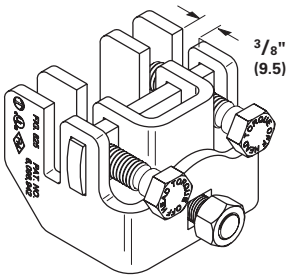
TOLCO Fig. 825 - bar joist sway brace attachment to steel (UL listed)

OPM

Size Range: One size accommodates all Fig. 900 Series sway brace attachments.

Material: Steel

Function: To attach sway bracing and hanger assemblies to steel members.



Set Bolts & Hardware Included

Features: This product's design incorporates a concentric attachment point which is critical to the performance of structural seismic connections. NFPA 13 indicates the importance of concentric loading of connections and fasteners. Permits secure non-friction connection without drilling or welding. Unique design reinforces point of connection to joist. Break off head set bolt design assures verification of proper installation torque (min. 31 ft.-lbs.).

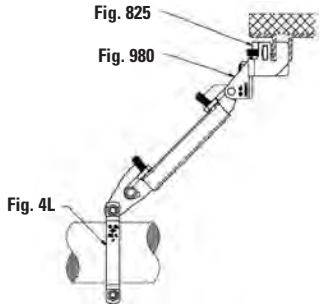
Approvals: Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)**. UL listed with Fig. 909, 910, and 980 series attachments and the following brace member type pipes: Sch. 40, KSD 3562. Included in our Seismic Engineering Guidelines approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to our Seismic Engineering Guidelines, OPM-0052-13. For FM Approval information refer to FM Approved page 55.

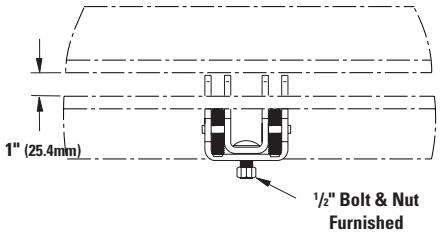
Maximum Design Load	
825W/909-1370 lbs	(5.78 KN)
825W/910-1500 lbs	(7.11 KN)
825W/980-1600 lbs	(8.45 KN)

Installation Instructions: Fig. 825 is the structural attachment component of a longitudinal or lateral sway brace assembly. It is intended to be combined with a TOLCO™ transitional attachment, "bracing pipe" and a TOLCO "braced pipe" attachment, to form a complete bracing assembly. NFPA 13 guidelines should be followed.

UL Listed as Hanger Attachment for 6" (150mm) pipe at Maximum Spacing

To Install: Place the Fig. 825 on the steel beam, tighten the cone point set bolts until heads break off. Attach other TOLCO transitional attachment fitting, Fig. 980, 910, 909, or any other TOLCO approved transitional fitting. Transitional fitting attachment can pivot for adjustment to proper brace angle.





Top View

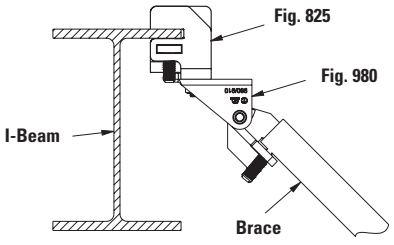
Finish: Plain, Electro-Galvanized and HDG

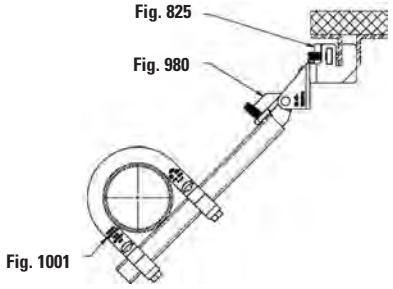
Approx. Wt./100: 247.5 Lbs. (112.2kg)

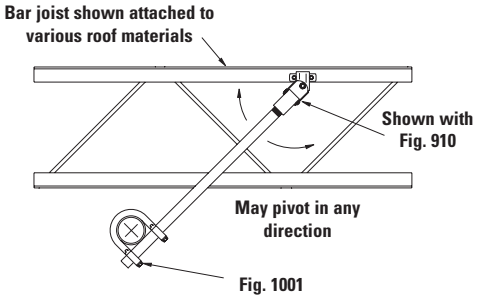
Order By: Figure number and finish

US Patent #6,098,942
Canada Patent #2,286,659

Retaining strap not required.







Front View

Eaton's B-Line series seismic bracing components are designed to be compatible only with other B-Line series bracing components, resulting in a listed seismic bracing assembly. Eaton B-Line Division warranty for seismic bracing components will be the warranty provided in Eaton B-Line Division standard terms and conditions of sale made available by Eaton, except that, in addition to the other exclusions from Eaton B-Line Division warranty, Eaton makes no warranty relating to B-Line series seismic bracing components that are combined with products not provided by Eaton.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

Updated 5-24-21

TOLCO Fig. 825 - bar joist sway brace attachment to steel (FM approved)

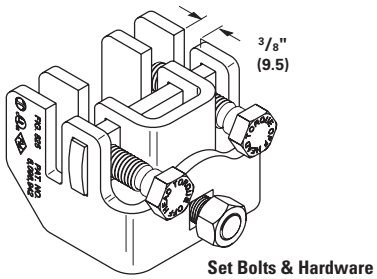
OPM

FM APPROVED

Size Range: One size accommodates all Fig. 900 Series sway brace attachments.

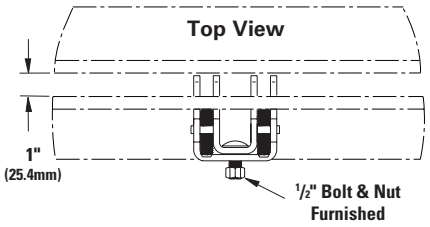
Material: Steel

Function: To attach sway bracing and hanger assemblies to steel members.



