

Fig. 260 ISS

Clevis Hanger with Insulation Saddle System

Size Range: 1/2" through 12" pipe and accommodates up to 2" of insulation.

Material: Carbon steel with high impact glass reinforced polypropylene saddle and carbon steel pipe spacer.

Finish: Plain or Galvanized Clevis Hanger

Service: Recommended for the suspension of stationary insulated chilled or hot water pipe lines.

Maximum Temperature: 40° F to 200° F

Approvals: Dual Fire Ratings, UL E94 VO and ASTM E84 Class 1 25/60.

Installation: Hanger load nut above clevis must be tightened securely to assure proper performance. Position the pipe on the saddle. Notch insulation to fit around the saddle. Square cut adjoining insulation and butt the insulation ends to each other. Insulation joint is coated, caulked and taped following standard insulation practice used on flanges and valves.

Adjustment: Vertical adjustment without removing the hanger may be made 7/8" through 2 3/8" varying with the size of the clevis. Tighten all nuts after adjustment.

Features: V-Block design cradles pipe through out the entire erection process. Clevis bolt spacer included as standard keeps the clevis lower strap from collapsing. Eliminates:

- Wood blocks and standard shields
- Costly calcium silicate inserts
- Re-leveling of piping at each individual hanger after insulation is completed.

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



FIG. 260 ISS SIZING TABLE						
Pipe Size	Insulation Thickness					
	1/2"	3/4"	1"	1 1/2"	2"	
(Size Number)						
1/2	2	2	3	—	—	
3/4	2	3	3	—	—	
1	2	3	3	—	—	
1 1/2	3	4	4	—	—	
2	4	4	5	—	—	
2 1/2	5	5	5	6	8	
3	5	5	5	6	8	
3 1/2	5	6	6	8	8	
4	6	6	8	8	8	
5	8	8	8	10	10	
6	10	10	10	10	10	
8	12	12	12	12	12	
10	14	14	14	14	16	
12	16	16	16	16	—	

FIG. 260 ISS SIZING TABLE						
Copper Tube Size	Insulation Thickness					
	1/2"	3/4"	1"	1 1/2"	2"	
(Size Number)						
3/8	2	2	3	—	—	
1/2	2	2	3	—	—	
5/8	2	2	3	—	—	
3/4	2	2	3	—	—	
1	2	3	3	—	—	
1 1/4	3	3	3	—	—	
1 1/2	3	3	4	—	—	
2	4	4	4	—	—	
2 1/2	4	5	5	6	—	
3	5	5	5	6	8	
3 1/2	5	5	6	8	8	
4	6	6	8	8	8	
5	8	8	8	8	10	
6	8	10	10	10	10	
8	10	10	12	12	12	

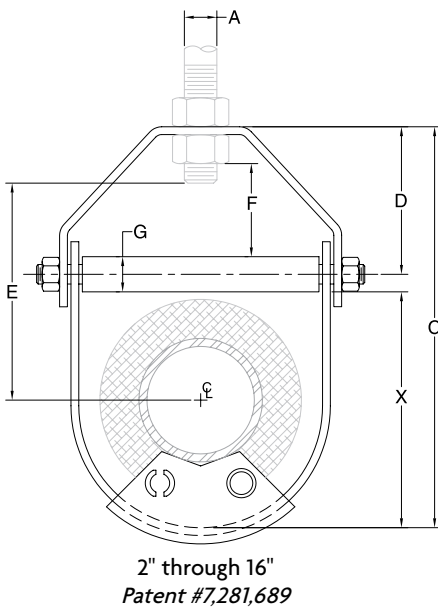


FIG. 260 ISS: LOADS (LBS) • WEIGHTS (LBS) • DIMENSIONS (IN)								
260 ISS Size Number	*Max Load	Weight	Rod Size A	C	**Rod Take Out E	Adjust. F	G	X
2	550	0.73	3/8	4 1/2	2 5/8	7/8	1/4	2 3/8
3		1.32	1/2	6 1/2	4 1/16	1 7/16	3/8	3 5/8
4		1.83	5/8	7 13/16	4 1/2	1 1/2		4 1/2
5	2.44	8 15/16		5 1/2	1 3/4	5 11/16		
6	750	3.81	3/4	10 1/4	5 3/4	1 1/2	1/2	6 11/16
8	1100	5.60		12 11/16	7 3/16	1 3/4		8 13/16
10		9.73	7/8	15 1/4	8 7/16	1 7/8	5/8	10 3/4
12		13.80		17 15/16	10 1/8	2 9/16		12 7/16
14	1700	15.60	1	19 9/16	10 11/16	2 1/2	3/4	14 7/16
16		26.81		22	12	2 3/8	1	16 5/16

* Max load exceeds dead weight load requirement of pipe at max span, except 14 and 16 where max load is based on industry standard spacing of 14. Further information on typical pipe spans and piping weight per length can be found on pages 249 and 251, respectively.

** Based on maximum insulation thickness, variations due to pipe size and insulation thickness may occur.

Fig. 260 ISS Clevis Hanger with Insulation Saddle System (cont.)

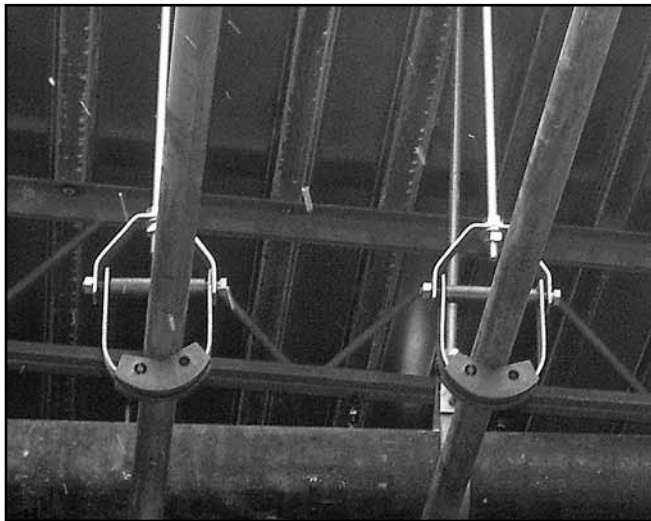
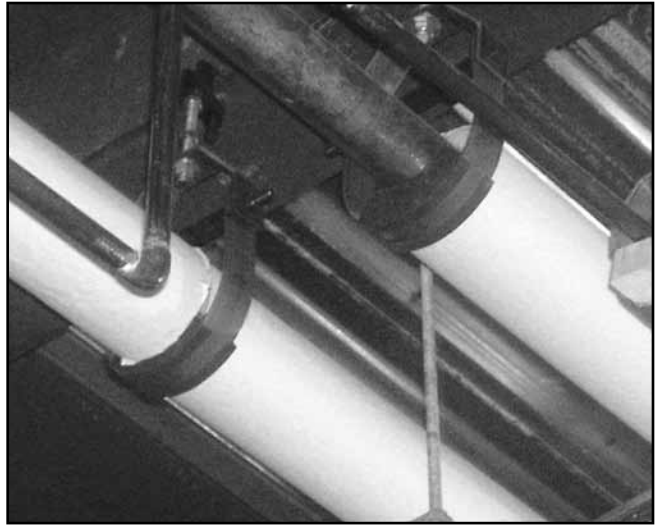
Application: Anvil's insulation saddle system clevises are fully tested and rated for a temperature range from 40°F to 200°F. Ideal for the suspension of stationary insulated chilled or hot water pipelines.

Chilled Water Testing: Extensive field-testing and inspection has been performed to confirm that the integrity of the insulation vapor barrier for chilled water systems are sustained with the 260 ISS.

To Assure Proper Vapor Barrier: Each insulation joint should be properly coated, caulked and taped. Applying standard insulation practice that is used on flanges and valves.

Features: The Anvil 260 (ISS) Insulation Saddle System reduces your overall installation time and greatly simplifies the way you insulate copper and steel pipe systems. Contractors can support insulated pipe with less parts and labor.

