	86	0.45
4	400	⅝	5½	7⅞	4⅜	1.40
100	1779	M16	140	200	111	0.64

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

REFRIGERATION HANGER AND SHIELD

Figure 100SH

This hanger is a combination of the Figure 100 and Figure 265 where the protection shield is welded to the clevis hanger. Designed to support insulated, stationary lines from above and prevent crushing the insulation or breaking the vapor barrier. It allows for approximately 1" to 1½" of vertical adjustment after the pipe is in place. The lower nut (not furnished) adjusts the pipe line to the proper elevation, the top nut (not furnished) prevents loosening due to vibration, and must be tightened securely to assure proper hanger performance.

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 1, MSS-SP-69 Type 1 and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify pipe size, insulation thickness, figure number, and finish. For Metric applications specify Figure M100SH.

Dimensional Data: See Figure 100 and Figure 265P.

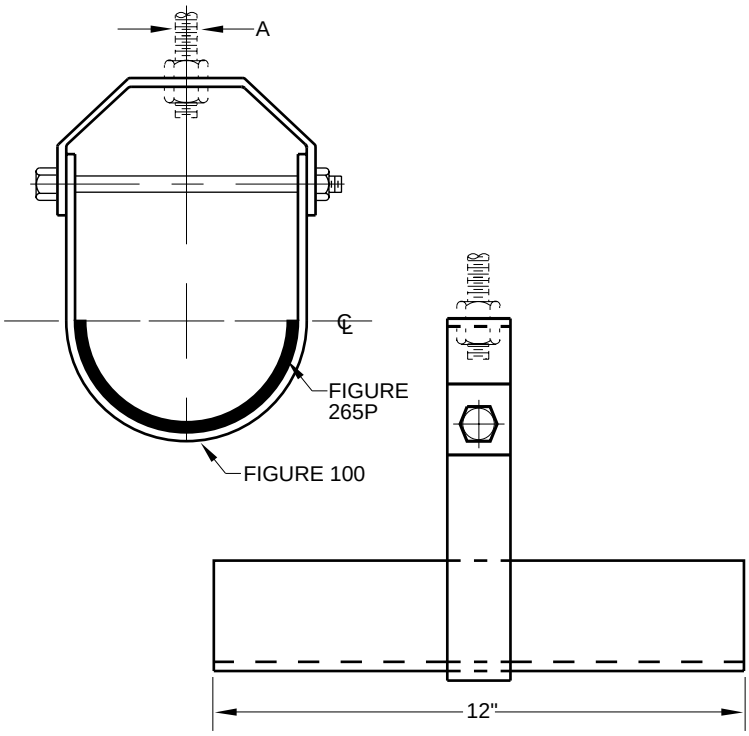


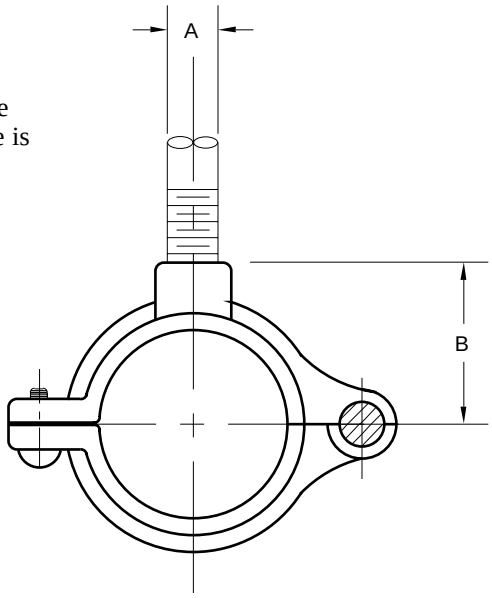
FIGURE 100SH - REFRIGERATION HANGER AND SHIELD

HANGER SIZE	ROD SIZE A	Insulation Thickness ½" Cov. 13 Cov. Bare Pipe Size	1" Cov. 25 Cov.	1½" Cov. 38 Cov.	2" Cov. 51 Cov.	2½" Cov 64 Cov.	3" Cov. 76 Cov.
1½ 40	⅜ M10	½ 15					
2 50	⅜ M10	¾ - 1 20 - 25					
2½ 65	½ M12	1¼-1½ 32 - 40	½ 15				
3 80	½ M12	2 50	¾ - 1 20 - 25				
3½ 90	½ M12	2½ 65	1¼ - 1½ 32 - 40	½ - ¾ 15 - 20			
4 100	⅝ M16	3 80	2 50	1 - 1¼ 25 - 32			
5 125	⅝ M16	3½ - 4 90 - 100	2½ - 3 65 - 80	1½ - 2 40 - 50	½ - 1¼ 15 - 32		
6 150	¾ M20	5 125	3½ - 4 90 - 100	2½ - 3 65 - 80	1½ - 2 40 - 50	½ - 1¼ 15 - 32	
7 M20	¾ 150	6 125	5 90 - 100	3½ - 4 65 - 80	2½ - 3 40 - 50	1½ - 2 15 - 32	½ - 1¼
8 200	¾ M20		6 150	5 125	3½ - 4 90 - 100	2½ - 3 65 - 80	1½ - 2 40 - 50
10 250	⅞ M20	8 200	8 200	6 150	5 - 6 125 - 150	3½ - 4 90 - 100	2½ - 4 65 - 100
12 300	⅞ M20	10 250	10 250	8 200	8 200	5 - 6 125 - 150	5 - 6 125 - 150
14 350	1 M24	12 300		10 250		8 200	
16 400	1 M24	14 350	12 - 14 300 - 350	12 300	10 250	10 250	8 200
18 450	1¼ M30	16 400	16 400	14 350	12 - 14 300 - 350	12 300	10 250
20 500	1¼ M30			16 400	16 400	14 350	12 - 14 300 - 350
24 600	1¼ M30					16 400	16 400

Dimensions	Temperature	Loads	Weight
Inches	Fahrenheit	Pounds	Pounds
Millimeters	Celsius	Newtons	Kilograms

EXTENSION RING HANGER

Figure 81 (Rod Tapped – Electro-Galvanized)



This split ring hanger is designed for the support of non-insulated stationary pipe lines. Also available in a two screw design. The Figure 85 or 85CT Ceiling Plate is normally used with this product.

Material: Malleable Iron.

Finish: Electro-Galvanized. For Copper Coating please see Figure 81CT.

Compliance: Federal Specification A-A-1192A Type 12, MSS-SP-69 Type 12.

Ordering: Specify pipe size and figure number.

FIGURE 81 AND 81SG – EXTENSION HANGER RING

PIPE SIZE	MAX LOAD	PIPE SIZE A	ROD SIZE A	FIGURE 81 B	FIGURE 81SG B	WEIGHT EACH FIG. 81	WEIGHT EACH FIG. 81SG
⅜	180	¼	⅜	13/16		0.16	
10	801	8	M10	21		0.07	
½	180	¼	⅜	⅞	23/32	0.17	0.10
15	801	8	M10	22	18	0.08	0.05
¾	180	¼	⅜	1	13/16	0.20	0.11
20	801	8	M10	25	21	0.09	0.05
1	180	¼	⅜	1⅛	31/32	0.21	0.12
25	801	8	M10	29	25	0.10	0.05
1¼	180	¼	⅜	1 5/16	1⅛	0.29	0.13
32	801	8	M10	33	29	0.13	0.06
1½	180	¼	⅜	1 7/16	1¼	0.31	0.14
40	801	8	M10	37	32	0.14	0.06
2	180	¼	⅜	1 11/16	1½	0.35	0.16
50	801	8	M10	43	38	0.16	0.07
2½	480	½	½	2⅛		0.57	
65	2135	15	M12	54		0.26	
3	480	½	½	2 7/16		0.72	
80	2135	15	M12	62		0.33	
4	480	½	½	3⅛		1.16	
100	2135	15	M12	81		0.53	

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ONE HOLE PIPE CLAMP

Figure 237

Designed to support light duty pipe lines that run next to walls or beams.

Material: Carbon Steel.

Finish: Plain, Electro-Galvanized, Hot-Dip Galvanized.

Ordering: Specify pipe size, figure number and finish. For Metric applications specify Figure M237S.

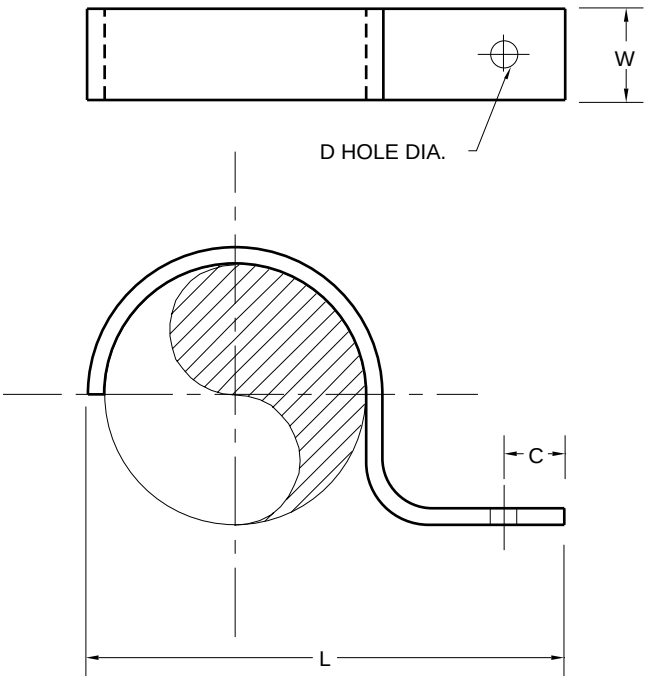


FIGURE 237 – ONE HOLE PIPE CLAMP

PIPE SIZE	C	D	L	W	WEIGHT EACH
½	⅞	9/32	2⅝	¾	0.05
15	22	7	67	19	0.02
¾	1	9/32	3	1	0.06
20	25	7	76	25	0.02
1	1⅛	9/32	3¼	1	0.09
25	29	7	83	25	0.04
1¼	⅞	11/32	3½	1	0.12
32	22	9	89	25	0.05
1½	1¼	13/32	4½	1	0.16
40	32	10	114	25	0.07
2	1¼	13/32	6⅝	1	0.24
50	32	10	168	25	0.11
2½	1½	9/16	6⅝	1¼	0.50
65	38	14	168	32	0.23
3	1½	9/16	6½	1¼	0.69
80	38	14	165	32	0.31
4	1½	9/16	8	1¼	1.40
100	38	14	203	32	0.64

PIPE CLIP

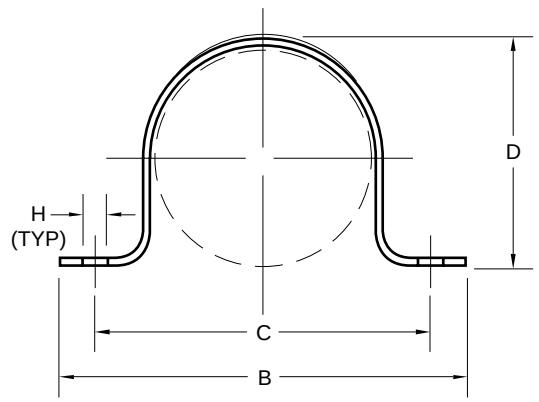
Figure 72

The Figure 72 is designed to hold pipe flush to the mounting surface. A reinforcing bead through the center adds strength to the product. Our Figure 72CT is available for copper tubing lines.

Material: Carbon Steel.

Finish: Galvanized.

Ordering: Specify pipe size, and figure number. For Metric applications Specify Figure M72.



DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

FIG. 72 – PIPE CLIP

PIPE SIZE	B	C	D	H	WGT. EACH
⅜	2⅜	1⅝	⅝	3/16	0.03
10	60	41	16	5	0.01
½	2⅝	1⅞	⅞	3/16	0.04
15	67	48	22	5	0.02
¾	2¾	2	1	3/16	0.07
20	70	51	25	5	0.03
1	3⅜	2⅝	1⅜	9/32	0.09
25	86	67	35	7	0.04
1¼	4¼	3¼	1⅜	9/32	0.10
32	108	83	41	7	0.05
1½	4¼	3½	2	9/32	0.14
40	108	89	51	7	0.06
2	5	4¼	2⅜	9/32	0.22
50	127	108	60	7	0.10
2½	6⅜	4⅞	2⅞	11/32	0.25
65	162	124	73	9	0.11
3	7⅜	5⅞	3½	11/32	0.30
80	187	149	89	9	0.14
4	8⅜	7⅛	4½	11/32	0.40
100	213	181	114	9	0.18
5	10⅛	8½	5⅝	11/32	0.70
125	257	216	143	9	0.32
6	11⅛	9½	6⅝	11/32	0.80
150	283	241	168	9	0.36

SHORT CLIP

Figure 114

Sprinkler Clips are used where piping runs close to the ceilings or beams. Holes are drilled for No.18 wood screws and ¼" bolts can be used on all sizes.

Material: Steel.

Compliance: Federal Specification A-A-1192A Type 26, MSS-SP-69 Type 26.

Finish: Plain, Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M114.

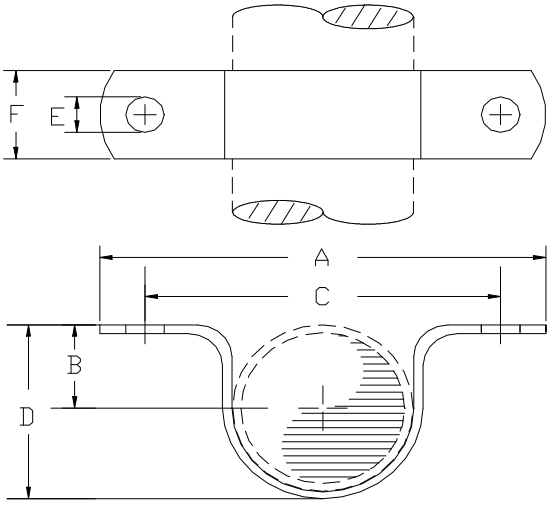


FIGURE 114 – SHORT CLIP

	MAX LOAD	A	B	C	D	E	F	WEIGHT EACH
1/2	300	4 1/8	7/16	2 7/8	1	7/16	1 1/4	0.51
15	**1334**	**105**	**11**	**73**	**25**	**11**	**32**	**0.23**
3/4	300	4 5/16	9/16	3 1/16	1 1/8	7/16	1 1/4	0.54
20	**1334**	**110**	**14**	**78**	**29**	**11**	**32**	**0.24**
1	300	4 9/16	11/16	3 5/16	1 3/8	7/16	1 1/4	0.69
25	**1334**	**116**	**17**	**84**	**35**	**11**	**32**	**0.31**
1 1/4	300	4 15/16	13/16	3 11/16	1 3/4	7/16	1 1/4	0.82
32	**1334**	**125**	**21**	**94**	**44**	**11**	**32**	**0.37**
1 1/2	300	5 3/16	15/16	3 15/16	2	7/16	1 1/4	0.84
40	**1334**	**132**	**24**	**100**	**51**	**11**	**32**	**0.38**
2	300	5 3/4	1 1/8	4 1/2	2 1/4	7/16	1 1/4	0.89
50	**1334**	**146**	**29**	**114**	**57**	**11**	**32**	**0.40**
2 1/2	500	6 1/4	1 3/8	5	2 7/8	7/16	1 1/4	1.16
65	**2224**	**159**	**35**	**127**	**73**	**11**	**32**	**0.53**
3	500	6 7/8	1 3/4	5 5/8	3 3/4	7/16	1 1/4	1.27
80	**2224**	**175**	**44**	**143**	**95**	**11**	**32**	**0.58**
3 1/2	500	7 3/8	2	6 1/8	4 1/4	7/16	1 1/4	1.37
90	**2224**	**187**	**51**	**156**	**108**	**11**	**32**	**0.62**
4	500	8 3/8	2 1/4	7 1/8	4 9/16	9/16	1 1/2	2.19
100	**2224**	**213**	**57**	**181**	**116**	**14**	**38**	**0.99**

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

LIGHT DUTY U-BOLT

Figure 283L (FORMERLY FIGURE 120)

The Figure 283L is recommended for the guiding, anchoring and supporting of conduit or light piping loads. Furnished with two (2) hex nuts.

Compliance: Federal Specification A-A-1192A (Type 24), MSS-SP 69 (Type 24), and BSPSS-BS3974.

Material: Carbon Steel.

Finish: Electro-Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M283L.

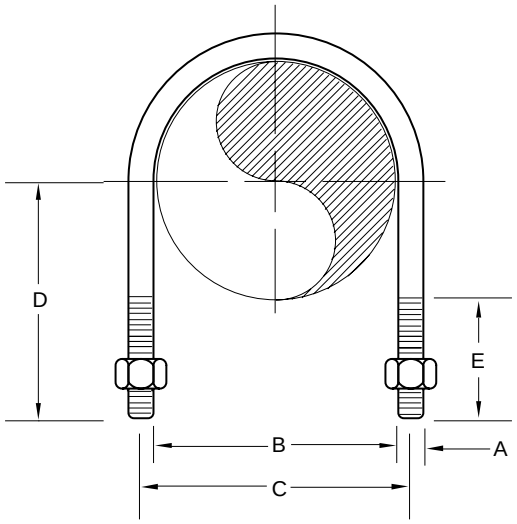


FIGURE 283L - LIGHT DUTY U-BOLT **FORMERLY FIGURE 120**

PIPE SIZE	MAXIMUM LOAD	A	B	C	D	E	WEIGHT EACH
½	485	¼	1	1¼	2	1¾	0.06
15	2157	M6	25	32	51	44	0.03
¾	485	¼	1⅛	1⅜	2⅛	1¾	0.07
20	2157	M6	29	35	54	44	0.03
1	485	¼	1⅜	1⅝	2¼	1¾	0.07
25	2157	M6	35	41	57	44	0.03
1¼	485	¼	1¾	2	2⅜	1¾	0.08
32	2157	M6	44	51	60	44	0.04
1½	485	¼	2	2¼	2½	1¾	0.09
40	2157	M6	51	57	64	44	0.04
2	485	¼	2½	2¾	2¾	1¾	0.10
50	2157	M6	64	70	70	44	0.05
2½	1220	⅜	3	3⅜	3⅛	2	0.28
65	5427	M10	76	86	79	51	0.13
3	1220	⅜	3⅝	4	3⅜	2	0.31
80	5427	M10	92	102	86	51	0.14
3½	1220	⅜	4⅛	4½	3⅝	2	0.35
90	5427	M10	105	114	92	51	0.16
4	1220	⅜	4⅝	5	3⅞	2	0.38
100	5427	M10	117	127	98	51	0.17
5	1220	⅜	5⅝	6	4⅝	2¼	0.45
125	5427	M10	143	152	117	57	0.20
6	2260	½	6¾	7¼	5⅛	2¼	0.95
150	10053	M12	171	184	130	57	0.43
8	2260	½	8¾	9¼	6⅛	2¼	1.20
200	10053	M12	222	235	156	57	0.54
10	3620	⅝	10⅞	11½	7¼	2½	2.30
250	16103	M16	276	292	184	64	1.04

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

SHORT U-BOLT

Figure 222

The Figure 222 is recommended for use as a support for piping where the tangent lengths are too long to use a Figure 283. It is supplied with two hex nuts.

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 2, MSS-SP69 Type 24, and BSPSS-BS3974.

Finish: Plain, Electro-Galvanized, or Hot-Dip Galvanized (Rod Size ¼" cannot be Hot-Dip Galvanized).

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify M222.

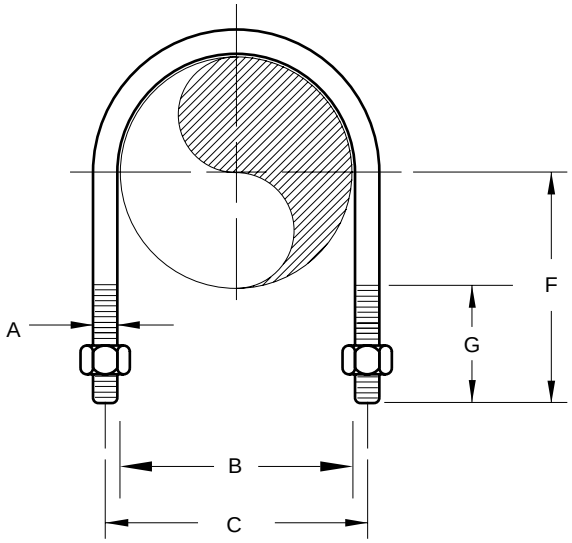


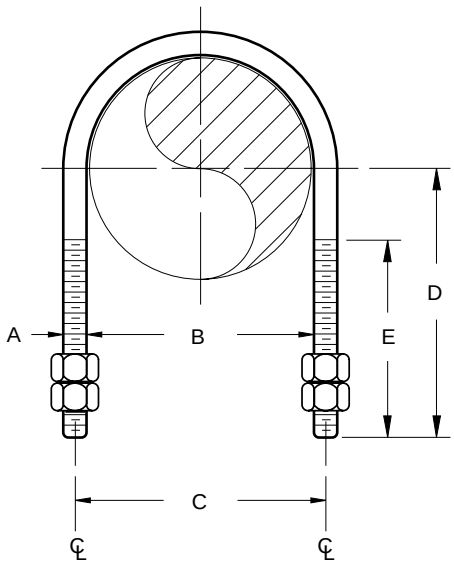
FIGURE 222 - SHORT U-BOLT

PIPE SIZE	MAX LOAD 650° F / 343° C	STOCK SIZE A	B	C	F	G	WEIGHT EACH
½	480	¼	⅞	1⅛	1¼	¾	0.08
15	2135	M6	22	29	32	19	0.04
¾	480	¼	1⅛	1⅜	1⅜	¾	0.09
20	2135	M6	29	35	35	19	0.04
1	480	¼	1⅜	1⅝	1⅜	¾	0.10
25	2135	M6	35	41	35	19	0.05
½	1200	⅜	⅞	1¼	1¼	¾	0.08
15	5338	M10	22	32	32	19	0.04
¾	1200	⅜	1⅛	1½	1⅜	¾	0.09
20	5338	M10	29	38	35	19	0.04
1	1200	⅜	1⅜	1¾	1⅜	¾	0.10
25	5338	M10	35	44	35	19	0.05
1¼	1200	⅜	1¾	2⅛	1¾	1	0.27
32	5338	M10	44	54	44	25	0.12
1½	1200	⅜	2	2⅜	1⅞	1	0.30
40	5338	M10	51	60	48	25	0.14
2	1200	⅜	2½	2⅞	2¼	1	0.34
50	5338	M10	64	73	57	25	0.15
2½	2200	½	3	3½	2⅝	1¼	0.72
65	9786	M12	76	89	67	32	0.33
3	2200	½	3⅝	4⅛	3¼	1¼	0.80
80	9786	M12	92	105	83	32	0.36
3½	2200	½	4⅛	4⅝	3½	1¼	0.95
90	9786	M12	105	117	89	32	0.43
4	2200	½	4⅝	5⅛	3½	1¼	0.95
100	9786	M12	117	130	89	32	0.43
5	2200	½	5⅝	6⅛	4¼	1¼	1.13
125	9786	M12	143	156	108	32	0.51
6	3600	⅝	6¾	7⅜	4¾	1¼	1.24
150	16014	M16	171	187	121	32	0.56
8	3600	⅝	8¾	9⅜	5⅜	1¼	2.10
200	16014	M16	222	238	137	32	0.95
10	5400	¾	10⅞	11⅝	7	1½	2.68
250	24021	M20	276	295	178	38	1.22
12	7500	⅞	12⅞	13¾	7⅞	1½	3.20
300	33363	M20	327	349	200	38	1.45

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

STANDARD U-BOLT

Figure 283 (Carbon Steel)
Figure 283PVC (PVC Coated)
Figure 283SS (Stainless Steel)



Our standard U-Bolts are recommended for use as supports or guides for piping. They are supplied with four hex nuts.

The Figure 283PVC is for support of piping where contact with the pipe is not desired. Threads and nuts are not coated.

The Figure 283SS is recommended for support of stainless steel piping. Please specify the grade of stainless steel you require when ordering.

Load Ratings shown are for Carbon Steel. PVC coating should not exceed 140°F / 60°C.

Materials: Carbon Steel, Stainless Steel.

Compliance: Federal Specification A-A-1192A Type 24, MSS-SP 69 Type 24, and BSPSS-BS3974.

Finish: Plain, Electro-Galvanized, Hot-Dip Galvanized (Rod Size 1/4" cannot be Hot-Dip Galvanized) Hot-Dip Galvanized U-Bolts will come with oversized hex nuts.

Side loads are given for the Figure 283 for a maximum temperature of 650ºF / 343ºC. When the loading condition requires the simultaneous application of a normal load and side load, the following interaction equation must be used to determine if the Figure 283 can be used.

(Actual Load / Maximum Design Load) + (Actual Side Load / Maximum Side Load) The result of this equation cannot exceed the value of 1.0 if the Figure 283 is to be used.

Ordering: Specify pipe size, figure number, and finish. For Metric applications Specify M283.

FIGURE 283 – STANDARD U-BOLT

PIPE SIZE	MAXIMUM LOAD 650° F 343° C	MAXIMUM LOAD 750° F 399° C	MAX. SIDE LOAD 650° F/ 343°C	A	B	C	D	E	WEIGHT EACH
½	485	435	63	¼	7/8	1⅛	2¾	2⅛	0.11
15	2157	1935	280	M6	22	29	70	54	0.05
¾	485	435	63	¼	1⅛	1⅜	2¾	2⅛	0.12
20	2157	1935	280	M6	29	35	70	54	0.05
1	485	435	63	¼	1⅜	1⅝	2¾	2⅛	0.12
25	2157	1935	280	M6	35	41	70	54	0.05
½	1200	1070	316	⅜	7/8	1¼	2¾	2⅛	0.16
15	5338	4760	1406	M10	22	32	70	54	0.07
¾	1200	1070	240	⅜	1⅛	1½	2¾	2⅛	0.16
20	5338	4760	1068	M10	29	38	70	54	0.07
1	1200	1070	186	⅜	1⅜	1¾	2¾	2⅛	0.19
25	5338	4760	827	M10	35	44	70	54	0.09
1¼	1220	1090	194	⅜	1¾	2⅛	2⅞	2⅛	0.28
32	5427	4849	863	M10	44	54	73	54	0.13
1½	1220	1090	194	⅜	2	2⅜	3	2½	0.30
40	5427	4849	863	M10	51	60	76	64	0.14
2	1220	1090	194	⅜	2½	2⅞	3¼	2½	0.33
50	5427	4849	863	M10	64	73	83	64	0.15
2½	2260	2020	184	½	3	3½	3¾	3	0.70
65	10053	8986	819	M12	76	89	95	76	0.32
3	2260	2020	184	½	3⅝	4⅛	4	3	0.78
80	10053	8986	819	M12	92	105	102	76	0.35
3½	2260	2020	184	½	4⅛	4⅝	4½	3	0.84
90	10053	8986	819	M12	105	117	114	76	0.38
4	2260	2020	184	½	4⅝	5⅛	4½	3	0.90
100	10053	8986	819	M12	117	130	114	76	0.41

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

RETURN LINE OFFSET HOOK

Figure 227

Designed to support light duty pipe lines with clearance requirements that run along walls or beams.

Material: Carbon Steel.

Finish: Plain, Hot-Dip Galvanized.

Ordering: Specify pipe size, and figure number. For Metric applications specify Figure M227.

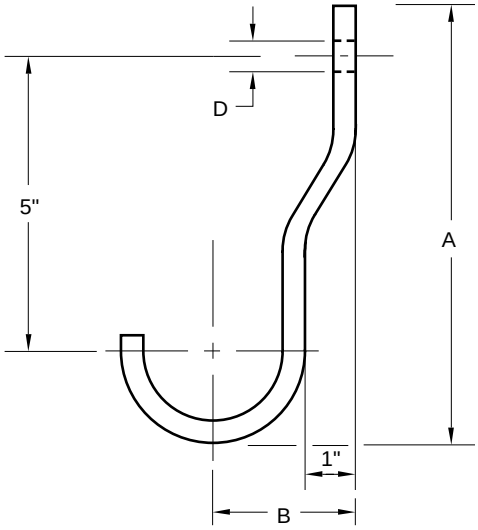


FIGURE 227 – RETURN LINE OFFSET HOOK

PIPE SIZE	MAX LOAD	A	B	D	WGT EACH
½	200	6 9/32	1 5/8	9/16	0.53
15	890	160	41	14	0.24
¾	200	6 1/8	1 11/16	9/16	0.55
20	890	156	43	14	0.25
1	200	6 9/16	1 7/8	9/16	0.81
25	890	167	48	14	0.37
1¼	200	6 5/8	2 1/16	9/16	0.84
32	890	168	52	14	0.38
1½	200	6 11/16	2 3/16	9/16	0.89
40	890	170	56	14	0.40
2	200	7 3/32	2 5/8	9/16	0.96
50	890	4315	67	14	0.44
2½	350	7 15/32	2 11/16	9/16	1.26
65	1557	190	68	14	0.57
3	350	7 5/8	3	9/16	1.38
80	1557	194	76	14	0.63
3½	350	8 1/32	3 1/4	9/16	1.47
90	1557	204	83	14	0.67
4	450	8 9/16	3 5/8	9/16	2.39
100	2002	217	92	14	1.08
5	450	9	4 3/16	9/16	3.90
125	2002	229	106	14	1.77
6	450	9 3/8	4 11/16	9/16	4.25
150	2002	238	119	14	1.93

RETURN LINE HOOK

Figure 227S

Designed to support light duty pipe lines that run next to walls or beams.

Material: Carbon Steel.

Finish: Plain, Hot-Dip Galvanized.

Ordering: Specify pipe size, and figure number. For Metric applications specify Figure M227S.

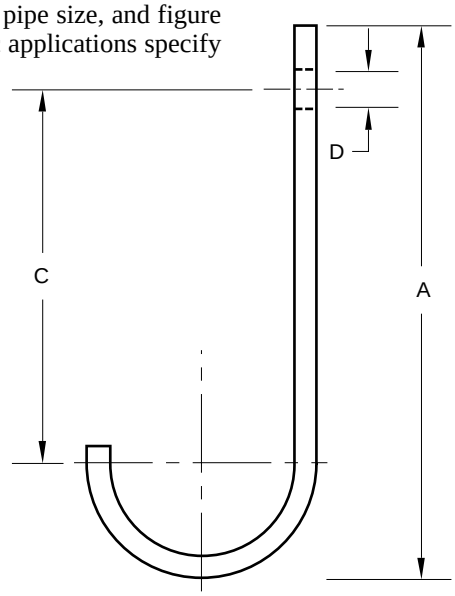


FIGURE 227S – RETURN LINE HOOK

PIPE SIZE	MAX LOAD	A	C	D	WGT EACH
½	200	6 9/32	5	9/16	0.51
15	890	160	127	14	0.23
¾	200	6 1/8	5	9/16	0.53
20	890	156	127	14	0.24
1	200	6 9/16	5	9/16	0.80
25	890	167	127	14	0.36
1¼	200	6 5/8	5	9/16	0.83
32	890	168	127	14	0.38
1½	200	6 11/16	5	9/16	0.87
40	890	170	127	14	0.39
2	200	7 3/32	5	9/16	0.93
50	890	4315	127	14	0.42
2½	350	7 15/32	5	9/16	1.16
65	1557	190	127	14	0.53
3	350	7 5/8	5	9/16	1.27
80	1557	194	127	14	0.58
3½	350	8 1/32	5	9/16	1.37
90	1557	204	127	14	0.62
4	350	8 9/16	5	9/16	2.19
100	1557	217	127	14	0.99
5	450	9	5	9/16	3.50
125	2002	229	127	14	1.59
6	450	9 3/8	5	9/16	4.15
150	2002	238	127	14	1.88

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ADJUSTABLE PIPE SUPPORT

Figure 101

The Figure 101 is used for support of piping from below without welding to the pipe and consists of a steel saddle, nipple, and pipe reducer. It connects to a threaded pipe standard and base which is also available, ordered separately, as our Figure 138.

Rated loads are for up to 650° F (343° C).

Materials: Reducer is Cast Iron, Pipe saddle and nipple are carbon steel.

Compliance: Federal Specification A-A-1192A Type 39, MSS-SP-69 Type 39.

Finish: Plain, Electro-Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M101.

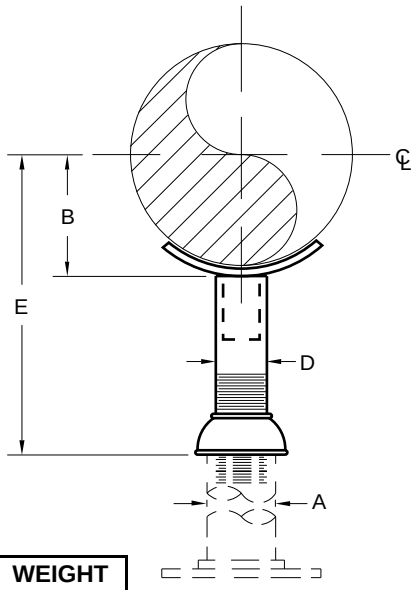


FIGURE 101 – ADJUSTABLE PIPE SUPPORT

PIPE SIZE	MAX LOAD	A	B	D	E		WEIGHT EACH
					MIN.	MAX.	
1 1/2	5,000	2 1/2	1 1/4	1 1/2	8	13	4.75
40	22242	65	32	40	203	330	2.15
2	5,000	2 1/2	1 1/2	1 1/2	8	13	4.80
50	22242	65	38	40	203	330	2.18
2 1/2	5,000	2 1/2	1 7/8	1 1/2	8	13	4.90
65	22242	65	48	40	203	330	2.22
3	5,000	2 1/2	2 1/8	1 1/2	8 1/4	13 1/4	5.0
80	22242	65	54	40	210	337	2.27
4	7,000	3	2 5/8	2 1/2	9 1/8	14 1/8	9.30
100	31139	80	67	65	232	359	4.22
5	7,000	3	3 1/4	2 1/2	9 5/8	14 5/8	9.65
125	31139	80	83	65	244	371	4.38
6	7,000	3	3 7/8	2 1/2	10	15	11.7
150	31139	80	98	65	254	381	9.40
8	7,000	3	4 7/8	2 1/2	11	16	12.9
200	31139	80	124	65	279	406	5.83
10	7,000	3	5 7/8	2 1/2	12 1/8	17 1/8	14.1
250	31139	80	149	65	308	435	6.40
12	7,000	3	6 7/8	2 1/2	13 1/8	18 1/8	15.3
300	31139	80	175	65	333	460	6.9
14	7,000	4	7 1/2	3	16 1/4	20 3/4	21.7
350	31139	100	191	80	413	527	9.84
16	7,000	4	8 5/8	3	17 3/4	22 1/4	25.4
400	31139	100	219	80	451	565	11.5
18	7,000	6	9 5/8	4	19 1/2	24	39.3
450	31139	150	244	100	495	610	17.8
20	7,000	6	10 5/8	4	21	25 1/2	44.9
500	31139	150	270	100	533	648	20.4
24	10,000	6	12 3/4	4	23 3/4	28 1/4	54.3
600	44484	150	324	100	603	718	24.6
30	10,000	6	15 3/4	4	27	31 1/2	62.4
750	44484	150	400	100	686	800	28.3
36	10,000	6	18 3/4	4	30 1/4	34 3/4	70.2
900	44484	150	476	100	768	883	31.8

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ADJUSTABLE FLOOR SUPPORT

Figure 101U

The Figure 101U is used for support of piping from below without welding where there is no axial or transverse movement. It connects to a threaded pipe standard and base. Made special to customer order.

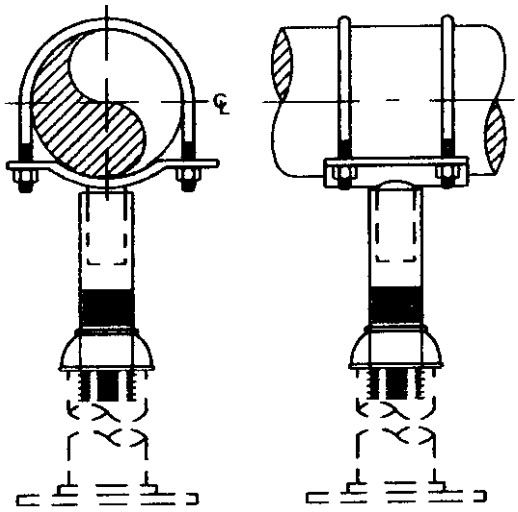
Rated loads are for up to 650°F (343°C).

Materials: Reducer is Cast Iron, Pipe saddle, nipple U-bolt are carbon steel.

Compliance: Federal Specification A-A-1192A (Type 39), MSS-SP-69 (Type 39).

Finish: Plain, Electro-Galvanized,

Ordering: Specify pipe size, load, overall height, figure number, finish, and base plate bolting if needed. For Metric applications specify Figure M101U.



DOUBLE U-BOLTS FOR 20" AND LARGER PIPE SIZES

WIRE PIPE HOOKS

Figure 111

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 hard or soft wood without bending. It can be used on pipes in various orientations.

Material: Steel.

Finish: Electro-Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M111.

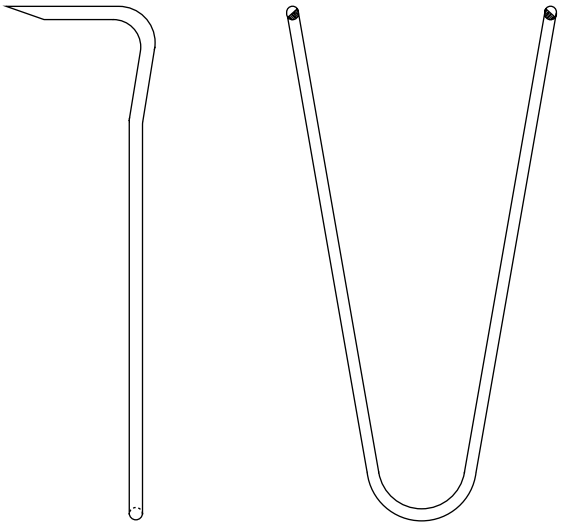


FIG. 111 – WIRE PIPE HOOKS

PIPE SIZE	WEIGHT PER 100 LENGTH OF HANGER 4 102	6 152	8 203	10 254	12 305
½	0.06	0.08	0.10	0.12	0.14
15	0.03	0.04	0.05	0.05	0.06
¾	0.06	0.08	0.10	0.12	0.14
20	0.03	0.04	0.05	0.05	0.06
1	0.06	0.08	0.10	0.12	0.14
25	0.03	0.04	0.05	0.05	0.06
1¼	0.08	0.10	0.12	0.14	0.16
32	0.04	0.05	0.05	0.06	0.07
1½	0.08	0.10	0.12	0.14	0.16
40	0.04	0.05	0.05	0.06	0.07
2		0.10	0.12	0.14	0.16
50		0.05	0.05	0.06	0.07

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

THREADED BASE STAND

Figure 138

The Figure 138 is designed for use with our Figure 101 and Figure 125.

Materials: Carbon Steel.

Compliance: To Federal Specification A-A-1192A Types 36, 37, 38, MSS-SP-69 Types 36, 37, 38 when used with the appropriate Pipe Saddle type attachment.

Finish: Plain, Hot-Dip Galvanized.

Ordering: Specify figure number, pipe size, height, and finish. For Metric applications specify Figure M138.

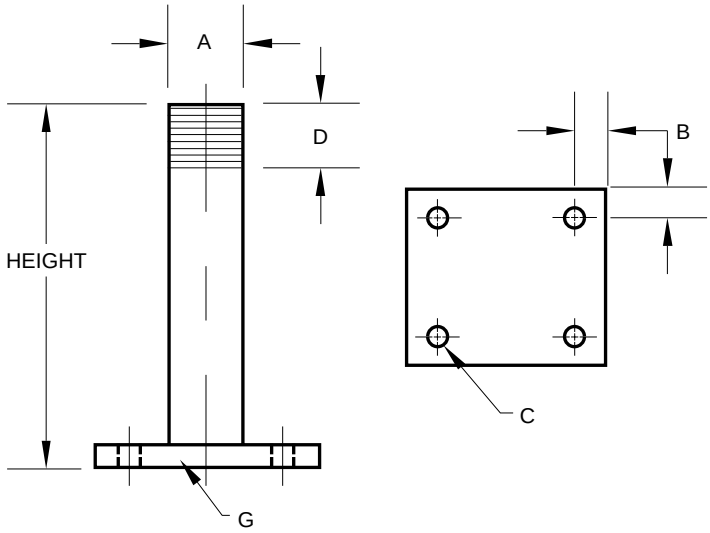


FIGURE 138 – THREADED BASE STAND

PIPE SIZE A	B	C	D	G	WEIGHT EACH
1 25	1 25	9/16 14	1½ 38	¼ x 6 x 6 6 x 152 x 152	4.95 2.25
1¼ 32	1 25	9/16 14	1½ 38	¼ x 6 x 6 6 x 152 x 152	5.83 2.64
1½ 40	1 25	9/16 14	1½ 38	¼ x 6 x 6 6 x 152 x 152	6.49 2.94
2 50	1 25	9/16 14	1½ 38	¼ x 6 x 6 6 x 152 x 152	7.85 3.56
2½ 65	1¼ 32	9/16 14	1½ 38	⅜ x 8 x 8 10 x 203 x 203	15.20 6.91
3 80	1½ 40	13/16 21	1½ 38	⅜ x 12 x 12 10 x 305 x 305	26.20 11.90
4 100	1½ 40	15/16 24	2 51	½ x 12 x 12 13 x 305 x 305	35.90 16.30
6 150	1½ 40	1⅛ 29	2 51	½ x 18 x 18 13 x 457 x 457	73.50 9.40

Weights are based upon a height “H” of 18"

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

PIPE STANCHION WITH U-BOLT

Figure 125

The Figure 125 is used for support of piping from below without welding to the pipe.

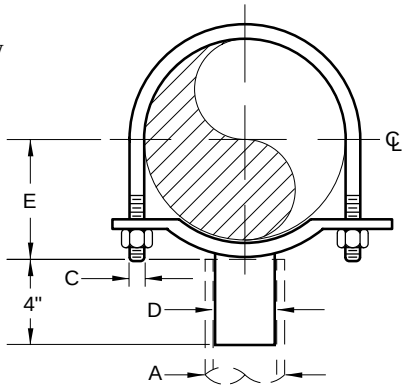
Rated loads are for up to 650° F (343° C).

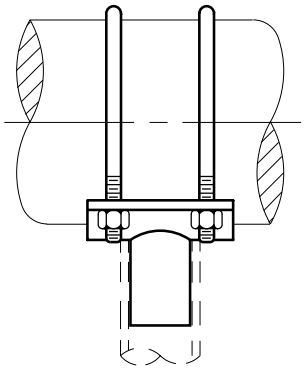
Material: Made from carbon steel, sizes 20 inch and larger are furnished with two U-bolts. The lower supporting pipe 'A' must be ordered separately.

Compliance: Federal Specification A-A-1192A Type 37, MSS-SP-69 Type 37, and BSPSS-BS3974.

Finish: Plain, Electro-Galvanized.

Ordering: Specify figure number, finish, and pipe size. For Metric applications specify Figure M125.





DOUBLE U-BOLTS FOR 20" AND LARGER PIPE SIZES

FIGURE 125 – PIPE STANCHION WITH U-BOLT

PIPE SIZE	MAXIMUM LOAD	SUPPORT PIPE A	C	STEM D	E	WEIGHT EACH
4	1200	3	½	2½	2½	5.15
100	270	80	M12	65	64	2.34
5	1200	3	½	2½	3 1/16	5.61
125	270	80	M12	65	78	2.54
6	1200	3	⅝	2½	3⅝	7.30
150	270	80	M16	65	92	3.31
8	1200	3	⅝	2½	4 11/16	9.25
200	270	80	M16	65	119	4.20
10	1200	3	¾	2½	5⅞	13.75
250	270	80	M20	65	149	6.24
12	1200	3	⅞	2½	6⅞	15.50
300	270	80	M20	65	175	7.03
14	1500	4	⅞	3	7⅝	25.35
350	337	100	M20	80	194	11.50
16	1750	4	⅞	3	8⅝	30.80
400	393	100	M20	80	219	13.97
18	2000	4	1	3	9¾	37.64
450	450	100	M24	80	248	17.07
20	3500	6	(2)-1	5	10¾	75.35
500	787	150	(2)-M24	125	273	34.18
24	3500	6	(2)-1⅛	5	13	112.80
600	787	150	(2)-M30	125	330	51.17
30	3500	6	(2)-1⅛	5	16	137.30
750	787	150	(2)-M30	125	406	62.28
36	3500	8	(2)-1¼	6	19	210.15
900	787	200	(2)-M30	150	483	95.32

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

FLOOR SUPPORTS

Figure 125SP
Figure 136SP

Both Figure 125SP and 136SP are intended to support piping from below where there is no axial or transverse movement. Made special to customer design requirements, either may be furnished with holes in the base for bolting, or with no holes for welding.

Material: Carbon Steel, Stainless Steel.

Finish: Plain, Galvanized.

Ordering: Specify pipe size, pipe material, load, overall height, figure number, finish, and base plate bolting if needed. For Metric applications specify Figure M125SP or M136SP.

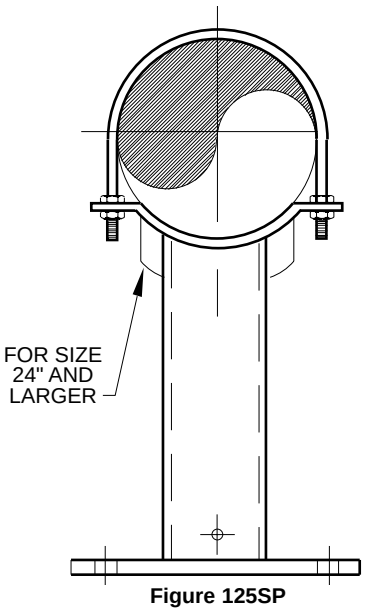


Figure 125SP

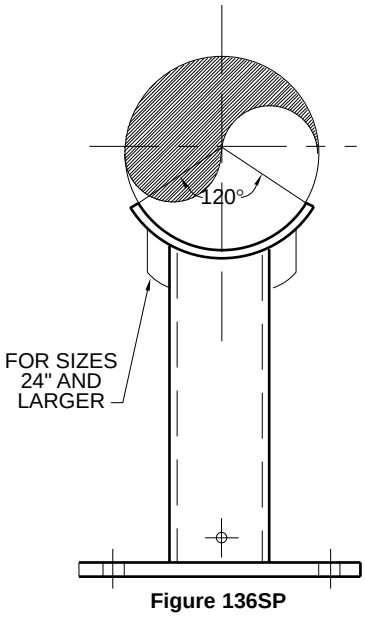


Figure 136SP

ANCHOR CHAIR

Figure 127

The Figure 127 in composed of two plates, one notched for the correct pipe size and the other has holes punched for a U-bolt. Both pieces are welded together. The U bolt has sufficient thread to allow for tightening to the pipe.

This anchor is used in conjunction with our Figure 84 and 139 Welded Steel Brackets. A square washer is set under the lips of angle iron sections of theBracket and nuts tightened on the U-bolt to prevent movement of the anchor.

Made special to customer order.

Material: Steel.

Finish: Plain, Electro-Galvanized, Hot-Dip Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M127.

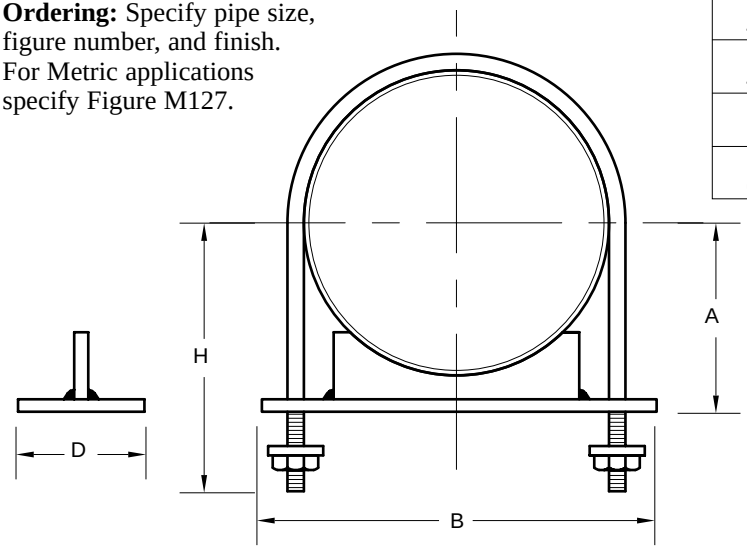


FIG. 127 – ANCHOR CHAIR

PIPE SIZE	A	B	D	H	WEIGHT EACH
4 100	3 76	8 203	4 102	5 127	6.28 2.85
5 125	3⅝ 92	9⅛ 232	4 102	5⅝ 143	7.32 3.32
6 150	4 1⁄16 103	10¼ 260	5 127	6½ 165	10.55 4.79
8 200	5 5⁄16 135	12¼ 311	5 127	7¾ 197	15.25 6.92
10 250	6½ 165	14½ 368	5 127	9¼ 235	21.30 9.66
12 300	7⅝ 194	16½ 419	5 127	10⅝ 264	25.50 11.57
14 350	8½ 216	18 457	5 127	11¼ 286	31.50 14.29
16 400	9⅝ 244	20 508	5 127	12⅜ 314	40.00 18.14
18 450	10⅞ 276	22 559	6 152	13⅝ 346	49.50 22.45
20 500	12 305	24½ 622	6 152	15 381	65.90 29.89
24 600	14 356	28½ 724	6 152	17 432	81.00 36.74

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

PIPE SUPPORT

Figure 136

The Figure 136 is used in conjunction with a pipe standard and flange at the base to support piping from below. Both pipe standard and flange must be ordered separately.

Compliance: Federal Specification A-A-1192A Type 38, MSS-SP-69 Type 38.

Finish: Plain, Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications Specify Figure M136.