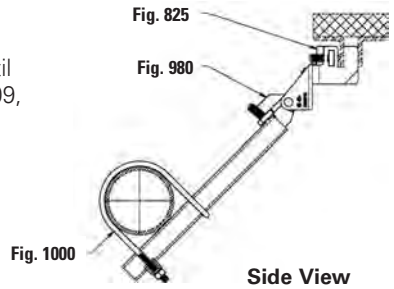
Features: This product's design incorporates a concentric attachment point which is critical to the performance of structural seismic connections. NFPA 13 indicates the importance of concentric loading of connections and fasteners. Permits secure non-friction connection without drilling or welding. Unique design reinforces point of connection to joist. Break off head set bolt design assures verification of proper installation torque (min. 31 ft.-lbs.).

Approvals: Approved by Factory Mutual Engineering **(FM)**.
Included in our Seismic Engineering Guidelines approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to our Seismic Engineering Guidelines, OPM-0052-13
For UL Listed information refer to UL Listed page 54.



Installation Instructions: Fig. 825 is the structural attachment componentof a longitudinal or lateral sway brace assembly. It is intended to be combined with a TOLCO™ transitional attachment, "bracing pipe" and a TOLCO "braced pipe" attachment, to form a complete bracing assembly. NFPA 13 or FM guidelines should be followed.

To Install: Place the Fig. 825 on the steel beam, tighten the cone point set bolts until heads break off. Attach other TOLCO transitional attachment fitting, Fig. 980, 910, 909, or any other TOLCO approved transitional fitting. Transitional fitting attachment can pivot for adjustment to proper brace angle.



Finish: Plain, Electro-Galvanized and HDG

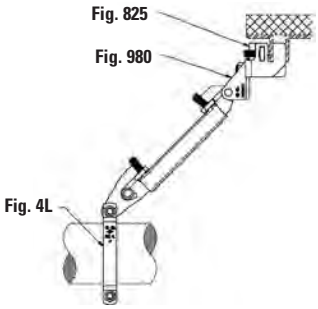
Approx. Wt./100: 247.5 Lbs. (112.2kg)

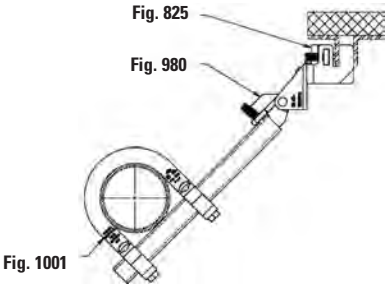
Order By: Figure number and finish

US Patent #6,098,942,
Canada Patent #2,286,659

Designed to meet or exceed requirements of FM DS 2-8.

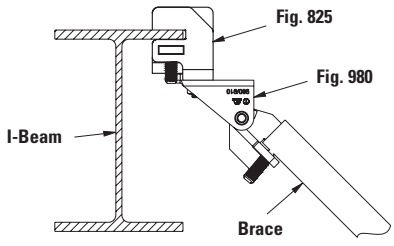
Retaining strap not required.





FM Approved design loads are based on ASD design method.

		FM Approved Design Loads			
		30°-44° lbs. / (kN)	45°-59° lbs. / (kN)	60°-74° lbs. / (kN)	75°-90° lbs. / (kN)
Maximum 3/8" Thick Flange	Perpendicular to Structural Member	990 (4.40)	1360 (6.05)	1670 (7.43)	1860 (8.27)
Maximum 3/8" Thick Flange	Parallel to Structural Member	460 (2.04)	630 (2.80)	770 (3.42)	860 (3.82)



Eaton's B-Line series seismic bracing components are designed to be compatible only with other B-Line series bracing components, resulting in a listed seismic bracing assembly. Eaton B-Line Division warranty for seismic bracing components will be the warranty provided in Eaton B-Line Division standard terms and conditions of sale made available by Eaton, except that, in addition to the other exclusions from Eaton B-Line Division warranty, Eaton makes no warranty relating to B-Line series seismic bracing components that are combined with products not provided by Eaton.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

Fig. 980 - TOLCO Universal swivel sway brace attachment -3/8"-16 to 3/4"-10 rods
Fig. 980H - TOLCO Universal swivel sway brace attachment -7/8"-9 to 1 1/4"-7

OPM

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Size Range: One size fits bracing pipe 1" (25mm) thru 2" (50mm), B-Line series 12 gauge (2.6mm) channel.

Material: Carbon steel

Function: Multi-functional attachment to structure or braced pipe fitting.

Features: This product's design incorporates a concentric attachment opening which is critical to the performance of structural seismic connections and in accordance with NFPA 13, 2019 Section 18.5.11.5. The Fig. 980 mounts to any surface angle and the break off bolt head assures verification of proper installation.

Installation: Fig.980 is the structural or transitional attachment component of a longitudinal or lateral sway brace assembly. It is intended to be combined with the "bracing pipe" and TOLCO™ "braced pipe" attachment, Fig. 1001, 2002, 3000, 4L or approved attachment to pipe to form a complete bracing assembly. NFPA 13 guidelines should be followed.

To Install: Place the Fig. 980 onto the "bracing pipe". Tighten the set bolt until the head breaks off. Attachment can pivot for adjustment to proper brace angle.

Approvals: —Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)**. UL Listed for the following brace member type pipes: Sch. 40, KSD 3562. Ask the factory for additional information as it may vary by product size. Included in our Seismic Engineering Guidelines approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to our Seismic Engineering Guidelines, OPM-0052-13. For FM Approval information refer to FM Approved page 61.

