

PTFE Pipe Slide Assemblies

Overview

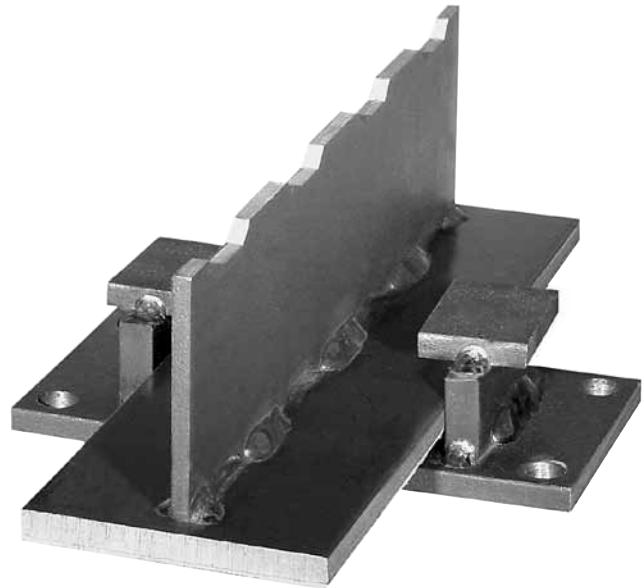
Application

Anvil PTFE pipe slide assemblies are designed to support the pipe and provide for lateral and axial movement due to thermal expansion and contraction of the piping system.

Assemblies are fabricated using PTFE slide bearings to provide a low coefficient of friction, minimizing frictional stress on the pipe and support structure.

Features

- Pre-engineered to save calculation and installation time.
- PTFE slide bearing pads are composed of 100% virgin Polytetrafluoroethylene polymer.
- Capable of supporting constant loads up to 2000 PSI at 70° F
- Coefficient of friction typically ranges between 0.06 and 0.2 depending on bearing surface area, bearing load (sample ranges shown in chart for given pressures at 70°F). Consult your Anvil representative for further information. The low coefficient of friction for the PTFE slide assemblies permits a smooth, unrestrained movement of the pipe and reduces overturning movements on supporting structures.
- PTFE is chemically inert and resists attack by chemicals, humidity and other elements found in harsh environments provided that the steel supports are suitably protected.
- Self-lubricating, maintenance-free.
- Provides resistance to galvanic corrosion between pipe and support structure.
- Maximum temperature: 400° F at PTFE
- Allows for up to 4" insulation thickness as standard. Greater than 4" insulation available on special request. Special designed slides and tees available on request.



Selection

- (1) Determine the support location based on allowable span and loading conditions.
- (2) Calculate the load for each slide assembly location.
- (3) Determine the lateral and axial movement of the pipe and the direction of movement, cold to hot.
- (4) Select pipe slide or tee figure number and attachment configuration, welded or bolted.
- (5) Select the method of slide plate attachment to support structure, welded or bolted.
- (6) Designate whether guided or non-guided slide plate is required.
- (7) Maximum recommended loads shown for pipe slides and structural tees are for vertical loading. Transitional loads for pipe structural tees are to be determined by customer.

Installation

- (1) Determine offset of pipe slide-slide plate interface to allow maximum pipe movement in direction of greatest thermal displacement.
- (2) Attach PTFE slide to pipe by welding or clamping with standard Fig. 212 pipe clamp or Fig. 432 special pipe clamp.
- (3) Attach slide plates to supporting structure by bolting or welding.
- (4) Verify setting to insure full bearing between the PTFE slide and slide base surfaces under all pipe movement conditions.

PTFE Pipe Slide Assemblies

Overview (cont.)

The maximum load on the pipe slides is based on using a PTFE width of 2" for the slide plate and a 70° F temperature. For a different temperature at the bearing surfaces, multiply the maximum load rating by the following factor.

Temperature °F	Factor
70	1.00
100	0.85
200	0.55
300	0.40
400	0.25

COEFFICIENT OF FRICTION VERSUS PRESSURE

Test Speed: 1"/min. (25mm/min.)