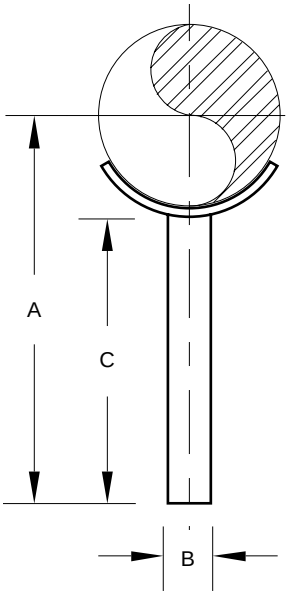


FIGURE 136 – PIPE SUPPORT

PIPE SIZE	A	SIZE B	ROD LENGTH C	WGT. SIZE
2 50	7 9/16 192	7/8 M20	6 152	1.57 0.71
3 80	8 1/8 206	7/8 M20	6 152	1.85 0.84
4 100	8 5/8 219	1 M24	6 152	2.70 1.22
5 125	9 13/16 233	1 M24	6 152	3.14 1.42
6 150	9 13/16 249	1 1/4 M30	6 152	4.90 2.22
8 200	10 13/16 275	1 1/4 M30	6 152	5.75 2.61
10 250	11 7/8 302	1 1/2 M36	6 152	9.88 4.48
12 300	12 7/8 327	1 1/2 M36	6 152	11.4 5.17

ADJUSTABLE PIPE STANCHION

Figure 137

Designed to support pipe from below, the Figure 137 is used in conjunction with flange or base mounted pipe column. The stem is threaded its full length and furnished with an nut to allow for vertical adjustment.

Material: Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish and pipe size. For Metric applications specify M137.

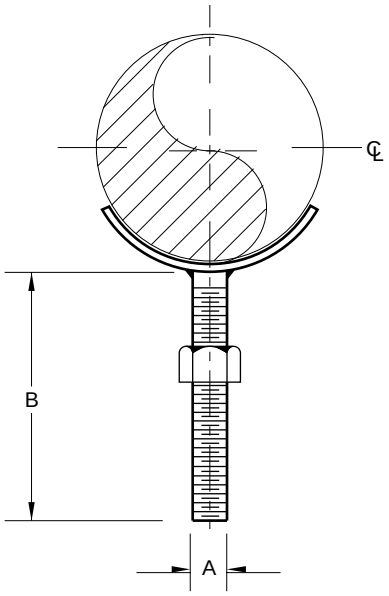


FIGURE 137 – ADJUSTABLE PIPE STANCHION

PIPE SIZE	A	B	WEIGHT EACH
1 25	5/8 M16	8 203	0.70 0.32
1 1/2 40	5/8 M16	8 203	0.74 0.34
2 50	5/8 M16	8 203	0.80 0.36
2 1/2 65	5/8 M16	8 203	0.84 0.38
3 80	5/8 M16	8 203	1.02 0.46
3 1/2 90	5/8 M16	8 203	1.06 0.48
4 100	7/8 M20	8 203	1.86 0.84
5 125	7/8 M20	8 203	2.50 1.13
6 160	1 M24	8 203	2.98 1.35
8 200	1 M24	8 203	3.28 1.49
10 250	1 1/4 M30	8 203	6.30 2.86
12 300	1 1/4 M30	8 203	7.00 3.18

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

PIPE CHAIR

Figure 145

Pipe Chairs are used to support piping in underground trenches or on top of piers above or below ground. This chair allows from 2½" inches to 4" inches clearance under pipeline.

Made special to customer order.

Material: Steel.

Finish: Plain, Hot-Dip Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M145.

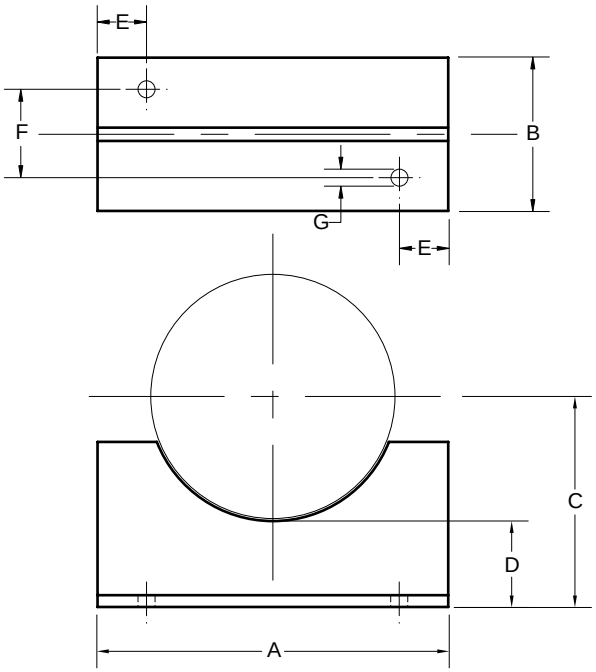


FIGURE 145 – PIPE CHAIR

PIPE SIZE	A	B	C	D	E	F	HOLE G	WEIGHT EACH
3	4¼	3⅛	4⅝	2⁹⁄₁₆	¾	2⅛	⁷⁄₁₆	2.75
80	108	79	110	65	19	54	11	1.25
4	6¼	3⁹⁄₁₆	5⅜	3⅛	¹⁵⁄₁₆	2⁵⁄₁₆	⁹⁄₁₆	5.25
100	159	90	137	79	24	59	14	2.38
5	7½	4¹⁄₁₆	6¹⁄₁₆	3¼	1	2¹¹⁄₁₆	⁹⁄₁₆	7.90
125	191	103	154	83	25	68	14	3.58
6	8¹³⁄₁₆	4½	6⁹⁄₁₆	3¼	1	3³⁄₁₆	⁹⁄₁₆	10.0
150	224	114	167	83	25	81	14	4.54
8	10¾	5½	7¹⁵⁄₁₆	3⅝	1⁵⁄₁₆	4	¹¹⁄₁₆	16.3
200	273	140	202	92	33	102	17	7.37
10	13	6½	9¹⁄₁₆	3¹¹⁄₁₆	1¼	5	⅝	25.8
250	330	165	230	94	32	127	16	11.7
12	15	7⁹⁄₁₆	10½	4⅛	1½	5⁹⁄₁₆	¹¹⁄₁₆	33.3
300	381	192	267	105	38	141	17	15.1

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

EXTENSION RISER CLAMP

Figure 126

The Figure 126 is designed for the support or steadying of vertical pipe risers. It is made of carbon steel and is designed to hold tight to the pipe, transmitting the load to the structure through the ears on each end. When possible the clamp should be placed under a coupling, hub, or lugs welded to the pipe.

NOTE: This product is not designed to be supported with rods. Use our Figure 124 when hanger rods are required. Install using the maximum suggested torque values shown in the Technical Section of this catalog.

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 8, MSS-SP-69 (Type 8) and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish, and pipe size. For Metric applications specify M126.

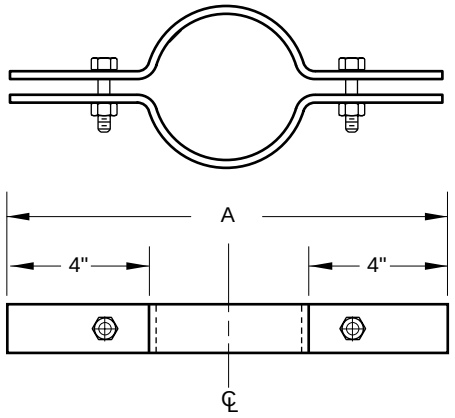


FIGURE 126 – EXTENSION RISER CLAMP

PIPE SIZE	MAXIMUM LOAD	A	WEIGHT EACH
½	255	9	1.00
15	1134	229	0.45
¾	255	8⅞	1.08
20	1134	225	0.49
1	255	8⅞	1.08
25	1134	225	0.49
1¼	255	10	1.86
32	1134	254	0.84
1½	255	10¼	1.22
40	1134	260	0.55
2	255	10¼	1.30
50	1134	6613	0.59
2½	390	11¼	1.74
65	1735	286	0.79
3	530	11⅜	1.98
80	2358	289	0.90
3½	670	12⅞	2.14
90	2980	327	0.97
4	810	12⅞	2.28
100	3603	327	1.03
5	1160	13¾	3.60
125	5160	349	1.63
6	1570	14¾	3.68
150	6984	375	1.67
8	2500	18½	7.26
200	11121	470	3.29
10	2500	20¾	11.00
250	11121	527	4.99
12	2700	22¾	15.94
300	12011	578	7.23
14	2700	24	17.36
350	12011	610	7.87
16	2900	26	29.68
400	12900	660	13.46
18	2900	28	31.64
450	12900	711	14.35
20	2900	30	34.84
500	12900	762	15.80
24	2900	34	50.00
600	12900	864	22.68

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

PLASTIC PIPE RISER CLAMP

Figure 126LD
Figure 126LD PVC

The Figure 126LD is designed for the support or steadying of vertical PVC pipe risers for DWV applications. It is designed to hold tight to the pipe, transmitting the load to the structure through the ears on each end. When possible the clamp should be placed under a coupling, hub, or lugs welded to the pipe. For heavier loads please see our Figure 126. The Figure 126LD PVC is completely PVC coated.

NOTE: This product is not designed to be supported with rods.

Materials: Carbon Steel.

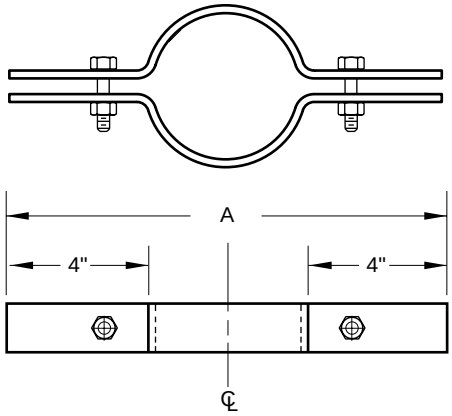
Finish: Plain, Galvanized, PVC.

Compliance: Federal Specification A-A-1192 Type 8, MSS-SP-69 (Type 8) and BSPSS-BS3974.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify M126LD or M126LD PVC.

FIGURE 126LD – RISER CLAMP
FIGURE 126LD – PVC RISER CLAMP

PIPE SIZE	MAXIMUM LOAD	A	WEIGHT EACH
1½ 40	225 1001	5¾ 146	0.62 0.28
2 50	225 1001	6½ 3710	0.67 0.30
3 80	225 1001	7¼ 184	0.88 0.40
4 100	225 1001	8½ 216	1.01 0.46



DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

RISER CLAMP

Figure 124

This product is designed to support vertical piping by resting on shear lugs welded to the pipe. Shear lugs are not supplied.

The stated Maximum Loads are based upon the use of the clamp as a rigid support. Use of the clamp with springs units will double the given Maximum Loads. Rated loads are for up to 650° F (343° C).

Material: Carbon Steel.

Finish: Plain, Hot-Dip Galvanized.

Ordering: Specify figure number, finish, and pipe size. For Metric applications specify Figure M124.

NOTE: For your Special Riser Clamp requirements that are not covered by this product, please contact us to discuss your application.

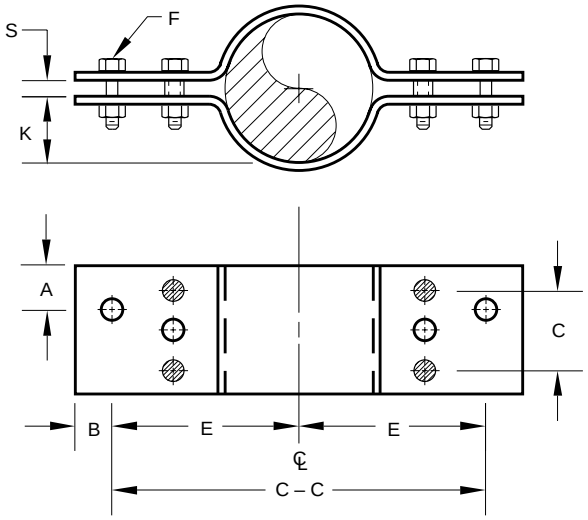


FIGURE 124 – RISER CLAMP

PIPE SIZE	MAX LOAD	A	B	C	C-C	E	F	K	S	WEIGHT EACH
2	900	1¼	2	-	18	9	⅜	3/16	¾	17.5
50	4004	32	51	-	457	229	M10	5	19	7.9
2½	900	1¼	2	-	20	10	⅜	1 1/16	¾	19.1
65	4004	32	51	-	508	254	M10	27	19	8.7
3	1500	1½	2	-	20	10	½	1⅜	¾	29.4
80	6673	38	51	-	508	254	M12	35	19	13.3
4	2200	1½	2	-	22	11	½	1⅞	¾	38.5
100	9786	38	51	-	559	279	M12	48	19	17.5
5	2200	¾	2	-	22	11	½	2⅜	¾	43.2
125	9786	19	51	-	559	279	M12	60	19	19.6
6	3000	⅞	2	-	24	12	⅝	2 13/16	1	56.8
150	13345	22	51	-	610	305	M16	71	25	25.8
8	3000	⅞	2	-	27	13½	⅝	3 13/16	1	79.2
200	13345	22	51	-	686	343	M16	97	25	35.9
10	5500	1¼	2	-	30	15	⅞	4⅝	1½	143.3
250	24466	32	51	-	762	381	M20	117	38	65.0
12	7800	1⅜	2½	-	32	16	1	5½	1¾	183.7
300	34698	35	64	-	813	406	M24	140	44	83.3
14	7800	1⅜	2½	-	34	17	1	6⅛	1¾	194.5
350	34698	35	64	-	864	432	M24	156	44	88.2
16	9000	1½	2½	-	36	18	1⅛	7	2	224.7
400	40036	38	64	-	914	457	M30	178	51	101.9
18	9000	1½	2½	-	39	19½	1⅛	8	2	280.7
450	40036	38	64	-	991	495	M30	203	51	127.3
20	13500	1⅞	3	4	42	21	1⅜	8¾	2½	429.1
500	60053	48	76	102	1067	533	M36	222	64	194.6
24	13500	1⅞	3	4	45	22½	1⅜	10¾	2½	465.1
600	60053	48	76	102	1143	572	M36	273	64	211.0

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

OFFSET PIPE CLAMP

Figure 179

The Offset Pipe Clamp is used on pipe lines running at a fixed distance from a wall or floor. The standard clearance is two inches (51mm) from the O.D. of pipe to the face of the surface. Non-standard clearances can be fabricated upon request.

Material: Carbon Steel.

Load Rating: Up to 650° F (343° C).

Finish: Plain, Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M179.

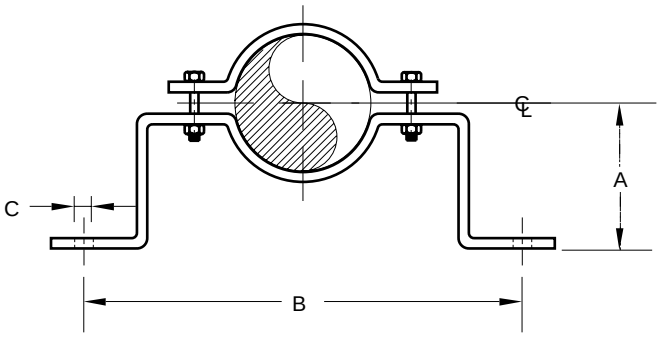


FIGURE 179 – OFFSET PIPE CLAMP

PIPE SIZE	MAX LOAD	A	B	C	WGT EACH
½	190	2 7/16	8½	7/16	1.1
15	845	62	216	11	0.50
¾	190	2¾	8¾	7/16	1.3
20	845	70	222	11	0.59
1	190	2⅞	9 ¼	7/16	1.4
25	845	73	235	11	0.64
1¼	190	3 1/16	9¾	7/16	1.5
32	845	78	248	11	0.68
1½	190	3 3/16	10	7/16	1.6
40	845	81	254	11	0.73
2	420	3½	11¼	9/16	2.8
50	1868	89	286	14	1.27
2½	420	3¾	11¾	9/16	2.9
65	1868	95	298	14	1.32
3	420	4 1/16	12⅞	9/16	3.2
80	1868	103	327	14	1.45
4	610	4 9/16	13⅞	9/16	4.2
100	2714	116	352	14	1.91
5	610	5 1/16	15⅝	11/16	6.5
125	2714	129	397	17	2.95
6	870	5⅝	16¾	11/16	7.2
150	3870	143	425	17	3.27
8	870	6⅝	18¾	11/16	8.3
200	3870	168	476	17	3.76
10	1050	7⅜	21½	13/16	12.4
250	4671	187	546	21	5.62
12	1200	8⅜	24⅞	13/16	21.0
300	5338	213	632	21	9.53

EXTENDED OFFSET PIPE CLAMP

Figure 267

Designed to attach directly to piping where the exact distance between the structure and the pipe cannot be determined until the piping is in place. The extended legs can be modified in the field to suit the location. Legs of longer lengths can be furnished on order.

Material: Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M267.

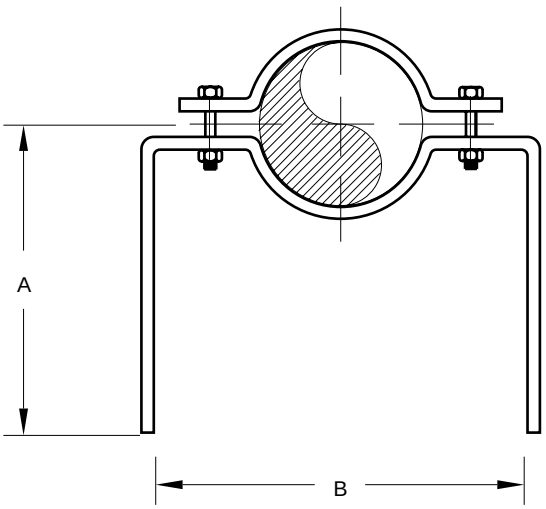


FIGURE 267 – EXTENDED PIPE CLAMP

PIPE SIZE	A	B	WEIGHT EACH
⅜	12	3¾	1.85
10	305	95	0.84
½	12	3¾	1.85
15	305	95	0.84
¾	12	4¾	1.85
20	305	121	0.84
1	255	5½	2.34
25	12	140	1.06
1¼	305	5⅞	2.40
32	1356	149	1.09
1½	12	6⅛	2.45
40	305	156	1.11
2	12	7	3.13
50	305	178	1.42
2½	12	7½	4.21
65	305	191	1.91
3	12	7⅞	4.47
80	305	200	2.03
4	12	10½	4.90
100	305	267	2.22
5	12	12¼	4.90
125	305	311	2.22
6	12	13	5.32
150	305	330	2.41
8	12	15¼	11.20
200	305	387	5.06
10	12	18¼	13.50
250	305	464	6.12
12	12	20¾	22.00
300	305	527	110.00
14	12	21	35.00
350	305	533	15.90

TWO BOLT PIPE CLAMP

Figure 175
Figure 175SP

Designed to suspend cold or hot pipe lines where little or no insulation is required. The Figure 175 is usually used with a Figure 279 Weldless Eyenut, or Figure 93 Welded Eyerod. See Figure 298 Heavy Duty Two Bolt Clamp when higher loads are required.

Rated Loads are for up to 750° F (399° C).

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 4, MSS-SP-69 Type 4 and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish and pipe size.

For Metric applications specify Figure M175.

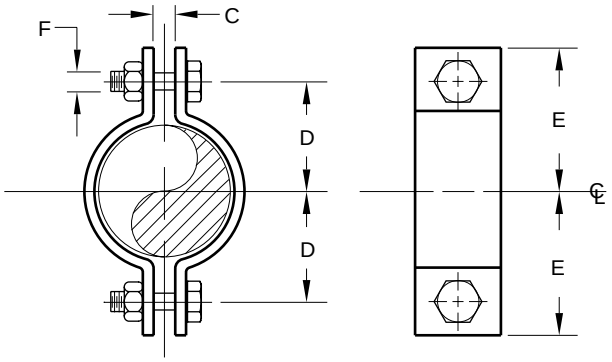


FIGURE 175 – TWO BOLT PIPE CLAMP

PIPE SIZE	MAXIMUM LOAD 650° F / 343° C	MAXIMUM LOAD 750° F / 343° C	C	ROD TAKE OUT D	E	F	WEIGHT EACH
½	500	445	⅜	1⅛	1⅝	⅜	0.31
15	2224	1980	10	29	41	M10	0.14
¾	500	445	⅜	1¼	1¾	⅜	0.35
20	2224	1980	10	32	44	M10	0.16
1	500	445	⅜	1⅜	1⅞	⅜	0.39
25	2224	1980	10	35	48	M10	0.18
1¼	500	445	⅜	1⅝	2⅛	⅜	0.40
32	2224	1980	10	41	54	M10	0.18
1½	800	715	⅜	1¾	2¼	⅜	0.45
40	3559	3181	10	44	57	M10	0.20
2	1040	930	½	2⅛	2⅝	½	1.23
50	4626	4137	13	54	67	M12	0.56
2½	1040	930	⅝	2⅝	3⅛	½	1.33
65	4626	4137	16	67	79	M12	0.60
3	1040	930	⅝	3	3½	½	1.53
80	4626	4137	16	76	89	M12	0.69
4	1040	930	¾	3⅝	4⅜	½	2.20
100	4626	4137	19	92	111	M12	1.00
5	1040	930	¾	4¼	5	⅝	2.39
125	4626	4137	19	108	127	M16	1.08
6	1615	1440	⅞	5¼	6¼	¾	5.87
150	7184	6406	22	133	159	M20	2.66
8	1615	1440	1	6⅜	7⅜	¾	6.95
200	7184	6406	25	162	187	M20	3.15
10	2490	2220	1	7⅝	8¾	⅞	14.39
250	11077	9875	25	194	222	M20	6.53
12	2490	2220	1	8¾	10¼	⅞	16.73
300	11077	9875	25	222	260	M20	7.59
14	2490	2220	1⅛	9¼	10⅝	⅞	21.26
350	11077	9875	29	235	270	M20	9.64
16	2490	2220	1⅛	10¼	11⅝	⅞	23.39
400	11077	9875	29	260	295	M20	10.61
18	3060	2730	1¼	11⅝	13	1	32.96
450	13612	12144	32	295	330	M24	14.95
20	3060	2730	1⅜	12¾	14⅛	1⅛	36.74
500	13612	12144	35	324	359	M30	16.67
24	3060	2730	1½	15¼	16⅞	1¼	52.96
600	13612	12144	38	387	429	M30	24.02
30	3500	3360	2	18½	20¾	1½	103.50
750	15569	14947	51	470	527	M36	46.95

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

HEAVY DUTY TWO BOLT PIPE CLAMP

Figure 298

Designed to suspend heavy loads on cold or hot pipe lines where little or no insulation is required. The Figure 298 is usually used with a Figure 279 Weldless Eyenut or Figure 93 Welded Eyerod.

Rated Loads are for up to 750° F (399° C).

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 4, MSS-SP-69 Type 4 and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish and pipe size. For Metric applications specify Figure M298.

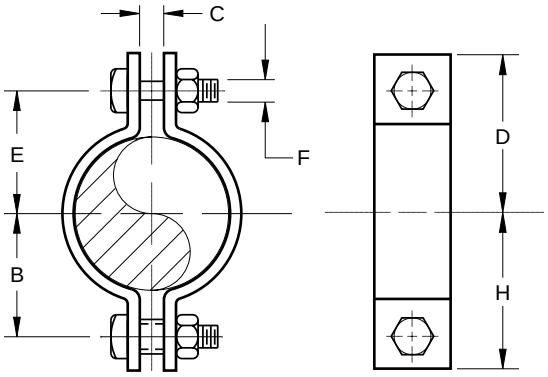


FIGURE 298 – HEAVY DUTY TWO BOLT PIPE CLAMP

PIPE SIZE	MAXIMUM LOAD 650° F 343° C	MAXIMUM LOAD 750° F 399° C	B	C	D	E	F	H	WEIGHT EACH
2 50	3400 15125	3000 13345	2 51	¾ 19	3 76	2 51	⅝ M16	3 76	2.1 1.0
3 80	3550 15792	3150 14012	3⅛ 79	1 25	4 102	3⅛ 79	¾ M20	4 102	3.8 1.7
4 100	3550 15792	3150 14012	3¾ 95	1 25	4⅞ 124	3¾ 95	⅞ M20	4⅞ 124	6.5 2.9
5 125	3550 15792	3150 14012	4⅜ 111	1 25	5½ 140	4⅜ 111	⅞ M20	5½ 140	7.4 3.4
6 150	4900 21797	4350 19351	5⅜ 137	1⅛ 29	6¾ 171	5⅜ 137	1 M24	6¾ 171	14.0 6.4
8 200	4900 21797	4350 19351	6¾ 171	1⅛ 29	8⅛ 206	6¾ 171	1 M24	8⅛ 206	16.4 7.4
10 250	6000 26690	5400 24021	7⅝ 194	1¼ 32	9⅛ 232	7¾ 197	1¼ M30	9 229	25.3 11.5
12 300	8700 38701	7750 34475	9¼ 235	1⅝ 41	11⅜ 289	9½ 241	1½ M36	11⅛ 283	44.1 20.0
14 350	9150 40703	8150 36254	9¾ 248	1⅝ 41	11⅞ 302	10 254	1½ M36	11⅝ 295	58.8 26.7
16 400	9150 40703	8150 36254	11 279	1⅝ 41	12⅞ 327	11 279	1½ M36	12⅞ 327	64.1 29.1
18 450	13800 61388	12280 54626	14½ 368	3 76	17¼ 438	14½ 368	2 M48	17¼ 438	126.3 57.3
20 500	15300 68060	13620 60587	16 406	3 76	18¾ 476	16 406	2 M48	18¾ 476	150.0 68.0
24 600	16300 72509	14500 64502	18½ 470	3¼ 83	21½ 546	18½ 470	2¼ M56	21½ 546	210.5 95.5
30 750	20500 91192	18250 81183	22½ 572	3½ 89	26 660	22½ 572	2½ M64	26 660	365.4 165.7
36 900	28000 124555	24900 110765	26½ 673	3½ 89	30¼ 768	26½ 673	2¾ M72	30¼ 768	575.1 260.9

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

THREE BOLT PIPE CLAMP

Figure 304

The Figure 304 is designed for hot insulated pipe lines up to 750° F. The spacer on the top inner bolt provides uniform space for the connecting eyerod or weldless eyenut. See Figure 91 for higher load ratings. We will also, design to meet special requirements such as special pipe sizes, order Figure 304SP.

Rated Loads are for up to 750° F (399° C).

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 3, MSS-SP-69 Type 3 and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number, and pipe size. Also, include any special requirements for Figure 304SP. For Metric applications specify Figure M304 or M304SP.

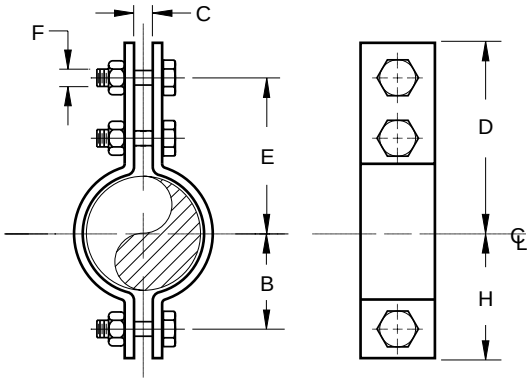


FIGURE 304 – THREE BOLT PIPE CLAMP

PIPE SIZE	MAXIMUM LOAD 650° F 343° C	MAXIMUM LOAD 750° F 399° C	B	C	D	TAKE OUT E	F	H	WEIGHT EACH
½	950	845	1	⅝	2⅞	2¼	⅜	1⅝	0.61
15	4226	3759	25	16	73	57	M10	41	0.28
¾	950	845	1⅛	⅝	3¼	2½	⅜	1¾	0.66
20	4226	3759	29	16	83	64	M10	44	0.30
1	950	845	1½	⅝	3¾	2½	⅜	2⅛	0.69
25	4226	3759	38	16	95	64	M10	54	0.31
1¼	950	845	1½	¾	3⅝	2⅞	⅜	2¼	0.75
32	4226	3759	38	19	92	73	M10	57	0.34
1½	1545	1380	1¾	1	4⅞	4⅛	⅝	2⅜	2.14
40	6873	6139	44	25	124	105	M16	60	0.97
2	1545	1380	2⅛	1⅛	5⅞	5⅛	⅝	2¾	2.43
50	6873	6139	54	29	149	130	M16	70	1.10
2½	1545	1380	2¼	1⅛	6⅛	5⅜	⅝	3	2.92
65	6873	6139	57	29	156	137	M16	76	1.32
3	1545	1380	2¾	1⅛	6⅝	6	⅝	3½	3.19
80	6873	6139	70	29	168	152	M16	89	1.45
4	2500	2230	3⅜	1	7⅝	6½	¾	4½	7.12
100	11121	9920	86	25	194	165	M20	114	3.23
5	2500	2230	4	1⅛	8⅛	7	¾	5⅛	7.96
125	11121	9920	102	29	206	178	M20	130	3.61
6	2865	2555	4¾	1¼	9⅝	8¼	⅞	6⅛	11.85
150	12745	11366	121	32	244	210	M20	156	5.38
8	2865	2555	5¾	1¼	10⅝	9¼	⅞	7⅛	13.59
200	12745	11366	146	32	270	235	M20	181	6.16
10	3240	2890	6⅞	1¼	12	10½	1	8¼	21.33
250	14413	12856	175	32	305	267	M24	210	9.68
12	3240	2890	8⅜	1½	13	11½	1	9⅞	23.65
300	14413	12856	213	38	330	292	M24	251	10.73
14	4300	3835	9⅛	2	14⅜	12¾	1¼	10¾	38.78
350	19128	17060	232	51	365	324	M30	273	17.59
16	4300	3835	10	2	15⅝	14	1¼	11¾	42.89
400	19128	17060	254	51	397	356	M30	298	19.45
18	4300	3835	11⅝	2	16¾	15⅛	1¼	13¼	46.35
450	19128	17060	295	51	425	384	M30	337	21.02
20	4500	4015	12⅜	2	17½	15⅞	1⅜	14	58.67
500	20018	17860	314	51	445	403	M36	356	26.61
24	5490	4900	14¾	2	19⅞	17⅞	1½	16⅜	89.32
600	24422	21797	375	51	505	454	M36	416	40.52
30	7500	6690	18½	1½	26⅜	23⅜	1½	21	140.89
750	33363	29760	470	38	670	594	M36	533	63.91
36	10500	9360	22½	3	32⅛	28¾	1¾	26	246.44
900	46708	41637	572	76	816	730	M42	660	111.79

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ALLOY THREE BOLT PIPE CLAMP

Figure 304Z

The Figure 304Z is designed for hot insulated pipelines. The spacer on the top inner bolt provides uniform space for the connecting eyerod or weldless eyenut. See Figure 91Z for higher load ratings.

Temperature range: above 750° F (399° C) to 1050° F (566° C).

Material: Chrome Molybdenum Steel, ASTM A-387 Grade 22.

Compliance: Federal Specification A-A-1192A Type 3, MSS-SP-69 Type 3 and BSPSS-BS3974.

Finish: Plain.

Ordering: Specify figure number, and pipe size. For Metric applications, specify Fig M304Z.

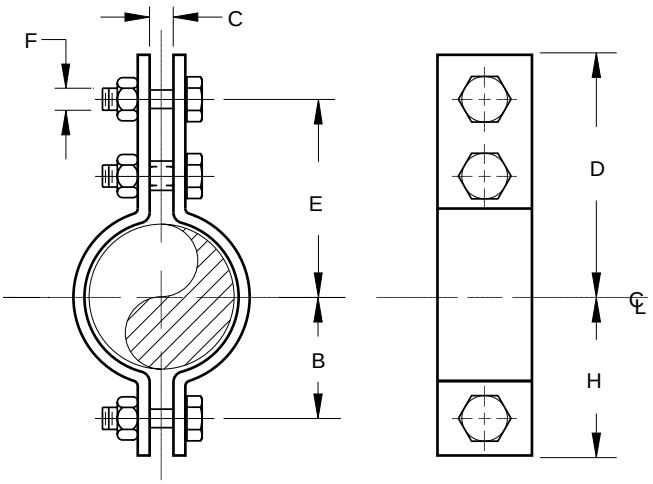


FIGURE 304Z – ALLOY THREE BOLT PIPE CLAMP

PIPE SIZE	MAXIMUM LOAD 950° F 510° C	1000° F 538° C	1050° F 566° C	B	C	D	TAKE OUT E	F	H	WEIGHT EACH
¾	870	600	440	1⅛	⅝	3	2½	⅜	1⅝	1.09
20	3870	2669	1957	29	16	76	64	M10	41	0.49
1	870	600	440	1¼	⅝	3⅛	2⅝	⅜	1¾	1.14
25	3870	2669	1957	32	16	79	67	M10	44	0.52
1¼	870	600	440	1½	¾	3¾	2⅞	⅜	2¼	1.23
32	3870	2669	1957	38	19	95	73	M10	57	0.56
1½	1400	1000	700	1¾	1	4⅞	4⅛	⅝	2⅜	2.48
40	6228	4448	3114	44	25	124	105	M16	60	1.12
2	1400	1000	700	2⅛	1	5⅞	5⅛	⅝	2¾	2.70
50	6228	4448	3114	54	25	149	130	M16	70	1.22
2½	1400	1000	700	2¼	1	6⅛	5⅜	⅝	3	2.76
65	6228	4448	3114	57	25	156	137	M16	76	1.25
3	1400	1000	700	2¾	1	6¾	6	⅝	3½	3.19
80	6228	4448	3114	70	25	171	152	M16	89	1.45
4	2300	1600	1100	3⅜	1	7⅝	6½	¾	4½	7.30
100	10231	7117	4893	86	25	194	165	M20	114	3.31
5	2300	1600	1100	4	1⅛	8⅛	7	¾	5⅛	7.96
125	10231	7117	4893	102	29	206	178	M20	130	3.61
6	2600	1800	1300	4¾	1¼	10	8⅝	⅞	6⅛	12.26
150	11566	8007	5783	121	32	254	219	M20	156	5.56
8	2600	1800	1300	5¾	1¼	11	9⅝	⅞	7⅛	14.04
200	11566	8007	5783	146	32	279	244	M20	181	6.37
10	3000	2100	1500	6⅞	1¼	12	10½	1	8¼	21.33
250	13345	9342	6673	175	32	305	267	M24	210	9.68
12	3000	2100	1500	8⅜	1½	13⅛	11⅝	1	9⅞	24.00
300	13345	9342	6673	213	38	333	295	M24	251	10.89
14	3900	2800	2000	9⅛	2	14⅛	12¾	1¼	10¾	38.78
350	17349	12456	8897	232	51	365	324	M30	273	17.59
16	3900	2800	2000	10	2	15⅛	14	1¼	11¾	43.13
400	17349	12456	8897	254	51	397	356	M30	298	19.56
18	39	2800	2000	11⅝	2	16¾	15⅛	1¼	13¼	47.78
450	173	12456	8897	295	51	425	384	M30	337	21.67
20	5000	3200	2000	12⅜	2	17½	15⅞	1⅛	14	58.67
500	22242	14235	8897	314	51	445	403	M36	356	26.61
24	5500	3500	2700	14¾	1½	19⅞	17⅞	1½	16⅜	90.82
600	24466	15569	12011	375	38	505	454	M36	416	41.20

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

HEAVY DUTY THREE BOLT PIPE CLAMP

Figure 91

The Figure 91 is designed to accommodate higher loads than the Figure 304 for insulated piping. The spacer on the top inner bolt provides uniform space for the connecting eyerod or weldless eyenut.

Rated loads are for up to 750° F (399° C).

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 3, MSS-SP-69 Type 3, and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish, and pipe size. For Metric applications specify Figure M91.

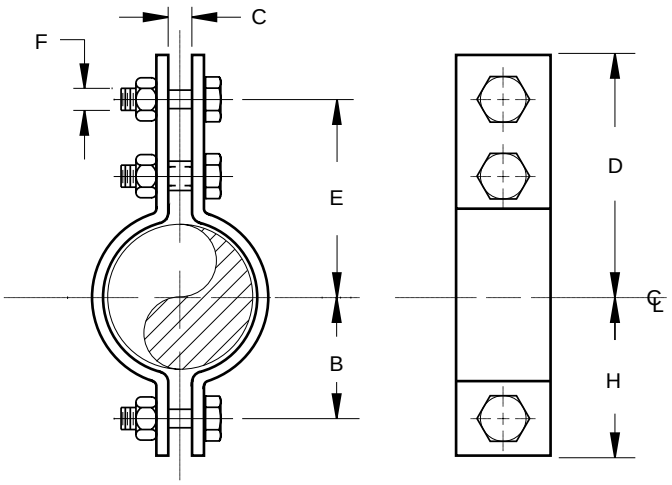


FIGURE 91 – HEAVY DUTY THREE BOLT PIPE CLAMP

PIPE SIZE	MAXIMUM LOAD 650° F 343° C	MAXIMUM LOAD 750° F 399° C	B	C	D	TAKE OUT E	F	H	WEIGHT EACH
6 150	3500 15569	3125 13901	4¾ 121	1¾ 44	10¼ 260	9 229	1 M24	6 152	14.26 6.47
8 200	4800 21352	4285 19061	6 152	2 51	11⅜ 289	10⅛ 257	1⅛ M30	7¼ 184	22.20 10.07
10 250	5500 24466	4910 21842	7¼ 184	2¼ 57	13⅛ 333	11⅜ 289	1¼ M30	9 229	35.10 15.92
12 300	7000 31139	6250 27802	8⅞ 225	2½ 64	14⅞ 378	12⅞ 327	1½ M36	10⅞ 276	58.09 26.35
14 350	9500 42260	8485 37745	10 254	2½ 64	15⅝ 397	13⅝ 346	1½ M36	12 305	71.31 32.35
16 400	10000 44484	8930 39724	10⅞ 276	3 76	17⅛ 435	14⅞ 378	1¾ M42	13⅛ 333	105.77 47.98
18 450	13800 61388	12325 54827	12½ 318	3½ 89	19¾ 502	17¼ 438	2 M48	15 381	153.73 69.73
20 500	15300 68060	13665 60787	13½ 343	3½ 89	20¾ 527	18¼ 464	2 M48	16 406	176.40 80.02
24 600	16300 72509	14555 64746	16 406	3½ 89	23¼ 591	20¼ 514	2 M48	19 483	237.02 107.51
30 750	20500 91192	18300 81406	19⅞ 505	4¼ 108	32¾ 832	28¼ 718	2¼ M56	24⅜ 619	388.37 176.16
36 900	28000 124555	…… …….	24⅝ 625	4½ 114	40¼ 1022	34¾ 883	2¾ M72	30⅛ 765	678.00 307.54

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

HEAVY ALLOY THREE BOLT PIPE CLAMP

Figure 91Z

The Figure 91Z is designed to accommodate higher loads than the Figure 304Z for use on insulated alloy piping. The spacer on the top inner bolt provides uniform space for the connecting eyerod or weldless eyenut.

Temperature range: Above 750° F (399° C) to 1050° F (566° C).

Material: Chrome Molybdenum Steel ASTM A-387 Grade 22.

Compliance: Federal Specification A-A-1192A Type 3, MSS-SP-69 Type 3, and BSPSS-BS3974.

Finish: Plain.

Ordering: Specify figure number and pipe size. For Metric applications specify Figure M91Z.

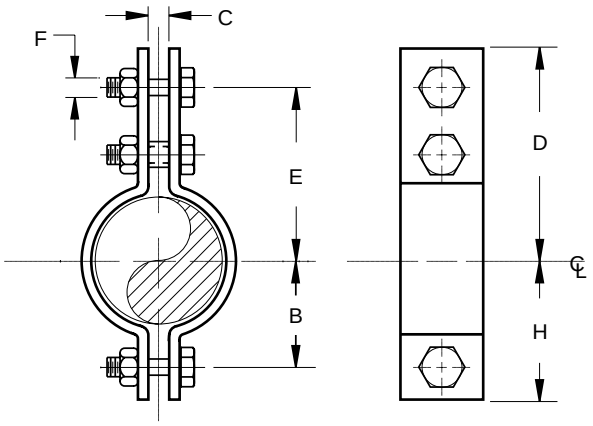


FIGURE 91Z – HEAVY ALLOY THREE BOLT PIPE CLAMP

PIPE SIZE	MAXIMUM LOAD 950° F 510° C	1000° F 538° C	1050° F 566° C	B	C	D	E	F	H	WEIGHT EACH
6	7300	5200	3700	5 1/4	1 3/4	11	9	1 1/2	7	28
150	32473	23132	16459	133	44	279	229	M36	178	13
8	7300	5200	3700	6 5/8	1 3/4	12	10	1 1/2	8 1/2	33
200	32473	23132	16459	168	44	305	254	M36	216	15
10	10000	7200	5000	8 1/4	2	14 1/2	12	1 7/8	10 1/2	53
250	44484	32028	22242	200	51	356	305	M42	254	24
12	10000	7200	5000	9 3/8	2	15	13	1 3/4	11 1/4	65
300	44484	32028	22242	238	51	381	330	M42	286	29
14	11600	8300	6000	9 7/8	2 1/4	16 1/4	14	1 7/8	12	88
350	51601	36922	26690	251	57	413	356	M48	305	40
16	11600	8300	6000	11	2 1/4	17 1/4	15	1 7/8	13	95
400	51601	36922	26690	279	57	438	381	M48	330	43
18	11600	8300	6000	12	2 1/4	18 1/4	16	1 7/8	14	103
450	51601	36922	26690	305	57	464	406	M48	356	47
20	15000	10600	7500	13 1/2	2 1/4	20 1/2	18	2	15 1/2	142
500	66726	47153	33363	343	57	521	457	M48	394	64
24	15000	13000	9000	15 3/4	2 1/4	23	20	2	18	213
600	66726	57829	40036	400	57	584	508	M48	457	97
30	15000	13000	9000	19	2 1/4	28	25	2	21 1/2	300
750	66726	57829	40036	483	57	711	635	M48	546	136
36	15000	13000	9000	22	2 1/4	31	28	2	24 1/2	340
900	66726	57829	40036	559	57	787	711	M48	622	154

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

STANDARD ALLOY YOKE CLAMP
Figure 134

The Figure 134 is recommended for the suspension of high temperature piping that requires up to 4 inches of insulation. Normally used with a Figure 93 Welded Eyerod or Figure 279 Weldless Eyenut. An alloy load distribution strap is provided.

Material: Chrome molybdenum steel except U-bolt, which is stainless steel.

Compliance: Federal Specification WW-H-171 (Type 2), MSS-SP-69 (Type 2), and BSPSS-BS3974.

Finish: Plain.

Ordering: Specify figure number, pipe size, and finish. For Metric applications specify Figure M134.

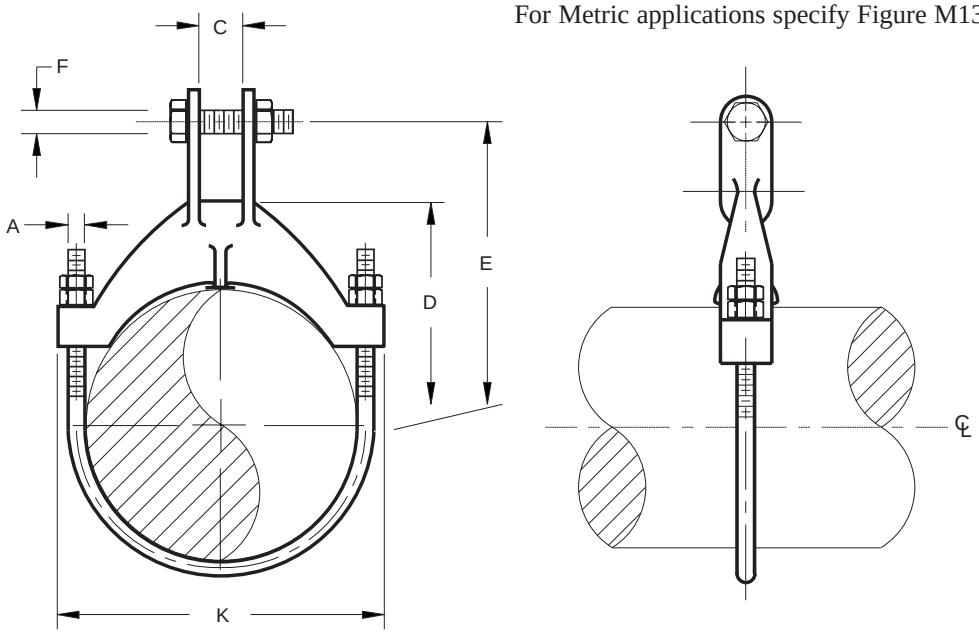


FIGURE 134 – STANDARD ALLOY YOKE CLAMP

PIPE SIZE	MAXIMUM LOAD 750° F 399° C	950° F 510° C	1000° F 538° C	1050° F 566° C	C	D	TAKE OUT E	F	K	WEIGHT EACH
4	3780	3300	2770	1890	1 1/8	3 7/8	6 3/4	7/8	6 1/2	4.0
100	16815	14680	12322	8407	29	98	171	M20	165	1.8
6	6060	5290	4440	3030	1 1/2	5 1/2	8 3/8	1	9 1/8	7.5
150	26957	23532	19751	13479	38	140	213	M24	232	3.4
8	6060	5290	4440	3030	1 1/2	6 3/4	9 5/8	1	11 1/8	9.0
200	26957	23532	19751	13479	38	171	244	M24	283	4.1
10	9060	7910	6640	4420	1 1/2	8 3/8	10 7/8	1 1/8	13 5/8	15.8
250	40302	35187	29537	19662	38	213	276	M30	346	7.2
12	12570	10980	9015	6010	2	10 1/8	12 7/8	1 1/2	16 1/8	24.3
300	55916	48843	40102	26735	51	257	327	M36	410	11.0
14	12570	10980	9015	6010	2	11 1/8	13 7/8	1 1/2	17 3/8	26.3
350	55916	48843	40102	26735	51	283	352	M36	441	11.9
16	12570	10980	9015	6010	2	12 1/4	15	1 1/2	19 5/8	31.0
400	55916	48843	40102	26735	51	311	381	M36	498	14.1

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

HEAVY DUTY ALLOY YOKE CLAMP

Figure 246

The Figure 246 is recommended for the suspension of heavy loads on high temperature piping that requires up to 6 inches of insulation. Normally used with a Figure 93 Welded Eyerod or Figure 279 Weldless Eyenut. An alloy load distribution strap is provided.

Material: Chrome molybdenum steel except U-bolt, which is stainless steel.

Compliance: Federal Specification WW-H-171 (Type 2), MSS-SP-69 (Type 2), and BSPSS-BS3974.

Finish: Plain.

Ordering: Specify figure number, pipe exact O.D., and finish. For Metric applications specify Figure M246.

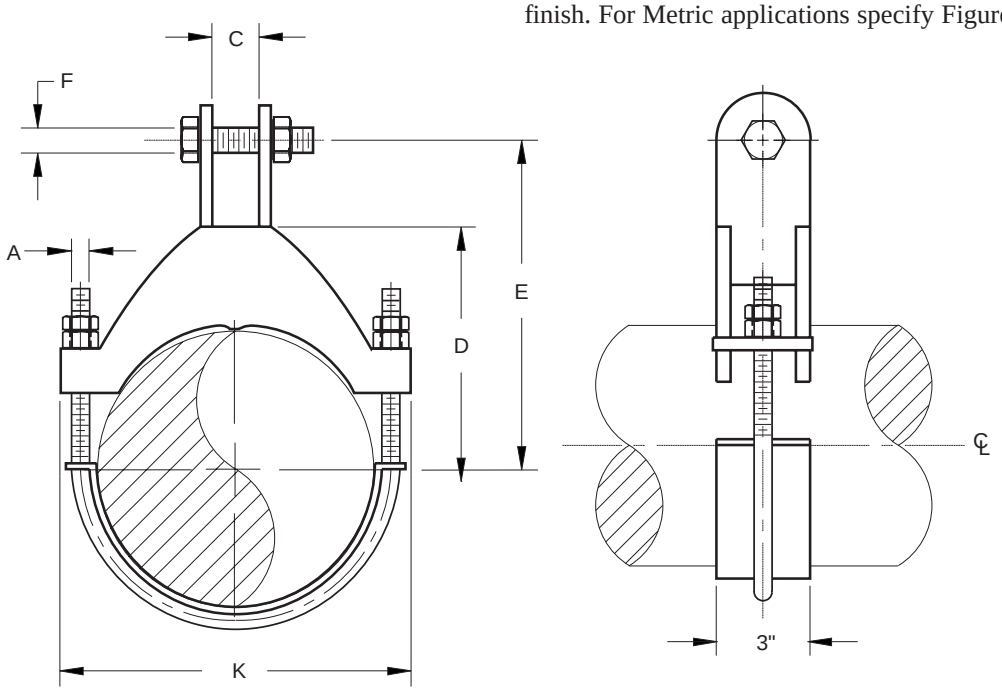


FIGURE 246 – HEAVY DUTY ALLOY YOKE CLAMP

PIPE SIZE	USED ON O.D. PIPE SIZE	OPERATING TEMPERATURE 950° F 510° C	1000° F 538° C	1050° F 566° C	1075° F 579° C	C	D	E	F	K	WEIGHT EACH
		MAXIMUM RECOMMENDED LOAD									
10 250	8 3/4 - 10 13/16 222 - 275	13500 60053	11780 52402	7850 34920	6120 27224	2 51	9 1/8 232	12 305	1 1/2 M36	15 3/8 391	42.0 19.1
12 300	10 7/8 - 12 13/16 276 - 325	16500 73399	14910 66326	9940 44217	7750 34475	2 1/4 57	10 3/4 273	13 3/4 349	1 5/8 M42	17 7/8 454	58.0 26.3
14 350	12 7/8 - 14 1/16 327 - 357	16500 73399	14910 66326	9940 44217	7750 34475	2 1/4 57	11 1/2 292	14 1/2 368	1 5/8 M42	19 1/8 486	63.0 28.6
16 400	14 1/8 - 16 1/16 359 - 408	16500 73399	14910 66326	9940 44217	7750 34475	2 1/4 57	13 1/8 333	16 3/8 416	1 5/8 M42	21 1/8 537	69.0 31.3
18 450	16 1/8 - 18 1/16 410 - 459	19000 84520	18410 81895	12270 54582	9570 42571	2 1/2 64	14 1/2 368	18 1/4 464	2 M48	24 1/8 613	94.0 42.6
20 500	18 1/8 - 20 1/16 460 - 510	19000 84520	18410 81895	12270 54582	9570 42571	2 1/2 64	15 3/4 400	19 1/2 495	2 M48	26 1/8 664	104.0 47.2
24 600	20 1/8 - 24 1/16 511 - 611	25000 111210	22280 99110	14850 66059	11580 51512	3 76	18 1/4 464	22 559	2 1/4 M56	30 3/4 781	167.0 75.8

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

CHANNEL ASSEMBLY

Figure 371

The Figure 371 Channel Assembly is composed of two channels back to back with a spacer welded on each end. Washer plates are included and shipped loose.

