

Sway Struts Sizing

Required Design Information:

- Pipe Size
- Load
- Distance from Structural Attachment to Pipe Centerline
- Pipe Material & temperature

Sway Struts

- Determine Sway Strut size according to the design load
- Determine ‘W’ (extension piece length) according to Sway Strut size, pipe size and overall distance from structural attachment to pipe

Sway Strut Problem #1

- Pipe Size = 12”
- Load = 5,000#
- Overall distance from structural attachment to pipe centerline = 80”



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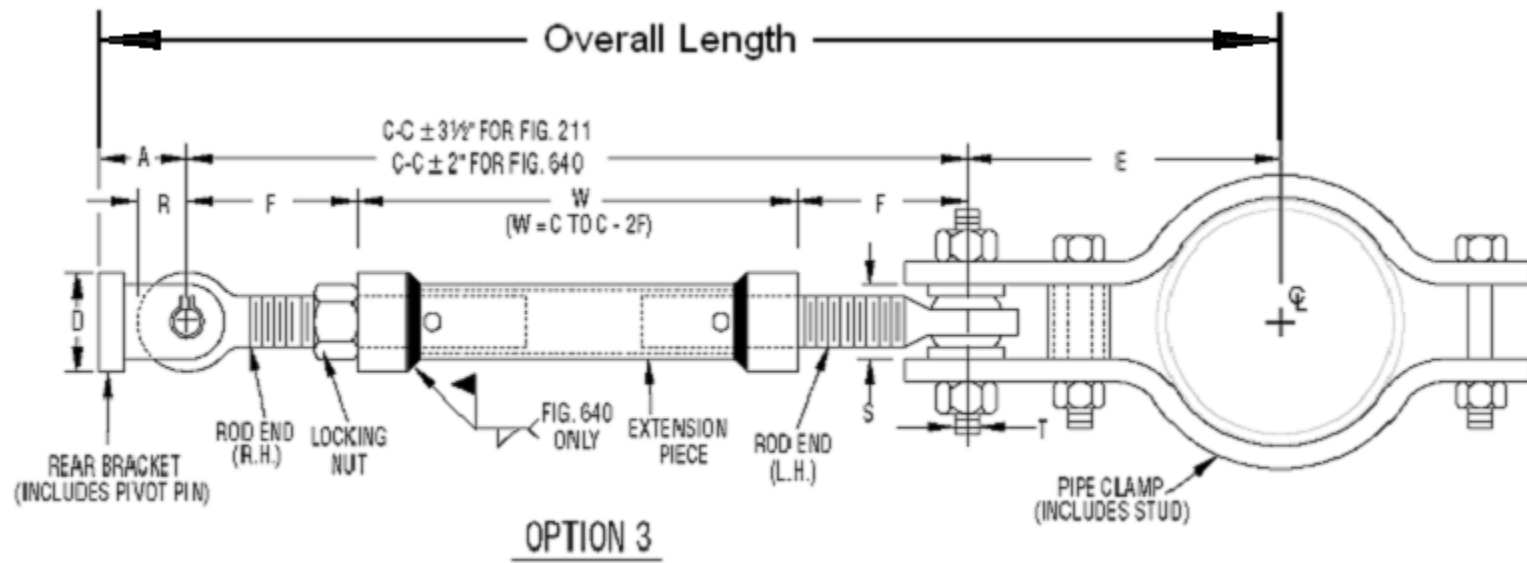
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Sway Strut Problem #1 (cont.)

Determine 'W' (extension piece length)

$$W = \text{Overall} - A - E - 2(F)$$



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Sway Strut Problem #1 (cont.)

Based on 5,000# load: Size 1 Sway Strut
(Page 185)

For a Size 1 Strut, $A = 2 \frac{1}{2}''$ / $F = 4 \frac{7}{8}''$

FIG. 211, C-211, FIG. 640 & FIG. C-640: LOAD (LBS) • DIMENSIONS (IN)

Size	Fig. 211 & Fig. 640										Fig. 211				Fig. 640				
	Load ■	Rod End	Ext. Piece	A	D	D1	N	R	S	T	C-C		W		F	Weld Z	C-C		F
											Max	Min	Max	Min			Max	Min	
A	650	¾	1	1	2	1¼	¼	⅝	⅝	0.374 0.372	60	16½	53⅛	9⅝	3 ⁷ / ₁₆	¾	60	12⅛	2 ¹¹ / ₁₆
B	1,500	1	1½	2½		2¾	⅝	1¾	1⅜	0.749 0.747	108	19	99⅛	10⅞	4 ⁷ / ₁₆			14 ⁷ / ₁₆	3 ¹¹ / ₁₆
C	4,500	1	2							2½			2¾	⅝					
1	8,000	1¼										0.999 0.997							

Sway Strut Problem #1 (cont.)