Temperature: 70°F (21°C)

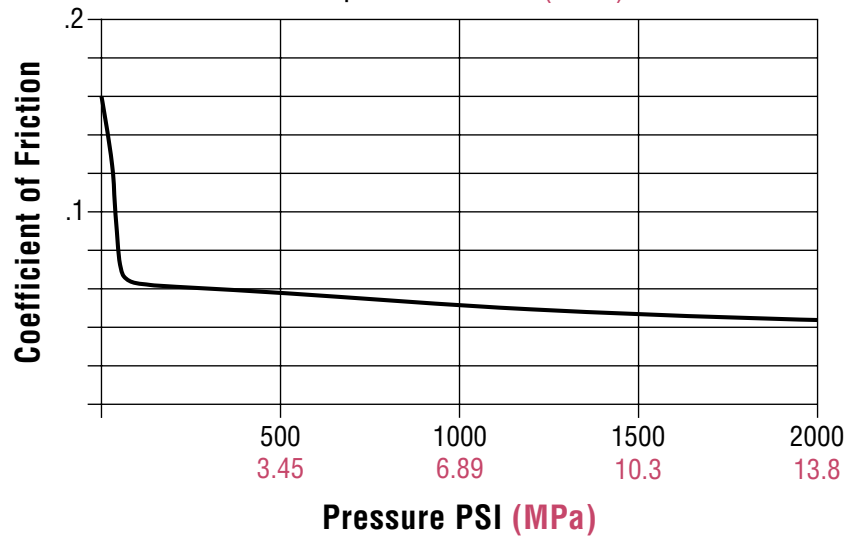


Fig. 257: Structural Tee Slide Assembly

Fig. 257A: Structural Tee

Fig. 436: Fabricated Tee Slide Assembly

Fig. 436A: Fabricated Tee

Pipe Slides Assembly, Complete

Size Range: All sizes within maximum load rating.

Material: Carbon steel tee, PTFE bonded slide plates and carbon steel base.

Finish: Plain, Painted or Galvanized

Service: For the support of piping where horizontal movement resulting from expansion and contraction takes place and where a low coefficient of friction is desired.

Approvals: Complies with Federal Specification A-A-1192A (Type 35), ANSI/MSS SP-69 and MSS SP-58 (Type 35).

Maximum Load: As indicated at 70° F see page 141 for rating factor at higher temperatures.

Maximum Temperature: 750° F

Temperature Range at PTFE: -20° F to 400° F

Features:

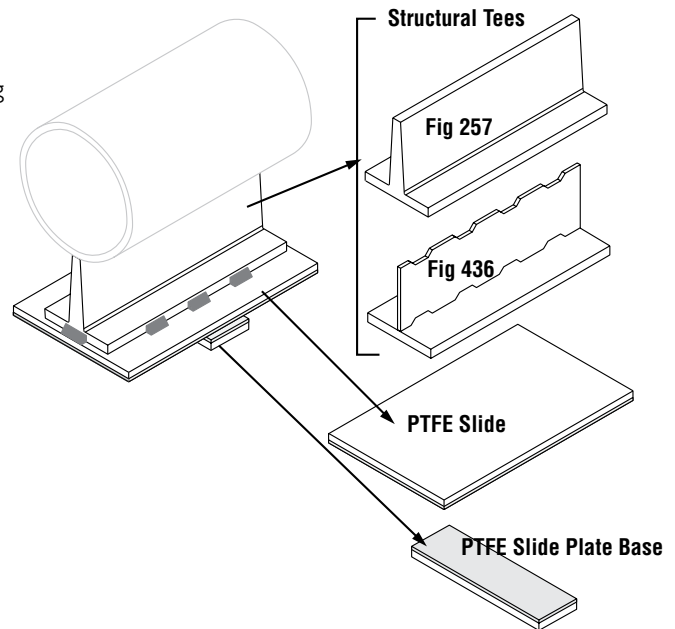
- No lubrication required.
- Designed to minimize heat loss.
- Allows up to 3" of insulation on Types 1, 2, 4 & 5 and up to 2 1/2" of insulation on Types 3 & 6.
- Allows up to 10" travel standard
- Weld in place design.

Available Options:

- Increased travels.
- Increased tee heights.
- End plates.
- Clamps, Fig. 212 or Fig. 432.
- Base plate with mounting holes
- High temperature option, 1000° F (Fig. 436) Stainless steel tee slide with an insulated PTFE slide

Ordering: Specify figure number, type, name, finish and any other option desired.

PTFE Pipe Slide Assembly – "T" Style (Type 1)



Note: In the PH-92 and PH-92R Catalogs:

The Fig. 257 & 436 (slide "T" section only) formerly referred to as Fig. 280 & 435

The Fig. 257 & 436 (slide base plate) formerly referred to as Fig. 438 (slide base plate)

The acceptability of galvanized coatings at temperatures above 450°F is at the discretion of the end user.