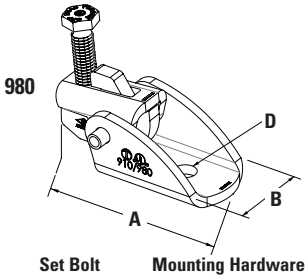
Note: Fig. 980 Swivel Attachment and Fig. 1001, 2002, 3000, 4L, or approved attachment to pipe make up a sway brace system of UL Listed attachments and bracing materials which satisfies the requirements of Underwriters Laboratories and the National Fire Protection Association **(NFPA)**

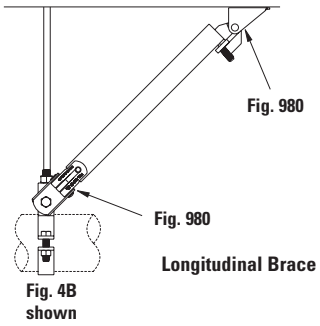
Finish: Plain, Electro-Galvanized or Stainless Steel.

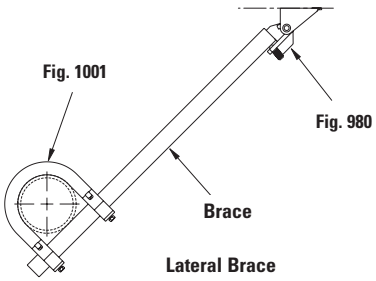
Contact customer service for alternative finishes.

Order By: Figure number and finish.

Pat. #6,273,372, Pat. #6,517,030, Pat. #6,953,174, Pat. #6,708,930, Pat. #7,191,987, Pat. #7,441,730, Pat. #7,669,806







Catalog #	A in.	A (mm)	B in.	B (mm)	D** in.	D** (mm)	Max. Design Load (cULus) lbs./(kN)	Approx.Wt./100 lbs.	Approx.Wt./100 (kg)
*980-3/8	4 9/16	(114.9)	2 1/16	(52.4)	7/16	(11.1)	1600 (7.12)	149	(67.6)
*980-1/2					9/16	(14.3)	2100 (9.34)	148	(67.1)
*980-5/8					11/16	(17.5)	2100 (9.34)	147	(66.7)
*980-3/4					13/16	(20.6)	2100 (9.34)	146	(66.2)
980H-7/8	6 3/4	(171.4)	3 1/2	(88.9)	15/16	(23.8)	Fig. 980H is not UL Listed or FM Approved	402	(182.3)
980H-1					1 1/16	(27.0)		400	(181.4)
980H-1 1/8					1 3/16	(30.2)		397	(180.1)
980H-1 1/4					1 5/16	(33.3)		390	(176.9)

* Sizes available in stainless steel (980S-3/8, 980S-1/2, 980S-5/8, and 980S-3/4) and have the same UL rating as what is listed.

** Mounting attachment hole size.

Eaton's B-Line series seismic bracing components are designed to be compatible only with other B-Line series bracing components, resulting in a listed seismic bracing assembly. Eaton B-Line Division warranty for seismic bracing components will be the warranty provided in Eaton B-Line Division standard terms and conditions of sale made available by Eaton, except that, in addition to the other exclusions from Eaton B-Line Division warranty, Eaton makes no warranty relating to B-Line series seismic bracing components that are combined with products not provided by Eaton.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

Fig. 980 - TOLCO Universal swivel sway brace attachment -3/8"-16 to 3/4"-10 rods
Fig. 980H - TOLCO Universal swivel sway brace attachment -7/8"-9 to 1 1/4"-7

Size Range: One size fits bracing pipe 1" (25mm) thru 2" (50mm), B-Line series 12 gauge (2.6mm) channel.

Material: Carbon steel

Function: Multi-functional attachment to structure or braced pipe fitting.

Features: This product's design incorporates a concentric attachment opening which is critical to the performance of structural seismic connections and in accordance with NFPA 13, 2019 Section 18.5.11.5. The Fig. 980 mounts to any surface angle and the break off bolt head assures verification of proper installation.

Installation: Fig.980 is the structural or transitional attachment component of a longitudinal or lateral sway brace assembly. It is intended to be combined with the "bracing pipe" and TOLCO™ "braced pipe" attachment, Fig. 1000, 1001, 3000, 4L, or other TOLCO approved attachment to pipe to form a complete bracing assembly. NFPA 13 guidelines should be followed.

To Install: Place the Fig. 980 onto the "bracing pipe". Tighten the set bolt until the head breaks off. Attachment can pivot for adjustment to proper brace angle.

Approvals: —Approved by Factory Mutual Engineering **(FM)**. Included in our Seismic Engineering Guidelines approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to our Seismic Engineering Guidelines, OPM-0052-13.
For UL Listed information refer to UL Listed page 60.

Note: Fig. 980 Swivel Attachment and Fig. 1000, 1001, 4L or other TOLCO approved attachment to pipe that make up a sway brace system of bracing materials which satisfies the requirements of Factory Mutual Engineering and the National Fire Protection Association **(NFPA)**

Finish: Plain, Electro-Galvanized or Stainless Steel.
Contact customer service for alternative finishes.

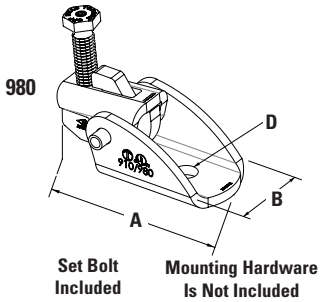
Order By: Figure number and finish.

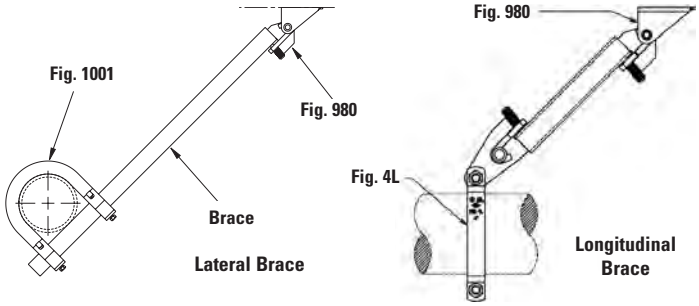
Pat. #6,273,372, Pat. #6,517,030, Pat. #6,953,174, Pat. #6,708,930, Pat. #7,191,987, Pat. #7,441,730, Pat. #7,669,806

Designed to meet or exceed requirements of FM DS 2-8.

