JANUARY 2022

PIPE HANGERS & SUPPORTS

MADE IN THE USA

THE COMPLETE LINE OF PIPE HANGERS, SUPPORT SYSTEMS AND ACCESSORIES

PIPE HANGERS AND SUPPORTS • CUSTOM FABRICATION • ENGINEERING

NATIONAL
PIPE HANGER CORPORATION

Introduction

National Pipe Hanger Corporation is proud to present our Pipe Hangers & Supports catalog containing a complete and versatile line of pipe hangers, pipe support systems and related products. This selection results from more than fifty years of concentrated and direct exposure to the piping industry, from the design engineer's selection, to the piping contractor's installation. This is where needs are discovered and where products and services are genuinely tested. In this area, National Pipe Hanger Corporation's experiences are unequaled. These products have been selected to effectively answer any pipe support issue in the plumbing, mechanical, HVAC and industrial fields. National Pipe Hanger Corporation's comprehensive line of quality products includes domestically manufactured pipe hangers, pre-insulated pipe supports, pipe guides, pipe clamps, pipe support chairs and stands, brackets, beam clamps, saddles and accessories just to name a few.

National Pipe Hanger Corporation takes pride in being an American manufacturing company in the United States. A constant awareness of the customers' requirements and efforts is the foundation in the development of National Pipe Hanger Corporation's manufacturing skills. All of National Pipe Hanger Corporation's products are carefully manufactured to meet the highest standards in the industry. Our 80,000 square foot manufacturing facility in NJ can accommodate any project nationwide. National Pipe Hanger Corporation is a full service fabricator with A.W.S. – D1.1 certified welders, a participating member of the Manufacturer's Standardization Society (MSS) and manufactures pipe hangers and supports in accordance with MSS Standard Practice SP-58. Many of National Pipe Hanger Corporation's products meet and exceed Factory Mutual Listings (FM), Underwriters Laboratory Listings (UL), and Federal Specifications (WW-H-171E).

In addition to a wide range of high-quality hangers, National Pipe Hanger Corporation offers custom options backed by our skilled engineers. Contact National Pipe Hanger Corporation's New Jersey headquarters or Maryland branch for special pipe support requirements including: other pipe sizes and types, dimensional requirements, installation methods, finishes, etc. National Pipe Hanger Corporation's sales team will always provide you with impeccable service and will respond quickly to your product and service needs on both standard items and specialized fabrications. For a detailed look at National Pipe Hanger Corporation's Pre-Insulated Pipe Supports, please refer to our Pre-Insulated Pipe Supports catalog. Visit our website at nationalpipehanger.com for additional information.

All units in this catalog are inch-pound unless otherwise noted. Additional information provided at the end of this catalog can aid the user in: types of finishes, estimating pipe support loads, the outer diameter of various types of pipe, determining pipe support spacing, determining rod size by pipe size and determining thickness of sheet metal by gauge.

National Pipe Hanger Corporation reserves the right to make specification changes without notice. While every effort has been made to assure the accuracy of information contained in this catalog at the time of publication, National Pipe Hanger Corporation cannot accept responsibility for inaccuracies resulting from undetected errors or omissions.

NATIONAL PIPE HANGER CORPORATION

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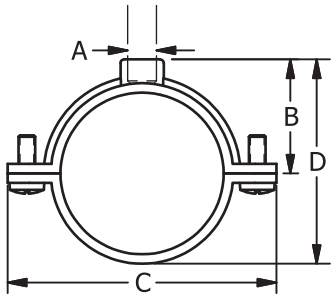
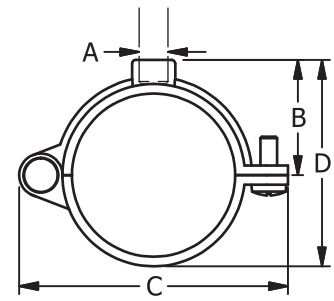
FIG. 100 Split Ring Extension Hanger

SERVICE: For suspension of non-insulated, stationary piping and copper tubing services.
MATERIAL: Malleable Iron or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Copper Epoxy Coated (COPPER-GARD)
STANDARDS: MSS SP-58 Type 12, FS WW-H-171E Type 25
ORDERING: Specify figure number, pipe/tube size, material and finish.

PIPE SIZE	PIPE OD	SCREW	A	B	C	D	WEIGHT EACH, LBS.	MAX REC. LOAD, LBS.
3/8	0.675	10 - 24	3/8	11/16	1 13/16	1 3/16	0.08	180
1/2	0.840	10 - 24	3/8	3/4	2 1/8	1 3/16	0.10	180
3/4	1.050	10 - 24	3/8	7/8	2 1/2	1 9/16	0.11	180
1	1.315	10 - 24	3/8	1 1/8	2 3/4	2	0.15	180
1 1/4	1.660	10 - 24	3/8	1 5/16	3 3/16	2 3/8	0.18	180
1 1/2	1.900	10 - 24	3/8	1 7/16	3 3/8	2 5/8	0.21	180
2	2.375	10 - 24	3/8	1 5/8	3 15/16	3 1/16	0.30	180
2 1/2	2.875	1/4	1/2	2 1/8	5 3/16	3 13/16	0.58	300
3	3.500	1/4	1/2	2 1/2	5 11/16	4 5/8	0.71	300
4	4.500	1/4	1/2	2 7/8	6 3/4	5 9/16	1.02	300



TUBE SIZE	TUBE OD	SCREW	A	B	C	D	WEIGHT EACH, LBS.	MAX REC. LOAD, LBS.
1/4	0.375	10 - 24	3/8	9/16	1 3/4	7/8	0.07	180
3/8	0.500	10 - 24	3/8	5/8	1 3/4	1 1/16	0.08	180
1/2	0.625	10 - 24	3/8	11/16	1 7/8	1 1/8	0.09	180
3/4	0.875	10 - 24	3/8	13/16	2 1/4	1 3/8	0.10	180
1	1.125	10 - 24	3/8	15/16	2 1/2	1 5/8	0.13	180
1 1/4	1.375	10 - 24	3/8	1 1/16	2 7/8	1 7/8	0.14	180
1 1/2	1.625	10 - 24	3/8	1 3/16	3	2 3/16	0.18	180
2	2.125	10 - 24	3/8	1 7/16	3 1/2	2 11/16	0.23	180
2 1/2	2.625	1/4	1/2	1 7/8	4 15/16	2 7/16	0.45	300
3	3.125	1/4	1/2	2 1/8	5 1/2	4 1/16	0.66	300
4	4.125	1/4	1/2	2 5/8	6 5/8	5 1/16	0.75	300

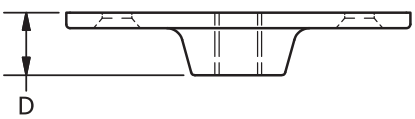


NOTE: Sizes 1/4", 3/8", 2 1/2", 3" and 4" are only available in hinged style, with the exception of stainless steel which is only available in two-screw style regardless of size.

FIG. 105 Hanger Flange

SERVICE: For attaching hanger rod to wood beams, ceilings, walls or floors.
MATERIAL: Malleable Iron or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Copper Epoxy Coated (COPPER-GARD)
ORDERING: Specify figure number, rod size, material and finish.

ROD SIZE A	B	C	D	E	SCREW SIZE F	WEIGHT EACH, LBS.
3/8 - 16	1 3/8	2 5/8	7/16	2	#12	0.18
1/2 - 13	1 3/8	2 5/8	7/16	2	#12	0.18



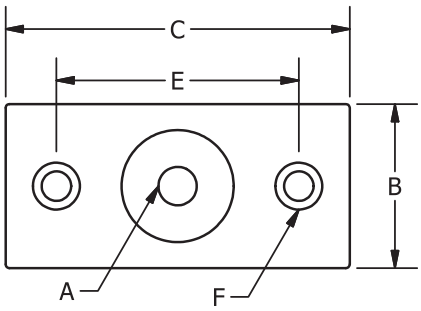


FIG. 110

Adjustable Swivel Ring Hanger

SERVICE: For suspension of non-insulated, stationary piping and copper tubing services. Approved for use without additional locking nuts normally required with pipe hangers.

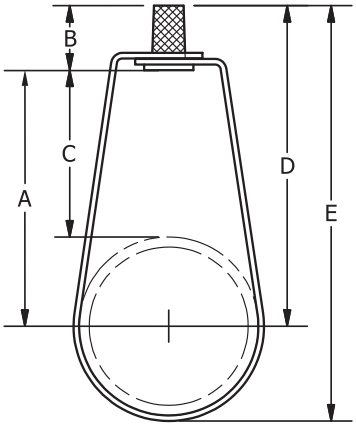
MATERIAL: Carbon Steel

FINISH: Electro-Galvanized or Copper Epoxy Coated (COPPER-GARD)

STANDARDS: MSS SP-58 Type 10, FS WW-H-171E Type 10

APPROVALS: FM NFPA ¾" - 8", UL NFPA ¾" - 8" excluding copper.

ORDERING: Specify figure number, pipe/tube size and finish. International Plumbing Code (IPC) sizes available price on application.



SPRINKLER SERVICE HANGER - NFPA								
PIPE SIZE	NFPA ROD SIZE	A	B	C	D	E	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
½	⅜	1⅝	⅞	1 3/16	2½	2⅞	0.08	400
¾	⅜	1 9/16	⅞	1 1/16	2 7/16	2 15/16	0.08	400
1	⅜	1¾	⅞	1 1/16	2⅝	3¼	0.08	600
1¼	⅜	1 11/16	⅞	⅞	2 9/16	3⅜	0.10	600
1½	⅜	1 13/16	⅞	⅞	2 11/16	3⅝	0.10	600
2	⅜	2½	⅞	1 5/16	3⅜	4½	0.12	600
2½	⅜	3⅛	⅞	1⅜	3⅞	5⅜	0.24	600
3	⅜	3⅝	⅞	1⅝	4½	6¼	0.28	600
3½	⅜	4	⅞	1¾	4⅞	6⅞	0.32	600
4	⅜	4⅛	⅞	1⅝	5	7¼	0.32	1000
5	½	4¼	1 1/16	1⅞	5¾	8½	0.62	1000
6	½	5⅛	1 1/16	2⅛	6¾	10⅛	0.65	1250
8	½	7	1 1/16	2⅜	7⅞	12¼	1.00	1250

NOTE: In accordance with the National Fire Protection Association (NFPA 13)

COPPER TUBING HANGER									
TUBE SIZE	TUBE OD	ROD SIZE	A	B	C	D	E	WEIGHT EACH, LBS.	MAX REC. LOAD, LBS.
½	0.625	⅜	1 13/16	⅞	1½	2 11/16	3	0.07	300
¾	0.875	⅜	1⅝	⅞	1 3/16	2½	2 15/16	0.07	300
1	1.125	⅜	1 9/16	⅞	1	2 7/16	3	0.07	300
1¼	1.375	⅜	1⅝	⅞	15/16	2½	3 3/16	0.08	300
1½	1.625	⅜	1 11/16	⅞	⅞	2 9/16	3⅜	0.09	300
2	2.125	⅜	2 7/16	⅞	1⅜	3 5/16	4⅜	0.10	300
2½	2.625	⅜	3⅛	⅞	1⅜	3⅞	5⅜	0.24	525
3	3.125	⅜	3⅝	⅞	1⅝	4½	6¼	0.28	525
3½	3.625	⅜	4	⅞	1¾	4⅞	6⅞	0.32	525
4	4.125	⅜	4⅛	⅞	1⅝	5	7¼	0.32	650
5	5.125	½	4¼	1 1/16	1⅞	5¾	8½	0.62	1000
6	6.125	½	5⅛	1 1/16	2⅛	6¾	10⅛	0.65	1000

NOTE: In accordance with ASTM B88

FIG. 136

FIG. 137

Hold Down Strap

Hold Down Strap for DI Pipe

SERVICE: To hold horizontally and vertically oriented piping against the attached structure. Prevents lateral movement.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Hot-Dip Galvanized

ORDERING: Specify figure number, pipe size, material and finish.

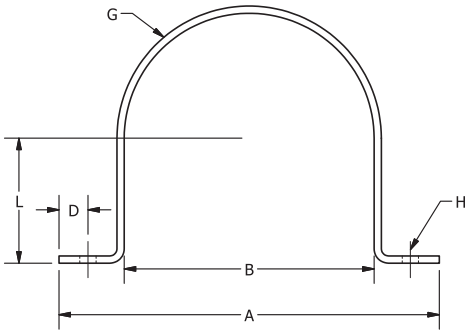


FIG. #136							
PIPE SIZE	A	B	D	STOCK SIZE G	H	L	WEIGHT EACH, LBS.
3	7	3 1/2	3/4	1/4 x 1 1/2	7/16	1 3/4	1.3
3 1/2	7 1/2	4	3/4	1/4 x 1 1/2	7/16	2	1.4
4	8	4 1/2	3/4	1/4 x 1 1/2	7/16	2 1/4	1.6
5	9 1/16	5 9/16	3/4	1/4 x 1 1/2	7/16	2 13/16	1.9
6	11 1/8	6 5/8	1	1/4 x 2	9/16	3 5/16	3.0
8	13 1/8	8 5/8	1	1/4 x 2	9/16	4 5/16	3.7
10	15 1/4	10 3/4	1	1/4 x 2	9/16	5 3/8	4.5
12	17 1/4	12 3/4	1	1/4 x 2	9/16	6 3/8	5.2
14	18 3/4	14	1	3/8 x 2	11/16	7	8.5
16	20 3/4	16	1	3/8 x 2	11/16	8	9.6
18	22 3/4	18	1	3/8 x 2	11/16	9	10.7
20	24 3/4	20	1	3/8 x 2	11/16	10	11.8
24	30 3/4	24	1 1/2	3/8 x 3	13/16	12	21.6

FIG. #137							
DI PIPE SIZE	A	B	D	STOCK SIZE G	H	L	WEIGHT EACH, LBS.
3	7 1/2	3 15/16	3/4	1/4 x 1 1/2	7/16	2	1.4
4	8 5/16	4 13/16	3/4	1/4 x 1 1/2	7/16	2 7/16	1.7
6	11 7/16	6 7/8	1	1/4 x 2	9/16	3 7/16	3.1
8	13 9/16	9 1/6	1	1/4 x 2	9/16	4 9/16	3.9
10	15 5/8	11 1/8	1	1/4 x 2	9/16	5 9/16	4.6
12	17 3/4	13 3/16	1	1/4 x 2	9/16	6 5/8	5.4
14	20 1/16	15 5/16	1	3/8 x 2	11/16	7 11/16	9.2
16	22 3/16	17 3/8	1	3/8 x 2	11/16	8 11/16	10.4
18	24 1/4	19 1/2	1	3/8 x 2	11/16	9 3/4	11.5
20	26 7/16	21 5/8	1	3/8 x 2	11/16	10 13/16	12.7
24	32 9/16	25 13/16	1 1/2	3/8 x 3	13/16	12 15/16	23.1

FIG. 165

FIG. 166

U-Bolt

U-Bolt for DI Pipe

SERVICE: For support, anchor or guide of heavy loads.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 24, FS WW-H-171E Type 24
ORDERING: Specify figure number, pipe size, material and finish. (Each FIG. #165 U-Bolt is furnished with four FIG. #785 Hex Nuts. Each FIG. #166 U-Bolt is furnished with four FIG. #790 Hex Nuts and is only available in Hot-Dip Galvanized.)

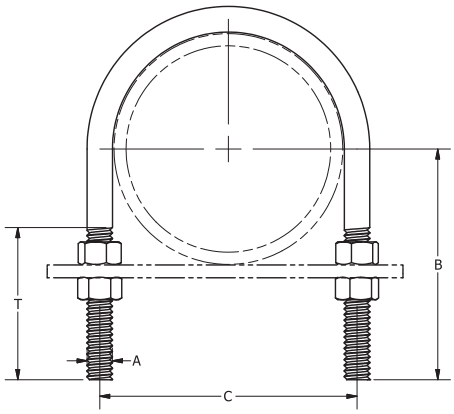


FIG. #165						
PIPE SIZE	A	B	C	T	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/2	1/4	2 3/4	1 3/16	2 3/8	0.10	485
3/4	1/4	2 3/4	1 3/8	2 3/8	0.10	485
1	1/4	2 3/4	1 5/8	2 3/8	0.10	485
1 1/4	3/8	2 7/8	2 1/16	2 3/8	0.26	1220
1 1/2	3/8	3	2 3/8	2 1/2	0.28	1220
2	3/8	3 1/4	2 13/16	2 1/2	0.32	1220
2 1/2	1/2	3 3/4	3 7/16	3	0.70	2260
3	1/2	4	4 1/16	3	0.76	2260
3 1/2	1/2	4 1/4	4 9/16	3	0.80	2260
4	1/2	4 1/2	5 1/16	3	0.86	2260
5	1/2	5	6 1/8	3	1.00	2260
6	5/8	6 1/8	7 3/8	3 3/4	1.98	3620
8	5/8	7 1/8	9 3/8	3 3/4	2.26	3620
10	3/4	8 3/8	11 5/8	4	3.94	5420
12	7/8	9 5/8	13 3/4	4 1/4	7.73	7540
14	7/8	10 1/4	15	4 1/4	8.28	7540
16	7/8	11 1/4	17	4 1/4	9.15	7540
18	1	12 5/8	19 1/8	4 3/4	13.48	9920
20	1	13 5/8	21 1/8	4 3/4	14.57	9920
24	1	15 5/8	25 1/8	4 3/4	16.87	9920
30	1	18 5/8	31 1/8	4 3/4	19.00	9920

FIG. #166						
DI PIPE SIZE	A	B	C	T	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3	1/2	4 1/4	4 5/8	3 1/4	0.84	2260
4	1/2	4 3/4	5 7/16	3 1/4	1.06	2260
6	5/8	6 1/4	7 3/4	4	2.23	3620
8	5/8	7 3/8	9 7/8	4	2.60	3620
10	3/4	8 5/8	12	4 1/4	4.49	5420
12	7/8	9 7/8	14 1/4	4 1/2	7.15	7540
14	7/8	11	16 3/8	5	8.10	7540
16	7/8	12	18 1/2	5	9.00	7540
18	1	13 3/8	20 5/8	5 1/2	13.20	9920
20	1	14 1/2	22 3/4	5 5/8	14.40	9920
24	1	16 5/8	27	5 3/4	16.80	9920
30	1	19 5/8	33 1/4	6	22.00	9920

FIG. 200

Adjustable Clevis Hanger

SERVICE: For the suspension of non-insulated, stationary piping and copper tubing services.

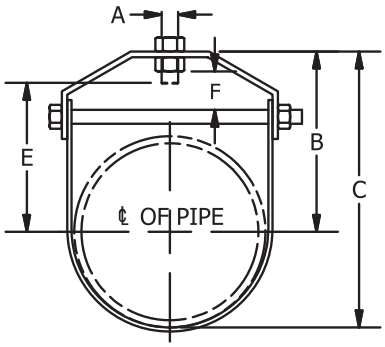
MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black, Electro-Galvanized, Hot-Dip Galvanized or Copper Epoxy Coated (COPPER-GARD)

STANDARDS: MSS SP-58 Type 1, FS WW-H-171E Type 1 (NPS) and Type 12 (copper tube)

APPROVALS: FM (NPS ¾" - 2" galv only & 2½" - 8" plain and galv), UL & ULC (NPS 2½" - 8" excluding 7")

ORDERING: Specify figure number, pipe/tube size, material and finish. (Clevis Hangers for 20" pipe and larger are furnished with a cross rod spacer.)



PIPE SIZE	A	B	C	E	F	BOLT	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
½	⅜	1 11/16	2 1/16	5/16	7/16	¼	0.18	730
¾	⅜	1 11/16	2 9/16	1 5/16	7/16	¼	0.20	730
1	⅜	2 1/16	2 11/16	1 ¼	⅝	¼	0.22	730
1 ¼	⅜	2 ½	3 3/16	1 11/16	⅞	¼	0.26	730
1 ½	⅜	2 ⅞	3 11/16	2 1/16	1 1/16	¼	0.32	730
2	⅜	3 5/16	4 7/16	2 ½	1 ¼	¼	0.41	7360
2 ½	½	4 ½	5 ⅞	3 ⅜	1 15/16	5/16	0.84	1130
3	½	4 ¾	6 ½	3 11/16	1 ¾	5/16	0.94	1130
3 ½	½	5 ⅞	7 15/16	4 13/16	2 9/16	5/16	1.19	1350
4	⅝	5 15/16	8 3/16	4 9/16	2 ⅛	⅜	1.32	1430
5	⅝	5 11/16	8 7/16	4 5/16	1 7/16	½	2.11	1430
6	¾	6 13/16	10 ⅛	5 3/16	1 ¾	½	2.96	1940
7	¾	7 13/16	11 ⅝	6 3/16	2	½	3.24	2000
8	¾	8 1/16	12 7/16	6 ¼	1 ⅞	⅝	4.53	2000
10	⅞	10	15 7/16	8	2 ¼	¾	8.23	3600
12	⅞	11 9/16	18	9 9/16	2 13/16	¾	10.35	3800
14	1	12 9/16	19 9/16	10 9/16	2 9/16	⅞	14.37	4200
16	1	13 15/16	21 15/16	11 15/16	2 13/16	1	20.56	4600
18	1	16	25	13 ⅞	3 ¾	1	23.07	4800
20	1 ¼	17 ½	27 ½	15 ⅛	3 ¾	1 ¼	47.13	4800
24	1 ¼	19 ¾	31 ¾	17 ⅜	4	1 ¼	54.00	4800
30	1 ¼	24 ⅛	39 ⅛	21 ½	4 ¾	1 ¼	69.00	6000
36	1 ¼	29	47	23 ¾	6 ½	1 ¼	86.70	6000

TUBE SIZE	TUBE OD	A	B	C	E	F	BOLT	WEIGHT EACH, LBS.	MAX REC. LOAD, LBS.
½	0.625	⅜	1 ⅞	2 3/16	1 ⅛	½	¼	0.12	150
¾	0.875	⅜	1 ¾	2 ⅛	1	½	¼	0.12	250
1	1.125	⅜	1 13/16	2 5/16	1 1/16	½	¼	0.12	250
1 ¼	1.375	⅜	2 ⅛	2 ¾	1 5/16	¾	¼	0.12	250
1 ½	1.625	⅜	2 ½	3 ¼	1 ¾	15/16	¼	0.18	250
2	2.125	⅜	2 15/16	4	2 3/16	1 1/16	¼	0.24	250
2 ½	2.625	½	4 ⅞	5 ¾	3 ⅜	2 1/16	¼	0.58	350
3	3.125	½	4 ½	6 ⅛	3 7/16	2	¼	0.60	350
4	4.125	½	5 ⅞	7 ⅞	4 ¾	2 9/16	5/16	1.02	400
5	5.125	⅝	5 ⅞	8 ¾	4 ¾	1 ⅝	⅜	1.68	550
6	6.125	⅝	6 1/16	9	4 ¾	1 ½	⅜	1.84	550

FIG. 200 Adjustable Clevis Hanger, PVC

SERVICE: For the suspension of stationary brass, aluminum and glass piping services, and copper tubing services. Plastic coating prevents pipe/tube from coming in contact with the hanger.

MATERIAL: Carbon Steel

FINISH: Clevis top, bolt and nut are Electro-Galvanized, clevis bottom is plastic coated.

STANDARDS: MSS SP-58 Type 1, FS WW-H-171E Type 12

ORDERING: Specify figure number, pipe size and finish.

PIPE SIZE	A	B	C	E	F	BOLT	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/2	3/8	1 3/4	2 1/8	1	1/2	1/4	0.12	150
3/4	3/8	1 13/16	2 5/16	1 1/16	1/2	1/4	0.12	250
1	3/8	2 1/8	2 3/4	1 5/16	3/4	1/4	0.12	250
1 1/4	3/8	2 1/2	3 1/4	1 3/4	1 5/16	1/4	0.18	250
1 1/2	3/8	2 13/16	3 13/16	2 1/16	1 1/8	1/4	0.24	250
2	3/8	3 5/16	4 1/2	2 9/16	1 1/4	1/4	0.26	250
2 1/2	1/2	4 1/2	5 15/16	3 7/16	2 1/16	1/4	0.58	350
3	1/2	4 13/16	6 9/16	3 3/4	1 7/8	5/16	0.66	350
4	1/2	6 1/16	8 5/16	5	2 3/8	3/8	0.94	400
5	5/8	5 11/16	8 7/16	4 5/16	1 7/16	1/2	2.04	1430
6	3/4	6 13/16	10 1/8	5 3/16	1 3/4	1/2	2.80	1940
7	3/4	7 13/16	11 5/8	6 3/16	2	1/2	3.24	2000
8	3/4	8 1/16	12 7/16	6 1/4	1 7/8	5/8	4.46	2000
10	7/8	10	15 7/16	8	2 1/4	3/4	8.06	3600
12	7/8	11 9/16	18	9 9/16	2 13/16	3/4	10.34	3800

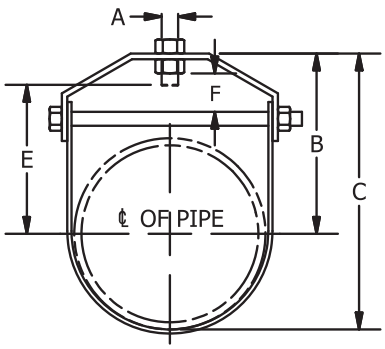


FIG. 205 Flat Top Clevis Hanger

SERVICE: For suspension of non-insulated, stationary piping services where space does not permit installation of a standard FIG. #200 Adjustable Clevis Hanger.

MATERIAL: Carbon Steel

FINISH: Electro-Galvanized

STANDARDS: MSS SP-58 Type 1

ORDERING: Specify figure number and pipe size.

PIPE SIZE	A	B	C	E	F	BOLT	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
2	3/8	2 1/2	3 11/16	1 5/8	7/16	1/4	0.46	300
2 1/2	1/2	2 7/8	4 3/16	1 7/8	7/16	5/16	0.78	500
3	1/2	3 5/8	5 3/8	2 9/16	11/16	5/16	0.98	500
4	5/8	4 1/16	6 5/16	3 1/8	3/16	3/8	1.38	700
5	5/8	4 7/8	7 5/8	3 1/2	5/8	1/2	2.08	700
6	3/4	5 1/2	8 7/8	3 7/8	7/16	1/2	2.82	900
8	3/4	6 3/8	10 7/8	4 5/8	5/16	5/8	4.34	1000

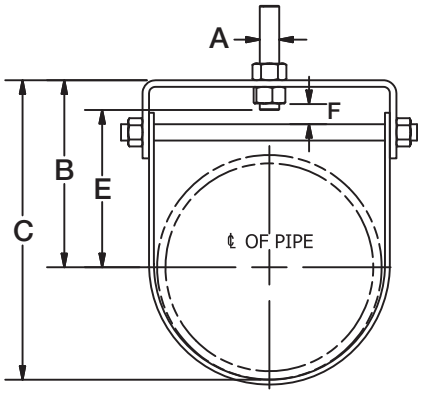
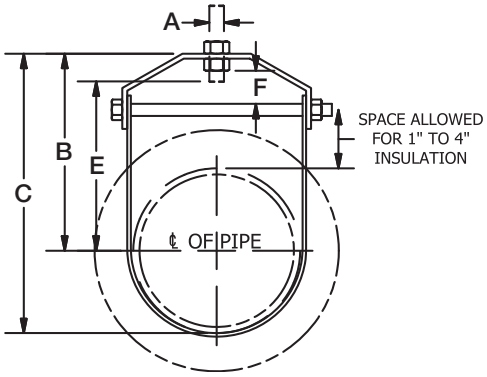


FIG. 210 Adjustable Clevis Hanger w/ Extended Bottom

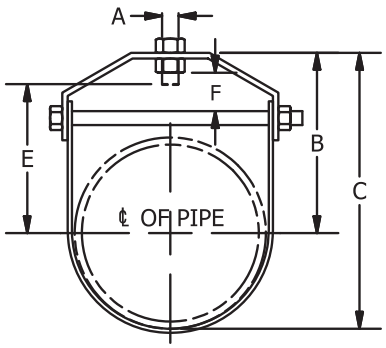
SERVICE: For the suspension of insulated, stationary piping services.
MATERIAL: Carbon Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 1, FS WW-H-171E Type 1
ORDERING: Specify figure number, pipe size and finish.



PIPE SIZE	A	B	C	E	F	BOLT	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/2	3/8	3 13/16	4 1/4	3	7/16	1/4	0.30	730
3/4	3/8	3 3/4	4 3/16	2 15/16	7/16	1/4	0.33	730
1	3/8	4 1/8	4 3/4	3 5/16	5/8	1/4	0.34	730
1 1/4	3/8	4 7/16	5 1/4	3 5/8	7/8	1/4	0.39	730
1 1/2	3/8	4 3/4	5 3/4	3 15/16	1 1/16	1/4	0.47	730
2	3/8	7 1/4	8 7/16	6 7/16	1 1/4	1/4	0.65	730
2 1/2	1/2	8 13/16	10 3/16	7 3/4	1 15/16	5/16	1.24	1130
3	1/2	9	10 3/4	7 15/16	1 3/4	5/16	1.34	1130
4	5/8	10 1/8	12 3/8	8 13/16	2 1/8	3/8	1.92	1430
5	5/8	9 7/8	12 9/16	8 7/16	1 7/16	1/2	2.58	1430
6	3/4	10 7/8	14 1/8	9 1/4	1 3/4	1/2	3.36	1940
8	3/4	12 1/4	16 9/16	10 7/16	1 7/8	5/8	5.08	2000
10	7/8	14 1/2	19 7/8	12 1/2	2 1/4	3/4	9.08	3600
12	7/8	15 7/8	22 1/4	13 7/8	2 13/16	3/4	11.54	3800

FIG. 215 Adjustable Clevis Hanger for DI Pipe

SERVICE: For the suspension of non-insulated, stationary ductile iron piping services.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 1, FS WW-H-171E Type 1
ORDERING: Specify figure number, pipe size, material and finish.



DI PIPE SIZE	A	B	C	E	F	BOLT	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
4	5/8	6	8 1/2	4 5/8	2 1/8	3/8	1.32	1430
6	3/4	6 13/16	10 1/8	5 3/16	1 3/4	1/2	2.86	1940
8	3/4	8 5/16	13	6 7/8	1 7/8	5/8	4.56	2000
10	7/8	10 1/2	16 1/4	8 1/2	2 1/4	3/4	8.70	3600
12	7/8	11 3/4	18 3/4	9 3/4	2 13/16	3/4	11.08	3800
14	1	13 15/16	21 15/16	11 15/16	2 13/16	1	22.70	4200
16	1	15 1/4	25	13 1/2	3 3/8	1	25.38	4600
18	1 1/4	17 1/2	27 1/2	15 1/8	3 3/4	1 1/4	47.13	4800
20	1 1/4	18 1/2	29 1/2	16 3/8	3 3/4	1 1/4	50.50	4800
24	1 1/4	20 3/4	34	18 5/8	4	1 1/4	58.00	4800
30	1 1/4	26 5/8	43	24	5 3/16	1 1/4	75.00	6000

FIG. 220 **Adjustable Clevis Hanger w/ Welded Shield**

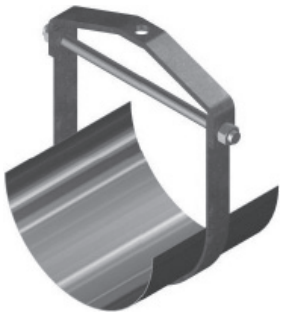
FIG. 221 **Adjustable Clevis Hanger w/ Welded MSS Shield**

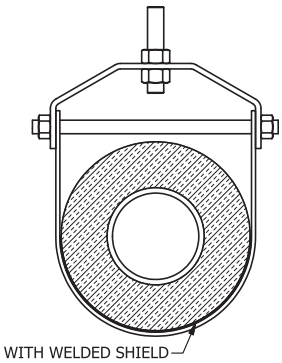
SERVICE: For vapor sealed lines.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Electro-Galvanized

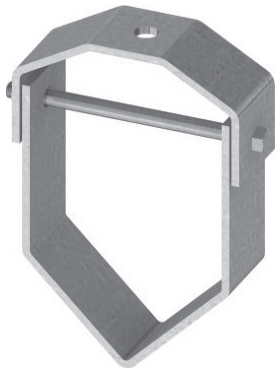
ORDERING: Specify figure number, pipe size, insulation thickness, material and finish. (FIG. #220 is supplied with a FIG. #300 Pipe Covering Protection Shield. FIG. #221 is supplied with a FIG. #307 MSS Pipe Covering Protection Shield.)





HANGER SIZE SELECTION GUIDE						
PIPE SIZE	THICKNESS OF PIPE INSULATION					
	½"	1"	1½"	2"	2½"	3"
½	1½	2½	3½	5	6	7
¾	2	3	3½	5	6	7
1	2	3	4	5	6	7
1¼	2½	3½	4	5	6	7
1½	2½	3½	5	6	7	8
2	3	4	5	6	7	8
2½	3½	5	6	7	8	10
3	4	5	6	7	8	10
3½	5	6	7	8	10	10
4	5	6	7	8	10	10
5	6	7	8	10	10	12
6	7	8	10	10	12	12
8	10	10	12	12	14	16
10	12	12	14	16	16	18
12	14	16	16	18	18	20
14	16	16	18	18	20	20
16	18	18	20	20	24	24

FIG. 230 V-Bottom Adjustable Clevis Hanger

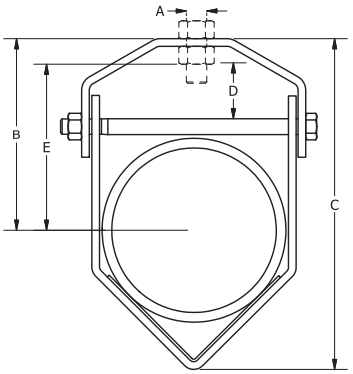


SERVICE: For the suspension of flexible pipe, tubing or hose. Hanger must be used in conjunction with FIG. #235 V-Channel. V-Channel must be cut to allow installation of fittings and couplings. FIG. #230 V-Bottom Adjustable Clevis Hangers must be installed at the end of the run of V-channel. Vertical adjustment of the supporting system is provided by the clevis top. Upper nut must be tightened after the piping system is leveled.

MATERIAL: Carbon Steel

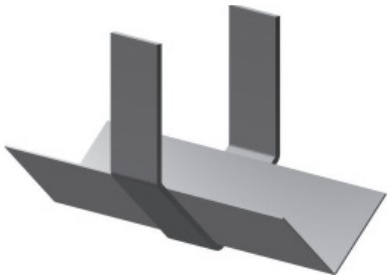
FINISH: Electro-Galvanized

ORDERING: Specify figure number and pipe size. (FIG. #235 V-Channel must be ordered separately.)



SIZE NO.	PIPE SIZE	BOLT	A	B	C	D	E	F	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1	1/2	1/4	3/8	5 3/16	5 7/8	2 9/16	4 7/16	1 1/4	0.30	250
	3/4	1/4	3/8	5	5 7/8	2 9/16	4 1/4	1 1/4	0.30	250
	1	1/4	3/8	4 7/8	5 7/8	2 9/16	4 1/16	1 1/4	0.30	250
	1 1/4	1/4	3/8	4 5/8	5 7/8	2 9/16	3 7/8	1 1/4	0.30	250
	1 1/2	1/4	3/8	4 7/16	5 7/8	2 9/16	3 11/16	1 1/4	0.30	250
	2	1/4	3/8	4 1/8	5 7/8	2 9/16	3 3/8	1 1/4	0.30	250
2	2 1/2	3/8	1/2	6 13/16	8 15/16	4 11/16	5 3/4	2 3/8	0.96	300
	3	3/8	1/2	6 3/8	8 15/16	4 11/16	5 5/16	2 3/8	0.96	300
	4	3/8	1/2	5 11/16	8 15/16	4 11/16	4 1/2	2 3/8	0.96	300

FIG. 235 V-Channel



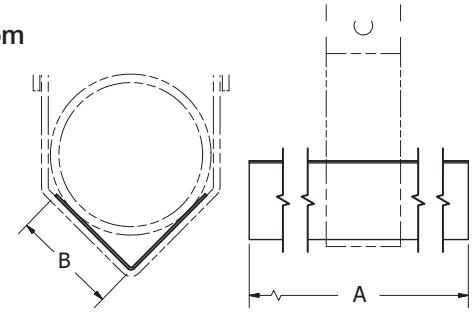
SERVICE: For the suspension of flexible pipe, tubing or hose. Channel must be used in conjunction with FIG. #230 V-Bottom Adjustable Clevis Hangers. Pipe is laid directly into the V-Channel and where necessary, the V-Channel may be cut to allow for fittings or couplings. Where practical, the hangers should be placed as close to the V-Channel joint as possible.

MATERIAL: Carbon Steel

FINISH: Pre-Galvanized

MAX TEMP: Maximum 450°F (Determined by type of pipe supported)

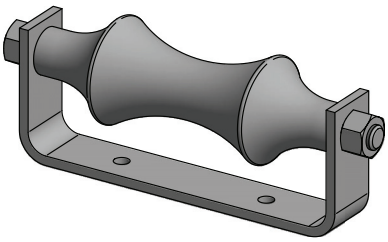
ORDERING: Specify figure number and channel number. (FIG. #230 V-Bottom Adjustable Clevis Hangers must be ordered separately.)



CHANNEL NO.	PIPE SIZE	A	B	STEEL THICKNESS	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1	1/2 to 2	120	1 1/2	18ga	5.4	150
2	2 1/2 to 4	120	3	18ga	10.8	250

FIG. 245

Roller Chair



SERVICE: To support pipe while providing large axial movement. To be bolted or welded to structure.

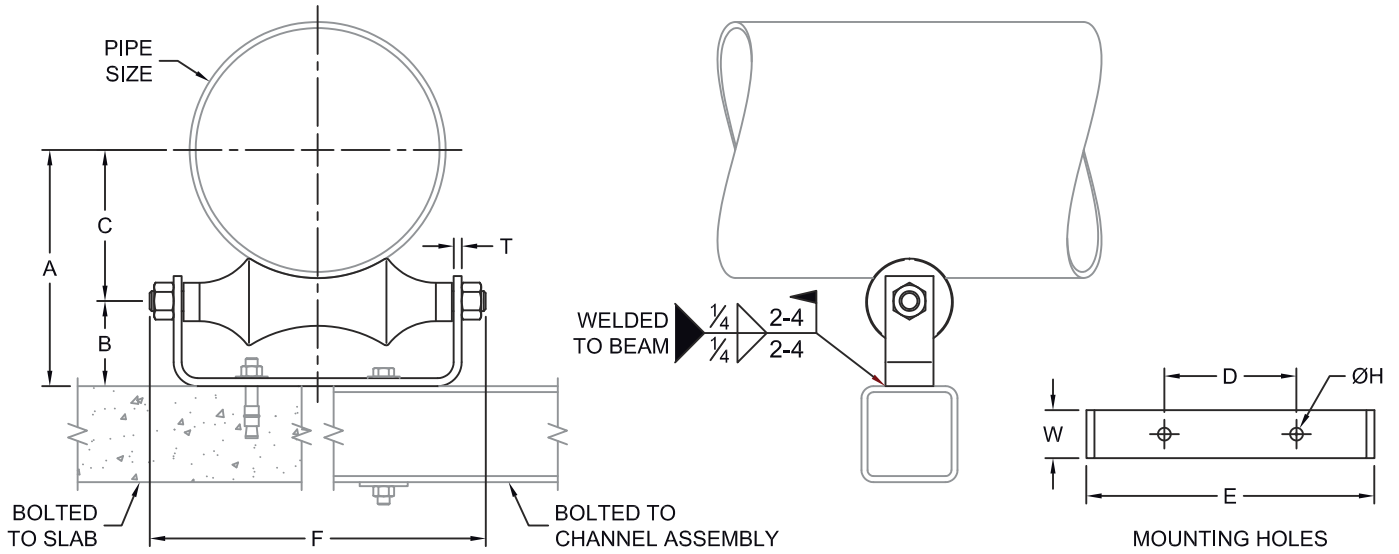
MATERIAL: Carbon Steel chair meeting ASTM A36 with gray cast iron roll meeting ASTM A48 Grade 30. Stainless Steel chair meeting ASTM A240 with cast roll meeting ASTM 351, Types 304 and 316.

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: 400ºF for Black Carbon Steel
350ºF for Hot-Dip Galvanized Carbon Steel
1000ºF for 304 and 316 Stainless Steel[2]

STANDARDS: MSS SP-58 Type 44

ORDERING: Specify figure number, pipe size, material and finish. (Order hardware separately.)



PIPE SIZE	A	B	C	D	E	F	ØH	T x W	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3	3⅞	1¾	2⅛	2	4½	5⅞	7/16	¼ x 1¼	1.5	390
4	5	2¼	2 13/16	2	5¾	6⅞	9/16	⅜ x 1½	2.9	950
5	5 13/16	2 7/16	3⅜	2½	7	8 7/16	9/16	⅜ x 1½	3.5	950
6	6⅝	2 1/16	3 5/16	3¼	8	9½	9/16	⅜ x 2	5.5	950
7	7 5/16	2 13/16	4½	3½	8⅞	10½	9/16	⅜ x 2	7.0	1350
8	8⅛	3	5 3/16	4	10	11⅞	11/16	⅜ x 2	7.3	1350
10	9 13/16	3 9/16	6¼	5	12¼	14¼	11/16	½ x 2	12	1730
12	11 9/16	4⅛	7 7/16	6	14¼	16¼	11/16	½ x 2	17	2400
14	13	4⅝	8⅜	6½	15⅝	18	13/16	½ x 2½	25	3130
16	14¾	5 5/16	9 7/16	8¼	18	21	13/16	½ x 3	35	3970
18	16¼	5 15/16	10 5/16	9¼	19¼	22⅞	13/16	½ x 3	37	4200
20	17 13/16	6 7/16	11⅜	10¼	21¼	25¼	13/16	½ x 3	45	4550
24	21 11/16	7 13/16	13⅞	12¼	25¾	30	15/16	⅝ x 4	78	6160
30	25 13/16	8 11/16	17⅛	15⅜	31¾	36	15/16	⅝ x 4	110	7290

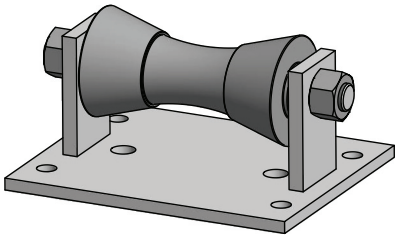
D.I./C.I. PIPE SIZE	FIG 245 SIZE
3	4
4	5
6	6
8	8
10	10
12	14
14	16
16	18
18	20
20	24
24	30
30	N/A

SS LOAD CORRECTION	
TEMP °F	FACTOR
100	1.00
200	0.80
400	0.67
600	0.59
800	0.54
1000	0.50

Notes:
1. For vertical and lateral adjustment see FIG. #249 Pipe Roller Stand.
2. Maximum Recommended Loads above for carbon steel/cast iron. For recommended loads on stainless steel roller chairs, multiply the above loads by the load/temperature correction factor.
3. For insulated lines with Pipe Covering Protection Saddles see FIG. #310 to #350 for size selection.
4. For pre-insulated lines see MaxSpan RH in Pre-Insulated Pipe Support Catalog for size selection.

