

Pipe hangers & supports





Eaton and Cooper united.
**Energizing a world
that demands more.**

Discover today's Eaton.

Powering business worldwide

As a global diversified power management company, we help customers worldwide manage the power needed for buildings, aircraft, trucks, cars, machinery and businesses.

Eaton's innovative technologies help customers manage electrical, hydraulic and mechanical power more reliably, efficiently, safely and sustainably.



Powering Business Worldwide



We deliver:

- **Electrical solutions** that use less energy, improve power reliability and make the places we live and work safer and more comfortable
- **Hydraulic and electrical solutions** that enable machines to deliver more productivity without wasting power
- **Aerospace solutions** that make aircraft lighter, safer and less costly to operate, and help airports operate more efficiently
- **Vehicle drivetrain and powertrain solutions** that deliver more power to cars, trucks and buses, while reducing fuel consumption and emissions

We provide integrated solutions that help make energy, in all its forms, more practical and accessible.

With 2012 sales of \$16.3 billion, Eaton has approximately 103,000 employees around the world and sells products in more than 175 countries.



Eaton's electrical business

Eaton is a global leader with expertise in:

- Power distribution and circuit protection
- Backup power protection
- Solutions for harsh and hazardous environments
- Lighting and security
- Structural solutions and wiring devices
- Control and automation
- Engineering services

Eaton is positioned through its global solutions to answer today's most critical electrical power management challenges. With 100 years of electrical experience behind us, we're energized by the challenge of powering up a world that demands twice as much energy as today. We're anticipating needs, engineering products, and creating solutions to energize our markets today and in the future.

We are dedicated to ensuring that reliable, efficient and safe power is available when it's needed most.

Eaton.com

Introduction

B-Line is a leading manufacturer and fabricator of metal products used in the support of pipe and equipment for industrial, residential, commercial, utility, and OEM installations. B-Line is proud of the exacting standards of research, design, engineering, and manufacturing that go into each and every product that comprise our pipe hanger product line. Our customers have access to the most complete support systems offered in the industry, including pipe hangers, metal framing, cable tray, slotted angle, seismic bracing, fasteners, telecom, enclosures and anchors.

Many of B-Line's products are listed by Underwriters' Laboratories, Inc. and FM Global approved for fire sprinkler system installations. All B-Line products are manufactured to meet or exceed industry standards set for their design and manufacture.

B-Line products are produced in five modern plants consisting of over 1,000,000 square feet. These facilities are located in Highland, Illinois; Troy, Illinois; Reno, Nevada; Corona, California and Sherman, Texas. Regional sales and distribution centers are located throughout the United States stocking standard B-Line products for quick service and delivery.

This catalog is designed to be helpful to engineers and contractors in the application and selection of pipe hangers, supports and seismic bracing for construction and maintenance.

If a unique application requires a special product not included in this catalog, B-Line engineering personnel are ready to furnish design consultation and realistic material estimates. In addition, sales representatives with engineering expertise are located throughout the United States and abroad for your convenience.

WARNING

All hanger products in this catalog are intended for installation and service as illustrated or described. Do not use them for any purposes other than those described in this catalog. Products that are used for unintended purposes could fail, resulting in severe personal injury or death.

Examples of misapplications which could cause severe personal injury or death include, but are not limited to:

- Using a beam clamp on a beam other than those described in the catalog;
- Using concrete inserts as anchors for pulling pipe up to the required elevation;
- Suspending clevis hangers, one under another, which could result in an accumulative load that is greater than that which the pipe hanger will support.

B-Line pipe hanger and support products are manufactured in accordance with industry standards. Our customers should exercise care to use these products properly so as to avoid potential accidents. Contact B-Line for assistance with proper installation and use of the products in this catalog.

NOTICE

Cooper B-Line reserves the right to change the specifications, materials, equipment, prices or the availability of products at any time without prior notice. While every effort has been made to assure the accuracy of information contained in this catalog at the time of publication, Cooper B-Line is not responsible for inaccuracies resulting from undetected errors or omissions.



Manufacturers Standardization Society
of the
Valve and Fitting Industry, Inc.



ISO 9001:2008



Eaton's B-Line Business

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* C & P is Carpenter & Paterson



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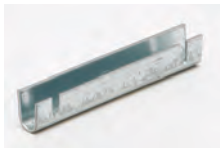


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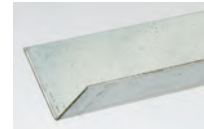
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◆ **DURA-COPPER™ Finish**

★ **Available in DURA-GREEN™ Finish** (Other hangers may be available with the DURA-GREEN finish, contact factory)

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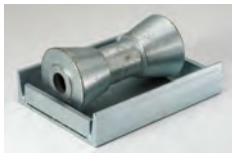
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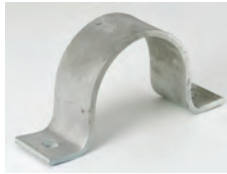
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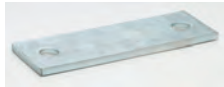
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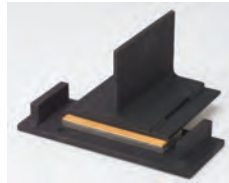
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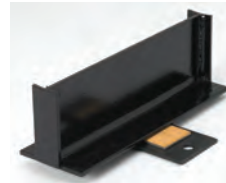
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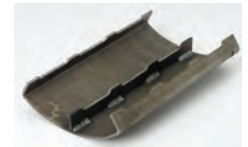
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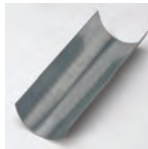
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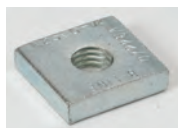
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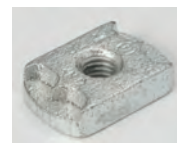
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◆ **DURA-COPPER™ Finish**

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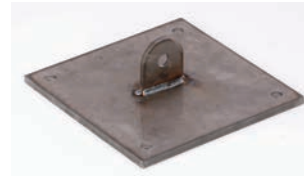
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B3203
Extension Piece
Page 234



B3223
Offset Eye Socket
Page 234



B3224
Hanger Adjuster

B3224CT
Dura-Copper Coated
Hanger Adjuster
Page 235



B3202
Turnbuckle
Page 235

◆ **DURA-COPPER™ Finish** ◆

Threaded Accessories (Continued)



B3205
Machine Threaded Rod
Page 236



ATR
All Threaded Rod
Page 236



B3214
Tie Bolt
Page 238



B3210
Eye Rod
Page 239



B3210X
Linked Eye Rod
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Fig. 98
Rod Stiffener
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Fig. 98B
Rod Stiffener with
Break Off Bolt Head
Page 237



SC228
Rod Stiffener
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B3211
Welded Eye Rod
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B3211X
Linked Welded Eye Rod
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B3212
J-Bolt
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B3228
Hex Head Lag Bolt
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DS 16 x 2
#16 x 2"
Drive Screw
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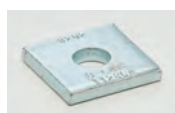
B3213
Coach Screw Rod
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B655
Steel Rod Coupling
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B656
Steel Reducer
Rod Coupling
Page 242



B3220
Malleable Iron
Rod Coupling
Page 243



B200
Square Washer
Page 243



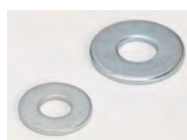
B3248
Steel Washer Plate
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B3234
Bevel Washer
Page 244



HN - Hex Nut
HHN - Heavy Hex Nut
Page 245



FW
Flat Washer
Page 246



LW
Lock Washer
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FFW
Flat Fender Washer
Page 246



ATB
Toggle Bolt
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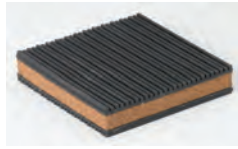
AWA
Wedge Anchor
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VIBRA TROL™



NNP
Ribbed Neoprene Pad
Page 251



CNP
Cork and Ribbed
Neoprene Pad
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CNNK
Cork, Ribbed Neoprene
and Steel
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VRP
Rubber Cube Pad
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HMLE/HME
Housed 1"
Deflection Mounting
Pages 257 & 258



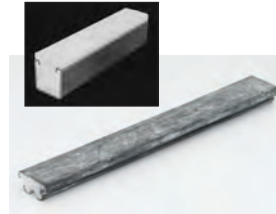
NVD
Double Deflection
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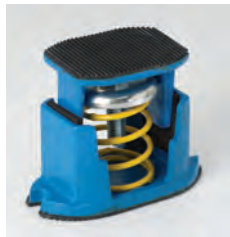
CM
Metal Housing and Neoprene
Page 254



OML/OM
Spring Mount
Pages 255 & 256



BVS
Vibra Strip™ for
1 5/8" Wide B-Line
channel
Page 253



HMLT/HMT
Housed 1"
Deflection Mounting
Pages 259 & 260



RH
Neoprene Hanger
Page 266



HSL/HS
Vibration Spring Hanger
Pages 261 & 262



HESL/HES
Combination Spring
& Neoprene
Pages 263 & 264



SHE
Isolation Spring Hanger
Pages 267 & 268



BVT
VibraClamp
Tubing Sizes
Page 269



B1999
Vibra Cushion
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ISO
ISO Pipe
Page 271

BVP
VibraClamp
Pipe Sizes
Page 270

DURA-BLOK™



DBP & DBM
Bases
Page 274



DB Series
Base & Short Channel
Page 275



DB6 Series
Base & Tall Channel
Page 276



DB10 Series
Double Base & Long Channel
Page 277

DURA-BLOK™ (Continued)



DBM Series
Base & Clamp Riser
Page 278



DBR Series
Base & Fixed Height
Roller Assembly
Page 281



DB_DS Series
Bases & Harness Assembly
Pages 279 & 280



CLDP10
Load Distribution Plate
Page 283



DBR Series
Base & Adjustable Height
Roller Assembly
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DBE Series
Base & Adjustable
Height Channel
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KwikWire™



KwikWire Clamp
Page 286



Wire Rope
Page 286



KwikPak™ Kit
Page 287



KwikWire Hanger
Page 288



Wire Rope Cutter
Page 287



KwikWire Accessories
BKL & BCLK
Loop Termination
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KwikWire Accessories
BKH & BKHK
Single Hook Termination
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KwikWire Accessories
BKYH & BKYHK
Double Hook Termination
Page 292

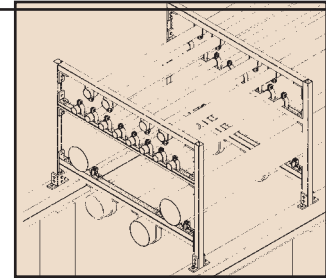


KwikWire Accessories
BKA & BKAK
Angle Bracket
Termination
Page 293



Strut Systems

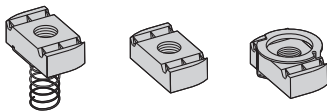
B-Line's metal framing support system is designed with many time-saving features. Fully adjustable and reusable, with a complete line of channels, fittings, and accessories for multi-purpose applications.



