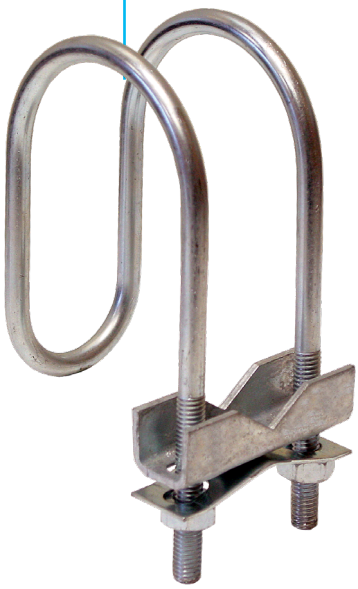
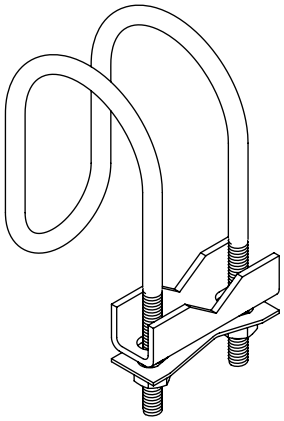
ASC Engineered Solutions

Model Q Lateral Sway Brace
Fig. AF001





1" to 4" Service Pipe

OPM-0351-13 | cULus LISTED | FM APPROVED

FIG. AF001: Weight and Installation Torque

Service Pipe Size	Brace Member Size		Installation Torque
	1" (DN25)	1¼" (DN25)	
1" (DN25)	0.82 lbs	0.87 lbs	14 ft-lbs
1¼" (DN32)	0.86 lbs	0.90 lbs	
1½" (DN40)	0.90 lbs	0.95 lbs	
2" (DN50)	0.96 lbs	1.00 lbs	16 ft-lbs
2½"	1.02 lbs	1.06 lbs	
DN65	1.05 lbs	1.09 lbs	
3" (DN80)	1.09 lbs	1.13 lbs	
4" (DN100)	1.23 lbs	1.26 lbs	17 ft-lbs

Material Specifications

Size Range:
Service Pipe Size: 1" – 4", DN25 – DN100
Brace Member: 1" – 1¼", DN25 – DN32

Material
Carbon Steel

Finish
☐ Plain
☐ Electro-Galvanized

Service
A seismic lateral brace designed to connect a brace member to the service pipe. The AF001 rigidly braces steel piping systems subjected to horizontal and vertical seismic loads.

Approvals
cULus Listed (ANSI/UL 203a), FM Approved (FM 1950-13), & OSHPD (OPM-0351-13). Complies with NFPA 13, ASCE 7, IBC, & MSS SP-127 bracing requirements.

Features
The indicator clip provides a visual indication that proper installation has been achieved..

Ordering
Specify figure number, service pipe size, brace size, finish, and description.

AFCON An ASC Engineered Solution

PROJECT INFORMATION	APPROVAL STAMP
Project:	☐ Approved
Address:	☐ Approved as noted
Contractor:	☐ Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

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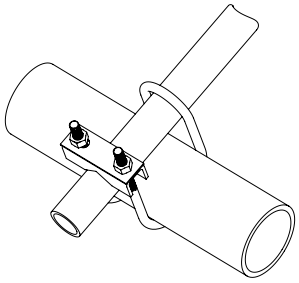
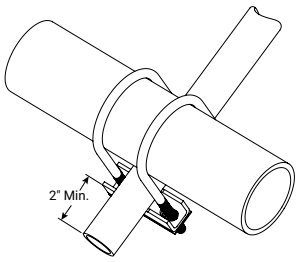
FIG. AF001 cULus Listing per ANSI/UL 203a (ASD)

Service Pipe Size	Service Pipe	Horizontal Load Rating at Brace Angle			
		30°-44°	45°-59°	60°-90°	Listed
1" (DN25)	½" (M12)	340 lbf (1.51 kN)	480 lbf (2.14 kN)	588 lbf (2.62 kN)	680 lbf (3.02 kN)
1¼" (DN32)	Sch. 10 Sch. 40 Metric Pipe				
1½" (DN40)					
2" (DN50)					
2½"	Sch. 10 Sch. 40				
DN65	Metric Pipe				
3" (DN80)	Sch. 10 Sch. 40 Metric Pipe				
4" (DN100)					