OPM

FM APPROVED





Catalog #	A in.	A (mm)	B in.	B (mm)	D** in.	D** (mm)	Max. Design Load*** (FM) 30°-44° lbs./(kN)	45°-59° lbs./(kN)	60°-74° lbs./(kN)	75°-90° lbs./(kN)	Approx.Wt./100 lbs.	(kg)
980-3/8	4 9/16	(114.9)	2 1/16	(52.4)	7/16	(11.1)	2370 (10.54)	2790 (12.41)	3360 (14.94)	3750 (16.68)	149	(67.6)
980-1/2					9/16	(14.3)					148	(67.1)
980-5/8					11/16	(17.5)					147	(66.7)
980-3/4					13/16	(20.6)					146	(66.2)
980H-7/8	6 3/4	(171.4)	3 1/2	(88.9)	15/16	(23.8)	Fig. 980H is not UL Listed or FM Approved				402	(182.3)
980H-1					1 1/16	(27.0)					400	(181.4)
980H-1 1/8					1 3/16	(30.2)					397	(180.1)
980H-1 1/4					1 5/16	(33.3)					390	(176.9)

** Mounting attachment hole size.
*** Installed with 1" or 1 1/4 "schedule 40 brace pipe.

Eaton's B-Line series seismic bracing components are designed to be compatible only with other B-Line series bracing components, resulting in a listed seismic bracing assembly. Eaton B-Line Division warranty for seismic bracing components will be the warranty provided in Eaton B-Line Division standard terms and conditions of sale made available by Eaton, except that, in addition to the other exclusions from Eaton B-Line Division warranty, Eaton makes no warranty relating to B-Line series seismic bracing components that are combined with products not provided by Eaton.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

TOLCO Fig. 1001 - sway brace attachment (UL listed)

Size Range: Pipe size to be braced: 1" (25mm) thru 8" (200mm) IPS.
Pipe size used for bracing: 1" (25mm) and 1¼" (32mm) Schedule 40 IPS.

Material: Steel

Function: For bracing pipe against sway and seismic disturbance. The pipe attachment component of a sway brace system: Fig. 1001 is used in conjunction with a Fig. 900 Series fitting and joined together with bracing pipe per NFPA 13, forming a complete sway brace assembly.

Features: Can be used to brace schedule 7 through schedule 40 IPS. Field adjustable, making critical pre-engineering of bracing pipe length unnecessary. Unique design requires no threading of bracing pipe. Comes assembled and ready for installation. Fig. 1001 has built-in visual verification of correct installation. See installation note below.

Installation Note: Position Fig. 1001 over the pipe to be braced and tighten two hex head cone point set bolts until heads bottom out. A minimum of 1" (25mm) pipe extension is recommended. Brace pipe can be installed on top or bottom of pipe to be braced.

Approvals: Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)**. UL Listed for the following sprinkler type pipes: Sch. 40 (and as brace member), Sch. 10, Bull Moose Eddy Flow, Wheatland Mega Flow, DIN 2448, KSD 3562 (and as brace member), KSD 3507. Ask the factory for additional information as it may vary by product size. Included in our Seismic Engineering Guidelines approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to our Seismic Engineering Guidelines, OPM-0052-13. For FM Approval information refer to FM Approved page 67.

Finish: Plain, Electro-Galvanized or Hot Dip Galvanized. Contact customer service for alternative finishes and materials.

Order By: Order by figure number, pipe size to be braced, followed by pipe size used for bracing (1" (25mm) or 1¼" (32mm)), and finish.

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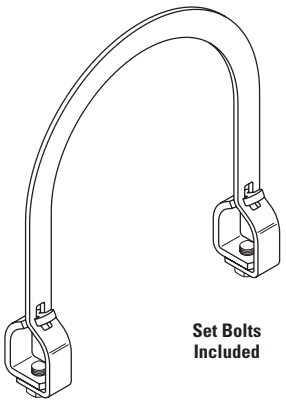


Pipe Size	Part Number & Approx. Wt./100 1" (25mm) Brace Pipe		1¼" (32mm) Brace Pipe		Design Load - Lbs. For Brace Pipe Size 1" / 1¼"		
in. (mm)		Lbs. (kg)		Lbs. (kg)	Sch. 7 1" / 1¼"	Sch. 10 1" / 1¼"	Sch. 40 1" / 1¼"
1" (25)	**1001-1 X 1**	104.6 (47.4)	**1001-1 X 1¼**	122.2 (55.4)	— / —	— / —	1000 / 1000
1¼" (32)	**1001-1¼ X 1**	105.2 (47.7)	**1001-1¼ X 1¼**	122.6 (55.6)	1000 / 1000	1000 / 1000	1000 / 1000
1½" (40)	**1001-1½ X 1**	107.0 (48.5)	**1001-1½ X 1¼**	124.7 (56.6)	1500 / 1500	1500 / 1500	1500 / 1500
2" (50)	**1001-2 X 1**	112.6 (51.1)	**1001-2 X 1¼**	129.2 (58.6)	1500 / 1500	1500 / 1500	1500 / 1500
*2½" (65)	**1001-2½ X 1***	136.3 (61.8)	**1001-2½ X 1¼***	154.4 (70.0)	2000 / 2000	2000 / 2000	2000 / 2000
3" (80)	**1001-3 X 1**	145.0 (65.8)	**1001-3 X 1¼**	163.1 (74.0)	2000 / 2000	2000 / 2000	2000 / 2000
4" (100)	**1001-4 X 1**	158.6 (71.9)	**1001-4 X 1¼**	176.7 (80.1)	2000 / 2000	2000 / 2000	2000 / 2000
5" (100)	**1001-5 X 1**	173.2 (78.6)	**1001-5 X 1¼**	191.4 (86.8)	— / —	2000 / 2000	2000 / 2000
*6" (150)	**1001-6 X 1***	190.0 (85.2)	**1001-6 X 1¼***	206.0 (93.4)	2000 / 2000	2000 / 2000	2000 / 2000
*8" (200)	**1001-8 X 1***	217.4 (111.5)	**1001-8 X 1¼***	265.3 (120.3)	— / —	2000 / 2000	2000 / 2000

*Note: Metric sizes available for 65mm, 150mm, 200mm pipe size with 25mm and 32mm brace pipe size. Contact the factory.