FIG. 248

Pipe Roller Stand



SERVICE: To support pipe while providing large axial movement. To be bolted or welded to structure.

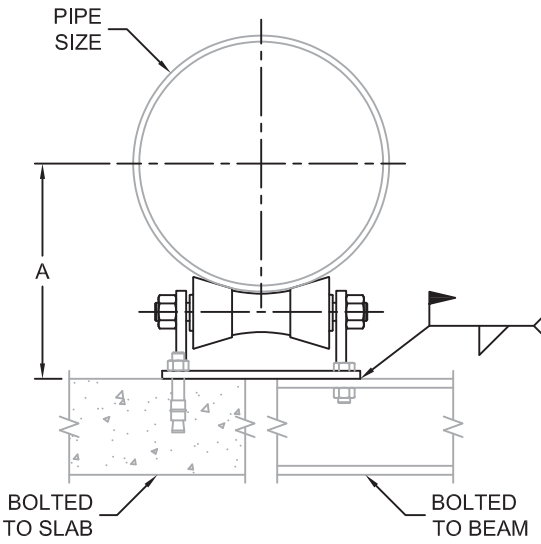
MATERIAL: Carbon Steel body meeting ASTM A36 with gray cast iron roll meeting ASTM A48 Grade 30. Stainless Steel body meeting ASTM A240 with cast roll meeting ASTM 351, Types 304 and 316.

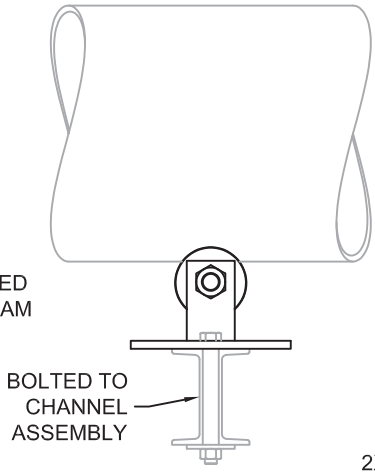
FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

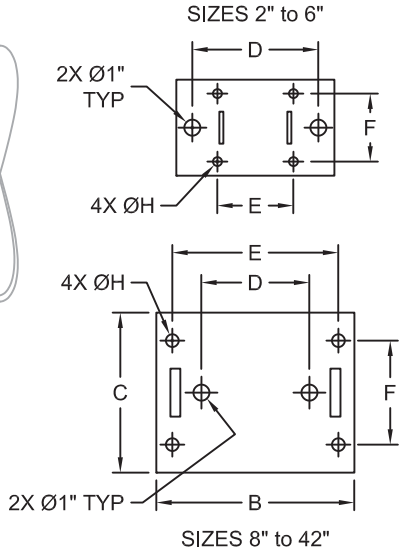
MAX TEMP: 400ºF for Black Carbon Steel
350ºF for Hot-Dip Galvanized Carbon Steel
1000ºF for 304 and 316 Stainless Steel [2]

STANDARDS: MSS SP-58 Type 44

ORDERING: Specify figure number, pipe size, material and finish. (Order hardware separately.)







PIPE SIZE	A	B	C	D	E	F	ØH	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
2	3 11/16	8 3/8	6	6 3/8	3 3/8	4	9/16	5.1	390
2 1/2	3 15/16	8 3/8	6	6 3/8	3 3/8	4	9/16	5.1	390
3	4 1/4	8 3/8	6	6 3/8	3 3/8	4	9/16	5.1	390
3 1/2	4 1/2	8 3/8	6	6 3/8	3 3/8	4	9/16	5.1	390
4	4 7/8	9 7/8	6	7 7/8	4 3/4	4 1/4	9/16	6.3	950
5	5 5/16	9 7/8	6	7 7/8	4 3/4	4 1/4	9/16	6.3	950
6	6	9 7/8	6	7 7/8	4 3/4	4 1/4	9/16	6.3	950
8	8 5/8	8 5/8	8	4	7	5	11/16	14	2100
10	9 7/8	8 5/8	8	4	7	5	11/16	14	2100
12	11 7/16	11	8	5 3/4	9	6	13/16	21	3075
14	12 1/16	11	8	5 3/4	9	6	13/16	21	3075
16	13 1/2	12 3/8	10	6 3/4	10 3/8	6 1/2	13/16	34	4980
18	14 11/16	12 3/8	10	6 3/4	10 3/8	6 1/2	13/16	34	4980
20	15 11/16	12 3/8	10	6 3/4	10 3/8	6 1/2	13/16	34	4980
24	17 11/16	13 1/2	10	7 1/2	11 1/2	6 1/2	13/16	40	6100
30	21 3/4	17	10	10	14 1/4	7 3/4	1 1/8	71	7500
36	25 3/4	20	12	12	17	9	1 5/8	147	12000
42	28 7/8	20	12	12	17	9	1 5/8	147	12000

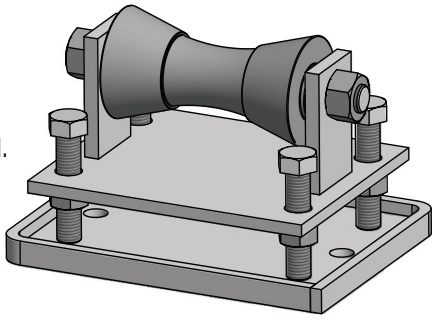
D.I./C.I. PIPE SIZE	FIG 248 SIZE
3	4
4	5
6	6
8	8
10	10
12	14
14	16
16	18
18	20
20	24
24	30
30	36
36	36
42	42

SS LOAD CORRECTION	
TEMP °F	FACTOR
100	1.00
200	0.80
400	0.67
600	0.59
800	0.54
1000	0.50

Notes:
1. For vertical and lateral adjustment see FIG. #249 Pipe Roller Stand.
2. Maximum Recommended Loads above for carbon steel/cast iron to 400°F. For recommended loads on stainless steel roller stands, multiply the above loads by the load/temperature correction factor.
3. Pipe sizes 36" and 42" not available in stainless steel.
4. Dimension "A" may vary for stainless steel.

FIG. 249

Adjustable Pipe Roller Stand



SERVICE: To support pipe while providing large axial movement. Provides vertical and horizontal adjustment during installation. To be bolted or welded to structure.

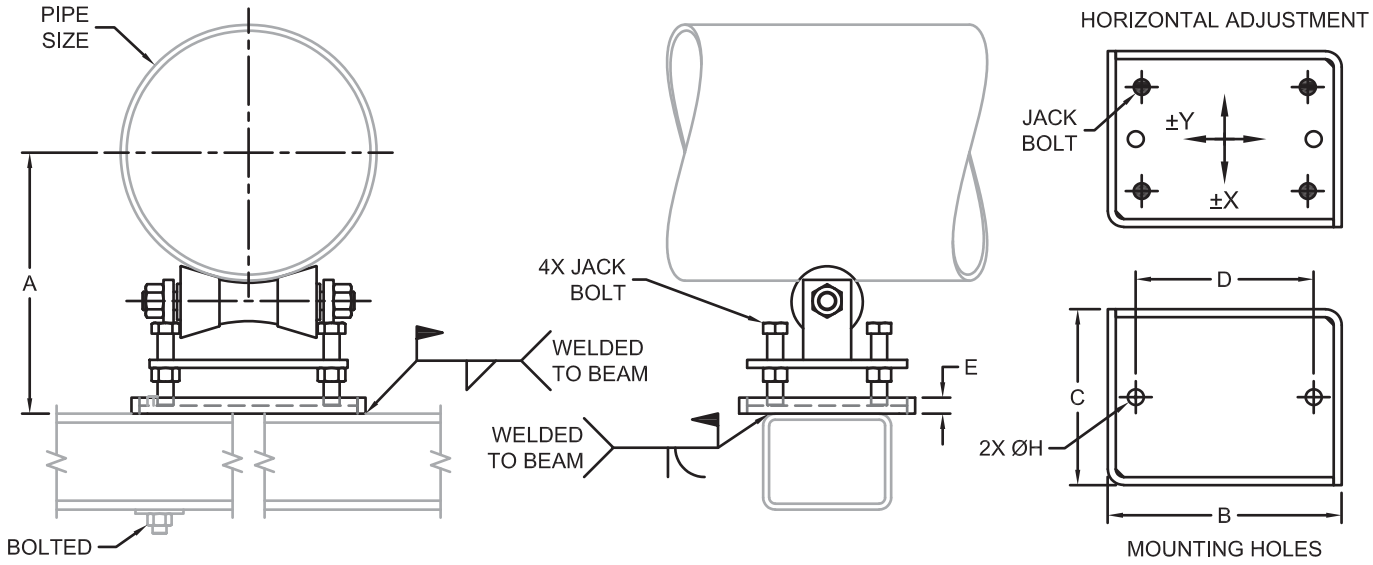
MATERIAL: Carbon Steel body meeting ASTM A36 with gray cast iron roll meeting ASTM A48 Grade 30. Stainless Steel body meeting ASTM A240 with cast roll meeting ASTM 351, Types 304 and 316.

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: 400ºF for Black Carbon Steel
350ºF for Hot-Dip Galvanized Carbon Steel
1000ºF for 304 and 316 Stainless Steel [2]

STANDARDS: MSS SP-58 Type 46

ORDERING: Specify figure number, pipe size, material and finish. (Order hardware separately.)



PIPE SIZE	A MIN	A MAX	B	C	D	E	ØH	±X	±Y	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
2	4¾	5⅝	6⅞	6½	3⅞	1	1	⅞	½	11	390
2½	5	5⅞	6⅞	6½	3⅞	1	1	⅞	½	11	390
3	5 5/16	6 3/16	6⅞	6½	3⅞	1	1	⅞	½	11	390
3½	5 9/16	6 7/16	6⅞	6½	3⅞	1	1	⅞	½	11	390
4	6 3/16	7 7/16	8½	6	5⅛	1	1	1	⅛	13	950
5	6¾	8	8½	6	5⅛	1	1	1	⅛	13	950
6	7¼	8½	8½	6	5⅛	1	1	1	⅛	13	950
8	10⅛	11 11/16	10½	7½	7⅜	1	1	13/16	⅜	29	2100
10	11 3/16	12¾	10½	7½	7⅜	1	1	13/16	⅜	29	2100
12	12¾	14⅛	12½	8½	9½	1	1	11/16	5/16	40	3075
14	13⅜	14¾	12½	8½	9½	1	1	11/16	5/16	40	3075
16	15⅜	17¼	14⅝	11	11⅛	1	1	¾	1	64	4980
18	16⅜	18¼	14⅝	11	11⅛	1	1	¾	1	64	4980
20	17⅜	19¼	14⅝	11	11⅛	1	1	¾	1	64	4980
24	19¼	21¼	15¾	11	12¼	1	1	¾	1	71	6100
30	24 7/16	26 11/16	19½	10¾	15¾	1½	1	1⅛	3/16	125	7500
36	28 13/16	30 13/16	23	12¾	19	2	1⅛	1 5/16	⅜	215	12000
42	31 15/16	33 15/16	23	12¾	19	2	1⅛	1 5/16	⅜	215	12000

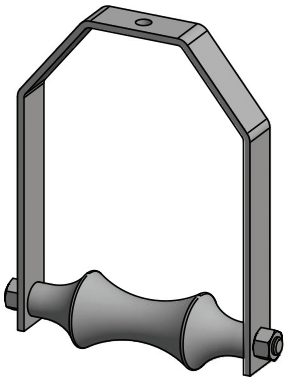
D.I./C.I. PIPE SIZE	FIG 249 SIZE
3	4
4	5
6	6
8	8
10	10
12	14
14	16
16	18
18	20
20	24
24	30
30	36
36	36
42	42

SS LOAD CORRECTION	
TEMP °F	FACTOR
100	1.00
200	0.80
400	0.67
600	0.59
800	0.54
1000	0.50

Notes:
1. For fixed height see FIG. #248 Pipe Roller Stand.
2. Maximum Recommended Loads above for carbon steel/cast iron to 400°F. For recommended loads on stainless steel roller stands, multiply the above loads by the load/temperature correction factor.
3. Pipe sizes 36" and 42" not available in stainless steel.
4. Dimension "A" may vary for stainless steel.

FIG. 250

Adjustable Single Rod Roller Hanger



SERVICE: To support pipe while providing large axial movement. To be hung from structure by a single rod. Provides vertical adjustment during installation.

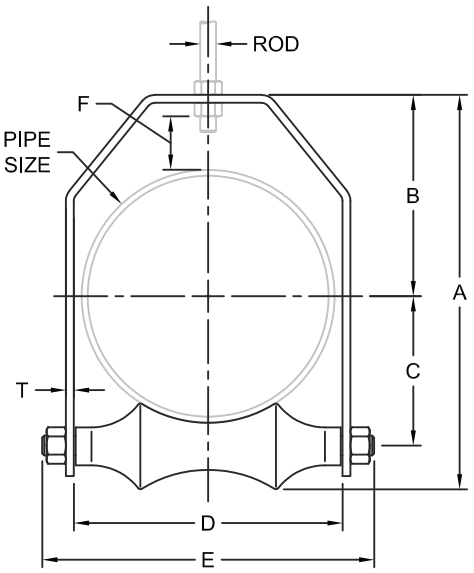
MATERIAL: Carbon Steel yoke meeting ASTM A36 with gray cast iron roll meeting ASTM A48 Grade 30. Stainless Steel yoke meeting ASTM A240 with cast roll meeting ASTM 351, Types 304 and 316.

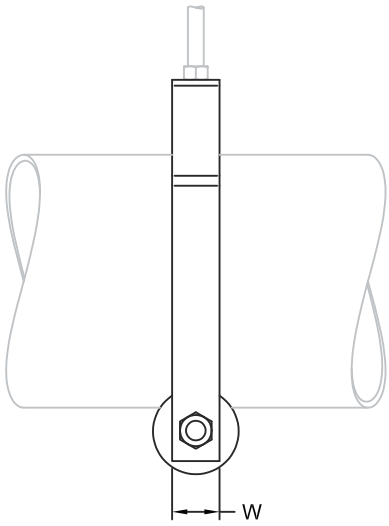
FINISH: Black, Electro-Galvanized meeting ASTM B633 or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: 400ºF for Black Carbon Steel
350ºF for Hot-Dip Galvanized Carbon Steel
1000ºF for 304 and 316 Stainless Steel

STANDARDS: MSS SP-58 Type 43

ORDERING: Specify figure number, pipe size, material and finish. (Order hardware separately.)





PIPE SIZE	ROD	A	B	C	D	E	F	T x W	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3	½	7 5/16	4 3/8	2 1/8	3 15/16	5 5/16	1 11/16	¼ x 1½	2.5	310
4	⅝	8 7/16	4 3/4	2 13/16	5	6 5/16	1 7/16	¼ x 1½	3.2	475
5	⅝	9 11/16	5 5/16	3 3/8	6	7 15/16	1 7/16	¼ x 2	4.9	685
6	¾	11 3/8	6 1/4	3 15/16	7 1/8	9	1 3/4	¼ x 2	6.3	780
7	¾	12 1/2	6 11/16	4 1/2	8 1/4	10 1/2	1 11/16	¼ x 2	7.0	780
8	⅞	14	7 3/8	5 3/16	9 1/8	11 7/8	1 11/16	⅜ x 2	12	780
10	⅞	17 3/8	9 7/16	6 1/4	11 5/16	14 1/4	2 9/16	½ x 2	17	965
12	⅞	19 5/8	10 1/16	7 7/16	13 3/16	16 1/4	2 3/16	½ x 2	22	965
14	1	22 7/8	12 1/16	8 3/8	14 1/2	18	3 1/2	½ x 2½	33	1200
16	1	24 15/16	12 3/4	9 7/16	17	21	3 1/8	½ x 3	45	1200
18	1	27 1/4	14 1/4	10 5/16	18 3/8	22 7/8	3 11/16	½ x 3	48	1400
20	1 1/4	29 3/8	14 15/16	11 3/8	20 1/2	25 1/4	3	⅝ x 3	63	1600
24	1 1/4	33 11/16	16 1/8	13 7/8	24 5/16	30	2 1/16	¾ x 4	112	1800

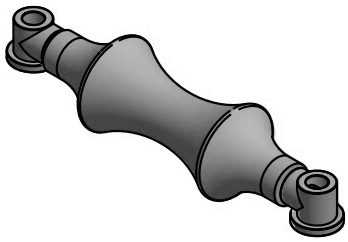
D.I./C.I. PIPE SIZE	FIG 250 SIZE
3	4
4	5
6	6
8	8
10	10
12	14
14	16
16	18
18	20
20	24

SS LOAD CORRECTION	
TEMP °F	FACTOR
100	1.00
200	0.80
400	0.67
600	0.59
800	0.54
1000	0.50

Notes:
1. Maximum Recommended Loads above for carbon steel/cast iron. For recommended loads on stainless steel roller hangers, multiply the above loads by the load/temperature correction factor.
2. For insulated lines with Pipe Covering Protection Saddles see FIG. #310 to #350 for size selection.
3. For pre-insulated lines see MaxSpan RH in Pre-Insulated Pipe Support Catalog for size selection.

FIG. 260

Adjustable Two Rod Roller Hanger



SERVICE: To support pipe while providing large axial movement. To be hung from structure by two rods. Provides vertical adjustment during installation.

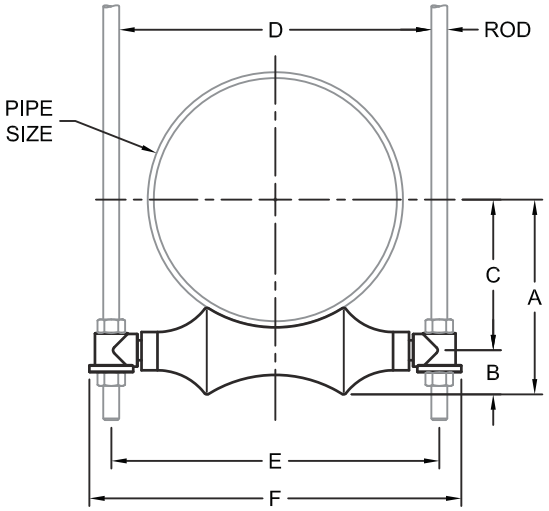
MATERIAL: Carbon Steel axle meeting ASTM A36 with gray cast iron roll & sockets meeting ASTM A48 Grade 30. Stainless Steel axle meeting ASTM A240 with cast roll meeting ASTM 351, Types 304 and 316.

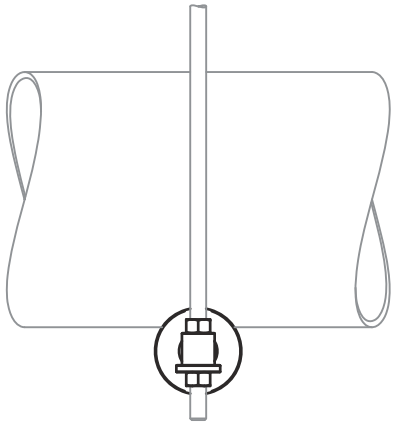
FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: 400°F for Black Carbon Steel
350°F for Hot-Dip Galvanized Carbon Steel
1000°F for 304 and 316 Stainless Steel

STANDARDS: MSS SP-58 Type 41

ORDERING: Specify figure number, pipe size, material and finish. (Order hardware separately.)





PIPE SIZE	ROD	A	B	C	D	E	F	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3	½	2⅞	¾	2⅛	5	5½	6⅞	1.4	700
4	½	3¾	15/16	2 13/16	6¼	6¾	8⅛	1.8	750
5	⅝	5	1⅝	3⅜	7 7/16	8 1/16	9 11/16	2.6	750
6	¾	5 9/16	1⅝	3 15/16	8 13/16	9 9/16	11⅜	4.3	1070
7	¾	6⅛	1⅝	4½	10	10¾	12 9/16	5.1	1100
8	⅞	7 3/16	2	5 3/16	11⅛	11 15/16	14 1/16	7.6	1350
10	⅞	8¼	2	6¼	13 3/16	14 1/16	16 3/16	9.5	1730
12	⅞	9½	2 1/16	7 1/16	15 7/16	16 5/16	18 7/16	13	2400
14	1	10¾	2⅜	8⅜	16¾	17¾	20½	19	3130
16	1	12 3/16	2¾	9 7/16	19 9/16	20 9/16	23 5/16	25	3970
18	1	13	2 11/16	10 5/16	20⅞	21⅞	24⅝	27	4200
20	1¼	14⅜	3	11⅜	23	24¼	27	33	4550
24	1½	17½	3⅝	13⅞	27⅛	28⅝	31⅞	54	6160
30	1½	21 11/16	4 9/16	17⅛	34	35½	39¼	88	7290

D.I./C.I. PIPE SIZE	FIG 260 SIZE
3	4
4	5
6	6
8	8
10	10
12	14
14	16
16	18
18	20
20	24
24	30
30	N/A

SS LOAD CORRECTION	
TEMP °F	FACTOR
100	1.00
200	0.80
400	0.67
600	0.59
800	0.54
1000	0.50

Notes:
1. Maximum Recommended Loads above for carbon steel/cast iron. For recommended loads on stainless steel roller hangers, multiply the above loads by the load/temperature correction factor.
2. For insulated lines with Pipe Covering Protection Saddles see FIG. #310 to #350 for size selection.
3. For pre-insulated lines see MaxSpan RH in Pre-Insulated Pipe Support Catalog for size selection.

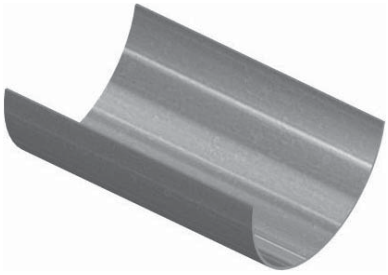
FIG. 300

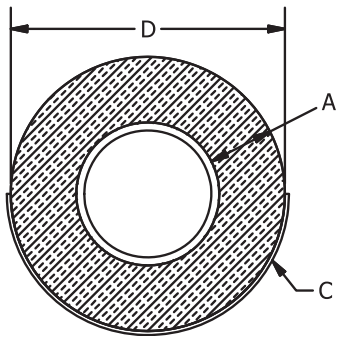
Pipe Covering Protection Shield

FIG. 302

Pipe Covering Protection Shield w/ 5/16" Hole

SERVICE: For use on the outside of foam or fiber glass insulation.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Pre-Galvanized
ORDERING: Specify figure number, shield size and material. (FIG. #816 plated round head machine screws sold separately for use with the FIG. #302 shield with 5/16" hole.)





SHIELD SIZE NO.	LENGTH	STOCK SIZE C	DIA. "D"	HANGER SIZE	WEIGHT PER 100, LBS.
0	12	24ga	1 7/8	1 1/2	25
1	12	24ga	2 3/8	2	31
2	12	24ga	2 7/8	2 1/2	37
3	12	18ga	3 1/2	3	93
4	12	18ga	4	3 1/2	103
5	12	18ga	4 1/2	4	118
6	12	18ga	5	5	133
7	12	18ga	5 9/16	5	147
8	12	18ga	6 5/8	6	165
9	12	18ga	7 5/8	7	190
10	12	18ga	8 5/8	8	210
13	12	18ga	9 5/8	10	235
14	12	18ga	10 3/4	10	265
15	12	18ga	11 3/4	12	295
16	12	18ga	12 3/4	12	315
17	12	16ga	14	14	445
18	12	16ga	15	16	446
19	12	16ga	16	16	490
20	12	16ga	17	18	515
21	12	16ga	18	18	550
22	12	16ga	19	20	570
23	12	16ga	20	20	635
24	12	16ga	21	24	645
25	12	16ga	22	24	660
26	12	16ga	23	24	700
27	12	16ga	24	24	785
28	12	16ga	26	30	790
29	12	16ga	27	30	805
30	12	16ga	28	30	860

SHIELD SIZE SELECTION TABLE FOR TUBING

TUBING SIZE	A - Insulation Thickness				
	1/2	3/4	1	1 1/2	2
1/2	0	1	2	4	5
3/4	0	1	2	4	6
1	1	2	3	4	6
1 1/4	1	2	3	5	7
1 1/2	2	3	3	5	7
2	3	4	4	6	8
2 1/2	4	5	5	7	8
3	5	6	6	8	9
3 1/2	6	7	7	8	9
4	7	7	8	9	10
5	8	8	9	10	13
6	9	9	10	13	14

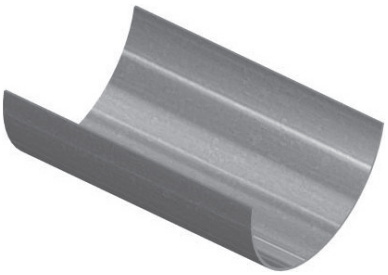
SHIELD SIZE SELECTION TABLE FOR PIPE

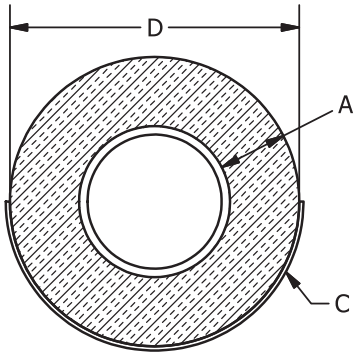
PIPE SIZE	A - Insulation Thickness				
	1/2	3/4	1	1 1/2	2
1/2	0	1	-	-	-
3/4	1	1	2	4	6
1	1	2	3	5	7
1 1/4	2	3	3	6	7
1 1/2	2	3	4	6	7
2	3	4	5	7	8
2 1/2	4	5	6	7	8
3	5	6	7	8	9
3 1/2	-	-	8	9	10
4	-	-	8	9	10
5	-	-	9	10	13
6	-	-	10	13	14
8	-	-	14	15	16
10	-	-	16	17	18
12	-	-	18	19	20
14	-	-	19	20	21
16	-	-	21	22	23
18	-	-	23	24	25
20	-	-	25	26	27
24	-	-	28	29	30

FIG. 307

MSS Pipe Covering Protection Shield

SERVICE: For use on the outside of foam or fiberglass insulation.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Pre-Galvanized
STANDARDS: MSS SP-58 Type 40, FS WW-H171E Type 41
ORDERING: Specify figure number, shield size and material.





SHIELD SIZE NO.	LENGTH	STOCK SIZE C	DIA. D	HANGER SIZE	WEIGHT PER 100, LBS.
0	12	18ga	1 7/8	1 1/2	53
1	12	18ga	2 3/8	2	68
2	12	18ga	2 7/8	2 1/2	82
3	12	18ga	3 1/2	3	93
4	12	18ga	4	3 1/2	103
5	12	18ga	4 1/2	4	118
6	12	18ga	5	5	133
7	12	18ga	5 9/16	5	147
8	12	16ga	6 5/8	6	233
9	12	16ga	7 5/8	7	266
10	12	16ga	8 5/8	8	300
11	18	16ga	7 5/8	7	399
12	18	16ga	8 5/8	8	449
13	18	16ga	9 5/8	10	503
14	18	16ga	10 3/4	10	562
15	24	14ga	11 3/4	12	1012
16	24	14ga	12 3/4	12	1094
17	24	14ga	14	14	1203
18	24	14ga	15	16	1292
19	24	14ga	16	16	1374
20	24	14ga	17	18	1463
21	24	12ga	18	18	2133
22	24	12ga	19	20	2256
23	24	12ga	20	20	2379
24	24	12ga	21	24	2492
25	24	12ga	22	24	2615
26	24	12ga	23	24	2737
27	24	12ga	24	24	2851
28	24	12ga	26	30	3087
29	24	12ga	27	30	3209
30	24	12ga	28	30	3322

SHIELD SIZE SELECTION TABLE FOR TUBING

TUBING SIZE	A - Insulation Thickness				
	1/2	3/4	1	1 1/2	2
1/2	0	1	2	4	5
3/4	0	1	2	4	6
1	1	2	3	4	6
1 1/4	1	2	3	5	7
1 1/2	2	3	3	5	7
2	3	4	4	6	8
2 1/2	4	5	5	7	8
3	5	6	6	8	9
3 1/2	6	7	7	8	9
4	7	7	8	9	10
5	8	8	9	10	13
6	9	9	10	13	14

SHIELD SIZE SELECTION TABLE FOR PIPE

PIPE SIZE	A - Insulation Thickness				
	1/2	3/4	1	1 1/2	2
1/2	0	1	-	-	-
3/4	1	1	2	4	6
1	1	2	3	5	7
1 1/4	2	3	3	6	7
1 1/2	2	3	4	6	7
2	3	4	5	7	8
2 1/2	4	5	6	7	8
3	5	6	7	8	9
3 1/2	-	-	8	9	10
4	-	-	8	9	10
5	-	-	9	10	13
6	-	-	10	13	14
8	-	-	14	15	16
10	-	-	16	17	18
12	-	-	18	19	20
14	-	-	19	20	21
16	-	-	21	22	23
18	-	-	23	24	25
20	-	-	25	26	27
24	-	-	28	29	30

FIG. 310 FIG. 315 Pipe Covering Protection Saddle

SERVICE: To protect insulation while providing stationary support on beams or accommodating thermal expansion on roller hangers and supports.

MATERIAL: Carbon Steel (A36) or Stainless Steel (A240) Types 304 and 316

MAX TEMP: 650°F for Black, 350°F for Hot-Dip Galvanized, 1000°F for Stainless Steel

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

STANDARDS: MSS SP-58 Type 39

ORDERING: Specify figure number, pipe size, material and finish.(3)

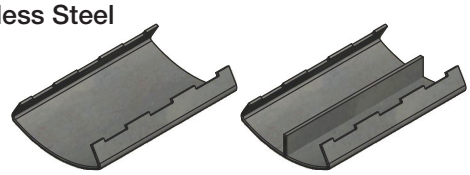
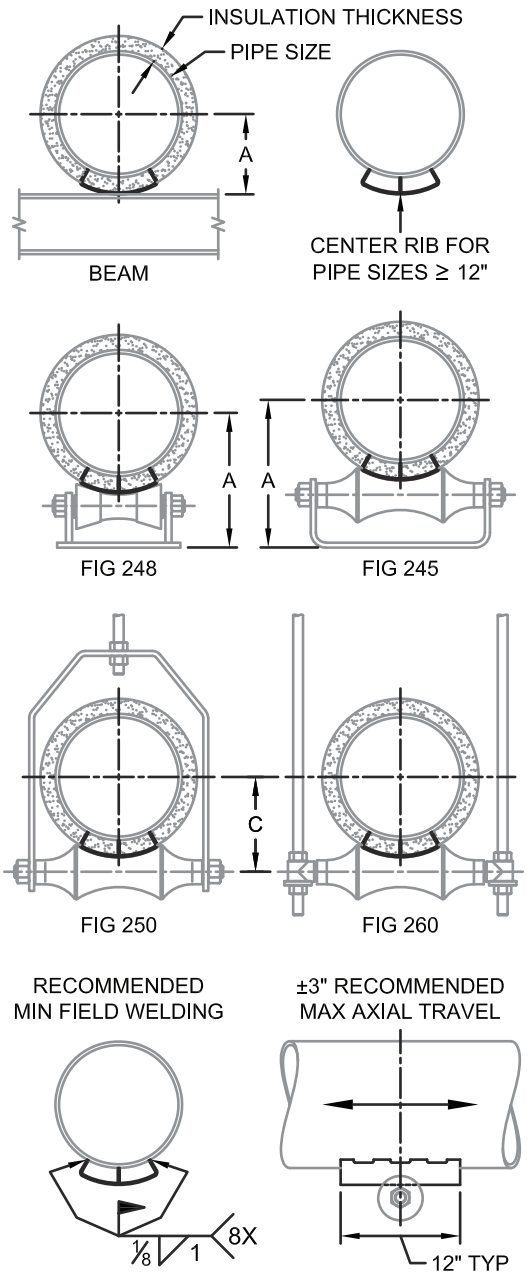


FIG. 310 1" Insulation Thickness

PIPE SIZE	BEAM A	248 A	248 SIZE	245 A	245 SIZE	250 C	250 SIZE	260 C	260 SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
¾	1⅝	4⅛	2-3½	3¾	3	2 1/16	3	2 1/16	3	1.46	1200
1	1 13/16	4¼	2-3½	3 15/16	3	2 3/16	3	2 3/16	3	1.46	1200
1¼	2	4 7/16	2-3½	4 1/16	3	2⅜	3	2⅜	3	1.46	1200
1½	2 1/16	4⅝	4-6	4 3/16	3	2⅝	4	2½	3	1.46	1200
2	2 5/16	4⅞	4-6	5 1/16	4	2⅞	4	2⅞	4	1.43	1200
2½	2 9/16	5⅛	4-6	5⅜	4	3 3/16	5	3⅛	4	1.43	1200
3	2⅞	5 7/16	4-6	5 15/16	5	3 7/16	5	3 7/16	5	1.78	1200
3½	3⅛	5 11/16	4-6	6 3/16	5	3¾	6	3 11/16	5	1.99	1200
4	3 7/16	6	4-6	6 7/16	5	4	6	4	5	1.99	1800
5	4	6 9/16	4-6	7 5/16	6	4 11/16	7	4⅝	6	1.99	1800
6	4½	8¾	8-10	8 5/16	8	5⅜	8	5⅜	8	3.94	1800
8	5½	9 13/16	8-10	9 15/16	10	6½	10	6⅜	10	4.59	1800
10	6 11/16	11	8-10	11⅛	10	8 1/16	12	7 11/16	12	4.59	1800
12	7 9/16	12½	12-14	13⅝	14	9	16	9	14	7.19	5000
14	8¼	13 3/16	12-14	15	16	9 13/16	16	9 11/16	16	7.19	5000
16	9 3/16	14 11/16	16-20	16 7/16	18	10 9/16	20	10½	18	7.53	5000
18	10 3/16	15 11/16	16-20	18 1/16	20	11⅝	20	11⅝	20	8.05	5000
20	11 3/16	16¾	22-24	20⅞	24	13 1/16	24	13 1/16	24	9.26	7200
24	13 3/16	19 9/16	30	24	30	-	-	15 5/16	30	10.7	7200
30	16 3/16	22¾	30	-	-	-	-	-	-	13.7	7200
36	19 3/16	26 11/16	36-42	-	-	-	-	-	-	16.0	7200

FIG. 315 1½" Insulation Thickness

PIPE SIZE	BEAM A	248 A	248 SIZE	245 A	245 SIZE	250 C	250 SIZE	260 C	260 SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
¾	2⅛	4 11/16	4-6	4 5/16	3	2 11/16	4	2 9/16	3	1.81	1200
1	2 5/16	4 11/16	4-6	4 7/16	3	2 13/16	4	2 11/16	3	1.81	1200
1¼	2½	5	4-6	5¼	4	3 1/16	5	3	4	1.81	1200
1½	2⅝	5⅛	4-6	5⅜	4	3 3/16	5	3⅛	4	1.81	1200
2	2 13/16	5⅜	4-6	5⅞	5	3⅜	5	3⅜	5	1.99	1200
2½	3 1/16	5⅝	4-6	6⅛	5	3 11/16	6	3⅝	5	2.13	1200
3	3 7/16	6	4-6	6 7/16	5	4 1/16	6	4	5	2.13	1800
3½	3⅝	6 3/16	4-6	7	6	4 5/16	7	4¼	6	2.19	1800
4	3 15/16	6½	4-6	7¼	6	4 9/16	7	4 9/16	6	2.19	1800
5	4½	7 1/16	4-6	8	7	5 5/16	8	5 3/16	7	2.19	1800
6	5	9¼	8-10	9 7/16	10	5⅞	10	5⅞	10	4.99	1800
8	6	10 5/16	8-10	10 9/16	10	7	12	6 15/16	10	5.52	1800
10	7 3/16	11½	8-10	12 5/16	12	8 9/16	14	8 3/16	12	5.52	1800
12	8 1/16	13	12-14	14 13/16	16	9½	16	9½	16	8.07	5000
14	8¾	14 3/16	16-20	15½	16	10 1/16	18	10¼	16	8.07	5000
16	9 11/16	15 3/16	16-20	17	18	11 1/16	20	11 1/16	18	9.26	5000
18	10 11/16	16¼	22-24	18⅝	20	12 9/16	24	12 3/16	20	9.55	5000
20	11 11/16	17 5/16	22-24	21⅜	24	13 9/16	24	13 3/16	24	10.5	7200
24	13 11/16	20⅛	30	24½	30	-	-	15 13/16	30	11.3	7200
30	16 11/16	24⅛	36-42	-	-	-	-	-	-	15.8	7200
36	19 11/16	27 3/16	36-42	-	-	-	-	-	-	17.2	7200



SS LOAD CORRECTION (2)	
TEMP °F	FACTOR
100	1.00
200	0.80
400	0.67
600	0.59
800	0.54
1000	0.50

1. Maximum recommended load shown for beam supported saddle. Maximum recommended load may be limited by the allowable roller load or other components in the load path.
2. Maximum recommended load shown for carbon steel. For recommended load for Stainless Steel, multiply the above load by the load/temperature correction factor.
3. For 30" and 36" pipe sizes, indicate roller Figure Number when ordering.
4. Selection size for Figure #249 Adjustable Roller Stand is the same as the Figure #248.
5. For other pipe sizes, insulation thickness, axial travels, or support configurations contact factory.

FIG. 320 FIG. 325

Pipe Covering Protection Saddle

SERVICE: To protect insulation while providing stationary support on beams or accommodating thermal expansion on roller hangers and supports.

