

## Fig. 4L - Longitudinal "In-Line" Sway Brace Attachment

**Size Range:** 2" (50mm) through 8" (200mm) IPS.

**Material:** Steel

**Function:** For bracing pipe against sway and seismic disturbance.

**Approvals:** Underwriters Laboratories Listed in the USA (**UL**) and Canada (**cUL**) 2 1/2" (65mm) through 8" (200mm) pipe. Approved by Factory Mutual Engineering (**FM**), 2" (50mm) through 8" (200mm) pipe.

**Installation Instructions:** Fig. 4L is the "braced pipe" attachment component of a longitudinal 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 OSHPD guidelines should be followed.

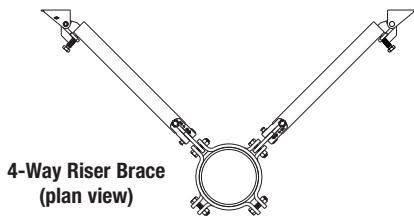
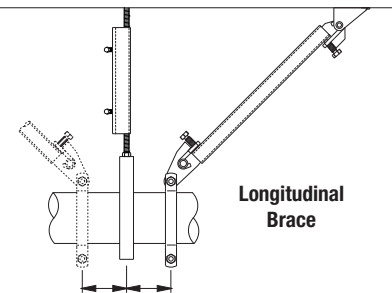
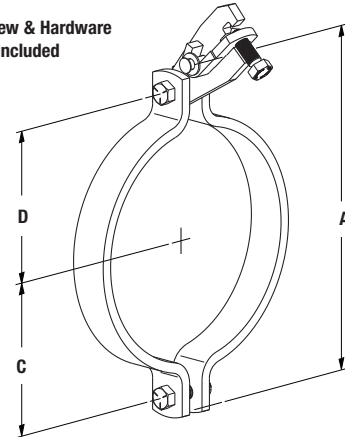
**To Install:** Place the Fig. 4L over the pipe to be braced and tighten bolts. Then engage "bracing pipe" into jaw opening and tighten set screw until head snaps off. Jaw attachment can pivot for adjustment to proper brace angle.

**Finish:** Plain. Contact B-Line for alternative finishes and materials.

**Order By:** Figure number, pipe size and finish.



Set Screw & Hardware Included



Seismic Bracing

| Part No. | Pipe Size |       | A       |         | C       |         | D        |         | Bolt Size | Max. Rec. Load (cULuc) |        | *Max. Design Load (FM) |         | Approx. Wt./100 |         |
|----------|-----------|-------|---------|---------|---------|---------|----------|---------|-----------|------------------------|--------|------------------------|---------|-----------------|---------|
|          | in.       | (mm)  | in.     | (mm)    | in.     | (mm)    | in.      | (mm)    |           | lbs.                   | (kN)   | lbs.                   | (kN)    | lbs.            | (kg)    |
| 4L-2     | 2"        | (50)  | 5 3/8"  | (136.5) | 2 1/16" | (52.4)  | 2 1/16"  | (52.4)  | 1/2"-13   | 2015                   | (8.96) | --                     | (--)    | 247             | (112.0) |
| 4L-2 1/2 | 2 1/2"    | (65)  | 6 7/16" | (163.5) | 2 1/2"  | (63.5)  | 2 3/4"   | (69.8)  | 1/2"-13   | 2015                   | (8.96) | 3000                   | (13.34) | 253             | (114.7) |
| 4L-3     | 3"        | (80)  | 7"      | (177.8) | 2 3/4"  | (69.8)  | 3 1/16"  | (77.8)  | 1/2"-13   | 2015                   | (8.96) | 1550                   | (6.89)  | 268             | (121.5) |
| 4L-4     | 4"        | (100) | 8 1/2"  | (215.9) | 3 3/8"  | (85.7)  | 3 11/16" | (93.7)  | 1/2"-13   | 2015                   | (8.96) | 1550                   | (6.89)  | 348             | (157.8) |
| 4L-5     | 5"        | (125) | 9 3/4"  | (247.6) | 3 7/8"  | (98.4)  | 4 3/8"   | (111.1) | 1/2"-13   | 2015                   | (8.96) | 1450                   | (6.45)  | 380             | (172.3) |
| 4L-6     | 6"        | (150) | 11 1/2" | (292.1) | 5"      | (127.0) | 5 1/8"   | (130.2) | 1/2"-13   | 2015                   | (8.96) | 1450                   | (6.45)  | 640             | (290.3) |
| 4L-8     | 8"        | (200) | 13 1/4" | (336.5) | 5 5/8"  | (142.8) | 5 5/8"   | (142.9) | 1/2"-13   | 2015                   | (8.96) | 1450                   | (6.45)  | 728             | (330.2) |