The revolutionary design of the 260 ISS spreads the load evenly over the lower strap of the clevis. The innovative V-Block design cradles the pipe at the design elevation throughout the erection process. The wide base V-Block design accommodates multiple pipe sizes, reducing the on-site inventory and the flexibility of pipe and insulation combinations with each size number.



ASTM & UL Fire Ratings: The 260 ISS has been independently tested by ASTM and UL for:

- Flame Spread Index (FSI)
- Smoke Development (SD) and drip ratings

Approvals from both agencies with the highest ratings for the type of product.

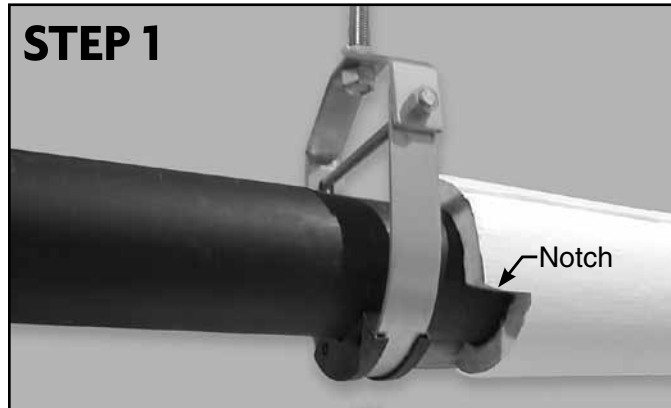
Low Thermal Conductivity: V-Block low thermal conductivity of .77 BTU-In./Sq.FT-Hr°F

Insulation R-Values: The Figure 260 ISS polymer V-Block component has an R-value ranging from 5.0 to 8.7, depending on the hanger size. Meets or exceeds most commercial insulation R-values.

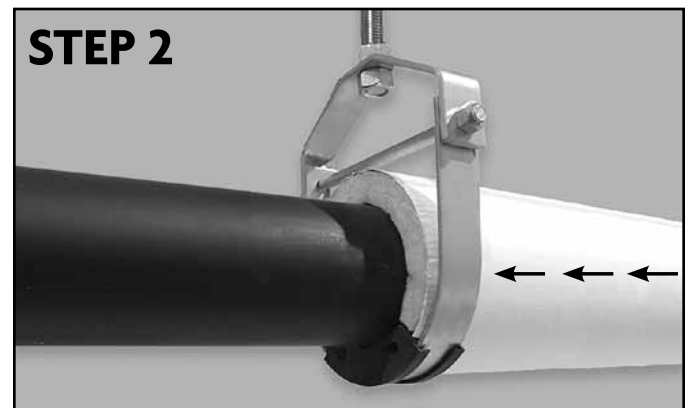
Fig. 260 ISS Clevis Hanger with Insulation Saddle System (cont.)

Easy Installation

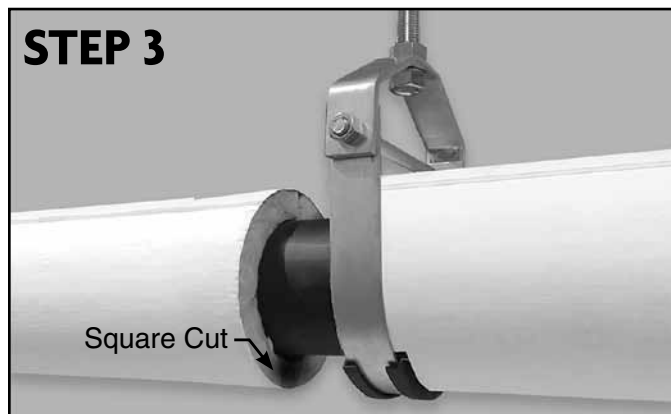
Make sure the double hex nuts installed with the upper hanger load nut above the clevis are tightened securely. Position pipe on saddle.



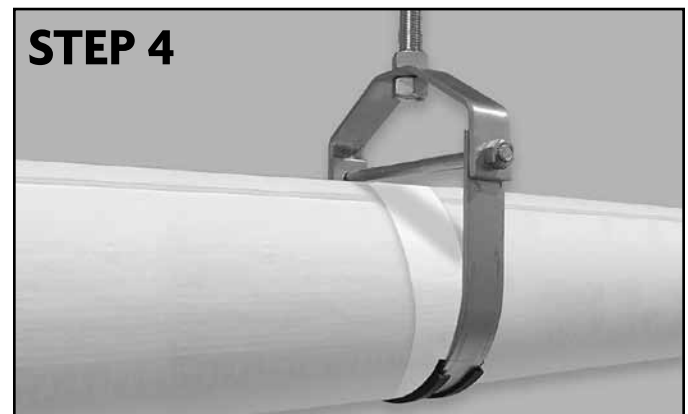
Cope or notch insulation to fit around saddle. The notch should be deep enough to extend $\frac{1}{8}$ " to $\frac{1}{4}$ " beyond the saddle.



Slide the notched insulation section over saddle.



Square cut adjoining insulation and butt the insulation ends to each other.



Caulk joints and finish taping.

To assure proper vapor barrier: Each insulation joint should be properly coated, caulked and taped. Applying standard insulation practice that is used on flanges and valves.

Finish via standard taping method.

For chilled systems a mastic for thermal insulations or similar sealant is typically used:

Systems (50°F or greater) apply sealant to:

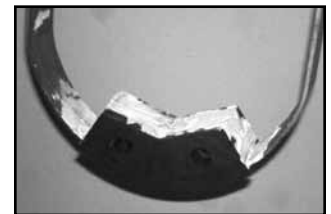
- The coped and flat edges of the mating insulation sections.
- The V-Block saddle at the insulation interface.

Systems (Below 50°F) apply sealant as per 50 Degrees with additional sealant to:

- The V-Block saddle joint between the two saddle halves.



Mastic applied to V-Block saddle at insulation interface. (50°F or greater)



Additional sealant applied to V-Block saddle joint between the two saddle halves. (Chilled water below 50°F)

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CLEVIS HANGERS

Fig. 300

Adjustable Clevis for Insulated Lines

Size Range: 3/4" through 12"

Material: Carbon steel

Finish: Plain, Galvanized or Epoxy coated

Service: Recommended for suspension of insulated **stationary** pipe lines.

Maximum Temperature: Plain 650° F, Galvanized and Epoxy 450° F

Approvals: Complies with Federal Specification A-A-1192A (Type 1) WW-H-171-E (Type 1), ANSI/MSS SP-69 and MSS SP-58 (Type 1).

Installation: Hanger load nut above clevis must be tightened securely to assure proper hanger performance.

Adjustment: Vertical adjustment is provided, varying with the size of the clevis. Tighten upper nut after adjustment.

Features:

- Designed for 2" of insulation on 3/4" through 1 1/2" pipe and 4" of insulation on 2" and larger pipe.
- When properly installed, clevis bolt is outside the insulation.

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

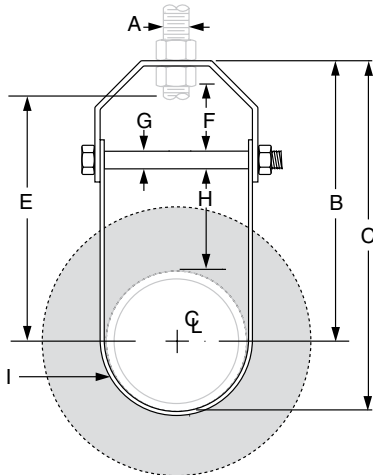


FIG. 300: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	Max Load	Weight	Rod Size A	B	C	E	Adjustment F	G	H	I Width Lower
3/4	730	0.51	3/8	3 5/8	4 1/4	2 7/8	1/2	1/4	2	1
1		0.58		4	4 11/16	3 1/4	5/8			
1 1/4		0.64		4 7/16	5 1/4	3 5/8	7/8			
1 1/2		0.72		4 3/4	5 3/4	4 1/16	1 1/16			
2		0.85		7 7/16	8 11/16	6 1/2	1 5/8			
2 1/2	1,350	1.90	1/2	8 7/16	9 15/16	7 1/2	2	3/8	4	1 1/4
3		2.00		8 5/8	10 5/16	7 9/16	1 3/4			
4	1,430	2.50	5/8	9 3/8	11 5/8	8 3/16	1 15/16	1/2	4	1 1/2
5		3.00		9 7/8	12 5/8	8 3/4	1 3/4			
6		3.40		10 5/8	14	9 3/8	1 7/8			
8	2,000	6.70	3/4	12 3/8	16 3/4	11	2	5/8	4	1 3/4
10	3,600	11.0		13 3/4	19 9/16	12 1/4	2 1/8			
12	3,800	13.8		15 1/8	21 9/16	13 3/8	2 7/16			

Fig. 590

Adjustable Clevis for Ductile or Cast Iron Pipe

Size Range: 3" through 24" ductile or cast iron pipe

Material: Carbon steel

Finish: Plain or Galvanized

Service: Recommended for the suspension of **stationary** ductile iron or cast iron pipe.