MATERIAL: Carbon Steel (A36) or Stainless Steel (A240) Types 304 and 316

MAX TEMP: 650°F for Black, 350°F for Hot-Dip Galvanized, 1000°F for Stainless Steel

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

STANDARDS: MSS SP-58 Type 39

ORDERING: Specify figure number, pipe size, material and finish.(3)

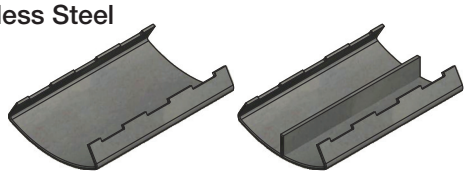
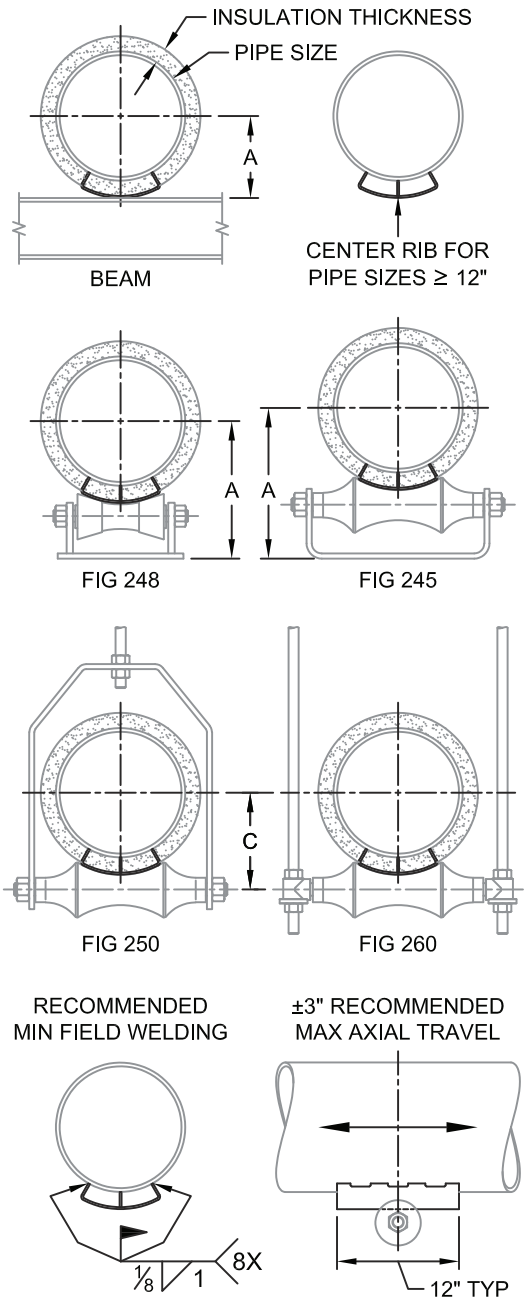


FIG. 320 2" Insulation Thickness

PIPE SIZE	BEAM A	248 A	248 SIZE	245 A	245 SIZE	250 C	250 SIZE	260 C	260 SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
¾	2⅝	5 3/16	4-6	5 11/16	5	3¼	5	3¼	5	2.49	1200
1	2 13/16	5⅜	4-6	5⅞	5	3⅜	5	3⅜	5	2.49	1200
1¼	3	5 9/16	4-6	6 1/16	5	3 9/16	5	3 9/16	5	2.49	1200
1½	3 1/16	5⅝	4-6	6⅛	5	3 11/16	6	3 11/16	5	2.70	1800
2	3 5/16	5 15/16	4-6	6⅜	5	3 15/16	6	3 15/16	5	2.70	1800
2½	3⅝	6 3/16	4-6	6 11/16	5	4 5/16	7	4¼	6	2.70	1800
3	3⅞	6½	4-6	7¼	6	4 9/16	7	4 9/16	7	2.99	1800
3½	4 3/16	6¾	4-6	7 11/16	7	5	8	4 13/16	7	2.99	1800
4	4 7/16	7	4-6	7 15/16	7	5¼	8	5⅛	7	2.99	1800
5	5	7 9/16	4-6	8 13/16	8	5⅞	10	5⅞	8	2.99	1800
6	5½	9 13/16	8-10	9 15/16	10	6⅜	10	6⅜	10	5.46	1800
8	6½	11⅜	12-14	11 11/16	12	7 9/16	12	7 9/16	12	6.28	1800
10	7 9/16	12½	12-14	13⅝	14	9	16	9	14	7.01	1800
12	8 9/16	14	16-20	15⅜	16	9⅞	18	10 1/16	16	9.90	5000
14	9¼	14 11/16	16-20	16⅛	16	10 9/16	18	10 13/16	16	9.90	5000
16	10 3/16	15 11/16	16-20	18 1/16	20	11⅝	20	11⅝	20	10.2	5000
18	11 3/16	16¾	22-24	20⅞	24	13 1/16	24	13 1/16	24	10.9	7200
20	12 3/16	17 13/16	22-24	21 15/16	24	-	-	14 1/16	24	11.5	7200
24	14 3/16	20⅝	30	25	30	-	-	16 5/16	30	12.7	7200
30	17 3/16	24⅝	36-42	-	-	-	-	-	-	17.6	7200
36	20 3/16	27¾	36-42	-	-	-	-	-	-	19.4	7200

FIG. 325 2½" Insulation Thickness

PIPE SIZE	BEAM A	248 A	248 SIZE	245 A	245 SIZE	250 C	250 SIZE	260 C	260 SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
¾	3⅛	5¾	4-6	6 3/16	5	3¾	6	3¾	5	3.10	1200
1	3 5/16	5⅞	4-6	6⅜	5	3 15/16	6	3⅞	5	3.10	1200
1¼	3 7/16	6 1/16	4-6	6 11/16	6	4 1/16	6	4 1/16	6	3.09	1200
1½	3 9/16	6 3/16	4-6	6 15/16	6	4¼	7	4 3/16	6	3.09	1800
2	3⅞	6 7/16	4-6	7 3/16	6	4 9/16	7	4 7/16	6	3.09	1800
2½	4 1/16	6 11/16	4-6	7⅝	7	4 15/16	8	4¾	7	3.32	1800
3	4 7/16	7	4-6	7 15/16	7	5¼	8	5⅛	7	3.32	1800
3½	4⅝	8⅞	8-10	8½	8	5½	10	5½	8	3.69	1800
4	4 15/16	9 3/16	8-10	8¾	8	5¾	10	5 13/16	8	3.69	1800
5	5½	9¾	8-10	9 15/16	10	6½	12	6 5/16	10	3.69	1800
6	6	10 5/16	8-10	10½	10	7	12	6 15/16	10	6.18	1800
8	7	11 15/16	12-14	12¼	12	8⅜	14	8 3/16	12	6.82	1800
10	8 1/16	13½	16-20	14 13/16	16	9½	16	9½	16	7.14	1800
12	9 1/16	14½	16-20	16 5/16	18	10⅜	18	10⅜	18	11.1	5000
14	9¾	15¼	16-20	17	18	11 3/16	20	11 1/16	18	11.1	5000
16	10 11/16	16¼	22-24	18⅝	20	12 9/16	24	12 3/16	20	11.9	7200
18	11 11/16	17 5/16	22-24	21⅜	24	13 9/16	24	13 9/16	24	12.5	7200
20	12 11/16	19 1/16	30	23½	30	-	-	14 13/16	30	13.1	7200
24	14 11/16	21 3/16	30	25½	30	-	-	16 13/16	30	14.6	7200
30	17 11/16	25 3/16	36-42	-	-	-	-	-	-	20.1	7200
36	20 11/16	28¼	36-42	-	-	-	-	-	-	21.6	7200



SS LOAD CORRECTION (2)	
TEMP °F	FACTOR
100	1.00
200	0.80
400	0.67
600	0.59
800	0.54
1000	0.50

1. Maximum recommended load shown for beam supported saddle. Maximum recommended load may be limited by the allowable roller load or other components in the load path.
2. Maximum recommended load shown for carbon steel. For recommended load for Stainless Steel, multiply the above load by the load/temperature correction factor.
3. For 30" and 36" pipe sizes, indicate roller Figure Number when ordering.
4. Selection size for Figure #249 Adjustable Roller Stand is the same as the Figure #248.
5. For other pipe sizes, insulation thickness, axial travels, or support configurations contact factory.

FIG. 330 FIG. 335 Pipe Covering Protection Saddle

SERVICE: To protect insulation while providing stationary support on beams or accommodating thermal expansion on roller hangers and supports.

MATERIAL: Carbon Steel (A36) or Stainless Steel (A240) Types 304 and 316

MAX TEMP: 650°F for Black, 350°F for Hot-Dip Galvanized, 1000°F for Stainless Steel

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

STANDARDS: MSS SP-58 Type 39

ORDERING: Specify figure number, pipe size, material and finish.(3)

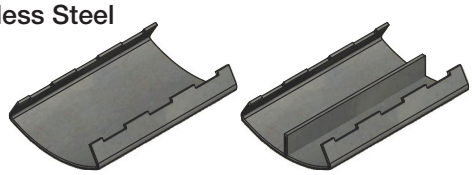
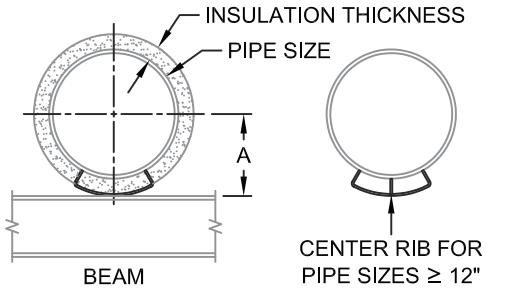


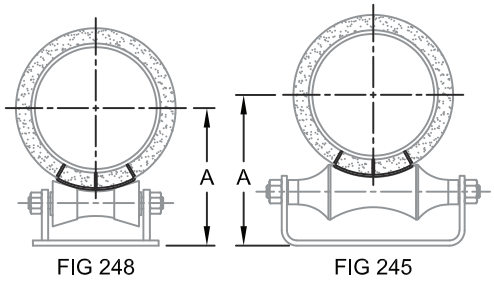
FIG. 330 3" Insulation Thickness

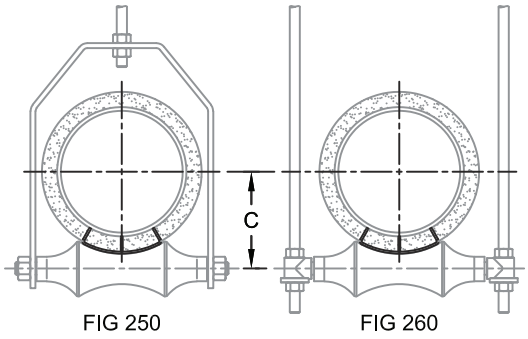
PIPE SIZE	BEAM A	248 A	248 SIZE	245 A	245 SIZE	250 C	250 SIZE	260 C	260 SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
¾	3⅜	6¼	4-6	7	6	4⁵⁄₁₆	7	4⁵⁄₁₆	6	3.90	1200
1	3¹³⁄₁₆	6⅜	4-6	7⅛	6	4½	7	4⁷⁄₁₆	6	3.90	1200
1¼	4	6⁹⁄₁₆	4-6	7⁵⁄₁₆	6	4¹¹⁄₁₆	7	4⅝	6	3.90	1200
1½	4⅛	6¹¹⁄₁₆	4-6	7⁷⁄₁₆	6	4¹⁵⁄₁₆	8	4¹³⁄₁₆	7	3.90	1800
2	4⅝	6¹⁵⁄₁₆	4-6	8⅛	8	5³⁄₁₆	8	5³⁄₁₆	8	4.20	1800
2½	4⁹⁄₁₆	8¹³⁄₁₆	8-10	8⁷⁄₁₆	8	5⁷⁄₁₆	10	5⁷⁄₁₆	8	4.20	1800
3	4⅞	9⅛	8-10	9⁵⁄₁₆	10	5¾	10	5¾	10	4.50	1800
3½	5³⁄₁₆	9⁷⁄₁₆	8-10	9⅝	10	6	10	6	10	4.50	1800
4	5⁷⁄₁₆	9¹¹⁄₁₆	8-10	9⅞	10	6¼	10	6¼	10	4.50	1800
5	6	10¼	8-10	10⁷⁄₁₆	10	7	12	6⅞	10	4.50	1800
6	6½	11⅜	12-14	11¹¹⁄₁₆	12	7⁹⁄₁₆	12	7⁹⁄₁₆	12	7.70	1800
8	7⅝	12½	12-14	13⁹⁄₁₆	14	9¹⁄₁₆	16	9	14	7.70	1800
10	8⁹⁄₁₆	14	16-20	15⅜	16	9¹³⁄₁₆	18	10¹⁄₁₆	16	9.05	1800
12	9⁹⁄₁₆	15¹⁄₁₆	16-20	16⅞	18	10¹⁵⁄₁₆	20	10¹⁵⁄₁₆	18	11.6	5000
14	10¼	15¾	16-20	17⁹⁄₁₆	18	11¹¹⁄₁₆	20	11¹³⁄₁₆	20	11.6	5000
16	11³⁄₁₆	16¾	22-24	20⅞	24	13¹⁄₁₆	24	13¹⁄₁₆	24	12.7	7200
18	12³⁄₁₆	17¹³⁄₁₆	22-24	21¹⁵⁄₁₆	24	-	-	14¹⁄₁₆	24	13.3	7200
20	13³⁄₁₆	19⁹⁄₁₆	30	24	30	-	-	15⁵⁄₁₆	30	14.0	7200
24	15³⁄₁₆	21¹¹⁄₁₆	30	26	30	-	-	17⅜	30	15.3	7200
30	18³⁄₁₆	25¹¹⁄₁₆	36-42	-	-	-	-	-	-	20.1	7200
36	21³⁄₁₆	28¾	36-42	-	-	-	-	-	-	21.9	7200

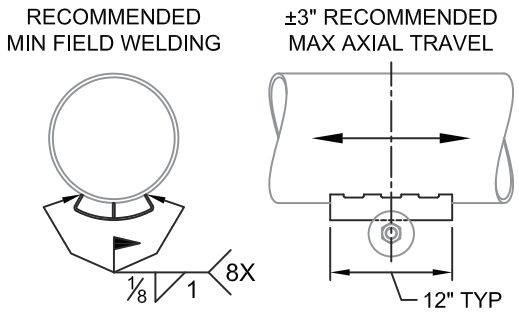
FIG. 335 3½" Insulation Thickness

PIPE SIZE	BEAM A	248 A	248 SIZE	245 A	245 SIZE	250 C	250 SIZE	260 C	260 SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1	4⁵⁄₁₆	8½	8-10	7⅞	7	5⅛	8	5	7	4.62	1200
1¼	4½	8¾	8-10	8¹⁄₁₆	7	5⁵⁄₁₆	8	5¼	7	4.62	1200
1½	4⅝	8⅞	8-10	8³⁄₁₆	7	5⁷⁄₁₆	10	5⁷⁄₁₆	8	4.62	1800
2	4¹³⁄₁₆	9¹⁄₁₆	8-10	9¼	10	5¹¹⁄₁₆	10	5¹¹⁄₁₆	10	5.04	1800
2½	5⅛	9⅜	8-10	9⁹⁄₁₆	10	5¹⁵⁄₁₆	10	5¹⁵⁄₁₆	10	5.04	1800
3	5⁷⁄₁₆	9¹¹⁄₁₆	8-10	9⅞	10	6¼	10	6¼	10	5.04	1800
4	5⅞	10³⁄₁₆	8-10	11	12	6⅞	12	6⅞	12	5.80	1800
5	6½	10¾	8-10	11⁹⁄₁₆	12	7¹³⁄₁₆	14	7½	12	5.80	1800
6	7	11¹⁵⁄₁₆	12-14	12¼	12	8⅜	14	8³⁄₁₆	12	8.81	1800
8	8⅛	13½	16-20	14⅞	16	9⁹⁄₁₆	16	9⁹⁄₁₆	16	8.81	1800
10	9¹⁄₁₆	14½	16-20	16⁵⁄₁₆	18	10⅜	18	10⅜	18	10.4	1800
12	10¹⁄₁₆	15⁹⁄₁₆	16-20	17⅞	20	11⁷⁄₁₆	20	11⁷⁄₁₆	20	12.4	5000
14	10¾	16⁵⁄₁₆	22-24	18⅝	20	12⅝	24	12³⁄₁₆	20	12.4	5000
16	11¹¹⁄₁₆	17⁵⁄₁₆	22-24	21⅜	24	13⁹⁄₁₆	24	13⁹⁄₁₆	24	14.7	7200
18	12¹¹⁄₁₆	19¹⁄₁₆	30	22½	24	-	-	14¹¹⁄₁₆	24	15.0	7200
20	13¹¹⁄₁₆	20⅛	30	24½	30	-	-	15¹³⁄₁₆	30	15.7	7200
24	15¹¹⁄₁₆	22³⁄₁₆	30	26⅝	30	-	-	17¹⁵⁄₁₆	30	17.2	7200
30	18¹¹⁄₁₆	26³⁄₁₆	36-42	-	-	-	-	-	-	22.0	7200
36	21¹¹⁄₁₆	29¼	36-42	-	-	-	-	-	-	23.8	7200









1. Maximum recommended load shown for beam supported saddle. Maximum recommended load may be limited by the allowable roller load or other components in the load path.
2. Maximum recommended load shown for carbon steel. For recommended load for Stainless Steel, multiply the above load by the load/temperature correction factor.
3. For 30" and 36" pipe sizes, indicate roller Figure Number when ordering.
4. Selection size for Figure #249 Adjustable Roller Stand is the same as the Figure #248.
5. For other pipe sizes, insulation thickness, axial travels, or support configurations contact factory.

SS LOAD CORRECTION (2)	
TEMP °F	FACTOR
100	1.00
200	0.80
400	0.67
600	0.59
800	0.54
1000	0.50

FIG. 340 FIG. 345 Pipe Covering Protection Saddle

SERVICE: To protect insulation while providing stationary support on beams or accommodating thermal expansion on roller hangers and supports.

MATERIAL: Carbon Steel (A36) or Stainless Steel (A240) Types 304 and 316

MAX TEMP: 650°F for Black, 350°F for Hot-Dip Galvanized, 1000°F for Stainless Steel

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

STANDARDS: MSS SP-58 Type 39

ORDERING: Specify figure number, pipe size, material and finish.(3)

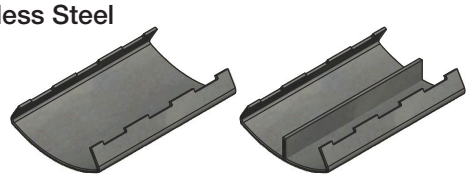
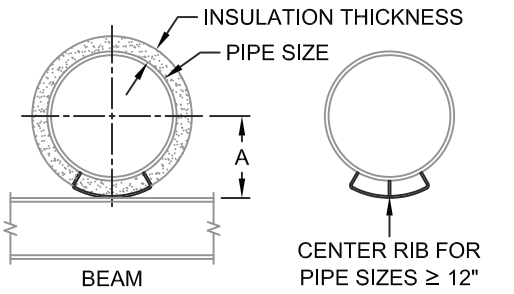


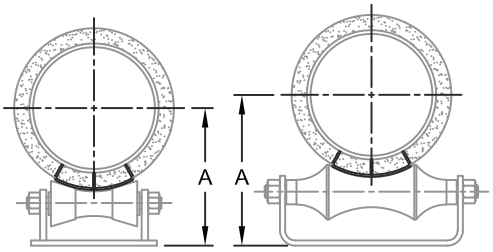
FIG. 340 4" Insulation Thickness

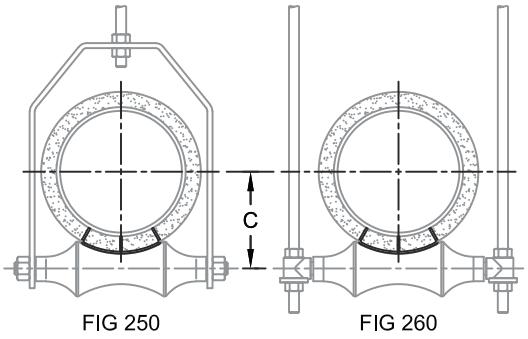
PIPE SIZE	BEAM A	248 A	248 SIZE	245 A	245 SIZE	250 C	250 SIZE	260 C	260 SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1	4 13/16	9 1/16	8-10	9 1/4	10	5 11/16	10	5 11/16	10	5.25	1200
1 1/4	5	9 1/4	8-10	9 7/16	10	5 11/16	10	5 7/8	10	5.25	1200
1 1/2	5 1/8	9 3/8	8-10	9 9/16	10	6	10	6	10	5.25	1800
2	5 5/16	9 5/8	8-10	9 3/4	10	6 3/16	10	6 3/16	10	5.17	1800
2 1/2	5 5/8	9 7/8	8-10	10 1/16	10	6 5/8	12	6 7/16	10	5.17	1800
3	5 15/16	10 3/16	8-10	10 3/8	10	6 15/16	12	6 13/16	10	5.17	1800
4	6 3/8	10 11/16	8-10	11 9/16	12	7 3/4	14	7 7/16	12	5.77	1800
5	7	11 7/8	12-14	12 1/8	12	8 5/16	14	8 1/16	12	5.77	1800
6	7 1/2	12 7/16	12-14	13 3/16	14	8 15/16	16	8 15/16	14	9.66	1800
8	8 5/8	14	16-20	15 3/8	16	9 7/8	18	10 1/16	16	9.66	1800
10	9 9/16	15 1/16	16-20	16 7/8	18	10 15/16	20	10 15/16	18	11.0	1800
12	10 9/16	16 1/8	22-24	18 7/16	20	12 7/16	24	12 1/16	20	14.9	5000
14	11 1/4	16 13/16	22-24	19 3/16	20	13 1/8	24	12 3/4	20	14.9	7200
16	12 3/16	17 13/16	22-24	21 15/16	24	14 1/16	24	14 1/16	24	14.2	7200
18	13 3/16	19 5/8	30	24	30	-	-	15 5/16	30	16.3	7200
20	14 3/16	20 5/8	30	25	30	-	-	16 5/16	30	15.8	7200
24	16 3/16	22 3/4	30	-	-	-	-	-	-	16.8	7200
30	19 3/16	26 11/16	36-42	-	-	-	-	-	-	26.6	7200
36	22 3/16	-	-	-	-	-	-	-	-	26.9	7200

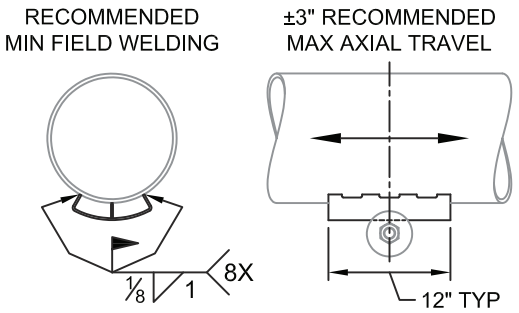
FIG. 345 4½" Insulation Thickness

PIPE SIZE	BEAM A	248 A	248 SIZE	245 A	245 SIZE	250 C	250 SIZE	260 C	260 SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1	5 5/16	9 9/16	8-10	9 3/4	10	6 1/8	10	6 1/8	10	5.88	1200
1 1/4	5 1/2	9 3/4	8-10	9 15/16	10	6 5/16	10	6 5/16	10	5.88	1200
1 1/2	5 5/8	9 7/8	8-10	10 1/16	10	6 5/8	12	6 7/16	10	5.88	1800
2	5 13/16	10 1/8	8-10	10 15/16	12	6 13/16	12	6 13/16	12	5.96	1800
2 1/2	6 1/8	10 3/8	8-10	11 3/16	12	7 1/8	12	7 1/8	12	5.96	1800
3	6 7/16	10 3/4	8-10	11 9/16	12	7 7/16	12	7 7/16	12	5.96	1800
4	6 15/16	11 7/8	12-14	12 15/16	14	8 5/16	14	8 5/16	14	9.21	1800
5	7 9/16	12 7/16	12-14	13 1/2	14	8 15/16	16	8 7/8	14	9.21	1800
6	8	13 7/16	16-20	14 3/4	16	9 7/16	16	9 7/16	16	9.74	1800
8	9 1/8	14 1/2	16-20	16 5/16	18	10 3/8	18	10 3/8	18	9.74	1800
10	10 1/16	15 9/16	16-20	17 7/8	20	11 7/16	20	11 7/16	20	11.1	1800
12	11 1/16	16 5/8	22-24	20 3/4	24	12 15/16	24	12 15/16	24	14.6	5000
14	11 3/4	17 3/8	22-24	21 7/16	24	13 3/8	24	13 3/8	24	14.6	7200
16	12 11/16	19 1/16	30	22 1/2	24	-	-	14 11/16	24	14.5	7200
18	13 11/16	20 1/8	30	24 1/2	30	-	-	15 13/16	30	17.2	7200
20	14 11/16	21 3/16	30	25 1/2	30	-	-	16 13/16	30	17.2	7200
24	17	24 3/8	36-42	-	-	-	-	-	-	17.1	7200
30	20 3/16	27 9/16	36-42	-	-	-	-	-	-	25.9	7200
36	23 5/16	-	-	-	-	-	-	-	-	27.9	7200









1. Maximum recommended load shown for beam supported saddle. Maximum recommended load may be limited by the allowable roller load or other components in the load path.
2. Maximum recommended load shown for carbon steel. For recommended load for Stainless Steel, multiply the above load by the load/temperature correction factor.
3. For 30" and 36" pipe sizes, indicate roller Figure Number when ordering.
4. Selection size for Figure #249 Adjustable Roller Stand is the same as the Figure #248.
5. For other pipe sizes, insulation thickness, axial travels, or support configurations contact factory.

SS LOAD CORRECTION (2)	
TEMP °F	FACTOR
100	1.00
200	0.80
400	0.67
600	0.59
800	0.54
1000	0.50

FIG. 350 Pipe Covering Protection Saddle

SERVICE: To protect insulation while providing stationary support on beams or accommodating thermal expansion on roller hangers and supports.

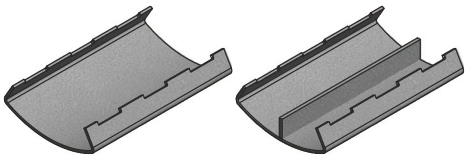
MATERIAL: Carbon Steel (A36) or Stainless Steel (A240) Types 304 and 316

MAX TEMP: 650°F for Black, 350°F for Hot-Dip Galvanized, 1000°F for Stainless Steel

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

STANDARDS: MSS SP-58 Type 39

ORDERING: Specify figure number, pipe size, material and finish.[3]



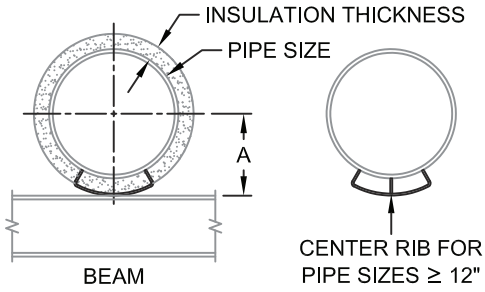
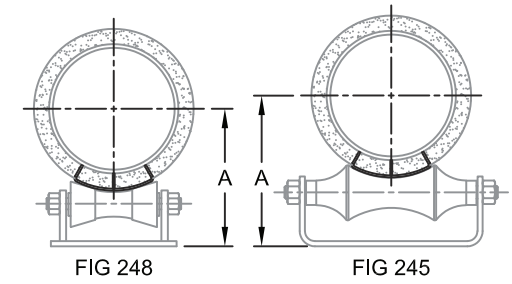
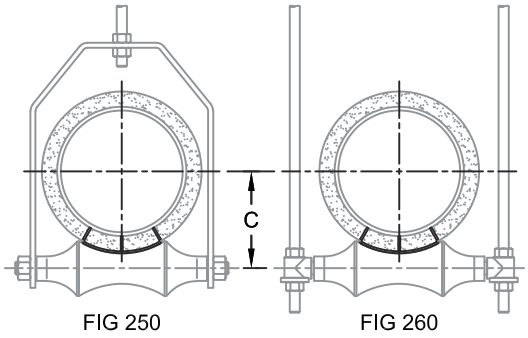


FIG. 350 5" Insulation Thickness

PIPE SIZE	BEAM A	248 A	248 SIZE	245 A	245 SIZE	250 C	250 SIZE	260 C	260 SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
2	6 5/16	10 5/8	8-10	11 7/16	12	7 5/16	12	7 3/8	12	6.58	1800
2 1/2	6 5/8	11 7/16	12-14	11 3/4	12	7 15/16	14	7 11/16	12	6.58	1800
3	6 15/16	11 13/16	12-14	12 1/16	12	8 5/16	14	8	12	6.58	1800
4	7 3/8	12 5/16	12-14	13 3/8	14	8 13/16	16	8 3/4	14	6.65	1800
5	8	12 15/16	12-14	14	16	9 3/8	16	9 7/16	16	6.65	1800
6	8 1/2	13 15/16	16-20	15 5/16	16	9 3/4	18	10	16	11.6	1800
8	9 5/8	15 1/16	16-20	16 13/16	18	11	20	10 7/8	18	11.6	1800
10	10 9/16	16 1/8	16-20	18 1/2	20	12 7/16	24	12 1/16	20	12.0	1800
12	11 9/16	17 3/16	22-24	21 1/4	24	13 7/16	24	12 7/16	24	16.5	5000
14	12 1/4	17 7/8	22-24	21 15/16	24	14 1/8	24	14 1/8	24	16.6	7200
16	13 3/16	19 5/8	30	24	30	-	-	15 5/16	30	17.8	7200
18	14 3/16	20 5/8	30	25	30	-	-	16 5/16	30	18.4	7200
20	15 3/16	21 11/16	30	26 1/16	30	-	-	17 3/8	30	19.1	7200
24	17 3/16	24 5/8	36-42	-	-	-	-	-	-	20.4	7200
30	20 3/16	27 3/4	36-42	-	-	-	-	-	-	28.7	7200
36	23 3/16	-	-	-	-	-	-	-	-	30.7	7200





SS LOAD CORRECTION [2]			
TEMP °F	FACTOR	TEMP °F	FACTOR
100	1.00	600	0.59
200	0.80	800	0.54
400	0.67	1000	0.50

1. Maximum recommended load shown for beam supported saddle. Maximum recommended load may be limited by the allowable roller load or other components in the load path.
2. Maximum recommended load shown for carbon steel. For recommended load for Stainless Steel, multiply the above load by the load/temperature correction factor.
3. For 30" and 36" pipe sizes, indicate roller Figure Number when ordering.
4. Selection size for Figure #249 Adjustable Roller Stand is the same as the Figure #248.
5. For other pipe sizes, insulation thickness, axial travels, or support configurations contact factory.

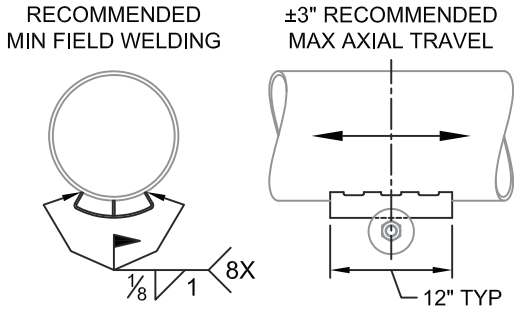
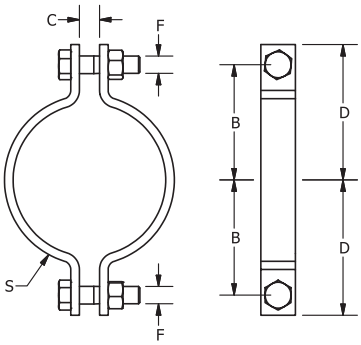


FIG. 400 Standard Steel Pipe Clamp

SERVICE: For suspension of non-insulated piping services. Normally used with FIG. #740 Weldless Eyenut.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 4, FS WW-H-171E Type 4
ORDERING: Specify figure number, pipe size, material and finish.

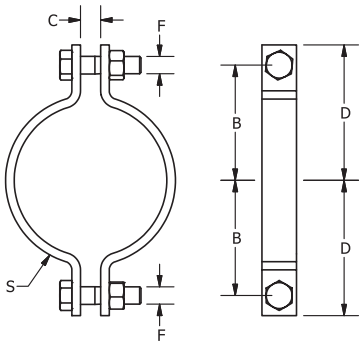


NO SPACER SUPPLIED

PIPE SIZE	B	C	D	F	STOCK SIZE S	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/2	1 1/8	7/16	1 11/16	5/16	11ga x 1	0.27	500
3/4	1 1/4	7/16	1 13/16	5/16	11ga x 1	0.30	500
1	1 7/16	7/16	2	5/16	11ga x 1	0.33	500
1 1/4	1 9/16	7/16	2 1/8	5/16	11ga x 1	0.36	500
1 1/2	1 3/4	1/2	2 1/4	5/16	11ga x 1	0.37	800
2	2 3/8	1/2	2 15/16	1/2	3ga x 1	1.04	1040
2 1/2	2 11/16	3/4	3 1/4	1/2	3ga x 1	1.19	1040
3	2 15/16	3/4	3 1/2	1/2	3ga x 1	1.27	1040
3 1/2	3 1/4	3/4	3 13/16	1/2	3ga x 1	1.43	1040
4	3 3/8	3/4	4 1/16	5/8	4ga x 1 1/4	1.94	1040
5	4 1/16	7/8	4 3/4	5/8	4ga x 1 1/4	2.20	1040
6	5	7/8	5 7/8	3/4	3/8 x 1 1/2	5.28	1615
8	6 1/8	1	7	3/4	3/8 x 1 1/2	6.25	1615
10	7 7/16	1	8 9/16	7/8	1/2 x 2	12.98	2490
12	8 7/16	1	9 9/16	7/8	1/2 x 2	14.82	2490
14	9 1/4	1 1/8	10 5/8	7/8	1/2 x 2 1/2	20.00	2490
16	10 1/4	1 1/8	11 5/8	7/8	1/2 x 2 1/2	22.00	2490
18	11 5/8	1 1/4	13	1	5/8 x 2 1/2	30.91	3060
20	12 3/4	1 3/8	14 1/8	1 1/8	5/8 x 2 1/2	35.89	3060
24	15 1/4	1 5/8	16 7/8	1 1/4	5/8 x 3	53.00	3060
30	19	2	21 1/8	1 3/4	3/4 x 4	110.86	3500

FIG. 405 Heavy Duty Two-Bolt Pipe Clamp

SERVICE: For suspension of non-insulated, heavy duty piping services. Normally used with FIG. #740 Weldless Eyenut
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 4, FS WW-H-171E Type 4
ORDERING: Specify figure number, pipe size, material and finish.

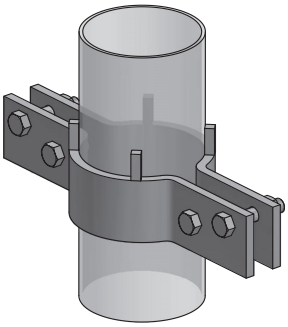


NO SPACER SUPPLIED

PIPE SIZE	B	C	D	F	STOCK SIZE S	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3	3 1/8	1	4	3/4	3/8 x 2	4.43	3370
4	3 3/4	1	4 7/8	7/8	3/8 x 2	5.74	3515
5	4 3/8	1	5 1/2	7/8	3/8 x 2	6.55	3515
6	5 1/4	1 1/8	6 5/8	1	1/2 x 2 1/2	12.40	4865
8	6 1/4	1 1/8	7 5/8	1	1/2 x 2 1/2	14.54	4865
10	7 11/16	1 1/4	9 1/16	1 1/4	5/8 x 2 1/2	23.45	6010
12	9 1/4	1 5/8	11 1/8	1 1/2	3/4 x 3	40.98	8675
14	10	1 5/8	11 7/8	1 1/2	3/4 x 4	56.00	9120
16	11 5/16	1 5/8	13 3/16	1 1/2	3/4 x 4	62.00	9120
18	14 1/2	3	18 1/2	2	3/4 x 6	129.00	13800
20	16	3	20	2	1 x 5	148.00	15300
24	18 1/2	3 1/4	23	2	1 x 6	200.00	16300
30	22 1/2	3 1/2	26	2 1/4	1 1/4 x 8	390.00	20500

FIG. 404

Heavy Duty Riser Clamp



SERVICE: To support vertical piping from hanger rods or structural members such as beams and concrete slabs. Shear lugs field welded to pipe wall transfer pipe load to riser clamp.

MATERIAL: Carbon Steel meeting ASTM: A36, A500 Gr B, A307 Gr A and A563 Gr A
Stainless Steel Type 304 and 316 meeting ASTM: A240, A312, F593 and F594

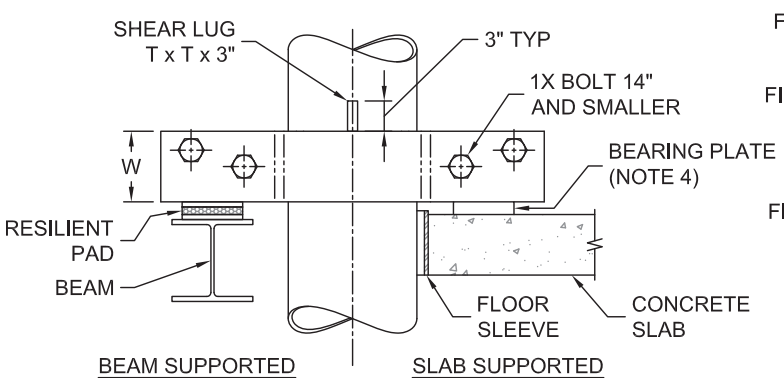
FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

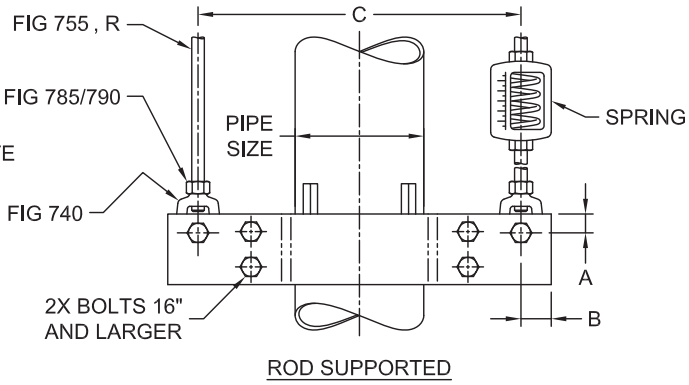
MAX TEMP: 650ºF for Black Carbon Steel and Stainless Steel
350ºF for Hot-Dip Galvanized Carbon Steel

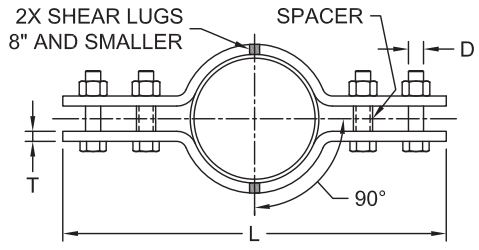
STANDARDS: MSS SP-58 Type 42

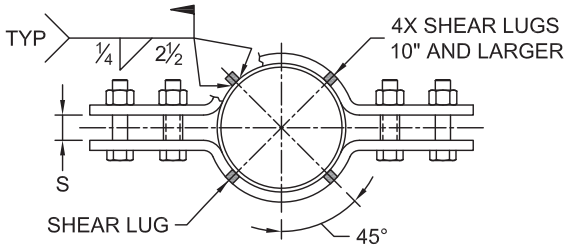
ORDERING: Specify figure number, pipe size, material and finish. (Order installation hardware separately.)

PIPE SIZE	T x W	A	B	C	D	L	S	R	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
2	1/2 x 2 1/2	1 1/4	2	18	1/2	22	3/4	1/2	16.00	900
2 1/2	1/2 x 2 1/2	1 1/4	2	20	1/2	24	3/4	1/2	18.00	900
3	5/8 x 3	1 1/4	2	20	5/8	24	1	5/8	27.30	1500
4	3/4 x 4	1 1/4	2	22	3/4	26	1 1/4	3/4	46.70	2200
5	3/4 x 4	1 1/4	2	22	3/4	26	1 1/4	3/4	47.40	2200
6	3/4 x 5	1 1/4	2	24	7/8	28	1 1/2	3/4	66.00	3000
8	3/4 x 5	1 1/4	2	27	7/8	31	1 1/2	3/4	74.00	3000
10	1 x 6	1 5/8	3	30	1 1/4	36	2 1/4	1	141.00	5500
12	1 x 7	1 7/8	3	32	1 1/2	38	2 1/2	1 1/4	185.00	7800
14	1 x 7	1 7/8	3	34	1 1/2	40	2 1/2	1 1/4	195.00	7800
16	1 1/4 x 8	2	3	36	1 1/2	42	2 1/2	1 1/4	283.00	9000
18	1 1/4 x 8	2	3	39	1 1/2	45	2 1/2	1 1/4	302.00	9000
20	1 1/4 x 8	2 5/8	4 1/4	42	2	50 1/2	3 1/2	1 1/2	364.48	13500
24	1 1/4 x 8	2 5/8	4 1/4	45	2	53 1/2	3 1/2	1 1/2	391.00	13500





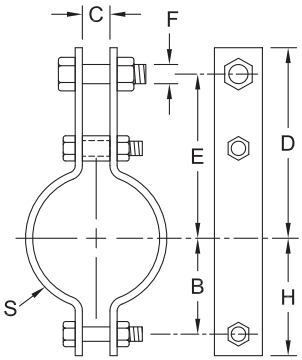




Notes:
1. Maximum recommended load on rigid support. Loads may be doubled when used with springs or other resilient devices.
2. Welding in accordance with AWS D1.1 for carbon steel and AWS D1.6 for stainless steel.
3. Local pipe wall stress due to welded shear lug attachment evaluation available upon request, provide: pipe material, pipe wall thickness, operating pressure and temperature, and corrosion allowance.
4. Concrete bearing plate as necessary by others.
5. For special designs, contact factory with pipe size, material, load, operating temperature, C and L dimensions, finish and support type.

FIG. 410 Double Bolt Pipe Clamp

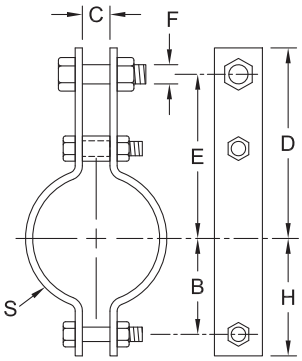
SERVICE: For suspension of insulated pipe lines. Normally used with a FIG. #740 Weldless Eyenut.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 3, FS WW-H-171E Type 3
ORDERING: Specify figure number, pipe size, material and finish.



PIPE SIZE	B	C	D	E	F	H	STOCK SIZE S	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/2	1	5/8	2 7/8	2 5/16	3/8	1 9/16	8ga x 1	0.54	950
3/4	1 1/16	5/8	3	2 7/16	3/8	1 5/8	8ga x 1	0.57	950
1	1 3/8	5/8	3 3/16	2 5/8	3/8	1 15/16	8ga x 1	0.61	950
1 1/4	1 1/2	5/8	3 1/2	2 15/16	3/8	2 1/16	8ga x 1	0.68	950
1 1/2	1 15/16	7/8	4 11/16	3 13/16	5/8	2 13/16	4ga x 1 1/4	1.72	1545
2	2 3/16	7/8	5 9/16	4 11/16	5/8	3 1/16	4ga x 1 1/4	1.93	1545
2 1/2	2 7/16	7/8	6 7/16	5 9/16	5/8	3 5/16	4ga x 1 1/4	2.12	1545
3	2 3/4	1	7	6 1/8	5/8	3 5/8	4ga x 1 1/4	2.26	1545
3 1/2	2 7/8	1	7 1/4	6 3/8	5/8	3 3/4	4ga x 1 1/4	2.37	1545
4	3 1/2	1 1/16	7 5/8	6 1/2	3/4	4 1/2	3/8 x 2	6.57	2500
5	4	1 1/16	8 1/8	7	3/4	5	3/8 x 2	7.17	2500
6	5	1 7/16	9 15/16	8 9/16	1	6 1/8	3/8 x 2 1/2	11.53	2865
8	6	1 7/16	10 15/16	9 9/16	1	7 1/8	3/8 x 2 1/2	13.22	2865
10	7 1/2	1 7/16	12	10 5/8	1	8 7/8	1/2 x 2 1/2	19.98	3240
12	8 1/2	1 7/16	13	11 5/8	1	9 7/8	1/2 x 2 1/2	22.16	3240
14	9 3/8	2	14 5/16	12 11/16	1 1/4	11	5/8 x 3	36.38	4300
16	10 3/8	2	15 5/16	13 11/16	1 1/4	12	5/8 x 3	39.77	4300
18	11 3/8	2	16 5/16	14 11/16	1 1/4	13	5/8 x 3	43.00	4300
20	12 3/4	2	17 1/2	15 7/8	1 1/2	14 3/8	3/4 x 3	59.00	5490
24	14 3/4	2	19 1/2	17 7/8	1 1/2	16 3/8	3/4 x 3	66.00	4500
30	18 3/4	2 1/2	26 1/8	23 3/8	1 1/2	21 1/4	3/4 x 5	134.0	7500

FIG. 415 Heavy Duty Double Bolt Pipe Clamp

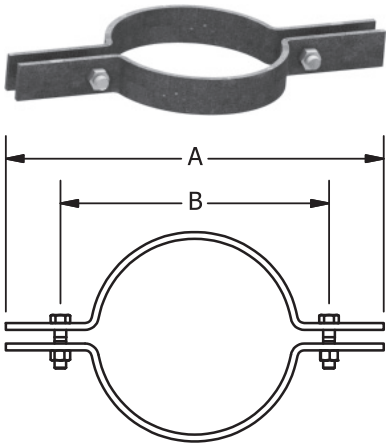
SERVICE: For supporting pipe requiring up to 4" of insulation.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
MAX TEMP: 750˚F
STANDARDS: MSS SP-58 Type 3, FS WW-H-171E Type 3
ORDERING: Specify figure number, pipe size, material and finish.