| Part No. | Pipe Size |       | Max. Rec. Load (cULuc) lbs./ (kN) | *Max. Design Load (FM) |                   |                   |                   |
|----------|-----------|-------|-----------------------------------|------------------------|-------------------|-------------------|-------------------|
|          | in.       | (mm)  |                                   | 30-44° lbs./ (kN)      | 45-59° lbs./ (kN) | 60-74° lbs./ (kN) | 75-90° lbs./ (kN) |
| 4L-2     | 2"        | (50)  | 2015 (8.96)                       | --                     | --                | --                | --                |
| 4L-2 1/2 | 2 1/2"    | (65)  | 2015 (8.96)                       | 1030 (4.58)            | 1180 (5.24)       | 1420 (6.31)       | 1590 (7.07)       |
| 4L-3     | 3"        | (80)  | 2015 (8.96)                       | 1030 (4.58)            | 1180 (5.24)       | 1420 (6.31)       | 1590 (7.07)       |
| 4L-4     | 4"        | (100) | 2015 (8.96)                       | 530 (2.36)             | 730 (3.25)        | 890 (3.96)        | 990 (4.40)        |
| 4L-5     | 5"        | (125) | 2015 (8.96)                       | 530 (2.36)             | 730 (3.25)        | 890 (3.96)        | 990 (4.40)        |
| 4L-6     | 6"        | (150) | 2015 (8.96)                       | 530 (2.36)             | 730 (3.25)        | 890 (3.96)        | 990 (4.40)        |
| 4L-8     | 8"        | (200) | 2015 (8.96)                       | 490 (2.18)             | 680 (3.02)        | 830 (3.69)        | 930 (4.13)        |

\* The loads listed are axial loads on the brace. The horizontal load capacity, H, of the brace is:  $H = F \times \sin \theta$ , where  $\theta$  the installation angle measured from the vertical. FM approved when used with 1", 1 1/4", 1 1/2" or 2" Sch. 40 brace pipe.

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

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

# TOLCO™ Seismic Bracing

## Fig. 4LA - Longitudinal “In-Line” Sway Brace Attachment

**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.

**Installation Instructions:** Fig. 4LA can be used as the system attachment component of a longitudinal or lateral brace assembly. It is intended to be combined with the "bracing member" and TOLCO transitional attachment and structural attachment to form a complete bracing assembly. For fire sprinkler applications NFPA 13 guidelines should be followed.

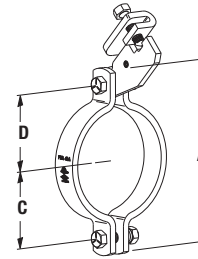
**To Install:** Place the Fig. 4LA pipe clamp component over the pipe to be braced and tighten down the break-off nuts until the hex head portion breaks off to verify correct installation torque. Next engage brace member (pipe or strut) with jaw component and tighten break-off head bolt until the hex head breaks off to verify correct installation torque. Pivot jaw for correct angle and attach to structure using TOLCO brand transitional attachment and structural attachment.