SELECTION CHART for Channels, Materials and Hole Patterns

Channel Type	Channel Dimensions				Material & Thickness*				Channel Hole Pattern **				
	Height		Width		Steel	Alum.	Stainless Steel		SH	S	H17/8	TH	KO6
							Type 304	Type 316					
B11	3 1/4"	(82.5)	15 5/8"	(41.3)	12 Ga.	--	--	--	<u>1</u>	<u>1</u>	<u>1</u>	--	<u>1</u>
B12	27/16"	(61.9)	15 5/8"	(41.3)	12 Ga.	.105	--	--	<u>1 2</u>	<u>1</u>	<u>1 2</u>	--	<u>1 2</u>
B22	15 5/8"	(41.3)	15 5/8"	(41.3)	12 Ga.	.105	12 Ga.	12 Ga.	<u>1 2 3 4</u>	<u>1</u>	<u>1 2 3 4</u>	<u>1</u>	<u>1 2</u>
B24	15 5/8"	(41.3)	15 5/8"	(41.3)	14 Ga.	.080	14 Ga.	14 Ga.	<u>1 2 3 4</u>	<u>1</u>	<u>1 2 3 4</u>	--	<u>1 2</u>
B26	15 5/8"	(41.3)	15 5/8"	(41.3)	16 Ga.	--	--	--	<u>1</u>	<u>1</u>	<u>1</u>	--	<u>1</u>
B32	13 3/8"	(34.9)	15 5/8"	(41.3)	12 Ga.	--	12 Ga.	--	<u>1 3</u>	<u>1</u>	<u>1 3</u>	--	<u>1</u>
B42	1"	(25.4)	15 5/8"	(41.3)	12 Ga.	--	12 Ga.	--	<u>1 3</u>	<u>1</u>	<u>1 3</u>	--	<u>1</u>
B52	13 1/16"	(20.6)	15 5/8"	(41.3)	12 Ga.	--	--	--	<u>1</u>	<u>1</u>	<u>1</u>	--	<u>1</u>
B54	13 1/16"	(20.6)	15 5/8"	(41.3)	14 Ga.	.080	14 Ga.	14 Ga.	<u>1 2 3 4</u>	<u>1</u>	<u>1 2 3 4</u>	--	<u>1 2</u>
B56	13 1/16"	(20.6)	15 5/8"	(41.3)	16 Ga.	--	--	--	<u>1</u>	<u>1</u>	<u>1</u>	--	<u>1</u>

Channel Nuts

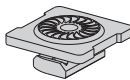


Size and Part Number			
Thread Size	With Spring	Without Spring	Twirl Nut
1/4"-20	N224	N224WO	TN224
3/8"-16	N228	N228WO	TN228
1/2"-13	N225	N225WO	TN225
5/8"-11	N255	N255WO	--
3/4"-10	N275	N275WO	--

Available Finishes: Electro-Galvanized

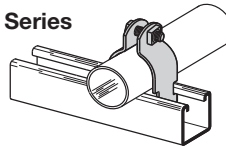
Combo Nut Washers

Part Number	Thread Size
NW524	1/4"-20
NW528	3/8"-16
NW525	1/2"-13



Available Finishes: Electro-Galvanized

B2000 Series



Copper Tubing Clamps DURA-COPPER™

Part No.	Nominal Tubing Size		Mat'l Ga.
B2026DCU	1/2"	(15)	16
B2008DCU	3/4"	(20)	16
B2030DCU	1"	(25)	14
B2032DCU	1 1/4"	(32)	14
B2011DCU	1 1/2"	(40)	14
B2038DCU	2"	(50)	12
B2042DCU	2 1/2"	(60)	12
B2046DCU	3"	(80)	12
B2050DCU	3 1/2"	(90)	12
B2054DCU	4"	(100)	11

Available Finishes: Electro-Galvanized, Aluminum, Stainless, DURA-COPPER Painted, Hot-Dip Galvanized and PVC coated. Nut and bolts are included with all two-piece clamps.

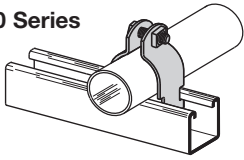
** Add "PA" to Part No. for Pre-assembled

Schedule 40 Pipe Clamps

Part No.	Nominal Pipe Size		Mat'l Ga.
B2001	3/8"	(10)	16
B2008	1/2"	(15)	16
B2009	3/4"	(20)	14
B2010	1"	(25)	14
B2011	1 1/4"	(32)	14
B2012	1 1/2"	(40)	12
B2013	2"	(50)	12
B2014	2 1/2"	(60)	12
B2015	3"	(80)	12
B2016	3 1/2"	(90)	11
B2017	4"	(100)	11
B2018	4 1/2"	(115)	11
B2019	5"	(125)	11
B2020	6"	(150)	11
B2021	7"	(175)	11
B2022	8"	(200)	11

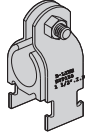
Below are some basic clamp and cushions to be used with a strut system. For the industry's most complete line of strut and strut fittings, refer to B-Line's Strut Systems Engineering Catalog.

B2000 Series



O.D. Pipe Clamps

Part No.	O.D. Size (Outside Dia.)	Mat'l Ga.
B2023	1/4"	(6.3)
B2024	3/8"	(9.5)
B2025	1/2"	(12.7)
B2026	5/8"	(15.9)
B2027	3/4"	(19.0)
B2028	7/8"	(22.2)
B2029	1"	(25.4)
B2030	1 1/8"	(28.6)
B2031	1 1/4"	(31.7)
B2032	1 3/8"	(34.9)
B2004	1 1/2"	(38.1)
B2011	1 5/8"	(41.3)
B2005	1 3/4"	(44.4)
B2036	1 7/8"	(47.6)
B2037	2"	(50.8)
B2038	2 1/8"	(54.0)
B2039	2 1/4"	(57.1)
B2013	2 3/8"	(60.3)
B2041	2 1/2"	(63.5)
B2042	2 5/8"	(66.7)
B2043	2 3/4"	(69.8)
B2014	2 7/8"	(73.0)
B2045	3"	(76.2)
B2046	3 1/8"	(79.4)
B2047	3 1/4"	(82.5)
B2048	3 3/8"	(85.7)
B2015	3 1/2"	(88.9)
B2050	3 5/8"	(92.1)
B2051	3 3/4"	(95.2)
B2016	4"	(101.6)
B2054	4 1/8"	(104.8)
B2055	4 1/4"	(107.9)
B2056	4 3/8"	(111.1)
B2017	4 1/2"	(114.3)
B2058	4 5/8"	(117.5)
B2059	4 3/4"	(120.6)
B2060	4 7/8"	(123.8)
B2061	5"	(127.0)
B2062	5 1/8"	(130.2)
B2063	5 1/4"	(133.3)
B2064	5 3/8"	(136.5)
B2065	5 1/2"	(139.7)



BVT & BVP Series Vibra-Clamp™

For Copper Tubing & OD Sizes

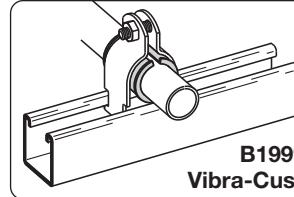
Catalog No.	Copper & Steel OD Tubing Size	Nominal Copper Size
BVT025	1/4"	(6.3)
BVT037	3/8"	(9.5)
BVT050	1/2"	(12.7)
BVT062	5/8"	(15.9)
BVT075	3/4"	(19.0)
BVT087	7/8"	(22.2)
BVT100	1"	(25.4)
BVT112	1 1/8"	(28.6)
BVT125	1 1/4"	(31.7)
BVT137	1 3/8"	(34.9)
BVT150	1 1/2"	(38.1)
BVT162	1 5/8"	(41.3)
BVT175	1 3/4"	(44.4)
BVT187	1 7/8"	(47.6)
BVT200	2"	(50.8)
BVT212	2 1/8"	(54.0)
BVT225	2 1/4"	(57.1)
BVT250	2 1/2"	(63.5)
BVT262	2 5/8"	(66.7)
BVT300	3"	(76.2)
BVT312	3 1/8"	(79.4)
BVT362	3 5/8"	(92.1)
BVT400	4"	(101.6)
BVT412	4 1/8"	(104.8)
BVT612	6 1/8"	(155.6)

Available for tubing and pipe sizes 1/4" to 6", OD sizes 1/4" to 6 5/8". Easy one tool installation, dampens vibration and noise, secures tubing firmly, and protects against galvanic reaction.

Stainless Steel available

For Pipe Sizes

Catalog No.	Nominal Pipe Size
BVP025	1/4"
BVP037	3/8"
BVP050	1/2"
BVP075	3/4"
BVP100	1"
BVP125	1 1/4"
BVP150	1 1/2"
BVP200	2"
BVP250	2 1/2"
BVP300	3"
BVP350	3 1/2"
BVP400	4"
BVP500	5"
BVP600	6"



B1999 Vibra-Cushion™

- Inhibits Galvanic Reaction
- Reduces Sound & Vibration
- Used on refrigeration, HVAC, copper tubing, glass pipes & hydraulic lines Available in 20 Ft. rolls.

For Rigid Conduit or Iron Pipe

Nominal Size	Length of Vibra-Cushion	Use Clamp No.
3/8"	(10)	21 1/8" (54.0) B2002
1/2"	(15)	25 5/8" (66.7) B2009
3/4"	(20)	31 1/4" (82.5) B2031
1"	(25)	41 1/8" (104.8) B2004
1 1/4"	(32)	53 1/16" (131.8) B2012
1 1/2"	(40)	51 5/16" (150.8) B2038
2"	(50)	71 1/2" (190.5) B2042
2 1/2"	(65)	9" (228.6) B2046
3"	(80)	11" (279.4) B2051
3 1/2"	(90)	12 1/2" (317.5) B2055
4"	(100)	14 1/2" (368.3) B2059
5"	(125)	17 7/16" (442.9) B2067
6"	(150)	20 3/4" (527.0) B2116

For Thinwall (EMT) Conduit

Nominal Size	Length of Vibra-Cushion	Use Clamp No.
3/8"	(10)	11 3/16" (46.0) B2027
1/2"	(15)	23 1/16" (58.7) B2002
3/4"	(20)	27 7/8" (73.0) B2003
1"	(25)	35 5/8" (92.1) B2032
1 1/4"	(32)	43 3/8" (120.6) B2036
1 1/2"	(40)	57 1/16" (138.1) B2012
2"	(50)	67 7/8" (174.6) B2013

For Copper Tubing Type L & K

Nominal Size	Length of Vibra-Cushion	Use Clamp No.
1/4"	(6)	13 1/16" (30.2) B2026
3/8"	(10)	19 1/16" (39.7) B2027
1/2"	(15)	17 7/8" (47.6) B2028
5/8"	(17)	25 5/16" (58.7) B2029
3/4"	(20)	23 3/4" (69.8) B2030
1"	(25)	31 1/2" (88.9) B2032
1 1/4"	(32)	45 5/16" (109.5) B2011
1 1/2"	(40)	51 7/8" (130.2) B2036
2"	(50)	61 1/16" (169.9) B2013
2 1/2"	(65)	81 1/4" (209.5) B2014
3"	(80)	91 3/16" (249.2) B2048
3 1/2"	(90)	113 3/8" (288.9) B2052
4"	(100)	121 5/16" (328.6) B2056
5"	(125)	61 7/8" (409.6) B2064
6"	(150)	19 1/4" (488.9) B2112
8"	(200)	25 1/2" (647.7) B2128

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

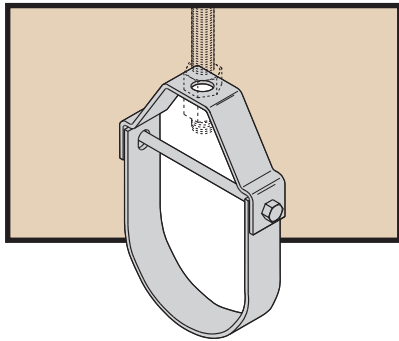
MATERIALS

Carbon Steel

Carbon steel is used in the manufacture of B-Line pipe hangers and supports. Excellent strength characteristics and adaptability to cold forming provide a well engineered design. By cold forming the steel, mechanical properties are increased, adding to the structural integrity of the fabricated hanger.

Stainless Steel

AISI Type 304 and Type 316 are non-magnetic members of the austenitic stainless steel group. Several conditions make the use of stainless steel ideal. These include reducing long term maintenance costs, high ambient temperatures, appearance, and stable structural properties such as yield strength, and high creep resistance.



CORROSION

All metal surfaces exposed to the environment are affected by corrosion. Depending on the physical properties of the metal and its proximity to other dissimilar metals, an electrochemical reaction may occur which causes an attack on the metal itself, resulting in corrosion. Chemical corrosion is limited to highly corrosive environments, high temperatures, or a combination of both.

FINISHES

Zinc Coatings

Protective zinc coatings are available on a number of pipe hangers and accessories in three basic forms:

Electro-galvanized, pre-galvanized, and hot-dip galvanized after fabrication. In all cases, the zinc protects the steel first as a sacrificial anode to repair bare areas on cut edges and gouges.

When exposed to air and moisture, zinc forms a tough, adherent protective film consisting of a mixture of zinc oxides, hydroxides, and carbonates. The corrosion resistance of zinc is directly related to its thickness and the environment. For example a 0.2 mil (5 μm) coating will last twice as long as a 0.1 mil (2.5 μm) coating in the same environment.

Electro-Galvanized (ASTM B633 SC1 or SC3)

An electro-galvanized process deposits a coating of zinc on the steel by electrolysis from a bath of zinc salts. This coating is pure zinc and adheres to the steel with a molecular bond. A maximum of 0.5 mils (12.7 μm) of zinc can be applied by this method. This coating is recommended for in-door use in relatively dry areas.