PIPE SIZE	B	C	D	E	F	H	STOCK SIZE S	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.	
									650°F	750°F
6	4 3/4	1 3/4	10 3/16	8 15/16	1	6	3/8 x 2 1/2	12.0	3500	3125
8	6	2	11 3/8	10 1/8	1 1/8	7 1/4	1/2 x 2 1/2	18.5	4800	4285
10	7 1/2	2 1/4	13 1/8	11 3/8	1 1/4	9	1/2 x 4	34.0	5500	4910
12	8 5/8	2 1/2	14 5/16	12 9/16	1 1/2	10 3/8	5/8 x 4	48.0	7000	6250
14	9 5/8	2 1/2	15 1/2	13 1/2	1 1/2	11 5/8	3/4 x 4	61.0	9500	8485
16	10 7/8	3	17 1/8	14 7/8	1 3/4	13 1/8	3/4 x 5	92.0	10000	8930
18	13 1/2	3 1/2	18 1/4	16 1/4	2	15 1/4	1 x 4	110.0	13800	12325
20	14 1/2	3 1/2	20 3/4	18 1/4	2	17	1 x 5	143.0	15300	13665
24	15 1/2	3 1/2	22 5/16	19 5/16	2	18 1/2	1 x 6	185.0	16300	14555
30	19 7/8	4 1/4	32 3/4	28 1/4	2 1/4	24 3/8	1 x 8	348.0	20500	-

FIG. 420

Riser Clamp



SERVICE: For support of vertical pipe/tube runs.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black, Electro-Galvanized, Hot-Dip Galvanized, Copper Epoxy Coated (Copper-Gard) or PVC coated (PVC coated riser clamps are completely Plastic Coated with Electro-Galvanized hardware.)

STANDARDS: MSS SP-58 Type 8, FS WW-H-171E Type 8

APPROVALS: UL (For standard pipe sizes 2" - 8")

ORDERING: Specify figure number, pipe/tube size, material and finish.

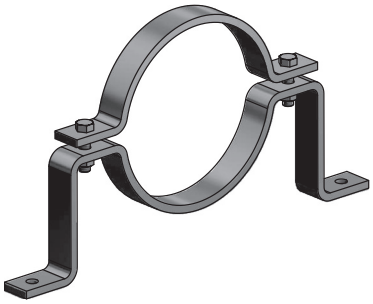
PIPE SIZE	A	B	BOLT	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/2	8 5/8	2 1/8	3/8	0.88	255
3/4	8 13/16	2 5/16	3/8	0.92	255
1	9 1/16	2 5/8	3/8	0.94	255
1 1/4	9 7/16	2 15/16	3/8	1.00	255
1 1/2	10	3 7/16	3/8	1.04	255
2	10 9/16	4	3/8	1.14	300
2 1/2	11 1/8	4 9/16	3/8	1.60	400
3	11 13/16	5 1/4	3/8	1.70	530
4	13 5/8	6 5/8	1/2	2.20	810
5	14 1/8	7 5/8	1/2	3.40	1500
6	15 3/8	8 7/8	1/2	3.72	1600
8	18 1/2	12 1/2	5/8	7.20	2500
10	20 3/4	14 3/4	5/8	11.00	2500
12	22 3/4	16 3/4	5/8	16.10	2700
14	24	18	5/8	17.00	2700
16	26	21	3/4	29.16	2900
18	28	23	3/4	32.40	2900
20	30	25	3/4	35.00	2900
24	36	29 1/4	7/8	43.00	2900
30	42	35 3/4	1	95.00	3200

TUBE SIZE	TUBE OD	A	B	BOLT	WEIGHT EACH, LBS.	MAX REC. LOAD, LBS.
1/2	0.625	6 11/16	1 11/16	1/4	0.48	225
3/4	0.875	7	2	1/4	0.50	225
1	1.125	8 3/4	2 1/4	1/4	0.64	250
1 1/4	1.375	9	2 1/2	1/4	0.66	250
1 1/2	1.625	9 3/8	2 7/8	1/4	0.68	250
2	2.125	9 15/16	3 3/8	3/8	1.06	500
2 1/2	2.625	10 1/2	4	3/8	1.08	500
3	3.125	11	4 7/16	3/8	1.16	500
4	4.125	12 5/8	5 9/16	3/8	1.66	500
5	5.125	14 1/8	7 1/8	1/2	3.42	815
6	6.125	15	8	1/2	3.76	815

PVC PIPE SIZE	A	B	BOLT	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/2	8 5/8	2 1/8	3/8	0.88	255
3/4	8 13/16	2 5/16	3/8	0.92	255
1	9 1/16	2 5/8	3/8	0.94	255
1 1/4	9 7/16	2 15/16	3/8	1.00	255
1 1/2	10	3 7/16	3/8	1.04	255
2	10 9/16	4	3/8	1.14	300
2 1/2	11 1/8	4 9/16	3/8	1.60	400
3	11 13/16	5 1/4	3/8	1.70	530
4	13 5/8	6 5/8	1/2	2.20	810
5	14 1/8	7 5/8	1/2	3.40	1500
6	15 3/8	8 7/8	1/2	3.72	1600
8	18 5/8	12	5/8	7.22	2500
10	21 1/4	14 3/4	5/8	10.94	2500

FIG. 430

Offset Pipe Clamp



SERVICE: To support horizontal piping from floors and walls. To provide lateral bracing to vertical piping. May be used as a riser support for pipe size up to 3".

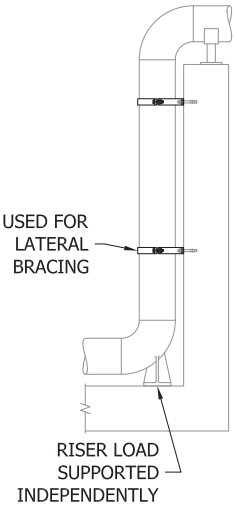
MATERIAL: Carbon Steel meeting ASTM: A36 and A307 Gr A
Stainless Steel Type 304 and 316 meeting ASTM: A240, F593 and F594

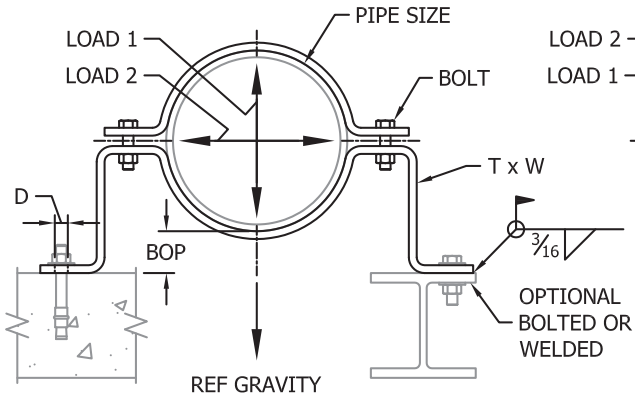
FINISH: Black, Electro-Galvanized meeting ASTM B633 or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: 650°F for Black Carbon Steel and Stainless Steel
350°F for Electro-Galvanized and Hot-Dip Galvanized Carbon Steel.

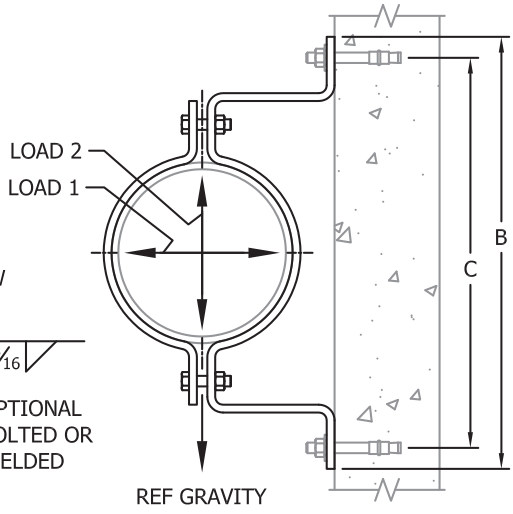
ORDERING: Specify figure number, pipe size, material and finish. (Order installation hardware separately.) 2½" is not stocked in Carbon Steel; 10" and 12" are not stocked in Stainless Steel.

PIPE SIZE	T x W	BOLT	BOP	A	B	C	D	WEIGHT EACH, LBS.	LOAD 1	LOAD 2	LOAD 3
2	¼ x 1¼	⅜	2	3 3/16	10⅝	9⅛	7/16	2.05	410	200	100
2½	¼ x 1¼	⅜	2	3 7/16	12	10½	7/16	2.39	410	200	150
3	¼ x 1¼	⅜	2	3¾	12⅝	11⅛	7/16	2.57	410	200	175
4	¼ x 1½	½	2	4¼	14½	12½	9/16	3.64	600	250	N/A
6	⅜ x 1½	½	2	5 5/16	18½	16½	9/16	6.91	850	350	N/A
8	⅜ x 1½	½	2	6 5/16	20⅝	18⅝	9/16	8.19	850	350	N/A
10	⅜ x 3	¾	2⅜	7¾	25	23	13/16	20.03	900	400	N/A
12	⅜ x 3	¾	2⅜	8¾	27	25	13/16	23.24	900	400	N/A

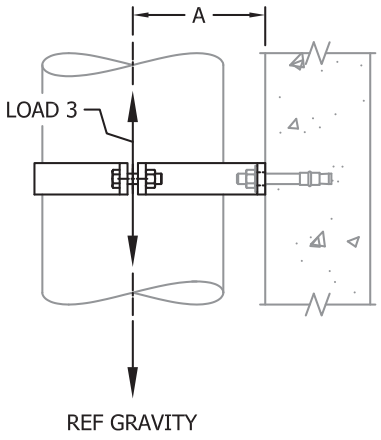




FLOOR MOUNTED



WALL MOUNTED



RISER APPLICATION

NOTES:
1. Stocked in Nominal Pipe Sizes (NPS). Ductile iron, cast iron and other pipe types available upon request. Provide pipe standard and/or outside diameter.
2. Special "A" dimension available upon request. Allowable loads above do not apply to specials.

BOLT TORQUE ft • lbs	
⅜	20
½	50
¾	75

FIG. 440

Four Section Rodding Band

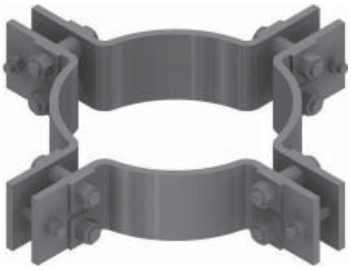
SERVICE: For avoiding the possibility of joints blowing out on high pressure cast iron water mains. Made to the City of New York or the New York Port Authority specifications. Four FIG. #465 Square Washer plates for the tie rod must be ordered separately.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized

ORDERING: Specify figure number, pipe size, material and finish.

DI PIPE SIZE	I.D.	STOCK SIZE	D	E	F	G	H	K	L	TIE ROD SIZE
4	4.8	3/8 x 3	7 1/2	4 3/8	1	1 1/2	7/8	1 1/4	5/8	3/4
6	6.9	3/8 x 3	8 1/2	5 3/8	1	1 1/2	7/8	1 1/4	5/8	3/4
8	9.05	1/2 x 4	9	6 3/8	1	1	7/8	1 1/4	5/8	3/4
10	11.1	1/2 x 5	10 5/8	7 5/8	1	1	7/8	1 1/2	5/8	1
12	13.2	1/2 x 5	12 1/4	8 7/8	1	1	7/8	1 1/2	5/8	1
14	15.3	1/2 x 5	13 3/16	9 13/16	1	1	7/8	1 1/2	5/8	1
16	17.4	1/2 x 5	14 1/4	10 7/8	1	1	7/8	1 1/2	5/8	1
18	19.5	1/2 x 6	15 3/8	12	1	1 1/4	7/8	1 1/2	5/8	1
20	21.6	1/2 x 6	16 3/8	13	1	1 1/4	7/8	1 1/2	5/8	1
24	25.8	1/2 x 6	19	15 1/4	1	1 1/4	7/8	1 7/8	5/8	1 3/8
30	32	5/8 x 6	23	18 3/4	1	1 1/4	7/8	2 1/4	5/8	1 3/4
36	38.3	3/4 x 8	26 1/4	22	1	1 1/2	7/8	2 1/4	5/8	1 3/4



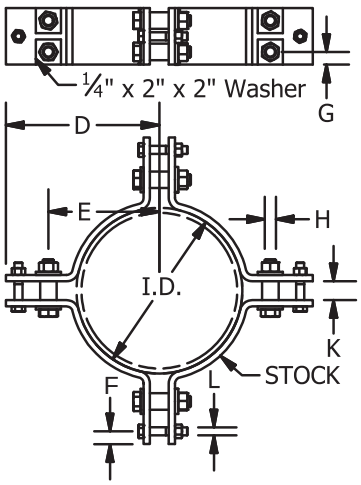


FIG. 450

FIG. 455

Socket Clamp for DI Pipe

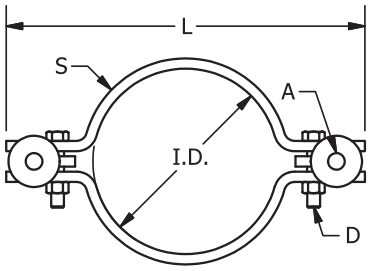
Socket Clamp Washer

SERVICE: Designed to prevent the separation of DI pipe joints.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized

ORDERING: Specify figure number, pipe size, material and finish. (Two FIG. #455 washers are required for each clamp and must be ordered separately. If tie rod is larger than ¾", FIG. #455 square plate is used.)



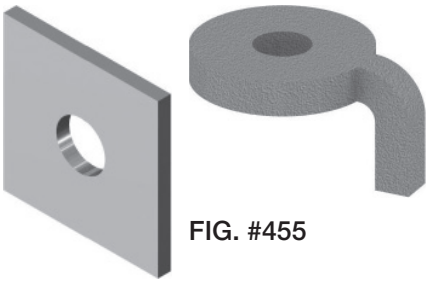


FIG. #455

FIG. #450							
DI PIPE SIZE	I.D.	ROD SIZE A	D	L	STOCK SIZE S	WEIGHT EACH, LBS.	
						WASHER	CLAMP
3	3.96	¾	⅝	12	⅜ x 2	0.79	5.95
4	4.80	¾	⅝	12¾	½ x 2	0.79	8.00
6	6.90	¾	⅝	15½	½ x 2	0.79	10.00
8	9.05	¾	⅝	17½	½ x 2	0.79	12.10
10	11.10	¾	⅝	19½	½ x 2	0.79	13.63
12	13.20	¾	⅝	22	½ x 2	0.79	15.65
14	15.30	1	⅞	28½	¾ x 3	2.80	45.00
16	17.40	1⅛	1	30¾	¾ x 4	2.80	63.00
18	19.50	1¼	1¼	34⅝	¾ x 4	2.80	76.00
20	21.60	1⅜	1¼	37½	¾ x 5	2.80	100.05
24	25.80	1½	1½	43	¾ x 5	2.80	119.50
30	32.00	1½	1½	49½	¾ x 5	2.80	140.50
36	38.30	1½	1½	56½	¾ x 5	2.80	164.50

FIG. #455			
PIPE SIZE	TIE ROD SIZE	STOCK SIZE	WEIGHT EACH, LBS.
3	¾	Cast Iron	0.79
4	¾	Cast Iron	0.79
6	¾	Cast Iron	0.79
8	¾	Cast Iron	0.79
10	¾	Cast Iron	0.79
12	¾	Cast Iron	0.79
14	1	⅝ x 4 x 4	2.80
16	1⅛	⅝ x 4 x 4	2.80
18	1¼	⅝ x 4 x 4	2.80
20	1⅜	⅝ x 4 x 4	2.80
24	1½	⅝ x 4 x 4	2.80
30	1½	⅝ x 4 x 4	2.80
36	1½	⅝ x 4 x 4	2.80

FIG. 460

FIG. 465

Four-Bolt Socket Clamp for DI Pipe

Four-Bolt Socket Clamp Washer

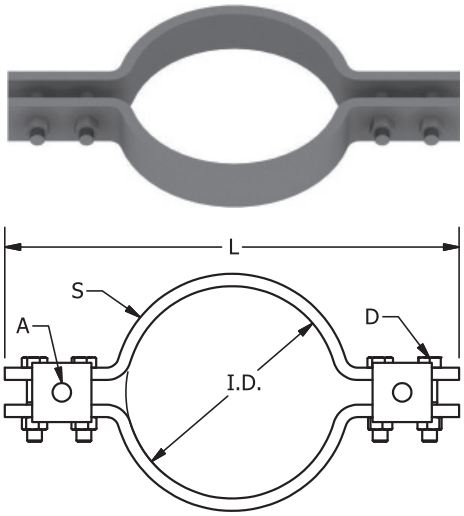
SERVICE: For clamping mechanical joint piping, mechanical joint fittings or socket joint fittings together; thus stopping separation or distortion of pipe lines under excessive water pressure.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Hot-Dip Galvanized

STANDARDS: National Fire Protection Association Standard (NFPA) 24 for outside protection.

ORDERING: Specify figure number, pipe size, material and finish. (Two FIG. #465 Square Washers are required for each clamp and must be ordered separately.)



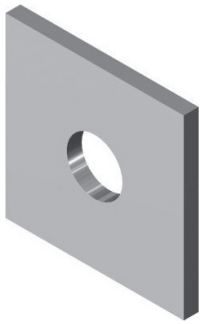


FIG. #465

FIG. #460							
DI PIPE SIZE	ROD SIZE A	D	I.D.	L	STOCK SIZE S	WEIGHT EACH, LBS.	
						WASHER	CLAMP
4	3/4	5/8	4.80	14 5/8	1/2 x 2	1.25	10
6	3/4	5/8	6.90	16 7/8	1/2 x 2	1.25	12
8	3/4	5/8	9.05	19 1/8	5/8 x 2 1/2	1.25	21
10	1	3/4	11.10	23	5/8 x 2 1/2	2.80	26
12	1	7/8	13.20	25 1/8	5/8 x 3	2.80	35
14	1 1/4	7/8	15.30	28 1/4	3/4 x 3	2.80	45
16	1 1/4	1	17.40	32 1/8	3/4 x 4	2.80	69
18	1 1/4	1 1/4	19.40	35 1/8	3/4 x 4	2.80	86
20	1 3/8	1 1/4	21.60	37 3/4	3/4 x 5	2.80	108
24	1 1/2	1 1/2	25.80	44 1/2	3/4 x 5	2.80	134

FIG. #465			
PIPE SIZE	TIE ROD SIZE	STOCK SIZE	WEIGHT EACH, LBS.
4	3/4	1/2 x 3 x 3	1.25
6	3/4	1/2 x 3 x 3	1.25
8	3/4	1/2 x 3 x 3	1.25
10	1	5/8 x 4 x 4	2.80
12	1	5/8 x 4 x 4	2.80
14	1 1/4	5/8 x 4 x 4	2.80
16	1 1/4	5/8 x 4 x 4	2.80
18	1 1/4	5/8 x 4 x 4	2.80
20	1 3/8	5/8 x 4 x 4	2.80
24	1 1/2	5/8 x 4 x 4	2.80
30	1 1/2	5/8 x 4 x 4	2.80
36	1 1/2	5/8 x 4 x 4	2.80

FIG. 470

Corporation Eye Bolt

SERVICE: For use with FIG. #450 socket clamp.

MATERIAL: Carbon Steel or 304 Stainless Steel

FINISH: Black or Electro-Galvanized

ORDERING: Specify figure number and finish.

ROD SIZE A	T	L
3/4	3	4 1/2

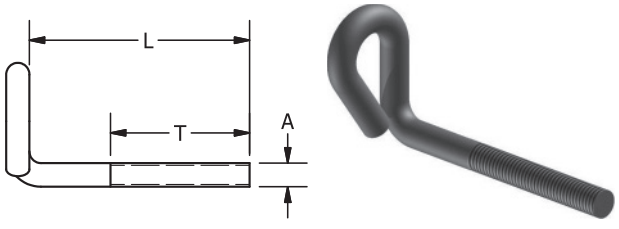
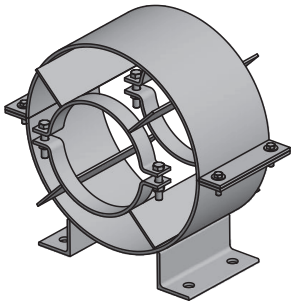


FIG. 500

Pipe Alignment Guide



SERVICE: To provide axial pipe alignment near an expansion joint for horizontal and vertical runs. Attached to steel beams by bolting or welding, and concrete slabs by anchor bolting.

MATERIAL: Carbon Steel meeting ASTM: A36, A307 Gr A and A563 Gr A
Stainless Steel Type 304 and 316 meeting ASTM: A240, F593 and F594

FINISH: Black or Hot-Dip Galvanized meeting ASTM: A153

MAX TEMP: 650°F for Black Carbon Steel and Stainless Steel
350°F for Hot-Dip Galvanized Carbon Steel

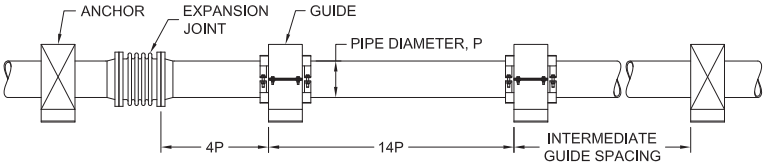
ORDERING: Specify figure number, size number, pipe size, insulation thickness, material and finish. (Order installation hardware separately.)

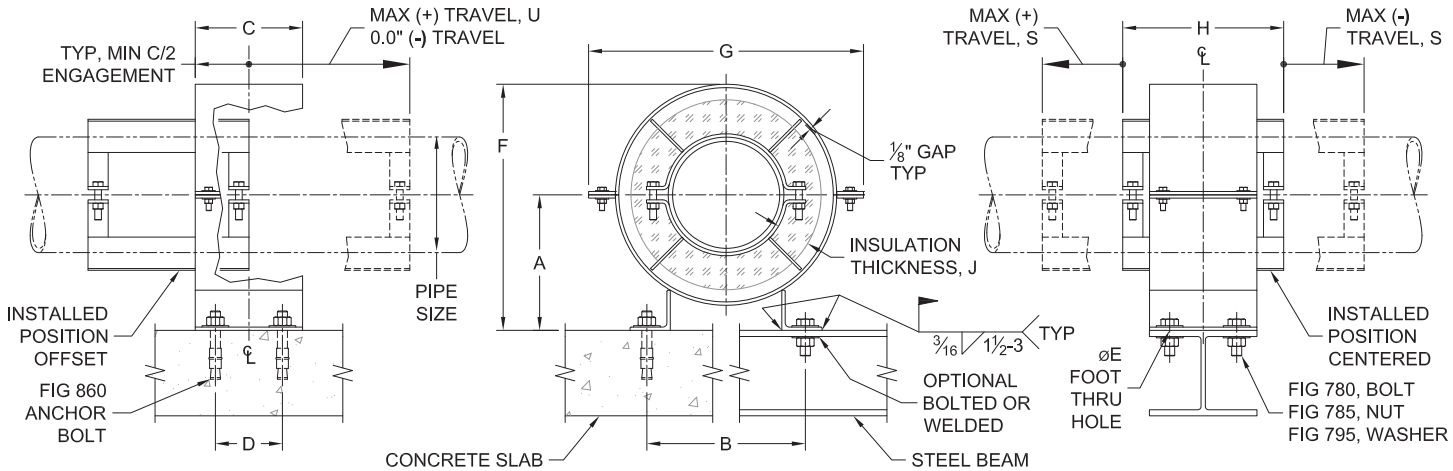
GUIDE SIZE SELECTION TABLE

PIPE SIZE	NOMINAL INSULATION THICKNESS, J							
	0	1	1½	2	2½	3	4	5
½-1	1	1	1	2	3	3	4	5
1¼	1	1	2	3	3	4	4	5
1½-2	1	1	2	3	3	4	5	6
2½	2	2	3	3	4	4	5	6
3	2	2	3	3	4	4	5	7
3½-4	3	3	3	4	4	5	6	7
5	4	4	4	4	5	5	7	8
6	4	4	4	5	5	6	7	8
8	6	6	6	6	7	7	8	9
10	8	8	8	8	8	8	9	10
12	9	9	9	9	9	9	10	10
14	10	10	10	10	10	10	10	11
16	10	10	10	10	10	10	11	12
18	11	11	11	11	11	11	12	12
20	12	12	12	12	12	12	12	13
24	13	13	13	13	13	13	13	13

GUIDE DIMENSIONS

SIZE NO.	A	B	C	D	E	F	G	H	WEIGHT EACH, LBS.
1	4	5 3/8	4	2 1/2	9/16	7 1/16	9 1/2	8	14.3
2	4 1/2	5 3/4	4	2 1/2	9/16	8 1/8	11 1/4	8	17.9
3	6	7	6	4	9/16	10 9/16	12 3/4	10	29.6
4	7 1/2	8 5/16	6	4	11/16	13 3/16	15 1/2	10	38.8
5	8 1/2	8 3/4	8	5	11/16	15 1/4	17 1/2	12	52.5
6	9 1/4	11 11/16	8	5	13/16	16 7/8	19 1/4	12	65.7
7	10 1/8	12	8	5	13/16	18 3/4	20 1/2	12	67.3
8	11	13 1/4	8	5	13/16	20 1/4	22 1/2	12	78.4
9	12	13 9/16	8	5	15/16	22 1/4	24 1/2	12	93.8
10	13 3/4	15 1/4	8	5	15/16	26	28 1/2	12	129.2
11	14 3/4	15 3/4	8	5	15/16	28	30	12	136.7
12	16 1/4	18 3/4	8	5	1 1/8	31 1/2	34	12	152.5
13	18 1/4	19 1/2	8	5	1 1/8	35 1/2	39 1/2	12	173.2





OFFSET INSTALLATION

CENTERED INSTALLATION

NOTES:

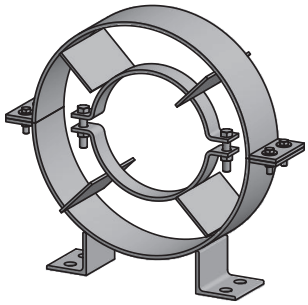
1. Welding in accordance with AWS D1.1 for carbon steel and AWS D1.6 for stainless steel.
2. Not to be used as a gravity support.
3. Guide spacing in accordance with Expansion Joint Manufacturers Association (EJMA) Standards.
4. If larger travel required, contact factory.
5. Shell ears may be rotated for closely spaced adjacent pipe runs, G' ≈ G - 4 in.

ALLOWABLE TRAVEL

SIZE NO.	U	S
1-2	+8	±4
3-4	+10	±5
5-13	+12	±6

FIG. 502

Light Duty Pipe Alignment Guide



SERVICE: To provide axial pipe alignment near an expansion joint for horizontal and vertical runs. Attached to steel beams by bolting or welding, and concrete slabs by anchor bolting.

MATERIAL: Carbon Steel meeting ASTM: A36, A307 Gr A and A563 Gr A
Stainless Steel Type 304 and 316 meeting ASTM: A240, F593 and F594

FINISH: Black or Hot-Dip Galvanized meeting ASTM: A153

MAX TEMP: 650°F for Black Carbon Steel and Stainless Steel
350°F for Hot-Dip Galvanized Carbon Steel

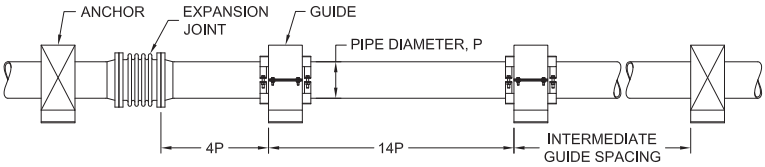
ORDERING: Specify figure number, size number, pipe size, insulation thickness, material and finish. (Order installation hardware separately.)

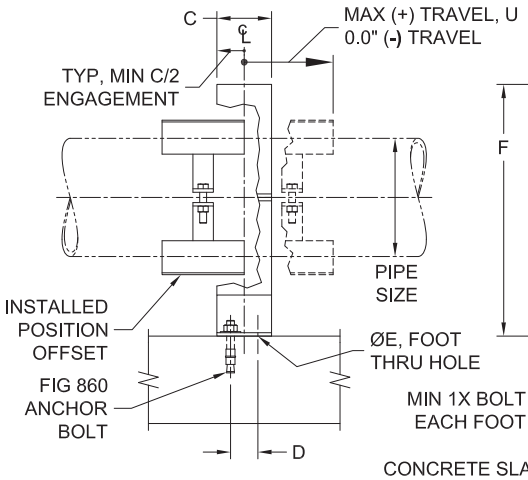
GUIDE SIZE SELECTION TABLE

PIPE SIZE	NOMINAL INSULATION THICKNESS, J							
	0	1	1½	2	2½	3	4	5
½-1	1	1	1	2	3	3	4	5
1¼	1	1	2	3	3	4	4	5
1½-2	1	1	2	3	3	4	5	6
2½	2	2	3	3	4	4	5	6
3	2	2	3	3	4	4	5	7
3½-4	3	3	3	4	4	5	6	7
5	4	4	4	4	5	5	7	8
6	4	4	4	5	5	6	7	8
8	6	6	6	6	7	7	8	9
10	8	8	8	8	8	8	9	10
12	9	9	9	9	9	9	10	10
14	10	10	10	10	10	10	10	-
16	10	10	10	10	10	10	-	-

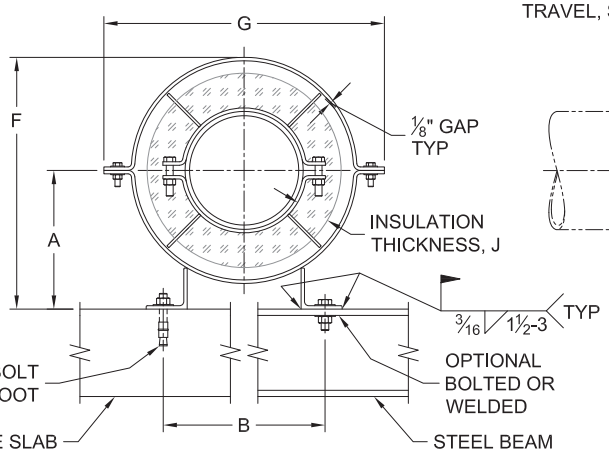
GUIDE DIMENSIONS

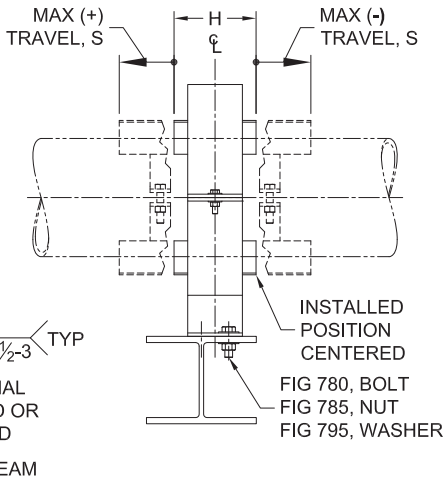
SIZE NO.	A	B	C	D	E	F	G	H	WEIGHT EACH, LBS.
1	4	5 3/8	3	1 1/2	9/16	7 1/16	9 1/2	4	9.7
2	4 1/2	5 3/4	3	1 1/2	9/16	8 1/8	11 1/4	4	12.1
3	6	7	3	1 1/2	9/16	10 9/16	12 3/4	4	15.0
4	7 1/2	8 5/16	3	1 1/2	9/16	13 3/16	15 1/2	4	19.7
5	8 1/2	8 3/4	4	2	11/16	15 1/4	17 1/2	4	25.6
6	9 1/4	11 11/16	4	2	13/16	16 7/8	19 1/4	4	35.6
7	10 1/8	12	4	2	13/16	18 3/4	20 1/2	4	36.3
8	11	13 1/4	6	4	13/16	20 1/4	22 1/2	6	52.1
9	12	13 9/16	6	4	15/16	22 1/4	24 1/2	6	62.1
10	13 3/4	15 1/4	6	4	15/16	26	28 1/2	6	81.1





OFFSET INSTALLATION





CENTERED INSTALLATION

NOTES:

1. Welding in accordance with AWS D1.1 for carbon steel and AWS D1.6 for stainless steel.
2. Not to be used as a gravity support.
3. Guide spacing in accordance with Expansion Joint Manufacturers Association (EJMA) Standards.
4. If larger travel required, see FIG. #500.
5. Shell ears may be rotated for closely spaced adjacent pipe runs, G' ≈ G - 4 in.

ALLOWABLE TRAVEL

SIZE NO.	U	S
1-7	+4	±2
8-10	+6	±3

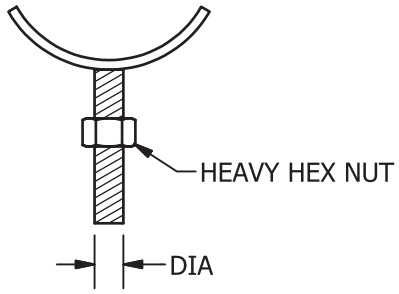
FIG. 515 Adjustable Pipe Support

SERVICE: For use in conjunction with a standard pipe and flange at base to support piping where an overhead supporting member is not available. The stem is threaded the full length with a nut to allow a vertical adjustment to accommodate the pitch in the pipe line.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Hot-Dip Galvanized

ORDERING: Specify figure number, pipe size, material and finish.



PIPE SIZE	STOCK SIZE	DIA. & LENGTH OF STEM	WEIGHT EACH, LBS.
2	3/8 x 1 1/2	7/8 x 8	1.92
3	3/8 x 1 1/2	7/8 x 8	2.20
4	3/8 x 2	1 x 8	3.23
5	3/8 x 2	1 x 8	3.67
6	1/2 x 2	1 1/4 x 8	5.92
8	1/2 x 2	1 1/4 x 8	6.77
10	1/2 x 3	1 1/2 x 8	11.56
12	1/2 x 3	1 1/2 x 8	13.08

FIG. 516 Adjustable Pipe Support w/ U-Bolt

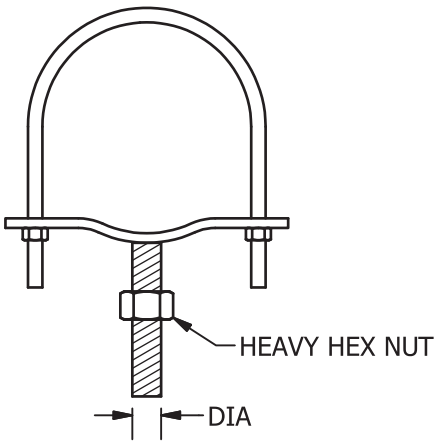
FIG. 517 Adjustable Pipe Support w/ DI U-Bolt

SERVICE: For use in conjunction with a standard pipe and flange at the base to support piping where an overhead supporting member is not available. The stem is threaded the full length with a nut to allow vertical adjustment to accommodate the pitch in the pipe line.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Hot-Dip Galvanized

ORDERING: Specify figure number, pipe size, material and finish.



PIPE SIZE	STOCK SIZE	DIA. & LENGTH OF STEM	WEIGHT EACH, LBS.
3	3/8 x 1 1/2	7/8 x 8	3.2
3 1/2	3/8 x 1 1/2	7/8 x 8	3.3
4	3/8 x 2	1 x 8	4.3
5	3/8 x 2	1 x 8	4.7
6	1/2 x 2	1 1/4 x 8	8.2
8	1/2 x 2	1 1/4 x 8	9.3
10	1/2 x 3	1 1/2 x 8	16.0
12	1/2 x 3	1 1/2 x 8	19.9

DI PIPE SIZE	STOCK SIZE	DIA. & LENGTH OF STEM	WEIGHT EACH, LBS.
3	3/8 x 1 1/2	7/8 x 8	3.3
4	3/8 x 2	1 x 8	4.5
6	1/2 x 2	1 1/4 x 8	8.5
8	1/2 x 2	1 1/4 x 8	9.6
10	1/2 x 3	1 1/2 x 8	15.6
12	1/2 x 3	1 1/2 x 8	19.3

FIG. 519

FIG. 520

FIG. 521

Pipe Saddle Support w/ DI U-Bolt

Pipe Saddle Support w/ U-Bolt

Pipe Saddle Support

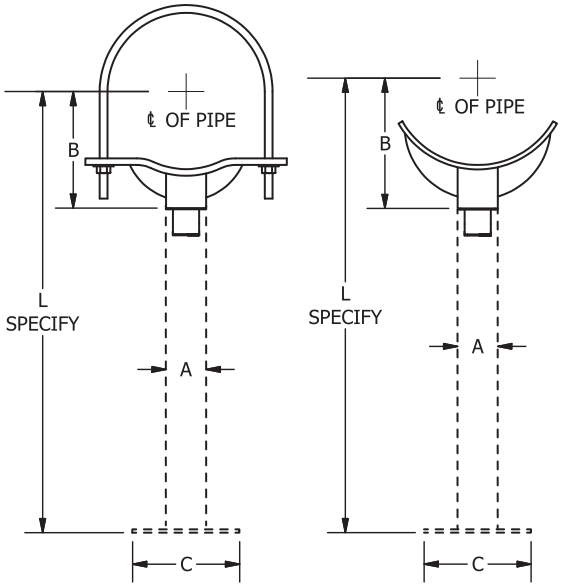
SERVICE: For general piping running close to the floor.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Hot-Dip Galvanized

STANDARDS: MSS SP-58 Type 37 (FIG. #519 & #520) Type 36 (FIG. #521)

ORDERING: Specify figure number, pipe size, L dimension, base plate hole size, material and finish. (Saddle furnished complete with or without U-Bolt. Gussets will be added to supports for pipe sizes 8" and above.Welded base plate and pipe as shown must be ordered separately.)



SHOWN WITH OPTIONAL STAND

DI PIPE SIZE	A	B	C	WEIGHT EACH, LBS.
4	3	4 5/16	10	6.88
6	3	5 9/16	10	11.32
8	3	7 1/8	10	14.57
10	3	8 5/8	10	18.11
12	3	10 3/16	10	23.34
14	4	11 9/16	10	38.92
16	4	13 1/16	10	44.32
18	4	14 5/8	10	52.67
20	6	16 3/16	12	84.55
24	6	18 13/16	12	99.93

PIPE SIZE	A	B	C	WEIGHT EACH, LBS.
4	3	4 3/16	10	6.72
5	3	4 13/16	10	7.30
6	3	5 7/16	10	11.06
8	3	6 15/16	10	14.30
10	3	8 7/16	10	18.53
12	3	9 15/16	10	23.92
14	4	10 15/16	10	39.10
16	4	12 3/8	10	44.47
18	4	13 7/8	10	52.95
20	6	15 3/8	12	84.72
24	6	17 15/16	12	100.00
30	6	21 5/16	12	113.10
36	8	24 1/2	12	163.74

NOTE: Weights are for saddles only.

FIG. 525 Pipe Saddle Support

SERVICE: For general piping running close to the floor.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black or Hot-Dip Galvanized
ORDERING: Specify figure number, pipe size, material and finish.

PIPE SIZE	STOCK SIZE S	D	L	WEIGHT EACH, LBS.
2	3/8 x 1 1/2	7/8	6	1.57
3	3/8 x 1 1/2	7/8	6	1.85
4	3/8 x 2	1	6	2.70
5	3/8 x 2	1	6	3.14
6	1/2 x 2	1 1/4	6	4.90
8	1/2 x 2	1 1/4	6	5.75
10	1/2 x 3	1 1/2	6	9.88
12	1/2 x 3	1 1/2	6	11.40

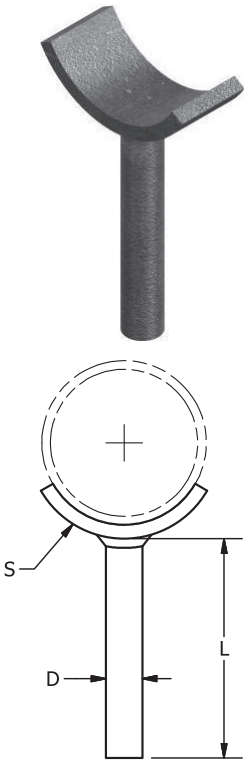


FIG. 530 Adjustable Pipe Saddle Support w/ Coupling

SERVICE: For general piping running close to the floor.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black or Hot-Dip Galvanized
ORDERING: Specify figure number, pipe size, material and finish.