FIG. 257, 436: LOADS (LBS) • DIMENSIONS (IN) • WEIGHTS (LBS)

Figure Number	Type	Max Load			Welded Slide				Bolted Slide					
		Down	Side *	Up	H **	W	BL	Weight	H **	W	BL	Hole Locations	Bolt Size	Weight
Fig. 257	Tee	8,000	2,000	800	3 15/16	4	12	7.00	—	—	—	—	1/2	—
	1				4 3/4	4	2	11.93	4 3/4	—	15.25			
	2				5	8	4	16.10	5	8	4	2 1/2 x 6 1/2		16.10
	3				5	11 1/2	5	16.95	5	11 1/2	5	3 1/2 x 10		16.95
	4				4 3/4	6	2	12.47	4 3/4	—	18.36			
	5				5	11 1/2	5	18.81	5	11 1/2	5	3 1/2 x 10		19.21
6	5	11 1/2	5	19.66	5	11 1/2	5	3 1/2 x 10	20.06					
Fig. 436	Tee	8,000	2,000	800	4	4	12	7.00	—	—	—	1/2	—	
	1				4 1 1/16	4	2	15.42	4 1 1/16	—	18.74			
	2				4 15/16	8	4	19.59	4 15/16	8	4		2 1/2 x 6 1/2	19.59
	3				4 15/16	8	4	20.44	4 15/16	8	4		2 1/2 x 6 1/2	20.44
	4				4 1 1/16	6	2	15.97	4 1 1/16	—	21.85			
	5				4 1 1/16	6	2	22.30	4 1 1/16	11 1/2	5		3 1/2 x 10	22.70
6	4 15/16	11 1/2	5	23.15	4 15/16	11 1/2	5	3 1/2 x 10	23.55					

* Side load is only applicable if appropriate endplates are added to slide or "T" Section

** With the Fig. 432 clamp, add the material thickness. The Tees are now being notched for the material thickness when welding on the Fig. 212 See page 147.

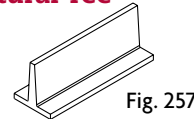
Fig. 257 and 436 PTFE Pipe Slide Assemblies

Straps
Pipe Supports
Trapeze
Pipe Shields & Saddles
Pipe Roll
Pipe Guides & Slides
Sway Brace Seismic
Spring Hangers
Constant Supports
Vibration Control & Sway Brace
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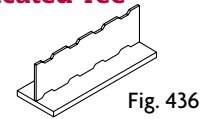
Notes:

- Types 1, 2, and 3 provide for longitudinal movement only.
- Types 4, 5, and 6 provide for both longitudinal and transverse movement of piping.

