

- Fig. 296, Fig. 297, Fig. 298 Sway Brace
- Fig. C-296, Fig. C-297, Fig. C-298 Corrosion Resistant
- Fig. 301, Fig. 302, Fig. 303 with Adjustable Preload
- Fig. C-301, Fig. C-302, Fig. C-303 Corrosion Resistant

Size Range: Preloads from 50 to 1,800 pounds and maximum forces from 200 to 7,200 pounds.

Finish: Standard finish: painted with semi-gloss primer.
Corrosion resistant: galvanized with coated coil.

Service: Recommended for controlling vibration; absorbing shock loading; guiding or restraining the movement of pipe resulting from thermal expansion; bracing a pipe line against sway.

Approvals: Complies with Federal Specification A-A-1192A (Type 55), WW-H-171E (Type 55), ANSI/MSS SP-69 and MSS SP-58 (Type 50).

Installation: Shipped ready for installation (see line cuts of Fig. 297, Fig. 298, Fig. 302 and Fig. 303 on page 187 for typical installed hanger assemblies).

Adjustment: The sway brace should be in the neutral position when the system is hot and operating, at which time both spring plates should be in contact with the end plates. If they are not, the sway brace should be adjusted to the neutral position by use of the load coupling.

Features:

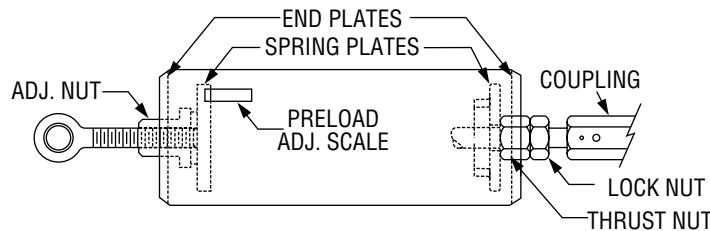
- Vibration is dampened with an instantaneous opposing force bringing the pipe back to normal position.
- A single pre-loaded spring provides two way movement.
- One spring saves space and simplifies design.
- Spring has 3-inch travel in either direction.
- Accurate neutral adjustment assured.
- A tight fitting connection at rear bracket and clamp.

Additional Features – Fig. 301:

The Fig. 301 sway brace is adjustable from the initial preload to the maximum capacity of the unit selected. It is equipped with a load-deflection scale to facilitate preload adjustment. Preload adjustment reduces spring travel accordingly.

Ordering: Specify figure, name and sway brace size. The Anvil Fig. 296 and Fig. 301 consist of the sway brace only. Available corrosion resistant as Fig. C-296 and Fig. C-301.

Preload adjustment – Fig. 301: Turn the preload adjustment nut until desired preload is indicated. Turn thrust nut until it is in contact with the spring plate. Lock in position. Indicated deflection must be greater than thermal movement.



PROJECT INFORMATION	APPROVAL STAMP
Project:	<input type="checkbox"/> Approved
Address:	<input type="checkbox"/> Approved as noted
Contractor:	<input type="checkbox"/> Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

Fig. 296, Fig. 301: with Adjustable Preload Fig. C-296, Fig. C-301: Corrosion Resistant

Sway Brace (cont.)

Size selection: The Anvil Vibration Control and Sway Brace gives full deflection forces from 200 to 7,200 pounds and has initial precompressed spring forces from 50 to 1,800 pounds to control vibrations and pipe sway. The amount of force needed to control piping should be in proportion to the mass, amplitude of movement, and nature of disturbing forces acting on the pipe. When it is possible to calculate the exact restraining force required, the size of the Vibration Control and Sway Brace capable of providing this force should be selected. As a general reference, the following sizes have been historically used for the pipe sizes shown:

- #1 - 3 1/2" and smaller
- #2 - 4" to 8"
- #3 - 10" to 16"
- #4 - 18" to 24"
- #5 and #6 - above 24"

Installation: 1) attach rear bracket to structure and pipe attachment to piping or equipment. 2) connect coupling to pipe attachment and turn coupling so that spring is compressed in direction opposite to and by approximate amount of piping thermal movement.

Important: Final adjustment should be made with the pipe in its hot or operating position. Turn the coupling until both spring plates are in contact with the end plates of the Sway Brace. When correct tension adjustments are completed, the brace exerts no force on the pipe in its operating position. Under shutdown conditions, the brace allows the pipe to assume its cold position. It exerts a nominal cold strain force equal to the preload force plus the amount of travel from the hot to cold position, times the spring scale of the particular size of the Vibration Control and Sway Brace.