Approvals: Complies with Federal Specification A-A-1192A (Type 1) WW-H-171-E (Type 1), ANSI/MSS SP-69 and MSS SP-58 (Type 1).

Installation: Hanger rod nut above clevis must be tightened securely to assure proper hanger performance.

Adjustment: Vertical adjustment without removing pipe may be made from 1¹⁵/₁₆" through 3³/₁₆", varying with the size of the clevis. Tighten upper nut after adjustment.

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

Note: Figure 590 sizes 12" and below typically feature a Figure 260 Top Component.

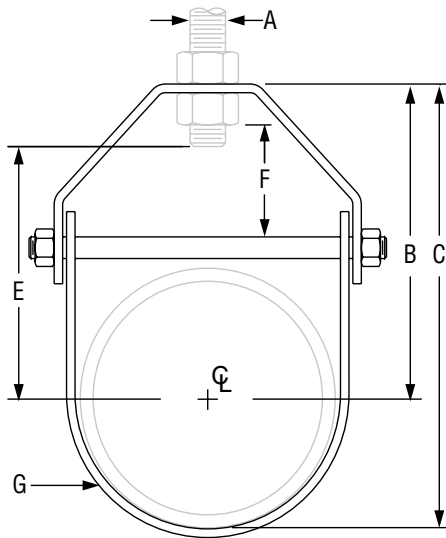


FIG. 590: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

D.I./C.I. Pipe Size	Max Load	Weight	D.I./C.I. Pipe O.D.	Rod Size A	B	C	E	F	G Width Lower
3	1,350	1.10	3.96	1/2	5 ¹ / ₁₆	7 ¹ / ₁₆	4 ³ / ₁₆	1 ¹³ / ₁₆	1 ¹ / ₄
4	1,430	1.64	4.80	5/8	5 ³ / ₄	8 ³ / ₁₆	4 ³ / ₄	1 ¹⁵ / ₁₆	
6	1,940	4.26	6.90	3/4	7 ⁷ / ₈	10 ⁹ / ₁₆	5 ¹⁵ / ₁₆		2 ¹ / ₄
8	2,000	6.70	9.05		10 ¹⁰ / ₈	13 ³ / ₁₆	7 ¹ / ₂	2 ⁵ / ₁₆	
10	3,600	9.73	11.10	7/8	12 ¹² / ₁₆	15 ¹¹ / ₁₆	8 ³ / ₄		2 ⁷ / ₈
12	3,800	13.64	13.20		13 ¹³ / ₄	20 ⁷ / ₈	11 ⁵ / ₁₆	2 ⁹ / ₁₆	
14	4,200	16.04	15.30	1	14 ¹ / ₄	22 ¹⁵ / ₁₆	12 ⁹ / ₁₆		2 ⁷ / ₁₆
16	4,600	24.52	17.40		16 ¹⁶ / ₈	26 ⁵ / ₈	15 ³ / ₁₆	3 ¹³ / ₁₆	
18	4,800	27.45	19.50	1 ¹ / ₄	18 ¹ / ₄	29 ¹ / ₁₆	16 ³ / ₈		3
20	4,800	46.24	21.60		20 ²⁰ / ₁₆	33 ¹ / ₄	18 ³ / ₈		
24	4,800	57.10	25.80						

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Fig. 261

Extension Pipe or Riser Clamp

Size Range: 3/4" through 24"

Material: Carbon steel

Finish: Plain, Galvanized or Epoxy coated

Service: For support of stationary steel pipe risers, cast iron pipe or conduit. This product is not intended for use with hanger rods. For this application refer to Fig. 40 Riser Clamp, page 49.

Maximum Temperature: Plain 650° F, Galvanized and Epoxy 450° F

Approvals: Complies with Federal Specification A-A-1192A (Type 8) WW-H-171-E (Type 8), ANSI/MSS SP-69 and MSS SP-58 (Type 8). UL, ULC Listed (Sizes 1 1/2" - 8").

Installation: Clamp is fitted and bolted preferably below a coupling, hub or welded lugs on steel pipe. Bolt torques should be per industry standards (see page 257). Clamp is designed for standard steel pipe O.D. and this must be considered in sizing the riser for other types of piping.

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



Note: Refer to Technical Data Section for cast iron soil pipe data.

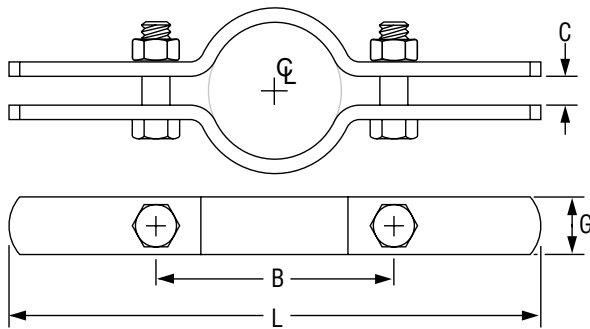


FIG. 261: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN) • TORQUE (FT-LBS)

Pipe Size	Max Load	Weight	L	G Width	B	C	Bolt Diameter	Torque Values
3/4	220	1.1	8 7/8	1	2 7/8	3/8	3/8	21
1		1.1			3 1/8			
1 1/4	1.6	3 1/2						
1 1/2	250	1.6	10 1/4		3 7/8	1/2	7/16	
2		1.7			4 1/4			
2 1/2	400	1.9	11 1/4		4 3/4			
3	500	1.9	11 3/8	5 1/2				
3 1/2	600	2.3	12 7/8	1 1/2	6 1/2	1/2	1/2	
4	750	2.4			7			
5	1,500	3.6	13 3/4		8			5/8
6	1,600	4.0	14 3/4		9			
8	2,500	7.6	18 1/2		2	12	3/4	3/4
10		11.1	20 1/4			13 3/4		
12	2,700	16.5	22 3/4	2 1/2	15 3/4	1	7/8	
14		17.7	24		17 1/4			
16	2,900	30.4	26	3	19 3/4	3/4	150	
18		33.8	28		21 3/4			
20		35.0	30		23 3/4			
24		82.0	36 3/4		30			

Fig. 40

Riser Clamp – Standard

Size Range: 2" through 24"

Material: Carbon steel (CS), Alloy (A), or Stainless Steel (SS)

Finish: Plain or Galvanized

Maximum Temperature: Galvanized 450° F, 650° F (CS), 950° F (A) and 1,000° F (SS)

Service: Riser clamps are used for the support of vertical piping. Load is carried by shear lugs which are welded to the pipe. Shear lugs provided upon request. Local pipe wall stress evaluation available upon request.

Approvals: Complies with Federal Specification A-A-1192A (Type 42), ANSI/MSS SP-69 and MSS SP-58 (Type 42).

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

Note: If different loads or dimensions are required, refer to Fig. 40 SD special design riser clamp.

