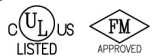
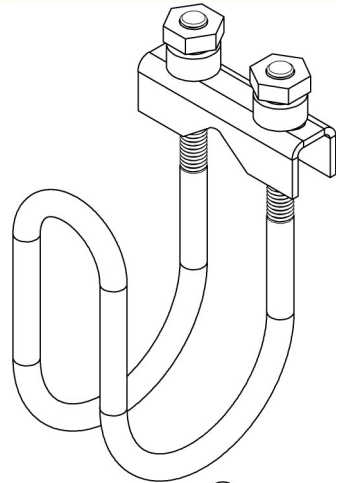


SEISMIC BRACING



FIG. 010



SWAY BRACE PIPE ATTACHMENT

Function: Designed for bracing pipe against sway and seismic disturbance. The pipe attachment component of a sway brace system used in conjunction with a PHD Manufacturing structural attachment fitting, and joined together with a bracing pipe element forms a complete sway brace assembly. Sway brace assemblies are intended to be installed in accordance with NFPA 13 and the manufacturer's installation instructions.

Size: Pipe size 1" (25) thru 4" (100).

Material: Carbon steel

Finish: Electro-galvanized

Install: Place over the pipe to be braced, adjust brace angle, and insert bracing pipe through opening leaving a minimum of 1" (25.4) extending from attachment. Brace pipe can be installed on top or bottom of pipe to be braced but must be a minimum of 6" (152.4) away from a pipe joint. Tighten nuts down evenly until hex heads break off.

Approvals: Underwriters Laboratories listed for US and Canada and Factory Mutual approved. Listed for use with NFPA and PHD sway brace components only.

Ordering: Specify figure number, brace pipe size, and sprinkler pipe size.

UL Maximum Design Load							
Pipe Size SCH 40		lbs.	kN	Wt. Each			
				1" (25mm) Brace Pipe		1 1/4" (32mm) Brace Pipe	
				lbs.	kg	lbs.	kg
1	(25)	680	(3.02)	0.71	(0.32)	0.75	(0.34)
1 1/4	(32)	680	(3.02)	0.76	(0.34)	0.79	(0.36)
1 1/2	(40)	680	(3.02)	0.79	(0.36)	0.82	(0.37)
2	(50)	680	(3.02)	0.84	(0.38)	0.88	(0.40)
2 1/2	(65)	680	(3.02)	0.90	(0.41)	0.94	(0.43)
3	(80)	680	(3.02)	0.98	(0.44)	1.02	(0.46)
4	(100)	680	(3.02)	1.10	(0.50)	1.14	(0.52)

UL's current Listings, shown above, are predicated on installation in accordance with the latest edition of NFPA 13. The 2016 and earlier editions of NFPA 13 referenced a minimum safety of 1.5 for the load rating as compared to 2.2 for the current edition.

The load ratings noted in table below, Previously Listed Loads, are consistent with the historical cULus Listings that were evaluated to the requirements of UL 203A, Outline of Investigation for Sway Brace Devices for Fire Sprinkler System Piping, based upon a minimum safety factor of 1.5 in accordance with the earlier editions of NFPA 13. The load ratings based upon the 2016 or earlier editions of NFPA 13 should only be used where approved by the Authority Having Jurisdiction (AHJ).

Previously Listed UL Loads							
Pipe Size SCH 40		lbs.	kN	Wt. Each			
				1" (25mm) Brace Pipe		1 1/4" (32mm) Brace Pipe	
				lbs.	kg	lbs.	kg
**1	(25)	*1000	*(4.45)	0.71	(0.32)	0.75	(0.34)
1 1/4	(32)	*1000	*(4.45)	0.76	(0.34)	0.79	(0.36)
1 1/2	(40)	*1000	*(4.45)	0.79	(0.36)	0.82	(0.37)
2	(50)	*1000	*(4.45)	0.84	(0.38)	0.88	(0.40)
2 1/2	(65)	*1000	*(4.45)	0.90	(0.41)	0.94	(0.43)
3	(80)	*1000	*(4.45)	0.98	(0.44)	1.02	(0.46)
4	(100)	*1000	*(4.45)	1.10	(0.50)	1.14	(0.52)

*Load ratings are based on a minimum safety factor of 1.5 in accordance with NFPA 13-2016 Section A.9.3.5.2.3.