Pre-Galvanized Zinc (ASTM A653 Coating Designation G90)

Pre-galvanized zinc is produced by continuously rolling the steel coils or sheets through molten zinc at the steel mills. This is also known as "mill-galvanized" or "hot-dipped mill galvanized". Coils are then slit to size for fabrication of pipe hangers. Coating thicknesses of G90, is 0.90 ounces per square foot (0.27 kg/m^2) of steel surface.



Protection of cut edges with zinc coatings.

Cut edges and welded areas are not zinc coated; however, zinc near the uncoated metal becomes a sacrificial anode which protects the bare areas after a short period of time. Pre-galvanized steel is not generally recommended for use outdoors in industrial environments,

but is suitable for extended exposure in dry or mildly corrosive atmospheres.

Hot-Dip Galvanized After Fabrication (ASTM A123)

After a pipe hanger or fitting has been fabricated, it is completely immersed in a bath of molten zinc. A metallurgical bond is formed, resulting in a zinc coating that completely coats all surfaces, including edges. Zinc coatings of this specification have a minimum thickness of 1.50 ounces per square foot (0.45 kg/m^2) on each side or a total of 3.0 ounces per square foot (0.9 kg/m^2) of steel.

Hot-dip galvanized after fabrication is recommended for outdoor exposure. For best results, a zinc rich paint (available from B-Line) should be applied to field cuts. The zinc rich paint will provide immediate protection for field cuts and eliminate the short time period for galvanic action to "heal" the damaged coating.

Plastic Coating

Some products offered by B-Line are plastic or vinyl coated for prevention of galvanic reaction between materials or for noise reduction. These coated products can also be used where contact between glass pipe and hanger is not desirable. Felt lined hangers may be substituted for same purpose.

Red Primer

A corrosion resistant metal primer containing rust inhibitive pigments.

DURA-COPPER™ and DURA-GREEN™ Epoxy Coatings

DURA-COPPER and DURA-GREEN are water borne epoxy coatings applied to B-Line products by a precisely controlled cathodic electro-deposition process. This process is accomplished using a conveyor to transport parts through several cleaning, phosphatizing and application stages prior to being baked (See diagram below).

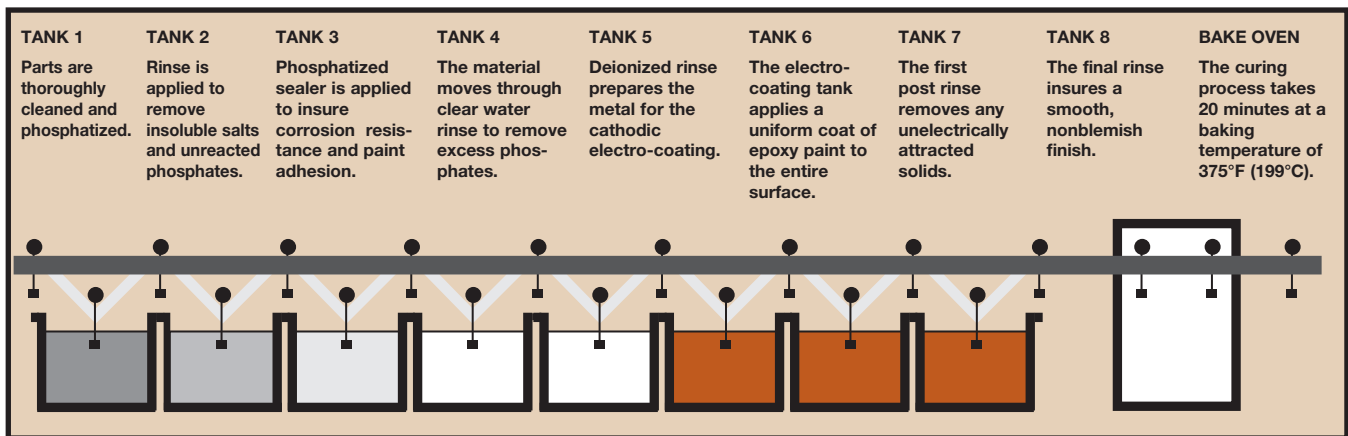
This custom designed paint system is used for painting all copper painted hanger parts and all green channel, slotted angle and fittings.

Samples are selected on a routine basis for Salt Spray (fog) testing to verify the quality of the finish. These tests are performed in accordance with ASTM B117-73 and evaluated and rated according to ASTM D1654-79 (Tables 1 & 2). The DURA-COPPER and DURA-GREEN Epoxy coatings have been tested and listed by Underwriters Laboratories in accordance with "Standard for Pipe Hanger Equipment for Fire Protection Service, UL 203" and meet or exceed all requirements of Federal Specification TT-C-490B Paragraph 3.

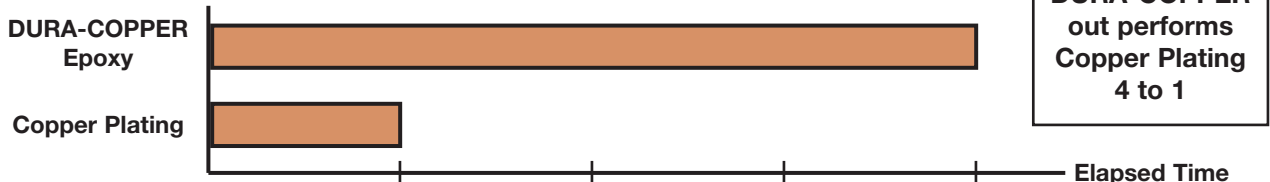
Quality Assurance

B-Line's Quality Assurance Program has been developed and implemented for compliance to various industry standards and specifications.

DURA-COPPER™ & DURA-GREEN™ EPOXY COATING PROCESS



SALT SPRAY TEST RESULTS



(1) All salt spray (fog) tests conducted in accordance with ASTM B117-73 and evaluated and rated according to ASTM D1654-79 Tables 1 & 2. Tests were performed and certified by an independent testing laboratory.

General Information

Torque

The torque values in this catalog are to be used as a guide only. The relationship between the applied torque or torque wrench reading and the actual tension created in the bolt may be substantially different. Important factors affecting torque-tension relationships include friction under the bolt head or nut, hole tolerances, and torque wrench tolerances. Accuracy of many commercial torque wrenches may vary as much as plus or minus 25%.

Charts and Tables

Charts and tables in this section are compiled from information published by nationally recognized organizations and are intended for use as a guide only. B-Line recommends that users of this information determine the validity of such information as applied to their own applications.

Eaton's B-Line reserves the right to make specification changes without notice.

SECTION 15140 - PIPE HANGERS AND SUPPORTS

Part I - GENERAL

1.01 SECTION INCLUDES

- A. The work covered under this section consists of the furnishing of all necessary labor, supervision, materials, equipment, and services to completely execute the pipe hanger and supports as described in this specification.

1.02 REFERENCES

- A. ASTM B633 - Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
- B. ASTM A123 - Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- C. ASTM A653 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- D. ASTM A1011 - Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability.
- E. ANSI/MSS SP-58 - Manufacturers Standardization Society: Pipe Hangers and Supports - Materials, Design, and Manufacture.
- F. ANSI/MSS SP-69 - Manufacturers Standardization Society: Pipe Hangers and Supports - Selection and Application.
- G. NFPA 13 - Installation of Sprinkler Systems.

1.03 QUALITY ASSURANCE

- A. Hangers and supports used in fire protection piping systems shall be listed and labeled by Underwriters Laboratories.
- B. Steel pipe hangers and supports shall have the manufacturers name, part number, and applicable size stamped in the part itself for identification.
- C. Hangers and supports shall be designed and manufactured in conformance with ANSI/MSS SP-58.
- D. Supports for sprinkler piping shall be in conformance with NFPA 13.

1.04 SUBMITTALS

- A. Submit product data on all hanger and support devices, including shields and attachment methods. Product data to include, but not limited to materials, finishes, approvals, load ratings, and dimensional information.

Part II - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Manufacturer: Subject to compliance with these specifications, pipe hanger and support systems shall be as manufactured by B-Line, Inc.

2.02 PIPE HANGERS AND SUPPORTS

- A. Hangers
 - 1. Uninsulated pipes 2 inch and smaller:
 - a. Adjustable steel swivel ring (band type) hanger, B-Line Fig. 200.
 - b. Adjustable steel swivel J-hanger, B-Line B3690.
 - c. Malleable iron ring hanger, B-Line B3198R or hinged ring hanger, B3198H.
 - d. Adjustable steel clevis hanger, B-Line B3104 or B3100.

2. Uninsulated pipes 2¹/₂ inch and larger:
 - a. Adjustable steel clevis hanger, B-Line B3100.
 - b. Pipe roll with sockets, B-Line B3114.
 - c. Adjustable steel yoke pipe roll, B-Line B3110.
 3. Insulated pipe - Hot or steam piping:
 - a. 2 inch and smaller pipes: use adjustable steel clevis with galvanized sheet metal shield, B-Line B3100 with B3151 or B3153 series.
 - b. 2¹/₂ inch and larger pipes:
 - i. Adjustable steel yoke pipe roll with pipe covering protection saddle, B-Line B3110 with B3160 - B3165 series.
 - ii. Pipe roll with sockets with pipe covering protection saddle, B-Line B3114 with B3160 - B3165 series.
 4. Insulated pipe - Cold or chilled water piping:
 - a. 5 inch and smaller pipes: use adjustable steel clevis with galvanized sheet metal shield, B-Line B3100 with B3151 or B3153 series.
 - b. 6 inch and larger pipes:
 - i. Adjustable steel yoke pipe, B-Line B3110, with B3380CW - B3384CW calcium silicate shield.
 - ii. Pipe roll with sockets, B-Line B3114, with B3380CW - B3384CW calcium silicate shield.
- B. PIPE CLAMPS**
1. When flexibility in the hanger assembly is required due to horizontal movement, use pipe clamps with weldless eye nuts, B-Line B3140 or B3142 with B3200. For insulated lines use double bolted pipe clamps, B-Line B3144 or B3146 with B3200.
- C. MULTIPLE OR TRAPEZE HANGERS**
1. Trapeze hangers shall be constructed from 12 gauge roll formed ASTM A1011 SS Gr. 33 structural steel channel, 1⁵/₈" x 1⁵/₈" minimum, B-Line B22 strut or stronger as required.
 2. Mount pipes to trapeze with two piece pipe straps sized for outside diameter of pipe, B-Line B2000 series.
 3. For pipes subjected to axial movement:
 - a. Strut mounted roller support, B-Line B3126. Use pipe protection shield or saddles on insulated lines.
 - b. Strut mounted pipe guide, B-Line B2417.
- D. WALL SUPPORTS**
1. Pipes 4 inch and smaller:
 - a. Carbon steel hook, B-Line B3191.
 - b. Carbon steel J-hanger, B-Line B3690.
 2. Pipes larger than 4 inch:
 - a. Welded strut bracket and pipe straps, B-Line B3064 and B2000 series.
 - b. Welded steel brackets, B-Line B3066 or B3067, with roller chair or adjustable steel yoke pipe roll. B-Line B3120 or B3110. Use pipe protection shield or saddles on insulated lines.

E. FLOOR SUPPORTS

1. Hot piping under 6 inch and all cold piping:
 - a. Carbon steel adjustable pipe saddle and nipple attached to steel base stand sized for pipe elevation, B-Line B3093 and B3088T or B3090 and B3088. Pipe saddle shall be screwed or welded to appropriate base stand.
2. Hot piping 6 inch and larger:
 - a. (Adjustable) Roller stand with base plate, B-Line B3117SL (or B3118SL).
 - b. Adjustable roller support and steel support sized for elevation, B-Line B3124

F. VERTICAL SUPPORTS

1. Steel riser clamp sized to fit outside diameter of pipe, B-Line B3373.

G. COPPER TUBING SUPPORTS

1. Hangers shall be sized to fit copper tubing outside diameters.
 - a. Adjustable steel swivel ring (band type) hanger, B-Line B3170CT.
 - b. Malleable iron ring hanger, B-Line B3198CT or hinged ring hanger B3198HCT.
 - c. Adjustable steel clevis hanger, B-Line B3104CT.

H. PLASTIC PIPE SUPPORTS

1. V-bottom clevis hanger with galvanized 18 gauge continuous support channel, B-Line B3106 and B3106V, to form a continuous support system for plastic pipe or flexible tubing.