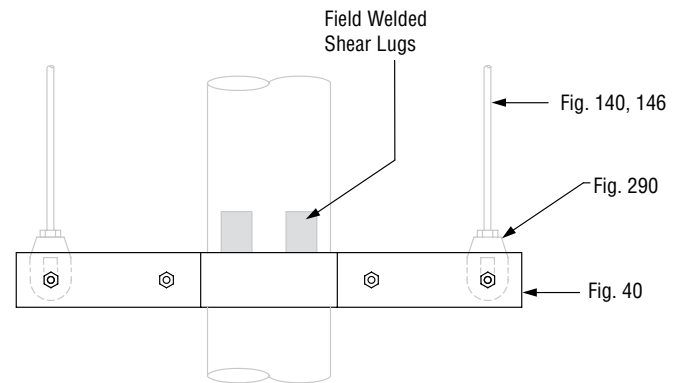
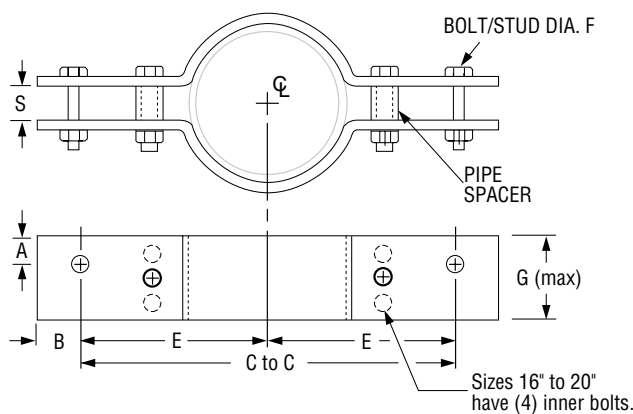


FIG. 40: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	Max Load		C-C	E	F (max)	G (max)	S	A (CS)	A (alloy) (SS)	B (max)	Maximum Weight Each			
	Rigid Assembly	Spring Assembly									CS	SS	Alloy	
2	900	1,800	18	9	1/2	2 1/2	3/4	1 1/4	7/8	2	18	15	18	
2 1/2			20	10							20	20	20	
3	1,500	3,000	22	11	5/8	3	1 1/2	1 1/8	30		25	30		
4	2,200	4,400							40		40	44		
5			3,000	6,000	24	12	7/8	4	1 1/4		45	40	45	
6	27	13 1/2			5	1 1/2					7/8	1 1/4	60	60
8	5,500	11,000	30	15	1 1/4	6	2 1/4	1 1/4	1 1/8		3	82	82	82
10			32	16								7	1 1/8	1 1/8
12	7,800	15,600	34	17	1 1/2	8	2 1/2	1 1/8	216	202				
14			36	18					9	1 1/2		2	228	228
16	9,000	18,000	39	19 1/2	2	10	3 1/2	2 5/8					2 5/8	4 1/4
18			42	21					11	3 1/2		2 5/8		
20	13,500	27,000	45	22 1/2	2	11	3 1/2	2 5/8					2 5/8	
24			525	525					580					

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STEEL PIPE CLAMPS

Fig. 103

Offset Pipe Clamp

Size Range: 3/4" through 8"
Material: Carbon steel
Finish: Plain or Galvanized
Service: For use in supporting piping away from wall or floor.
Maximum Temperature: Plain 650° F, Galvanized 450° F
Ordering: Specify pipe size, figure number, name and finish
Service: For use in supporting horizontal piping away from the wall or floor (not to be used as a riser type support)

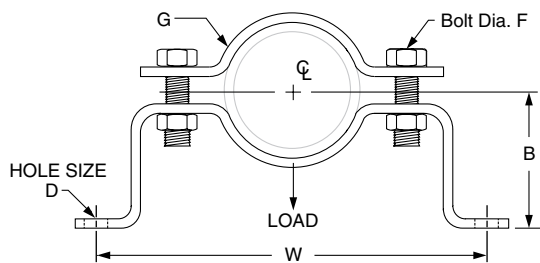


FIG. 103: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	Max Load	Weight	W	B	D	Bolt Dia. F	G Width
3/4	190	1.50	8 3/4	2 1/2	7/16	3/8	1 1/4
1		1.60	9 1/4	2 5/8			
1 1/4		1.70	9 3/4	2 13/16			
1 1/2		1.80	10	2 15/16			
2	420	2.70	11 1/4	3 3/16	9/16	1/2	1 1/2
2 1/2		2.90	11 3/4	3 1/16			
3		3.20	12 7/8	3 3/4			
4	610	4.60	13 7/8	4 1/4	1 1/16	5/8	2
5		7.30	15 5/8	4 3/4			
6		7.80	16 3/4	5 3/16			
8		9.00	18 3/4	6 5/16			

Fig. 100

Extended Pipe Clamp

Size Range: 1/2" through 8"
Material: Carbon steel
Finish: Plain or Galvanized
Service: For attachment to structure without use of rods.
Maximum Temperature: Plain 650° F, Galvanized 450° F
Ordering: Specify pipe size, figure number, name and finish.

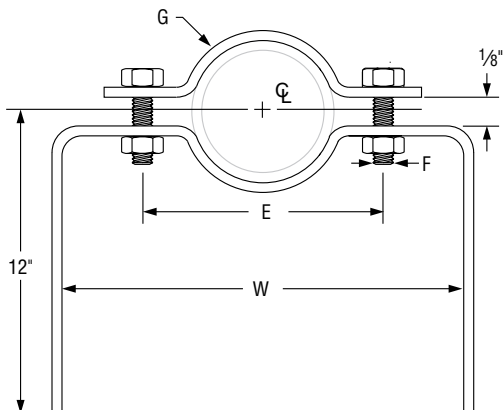
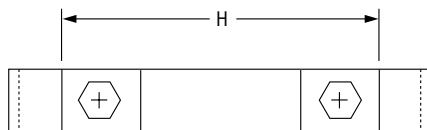


FIG. 100: WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	W	E	F	G Width	H	Weight
1/2	5 5/8	2 7/8	3/8	1	4 1/4	1.85
3/4	5 7/8	3 1/8			4 1/2	2.20
1	6 3/8	3 5/8			5	2.25
1 1/4	6 7/8	4 1/8			5 1/2	2.34
1 1/2	7 1/8	4 3/8	1/2	1 1/4	5 3/4	2.39
2	8 3/8	5 1/8			6 7/8	3.25
2 1/2	8 7/8	5 5/8			7 7/8	3.40
3	10	6 3/4			8 1/4	3.58
4	10 5/8	7 3/8	5/8	1 1/2	9 1/8	4.74
5	12 3/8	8 3/8			10 1/8	5.09
6	13 1/2	9 3/4			12	8.23
8	15 1/2	11 3/4			14	9.25

Fig. 212

Medium Pipe Clamp

Size Range: 1/2" through 30"

Material: Carbon steel

Finish: Plain or Galvanized

Service: Recommended for suspension of cold pipe lines or hot lines where no insulation is required.

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

Approvals: Complies with Federal Specification A-A-1192A (Type 4)

WW-H-171-E (Type 4), ANSI/MSS SP-69 and MSS SP-58 (Type 4).

UL, ULC Listed and FM Approved (Sizes 3/4" - 8").

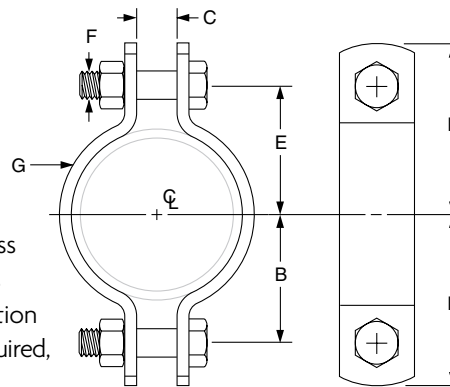
Installation: Normally used with weldless eye nut Fig. 290, page 102 or eye rod.

Features:

- Clamps tightly to pipe.
- Wide range of sizes.
- Equal gap design on many sizes.