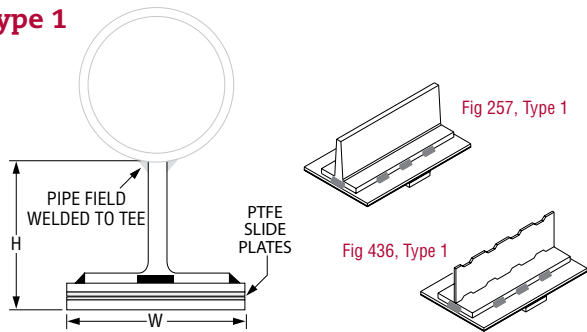
Structural Tee



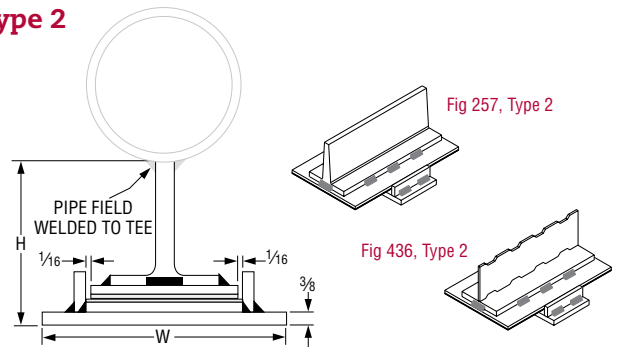
Fabricated Tee



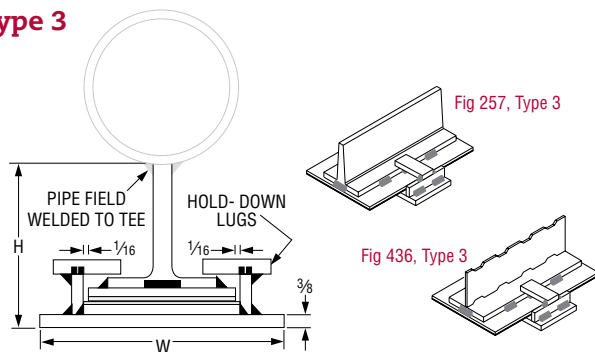
Type 1



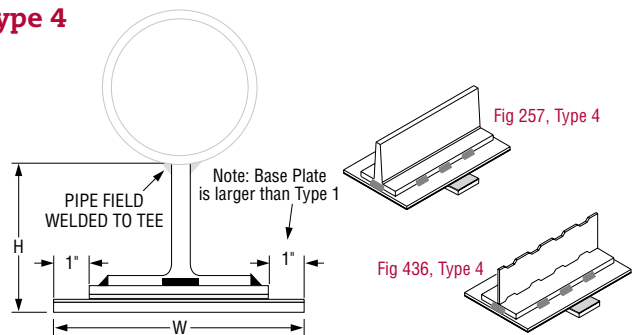
Type 2



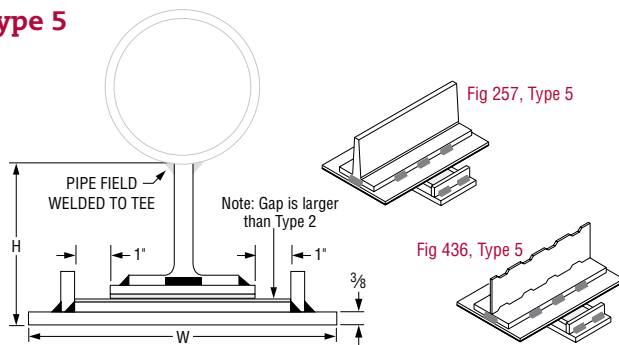
Type 3



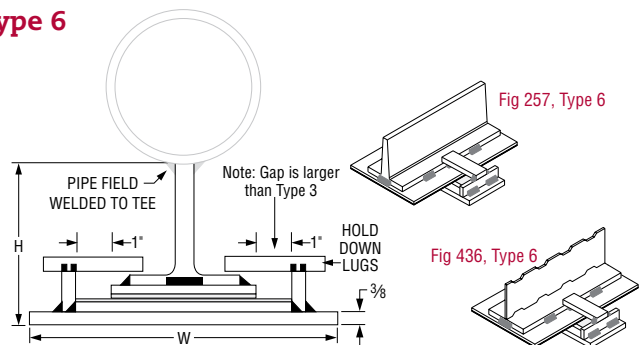
Type 4



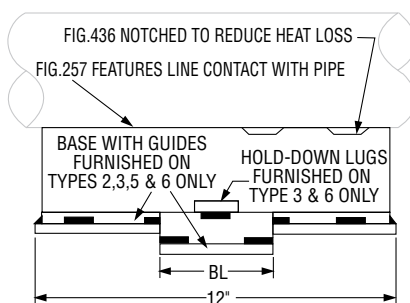
Type 5



Type 6



Side View, All Types



Options (for all types)

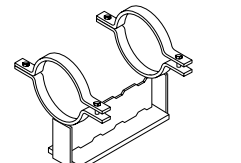
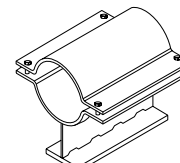
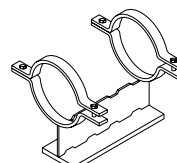
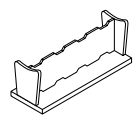
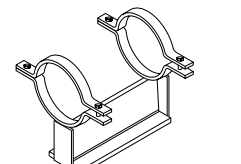
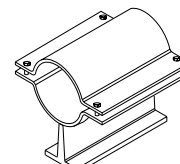
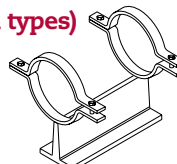
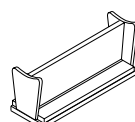


Fig. 439: Structural "H" Slide Assembly
Fig. 439A: Structural "H"

Pipe Slide Assembly, Complete

Size Range: 6" through 36"

Material: Carbon steel "H" section, PTFE bonded slide plates and carbon steel base.

Finish: Plain, Painted or Galvanized

Service: A heavy duty slide support where horizontal movement resulting from expansion and contraction takes place and where a low coefficient of friction is desired.

Approvals: Complies with Federal Specification A-A-1192A (Type 35), ANSI/MSS SP-69 and MSS SP-58 (Type 35).
Maximum Load: As indicated at 70° F see page 141 for rating factor at higher temperatures.