I. SUPPLEMENTARY STRUCTURAL SUPPORTS

1. Design and fabricate supports using structural quality steel bolted framing materials as manufactured by B-Line. Channels shall be roll formed, 12 gauge ASTM A1011 SS Grade 33 steel, 1⁵/₈" x 1⁵/₈" or greater as required by loading conditions. Submit designs for pipe tunnels, pipe galleries, etc., to engineer for approval. Use clamps and fittings designed for use with the strut system.

2.04 UPPER ATTACHMENTS

A. BEAM CLAMPS

1. Beam clamps shall be used where piping is to be suspended from building steel. Clamp type shall be selected on the basis of load to be supported, and load configuration.
2. C-Clamps shall have locknuts and cup point set screws, B-Line B351L, B3036L or Fig. 65XT Top flange C-clamps shall be used when attaching a hanger rod to the top flange of structural shapes, B-Line B3034 or B3033. Refer to manufacturers' recommendation for setscrew torque. Retaining straps shall be used to maintain the clamp's position on the beam where required (Fig. 69, Fig. 69R).
3. Center loaded beam clamps shall be used where specified. Steel clamps shall be B-Line B3050 or B3055. Malleable iron or forged steel beam clamps with cross bolt shall be B-Line B3054 or B3291 - B3297 series as required to fit beams.

B. CONCRETE INSERTS

1. Cast in place spot concrete inserts shall be used where applicable, either steel or malleable iron body, B-Line B2500 or B3014. Spot inserts shall allow for lateral adjustment and have means for attachment to forms. Select insert nuts to suit threaded hanger rod sizes, B-Line N2500 or B3014N series.

2. Continuous concrete inserts shall be used where applicable. Channels shall be 12 gauge, ASTM A 1011 SS Grade 33 structural quality carbon steel, complete with styrofoam inserts and end caps with nail holes for attachment to forms. The continuous concrete insert shall have a load rating of 2,000 lbs/ft. in concrete, B-Line B22I, B32I, or B52I (B52I is limited to 1,500 lbs/ft.). Select channel nuts suitable for strut and rod sizes.

2.05 VIBRATION ISOLATION AND SUPPORTS

- A. For refrigeration, air conditioning, hydraulic, pneumatic, and other vibrating system applications, use a clamp that has a vibration dampening insert and a nylon inserted locknut. For copper and steel tubing use B-Line BVT series VibraClamps, for pipe sizes use BVP series.
- B. For larger tubing or piping subjected to vibration, use neoprene or spring hangers as required.
- C. For base mounted equipment use vibration pads, molded neoprene mounts, or spring mounts as required.
- D. Vibration isolation products as manufactured by B-Line, VibraTrol systems.

2.06 ACCESSORIES

- A. Hanger rods shall be threaded both ends, B-Line B3205, or continuous threaded rods of circular cross section. Use adjusting locknuts at upper attachments and hangers. No wire, chain, or perforated straps are allowed.
- B. Shields shall be 180° galvanized sheet metal, 12 inch minimum length, 18 gauge minimum thickness, designed to match outside diameter of the insulated pipe, B-Line B3151.
- C. Pipe protection saddles shall be formed from carbon steel, 1/8 inch minimum thickness, sized for insulation thickness. Saddles for pipe sizes greater than 12 inch shall have a center support rib.

2.07 FINISHES

INDOOR FINISHES

- A. Hangers and clamps for support of bare copper piping shall be coated with copper colored epoxy paint, B-Line DURA-COPPER™. Additionally a plastic coating or a felt lining in hanger can be used.
- B. Hangers for other than bare copper pipe shall be zinc plated in accordance with ASTM B633 - SC3 or shall have an electro-deposited green epoxy finish, B-Line DURA-GREEN™.
- C. Strut channels shall be pre-galvanized in accordance with ASTM A653 G90 or have an electro-deposited green epoxy finish, B-Line DURA-GREEN.

OUTDOOR AND CORROSIVE AREA FINISHES

- D. Hangers and strut located outdoors shall be hot dip galvanized after fabrication in accordance with ASTM A123. All hanger hardware shall be hot-dip galvanized or stainless steel. Zinc plated hardware is not acceptable for outdoor or corrosive use.
- E. Hangers and strut located in corrosive areas shall be Type 304 (316) stainless steel with stainless steel hardware.

Part III - EXECUTION

3.01 PIPE HANGERS AND SUPPORTS

- A. Pipe shall be adequately supported by pipe hanger and supports specified in PART II - PRODUCTS. Hangers for insulated pipes shall be sized to accommodate insulation thickness.
- B. Horizontal steel piping shall be supported in accordance with ANSI/MSS SP-69 & SP-58 Tables 3 and 4, excerpts of which follow below:

NOMINAL PIPE SIZE	ROD DIAMETER	MAXIMUM SPACING
3/8" - 1 1/4"	3/8"	7'-0"
1 1/2"	3/8"	9'-0"
2"	3/8"	10'-0"
2 1/2"	1/2"	11'-0"
3"	1/2"	12'-0"
3 1/2"	1/2"	13'-0"
4"	5/8"	14'-0"
5"	5/8"	16'-0"
6"	3/4"	17'-0"
8"	3/4"	19'-0"
10"	7/8"	22'-0"
12"	7/8"	23'-0"
14"	1"	25'-0"
16"	1"	27'-0"

- C. Horizontal copper tubing shall be supported in accordance with ANSI/MSS SP-69 & SP-58 Tables 3 and 4, excerpts of which follow below:

NOMINAL TUBING SIZE	ROD DIAMETER	MAXIMUM SPACING
1/4" - 3/4"	3/8"	5'-0"
1"	3/8"	6'-0"
1 1/4"	3/8"	7'-0"
1 1/2"	3/8"	8'-0"
2"	3/8"	8'-0"
2 1/2"	1/2"	9'-0"
3"	1/2"	10'-0"
3 1/2"	1/2"	11'-0"
4"	1/2"	12'-0"
5"	1/2"	13'-0"
6"	5/8"	14'-0"
8"	3/4"	16'-0"

- D. Provide means of preventing dissimilar metal contact such as plastic coated hangers, copper colored B-Line DURA-COPPER™ epoxy paint, or non-adhesive isolation tape (B-Line Iso-Pipe™). Galvanized felt isolators sized for copper tubing may also be used, B-Line B3195CT.

- E. Support horizontal cast iron pipe adjacent to each hub, with 10 feet maximum spacing between hangers.
- F. Install hangers to provide a minimum of 1/2 inch space between finished covering and adjacent work.
- G. Place a hanger within 12 inches of each horizontal elbow.
- H. Support vertical piping independently of connected horizontal piping. Support vertical pipes at every (other) floor. Wherever possible, locate riser clamps directly below pipe couplings or shear lugs.
- I. Where several pipes can be installed in parallel and at the same elevation, provide trapeze hangers as specified in Section 2.02 C. Trapeze hangers shall be spaced according to the smallest pipe size, or install intermediate supports according to schedule in Section 3.01 B.
- J. Do not support piping from other pipes, ductwork or other equipment which is not building structure.

3.02 CONCRETE INSERTS

- A. Provide inserts for placement in formwork before concrete is poured.
- B. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
- C. Where concrete slabs form finished ceilings, provide inserts to be flush with slab surface.
- D. For inserts carrying 5" nominal pipe and larger, provide hooked rod to concrete reinforcement.

Beam Clamps



Beam clamps offered in this section are designed to provide attachment of hanger rods to structural members without drilling or welding. A wide range of types and sizes are available for various applications.

Materials

Carbon Steel, Malleable Iron and Forged Steel are used in the manufacturing of beam clamps and accessories. Stainless steel and other materials are available.

Finishes

The standard finishes for mechanical supports are plain steel (oil coated) sometimes referred to as black and Electro-Galvanized Zinc (ASTM B633 SC3). Hot-Dip Galvanized After Fabrication (ASTM A123), Red Primer, Plastic Coating and DURA-GREEN™. Other special coatings are available upon request.

Note: Due to the design of some products, (threads, connecting hardware, swivels, etc.) items may or may not be uniformly coated with special finishes. In some cases, the hanger itself may be coated, however, the hardware may be supplied Electro-Plated, copper plated, or in stainless steel.

Recommended Set screw Torque (unless otherwise specified)

1/4"-20	3/8"-16	1/2"-13	5/8"-11	3/4"-10
4 ft/lbs (5 Nm)	5 ft/lbs (7 Nm)	11 ft/lbs (15 Nm)	21 ft/lbs (28 Nm)	34 ft/lbs (46 Nm)

Over torqued set screws will damage beam clamps in this section.

We are aware that torque wrenches are not used or not available in many instances. In the absence of a torque wrench, the set screw should be finger tightened to the I-beam and then an additional 1/4 to 1/2 turn applied to the set screw.

Approvals (as noted)

Items in this section are Underwriters Laboratories Listed, Factory Mutual Approved, and comply with Federal Specification WW-H-171E & A-A-1192A or Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58.

B351L - Steel C-Clamp With Locknut (TOLCO Fig. 64)

Size Range: 3/8"-16 thru 7/8"-9 rod

Material: Steel

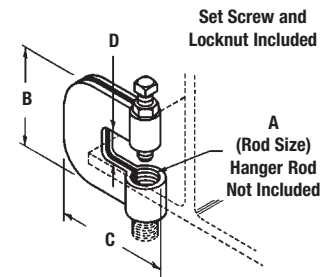
Function: For attachment to I-beams, channels, and wide flange beams where the thickness does not exceed 3/4" (19.0mm). Hardened set screw secures "C" Clamp to beam.

Approvals: B351L (3/8"-16 - 3/4"-10), is Underwriters Laboratories Listed. Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 23 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 23.

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

Note: When retaining strap is required, order B3362 thru B3365 separately. See page 29.

Order By: Part number and finish



Part No.	Rod Size A	B in. (mm)	C in. (mm)	D in. (mm)	Design Load Lbs. (kN)	Maximum Iron Pipe Size Per UL in. (mm)	Approx. Wt./100 Lbs. (kg)
B351L-3/8	3/8"-16	2 3/8" (60.3)	2 3/8" (60.3)	3/4" (19.0)	300 (0.89)	4" (100)	41 (18.6)
B351L-1/2	1/2"-13	2 3/8" (60.3)	2 3/8" (60.3)	3/4" (19.0)	380 (1.69)	6" (150)	41 (18.6)
B351L-5/8	5/8"-11	2 3/8" (60.3)	2 1/4" (57.1)	3/4" (19.0)	550 (2.44)	6" (150)	60 (27.2)
B351L-3/4	3/4"-10	2 3/8" (60.3)	2 1/4" (57.1)	3/4" (19.0)	630 (2.80)	6" (150)	71 (32.2)
B351L-7/8	7/8"-9	3" (76.2)	3 1/4" (82.5)	1" (25.4)	1200 (5.34)	--	184 (83.4)

Note: See page 27 for recommended setscrew torque.

B3036L - Malleable Iron C-Clamp With Locknut

Size Range: 3/8"-16 thru 3/4"-10 rod

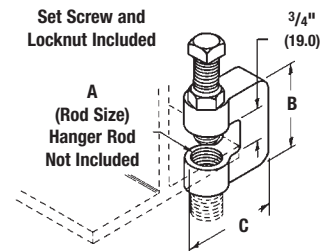
Material: Malleable Iron

Function: Designed for attaching a hanger rod to the flange of a beam.

Approvals: B3036L is Underwriters Laboratories Listed. Complies with Federal Specification WW-H-171E & A-A-1192A Type 23 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58 Type 23.

Finish: Plain or Electro-Galvanized

Order By: Part number and finish. When retaining strap is required, order B3362 thru B3365 separately. See page 29.



Part No.	Rod Size A	B in. (mm)	C in. (mm)	Design Load Lbs. (kN)	Maximum Iron Pipe Size Per UL in. (mm)	Approx. Wt./100 Lbs. (kg)
B3036L-3/8	3/8"-16	1 3/4" (44.4)	1 3/4" (44.4)	300 (0.89)	4" (100)	41 (18.6)
B3036L-1/2	1/2"-13	1 3/4" (44.4)	1 3/4" (44.4)	380 (1.69)	5" (125)	41 (18.6)
B3036L-5/8	5/8"-11	2" (50.8)	1 7/8" (47.6)	530 (2.36)	6" (150)	60 (27.2)
B3036L-3/4	3/4"-10	2" (50.8)	2" (50.8)	530 (2.36)	6" (150)	71 (32.2)

Note: See page 27 for recommended setscrew torque.