For a 12" Clamp
w/ Size 1 Strut
E = 11 7/8"
(Page 184)

E-TAKE OUT:				
Pipe Size	Size A	Size B & C	Size 1 & 2	Size 3
3/4	2 ⁷ / ₁₆	–	–	–
1	2 ⁹ / ₁₆	–	–	–
1 ¹ / ₄	2 ¹¹ / ₁₆	–	–	–
1 ¹ / ₂	4 ¹ / ₈	–	–	–
2	5 ¹ / ₈	6 ³ / ₈	6 ³ / ₈	–
2 ¹ / ₂	5 ³ / ₈	7	7	8 ¹ / ₈
3	5 ¹⁵ / ₁₆			
3 ¹ / ₂	6 ³ / ₁₆			
4	6 ¹ / ₂	7 ¹ / ₄	7 ¹ / ₄	8 ³ / ₈
5	7 ³ / ₄	7 ³ / ₄	7 ³ / ₄	9 ¹ / ₈
6	8 ³ / ₈	8 ³ / ₈	8 ³ / ₈	10
8	9 ³ / ₈	9 ³ / ₈	9 ³ / ₈	11 ¹ / ₄
10	10 ¹ / ₂	10 ¹ / ₂	10 ¹ / ₂	12 ³ / ₄
12	–	11 ⁷ / ₈	11 ⁷ / ₈	13 ⁷ / ₈
14	–	12 ⁵ / ₈	12 ⁵ / ₈	14 ¹ / ₂
16	–	13 ⁵ / ₈	13 ⁵ / ₈	15 ¹ / ₄

Sway Strut Problem #1

$$'W' = 80'' - 11 \frac{7}{8}'' - 2 \frac{1}{2}'' - 2(4 \frac{7}{8}'') = 55 \frac{7}{8}''$$

55 7/8" is OK based on Max & Min 'W' Dimension

Order: Size 1, Fig.211 Sway Strut, Option 3, 12" Pipe, W=55 7/8"

FIG. 211, C-211, FIG. 640 & FIG. C-640: LOAD (LBS) • DIMENSIONS (IN)

Size	Fig. 211 & Fig. 640										Fig. 211					Fig. 640			
	Load ■	Rod End	Ext. Piece	A	D	D1	N	R	S	T	C-C		W		F	Weld Z	C-C		F
											Max	Min	Max	Min			Max	Min	
A	650	3/4	1	1	2	1 1/4	1/4	5/8	5/8	0.374 0.372	60	16 1/2	53 1/8	9 5/8	3 7/16	3/16	60	12 1/8	2 1/16
B	1,500	1	1 1/2	2 1/2		2 3/8	5/8	1 3/8	1 3/8	0.749 0.747	108	19	99 1/8	10 1/8	4 7/16		3/16	14 7/16	3 1/16
C	4,500	1	2							0.749 0.747									
1	8,000	1 1/4				2 7/8	3/4	1 1/2	0.999 0.997	21 3/8	110	11 3/8	5	5/16	16 7/8	4 1/4			
2	11,630	1 1/2	0.999 0.997																

Sway Struts

- Stainless Steel and Alloy Pipe Clamps are available as a special design.
- Clamp Take-Out 'E' dimension is determined by Anvil Engineering based on Temperature and material