1) Brace Angles are determined from Vertical.
2) Sch. 10 Load Ratings may be used for any thicker wall pipe of the same diameter.
3) Listed load ratings reduced for angle ranges in accordance with NFPA 13-2019 Table 18.5.2.3.
4) Load Ratings reflect 1" (DN25) – 1¼" (DN32) brace members. See table below for listed brace members.
5) Minimum safety factor of 2.2 in accordance with NFPA 13-2019 Section A.18.5.2.3.



Lateral Application



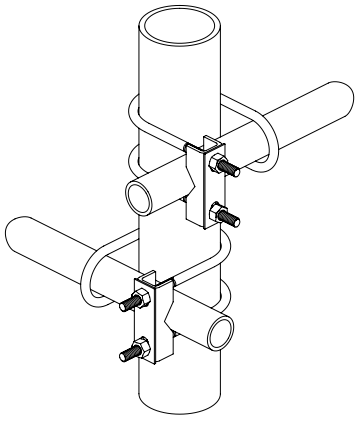
Lateral Application

Fig. AF001 cULus Listing per ANSI/UL 203A (ASD) for NFPA 13 - 2016 editions or earlier

UL's current Listings 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 factor of 1.5 for the load rating as compared to 2.2 for the current edition. The load ratings noted in this table 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).

Service Pipe Size	Service Pipe	Horizontal Load Rating at Brace Angle			
		30°-44°	45°-59°	60°-90°	Listed
1" (DN25)	½" (M12)	500 lbf (2.22 kN)	707 lbf (3.15 kN)	865 lbf (3.85 kN)	1000 lbf (4.45 kN)
1¼" (DN32)	Sch. 10 Sch. 40 Metric Pipe				
1½" (DN40)					
2" (DN50)					
2½"	Sch. 10 Sch. 40				
DN65	Metric Pipe				
3" (DN80)	Sch. 10 Sch. 40 Metric Pipe				
4" (DN100)					

1) Brace Angles are determined from Vertical.
2) Sch. 10 Load Ratings may be used for any thicker wall pipe of the same diameter.
3) Listed load ratings reduced for angle ranges in accordance with NFPA 13-2016 Table 9.3.5.2.3.
4) Load Ratings reflect 1" (DN25) – 1¼" (DN32) brace members. See table below for listed brace members.
5) Minimum safety factor of 1.5 in accordance with NFPA 13-2016 Section A.9.3.5.2.3



Riser Application

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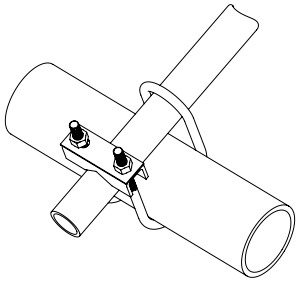
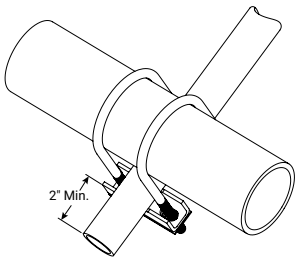
FIG. AF001FM Approved (Listing) per FM 1950-13 (ASD)

Service Pipe Size	Service Pipe	Horizontal Load Rating at Brace Angle			
		30°-44°	45°-59°	60°-74°	75°-90°
1" (DN25)	LW[2]	250 lbf (1.11 kN)	360 lbf (1.60 kN)	440 lbf (1.96 kN)	500 lbf (2.22 kN)
1¼" (DN32)					
1½" (DN40)					
2" (DN50)					
2½"					
3" (DN80)					
4" (DN100)	LW[2]	410 lbf (1.82 kN)	590 lbf (2.62 kN)	720 lbf (3.2 kN)	800 lbf (2.56 kN)
1" (DN25)	Sch. 10 Sch. 40 Metric Pipe	500 lbf (2.22 kN)	810 lbf (3.6 kN)	1000 lbf (4.45 kN)	1100 lbf (4.89 kN)
1¼" (DN32)					
1½" (DN40)					
2" (DN50)					
2½"	Sch. 10 Sch. 40				
DN65	Metric Pipe				
3" (DN80)	Sch. 10 Sch. 40 Metric Pipe				
4" (DN100)	Sch. 10 Sch. 40 Metric Pipe	760 lbf (3.38 kN)	1070 lbf (4.76 kN)	1320 lbf (5.87 kN)	1470 lbf (6.54 kN)