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

Beam Clamps

B3362, B3363, B3364, B3365 - Retaining Strap

Size Range: 6" (152.4mm) to 12" (304.8mm) lengths

Material: Steel (Stainless Steel available)

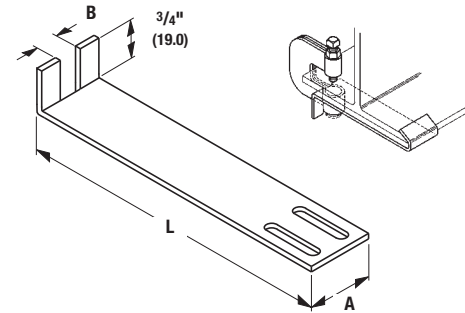
Finish: Pre-Galvanized

Function: Designed for use with B351L and B3036L C-Clamps.

Order By: Part number, length 'L', (add 1" (25.4) minimum to flange width), and finish.

Note: Requires field forming on beam.

Flange Width		Length L	
in.	(mm)	in.	(mm)
3"-5"	(76-127)	6"	(152.4)
5"-7"	(127-178)	8"	(203.2)
7"-9"	(178-228)	10"	(254.0)
9"-11"	(228-279)	12"	(304.8)



Material Thickness
12 Gauge (2.7)



Part No.	For Use With	A		B		Approx. Wt./100 for Length 'L' of							
		in.	(mm)	in.	(mm)	6" (152.4)	8" (203.2)	10" (254.0)	12" (304.8)				
						Lbs. (kg)	Lbs. (kg)	Lbs. (kg)	Lbs. (kg)				
B3362-L	B351L-3/8 & 1/2	1 1/4"	(31.7)	7/16"	(11.1)	27 (12.2)	35 (15.9)	44 (19.9)	52 (23.6)				
B3363-L	B351L-5/8 & 3/4, B3036L-3/8 & 1/2	1 1/4"	(31.7)	5/8"	(15.9)	26 (11.8)	35 (15.9)	43 (19.5)	52 (23.6)				
B3364-L	B3036L-5/8 & 3/4	1 1/4"	(31.7)	1 1/16"	(17.4)	26 (11.8)	35 (15.9)	43 (19.5)	52 (23.6)				
B3365-L	B351L-7/8	1 1/2"	(38.1)	3/4"	(19.0)	32 (14.5)	42 (19.0)	52 (23.6)	62 (28.1)				

Beam Clamps

B3037 - Z-Purlin Malleable C-Clamp

Material: Malleable Iron

Function: Designed for attaching a 3/8"-16 hanger rod to the bottom flange of a Z-purlin.

Approvals: Underwriters Laboratories Listed for up to 4" (100mm) pipe. Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 23 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 23.

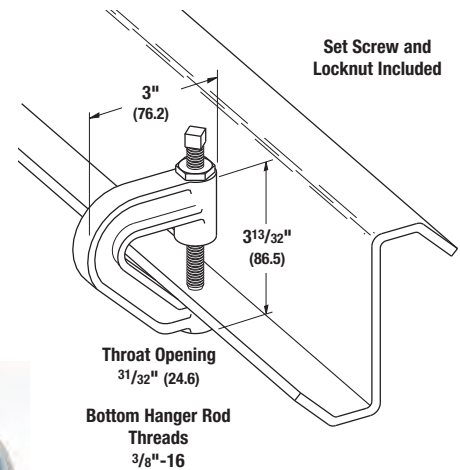
Finish: Plain or Electro-Galvanized

Order By: Part number and finish.

Weight: Approx. Wt./100 90 Lbs. (40.8kg)

Design Load: 400 Lbs. (1.78kN)

Note: See page 27 for recommended setscrew torque.



B3031-3/8 - Light Duty Malleable C-Clamp

Material: Malleable Iron

Function: Designed for attaching a 3/8"-16 hanger rod to the top or bottom flange of a beam or bar joist when setscrew is in the down position as shown.

Approvals: Underwriters Laboratories Listed for up to 4" pipe. Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 19 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 19.

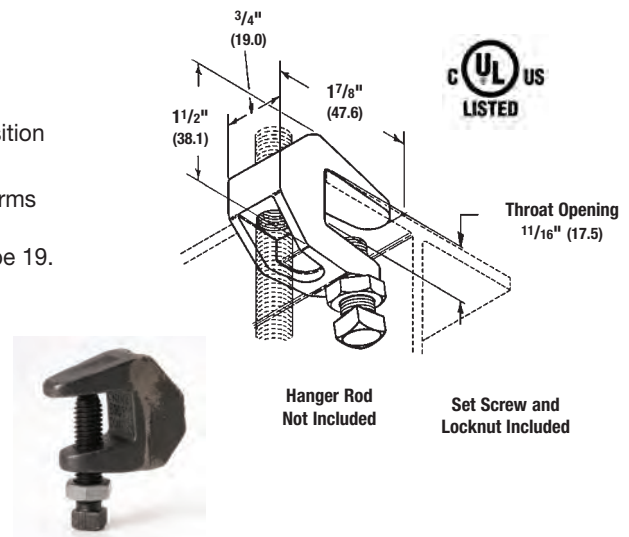
Finish: Plain or Electro-Galvanized

Order By: Part number and finish. When retaining strap is required, order Fig. 69 separately. See Page 37.

Weight: Approx. Wt./100 25 Lbs. (11.3kg)

Design Load: 350 Lbs. (1.55kN)

Note: See page 27 for recommended setscrew torque.



B3033 - Wide Jaw Reversible C-Clamp (TOLCO Fig. 68)

Size Range: 3/8"-16 thru 3/4"-10 rod

Material: Cast Malleable Steel with hardened cup point set screw and jam nut

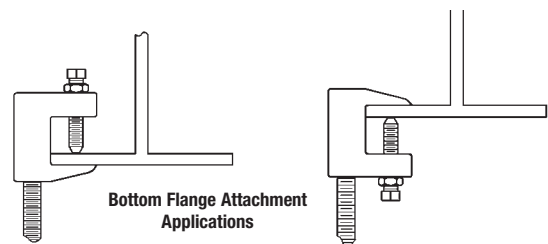
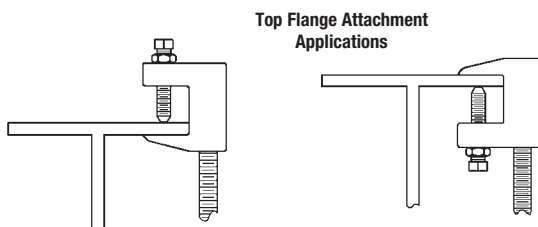
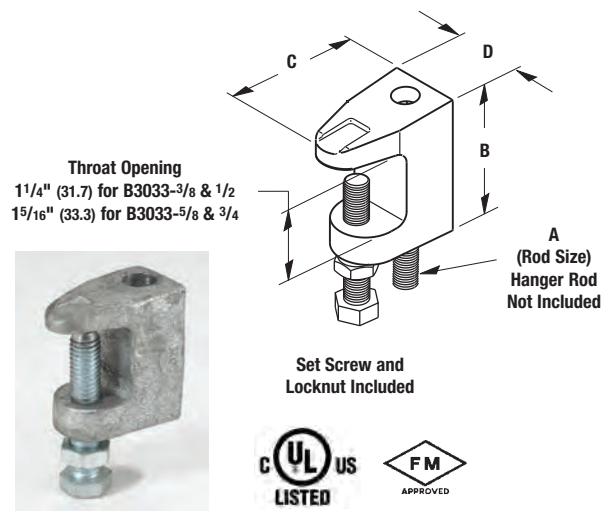
Function: For attachment to structural shapes requiring wider throat especially under roof with bar joist construction. This clamp may be used with the set screw in the up or down position.

Approvals: Underwriters Laboratories Listed (cULus) and Factory Mutual Engineering Approved (FM). Conforms to Federal Specification WW-H-171E Type 19 & A-A-1192A, Type 19 & 23 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 19 & 23.

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

Order By: Part number, rod size and finish

Note: Do not over tighten set screw.



Part No.	Rod Size A	B		C		D		Design Load with Setscrew Up		Design Load with Setscrew Down		Maximum Iron Pipe Size Per UL		Approx. Wt./100	
		in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kN)	in.	(mm)	Lbs.	(kg)
B3033-3/8	3/8"-16	2 1/4"	(57.1)	2"	(50.8)	1 1/8"	(28.6)	610	(2.71)	610	(2.71)	4"	(100)	54	(24.5)
B3033-1/2	1/2"-13	2 5/16"	(58.7)	2 3/16"	(55.6)	1 1/4"	(31.7)	750	(3.33)	1130	(5.02)	8"	(200)	51	(23.1)
B3033-5/8	5/8"-11	2 5/8"	(66.7)	2 1/2"	(63.5)	1 3/8"	(34.9)	750	(3.33)	1130	(5.02)	8"	(200)	70	(31.7)
B3033-3/4	3/4"-10	2 11/16"	(68.3)	2 1/2"	(63.5)	1 7/16"	(36.5)	750	(3.33)	1130	(5.02)	10"	(250)	98	(44.4)

Note: See page 27 for recommended setscrew torque.

Beam Clamps

B3034 - C-Clamp

Size Range: 3/8"-16 thru 3/4"-10 rod

Material: Cast Malleable Steel with hardened cup point set screw and jam nut

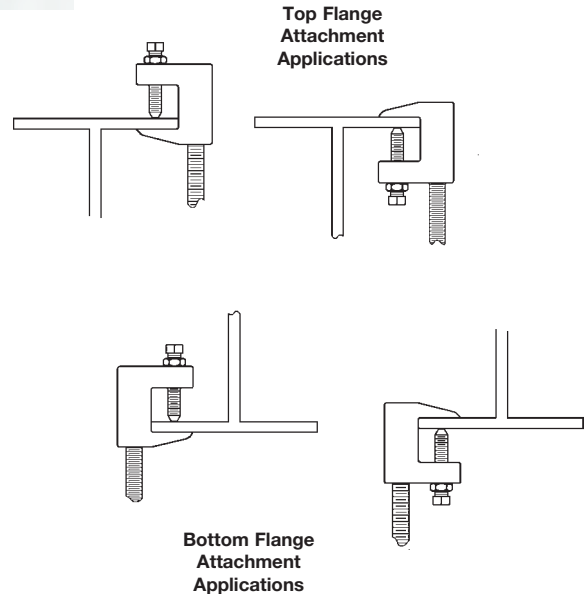
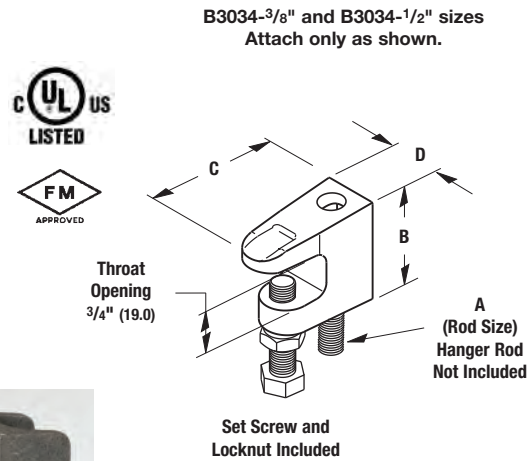
Function: Recommended for hanging from steel beam where flange thickness does not exceed 3/4" (19.0mm).

Features: May be used on top or bottom flange of the beam. Beveled lip allows hanging from top flange where clearance is limited. may be installed with the set screw in the up or down position. Offset design permits unlimited rod adjustment by allowing the rod to be threaded completely through the clamp. The rear window design permits inspection of thread engagement.

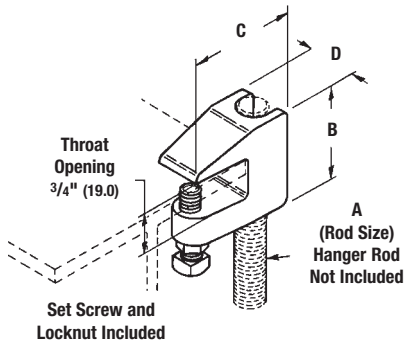
Approvals: Underwriters Laboratories Listed and Factory Mutual Engineering Approved for 3/8"-16 and 1/2"-13 rod sizes. Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 19 & 23 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 19 & 23. 3/8"-16 is (cULus) Listed to support up to 4" (100mm) pipe with the set screw in the down position, up to 3" (75mm) pipe with the set screw in the up position. 1/2"-13 is (cULus) Listed to support up to 8" (200mm) pipe with the set screw in the down position, up to 6" (150mm) pipe with the set screw in the up position.