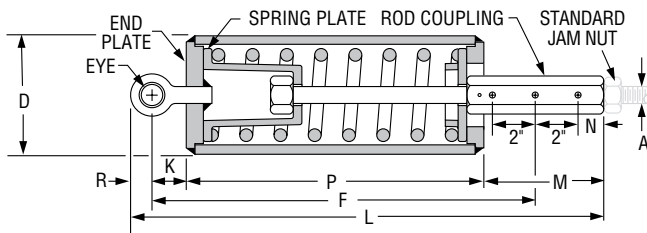


Fig. 296

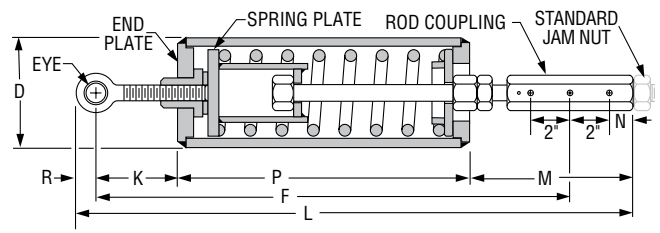


Fig. 301

FIG. 296: LOADS • WEIGHTS (LBS) • DIMENSIONS (IN)

Sway Brace Size	Pipe Size	Preload and Spring Scale (lb/in)	Max Force (lbs)	Weight	Rod Size Fig. 297 A	Eye		D	Length F	K	L	M	N	P	R
						Dia. Hole	Thickness								
1	1 1/2 to 24	50	200	22	3/4	1	1	4 1/2	13 5/8	1 5/8	17 7/8	6 3/8	1	8 7/8	1 1/4
2		150	600	25	1				14 3/8		18 5/8			9 5/8	
3		450	1,800	36	1				17 3/4		22			13	
4		900	3,600	64	1 1/4				17		22 5/16			11 1/2	
5	6 to 30	1,350	5,400	79	1 1/2	1 1/2	6 5/8	18 1/2	2 1/4	23 13/16	6 3/4	1 1/2	13	1 13/16	
6		1,800	7,200	95				1 1/2		20 1/2			25 13/16		15

FIG. 301: LOADS • WEIGHTS (LBS) • DIMENSIONS (IN)

Sway Brace Size	Pipe Size	Preload and Spring Scale (lb/in)	Max Force (lbs)	Weight	Rod Size Fig. 302 A	Eye		D	Length F	K	L	M	N	P	R
						Dia. Hole	Thickness								
1	1 1/2 to 24	50	200	23	3/4	1	3/4	4 1/2	20	5 15/16	24 1/4	7 7/8	1	9 3/16	1 1/4
2		150	600	26	1				20 3/4		25			9 15/16	
3		450	1,800	38	1				24 1/8		28 3/8			13 5/16	
4		900	3,600	67	1 1/4				24 5/16		29 5/8			12	
5	6 to 30	1,350	5,400	82	1 1/2	1 1/2	6 5/8	25 13/16	6 9/16	31 1/8	9 1/4	1 1/2	13 1/2	1 13/16	
6		1,800	7,200	98				1 1/2		27 13/16			33 1/8		15 1/2

Fig. 297 and Fig. 298 Fig. 302 and Fig. 303: with Adjustable Preload Fig. C-297, Fig. C-298, Fig. C-302 and Fig. C-303: Corrosion Resistant

The Fig. 297 and Fig. 302 consist of a structural attachment, two studs, the Sway Brace, extension piece up to 2' 0" in length as required, and a modified Fig. 295 pipe clamp.

The Fig. 298 and Fig. 303 consist of a structural attachment, two studs, the Sway Brace, adjustable extension piece 2' 1" in length or over as required, an adapter and a tolerated pipe clamp.

Note: In specifying Sway Brace assemblies where the "W" dimension exceeds 2' 0" in length, the Fig. 298 or Fig. 303 assembly is required. Verify that calculated "W" is within the min/max shown in table.

Ordering assemblies: Specify figure number, name, Sway Brace size, pipe size, "W" dimension. Available corrosion resistant as Fig. C-297, C-298, C-302 and C-303.