Maximum Temperature: 750° F

Temperature Range at PTFE: -20° F to 400° F

Features:

- No lubrication required.
- Allows up to 4" of insulation.
- Allows up to 10" travel standard.
- Weld in place design.

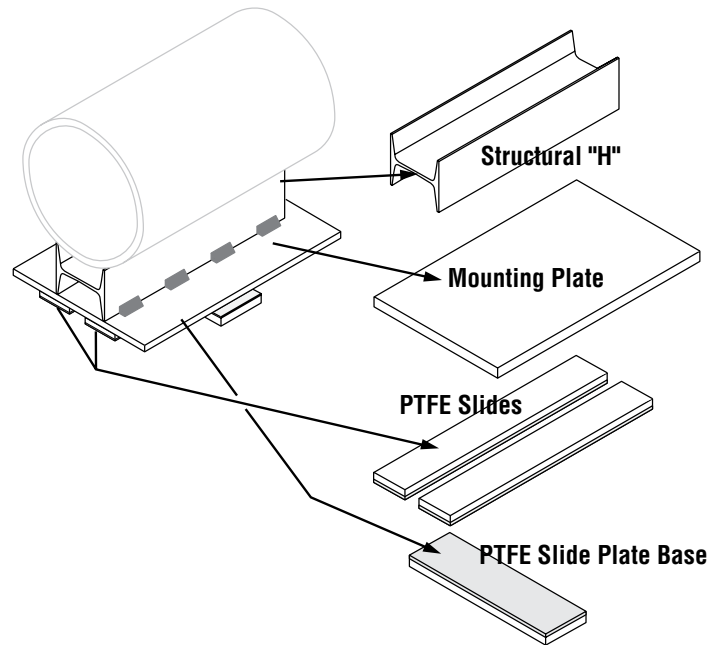
Available Options:

- Increased travels.
- Increased "H" Section heights.
- Clamps, Fig. 212 or Fig. 432.
- Base plate with mounting holes. The bolt spacing for the bolted base plates is equal to the "W" dimension minus 1 1/2" and the "BL" dimension minus 1 1/2" for all pipe sizes and the hole diameter is 9/16" for all sizes.

Ordering: Specify figure number, type, name, finish and any other option desired.

Notes: Types 1, 2, and 3 provide for longitudinal movement only. Types 4 and 5 provide for both longitudinal and transverse movement of piping.

PTFE Pipe Slide Assembly – "H" Type



Note: In the PH-92 and PH-92R Catalogs:

The Fig. 439 (slide "H" section only) formerly referred to as Fig. 437.

The Fig. 439 (slide base plate) formerly referred to as Fig. 438 (slide base plate).

The acceptability of galvanized coatings at temperatures above 450°F is at the discretion of the end user.

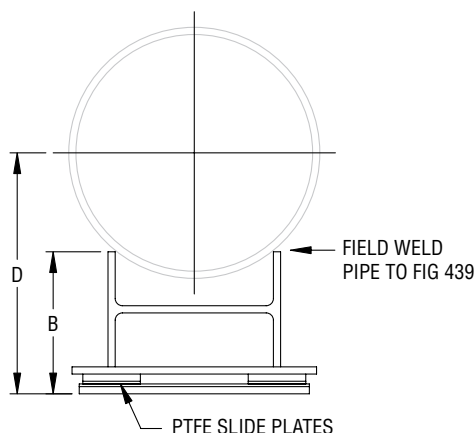


FIG. 439: LOADS (LBS) • DIMENSIONS (IN)

Pipe Size	B			D *			Max Load					
	Type			Type			Down	Side Type 2, 3, 5	Up Type 3			
	1 & 4	2 & 5	3	1 & 4	2 & 5	3						
6	5	5 1/4	5 5/16	7 3/4	8	8	12,000	3,000	1,200			
8				8 3/4	9	9						
10	5 1/8	5 3/8	5 7/16	9 5/8	9 7/8	9 15/16				16,000	4,000	1,600
12				10 3/4	11	11 1/16						
14				10 7/8	11 1/8	11 3/16						
16				12 1/8	12 3/8	12 1/16						
18				12 5/8	12 7/8	12 15/16						
20	5 1/4	5 1/2	5 9/16	13 3/4	14	14 1/16	24,000	6,000	2,400			
24				15 5/8	15 7/8	15 15/16						
30				19 5/8	19 7/8	20 1/16						
36	6 7/16	6 13/16	6 3/4	23	23 3/4	23 7/16						

* With clamps; add material thickness of a Fig. 212 for bolted bases add 5/16" to height "H" dimension.