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

Order By: Part number and finish



B3034-5/8" and B3034-3/4" sizes
Attach only as shown.



Part No.	Rod Size A	B		C		D		Design Load with Setscrew				Maximum Iron Pipe Size Per UL		Approx. Wt./100	
		in.	(mm)	in.	(mm)	in.	(mm)	Up		Down		in.	(mm)	Lbs.	(kg)
B3034-3/8	3/8"-16	15/8"	(41.3)	2"	(50.8)	7/8"	(19.0)	610	(2.71)	610	(2.71)	4"	(100)	30	(13.6)
B3034-1/2	1/2"-13	113/16"	(46.0)	23/16"	(55.6)	13/16"	(30.2)	750	(3.33)	1130	(5.02)	8"	(200)	47	(21.3)
B3034-5/8	5/8"-11	13/4"	(44.5)	21/8"	(54.0)	11/4"	(31.7)	750	(3.33)	1130	(5.02)	--	--	58	(26.3)
B3034-3/4	3/4"-10	2"	(50.8)	21/4"	(57.2)	11/4"	(31.7)	750	(3.33)	1130	(5.02)	--	--	77	(35.0)

Note: See page 27 for recommended setscrew torque.

Fig. 68S - Reversible Malleable Beam Clamp $\frac{3}{4}$ " (19.0mm) Throat Opening

Fig. 68W - Reversible Malleable Beam Clamp $1\frac{1}{4}$ " (31.7mm) Throat Opening (bottom of page)

Size Range:

$\frac{3}{8}$ "-16 rod sizes thru $\frac{7}{8}$ "-9 rod sizes



Material: Cast Malleable Steel with hardened cup point set screw and jam nut

Function: Recommended for hanging from steel beam where flange thickness does not exceed $\frac{3}{4}$ " (19.0mm) on Fig. 68S or $1\frac{1}{4}$ " (31.7mm) on Fig. 68W.

Features: May be used on top or bottom flange of beam. Beveled lip allows hanging from top flange where clearance is limited. May be installed with set screw in up or down position. Offset design permits unlimited rod adjustment by allowing the rod to be threaded completely through the clamp. The rear window design permits inspection of thread engagement.

Approvals: Factory Mutual Engineering Approved. Underwriters Laboratories Listed. Conforms to Federal Specification WW-H-171E, Type 23 and Manufacturers Standardization Society SP-58, Type 19.

Fig. 68S- $\frac{3}{8}$ is cULus Listed to support up to 4" (100mm) pipe with the set screw in the down position and up to 3" (80mm) pipe with the set screw in the up position.

Fig. 68S- $\frac{1}{2}$ is cULus Listed to support up to 8" (200mm) pipe with the set screw in the down position and up to 6" (150mm) pipe with the set screw in the up position.

Fig. 68W- $\frac{3}{8}$ is cULus Listed to support up to 4" (100mm) pipe with the set screw in the down position and up to 4" (100mm) pipe with the set screw in the up position.

Fig. 68W- $\frac{1}{2}$ is cULus Listed to support up to 6" (150mm) pipe with the set screw in the down position and up to 6" (150mm) pipe with the set screw in the up position.

Factory Mutual Engineering approved only with the set screw in the down position.

(OSHPD). For additional load spacing and placement information relating OSHPD projects, please refer to the Seismic Restraint System Guidelines.

Finish: Plain. Contact B-Line for Electro-Galvanized or HDG finishes.

Order By: Part number and finish

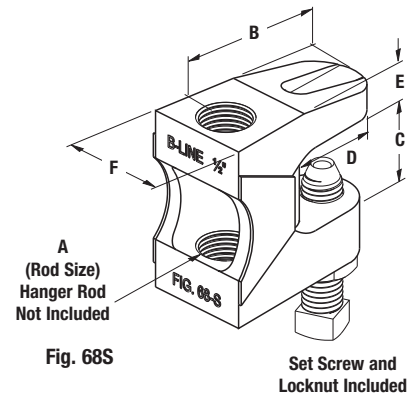


Fig. 68S

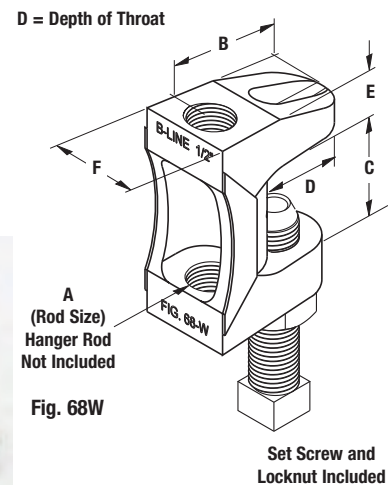


Fig. 68W

Fig. 68S



Fig. 68W



Fig. 68S

Part No.	Rod Size A	B in. (mm)	C Min. in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	Max Rec. Load Set Screw Up Lbs. (kN)	Max Rec. Load Set Screw Down Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
68S- $\frac{3}{8}$	$\frac{3}{8}$ "-16	19/16" (39.7)	$\frac{3}{4}$ " (19.0)	1 1/8" (28.6)	7/16" (11.1)	7/8" (22.2)	610 (2.71)	610 (2.71)	32 (14.5)
68S- $\frac{1}{2}$	$\frac{1}{2}$ "-13	15/8" (41.3)	$\frac{3}{4}$ " (19.0)	1" (25.4)	7/16" (11.1)	1 1/8" (28.6)	750 (3.33)	1130 (5.02)	54 (24.5)
68S- $\frac{5}{8}$	$\frac{5}{8}$ "-11	19/16" (39.7)	$\frac{3}{4}$ " (19.0)	1" (25.4)	9/16" (14.3)	1 1/8" (28.6)	750 (3.33)	1130 (5.02)	50 (22.7)
68S- $\frac{3}{4}$	$\frac{3}{4}$ "-10	13/4" (44.4)	$\frac{3}{4}$ " (19.0)	1 1/8" (28.6)	9/16" (14.3)	1 1/4" (31.7)	750 (3.33)	1130 (5.02)	81 (36.7)
68S- $\frac{7}{8}$	$\frac{7}{8}$ "-9	13/4" (44.4)	$\frac{3}{4}$ " (19.0)	1 1/8" (28.6)	9/16" (14.3)	1 5/16" (33.3)	750 (3.33)	1130 (5.02)	75 (34.0)

Fig. 68W

Part No.	Rod Size A	B in. (mm)	C Min. in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	Max Rec. Load Set Screw Up Lbs. (kN)	Max Rec. Load Set Screw Down Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
68W- $\frac{3}{8}$	$\frac{3}{8}$ "-16	19/16" (39.7)	1 1/4" (31.7)	1 1/8" (28.6)	7/16" (11.1)	7/8" (22.2)	610 (2.71)	610 (2.71)	41 (18.6)
68W- $\frac{1}{2}$	$\frac{1}{2}$ "-13	19/16" (39.7)	1 1/4" (31.7)	1" (25.4)	5/8" (15.9)	1 1/8" (28.6)	750 (3.33)	1130 (5.02)	66 (29.9)
68W- $\frac{5}{8}$	$\frac{5}{8}$ "-11	11/2" (38.1)	1 1/4" (31.7)	1" (25.4)	9/16" (14.3)	1 1/8" (28.6)	750 (3.33)	1130 (5.02)	68 (30.8)
68W- $\frac{3}{4}$	$\frac{3}{4}$ "-10	13/4" (44.4)	1 1/4" (31.7)	1 1/8" (28.6)	3/8" (19.5)	1 1/4" (31.7)	750 (3.33)	1130 (5.02)	110 (49.9)
68W- $\frac{7}{8}$	$\frac{7}{8}$ "-9	13/4" (44.4)	1 1/4" (31.7)	1 1/8" (28.6)	9/16" (14.3)	1 5/16" (33.3)	750 (3.33)	1130 (5.02)	98 (44.4)

Note: See page 27 for recommended setscrew torque.

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

Beam Clamps

Fig. 65 - Reversible Steel C-Type Beam Clamp $\frac{3}{4}$ " (19.0mm) Throat Opening

Fig. 65XT - Reversible Steel C-Type Beam Clamp $\frac{3}{4}$ " (19.0mm) Throat Opening (bottom of page)

Size Range:

Fig. 65 - $\frac{1}{2}$ "-13 rod sizes, and $\frac{5}{8}$ "-11 rod sizes

Fig. 65XT - $\frac{3}{8}$ "-16 rod size (see below)



Component of State of California OSHPD Approved Seismic Restraints System

Material: Steel with hardened cup point set screw and jam nut

Function: Recommended for hanging from steel beam where flange thickness does not exceed $\frac{3}{4}$ " (19.0mm).

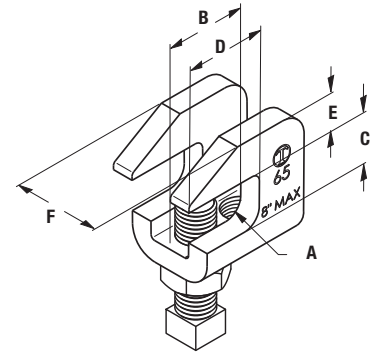
Features: All steel construction eliminates structural deficiencies associated with casting type beam clamps. May be used on top or bottom flange of beam. (Beveled lip allows hanging from top flange where clearance is limited.) May be installed with set screw in up or down position. Offset design permits unlimited rod adjustment by allowing the rod to be threaded completely through the clamp. Open design permits inspection of thread engagement.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Exceeds requirements of the National Fire Protection Association (NFPA), pamphlet 13, $\frac{3}{8}$ "-16 rod will support $\frac{1}{2}$ " (15mm) thru 4" (100mm) pipe
 $\frac{1}{2}$ "-13 rod will support $\frac{1}{2}$ " (15mm) thru 8" (200mm) pipe
 Included in the Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD). For additional load spacing and placement information relating OSHPD projects, please refer to the Seismic Restraint System Guidelines.

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

Order By: Part number and finish

Fig. 65 Patent #4,570,885



Set Screw and Locknut Included



Part No.	Rod Size A	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)
65- $\frac{1}{2}$	$\frac{1}{2}$ "-13	1 $\frac{1}{2}$ " (38.1)	$\frac{3}{4}$ " (19.0)	1" (25.4)	$\frac{9}{16}$ " (14.3)
65- $\frac{5}{8}$	$\frac{5}{8}$ "-11	1 $\frac{1}{2}$ " (38.1)	$\frac{3}{4}$ " (19.0)	1" (25.4)	$\frac{9}{16}$ " (14.3)

Part No.	F in. (mm)	Mac Rec. Load * in. (mm)	Approx. Wt./100 in. (mm)
65- $\frac{1}{2}$	1 $\frac{1}{4}$ " (31.7)	1130 (5.02)	55 (24.9)
65- $\frac{5}{8}$	1 $\frac{1}{4}$ " (31.7)	1130 (5.02)	55 (24.9)

* Maximum loads for clamp with set screw in up or down position.

Note: See page 27 for recommended setscrew torque.

Fig. 65XT- $\frac{3}{8}$ - Beam Clamp

Feature: Extruded holes allow for more thread engagement of threaded rod and set screw.

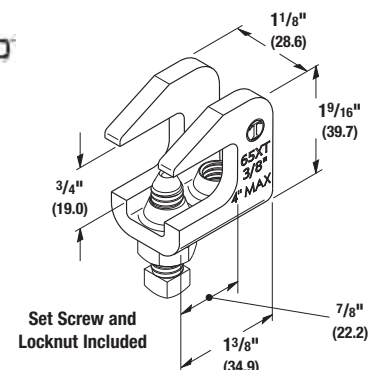
Weight: Approx. Wt./100 - 28.0 Lbs. (12.7kg)

Design Load: 730 Lbs (3.25kN)

Finish: Plain or Electro-Galvanized

Order By: Part number and finish

Approvals: Underwriters Laboratories Listed and FM Approved for use to 4" (100mm) pipe.



Set Screw and Locknut Included

Note: See page 27 for recommended setscrew torque.

Fig. 66 - Reversible Steel C-Type Beam Clamp 1 1/4" (31.7mm) Throat Opening

Size Range: 3/8"-16, 1/2"-13 rod sizes, and 5/8"-11 rod sizes

Material: Steel with hardened cup point set screw and jam nut

Function: Recommended for hanging from steel beam where flange thickness does not exceed 1 1/4" (31.7mm).