**Finish:** Plain or Electro-Galvanized. Contact B-Line for alternative finishes and materials.

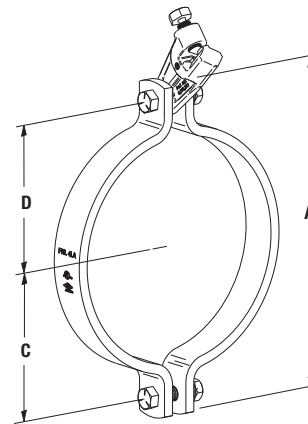
**Order By:** Figure number, pipe size and finish.



4LA-1 thru 4LA-4



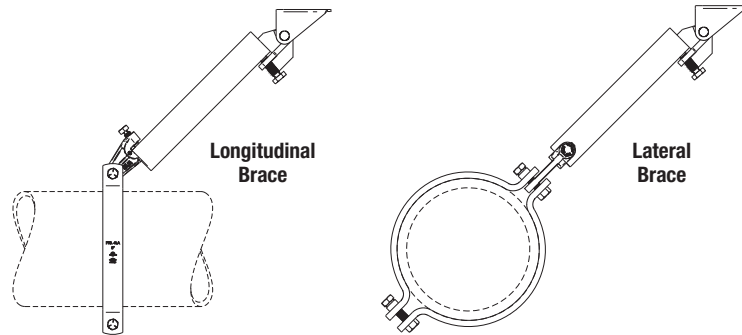
4LA-5 thru 4LA-12



| Part No.                          | Pipe Size                       |       | A                                  |         | C                                |         | D                                 |         | Bolt Size | Approx. Wt./100 |         |
|-----------------------------------|---------------------------------|-------|------------------------------------|---------|----------------------------------|---------|-----------------------------------|---------|-----------|-----------------|---------|
|                                   | in.                             | (mm)  | in.                                | (mm)    | in.                              | (mm)    | in.                               | (mm)    |           | lbs.            | (kg)    |
| 4LA-1                             | 1"                              | (25)  | 3 <sup>19</sup> / <sub>32</sub> "  | (91.2)  | 1 <sup>5</sup> / <sub>16</sub> " | (33.5)  | 1 <sup>5</sup> / <sub>16</sub> "  | (33.5)  | 3/8"-16   | 119             | (54.0)  |
| 4LA-1 <sup>1</sup> / <sub>4</sub> | 1 <sup>1</sup> / <sub>4</sub> " | (32)  | 3 <sup>29</sup> / <sub>32</sub> "  | (99.3)  | 1 <sup>3</sup> / <sub>8</sub> "  | (35.3)  | 1 <sup>3</sup> / <sub>8</sub> "   | (35.3)  | 3/8"-16   | 123             | (55.8)  |
| 4LA-1 <sup>1</sup> / <sub>2</sub> | 1 <sup>1</sup> / <sub>2</sub> " | (40)  | 4 <sup>5</sup> / <sub>32</sub> "   | (105.7) | 1 <sup>1</sup> / <sub>2</sub> "  | (38.5)  | 1 <sup>1</sup> / <sub>2</sub> "   | (38.5)  | 3/8"-16   | 127             | (57.6)  |
| 4LA-2                             | 2"                              | (50)  | 5 <sup>11</sup> / <sub>32</sub> "  | (135.6) | 2 <sup>1</sup> / <sub>32</sub> " | (51.9)  | 2 <sup>1</sup> / <sub>16</sub> "  | (51.9)  | 3/8"-16   | 142             | (64.4)  |
| 4LA-2 <sup>1</sup> / <sub>2</sub> | 2 <sup>1</sup> / <sub>2</sub> " | (65)  | 5 <sup>27</sup> / <sub>32</sub> "  | (148.7) | 2 <sup>5</sup> / <sub>16</sub> " | (58.5)  | 2 <sup>5</sup> / <sub>16</sub> "  | (58.5)  | 3/8"-16   | 173             | (78.5)  |