** With the Figure 432 special clamp, add the material thickness of Figure 432. See page 146.

Fig. 439

Structural "H" Slide Assembly, Complete

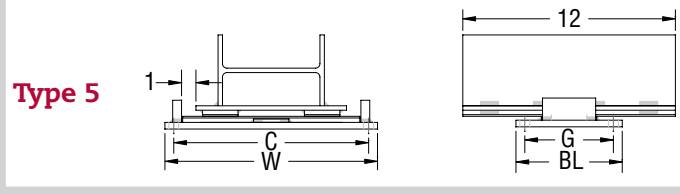
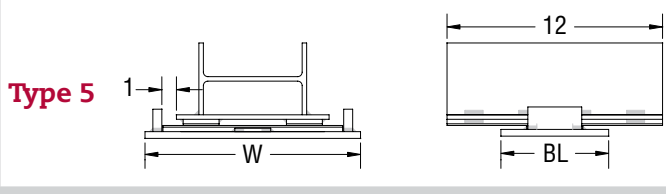
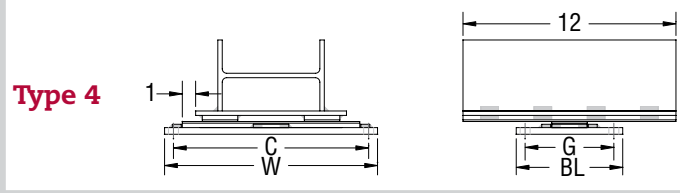
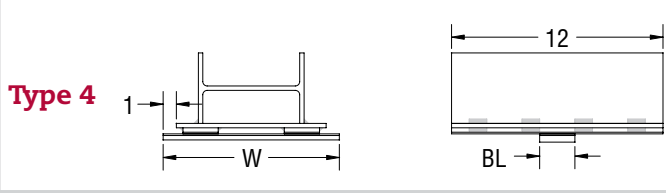
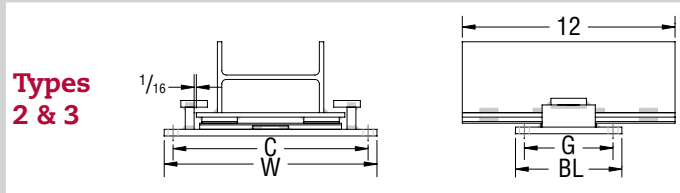
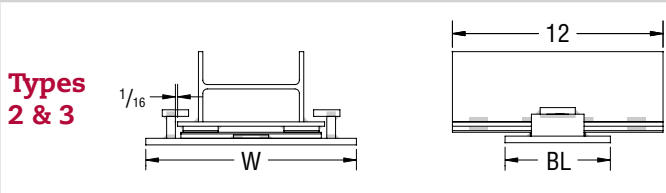
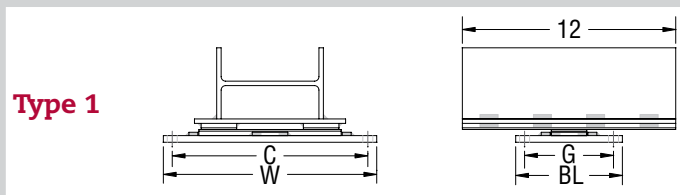
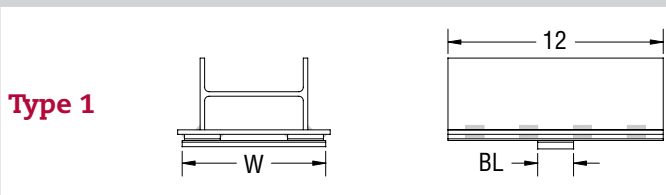
Straps
Pipe Supports
Trapeze
Pipe Shields & Saddles
Pipe Roll
Pipe Guides & Slides
Sway Brace Seismic
Spring Hangers
Constant Supports
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WELDED: DIMENSIONS (IN)						
Pipe Size	W Type				BL Type	
	1	2 & 3	4	5	1 & 4	2, 3, & 5
	6	5 1/2	10	7 1/2	10	2
8	10 1/2			12 1/2		
10	12 1/2			14 1/2		
12	14 1/2			17		
14	16 1/2			19		
16	8	12 1/2	10 1/2	12 1/2	3	
18			12 1/2	14 1/2		
20			14 1/2	17		
24	14	19	16 1/2	19		
30	16	21	18 1/4	21		
36	18	23	20 1/4	23		

BOLTED: DIMENSIONS (IN)				
Pipe Size	W Type 1 to 5	BL Type 1 to 5	Hole Spacing	
			C	G
6	10	6	8 1/2	4 1/2
8				
10	12 1/2		11	
12				
14	14 1/2		13	
16				
18	17		15 1/2	
20				
24	19		17 1/2	
30	21		19 1/2	
36	23	21 1/2		

WELDED SCHEMATICS

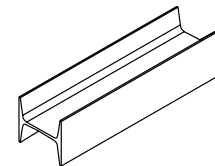
BOLTED SCHEMATICS



Notes:

- Types 1, 2, and 3 provide for longitudinal movement only.
- Types 4 and 5 provide for both longitudinal and transverse movement of piping.