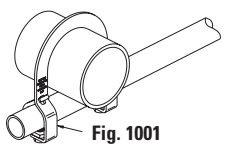
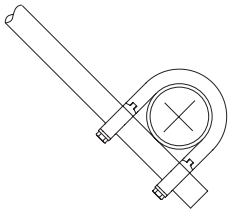
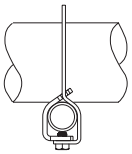
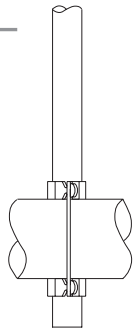


Fig. 1001







All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

TOLCO Fig. 1001 - sway brace attachment (FM approved)

OPM

FM APPROVED

Size Range: Pipe size to be braced: 1" (25mm) thru 8" (200mm) IPS. Pipe size used for bracing: 1" (25mm) and 1¼" (32mm) Schedule 40 IPS.

Material: Steel

Function: For bracing pipe against sway and seismic disturbance. The pipe attachment component of a sway brace system: Fig. 1001 is used in conjunction with a Fig. 900 Series fitting and joined together with bracing pipe per NFPA 13, forming a complete sway brace assembly.

Features: Can be used to brace schedule 7 through schedule 40 IPS. Field adjustable, making critical pre-engineering of bracing pipe length unnecessary. Unique design requires no threading of bracing pipe. Can be used as a component of a four-way riser brace. Comes assembled and ready for installation. Fig. 1001 has built-in visual verification of correct installation. See installation note below.

Installation Note: Position Fig. 1001 over the pipe to be braced and tighten two hex head cone point set bolts until heads bottom out. A minimum of 1" (25mm) pipe extension is recommended. Brace pipe can be installed on top or bottom of pipe to be braced.

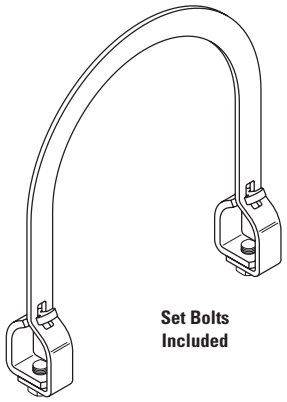
Approvals: Approved by Factory Mutual Engineering **(FM)**. Included in our Seismic Engineering Guidelines approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to our Seismic Engineering Guidelines, OPM-0052-13. For **UL** Listed information refer to **UL** Listed page 66.

Finish: Plain, Electro-Galvanized or Hot Dip Galvanized. Contact customer service for alternative finishes and materials.

Order By: Order by figure number, pipe size to be braced, followed by pipe size used for bracing (1" (25mm) or 1¼" (32mm)) , and finish.

Important Note: Fig. 1001 is precision manufactured to perform its function as a critical component of a complete bracing assembly. To ensure performance, the FM Approval requires that Fig. 1001 must be used only with other TOLCO™ bracing products. **The Fig. 1001 is not intended for use with the Fig. 907 4-way Longitudinal Brace Attachment.**

Designed to meet or exceed requirements of FM DS 2-8.



Pipe Size in. (mm)	Part Number & Approx. Wt./100 1" (25mm) Brace Pipe	Lbs.	(kg)	1¼" (32mm) Brace Pipe	Lbs.	(kg)	Design Load - For Sch. 7, Sch. 10, & Sch. 40 Pipe Allowable Horizontal Capacity (lbf) Per Installation [1,2,3] 30°-44° Lbs.	(kN)	45°-59° Lbs.	(kN)	60°-74° Lbs.	(kN)	75°-90° Lbs.	(kN)
1" (25)	**1001-1 X 1**	104.6	(47.4)	**1001-1 X 1¼**	122.2	(55.4)	1800	(8.01)	2550	(11.34)	3120	(13.88)	3490	(15.52)
1¼" (32)	**1001-1¼ X 1**	105.2	(47.7)	**1001-1¼ X 1¼**	122.6	(55.6)	1230	(5.47)	1740	(7.74)	2140	(9.52)	2380	(10.59)
1½" (40)	**1001-1½ X 1**	107.0	(48.5)	**1001-1½ X 1¼**	124.7	(56.6)	1230	(5.47)	1740	(7.74)	2140	(9.52)	2380	(10.59)
2" (50)	**1001-2 X 1**	112.6	(51.1)	**1001-2 X 1¼**	129.2	(58.6)	1230	(5.47)	1740	(7.74)	2140	(9.52)	2380	(10.59)
*2½"(65)	**1001-2½ X 1***	136.3	(61.8)	**1001-2½ X 1¼***	154.4	(70.0)	800	(3.56)	1130	(5.03)	1380	(6.14)	1540	(6.85)
3" (80)	**1001-3 X 1**	145.0	(65.8)	**1001-3 X 1¼**	163.1	(74.0)	850	(3.78)	1200	(5.34)	1470	(6.54)	1640	(7.30)
4" (100)	**1001-4 X 1**	158.6	(71.9)	**1001-4 X 1¼**	176.7	(80.1)	850	(3.78)	1200	(5.34)	1470	(6.54)	1640	(7.30)
5" (100)	**1001-5 X 1**	173.2	(78.6)	**1001-5 X 1¼**	191.4	(86.8)	510	(2.27)	730	(3.25)	890	(3.96)	990	(4.40)
*6" (150)	**1001-6 X 1***	190.0	(85.2)	**1001-6 X 1¼***	206.0	(93.4)	510	(2.27)	730	(3.25)	890	(3.96)	990	(4.40)
*8" (200)	**1001-8 X 1***	217.4	(111.5)	**1001-8 X 1¼***	265.3	(120.3)	510	(2.27)	730	(3.25)	890	(3.96)	990	(4.40)