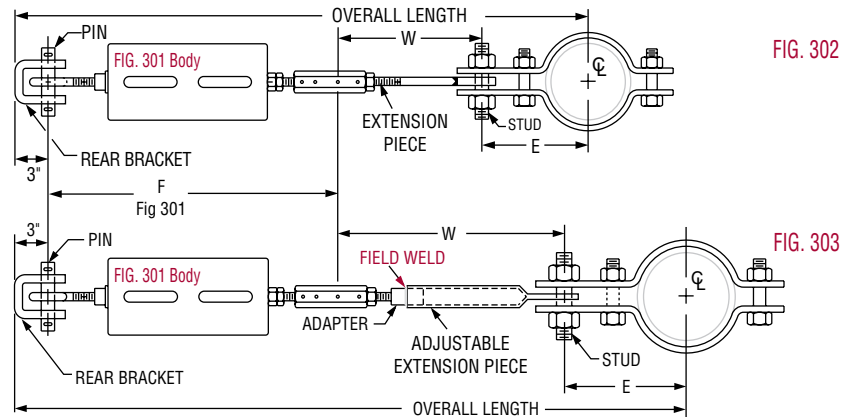
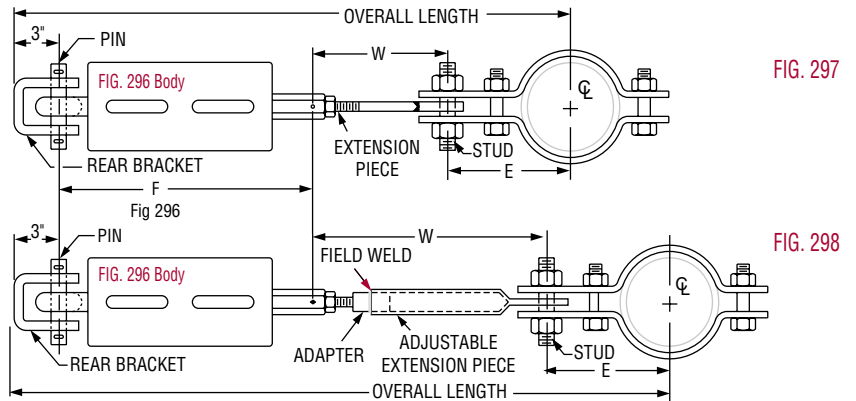


FIG. 297, 298, 302, 303, C-297, C-298, C-302 AND C-303: DIMENSIONS (IN)

Pipe Size	E		
	Size 1 - 4 Carbon	Size 5 & 6 Carbon	Size 5 & 6 Alloy
1½	4⅞	—	—
2	5⅞	—	—
2½	5¾	—	—
3	5 ¹⁵ / ₁₆	—	—
3½	6 ³ / ₁₆	—	—
4	6½	—	—
5	7	—	—
6	8 ⁹ / ₁₆	11 ⁷ / ₁₆	12 ¹ / ₁₆
8	9 ⁹ / ₁₆	12 ⁷ / ₁₆	13 ¹ / ₁₆
10	10 ⁵ / ₈	13½	14 ³ / ₈
12	11 ⁵ / ₈	14¾	15 ³ / ₈
14	12 ¹¹ / ₁₆	15¾	16
16	13 ¹¹ / ₁₆	16¾	17
18	14 ¹¹ / ₁₆	17¾	18
20	15 ⁷ / ₈	19	19½
24	17 ⁷ / ₈	21 ⁵ / ₈	22 ¹ / ₈
30	—	25 ¹ / ₈	25 ¹ / ₈
	—		

FIG. 297, 298, 302, 303, C-297, C-298, C-302 AND C-303: DIMENSIONS (IN)

Sway Brace Size	W			
	Fig. 297, 302		Fig. 298, 303	
	Min	Max	Min	Max
1	7 ¹⁵ / ₁₆	24	24	90 ³ / ₁₆
2	8 ⁹ / ₁₆	24	24	86 ¹ / ₁₆
3	8 ⁹ / ₁₆	24	24	79 ³ / ₁₆
4	9 ¹¹ / ₁₆	24	24	74 ¹³ / ₁₆
5	9 ¹³ / ₁₆	24	24 ¹ / ₈	61 ¹³ / ₁₆
6				46 ¹³ / ₁₆