Material: Steel.

Finish: Plain, Painted, Hot-Dip Galvanized.

Ordering: Specify channel size, rod diameter, dimension "A", figure number, and finish. For Metric applications specify Figure M371. Made special to customer order.

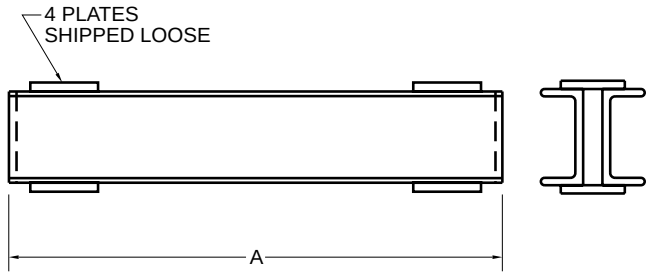


FIGURE 371 – CHANNEL ASSEMBLY

CHANNEL SIZE	ALLOWABLE CONCENTRATED LOAD AT CENTER OF SPAN F/S 5							
	12 305	18 457	24 610	30 762	36 914	42 1067	60 1524	72 1829
3C 4.1	10000 44484	6800 30249	5100 22687	4100 18238	3400 15125	2900 12900	2000 8897	1700 7562
4C 5.4	17500 77847	11600 51601	8800 39146	7000 31139	5800 25801	5000 22242	3500 15569	2900 12900
5C 6.7	27600 122776	18400 81851	13800 61388	11000 48932	9200 40925	7900 35142	5500 24466	4600 20463
6C 8.2	39500 175712	26300 116993	19800 88078	15800 70285	13200 58719	11300 50267	7900 35142	6600 29359
8C 11.5	74500 331406	49600 220641	37300 165925	29800 132562	24800 110320	21300 94751	14900 66281	12400 55160
12C 20.7			98500 438167	78800 350534	65600 291815	56300 250445	39400 175267	32800 145907

ANGLE IRON SUPPORT

Figure 374

The Figure 374 Angle Iron Support is used to form a trapeze when supporting more than one pipeline at the same time.

Material: Steel.

Finish: Plain, Painted, Hot-Dip Galvanized.

Ordering: Specify size of angle, dimension "A", center to center of drop rods, size of drop rods, figure number and finish. Made special to customer order. For Metric applications specify Figure M374.

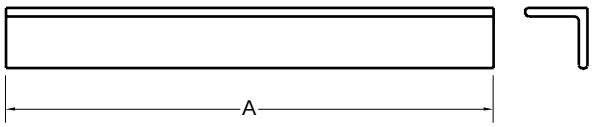


FIGURE 374 – ANGLE IRON SUPPORT

ANGLE SIZE	ALLOWABLE CONCENTRATED LOAD AT CENTER OF SPAN								
	6 152	12 305	18 457	24 610	30 762	36 914	42 1067	48 1219	72 1829
1 x 1 x ¼	670 2980	330 1468	220 979	160 712	130 578	100 445			
1½ x 1½ x ¼	1000 4448	500 2224	350 1557	250 1112	200 890				
2 x 2 x ¼	1940 8630	1470 6539	980 4359	730 3247	580 2580	480 2135	410 1824	355 1579	225 1001
2 x 2 x ⅜	2750 12233	1350 6005	925 4115	775 3448	550 2447				
2½ x 2½ x ¼	1980 8808	1800 8007	1570 6984	1170 5205	935 4159	775 3448	660 2936	575 2558	370 1646
3 x 3 x ¼	1840 8185	1740 7740	1640 7295	1550 6895	1370 6094	1140 5071	970 4315	845 3759	545 2424
3 x 3 x ½		4350 19351	2925 13012	2175 9675	1750 7785				

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

PIPE COVERING PROTECTION SADDLE

Figure 351 to 357Z

The Figure 351 to 357APCP saddles are used to protect the insulation against damage and keep heat loss to a minimum. They are designed for from 1" up to 5" of covering. All Saddles are 12" long with three tabs on each side for welding to pipe. Sizes 12" and larger have a welded in center rib.

Material: Carbon Steel (except Fig 356Z and 357Z which are Chrome Molybdenum Steel).

Compliance: Federal Specification A-A-1192A Type 39A or 39B, MSS-SP-69 Type 39A or 39B and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number and pipe size. For Metric applications specify Figure M351 to M357Z.

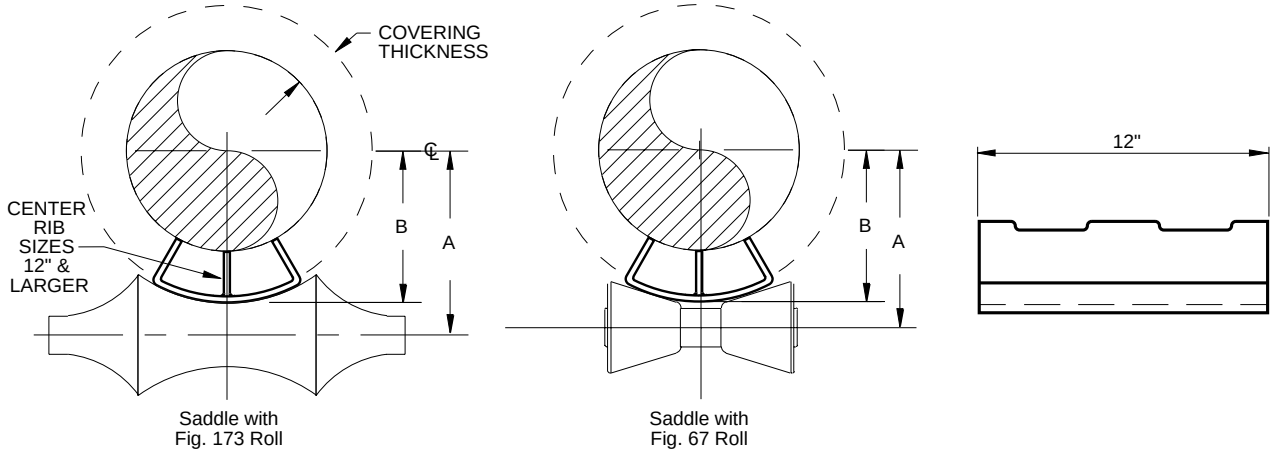


FIGURE 351 TO 357Z – PIPE COVERING PROTECTION SADDLE

PIPE SIZE	FIG. NO.	MAXIMUM COVERING THICKNESS	ACTUAL COVERING THICKNESS	MAX. LOAD	SADDLE WITH FIG. 173 ROLL			SADDLE WITH FIG. 67 ROLL			WEIGHT EACH
					ROLL SIZE	A	B	ROLL SIZE	A	B	
¾ 20	351	1 25	15/16 24	1200 5338	2½ 64	2⅛ 54	1⅝ 41	2-3½ 50-90	2 5/16 59	1⅝ 41	1.15 0.52
	352	1½ 38	1½ 38	1200 5338	3 76	2⅝ 67	2⅛ 54	2-3½ 50-90	2 11/16 68	2⅛ 54	2.10 0.95
	353	2 51	2 51	1200 5338	4 100	3¼ 83	2⅝ 67	2-3½ 50-90	3⅜ 86	2⅝ 67	2.63 1.19
1 25	351	1 25	1 1/16 27	1200 5338	2¼ 65	2¾ 70	1¾ 44	2-3½ 50-90	2 7/16 62	1¾ 44	1.15 0.52
	352	1½ 38	1 9/16 40	1200 5338	3 80	2⅞ 73	2⅜ 60	2-3½ 50-90	2 15/16 75	2⅜ 60	2.10 0.95
	353	2 51	2⅛ 54	1200 5338	4 100	3⅜ 86	2¾ 70	2-3½ 50-90	3½ 89	2¾ 70	2.63 1.19
1¼ 32	351	1 25	7/8 22	1200 5338	3 80	2½ 64	2 51	2-3½ 50-90	2 9/16 65	2 51	1.25 0.57
	352	1½ 38	1⅝ 41	1200 5338	3½ 90	3 76	2½ 64	2-3½ 50-90	3 3/16 81	2½ 64	2.10 0.95
	353	2 51	1 15/16 49	1200 5338	5 125	3⅝ 92	3 1/16 78	2-3½ 50-90	3 11/16 94	3 1/16 78	2.63 1.19
	354	2½ 64	2½ 64	1200 5338	6 150	4¼ 108	3½ 89	4-6 100-150	4 1/16 103	3½ 89	3.25 1.47
1½ 40	351	1 25	1 1/16 27	1200 5338	3 80	2½ 64	2 51	2-3½ 50-90	2 11/16 68	2 51	1.50 0.68
	352	1½ 38	1 9/16 40	1200 5338	4 90	3⅛ 79	2⅝ 67	2-3½ 50-90	3 5/16 84	2⅝ 67	2.10 0.95
	353	2 51	2⅜ 60	1800 8007	5 125	4⅛ 105	3⅜ 86	2-3½ 50-90	3¾ 95	3⅜ 86	3.10 1.41
	354	2½ 64	2⅞ 73	1800 8007	6 152	4⅝ 117	3⅞ 98	4-6 100-150	4 3/16 106	3⅞ 98	3.75 1.70

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

FIGURE 351 TO 357Z – PIPE COVERING PROTECTION SADDLE

PIPE SIZE	FIG. NO.	MAXIMUM COVERING THICKNESS	ACTUAL COVERING THICKNESS	MAX. LOAD	SADDLE WITH FIG. 173 ROLL			SADDLE WITH FIG. 67 ROLL			WEIGHT EACH
					ROLL SIZE	A	B	ROLL SIZE	A	B	
2 50	351	1 25	1 1/16 27	1200 5338	3 1/2 80	2 7/8 73	2 3/8 60	2-3 1/2 50-90	2 15/16 75	2 3/8 60	1.63 0.74
	352	1 1/2 38	1 9/16 40	1200 5338	4 102	3 1/8 79	2 5/8 67	2-3 1/2 50-90	3 5/16 84	2 5/8 67	2.10 0.95
	353	2 51	2 1/8 54	1800 8007	6 152	4 1/4 108	3 1/2 89	4-6 100-150	3 7/8 98	3 1/2 89	3.12 1.42
	354	2 1/2 64	2 5/8 67	1800 8007	7 178	4 3/4 121	4 102	4-6 100-150	4 13/16 122	4 102	3.63 1.65
	355	3 76	3 1/16 78	1800 8007	7 178	5 1/4 133	4 1/2 114	7-10 180-255	5 5/16 135	4 1/2 114	4.40 2.00
2 1/2 65	351	1 25	1 1/16 27	1200 5338	4 102	3 1/2 89	2 7/8 73	2-3 1/2 50-90	3 9/16 90	2 7/8 73	1.75 0.79
	352	1 1/2 38	1 7/8 48	1200 5338	6 152	4 1/2 114	3 3/8 86	2-3 1/2 50-90	3 3/4 95	3 3/8 86	2.40 1.09
	353	2 51	2 3/8 60	1800 8007	6 152	4 5/8 117	3 7/8 98	4-6 100-150	4 3/16 106	3 7/8 98	3.12 1.42
	354	2 1/2 64	2 7/8 73	1800 8007	7 178	5 1/8 130	4 3/8 111	7-10 180-255	5 1/16 129	4 3/8 111	3.63 1.65
	355	3 76	3 3/8 86	1800 8007	7 178	5 5/8 143	4 7/8 124	7-10 180-255	5 9/16 141	4 7/8 124	4.40 2.00
3 80	351	1 25	1 1/16 27	1200 5338	4 102	3 1/2 89	2 7/8 73	2-3 1/2 50-90	3 9/16 90	2 7/8 73	1.75 0.79
	352	1 1/2 38	1 9/16 40	1800 8007	6 152	4 1/2 114	3 3/4 95	4-6 100-150	4 1/16 103	3 3/4 95	2.75 1.25
	353	2 51	2 1/16 52	1800 8007	7 178	4 3/4 121	4 102	4-6 100-150	4 9/16 116	4 102	3.50 1.59
	354	2 1/2 64	2 9/16 65	1800 8007	8 203	5 3/8 137	4 5/8 117	7-10 180-255	5 3/8 137	4 5/8 117	3.93 1.78
	355	3 76	3 1/16 78	1800 8007	8 203	5 7/8 149	5 127	7-10 180-255	6 152	5 127	4.40 2.00
4 100	351	1 25	1 1/16 27	5000 22242	6 152	4 1/4 108	3 1/2 89	4-6 100-150	4 102	3 1/2 89	2.13 0.97
	352	1 1/2 38	1 9/16 40	5000 22242	7 178	4 3/4 121	4 102	4-6 100-150	4 1/16 103	4 102	3.00 1.36
	353	2 51	2 1/16 52	5000 22242	7 178	5 3/8 137	4 5/8 117	4-6 100-150	5 1/8 130	4 5/8 117	3.50 1.59
	354	2 1/2 64	2 9/16 65	5000 22242	10 254	6 152	5 1/8 130	7-10 180-255	5 7/8 149	5 1/8 130	3.93 1.78
	355	3 76	3 1/8 79	5000 22242	10 254	6 5/8 168	5 3/4 146	7-10 180-255	6 3/8 162	5 3/4 146	5.00 2.27
	356	4 102	4 1/8 105	5000 22242	12 305	7 3/4 197	6 1/2 165	7-10 180-255	7 9/16 192	6 1/2 165	6.30 2.86
	356Z	4 102	4 1/16 103	5000 22242	12 305	7 3/4 197	6 1/2 165	7-10 180-255	7 5/8 194	6 1/2 165	14.45 6.55
	357Z	5 1/2 140	5 11/16 144	5000 22242	16 406	9 5/8 244	8 1/4 210	16 180-255	9 1/2 241	8 1/4 210	26.40 11.98
5 125	351	1 25	1 1/16 27	1800 8007	6 152	4 7/8 124	4 1/8 105	4-6 100-150	4 102	4 1/8 105	2.38 1.08
	352	1 1/2 38	1 9/16 40	1800 8007	7 178	5 1/2 140	4 3/4 121	4-6 100-150	5 3/16 132	4 3/4 121	3.00 1.36
	353	2 51	2 1/16 52	1800 8007	8 203	6 152	5 1/4 133	7-10 180-255	6 152	5 1/4 133	3.62 1.64
	354	2 1/2 64	2 9/16 65	1800 8007	10 254	6 5/8 168	5 3/4 146	7-10 180-255	6 7/16 164	5 3/4 146	4.06 1.84
	355	3 76	3 1/16 78	1800 8007	10 254	7 1/8 181	6 1/4 159	7-10 180-255	7 5/32 182	6 1/4 159	5.00 2.27
	356	4 102	4 1/4 108	1800 8007	12 305	8 1/4 210	7 178	7-10 180-255	8 3/32 206	7 178	6.30 2.86
	356Z	4 102	4 3/16 106	5000 22242	12 305	8 3/8 213	7 1/8 181	7-10 180-255	8 1/4 210	7 1/8 181	14.95 6.78
	357Z	5 1/2 140	5 11/16 144	5000 22242	18 457	10 3/16 259	8 3/4 222	18 180-255	10 3/4 273	8 3/4 222	27.40 12.43

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

FIGURE 351 TO 357Z – PIPE COVERING PROTECTION SADDLE

PIPE SIZE	FIG. NO.	MAXIMUM COVERING THICKNESS	ACTUAL COVERING THICKNESS	MAX. LOAD	SADDLE WITH FIG. 173 ROLL			SADDLE WITH FIG. 67 ROLL			WEIGHT EACH
					ROLL SIZE	A	B	ROLL SIZE	A	B	
	351	1 25	1 27	1800 8007	7 178	5 3/8 137	4 5/8 117	4-6 100-150	5 1/8 130	4 5/8 117	3.85 1.75
	352	1 1/2 38	1 1/2 38	1800 8007	8 203	5 7/8 149	5 127	7-10 180-255	6 3/16 157	5 127	4.75 2.15
	353	2 51	2 1/16 52	1800 8007	10 254	6 3/8 162	5 1/2 140	7-10 180-255	6 1/2 165	5 1/2 140	6.28 2.85
6 150	354	2 1/2 64	2 9/16 65	1800 8007	12 305	7 178	6 152	12-15 305-380	7 5/8 194	6 152	7.09 3.22
	355	3 76	3 1/16 78	1800 8007	12 305	7 3/4 197	6 1/2 165	7-10 180-255	7 1/2 191	6 1/2 165	8.10 3.67
	356	4 102	4 3/16 106	1800 8007	12 305	8 7/8 225	7 5/8 194	12-15 305-380	8 13/16 224	7 5/8 194	10.15 4.60
	356Z	4 102	4 1/8 105	7200 32028	12 305	8 7/8 225	7 7/8 200	12-15 305-381	8 7/8 225	7 7/8 200	16.00 7.26
	357Z	5 1/2 140	5 5/8 143	7200 32028	18 457	11 9/16 294	10 254	18 180-255	11 1/2 292	10 254	27.50 12.47
	351	1 25	1 1/16 27	1800 8007	10 254	7 178	6 152	7-10 180-255	6 9/16 167	6 152	5.05 2.29
	352	1 1/2 38	1 9/16 40	1800 8007	10 254	7 178	6 152	7-10 180-255	7 3/16 183	6 152	5.25 2.38
	353	2 51	2 1/16 52	1800 8007	12 305	7 1/2 191	6 1/2 165	7-10 180-255	7 11/16 195	6 1/2 165	7.00 3.18
8 200	354	2 1/2 64	2 11/16 68	1800 8007	14 356	8 1/4 210	7 178	12-15 305-380	8 11/16 221	7 178	7.55 3.42
	355	3 76	3 3/16 81	1800 8007	12 305	8 7/8 225	7 5/8 194	12-15 305-380	8 27/32 225	7 5/8 194	9.90 4.49
	356	4 102	4 3/16 106	1800 8007	16 406	10 254	8 3/4 222	12-15 305-380	9 13/16 249	8 3/4 222	10.13 4.59
	356Z	4 102	4 3/16 106	7200 32028	16 406	10 254	8 3/4 222	12-15 305-380	9 7/8 251	8 3/4 222	16.90 7.67
	357Z	5 1/2 140	5 9/16 141	7200 32028	20 508	11 13/16 300	10 1/4 260	20 180-255	11 3/4 298	10 1/4 260	34.10 15.47
	351	1 25	1 25	1800 8007	10 254	8 1/4 210	7 1/4 184	7-10 180-255	6 9/16 167	7 1/4 184	5.05 2.29
	352	1 1/2 38	1 5/8 41	1800 8007	10 254	8 1/4 210	7 1/4 184	7-10 180-255	7 3/16 183	7 1/4 184	5.25 2.38
	353	2 51	2 1/16 52	1800 8007	12 305	9 1/8 252	7 7/8 200	7-10 180-255	7 11/16 195	7 7/8 200	7.0 3.18
10 250	354	2 1/2 64	2 1/8 54	1800 8007	16 406	9 5/8 244	8 1/8 206	16-20 406-508	9 11/16 246	8 1/8 206	8.75 3.97
	355	3 76	3 1/8 79	5000 22242	16 406	10 1/8 257	8 7/8 225	16-20 406-508	10 3/8 264	8 7/8 225	10.70 4.85
	356	4 102	4 1/8 105	5000 22242	18 457	11 1/8 283	9 3/4 248	16-20 406-508	11 1/16 281	9 3/4 248	13.88 6.30
	356Z	4 102	4 1/16 103	7200 32028	18 457	11 1/8 283	9 3/4 248	16-20 406-508	11 1/8 283	9 3/4 248	17.50 7.94
	357Z	5 1/2 140	5 9/16 141	7200 32028	20 508	13 1/8 333	11 1/4 286	20 406-508	12 5/8 321	11 1/4 286	36.60 16.60
	351	1 25	1 1/8 29	2500 11121	14 356	9 3/8 238	8 1/8 206	12-15 305-380	9 1/4 235	8 1/8 206	7.30 3.31
	352	1 1/2 38	1 5/8 41	5000 22242	14 356	9 3/8 356	8 1/8 238	12-15 305-380	9 7/8 251	8 1/8 206	7.35 3.33
	353	2 51	2 1/8 54	5000 22242	16 406	10 254	8 5/8 219	16-20 406-508	9 15/16 252	8 5/8 219	9.20 4.17
12 300	354	2 1/2 64	2 1/8 54	5000 22242	18 457	10 1/2 267	9 1/8 232	16-20 406-508	10 9/16 268	9 1/8 232	10.04 4.55
	355	3 76	3 1/8 79	5000 22242	18 457	11 1/4 286	9 3/4 248	16-20 406-508	11 1/8 283	9 3/4 248	11.00 4.99
	356	4 102	4 1/8 105	5000 22242	20 508	12 1/4 311	10 3/4 273	16-20 406-508	12 1/16 306	103/4 273	14.45 6.55
	356Z	4 102	4 1/8 105	11000 48932	20 508	12 1/4 311	10 3/4 273	16-20 406-508	12 1/8 308	10 3/4 273	28.00 12.70
	357Z	5 1/2 140	5 9/16 141	11000 48932	24 610	14 1/4 362	12 3/8 314	24 406-508	13 3/4 349	12 3/8 314	36.60 16.60

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

FIGURE 351 TO 357Z – PIPE COVERING PROTECTION SADDLE

PIPE SIZE	FIG. NO.	MAXIMUM COVERING THICKNESS	ACTUAL COVERING THICKNESS	MAX. LOAD	SADDLE WITH FIG. 173 ROLL			SADDLE WITH FIG. 67 ROLL			WEIGHT EACH
					ROLL SIZE	A	B	ROLL SIZE	A	B	
14 350	352	1½ 38	1½ 38	5000 22242	16 406	10¼ 260	9 229	16-20 406-508	10⅜ 264	9 229	8.25 3.74
	353	2 51	2 51	5000 22242	18 457	10¾ 273	9⅜ 238	16-20 406-508	10¾ 273	9⅜ 238	9.20 4.17
	354	2½ 64	2⅛ 54	5000 22242	18 457	11⅜ 289	9⅞ 251	16-20 406-508	11¼ 286	9⅞ 251	10.04 4.55
	355	3 76	3 76	5000 22242	18 457	12 305	10½ 267	16-20 406-508	11¾ 298	10½ 267	11.00 4.99
	356	4 102	4 102	5000 22242	24 610	13¼ 337	11¾ 298	22-24 559-610	12⅜ 314	11¾ 298	15.50 7.03
	356Z	4 102	4 102	11000 48932	24 610	12¾ 324	11¼ 286	22-24 559-610	11⅞ 302	11¼ 286	27.60 12.52
	357Z	5½ 140	5½ 140	11000 48932	24 610	15 381	13⅛ 333	24 559-610	14½ 368	13⅛ 333	36.60 16.60
16 400	352	1½ 38	1½ 38	5000 22242	18 457	11⅛ 283	9¾ 248	16-20 406-508	11¼ 286	9¾ 248	8.25 3.74
	353	2 51	2 51	5000 22242	20 508	11¾ 298	10¼ 260	16-20 406-508	11⅝ 295	10¼ 260	9.20 4.17
	354	2½ 64	2½ 64	7200 32028	20 508	12¼ 311	10¾ 273	16-20 406-508	12¼ 311	10¾ 273	13.69 6.21
	355	3 76	3 76	7200 32028	24 610	12⅞ 327	11⅛ 283	22-24 559-610	12⅞ 327	11⅛ 283	14.65 6.65
	356	4 102	4 102	7200 32028	24 610	14 356	12¼ 311	22-24 559-610	13⁹⁄₁₆ 344	12¼ 311	15.50 7.03
	356Z	4 102	4 102	11000 48932	24 610	14 356	12¼ 311	22-24 559-610	13⅝ 346	12¼ 311	30.10 13.65
	357Z	5½ 140	5½ 140	11000 48932	30 762	16⅕ 411	13⅞ 352	30 559-610	15¾ 400	13⅞ 352	39.00 17.69
18 450	352	1½ 38	1½ 38	5000 22242	20 508	12¼ 311	10¾ 273	16-20 406-508	12¼ 311	10¾ 273	9.35 4.24
	353	2 51	2 51	7200 32028	24 610	13⅛ 333	11⅝ 295	22-24 559-610	12⅜ 314	11⅝ 295	12.00 5.44
	354	2½ 64	2½ 64	7200 32028	24 610	13½ 343	11¾ 298	22-24 559-610	13 330	11¾ 298	14.19 6.44
	355	3 76	3 76	7200 32028	24 610	14 356	12¼ 311	22-24 559-610	13½ 343	12¼ 311	15.25 6.92
	356	4 102	4 102	7200 32028	24 610	15⅜ 330	13⅝ 346	22-24 559-610	14⅝ 371	13⅝ 346	21.00 9.53
	356Z	4 102	4 102	13200 58719	24 610	15⅛ 384	13⅜ 340	22-24 559-610	14⅜ 365	13⅜ 340	40.30 18.28
	357Z	5½ 140	5½ 140	13200 58719	30 762	17⅓ 440	15 381	30 559-610	16⅞ 429	15 381	52.10 23.63
20 500	352	1½ 38	1½ 38	7200 32028	24 610	13½ 343	11¾ 298	22-24 559-610	13 330	11¾ 298	11.05 5.01
	353	2 51	2 51	7200 32028	24 610	14 356	12¼ 311	22-24 559-610	13½ 343	12¼ 311	12.40 5.62
	354	2½ 64	2½ 64	7200 32028	24 610	14⅝ 371	12⅞ 327	22-24 559-610	14⅛ 359	12⅞ 327	14.19 6.44
	355	3 76	3 76	7200 32028	24 610	15¼ 387	13¾ 349	26-30 660-762	14⅞ 378	13¾ 349	15.25 6.92
	356	4 102	4 102	7200 32028	30 762	16½ 359	14¼ 362	26-30 660-762	15¾ 400	14¼ 362	22.80 10.34
	356Z	4 102	4 102	13200 58719	7 178	16⅝ 422	14⅜ 365	26-30 660-762	15⅞ 403	14⅜ 365	44.80 20.32
	357Z	5½ 140	5½ 140	13200 58719	30 762	18⅓ 465	16 406	30 660-762	17⅞ 454	16 406	52.10 23.63
24 600	352	1½ 38	1½ 38	7200 32028	30 762	16⅜ 416	14⅛ 359	26-30 660-762	15¾ 400	14⅛ 359	12.90 5.85
	353	2 51	2 51	7200 32028	30 762	16⅜ 416	14⅛ 359	26-30 660-762	15¾ 400	14⅛ 359	13.90 6.28
	354	2½ 64	2½ 64	7200 32028	30 762	17 432	14¾ 375	26-30 660-762	16⅝ 422	14¾ 375	18.07 8.20
	355	3 76	3 76	7200 32028	30 762	17½ 445	15¼ 387	26-30 660-762	17⅛ 435	15¼ 387	19.35 8.78
	356	4 102	4 102	7200 32028	30 762	18¾ 422	16½ 419	26-30 660-762	18 457	16½ 419	23.10 10.48
	356Z	4 102	4 102	13200 58719	30 762	18⅞ 479	16⅝ 422	26-30 660-762	18⅛ 460	16⅝ 422	45.40 20.59

INSULATION SHIELD

Figure 265P

The Figure 265P is designed to protect the insulation and distribute the load at the hanger point. This item is usually used with our Figure 100 Clevis Hanger.

Material: Carbon Steel.

Finish: Electro-Galvanized.

Ordering: Specify hanger size, and figure number. For Metric applications specify Figure M265P.

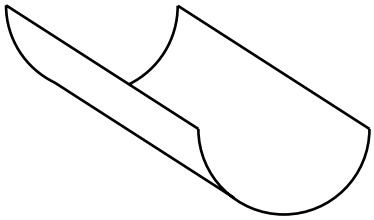


FIGURE 265P – INSULATION SHIELD

INSIDE DIAMETER	CLEVIS HANGER SIZE	LENGTH	WEIGHT EACH
2⅜ 60	2 50	12 305	0.62 0.28
2⅞ 73	2½ 65	12 305	0.76 0.34
3½ 89	3 80	12 305	0.92 0.42
4 102	3½ 90	12 305	1.04 0.47
4½ 114	4 100	12 305	1.16 0.53
5 127	5 125	12 305	1.32 0.60
5⅝ 143	5 125	12 305	1.46 0.66
6⅝ 168	6 150	12 305	1.58 0.72
7⅝ 194	7 175	12 305	1.74 0.79
8⅝ 219	8 200	12 305	2.02 0.92
9⅝ 244	10 250	12 305	2.28 1.03
10¾ 273	10 250	12 305	2.54 1.15
11¾ 298	12 300	12 305	2.84 1.29
12¾ 324	12 300	12 305	4.18 1.90
14 356	14 350	12 305	4.58 2.08
15 381	16 400	12 305	4.90 2.22
16 406	16 400	12 305	5.20 2.36
17 432	18 450	12 305	5.53 2.51
18 457	18 450	12 305	6.20 2.81
19 483	20 500	12 305	6.50 2.95
20 508	20 500	12 305	7.25 3.29
21 533	24 600	12 305	7.30 3.31
22 559	24 600	12 305	7.60 3.45
23 584	24 600	12 305	7.75 3.52
24 610	24 600	12 305	8.00 3.63

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

INSULATION SHIELD

Figure 265GS

The Figure 265GS is designed to support insulated pipe and prevent crushing of the insulation at the point of support. This item is usually used with our Figure 100 Clevis Hanger.

Approvals: Federal Specification A-A-1192 (Type 40), MSS-SP-69 (Type 40).

Material: Carbon Steel.

Finish: Electro-Galvanized.

Ordering: Specify hanger size, and figure number. For Metric applications specify Figure M265GS.

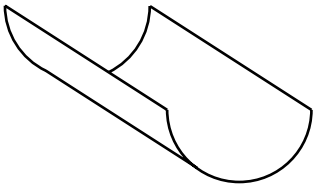


FIGURE 265GS – INSULATION SHIELD

INSIDE DIA.	CLEVIS HANGER SIZE	SHIELD GAUGE	LENGTH	WEIGHT EACH
2⅜ 60	2 50	18 1	12 305	0.62 0.28
2⅞ 73	2½ 65	18 1	12 305	0.76 0.34
3½ 89	3 80	18 1	12 305	0.92 0.42
4 102	3½ 90	18 1	12 305	1.04 0.47
4½ 114	4 100	18 1	12 305	1.16 0.53
5 127	5 125	18 1	12 305	1.32 0.60
5⅝ 143	6 150	18 1	12 305	1.46 0.66
6⅝ 168	6 150	16 1	12 305	2.30 1.04
7⅝ 194	7 175	16 1	12 305	2.70 1.22
8⅝ 219	8 200	16 1	12 305	3.00 1.36
9⅝ 244	10 250	16 1	18 457	5.10 2.31
10¾ 273	10 250	16 1	18 457	5.60 2.54
11¾ 298	12 300	14 2	24 610	10.00 4.50
12¾ 324	12 300	14 2	24 610	11.00 5.00
14 356	14 350	14 2	24 610	12.00 5.40
15 381	16 400	14 2	24 610	13.00 5.90
16 406	16 400	14 2	24 610	14.00 6.40
17 432	18 450	14 2	24 610	15.00 6.80
18 457	18 450	12 3	24 610	17.00 7.70
19 483	20 500	12 3	24 610	23.00 10.40
20 508	20 500	12 3	24 610	24.00 10.90
21 533	24 600	12 3	24 610	25.00 11.30
22 559	24 600	12 3	24 610	26.00 11.80
23 584	24 600	12 3	24 610	28.00 12.70
24 610	24 600	12 3	24 610	29.00 13.20
26 660	30 750	12 3	24 610	31.00 14.10
27 686	30 750	12 3	24 610	32.00 14.50
28 711	30 750	12 3	24 610	34.00 15.40

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

HIGH TEMPERATURE PIPE INSULATION SHIELD

Figure 465 CVB

The Figure 465 CVB is designed to insulated the pipe for thermal efficiency. It is comprised of a calcium silicate insert resting on an outer wrapper and a galvanized steel shield. Recommended for an operating temperature range of +250° F (+121° C) to +1200° F (+648° C).

Materials: Calcium Silicate, ASJ (Outer Wrapper), and Carbon Steel.

Finish: Galvanized.

Ordering: Specify pipe size, covering thickness, and figure number. For Metric applications specify Figure M465CVB.

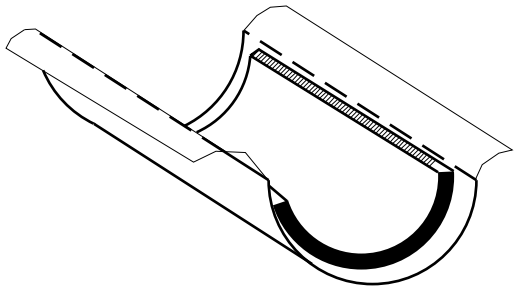


FIGURE 465 CVB – HIGH TEMPERATURE PIPE SHIELD

PIPE SIZE	LENGTH OF OUTER WRAP	NOMINAL INSULATION THICKNESS WEIGHT ¾"	1"	1½"	2"
½	10	0.50	0.60	1.00	1.56
15	254	0.23	0.27	0.45	0.71
¾	10	0.56	0.64	1.04	1.53
20	254	0.25	0.29	0.47	0.69
1	10	0.62	0.78	1.40	1.74
25	254	0.28	0.35	0.64	0.79
1¼	10	0.76	0.82	1.55	1.81
32	254	0.34	0.37	0.70	0.82
1½	10	0.78	0.94	1.65	2.15
40	254	0.35	0.43	0.75	0.98
2	10	0.90	1.29	1.88	2.33
50	254	0.41	0.59	0.85	1.06
2½	10	1.23	1.43	2.22	3.24
65	254	0.56	0.65	1.01	1.47
3	10	1.51	1.61	2.34	3.40
80	254	0.68	0.73	1.06	1.54
4	10	1.74	2.11	3.32	4.06
100	254	0.79	0.96	1.51	1.84
5	10	3.04	2.77	3.58	5.11
125	254	1.38	1.26	1.62	2.32
6	10	2.93	3.20	4.43	5.90
150	254	1.33	1.45	2.01	2.68
8	16	3.64	3.27	6.95	8.78
200	406	1.65	1.48	3.15	3.98
10	16	4.10	4.17	7.45	8.95
250	406	1.86	1.89	3.38	4.06
12	16	4.74	4.87	7.75	9.04
300	406	2.15	2.21	3.52	4.10
14	16	5.29	5.35	7.95	9.25
350	406	2.40	2.43	3.61	4.20
16	16	6.15	6.25	8.04	9.47
400	406	2.79	2.84	3.65	4.30
18	16	6.67	6.75	8.27	9.60
450	406	3.03	3.06	3.75	4.35
20	16	8.75	8.85	8.95	9.67
500	406	3.97	4.01	4.06	4.39

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

HARVARD ROLL HANGER

Figure 140

Designed to support piping lines from above, allowing for vertical adjustment, and axial movement in the piping. The lower nut (not furnished) adjusts the pipe line to the proper elevation, the top nut (not furnished) prevents loosening due to vibration, and must be tightened securely to assure proper hanger performance.

Material: Carbon Steel frame with a Cast Iron Roll. Do not exceed 450° F / 232° C at the contact point to the roll.

Compliance: A-A-1192A Type 43 and MSS-SP-69 Type 43.

Finish: Plain, Galvanized.

For pipe with insulation and a pipe covering protection saddle the Figure 140 will have to be oversized to suit. Please see the Table below showing the correct sizing for insulated pipe.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M140.

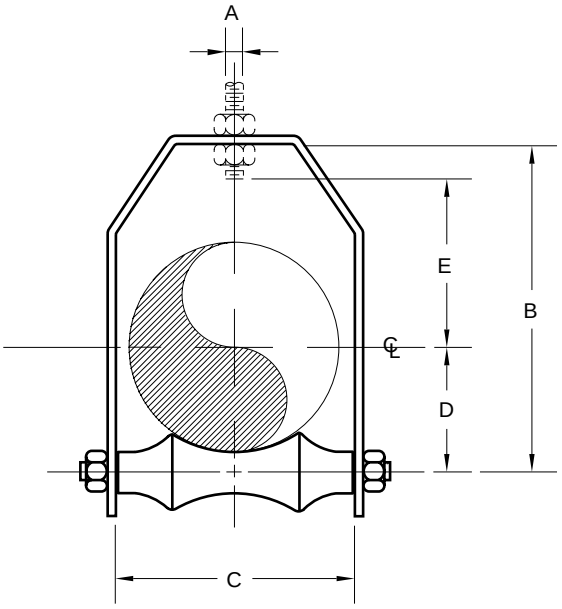


FIGURE 140 – HARVARD ROLL HANGER

PIPE SIZE	MAXIMUM LOAD	ROD SIZE A	B	C	D	E	WEIGHT EACH
2	150	½	4¼	2¾	1⅝	2⅝	1.60
50	667	M12	108	70	41	67	0.73
2½	225	½	4⅞	3¼	2	2⅞	2.00
65	1001	M12	124	83	51	73	0.91
3	310	½	6¼	3⅞	2¼	3⅛	2.30
80	1379	M12	159	98	57	79	1.04
3½	390	½	6⅞	4½	2⅝	3½	2.50
90	1735	M12	175	114	67	89	1.13
4	475	⅝	7½	4⅞	2⅞	3⅝	4.00
100	2113	M16	191	124	73	92	1.81
5	685	⅝	8⅜	6⅜	3½	4½	5.30
125	3047	M16	213	162	89	114	2.40
6	780	¾	9⅞	7⅝	4	5	7.00
150	3470	M20	251	194	102	127	9.40
7	780	¾	11⅛	8½	4¾	5¼	9.40
175	3470	M20	283	216	121	133	4.26
8	780	⅞	12⅝	9½	5⅛	6⅛	12.30
200	3470	M20	321	241	130	156	5.58
10	965	⅞	15	11¼	6¼	7¼	19.30
250	4293	M20	381	286	159	184	8.75
12	965	⅞	17⅛	13½	7½	8⅜	23.10
300	4293	M20	435	343	191	213	10.50
14	1200	1	18⅜	14⅝	8⅜	8¾	35.50
350	5338	M24	467	371	213	222	16.10
16	1400	1	20½	17¼	9½	9¾	46.50
400	6228	M24	521	438	241	248	21.10
18	1400	1	23⅛	19	10½	11½	57.00
450	6228	M24	587	483	267	292	25.90
20	1600	1¼	24½	21	11⅝	12¼	75.90
500	7117	M30	622	533	295	311	34.40
24	1800	1½	29⅞	24¾	14	15¾	119.30
600	8007	M36	759	629	356	400	54.10

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

Figure 140 PIPE SIZE OF ROLL	PIPE SIZE OF COVERING PROTECTION SADDLE to be used with Figure 140					
	Figure 351 1" Cov. 25	Figure 352 1½" Cov. 38	Figure 353 2" Cov. 51	Figure 354 2½" Cov. 64	Figure 355 3" Cov. 76	Figure 356 4" Cov. 100
2½ 65	¾ 20					
3 80	1 to 1½ 25 to 40					
4 100	2 to 2½ 50 to 65	1 to 1½ 25 to 40				
5 125	3 to 3½ 80 to 90	2 to 2½ 50 to 65	¾ to 1½ 20 to 40			
6 150	4 100	3 to 3½ 80 to 90	2 to 2½ 50 to 65	¾ to 1 20 to 25		
7 175	5 125	4 100	3 to 3½ 80 to 90	1¼ to 1½ 32 to 40	2 50	
8 200	6 150	5 125	4 100	2 to 3 50 to 80	2½ 65	
10 250	8 200	6 150	5 to 6 125 to 150	3½ to 5 90 to 125	3 to 4 80 to 100	
12 300	10 250	8 200	8 200	6 150	5 to 6 125 to 150	
14 350	12 300	10 250		8 200	5 to 6 125 to 150	
16 400	14 350	12 300	10 250	10 250	8 200	8 200
18 450		14 350	14 250	12 300	12 300	10 250
20 500		16 400	16 400	14 350	14 350	12 300
24 600		20 500	20 500	18 450	18 450	16 400

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

ADJUSTABLE ROLL SUPPORT

Figure 142

The Figure 142 is designed for longitudinal movement of pipe where vertical adjustment is required. Although primarily used for support of the pipe, this component may also be placed over the pipe to act as a guide.

Material: Cast Iron Pipe Roll and Sockets with a Carbon Steel Axle. Do not exceed 450° F / 232° C at the contact point to the roll.

Compliance: A-A-1192A Type 42, MSS SP-69 Type 41.

Finish: Plain, Galvanized.

For pipe with insulation and a pipe covering protection saddle the Figure 142 will have to be oversized to suit. Please see the Table below which shows the correct sizing for insulated pipe.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M142.

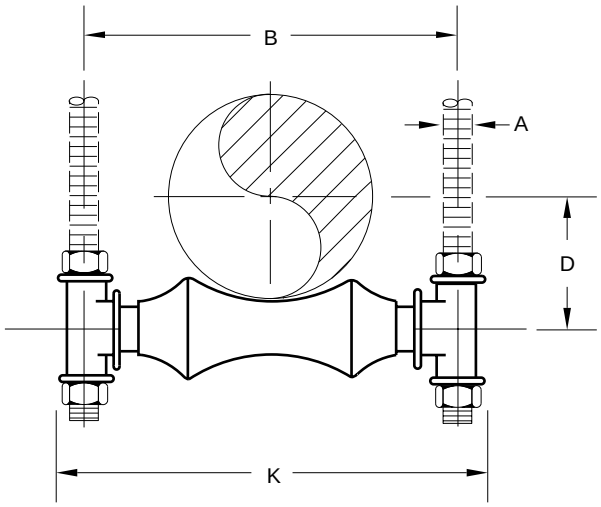


FIGURE 142 – ADJUSTABLE ROLL SUPPORT

PIPE SIZE	MAX LOAD	ROD SIZE A	B	D	K	WGT. EACH
1 25	600 2669	⅜ M10	3 76	1 25	4⅛ 105	0.45 0.20
1¼ 32	600 2669	⅜ M10	3⅜ 86	1¼ 32	4½ 114	0.48 0.22
1½ 40	600 2669	⅜ M10	3⅝ 92	1⅜ 35	4¾ 121	0.51 0.23
2 50	600 2669	⅜ M10	4⅛ 105	1⅝ 41	5¼ 133	0.57 0.26
2½ 65	600 2669	½ M12	5½ 140	2 51	7 178	1.48 0.67
3 80	700 3114	½ M12	6⅛ 156	2¼ 57	7⅝ 194	1.48 0.67
4 100	700 3114	⅝ M16	7⅛ 181	2⅞ 73	8⅝ 219	1.78 0.81
5 125	700 3114	⅝ M16	8⅜ 213	3½ 89	9⅞ 251	2.42 1.10
6 150	1000 4448	¾ M20	9⅝ 244	4 102	11⅜ 289	3.96 1.80
7 175	1200 5338	¾ M20	10¾ 273	4¾ 121	12½ 318	5.99 2.72
8 200	1300 5783	⅞ M20	12 305	5⅛ 130	14 356	6.43 2.92
10 250	1700 7562	⅞ M20	14⅛ 359	6¼ 159	16 406	8.45 3.83
12 300	2400 10676	⅞ M20	16⅛ 410	7½ 191	18 457	10.20 4.63
14 350	3100 13790	1 M24	17¾ 451	8⅜ 213	20 508	20.90 9.48
16 400	3900 17349	1 M24	19⅞ 505	9½ 241	22⅛ 562	26.07 11.80
18 450	4200 18683	1 M24	22⅛ 562	10½ 267	24⅜ 619	36.59 16.60
20 500	4500 20018	1¼ M30	24 ⅛ 613	11⅝ 295	26⅝ 676	39.00 17.70
24 600	6100 27135	1½ M36	28⅞ 733	14 356	32⅛ 816	66.90 30.30
30 750	7200 32028	1½ M36	35½ 902	17½ 445	39⅞ 1013	134.00 60.80

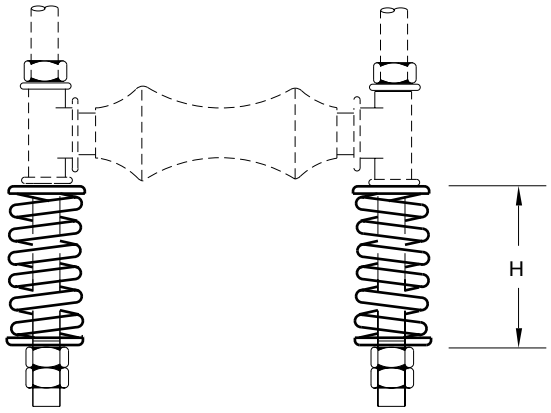
DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

Figure 142 PIPE SIZE OF ROLL	PIPE SIZE OF COVERING PROTECTION SADDLE to be used with Figure 142					
	Figure 351 1" Cov. 25	Figure 352 1½" Cov. 38	Figure 353 2" Cov. 51	Figure 354 2½" Cov. 64	Figure 355 3" Cov. 76	Figure 356 4" Cov. 102
2½ 65	¾ to 1 20 to 25					
3 80	1¼ to 1½ 32 to 40	¾ to 1 20 to 25				
4 100	2½ to 3 65 to 80	1½ 40	¾ to 1 20 to 25			
5 125	3½ 90	2 to 2½ 50 to 65	1¼ to 1½ 32 to 40	¾ to 1 20 to 25		
6 150	4 to 5 100 to 125	3 to 3½ 80 to 90	2 to 2½ 50 to 65	1¼ to 1½ 32 to 40		
7 175	6 150	4 to 5 100 to 125	3 to 4 80 to 100	2 to 2½ 50 to 65	2 to 2½ 50 to 65	
8 200		6 150	5 125	3 to 3½ 80 to 90	3 to 3½ 80 to 90	
10 250	8 200	8 200	6 150	4 to 5 100 to 125	4 to 5 100 to 125	
12 300	10 250	10 250	8 200	6 150	6 to 8 150 to 200	4 to 6 100 to 150
14 350	12 300	12 300	10 250	8 200		
16 400	14 350	14 350	12 to 14 300 to 350	10 250	10 250	8 200
18 450	16 400	16 400	16 400	12 to 14 300 to 400	12 to 14 300 to 400	10 250
20 500	18 450	18 450		16 400		12 300
24 600	20 500	20 500	18 to 20 450 to 500	18 to 20 450 to 500	16 to 20 400 to 450	14 to 18 350 to 450
30 750	24 600	24 600	24 600	24 600	24 600	20 to 24 500 to 600

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

CUSHION SPRING ASSEMBLY

Figure 478



Designed to provide an economical method to support piping with both vertical and axial movement as well as absorbing vibration normally found in piping systems.

Comprised of two spring coils and four steel caps the Cushion Spring Assembly is used in conjunction with our Figure 142 Two Rod Roll Hanger and drop rods, both must be ordered separately. The Figure 478 can also be used for insulated piping provided the correct saddle has been ordered from this catalog.

In selecting the correct spring size consideration should be given to weight of pipe to be supported and its contents, concentrated loads, as well as the anticipated deflection.

Material: Carbon Steel.

Finish: Plain.

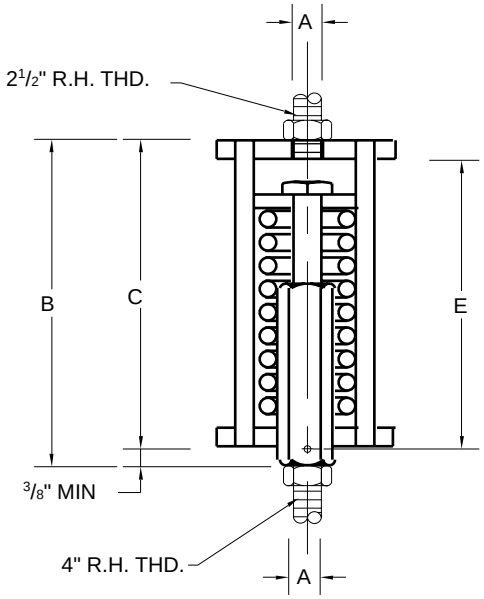
Ordering: Specify drop rod diameter, spring number, figure number, and finish. For Metric applications specify Figure M478.

FIGURE 478 – CUSHION SPRING ASSEMBLY

SPRING NUMBER	MAXIMUM LOAD	MAXIMUM DEFLECTION	SPRING DEFLECTION	ROD SIZE	MAXIMUM ROD SIZE	H	WEIGHT EACH
1	535	1¼	428 lbs./in.	⅜	¾	6¼	4.5
1	2380	32	74 N/mm	M10	M20	159	2.0
2	1500	1¼	1200 lbs./in.	½	¾	5⅝	14.0
2	6673	32	208 N/mm	M12	M20	143	6.4
3	3000	1¼	3000 lbs./in.	⅞	1½	8⅞	22.0
3	13345	32	417 N/mm	M20	M36	225	10.0

SPRING HANGER

Figure 399



Designed to provide an economical means to support low pipe loads with vertical movement. In selecting the correct spring size consideration should be given to weight of pipe to be supported and its contents, insulation, concentrated loads, as well as the anticipated deflection. Please see our Engineered Spring Catalog for units requiring higher loads and/or greater movements.

Material: Carbon Steel.

Finish: Painted.

Ordering: Specify spring size, figure number, and finish. For Metric applications specify Figure M399.