PIPE SIZE	STOCK SIZE S	COUPLING SIZE	WEIGHT EACH, LBS.
2	3/8 x 2	1 1/4	1.35
3	3/8 x 2 1/2	1 1/2	2.45
4	3/8 x 3	2	3.63
5	3/8 x 3	2	4.30
6	1/2 x 4	2 1/2	7.03
8	1/2 x 4	2 1/2	8.53
10	1/2 x 4	3	13.04
12	1/2 x 4	3	15.07

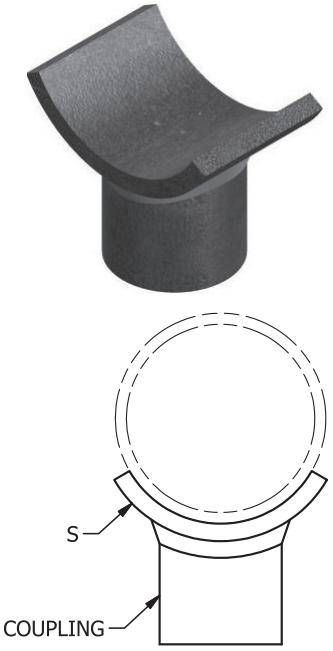


FIG. 535 **Adjustable Pipe Saddle Support**

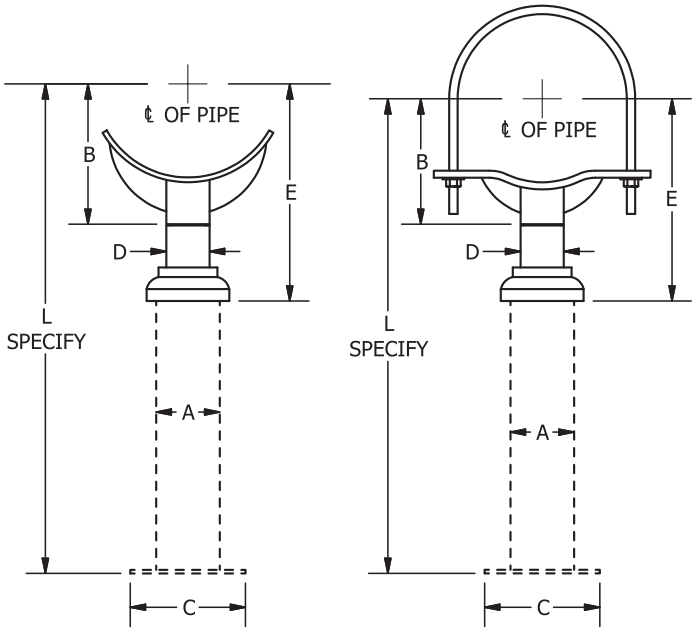
FIG. 538 **Adjustable Pipe Saddle Support w/ U-Bolt**

FIG. 539 **Adjustable Pipe Saddle Support w/ DI U-Bolt**

SERVICE: For general piping running close to the floor.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 37/38 (FIG. #538 and FIG. #539), Type 38 (FIG. #535)
ORDERING: Specify figure number, pipe size, L dimension, base plate hole size, material and finish. (Unit consists of saddle, nipple and reducer. Gussets will be added to supports for pipe sizes 8" and above. Welded base plate and pipe must be ordered separately.)

PIPE SIZE	PIPE SIZE A	B	C	D	DIMENSION E		WEIGHT EACH, LBS.	
					MIN.	MAX.	SADDLE ONLY	WITH REDUCER
2½	2½	3 7/16	8	1½	8	13	4.14	7.44
3	2½	3 11/16	8	1½	8¼	13¼	4.40	7.70
4	3	4 3/16	10	2½	9¼	14	5.83	13.39
5	3	4 13/16	10	2½	10	14¾	6.48	14.04
6	3	5 7/16	10	2½	10½	15¼	10.24	17.80
8	3	6 15/16	10	2½	11¾	16½	13.16	20.72
10	3	8 7/16	10	2½	13½	18¼	17.23	24.79
12	3	9 15/16	10	2½	15	19¾	22.56	30.12
14	4	10 15/16	10	3	16¼	20¾	29.20	42.55
16	4	12 3/8	10	3	17¾	22¼	33.53	46.88
18	6	13 7/8	12	4	19½	24	52.83	74.78
20	6	15 3/8	12	4	21	25½	56.96	78.91
24	6	17 15/16	12	4	23¾	28¼	78.92	100.87
30	6	21 5/16	12	4	27	31½	90.40	112.35
36	6	24½	12	4	30¼	34¾	107.92	129.87

DI PIPE SIZE	PIPE SIZE A	B	C	D	DIMENSION E		WEIGHT EACH, LBS.	
					MIN.	MAX.	SADDLE ONLY	WITH REDUCER
3	2½	3 15/16	8	1½	8½	13½	4.52	7.82
4	3	4 5/16	10	2½	9⅜	14⅜	5.99	13.55
6	3	5 9/16	10	2½	10⅝	15⅝	10.50	18.06
8	3	7⅛	10	2½	11 15/16	16 11/16	13.43	20.99
10	3	8⅝	10	2½	13 11/16	18 7/16	16.81	24.37
12	3	10 3/16	10	2½	15¼	20	21.98	29.54
14	4	11 9/16	10	3	16⅞	21⅜	29.02	42.37
16	4	13 1/16	10	3	18 7/16	22 15/16	33.38	46.73
18	6	14⅝	12	4	20¼	24¾	52.55	74.50
20	6	16 3/16	12	4	21 13/16	26 5/16	56.79	78.74
24	6	18 13/16	12	4	24⅝	29⅛	78.85	100.80
30	6	22 5/16	12	4	28	32½	94.57	116.52
36	6	25⅝	12	4	31⅜	35⅞	109.32	131.27



SHOWN WITH OPTIONAL STAND

FIG. 540 Angle Iron Support

SERVICE: For general piping. Must be installed long leg vertical.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black or Hot-Dip Galvanized
ORDERING: Specify figure number, rod size, angle size, center to center of holes, material and finish.

ANGLE SIZE	ALLOWABLE CONCENTRATED LOAD AT CENTER OF SPAN, LBS									
	10	12	18	24	30	36	48	60	72	84
1½ x 1½ x ¼	1109	924	616	462	-	-	-	-	-	-
2 x 2 x ¼	2117	1764	1177	882	710	590	-	-	-	-
3 x 3 x ¼	-	3860	2577	1930	1540	1290	970	-	-	-
4 x 3 x ⅜	-	-	-	-	-	3330	2500	2000	1670	1430
5 x 3 x ⅜	-	-	-	-	-	4900	3660	2930	2440	2100
6 x 4 x ⅜	-	-	-	-	-	7350	5500	4400	3670	3140

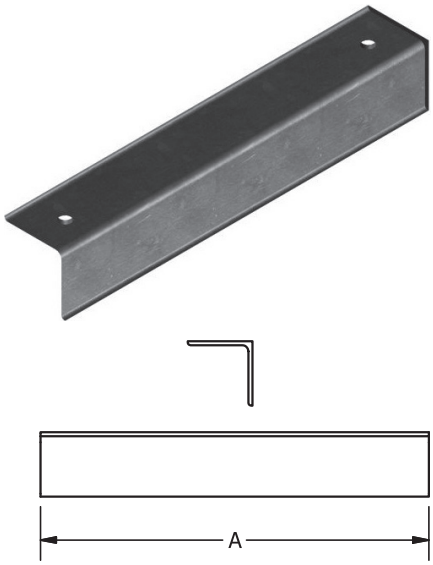


FIG. 550 Angle Bracket

SERVICE: For use on the side of steel or wood beams.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black or Electro-Galvanized
ORDERING: Specify figure number, bolt size, material and finish.

BOLT SIZE	HOLE SIZE A	B	C	D	E	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
⅜	7/16	2 1/16	8ga	1 5/16	1½	0.23	300
½	9/16	2⅛	3ga	1⅜	1½	0.33	560
⅝	11/16	3	¼	1¾	3	1.15	900
¾	13/16	3	⅜	1¾	3	1.69	1300
⅞	15/16	4	⅜	2½	4	3.12	1800
1	1⅛	4	½	2½	4	4.02	2400

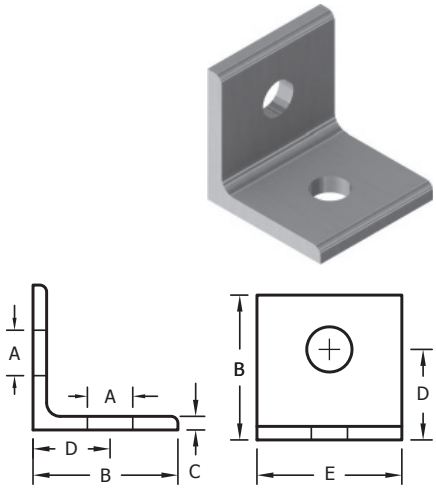


FIG. 545

Channel Assembly

SERVICE: To support single and multiple piping services on a common member such as a trapeze suspended by two threaded rods or as supplemental steel attached to the structure. Back-to-back channel assembled with spacers for rod clearance and adjustment. Available with or without washer plates. Washer plates may be welded or loose.

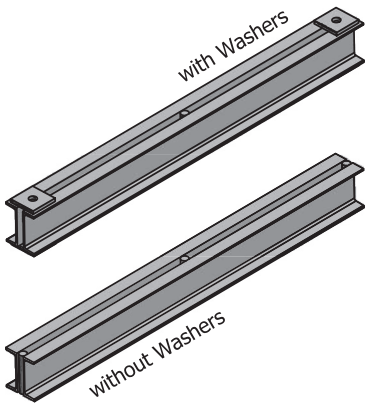
MATERIAL: Carbon Steel meeting ASTM: A36

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: 650°F for Black Carbon Steel
350°F for Hot-Dip Galvanized Carbon Steel

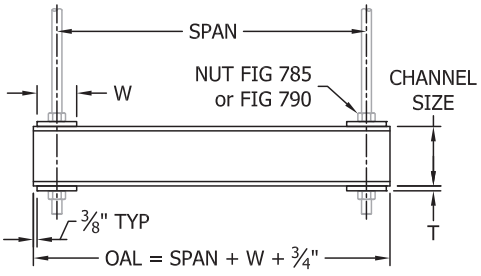
STANDARDS: MSS SP-58 Type 59, Trapeze

ORDERING: Specify figure number, channel size, overall length (OAL), span, rod size, with washer plates welded (W) or loose (L) or without (N) and finish. (Example: Fig 545-6-76.75-72-1-W-HDG)

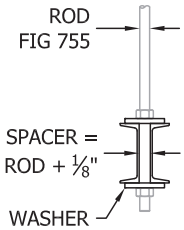


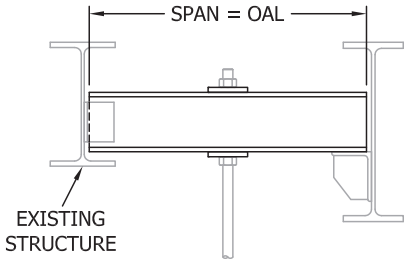
MAXIMUM RECOMMENDED LOAD								
SPAN	C3 x 4.1 8.2 lb/ft	C4 x 5.4 10.8 lb/ft	C5 x 6.7 13.4 lb/ft	C6 x 8.2 16.4 lb/ft	C8 x 11.5 23 lb/ft	C10 x 15.3 30.6 lb/ft	C12 x 20.7 41.4 lb/ft	C15 x 33.9 67.8 lb/ft
36	2900	5100	7900	11600	21700	-	-	-
48	2200	3800	5900	8700	16200	-	-	-
60	1700	3000	4700	6900	13000	21600	-	-
72	1400	2500	3900	5800	10800	18000	-	-
84	1200	2100	3400	4900	9300	15400	24500	-
96	1100	1900	2900	4300	8100	13500	21500	-
108	900	1700	2600	3800	7200	12000	19100	-
120	800	1500	2300	3400	6500	10800	17200	-
132	800	1300	2100	3100	5900	9800	15600	-
144	-	1200	1900	2900	5400	9000	14300	-
156	-	1100	1800	2600	5000	8300	13200	-
168	-	1000	1700	2400	4600	7700	12200	24000
180	-	-	1500	2300	4300	7200	11400	22400
192	-	-	1400	2100	4000	6700	10700	21000
204	-	-	1400	2000	3800	6300	10100	19700
216	-	-	-	1900	3600	6000	9500	18600
228	-	-	-	1800	3400	5600	9000	17600
240	-	-	-	1700	3200	5400	8600	16800

ROD & WASHER SELECTION		
ROD	LOAD	WASHER W x W x T
⅜	730	3 x 3 x ¼
½	1350	3 x 3 x ¼
⅝	2160	3 x 3 x ⅜
¾	3230	4 x 4 x ⅜
⅞	4480	4 x 4 x ½
1	5900	4 x 4 x ½
1⅛	7420	4 x 4 x ½
1¼	9500	4 x 4 x ½
1⅜	11290	5 x 5 x ¾
1½	13800	5 x 5 x ¾
1¾	18600	5 x 5 x ¾
2	24600	5 x 5 x ¾
See Note 2		

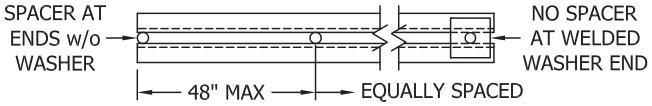


TRAPEZE HANGER





SUPPLEMENTAL STEEL



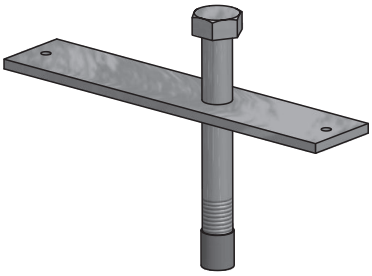
QTY (1) SPACER @ MID-SPAN 49" to 96"
QTY (2) SPACERS for SPANS 97" to 144"
QTY (3) SPACERS for SPANS 145" to 192"
QTY (4) SPACERS for SPANS 193" to 240"

NOTES:

1. Load based on simply supported beam with a concentrated load at mid-span. All deflections at mid-span less than Span/360.
2. Each rod size may be based on one half the maximum recommended load for symmetrically loaded channel assemblies. For varying load distributions, each rod size is recommended to be based on the full load unless calculations have been performed.
3. Welding in accordance with AWS D1.1.
4. Interior spacers partially welded for field removal if necessary.
5. For special designs contact factory with dimensions, material, loading, finish, and additional design criteria.

FIG. 558

Metal Deck Anchor Bolt



SERVICE: To provide a pre-positioned hanger rod attachment to the underside of concrete slabs on metal form decks. Used as a cast-in-place concrete anchor bolt on deck upper flute in 3,000 psi minimum compressive strength normal and lightweight, cracked and uncracked concrete loaded by static tensile forces from piping or similar services.

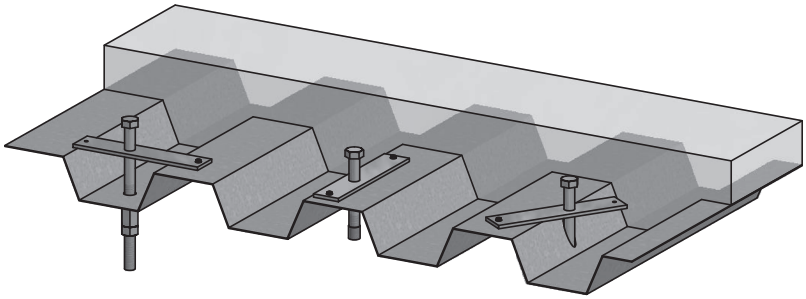
MATERIAL: Carbon Steel meeting ASTM A36 and A307 Gr A

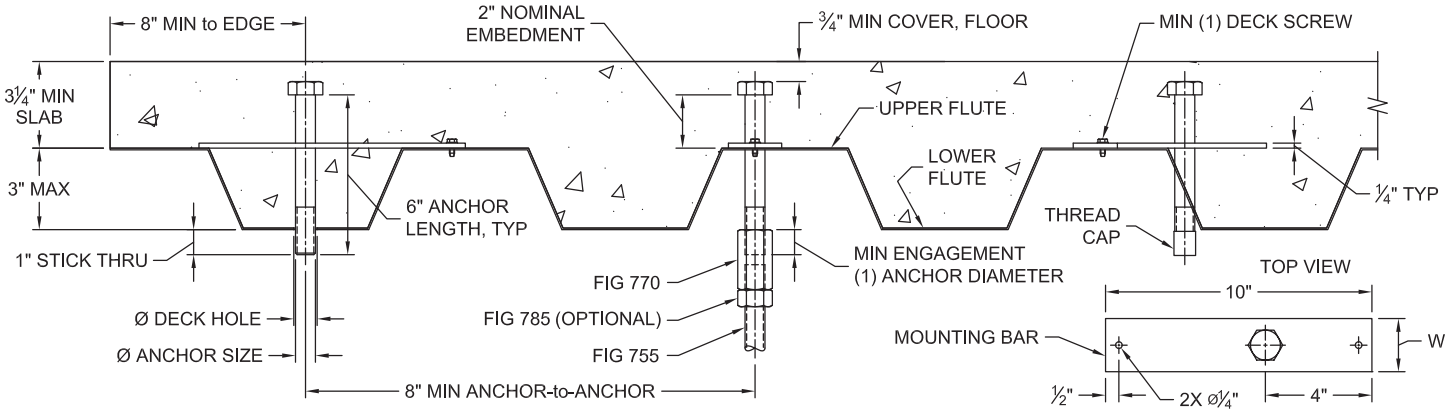
FINISH: Electro-Galvanized meeting ASTM B633

MAX TEMP: 200°F

ORDERING: Specify figure number, anchor size and finish. (Order hardware separately.)

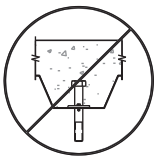
ANCHOR SIZE	WIDTH W	DECK HOLE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3/8	1 1/2	1/2	1.21	730
1/2	1 1/2	5/8	1.33	800
5/8	1 1/2	3/4	1.54	800
3/4	2	7/8	2.16	800
7/8	Contact Factory (Note 2)			
1				





NOTES:

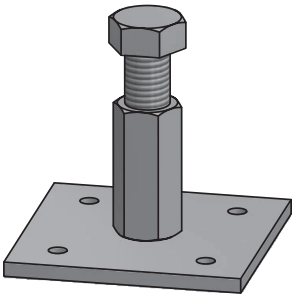
1. Safety factor of 4.0 against nominal strength calculated in accordance with American Concrete Institiute (ACI) 318, Appendix D, 2011. Maximum recommended tensile loads presented above are unfactored. Minimum concrete compressive strength = 3,000 psi. Concrete assumed cracked. Concrete breakout governs the maximum recommended tensile load. Condition B applies. Edge and spacing effects not included in maximum recommended tensile load development. Follow minimums specified above.
2. Provide concrete compressive strength and slab thickness.
3. Do not load anchor bolt until concrete has fully cured.
4. Use a minimum of one deck screw to secure anchor bolt during concrete pour. Screw may be #12 or smaller.
5. Mounting bar is not a structural element.
6. Minimum cover based on conditions not exposed to weather in accordance with ACI 318, Section 7.7.1(c).



DO NOT INSTALL IN LOWER FLUTE

FIG. 561

Female Overhead Anchor Bolt



SERVICE: To provide a pre-positioned hanger rod attachment to the underside of concrete slabs on wood forms. Used as a cast-in-place concrete anchor bolt in 3,000 psi minimum compressive strength normal and lightweight, cracked and uncracked concrete loaded by static tensile forces from piping or similar services.

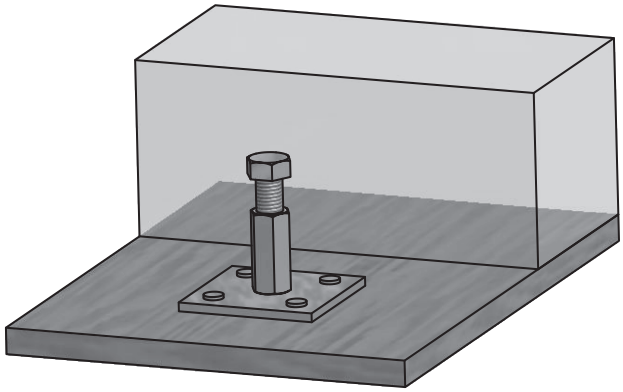
MATERIAL: Carbon Steel meeting ASTM: A36, A307 Gr A and A563 Gr A

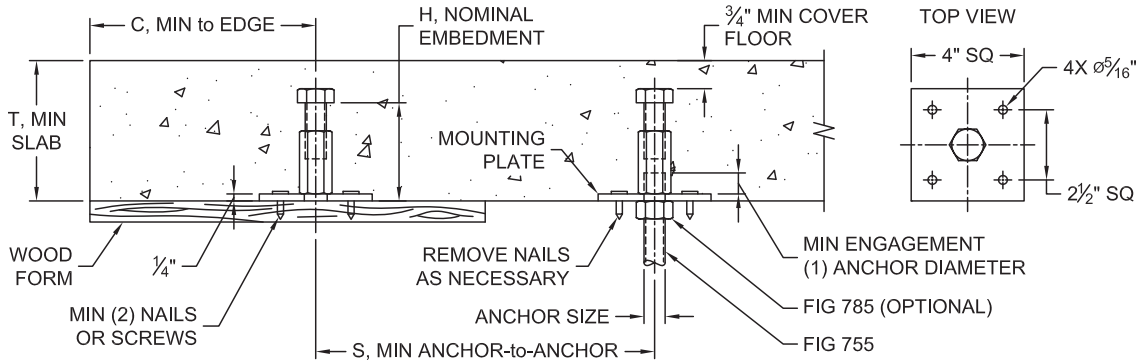
FINISH: Electro-Galvanized meeting ASTM B633

MAX TEMP: 200ºF

ORDERING: Specify figure number, anchor size, and finish. (Order hardware separately.)

ANCHOR SIZE	EMBED DEPTH "H"	MIN SLAB "T"	MIN EDGE "C"	MIN SPACING "S"	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3/8	3	4 1/2	6	12	1.20	730 †
1/2	3	4 1/2	6	12	1.40	1350 †
5/8	3 1/2	5	7	14	1.45	2160 ‡
3/4	3 1/2	5	7	14	1.68	2160 ‡
7/8	4	5 1/2	8	16	2.17	2600 ‡
1	4	6	8	16	2.26	2600 ‡
1 1/4	5	7	10	20	3.69	3600 ‡
1 1/2	6	8 1/2	12	24	5.62	4800 ‡





NOTES:

1. Safety factor of 4.0 against nominal strength calculated in accordance with American Concrete Institute (ACI) 318, Appendix D, 2011. Maximum recommended tensile loads presented above are unfactored. Minimum concrete compressive strength = 3,000 psi. Concrete assumed cracked. † pullout governs, ‡ breakout governs the maximum recommended tensile load. Condition B applies. Edge and spacing effects not included in maximum recommended tensile load development. Follow minimums specified above.
2. Do not load anchor bolt until concrete has fully cured.
3. Use a minimum two nails or screws to secure anchor bolt during concrete pour. Remove nails or screws after forms are removed.
4. Mounting plate is not a structural element.
5. Minimum cover based on conditions not exposed to weather in accordance with ACI 318, Section 7.7.1.(c).

FIG. 600

FIG. 605

Concrete Insert Box

Concrete Insert Nut

SERVICE: Heavy gauge insert box is nailed to concrete form and can accommodate ¼" to ¾" rod diameters. When concrete has set, knock out plug can be removed and insert nut installed. Side openings accommodate up to ½" reinforcing rods.

MATERIAL: Carbon Steel

FINISH: Electro-Galvanized

STANDARDS: MSS SP-58 Type 18

ORDERING: Specify figure number. (FIG. #605 Insert Nut must be ordered separately by rod size.)

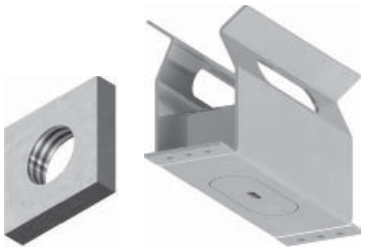


FIG. #605 FIG. #600

FIG. #600						
A	B	C	D	E	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3⅞	1¾	2⅝	13/16	2⅛	0.96	1200

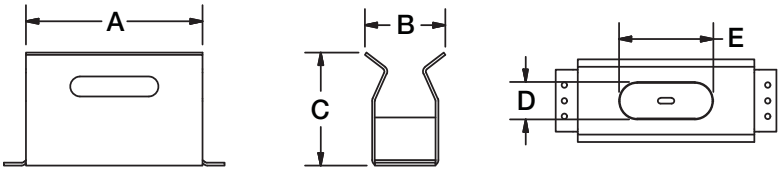


FIG. #605			
ROD SIZE A	B	C	WEIGHT EACH, LBS.
⅜	5/16	1¼	0.13
½	5/16	1¼	0.12
⅝	5/16	1¼	0.11
¾	5/16	1¼	0.10

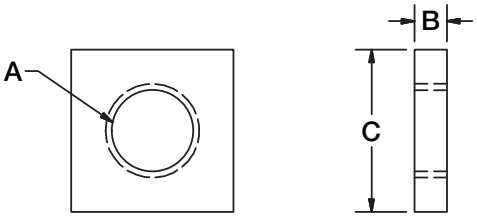


FIG. 615

FIG. 620

C-Clamp w/ Locknut

C-Clamp Retaining Strap

SERVICE: For attaching to I-beams and wide flange beams where thickness does not exceed ¾". Flange thickness may not exceed ⅝" when clamp is used with a retaining strap.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Electro-Galvanized

STANDARDS: MSS SP-58 Type 23, FS WW-H-171E Type 23

APPROVALS: FM (FIG. #615 with FIG. #620)

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

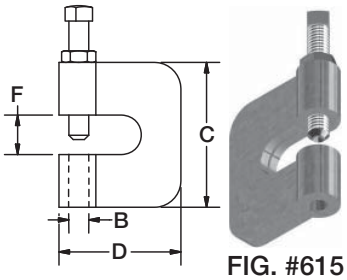


FIG. #615

FIG. #	C-CLAMP	ROD SIZE B	C	D	F	MAX PIPE SIZE	WEIGHT PER EACH, LBS.	MAX. REC. LOAD, LBS.
615	With Lock Nut	⅜	2⅜	2⅜	¾	4	0.40	400
615	With Lock Nut	½	2⅜	2⅜	¾	4	0.40	500
615	With Lock Nut	⅝	2⅜	2 5/16	¾	5	0.60	550
615	With Lock Nut	¾	2⅜	2 5/16	¾	6	0.68	630

FIG. #620 L	WEIGHT PER EACH, LBS.
4½	0.22
6	0.30
8	0.36
10	0.44
12	0.48
14	0.66

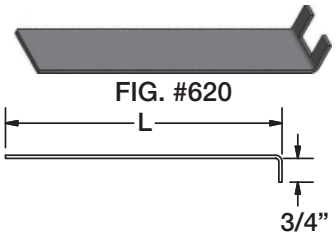


FIG. #620

FIG. 618 Purlin Clamp w/ Locknut

SERVICE: For use with large-lip steel purlin beams.
MATERIAL: Ductile Iron
FINISH: Black
STANDARDS: MSS SP-58 Type 23
ORDERING: Specify figure number and finish.

ROD SIZE A	B	C	D	E	SET SCREW	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3/8	1	1	1 7/8	1 5/8	3/8 - 16 x 3	0.92	400

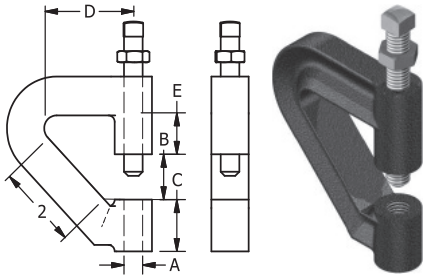
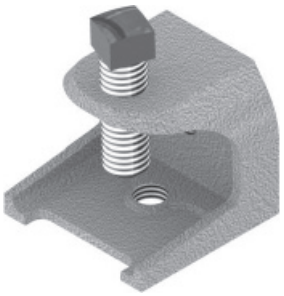


FIG. 630 Electrical Beam Clamp

SERVICE: For attaching hanger rod to beam or framework where thickness does not exceed ½". Rod tapped on both bottom and back of clamp.
MATERIAL: Malleable Iron
FINISH: Electro-Galvanized
ORDERING: Specify figure number and rod size.

ROD SIZE A	B	C	D	SET SCREW	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/4	1 3/16	1 3/8	1 3/8	5/16 - 18	0.26	335
3/8	2 1/16	1 7/8	1 3/4	1/2 - 13	0.70	525
1/2	2 1/2	2 3/8	2 3/16	1/2 - 13	1.26	750



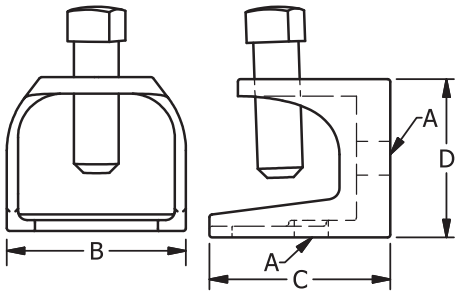
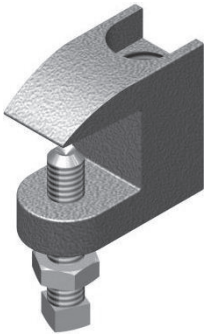


FIG. 635 Junior Top Beam Clamp



SERVICE: For use under roof installations with bar joist type construction where the thickness of the joist does not exceed 5/8".

MATERIAL: Malleable Iron casting or 304 Stainless Steel

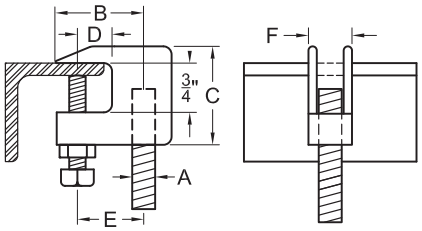
FINISH: Black or Electro-Galvanized

STANDARDS: MSS SP-58 Type 19

APPROVALS: FM NFPA 3/8" only, UL 3/8" for top of Beam only, UL 1/2" (1/2" for 4" IPS max)

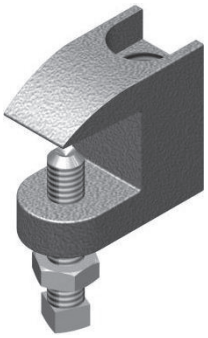
ORDERING: Specify figure number, rod size and finish. (Furnished with a hardened cup point set screw and lock nut.)

ROD SIZE A	B	C	D	E	F	MAX PIPE SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3/8	1 5/16	1 1/2	1/2	1	7/8	4	0.32	350
1/2	1 5/16	1 1/2	1/2	1	7/8	4	0.32	470
5/8	1 3/4	1 3/4	5/8	1 3/8	1 1/8	5	0.58	550
3/4	1 7/8	1 7/8	5/8	1 3/8	1 3/8	6	0.82	700
7/8	2 3/8	1 7/8	5/8	1 3/8	1 3/8	8	0.80	1000



NOTE: FIG. #635 3/8" Electro-Galvanized is substituted with a FIG. #638 Domestic Jr. Top Beam Clamp 3/8" Electro-Galvanized.

FIG. 636 Junior Top Beam Clamp, Domestic



SERVICE: For attaching hanger rod to top or bottom of flange of a beam or bar joist where thickness does not exceed 3/4".

MATERIAL: Malleable Iron casting

FINISH: Electro-Galvanized

STANDARDS: MSS SP-58 Type 19 & 23

APPROVALS: FM NFPA, UL for top & bottom of Beam

ORDERING: Specify figure number, rod size and finish. (Furnished with a hardened cup point set screw and lock nut.)

ROD SIZE A	B	C	D	E	F	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/2	1	1 1/2	1/2	1	7/8	0.39	500
5/8	1 1/2	1 1/2	1/2	1	1	0.58	600
3/4	1 7/8	1 3/4	5/8	1 3/8	1 1/4	0.82	800
7/8	2	1 3/4	5/8	1 1/2	1 1/4	0.79	1200

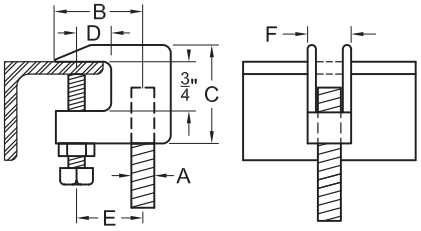


FIG. 637 Top Beam Clamp Retaining Strap

SERVICE: For use with FIG. #635, FIG. #636, FIG. #638 and FIG. #640 to eliminate movement of beam clamp due to vibration.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Electro-Galvanized

ORDERING: Specify figure number, rod size, length, material and finish. (Sizes shown are carried in stock, other sizes are also available. For proper length, add 2" to flange width and select the next size strap.)

ROD SIZE A	STOCK SIZE	LENGTH C	HOLE SIZE	WEIGHT EACH, LBS.
3/8	14ga x 1	10	7/16	0.21
1/2	14ga x 1	10	9/16	0.21
5/8	14ga x 1 1/4	10	11/16	0.24
3/4	14ga x 1 1/4	10	13/16	0.24
7/8	14ga x 2	10	15/16	0.43

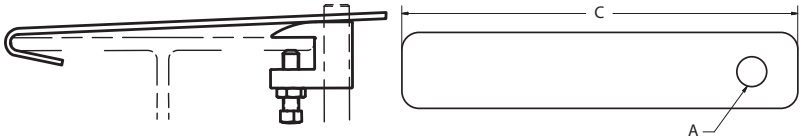


FIG. 638 Junior Top Beam Clamp, Domestic

SERVICE: For attaching hanger rod to top or bottom flange of a beam or a bar joist, where thickness does not exceed 3/4". The open back design permits rod adjustment and visual verification during installation.

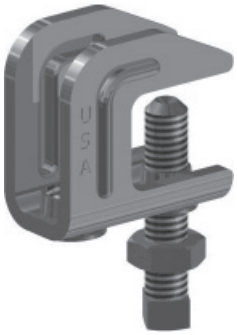
MATERIAL: Carbon Steel or 304 Stainless Steel

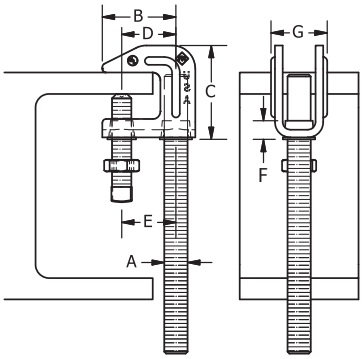
FINISH: Electro-Galvanized

STANDARDS: MSS SP-58 Type 19 & 23, FS WW-H-171E

APPROVALS: FM NFPA, UL for top of Beam

ORDERING: Specify figure number, rod size, and finish. (Furnished with a hardened cup point set screw and lock nut.)





ROD SIZE "A"	B	C	D	E	F	G	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS
3/8	1 13/16	1 5/8	17/32	3/4	3/8 min.	15/16	0.20	400

FIG. 640 Wide Top Beam Clamp

SERVICE: For use under roof installations with bar joist type construction where the thickness of the joist does not exceed 1¼".

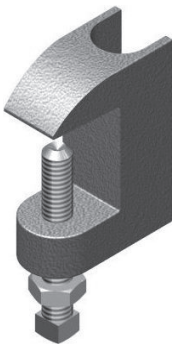
MATERIAL: Malleable Iron casting

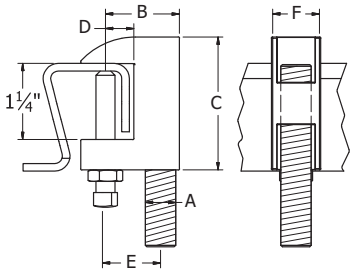
FINISH: Black or Electro-Galvanized

STANDARDS: MSS SP-58 Type 19

APPROVALS: FM 3/8" only, UL 3/8" and 1/2" (1/2" for 4" IPS max)

ORDERING: Specify figure number, rod size, and finish. (Furnished with a hardened cup point set screw and lock nut.)





ROD SIZE "A"	B	C	D	E	F	MAX. PIPE SIZE	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3/8	1 3/8	2	1/2	1	7/8	4	0.55	400
1/2	1 3/8	2	1/2	1	7/8	4	0.56	500
5/8	1 7/8	2 3/8	5/8	1 3/8	1 1/4	5	0.66	850
3/4	1 7/8	2 3/8	5/8	1 3/8	1 1/4	6	0.83	900

FIG. 645

FIG. 650

Welding Beam Attachment

Welding Beam Attachment w/ Bolt and Nut

SERVICE: To provide hanger rod attachment to structural member bottom flange. Used to provide vertical hanger rod adjustment or to permit horizontal pipe movement through hanger rod rotation for pipe support assemblies loaded by static and dynamic tensile forces from piping or similar services.

MATERIAL: Carbon Steel meeting ASTM: A36, A307 Gr A and A563 Gr A
Stainless Steel Type 304 and 316 meeting ASTM: A240, F593 and F594

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: 650°F for Black Carbon Steel and Stainless Steel
350°F for Hot-Dip Galvanized Carbon Steel

STANDARDS: MSS SP-58 Type 22, FS WW-H-171E Type 22

ORDERING: Specify figure number, rod size, material and finish. (Order hardware separately.)

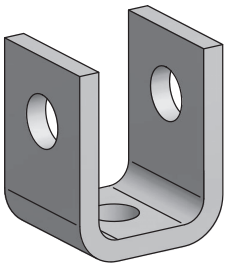


FIG. #645

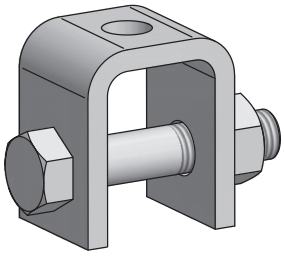


FIG. #650

SIZE	T x W	BOLT B	E	G	F	R	S	H	X	WEIGHT EACH, LBS.		MAX. REC. LOAD, LBS.
										FIG. #645	FIG. #650	
3/8	3ga x 2	1/2 x 2 3/4	2	4 1/2	2	7/8	1 1/2	9/16	1/4	0.835	1.055	730
1/2	3ga x 2	5/8 x 2 3/4	2	4 1/2	2	7/8	1 1/2	11/16	1/4	0.79	1.15	1350
5/8	3ga x 2	3/4 x 3	2	4 3/8	2	7/8	1 1/2	13/16	1/4	0.77	1.35	2160
3/4	3/8 x 2 1/2	7/8 x 4	2	4 1/4	2	1 1/8	1 15/16	15/16	5/16	1.64	2.56	3230
7/8	3/8 x 2 1/2	1 x 4	3	6 1/8	3	1 1/4	2 1/16	1 1/16	5/16	2.24	3.60	4480
1	1/2 x 3	1 1/8 x 5 1/2	3	6 1/8	3	1 1/2	2 3/4	1 1/4	5/16	4.07	6.45	5900
1 1/8	1/2 x 3	1 1/4 x 5 1/2	3	7 1/16	3	1 3/4	2 3/4	1 3/8	3/8	4.10	7.22	7420
1 1/4	5/8 x 4	1 3/8 x 6 †	3	7	3	2	3	1 1/2	3/8	7.28	9.82	9500
1 1/2	3/4 x 5	1 5/8 x 6 1/2 †	4	7 7/8	4	2 1/2	3 1/2	1 3/4	3/8	14.49	18.31	13800
1 3/4	3/4 x 5	1 7/8 x 6 7/8 †	5	12 5/8	5	2 3/4	3 3/4	2	3/8	16.53	21.86	18600
2 ‡	3/4 x 6	2 1/4 x 6 7/8 †	5	12 7/16	5 1/4	3 1/4	3 3/4	2 3/8	3/8	24.94	32.84	24600

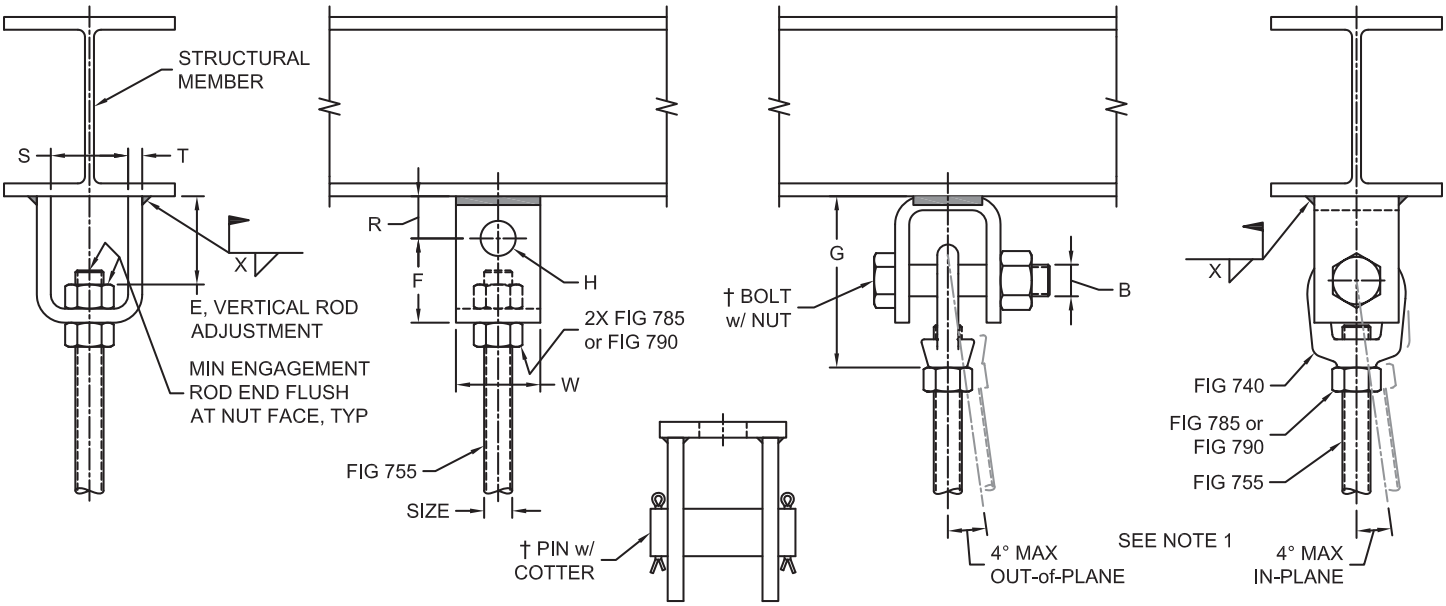


FIG 645
w/o BOLT AND NUT

‡ WELDED CONSTRUCTION

FIG 650
w/ BOLT AND NUT

Notes:

† FIG. #650 bolt and nut replaced by pin with cotters.

‡ FIG. #645 and FIG. #650 welded construction. Weld all-around to structural member.

1. Maximum hanger rod in-plane and out-of-plane rotation resultant ≤ 4° per MSS SP-58. Pipe attachment shall provide rotation.
2. Welding in accordance with AWS D1.1 for carbon steel with 70000 psi filler metal and AWS D1.6 for stainless steel with 80000 psi filler metal.
3. Welding may be all-around to structure as necessary.