"H" Section Only



Options (for all types)

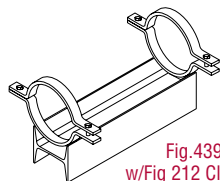


Fig. 439
w/ Fig 212 Clamps

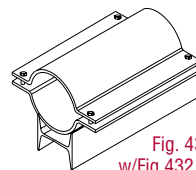


Fig. 439
w/ Fig 432 Clamp

Fig. 432

Special Clamp

Size Range: 2" through 24"

Material: Carbon steel

Finish: Plain or Galvanized

Maximum Temperature: Plain 750° F, Galvanized 450° F
for carbon steel pipe only

Service: Used with and where pipe slides cannot be welded directly to pipe or copper tube. When used with fiberglass, plastic, or aluminum pipe, a thin protective liner should be inserted between the pipe and the clamp. Clamp is designed for use with Figure 257 and Figures 436 and 439 slides and tees.

Ordering: Specify figure number, pipe size, name and finish.

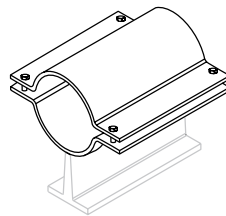


Fig. 257
w/Fig 432 Clamp

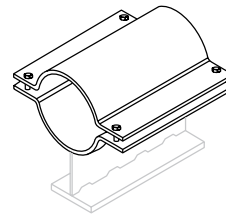


Fig. 436
w/Fig 432 Clamp

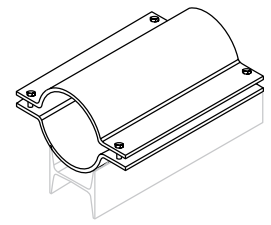


Fig. 439
w/Fig 432 Clamp

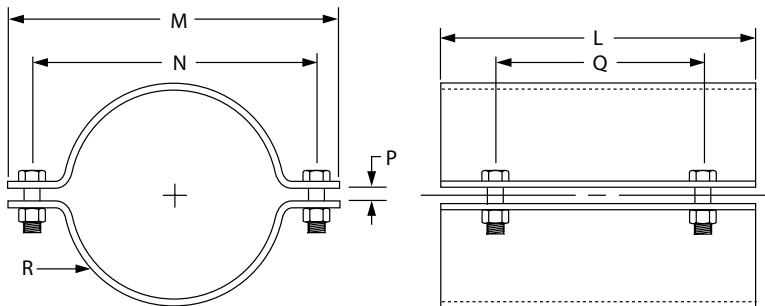


FIG. 432: WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	L	M	N	P	Q	R Stock Size	Weight
2	6	5	4	1/4	4 1/2	1/8 x 6	2
2 1/2		5 1/2	4 1/2				3
3		6	5				3
3 1/2		6 1/2	5 1/2				4
4		7	6				4
5	8	8	7	3/8	6	3/16 x 8	5
6		9 5/8	8 1/2				12
8		11 5/8	10 1/2				15
10		13 3/4	12 5/8				18
12		15 3/4	14 5/8				21
14	12	17 7/8	16 1/2	1/2	8	1/4 x 12	41
16		19 7/8	18 1/2				46
18		21 7/8	20 1/2				52
20		23 7/8	22 1/2				57
24		28 1/8	26 7/8				5/8

Fig. 212

Medium Pipe Clamp

Size Range: 2" through 30"

Material: Carbon steel

Finish: Plain or Galvanized

Maximum Temperature: Plain 750° F, Galvanized 450° F

Service: Pipe clamp for figure numbers 257, 436, and 439 slides and tees.

Ordering: Specify pipe size, figure number, name and finish.

Note: Two clamps are required. "T" section 257/436 or "H" section 439 are notched to accommodate clamps and to eliminate the increase in height of the slide assembly.