[1] FM Approved when used with 1 or 1¼ inch NPS Schedule 40 GB/T 3091,EN 10255H, or JIS G3451 steel pipe as the brace member.

[2] Load rating for LW above refers to FM Approved Lightwall Pipe commonly referred to as "Schedule 7". These ratings may also be applied when EN 10220 and GB/T 8163 steel pipe.

[3] Load rating for Schedule 10 above may be applied to GB/T 3092,EN 10255M and H, or JIS G3454, FM Approved Thinwall, or Schedule 40 steel pipes.

Note: See UL load ratings in UL Listed Design Load chart shown under drawing.

*Note: Metric sizes available for 65mm, 150mm, 200mm pipe size with 25mm and 32mm brace pipe size. Contact the factory.

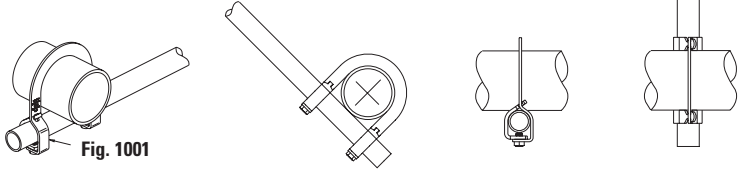


Fig. 1001

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

TOLCO Fig. 4L - sway brace attachment (UL listed)

Size Range: 1" (25mm) through 8" (200mm) IPS. 10" (250mm) and 12" (300mm) not UL listed

Material: Steel and stainless steel.

Function: For bracing pipe against sway and seismic disturbance.

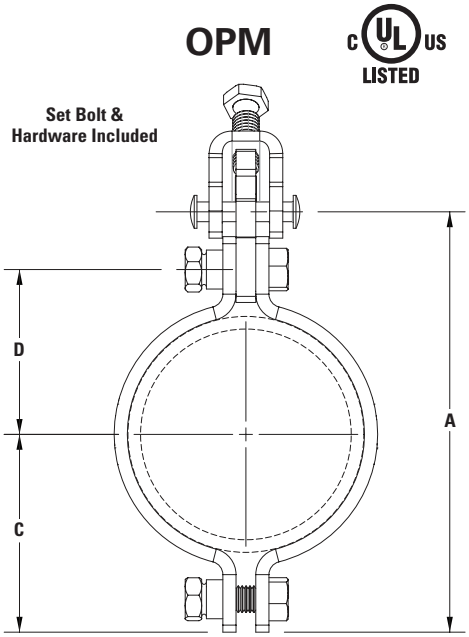
Approvals: Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)** 1" (25mm) through 8" (200mm) pipe. UL Listed for the following sprinkler type pipes: Sch. 40, Sch. 10, Bull Moose Eddy Flow, Wheatland Mega Flow, DIN 2448, KSD 3562, KSD 3507. Ask the factory for additional information as it may vary by product size. For FM Approval information refer to FM Approved page 75. Included in our Seismic Engineering Guidelines approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to our Seismic Engineering Guidelines, OPM-0052-13.

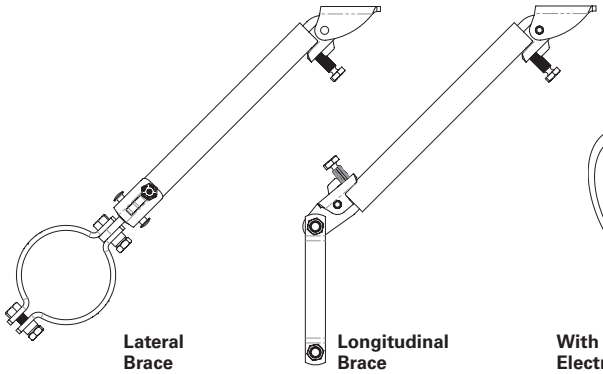
Installation Instructions: Fig. 4L is the "braced pipe" attachment component of a longitudinal and lateral sway brace assembly. It is intended to be combined with the "bracing pipe" and TOLCO structural attachment component to form a complete bracing assembly. NFPA 13 guidelines should be followed. (For complete detailed instructions see instruction sheet IL309015EN).

To Install: Place the Fig. 4L over the pipe to be braced and tighten bolts. Then engage "bracing pipe" into jaw opening and tighten set bolt until head snaps off. Jaw attachment can pivot for adjustment to proper brace angle.

Finish: Plain, Electrogalvanized, Hot Dip Galvanized or Stainless Steel (only for 4" & 6" sizes).

Order By: Figure number, pipe size and finish.