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

Note: The "C" gap dimension ensures adequate clearance at the top attachment point for a weldless eye nut or other appropriate rod attachment. This gap may or may not be present on the bottom portion of the clamp. If different loads or dimensions are required, refer to Fig. 42 SD non-standard two bolt pipe clamp.



Note: This picture is representative of a typical Figure 212. Distance between clamp ears beneath pipe may or may not be equal to upper gap.

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

Pipe Size	Span Ft.	Max Load For Service Temp		Weight	B	C	Rod Take Out E	H	D	F	G Width
		650° F	750° F								
1/2	7*	500	-	0.29	1	1/2	1 3/16	1 17/32	1 23/32	5/16	1
3/4				0.33	1 1/8		1 1/4	1 21/32	1 25/32		
1				0.35	1 1/8		1 3/8	1 29/32	1 29/32		
1 1/4				0.38	1 1/16		1 5/8	1 31/32	2 5/32		
1 1/2	9*	800	-	0.43	1 1/16	5/8	1 11/16	2 3/32	2 7/32	1/2	
2				1.10	2 1/8		2 1/8	2 3/4	2 3/4		
2 1/2				1.20	2 5/8		2 5/8	3 1/4	3 1/4		
3				1.40	2 7/8		2 7/8	3 1/2	3 1/2		
3 1/2	13*	1,040	930	1.50	3 3/16	3/4	3 3/16	3 13/16	3 13/16	5/8	
4				1.80	3 1/2		3 1/2	4 1/4	4 1/4		
5				2.60	4 3/16		4 3/16	4 15/16	4 15/16		
6				5.40	4 7/8		4 7/8	5 3/4	5 3/4		
8	17*	1,615	1,440	6.50	6	1 1/4	6	6 7/8	6 7/8	3/4	
10				13.60	7 1/16		7 1/16	8 9/16	8 9/16		
12				15.20	8 7/16		8 7/16	9 9/16	9 9/16		
14				20.50	9 1/4		9 1/4	10 5/8	10 5/8		
16	23*	2,490	2,220	22.30	10 1/4	1 1/8	10 1/4	11 5/8	11 5/8	7/8	
18				31.60	11 5/8		11 5/8	13	13		
20				35.80	12 3/4		12 3/4	14 1/8	14 1/8		
24				53.10	15 1/4		15 1/4	16 7/8	16 7/8		
30	15	3,060	2,730	113.90	19	1 1/4	19	21 1/8	21 1/8	1 1/4	
30	9			3,500	3,360		113.90	19	2		19

Clamps may be furnished with square ends. "Span" represents the maximum recommended distance between hangers on a continuous & straight run of horizontal standard weight steel pipe filled with water. In all cases, verify that chosen location of hangers does not subject hangers to a load greater than the maximum recommended load shown above. For vapor service, the presence of fittings or insulation, and other weights and types of pipe, spans may either increase or decrease. In all cases, verify that chosen location of hanger does not subject hangers to a load greater than the maximum recommended load shown. *Indicates that span represents the maximum span for water filled pipe as given in Table 1 of page 249.

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STEEL PIPE CLAMPS

Fig. 212FP

Earthquake Bracing Clamp

Size Range: 2 1/2" through 12"

Material: Carbon steel

Finish: Plain or Galvanized

Service: For seismic bracing, to be used with Fig. 113 brace fitting.

Pipe clamp bolt holes are designed to match holes in brace fitting.

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

Approvals: Complies with Federal Specification A-A-1192A (Type 4) WW-H-171-E (Type 4), ANSI/MSS SP-69 and MSS SP-58 (Type 4).

Installation: Designed for use with Fig. 113 brace fitting, see page 76.

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

Note: The "C" gap dimension should be used at the upper and lower locations to ensure proper installation of the clamp.

Standard Figure 212 will be furnished for sizes 2 1/2" thru 4".

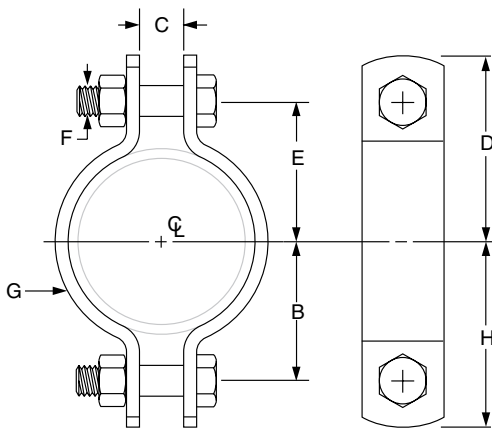


FIG. 212FP: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	Max Load For Service Temp		Weight (lbs)	B	C	Rod Take Out E	H	D	F	G Width
	650° F	750° F								
2 1/2	1,040	930	1.20	2 5/8	5/8	2 5/8	3 1/4	3 1/4	1/2	1
3			1.40	2 7/8		2 7/8	3 1/2	3 1/2		
3 1/2			1.50	3 3/16		3 3/16	3 3/16	3 3/16		
4			1.80	3 1/2		3 1/2	4 1/4	4 1/4		
5			2.50	4 3/16	3/4	4 3/16	4 15/16	4 15/16		1 1/4
6			5.20	4 7/8	1 1/4	4 7/8	5 3/4	5 3/4		
8			6.30	6		6	6 7/8	6 7/8		
10			13.60	7 7/16	1	7 7/16	8 9/16	8 9/16		2
12			15.20	8 7/16		8 7/16	9 9/16	9 9/16		

Fig. 216

Heavy Pipe Clamp

Size Range: 3" through 42"

Material: Carbon steel

Finish: Plain or Galvanized

Service: Recommended for suspension of pipe lines where no insulation is required.

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

Approvals: Complies with Federal Specification A-A-1192A (Type 4)

WW-H-171-E (Type 4), ANSI/MSS SP-69 and MSS SP-58 (Type 4).

Installation: Normally used with welded eye rod or with weldless eye nut

Fig. 290, see page 102.

Features:

- Designed for heavy load up to 750° F

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

Note: If different loads or dimensions are required, refer to Fig. 42 SD non-standard two bolt pipe clamp.



Note: This picture is representative of a typical Figure 216. Distance between clamp ears beneath pipe may or may not be equal to upper gap.