FIG. 646

FIG. 647

Concrete Rod Attachment Plate

Concrete Clevis Plate

SERVICE: To provide hanger rod attachment to the underside of concrete slabs. Allows vertical hanger rod adjustment or permits horizontal pipe movement through hanger rod rotation. Attached by post-installed or cast-in-place anchor bolts in 3,000 psi minimum compressive strength normal weight and lightweight, cracked and uncracked concrete loaded by static tensile forces from piping or similar services.

MATERIAL: Carbon Steel meeting ASTM: A36, A307 Gr A and A563 Gr A
Stainless Steel Type 304 and 316 meeting ASTM: A240, F593 and F594

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: 650ºF for Black Carbon Steel and Stainless Steel
350ºF for Hot-Dip Galvanized Carbon Steel

ORDERING: Specify figure number, rod size, material and finish. (Order anchor bolts and hardware separately.)

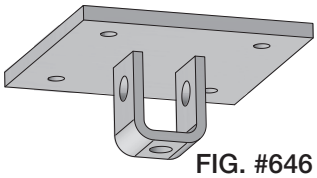


FIG. #646

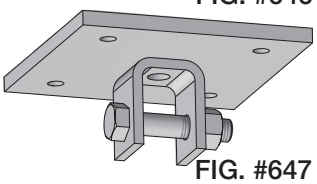


FIG. #647

SIZE	T x W	BOLT B	A	C	E	F	G	H	J	K	P	Q	R	S	V	Y	WEIGHT EACH, LBS.		MAX. REC. LOAD, LBS.
																	FIG. #646	FIG. #647	
3/8	3ga x 2	1/2 x 2 3/4	1	10	2	2	4 7/8	9/16	3/8	9/16	1/2	2	4	1 1/2	3	6	11.6	11.9	730
1/2	3ga x 2	5/8 x 2 3/4	1	10	2	2	4 7/8	11/16	3/8	9/16	1/2	2	4	1 1/2	3	6	11.6	12.0	1350
5/8	3ga x 2	3/4 x 3	1	10	2	2	4 7/8	13/16	1/2	9/16	1/2	2	4	1 1/2	3	6	15.2	15.8	2160
3/4	3/8 x 2 1/2	7/8 x 3 1/2	1	10	2	2	4 3/4	15/16	1/2	11/16	5/8	2 3/4	6	1 9/16	5	10	16.1	17.0	3230
7/8	3/8 x 2 1/2	1 x 4	1	10	3	3	6 5/8	1 1/16	1/2	11/16	5/8	2 3/4	6	2 1/16	5	10	16.7	18.1	4100
1	1/2 x 3	1 1/8 x 5 1/2	2	12	3	3	6 7/8	1 1/4	3/4	13/16	3/4	3 1/8	6	2 3/4	6	12	35.0	36.9	5400
1 1/8	1/2 x 3	1 1/4 x 5 1/2	2	12	3	3	7 13/16	1 3/8	3/4	15/16	7/8	3 1/2	10	2 3/4	6	12	35.2	37.9	5800
1 1/4	5/8 x 4	1 3/8 x 6†	2	12	3	3	7 3/4	1 1/2	3/4	15/16	7/8	3 1/2	10	3	6	12	40.9	43.0	5800
1 1/2	3/4 x 5	1 5/8 x 6 1/2†	2	12	4	4	8 7/8	1 3/4	1	1 1/8	1	4 3/8	10	3 1/2	7	14	57.6	60.0	5800

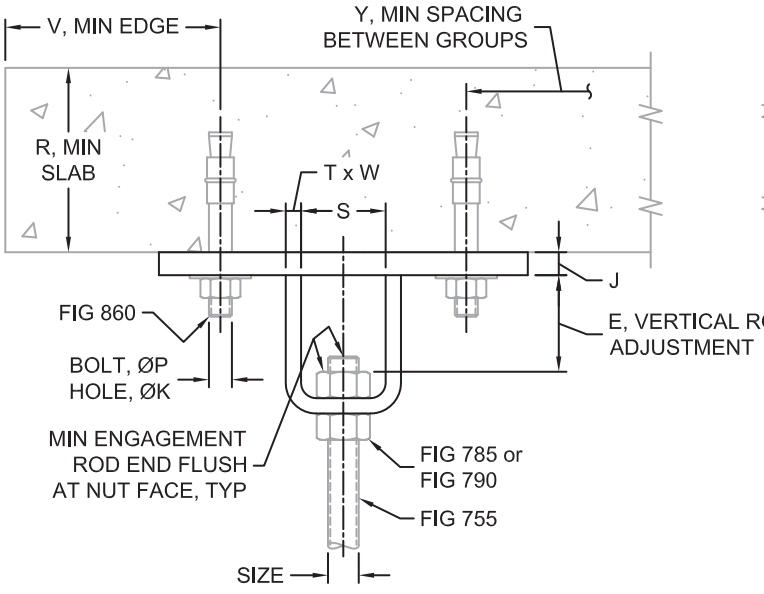


FIG 646
w/o BOLT AND NUT

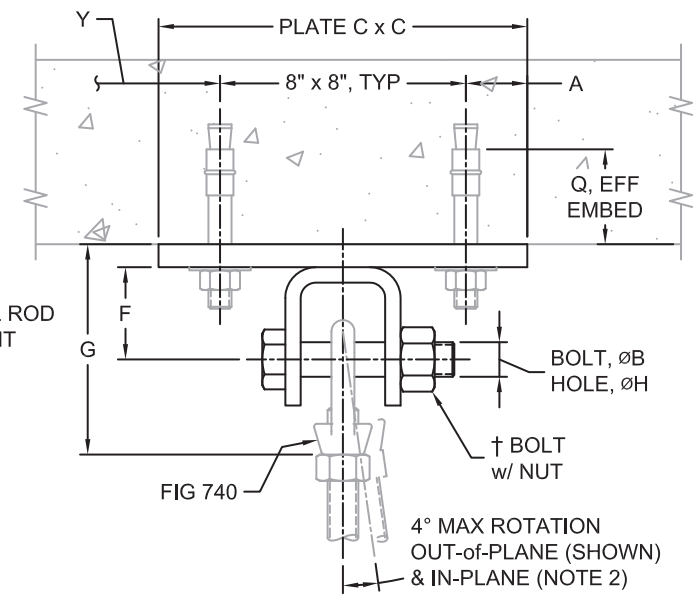


FIG 647
w/ BOLT AND NUT

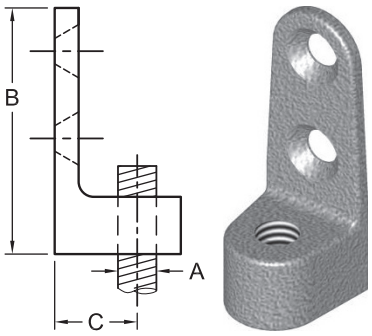
Notes:

† Figure 647 bolt and nut replaced by pin with cotters.

1. Concrete attachment based on Powers Fasteners Power-Stud+ SD1 post-installed wedge expansion anchor bolt in 3,000 psi minimum compressive strength cracked concrete. Concrete failure modes in accordance with American Concrete Institute (ACI) 318, Appendix D, 2011. Minimum safety factor of 3.5 and 4.0 for steel and concrete failure modes, respectively. Maximum recommended loads presented above are unfactored. Condition B applies.
2. Maximum hanger rod in-plane and out-of-plane rotation resultant ≤ 4º per MSS SP-58. Pipe attachment shall provide rotation.
3. Other anchor bolt types and embedment depth combinations may be used. Contact factory for assistance.

FIG. 655 Side Beam Connector

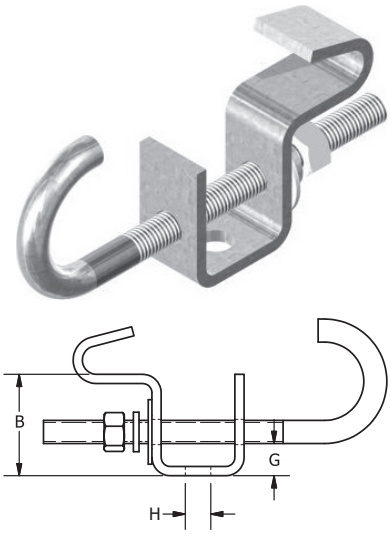
SERVICE: For mounting to the side of wood beams. Bottom hole is tapped for rod.
MATERIAL: Malleable Iron
FINISH: Black or Electro-Galvanized
STANDARDS: MSS SP-58 Type 34
ORDERING: Specify figure number, rod size, and finish.



SIZE NO.	ROD SIZE A	B	C	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1	3/8	2 1/8	5/8	0.13	250
2	1/2	2 3/4	3/4	0.29	480

FIG. 665 Adjustable Rod Beam Clamp

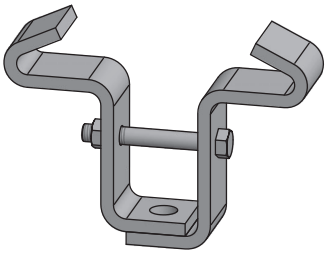
SERVICE: To be used in the suspension of a hanger rod from an I-beam. Recommended for the attachment of beams where the flange widths are from 4” to 8”.
MATERIAL: Carbon Steel
FINISH: Electro-Galvanized
STANDARDS: MSS SP-58 Type 27
ORDERING: Specify figure number and rod size.



ROD SIZE	G	H	B	STOCK SIZE	ADJUSTMENT MIN.	ADJUSTMENT MAX.	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3/8	1 1/16	7/16	2	3ga x 1 1/4	3 1/2	8	0.98	300
1/2	1	9/16	2	3ga x 1 1/2	3 1/2	8	1.38	700
5/8	15/16	11/16	2	3ga x 1 3/4	3 1/2	8	1.86	1000

FIG. 675

Adjustable Center Beam Clamp



SERVICE: To hang piping with a threaded rod from the bottom center of wide flange beams (W-Shape) or American standard beams (S-Shape). Provides vertical hanger rod adjustment. For hanger assemblies loaded by static tensile forces from piping or similar services.

MATERIAL: Carbon Steel meeting ASTM: A36, A307 Gr A, and A563 Gr A
Stainless Steel Type 304 and 316 meeting ASTM: A240, F593, and F594

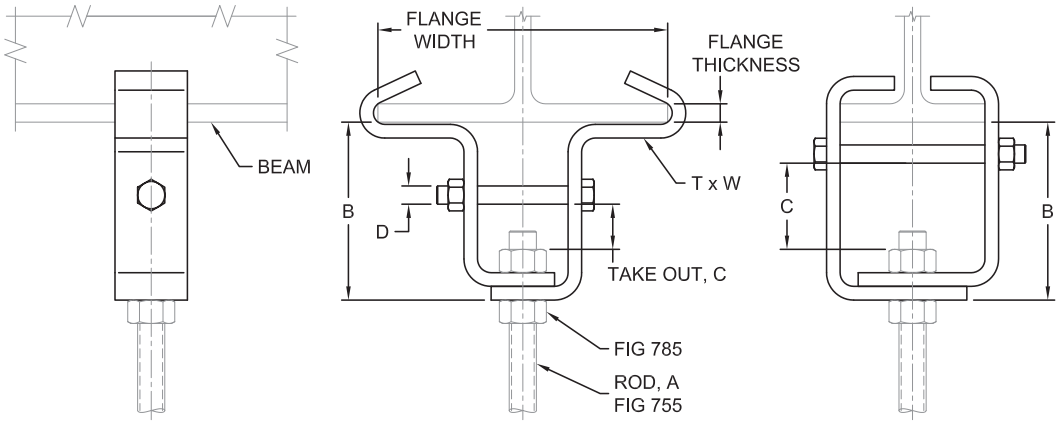
FINISH: Electro-Galvanized meeting ASTM B633

MAX TEMP: 650ºF for Stainless Steel
350ºF for Electro-Galvanized Carbon Steel

STANDARDS: MSS SP-58 Type 21, FS WW-H-171E Type 21

ORDERING: Specify figure number, size, flange width, flange thickness, material and finish. (Order installation hardware separately.)

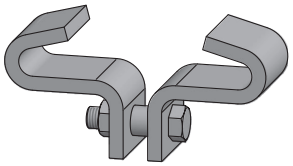
SIZE	T x W	A	B	C	D	MAX FLANGE THICKNESS	WEIGHT EACH lbs - FLANGE WIDTH in							MAX. REC. LOAD, LBS.
							4	5	5½	6	6½	7	8	
2	¼ x 1½	½	4	1¾	½	½	2.0	2.1	2.2	2.2	2.3	2.3	2.4	850
3	⅜ x 1½	⅝	4½	2	½		2.9	3.1	3.3	3.3	3.5	3.5	3.7	1100
4	⅜ x 2	¾	4½	1	½		3.9	4.1	4.3	4.3	4.5	4.5	4.7	1500
5 Std	½ x 2	⅞	5	1	½		6.0†	6.2†	6.3	6.3	6.6	6.6	6.9	2600
5 Box †			5	2										
6 Std	½ x 2½	1	5	¾	⅝		8.0†	8.7†	9.1†	8.0	8.4	8.4	8.8	4300
6 Box †			5¼	2										



Notes:
1. For flange widths greater than 8" use FIG. #695.
2. B dimension may vary ¼" due to flange thickness variations.
3. When ordering, flange width and flange thickness may be specified by the AISC W-Shape or S-shape designation, e.g., W8x35.

FIG. 680

Center Beam Clamp



SERVICE: To hang piping with a threaded rod from the bottom center of wide flange beams (W-Shape) or American standard beams (S-Shape). Permits horizontal pipe movement through hanger rod rotation. For hanger assemblies loaded by static tensile forces from piping or similar services.

MATERIAL: Carbon Steel meeting ASTM: A36, A500 Gr B, A307 Gr A and A563 Gr A
Stainless Steel Type 304 and 316 meeting ASTM: A240, A312, F593 and F594

FINISH: Electro-Galvanized meeting ASTM B633

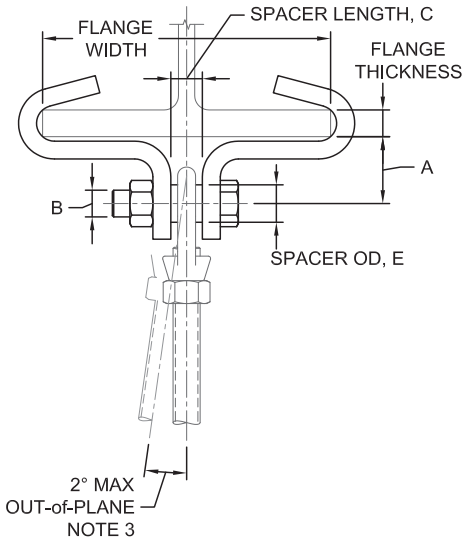
MAX TEMP: 650ºF for Stainless Steel
350ºF for Electro-Galvanized Carbon Steel

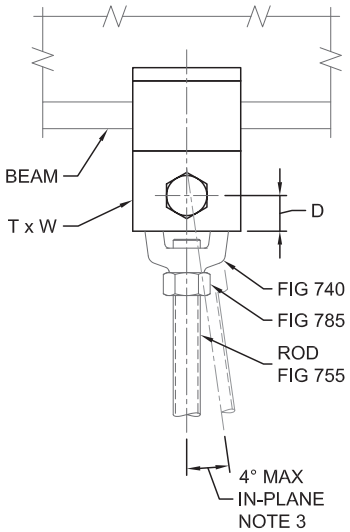
STANDARDS: MSS SP-58 Type 21, FS WW-H-171E Type 21

ORDERING: Specify figure number, size, flange width, flange thickness, material and finish. (Order installation hardware separately.)

FLANGE		WEIGHT EACH, LBS.	
WIDTH	MAX THK	SIZE 2	SIZE 5
4	½	1.1	3.8
5	⅝	1.2	4.1
5½	⅝	1.3	4.4
6	¾	1.3	4.4
6½	¾	1.4	4.7
7	⅞	1.4	4.7
8	⅞	3.3	5.0
9	1	3.7	7.0
10	1	4.1	7.5
12	1	4.9	10.1

SIZE	FLANGE	T X W	A	B	C	D	E	REC. ROD	MAX. ROD	MAX. REC. LOAD, LBS.
2	4 to 7	¼ x 1¼	1⅛	½	⅝	⅝	0.840	½	¾	1000
	8 to 12	⅜ x 2	1⅜							
5	4 to 10	½ x 2	2	¾	⅞	1	1.050	¾	1	3000
	12	½ x 3								

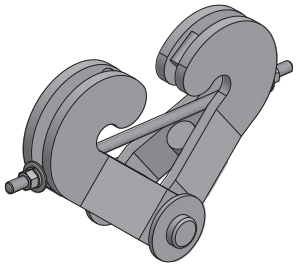




Notes:
1. For flange widths greater than 12" use FIG. #695.
2. When ordering, flange width and flange thickness may be specified by the AISC W-Shape or S-shape designation, e.g., W8x35.
3. Maximum hanger rod-in-plane and out-of-plane rotation resultant ≤ 4° per MSS SP-58. Pipe attachment shall provide rotation.
4. Recommended rod size based on maximum load. Maximum rod size based on dimension "C" and FIG. #740 Weldless Eye Nut bail size.

FIG. 695

Beam Clamp Assembly



SERVICE: To hang piping with a single threaded rod from the bottom center of wide flange beams (W-shape) or American standard beams (S-shape). Provides vertical hanger rod adjustment. Permits horizontal pipe movement through hanger rod rotation. For hanger assemblies loaded by static tensile forces from piping or similar services.

MATERIAL: Carbon Steel meeting ASTM: A36, A307 Gr A, A563 Gr A
Stainless Steel Type 304 and 316 meeting ASTM: A240, F593, and F594

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

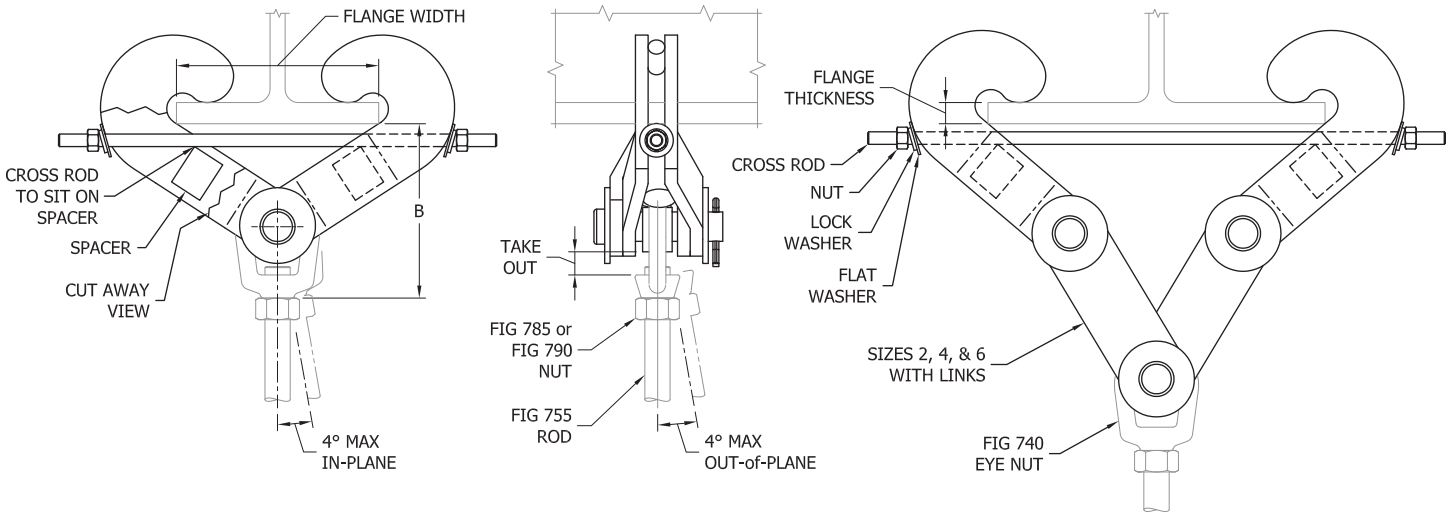
MAX TEMP: 650°F for Black Carbon Steel and Stainless Steel
350°F for Hot-Dip Galvanized Carbon Steel

STANDARDS: MSS SP-58 Type 28 and Type 29, FS WW-H-171E Type 28 and Type 29

ORDERING: Specify figure number, size, flange width, flange thickness, rod size, material and finish. (Order FIG. #740 Weldless Eye Nut and hardware separately.)

SIZE	MAX FLG THK	FLG WIDTH	MAX ROD	TAKE OUT	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1	5/8	4 to 8	3/4	11/16	7.2	3230
2	5/8	7 to 15	3/4	11/16	13.6	3230
3	3/4	4 to 8	1	11/16	9.8	5900
4	3/4	7 to 15	1	11/16	17.4	5900
5	1	5 to 9	1 1/2	1 11/16	25.5	13800
6	1	8 to 16	1 1/2	1 11/16	42.8	13800

SIZE	DIMENSION B (±1/4") FLANGE WIDTH												
	4	5	6	7	8	9	10	11	12	13	14	15	16
1	5 9/16	5 3/8	5 3/16	4 15/16	4 3/8	-	-	-	-	-	-	-	-
2	-	-	-	9 15/16	9 13/16	9 5/8	9 3/8	9 1/8	8 13/16	8 7/16	8 1/16	7 5/8	-
3	6 1/2	6 5/16	6 1/8	5 7/8	5 5/16	-	-	-	-	-	-	-	-
4	-	-	-	10 7/8	10 3/4	10 9/16	10 5/16	10 1/16	9 3/4	9 3/8	9	8 9/16	-
5	-	8 5/8	8 3/8	8 1/16	7 5/8	7 3/16	-	-	-	-	-	-	-
6	-	-	-	-	12 7/8	12 3/4	12 9/16	12 3/8	12 1/8	11 7/8	11 7/16	11 1/8	10 9/16



Notes:

1. When ordering, flange width and flange thickness may be specified by the AISC W-shape or S-shape designation, e.g., W8x35.
2. Hanger rod in-plane and out-of-plane rotation resultant shall be ≤ 4° per MSS SP-58.
3. Maximum load based on FIG. #755 Continuous Threaded Rod. Smaller rod sizes may be used. See FIG. #755 for load rating.
4. Installation: Prior to tightening, cross rod shall sit on both spacers. Tighten nuts until cross rod bends slightly. Lock washers may not flatten.

FIG. 685

Malleable Beam Clamp

FIG. 690

Malleable Beam Clamp w/ Extension Piece

SERVICE: For the attachment to bottom flange of I-beam and wide flange beams where flange widths are from 2⅜" - 7" and the flange thickness does not exceed .60 inches. The extension piece provides 1" of vertical adjustment.

MATERIAL: Malleable Iron and Steel

FINISH: Black or Electro-Galvanized

STANDARDS: MSS SP-58 Type 30 (FIG. #690)

ORDERING: Specify figure number, rod size and finish.

FIG. #685

FIG. #690

ROD SIZE A	ROD TAKEOUT FOR WIDTH OF BEAM FLANGE "B"						BOLT DIA.	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
	2⅜	3	4	5	6	7			
CLAMP ONLY	3 1/2	3 7/16	3 5/16	2 15/16	2 9/16	1 7/8	7/16	2.49	1365
3/8	4 3/4	4 11/16	4 9/16	4 3/16	3 13/16	3 1/8	7/16	2.68	610
1/2	4 7/8	4 13/16	4 11/16	4 5/16	3 15/16	3 1/4	7/16	2.90	1130
5/8	4 15/16	4 7/8	4 3/4	4 3/8	4	3 5/16	7/16	2.91	1365
3/4	5 3/16	5 1/8	5	4 5/8	4 1/4	3 9/16	7/16	3.17	1365
7/8	5 1/4	5 3/16	5 1/16	4 11/16	4 5/16	3 5/8	7/16	3.27	1365

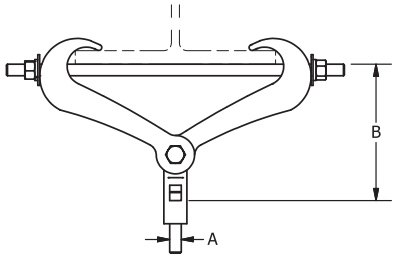


FIG. 700

Light Welded Steel Bracket

SERVICE: For the support of loads up to 750 Lbs. Constructed of facing angle irons with 1" space between. This bracket provides maximum lateral adjustment when carrying or suspending pipe.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Hot-Dip Galvanized

STANDARDS: MSS SP-58 Type 31, FS WW-H-171E Type 32

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

CARBON STEEL									
SIZE NO.	C-C	A	E	H	B	L	ANGLE SIZE S	W	WEIGHT EACH, LBS.
0	11 1/2	9	2	13/16	3/4	13	1 x 1 x 3/16	3	6.63
1	15 1/2	13	2	13/16	3/4	17	1 x 1 x 3/16	3	9.33
2	21 1/2	19	2	13/16	3/4	23	1 x 1 x 3/16	3	13.34

STAINLESS STEEL									
SIZE NO.	C-C	A	E	H	B	L	ANGLE SIZE S	W	WEIGHT EACH, LBS.
0	11 1/2	9	2	13/16	3/4	13	1 x 1 x 3/16	3	7.00
1	15 1/2	13	2	13/16	3/4	17	1 x 1 x 3/16	3	9.62
2	21 1/2	19	2	13/16	3/4	23	1 x 1 x 3/16	3	13.73

NOTE: Stainless steel dimensions may change due to availability of stainless steel angle.

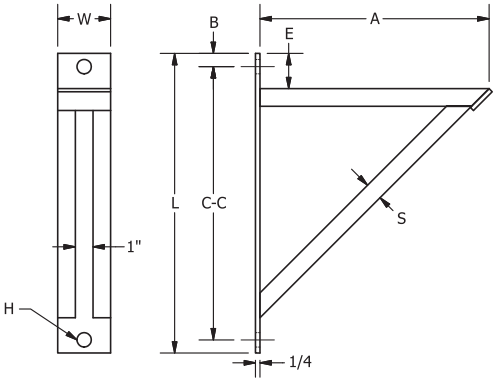


FIG. 705 Medium Welded Steel Bracket

SERVICE: For the support of loads up to 1,500 Lbs. Constructed of facing angle irons with 1" space between. This bracket provides maximum lateral adjustment when carrying or suspending pipe.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 32, FS WW-H-171E Type 33
ORDERING: Specify figure number, size, material and finish.

CARBON STEEL									
SIZE NO.	C-C	A	E	H	B	L	ANGLE SIZE S	W	WEIGHT EACH, LBS.
0	15 1/2	12	2 1/2	13/16	1 1/4	18	1 1/2 x 1 1/2 x 3/16	4	15.67
1	21 1/2	18	2 1/2	13/16	1 1/4	24	1 3/4 x 1 3/4 x 3/16	4 1/2	25.90
2	27 1/2	24	2 1/2	13/16	1 1/4	30	2 x 2 x 1/4	5	44.87

STAINLESS STEEL									
SIZE NO.	C-C	A	E	H	B	L	ANGLE SIZE S	W	WEIGHT EACH, LBS.
0	15 1/2	12	2 1/2	13/16	1 1/4	18	1 1/2 x 1 1/2 x 3/16	4	16.50
1	21 1/2	18	2 1/2	13/16	1 1/4	24	2 x 2 x 1/4	5	35.00
2	27 1/2	24	2 1/2	13/16	1 1/4	30	2 x 2 x 1/4	5	46.00

NOTE: Stainless steel dimensions may change due to availability of stainless steel angle.

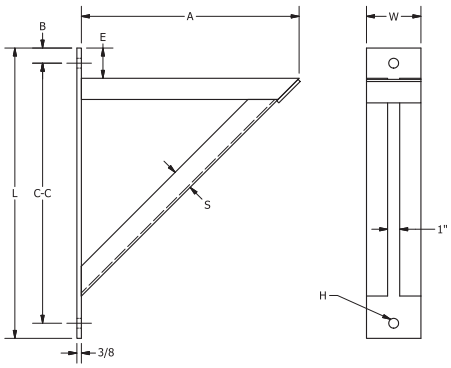


FIG. 710 Heavy Welded Steel Bracket

SERVICE: For the support of loads up to 3,000 Lbs. Constructed of facing angle irons with 1" space between. This bracket provides maximum lateral adjustment when carrying or suspending pipe.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 33, FS WW-H-171E Type 34
ORDERING: Specify figure number, size, material and finish.

CARBON STEEL										
SIZE NO.	C-C	A	B	E	F	H	L	ANGLE SIZE S	W	WEIGHT EACH, LBS.
0	15 1/2	12	1 3/8	2 3/4	1 Hole	13/16	18	2 x 1 1/2 x 1/4	4	25.00
1	21 3/8	18	1 3/8	2 3/4	2 3/4	15/16	24	2 x 2 x 1/4	5	38.00
2	27 1/2	24	1 1/4	2 3/4	2 1/2	1 1/8	30	2 1/2 x 2 x 3/8	5	69.00
3	33 1/4	30	1 1/2	3	2 1/2	1 1/8	36	2 1/2 x 2 x 3/8	5	82.10
4	39	36	1 1/2	3	3 1/2	1 1/8	42	3 1/2 x 2 1/2 x 3/8	6	130.00
5	46	42	2	3 1/2	3 1/2	1 1/8	50	3 1/2 x 2 1/2 x 3/8	6	162.00

STAINLESS STEEL										
SIZE NO.	C-C	A	B	E	F	H	L	ANGLE SIZE S	W	WEIGHT EACH, LBS.
0	15 1/2	12	1 3/8	2 3/4	1 Hole	13/16	18	2 x 2 x 1/4	5	27.45
1	21 3/8	18	1 3/8	2 3/4	2 3/4	15/16	24	2 x 2 x 1/4	5	40.00
2	27 1/2	24	1 1/4	2 3/4	2 1/2	1 1/8	30	2 1/2 x 2 1/2 x 3/8	6	74.00
3	33 1/4	30	1 1/2	3	2 1/2	1 1/8	36	2 1/2 x 2 1/2 x 3/8	6	95.00
4	39	36	1 1/2	3	3 1/2	1 1/8	42	3 1/2 x 3 1/2 x 3/8	8	162.00
5	46	42	2	3 1/2	3 1/2	1 1/8	50	3 1/2 x 3 1/2 x 3/8	8	193.00

NOTE: Stainless steel dimensions may change due to availability of stainless steel angle.

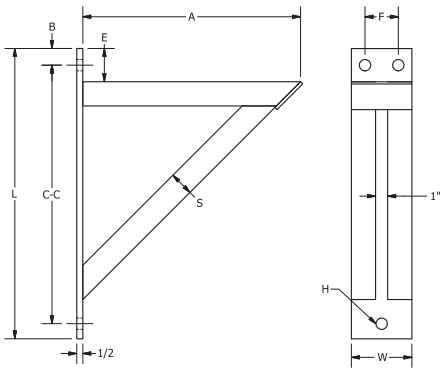


FIG. 715

FIG. 720

Light Welded Steel Bracket
Side Clip

SERVICE: For the suspension of hanger rods from steel columns or walls. Using a FIG. #720 clip which consists of two steel plates joined by a bolt and nut in one end, rod can be suspended at any point along the length of the bracket, thus providing horizontal adjustment.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Hot-Dip Galvanized

STANDARDS: MSS SP-58 Type 31

ORDERING: Specify figure number, bracket size number, clip number (if required) material and finish. (Piping suspended from FIG. #720 clip must not exceed 3½" in diameter. Clip must be ordered separately.)

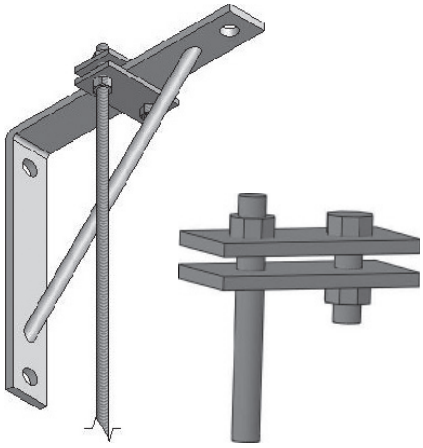


FIG. #715							
BRACKET SIZE	B	C-C	HOLE SIZE	L	STOCK SIZE S	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1	8	6 1/2	13/16	9	3/8 x 2	4.2	750
2	12	10 1/2	13/16	13	3/8 x 2	6.5	750
3	18	16 1/2	13/16	19	3/8 x 2	9.4	750

FIG. #720			
CLIP NUMBER	PIPE SIZE	ROD SIZE A	WEIGHT EACH, LBS.
1	3/4 TO 2	3/8	0.80
2	2 1/2 TO 3 1/2	1/2	1.24

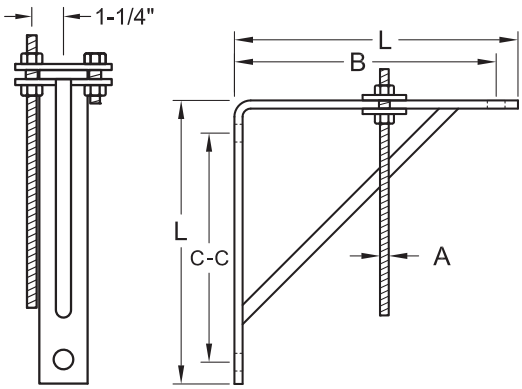


FIG. 730

Turnbuckle

SERVICE: For providing adjustment up to 6" for heavy loads.

MATERIAL: Carbon Steel

FINISH: Black or Hot-Dip Galvanized

STANDARDS: MSS SP-58 Type 13, FS WW-H-171E Type 13

ORDERING: Specify figure number, rod size and finish.

ROD SIZE	BODY LENGTH	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS. 650°F
3/8	7 1/8	0.42	1200
1/2	7 9/16	0.65	2200
5/8	7 7/8	0.98	3500
3/4	8 1/8	1.45	5200
7/8	8 5/8	1.85	7200
1	8 7/8	2.60	9300
1 1/8	9 1/8	4.06	11600
1 1/4	9 1/8	4.00	15200
1 1/2	9 3/4	6.15	21000

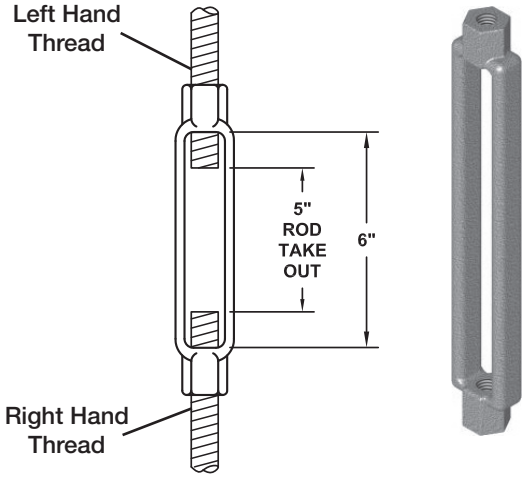
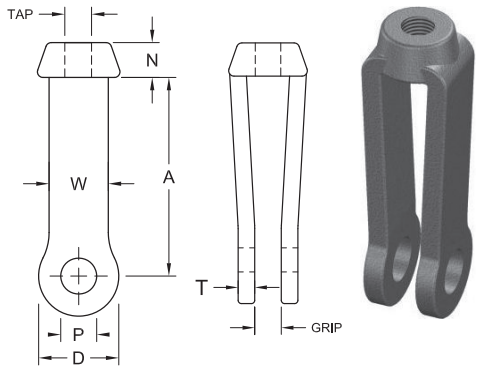


FIG. 735 Forged Steel Clevis

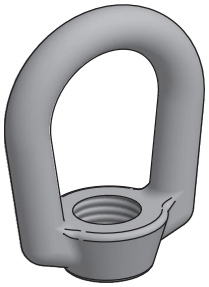
SERVICE: For use on high temperature piping installations.
MATERIAL: Carbon Steel
FINISH: Black or Hot-Dip Galvanized
STANDARDS: MSS SP-58 Type 14, FS WW-H-171E Type 14
ORDERING: Specify figure number, size, rod tapping size, pin hole size, pin size (if required), grip size and finish.



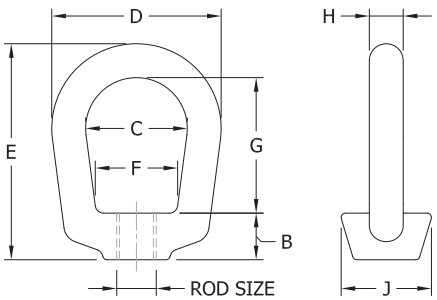
ROD SIZE (TAP)	GRIP	BODY SIZE	A	D	T	N	W	PIN SIZE P	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS. 650°F
3/8	1/2	#2	3 9/16	1 7/16	5/16	5/8	1 1/16	1/2	1.7	610
1/2	1/2							5/8		1130
5/8	5/8							3/4		1810
3/4	3/4	#2.5	4	2 1/2	5/16	1	1 1/4	7/8	2.5	2710
7/8	7/8							1		3770
1	1	#3	5 1/16	3	1/2	1 1/4	1 1/2	1 1/8	4.0	4960
1 1/8	1 1/8							1 1/4		6230
1 1/4	1 1/4							1 1/2		8000
1 1/2	1 1/2	#3.5	6	3 1/2	1/2	1 1/2	1 3/4	1 5/8	6.0	11630

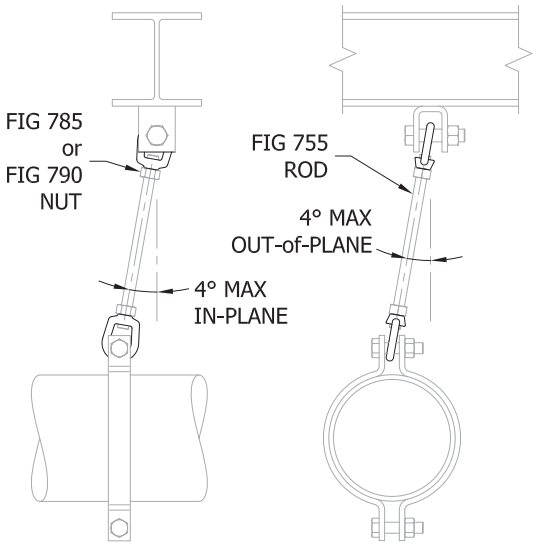
FIG. 740 Weldless Eye Nut

SERVICE: Recommended for use on pipe hanger assemblies between pipe attachment and structural attachment. Provides vertical hanger rod adjustment. Permits horizontal pipe movement through hanger rod rotation. For hanger assemblies loaded by static and dynamic tensile forces from piping or similar services.
MATERIAL: Carbon Steel meeting AISI C-1030
Stainless Steel Type 316 meeting ASTM A182
FINISH: Black or Hot-Dip Galvanized meeting ASTM A153
MAX TEMP: 650°F for Black Carbon Steel and Stainless Steel
350°F for Hot-Dip Galvanized Carbon Steel
STANDARDS: MSS SP-58 Type 17, FS WW-H-171E Type 17
ORDERING: Specify figure number, rod size, material and finish.



ROD SIZE	B	C	D	E	F	G	H	J	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3/8	11/16	1 1/2	2 1/4	3 3/16	1 3/16	2	1/2	1 3/8	0.63	730
1/2									0.61	1350
5/8									0.59	2160
3/4									0.56	3230
7/8	1	2	3 1/4	4 3/8	1 11/16	2 5/8	3/4	1 15/16	1.72	4480
1									1.67	5900
1 1/8	1 1/4	2 1/2	4 1/4	5 5/8	1 13/16	3 3/8	1	2 3/8	3.64	7420
1 1/4									3.55	9500
1 1/2									3.45	13800





Note:
1. Hanger rod in-plane and out-of-plane rotation resultant shall be ≤ 4° per MSS SP-58.

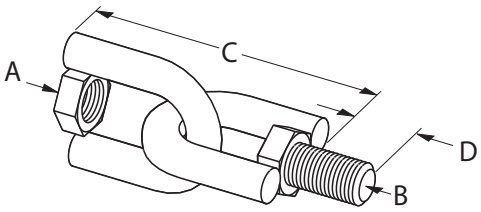
FIG. 744 Swivel Hanger Male/Female

SERVICE: For installation where a universal movement of the piping is desirable.

MATERIAL: Carbon Steel

FINISH: Electro-Galvanized

ORDERING: Specify figure number and rod size. (Sizes ⅜" and ½" use a Hex Nut welded to round bar on the female end. Sizes ⅝" and ¾" use a Weldless Eye Nut on the female end.)



ROD SIZE A	B	C	D	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
⅜	⅜	2¾	1	0.28	610
½	½	2¾	1	0.36	1130
⅝	⅝	5 3/16	1½	1.00	1810
¾	¾	5 3/16	1½	1.30	2710

FIG. 755 Continuous Threaded Rod

SERVICE: Recommended for use on hanging pipe support assemblies between pipe attachment and structural attachment. Continuous rolled United National Course (UNC) Class 1A thread form available in 6ft, 10ft and 12ft lengths.

MATERIAL: Carbon Steel meeting ASTM A36
Stainless Steel Type 304 and 316 meeting ASTM F593

FINISH: Black, Electro-Galvanized meeting ASTM B633 or Hot-Dip Galvanized meeting ASTM A153

MAX TEMP: 650ºF for Black Carbon Steel and Stainless Steel
350ºF for Electro-Galvanized and Hot-Dip Galvanized Carbon Steel

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

ROD SIZE	THREADS PER INCH	ROOT AREA THREAD, IN²	WEIGHT PER FOOT, LBS.	MAX. REC. LOAD, LBS.
¼	20	0.027	0.12	240
5/16	18	0.045	0.19	480
⅜	16	0.068	0.29	730
½	13	0.126	0.54	1350
⅝	11	0.202	0.83	2160
¾	10	0.302	1.25	3230
⅞	9	0.419	1.70	4480
1	8	0.551	2.23	5900
1⅛	7	0.693	2.81	7420
1¼	7	0.890	3.54	9500
1⅜	6	1.054	4.23	11290
1½	6	1.290	5.12	13800
1¾	5	1.740	6.92	18600
2	4.5	2.300	9.09	24600

Notes:
1. Maximum recommended load based on MSS SP-58 with ultimate strength of 50000 psi, a safety factor of 3.5 and a 25% reduction for installation and service conditions equating to an allowable stress of 10700 psi loaded in tension.
2. Minimum ⅜" rod size per MSS SP-58.
3. Root area in accordance with ASME B1.1.
4. United National Fine (UNF) thread form available upon request.