FIGURE 399 – SPRING HANGER

SPRING NO.	MAX. LOAD	MAX. DEFLECTION	SPRING DEFLECTION	A	B		C	E	WEIGHT EACH
					MIN.	MAX.			
1	52	2	26 lbs./in.	⅜	4½	6½	4⅛	3¾	1.60
1	231	51	4.5 N/mm	M10	114	165	105	95	0.73
2	115	1¾	66 lbs./in.	⅜	4½	6¼	4⅛	3¾	2.38
2	512	44	11.6 N/mm	M10	114	159	105	95	1.08
3	163	1⅞	87 lbs./in.	½	5⅞	7¾	5½	5	2.87
3	725	48	15.1 N/mm	M12	149	197	140	127	1.30
4	266	1¾	152 lbs./in.	½	5⅞	7⅞	5½	5	3.50
4	1183	44	26.8 N/mm	M12	149	194	140	127	1.59
5	400	2	200 lbs./in.	⅝	6¾	8¾	6⅜	5¾	6.80
5	1779	51	34.9 N/mm	M16	171	222	162	146	3.08
6	600	2½	240 lbs./in.	¾	8⅜	10⅞	8	7⅜	9.82
6	2669	64	41.7 N/mm	M20	213	276	203	187	4.45

ROLLER CHAIR

Figure 54

The Figure 54 is designed for longitudinal movement of pipe where vertical adjustment is not required. Although two bolts are supplied for installation the chair can be alternatively welded in position

Material: Carbon Steel Chair and Axle with Cast Iron Pipe Roll. Use a Figure 17 when a Cast Iron Chair is required. Do not exceed 450° F / 232° C at the contact point to the roll.

Finish: Plain, Galvanized.

For pipe with insulation and a pipe covering protection saddle the Figure 54 will have to be oversized to suit. Please see the Table for the Figure 142 which shows the correct sizing for insulated pipe.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M54.

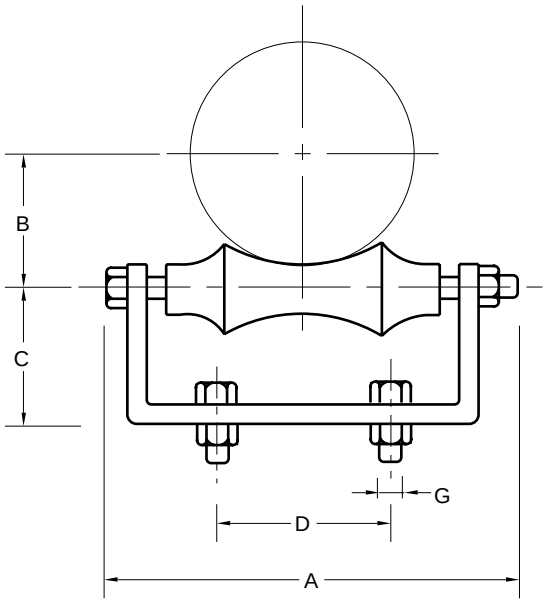


FIGURE 54 – ROLLER CHAIR

PIPE SIZE	MAX LOAD	A	B	C	D	BOLT SIZE G	WEIGHT EACH
2	300	4⅞	1⅝	1½	2	⅜ x 1½	1.10
50	1335	124	41	38	51	M10 x 38	0.50
2½	600	4⅞	2	1⅝	2	⅜ x 1½	1.40
65	2669	124	51	41	51	M10 x 38	0.64
3	600	6	2¼	1¾	2	⅜ x 1½	1.60
80	2669	152	57	44	51	M10 x 38	0.73
3½	600	6½	2⅝	2⅛	2	⅜ x 1½	2.60
90	2669	165	67	54	51	M10 x 38	1.18
4	700	7	2⅞	2⅜	2½	⅜ x 1½	2.90
100	3114	178	73	60	64	M10 x 38	1.32
5	700	7⅝	3½	2½	3	½ x 2	3.90
125	3114	194	89	64	76	M12 x 51	1.77
6	1000	9¾	4	2¾	3¼	½ x 2	6.00
150	4448	248	102	70	83	M12 x 51	2.72
8	1300	11⅞	5⅛	3	4½	⅝ x 2	9.00
200	5783	302	130	76	114	M16 x 51	4.08
10	1700	14½	6⅜	3⅝	5	¾ x 2½	13.80
250	7562	368	162	92	127	M20 x 64	6.26
12	2300	16¼	7½	4⅛	6	¾ x 2½	18.90
300	10231	413	191	105	152	M20 x 64	8.57
14	3100	18½	8⅜	4¾	6½	¾ x 2½	28.10
350	13790	470	213	121	165	M20 x 64	12.70
16	3900	20	9⅜	5⅜	10	⅞ x 3	34.90
400	17349	508	238	137	254	M20 x 76	15.80
18	4200	22¾	10½	6	9¼	¾ x 2½	44.40
450	18683	578	267	152	235	M20 x 64	20.10
20	4500	25⅝	11⅜	6½	10¼	¾ x 2½	56.30
500	20018	651	295	165	260	M20 x 64	25.60
24	6000	30	14	7⅞	12¼	⅞ x 3½	87.50
600	26690	762	356	200	311	M20 x 102	39.70

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ADJUSTABLE ROLL SUPPORT

Figure 109

The Figure 109 is designed for longitudinal movement of pipe where vertical adjustment of up to six inches of is required. This part is normally used directly above the supporting structure.

Material: Cast Iron Pipe Roll and Sockets, Carbon Steel Axle, Continuous Thread Rods, and Hex Nuts. Do not exceed 450° F / 232° C at the contact point to the roll.

Finish: Plain, Galvanized.

For pipe with insulation and a pipe covering protection saddle the Figure 109 will have to be oversized to suit. Please see the Table for the Figure 142 which shows the correct sizing for insulated pipe.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M109.

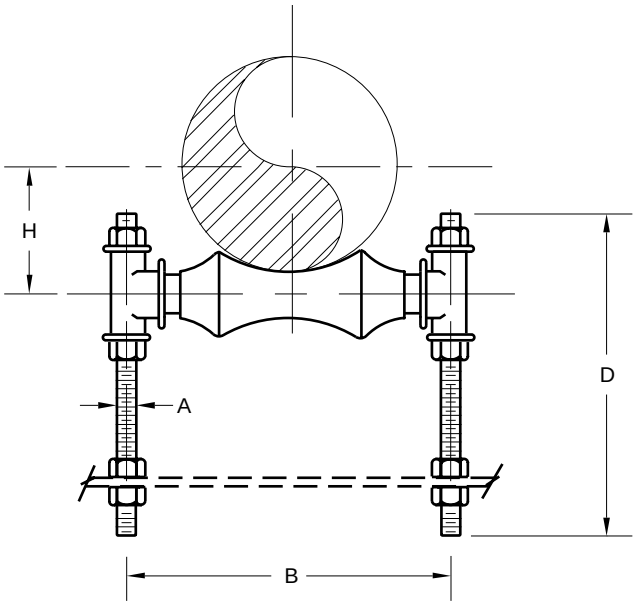


FIGURE 109 – ADJUSTABLE ROLL SUPPORT

PIPE SIZE	MAX LOAD	A	B	D	H	WGT. EACH
1¼	300	⅜	3⅜	7¼	1¼	1.08
32	1335	M10	86	184	32	0.49
1½	300	⅜	3⅜	7¼	1⅜	1.11
40	1335	M10	92	184	35	0.50
2	300	⅜	4⅛	7¼	1⅝	1.65
50	1335	M10	105	184	41	0.75
2½	600	½	5½	8	2	2.72
65	2669	M12	140	203	51	1.23
3	600	½	6⅛	8	2¼	2.72
80	2669	M12	156	203	57	1.23
3½	700	½	7⅛	8	2⅝	2.72
90	3114	M12	181	203	67	1.23
4	700	⅝	7⅛	8½	2⅞	3.91
100	3114	M16	181	216	73	1.77
5	700	⅝	8⅜	9	3½	4.63
125	3114	M16	213	229	89	2.10
6	1000	¾	9⅝	9	4	7.07
150	4448	M20	244	229	102	3.21
8	1300	⅞	12	10	5⅛	11.40
200	5783	M20	305	254	130	5.15
10	1700	⅞	14⅛	11	6⅜	13.70
250	7562	M20	359	279	162	6.22
12	2300	⅞	16⅛	12	7½	15.90
300	10231	M20	410	305	191	7.21
14	3075	1	17¾	12	8⅜	28.70
350	13679	M24	451	305	213	13.00
16	3970	1	20½	18	9½	42.50
400	17660	M24	502	457	241	19.30
18	4200	1	22⅛	18	10½	46.60
450	18683	M24	556	457	267	21.10
20	4550	1¼	24⅛	18	11⅝	66.20
500	20240	M30	616	457	295	30.00
24	6160	1½	28⅜	24	14	102.50
600	27402	M36	727	610	356	46.50
30	7290	1½	35½	24	17½	186.80
750	32429	M36	902	610	445	84.70

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ROLLER SUPPORT

Figure 333

The Figure 333 is designed for axial movement of pipe where vertical adjustment is required. This part is normally used directly above the supporting structure.

Material: Cast Iron Pipe Roll, Carbon Steel Axle, Chair, and Hex Nuts. Do not exceed 450° F / 232° C at the contact point to the roll.

Finish: Plain, Galvanized.

For pipe with insulation and a pipe covering protection saddle the Figure 333 will have to be oversized to suit. Please see the Table for the Figure 142 which shows the correct sizing for insulated pipe.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M333.

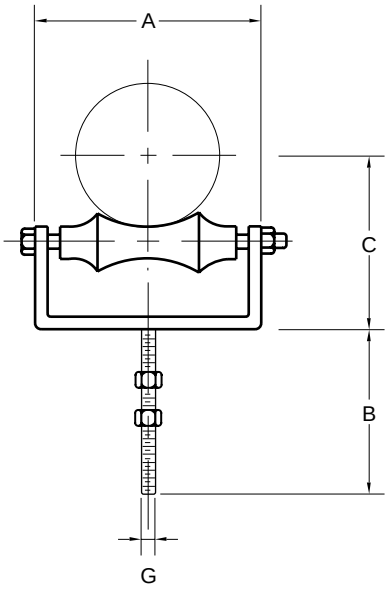


FIGURE 333 – ROLLER SUPPORT

PIPE SIZE	MAXIMUM LOAD	A	B	C	ROD G	WEIGHT EACH
2 50	400 1779	2⅞ 73	6 152	2⅞ 73	½ M12	2.09 0.95
2½ 65	400 1779	3⅜ 86	6 152	3¼ 83	½ M12	2.43 1.10
3 80	400 1779	4 102	6 152	3⅝ 92	½ M12	2.65 1.20
3½ 90	400 1779	4½ 114	6 152	4 102	½ M12	2.72 1.23
4 100	600 2669	5⅛ 130	6 152	4⅝ 110	⅝ M16	3.43 1.56
5 125	600 2669	6⅛ 156	6 152	5⅛ 129	⅝ M16	4.26 1.93
6 150	900 4004	7¼ 184	6 152	6 152	¾ M20	7.71 3.50
8 200	900 4004	9⅜ 238	6 152	7¼ 184	¾ M20	9.93 4.50
10 250	1100 4893	11½ 292	6 152	8 13⁄16 224	1 M24	16.70 7.55
12 300	1100 4893	13½ 343	6 152	10 5⁄16 262	1 M24	19.30 8.77

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

PIPE ROLL

Figure 173

The Figure 173 is used in conjunction with our Figure 140, 142, and 333 Roll Hangers The inside of the roll is cored. A special non-conductive roll is available upon request.

Material: Cast Iron.
Do not exceed 450° F / 232° C at the contact point to the roll.

Finish: Plain, Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M173.

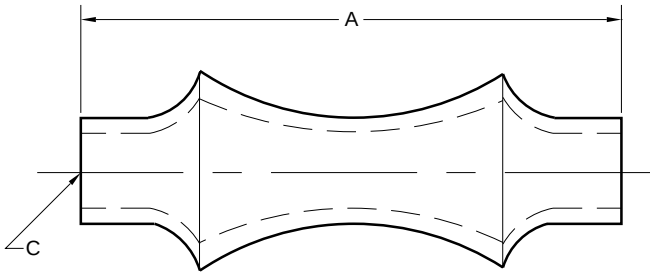


FIG. 173 – PIPE ROLL

PIPE SIZE	A	Roll Rod Diameter C	WEIGHT EACH
1 25	1½ 38	⅜ 10	0.12 0.05
1¼ 32	1⅞ 48	⅜ 10	0.18 0.08
1½ 40	2⅛ 54	⅜ 10	0.24 0.11
2 50	2⅞ 73	⅜ 10	0.34 0.15
2½ 65	3⅛ 79	½ 13	0.37 0.17
3 80	3¾ 95	½ 13	0.42 0.19
3½ 90	4⅜ 111	½ 13	0.68 0.31
4 100	4¾ 121	½ 13	0.90 0.41
5 125	5⅞ 149	⅝ 16	1.29 0.59
6 150	6¾ 171	⅝ 16	1.8 0.82
7	8 203	1 19	2.4 1.09
8 200	8⅞ 225	¾ 19	3.3 1.50
10 250	11 279	⅞ 22	4.8 2.18
12 300	13 330	⅞ 22	10.0 4.5
14 350	14⅜ 365	1 25	12.0 5.4
16 400	16⅞ 429	1¼ 32	19.0 8.6
18 450	18⅜ 467	1¼ 32	22.5 10.2
20 500	20⅜ 518	1¼ 32	22.6 10.3
24 600	24¼ 616	1½ 38	43.7 19.8
30 750	30¼ 768	1¾ 44	98 44.5

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

ROLL AND PLATE

Figure 63

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.

Material: Steel Plate, Cast Iron Roll. Do not exceed 450° F / 232° C at the contact point to the roll.

Finish: Plain, Galvanized.

Ordering: Specify plate number and figure number.

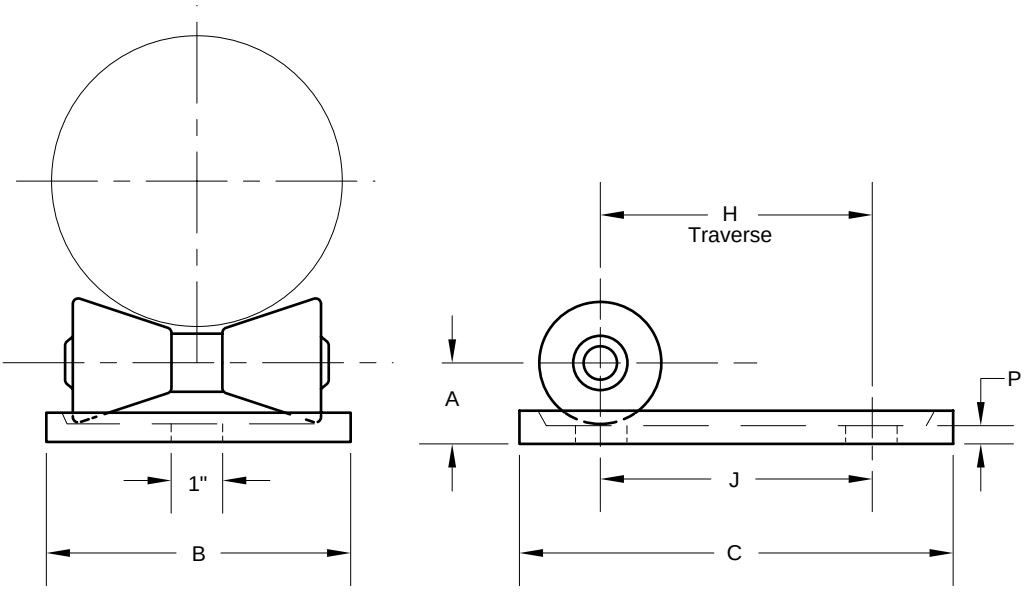


FIGURE 63 – ROLL AND PLATE

PLATE NO.	PIPE SIZES	MAXIMUM LOAD	A	B	C	H	J	P	WEIGHT EACH
1A	2-3	390	1¼	3⅛	6⅜	4⅜	3⅞	5/16	3.16
1A	50 - 80	177	32	79	162	111	98	8	1.43
1	4-6	950	1⅜	4⅛	7⅜	5¼	4¾	5/16	4.75
1	100 - 150	431	35	105	187	133	121	8	2.15
2	8-10	2100	2	6½	8½	5⅜	5¾	⅜	11.4
2	200 - 250	953	51	165	216	137	146	10	5.17
3	12-14	3075	2½	8⅝	9⅝	6¼	6½	⅜	21.9
3	300 - 350	1395	64	219	244	159	165	10	9.93
4	16-20	4980	2¾	9⅝	10⅝	7	7½	½	28.2
4	400 - 500	2259	70	244	270	178	191	13	12.8
5	24	6100	2⅞	10¾	11¾	8	8½	⅝	38.9
5	600	2767	73	273	298	203	216	16	17.6
6	30	7500	3⅜	13½	13	8½	9½	⅝	59.0
6	750	3402	86	343	330	216	241	16	26.7

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

PIPE ROLL

Figure 67

Our Figure 67 Pipe Roll is used with Figure17, 39, 40,and 53 adjustable and non-adjustable chairs and rolls, also on various types of hangers and supports

This product is shown for conceptual special assembly design purposes only and is not sold as an individual product.

Material: Cast Iron.

Do not exceed 450° F / 232° C at the contact point to the roll.

Finish: Plain, Galvanized.

Ordering: Specify roll size and figure number. For Metric applications specify Figure M67.

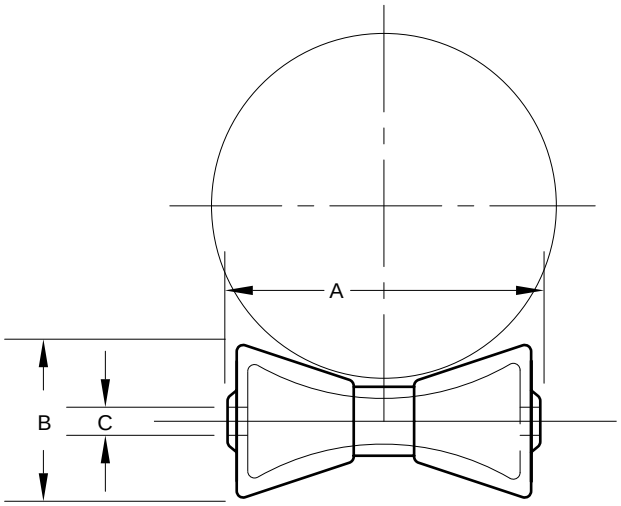


FIGURE 67 – PIPE ROLL

ROLL NO.	PIPE SIZES	A	B	ROD C	WEIGHT EACH
1A	2-3	2 11/16	1 7/8	½	1.02
1A	50 - 80	68	48	M12	0.46
1	4-6	3¾	2 1/16	½	1.26
1	100 - 150	95	52	M12	0.57
2	8-10	6	3¼	¾	4.42
2	200 - 250	152	83	M20	2.00
3	12-14	8	4	⅞	8.82
3	300 - 350	203	102	M20	4.00
4	16-20	9⅛	4½	1⅛	12.2
4	400 - 500	232	114	M30	5.53
5	24	10	4 7/16	1⅛	14.5
5	600	254	113	M36	6.58
6	30	12½	5½	1¼	23.6
6	750	318	140	M42	10.7

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

CHAIR AND ROLL

Figure 17

The Figure 17 is designed for longitudinal movement of pipe where vertical adjustment is not required.

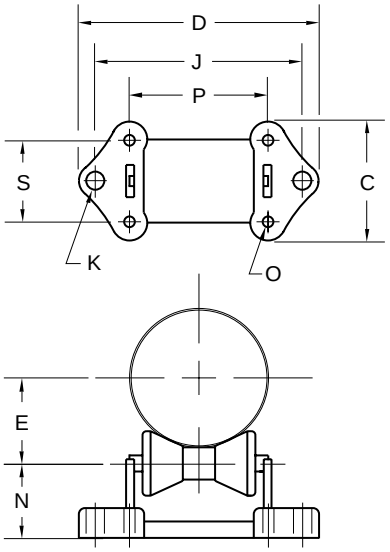
Material: Cast Iron Pipe Roll and Chair with Carbon Steel Axle. Use a Figure 39 when a Carbon Steel Chair is required. Do not exceed 450° F / 232° C at the contact point to the roll.

Compliance: Federal Specification A-A-1192A Type 44, MSS-SP-69 Type 44.

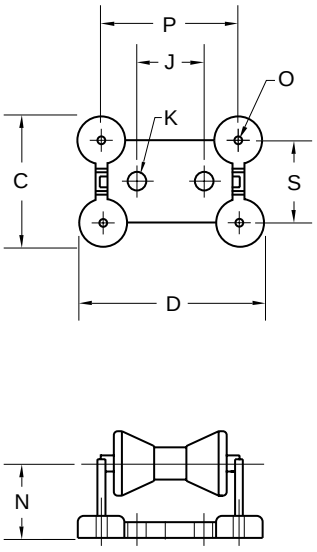
Finish: Plain, Galvanized.

For pipe with insulation and a pipe covering protection saddle the Figure 17 will have to be oversized to suit. Please see the Table on page 62 showing the correct sizing for insulated pipe.

Ordering: Specify chair number, figure number, and finish. For Metric applications specify Figure M17.



PIPE SIZES 2" TO 4"



PIPE SIZES 8" TO 30"

FIGURE 17 – CHAIR AND ROLL

CHAIR NO.	MAX LOAD	BARE PIPE SIZE	C	D	E	J	K	N	O	P	S	WGT. EA.
1A	390	2	5¾	8½	1½	6½	1	2	7/16	3½	4⅛	7.0
		2½			1¾							
		3			2½							
		3½			2¾							
1A	1735	50	146	216	38	165	25	51	11	89	105	3.2
		65			44							
		80			64							
		90			70							
1	950	4	5¾	10⅛	2¾	8	1	2⅜	9/16	4¾	4¼	10.5
		5			3⅜							
		6			3⅞							
1	4226	100	146	257	70	203	25	60	14	121	108	4.8
		125			86							
		150			98							
2	2100	8	6⅞	8⅞	5⅛	4	⅞	3¾	⅝	7	5	16.5
		10			6¼							
2	9342	200	175	225	130	102	22	95	16	178	127	7.5
		250			159							
3	3075	12	7⅞	11	7⅜	5¾	⅞	4¾	9/16	9¼	6	26.8
		14			8							
3	13679	300	200	279	187	146	22	121	14	235	152	12.2
		350			203							
4	4980	16	8¾	12½	8⅞	6¾	1	4⅝	¾	10¼	6½	40.5
		18			10							
		20			11							
4	22153	400	222	318	225	171	25	117	19	260	165	18.4
		450			254							
		500			279							
5	6100	24	8⅞	13¾	13	7½	1	4¾	13/16	11½	6¾	51.0
5	27135	600	225	349	330	191	25	121	21	292	171	23.1
6	7500	30	10¾	17¼	16¼	10	1	5⅝	1	14⅜	8	89.8
6	33363	750	273	438	413	254	25	143	25	365	203	40.7
7	12000	36	12	18¾	20	12	1	5¾	1 5/16	17	9	152
		42			23⅛							
7	53381	900	305	476	508	305	25	146	33	432	229	68.9
		1050			587							

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ADJUSTABLE CHAIR AND ROLL

Figure 53

The Figure 53 is designed for longitudinal movement of pipe where vertical and lateral adjustment is required.The correct height can be obtained by adjusting the screws at each corner. The correct lateral location can be achieved by sliding the chair on the ends of the adjusting screws. The Figure 53 may be used without the Base Plate to rest on customer provided flooring or structure.

Material: Cast Iron Chair, Base and Roll. Carbon Steel Axle and Adjusting Screws. Use a Figure 40 when a Carbon Steel Base is required. Do not exceed 450° F / 232° C at the contact point to the roll.

Compliance: Federal Specification A-A-1192A Type 46, MSS-SP-69 Type 46.

Finish: Plain, Galvanized.

For pipe with insulation and a pipe covering protection saddle the Figure 53 will have to be oversized to suit. Please see the Table below showing the correct sizing for insulated pipe.

Ordering: Specify chair number, figure number, and finish. For Metric applications specify Figure M53.

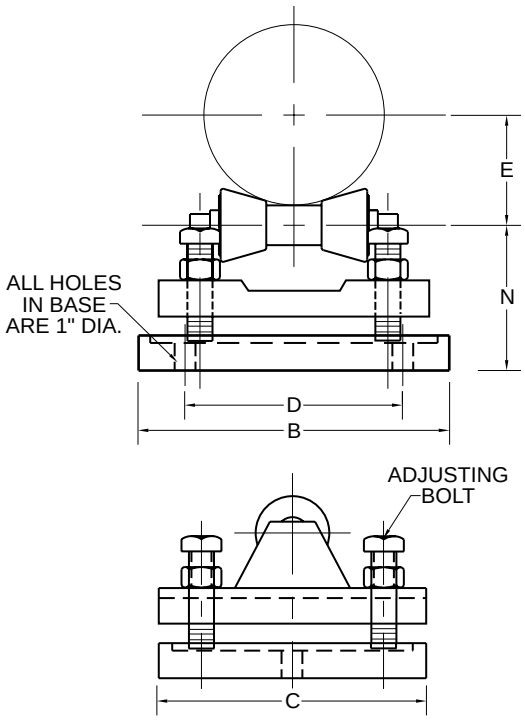


FIGURE 53 – ADJUSTABLE STEEL CHAIR AND ROLL

CHAIR NO.	MAX LOAD	BARE PIPE SIZE	B	C	D	E	N MIN.	N MAX.	WGT. EA.
1A	390	2	6⅞	5½	3⅞	1¾	3	3⅞	15.5
		2½				2⅛			
		3				2½			
		3½				2½			
1A	1735	50	175	140	98	44	76	98	7.0
		65				54			
		80				64			
		90				64			
1	950	4	8⅛	5¾	5⅛	2⅞	3⅜	4½	20.7
		5				3			
		6				3⅞			
1	4226	100	206	146	130	73	86	114	9.4
		125				76			
		150				98			
2	2100	8	10⅝	6¾	7⅜	5⅜	4⅞	6⅝	34.3
		10				6			
2	9342	200	270	171	187	137	124	168	15.6
		250				152			
3	3075	12	13	8	9½	7⅛	5⅞	7⅝	50.6
		14				8			
3	13679	300	333	203	241	181	149	194	23.0
		350				203			
4	4980	16	14⅝	8⅝	11⅛	9¼	5⅞	7¾	73.6
		18				10½			
		20				11¼			
4	22153	400	371	219	283	235	149	197	33.4
		450				267			
		500				286			
5	6100	24	15¾	8⅝	12¼	13⅜	6⅛	8	88.7
5	27135	600	400	219	311	340	156	203	40.2
6	7500	30	19¼	10½	15¾	16⅞	7¼	10½	166
6	33363	750	489	267	400	429	184	267	75.3
7	12000	36	22½	12	16	20	8⅜	11¾	233
7	53381	900	572	305	406	508	213	298	106
7	12000	42	22½	12	16	23⅛	8⅜	11¾	233
7	53381	1050	572	305	406	587	213	298	106

PIPE SIZE OF COVERING PROTECTION SADDLE TO BE USED WITH FIGURE 53

CHAIR NUMBER	BARE PIPE SIZE	Fig. 351 1" Cov. 25	Fig. 352 1½" Cov. 38	Fig. 353 2" Cov. 51	Fig. 354 2½" Cov. 64	Fig. 355 3" Cov. 76	Fig. 356 4" Cov. 102
1A	2 2½ 3 3½	¾ x 3 20 to 80	¾ to 2½ 20 to 65	¾ to 1½ 20 to 40			
1	4 5 6	4 to 6 100 to 150	3 to 5 80 to 125	2 to 4 50 to 100	¾ to 1½ 20 to 40		
2	8 10	8 200	6 to 8 150 to 200	5 to 8 125 to 200	2 to 5 50 to 125	2 to 6 50 to 150	4 to 5 100 to 125
3	12 14	10 to 12 250 to 300	10 to 12 250 to 300	10 to 12 250 to 300	6 to 8 150 to 200	8 200	6 to 8 150 to 200
4	16 18 20	14 to 18 350 to 450	14 to 18 350 to 450	14 to 18 350 to 450	10 to 16 250 to 400	10 to 14 250 to 350	10 to 12 250 to 300
5 5	24 600	20 500	20 500	18 to 20 450 to 500	18 to 20 450 to 500	16 to 18 400 to 450	14 to 18 350 to 450
6 6	30 750	24 600	24 600	24 600	24 600	20 to 24 500 to 600	20 to 24 500 to 600
7	36 900	30 750	30 750	30 750	30 750	30 750	28 700
7	42 1050	40 1000	36 900	36 900	36 900	36 900	32 800

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

CHAIR AND ROLL

Figure 39

The Figure 39 is designed for longitudinal movement of pipe where vertical adjustment is not required. Because the chair is made of steel, it can be either welded or bolted in position

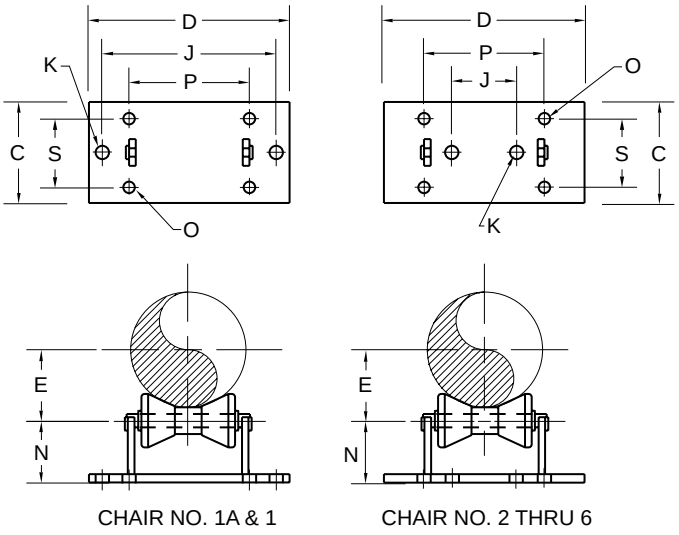
Material: Carbon Steel Chair and Axle with Cast Iron Pipe Roll. Use a Figure 17 when a Cast Iron Chair is required. Do not exceed 450° F / 232° C at the contact point to the roll.

Compliance: Federal Specification A-A-1192A Type 44, MSS-SP-69 Type 44.

Finish: Plain, Galvanized.

For pipe with insulation and a pipe covering protection saddle the Figure 39 will have to be oversized to suit. Please see the Table below showing the correct sizing for insulated pipe.

Ordering: Specify chair number, figure number, and finish. For Metric applications specify Figure M39.



CHAIR NO. 1A & 1 CHAIR NO. 2 THRU 6

FIGURE 39 – CHAIR AND ROLL

CHAIR NO.	MAX LOAD	BARE PIPE SIZE	C	D	E	J	K	M	N	O	P	S	WGT. EA.
1A	390	2	6	8½	1½	6½	1	¼	2	9⁄16	3½	4⅛	7.0
		2½			1¾								
		3			2⅛								
		3½			2⅜								
1A	1735	50	152	216	38	165	25	6	51	14	89	105	3.2
		65			44								
		80			54								
		90			60								
1	950	4	6	10⅛	2¾	8	1	¼	2⅜	9⁄16	4¾	4¼	10.5
		5			3⅜								
		6			3⅞								
1	4226	100	152	257	70	203	25	6	60	14	121	108	4.8
		125			86								
		150			98								
2	2100	8	7	9	5⅛	4	1	⅜	3¾	11⁄16	7	5	16.5
		10			6¼								
2	9342	200	178	229	130	102	25	10	95	17	178	127	7.5
		250			159								
3	3075	12	8	11	7⅜	5¾	1	⅜	4¾	11⁄16	9	6	26.8
		14			8								
3	13679	300	203	279	187	146	25	10	121	17	229	152	12.2
		350			203								
4	4980	16	9	12½	8⅞	6¾	1	½	4¾	13⁄16	10	6½	40.5
		18			10								
		20			11								
4	22153	400	229	318	225	171	25	13	121	21	254	165	18.4
		450			254								
		500			279								
5	6100	24	8⅞	13¾	13	7½	1	⅝	4⅞	13⁄16	11½	6¾	51.0
5	27135	600	225	349	330	191	25	16	124	21	292	171	23.1
6	7500	30	11	17¼	16¼	10	1	⅝	5⅝	13⁄16	14¼	8	89.8
6	33363	750	279	438	413	254	25	16	143	21	362	203	40.7
7	12000	36	12	20	20	12	1	1	5⅞	1 1⁄16	17	9	145
		42			23⅛								
7	53381	900	305	508	508	305	25	25	149	27	432	229	65.8
		1320			587								

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

PIPE SIZE OF COVERING PROTECTION SADDLE TO BE USED WITH FIGURES 17 AND 39

CHAIR NUMBER	BARE PIPE SIZE	Fig. 351 1" Cov. 25	Fig. 352 1½" Cov. 38	Fig. 353 2" Cov. 51	Fig. 354 2½" Cov. 64	Fig. 355 3" Cov. 76	Fig. 356 4" Cov. 102
1A	2 2½ 3 3½	¾ to 3 20 to 80	¾ to 2½ 20 to 65	¾ to 1½ 20 to 40			
1	4 5 6	4 to 6 100 to 150	3 to 5 80 to 125	2 to 4 50 to 100	¾ to 1½ 20 to 40		
2	8 10	8 200	6 to 8 150 to 200	5 to 8 125 to 200	2 to 5 50 to 125	2 to 6 50 to 150	4 to 5 100 to 125
3	12 14	10 to 12 250 to 300	10 to 12 250 to 300	10 to 12 250 to 300	6 to 8 150 to 200	8 200	6 to 8 150 to 200
4	16 18 20	14 to 18 350 to 450	14 to 18 350 to 450	14 to 18 350 to 450	10 to 16 250 to 400	10 to 14 250 to 350	10 to 12 250 to 300
5 5	24 600	20 500	20 500	18 to 20 450 to 500	18 to 20 450 to 500	16 to 18 400 to 450	14 to 18 350 to 450
6 6	30 750	24 600	24 600	24 600	24 600	20 to 24 500 to 600	20 to 24 500 to 600
7	36 900	30 750	30 750	30 750	30 750	30 750	28 700
7	42 1050	40 1000	36 900	36 900	36 900	36 900	32 800

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

ADJUSTABLE CHAIR AND ROLL

Figure 40

The Figure 40 is designed for longitudinal movement of pipe where vertical and lateral adjustment is required. Because the base plate is made of steel, it can be either welded or bolted in position. The correct height can be obtained by adjusting the screws at each corner. The correct lateral location can be achieved by sliding the chair on the ends of the adjusting screws. The Figure 40 may be used without the Base Plate to rest on customer provided flooring or structure.

Material: Carbon Steel Chair, Base, Axle and Adjusting Screws with Cast Iron Pipe Roll. Use a Figure 53 when a Cast Iron Chair and Base are required. Do not exceed 450° F / 232° C at the contact point to the roll.

Compliance: Federal Specification A-A-1192A Type 46, MSS-SP-69 Type 46.

Finish: Plain, Galvanized.

For pipe with insulation and a pipe covering protection saddle the Figure 40 will have to be oversized to suit. Please see the Table below showing the correct sizing for insulated pipe.

Ordering: Specify chair number, figure number, and finish. For Metric applications specify Figure M40.

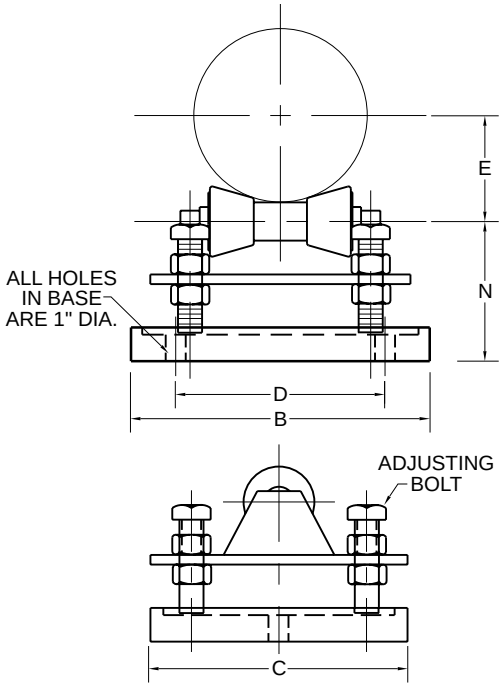


FIGURE 40 – ADJUSTABLE STEEL CHAIR AND ROLL

CHAIR NO.	MAX LOAD	BARE PIPE SIZE	B	C	D	E	N MIN.	N MAX.	WGT. EA.
1A	390	2	6⅞	5½	3⅞	1¾	3	3⅞	15.5
		2½				2⅛			
		3				2½			
		3½				2½			
1A	1735	50	175	140	98	44	76	98	7.0
		65				54			
		80				64			
		90				64			
1	950	4	8½	5¾	5⅛	2⅞	3⅜	4½	20.7
		5				3			
		6				3⅞			
1	4226	100	216	146	130	73	86	114	9.4
		125				76			
		150				98			
2	2100	8	10⅝	6½	7⅜	5⅜	4⅞	6⅝	34.3
		10				6			
2	9342	200	270	165	187	137	124	168	15.6
		250				152			
3	3075	12	12½	7¾	9½	7⅛	5⅞	7⅝	50.6
		14				8			
3	13679	300	318	197	241	181	149	194	23.0
		350				203			
4	4980	16	14⅝	8⅝	11⅛	9¼	5⅞	7¾	73.6
		18				10½			
		20				11¼			
4	22153	400	371	219	283	235	149	197	33.4
		450				267			
		500				286			
5	6100	24	15¾	8⅝	12¼	13⅜	6⅛	8	88.7
5	27135	600	400	219	311	340	156	203	40.2
6	7500	30	19¼	10½	15¾	16⅞	7¼	10½	166
6	33363	750	489	267	400	429	184	267	75.3
7	12000	36	22½	12	16	20	8⅜	11¾	233
7	53381	900	572	305	406	508	213	298	106
7	12000	42	22½	12	16	23⅛	8⅜	11¾	233
7	53381	1050	572	305	406	587	213	298	106

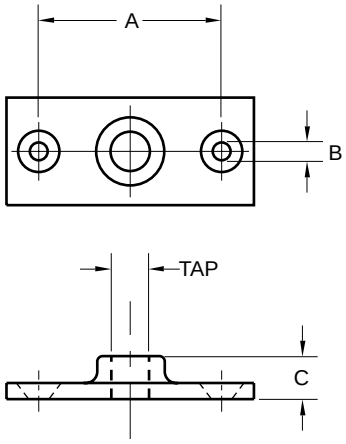
PIPE SIZE OF COVERING PROTECTION SADDLE TO BE USED WITH FIGURE 40

CHAIR NUMBER	BARE PIPE SIZE	Fig. 351 1" Cov. 25	Fig. 352 1½" Cov. 38	Fig. 353 2" Cov. 51	Fig. 354 2½" Cov. 64	Fig. 355 3" Cov. 76	Fig. 356 4" Cov. 102
1A	2 2½ 3 3½	¾ to 3 20 TO 80	¾ to 2½ 20 to 65	¾ to 1½ 20 to 40			
1	4 5 6	4 to 6 100 to 150	3 to 5 80 to 125	2 to 4 50 to 100	¾ to 1½ 20 to 40		
2	8 10	8 200	6 to 8 150 to 200	5 to 8 125 to 200	2 to 5 50 to 125	2 to 6 50 to 150	4 to 5 100 to 125
3	12 14	10 to 12 250 to 300	10 to 12 250 to 300	10 to 12 250 to 300	6 to 8 150 to 200	8 200	6 to 8 150 to 200
4	16 18 20	14 to 18 350 to 450	14 to 18 350 to 450	14 to 18 350 to 450	10 to 16 250 to 400	10 to 14 250 to 350	10 to 12 250 to 300
5 5	24 600	20 500	20 500	18 to 20 450 to 500	18 to 20 450 to 500	16 to 18 400 to 450	14 to 18 350 to 450
6 6	30 750	24 600	24 600	24 600	24 600	20 to 24 500 to 600	20 to 24 500 to 600
7	36 900	30 750	30 750	30 750	30 750	30 750	28 700
7	42 1050	40 1000	36 900	36 900	36 900	36 900	32 800

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

SINGLE PLATE

Figure 85RT (Rod Tapped – Electro-Galvanized)



The Figure 85 is designed for attaching a rod to a wooden member. This part is normally used in conjunction with our Figure 81 Split Ring.

Material: Malleable Iron.

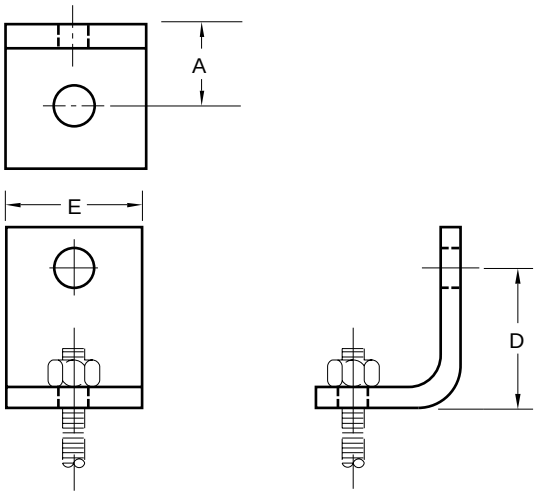
Ordering: Specify rod size and figure number. For metric applications specify Figure M85RT.

FIGURE 85RT – SINGLE PLATE

ROD TAP	MAX LOAD	A	B	C	WGT. EACH
⅜	180	2	¼	½	0.19
M10	801	51	6	13	0.09
½	180	2	¼	½	0.18
M12	801	51	6	13	0.08

SIDE BEAM ANGLE BRACKET

Figure 303



The Figure 303 is designed for use in supporting pipe hangers to the side of joist, steel, or wood beams. It can be either bolted or welded to the structure.

Material: Carbon Steel.

Compliance: A-A-1192A Type 34 and MSS-SP-69 Type 34.

Finish: Plain, Galvanized.

Ordering: Specify rod size, figure number, and finish. For Metric applications specify Figure M303.

FIGURE 303 – SIDE BEAM BRACKET

ROD SIZE	MAXIMUM LOAD LAG SCREW	MAXIMUM LOAD BOLT TO STEEL	A	D	E	WEIGHT EACH
⅜	390	580	⅞	1¼	1¼	0.25
M10	1735	2580	22	32	32	0.11
½	640	960	1 3⁄16	1⅝	1½	0.40
M12	2847	4270	30	41	38	0.18
⅝	760	1500	1 7⁄16	1⅞	1½	0.70
M16	3381	6673	37	48	38	0.32
¾	830	2500	1 11⁄16	2⅛	2	1.07
M20	3692	11121	43	54	51	0.49
⅞	830	3600	2	2½	2	1.64
M20	3692	16014	51	64	51	0.74

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

CEILING STIRRUP

Figure 151

The Figure 151 is designed for attaching a rod to a level ceiling or beam.

Material: Steel

Finish: Plain, Galvanized.

Ordering: Specify size, figure number, and finish. For Metric applications specify Figure M151.

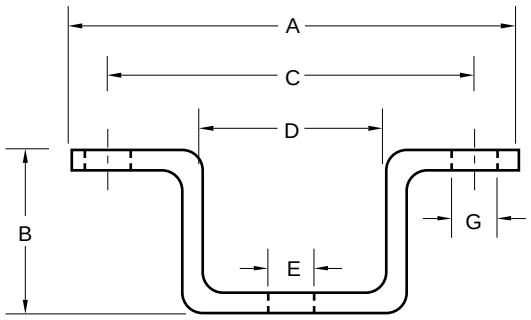


FIGURE 151

SIZE	MAXIMUM LOAD	A	B	C	E	G	WEIGHT EACH
1	600	5½	2	4½	9/16	9/16	0.76
1	2669	140	51	114	14	14	0.34
2	880	6	2⅛	4½	11/16	9/16	1.36
2	3915	152	54	114	17	14	0.62

SIDE BEAM CONNECTOR

Figure 153 (Rod Tapped – Electro-Galvanized)

The Figure 153 is designed for use on buildings of wood construction. They can be secured to the side of beams or joists by means of our Figure 166 Drive Screws (ordered separately).

Material: Malleable Iron.

Finish: Plain, Electro-Galvanized.

Ordering: Specify size, figure number, and finish.
For Metric applications specify Figure M153, M153S.

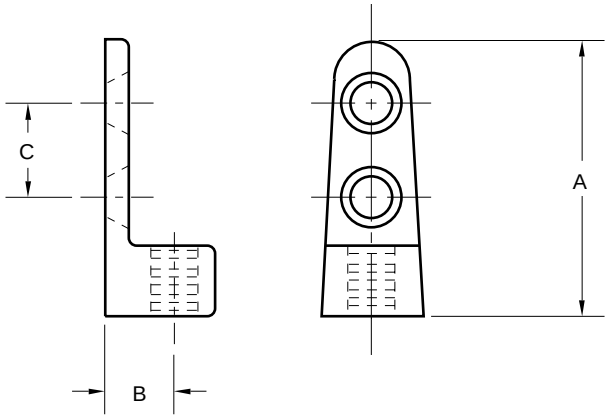


FIGURE 153 – SIDE BEAM CONNECTOR

SIZE	MAX LOAD	A	B	C	WGT. EACH
⅜ ROD	250	2⅜	9/16	¾	0.13
M10 ROD	1112	60	14	19	0.06
½ ROD	480	2¾	¾	¾	0.25
M12 ROD	2135	70	19	19	0.11
¼ PIPE	250	2¾	¾	¾	0.25
M8 PIPE	1112	70	19	19	0.11

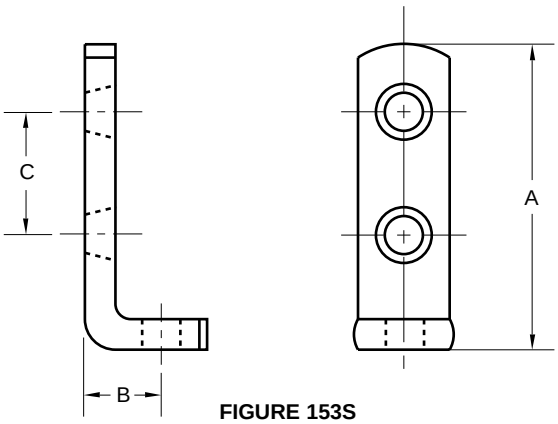


FIGURE 153S

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

BEAM CLAMP

Figure 15

The Figure 15 is designed to attach to the bottom of flanged beams. Normally used with the Figure 93 Eye Rod or Figure 279 Eye Nut.

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 21, MSS-SP-69 Type 21.

Finish: Plain, Galvanized.

Ordering: Specify clamp size, flange width, flange thickness, figure number, and finish. For Metric applications specify Figure M15.

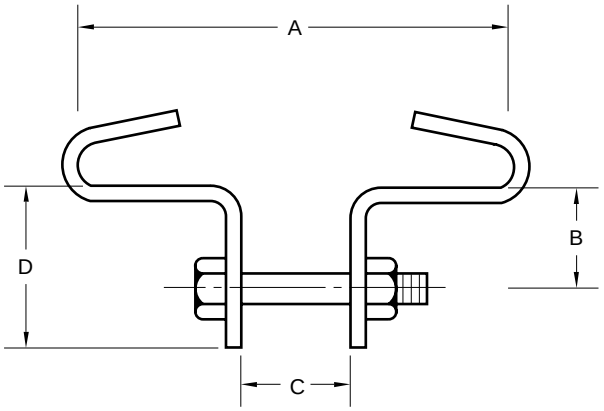


FIGURE 15 – BEAM CLAMP

CLAMP SIZE	MAX LOAD	B	C	D	BOLT SIZE
1	500	⅞	½	1½	⅜
1	2224	22	13	38	M10
2	700	1⅛	⅝	1¾	½
2	3114	29	16	44	M12
3	800	1¼	⅝	2	½
3	3559	32	16	51	M12
4	1000	1⅜	¾	2⅜	⅝
4	4448	35	19	60	M16
5	3000	1⅝	⅞	2⅝	¾
5	13345	41	22	67	M20
6	3000	2	1	3	⅞
6	13345	44	25	83	M20
7	5000	2⅛	1⅛	4⅛	1
7	22242	54	29	105	M24

CLAMP SIZE	WEIGHT EACH BEAM WIDTH – DIMENSION "A" 2	3	4	5	6	7	8	10
1	0.52	0.62	0.78	0.88	0.95			
1	0.24	0.28	0.35	0.40	0.43			
2	0.74	0.82	1.09	1.21	1.31	1.39		
2	0.34	0.37	0.49	0.55	0.59	0.63		
3	1.26	1.49	1.89	2.12	2.29	2.45	2.69	
3	0.57	0.68	0.86	0.96	1.04	1.11	1.22	
4		2.32	2.85	3.18	3.39	3.60	3.92	
4		1.05	1.29	1.44	1.54	1.63	1.78	
5		3.40	4.08	4.52	4.80	5.10	5.51	6.23
5		1.54	1.85	2.05	2.18	2.31	2.50	2.83
6			6.00	6.45	7.00	7.40	7.90	8.80
6			2.72	2.93	3.18	3.36	3.58	3.99
7				11.95	12.75	13.55	14.35	15.95
7				5.42	5.78	6.15	6.51	7.23

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

WELDED BEAM ATTACHMENT

Figure 113A
Figure 113B

Figure 113A is recommended for attachment to the bottom of beams when little or no pipe movement is expected.

Figure 113B is recommended for attachment to the bottom of beams, when pipe movement is expected. A bolt & nut or pin is supplied. A pin with cotters is normally supplied for rod sizes over 1".

Compliance: Federal Specification A-A-1192A Type 22, MSS SP-69 Type 22 and BSPSS-BS3974.

Material: Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify Figure No., rod size and finish. For Metric applications specify M113A or M113B.