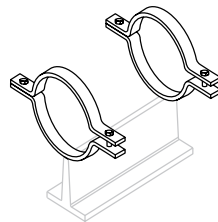
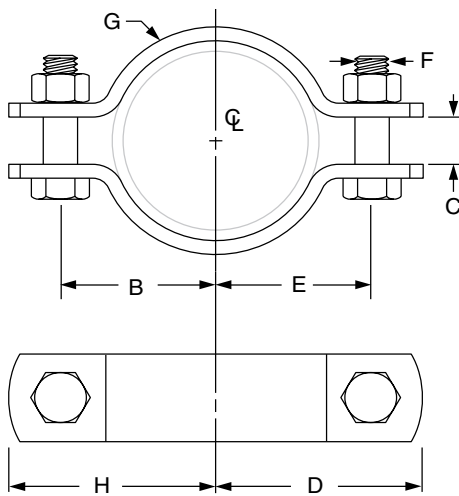


Fig. 257
w/ Fig 212 Clamps

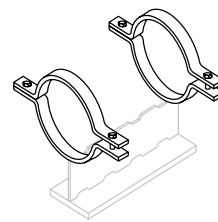


Fig. 436
w/ Fig 212 Clamps

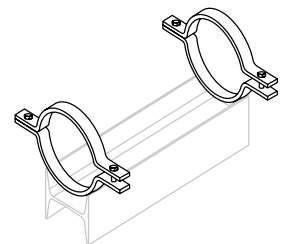


Fig. 439
w/ Fig 212 Clamps

FIG. 212: WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	B	C	D	E	H	F	G Width	Weight
2	2 $\frac{1}{8}$	$\frac{1}{2}$	2 $\frac{3}{4}$	2 $\frac{1}{8}$	2 $\frac{3}{4}$	$\frac{1}{2}$	1	2.2
2 $\frac{1}{2}$	2 $\frac{5}{8}$	$\frac{5}{8}$	3 $\frac{1}{4}$	2 $\frac{5}{8}$	3 $\frac{1}{4}$			2.4
3	2 $\frac{7}{8}$		3 $\frac{1}{2}$	2 $\frac{7}{8}$	3 $\frac{1}{2}$			2.8
3 $\frac{1}{2}$	3 $\frac{3}{16}$		3 $\frac{13}{16}$	3 $\frac{3}{16}$	3 $\frac{13}{16}$			3.0
4	3 $\frac{1}{2}$	$\frac{3}{4}$	4 $\frac{1}{4}$	3 $\frac{1}{2}$	4 $\frac{1}{4}$	$\frac{5}{8}$	1 $\frac{1}{4}$	4.6
5	4 $\frac{3}{16}$		4 $\frac{15}{16}$	4 $\frac{3}{16}$	4 $\frac{15}{16}$			5.2
6	4 $\frac{7}{8}$		5 $\frac{3}{4}$	4 $\frac{7}{8}$	5 $\frac{3}{4}$	$\frac{3}{4}$	1 $\frac{1}{2}$	10.8
8	6	6 $\frac{7}{8}$	6	6 $\frac{7}{8}$	13.0			
10	7 $\frac{7}{16}$	1	8 $\frac{9}{16}$	7 $\frac{7}{16}$	8 $\frac{9}{16}$	$\frac{7}{8}$	2	27.2
12	8 $\frac{7}{16}$		9 $\frac{9}{16}$	8 $\frac{7}{16}$	9 $\frac{9}{16}$			30.4
14	9 $\frac{1}{4}$	1 $\frac{1}{8}$	10 $\frac{5}{8}$	9 $\frac{1}{4}$	10 $\frac{5}{8}$		2 $\frac{1}{2}$	41.0
16	10 $\frac{1}{4}$		11 $\frac{5}{8}$	10 $\frac{1}{4}$	11 $\frac{5}{8}$	44.6		
18	11 $\frac{5}{8}$	$\frac{1}{4}$	13	11 $\frac{5}{8}$	13	1	63.2	
20	12 $\frac{3}{4}$	$\frac{1}{8}$	14 $\frac{1}{8}$	12 $\frac{3}{4}$	14 $\frac{1}{8}$	$\frac{1}{8}$	71.6	
24	15 $\frac{1}{4}$	$\frac{1}{8}$	16 $\frac{7}{8}$	15 $\frac{1}{4}$	16 $\frac{7}{8}$	$\frac{1}{4}$	106.2	
30	19	2	21 $\frac{1}{8}$	19	21 $\frac{1}{8}$	$\frac{1}{4}$	4	227.8

•Clamps may be furnished with square ends.