Lateral Brace

Longitudinal Brace

With Plain & Electrogalvanized Finish

With Hot Dip Galvanized & Stainless Steel Finish

Part No.	Nom Pipe Size in.	Nom Pipe Size (mm)	A (Max) in.	C in.	D in.	Bolt Size in.	UL Max. Rec. Load Logitudinal lbs.	UL Max. Rec. Load Lateral lbs.	PLN & EG. Approx. Wt./100 lbs.
4L-1	1	(25)	5	2	1 3/8	1/2-13	1000	1000	176
4L-1 1/4	1 1/4	(32)	5 2/7	2 1/16	1 5/9	1/2-13	1000	1000	182
4L-1 1/2	1 1/2	(40)	5 1/2	2 1/3	1 2/3	1/2-13	1000	1000	187
4L-2	2	(50)	6 2/7	2 2/3	2	1/2-13	1600	1000	204
4L-2 1/2	2 1/2	—	6 7/9	3	2 1/3	1/2-13	2000	1000	217
4L-65mm	—	(65)	6 7/9	3	2 1/3	1/2-13	700	1000	214
4L-3	3	(80)	7 3/7	3 1/4	2 5/8	1/2-13	2000	1000	323
4L-3 1/2	3 1/2	(90)	8	3 1/2	2 7/8	1/2-13	2000	1000	343
4L-4* **	4	(100)	8 3/7	3 3/4	3 1/8	1/2-13	2000**	1000	253
4L-5	5	—	9 5/9	4 3/8	3 5/8	1/2-13	2000**	1600*	314
4L-125mm	—	(125)	9 5/9	4 3/8	3 5/8	1/2-13	1200	1600*	314
4L-6* **	6	—	11 3/7	5 1/3	4 4/7	1/2-13	2000	1600*	540
4L-150mm	—	(150)	11 3/7	5 1/3	4 4/7	1/2-13	1200	1600*	538
4L-8	8	—	13 3/5	6 2/5	5 2/3	1/2-13	2000	2100*	645
4L-200mm	—	(200)	13 3/5	6 2/5	5 2/3	1/2-13	1400	2100*	643
4L-10** **	10	(254)	17 3/5	8 1/4	7 1/4	1/2-13	NA	NA	1349
4L-12** **	12	(300)	19 3/5	9 1/4	8 1/4	1/2-13	NA	NA	1526

* Only UL listed as a lateral brace for use with a 1" (25mm) pipe as the brace member.
** Only UL listed as a longitudinal brace for use with a 1" (25mm) thru 1 1/2" (40mm) pipe as the brace member.
*** Fig 4L-4 and Fig 4L-6 are only sizes available in stainless steel 316.
**** FM approved not UL listed.

Eaton's B-Line series seismic bracing components are designed to be compatible only with other B-Line series bracing components, resulting in a listed seismic bracing assembly. Eaton B-Line Division warranty for seismic bracing components will be the warranty provided in Eaton B-Line Division standard terms and conditions of sale made available by Eaton, except that, in addition to the other exclusions from Eaton B-Line Division warranty, Eaton makes no warranty relating to B-Line series seismic bracing components that are combined with products not provided by Eaton.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

Updated 4-2-21

TOLCO Fig. 4L - sway brace attachment (FM approved)

OPM

FM APPROVED

Size Range: 1" (25mm) through 12" (300mm) IPS.

Material: Steel.

Function: For bracing pipe against sway and seismic disturbance.

Approvals: Approved by Factory Mutual Engineering **(FM)**, 1" (25mm) through 12" (300mm) pipe. For UL Listed information refer to UL Listed page 74. Included in our Seismic Engineering Guidelines approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to our Seismic Engineering Guidelines, OPM-0052-13.

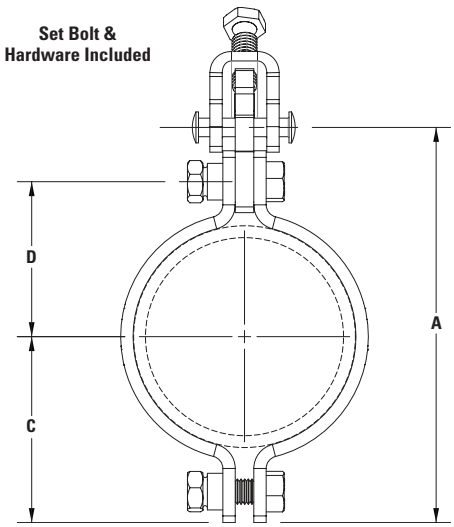
Installation Instructions: Fig. 4L is the "braced pipe" attachment component of a longitudinal and lateral sway brace assembly. It is intended to be combined with the "bracing pipe" and TOLCO™ structural attachment component to form a complete bracing assembly. NFPA 13 and/or FM guidelines should be followed.

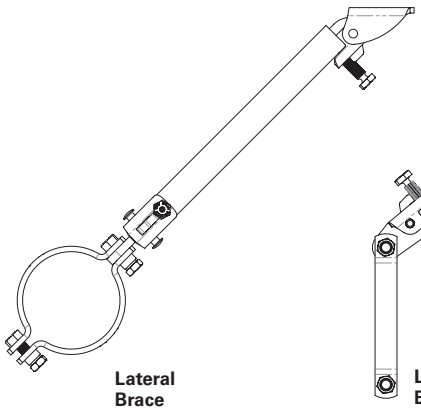
To Install: Place the Fig. 4L over the pipe to be braced and tighten bolts. Then engage "bracing pipe" into jaw opening and tighten set bolt until head snaps off. Jaw attachment can pivot for adjustment to proper brace angle. (For complete detailed instructions see instruction sheet IL309015EN).

Finish: Plain, Electrogalvanized.

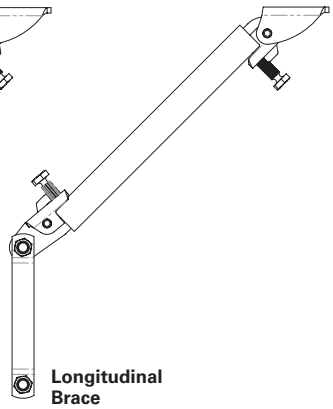
Order By: Figure number, pipe size and finish.

Designed to meet or exceed requirements of FM DS 2-8.