Features: All steel construction eliminates structural deficiencies associated with casting type beam clamps. May be used on top or bottom flange of beam. (Beveled lip allows hanging from top flange where clearance is limited.) May be installed with set screw in up or down position. Offset design permits unlimited rod adjustment by allowing the rod to be threaded completely through the clamp. Open design permits inspection of thread engagement.

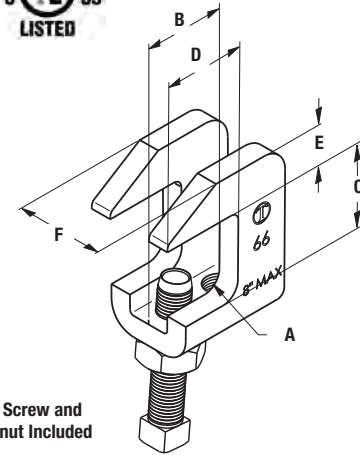
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Exceeds requirements of the National Fire Protection Association (NFPA), pamphlet 13, 3/8"-16 rod will support 1/2" (15mm) thru 4" (100mm) pipe
1/2"-13 rod will support 1/2" (15mm) thru 8" (200mm) pipe
Included in the Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD). For additional load spacing and placement information relating OSHPD projects, please refer to the Seismic Restraint System Guidelines.

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

Order By: Part number and finish



Component of State of California OSHPD Approved Seismic Restraints System



Set Screw and Locknut Included



Beam Clamps

Part No.	Rod Size A	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)
66-3/8	3/8"-16	1 3/16" (30.2)	1 1/4" (31.7)	1" (25.4)	7/16" (11.1)
66-1/2	1/2"-13	1 1/2" (38.1)	1 1/4" (31.7)	1" (25.4)	9/16" (14.3)
66-5/8	5/8"-11	1 1/2" (38.1)	1 1/4" (31.7)	1" (25.4)	9/16" (14.3)

Part No.	F in. (mm)	Mac Rec. Load * in. (mm)	Approx. Wt./100 in. (mm)
66-3/8	1" (25.4)	610 (2.71)	28 (12.7)
66-1/2	1 1/4" (31.7)	1130 (5.02)	55 (24.9)
66-5/8	1 1/4" (31.7)	1130 (5.02)	55 (24.9)

* Maximum loads for clamp with set screw in up or down position.

Note: See page 27 for recommended setscrew torque.

Beam Clamps

Fig. 67SS - Stainless Steel Reversible C-Type Beam Clamp $\frac{3}{4}$ " (19.0mm) Throat Opening

Fig. 68SS - Stainless Steel Reversible C-Type Beam Clamp Wide Mouth

Size Range: $\frac{3}{8}$ "-16 and $\frac{1}{2}$ "-13 rod sizes

Material: Stainless Steel (Type 316 or 304)

Function: Recommended for hanging from steel beams where flange thickness does not exceed $\frac{3}{4}$ " (19.0mm) for Fig. 67SS or $\frac{1}{4}$ " (31.7mm) for Fig. 68SS.

Features: All steel construction eliminates structural deficiencies associated with casting type beam clamps. May be used on top or bottom flange of beam. May be installed with set screw in up or down position. Offset design permits unlimited rod adjustment by allowing the rod to be threaded completely through the clamp.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Conforms to Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 19. Meets or exceeds requirements of the National Fire Protection Association (NFPA), pamphlet 13.

$\frac{3}{8}$ "-16 rod will support $\frac{1}{2}$ " (15mm) thru 4" (100mm) pipe

$\frac{1}{2}$ "-13 rod will support $\frac{1}{2}$ " (15mm) thru 8" (200mm) pipe

Order By: Part number and stainless steel type.

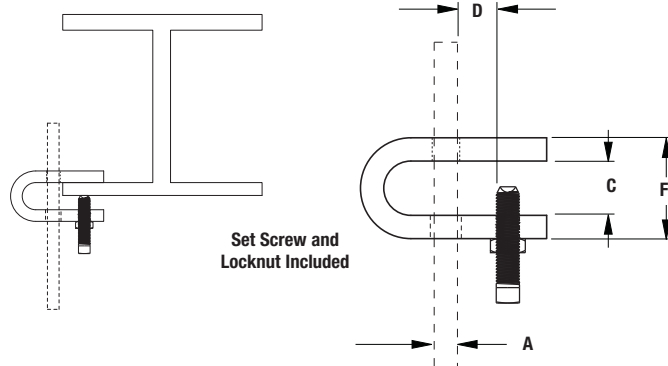
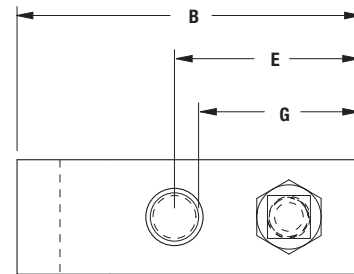


Fig. 67SS

Part No.	Rod Size A	Pipe Size in.	Pipe Size (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)
67SS- $\frac{3}{8}$	$\frac{3}{8}$ "-16	$\frac{1}{2}$ " - 4"	(15 - 100)	3"	(76.2)	$\frac{7}{8}$ "	(22.2)	1"	(25.4)	$1\frac{5}{8}$ "	(41.3)
67SS- $\frac{1}{2}$	$\frac{1}{2}$ "-13	5" - 8"	(125 - 200)	3"	(76.2)	$\frac{7}{8}$ "	(22.2)	1"	(25.4)	$1\frac{5}{8}$ "	(41.3)

Part No.	F in.	F (mm)	G in.	G (mm)	Test Load in.	Test Load (mm)	Approx. Wt./100 in.	Approx. Wt./100 (mm)
67SS- $\frac{3}{8}$	$1\frac{5}{8}$ "	(41.3)	$1\frac{1}{8}$ "	(28.6)	1500	(6.67)	84	(38.1)
67SS- $\frac{1}{2}$	$1\frac{5}{8}$ "	(41.3)	$1\frac{1}{8}$ "	(28.6)	4050	(18.01)	170	(77.1)



Fig. 68SS

Part No.	Rod Size A	Pipe Size in.	Pipe Size (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	E in.	E (mm)
68SS- $\frac{3}{8}$	$\frac{3}{8}$ "-16	$\frac{1}{2}$ " - 4"	(15 - 100)	$2\frac{1}{16}$ "	(52.4)	$1\frac{1}{8}$ "	(28.6)	$\frac{3}{4}$ "	(19.0)	$1\frac{1}{4}$ "	(31.7)
68SS- $\frac{1}{2}$	$\frac{1}{2}$ "-13	5" - 8"	(125 - 200)	$2\frac{1}{4}$ "	(57.1)	$1\frac{1}{4}$ "	(31.7)	$\frac{13}{16}$ "	(20.6)	$1\frac{1}{4}$ "	(31.7)

Part No.	F in.	F (mm)	Test Load in.	Test Load (mm)	Approx. Wt./100 in.	Approx. Wt./100 (mm)
68SS- $\frac{3}{8}$	2"	(50.8)	1500	(6.67)	84	(38.1)
68SS- $\frac{1}{2}$	$2\frac{1}{4}$ "	(57.1)	4050	(18.01)	170	(77.1)



Note: See page 27 for recommended setscrew torque.

B303-B309 - Beam Clamps

Size Range: 1/4"-20 thru 5/8"-11 rod

Material: Steel

Function: Designed for attaching a hanger rod to the flange of a beam.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 19 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 19.

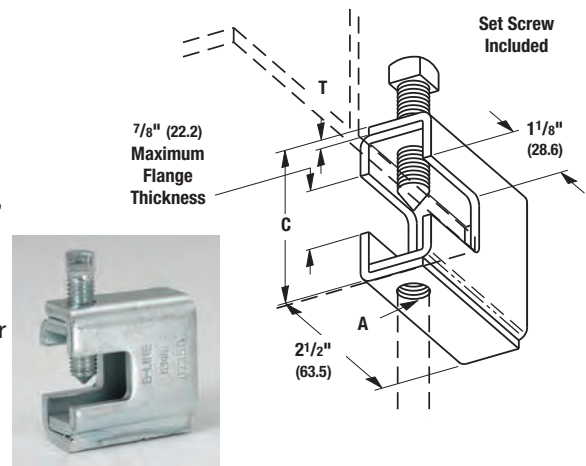
Finish: Electro-Galvanized or Hot-Dip Galvanized

Order By: Part number and finish. When retaining strap is required, order B312 separately. See page 39.

Recommended Set Screw Torque:

3/8"-16 = 150 in-lbs (16.9 N•m)

1/2"-13 = 350 in-lbs (39.5 N•m)



Part No.	Rod Size A	Setscrew Size	C in. (mm)	T in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B303	1/4"-20	3/8"-16	25/16" (58.7)	11 Ga. (3.0)	400 (1.78)	72 (32.6)
B304	5/16"-18	3/8"-16	25/16" (58.7)	11 Ga. (3.0)	600 (2.67)	72 (32.6)
B305	3/8"-16	3/8"-16	25/16" (58.7)	11 Ga. (3.0)	600 (2.67)	72 (32.6)
B306	3/8"-16	1/2"-13	27/16" (61.9)	7 Ga. (4.5)	1100 (4.89)	97 (44.0)
B307	1/2"-13	1/2"-13	27/16" (61.9)	7 Ga. (4.5)	1100 (4.89)	97 (44.0)
B308	1/2"-13	1/2"-13	29/16" (65.1)	1/4" (6.3)	1500 (6.67)	133 (60.3)
B309	5/8"-11	1/2"-13	29/16" (65.1)	1/4" (6.3)	1500 (6.67)	133 (60.3)

Fig. B321 - Series Beam Clamps

Size Range: 3/8"-16 thru 3/4"-10 rod

Material: Steel

Function: Designed for attaching a hanger rod to the flange of a beam.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 19 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 19.

Finish: Electro-Galvanized or Hot-Dip Galvanized

Ordering: Part number and finish. When retaining strap is required, order B312 separately. See page 39.

Recommended Set Screw Torque:

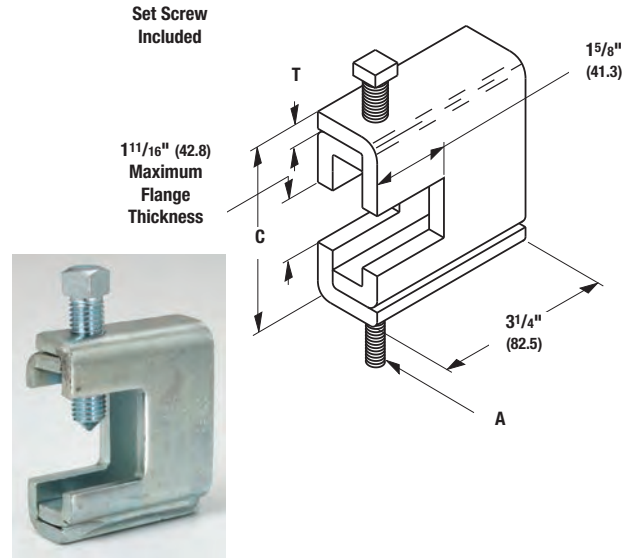
1/2"-13 = 350 in-lbs (39.5 N•m)

5/8"-11 = 700 in-lbs (79.0 N•m)

Minimum Flange Thickness:

For B321-1 thru B321-3 = 3/8" (9.5)

For B321-4 & B321-5 = 5/8" (15.9)



Part No.	Rod Size A	Setscrew Size	C in. (mm)	T in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B321-1	3/8"-16	1/2"-13	39/16" (92.1)	1/4" (6.3)	1300 (5.78)	187 (84.8)
B321-2	1/2"-13	1/2"-13	39/16" (92.1)	1/4" (6.3)	1400 (6.23)	186 (84.3)
B321-3	5/8"-11	1/2"-13	39/16" (92.1)	1/4" (6.3)	1600 (7.12)	185 (83.9)
B321-4	5/8"-11	5/8"-11	323/32" (94.4)	5/16" (7.9)	1800 (8.00)	239 (108.4)
B321-5	3/4"-10	5/8"-11	323/32" (94.4)	5/16" (7.9)	2000 (8.89)	238 (107.9)

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

Beam Clamps

Fig. 69 - Beam Clamp Retaining Strap (B-Line B3367)

Size Range: $\frac{3}{8}$ "-16 thru $\frac{3}{4}$ "-10 rod
 4" (101.6mm) thru 16" (406.4mm) lengths
 Note: longer lengths are available consult factory

Material: Pre-Galvanized Steel

Function: To offer more secure fastening of various types of beam clamps to beam where danger of movement might be expected. NFPA 13 requires the use of retaining straps with all beam clamps installed in earthquake areas. Satisfies requirements of NFPA 13.