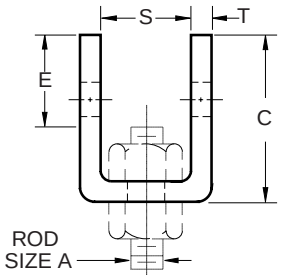


FIG 113A

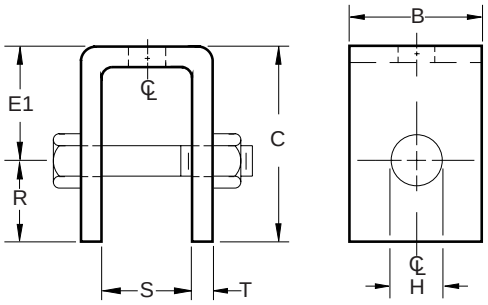


FIG 113B

FIGURE 113 – WELDED BEAM ATTACHMENT

ROD SIZE	MAX LOAD 650° F 343° C	BOLT OR PIN SIZE	B	C	ROD TAKEOUT FIG 113A E	ROD TAKEOUT FIG 113B E1	H	R	S	T	WEIGHT EACH FIG 113A W/O B&N	WEIGHT EACH FIG 113B W B&N
3/8	610	1/2	2	2 7/8	1 7/8	2	9/16	7/8	1 1/4	1/4	0.96	1.20
M10	2714	M12	51	73	48	51	14	22	32	6	0.44	0.54
1/2	1130	5/8	2	2 7/8	1 3/4	2	11/16	7/8	1 1/4	1/4	0.96	1.20
M12	5027	M16	51	73	44	51	17	22	32	6	0.44	0.54
5/8	1810	3/4	2	2 7/8	1 3/4	2	13/16	7/8	1 1/4	1/4	0.96	1.60
M16	8052	M20	51	73	44	51	21	22	32	6	0.44	0.73
3/4	2710	7/8	2 1/2	3 1/8	1 1/8	2	15/16	1 1/8	2 1/8	3/8	1.90	2.80
M20	12055	M20	70	79	29	51	24	29	54	10	0.86	1.27
7/8	3770	1	2 1/2	4 1/4	2 5/8	3	1 1/16	1 1/4	2 1/8	3/8	2.50	3.90
M20	16770	M24	64	108	67	76	29	32	54	10	1.13	1.77
1	4960	1 1/8	3	4 1/2	3	3	1 1/4	1 1/2	2 7/8	1/2	4.30	6.30
M24	22064	M30	76	114	76	89	32	38	73	13	1.95	2.86
1 1/4	8000	1 3/8	4	5	2	3	1 1/2	2	3	3/4	8.10	10.20
M30	35587	M36	102	127	51	76	38	51	76	19	3.67	4.63
1 1/2	11600	1 5/8	5	6 1/2	2 1/2	4	1 3/4	2 1/2	3	3/4	15.60	19.00
M36	51601	M42	127	165	64	102	44	64	76	19	7.08	8.62
1 3/4	15700	1 7/8	5	7 3/4	2 3/4	5	2	2 3/4	3 3/4	3/4	18.70	24.20
M42	69840	M48	127	197	70	127	51	70	95	19	8.48	10.98
2	20700	2 1/4	6	8 1/4	3 1/4	5	2 3/8	3 1/4	3 1/2	1/2	22.80	30.60
M48	92082	M56	152	210	83	127	60	83	89	13	10.34	13.88
2 1/4	27200	2 1/2	6	9 3/4	3 1/2	6	2 5/8	3 1/2	3 1/2	5/8	26.40	36.80
M56	120996	M64	152	248	89	159	67	89	89	16	117.44	16.69
2 1/2	33500	2 3/4	6	9 3/4	3 1/2	6	2 7/8	3 3/4	3 3/4	5/8	26.70	39.70
M64	149021	M70	152	248	89	159	73	95	95	16	118.77	176.60
2 3/4	41580	3	6	9 3/4	N/A	5 3/4	3 1/8	4	3 3/4	5/8	N/A	39.70
M72	184964	M80X6	152	248	N/A	146	79	102	95	16	N/A	176.60
3	50580	3 1/4	7	10 1/4	N/A	6 1/4	3 3/8	4	3 3/4	5/8	N/A	49.00
M80	225000	M80	178	260	N/A	159	86	102	95	16	N/A	217.97
3 1/4	71280	3 1/2	7	11 1/2	N/A	7	3 5/8	4 1/2	4 1/4	3/4	N/A	67.60
M80	317082	M90X6	178	292	N/A	178	92	114	108	19	N/A	300.71
3 1/2	71280	3 3/4	7	12	N/A	7 1/2	3 7/8	4 1/2	4 1/4	3/4	N/A	79.30
M90	317082	M90X6	178	305	N/A	191	98	114	108	19	N/A	352.76

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

RIGHT ANGLE BEAM CLAMP

Figure 282

The Figure 282 is used in attaching conduit or pipe at a right angle to a structural member.

Materials: Malleable iron body with carbons steel U-bolt and nuts.

Finish: Hot-Dip Galvanized

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M282.

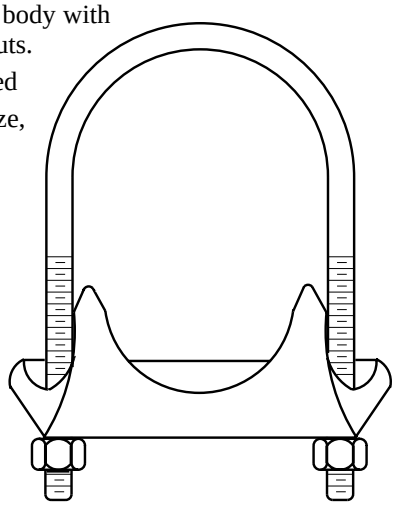


FIGURE 282 - RIGHT ANGLE BEAM CLAMP

PIPE SIZE	WEIGHT EACH
⅜ 10	0.33 0.15
½ 15	0.41 0.19
¾ 20	0.42 0.19
1 25	0.47 0.21
1¼ 32	0.54 0.24
1½ 40	0.57 0.26
2 50	0.85 0.39
2½ 65	1.06 0.48
3 80	1.10 0.50
3½ 90	1.28 0.58
4 100	1.40 0.64

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

STEEL BEAM CLAMP WITH WELDLESS EYENUT

Figure 297

The Figure 297 beam clamp with eyenut is used when welding to the structure is prohibited for supports where some movement is expected. The clamping effect is produced by the "ice tong" action of the arms and is locked in place by the through bolt located just under the beam flange.

Material: Carbon Steel with Forged Steel Eyenut.

Compliance: Federal Specification A-A-1192A Type 28, MSS-SP-69 Type 28 and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number, rod size, clamp number and finish. For Metric applications specify Figure M297.

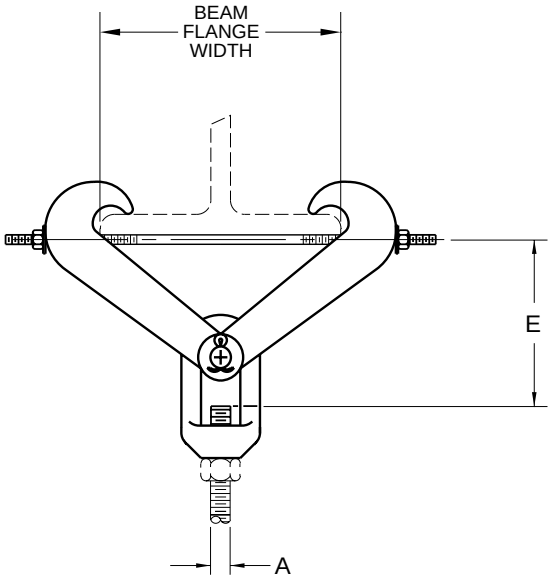


FIGURE 297 – STEEL BEAM CLAMP WITH WELDLESS EYENUT

CLAMP SIZE	MAXIMUM LOAD	MAXIMUM ROD SIZE A	BEAM WIDTH	BODY SIZE	MAXIMUM FLANGE THICKNESS	WEIGHT EACH
1	2710 68834	¾ M20	3 - 8 76 - 203	A	0.6 15	5.5 2.5
2	4960 125984	1 M24	3 - 8 76 - 203	A	0.6 15	5.5 2.5
3	4960 125984	1 M24	4 - 11 102 - 279	B	0.6 15	9.0 4.1
4	4960 125984	1 M24	4 - 12 102 - 305	C	1.03 26	29.0 13.2
5	4960 125984	1 M24	11 - 15 279 - 381	D	1.03 26	33.3 15.1
6	11500 292100	1½ M36	4 - 12 102 - 305	C	1.03 26	29.0 13.2
7	11500 292100	1½ M36	11 - 15 279 - 381	D	1.03 26	33.3 15.1
8	11500 292100	2 M48	4 - 12 102 - 305	C	1.03 26	29.0 13.2

** Based on the allowable stresses shown in ANSI Code for Pressure Piping

CLAMP SIZE	BODY SIZE	ROD TAKEOUT "E" FOR WIDTH OF BEAM												
		3	4	5	6	7	8	9	10	11	12	13	14	15
1 1	A A	5 3/16 132	5 1/8 130	5 127	4 13/16 122	4 3/8 111	3 15/16 100							
2 2	A A	5 3/16 132	5 1/8 130	5 127	4 13/16 122	4 3/8 111	3 15/16 100							
3 3	B B		8 1/4 210	8 1/8 206	8 1/8 206	7 7/8 200	7 3/4 197	7 3/8 187	7 178	6 1/2 165				
4 4	B B		8 5/8 219	8 5/8 219	8 1/2 216	8 3/8 213	8 1/8 206	7 7/8 200	7 5/8 194	7 178	6 3/4 171			
5 5	D D									9 1/2 241	9 1/4 235	8 7/8 225	8 3/8 213	7 7/8 200
6 6	C C		8 5/8 219	8 5/8 219	8 1/2 216	8 3/8 213	8 1/8 206	7 7/8 200	7 5/8 194	7 178	6 3/4 171			
7 7	D D									9 3/4 248	9 1/2 241	9 1/8 232	8 3/4 222	8 1/8 206
8 8	C C		11 5/8 295	11 1/2 292	11 1/2 292	11 3/8 289	11 1/8 283	10 7/8 276	10 3/4 273	10 1/2 267	10 254			

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

STEEL CONCRETE INSERT

Figure 75

The Figure 75 is designed to provide an economical method of overhead rod support by being embedded in concrete. The insert is nailed in place prior to the concrete being poured. After the pour has cured the insert knock-out is removed, a Figure 75N Insert Nut installed, and the rod attached.

Material: Carbon Steel.

Compliance: Federal Specification WW-H-171 (Type 19), MSS-SP-69 Type 18.

Finish: Plain, Electro-Galvanized.

Ordering: Specify rod size, figure number, and finish. If an Insert Nut Figure 75N is required, it must be ordered separately by Figure number rod size and finish. For Metric applications specify Figure M75 and M75N.

CONCRETE INSERT NUT

Figure 75N

Designed for use with Figure 75 Steel Concrete Insert.

Finish: Plain, Galvanized.

Ordering: Specify rod size, figure number, and finish. For Metric applications specify Figure M75N.

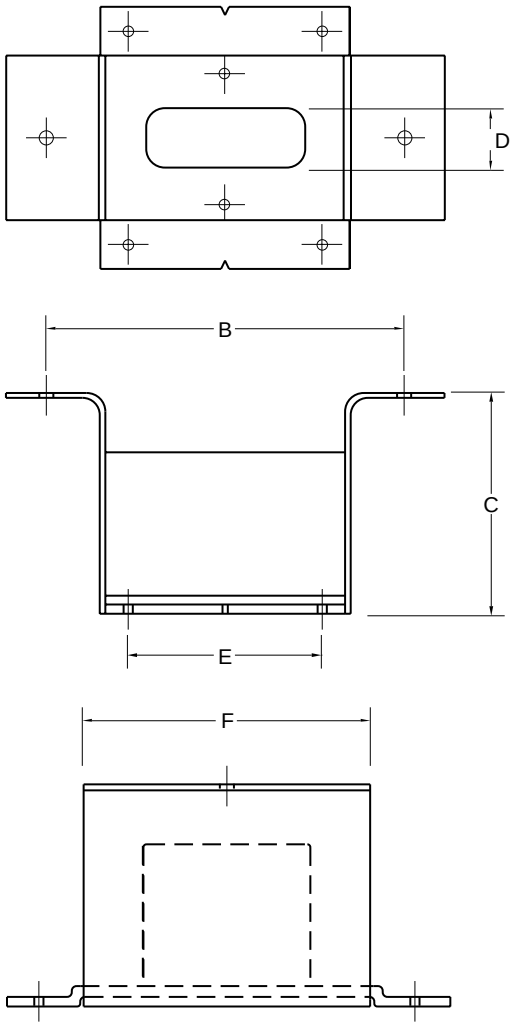


FIGURE 75 – STEEL CONCRETE INSERT
FIGURE 75N – CONCRETE INSERT NUT

ROD SIZE	MAXIMUM LOAD	B	C	D	E	F	WEIGHT EACH INSERT	WEIGHT EACH NUT
⅜	600	3⅛	1⅝	⅞	1½	2	0.44	0.10
M10	2669	79	41	22	38	51	0.20	0.05
½	600	3⅛	1⅝	⅞	1½	2	0.44	0.14
M12	2669	79	41	22	38	51	0.20	0.06
⅝	600	3⅛	1⅝	⅞	1½	2	0.44	0.16
M16	2669	79	41	22	38	51	0.20	0.07
¾	600	3⅛	1⅝	⅞	1½	2	0.44	0.17
M20	2669	79	41	22	38	51	0.20	0.08

Maximum Load Rating is dependant upon the selected nut size used.

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

LIGHT WELDED STEEL BRACKET

Figure 69

The Figure 69 is designed to support up to 6" pipe. This bracket is for installation to walls as shown or inverted, and may require a backing plate. Holes for up to ¾" rods are located at each end of the bracket to allow for use in either orientation. The Figure 78 Steel Bracket Clip can be attached to the Figure 69 to support piping 3 1/2" or smaller. Please see the Figure 79 for more information.

Compliance: A-A-1192A Type 31, MSS-SP 69 Type 31.

Finish: Plain, Galvanized.

Ordering: Specify size number, figure number, and finish. For Metric applications specify Figure M69 and M79 as required.

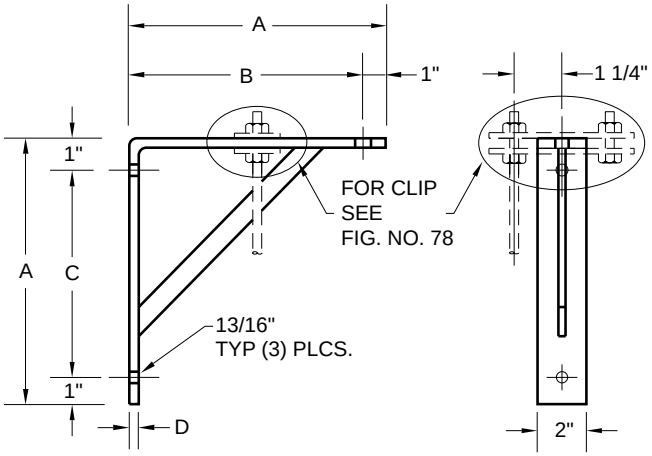


FIGURE 69 – LIGHT WELDED STEEL BRACKET

SIZE	MAX LOAD	A	B	C	WGT. EACH
1	750	9	8	6½	6.99
1	3336	229	203	165	3.17
2	750	13	12	10½	10.10
2	3336	330	305	267	4.60
3	750	19	18	16½	10.50
3	3336	483	457	419	4.74

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

STEEL BRACKET CLIP

Figure 78

The Figure 78 Clip can be used to support piping 3½" or smaller from the horizontal member of a Figure 69 Steel Bracket. The Clip is composed of two steel plates and one bolt and nut.

Material: Carbon Steel.

Finish: Plain, Hot-Dip Galvanized.

Ordering: Specify size number, figure number, and finish. For Metric applications Specify Figure M78.

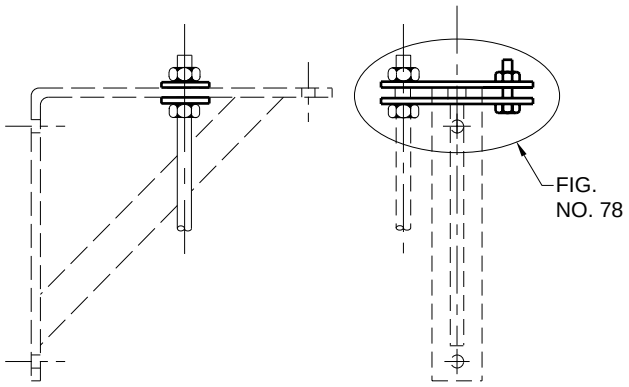


FIGURE 78 – STEEL BRACKET CLIP

SIZE	ROD SIZE	MAX LOAD	WEIGHT EACH
1	⅜	610	0.80
1	M10	2714	0.36
2	½	750	1.24
2	M12	3336	0.56

BRACKET

Figure 83

This bracket is used on light duty applications. Dimension "B" can be changed upon request.

Material: Steel.

Finish: Plain, Galvanized.

Ordering: Specify bracket size, figure number, and finish.

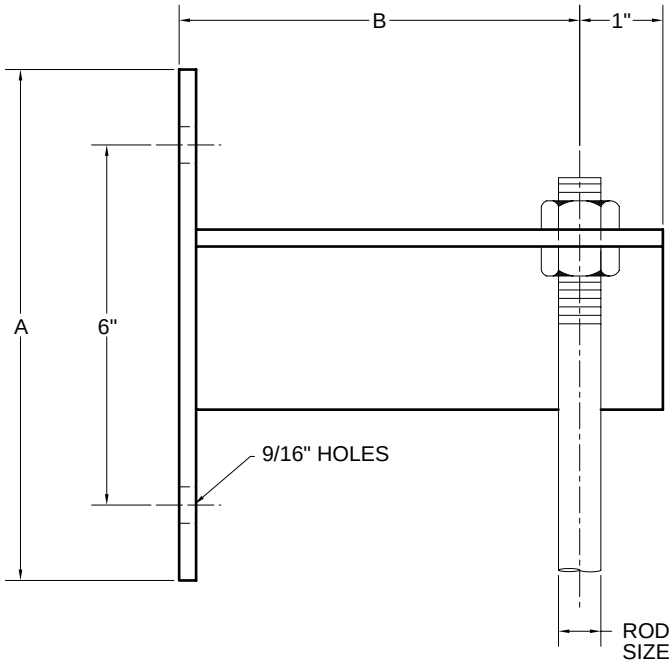


FIGURE 83 – BRACKET

SIZE	MAX. LOAD	A	B	MAX. ROD SIZE	WGT. EACH
1	610	8	4	½	2.7
1	2714	203	102	M12	1.2
2	610	8	6	½	3.2
2	2714	203	152	M12	1.5
3	610	8	9	½	4.4
3	2714	203	229	M12	2.0

MEDIUM WELDED STEEL BRACKET

Figure 84

The Figure 84 is designed to support pipe from either above or below. Slotted construction allows for drop rod use along the length of the bracket. This bracket is for bolted installation to walls and may require a backing plate. Special steel brackets can be fabricated to customers loads and/or dimensions.

Compliance: A-A-1192A Type 32, MSS-SP 69 Type 32.

Finish: Plain, Hot-Dip Galvanized.

Ordering: Specify size number, figure number, and finish. For Metric applications specify Figure M84.

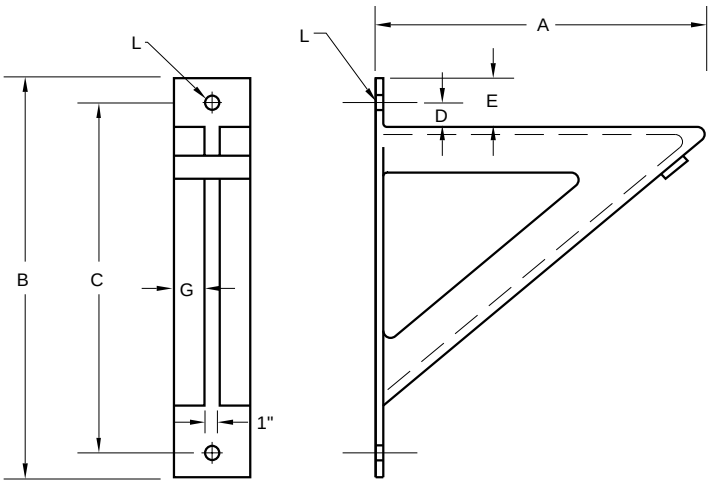


FIGURE 84 – MEDIUM WELDED STEEL BRACKET

SIZE	MAX LOAD	A	B	C	D	E	G	L	WGT EACH
0	1500	12	18	15½	1¼	2½	1¼	13/16	15.50
0	6673	305	457	394	32	64	32	21	7.03
1	1500	18	24	21½	1¼	2½	1½	13/16	24.70
1	6673	457	610	546	32	64	38	21	11.20
2	1500	24	30	27½	1¼	2½	1½	13/16	37.70
2	6673	610	762	699	32	64	38	21	17.10

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

HEAVY WELDED STEEL BRACKET

Figure 139

The Figure 139 is designed to support pipe from either above or below. Slotted construction allows for drop rod use along the length of the bracket. This bracket is for bolted installation to walls and may require a backing plate. Special steel brackets can be fabricated to customers loads and/or dimensions.

Compliance: A-A-1192A Type 33, MSS-SP 69 Type 33.

Finish: Plain, Hot-Dip Galvanized.

Ordering: Specify size number, figure number, and finish. For Metric applications specify Figure M139.

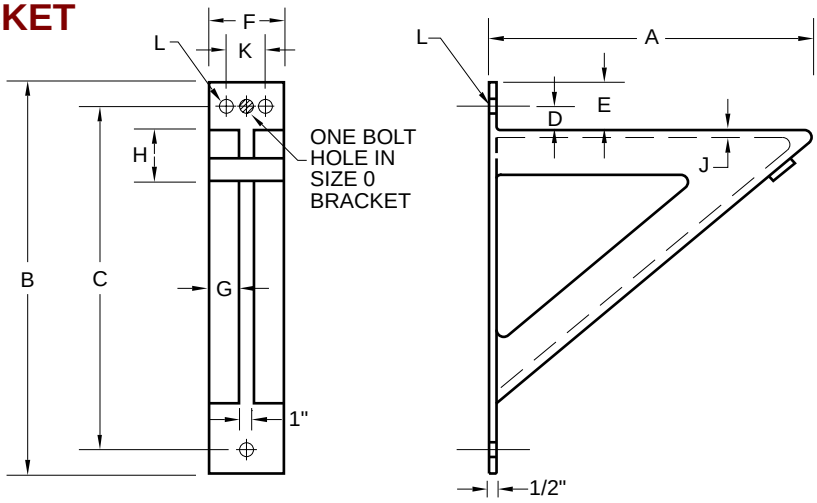


FIGURE 139 – HEAVY WELDED STEEL BRACKET

SIZE	MAX LOAD	A	B	C	D	E	F	G	H	J	K	L	WGT EACH
0	3000	12	18	15¼	1½	2¾	4½	1½	2	¼	NA	13⁄16	25.1
0	13345	305	457	387	38	70	114	38	51	6	NA	21	11.4
1	3000	18	24	21⅜	1½	2¾	5	1½	2	⅜	2¾	13⁄16	44.8
1	13345	457	610	543	38	70	127	38	51	10	70	21	20.3
2	3000	24	30	27½	1½	2¾	5	1½	2½	⅜	2½	1⅛	60.7
2	13345	610	762	699	38	70	127	38	64	10	64	27	27.5
3	3000	30	36	33¼	1⅝	3	6	2	2½	⅜	2½	1⅛	98.1
3	13345	762	914	845	41	76	152	51	64	10	64	27	44.5
4	3000	36	42	39	1½	3	6	2	3½	⅜	3½	1⅛	129.4
4	13345	914	1067	991	38	76	152	51	89	10	89	27	58.7
5	3000	42	50	46	1½	3½	7	2½	3½	⅜	3½	1⅛	177.2
5	13345	1067	1270	1168	38	89	178	64	89	10	89	27	80.4

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

CONCRETE SINGLE LUG PLATE

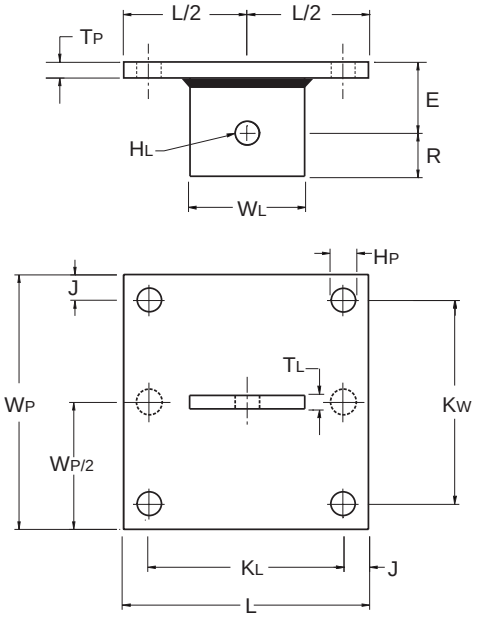
Figure 1022

The Figure 1022 is for attachment to a concrete structure where movement is anticipated. A two-anchor pattern is used on sizes 3/8" thru 5/8" and all others use four anchors. Used with the Figure 276 Forged Steel Clevis and Type "C" variable springs.

Material Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish, and rod size. For Metric applications specify Figure M1022



TWO ANCHORS ONLY FOR SIZES 3/8" THRU 5/8"

FIGURE 1022 – CONCRETE SINGLE LUG PLATE

ROD SIZE	MAX LOAD	E	HL	HP	J	KL	KW	L	R	TP	TL	WP	WL	WGT EACH
3/8	610	1 3/4	1/2	1/2	1	4	-	6	1 1/4	1/4	1/4	4	2 1/2	11.6
M10	5027	44	13	13	25	102		152	32	6	6	102	64	5.3
1/2	1130	1 7/8	5/8	5/8	1	5	-	7	1 1/4	3/8	1/4	4	2 1/2	11.6
M12	5027	48	16	16	25	127		178	32	10	6	102	64	5.3
5/8	1810	2	3/4	3/4	1	6	-	8	1 1/4	1/2	1/4	4	2 1/2	11.6
M16	8052	51	19	19	25	152		203	32	13	6	102	64	5.3
3/4	2710	2 1/4	7/8	5/8	1	5	5	7	1 1/4	1/2	3/8	7	2 1/2	12.0
M20	12055	57	22	16	25	127	127	178	32	13	10	178	64	5.4
7/8	3770	3	1	7/8	1	6 1/2	6 1/2	9	1 1/2	3/4	3/8	9	3	22.0
M20	16770	76	25	22	25	165	165	229	38	19	10	229	76	10.0
1	4960	3	1 1/8	7/8	1 1/4	8	8	9	1 1/2	3/4	1/2	9	3	31.9
M24	22064	76	29	22	32	203	203	229	38	19	13	229	76	14.5
1 1/4	8000	4	1 3/8	1	2	8	8	12	2	1	5/8	12	4	43.8
M30	35587	102	35	25	51	203	203	305	51	25	16	305	102	19.9
1 1/2	11630	4 1/4	1 5/8	1 1/8	2	8	8	12	2 1/2	1	3/4	12	5	45.6
M36	51735	108	41	29	51	203	203	305	64	25	19	305	127	20.7
1 3/4	15700	4 1/2	1 7/8	1 3/8	2	8	8	12	2 1/2	1 1/4	3/4	12	5	55.7
M42	69840	114	48	35	51	203	203	305	64	32	19	305	127	25.3
2	20700	5 1/4	2 1/4	1 3/8	2	8	8	12	3	1 1/4	3/4	12	6	58.2
M48	92082	133	57	35	51	203	203	305	76	32	19	305	152	26.4

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

CONCRETE ATTACHMENT

Figure 1020

The Figure 1020 Type 1 is for attaching support assemblies to concrete structures where little or no movement is anticipated. Used with a Fig 133 Threaded Rod or Figure 94 All Thread Rod.

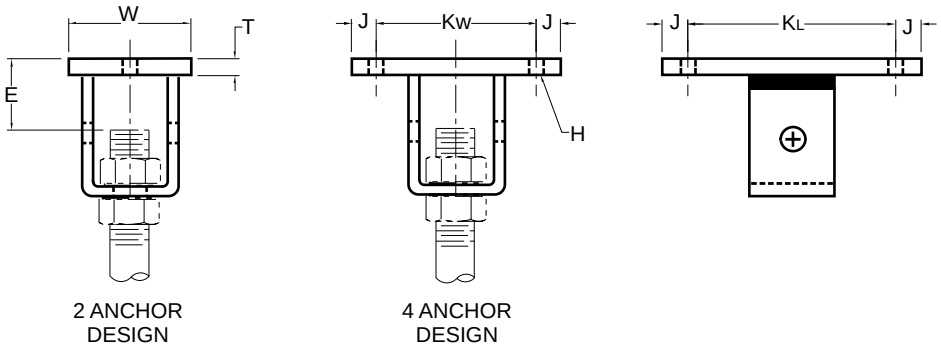
The Figure 1020 Type 2 is for attaching support assemblies to concrete structures where movement is anticipated. Used with a Fig 279 Weldless Eyenut or Figure 93 Welded Eyerod. A two-anchor pattern is used on sizes ⅜" thru ⅝" and all others use four anchors.

Material: Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish, and rod size. For Metric applications specify Figure M1020 Type 1 or Type 2.

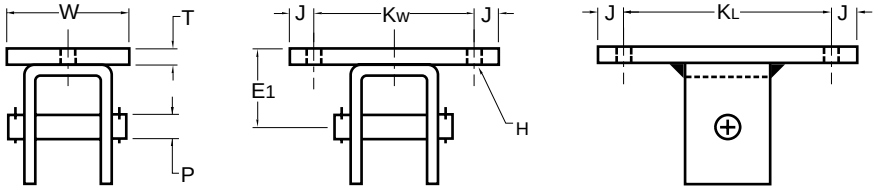
CONFIGURATION TYPE 1



2 ANCHOR DESIGN

4 ANCHOR DESIGN

CONFIGURATION TYPE 2



2 ANCHOR DESIGN

4 ANCHOR DESIGN

FIGURE 1020 – CONCRETE ATTACHMENT

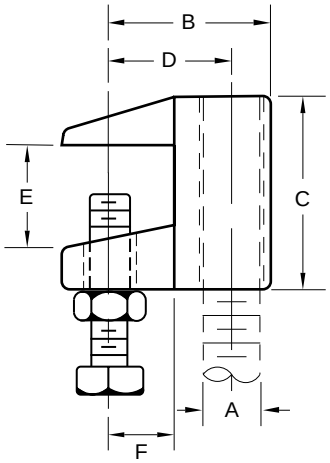
ROD SIZE	MAX LOAD	E	E_1	H*	P	J	K_L	K_W	T	W	WGT EACH W/PIN	WGT EACH W/O PIN
⅜	610	2⅛	2¼	½	½	1	4	N/A	¼	4	2.8	2.7
M10	2714	54	57	13	13	25	102	N/A	6	102	1.3	1.2
½	1130	2⅛	2⅜	⅝	⅝	1	5	N/A	⅜	4	4.1	3.9
M12	5027	54	60	16	16	25	127	N/A	10	102	1.9	1.8
⅝	1810	2¼	2½	¾	¾	1	6	N/A	½	4	5.8	5.5
M16	8052	57	64	19	19	25	152	N/A	13	102	2.6	2.5
¾	2710	2⅛	2⅜	⅝	⅞	1	5	5	⅜	N/A	7.7	7.1
M20	12055	54	60	16	22	25	127	127	10	N/A	3.5	3.2
⅞	3770	3⅜	3⅝	⅞	1	1¼	6½	7	⅝	N/A	19.8	18.6
M20	16770	86	92	22	25	32	165	165	16	N/A	9.0	8.4
1	4960	3⅜	3⅝	⅞	1⅛	1¼	6½	7	⅝	N/A	19.8	18.6
M24	22064	86	92	22	29	32	165	165	16	N/A	9.0	8.4
1¼	8000	3⅝	3¾	1	1⅜	2	8	8	¾	N/A	41.0	38.7
M30	35587	92	95	25	35	51	203	203	19	N/A	18.6	17.6
1½	11630	5	5	1⅛	1⅝	2	8	8	1	N/A	60.0	56.4
M36	51735	127	127	29	41	51	203	203	25	N/A	27.2	25.6
1¾	15700	6¼	6¼	1⅜	2	2	10	10	1¼	N/A	93.6	88.0
M42	69840	159	159	35	51	51	254	254	32	N/A	42.5	39.9
2	20700	6½	6¼	1⅜	2¼	2	10	10	1¼	N/A	100.0	92.0
M48	92082	165	159	35	57	51	254	254	32	N/A	45.4	41.7

* Holes are ⅛" larger than recommended anchor bolt diameter to allow for installation tolerance.

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

TOP BEAM CLAMP WITH LOCKING NUT

Figure 192



The Figure 192 is designed for roof installations with bar joist type construction as well as to be attached mechanically to the top or bottom flange of steel beams. A locking nut is provided and when properly tightened prevents loosening due to vibration. The full body tapping feature for the rod allows for extra adjustment after installation. A Figure 192RS Retaining Strap may also be required by various codes.

Install in accordance with MSS-SP69 set screw torque values. Maximum loads are based upon full thread engagement by the rod. When using a Retaining Strap the maximum allowable flange thickness is reduced by ⅛".

Material: Malleable Iron with Hardened Steel Cup Point Set Screw.

Compliance: MSS-SP-69 (Type 19).

Finish: Plain, Electro-Galvanized.

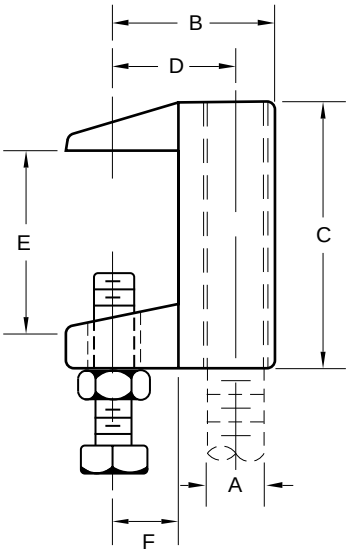
Ordering: Specify rod size, figure number, and finish. For Metric applications specify Figure M192.

FIGURE 192 – TOP BEAM CLAMP

ROD SIZE A	MAXIMUM LOAD	MAXIMUM PIPE SIZE	B	C	D	E	F	WEIGHT EACH
⅜	400	4	1⅝	1½	1	¾	½	0.33
M10	1779	100	41	38	25	19	13	0.15
½	500	8	1 11/16	1½	1	¾	½	0.34
M12	2224	200	43	38	25	19	13	0.15
⅝	600	8	1⅞	1½	1 1/16	¾	⅝	0.39
M16	2669	200	48	38	27	19	16	0.18
¾	800	8	2⅜	1¾	1 5/16	¾	⅝	0.63
M20	3559	200	60	44	33	19	16	0.29
⅞	1200	8	2⅜	1¾	1 5/16	¾	⅝	0.60
M20	5338	200	60	44	33	19	16	0.27

WIDE MOUTH TOP BEAM CLAMP WITH LOCKING NUT

Figure 192W



The Figure 192W is designed for roof installations with bar joist type construction as well as to be attached mechanically to the top or bottom flange of steel beams. A locking nut is provided and when properly tightened prevents loosening due to vibration. The full body tapping feature for the rod allows for extra adjustment after installation. A Figure 192RS Retaining Strap may also be required by various codes.

Install in accordance with MSS-SP69 set screw torque values. Maximum loads are based upon full thread engagement by the rod. When using a Retaining Strap the maximum allowable flange thickness is reduced by ⅛".

Material: Malleable Iron with Hardened Steel Cup Point Set Screw.

Compliance: MSS-SP-69 (Type 19).

Finish: Plain, Electro-Galvanized.

Ordering: Specify rod size, figure number, and finish.
For Metric applications specify Figure M192W.

FIGURE 192W – WIDE MOUTH TOP BEAM CLAMP

ROD SIZE A	MAXIMUM LOAD	MAXIMUM PIPE SIZE	B	C	D	E	F	WEIGHT EACH
⅜	400	4	1⅝	1⅞	1 1/16	1¼	½	0.37
M10	1779	100	41	48	27	32	13	0.17
½	500	4	1⅝	1⅞	1 1/16	1¼	½	0.35
M12	2224	200	41	48	27	32	13	0.16
⅝	850	5	2¼	2 5/16	1⅜	1¼	¾	0.49
M16	3781	125	57	59	35	32	19	0.22
¾	900	6	2⅜	2⅜	1⅜	1¼	¾	0.87
M20	4004	150	60	60	35	32	19	0.39

TOP BEAM CLAMP RETAINING CLIP

Figure 192RS

The Figure 192RS is designed for use with Figure 192 Top Beam Clamp to prevent movement of the clamp due to vibration after installation. Available in up to 4½", 6", 8", 10" and 14" lengths (Two inches should be added to beam flange width to determine length and select next largest strap length if between sizes.)

Material: Carbon Steel.

Finish: Plain, Electro-Galvanized.

Ordering: Specify rod size, length, figure number, and finish. For Metric applications specify Figure M193RS.

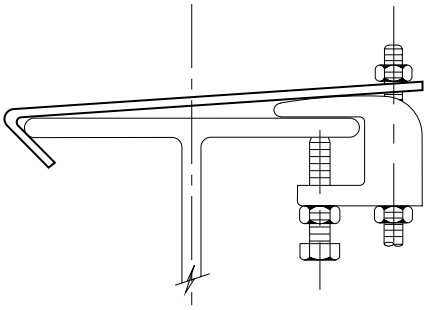


FIGURE 192RS – TOP BEAM CLAMP RETAINING CLIP

ROD SIZE	WEIGHT EACH LENGTH – DIMENSION "C" 4½ 114	6 152	8 203	10 254	14 356
⅜	0.15	0.21	0.28	0.35	0.49
M10	0.07	0.10	0.13	0.16	0.22
½	0.15	0.21	0.28	0.35	0.49
M12	0.07	0.10	0.13	0.16	0.22
⅝	0.20	0.26	0.35	0.44	0.62
M16	0.09	0.12	0.16	0.20	0.28
¾	0.20	0.26	0.35	0.44	0.62
M20	0.09	0.12	0.16	0.20	0.28
⅞	0.31	0.42	0.56	0.70	0.98
M20	0.14	0.19	0.25	0.32	0.44

C-CLAMP WITH LOCKING NUT

Figure 196

The Figure 193 is designed to attach mechanically to the bottom flange of a steel beam and may require a Figure 22 Retaining Clip to prevent loosening due to vibration after installation.

Install Figure 196 in accordance with MSS-SP69 set screw torque values. Maximum loads are based upon full thread engagement by the rod. Some Codes require the use of a Figure 22 Retaining Clip on all C-Clamps. When using a Retaining Clip the maximum allowable flange thickness is reduced by ⅛".

Material: Malleable Iron with Hardened Steel Cup Point Set Screw.

Compliance: Federal Specification A-A-1192A Type 23, MSS-SP-69 Type 23.

Finish: Plain, Electro-Galvanized.

Ordering: Specify rod size, figure number, and finish. For Metric applications specify Figure M196.

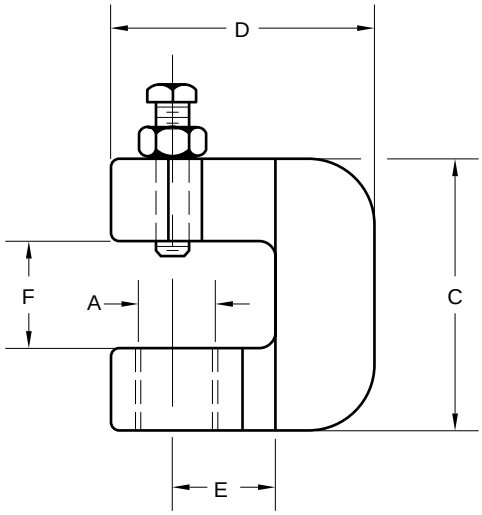


FIGURE 196 – C-CLAMP

ROD SIZE A	MAXIMUM LOAD	PIPE SIZES	C	D	E	F	FIG. 193 WEIGHT EACH	FIG. 196 WEIGHT EACH
⅜	400	½ to 2	1¾	1¾	⅝	¾	0.30	0.33
M10	1779	15 to 50	44	44	16	19	0.14	0.15
½	400	2½ to 3½	1¾	1¾	⅝	¾	0.38	0.39
M12	1779	65 to 90	44	44	16	19	0.17	0.18
⅝	440	4 to 5	2	2	¾	¾	0.45	0.46
M16	1957	100 to 125	51	51	19	19	0.20	0.21
¾	500	6	2	2	¾	¾	0.51	0.52
M20	2224	150	51	51	19	19	0.23	0.24

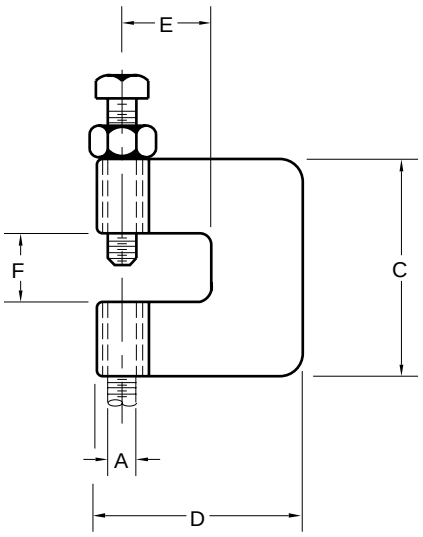
C-CLAMP WITH LOCKING NUT

Figure 47

Figure 47SS (Stainless Steel)

C-CLAMP WITHOUT LOCKING NUT

Figure 238



The Figure 47 is designed to attach to the bottom flange of a steel beam. A locking nut is provided and when tightened prevents loosening due to vibration.

The Figure 238 is identical to the Figure 47 and may require a Figure 22 Retaining Clip to prevent loosening due to vibration.

Install both Figure 47 and 238 in accordance with MSS-SP69 set screw torque values.

Maximum loads are based upon full thread engagement by the rod.

Some Codes require the use of a Figure 22 Retaining Clip on all C-Clamps. When using a Retaining Clip the maximum allowable flange thickness is reduced by ⅛".

Material: Carbon Steel with Hardened Steel Cup Point Set Screw. Stainless Type 304.

Compliance: Federal Specification A-A-1192A Type 23, MSS-SP-69 Type 23.

Finish: Plain, Electro-Galvanized. Figure 47SS (Sizes ⅜", ½", ⅝").

Ordering: Specify rod size, figure number, and finish. For Metric applications specify Figure M47 or Figure M238.

FIGURE 47 – C CLAMP WITH LOCKING NUT

ROD SIZE A	MAX LOAD	C	D	E	F	SET SCREW SIZE	WEIGHT EACH
⅜	400	2⅜	2¼	⅞	¾	⅜ x 1½	0.38
M10	1779	60	57	22	19	10 x 38	0.17
½	500	2⅜	2⅜	⅞	¾	½ x 1½	0.38
M12	2224	60	60	22	19	13 x 38	0.17
⅝	600	2⅜	2⅜	¾	¾	⅝ x 1½	0.68
M16	2669	60	60	19	19	16 x 38	0.31
¾	800	2⅜	2¼	¾	¾	¾ x 1½	0.79
M20	3559	60	57	19	19	19 x 38	0.36
⅞	1200	3	2¾	1¼	1	¾ x 1½	1.83
M20	5338	76	70	32	25	19 x 38	0.83

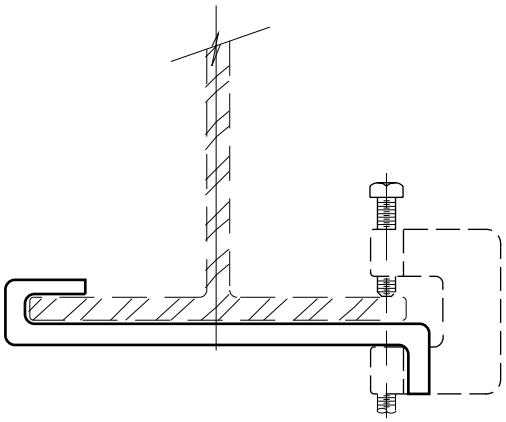
FIGURE 238 – C CLAMP WITHOUT LOCKING NUT

ROD SIZE A	MAX LOAD	C	D	E	F	SET SCREW SIZE	WEIGHT EACH
⅜	400	2¼	2⅜	⅞	¾	⅜ x 1½	0.36
M10	1779	57	60	22	19	10 x 38	0.16
½	400	2¼	2⅜	⅞	¾	½ x 1½	0.36
M12	1779	57	60	22	19	13 x 38	0.16
⅝	440	2¼	2⅜	¾	¾	⅝ x 1½	0.63
M16	1957	57	60	19	19	16 x 38	0.29
¾	800	2¼	2¼	¾	¾	¾ x 1½	0.72
M20	3559	57	57	19	19	19 x 38	0.33
⅞	1200	3	2¾	1¼	1	¾ x 1½	1.65
M20	5338	76	70	32	25	19 x 38	0.75

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

"C" CLAMP RETAINING CLIP

Figure 22



The Figure 22 is designed for use with Figure 238 and 193 "C" Clamps. to prevent movement of the "C" Clamp due to vibration after installation. Available in up to 4½", 6", 8", 10" and 14" lengths (One inch should be added to beam flange width to determine length; select next largest strap length if between standard lengths.)

Type 1 is for Figure 238, ⅜" (M10), ½" (M12), ⅝" (M16), ¾" (M20) and 7/8" (M20) rod sizes.

Type 2 is for Figure 193, ½" (M12), ⅝" (M16) and ¾" (M20) rod sizes only.

Material: Carbon Steel.

Finish: Plain, Electro-Galvanized.

Ordering: Specify rod size, length, type, figure number, and finish. For Metric applications specify Figure M17.

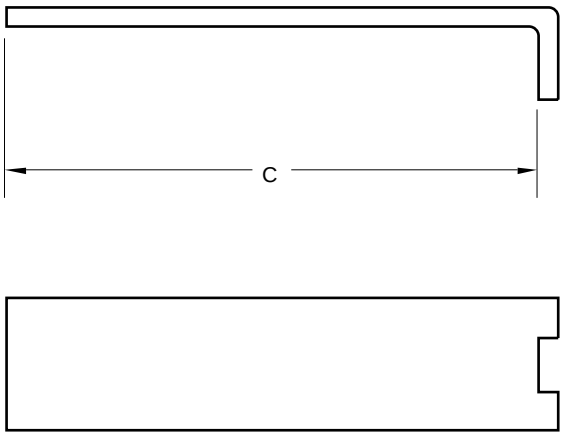
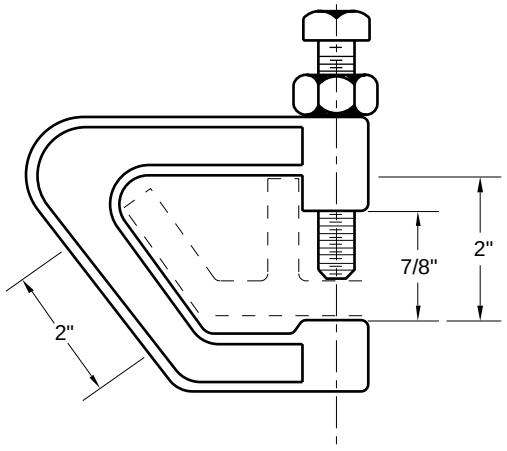


FIGURE 22 – "C" CLAMP RETAINING CLIP

CLIP SIZE	WEIGHT EACH LENGTH - DIMENSION "C"				
	4½ 114	6 152	8 203	10 254	14 356
1	0.15	0.22	0.33	0.36	0.50
1	0.07	0.10	0.15	0.16	0.23
2	0.21	0.28	0.36	0.45	0.59
2	0.10	0.13	0.16	0.20	0.27

PURLIN CLAMP

Figure 290



Designed to attach directly to steel purlins. Maximum Pipe Size is 4".

Material: Malleable Iron with hardened steel cup point set screw.

Finish: Plain, Electro-Galvanized.

Ordering: Specify figure number. For Metric applications specify Figure M290.

FIG. 290 – PURLIN CLAMP

ROD SIZE	MAXIMUM LOAD	WEIGHT EACH
⅜	400	0.82
M10	1779	0.37

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ADJUSTABLE BEAM CLAMP

Figure 14
Figure 14A (Formerly Figure 46A)

The Figure 14 is designed to clamp to the bottom of flanged beams. After installation the unit is locked into position with a hex nut and lock washer. Figure 14A is designed for wider flange widths, please see table.

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 27, MSS-SP-69 Type 27.

Finish: Plain, Galvanized.

Ordering: Specify rod size, figure number, and finish. For Metric applications specify Figure M14 or M14A.