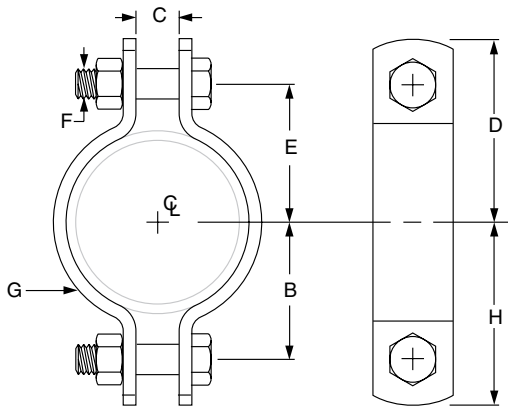


FIG. 216: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	Max Load For Service Temp		Weight	B	C	D	Rod Take Out E	F	G Width	H	
	650° F	750° F									
3	3,370	3,005	3.6	2 ¹⁵ / ₁₆	1	4	3 ¹ / ₈	3 ³ / ₄	2	3 ¹³ / ₁₆	
4	3,515	3,135	5.5	3 ⁹ / ₁₆		4 ⁷ / ₈	3 ³ / ₄	7 ⁷ / ₈		4 ¹¹ / ₁₆	
5			6.3	4 ¹ / ₈		5 ¹ / ₂	4 ³ / ₈			5 ¹ / ₄	
6	4,865	4,350	11.7	5	1 ¹ / ₈	6 ⁵ / ₈	5 ¹ / ₄	1	2 ¹ / ₂	6 ³ / ₈	
8		4,340	13.9	6 ¹ / ₈		7 ⁵ / ₈	6 ¹ / ₄			7 ¹ / ₂	
10		6,010	5,360	22.3	7 ⁹ / ₁₆	1 ¹ / ₄	9 ¹ / ₁₆			7 ¹¹ / ₁₆	1 ¹ / ₄
12	8,675	7,740	38.1	9	1 ⁵ / ₈	10 ⁷ / ₈	9 ¹ / ₄	1 ¹ / ₂	3	10 ⁵ / ₈	
14	9,120	8,135	46.8	9 ³ / ₄		11 ⁷ / ₈	10		1 ¹ / ₂	3 ¹ / ₂	11 ⁵ / ₈
16			51.4	10 ³ / ₄		12 ⁷ / ₈	11				12 ⁵ / ₈
18	13,800	–	130.1	14 ¹ / ₂	3	17 ¹ / ₄	14 ¹ / ₂	2	6	17 ¹ / ₄	
20	15,300	–	163.6	16		18 ³ / ₄	16		5	18 ³ / ₄	
24	16,300	–	215.2	18 ¹ / ₂	3 ³ / ₄	21 ¹ / ₂	18 ¹ / ₂	2 ¹ / ₄	6	21 ¹ / ₂	
28	18,000	–	302.8	20 ¹ / ₂		23 ¹ / ₂	20 ¹ / ₂		8	23 ¹ / ₂	
30	20,500	–	365.4	22 ¹ / ₂	3 ¹ / ₂	26	22 ¹ / ₂	2 ¹ / ₂	7	26	
32	23,750	–	431.7	23 ¹ / ₂		27	23 ¹ / ₂		8	27	
34	25,000	–	533.8	25		28 ¹ / ₂	25		8	28 ¹ / ₂	
36	28,000	–	575.1	26 ¹ / ₂		30 ¹ / ₄	26 ¹ / ₂			2 ³ / ₄	30 ¹ / ₄
42	35,000	–	915.7	30		33 ³ / ₄	30				10

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STEEL PIPE CLAMPS

Fig. 295

Double Bolt Pipe Clamp

Size Range: 3/4" through 36"

Material: Carbon steel

Finish: Plain or Galvanized

Service: Recommended for suspension of pipe requiring insulation within the limitation of temperature and loads shown below.

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

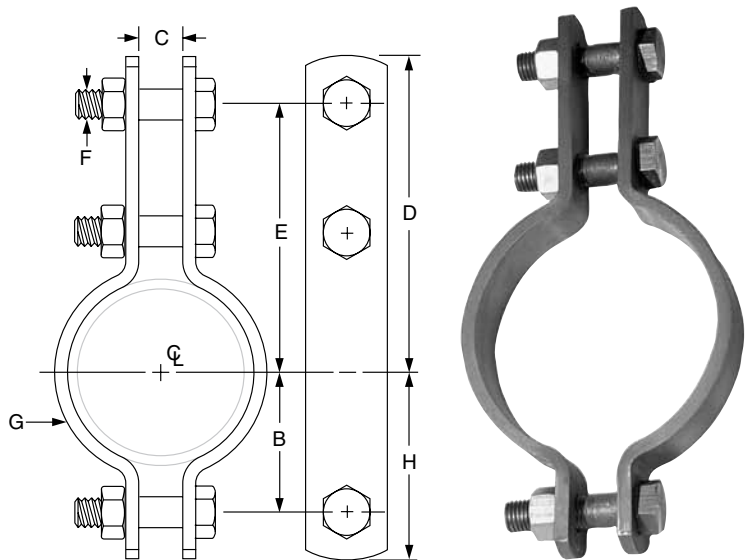
Approvals: Complies with Federal Specification A-A-1192A (Type 3), WW-H-171-E (Type 3), ANSI/MSS SP-69 and MSS SP-58 (Type 3).

Installation: Attachment to the clamp may be made with a welded eye rod Fig. 278, page 98 or the weldless eye nut Fig. 290, see page 102.

Features:

- Sizes 6" and above accommodate up to 4" thick insulation.
- Figure 41SD will accommodate larger insulation thicknesses, loads and dimensions.

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



Note: This picture is representative of a typical Figure 295. Distance between clamp ears beneath pipe may or may not be equal to upper gap.

FIG. 295: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	Max Span Ft.	Max Load For Service Temp.		Weight	B	C	D	Rod Take Out E	F	G Width	H
		650° F	750° F								
3/4	7*	950	—	0.7	15/16	5/8	27/8	27/16	3/8	1	13/8
1			—	0.8	11/16		3	29/16			11/2
1 1/4			—	0.8	1 1/4		3 1/8	2 11/16			1 11/16
1 1/2	9*	1,545	1,380	2.3	1 13/16	1 1/16	4 7/8	4 1/8	5/8	1 1/4	2 3/8
2	10*			2.6	2 1/8		5 7/8	5 1/8			2 11/16
2 1/2	11*			1.97	2 5/8	5/8	6	5 3/8	1/2	1	3 1/4
3	12*			2.17	2 7/8		6 5/8	6			3 1/2
4	14*	2,500	2,230	6.7	3 3/8	1 1/16	7 5/8	6 1/2	3/4	2	4 1/2
5	16*			7.0	3 15/16		8 1/8	7			5
6	17*	2,865	2,555	7.31	4 7/8	1 1/4	9 3/8	8 1/2	1	2 1/2	5 3/4
8	19*			8.33	6		10 3/8	9 1/2			6 7/8
10	22*	3,240	2,890	19.8	6 7/8	1 7/16	12	10 7/16	1	3	8 1/4
12	23"			22.3	7 7/8		13	11 7/16			9 1/4
14	20			4,300	3,835	37.7	9 1/16	2	14 5/16	12 11/16	1 1/4
16	15	41.4	10 1/16			15 5/16	13 11/16		11 11/16		
18		44.9	11 1/16			16 5/16	14 11/16		12 11/16		
20		12	54.90			12 3/8	17 5/8		15 5/8	14	
24	12	4,500	4,015	65.9	14 3/8	2 1/4	19 3/8	17 7/8	1 3/8	16	
28	—	6,000	—	112.3	17 1/2		24 1/4	21 3/4		1 1/4	4
30	9	7,500	—	150.0	18 1/2	2 1/2	26 1/8	23 3/8	1 3/8	5	21 1/4
32	—	8,250	—	193.3	19 5/8		28	25		1 1/2	6
34	—	9,800	—	248.8	21 1/2	3	31 1/4	27 3/4	1 3/4	5	25
36	—	10,500	—	257.5	22 1/2		32 1/4	28 3/4			1 3/4

Clamps may be furnished with square ends. "Span" represents the maximum recommended distance between hangers on a continuous and straight run of horizontal standard weight steel pipe filled with water. In all cases, verify that chosen location of hangers does not subject hangers to a load greater than the maximum recommended load shown above. *Indicates that span represents the maximum span for water filled pipe as given in Table 1 of page 249. For vapor service, the presence of fittings or insulation, and other weights and types of pipe, spans may either increase or decrease. In all cases, verify that chosen location of hanger does not subject hangers to a load greater than the maximum recommended load shown.

Fig. 295A

Alloy Double Bolt Pipe Clamp

Size Range: 1½" through 24"

Material: Chrome molybdenum steel (ASTM A 387 Grade 22).

Service: Recommended for suspension of high temperature pipe requiring insulation.

Maximum Temperature: 1,050° F

Approvals: Complies with Federal Specification A-A-1192A (Type 3)

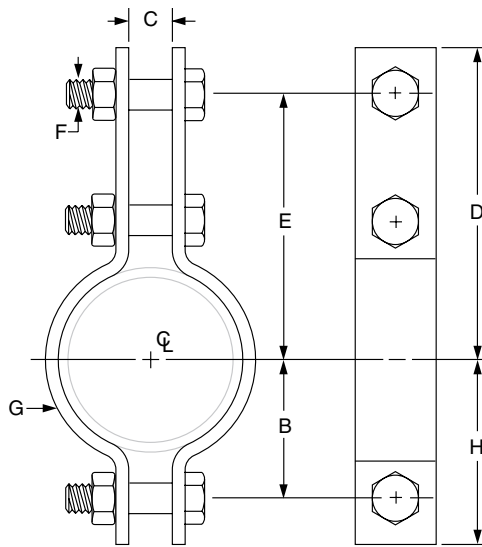
WW-H-171-E (Type 3), ANSI/MSS SP-69 and MSS SP-58 (Type 3).