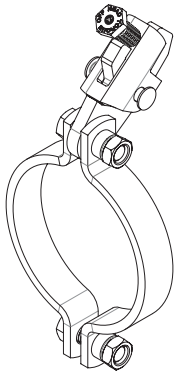




Lateral Brace



Longitudinal Brace



With Plain & Electrogalvanized Finish

Part No.	Nom Pipe Size in.	(mm)	A (Max) in.	C in.	D in.	Bolt Size in.	FM Max. Rec. Load Logitudinal 30°-44° lbs. (kN)	45°-59° lbs. (kN)	60°-74° lbs. (kN)	75°-90° lbs. (kN)	FM Max. Rec. Load Lateral 30°-44° lbs. (kN)	45°-59° lbs. (kN)	60°-74° lbs. (kN)	75°-90° lbs. (kN)	Approx. Wt./100 lbs.
4L-1	1	(25)	5	2	1 3/8	1/2-13	1060 (4.72)	1160 (5.16)	1400 (6.23)	1500 (6.68)	1370 (6.10)	1940 (8.63)	2380 (10.59)	2650 (11.79)	176
4L-1 1/4	1 1/4	(32)	5 2/7	2 1/16	1 5/9	1/2-13	1060 (4.72)	1160 (5.16)	1400 (6.23)	1500 (6.68)	1370 (6.10)	1940 (8.63)	2380 (10.59)	2650 (11.79)	182
4L-1 1/2	1 1/2	(40)	5 1/2	2 1/3	1 2/3	1/2-13	740 (3.30)	1020 (4.54)	1250 (5.57)	920 (4.10)	1370 (6.10)	1940 (8.63)	2380 (10.59)	2650 (11.79)	187
4L-2	2	(50)	6 2/7	2 2/3	2	1/2-13	740 (3.30)	1020 (4.54)	1250 (5.57)	920 (4.10)	1420 (6.32)	1990 (8.86)	2440 (10.86)	2720 (12.10)	204
4L-2 1/2	2 1/2	—	6 7/9	3	2 1/3	1/2-13	520 (2.32)	650 (2.90)	790 (3.52)	1040 (4.63)	1410 (6.28)	1990 (8.86)	2440 (10.86)	2720 (12.10)	220
4L-65mm	—	(65)	6 7/9	3	2 1/3	1/2-13	520 (2.32)	650 (2.90)	790 (3.52)	1040 (4.63)	1410 (6.28)	1990 (8.86)	2440 (10.86)	2720 (12.10)	218
4L-3	3	(80)	7 3/7	3 1/4	2 5/8	1/2-13	520 (2.32)	650 (2.90)	790 (3.52)	1040 (4.63)	1410 (6.28)	1990 (8.86)	2440 (10.86)	2720 (12.10)	323
4L-3 1/2	3 1/2	(90)	8	3 1/2	2 7/8	1/2-13	520 (2.32)	650 (2.90)	790 (3.52)	1040 (4.63)	1410 (6.28)	1990 (8.86)	2440 (10.86)	2720 (12.10)	343
4L-4	4	(100)	8 3/7	3 3/4	3 1/8	1/2-13	520 (2.32)	650 (2.90)	790 (3.52)	1040 (4.63)	1410 (6.28)	1990 (8.86)	2440 (10.86)	2720 (12.10)	253
4L-5	5	—	9 5/9	4 3/8	3 5/8	1/2-13	520 (2.32)	650 (2.90)	790 (3.52)	1040 (4.63)	1410 (6.28)	1990 (8.86)	2440 (10.86)	2720 (12.10)	313
4L-125mm	—	(125)	9 5/9	4 3/8	3 5/8	1/2-13	520 (2.32)	650 (2.90)	790 (3.52)	1040 (4.63)	1410 (6.28)	1990 (8.86)	2440 (10.86)	2720 (12.10)	312
4L-6	6	—	11 3/7	5 1/3	4 4/7	1/2-13	870 (3.87)	1200 (5.34)	1460 (6.50)	1630 (7.26)	1560 (6.94)	2210 (9.84)	2710 (12.06)	3020 (13.44)	540
4L-150mm	—	(150)	11 3/7	5 1/3	4 4/7	1/2-13	870 (3.87)	1200 (5.34)	1460 (6.50)	1630 (7.26)	1560 (6.94)	2210 (9.84)	2710 (12.06)	3020 (13.44)	538
4L-8	8	—	13 3/5	6 2/5	5 2/3	1/2-13	1190 (5.30)	1440 (6.41)	1580 (7.03)	1750 (7.79)	1560 (6.94)	2210 (9.84)	2710 (12.06)	3020 (13.44)	645
4L-200mm	—	(200)	13 3/5	6 2/5	5 2/3	1/2-13	1190 (5.30)	1440 (6.41)	1580 (7.03)	1750 (7.79)	1560 (6.94)	2210 (9.84)	2710 (12.06)	3020 (13.44)	643
4L-10	10	(254)	17 3/5	8 1/4	7 1/4	1/2-13	1620 (7.21)	1660 (7.38)	1570 (6.98)	1740 (7.74)	1620 (7.21)	2300 (10.23)	2820 (12.54)	3140 (13.97)	1349
4L-12	12	(300)	19 3/5	9 1/4	8 1/4	1/2-13	1620 (7.21)	1660 (7.38)	1570 (6.98)	1740 (7.74)	1620 (7.21)	2300 (10.23)	2820 (12.54)	3140 (13.97)	1526

Eaton's B-Line series seismic bracing components are designed to be compatible only with other B-Line series bracing components, resulting in a listed seismic bracing assembly. Eaton B-Line Division warranty for seismic bracing components will be the warranty provided in Eaton B-Line Division standard terms and conditions of sale made available by Eaton, except that, in addition to the other exclusions from Eaton B-Line Division warranty, Eaton makes no warranty relating to B-Line series seismic bracing components that are combined with products not provided by Eaton.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

Updated 4-2-21