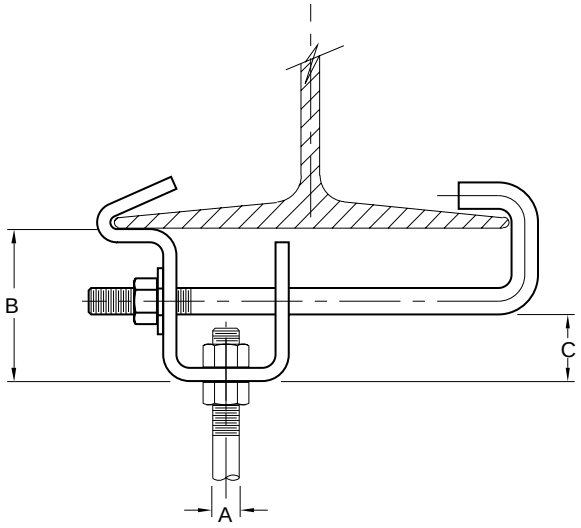


FIGURE 14 AND 14A – ADJUSTABLE BEAM CLAMP

ROD SIZE A	MAXIMUM LOAD	FLANGE WIDTH FIGURE 14 MIN.	FLANGE WIDTH FIGURE 14 MAX.	FLANGE WIDTH FIGURE 14A MIN.	FLANGE WIDTH FIGURE 14A MAX.	B	C	WEIGHT EACH FIG. 14	WEIGHT EACH FIG. 14A
⅜	300	3½	8	8	16	2¾	1¼	0.96	2.56
M10	1335	89	203	203	406	70	32	0.44	1.16
½	700	3½	8	8	16	2¾	1¼	1.42	3.48
M12	3114	89	203	203	406	70	32	0.64	1.58
⅝	1000	3½	8	8	16	2¾	1¼	1.86	5.24
M16	4448	89	203	203	406	70	32	0.84	2.38
¾	1300	3½	8	8	16	3¾	1½	4.22	7.18
M20	5783	89	203	203	406	95	38	1.91	3.26
⅞	1400	3½	8	8	16	3¾	1½	5.56	8.92
M20	6228	89	203	203	406	95	38	3.20	4.05
1	1500	3½	8	8	16	3¾	1½	7.74	11.32
M24	6673	89	203	203	406	95	38	3.51	5.13

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ADJUSTABLE BEAM CLAMP

Figure 82

The Figure 82 is designed to attached to the bottom of flanged beams without requiring welding. Normally used with the Figure 157 Extension Piece (Not Furnished) up to a maximum ⅞" (M20) rod diameter. Loading is achieved through the clamp jaws while locking is accomplished by tightening the through-bolt located directly below the flange. Maximum flange thickness is 0.60 inches.

Material: Malleable Iron.

Compliance: Federal Specification A-A-1192A Type 30, MSS-SP-69 Type 30 when used with a Figure 157.

Finish: Plain, Galvanized.

Ordering: Specify figure number, and finish. Order Figure 157 separately, if required. For Metric applications specify Figure M82.

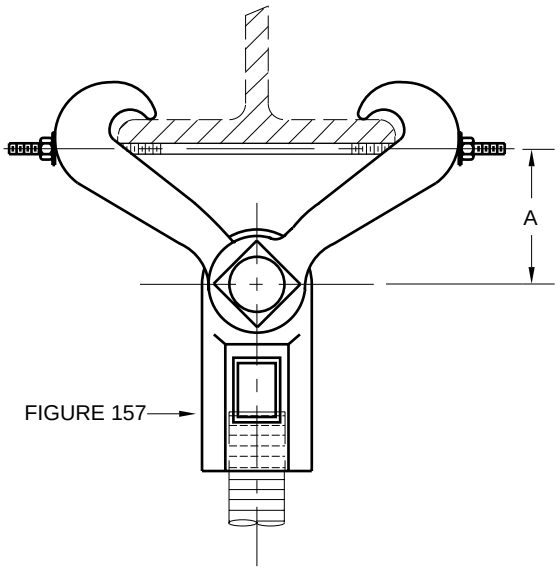


FIGURE 82 – ADJUSTABLE BEAM CLAMP

MAXIMUM ROD SIZE	MAXIMUM LOAD	ROD TAKE OUT BEAM FLANGE WIDTH – B 2⅜ 60	3 76	4 101	5 127	6 152	7 177	WEIGHT EACH
⅜	610	3½	3 7/16	3 5/16	2 15/16	2 9/16	1⅞	1.91
M10	2714	89	87	84	75	65	48	0.87
½	1130	3½	3 7/16	3 5/16	2 15/16	2 9/16	1⅞	2.11
M12	5027	89	87	84	75	65	48	0.96
⅝	1365	3½	3 7/16	3 5/16	2 15/16	2 9/16	1⅞	2.15
M16	6072	89	87	84	75	65	48	0.98
¾	1365	3½	3 7/16	3 5/16	2 15/16	2 9/16	1⅞	2.36
M20	6072	89	87	84	75	65	48	1.07
⅞	1365	3½	3 7/16	3 5/16	2 15/16	2 9/16	1⅞	2.49
M20	6072	89	87	84	75	65	48	1.13

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ALL-THREAD HANGER ROD

Figure 94
Figure 94SS

This product has a standard rolled thread running its entire length. It is particularly useful when exact rod lengths are questionable.

Material: Figure 94 is made of carbon steel while Figure 94SS is available in either 304 or 316 stainless steel. Available in precut six, ten, and twelve foot lengths. Can be cut to suit customer need upon request.

Finish: Plain, Electro-Galvanized, or Hot-Dip Galvanized.

Ordering: Specify figure number, finish, rod size, and length. For Metric applications specify Figure M94 or M94SS.

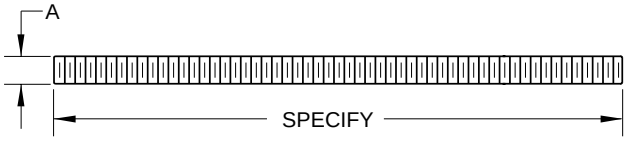


FIGURE 94 – ALL-THREAD HANGER ROD

DIAMETER A	MAXIMUM LOAD	WEIGHT PER FOOT
3/8 M10	610 2714	0.30 0.14
1/2 M12	1130 5027	0.53 0.24
5/8 M16	1810 8052	0.84 0.38
3/4 M20	2710 12055	1.20 0.54
7/8 M20	3700 16459	1.70 0.77
1 M24	4960 22064	2.30 1.04
1 1/4 M30	8000 35587	3.60 1.63
1 1/2 M36	11600 51601	5.10 2.31

MACHINE THREAD RODS

Figure 133
(Right Hand Threads Both Ends)

Figure 133L
(Right Hand and Left Hand Thread)

Furnished with UNC threads this product is made from carbon steel.

Maximum loads given are rated for up to 650° F (343° C).

Material: Carbon Steel (Stainless Steel is Available).

Finish: Plain, Electro-Galvanized, Hot-Dip Galvanized.

Ordering: Specify material if other than carbon steel, figure number, finish, rod diameter, and length, and thread length if other than standard. For Metric applications specify M133 or M133L.

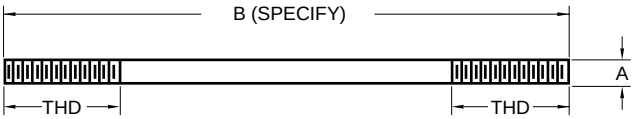


FIGURE 133, 133L – MACHINE THREAD RODS

DIAMETER A	THREAD LENGTH	LOAD AT 650° F / 343° C
3/8 M10	3 76	610 2713
1/2 M12	3 76	1130 5026
5/8 M16	3 76	1810 8051
3/4 M20	3 76	2710 12055
7/8 M20	4 102	3770 16770
1 M24	4 102	4960 22063
1 1/4 M30	4 102	8000 35586
1 1/2 M36	6 152	11630 51733
1 3/4 M42	6 152	15700 69837
2 M48	6 152	20700 92078
2 1/4 M56	6 152	27200 120991
2 1/2 M64	6 152	33500 149015
2 3/4 M72	6 152	41580 184956
3 M80	6 152	50580 224990
3 1/4 M80	6 152	60480 269027
3 1/2 M90	6 152	71280 317068
3 3/4 M95	6 152	82890 368711
4 M100	6 152	95400 424358

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

MACHINE THREAD EYE ROD

Figure 33 (Right Hand Threads)

Figure 33L (Left Hand Threads)

The Figure 33 is designed to permit swing in the attachment component due to pipe movement. The inside diameter of the eye is ⅜" larger than the rod diameter for rod sizes up to 1½" while the inside diameter for larger size rods will be ¾" greater. The eye is not welded. The Figure 93 Welded Eye Rod is available for higher load requirements.

Material: Carbon Steel.

Finish: Plain, Electro-Galvanized, Hot-Dip Galvanized.

Temperature: 650° F / 343° C Maximum.

Ordering: Specify rod size, rod length, thread length, (if other than standard), figure number, and finish. For Metric applications specify M33 or M33L. Larger rod diameters are available upon request.

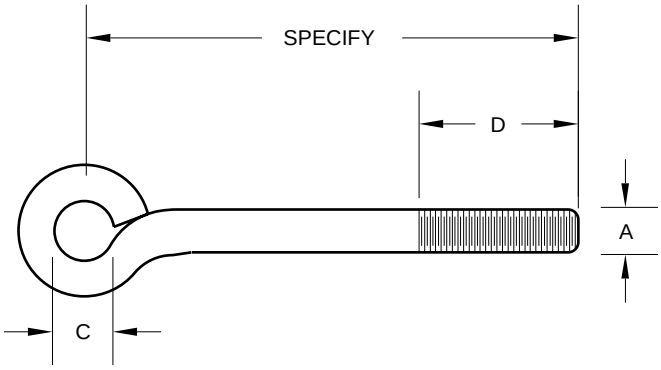


FIGURE 33 – MACHINE THREADED EYE ROD

A	⅜ M10	½ M12	⅝ M16	¾ M20	⅞ M20	1 M24	1¼ M30	1½ M36	1¾ M42	2 M48	2¼ M56	2½ M64
C	¾ 19	⅞ 22	1 25	1⅛ 29	1¼ 32	1⅜ 35	1⅝ 41	1⅞ 48	2½ 64	2¾ 70	3 76	3¼ 83
D	2½ 64	2½ 64	2½ 64	3 76	3½ 89	4 102	5 127	6 152	6 152	6 152	6 152	6 152
LOAD AT **650° F / 343° C**	240 1068	440 1957	705 3136	1050 4671	1470 6539	1940 8630	3170 14101	4650 20684	6380 28380	8280 36831	10900 48485	13400 59606

WELDED EYEROD

Figure 93 (Right Hand Threads)

Figure 93L (Left Hand Threads)

Welded Eyerods are designed to permit swing in the attachment component due to pipe movement.

Material: Carbon Steel. Larger rod diameters over 2½", special materials, and special eye dimensions can be furnished upon request.

Finish: Plain, Electro-Galvanized, Hot-Dip Galvanized.

Ordering: Specify figure number, finish, rod size, rod length, and thread length if other than standard. For Metric applications specify M93 or M93L.

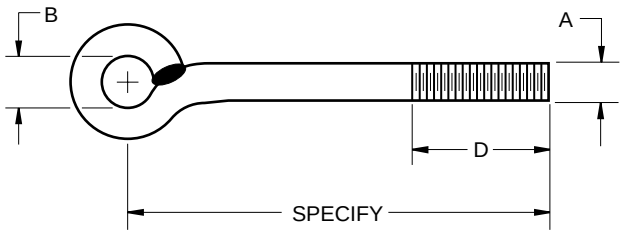


FIGURE 93, 93L – WELDED EYEROD

A	⅜ M10	½ M12	⅝ M16	¾ M20	⅞ M20	1 M24	1¼ M30	1½ M36	1¾ M42	2 M48	2¼ M56	2½ M64
B	¾ 19	⅞ 22	1 25	1⅛ 29	1¼ 32	1⅜ 35	1⅝ 41	1⅞ 48	2½ 64	2¾ 70	3 76	3¼ 83
THREAD **LENGTH (D)**	3 76	3 76	3 76	3 76	4 102	4 102	4 102	6 152	6 152	6 152	6 152	6 152
LOAD AT **650° F / 343° C**	610 2713	1130 5026	1810 8051	2710 12055	3770 16770	4960 22063	8000 35586	11630 51733	15700 69837	20700 92078	27200 120991	33500 149015
LOAD AT **750° F / 399° C**	540 2402	1010 4493	1610 7162	2420 10765	3360 14946	4420 19661	7140 31760	10370 46128	14000 62275	18460 82114	24260 107913	29880 132912

Dimensions	Temperature	Loads	Weight
Inches Millimeters	Fahrenheit Celsius	Pounds Newtons	Pounds Kilograms

LAG ROD

Figure 28

The Figure 28 is designed for a vertical rod connection to wood.

Material: Carbon Steel.

Finish: Plain, Electro-Galvanized.

Ordering: Specify rod diameter, rod length, figure number, and finish. For Metric applications specify M28.

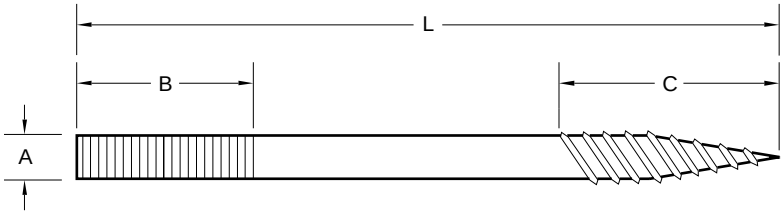


FIGURE 28 – LAG ROD

ROD SIZE A	MAXIMUM LOAD	MINIMUM LENGTH MACHINE B	MINIMUM LENGTH COACH C	WEIGHT EACH LENGTH - DIMENSION "L" 4 114	6 152	8 203	10 254	12 356
⅜	390	2½	2	0.12	0.19	0.25	0.31	0.37
M10	1735	64	51	0.05	0.09	0.11	0.14	0.17
½	640	2½	2	0.22	0.34	0.44	0.56	0.67
M12	2847	64	51	0.10	0.15	0.20	0.25	0.30
⅝	750	2½	2½	0.35	0.53	0.70	0.87	0.59
M16	3336	64	64	0.16	0.24	0.32	0.39	0.27

FORGED WELDLESS EYENUT

Figure 279
Figure 279L

The Figure 279 is used to connect rod ends with structural steel welded beam attachments or pipe clamps as a substitute for a welded eyerod. It provides a pivot point and adjustment. It can also be supplied tapped left hand as Fig 279L.

Material: Forged Steel.

Compliance: Federal Specification A-A-1192A Type 17, MSS-SP 69 Type 17, and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number, rod size and finish. For Metric applications specify M279 or M279L.

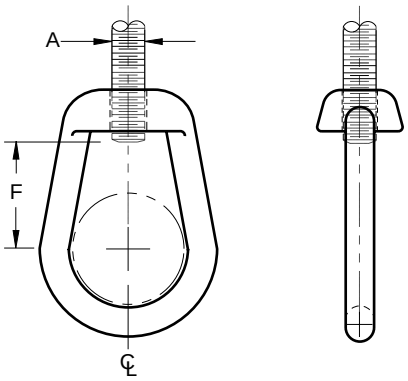


FIGURE 279 – WELDLESS EYENUT

ROD TAP A	MAX LOAD 650° F / 343 °C	F	WEIGHT EACH
⅜	610	1	0.20
M10	2714	25	0.09
½	1130	1	0.31
M12	5027	25	0.14
⅝	1810	1	0.55
M16	8052	25	0.25
¾	2710	1	1.00
M20	12055	25	0.45
⅞	3770	1⅜	1.55
M20	14991	35	0.70
1	4960	1¾	2.45
M24	22064	44	1.11
1¼	8000	1¾	3.75
M30	35587	44	1.70
1½	11630	1¾	6.75
M36	51735	44	3.06
1¾	15700	3¼	16.40
M42	69840	83	7.44
2	20700	3¼	16.75
M48	92082	83	7.60
2¼	27200	3¼	16.75
M56	120996	83	7.60
2½	33500	3¼	16.75
M64	149021	83	7.60

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

FORGED STEEL CLEVIS

Figure 276
Figure 276P

The Figure 276 is used to connect rod ends with structural steel welding lug plates or lugs welded to pipe. It provides a pivot point and adjustment. It can be supplied with a pin as Fig 276P.

Material: Forged Steel.

Compliance: Federal Specification A-A-1192A Type 14, MSS-SP 69 Type 14, and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number, rod size, pin size, grip "G" and finish. For Metric applications specify M276 or M276P.

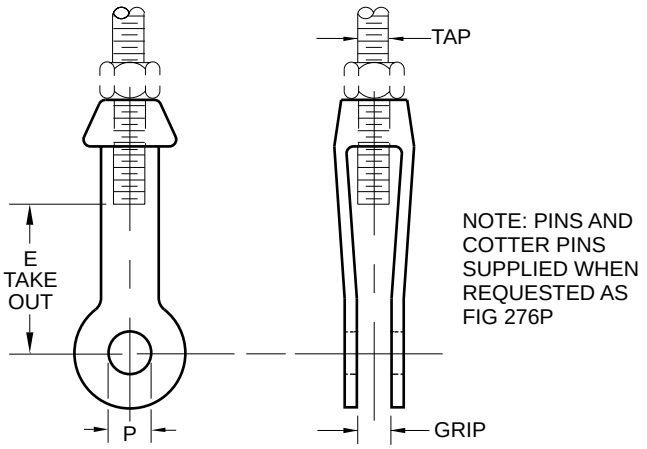


FIGURE 276 – FORGED STEEL CLEVIS

ROD SIZE	MAX LOAD 650° F 343° C	PIN/ BOLT DIA.	E TAKE OUT	P	WGT EACH
3/8	610	1/2	2	9/16	0.77
M10	2713	M12	48	14	0.35
1/2	1130	5/8	2	11/16	0.77
M12	5026	M16	48	8	0.35
5/8	1810	3/4	2	13/16	0.77
M16	8051	M20	48	21	0.35
3/4	2710	7/8	2 1/2	1	2.50
M20	12055	M20	64	24	1.13
7/8	3770	1	2 1/2	1 1/8	2.50
M20	16770	M24	64	29	1.13
1	4960	1 1/8	3	1 1/4	4.00
M24	22063	M30	80	32	1.81
1 1/4	8000	1 3/8	3	1 1/2	4.00
M30	35586	M36	80	38	1.81
1 1/2	11630	1 5/8	3 1/2	1 3/4	6.00
M36	51733	M42	90	44	2.72
1 3/4	15700	1 7/8	4	2	8.00
M42	69837	M48	100	51	3.63
2	20700	2 1/4	5	2 3/8	16.00
M48	92078	M56	125	60	7.26
2 1/4	27200	2 1/2	6	2 5/8	26.00
M56	120991	M64	150	67	11.79
2 1/2	33500	2 3/4	6	2 7/8	36.00
M64	149015	M72	150	73	16.33

TURNBUCKLE

Figure 132

The Figure 132 is used to connect right and left hand threaded rods together and provide for adjustment.

Material: Forged Steel.

Compliance: Federal Specification A-A-1192A Type 13, MSS-SP 69 Type 13, and BSPSS-BS3974.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish, and rod size. For Metric applications specify M132.

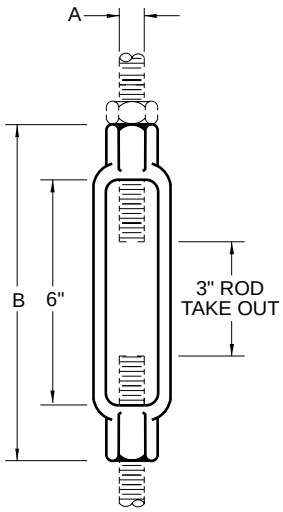


FIGURE 132 – TURNBUCKLE

ROD SIZE A	MAXIMUM LOAD 650° F 343° C	B	WEIGHT EACH
3/8	610	7 1/8	0.30
M10	2714	181	0.14
1/2	1130	7 1/2	0.60
M12	5027	191	0.27
5/8	1810	7 7/8	1.00
M16	8052	200	0.45
3/4	2710	8 1/4	1.20
M20	12055	210	0.54
7/8	3370	8 5/8	1.90
M20	14991	219	0.86
1	4960	9	2.50
M24	22064	229	1.13
1 1/4	8000	9 1/8	3.80
M30	35587	232	1.72
1 1/2	11630	9 3/4	5.70
M36	51735	248	2.59
1 3/4	15700	10 3/8	8.20
M42	69840	264	3.72
2	20700	11	14.20
M48	92082	279	6.44
2 1/4	27200	12 7/8	27.00
M56	120996	327	12.25
2 1/2	33500	13 1/2	33.00
M64	149021	343	14.97

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

HANGER ADJUSTER

Figure 38

Figure 38CT (Copper Finish)

The Figure 38 is an economical alternative to using turnbuckles for vertical piping adjustment with our Figure 34 Hinge Hanger. Figure 38CT is available in 3/8" and 1/2" rod sizes only.

Material: Malleable Iron.

Compliance: Federal Specification A-A-1192A Type 15, MSS-SP-69 Type 15.

Finish: Plain, Copper.

Ordering: Specify rod size and figure number. For Metric applications specify Figure M38 or Figure M38CT.

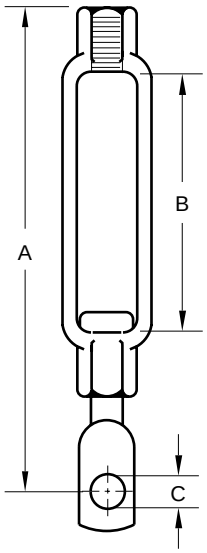


FIGURE 38 – HANGER ADJUSTER

ROD SIZE	MAX LOAD	A	B	C	WEIGHT EACH
¼	230	2½	1¼	7/32	0.09
M6	1023	64	32	6	0.04
⅜	610	3 13/16	1⅞	13/32	0.28
M10	2714	97	48	10	0.13
½	710	3 13/16	1 13/16	13/32	0.31
M12	3158	97	46	10	0.14
⅝	710	4⅞	2 5/16	½	0.72
M16	3158	124	59	13	0.33
¾	860	4 15/16	2 5/16	9/16	0.70
M20	3826	125	59	14	0.32

FIG. 38CT – HANGER ADJUSTER FOR COPPER TUBING

ROD SIZE	MAX LOAD	A	B	C	WEIGHT EACH
⅜	610	3 13/16	1⅞	13/32	0.28
M10	2714	97	48	10	0.13
½	710	3 13/16	1 13/16	13/32	0.31
M12	3158	97	46	10	0.14

EYE SOCKET

Figure 12

Figure 12CT (Copper Finish)

The Figure 12 is designed for attaching a rod to split ring type clamps. Figure 12CT is only available in 1/4", 3/8", and 1/2" rod sizes.

Material: Malleable Iron.

Compliance: Federal Specification WW-H-171E Type 16, MSS-SP-69 (Type 16).

Finish: Plain, Copper.

Ordering: Specify rod size and figure number. For Metric applications specify Figure M12 or M12CT.

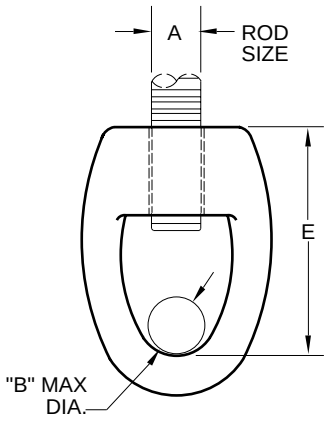


FIGURE 12 – EYE SOCKET

ROD SIZE A	MAX LOAD	MAX B	E	WEIGHT EACH
¼	240	¼	1⅜	0.08
M6	1068	M6	35	0.04
⅜	610	¼	1⅜	0.08
M10	2714	M6	35	0.04
½	1000	¼	1 9/16	0.11
M12	4448	M6	40	0.05
⅝	1400	⅜	1¾	0.22
M16	6228	M10	44	0.10
¾	2200	½	2¼	0.30
M20	9786	M12	57	0.14
⅞	2300	½	2 7/16	0.32
M20	10231	M12	62	0.15

FIGURE 12CT – EYE SOCKET

ROD SIZE A	MAX LOAD	B	MAX SIZE C	WEIGHT EACH
¼	240	1⅜	¼	0.08
M6	1068	35	M6	0.04
⅜	610	1⅜	¼	0.08
M10	2714	35	M6	0.04
½	1000	1 9/16	¼	0.11
M12	4448	40	M6	0.05

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

EXTENSION PIECE

Figure 157

The Figure 157 is designed for attaching rods to the Figure 82 Beam Clamp and similar types of attachments.

Material: Malleable Iron.

Compliance: Federal Specification A-A-1192A Type 30, MSS-SP-69 Type 30 when used with a Figure 82.

Finish: Plain, Electro-Galvanized.

Ordering: Specify rod size, figure number, and finish. Order Figure 82 separately, if required. For Metric applications specify Figure M157.

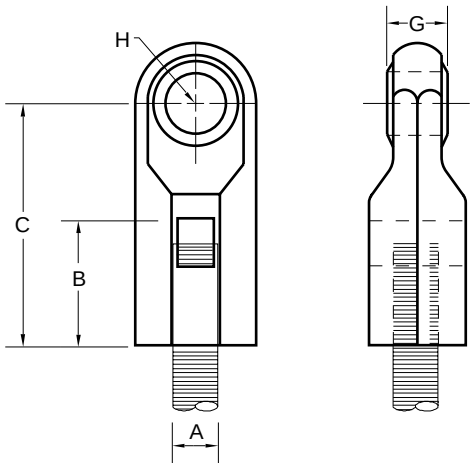


FIGURE 157 – EXTENSION PIECE

ROD SIZE A	MAX LOAD	B	C	G	H	WEIGHT EACH
⅜	610	1¼	2⅛	½	½	0.20
M10	2714	32	54	13	13	0.09
½	1130	1⅜	2⅜	⅝	½	0.40
M12	5027	35	60	16	13	0.18
⅝	1810	1½	2½	⅝	½	0.44
M16	8052	38	64	16	13	0.20
¾	2710	1¾	2⅞	⅝	½	0.65
M20	12055	44	73	16	13	0.29
⅞	2950	1⅞	3	¾	9⁄16	0.78
M20	13123	48	76	19	14	0.35

ROUND HANGER ROD

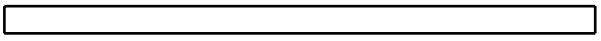
Figure 224

Unthreaded steel rod available in a variety of sizes for customer use. Available in up to 20 foot lengths.

Material: Low carbon steel.

Finish: Plain.

Ordering: Specify rod size, length, figure number, and finish. For Metric applications specify Figure M224.



DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

WELDING LUG

Figure 220

The Figure 220 is to be welded to the underside of structural members for the support of C Type Variable Springs, and with the Figure 276P Forged Steel Clevis with Pin.

Material: Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish and size. For Metric applications specify Figure M220.

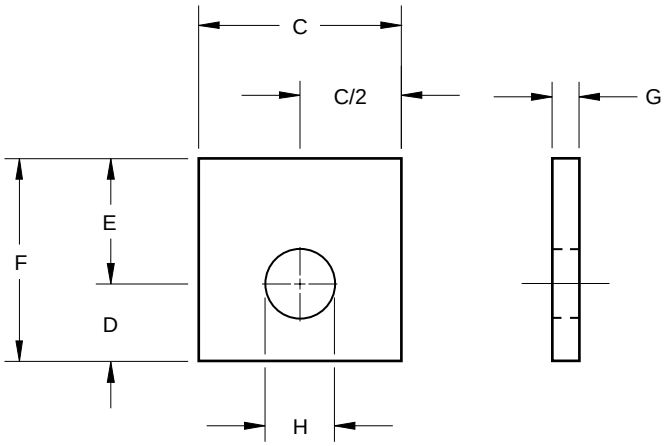


FIGURE 220 – WELDING LUG

ROD SIZE	BOLT OR PIN SIZE	MAXIMUM LOAD	C	D	E	F	G	H	WEIGHT EACH
½	⅝	1130	2½	1¼	3	4¼	¼	11/16	0.75
12	M16	5027	64	32	76	108	6	17	0.34
⅝	¾	1810	2½	1¼	3	4¼	¼	13/16	0.68
16	M20	8052	64	32	76	108	6	21	0.31
¾	⅞	2710	2½	1¼	3	4¼	⅜	15/16	1.00
20	M20	12055	64	32	76	108	10	24	0.45
⅞	1	3770	2½	1¼	3	4¼	⅜	1⅛	0.98
20	M24	16770	64	32	76	108	10	29	0.44
1	1⅛	4960	3	1½	3	4½	½	1¼	1.60
24	M30	22064	76	38	76	114	13	32	0.73
1¼	1⅜	8000	4	2	4	6	⅝	1½	3.70
30	M36	35587	102	51	102	152	16	38	1.68
1½	1⅝	11630	5	2½	4½	7	¾	1¾	6.40
36	M42	51735	127	64	114	178	19	44	2.90
1¾	1⅞	15700	5	2½	4½	7	¾	2	6.30
42	M48	69840	127	64	114	178	19	51	2.86
2	2¼	20630	6	3	4½	7½	¾	2⅜	7.20
48	M56	91770	152	76	114	191	19	60	3.27
2¼	2½	23000	6	3	4½	7½	¾	2⅝	7.60
56	M64	102313	152	76	114	191	19	67	3.45
2½	2¾	30500	8	4	4½	8½	1	2⅞	15.50
64	M72	135676	203	102	114	216	25	73	7.03
2¾	3	41600	8	4	4½	8½	1	3⅛	15.10
72	M80	185053	203	102	114	216	25	79	6.85
3	3¼	50500	8	4	5	9	1	3⅜	16.00
80	M80	224644	203	102	127	229	25	86	7.26
3¼	3½	60500	9	4½	5	9½	1	3⅝	18.90
80	M90	269128	229	114	127	241	25	92	8.57
3½	3¾	71300	9	4½	6	10½	1½	3⅞	31.30
90	M100	317171	229	114	152	267	38	98	14.20
3¾	4	82900	9	5	6	11	1¾	4⅛	35.90
100	M125	368772	229	127	152	279	44	105	16.28

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

WASHER PLATE

Figure 260

This product is to be welded to back to back channels or angles for supporting pipe with rods or U-Bolts.

Sufficient contact surface to the supporting structure must be made to develop maximum load capacity. Dimension "A" should not be exceeded.

Material: Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify figure number, finish, and rod size. For Metric applications specify Figure M260.

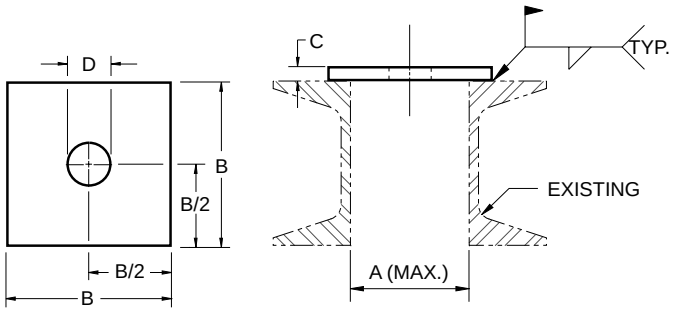


FIGURE 260 – WASHER PLATE

ROD SIZE	MAX LOAD	A	B	C	HOLE D	WGT EACH
3/8	610	1 1/2	3	1/4	7/16	0.63
M10	2713	38	76	6	11	0.29
1/2	1130	1 1/2	3	1/4	9/16	0.61
M12	5026	38	76	6	14	0.28
5/8	1810	1 1/2	3	3/8	11/16	0.95
M16	8051	38	76	10	17	0.43
3/4	2710	2	4	3/8	13/16	1.60
M20	12055	51	102	10	21	0.73
7/8	3770	2	4	1/2	15/16	2.17
M20	16770	51	102	13	24	0.98
1	4960	2 1/2	4	1/2	1 1/16	2.15
M24	22063	64	102	13	27	0.98
1 1/8	6230	2 1/2	4	1/2	1 1/4	2.13
M30	27712	64	102	13	32	0.97
1 1/4	8000	3	5	1/2	1 3/8	3.28
M30	35586	76	127	13	35	1.49
1 1/2	11630	3 1/2	5	5/8	1 5/8	4.05
M36	51733	89	127	16	41	1.84
1 3/4	15700	3 1/2	5	5/8	2	3.88
M42	69837	89	127	16	51	1.76
2	20700	4	6	3/4	2 1/4	4.47
M48	92078	102	152	19	57	2.03
2 1/4	27200	4	6	3/4	2 1/2	6.62
M56	120991	102	152	19	64	3.00
2 1/2	33500	4 1/2	6	3/4	2 3/4	6.40
M64	149015	114	152	19	70	2.90
2 3/4	41580	4 1/2	6	3/4	3	6.16
M72	184956	114	152	19	76	2.79
3	50580	4 1/2	6	3/4	3 1/4	5.89
M80	224990	114	152	19	83	2.67
3 1/4	60480	4 1/2	6	3/4	3 1/2	5.56
M80	269027	114	152	19	89	2.52
3 1/2	71280	5	7	3/4	3 3/4	8.07
M90	317068	127	178	19	95	3.66
3 3/4	82890	5	7	3/4	4	7.75
M95	368711	127	178	19	102	3.52

MALLEABLE ROD COUPLING

Figure 167

REDUCING ROD COUPLING

Figure 167R

The Figure 167 is tapped with a straight bolt thread tap.

The Figure 167R is designed to reduce rod sizes. Couplings are made either to step up or down one rod size.

Finish: Plain, Electro-Galvanized.

Ordering: Specify rod size, figure number, and finish. For Metric applications specify Figure M67 or M167R.

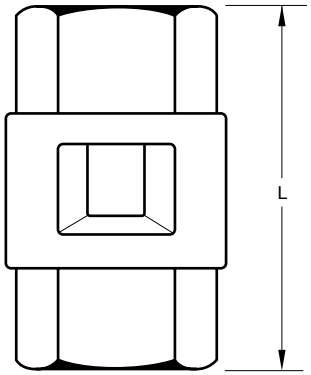


FIGURE 167 – MALLEABLE ROD COUPLING

ROD SIZE	MAXIMUM LOAD	L	WEIGHT EACH
1/4	230	1 3/8	0.10
M6	1023	35	0.05
3/8	610	1 5/8	0.10
M10	2714	41	0.05
1/2	1130	2 5/8	0.18
M12	5027	54	0.08
5/8	1810	2 1/2	0.30
M16	8052	64	0.14
3/4	2710	2 5/8	0.44
M20	12055	67	0.20
7/8	3770	2 1/4	0.96
M20	16770	57	0.44
1	4960	2 3/4	0.94
M24	22064	70	0.43

FIGURE 167R – MALLEABLE REDUCING ROD COUPLING

ROD SIZE	MAXIMUM LOAD	L	WEIGHT EACH
3/8 x 1/4	230	1 5/8	0.10
M10 x M6	1023	41	0.05
1/2 x 3/8	610	2 1/8	0.18
M12 x M10	2714	54	0.08
5/8 x 3/4	1810	2 1/2	0.44
M16 x M20	8052	64	0.20
3/4 x 7/8	2710	2 5/8	0.96
M20 x M20	12055	67	0.44

STEEL ROD COUPLING

Figure 123
Figure 123W

Figure 123 is used to connect rods up to 1½ inch diameter. The Rod Coupling is made of carbon steel and can be welded to the rod after assembly. The Figure 123W has a sight hole mid length to allow for determining depth of thread engagement.

Finish: Electro-Galvanized.

Ordering: Specify figure number, finish and rod size. For Metric applications specify Figure M123 or M123W.

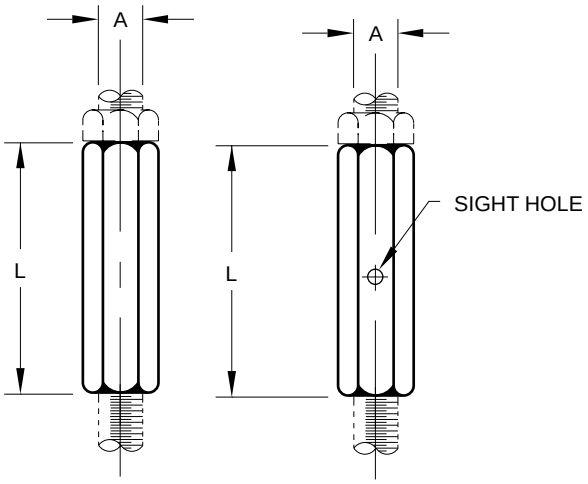


FIGURE 123 FIGURE 123W

FIGURE 123, 123W – ROD COUPLING

ROD SIZE A	MAXIMUM LOAD	L	WEIGHT EACH
¼	240	⅞	0.02
M6	1068	22	0.01
⅜	610	1¾	0.08
M10	2714	44	0.04
½	1130	1¾	0.12
M12	5027	44	0.05
⅝	1810	2⅛	0.17
M16	8052	54	0.08
¾	2710	2¼	0.28
M20	12055	57	0.13
⅞	3770	2¼	0.44
M20	16770	57	0.20
1	4150	2¾	0.72
M24	18461	70	0.33
1¼	6660	3¼	1.41
M30	29626	83	0.64
1½	7000	4	1.96
M36	31139	102	0.89

STEEL REDUCING ROD COUPLING

Figure 123R

Figure 123R is used to reduce rod sizes. Coupling are made of carbon steel to step up or down one rod size.

Finish: Electro-Galvanized.

Ordering: Specify rod size and figure number. For Metric applications specify Figure M123R.

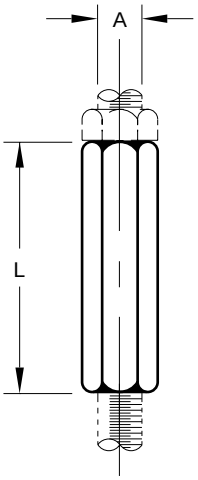


FIGURE 123R – REDUCING ROD COUPLING

ROD SIZE A	MAXIMUM LOAD	L	WEIGHT EACH
⅜ x ½	610	1¼	0.12
M10 x M12	2714	32	0.05
½ x ⅝	1130	1¼	0.16
M12 x M16	5027	32	0.07
⅝ x ¾	1810	1½	0.20
M16 x M20	8052	38	0.09
¾ x ⅞	2710	1¾	0.31
M20 x M20	12055	44	0.14

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

ANCHOR BOLT

Figure 177

The Figure 177 is designed to be embedded into concrete. Made special to customer order. Are available in other diameters and lengths.

Material: Carbon Steel

Finish: Plain, Electro-Galvanized, Hot-Dip Galvanized.

Ordering: Specify rod size, length, thread length "E", figure number, and finish. For Metric applications specify Figure M177.

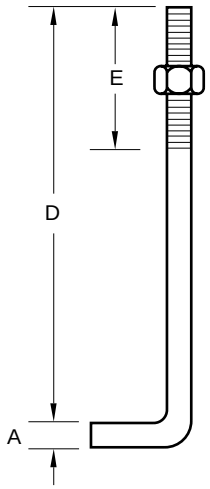


FIGURE 177 – ANCHOR BOLT

ROD SIZE A	WEIGHT EACH LENGTH - DIMENSION "D" 6	8	10	12
⅜	0.28	0.34	0.40	0.46
M10	0.13	0.15	0.18	0.21
½	0.52	0.63	0.74	0.85
M12	0.24	0.29	0.34	0.39
⅝	0.81	0.99	1.16	1.34
M16	0.37	0.45	0.53	0.61
¾	1.19	1.44	1.69	1.94
M20	0.54	0.65	0.77	0.88
⅞	1.5	1.9	2.2	2.60
M20	0.68	0.86	1.00	1.18
1	2.0	2.4	2.9	3.30
M24	0.91	1.09	1.32	1.50

ROUND WASHER

Figure 103 (Carbon Steel – Plain)

Figure 103E (Carbon Steel – Electro-Galvanized)

Figure 103G (Carbon Steel – Hot-Dip Galvanized)

Figure 103S (Stainless Steel)

Compliance: United States Standard.

Material: Carbon Steel or Stainless Steel (ASTM 240 Type 304 or Type 316).

Finish: Plain, Electro-Plated, Hot-Dip Galvanized.

Ordering: Specify rod size, figure number, finish or grade of material. For Metric applications Specify Figure M103. Please see Figure 176 for Lock Washers. Fender Washers and Tooth Lock Washers are available upon request.

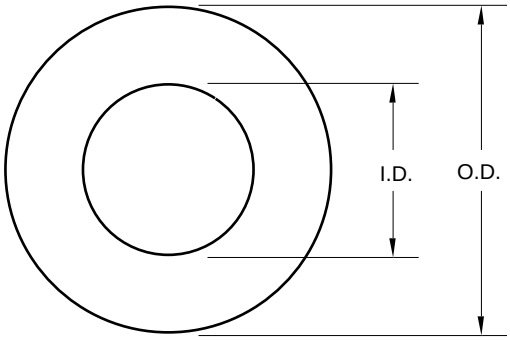


FIGURE 103 – ROUND WASHER

BOLT SIZE	¼ M6	5/16 M8	⅜ M10	7/16 M12	½ M12	9/16 M14	⅝ M16
I.D.	5/16 8	⅜ 10	7/16 11	½ 13	9/16 14	⅝ 16	11/16 17
O.D.	1 19	1 25	1 25	1¼ 32	1⅜ 35	1½ 38	1¾ 44
WGT. EACH	0.01 0.04	0.02 0.09	0.02 0.09	0.03 0.13	0.04 0.18	0.06 0.27	0.08 0.36

BOLT SIZE	¾ M20	⅞ M20	1 M24	1⅛ M30	1¼ M30	1⅜ M36	1½ M36
I.D.	13/16 21	15/16 24	1 1/16 27	1¼ 32	1⅜ 35	1½ 38	1⅝ 41
O.D.	2 51	2¼ 57	2½ 64	2¾ 70	3 76	3¼ 83	3½ 89
WGT. EACH	0.11 0.49	0.15 0.67	0.19 0.85	0.22 0.98	0.26 1.16	0.32 1.42	0.38 1.69

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

HEX NUT

Figure 165

HEAVY HEX NUT

Figure 165H

Material is an ASTM A-563 Grade A (Alloy and Stainless Steel grades are Available). Sizes 1¾" and larger are only available as a Figure 165H. RH tap will be furnished. LH tap are special order.

Finish: Plain, Electro-Galvanized, Hot-Dip Galvanized.

Ordering: Specify tap size, figure number, and finish. For Metric applications specify M165 or M165H.

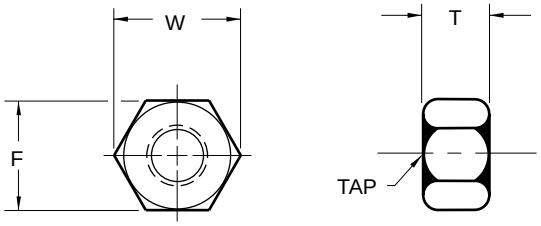


FIGURE 165H – HEAVY HEX NUT

TAP SIZE	MAX LOAD	F	T	W	WGT EACH
3/8	610	11/16	3/8	13/16	0.031
M10	2714	17	10	21	0.014
1/2	1130	7/8	1/2	1	0.065
M12	5027	22	13	25	0.030
5/8	1810	1 1/16	5/8	1 1/4	0.119
M16	8052	27	16	32	0.054
3/4	2710	1 1/4	3/4	1 7/16	0.193
M20	12055	32	19	37	0.088
7/8	1810	1 7/16	7/8	1 11/16	0.297
M20	8052	37	22	43	0.135
1	4960	1 5/8	1	1 7/8	0.425
M24	22064	41	25	48	0.193
1 1/4	8000	2	1 1/4	2 5/16	0.786
M30	35587	51	32	59	0.357
1 1/2	11630	2 3/8	1 1/2	2 3/4	1.310
M36	51735	60	38	70	0.594
1 3/4	15700	2 3/4	1 3/4	3 3/16	2.040
M42	69840	70	44	81	0.925
2	20700	3 1/8	2	3 5/8	2.990
M48	92082	79	51	92	1.356
2 1/4	27200	3 1/2	2 3/16	4 1/16	4.190
M56	120996	89	56	103	1.901
2 1/2	33500	3 7/8	2 7/16	4 1/2	5.640
M64	149021	98	62	114	2.558
2 3/4	41580	4 1/4	2 11/16	4 15/16	7.380
M72	184964	108	68	125	3.348
3	50580	4 5/8	2 15/16	5 5/16	9.500
M80	225000	117	75	135	4.309
3 1/4	60480	5	3 3/16	5 3/4	11.940
M80	269039	127	81	146	5.416
3 1/2	71280	5 3/8	3 7/16	6 3/16	15.260
M90	317082	137	87	157	6.922

HEX HEAD BOLT WITH HEAVY HEX NUT

Figure 162

Hex head bolt with UNC threads and supplied with one heavy hex nut. Stocked for immediate shipment. Various lengths. Available without heavy hex nut.

Also available in alloy (A193B7), stainless steel (316 and 18-8), and high strength (A325).

Material: Low carbon steel.

Finish: Plain, Electro-Galvanized, Hot-Dip Galvanized.

Ordering: Specify diameter, length, thread length, figure number, and finish. For Metric applications specify Figure M162.

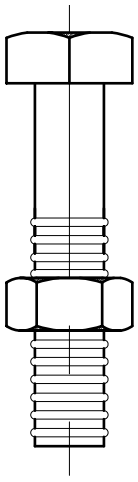


FIGURE 162 – HEX HEAD BOLT WITH HEAVY DUTY NUT

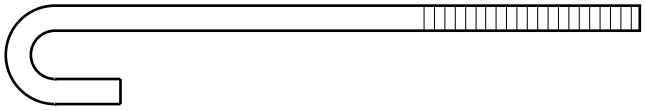
DIA.OF BOLT	LENTH OF BOLT IN INCHES									
	2"	2¼"	2½"	2¾"	3"	3¼"	3½"	3¾"	4"	5"
5/8	36	38	40	42	44	46	48	50	52	60
3/4	57	60	62	65	68	71	74	77	80	92
7/8	86	90	94	99	103	107	111	115	118	135
1	127	133	138	143	148	153	158	163	169	190

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

J BEAM HOOK

Figure 31

The Figure 31 is used in conjunction with our Figure 33 Machine Thread Eye Rod when it is necessary to support piping from the top flange of beam which allows the pipe to run close to the bottom of the beam where headroom is limited.



Material: Carbon Steel.

Finish: Plain, Electro-Galvanized.

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

Ordering: Specify rod size, length, thickness of flange, figure number, and finish. Made special to customer order. For Metric applications specify Figure M31.

FIGURE 31 – J BEAM HOOK

SIZE A	WEIGHT EACH RODWIDTH OF I BEAM FLANGE 4 102	5 127	6 152	7 178	8 203	10 254	12 305
⅜	0.19	0.22	0.25	0.28	0.32	0.38	0.44
M10	0.09	0.10	0.11	0.13	0.15	0.17	0.20
½	0.33	0.39	0.45	0.5	0.56	0.67	0.78
M12	0.15	0.18	0.20	0.23	0.25	0.30	0.35
⅝	0.52	0.61	0.70	0.78	0.87	1.02	1.22
M16	0.24	0.28	0.32	0.35	0.39	0.46	0.55
¾	0.75	0.89	1.01	1.13	1.26	1.50	1.75
M20	0.34	0.40	0.46	0.51	0.57	0.68	0.79
⅞	1.02	1.20	1.36	1.53	1.71	2.04	2.39
M20	0.46	0.54	0.62	0.69	0.78	0.93	1.08

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

PIPE SLIDE ASSEMBLY

Figure 1010

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

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

Maximum temperature: 200° F at the sliding surface

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

Compliance: MSS SP-69 Type 35.

Material: Carbon Steel, Stainless Steel, PTFE.

Finish: Plain, Painted, Hot-Dip Galvanized.

Ordering: Specify pipe size, figure number, travel, and type. For Metric applications specify Figure M1010.

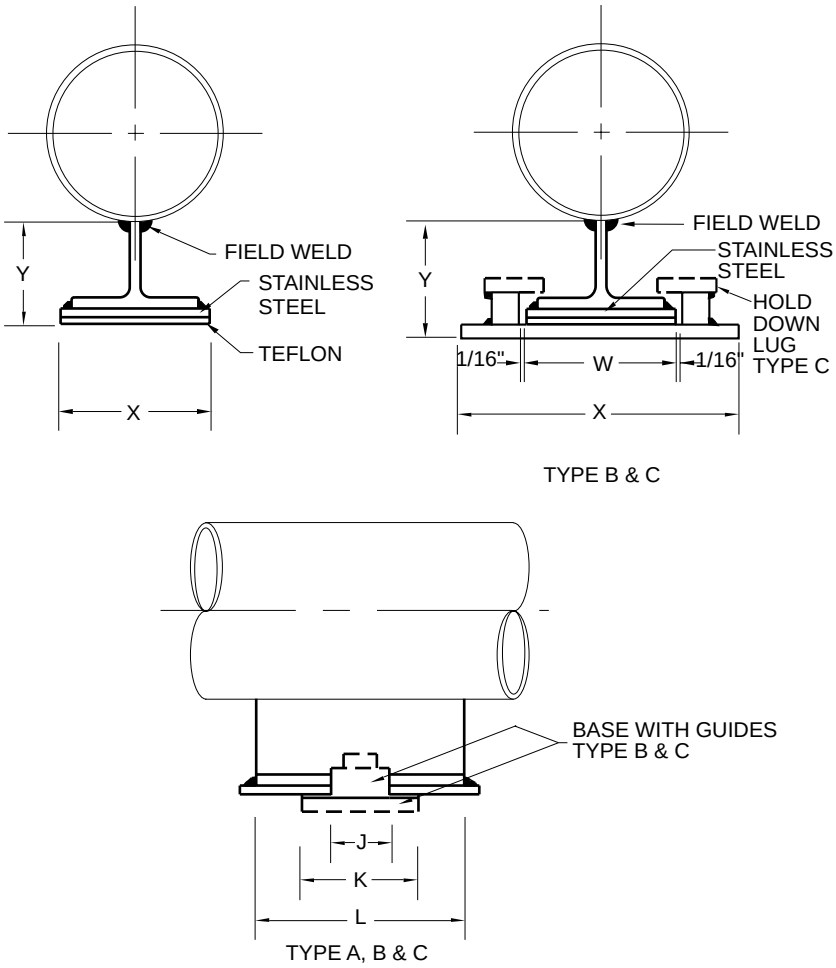


FIGURE 1010 – PIPE SLIDE ASSEMBLY

PIPE SIZE	MAX LOAD*	TRAVEL	Y TYPE A	Y TYPE B & C	L TYPES A, B, C	K TYPES A, B, C	W TYPES A, B, C	X TYPE A	X TYPE B & C	WEIGHT EACH
UP TO 8"	7000	5 10 15 20	3¾	4¼	8½ 13½ 18½ 23½	4	3½	3½	6	15.5
UP TO 200	31139	127 254 381 508	95	108	216 343 470 597	102	89	89	152	7.0
10" TO 24"	13500	5 10 15 20	3¾	4¼	10½ 15½ 20½ 25½	6	4½	4½	7	20.7
250 TO 600	60053	127 254 381 508	95	108	267 394 521 648	152	114	114	178	9.4

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

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

COPPER CLEVIS HANGER

Figure 100CT

Designed to support non-insulated, stationary copper tubing lines from above, allowing for approximately 1" to 1½" of vertical adjustment after the tubing is in place. The lower nut (not furnished) adjusts the pipe line to the proper elevation, the top nut (not furnished) prevents loosening due to vibration, and must be tightened securely to assure proper hanger performance.