FIG. 770 Rod Coupling

SERVICE: For connecting lengths of threaded rod.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black or Electro-Galvanized
ORDERING: Specify figure number, rod tapping size, material and finish.

ROD SIZE	LENGTH	WEIGHT PER 100, LBS.	MAX. REC. LOAD, LBS.
1/4	7/8	9	240
5/16	1 3/4	8	300
3/8	1 3/4	13	610
1/2	1 3/4	15	1130
5/8	2 1/8	18	1810
3/4	2 1/4	33	2710
7/8	2 1/2	72	3770
1	2 1/2	78	4960
1 1/8	3	120	6230
1 1/4	3	143	8000
1 1/2	4	190	11630

FIG. 775 Reducing Rod Coupling

SERVICE: For connecting lengths of threaded rod.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Electro-Galvanized
ORDERING: Specify figure number, rod tapping size, material and finish.

ROD SIZE	LENGTH	WEIGHT PER 100, LBS.	MAX. REC. LOAD, LBS.
3/8 x 1/4	1	11	225
1/2 x 3/8	1 1/4	12	610
5/8 x 1/2	1 1/4	16	1130
3/4 x 5/8	1 1/2	31	1810
7/8 x 3/4	1 3/4	39	2710
1 x 7/8	2	41	3770

FIG. 780 Hex Head Machine Bolt

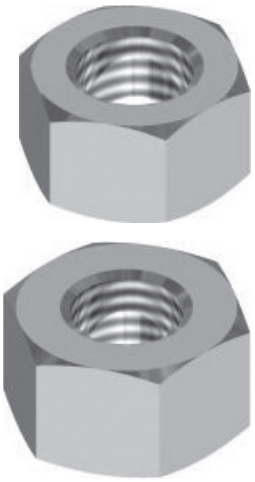
SERVICE: For use as a fastening device.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
ORDERING: Specify figure number, bolt size, material and finish. (Length of bolt is measured from under the head to the extreme point. Sizes as shown are carried in stock, other sizes are also available.)

BOLT DIA.	WEIGHT PER 100, LBS. LENGTH OF BOLT														
	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2	5	5 1/2	6
3/8	9	10	11	-	-	-	-	-	-	-	-	-	-	-	-
1/2	18	20	21	22	24	25	27	-	-	-	-	-	-	-	-
5/8	31	33	35	37	39	41	43	46	48	50	52	56	61	65	69
3/4	49	52	55	58	61	64	67	70	73	76	80	86	92	98	105
7/8	-	-	-	-	89	93	98	102	106	110	115	123	131	140	148
1	-	-	-	-	-	128	134	139	145	150	156	167	178	189	200
1 1/8	-	-	-	-	-	-	-	-	193	-	207	221	235	249	263
1 1/4	-	-	-	-	-	-	-	-	-	-	-	-	302	320	337

FIG. 785
FIG. 790

Finished Hex Nut
Heavy Duty Hex Nut

MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
ORDERING: Specify figure number, rod size, material and finish.

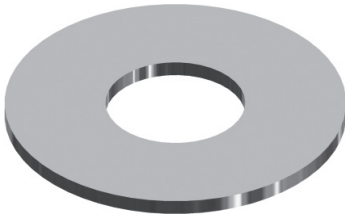


ROD SIZE	WEIGHT PER 100, LBS.	
	FIG. #785	FIG. #790
1/4	0.74	1.20
3/8	1.60	3.20
1/2	3.75	6.60
5/8	7.33	12.00
3/4	11.90	19.00
7/8	19.00	30.00
1	28.30	43.00
1 1/8	40.30	59.00
1 1/4	54.30	79.00
1 3/8	73.00	102.00
1 1/2	94.30	131.00

FIG. 795

Round Steel Washer

MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
ORDERING: Specify figure number, rod size, material and finish.



ROD SIZE	O.D.	HOLE SIZE	WEIGHT PER 100, LBS.
1/4	3/4	5/16	0.67
3/8	1	7/16	1.50
1/2	1 3/8	9/16	3.90
5/8	1 3/4	11/16	7.80
3/4	2	13/16	11.00
7/8	2 1/4	15/16	15.00
1	2 1/2	1 1/16	19.00
1 1/8	2 3/4	1 1/4	22.00
1 1/4	3	1 3/8	26.00
1 1/2	3 1/2	1 5/8	38.00

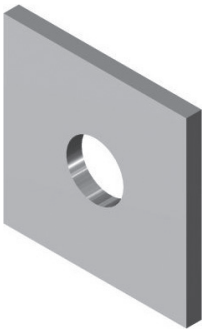
FIG. 800

Split Lock Washer

MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Electro-Galvanized
ORDERING: Specify figure number, rod size, material and finish.

ROD SIZE	I.D.	STEEL WIDTH	STEEL THICKNESS	WEIGHT PER 100, LBS.
3/8	7/16	0.14	0.09	7
1/2	9/16	0.17	0.13	15
5/8	11/16	0.20	0.16	26
3/4	13/16	0.23	0.19	43

FIG. 805 Steel Washer Plate



SERVICE: For use as a heavy duty washer to suspend hanger rods.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Black, Electro-Galvanized or Hot-Dip Galvanized
ORDERING: Specify figure number, rod tapping size, material and finish. (Steel in ¼" thickness is kept in stock for all rod sizes. Special size and thickness available upon request.)

ROD SIZE	STOCK SIZE	WEIGHT EACH, LBS.
3/8	2 x 2 x 1/4	0.28
1/2	2 x 2 x 1/4	0.28
3/8	3 x 3 x 1/4	0.62
1/2	3 x 3 x 1/4	0.62
5/8	3 x 3 x 1/4	0.62
3/4	3 x 3 x 1/4	0.62
3/8	4 x 4 x 1/4	1.05
1/2	4 x 4 x 1/4	1.05
5/8	4 x 4 x 1/4	1.05
3/4	4 x 4 x 1/4	1.05
7/8	4 x 4 x 1/4	1.05

FIG. 810 Fender Washer

SERVICE: For producing a greater bearing surface.
MATERIAL: Carbon Steel
FINISH: Electro-Galvanized
ORDERING: Specify figure number and rod size.

ROD SIZE	O.D.	HOLE SIZE	WEIGHT PER 100, LBS.
1/4	1 1/4	9/32	2.2
1/4	1 1/2	9/32	3.2
3/8	1 1/4	13/32	2.0
3/8	1 1/2	13/32	3.0
1/2	2	17/32	5.5

FIG. 816 Round Head Machine Screw

SERVICE: For use with the FIG. #302 shield with hole.
MATERIAL: Carbon Steel
FINISH: Electro-Galvanized
ORDERING: Specify figure number and size.

SIZE	WEIGHT PER 100, LBS.
1/4 x 3/4	1.5
1/4 x 1	1.8
1/4 x 1 1/4	1.9

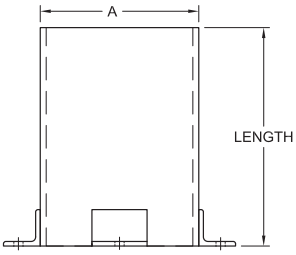
FIG. 830 Pipe Sleeve

SERVICE: For attaching to concrete forms to provide a smooth sealable channel for piping, eliminating the need to core drill. Pipe sleeves are cut from standard weight pipe with optional lugs to facilitate fastening.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Hot-Dip Galvanized

ORDERING: Specify figure number, nominal pipe size A, length, with or without lugs, material and finish.



Shown with optional lugs.

FIG. 835 Sheet Metal Sleeve w/ Cap

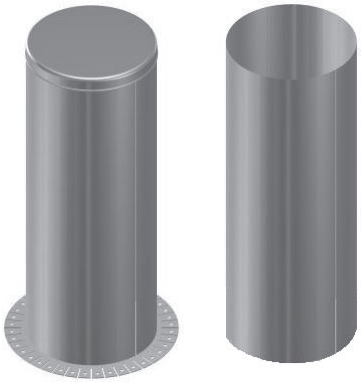
FIG. 836 Sheet Metal Sleeve w/ No Cap

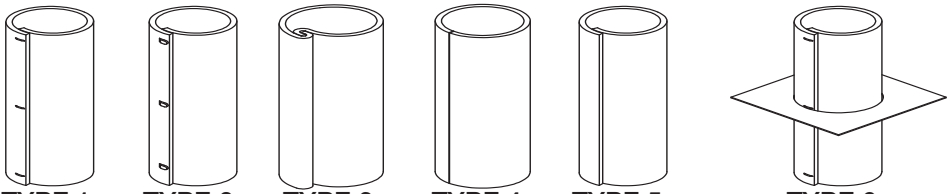
SERVICE: For attaching to roof deck to provide a channel for piping, eliminating the need to core drill. Sleeves are made in all heights and diameters with optional tabs to facilitate fastening and an optional cap to keep out wet cement until pipe installation.

MATERIAL: 24ga Galvanized Sheet Metal or 304/316 Stainless Steel

FINISH: Galvanized

ORDERING: Specify figure number, diameter, height, type, with or without tabs and material.





TYPE 1 — Stapled or Spot-Welded

TYPE 2 — Locking Tabs 100 pcs Min.

TYPE 3 — Finger Locks

TYPE 4 — Split, Butt Edges

TYPE 5 — Split, Overlap

TYPE 6 — Metal Deck Flange

FIG. 840 Waterproof Sleeve

SERVICE: For installing in concrete forms to provide a smooth, sealable channel for piping. Waterproof sleeves are cut from standard weight pipe and are furnished with a continuously welded water stop made from ¼" steel plate, to prevent the migration of water around the outside of the sleeve.

MATERIAL: Carbon Steel or 304/316 Stainless Steel

FINISH: Black or Hot-Dip Galvanized

ORDERING: Specify figure number, nominal pipe size A, ring center line B, length, material and finish.

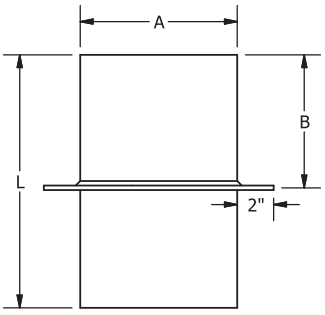


FIG. 845 Wood-Knocker®II+

SERVICE: To provide a pre-positioned hanger rod attachment to the underside of concrete slabs on wood forms. Used as a cast-in-place concrete anchor in 3,000 psi minimum compressive strength normal and lightweight, cracked and uncracked concrete loaded by static and occasional tensile and shear forces from piping or similar services.

MATERIAL: Carbon Steel meeting AISI 1008 and Engineered Plastic (Polypropylene)

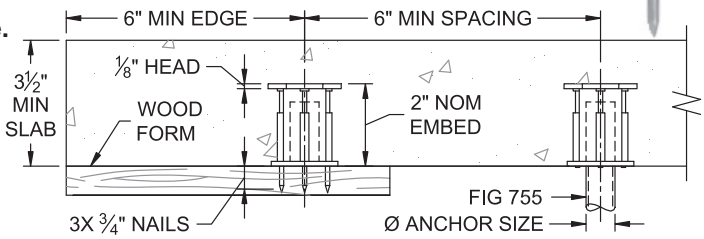
FINISH: Electro-Galvanized meeting ASTM B633

MAX TEMP: 200°F

APPROVALS: FM, UL, ICC-ES ESR-3657, IBC 2018

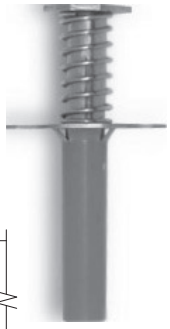
ORDERING: Specify figure number and anchor size.

ANCHOR SIZE	COLOR CODE	WEIGHT EACH, LBS.
3/8	GREEN	0.248
1/2	YELLOW	0.220
5/8	RED	0.356
3/4	PURPLE	0.348



NOTE: Refer to Dewalt Anchors & Fasteners, Wood-Knocker®II+ for maximum recommended loads and additional details.

FIG. 850 Bang-It®+



SERVICE: To provide a pre-positioned hanger rod attachment to the underside of concrete slabs on metal form decks. Used as a cast-in-place concrete anchor in 3,000 psi minimum compressive strength normal and lightweight, cracked and uncracked concrete loaded by static and occasional tensile and shear forces from piping or similar services.

MATERIAL: Carbon Steel meeting AISI 1008 and Engineered Plastic (Polypropylene)

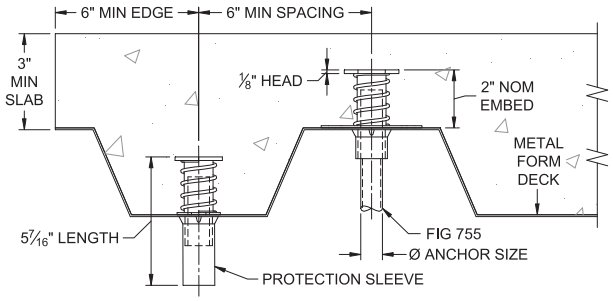
FINISH: Electro-Galvanized meeting ASTM B633

MAX TEMP: 200°F

APPROVALS: FM, UL, ICC-ES ESR-3657, IBC 2018

ORDERING: Specify figure number and anchor size.

ANCHOR SIZE	COLOR CODE	WEIGHT EACH, LBS.
3/8	GREEN	0.408
1/2	YELLOW	0.384
5/8	RED	0.759
3/4	PURPLE	0.715



NOTE: Refer to Dewalt Anchors & Fasteners, Bang-It®+ for maximum recommended loads and additional details.

FIG. 855 Hangermate®+

SERVICE: For suspending threaded rod vertically overhead in pipe hanging, fire protection, electrical conduit and cable-tray applications.

MATERIAL: Carbon Steel

FINISH: Electro-Galvanized

APPROVALS: FM, UL

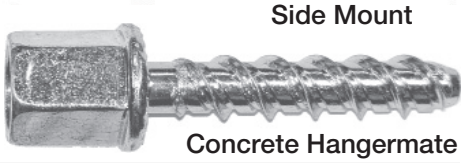
ORDERING: Specify figure number.

FIG #	SIZE #	TYPE	ROD SIZE	MOUNT DIRECTION	SCREW SIZE	LENGTH	WEIGHT EACH, LBS.
2211200	PFM2211200	CONCRETE	3/8	VERTICAL	1/4	1 5/8	0.07
2211260	PFM2211260	CONCRETE	3/8	VERTICAL	3/8	1 5/8	0.08
2211280	PMF2211280	CONCRETE	1/2	VERTICAL	3/8	2	0.13
7159	PFM2231200	STEEL	3/8	VERTICAL	1/4	1½	0.075
7164	PFM2251300	WOOD	1/2	VERTICAL	5/16	2½	0.082
7165	PFM2251100	WOOD	3/8	VERTICAL	1/4	2	0.073
7170	PFM2261100	WOOD	3/8	SIDE	1/4	2	0.073
7173	PFM2217173	CONCRETE	3/8	VERTICAL	1/4	1½	0.070
7175	THD50234RH	CONCRETE	1/2	VERTICAL	1/2	2¾	0.082


Steel Hangermate


Wood Hangermate Vertical Mount


Wood Hangermate Side Mount


Concrete Hangermate

NOTE: Refer to Dewalt Anchors & Fasteners, Hangermate®+ for maximum recommended loads and additional details. Refer to Simpson Strong-Tie, Titen HD for additional details on FIG #7175.

FIG. 860 Wedge Anchor

SERVICE: For use in solid concrete and grout filled masonry.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Electro-Galvanized
ORDERING: Specify figure number, rod size, length and material.

SIZE	WEIGHT PER 100, LBS.
1/4 x 1 3/4	3.00
1/4 x 2 1/4	4.00
1/4 x 3 1/4	5.00
3/8 x 2 1/4	8.00
3/8 x 2 3/4	9.00
3/8 x 3	10.00
3/8 x 3 3/4	13.00
3/8 x 5	15.00
1/2 x 2 3/4	19.00
1/2 x 3 3/4	23.00
1/2 x 4 1/2	27.00

SIZE	WEIGHT PER 100, LBS.
1/2 x 5 1/2	30.80
1/2 x 7	38.00
5/8 x 3 1/2	36.00
5/8 x 4 1/2	41.00
5/8 x 6	53.00
3/4 x 4 3/4	68.00
3/4 x 5 1/2	76.00
3/4 x 6 1/4	91.00
3/4 x 7	91.00
7/8 x 6	128.00
1 x 6	168.00

FIG. 865 Sleeve Anchor w/ Coupling
FIG. 867 Sleeve Anchor

SERVICE: For anchoring to concrete and masonry substrates. Suitable for solid and hollow base materials.
MATERIAL: Carbon Steel
FINISH: Electro-Galvanized
ORDERING: Specify figure number and size. FIG. #775 Reducing Rod Coupling must be ordered separately for FIG. #867 Sleeve Anchor.

FIG. #865

FIG. #867

FIG. #865			
SIZE	DRILL SIZE	MIN. EMBED	WEIGHT PER 100, LBS.
3/8 X 1 7/8*	3/8	1 5/8	9.0
1/2 X 2 1/4**	1/2	2 1/4	21.0

FIG. #867			
SIZE	DRILL SIZE	MIN. EMBED	WEIGHT PER 100, LBS.
5/8 X 2 1/4*	5/8	2	25.5
3/4 X 2 3/4**	3/4	2 1/4	46.0

NOTE: Length shown is measured from end of bolt to bottom of washer.
* Refer to Simpson Strong-Tie, Sleeve-All® for maximum recommended loads and additional details.
** Refer to Dewalt Anchors & Fasteners, Lok-Bolt AS® for maximum recommended loads and additional details.

FIG. 874 Mini Drop-In Anchor
FIG. 877 Mini Drop-In Setting Tool

SERVICE: For anchoring into solid concrete and hollow core concrete plank.
MATERIAL: Carbon Steel
FINISH: Electro-Galvanized
ORDERING: Specify figure number and size.

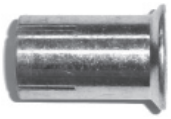


FIG. #874

FIG. #877

SIZE	DRILL SIZE	MIN. DEPTH	THREAD DEPTH	WEIGHT PER 100, LBS.
3/8	1/2	3/4	13/32	0.04
1/2	5/8	1	5/8	0.06

FIG. 875

FIG. 876

Drop-In Anchor

Drop-In Setting Tool

SERVICE: For anchoring into solid concrete.
MATERIAL: Carbon Steel or 304/316 Stainless Steel
FINISH: Electro-Galvanized
ORDERING: Specify figure number, size and material.

FIG. #875

FIG. #876

SIZE	ANCHOR LENGTH	DRILL SIZE	MIN. EMBED	WEIGHT PER 100, LBS.	MIN. CONCRETE COMPRESSION STRENGTH 4,000 psi	
					TENSION, LBS	SHEAR, LBS
1/4	1	3/8	1	2.6	495	530
3/8	1 9/16	1/2	1 9/16	6.8	1045	1145
1/2	2	5/8	2	11.6	1440	1600
5/8	2 1/2	7/8	2 1/2	31.2	1860	3095
3/4	3 3/16	1	3 3/16	47.6	3600	3920

NOTE: Allowable load capacities listed are calculated using an applied safety factor of 4.0.

FIG. 878

Zamac Nailin® Nail Drive Anchor

SERVICE: For anchoring into solid concrete, block or brick.
MATERIAL: Carbon Steel drive nail with Zamac Alloy body
FINISH: Electro-Galvanized
ORDERING: Specify figure number and size.

SIZE	DRILL SIZE	WEIGHT PER 100, LBS.
1/4 x 3/4	1/4	1.50
1/4 x 1	1/4	1.75
1/4 x 1 1/4	1/4	2.25
1/4 x 1 1/2	1/4	2.50
1/4 x 2	1/4	3.00

NOTE: Refer to Dewalt Anchors & Fasteners, Zamac Nailin® Mushroom Head Nail Anchor for maximum recommended loads and additional details.

FIG. 880

FIG. 885

Spring Wing Toggle w/ Bolt

Spring Wing Toggle Head Only

SERVICE: For use as a fastener for hollow walls.
MATERIAL: Carbon Steel
FINISH: Electro-Galvanized
ORDERING: Specify figure number and size.

FIG. #885 FIG. #880

SIZE	DRILL SIZE	WEIGHT PER 100, LBS.		MAX. REC. LOAD, LBS	
		TOGGLE WITH BOLT	BOLT ONLY	TENSION	SHEAR
1/4 x 3	5/8	6.5	3	70	120
1/4 x 4	5/8	7.5	3	70	120
1/4 x 6	5/8	9.5	3	70	120
3/8 x 3	7/8	16.0	7	140	140
3/8 x 4	7/8	18.0	7	140	140
3/8 x 6	7/8	23.0	7	140	140
1/2 x 4	1 1/4	42.0	9	230	160
1/2 x 6	1 1/4	50.0	9	230	160

FIG. 900 Neoprene-In-Shear Hanger

ISOLATOR SIZE	MAX. REC. LOAD, LBS.	DEFLECTION	DIMENSIONS				
			A	B	C	D	E
BRD-1-A	60	0.50	4	2 7/8	2 1/2	1/2	1 7/8
BRD-1-B	130						
BRD-1-C	250						
BRD-1-D	430						
BRD-2-A	380	0.50	5 1/2	3 3/4	4	3/4	2 3/8
BRD-2-B	520						
BRD-2-C	840						
BRD-2-D	1070						
BRD-3-A	750	0.50	6 1/4	4 1/4	5 3/8	1	2 3/8
BRD-3-B	1350						
BRD-3-C	1900						
BRD-3-D	3050						

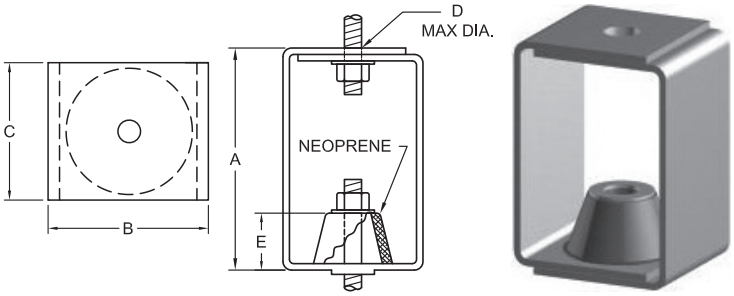


FIG. 901 Spring Hanger

ISOLATOR SIZE	RATED LOAD LBS. AT 1" DEFL.	SOLID LOAD, LBS.
BS-50	50	126
BS-100	100	207
BS-150	150	263
BS-200	200	348
BS-300	300	500
BS-400	400	605
BS-500	500	750
BS-600	600	891
BS-700	700	1138
BS-800	800	1155
BS-1000	1000	1452

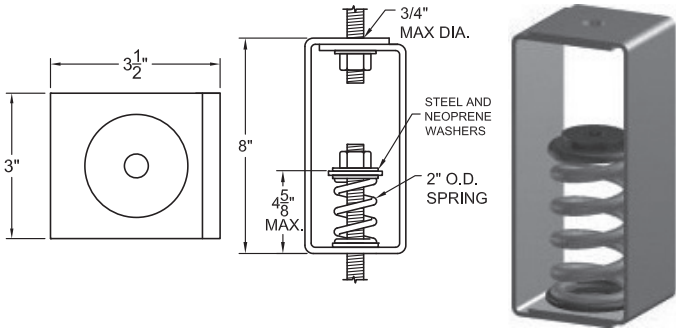


FIG. 902 Neoprene-In-Shear Spring Hanger

ISOLATOR SIZE	RATED LOAD LBS. AT 1" DEFL.	SOLID LOAD, LBS.	DIMENSIONS						
			A	B	C	D	E	F	G
BSRA-1-15	15	27	3 1/2	2 1/2	7 1/8	3	1/2	2	1 7/8
BSRA-1-25	25	39							
BSRA-1-50	50	83							
BSRA-1-100	100	160							
BSRA-1-150	150	242							
BSRA-1-200	200	293							
BSRA-1-300	300	442							
BSRA-1-400	400	585							
BSRA-1-500	500	782	4 1/2	4 7/8	11	4 3/8	3/4	3 1/4	2 3/8
BSRA-1-600	600	925							
BSRA-1-800	800	1257							
BSRA-1-1000	1000	1565							
BSRA-1-1200	1200	1829					1		
BSRA-1-1400	1400	2131							
BSRA-1-1600	1600	2419							
BSRA-1-1800	1800	2662							

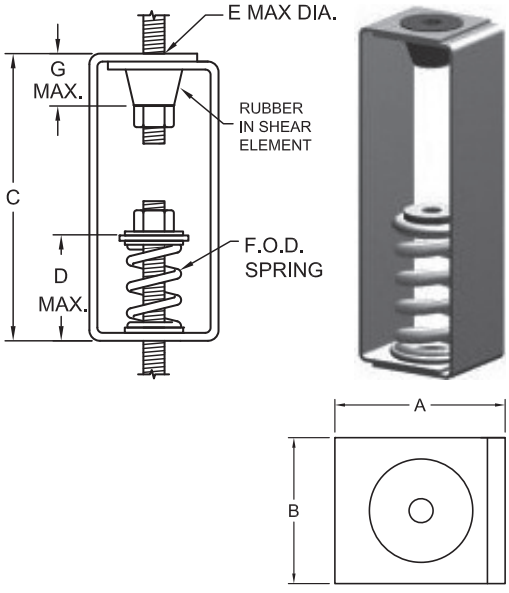
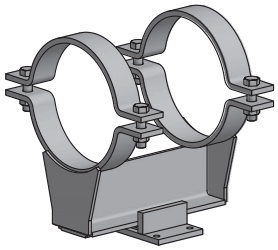
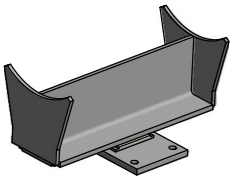


FIG. 950

Pipe Slide, Guide and Anchor





SERVICE: To support pipe while providing axial movement combined with lateral movement, lateral guidance, uplift restraint and/or anchorage. Slides, guides and uplift restraints to be welded or bolted to structure and welded or clamped to the pipe. Glass filled virgin Teflon™ (PTFE) slide bearing provides low coefficient of friction to reduce stress on the pipe and supporting structure. Anchors to be continuously welded to pipe and structure only.

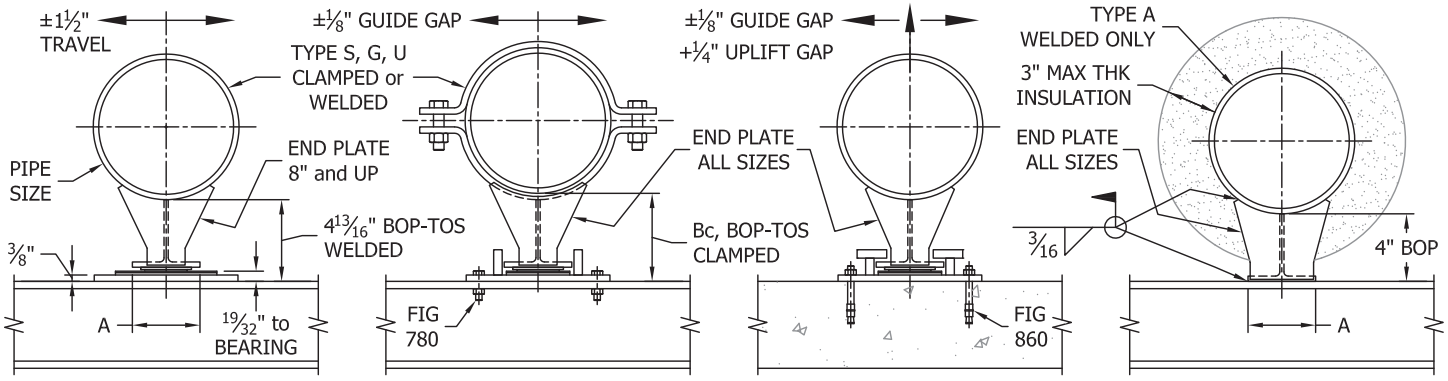
MATERIAL: Carbon Steel meeting ASTM: A36, A307 Gr A and A563 Gr A
Slide Bearing: PTFE-to-PTFE, average coefficient of friction = 0.06

FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

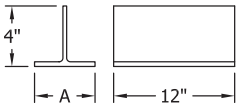
MAX TEMP: 650ºF at pipe wall
300ºF at PTFE bearing.

STANDARDS: MSS SP-58 Type 35

ORDERING: Specify figure number, type, pipe size, pipe attachment type and finish. (Order mounting hardware separately.)



950S - SLIDE | 950G - GUIDE | 950U - UPLIFT | 950A - ANCHOR

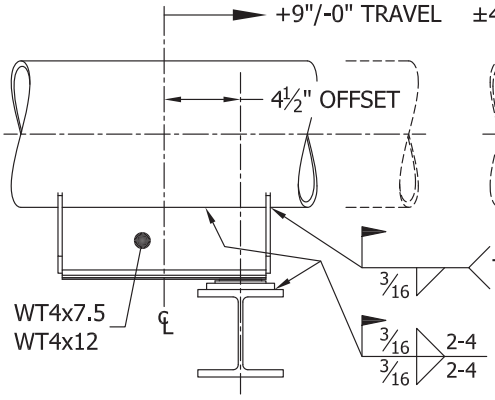


950T - TEE ONLY

2" - 12" WT4x7.5
14" - 24" WT4x12

DIMENSIONAL DATA		
PIPE SIZE	A	Bc
2 - 5	4	5 1/16
6 - 8	4	5 3/16
10 - 12	4	5 5/16
14 - 16	6½	5 5/16
18 - 24	6½	5 7/16

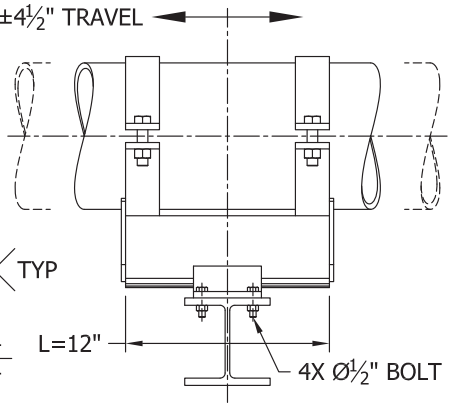
OFFSET INSTALLATION



PIPE ATTACHMENT: WELDED (W)
ALL TYPES

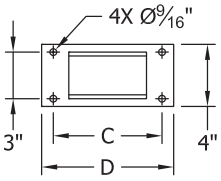
EX: FIG 950S-12-W-HDG

CENTERED INSTALLATION



PIPE ATTACHMENT: CLAMPED (C)
TYPES: S, G, and U ONLY

EX: FIG 950G-12-C-BLK



BASE DIMENSIONS TYPES: S, G, U		
PIPE SIZE	C	D
2 - 12	7	8½
14 - 24	9½	11

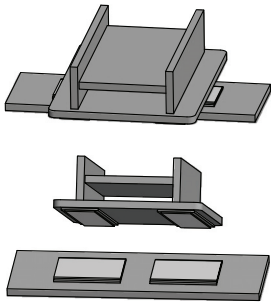
MAXIMUM RECOMMENDED LOADS					
TYPE	PIPE SIZE	VERTICAL DOWN	VERTICAL UP	LATERAL	AXIAL
S	2 - 24	8000	n/a	n/a	n/a
G	2 - 6	8000	n/a	1000	n/a
	8 - 24	8000	n/a	2000	n/a
U	2 - 6	8000	800	1000	n/a
	8 - 24	8000	800	2000	n/a
A	2 - 6	4000	800	1000	2000
	8 - 24	8000	800	2000	5000

Notes:
1. Special fabricated tee and base available for specified axial and lateral travel, insulation banding slots, heat loss notches and/or grade 304 and 316 stainless steel. Provide performance criteria and dimensions A, BOP, C, D and/or L.
2. For PTFE bearing temperatures 300ºF to 500ºF, specify high temperature bearing adhesive. Available in black finish only over 350ºF.
3. Alternative PTFE-on-stainless steel slide bearing option available.
4. Weld in accordance with AWS D1.1 with 70000 psi filler metal. Minimum weld sizes shown. Tee-to-pipe and base-to-structure welds may be continuous.
5. Anchor loads for standard weight carbon steel pipe at design conditions 400 psi and 500ºF. Corrosion allowance 1/32" for pipe sizes ≤ 6" and 1/16" for sizes ≥ 8".

FIG. 955S

H-Slide

±5” Axial Movement, ±1” Lateral Movement



SERVICE: To support pipe while providing large axial movement and moderate lateral movement. Pad to be welded to structure and body welded to pipe. Slide bearing provides low coefficient of friction between body and pad to reduce stress on the pipe and supporting structure.

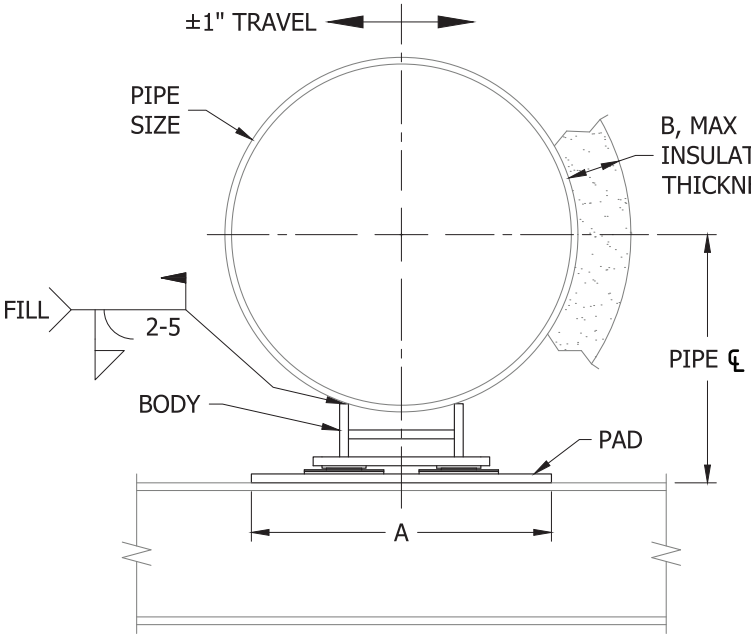
MATERIAL: Carbon Steel meeting ASTM A36
Stainless Steel meeting ASTM A240 Type 304 and 316
Slide Bearing: PTFE-on-PTFE, 3/32” thick glass filled PTFE bonded to 10 ga. back-up plate, 2000 psi compressive strength at 70°F (Note 2)

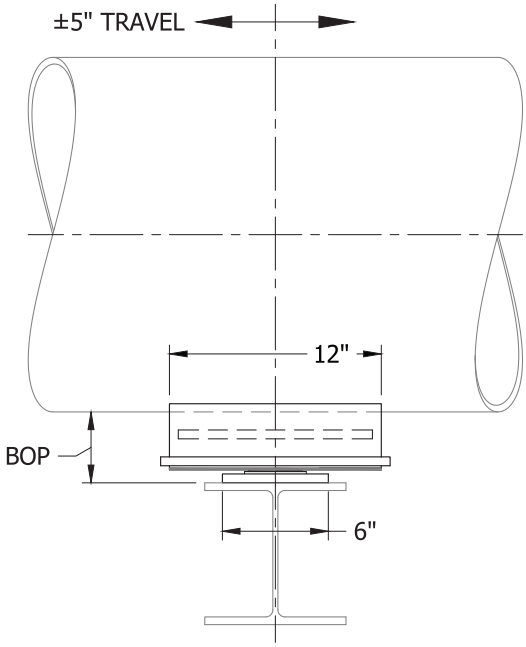
FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: At Pipe Wall: 650ºF for Black, 350ºF for Hot-Dip Galvanized.
At PTFE Bearing 300°F (Note 2 & 3).

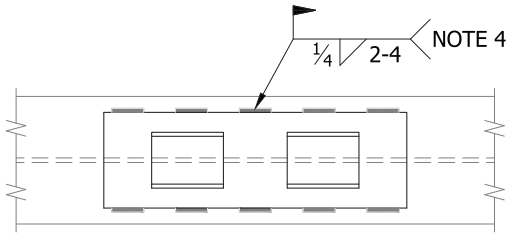
STANDARDS: MSS SP-58 Type 35, FS A-A-1192A Type 35

ORDERING: Specify figure number, pipe size, and finish (example: 955S-16-HDG).





PIPE SIZE	PIPE cL	BOP	A	B	WEIGHT EACH, LBS	VERTICAL DOWN LOAD
6	8	4 11/16	10	3 1/2	24	12000
8	9	4 11/16	10	3 1/2	24	12000
10	9 7/8	4 1/2	12 1/2	3 1/2	35	16000
12	11	4 5/8	12 1/2	3 1/2	35	16000
14	11 1/8	4 1/8	14 1/2	3	51	16000
16	12 3/8	4 3/8	14 1/2	3	51	16000
18	12 7/8	3 7/8	17	3	56	16000
20	14	4	17	3	56	16000
24	15 7/8	3 7/8	19	3	65	24000
30	19 7/8	4 7/8	21	4	78	24000
36	23 1/4	5 1/4	23	4	108	24000



PAD WELD DETAIL

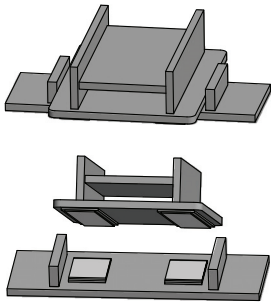
NOTES:

1. Special fabricated configurations available upon request for options: pad bolted to structure, body clamped to pipe, specified bottom of pipe (BOP), custom axial / lateral travel, insulation banding slots, heat loss notches, etc. Provide performance criteria and dimensions.
2. Allowable vertical load at 70°F bearing temperature. See Supplemental Data for load reduction factors at higher bearing temperatures.
3. For bearing temperatures 300°F to 500°F, specify High Temperature adhesive (-HT).
4. Pad may be seal welded to structure with all-around weld.
5. Body interchangeable with 955G, 955L, and 955U pads for same pipe size and “A” dimension.
6. See Fig 955 Supplemental Data for other structural attachment details, slide bearing information, etc.

FIG. 955G

H-Guide

±5” Axial Movement, ±1/16” Lateral Movement



SERVICE: To support pipe while providing large axial movement and lateral guidance. Pad to be welded to structure and body welded to pipe. Slide bearing provides low coefficient of friction between body and pad to reduce stress on the pipe and supporting structure.

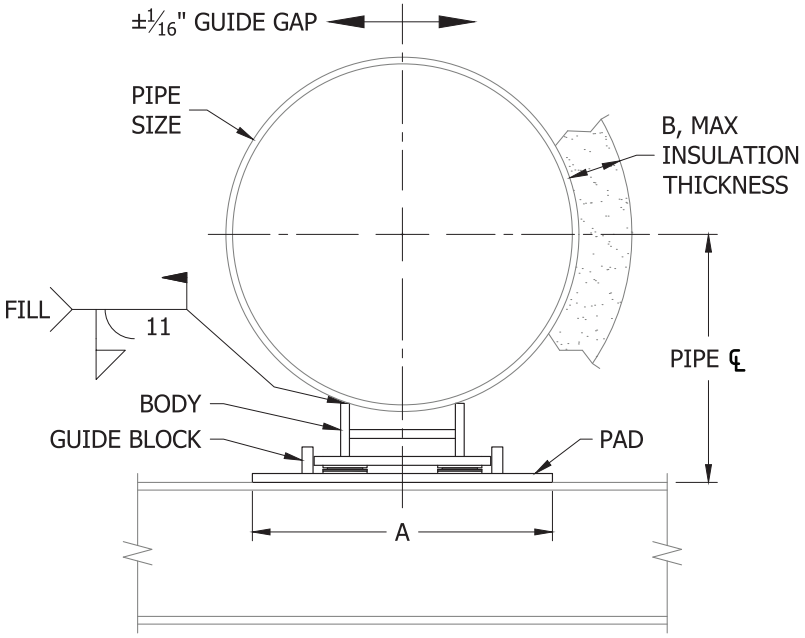
MATERIAL: Carbon Steel meeting ASTM A36
Stainless Steel meeting ASTM A240 Type 304 and 316
Slide Bearing: PTFE-on-PTFE, 3/32” thick glass filled PTFE bonded to 10 ga. back-up plate, 2000 psi compressive strength at 70°F (Note 2)

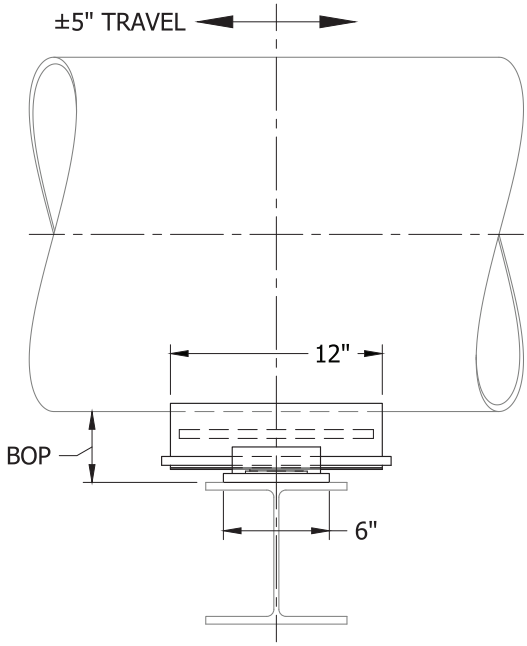
FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: At Pipe Wall: 650ºF for Black, 350ºF for Hot-Dip Galvanized.
At PTFE Bearing 300°F (Note 2 & 3)

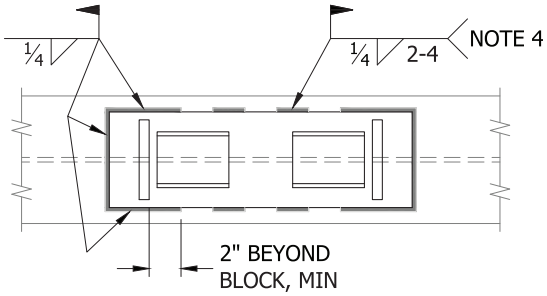
STANDARDS: MSS SP-58 Type 35, FS A-A-1192A Type 35

ORDERING: Specify figure number, pipe size, and finish (example: 955G-16-HDG).