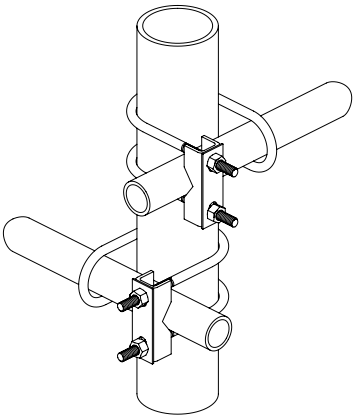
1) Brace Angles are determined from Vertical.
2) LW Refers to FM Approved Lightwall pipe, commonly referred to as Sch. 7 and Flow Pipe. See FM Approval Guide for approved Lightwall pipe.
3) Sch. 10 Load Ratings may be used for any thicker wall pipe of the same diameter.
4) See table below for FM listed specialty pipes & FM Listed metric service pipes.
5) Load Ratings reflect 1" (DN25) – 1¼" (DN32) brace members. See table below for listed brace members.
6) Minimum safety factor of 1.5 in accordance with NFPA 13-2016 Section A.9.3.5.2.3. To convert the load ratings above to a safety factor of 2.2 per NFPA 13-2019 Section A.18.5.2.3, multiply load ratings by a factor of 0.68.
7) To convert to LRFD Load Ratings, ASD Load Ratings may be multiplied by a factor of 1.5.



Lateral Application



Lateral Application



Riser Application

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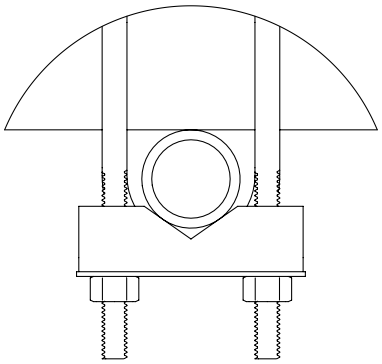

1. Place the AF001 over the service pipe to be braced.
2. Insert the brace member through the open loop and the bracket. The end of the brace pipe shall extend at least 2in (50.8mm) past the bracket.
3. Hand tighten the nuts equally until the bracket contacts the brace member. Continue to torque the nuts equally and alternately until indicator clip is flat and the installation torque has been achieved.
4. Ensure the brace angle is within the specified range.

Notes: The brace member may be installed above or below the service pipe.

FIG. AF001 cULus Listed & FM Approved Brace Members

Brace Member	Sizes	Standards (or Equivalent)	UL Listed	FM Approved
Sch. 40 NPS Pipe	1", 1¼"	ASTM A53, A106, A135, or A795	✓	✓
Sch. 40 Metric Pipe	DN25 DN32	KS D 3562	✓	✓
Metric Pipe	DN25 DN32	EN10255H		✓
		GB/T 3091		✓
		JIS G3454		✓

FIG. AF001 cULus Listed & FM Approved Metric Service Pipes

Brace Member	Service Pipe Sizes	UL Listed	FM Approved
KS D 3507 KS D 3537	DN25 DN32 DN40 DN50 DN 80 DN100	✓	✓
KS D 3562 Sch. 40		✓	✓
GB/T 3091 GB/T 3092			✓
JIS G3452			✓
EN 10255M			✓
EN 10255H			✓

Notes:

ASC Engineered Solutions™ brand bracing components are designed to be compatible ONLY with other ASC Engineered Solutions brand bracing components, resulting in a Listed seismic bracing assembly. Updated UL listing information may be viewed at www.ul.com and updated FM approval information may be viewed at www.approvalguide.com.

Disclaimer:

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Seis Brace® Seismic Fire Protection Design Tool may be accessed at www.seisbrace.com

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