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 1, MSS-SP-69 Type 1 and BSPSS-BS3974. Rated Loads are for up to 650° F (343° C).

Finish: Copper.

Ordering: Specify tubing size, and figure number. For Metric applications specify Figure M100CT.

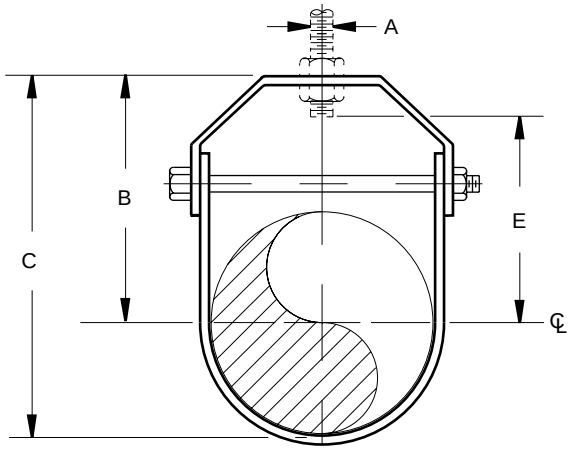


FIGURE 100CT – COPPER CLEVIS HANGER

TUBE SIZE	MAXIMUM LOAD	A	B	C	ROD TAKE OUT E	WEIGHT EACH
½	150	⅜	2⅞	3⅛	2⅛	0.16
15	667	M10	73	79	54	0.07
¾	250	⅜	2⅝	3	1⅞	0.16
20	1112	M10	67	76	48	0.07
1	250	⅜	2⅝	3⅛	1⅞	0.19
25	1112	M10	67	79	48	0.09
1¼	250	⅜	3⅛	3¾	2⅜	0.22
32	1112	M10	79	95	60	0.10
1½	250	⅜	3⅜	4⅛	2⅝	0.29
40	1112	M10	86	105	67	0.13
2	250	⅜	3⅜	4⅜	2⅝	0.32
50	1112	M10	86	111	67	0.15
2½	350	½	3⅝	4⅞	2⅝	0.72
65	1557	M12	92	124	67	0.33
3	350	½	3⅞	5⅜	2⅞	0.82
80	1557	M12	98	137	73	0.37
3½	350	½	4⅛	5⅞	3⅛	0.91
90	1557	M12	105	149	79	0.41
4	350	½	4½	6¼	3½	1.07
100	1557	M12	114	159	89	0.49
5	900	⅝	5	7¾	3⅞	1.76
125	4004	M16	127	197	98	0.80
6	900	⅝	5¾	8⅞	4⅝	1.92
150	4004	M16	4	225	117	0.87

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

COPPER TUBING SWIVEL RING

Figure 800CT

Designed for the support of non-insulated static copper tubing lines. The swivel nut is knurled to provide a gripping surface when adjusting the tubing elevation.

Compliance: Federal Specification A-A-1192A Type 10, MSS SP-69 Type 10.

We also offer Swivel Ring hangers that are for carbon steel pipe (Figure 800), PVC coated (Figure 800PVC), and for NFPA requirements (Figure 800FP), in this catalog.

Material: Carbon Steel.

Finish: Copper.

Ordering: Specify copper tubing size and figure number. For Metric applications specify Figure M800CT.

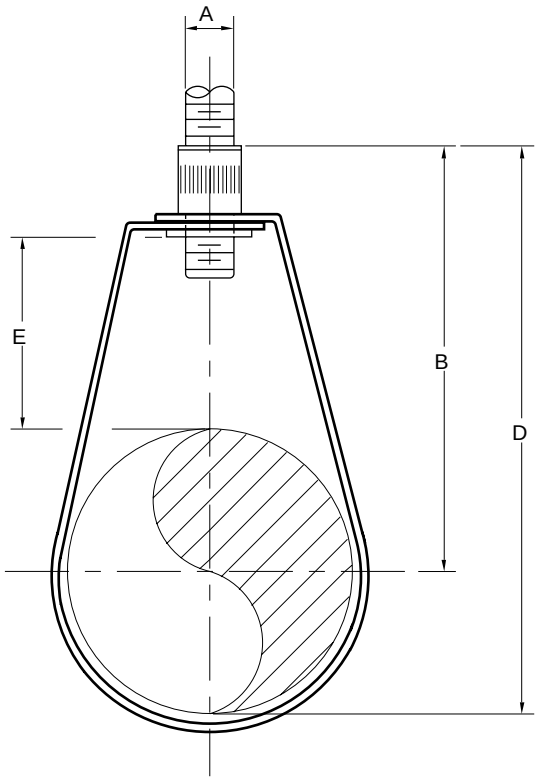


FIGURE 800CT - ADJUSTABLE SWIVEL RING

PIPE SIZE	MAXIMUM LOAD	A	B	D	E	WEIGHT EACH
½ 15	300 1335	⅜ M10	2⅜ 60	3¼ 83	1 11⁄16 43	0.11 0.05
¾ 20	300 1335	⅜ M10	2⅜ 60	3⅛ 79	1⅜ 35	0.11 0.05
1 25	300 1335	⅜ M10	2½ 64	3⅛ 79	1 25	0.11 0.05
1¼ 32	300 1335	⅜ M10	2¾ 70	3¼ 83	15⁄16 24	0.13 0.06
1½ 40	300 1335	⅜ M10	2 15⁄16 75	3⅝ 92	1⅛ 29	0.13 0.06
2 50	300 1335	⅜ M10	3 5⁄16 84	4⅛ 105	1 1⁄16 27	0.15 0.07
2½ 65	525 2335	⅜ M10	4 102	4⅝ 117	1⅛ 29	0.16 0.07
3 80	525 2335	½ M12	4 9⁄16 116	5 9⁄16 141	1 5⁄16 33	0.32 0.15
3½ 90	525 2335	½ M12	4 9⁄16 116	5⅞ 149	1⅛ 29	0.35 0.16
4 100	650 2891	½ M12	5 9⁄16 141	6½ 165	1 3⁄16 30	0.38 0.17
5 125	1000 4448	½ M12	6¼ 159	8⅜ 213	1⅝ 41	0.58 0.26
6 150	1000 4448	½ M12	7 3⁄16 183	9 13⁄16 249	2¼ 57	0.92 0.42

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

COPPER TUBING BAND HANGER

Figure 1A CT

Designed to support non-insulated, copper tubing lines from above. Install the same as a Figure 1A.

Material: Carbon Steel.

Finish: Copper.

Compliance: Federal Specification A-A-1192A Type 7, MSS-SP-69 Type 7.

Ordering: Specify tubing size, and figure number. For Metric applications specify Figure M1A CT. See Figure 1A for plain and electro-galvanized finishes. For PVC Coating refer to Figure 1A PVC.

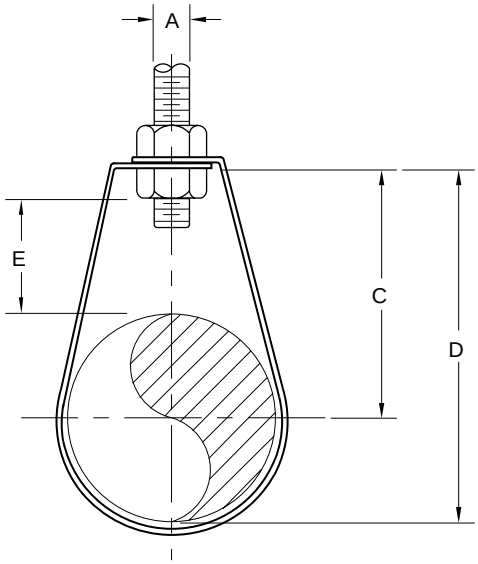


FIGURE 1A CT – COPPER TUBING BAND HANGER

TUBE SIZE	MAX LOAD	ROD SIZE A	C	D	ADJ. E	WEIGHT EACH
½	610	⅜	2 7/16	2¾	1⅝	0.11
15	2714	M10	62	70	41	0.05
¾	610	⅜	2¾	2 11/16	1 5/16	0.11
20	2714	M10	70	68	33	0.05
1	610	⅜	2⅛	2 11/16	1 1/16	0.11
25	2714	M10	54	68	27	0.05
1¼	610	⅜	2⅛	2 13/16	15/16	0.12
32	2714	M10	54	71	24	0.05
1½	610	⅜	2⅜	3 7/16	1 1/16	0.14
40	2714	M10	60	87	27	0.06
2	610	⅜	2 9/16	3⅝	1	0.16
50	2714	M10	65	92	25	0.07
2½	610	⅜	2 15/16	4¼	1 1/16	0.16
65	2714	M10	75	108	27	0.07
3	970	½	3¼	4 13/16	1	0.38
80	4315	M12	83	122	25	0.17
3½	970	½	3 7/16	5¼	1	0.42
90	4315	M12	87	133	25	0.19
4	1250	½	3¾	5 15/16	1	0.45
100	5560	M12	95	151	25	0.20

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

COPPER RISER CLAMP

Figure 126CT

The Figure 126CT is normally used for the support of uninsulated vertical tubing where no movement will occur. Please use our Figure 126 for carbon steel piping or Figure 126PVC for plastic coating requirements.

NOTE: This product is not designed to be supported with rods. Install using the maximum suggested torque values shown in the Technical Section of this catalog.

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 8, MSS-SP-69 Type 8.

Finish: Copper.

Ordering: Specify tubing size and figure number. For Metric applications specify Figure M126CT.

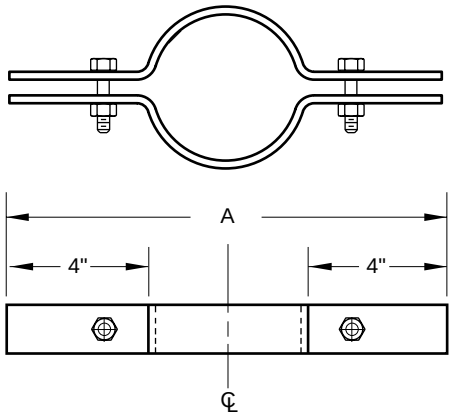


FIGURE 126CT – COPPER EXTENSION RISER CLAMP

TUBE SIZE	MAXIMUM LOAD	A	WEIGHT EACH
½ 15	220 979	9 3/16 233	0.70 0.32
¾ 20	220 979	9 3/16 233	0.74 0.34
1 25	220 979	9½ 241	0.75 0.34
1¼ 32	220 979	9¾ 248	0.77 0.35
1½ 40	220 979	10⅛ 257	0.80 0.36
2 50	220 979	10½ 6532	0.84 0.38
2½ 65	390 1735	11 279	1.60 0.73
3 80	530 2358	11⅝ 295	1.80 0.82
3½ 90	530 2358	12⅛ 321	1.95 0.88
4 100	530 2358	13⅛ 333	2.04 0.93
5 125	810 3603	14 356	3.50 1.59
6 150	1570 6984	15 381	5.25 2.38

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

PVC COATED RISER CLAMP

Figure 126CT-PVC

The Figure 126CT-PVC is normally used for the support of uninsulated vertical piping where no movement will occur. PVC coating the contact surface prevents galvanic corrosion with the pipe. Please use our Figure 126 for carbon steel piping or Figure 126CT for copper tubing requirements.

NOTE: This product is not designed to be supported with rods. Install using the maximum suggested torque values shown in the Technical Section of this catalog.

Material: Carbon Steel.

Compliance: Federal Specification A-A-1192A Type 8, MSS-SP-69 Type 8. Operating temperature should not exceed 1400° F / 600° C.

Finish: Polyvinyl Chloride

Ordering: Specify pipe size and figure number. For Metric applications Specify Figure M126PVC. A completely PVC coated Figure 126 is available upon request. (Bolts and nuts will not be PVC coated.)

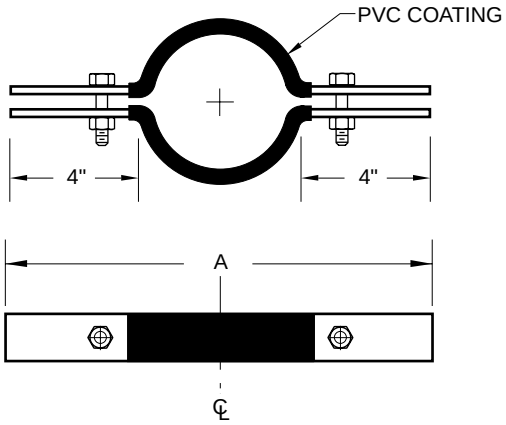


FIGURE 126CT-PVC – PLASTIC COATED EXTENSION RISER CLAMP

PIPE SIZE	MAXIMUM LOAD	A	WEIGHT EACH
½ 15	225 1001	9⅜ 238	1.30 0.59
¾ 20	225 1001	9⅜ 238	1.36 0.62
1 25	225 1001	9⅝ 244	1.38 0.63
1¼ 32	225 1001	10 254	1.95 0.88
1½ 40	225 1001	10⅜ 264	2.01 0.91
2 50	225 1001	10¾ 6694	2.17 0.98
2½ 65	390 1735	11¼ 286	2.29 1.04
3 80	530 2358	12 305	2.50 1.13
4 100	810 3603	13½ 343	3.42 1.55

COPPER EXTENSION RING HANGER

Figure 81CT

This split ring hanger is designed for the support of non-insulated copper tubing lines. The Figure 81CT is furnished tapped for bolt thread and is used with the Figure 85CT Ceiling Plate. Also available in a two bolt design.

Material: Malleable Iron.

Finish: Copper. For Electro-Galvanizing please see Figure 81.

Compliance: Federal Specification A-A-1192A Type12, MSS-SP-69 Type 12.

Ordering: Specify tube size and figure number. For Metric applications specify Figure M81CT.

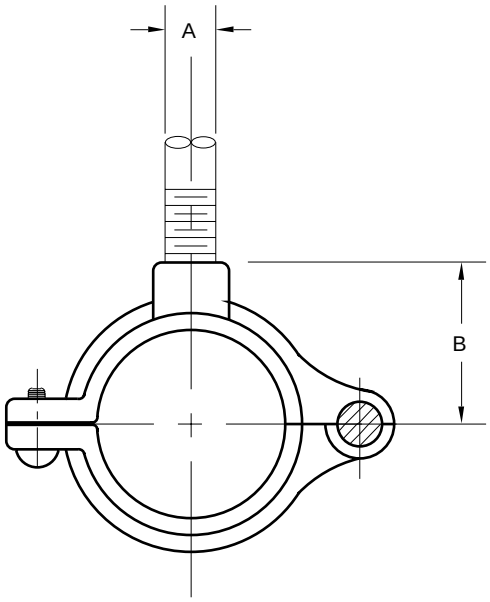


FIGURE 81CT AND 81SCT
COPPER EXTENSION HANGER RING

TUBE SIZE	MAX LOAD	ROD SIZE A	B	WEIGHT EACH
1/4	180	3/8	5/8	0.10
8	801	M10	16	0.05
3/8	180	3/8	5/8	0.12
10	801	M10	16	0.05
3/8	180	3/8	3/4	0.13
15	801	M10	19	0.06
5/8	180	3/8	3/4	0.14
18	801	M10	19	0.06
3/4	180	3/8	7/8	0.15
20	801	M10	22	0.07
1	180	3/8	1	0.16
25	801	M10	25	0.07
1 1/4	180	3/8	1 1/4	0.19
32	801	M10	32	0.09
1 1/2	180	3/8	1 1/4	0.22
40	801	M10	32	0.10
2	180	3/8	1 1/2	0.27
50	801	M10	38	0.12
2 1/2	480	1/2	2	0.72
65	2135	15	51	0.33
3	480	1/2	2 1/4	1.07
80	2135	15	57	0.49

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

SINGLE PLATE

Figure 85CT (Rod Tapped – Copper Finish)

The Figure 85CT is designed for attaching a rod to a wooden member. This part is normally used in conjunction with our Figure 81 Split Ring.

Material: Malleable Iron.

Ordering: Specify rod size and figure number. For metric applications specify Figure M85CT.

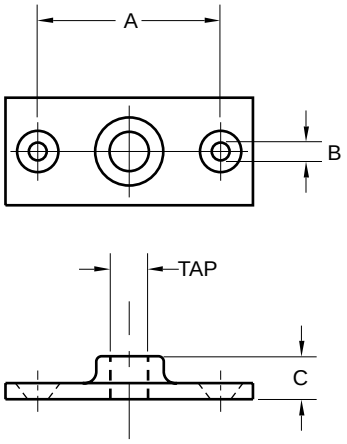


FIGURE 85CT – SINGLE PLATE

ROD TAP	MAX LOAD	A	B	C	WGT. EACH
⅜	180	2	¼	½	0.19
M10	801	51	6	13	0.09
½	180	2	¼	½	0.18
M12	801	51	6	13	0.08

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

DUCTILE IRON PIPE CLAMP

Figure 158

The Figure 158 can be used to secure mechanical joint piping or socket fittings together to prevent separation under pressure either under or above ground, vertically or horizontally. If use in this fashion two (2) Figure 258 Socket Clamp Washers and Figure 133 Rods are also required, but must be ordered separately. The Figure 158 may also be used to support and guide vertical Ductile Iron pipe.

Materials: Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M158.

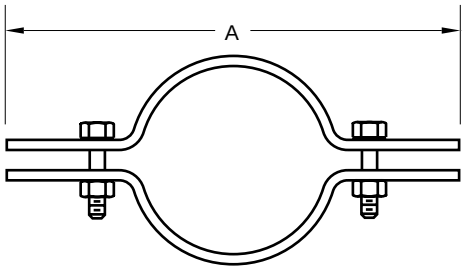


FIGURE 158 – UNDERGROUND PIPE CLAMP

PIPE SIZE	ACTUAL PIPE O.D.	A	WASHER SIZE	WEIGHT EACH
3 80	3.96 101	12¼ 311	¾ M20	9.00 4.08
4 100	4.8 122	13¾ 349	¾ M20	9.00 4.08
6 150	6.9 175	15¾ 400	¾ M20	10.70 9.40
8 200	9.05 230	18 457	¾ M20	12.20 5.54
10 250	11.1 282	20⅛ 511	¾ M20	14.60 6.64
12 300	13.2 335	22⅞ 581	¾ M20	16.60 7.53
14 350	15.3 389	25½ 648	1¼ M30	41.90 18.99
16 400	17.4 442	28 711	1¼ M30	61.90 28.10
18 450	19.5 495	33 838	1¼ M30	65.10 29.50
20 500	21.6 549	35½ 902	1½ M36	92.20 41.80
24 600	25.8 655	40½ 1029	1½ M36	122.70 55.70
30 750	32 813	48 1219	1½ M36	184.00 83.50

DOUBLE BOLT DUCTILE IRON PIPE CLAMP

Figure 158DB

The Figure 158DB can be used in the same manner as the Figure 158, except the overall length is longer.

Materials: Carbon Steel.

Compliance: NFPA Standard NFPA-24 for Outside Protection.

Finish: Plain, Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M158DB.

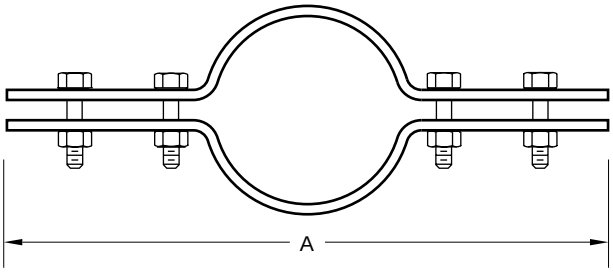


FIGURE 158DB – UNDERGROUND PIPE CLAMP

PIPE SIZE	ACTUAL PIPE O.D.	A	WASHER SIZE	WEIGHT EACH
3 80	3.96 101	13⅜ 340	⅝ M16	9.50 4.31
4 100	4.8 122	14¾ 375	⅝ M16	10.00 4.54
6 150	6.9 175	17 432	⅝ M16	12.00 9.40
8 200	9.05 230	19½ 495	⅝ M16	21.00 9.53
10 250	11.1 282	23¼ 591	¾ M20	24.00 10.89
12 300	13.2 335	25½ 648	⅞ M20	36.00 16.33
14 350	15.3 389	28¾ 730	1¼ M30	48.60 22.04
16 400	17.4 442	31½ 800	1¼ M30	71.80 32.50
18 450	19.5 495	35¼ 895	1¼ M30	85.30 38.70
20 500	21.6 549	38½ 978	1½ M36	102.00 46.30
24 600	25.8 655	45¼ 1149	1½ M36	136.60 62.00
30 750	32.0 813	53 1346	1¾ M42	204.00 93.00

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

UNDERGROUND SOCKET CLAMP WASHER

Figure 258

The Figure 258 is for use with our Figure 158 and Figure 158DB Underground Clamp. Two (2) Washers are required per clamp. When installed the lug bears against the bolt which prevents the washer from sliding off the clamp.

Material: Cast Iron.

Finish: Plain, Galvanized.

Ordering: Specify rod size, figure number, and finish. For Metric applications specify Figure M258.

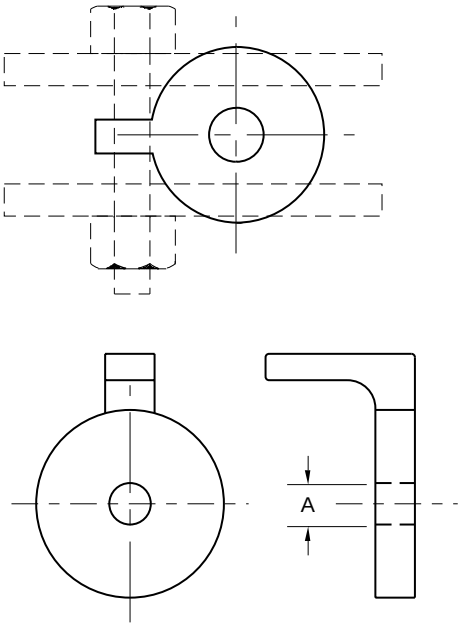


FIGURE 258 – UNDERGROUND SOCKET CLAMP WASHER

ROD SIZE A	USED WITH CLAMP SIZE	WEIGHT EACH
¾ M20	4" to 12" 100 to 300	1.25 0.57
1¼	14" to 18"	2.85

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

CLEVIS HANGER FOR DUCTILE IRON AND A.W.W.A. CAST IRON PIPE

Figure 100DI

Designed to support non-insulated, stationary ductile iron and A.W.W.A. cast iron lines from above allowing for approximately 1" to 1½" of vertical adjustment after the pipe is in place. The lower nut (not furnished) adjusts the pipe line to the proper elevation, the top nut (not furnished) prevents loosening due to vibration, and must be tightened securely to assure proper hanger performance.

Material: Carbon Steel.

Compliance: MSS-SP-69 Type 1, A-A-1192A Type 1.

Finish: Plain, Galvanized.

Ordering: Specify pipe size, figure number, and finish. For Metric applications specify Figure M100DI.

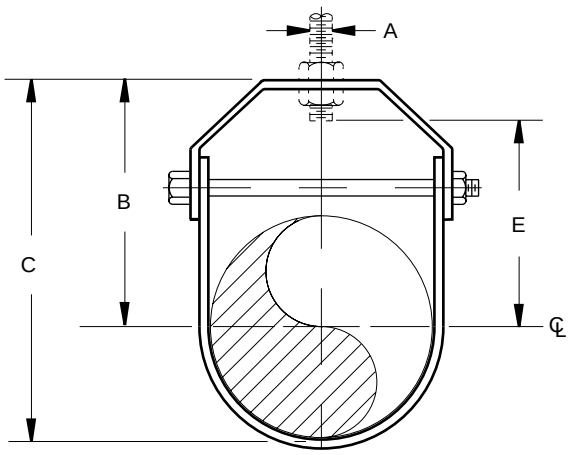


FIGURE 100DI – CLEVIS HANGER FOR DUCTILE IRON PIPE

PIPE SIZE	MAXIMUM LOAD	A	B	C	ROD TAKE OUT E	WEIGHT EACH
4 100	1430 6361	¾ M20	5¾ 146	8⅛ 206	4⅜ 111	2.08 0.94
6 150	1940 8630	⅞ M20	7 178	10⅜ 264	5½ 140	2.78 1.26
8 200	2000 8897	⅞ M20	9¼ 235	13¾ 349	7¾ 197	4.47 2.03
10 250	3600 16014	⅞ M20	10¼ 260	15¾ 400	8⅝ 219	8.87 4.02
12 300	3800 16904	⅞ M20	12⅝ 321	17¼ 489	11 279	12.0 5.46
14 350	4200 18683	1 M24	14⅛ 359	21¾ 552	12¼ 311	15.2 6.87
16 400	4800 21352	1 M24	14⅞ 378	23⅝ 600	13 330	23.6 10.7
18 450	4800 21352	1 M30	17¾ 419	27¾ 667	15¾ 368	25.9 11.7
20 500	4800 21352	1¼ M30	18¾ 476	29½ 749	16½ 419	44.3 20.1
24 600	4800 21352	1¼ M30	21⅞ 556	34¾ 883	19½ 495	53.5 24.2

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

PIPE ALIGNMENT GUIDE

Figure 1006

Designed to maintain the axial alignment of piping as it expands and contracts during operation. It is most typically installed adjacent to expansion joints and at reasonable distances between the expansion joint and the anchor point. Our Figures 1007, and 1010 also offer alternative means for your piping alignment needs.

Note: Guides are not designed to carry dead weight loads. Maximum temperature is 750°F.

Material: Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify guide size, pipe size, insulation thickness, figure number, and finish. For Metric applications specify Figure M1006.

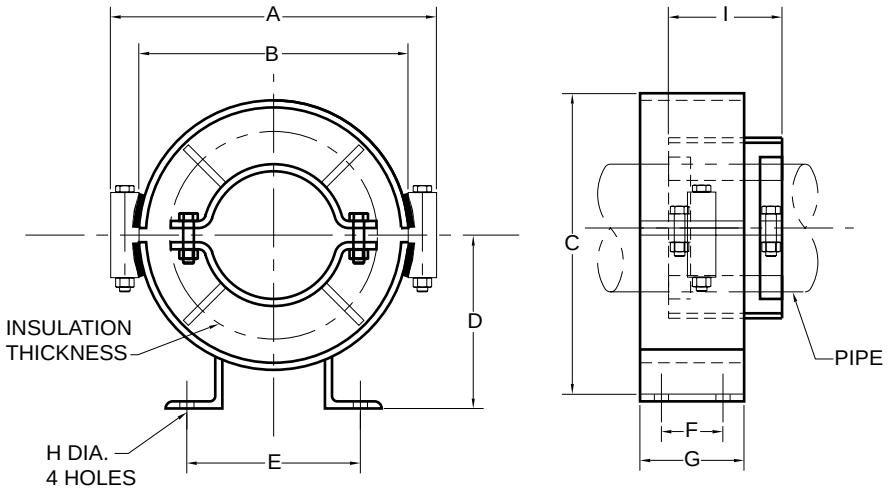


FIGURE 1006 – PIPE ALIGNMENT GUIDE

SIZE NUMBER	A	B	C	D	E	F	G	H	WEIGHT EACH
1	6¾	4½	5⅜	3⅛	5	1½	3	⅝	5.8
1	171	114	137	79	127	38	76	16	2.6
2	7¼	5⅝	6⅜	3½	6¼	1½	3	⅝	7.2
2	184	143	162	89	159	38	76	16	3.3
3	8⅜	6⅝	7⅜	4	6¾	1½	3	⅝	8.2
3	213	168	187	102	171	38	76	16	3.7
4	10⅜	8⅝	9⅜	5	7⅜	1½	3	⅝	10.6
4	264	219	238	127	187	38	76	16	4.8
5	12⅓	10¾	11⅝	6¼	7⅜	2	4	⅝	15.6
5	313	273	295	159	187	51	102	16	7.1
6	14⅞	12¾	13⅝	7¼	8	2	4	⅝	19.5
6	378	324	346	184	203	51	102	16	8.8
7	16⅞	14¾	15⅞	8½	9¾	2	4	¾	26.8
7	429	375	403	216	248	51	102	19	12.2
8	18⅞	16¾	17⅞	9½	10¼	4	6	¾	35.6
8	479	425	454	241	260	102	152	19	16.1
9	21⅝	19	20	10½	11¼	4	6	¾	44.2
9	5629	483	508	267	286	102	152	19	20.0
10	23⅜	21	22	11½	14⅛	4	6	⅞	52.6
10	600	533	559	292	359	102	152	22	23.9
11	25⅝	23	24	12½	14¾	4	6	⅞	66.3
11	651	584	610	318	375	102	152	22	30.1
12	28⅜	25¾	26⅝	13¾	15⅞	4	6	1	79.7
12	721	654	676	349	403	102	152	25	36.2
13	32⅛	29½	30½	15¾	16⅜	5½	8	1	106.3
13	816	749	775	400	416	140	203	25	48.2
14	36⅛	33½	34½	17¾	17⅛	5½	8	1	116.8
14	918	851	876	451	435	140	203	25	53.0

PIPE SIZE	DIM. I	MAX. MVT
1" to 6"	4	4
25 to 150	102	102
8" to 16"	6	6
200 to 400	152	152
18" to 24"	8	8
450 to 600	203	203

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

Please use the following chart for selecting the correct size.

FIGURE 1006 – PIPE ALIGNMENT GUIDE

SIZE NUMBER	THICKNESS OF INSULATION					
	1 **25**	**1½** **38**	**2** **51**	**2½** **64**	**3** **76**	**4** **102**
1 1	1 25					
2 2	1¼ - 2 32 to 50	1 25				
3 3	2½ 65	1¼ - 2 32 to 50	1 25			
4 4	3 - 4 80 to 100	2½ - 3½ 65 to 90	1¼ - 2½ 32 to 65	1 - 2 25 to 50	1 25	
5 5	5 - 6 125 to 150	4 - 5 100 to 125	3 - 4 80 to 100	2½ - 3½ 65 to 90	1¼ - 2½ 32 to 65	1 25
6 6		6 150	5 - 6 125 to 150	4 - 5 100 to 125	3 - 4 80 to 100	1¼ - 2½ 32 to 65
7 7		8 200	8 200	6 150	5 - 6 125 to 150	3 - 4 80 to 100
8 8		10 250	10 250	8 200	8 200	5 - 6 125 to 150
9 9		12 300	12 300	10 250	10 250	8 200
10 10			14 350	12 - 14 300 to 350	12 300	10 250
11 11			16 400	16 400	14 350	12 300
12 12					16 - 18 400 to 450	14 - 16 350 to 400
13 13					20 500	18 - 20 450 to 500
14 14					24 600	24 600

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

PIPE ALIGNMENT GUIDE

Figure 1007

Designed to maintain the axial alignment of piping as it expands and contracts during operation. It is most typically installed adjacent to expansion joints and at reasonable distances between the expansion joint and the anchor point. Our Figures 1006 and 1010 also offer alternative means for your piping alignment needs.

Note: Guides are not designed to carry dead weight loads. Maximum temperature is 750°F.

Material: Carbon Steel.

Finish: Plain, Galvanized.

Ordering: Specify guide size, pipe size, insulation thickness, figure number, and finish. For Metric applications specify Figure M1007.

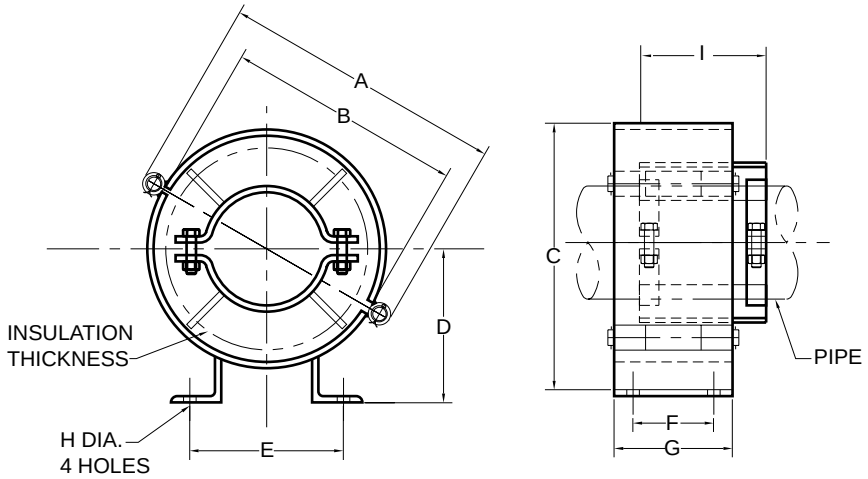


FIGURE 1007 – PIPE ALIGNMENT GUIDE

SIZE NUMBER	A	B	C	D	E	F	G	H	WEIGHT EACH
1	5⅞	4½	5⅜	3⅛	5	2½	4	⅝	9.5
1	149	114	6	79	127	64	102	16	4.3
2	7	5⅝	6⅜	3½	6¼	2½	4	⅝	12.0
2	178	143	162	89	159	64	102	16	5.4
3	8	6⅝	7⅜	4	6¾	2½	4	⅝	13.2
3	203	168	187	102	171	64	102	16	6.0
4	10⅜	8⅝	9⅜	5	7⅜	2½	4	⅝	16.3
4	264	219	238	127	187	64	102	16	7.4
5	12½	10¾	11⅝	6¼	7⅜	4	6	⅝	26.0
5	318	273	295	159	187	102	152	16	11.8
6	14⅞	12¾	13⅝	7¼	8	4	6	⅝	32.3
6	378	324	346	184	203	102	152	16	14.7
7	16⅞	14¾	15⅞	8½	9¾	5½	8	¾	48.2
7	429	375	403	216	248	140	203	19	21.9
8	18⅞	16¾	17⅞	9½	10¼	5½	8	¾	57.0
8	479	425	454	241	260	140	203	19	25.9
9	21⅝	19	20	10½	11¼	5½	8	¾	72.1
9	549	483	508	267	286	140	203	19	32.7
10	23⅝	21	22	11½	14⅛	5½	8	⅞	84.5
10	600	533	559	292	359	140	203	22	38.3
11	25⅝	23	24	12½	14¾	5½	8	⅞	103.2
11	651	584	610	318	375	140	203	22	46.8
12	28⅝	25¾	26⅝	13¾	15⅞	5½	8	1	129.1
12	727	654	676	349	403	140	203	25	58.6
13	32⅛	29½	30½	15¾	16⅜	5½	8	1	153.3
13	816	749	775	400	416	140	203	25	69.5
14	36⅛	33½	34½	17¾	17⅛	5½	8	1	140.0
14	918	851	876	451	435	140	203	25	63.5

PIPE SIZE	DIM. I	MAX. MVT
1" to 6"	4	4
25 to 150	102	102
8" to 16"	6	6
200 to 400	152	152
18" to 24"	8	8
450 to 600	203	203

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

Please use the following Chart for selecting the correct size.

FIGURE 1007 – PIPE ALIGNMENT GUIDE

SIZE NUMBER	THICKNESS OF INSULATION					
	1	**1½**	**2**	**2½**	**3**	**4**
	25	**38**	**51**	**64**	**76**	**102**
1 1	1 25					
2 2	1¼ - 2 32 to 50	1 25				
3 3	2½ 65	1¼ - 2 32 to 50	1 25			
4 4	3 - 4 80 to 100	2½ - 3½ 65 to 90	1¼ - 2 32 to 50	1 - 2 25 to 50	1 25	
5 5	5 - 6 125 to 150	4 - 5 100 to 125	3 - 4 80 to 100	2½ - 3½ 65 to 90	1¼ - 2½ 32 to 65	1 25
6 6		6 150	5 - 6 125 to 150	4 - 5 100 to 125	3 - 4 80 to 100	1¼ - 2½ 32 to 65
7 7		8 200	8 200	6 150	5 - 6 125 to 150	3 - 4 80 to 100
8 8		10 250	10 250	8 200	8 200	5 - 6 125 to 150
9 9		12 300	12 300	10 250	10 250	8 200
10 10			14 350	12 - 14 300 to 350	12 300	10 250
11 11			16 400	16 400	14 350	12 300
12 12					16 - 18 400 to 450	14 - 16 350 to 400
13 13					20 500	18 - 20 450 to 500
14 14					24 600	24 600

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES MILLIMETERS	FAHRENHEIT CELSIUS	POUNDS NEWTONS	POUNDS KILOGRAMS

TECHNICAL INFORMATION

REFERENCE DATA – METRIC CONVERSION CHART

	TO CONVERT FROM	TO	MULTIPLY BY
Angle	degree	radian (rad)	1.745329×10^{-2}
	radian (rad)	degree	$5.729578 \times 10^{+1}$
Area	foot^2	square meter (m^2)	9.290304×10^{-2}
	inch^2	square meter (m^2)	6.451600×10^{-4}
	circular mil	square meter (m^2)	$5{,}067075 \times 10^{-10}$
	square centimeter (cm^2)	square inch (in^2)	1.550003×10^{-1}
	square meter (m^2)	foot^2	$1.076391 \times 10^{+1}$
	square meter (m^2)	inch^2	$1.550003 \times 10^{+3}$
	square meter (m^2)	circular mil	$1.973525 \times 10^{+9}$
Bending Moment of Torque	lbf•ft	newton meter (N•m)	1.355818
	lbf•in	newton meter (N•m)	1.129848×10^{-1}
	N•m	lbf•ft	7.375621×10^{-1}
	N•m	lbf•in	8.850748
Force	pounds-force (lbf)	newtons (N)	4.448222
Length	foot (ft)	meter (m)	3.048000×10^{-1}
	inch (in)	meter (m)	2.540000×10^{-2}
	mil	meter (m)	2.540000×10^{-5}
	inch (in)	micrometer (µm)	$2.540000 \times 10^{+4}$
	meter (m)	foot (ft)	3.280840
	meter (m)	inch (in)	$3.937008 \times 10^{+1}$
	meter (m)	mil	$3.937008 \times 10^{+4}$
	micrometer (µm)	Inch (in)	3.937008×10^{-5}
Mass	ounce (avoirdupois)	kilogram (kg)	2.834952×10^{-2}
	pound (avoirdupois)	kilogram (kg)	4.535924×10^{-1}
	on (short, 2000 lb)	kilogram (kg)	$9.071847 \times 10^{+2}$
	on (long, 2240 lb)	kilogram (kg)	$1.016047 \times 10^{+3}$
	kilogram (kg)	ounce (avoirdupois)	$3.527396 \times 10^{+1}$
	kilogram (kg)	pound (avoirdupois)	2.204622
	kilogram (kg)	ton (short 2000 lb)	1.102311×10^{-3}
	kilogram (kg)	ton (long 2240 lb)	9.842064×10^{-4}
Mass Per Unit Length	lb/ft	kilogram per meter (kg/m)	1.488164
	lb/in	kilogram per meter (kg/m)	$1.785797 \times 10^{+1}$
	kg/m	lb/ft	6.719689×10^{-1}
	kg/m	lb/in	5.599741×10^{-2}
Mass Per Unit Volume	lb/ft^3	kilogram per cubic meter (kg/m^3)	1.601846×10^{-1}
	lb/in^3	kilogram per cubic meter (kg/m^3)	$2.767990 \times 10^{+4}$
	kg/m^3	lb/ft^3	6.242797×10^{-2}
	kg/m^3	lb/in^3	$3\ 612730 \times 10^{-5}$
	lbs/ft^3	lbs/in^3	$1.728000 \times 10^{+3}$
Mass Per Area Unit	lb/ft^2	kilogram per square meter (kg/m^2)	4882428
	kg/m^2	pound per square foot (lb/ft^2)	2.048161×10^{-1}
Pressure or Stress	lbf/in^2 (psi)	pascal (Pa)	$6.894757 \times 10^{+3}$
	kip/in^2 (ksi)	pascal (Pa)	$6\text{-}894757 \times 10^{+6}$
	lbf/in^2 (psi)	megapascals (MPa)	6.894757×10^{-3}
	pascal (Pa)	pound force per sq. inch (psi)	1.450377×10^{-4}
	pascal (Pa)	kip per sq. inch (ksi)	1.450377×10^{-7}
	megapascals (MPa)	lbf/in^2 (psi)	$1\text{-}450377 \times 10^{+2}$
Section Properties	section modulus S (in^3)	S (m^3)	1.638706×10^{-5}
	section modulus S (M^3)	S (in^3)	$6.102374 \times 10^{+4}$
	moment of inertia I (in^4)	1 (m^4)	4.162314×10^{-7}
	moment of inertia I (M^4)	I (in^4)	$2.402510 \times 10^{+6}$
	modulus of elasticity E (psi)	E (Pa)	$6.894757 \times 10^{+3}$
	modulus of elasticity E (Pa)	E (psi)	1.450377×10^{-4}
Temperature	degree Fahrenheit	degree Celsius	$t°_C = t°_F - 32) / 1.8$
	degree Celsius	degree Fahrenheit	$t°_F = 1.8\ t°_C + 32$
Volume	foot^3	cubic meter (m^3)	2.831685×10^{-2}
	inch^3	cubic meter (m^3)	1.638706×10^{-2}
	cubic centimeter (cm^3)	cubic inch (in^3)	6.102374×10^{-2}
	cubic meter (m^3)	foot^3	$3.531466 \times 10^{+1}$
	cubic meter (m^3)	inch^3	$6.102376 \times 10^{+4}$
	gallon (U.S. liquid)	cubic meter (m^3)	3.785412×10^{-3}

ABBREVIATIONS

AISC	=	American Institute of Steel Construction
AISI	=	American Iron & Steel Institute
ANSI	=	American National Standards Institute
ASTM	=	American Society for Testing & Materials
AWWA	=	American Water Works Association
Dia.	=	Diameter
Ft.	=	Feet
Ga	=	Gauge
I.D.	=	Inside Diameter
In.	=	Inch
Lbs.	=	Pounds
Max.	=	Maximum
Min.	=	Minimum
MSS	=	Manufacturers' Standardization Society
NFPA	=	National Fire Protection Association
O.D.	=	Outside Diameter
Oz.	=	Ounces
psi	=	Pounds Per Square Inch
PVC	=	Poly Vinyl Chloride
UNC	=	Unified Course Threads
UNCR	=	Unified Course Threads (Rounded Root)

METRIC SYMBOLS

cm	=	centimeter
kg	=	kilogram
kN	=	kilonewton
m	=	meter
µm	=	micrometer
mm	=	millimeter
MPa	=	megapascal
N	=	newton
Nm	=	newton-meter
Pa	=	pascal

TECHNICAL INFORMATION

PIPE WEIGHTS FOR STANDARD AND HEAVY WEIGHT PIPE

PIPE DATA					PIPE WEIGHT			
Nominal	Pipe	Outside Dia.		Wall Th'k	w/ Gas, Air, Steam		w/ Water	
Pipe Size	Schedule	in	mm	in	lbs/ft	N/m	lbs/ft	N/m
½"	Std / 40	0.840	22	0.109	0.9	12	1.0	14
(15mm)	XS / 80			0.147	1.1	16	1.2	17
¾"	Std / 40	1.050	28	0.113	1.1	17	1.4	20
(20mm)	XS / 80			0.154	1.5	22	1.7	24
1"	Std / 40	1.315	34	0.133	1.7	25	2.1	30
(25mm)	XS / 80			0.179	2.2	32	2.5	36
1¼"	Std / 40	1.660	42	0.140	2.3	33	2.9	43
(32mm)	XS / 80			0.191	3.0	44	3.6	52
1½"	Std / 40	1.900	48	0.145	2.7	40	3.6	53
(40mm)	XS / 80			0.200	3.6	53	4.4	64
2"	Std / 40	2.375	60	0.154	3.7	53	5.1	75
(50mm)	XS / 80			0.218	5.0	73	6.3	92
2½"	Std / 40	2.875	75	0.203	5.8	85	7.9	115
(65mm)	XS / 80			0.276	7.7	112	9.5	139
3"	Std / 40	3.500	89	0.216	7.6	111	11	157
(80mm)	XS / 80			0.300	10	150	13	191
3½"	Std / 40	4.000	102	0.226	9.1	133	13	195
(90mm)	XS / 80			0.318	13	182	16	239
4"	Std / 40	4.500	114	0.237	11	157	16	238
(100mm)	XS / 80			0.337	15	219	20	291
5"	Std / 40	5.563	141	0.258	15	213	23	340
(125mm)	XS / 80			0.375	21	303	29	418
6"	Std / 40	6.625	168	0.280	19	277	31	460
(150mm)	XS / 80			0.432	29	417	40	582
8"	Std / 40	8.625	219	0.322	29	417	50	733
(200mm)	XS / 80			0.500	43	633	63	922
10"	Std / 40	10.75	273	0.365	40	591	75	1090
(250mm)	XS / 60			0.500	55	799	87	1271
12"	Std	12.75	235	0.375	50	723	99	1439
(300mm)	XS			0.500	65	955	112	1641
14"	Std / 30	14.00	355.6	0.375	55	796	114	1669
(350mm)	XS			0.500	72	1052	130	1892
16"	Std / 30	16.00	406.4	0.375	63	913	142	2069
(400mm)	XS / 40			0.500	83	1208	159	2326
18"	Std	18.00	457.2	0.375	71	1030	172	2509
(450mm)	XS			0.500	93	1364	192	2800
20"	Std / 20	20.00	508.0	0.375	79	1147	205	2988
(500mm)	XS / 30			0.500	104	1520	227	3313
24"	Std / 20	24.00	609.6	0.375	95	1381	279	4067
(600mm)	XS			0.500	125	1831	306	4460
30"	Std	30.00	762.0	0.375	119	1731	410	5983
(750mm)	XS / 20			0.500	158	2299	444	6478
36"	Std	36.00	914.4	0.375	143	2082	566	8256
(900mm)	XS / 20			0.500	190	2766	607	8853
42"	Std	42.00	1066.8	0.375	167	2433	746	10888
(1050mm)	XS / 20			0.500	222	3234	794	11587

Pipe Weights are based on Carbon Steel pipe

TECHNICAL INFORMATION

AMERICAN WATER WORKS ASSOCIATION - DUCTILE IRON PIPE DATA

BASED UPON AWWA C108-70 CLASS 53

NOMINAL PIPE SIZE		O.D. SIZE		WALL THICKNESS		WEIGHT OF PIPE		WEIGHT OF PIPE FILLED WITH WATER	
in.	mm	in.	mm	in.	mm	Lbs./Ft.	Kg/m	Lbs./Ft.	Kg/m
3	80	3.96	100.6	0.31	7.9	11.2	16.7	15.0	22.3
4	100	4.80	121.9	0.32	8.1	14.2	21.1	20.1	29.9
6	150	6.90	175.3	0.34	8.6	22.0	32.7	35.1	52.2
8	200	9.05	229.9	0.36	9.1	31.0	46.1	54.0	80.4
10	250	11.1	281.9	0.38	9.7	40.4	60.1	76.8	114.3
12	300	13.2	335.3	0.40	10.2	50.7	75.5	103.0	153.3
14	350	15.3	388.6	0.42	10.7	62.4	92.9	133.5	198.7
16	400	17.4	442.0	0.43	10.9	72.8	108.3	165.9	246.9
18	450	19.5	495.3	0.44	11.2	83.6	124.4	201.5	299.9
20	500	21.6	548.6	0.45	11.4	95.2	141.7	241.0	358.7
24	600	25.8	655.3	0.47	11.9	119.2	177.4	329.4	490.2
30	750	32.0	812.8	0.51	13.0	161.3	240.0	487.8	725.9
36	900	38.3	972.8	0.58	14.7	219.5	326.7	688.8	1025.1
42	1050	44.5	1130.3	0.65	16.5	285.2	424.4	920.1	1369.3
48	1200	50.8	1290.3	0.72	18.3	360.3	536.2	1189.2	1769.8
54	1350	57.1	1450.3	0.81	20.6	455.0	677.1	1502.2	2235.6

Note: Add flange weight for flanged ductile iron pipe

CAST IRON PIPE DATA

MECHANICAL JOINT PIPE CLASS 150

NOMINAL PIPE SIZE		O.D. SIZE		WALL THICKNESS		WEIGHT OF PIPE		WEIGHT OF PIPE FILLED WITH WATER	
in.	mm	in.	mm	in.	mm	Lbs./Ft.	Kg/m	Lbs./Ft.	Kg/m
3	80	3.96	100.6	0.32	8.1	12.9	19.2	16.6	24.7
4	100	4.80	121.9	0.35	8.9	16.4	24.4	22.1	32.9
6	150	6.90	175.3	0.38	9.7	25.7	38.2	38.5	57.3
8	200	9.05	229.9	0.41	10.4	36.7	54.6	59.8	89.0
10	250	11.1	281.9	0.44	11.2	48.7	72.5	84.2	125.3
12	300	13.2	335.3	0.48	12.2	62.9	93.6	113.9	169.5
14	350	15.3	388.6	0.51	13.0	78.8	117.3	148.1	220.4
16	400	17.4	442.0	0.54	13.7	95.0	141.4	185.3	275.8
18	450	19.5	495.3	0.58	14.7	114.7	170.7	228.7	340.4
20	500	21.6	548.6	0.62	15.7	135.9	202.2	277.4	412.8
24	600	25.8	655.3	0.73	18.5	190.4	283.4	391.4	582.5
30	750	32.0	812.8	0.85	21.6	277.3	412.7	589.3	877.0
36	900	38.3	972.8	0.94	23.9	368.9	549.0	817.9	1217.2
42	1050	44.5	1130.3	1.05	26.7	479.1	713.0	1091.1	1623.8
48	1200	50.8	1290.3	1.14	29.0	595.2	885.8	1398.2	2080.8