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Fig.211
Option 2



Fig.211 Option 3

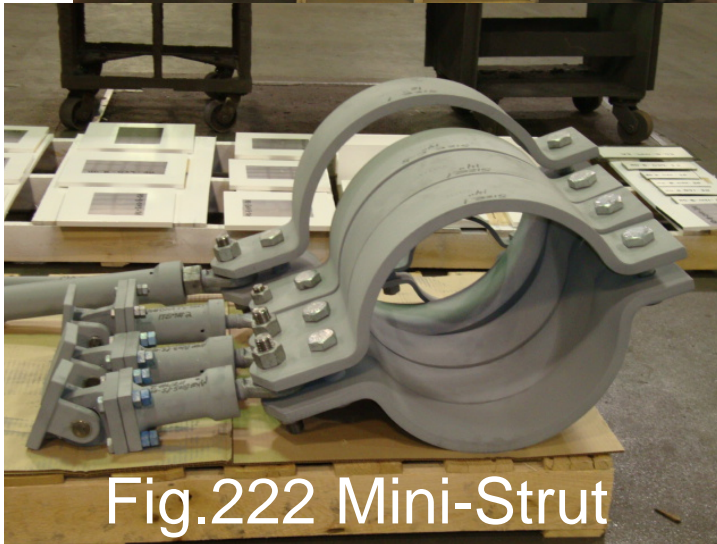


Fig.222 Mini-Strut



Fig.640
Field Welded Strut

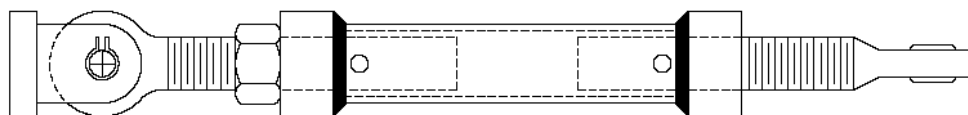


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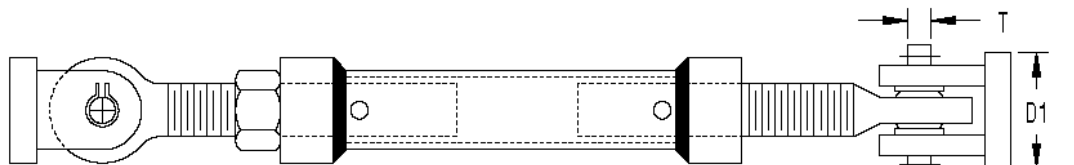
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Sway Struts

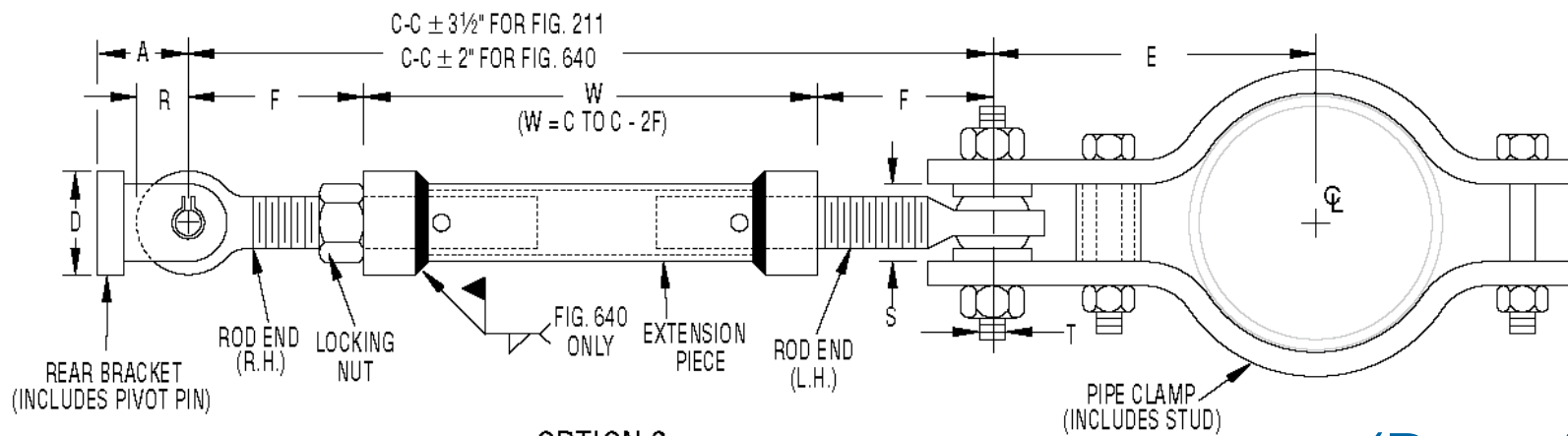
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OPTION 1



OPTION 2



OPTION 3

(Page 185)

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Questions? Contact us! We'd love to work with you!

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