| 4LA-3                             | 3"                              | (80)  | 6 <sup>1</sup> / <sub>2</sub> "    | (164.9) | 2 <sup>5</sup> / <sub>8</sub> "  | (66.6)  | 2 <sup>5</sup> / <sub>8</sub> "   | (66.6)  | 3/8"-16   | 187             | (84.8)  |
| 4LA-3 <sup>1</sup> / <sub>2</sub> | 3 <sup>1</sup> / <sub>2</sub> " | (90)  | 7.407"                             | (188.1) | 2 <sup>7</sup> / <sub>8</sub> "  | (73.1)  | 2 <sup>7</sup> / <sub>8</sub> "   | (73.1)  | 3/8"-16   | 198             | (89.8)  |
| 4LA-4                             | 4"                              | (100) | 7 <sup>13</sup> / <sub>32</sub> "  | (190.8) | 3 <sup>1</sup> / <sub>8</sub> "  | (79.5)  | 3 <sup>1</sup> / <sub>8</sub> "   | (79.5)  | 3/8"-16   | 209             | (94.8)  |
| 4LA-5                             | 5"                              | (125) | 8 <sup>3</sup> / <sub>4</sub> "    | (222.3) | 3 <sup>5</sup> / <sub>8</sub> "  | (92.1)  | 3 <sup>5</sup> / <sub>8</sub> "   | (92.1)  | 1/2"-13   | 298             | (135.2) |
| 4LA-6                             | 6"                              | (150) | 10 <sup>5</sup> / <sub>8</sub> "   | (269.9) | 4 <sup>9</sup> / <sub>16</sub> " | (115.9) | 4 <sup>9</sup> / <sub>16</sub> "  | (115.9) | 1/2"-13   | 521             | (236.3) |
| 4LA-8                             | 8"                              | (200) | 12 <sup>13</sup> / <sub>16</sub> " | (325.5) | 5 <sup>9</sup> / <sub>16</sub> " | (143.7) | 5 <sup>21</sup> / <sub>32</sub> " | (143.7) | 1/2"-13   | 629             | (285.3) |
| 4LA-10                            | 10"                             | (250) | 16 <sup>1</sup> / <sub>2</sub> "   | (419.1) | 7 <sup>1</sup> / <sub>4</sub> "  | (184.2) | 7 <sup>1</sup> / <sub>4</sub> "   | (184.2) | 1/2"-13   | 1320            | (598.7) |
| 4LA-12                            | 12"                             | (300) | 18 <sup>1</sup> / <sub>2</sub> "   | (469.9) | 8 <sup>1</sup> / <sub>4</sub> "  | (209.6) | 8 <sup>1</sup> / <sub>4</sub> "   | (209.6) | 1/2"-13   | 1496            | (678.6) |

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

Fig. 4LA - Longitudinal “In-Line” Sway Brace Attachment cont.