Features:

- Sizes 6" and above accommodate up to 4" thick insulation.
- Figure 41SD will accommodate larger insulation thicknesses, loads and dimensions.

Ordering: Specify pipe size, figure number and name.

Note: Galvanizing is not recommended for alloy products.



Note: This picture is representative of a typical Figure 295A. Distance between clamp ears beneath pipe may or may not be equal to upper gap.

FIG. 295A: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	Max Load ■ For Service Temp				Weight	B	C	D	Rod Take Out E	F	G Width	H
	650° F	750° F	1,000° F	1,050° F								
1½	1,545	1,410	1,000	745	2.3	1 ¹³ / ₁₆	1 ¹ / ₁₆	4 ⁷ / ₁₆	4 ¹ / ₈	5 ⁵ / ₁₆	1 ¹ / ₄	2 ³ / ₈
2					2.6	2 ¹ / ₈		5 ⁷ / ₁₆	5 ¹ / ₈			2 ¹¹ / ₁₆
2½					2.7	2 ⁵ / ₁₆		6 ¹ / ₈	5 ³ / ₈			2 ¹⁵ / ₁₆
3					3.0	2 ³ / ₄		6 ¹¹ / ₁₆	5 ¹⁵ / ₁₆			3 ¹ / ₂
4					6.7	3 ³ / ₈		7 ⁵ / ₁₆	6 ¹ / ₂			4 ¹ / ₂
5	2,500	2,290	1,625	1,200	7.0	3 ¹⁵ / ₁₆	1 ⁷ / ₁₆	8 ¹ / ₈	7	3 ³ / ₄	2	5
6					11.5	4 ³ / ₄		9 ¹⁵ / ₁₆	8 ⁹ / ₁₆			6 ¹ / ₈
8					13.2	5 ³ / ₄		10 ¹⁵ / ₁₆	9 ⁹ / ₁₆			7 ⁷ / ₈
10	3,240	2,970	2,100	1,565	19.8	7 ¹ / ₁₆	1 ⁷ / ₁₆	12	10 ⁵ / ₈	1	2 ¹ / ₂	8 ¹ / ₄
12					22.3	8 ¹ / ₁₆		13	11 ⁵ / ₈			9 ⁵ / ₁₆
14	4,300	3,915	2,795	2,060	37.7	9 ¹ / ₁₆	2	14 ⁵ / ₁₆	12 ¹ / ₁₆	1 ¹ / ₄	3	10 ¹ / ₁₆
16					41.4	10 ¹ / ₁₆		15 ⁵ / ₁₆	13 ¹ / ₁₆			11 ¹ / ₁₆
18					44.9	11 ¹ / ₁₆		16 ⁵ / ₁₆	14 ¹ / ₁₆			12 ¹ / ₁₆
20					57.3	12 ³ / ₈		17 ¹ / ₂	15 ⁷ / ₈			14
24	4,500	4,095	2,910	2,160	65.9	14 ³ / ₈	2	19 ¹ / ₂	17 ⁷ / ₈	1 ³ / ₈	3	16

■ Based on the allowable stresses shown in the ASME Code for Pressure Piping.

STEEL PIPE CLAMPS

Fig 295H

Heavy Duty Double Bolt Pipe Clamp

Size Range: 6" through 36"

Material: Carbon steel

Finish: Plain or Galvanized

Service: Recommended for suspension of pipe requiring insulation within the limitation of temperature and loads shown below.

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

Approvals: Complies with Federal Specification A-A-1192A (Type 3) WW-H-171-E (Type 3), ANSI/MSS SP-69 and MSS SP-58 (Type 3).

Features:

- Accommodates up to 4" thick insulation.
- Figure 41SD will accommodate larger insulation thicknesses, loads and dimensions.

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



Note: This picture is representative of a typical Figure 295H. Distance between clamp ears beneath pipe may or may not be equal to upper gap.

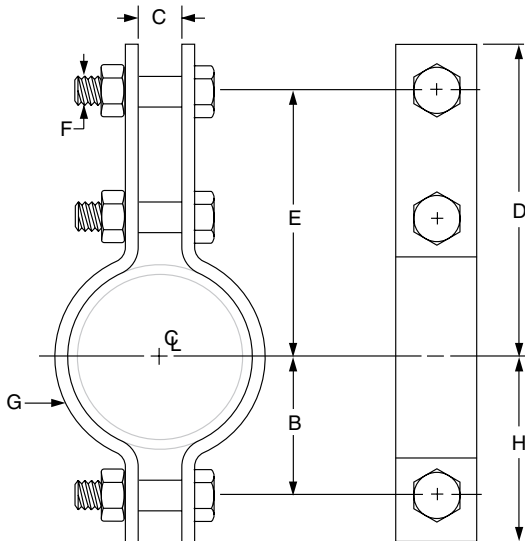


FIG 295H: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	Max Load For Service Temp		Weight	B	C	D	Rod Take Out E	F	G Width	H
	650° F	750° F								
6	3,500	3,125	12.0	4 ³ / ₄	1 ³ / ₄	10 ¹³ / ₁₆	8 ¹⁵ / ₁₆	1	2 ¹ / ₂	6
8	4,800	4,285	18.5	6	2	11 ³ / ₈	10 ¹ / ₈	1 ¹ / ₈		7 ¹ / ₄
10	5,500	4,910	30.3	7 ¹ / ₄	2 ¹ / ₄	13 ³ / ₈	11 ³ / ₈	1 ¹ / ₄	3 ¹ / ₂	9
12	7,000	6,250	42.0	8 ⁵ / ₈	2 ¹ / ₂	14 ⁵ / ₁₆	12 ⁹ / ₁₆	1 ³ / ₈		10 ³ / ₈
14	9,500	8,485	60.0	9 ⁵ / ₈		3	15 ¹ / ₂	13 ¹ / ₂	1 ¹ / ₂	4
16	10,000	8,930	80.0	10 ⁷ / ₈	3 ¹ / ₂		17 ⁷ / ₈	14 ⁷ / ₈	1 ³ / ₄	4 ¹ / ₂
18	13,800	12,325	115.0	12 ¹ / ₂		4	18 ¹ / ₄	16 ¹ / ₄	2	4
20	15,300	13,665	140.0	13 ¹ / ₂	4 ¹ / ₄		19 ³ / ₄	17 ¹ / ₄		2 ¹ / ₄
24	16,300	14,555	190.0	15 ¹ / ₂		4 ¹ / ₄	22 ⁵ / ₁₆	19 ⁵ / ₁₆	2 ¹ / ₂	
28	18,000	–	354.0	18 ⁷ / ₈	4 ¹ / ₂		31 ³ / ₄	27 ¹ / ₄		2 ¹ / ₄
30	20,500	–	406.0	19 ⁷ / ₈		4 ¹ / ₂	32 ³ / ₄	28 ¹ / ₄	2 ¹ / ₄	
32	23,750	–	555.0	21 ³ / ₄	4 ¹ / ₂		36	31		2 ¹ / ₂
34	25,000	–	604.0	23 ³ / ₈		4 ¹ / ₂	37 ¹ / ₂	32 ¹ / ₂	2 ¹ / ₄	
36	28,000	–	678.0	24 ⁵ / ₈	4 ¹ / ₂		40 ¹ / ₄	34 ³ / ₄		2 ¹ / ₄

Clamps may be furnished with square ends.

Fig. 224 Fig. 246

Alloy Steel Pipe Clamp

Heavy Duty Alloy Steel Pipe Clamp

Size Range: 4" through 24"

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

Service: Recommended for suspension of high temperature pipe requiring up to 6" of insulation.

Maximum Temperature: 1,075° F

Approvals: Complies with Federal Specification A-A-1192A (Type 2), ANSI/MSS SP-69 and MSS SP-58 (Type 2).