** Restraint only

FM Maximum Design Load				
Brace Pipes 1" or 1 1/4"				
(GB/T3091, EN10255H, or JISG3454)				
Pipe Size SCH 10, 40 & Flow Pipe		Brace Angle From Vertical (Degrees)	lbs.	kN
1	(25)	30° - 44°	340	(1.51)
		45° - 59°	480	(2.13)
		60° - 74°	590	(2.62)
		75° - 90°	660	(2.93)
1 1/4	(32)	30° - 44°	350	(1.55)
		45° - 59°	500	(2.22)
		60° - 74°	610	(2.71)
1 1/2	(40)	75° - 90°	680	(3.02)
		30° - 44°	290	(1.28)
		45° - 59°	420	(1.86)
2	(50)	60° - 74°	510	(2.26)
		75° - 90°	570	(2.53)
		30° - 44°	390	(1.73)
2 1/2	(65)	45° - 59°	550	(2.44)
		60° - 74°	670	(2.98)
		75° - 90°	750	(3.33)
3	(80)	30° - 44°	440	(1.95)
		45° - 59°	620	(2.75)
		60° - 74°	760	(3.38)
4	(100)	75° - 90°	850	(3.78)
		30° - 44°	470	(2.09)
		45° - 59°	660	(2.93)
4	(100)	60° - 74°	810	(3.33)
		75° - 90°	910	(4.04)
		30° - 44°	430	(1.91)
4	(100)	45° - 59°	610	(2.71)
		60° - 74°	750	(3.33)
		75° - 90°	840	(3.73)

When governed by NFPA13 2019 or later, multiply FM approved loads by 0.682.

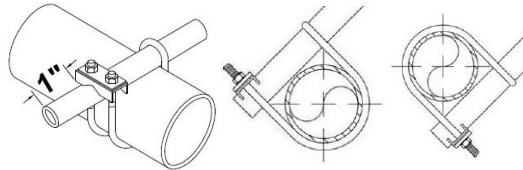
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FIG. 010 SWAY BRACE PIPE ATTACHMENT

- Pipe Braced:** 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 4"
Bracing: 1" Or 1 1/4" SCH40 steel pipe
Function: Designed for bracing pipe against sway and seismic disturbance. The pipe attachment component of a sway brace system used in conjunction with a PHD Manufacturing structural attachment fitting, and joined together with a bracing pipe element forms a complete sway brace assembly. Sway brace assemblies are intended to be installed in accordance with NFPA 13 and the manufacturer's installation instructions.
Approvals: Underwriters Laboratories listed for US and Canada
 Factory Mutual approved Listed for use with NFPA and PHD sway brace components only
Material: Low Carbon Steel
Installation: Place over the pipe to be braced, adjust brace angle, and insert bracing pipe through opening leaving a minimum of 1" extending from attachment. Brace pipe can be installed on top or bottom of pipe to be braced but must be a minimum of 6" away from a pipe joint. Tighten nuts down evenly until hex heads break off.



UL Maximum Design Loads		
Pipe Size Schedule 40	Brace Pipe Size Schedule 40	lbs.
1	1 & 1/4	680
1 1/4	1 & 1/4	680
1 1/2	1 & 1/4	680
2	1 & 1/4	680
2 1/2	1 & 1/4	680
3	1 & 1/4	680
4	1 & 1/4	680

FM Approved Loads							
Orientation	Pipe Size	Pipe Schedule	Allowable Horizontal Capacity Per Installation Angle (lbs.)				Brace Pipe Size Schedule 40
			Brace Angle From Vertical				
			30° - 44°	45° - 59°	60° - 74°	75° - 90°	
Lateral	1	LW, 10, 40	340	480	590	660	1" or 1 1/4"
Lateral	1 1/4	LW, 10, 40	350	500	610	680	1" or 1 1/4"
Lateral	1 1/2	LW, 10, 40	290	420	510	570	1" or 1 1/4"
Lateral	2	LW, 10, 40	390	550	670	750	1" or 1 1/4"
Lateral	2 1/2	LW, 10, 40	440	620	760	850	1" or 1 1/4"
Lateral	3	LW, 10, 40	470	660	810	910	1" or 1 1/4"
Lateral	4	LW, 10, 40	430	610	750	840	1" or 1 1/4"

When governed by NFPA13 2019 or later, multiply FM approved loads by 0.682.

NOTE: LW above refers to FM Approved Lightwall pipe, commonly referred to as Schedule 7. These ratings may also be applied to EN10220 and GB/T 8163 pipe. Schedule 10 above may be applied to GB/T 3091, GB/T 3092, EN 10255 M and H, JIS G3452. Schedule 40 above may be applied to GB/T3091, EN10255H or JISG3454 brace pipe.

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