| Longitudinal Loads |           |       | FM Max. Design Load |        |         |         |         |        |         |        | Max. Rec. Load |         |
|--------------------|-----------|-------|---------------------|--------|---------|---------|---------|--------|---------|--------|----------------|---------|
| Part No.           | Pipe Size |       | 30°-44°             |        | 45°-59° |         | 60°-74° |        | 75°-90° |        | lbs.           | (kN)    |
|                    | in.       | (mm)  | lbs.                | (kN)   | lbs.    | (kN)    | lbs.    | (kN)   | lbs.    | (kN)   |                |         |
| 4LA-1              | 1"        | (25)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29) | 1320    | (5.87) | 1000           | (4.45)  |
| 4LA-1 1/4          | 1 1/4"    | (32)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29) | 1320    | (5.87) | 1000           | (4.45)  |
| 4LA-1 1/2          | 1 1/2"    | (40)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29) | 1320    | (5.87) | 1000           | (4.45)  |
| 4LA-2              | 2"        | (50)  | 680                 | (3.02) | 860     | (3.82)  | 1030    | (4.58) | 1150    | (5.11) | 1000           | (4.45)  |
| 4LA-2 1/2          | 2 1/2"    | (65)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29) | 1320    | (5.87) | 1000           | (4.45)  |
| 4LA-3              | 3"        | (80)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29) | 1320    | (5.87) | 1000           | (4.45)  |
| 4LA-3 1/2          | 3 1/2"    | (90)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29) | 1320    | (5.87) | 1000           | (4.45)  |
| 4LA-4              | 4"        | (100) | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29) | 1320    | (5.87) | 1000           | (4.45)  |
| 4LA-5              | 5"        | (125) | -                   | -      | -       | -       | -       | -      | -       | -      | 1600           | (7.11)  |
| 4LA-6              | 6"        | (150) | 1620                | (7.20) | 2,260   | (10.05) | 2010    | (8.94) | 2220    | (9.87) | 1600           | (7.11)  |
| 4LA-8              | 8"        | (200) | 1620                | (7.20) | 1,660   | (7.38)  | 1570    | (6.98) | 1740    | (7.74) | 2015           | (8.96)  |
| 4LA-10             | 10"       | (250) | 1620                | (7.20) | 1,660   | (7.38)  | 1570    | (6.98) | 1740    | (7.74) | 2765           | (12.30) |
| 4LA-12             | 12"       | (300) | 1620                | (7.20) | 1,660   | (7.38)  | 1570    | (6.98) | 1740    | (7.74) | -              | -       |

| Lateral Loads |           |       | FM Max. Design Load |        |         |         |         |         |         |         | Max. Rec. Load |         |
|---------------|-----------|-------|---------------------|--------|---------|---------|---------|---------|---------|---------|----------------|---------|
| Part No.      | Pipe Size |       | 30°-44°             |        | 45°-59° |         | 60°-74° |         | 75°-90° |         | lbs.           | (kN)    |
|               | in.       | (mm)  | lbs.                | (kN)   | lbs.    | (kN)    | lbs.    | (kN)    | lbs.    | (kN)    |                |         |
| 4LA-1         | 1"        | (25)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29)  | 1320    | (5.87)  | 1000           | (4.45)  |
| 4LA-1 1/4     | 1 1/4"    | (32)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29)  | 1320    | (5.87)  | 1000           | (4.45)  |
| 4LA-1 1/2     | 1 1/2"    | (40)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29)  | 1320    | (5.87)  | 1000           | (4.45)  |
| 4LA-2         | 2"        | (50)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29)  | 1320    | (5.87)  | 1000           | (4.45)  |
| 4LA-2 1/2     | 2 1/2"    | (65)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29)  | 1320    | (5.87)  | 1000           | (4.45)  |
| 4LA-3         | 3"        | (80)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29)  | 1320    | (5.87)  | 1000           | (4.45)  |
| 4LA-3 1/2     | 3 1/2"    | (90)  | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29)  | 1320    | (5.87)  | 1000           | (4.45)  |
| 4LA-4         | 4"        | (100) | 680                 | (3.02) | 970     | (4.31)  | 1190    | (5.29)  | 1320    | (5.87)  | 1000           | (4.45)  |
| 4LA-5         | 5"        | (125) | -                   | -      | -       | -       | -       | -       | -       | -       | 1600           | (7.11)  |
| 4LA-6         | 6"        | (150) | 1620                | (7.20) | 2,300   | (10.23) | 2820    | (12.54) | 3140    | (13.96) | 1600           | (7.11)  |
| 4LA-8         | 8"        | (200) | 1620                | (7.20) | 2,300   | (10.23) | 2820    | (12.54) | 3140    | (13.96) | 2015           | (8.96)  |
| 4LA-10        | 10"       | (250) | 1620                | (7.20) | 2,300   | (10.23) | 2820    | (12.54) | 3140    | (13.96) | 2765           | (12.30) |
| 4LA-12        | 12"       | (300) | 1620                | (7.20) | 2,300   | (10.23) | 2820    | (12.54) | 3140    | (13.96) | -              | -       |

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