Installation: Used with welded eye rod Fig. 278, page 98 or weldless eye nut Fig. 290, page 102.

Features:

- Designed for the support of loads at temperatures up to 1,075° F.
- Fig. 246 Clamp with filler plate will snugly hold pipe of non-standard size.
- Alloy load distribution strap provided.
- When used on pipe with 6" of covering, the top bolt is outside of the insulation.
- Yoke has rugged cross section area, eliminating high stress conditions.

Ordering: Ordering: Specify nominal pipe size and exact O.D. of pipe, figure number, name. Special alloy filler plates will be provided, at an extra charge, when the O.D. of the pipe size is other than standard. Installation instructions are attached to the clamp when the filler plates are required.

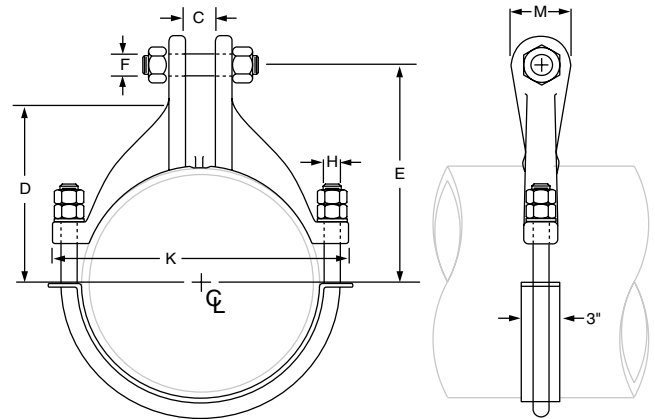


FIG. 224 & 246: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

Pipe Size	Used on O.D. pipe size	Max Load					Weight	C	D	Rod Take Out E	F	H	K	M
		750° F	950° F	1,000° F	1,050° F	1,075° F								
4	—	3,780	3,300	2,770	1,890	—	4.0	1 ¹ / ₁₆	3 ⁷ / ₈	6 ³ / ₄	7 ⁷ / ₈	1 ¹ / ₂	6 ¹ / ₂	—
6	—	6,060	5,290	4,440	3,030	—	8.0	1 ⁷ / ₁₆	5 ⁷ / ₁₆	8 ³ / ₁₆	1	5 ⁵ / ₈	9 ⁹ / ₈	—
8	—					—	9.0		6 ¹ / ₁₆	9 ⁹ / ₁₆			11 ¹ / ₈	—
10	8 ³ / ₈ - 10 ¹³ / ₁₆	9,060	13,500	11,780	7,850	6,120	42.0	2	9 ⁹ / ₈	12	1 ¹ / ₂	1	15 ¹⁵ / ₈	3 ³ / ₄
12	10 ⁷ / ₈ - 12 ¹³ / ₁₆	12,570	16,500	14,910	9,940	7,750	58.0	2 ¹ / ₄	10 ³ / ₄	13 ³ / ₄	1 ⁵ / ₈	1 ¹ / ₄	17 ⁷ / ₈	4
14	12 ⁷ / ₈ - 14 ¹ / ₁₆						63.0		11 ¹ / ₂	14 ¹ / ₂			19 ⁹ / ₈	
16	14 ¹ / ₈ - 16 ¹ / ₁₆						69.0		13 ³ / ₈	16 ³ / ₈			21 ¹ / ₈	
18	16 ¹ / ₈ - 18 ¹ / ₁₆	—	19,000	18,410	12,270	9,570	94.0	2 ¹ / ₂	14 ¹ / ₂	18 ¹ / ₄	2	1 ¹ / ₈	24 ¹ / ₈	4 ¹ / ₂
20	18 ¹ / ₈ - 20 ¹ / ₁₆	—					104.0		15 ³ / ₄	19 ¹ / ₂			26 ¹ / ₈	
24	20 ¹ / ₈ - 24 ¹ / ₁₆	—	25,000	22,280	14,850	11,580	167.0	3	18 ¹ / ₄	22	2 ¹ / ₄	1 ¹ / ₈	30 ³ / ₄	6

Filler plates are available for > 10" pipe.

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SOCKET CLAMPS

Fig. 595

Socket Clamp for Ductile Iron or Cast Iron Pipe

Size Range: 4" through 24"

Material: Two carbon steel half bands and four bolts and nuts.

Finish: Plain or Galvanized

Service: Clamps ductile or cast iron mechanical joint piping or mechanical joint or socket joint fittings together to prevent separation or distortion of pipe line under excessive water pressure.

Approvals: Complies with Federal Specification A-A-1192A (Type 8), ANSI/MSS SP-69 and MSS SP-58 (Type 8). Complies with the requirements of the National Fire Protection Association Standard NFPA-24 for Outside Protection.

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

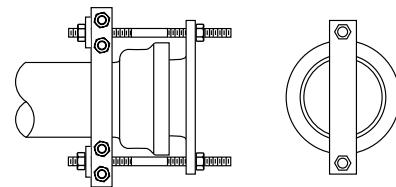
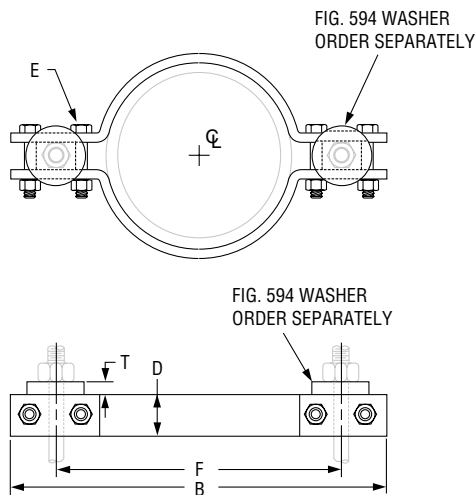


Fig. 594

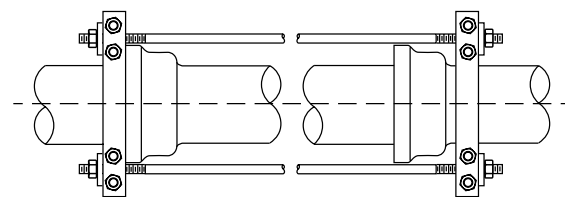
Socket Clamp Washer

Two cast iron or steel washers, Fig. 594, are used with each Fig. 595 socket clamp and these must be ordered separately.

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



Plug Strap for Bell End of Pipe



Pipe Anchor

FIG. 595, FIG. 594: LOADS (LBS) • WEIGHT (LBS) • DIMENSIONS (IN)

D.I./C.I. Pipe Size	Max Test Pressure (PSI)	Force* On Clamp	Weight		Pipe O.D.	B	D Width	Bolt Dia. E	F	T	Fig. 594 Washer Rod Dia.
			Fig. 595 Clamp	Fig. 594 Washer							
4	250	4,550	12.8	1.1	5	14 ⁵ / ₈	2	5/8	9 ⁵ / ₈	5/8	3/4
6		9,340	14.6		7 ⁷ / ₈	16 ⁷ / ₈					
8		16,080	23.6		9 ⁵ / ₁₆	19 ¹ / ₈					
10		24,180	29.3	11 ¹ / ₂	21 ³ / ₈	2 ¹ / ₂	3/4	16 ⁵ / ₈			
12		34,230	40.3	13 ¹ / ₂	25 ¹ / ₈						
14	120	22,200	53.9	2.7	15 ³ / ₄	28 ¹ / ₄	3	7/8	3/4	1	
16	115	27,760	76.5		17 ⁷ / ₈	31 ³ / ₈					
18	100	23,900	94.3	4.3	20	35 ¹ / ₈	4	1	25 ³ / ₈	1 ¹ / ₈	1 ¹ / ₄
20	75	27,500	109.8		22 ¹ / ₈	37 ³ / ₄		4 ¹ / ₂	1 ¹ / ₄		
24	50	26,200	148.6		5.8	26 ³ / ₈	44 ¹ / ₄	5	1 ¹ / ₂		

*Refers to Hydrostatic Test