Note: Add flange weight for flanged cast iron pipe

INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

TECHNICAL INFORMATION

NO-HUB CAST IRON PIPE DATA

BASED UPON CAST IRON SOIL PIPE INSTITUTE STANDARDS 301-72, TABLE 1

NOMINAL PIPE SIZE:		O.D. SIZE		WALL THICKNESS		WEIGHT OF PIPE		WEIGHT OF PIPE FILLED W/WATER		
in.	mm	in.	mm	in.	mm	Lbs./Ft.	Kg/m	Lbs./Ft.	Kg/m	
1½"	40	1.9	48.3	0.16	4.1	2.7	4.0	6.2	9.2	3.73
2"	50	2.35	59.7	0.16	4.1	3.6	5.4	8.6	12.8	5.72
3"	80	3.35	85.1	0.16	4.1	5.2	7.7	13.5	20.1	12.80
4"	100	4.38	111.3	0.19	4.8	7.4	11.0	20.2	30.1	23.10
5"	125	5.30	134.6	0.19	4.8	9.6	14.3	27.5	40.9	35.50
6"	150	6.30	160.0	0.19	4.8	11.0	16.4	34.0	50.6	51.00
8"	200	8.38	212.9	0.23	5.8	18.0	26.8	57.5	85.6	69.30

DECIMAL EQUIVALENTS

DECIMALS OF AN INCH & EQUIVALENT MILLIMETERS

FRACTION	DECIMAL	MM	FRACTION	DECIMAL	MM	FRACTION	DECIMAL	MM	FRACTION	DECIMAL	MM
1/32	0.0313	0.794	9/32	0.2813	7.144	17/32	0.5313	13.494	25/32	0.7813	19.844
1/16	0.0625	1.588	5/16	0.3125	7.938	9/16	0.5625	14.288	13/16	0.8125	20.638
3/32	0.0938	2.381	11/32	0.3438	8.731	19/32	0.5938	15.081	27/32	0.8438	21.431
1/8	0.1250	3.175	3/8	0.3750	9.525	5/8	0.6250	15.875	7/8	0.8750	22.225
5/32	0.1563	3.969	13/32	0.4063	10.319	21/32	0.6563	16.669	29/32	0.9063	23.019
3/16	0.1875	4.763	7/16	0.4375	11.113	11/16	0.6875	17.463	15/16	0.9375	23.813
7/32	0.2188	5.556	15/32	0.4688	11.906	23/32	0.7188	18.256	31/32	0.9688	24.606
1/4	0.2500	6.350	1/2	0.5000	12.700	3/4	0.7500	19.050	1	1.0000	25.400

ELECTRICAL CONDUIT SIZES

NOMINAL CONDUIT SIZE	ELECTRICAL METALLIC CONDUIT O.D.	INTERMEDIATE METALLIC CONDUIT O.D.	STEEL RIGID CONDUIT O.D.
½	0.706	0.815	0.840
¾	0.922	1.029	1.050
1	1.163	1.290	1.315
1¼	1.510	1.638	1.660
1½	1.740	1.863	1.900
2	2.197	2.360	2.375
2½	2.875	2.857	2.875
3	3.500	3.476	3.500
3½	4.000	3.971	4.000
4	4.500	4.466	4.500
5			5.563
6			6.625

C-CLAMP SET SCREW TORQUE

FOR SET SCREW IN MSS TYPE 19 AND 23 C-CLAMPS PER MSS-SP-69

SET SCREW SIZE		MAXIMUM TORQUE VALUE INCH-POUNDS	NEWTON-METERS
¼	M6	40	4.5
3/8	M10	60	6.8
½	M12	125	14.1
5/8	M16	250	28.2
¾	M20	400	45.2
7/8	M20	665	75.1

TECHNICAL INFORMATION

COPPER TUBING DATA - TYPE L

NOMINAL TUBING SIZE		O.D. SIZE		WALL THICKNESS		WEIGHT OF TUBING		WEIGHT OF TUBING FILLED WITH WATER	
in.	mm	in.	mm	in.	mm	Lbs./Ft.	Kg/m	Lbs./Ft.	Kg/m
¼	8	0.375	9.5	0.030	0.8	0.13	0.19	0.15	0.22
⅜	10	0.500	12.7	0.035	0.9	0.20	0.29	0.26	0.39
1/2	15	0.625	15.9	0.040	1.0	0.29	0.42	0.38	0.57
⅝	18	0.750	19.1	0.042	1.1	0.36	0.54	0.51	0.76
¾	20	0.875	22.2	0.045	1.1	0.46	0.68	0.66	0.98
1	25	1.125	28.6	0.050	1.3	0.66	0.97	1.01	1.50
1¼	32	1.375	34.9	0.055	1.4	0.88	1.32	1.42	2.11
1½	40	1.625	41.3	0.060	1.5	1.14	1.70	1.91	2.84
2	50	2.125	54.0	0.070	1.8	1.75	2.60	3.09	4.60
2½	65	2.625	66.7	0.080	2.0	2.48	3.69	4.54	6.76
3	80	3.125	79.4	0.090	2.3	3.33	4.96	6.28	9.35
3½	90	3.625	92.1	0.100	2.5	4.29	6.38	8.28	12.32
4	100	4.125	104.8	0.110	2.8	5.38	8.01	10.57	15.73
5	125	5.125	130.2	0.125	3.2	7.61	11.30	15.69	23.35
6	150	6.125	155.6	0.140	3.6	10.20	15.20	21.81	32.46
8	200	8.125	206.4	0.200	5.1	19.26	28.70	39.49	58.77
10	250	10.125	257.2	0.250	6.4	20.10	29.90	61.69	91.81
12	300	12.125	308.0	0.280	7.1	40.40	60.10	85.83	127.73

COPPER TUBING DATA - TYPE K

NOMINAL TUBING SIZE		O.D. SIZE		WALL THICKNESS		WEIGHT OF TUBING		WEIGHT OF TUBING FILLED WITH WATER	
in.	mm	in.	mm	in.	mm	Lbs./Ft.	Kg/m	Lbs./Ft.	Kg/m
¼	8	0.375	9.5	0.035	0.9	0.14	0.21	0.17	0.25
⅜	10	0.500	12.7	0.049	1.2	0.27	0.40	0.32	0.48
½	15	0.625	15.9	0.049	1.2	0.34	0.51	0.43	0.64
⅝	18	0.750	19.1	0.049	1.2	0.42	0.63	0.56	0.83
¾	20	0.875	22.2	0.065	1.7	0.64	0.95	0.83	1.24
1	25	1.125	28.6	0.065	1.7	0.84	1.25	1.18	1.76
1¼	32	1.375	34.9	0.065	1.7	1.04	1.55	1.57	2.34
1½	40	1.625	41.3	0.072	1.8	1.36	2.02	2.10	3.13
2	50	2.125	54.0	0.083	2.1	2.06	3.07	3.37	5.02
2½	65	2.625	66.7	0.095	2.4	2.92	4.35	4.92	7.32
3	80	3.125	79.4	0.109	2.8	4.00	5.95	6.96	10.36
3½	90	3.625	92.1	0.120	3.0	5.12	7.62	9.02	13.42
4	100	4.125	104.8	0.134	3.4	6.51	9.69	11.57	17.22
5	125	5.125	130.2	0.160	4.1	9.67	14.4	17.67	26.30
6	150	6.125	155.6	0.192	4.9	13.87	20.6	25.07	37.31
8	200	8.125	206.4	0.271	6.9	25.90	38.5	45.40	67.56
10	250	10.125	257.2	0.338	8.6	40.30	60.0	70.72	105.25
12	300	12.125	308.0	0.405	10.3	57.80	86.0	101.48	151.02

TECHNICAL INFORMATION

PIPE WEIGHTS FOR PVC AND CPVC PIPE – TYPES I & II

PIPE DATA					PVC PIPE WEIGHT				CPVC PIPE WEIGHT			
Nominal	Pipe	Outside Dia.		Wall Th'k	w/ Gas, Air		w/ Water		w/ Gas, Air		w/ Water	
Pipe Size	Schedule	in	mm	in	lbs/ft	N/m	lbs/ft	N/m	lbs/ft	N/m	lbs/ft	N/m
⅛"	40	0.405	10	0.068	0.05	0.7	0.07	1.0				
(3mm)	80			0.095	0.06	0.9	0.08	1.1				
¼"	40	0.54	14	0.088	0.08	1.2	0.13	1.9	0.09	1.3	0.13	2.0
(6mm)	80			0.119	0.10	1.5	0.13	2.0	0.12	1.7	0.14	2.1
⅜"	40	0.675	17	0.091	0.11	1.6	0.19	2.8	0.12	1.8	0.20	3.0
(10mm)	80			0.126	0.14	2.1	0.20	3.0	0.16	2.3	0.22	3.2
½"	40	0.840	22	0.109	0.17	2.4	0.30	4.4	0.19	2.7	0.31	4.6
(15mm)	80			0.147	0.21	3.1	0.31	4.6	0.24	3.5	0.33	4.8
	120			0.170	0.24	3.4	0.32	4.7				
¾"	40	1.050	28	0.113	0.22	3.2	0.45	6.6	0.25	3.6	0.47	6.9
(20mm)	80			0.154	0.29	4.2	0.47	6.9	0.32	4.7	0.50	7.3
	120			0.170	0.31	4.5	0.48	7.0				
1"	40	1.315	34	0.133	0.33	4.8	0.70	10	0.37	5.4	0.73	11
(25mm)	80			0.179	0.42	6.2	0.74	11	0.47	6.9	0.77	11
	120			0.200	0.46	6.8	0.75	11				
1¼"	40	1.660	42	0.140	0.44	6.5	1.1	16	0.50	7.2	1.1	16
(32mm)	80			0.191	0.58	8.5	1.1	17	0.65	9.5	1.2	17
	120			0.215	0.65	9.5	1.2	17				
1½"	40	1.900	48	0.145	0.53	7.8	1.4	21	0.60	8.7	1.5	21
(40mm)	80			0.200	0.71	10	1.5	22	0.79	12	1.5	22
	120			0.225	0.79	11	1.5	22				
2"	40	2.375	60	0.154	0.72	10	2.2	32	0.80	12	2.2	33
(50mm)	80			0.218	0.98	14	2.3	33	1.1	16	2.3	34
	120			0.250	1.1	16	2.3	34				
2½"	40	2.875	75	0.203	1.1	17	3.2	47	1.3	18	3.3	48
(65mm)	80			0.276	1.5	22	3.3	49	1.7	24	3.5	50
	120			0.300	1.6	24	3.4	49				
3"	40	3.500	89	0.216	1.5	22	4.7	68	1.7	24	4.8	70
(80mm)	80			0.300	2.0	29	4.9	71	2.2	33	5.0	73
	120			0.350	2.3	34	5.0	73				
3½"	40	4.000	102	0.226	1.8	26	6.1	89	2.0	29	6.2	91
(90mm)	80			0.318	2.5	36	6.3	92	2.7	40	6.5	95
4"	40	4.500	114	0.237	2.1	31	7.6	111	2.4	34	7.8	114
(100mm)	80			0.337	2.9	43	7.9	116	3.3	48	8.2	119
	120			0.437	3.7	54	8.2	120				
5"	40	5.563	141	0.258	2.9	42	12	168				
(125mm)	80			0.375	4.1	60	12	175				
6"	40	6.625	168	0.280	3.7	54	16	237	4.2	61	17	242
(150mm)	80			0.432	5.6	82	17	247	6.3	91	17	253
	120			0.562	7.1	104	17	254				
8"	40	8.625	219	0.322	5.6	82	27	398	6.3	91	28	405
(200mm)	80			0.500	8.5	124	28	413	9.5	139	29	423
10"	40	10.75	273	0.365	8.0	116	42	615	8.9	130	43	624
(250mm)	80			0.593	13	184	44	639	14	206	45	654
12"	40	12.75	235	0.406	11	153	59	862	12	171	60	874
(300mm)	80			0.687	17	254	61	897	19	283	63	917
14"	40	14.00	355.6	0.437	12	182	71	1038				
(350mm)	80			0.750	21	304	74	1081				
16"	40	16.00	406.4	0.500	16	238	93	1356				
(400mm)	80			0.843	27	391	97	1409				
18"	40	18.00	457.2	0.562	22	328	119	1743				
(450mm)	80			0.937	34	489	122	1781				
20"	40	20.00	508.0	0.593	27	388	147	2146				
(500mm)	80			1.031	42	618	152	2217				
24"	40	24.00	609.6	0.687	37	542	211	3086				
(600mm)	80			1.218	60	879	219	3189				

PVC and CPVC pipe weights are based on the "average I.D."

TECHNICAL INFORMATION

USEFUL WEIGHT FORMULAS

PIPE
Weight (lb/ft) = 10.68 x T x (D - T) x F

PIPE CONTENTS
Weight (lb/ft) = 0.3405 x G x $(D - 2T)^2$

LEGEND
D = Outside Diameter (inches)
F = Material Weight Factor
G = Specific Gravity of Pipe Contents
Normally 1.0 for water, 0 for air and steam.
L = Length (inches)
T = Pipe Wall, Plate, or Bar Thickness (inches)
W = Width (inches)

PLATE AND BAR
Weight (lb) = 0.2833 x T x W x L x F

ROUND ROD
Weight (lb/ft) = $2.67D^2$

MATERIAL WEIGHT FACTORS
Carbon Steel & Cr-Mo 1.00
Aluminum 0.35
Brass 1.12
Cast lron 0.91
Copper 1.14
Ferritic stainless steel 0.95
Austenitic stainless steel 1.02
Wrought iron 0.98

CALCULATING OF PIPING INSULATION WEIGHT

The weight per foot of insulation is calculated by using the weight factor "X" from the table below and multiplying by the insulation density (lbs/cu-ft).

EXAMPLE: A 16" pipe with 3½" of insulation is found to have a weight factor of 1.49 (from table below). With an insulation density of 11 lb/cu-ft, the calculation for insulation weight is 1.49 x 11 = 16.39

INSULATION WEIGHT FACTOR – X

NOMINAL	NOMINAL INSULATION THICKNESS										
PIPE SIZE	1"	1½"	2"	2½"	3"	3½"	4"	4½"	5"	5½"	6"
1	.057	.10	.16	.23	.31	.40					
1¼	.051	.12	.15	.22	.30	.39					
1½	.066	.11	.21	.29	.38	.48					
2	.080	.14	.21	.29	.37	.47	.59				
2½	.091	.19	.27	.36	.46	.58	.70	.83			
3	.10	.17	.25	.34	.44	.56	.68	.81			
3½	.15	.23	.31	.41	.54	.66	.78	...	.97		
4	.13	.21	.30	.39	.51	.63	.77	.96	1.10		
5	.15	.24	.34	.45	.58	.71	.88	1.04	1.20		
6	.17	.27	.38	.51	.64	.83	.97	1.13	1.34		
8		.34	.47	.66	.80	.97	1.17	1.36	1.56	1.75	
10		.43	.59	.75	.93	1.12	1.32	1.54	1.76	1.99	
12		.50	.68	.88	1.07	1.28	1.52	1.74	1.99	2.24	2.50
14		.51	.70	.90	1.11	1.34	1.57	1.81	2.07	2.34	2.62
16		.57	.78	1.01	1.24	1.49	1.74	2.01	2.29	2.58	2.88
18		.64	.87	1.12	1.37	1.64	1.92	2.21	2.51	2.82	3.14
20		.70	.96	1.23	1.50	1.79	2.09	2.40	2.73	3.06	3.40
24		.83	1.13	1.44	1.77	2.10	2.44	2.80	3.16	3.54	3.92

General Formula: For pipe sizes not shown in the table above (special O.D. pipe, etc.), use the following formula to determine the insulation weight:

Insulation Weight: (lb/ft) = 0.0218 x I x T x (T + D)

Where: I = Insulation density (lb/cu-ft)
T = Insulation thickness (inches)
D = Outside diameter of pipe (inches)

TECHNICAL INFORMATION

MAXIMUM HORIZONTAL HANGER SPACING

PER MSS-SP69, AND ANSI B31.1

NOMINAL PIPE SIZE OR TUBE DIA.	STANDARD WEIGHT STEEL PIPE SERVICE (FEET / METERS)		COPPER TUBING SERVICE (FEET / METERS)	
	WATER	VAPOR	WATER	VAPOR
¼	7	8	5	5
8	2.13	2.44	1.52	1.52
⅜	7	8	5	6
10	2.13	2.44	1.52	1.83
½	7	8	5	6
15	2.13	2.44	1.52	1.83
¾	7	9	5	7
20	2.13	2.74	1.52	2.13
1	7	9	6	8
25	2.13	2.74	1.83	2.44
1¼	7	9	7	9
32	2.13	2.74	2.13	2.74
1½	9	12	8	10
40	2.74	3.66	2.44	3.05
2	10	13	8	11
50	3.05	3.96	2.44	3.35
2½	11	14	9	13
65	3.35	4.27	2.74	3.96
3	12	15	10	14
80	3.66	4.57	3.05	4.27
3½	13	16	11	15
90	3.96	4.88	3.35	4.57
4	14	17	12	16
100	4.27	5.18	3.66	4.88
5	16	19	13	18
125	4.88	5.79	3.96	5.49
6	17	21	14	20
150	5.18	6.40	4.27	6.10
8	19	24	16	23
200	5.79	7.32	4.88	7.01
10	22	26	18	25
250	6.71	7.92	5.49	7.62
12	23	30	19	28
300	7.01	9.14	5.79	8.53
14	25	32		
350	7.62	9.75		
16	27	35		
400	8.23	10.67		
18	28	37		
450	8.53	11.28		
20	30	39		
500	9.14	11.89		
24	32	42		
600	9.75	12.80		
30	33	44		
750	10.06	13.41		

DIMENSIONS	TEMPERATURE	LOADS	WEIGHT
INCHES	FAHRENHEIT	POUNDS	POUNDS
MILLIMETERS	CELSIUS	NEWTONS	KILOGRAMS

LOAD CHART FOR THREADED ROD

MATERIALS: ASTM A36, A575 GR. 1020 OR A576 GR 1020

NOMINAL ROD DIAMETER	MAXIMUM SAFE ROD LOAD ROD TEMPERATURE 650°F 349°C	750°F 399°C	WEIGHT PER FOOT METER	ROOT AREA IN.² MM²
¼	240	210	0.167	0.027
M6	1068	934	0.248	0.017
⅜	610	540	0.360	0.068
M10	2714	2402	0.536	0.044
½	1130	1010	0.668	0.126
M12	5027	4493	0.994	0.081
⅝	1810	1610	1.04	0.202
M16	8052	7162	1.55	0.130
¾	2710	2420	1.50	0.302
M20	12055	10765	2.23	0.195
⅞	3770	3360	2.04	0.419
M20	16770	14947	3.04	0.270
1	4960	4420	2.67	0.552
M24	22064	19662	3.97	0.356
1¼	8000	7140	3.38	0.889
M30	35587	31762	5.03	0.574
1½	11630	10370	4.17	1.293
M36	51735	46130	6.20	0.834
1¾	15700	14000	6.01	1.744
M42	69840	62278	8.94	1.125
2	20700	18460	8.18	2.300
M48	92082	82117	12.17	1.484
2¼	27200	24260	10.68	3.023
M56	120996	107918	15.89	1.950
2½	33500	29880	13.52	3.716
M64	149021	132918	20.12	2.398
2¾	41580	37066	16.69	4.619
M72	184964	164884	24.83	2.980
3	50580	45085	20.19	5.621
M80	225000	200556	30.04	3.627

GAUGE THICKNESS

GAUGE	MINIMUM	NOMINAL
3	0.215	0.239
3	5.461	6.071
7	0.167	0.179
7	4.242	4.547
11	0.108	0.120
11	2.743	3.048
12	0.093	0.105
12	2.362	2.667
13	0.080	0.090
13	2.032	2.286
14	0.066	0.075
14	1.676	1.905
16	0.053	0.060
16	1.346	1.524
18	0.042	0.048
18	1.067	1.219

HANGER SPACING FOR PVC AND CPVC PIPING

		PVC										CPVC											
Pipe		60° F		80° F		100° F		120° F		140° F		73° F		100° F		120° F		140° F		160° F		180° F	
Size	Sch.	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm
½"	40	4.5	1.37	4.5	1.37	4.0	1.22	2.5	0.76	2.5	0.76	5.0	1.52	4.5	1.37	4.5	1.37	4.0	1.22	2.5	0.76	2.5	0.76
15mm	80	5.0	1.52	4.5	1.37	4.5	1.37	3.0	0.91	2.5	0.76	5.5	1.68	5.5	1.68	4.5	1.37	4.5	1.37	3.0	0.91	2.5	0.76
	120	5.0	1.52	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76												
3/4"	40	5.0	1.52	4.5	1.37	4.0	1.22	2.5	0.76	2.5	0.76	5.0	1.52	5.0	1.52	4.5	1.37	4.0	1.22	2.5	0.76	2.5	0.76
20mm	80	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76	5.5	1.68	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76
	120	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	3.0	0.91												
1"	40	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76	5.5	1.68	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76
25mm	80	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91	6.0	1.83	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91
	120	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91												
1 1/4"	40	5.5	1.68	5.5	1.68	5.0	1.52	3.0	0.91	3.0	0.91	5.5	1.68	5.5	1.68	5.5	1.68	5.0	1.52	3.0	0.91	3.0	0.91
32mm	80	6.0	1.83	6.0	1.83	5.5	1.68	3.5	1.07	3.0	0.91	6.5	1.98	6.0	1.83	6.0	1.83	5.5	1.68	3.5	1.07	3.0	0.91
	120	6.5	1.98	6.0	1.83	5.5	1.68	3.5	1.07	3.5	1.07												
1½"	40	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91	6.0	1.83	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91
40mm	80	6.5	1.98	6.0	1.83	5.5	1.68	3.5	1.07	3.5	1.07	7.0	2.13	6.5	1.98	6.0	1.83	5.5	1.68	3.5	1.07	3.5	1.07
	120	6.5	1.98	6.5	1.98	6.0	1.83	4.0	1.22	3.5	1.07												
2"	40	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91	6.0	1.83	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91
50mm	80	7.0	2.13	6.5	1.98	6.0	1.83	4.0	1.22	3.5	1.07	7.0	2.13	7.0	2.13	6.5	1.98	6.0	1.83	4.0	1.22	3.5	1.07
	120	7.5	2.29	7.0	2.13	6.5	1.98	4.0	1.22	3.5	1.07												
2½"	40	7.0	2.13	6.5	1.98	6.0	1.83	4.0	1.22	3.5	1.07	7.0	2.13	7.0	2.13	6.5	1.98	6.0	1.83	4.0	1.22	3.5	1.07
65mm	80	7.5	2.29	7.5	2.29	6.5	1.98	4.5	1.37	4.0	1.22	8.0	2.44	7.5	2.29	7.5	2.29	6.5	1.98	4.5	1.37	4.0	1.22
	120	8.0	2.44	7.5	2.29	7.0	2.13	4.5	1.37	4.0	1.22												
3"	40	7.0	2.13	7.0	2.13	6.0	1.83	4.0	1.22	3.5	1.07	7.0	2.13	7.0	2.13	7.0	2.13	6.0	1.83	4.0	1.22	3.5	1.07
80mm	80	8.0	2.44	7.5	2.29	7.0	2.13	4.5	1.37	4.0	1.22	8.0	2.44	8.0	2.44	7.5	2.29	7.0	2.13	4.5	1.37	4.0	1.22
	120	8.5	2.59	8.0	2.44	7.5	2.29	5.0	1.52	4.5	1.37												
3½"	40	7.5	2.29	7.0	2.13	6.5	1.98	4.0	1.22	4.0	1.22	7.5	2.29	7.5	2.29	7.0	2.13	6.5	1.98	4.0	1.22	4.0	1.22
90mm	80	8.5	2.59	8.0	2.44	7.5	2.29	5.0	1.52	4.5	1.37	8.5	2.59	8.5	2.59	8.0	2.44	7.5	2.29	5.0	1.52	4.5	1.37
4"	40	7.5	2.29	7.0	2.13	6.5	1.98	4.5	1.37	4.0	1.22	7.5	2.29	7.5	2.29	7.0	2.13	6.5	1.98	4.5	1.37	4.0	1.22
100mm	80	9.0	2.74	8.5	2.59	7.5	2.29	5.0	1.52	4.5	1.37	8.5	2.59	9.0	2.74	8.5	2.59	7.5	2.29	5.0	1.52	4.5	1.37
	120	9.5	2.90	9.0	2.74	8.5	2.59	5.5	1.68	5.0	1.52												
5"	40	8.0	2.44	7.5	2.29	7.0	2.13	4.5	1.37	4.0	1.22	8.0	2.44	8.0	2.44	7.5	2.29	7.0	2.13	5.0	1.52	4.5	1.37
125mm	80	9.5	2.90	9.0	2.74	8.0	2.44	5.5	1.68	5.0	1.52	9.0	2.74	9.0	2.74	8.5	2.59	8.0	2.44	5.5	1.68	5.0	1.52
6"	40	8.5	2.59	8.0	2.44	7.5	2.29	5.0	1.52	4.5	1.37	8.5	2.59	8.0	2.44	7.5	2.29	7.0	2.13	5.0	1.52	4.5	1.37
150mm	80	10.0	3.05	9.5	2.90	9.0	2.74	6.0	1.83	5.0	1.52	10.0	3.05	9.5	2.90	9.0	2.74	8.0	2.44	5.5	1.68	5.0	1.52
	120	11.5	3.51	10.5	3.20	9.5	2.90	6.5	1.98	6.0	1.83												
8"	40	9.0	2.74	8.5	2.59	8.0	2.44	5.0	1.52	4.5	1.37	9.5	2.90	9.0	2.74	8.5	2.59	7.5	2.29	5.5	1.68	5.0	1.52
200mm	80	11.0	3.35	10.5	3.20	9.5	2.90	6.5	1.98	5.5	1.68	11.0	3.35	10.5	3.20	10.0	3.05	9.0	2.74	6.0	1.83	5.5	1.68
10"	40	10.0	3.05	9.0	2.74	8.5	2.59	5.5	1.68	5.0	1.52	10.5	3.20	10.0	3.05	9.5	2.90	8.0	2.44	6.0	1.83	0.56	0.17
250mm	80	12.0	3.66	11.0	3.35	10.0	3.05	7.0	2.13	6.0	1.83	11.5	3.51	11.0	3.35	10.5	3.20	9.5	2.90	6.5	1.98	0.60	0.18
12"	40	11.5	3.51	10.5	3.20	9.5	2.90	6.5	1.98	5.5	1.68	11.5	3.51	10.5	3.20	10.0	3.05	8.5	2.59	6.5	1.98	6.0	1.83
300mm	80	13.0	3.96	12.0	3.66	10.5	3.20	7.5	2.29	6.5	1.98	12.5	3.81	12.0	3.66	11.5	3.51	10.5	3.20	7.5	2.29	6.5	1.98
14"	40	12.0	3.66	11.0	3.35	10.0	3.05	7.0	2.13	6.0	1.83												
350mm	80	13.5	4.11	13.0	3.96	11.0	3.35	8.0	2.44	7.0	2.13												
16"	40	12.5	3.81	11.5	3.51	10.5	3.20	7.5	2.29	6.5	1.98												
400mm	80	14.0	4.27	13.5	4.11	11.5	3.51	8.5	2.59	7.5	2.29												
18"	40	13.0	3.96	12.0	3.66	11.0	3.35	8.0	2.44	7.0	2.13												
450mm	80	14.5	4.42	14.0	4.27	12.0	3.66	9.0	2.74	8.0	2.44												
20"	40	13.5	4.11	12.5	3.81	11.5	3.51	8.5	2.59	7.5	2.29												
500mm	80	15.0	4.57	14.5	4.42	12.5	3.81	9.5	2.90	8.5	2.59												
24"	40	14.0	4.27	13.0	3.96	12.0	3.66	9.0	2.74	8.0	2.44												
600mm	80	18.5	5.64	15.0	4.57	13.0	3.96	10.0	3.05	9.0	2.74												

TECHNICAL INFORMATION

THERMAL EXPANSION OF PIPE MATERIALS

DIMENSIONS

INCHES PER FOOT
MILLIMETERS PER METER

TEMPERATURE	CARBON STEEL THROUGH 3% CR MO	ALLOY STEELS THROUGH 9% CR MO	STAINLESS STEELS (304, 316, 347)	COPPER	BRASS	ALUMINUM
0	-0.0051		-0.0078	-0.0079	-0.0081	-0.0104
-17.8	-0.4250		-0.6500	-0.6583	-0.6750	-0.8666
50	-0.0015		-0.0022	-0.0022	-0.0023	-0.0030
10.0	-0.1250		-0.1833	-0.1833	-0.1917	-0.2500
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
100	0.0023	0.0022	0.0034	0.0034	0.0035	0.0046
37.8	0.1917	0.1833	0.2833	0.2833	0.2917	0.3833
150	0.0061	0.0058	0.0090	0.0091	0.0093	0.0123
65.6	0.5083	0.4833	0.7500	0.7583	0.7750	1.0250
200	0.0099	0.0094	0.0146	0.0151	0.0152	0.0200
93.3	0.8250	0.7833	1.2166	1.2583	1.2666	1.6666
250	0.0141	0.0132	0.0203	0.0208	0.0214	0.0283
121	1.1750	1.1000	1.6916	1.7333	1.7833	2.3582
300	0.0182	0.0171	0.0261	0.0267	0.0276	0.0366
149	1.5166	1.4249	2.1749	2.2249	2.2999	3.0499
350	0.0226	0.0210	0.0321	0.0327	0.0340	0.0452
177	1.8833	1.7499	2.6749	2.7249	2.8332	3.7665
400	0.0270	0.0250	0.0380	0.0388	0.0405	0.0539
204	2.2499	2.0833	3.1665	3.2332	3.3749	4.4915
450	0.0316	0.0292	0.0440	0.0449	0.0472	0.0628
232	2.6332	2.4332	3.6665	3.7415	3.9332	5.2331
500	0.0362	0.0335	0.0501	0.0512	0.0540	0.0717
260	3.0165	2.7916	4.1748	4.2665	4.4998	5.9748
550	0.0411	0.0379	0.0562	0.0574	0.0610	0.0810
288	3.4249	3.1582	4.6831	4.7831	5.0831	6.7497
600	0.0460	0.0424	0.0624	0.0639	0.0680	0.0903
316	3.8332	3.5332	5.1998	5.3248	5.6664	7.5247
650	0.0512	0.0469	0.0687	0.0703	0.0753	
343	4.2665	3.9082	5.7248	5.8581	6.2747	
700	0.0563	0.0514	0.0750	0.0768	0.0826	
371	4.6915	4.2832	6.2498	6.3997	6.8831	
750	0.0617	0.0562	0.0815	0.0834	0.0902	
399	5.1415	4.6831	6.7914	6.9497	7.5164	
800	0.0670	0.0610	0.0880	0.0900	0.0978	
427	5.5831	5.0831	7.3330	7.4997	8.1497	
850	0.0726	0.0658	0.0946	0.0967	0.1056	
454	6.0498	5.4831	7.8830	8.0580	8.7996	
900	0.0781	0.0707	0.1012	0.1037	0.1135	
482	6.5081	5.8914	8.4330	8.6413	9.4580	
950	0.0835	0.0756	0.1080	0.1105	0.1216	
510	6.9581	6.2997	8.9996	9.2080	10.1329	
1000	0.0889	0.0806	0.1148	0.1175	0.1298	
538	7.4080	6.7164	9.5663	9.7913	10.8162	
1050	0.0946	0.0855	0.1216			
566	7.8830	7.1247	10.1329			
1100	0.1004	0.0905	0.1284			
593	8.3663	7.5414	10.6996			

TECHNICAL INFORMATION

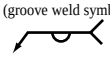
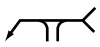
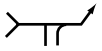
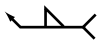
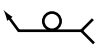
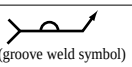
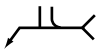
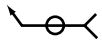
COMMON STRUCTURAL SHAPES USED FOR PIPE SUPPORTS

STRUCTURAL SHAPE	SIZE	WEIGHT PER FOOT	DEPTH IN	FLANGE WIDTH IN	THICKNESS IN	SECTION MODULUS IN^3
ANGLE	L 1½ x 1½ x ¼	2.3	1½	1½	¼	0.13
	L 2 x 2 x ¼	3.2	2	2	¼	0.25
	L 2½ x 2½ x ¼	4.1	2½	2½	¼	0.38
	L 3 x 3 x ¼	4.9	3	3	¼	0.58
	L 3 x 3 x ⅜	7.2	3	3	⅜	0.83
	L 3 x 3 x ½	9.4	3	3	½	1.07
	L 3½ x 3½ x ⅜	8.5	3½	3½	⅜	1.15
	L 4 x 4 x ⅜	9.8	4	4	⅜	1.52
	L 4 x 4 x ½	12.8	4	4	½	1.97
	L 5 x 5 x ½	16.2	5	5	½	3.16
	L 6 x 6 x ½	19.6	6	6	½	4.61
	L 6 x 6 x ¾	28.7	6	6	¾	6.66
CHANNEL	C 3 x 4.1	4.1	3	1⅜	¼	1.10
	C 4 x 5.4	5.4	4	1⅝	5⁄16	1.93
	C 5 x 6.7	6.7	5	1¾	5⁄16	3.00
	C 6 x 8.2	8.2	6	1⅞	5⁄16	4.38
	C 8 x 11.5	11.5	8	2¼	⅜	8.14
	C 10 x 15.3	15.3	10	2⅝	7⁄16	13.50
	C 12 x 20.7	20.7	12	3	½	21.50
	C 15 x 33.9	33.9	15	3⅜	⅝	42.00
SQUARE TUBING	ST 2 x 2 x ¼	5.4	2	2	¼	0.77
	ST 3 x 3 x ¼	8.8	3	3	¼	2.10
	ST 4 x 4 x ¼	12.2	4	4	¼	4.11
	ST 4 x 4 x ⅜	17.3	4	4	⅜	5.35
	ST 4 x 4 x ½	21.6	4	4	½	6.13
	ST 6 x 6 x ¼	19.0	6	6	¼	10.10
	ST 6 x 6 x ⅜	27.5	6	6	⅜	13.90
	ST 6 x 6 x ½	35.2	6	6	½	16.80
	ST 8 x 8 x ¼	25.8	8	8	¼	18.80
	ST 8 x 8 x ⅜	38.9	8	8	⅜	26.40
	ST 8 x 8 x ½	48.9	8	8	½	32.90
I-BEAM	S 4 x 7.7	7.7	4	2⅝	5⁄16	3.04
	W 4 x 13	13.0	4⅛	4	⅜	5.46
	W 6 x 12	12.0	6	4	¼	7.31
	W 6 x 15	15.0	6	6	¼	9.72
	W 6 x 20	20.0	6¼	6	⅜	13.40
	W 8 x 18	18.0	8⅛	5¼	5⁄16	15.20
	W 8 x 24	24.0	7⅞	6½	⅜	20.90
	W 8 x 31	31.0	8	8	7⁄16	27.50
	W 10 x 22	22.0	10⅛	5¾	⅜	23.20
	W 10 x 33	33.0	9¾	8	7⁄16	35.00
	W 12 x 26	26.0	12¼	6½	⅜	33.40
	W 12 x 40	40.0	12	8	½	51.90

Note: Flange thickness for I-Beam and Channel is the “mean” thickness

TECHNICAL INFORMATION
WELDING

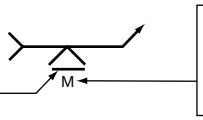
BASIC WELDING SYMBOLS AND THEIR LOCATION SIGNIFICANCE

Location Significance	Fillet	Plug or Slot	Spot or Projection	Seam	Back or backing	Surfacing	Flange Edge	Flange Corner
Arrow side					(groove weld symbol) 			
Other side					 (groove weld symbol)	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	not used	not used	not used

SUPPLEMENTARY SYMBOLS USED WITH WELDING SYMBOLS

Flush Contour Symbol

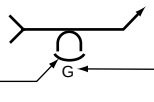
Flush contour symbol indicates face of weld to be made flush. When used without a finish symbol, indicates weld to be welded flush without subsequent finishing.



Finish symbol (user's standard) indicates method of obtaining specified contour but not degree of finish.

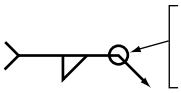
Convex Contour Symbol

Convex countour symbol indicates face of weld to be finished to convex contour.



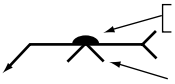
Finish symbol (user's standard) indicates method of obtaining specified contour but not degree of finish.

Weld-All-Around Symbol



Weld all-around symbol indicates that weld extends completely around the joint

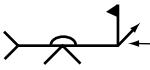
Melt-Thru Symbol



Melt-thru symbol is not dimensioned (except height)

Any applicable weld symbol

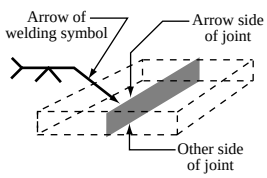
Field Weld Symbol



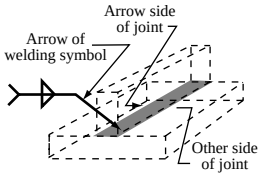
Field weld symbol indicates that weld is to be made at a place other than that of initial construction

BASIC JOINTS – Identification of arrow side and other side of joint

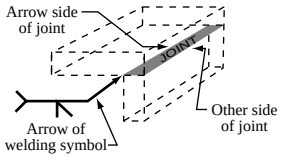
Butt Joint

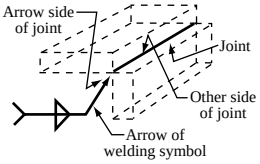


T-Joint

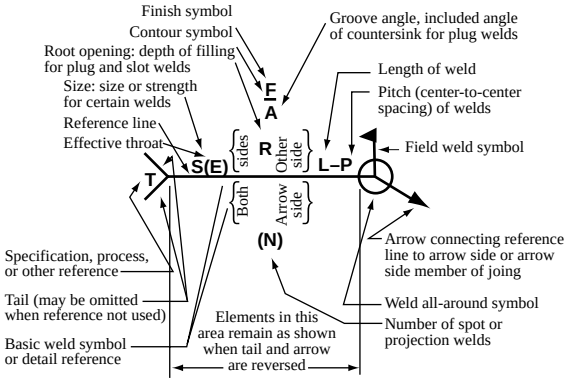


Corner Joint



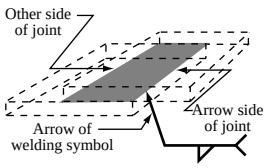


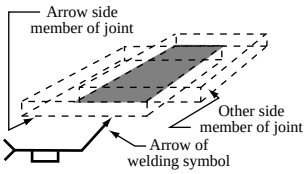
LOCATION OF ELEMENTS OF A WELDING SYMBOL



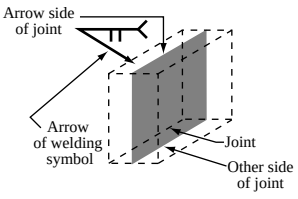
ARROW SIDE AND OTHER SIDE MEMBER OF JOINT

Lap Joint





Edge Joint



DESIGNATION OF WELDING AND ALLIED PROCESSES BY LETTERS

AAC ..... air carbon arc cutting	B ..... brazing	CW ..... cold welding	ESW ..... electroslag welding	FOC ..... chemical flux cutting
AAW ..... air acetylene welding	BB ..... block brazing	DB ..... dip brazing	EXW ..... explosion welding	FOW ..... forge welding
ABD ..... adhesive bonding	BMAW ..... bare metal arc welding	DFB ..... diffusion brazing	FB ..... furnace brazing	FRW ..... friction welding
AB ..... arc brazing	CAC ..... carbon arc cutting	DFW ..... diffusion welding	FCAW ..... flux cored arc welding	FS ..... furnace soldering
AC ..... arc cutting	CAW ..... carbon arc welding	DS ..... dip soldering	FCAW-EG ..... flux cored arc welding–electrogas	FW ..... flash welding
AHW ..... atomic hydrogen welding	CAW-G ..... gas carbon arc welding	EASP ..... electric arc spraying	FLB ..... flow brazing	GMAC ..... gas metal arc cutting
AOC ..... oxygen arc cutting	CAW-S ..... shielded carbon arc welding	EBC ..... electron beam cutting	FLOW ..... flow welding	GMAW ..... gas metal arc welding
AW ..... arc welding	CAW-T ..... twin carbon arc welding	EBW ..... electron beam welding	FLSP ..... flame spraying	GMAW-EG ... gas metal arc welding- electrogas

TECHNICAL INFORMATION

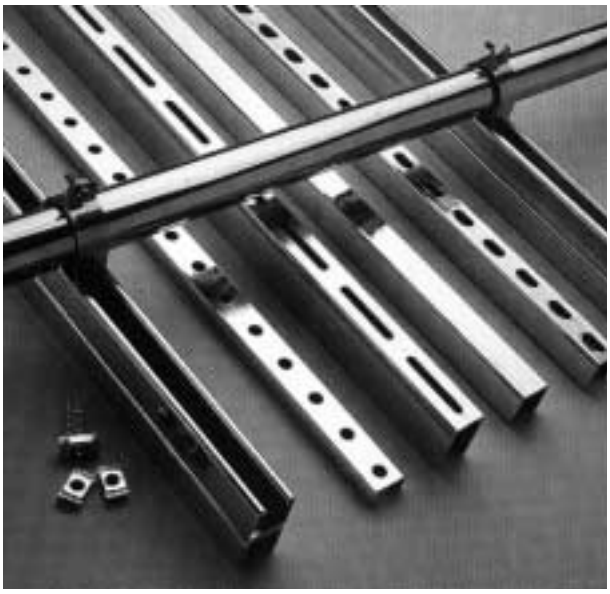
COMPONENT TYPES

FIGURE NUMBER:	MSS-SP-69	WW-H-171	FIGURE NUMBER:	MSS-SP-69	WW-H-171
1A	7	7	126LD PVC	8	8
1A CT	7	7	126PVC	8	8
12	16	16	132	13	15
12CT	16	16	136	38	38
14	27	54	128	36, 37, 38	36, 37, 38, 39
15	21	21	140	43	33
17	44	45	142	41	42
34	11	11	157	30	30
34CT	11	11	175	4	4
38	15	15	175SP	4	4
38CT	15	15	192	19	—
39	44	45	192W	19	—
40	46	47	193	23	23
47	23	23	196	23	23
47SS	23	23	200	1	12
238	23	23	200VT	1	12
238SS	23	23	217	25	—
49	13	—	222	24	24
53	46	47	240	6	—
69	31	32	247	38	38
81	12	25	265P	40	41
81CT	12	25	276	14	14
81BRT	12	35	276P	14	14
81PT	12	35	279	17	17
81SG	12	35	279L	17	17
81SCT	12	35	283	24	24
82	30	30	283PVC	24	24
84	32	33	283SP	24	24
89	8	8	283SS	24	24
91	3	3	297	28	28
91Z	3	3	298	4	4
100	1	1	303	34	35
100PVC	1	1	304	3	3
100SS	1	1	304SP	3	3
100CI	1	1	304Z	3	3
100CT	1	12	337	34	35
100EL	1	1	351 to 357Z	39A or 39B	40A or 40B
100SH	1	1	650	18	19
101	39	39	702	21	21
113A	22	22	800	10	10
113B	22	22	800CT	10	10
125	37	38	800N	10	10
126	8	8	800PVC	10	10
126CT	8	8	1010	35	—
126LD	8	8			

PHS SPECIALTIES

MULTI-STRUT METAL FRAMING SYSTEM

Standard channel, combination channel and concrete insert channel available in standard lengths or cut to suit. Stocked pre-galvanized, painted, or plain; stainless steel upon request. Pipe clips, channel nuts, and a variety of fittings that readily attach to the channel are also available.



NON-METALLIC FRAMING SYSTEM

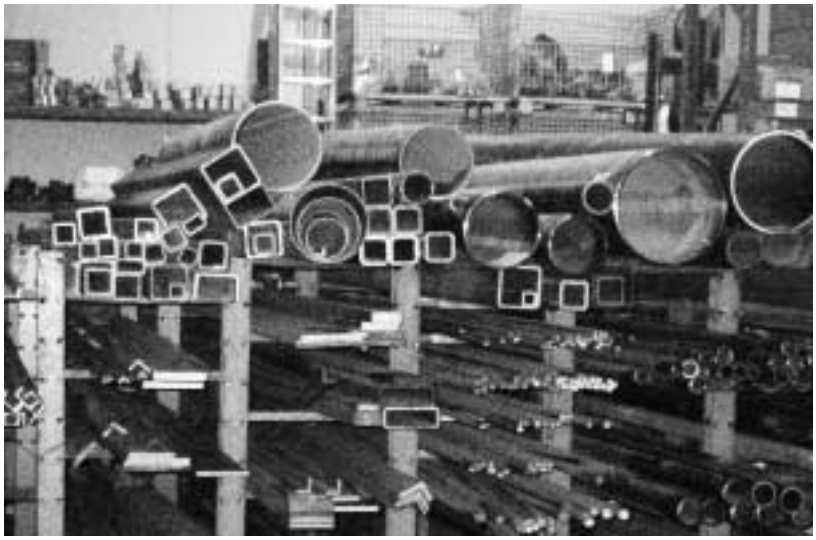
Fiberglass channel and fittings are available in both polyester and vinyl ester finishes. Non-metallic structural shapes are also available upon request.

VIBRATION ISOLATION AND SIESMIC CONTROL

Spring and neoprene hanger isolators, housed and free-standing to provide shock and vibration isolation on equipment. Equipment bases, Inertia bases and Isolation Rails are also available. Seismic control braces to help preserve the safety and operation of plant systems during a seismic event. Please ask for our Seismic Brochure.

STRUCTURAL STEEL

We stock the most popular sizes of angle, channel, I beams, wide flange, steel bars and rods for your ordering convenience.



FASTENERS

We stock hex bolts, studs, nuts, in carbon and stainless steel as well as lag bolts, tek screws, concrete anchors, adhesive tubes and cartridges. Sammy Super Screws and accessories.

PHS SPECIALTIES

ENGINEERING

We maintain an engineering department to design pipe hangers and supports for typical and special applications including seismic, wind, and snow loading. Our engineers utilize contemporary CAD and computer piping stress analysis programs when needed to meet customer requirements. Registered Professional Engineers are on staff.

STRUCTURAL STEEL FABRICATION

Complete fabrication services to meet your support needs in carbon steel, alloy steel, stainless, aluminum, hastaloy, or any other requirement.

PIPE SLEEVES

Wall and floor sleeves with or without waperproof stops made from plain or galvanized pipe as well as galvanized sheet metal sleeves made to customer order. Plastic “crete” sleeves. Rubber mechanical seal material is available.

ENGINEERED PRODUCTS

Variable springs, constant springs, sway braces and travelers, to handle any application.

PRE-INSULATED HANGERS

Calcium silicate and rigid urethane foam in various densities, vapor barriers, saddles and shields provide a full variety of combinations to suit customer applications. Pre-insulated slides and guides with PTFE and graphite are also supplied.

INDEX BY PRODUCT NAME

INDEX BY PRODUCT NAME

INDEX BY PRODUCT NAME

INDEX BY FIGURE NUMBER

INDEX BY FIGURE NUMBER

INDEX BY FIGURE NUMBER

MANUFACTURERS COMPARISON CHART
FIGURE NUMBER COMPARISON
HARDWARE

GRINNELL	PHS
14	14
47	48
49	49
52	52
55	220
65	200
CT65	100CT
66	113
69	800N
CT69	800CT
70	800
85	196
92	192
93	192W
94	192W
95	47
96	22
100	267
103	179
104	240
108	34
110R	12
114	38
120	120
CT121	126CT
126	237
195	84
199	139
206	303
212	175
216	298
218	82
224	224
225	45
230	132
246	246
248	33

GRINNELL	PHS
128	85
CT128	85CT
133	15*
134	15*
135	123
136	167
136R	167R
137	283
137C	283PVC
138	81
CT138	81CT
140	133
142	28
146	94
157	157
160-166	351-356
167	265P
171	142
173	173
175	54
177	109
181	140
191	191
192	137
193	78
194	69
264	101*
271	17
273	67
274	53
277	63
278	93
285	75
290	279
291	291
292	297*
295	304

*This is not an exact equal, please see catalog.

MANUFACTURERS COMPARISON CHART
FIGURE NUMBER COMPARISON
HARDWARE

253	133	295A	304Z
254	254	295H	91
255	255	299	276
256	256	300	100EL
259	125	590	100CL
260	100	594	358
261	126	595	158DB
261C	126PVC	599	258
262	114	600	158

SPRING HANGERS

GRINNELL	PHS
82	910
268	920
98	940
	960

*This is not an exact equal, please see catalog.

TERMS AND CONDITIONS

AGREEMENTS: All agreements are subject to strikes, accidents or other causes beyond our control.

GUARANTEE: We guarantee for one year from date of delivery our manufactured products to the extent that we will replace those having manufacturing defects when used for the purpose which we recommended. If goods are defective, the amount of damage is the price of the defective goods only and no allowance will be made for labor or expense of repairing defective goods or damage resulting from the same. We guarantee the products we sell of other manufacturers to the extent of the guarantees of the respective makers.

CLAIMS: No claims for shortages allowed unless made in writing within ten days of receipt of goods.

All materials sent out will be carefully examined, counted and packed. Claims for goods damaged or lost in transit should be made on the carrier, as our responsibility ceases on delivery to the carrier.

RETURNS: We cannot accept return of goods unless our permission has been first obtained, in which case same will be credited subject to the following:

1. All material must on its arrival at our plants be found in first-class conditions; if not, cost of putting material in saleable condition will be deducted from credit memoranda issued for material returned.

2. A final deduction of 25% will be made from all credit memoranda's issued for material returned.

3. Transportation charges, if not prepaid, will be deducted from credit memoranda.

SPECIAL ORDERS: Order covering special or non-standard goods are not subject to cancellation except on such terms as we may specify on application.

PRICES: Subject to change without notice.

DESIGN: Product data and dimensions are subject to change without notice.

TAXES: To the prices and terms quoted, there will be added any Manufacturers or Sales Tax payable on the transaction under any effective statute.

MINIMUM INVOICE: $25.00

TERMS: Net Thirty (30) Days

FREIGHT ALLOWANCE: All prices for F.O.B. Factory or point of shipment with no freight allowed.