PIPE SIZE	PIPE cL	BOP	A	B	WEIGHT EACH, LBS	VERTICAL DOWN LOAD	LATERAL LOAD
6	8	4 11/16	10	3 1/2	26	12000	3000
8	9	4 11/16	10	3 1/2	26	12000	3000
10	9 7/8	4 1/2	12 1/2	3	37	16000	4000
12	11	4 5/8	12 1/2	3	37	16000	4000
14	11 1/8	4 1/8	14 1/2	3	54	16000	4000
16	12 3/8	4 3/8	14 1/2	3	54	16000	4000
18	12 7/8	3 7/8	17	3	58	16000	4000
20	14	4	17	3	58	16000	4000
24	15 7/8	3 7/8	19	3	68	24000	6000
30	19 7/8	4 7/8	21	4	80	24000	6000
36	23 1/4	5 1/4	23	4	111	24000	6000



PAD WELD DETAIL

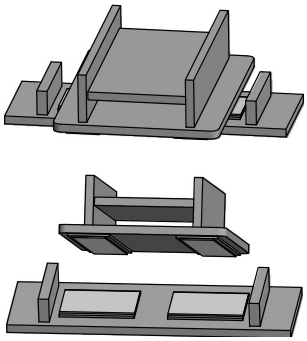
NOTES:

1. Special fabricated configurations available upon request for options: pad bolted to structure, body clamped to pipe, specified bottom of pipe (BOP), custom axial / lateral travel, insulation banding slots, heat loss notches, etc. Provide performance criteria and dimensions.
2. Allowable vertical load at 70°F bearing temperature. See Supplemental Data for load reduction factors at higher bearing temperatures.
3. For bearing temperatures 300°F to 500°F, specify High Temperature adhesive (-HT).
4. Pad may be seal welded to structure with all-around weld.
5. Body interchangeable with 955S, 955L, and 955U pads for same pipe size and “A” dimension.
6. See Fig 955 Supplemental Data for other structural attachment details, slide bearing information, etc.

FIG. 955L

H-Slide w/ Lateral Stop

±5" Axial Movement, ±1" Guide Gap



SERVICE: To support pipe while providing large axial movement and moderate lateral movement with guidance. Pad to be welded to structure and body welded to pipe. Slide bearing provides low coefficient of friction between body and pad to reduce stress on the pipe and supporting structure.

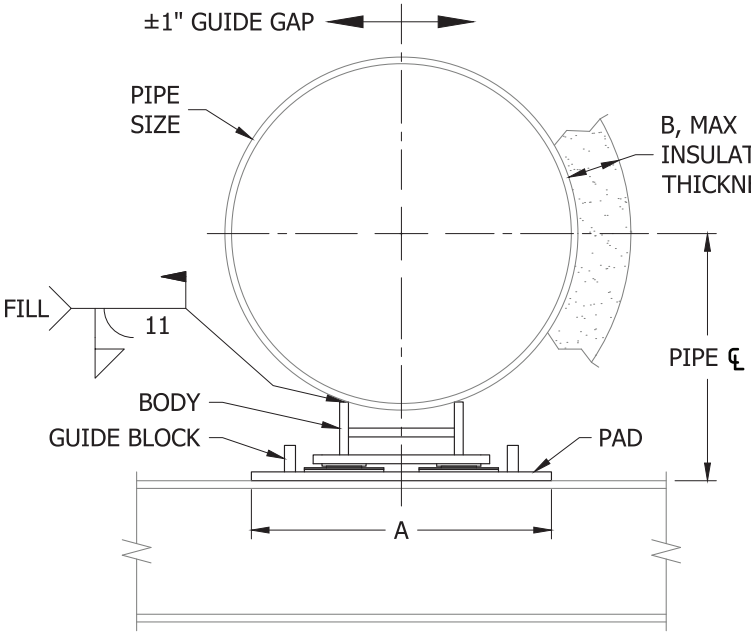
MATERIAL: Carbon Steel meeting ASTM A36
Stainless Steel meeting ASTM A240 Type 304 and 316
Slide Bearing: PTFE-on-PTFE, 3/32" thick glass filled PTFE bonded to 10 ga. back-up plate, 2000 psi compressive strength at 70°F (Note 2)

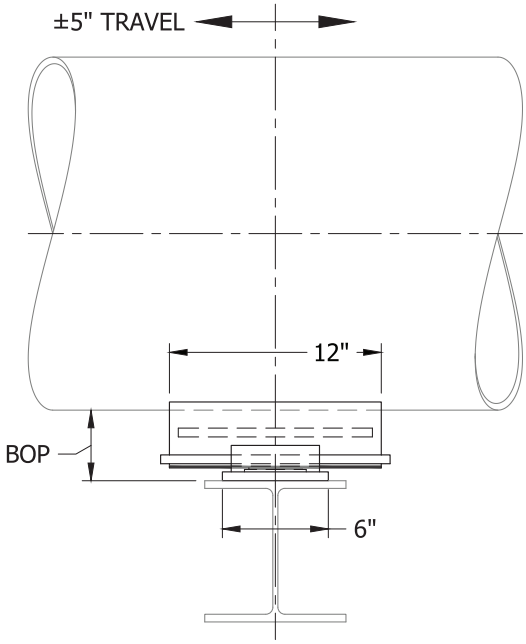
FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: At Pipe Wall: 650ºF for Black, 350ºF for Hot-Dip Galvanized.
At PTFE Bearing 300°F (Note 2 & 3).

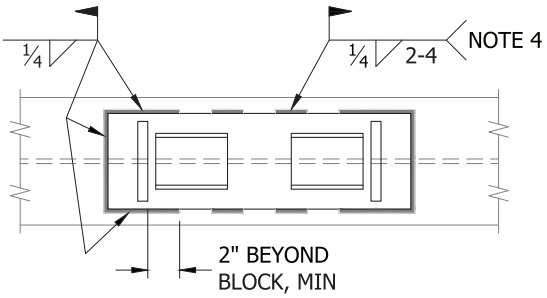
STANDARDS: MSS SP-58 Type 35, FS A-A-1192A Type 35

ORDERING: Specify figure number, pipe size, and finish (example: 955L-16-HDG).





PIPE SIZE	PIPE cL	BOP	A	B	WEIGHT EACH, LBS	VERTICAL DOWN LOAD	LATERAL LOAD
6	8	4 11/16	10	3 1/2	26	12000	3000
8	9	4 11/16	10	3 1/2	26	12000	3000
10	9 7/8	4 1/2	12 1/2	3 1/2	38	16000	4000
12	11	4 5/8	12 1/2	3 1/2	38	16000	4000
14	11 1/8	4 1/8	14 1/2	3	54	16000	4000
16	12 3/8	4 3/8	14 1/2	3	54	16000	4000
18	12 7/8	3 7/8	17	3	59	16000	4000
20	14	4	17	3	59	16000	4000
24	15 7/8	3 7/8	19	3	68	24000	6000
30	19 7/8	4 7/8	21	4	81	24000	6000
36	23 1/4	5 1/4	23	4	112	24000	6000



PAD WELD DETAIL

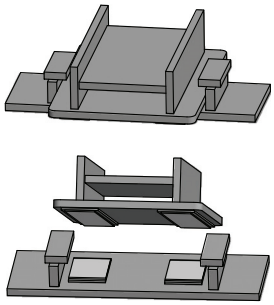
NOTES:

1. Special fabricated configurations available upon request for options: pad bolted to structure, body clamped to pipe, specified bottom of pipe (BOP), custom axial / lateral travel, insulation banding slots, heat loss notches, etc. Provide performance criteria and dimensions.
2. Allowable vertical load at 70°F bearing temperature. See Supplemental Data for load reduction factors at higher bearing temperatures.
3. For bearing temperatures 300°F to 500°F, specify High Temperature adhesive (-HT).
4. Pad may be seal welded to structure with all-around weld.
5. Body interchangeable with 955S, 955G, and 955U pads for same pipe size and "A" dimension.
6. See Fig 955 Supplemental Data for other structural attachment details, slide bearing information, etc.

FIG. 955U

H-Guide w/ Uplift Stop

±5" Axial Movement, ±1/16" Guide Gap, ½" Uplift Gap



SERVICE: To support pipe while providing large axial movement, lateral guidance, and uplift restraint. Pad to be welded to structure and body welded to pipe. Slide bearing provides low coefficient of friction between body and pad to reduce stress on the pipe and supporting structure.

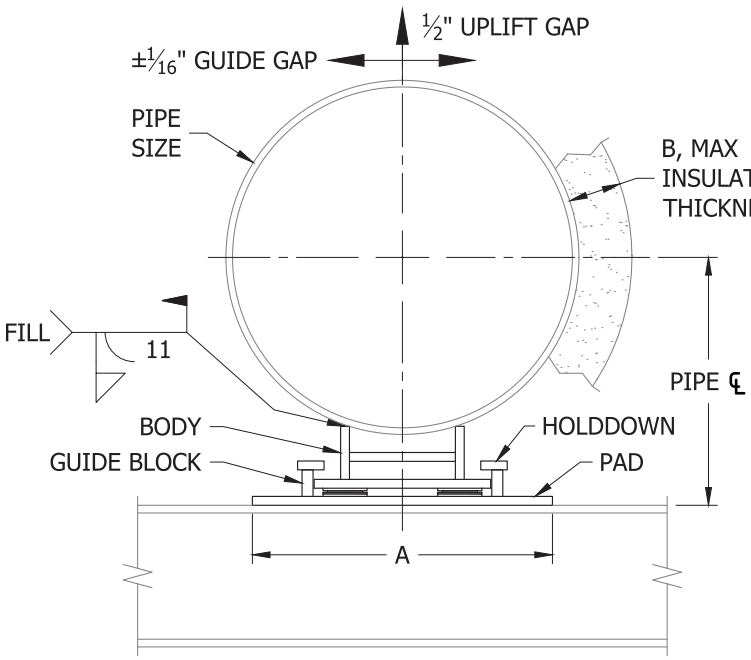
MATERIAL: Carbon Steel meeting ASTM A36
Stainless Steel meeting ASTM A240 Type 304 and 316
Slide Bearing: PTFE-on-PTFE, 3/32" thick glass filled PTFE bonded to 10 ga. back-up plate, 2000 psi compressive strength at 70°F (Note 2)

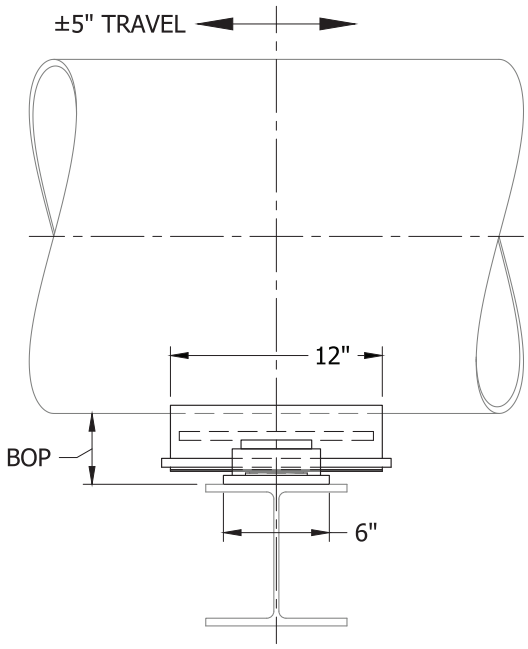
FINISH: Black or Hot-Dip Galvanized meeting ASTM A123

MAX TEMP: At Pipe Wall: 650ºF for Black, 350ºF for Hot-Dip Galvanized.
At PTFE Bearing 300°F (Note 2 & 3).

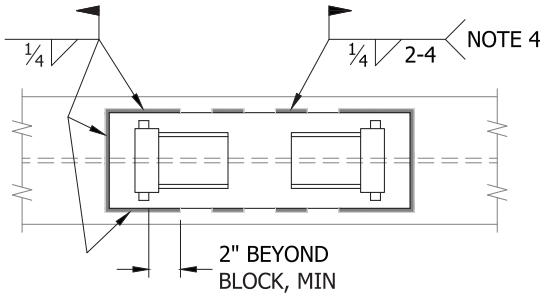
STANDARDS: MSS SP-58 Type 35, FS A-A-1192A Type 35

ORDERING: Specify figure number, pipe size, and finish (example: 955U-16-HDG).





PIPE SIZE	PIPE cL	BOP	A	B	WEIGHT EACH, LBS	VERTICAL DOWN LOAD	LATERAL LOAD	UPLIFT LOAD
6	8	4 11/16	10	2½	28	12000	3000	1200
8	9	4 11/16	10	2½	28	12000	3000	1200
10	9⅞	4½	12½	2½	39	16000	4000	1600
12	11	4⅝	12½	2½	39	16000	4000	1600
14	11⅛	4⅛	14½	2½	55	16000	4000	1600
16	12⅜	4⅜	14½	2½	55	16000	4000	1600
18	12⅞	3⅞	17	2½	60	16000	4000	1600
20	14	4	17	2½	60	16000	4000	1600
24	15⅞	3⅞	19	2½	70	24000	6000	2400
30	19⅞	4⅞	21	3½	82	24000	6000	2400
36	23¼	5¼	23	4	113	24000	6000	2400



PAD WELD DETAIL

NOTES:

1. Special fabricated configurations available upon request for options: pad bolted to structure, body clamped to pipe, specified bottom of pipe (BOP), custom axial / lateral travel, insulation banding slots, heat loss notches, etc. Provide performance criteria and dimensions.
2. Allowable vertical load at 70°F bearing temperature. See Supplemental Data for load reduction factors at higher bearing temperatures.
3. For bearing temperatures 300°F to 500°F, specify High Temperature adhesive (-HT).
4. Pad may be seal welded to structure with all-around weld.
5. Body interchangeable with 955S, 955G, and 955L pads for same pipe size and "A" dimension.
6. See Fig 955 Supplemental Data for other structural attachment details, slide bearing information, etc.

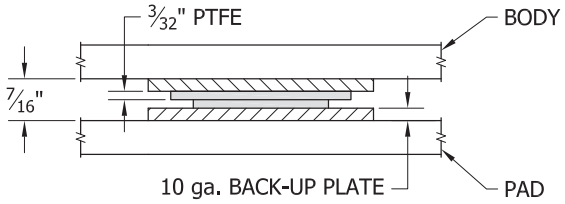
1.0 Slide Bearing Details

Slide bearings by Con-Serv, Inc., Georgetown, South Carolina. Con-Slide Slide Bearing Type CSA product data reproduced with permission.

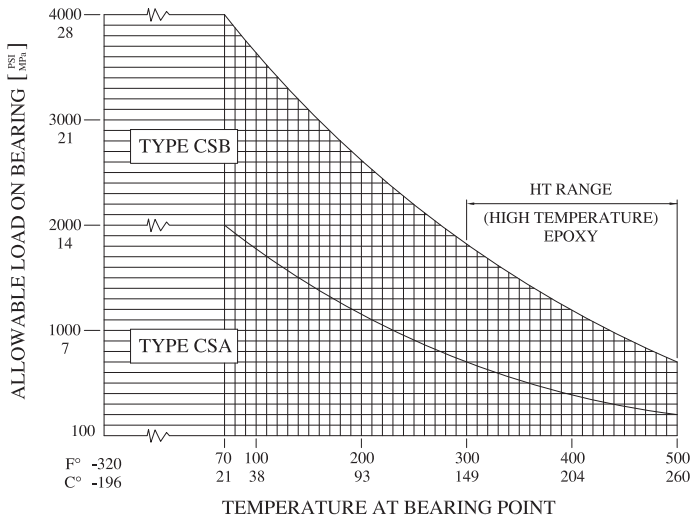
The Type CSA CON-SLIDE™ slide bearing is constructed of filled PTFE bonded to flat rigid back-up steel. The CON-SLIDE material, at thermal expansion and contraction rates, will exhibit little to no wear for the life of the support. The Type CSA blend is formulated for use against itself as a slide material.

The blended CSA material used for this bearing is composed of virgin (uncompressed) PTFE resin tested per ASTM D4894 or ASTM D4895 and reinforcing agents including milled glass fibers. This structural material has the following representative mechanical and physical properties:

TENSILE STRENGTH	2200 psi
ELONGATION	225%
SPECIFIC GRAVITY	2.17 to 2.22



The CSA system consists of an upper and lower element. The PTFE slide surfaces in this system are nominally 3/32" thick and are control-bonded to a 10 ga. carbon steel back-up sheet. See graph for allowable design pressures at various temperatures.



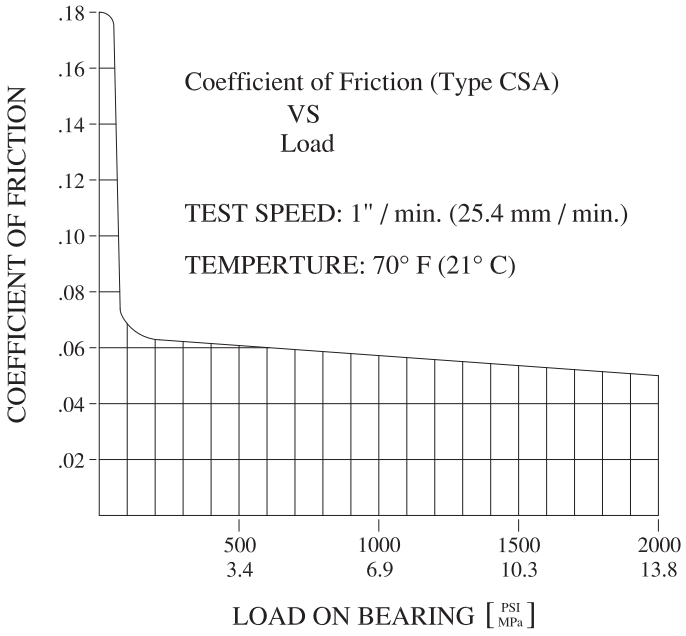
TEMPERATURE	ALLOWABLE LOAD	FACTOR
70°F	2000 psi	1.00
100°F	1700 psi	0.85
200°F	1000 psi	0.50
300°F	700 psi	0.35
400°F	400 psi	0.20
500°F	200 psi	0.10

Apply the load reduction factors for the corresponding temperatures at the Teflon bearing. Multiply the allowable vertical load from the submittal sheet by the factor for the new allowable load at the operating bearing temperature.

FIG. 955

Supplemental Data

The coefficient of friction plotted in the graph below is a maximum value after first movement breakaway. The friction values do not vary significantly with temperature; however, they will rise with increased speed. The graph values will increase approximately 45% for a speed increase to 10 in./min.

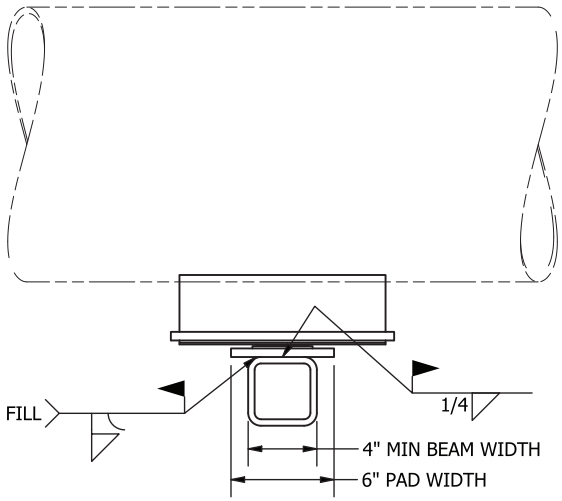


The epoxy compound used has been tested and formulated for bonding CSA to backing materials. The bond strength developed has a safety factor of from 5 to 6 on a sliding shear, assuming no friction between the special PTFE and back-up plate. These strengths are ensured at temperatures between 300F and 500F with a special epoxy for high temperature bearings.

Wear of bearings utilized in thermal expansion applications designed in accordance with CSA guidelines is negligible. Ultraviolet testing indicates that CSA materials show no ill effects from a time-accelerated test.

2.0 Alternate Beam Attachment Methods

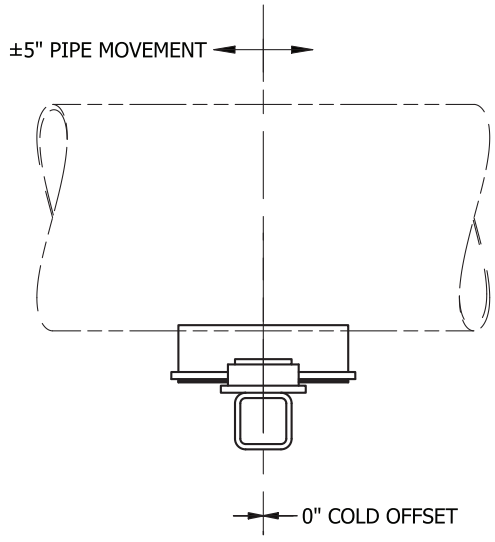
The minimum recommended beam width for supporting H-Slides and H-Guides is 4". The minimum beam width is to protect PTFE slide bearing and adhesive from excessive temperature during welding. The maximum allowable temperature at PTFE and adhesive is 300°F for standard adhesive and 500°F for high temperature adhesive. The figure below shows the attachment to a 4" wide tube with a flared-bevel-groove weld. Intermittent and continuous welds permissible.



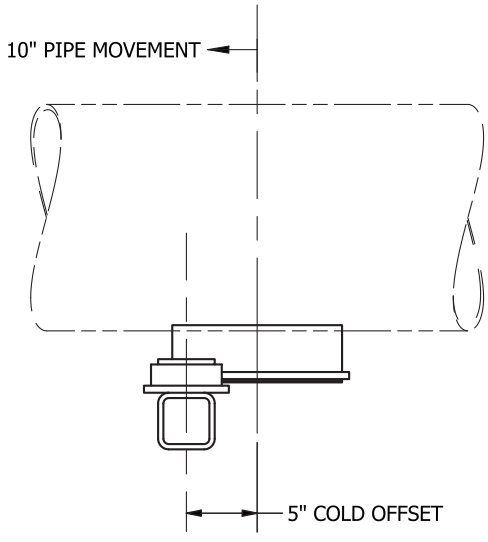
NOTES:
1. WELD LENGTH, SPACING, AND LOCATION PER SUBMITTAL SHEET.

3.0 Cold Offset

When the support body is centered on the slide or guide pad during installation (cold), the support may offer ±5" axial movement during operating (hot) conditions. If more travel is desired and the direction of the movement known, the support body may be cold offset from the slide or guide pad allowing up to 10" travel in one direction.



CENTERED INSTALLATION POSITION FOR ±5" MOVEMENT



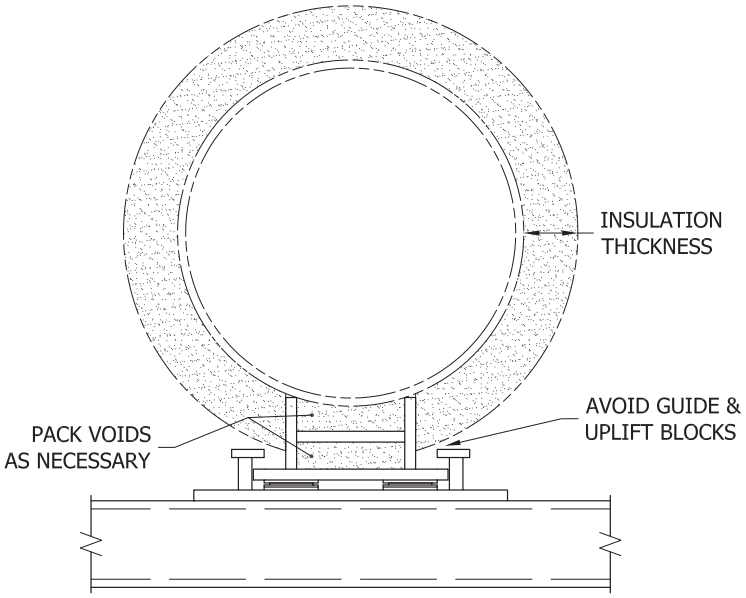
COLD OFFSET POSITION FOR +10" / -0" MOVEMENT

FIG. 955

Supplemental Data

4.0 Insulation

Maximum insulation thickness is dependent on the bottom of pipe elevation and the presence of guide and holddown blocks. Insulation shall avoid the guide and holddown blocks to prevent damage from pipe movement. One or both H-Body voids may be filled with insulation as necessary to match the desired thickness.



Finishes

National Pipe Hanger Corporation offers the following types of finishes on its products.

ELECTRO-GALVANIZED ZINC (ASTM B633) - This type of finish is suitable for indoor use in relatively dry areas. The process deposits a coating of zinc on the steel or iron through the process of electrolysis. A coating of pure zinc adheres to the steel or iron with a molecular bond.

PRE-GALVANIZED ZINC (ASTM A653) - This type of finish is recommended for extended exposure in dry or mildly corrosive atmospheres. Also referred to as "mill galvanized," the pre-galvanized zinc coating is produced at the steel mill by continuously rolling steel coils or sheets through molten zinc. The material is then cut to size for fabrication.

HOT-DIP GALVANIZED (ASTM A123 or ASTM A153) - This type of finish provides extended corrosion protection for steel and iron products. It is recommended for prolonged outdoor exposure and will usually protect steel and iron products in most atmospheric environments. After fabrication, the product is immersed in a bath of molten liquid zinc where a metallurgical bond is created resulting in a tightly adherent zinc coating on all surfaces including edges.

COPPER PLATING - This type of finish is used for identification purposes and generally not intended to provide corrosion protection. It is recommended that a non-metallic coating, jacket or liner be used on hanger material where the risk of galvanic corrosion is present.

COPPER-GARD - COPPER-GARD products offer corrosion protection due to the epoxy coating over Electro-Galvanized material. The alternative Copper Plating that has been done historically identifies the product and is not intended for protection.

PVC - Polyvinyl Chloride or plastic coated products are recommended to prevent galvanic reaction between dissimilar metals, provide corrosion resistance, and reduce noise and vibration.

SPECIAL COATING - Special finishes can be supplied per customer request.

Pipe Outside Diameter Chart

NOMINAL SIZE	NPS (IPS) STANDARD / SCHEDULE 40 / SCHEDULE 80 STEEL (C & SS)	AWWA DUCTILE IRON (IRON)	SERVICE WEIGHT CAST IRON SOIL PIPE (IRON)	EXTRA WEIGHT CAST IRON SOIL PIPE (IRON)	NO-HUB CAST IRON SOIL PIPE (IRON)	COPPER TUBE TYPE L / TYPE K (COPPER)	PVC SCHEDULE 40 / SCHEDULE 80 / SDR 26	PVC SDR 35	NOMINAL SIZE
1/8	-	-	-	-	-	-	0.405	-	1/8
1/4	0.540	-	-	-	-	0.375	0.540	-	1/4
3/8	0.675	-	-	-	-	0.500	0.675	-	3/8
1/2	0.840	-	-	-	-	0.625	0.840	-	1/2
3/4	1.050	-	-	-	-	0.875	1.050	-	3/4
1	1.315	-	-	-	-	1.125	1.315	-	1
1 1/4	1.660	-	-	-	-	1.375	1.660	-	1 1/4
1 1/2	1.900	-	-	-	1.90	1.625	1.900	-	1 1/2
2	2.375	-	2.25	2.38	2.35	2.125	2.375	-	2
2 1/2	2.875	-	-	-	-	2.625	2.875	-	2 1/2
3	3.500	3.96	3.25	3.50	3.35	3.125	3.500	-	3
3 1/2	4.000	-	-	-	-	3.625	4.000	-	3 1/2
4	4.500	4.80	4.25	4.50	4.38	4.125	4.500	4.215	4
4 1/2	5.000	-	-	-	-	-	-	-	4 1/2
5	5.563	-	5.25	5.50	5.30	5.125	5.563	-	5
6	6.625	6.90	6.25	6.50	6.30	6.125	6.625	6.275	6
7	7.625	-	-	-	-	-	7.625	-	7
8	8.625	9.05	8.38	8.62	8.38	8.125	8.625	8.400	8
9	9.625	-	-	-	-	-	9.625	-	9
10	10.75	11.10	10.50	10.75	-	-	10.750	10.500	10
11	11.75	-	-	-	-	-	11.750	-	11
12	12.75	13.20	12.50	12.75	-	-	12.750	12.500	12
14	14.00	15.30	-	-	-	-	-	-	14
15	-	-	15.62	15.88	-	-	-	15.300	15
16	16.00	17.40	-	-	-	-	-	-	16
18	18.00	19.50	-	-	-	-	-	18.701	18
20	20.00	21.60	-	-	-	-	-	-	20
21	-	-	-	-	-	-	-	22.047	21
22	22.00	-	-	-	-	-	-	-	22
24	24.00	25.80	-	-	-	-	-	24.803	24
26	26.00	-	-	-	-	-	-	-	26
28	28.00	-	-	-	-	-	-	-	28
30	30.00	32.00	-	-	-	-	-	-	30
32	32.00	-	-	-	-	-	-	-	32
34	34.00	-	-	-	-	-	-	-	34
36	36.00	38.30	-	-	-	-	-	-	36
42	42.00	44.50	-	-	-	-	-	-	42
48	48.00	50.80	-	-	-	-	-	-	48
54	54.00	57.10	-	-	-	-	-	-	54
Standards	1	2	3	4	5	6			
Notes	a								

Standards:

1. ASTM A53
2. AWWA C108-70, Table 8.2
3. ASTM A74, Table 2
4. ASTM A74, Table 1
5. Cast Iron Soil Pipe Institute, Standard 301-72, Table 1
6. ASTM B88-82

Notes:

a. Stainless steel tubing outside diameter equals nominal diameter.

Maximum Spacing Between Pipe Supports

NOMINAL SIZE OR TUBE SIZE	CARBON STEEL PIPE - ft.		COPPER TUBE - ft.		PVC PIPE - ft.	CPVC PIPE - ft.	STAINLESS STEEL PIPE - ft.
	STANDARD WEIGHT		TYPE L, DRAWN		SCHEDULE 40	SCHEDULE 40	SCHEDULE 10S/10
	WATER SERVICE	VAPOR SERVICE	WATER SERVICE	VAPOR SERVICE	WATER SERVICE	WATER SERVICE	VAPOR SERVICE
	≤ 650ºF		≤ 250ºF		≤ 100ºF		≤ 300ºF
¼	-	-	5.0	5.0	3.5	3.5	-
⅜	7.0	8.0	5.0	6.0	3.5	4.0	8.0
½	7.0	8.0	5.0	6.0	4.0	4.5	8.0
¾	7.0	9.0	5.0	7.0	4.0	5.0	9.0
1	7.0	9.0	6.0	8.0	4.5	5.5	9.0
1¼	7.0	9.0	7.0	9.0	5.0	5.5	9.0
1½	9.0	12.0	8.0	10.0	5.0	6.0	12.0
2	10.0	13.0	8.0	11.0	5.0	6.0	13.0
2½	11.0	14.0	9.0	13.0	6.0	7.0	14.0
3	12.0	15.0	10.0	14.0	6.0	7.0	15.0
3½	13.0	16.0	11.0	15.0	6.5	7.5	16.0
4	14.0	17.0	12.0	16.0	6.5	7.5	17.0
5	16.0	19.0	13.0	18.0	7.0	7.5	19.0
6	17.0	21.0	14.0	20.0	7.5	8.0	21.0
8	19.0	24.0	16.0	23.0	8.0	9.0	24.0
10	22.0	26.0	18.0	25.0	8.5	10.0	26.0
12	23.0	30.0	19.0	28.0	9.5	10.5	30.0
14	25.0	32.0	-	-	10.0	11.0	32.0
16	27.0	35.0	-	-	10.5	12.0	35.0
18	28.0	37.0	-	-	11.0	12.5	37.0
20	30.0	39.0	-	-	11.5	13.0	39.0
24	32.0	42.0	-	-	12.5	14.0	42.0
30	33.0	44.0	-	-	-	-	44.0
36	35.0	46.0	-	-	-	-	46.0
42	38.0	50.0	-	-	-	-	50.0

Note:
1. Per MSS SP-58, Table 4

Recommended Minimum Rod Diameter for Single Rigid Rod Hangers

PIPE SIZE	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24	30
REC. ROD SIZE	⅜							½			⅝		¾		⅞		1			1¼		

Notes:
1. Per MSS SP-58, Table 3
2. Rods may be reduced one size for double rod hangers.

Sheet Metal Thickness

SHEET GAUGE - ga.	24	22	20	18	16	14	12	10
THICKNESS	0.0276	0.0336	0.0396	0.0516	0.0635	0.0785	0.1084	0.1382

Note:
1. Sheet metal thickness based on galvanized steel.

Pipe Chart

⅜" PIPE SIZE - 0.675" O.D.		
SCHEDULE NO.	40	80
WALL DESIGNATION	STD.	XS
THICKNESS - IN.	0.091	0.126
PIPE - LBS./FT.	0.568	0.739
WATER - LBS./FT.	0.083	0.061

½" PIPE SIZE - 0.840" O.D.			
40	80	160	
STD.	XS		XXS
0.109	0.147	0.188	0.294
0.851	1.088	1.309	1.714
0.132	0.101	0.068	0.022

¾" PIPE SIZE - 1.050" O.D.				
SCHEDULE NO.	40	80	160	
WALL DESIGNATION	STD.	XS		XXS
THICKNESS - IN.	0.113	0.154	0.219	0.308
PIPE - LBS./FT.	1.131	1.474	1.944	2.441
WATER - LBS./FT.	0.231	0.187	0.128	0.064

1" PIPE SIZE - 1.315" O.D.			
40	80	160	
STD.	XS		XXS
0.133	0.179	0.250	0.358
1.68	2.17	2.84	3.66
0.37	0.31	0.23	0.12

1¼" PIPE SIZE - 1.660" O.D.				
SCHEDULE NO.	40	80	160	
WALL DESIGNATION	STD.	XS		XXS
THICKNESS - IN.	0.140	0.191	0.25	0.382
PIPE - LBS./FT.	2.27	3.00	3.77	5.22
WATER - LBS./FT.	0.65	0.56	0.46	0.27

1½" PIPE SIZE - 1.900" O.D.			
40	80	160	
STD.	XS		XXS
0.145	0.200	0.281	0.400
2.72	3.63	4.86	6.41
0.88	0.77	0.61	0.41

2" PIPE SIZE - 2.375" O.D.				
SCHEDULE NO.	40	80	160	
WALL DESIGNATION	STD.	XS		XXS
THICKNESS - IN.	0.154	0.218	0.343	0.436
PIPE - LBS./FT.	3.65	5.02	7.44	9.03
WATER - LBS./FT.	1.46	1.28	0.97	0.77

2½" PIPE SIZE - 2.875" O.D.			
40	80	160	
STD.	XS		XXS
0.203	0.276	0.375	0.552
5.79	7.66	10.01	13.7
2.08	1.84	1.54	1.07

3" PIPE SIZE - 3.500" O.D.				
SCHEDULE NO.	40	80	160	
WALL DESIGNATION	STD.	XS		XXS
THICKNESS - IN.	0.216	0.300	0.438	0.600
PIPE - LBS./FT.	7.58	10.25	14.32	18.58
WATER - LBS./FT.	3.2	2.86	2.35	1.80

3½" PIPE SIZE - 4.000" O.D.		
40	80	
STD.	XS	XXS
0.226	0.318	0.636
9.11	12.51	22.85
4.28	3.85	2.53

4" PIPE SIZE - 4.500" O.D.				
SCHEDULE NO.	40	80	160	
WALL DESIGNATION	STD.	XS		XXS
THICKNESS - IN.	0.237	0.337	0.531	0.674
PIPE - LBS./FT.	10.79	14.98	22.51	27.54
WATER - LBS./FT.	5.51	4.98	4.02	3.38

5" PIPE SIZE - 5.563" O.D.			
40	80	160	
STD.	XS		XXS
.258	0.375	0.625	0.750
14.62	20.78	32.96	38.55
8.66	7.89	6.33	5.62

Pipe Chart

6” PIPE SIZE - 6.625” O.D.				
SCHEDULE NO.	40	80	160	
WALL DESIGNATION	STD.	XS		XXS
THICKNESS - IN.	0.280	0.432	0.718	0.864
PIPE - LBS./FT.	18.97	28.57	45.3	53.2
WATER - LBS./FT.	12.51	11.29	9.2	8.2

8” PIPE SIZE - 8.625” O.D.				
20	40	80		160
	STD.	XS	XXS	
0.250	0.322	0.500	0.875	0.906
22.36	28.55	43.4	72.4	74.7
22.48	21.69	19.8	16.1	15.8

10” PIPE SIZE - 10.750” O.D.					
SCHEDULE NO.	20	40	60	80	160
WALL DESIGNATION		STD.	XS		
THICKNESS - IN.	0.250	0.365	0.500	0.593	1.125
PIPE - LBS./FT.	28.04	40.5	54.7	64.3	115.7
WATER - LBS./FT.	35.77	34.1	32.3	31.1	24.6

12” PIPE SIZE - 12.750” O.D.					
20		40		80	160
	STD.		XS		
0.250	0.375	0.406	0.500	0.687	1.312
33.38	49.6	53.5	65.4	88.5	160.3
51.10	49.0	48.5	47.0	44.0	34.9

14” PIPE SIZE - 14” O.D.						
SCHEDULE NO.	10	30	40		80	160
WALL DESIGNATION		STD.		XS		
THICKNESS - IN.	0.250	0.375	0.438	0.500	0.750	1.406
PIPE - LBS./FT.	36.71	54.6	63.4	72.1	106.1	189.1
WATER - LBS./FT.	62.06	59.7	58.7	57.5	53.2	42.6

16” PIPE SIZE - 16” O.D.				
10	30	40	80	160
	STD.	XS		
0.250	0.375	0.500	0.843	1.593
42.1	62.6	82.8	136.5	245.1
81.8	79.1	76.5	69.7	55.9

18” PIPE SIZE - 18” O.D.						
SCHEDULE NO.	10			40	80	160
WALL DESIGNATION		STD.	XS			
THICKNESS - IN.	0.250	0.375	0.500	0.562	0.937	1.781
PIPE - LBS./FT.	47.4	70.6	93.5	104.8	170.8	308.5
WATER - LBS./FT.	104.3	101.2	98.4	97.0	88.5	71.0

20” PIPE SIZE - 20” O.D.					
10	20	30	40	80	160
	STD.	XS			
0.250	0.375	0.500	0.593	1.031	1.968
52.7	78.6	104.1	122.9	208.9	379.0
129.5	126.0	122.8	120.4	109.4	87.9

24” PIPE SIZE - 24” O.D.						
SCHEDULE NO.	10	20		40	80	160
WALL DESIGNATION		STD.	XS			
THICKNESS - IN.	0.250	0.375	0.500	0.687	1.218	2.343
PIPE - LBS./FT.	63.4	94.6	125.5	171.2	296.4	541.9
WATER - LBS./FT.	188.0	183.8	180.1	174.3	158.3	127

30” PIPE SIZE - 30” O.D.		
10		20
	STD.	XS
0.312	0.375	0.500
98.9	118.7	157.6
293.5	291.0	286.0

36” PIPE SIZE - 36” O.D.				
SCHEDULE NO.	10		20	40
WALL DESIGNATION		STD.	XS	
THICKNESS - IN.	0.312	0.375	0.500	0.750
PIPE - LBS./FT.	119.1	142.7	189.6	282.4
WATER - LBS./FT.	425.9	422.6	416.6	405.1

42” PIPE SIZE - 42” O.D.	
	20
STD.	XS
0.375	0.500
166.7	221.6
578.7	571.7

Terms of Sale

AGREEMENTS: All agreements are subject to strikes, accidents or other causes beyond our control. Prices and terms are not subject to verbal changes or other agreements unless approved in writing by the seller.

TAXES: The buyer is liable for any federal or state taxes imposed on the seller unless the buyer provides the seller with a tax exemption certificate acceptable to the taxing authority.

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

RETURNS: Permission to return standard stocked merchandise must be obtained in writing. Credit may be issued subject to the following:

1. Return freight charges must be prepaid.

2. All material must be in **first-class condition and in box quantities** upon arrival at our plant; if not, repackaging and reconditioning costs will be deducted from the credit.

3. **If** material is in approved condition, credit will be allowed on the basis of the price charged less a minimum restocking charge of 30% and less any out-bound freight allowed or paid by us.

4. Special, non-stocked and custom-made merchandise is **NOT RETURNABLE.**

5. Materials are **NOT RETURNABLE** after 30 days beyond date of invoice.

CLAIMS: No claims for shortages allowed unless made in writing within ten (10) days of receipt of goods. All material sent out will be carefully counted and packed. Claims for goods damaged or lost in transit should be made to the carrier as our responsibility ceases on delivery to the carrier.

TERMS AND DESIGN: National Pipe Hanger Corporation reserves the right to make specification changes without notice. While every effort has been made to assure the accuracy of information contained in this catalog at the time of publication, we cannot accept responsibility for inaccuracies resulting from undetected errors or omissions.

WARNING: National Pipe Hanger's products are designed and manufactured in accordance with industry codes and standards and are intended for service and installation as illustrated or described herein. National shall not be responsible for any losses or damages sustained by the buyer or any other person as a result of misapplication. Products used for unintended purposes could fail, resulting in property loss, injury or death.

National Pipe Hanger Corporation's Terms of Sale supersede Buyer's supplemental or conflicting terms and conditions to which notice of objection is hereby given.

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