Important Note: Good installation practice of a retaining strap requires that the strap be held tightly and securely to all component parts of the assembly. Therefore a locking mechanism of some kind, such as a hex nut or the beveled locking slot of the Fig. 69R will provide a more secure reliable installation.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved for use with any listed beam clamp. Included in the Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD). For additional load spacing and placement information relating OSHPD projects, please refer to the Seismic Restraint System Guidelines.

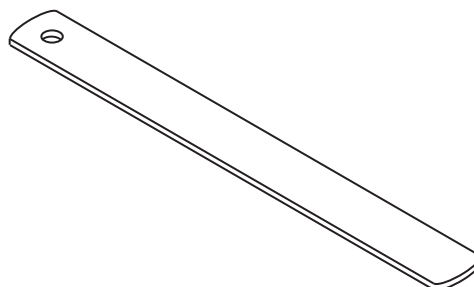
Finish: Pre-Galvanized

Order By: Part number, length (L), and finish.

Note: Minimum return on strap is 1" (25.4mm)



Component of State of
 California OSHPD Approved
 Seismic Restraints System



Part No.	Hole Dia. D in. (mm)	For Use With	Length
69- $\frac{3}{8}$ -L	$\frac{7}{16}$ " (30.1)	B3033- $\frac{3}{8}$, B3034- $\frac{3}{8}$, B3031- $\frac{3}{8}$, 65- $\frac{3}{8}$, 65XT- $\frac{3}{8}$, 66- $\frac{3}{8}$	Specify
69- $\frac{1}{2}$ -L	$\frac{9}{16}$ " (30.1)	B3033- $\frac{1}{2}$, B3034- $\frac{1}{2}$, 65- $\frac{1}{2}$, 66- $\frac{1}{2}$	Specify
69- $\frac{5}{8}$ -L	$\frac{11}{16}$ " (50.8)	B3033- $\frac{5}{8}$, 65- $\frac{5}{8}$, 66- $\frac{5}{8}$	Specify
69- $\frac{3}{4}$ -L	$\frac{13}{16}$ " (63.5)	B3033- $\frac{3}{4}$	Specify

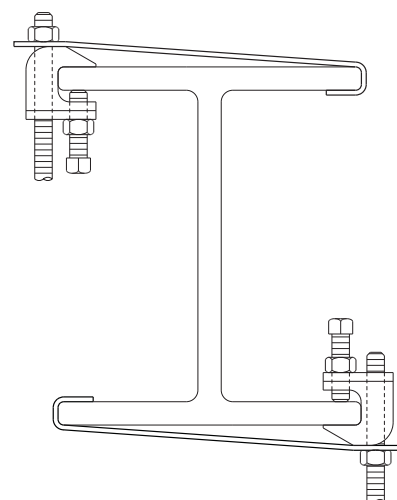


Fig. 69R - Retrofit Capable Beam Clamp Retaining Strap

Size Range: $\frac{3}{8}$ "-16 & $\frac{1}{2}$ "-13 rod
 4" (101.6mm) thru 16" (406.4mm) lengths
 Note: longer lengths are available consult factory



Component of State of
 California OSHPD Approved
 Seismic Restraints System

Material: Pre-Galvanized Steel

Function: To offer more secure fastening of various types of beam clamps to beam where danger of movement might be expected. NFPA 13 requires the use of retaining straps with all beam clamps installed in earthquake areas. Satisfies requirements of NFPA 13.

Features: Beveled locking slot* is precisely formed to align with the threaded section of a hanger rod or set screw and engage the unit securely. May be used as shown in Section "A-A" or inverted. Allows easy installation for new construction or retrofit applications.

Important Note: Good installation practice of a retaining strap requires that the strap be held tightly and securely to all component parts of the assembly. Therefore a locking mechanism of some kind, such as a hex nut or the beveled locking slot of the Fig. 69R will provide a more secure reliable installation.

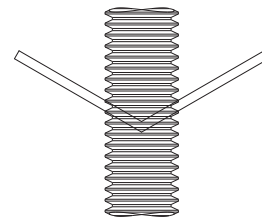
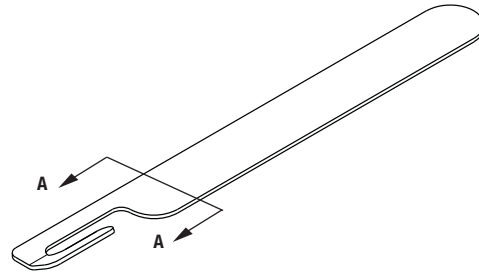
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved for use with any listed beam clamp. Included in the Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD). For additional load spacing and placement information relating OSHPD projects, please refer to the Seismic Restraint System Guidelines.

Finish: Pre-Galvanized

Order By: Part number, length, and finish.

Note: Minimum return on strap is 1" (25.4mm)

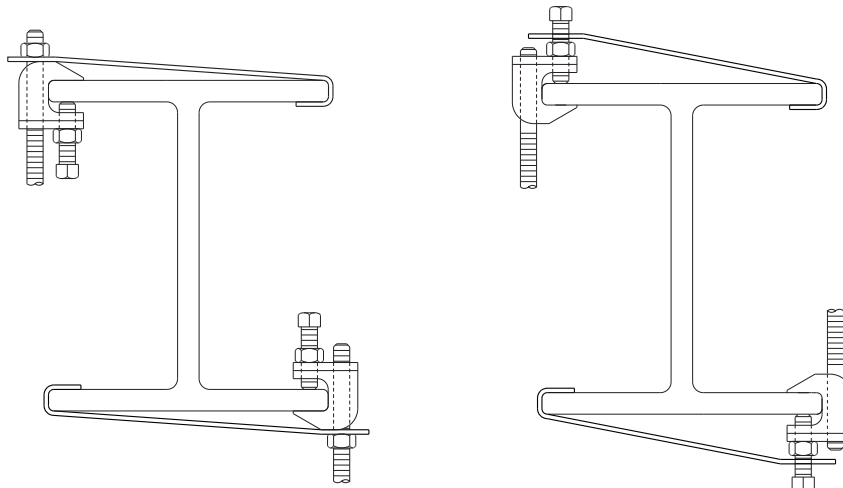
* Patent #5,947,424



A - A



Part No.	Slot Width		For Use With	Length
	in.	(mm)		
69R- $\frac{3}{8}$ -L	$\frac{7}{16}$ "	(30.1)	B3033- $\frac{3}{8}$, B3034- $\frac{3}{8}$, B3031- $\frac{3}{8}$, 65- $\frac{3}{8}$, 65XT- $\frac{3}{8}$, 66- $\frac{3}{8}$	Specify
69R- $\frac{1}{2}$ -L	$\frac{9}{16}$ "	(30.1)	B3033- $\frac{1}{2}$, B3034- $\frac{1}{2}$, 65- $\frac{1}{2}$, 66- $\frac{1}{2}$	Specify



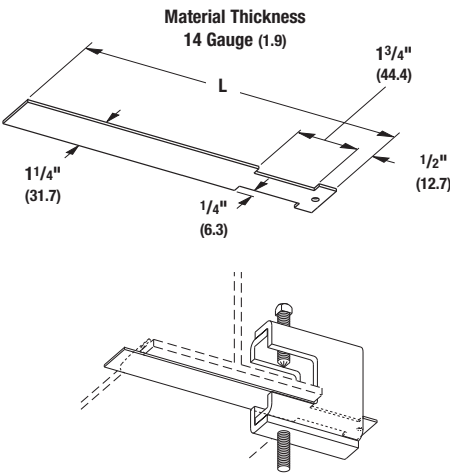
All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

Beam Clamps

B312 - Retaining Strap

Size Range: 9" (228.6mm) to 18" (457.2mm) strap lengths
Material: Steel
Function: Designed for use with B303-B309 and B321 beam clamps.
Finish: Pre-Galvanized
Order By: Part number and finish.

Notes:
Maximum beam thickness $\frac{3}{4}$ " (19.0).
For thicker beams step up one flange width size.
Requires field forming on beam.



Part No.	For Flange With		L		Approx. Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	kg
B312-6	6"	(152.4)	9"	(228.6)	22	(10.0)
B312-9	9"	(228.6)	12"	(304.8)	30	(13.6)
B312-12	12"	(304.8)	15"	(381.0)	40	(18.1)
B312-15	15"	(381.0)	18"	(457.2)	49	(22.2)

B3050 - Beam Clamp (TOLCO Fig. 62)

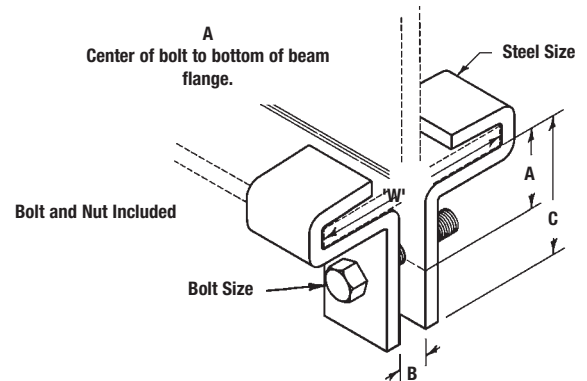
Material: Steel

Function: Recommended for the suspending of hanger rod from the center of an I-beam, equally distributing the load on both sides of the beam. Use with B3210 eye rod, B3211 welded eye rod or B3200 weldless rye nut.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 21 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 21.

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

Order By: Part number, type, width of flange and finish.



Part No. & Size	Bolt Size	A in. (mm)	B in. (mm)	C in. (mm)	Steel Size in. (mm)	Design Load Lbs. (kN)
B3050-2	1/2"-13	1 3/8" (34.9)	5/8" (15.9)	2 1/8" (54.0)	1/4" x 1 1/4" (6.3 x 31.7)	1000 (3.11)
B3050-5	3/4"-10	1 7/8" (47.6)	7/8" (22.2)	3" (76.2)	1/2" x 2" (12.7 x 50.8)	3000 (6.67)

Flange Width 'W'		Flange Thickness		Approx. Wt./100 For Beam Clamp Size			
		Min. in. (mm)	Max. in. (mm)	2 lbs. (kg)		5 lbs. (kg)	
4"	(101.6)	3/16" (4.8)	1/2" (12.7)	116	(52.6)	429	(194.6)
5"	(127.0)	5/16" (7.9)	5/8" (15.9)	125	(56.7)	458	(207.8)
6"	(152.4)	1/4" (6.3)	3/4" (19.0)	134	(60.8)	486	(220.5)
7"	(177.8)	7/16" (11.1)	7/8" (22.2)	143	(64.9)	514	(233.2)
8"	(203.2)	7/16" (11.1)	7/8" (22.2)	152	(69.0)	543	(246.3)
9"	(228.6)	9/16" (14.3)	1" (25.4)	160	(72.6)	571	(259.0)
10"	(254.0)	5/8" (15.9)	1" (25.4)	169	(76.7)	599	(271.8)
12"	(304.8)	5/8" (15.9)	1 1/4" (31.7)	187	(84.8)	656	(297.6)



B3040 - Adjustable Beam Clamp (TOLCO Fig. 336)

Size Range: 3/8"-16 thru 3/4"-10 rod

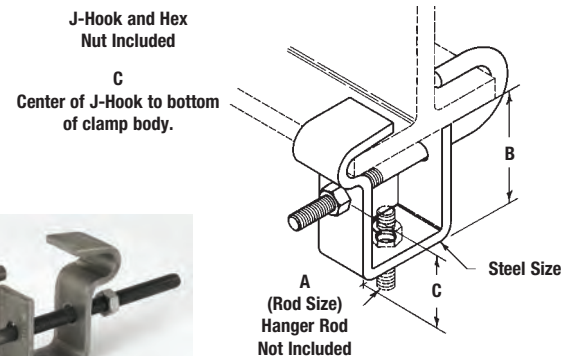
Material: Steel

Function: Fits structural I-Beams and wide flange beams, flange widths 3 1/2" (88.9mm) to 8" (203.2mm), thickness up to 1/2" (12.7mm).

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 54, and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 27.

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

Order By: Part number and finish



Part No.	Rod Size A	B in. (mm)	C in. (mm)	Steel Size in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3040-3/8	3/8"-16	2 3/4" (69.8)	1 3/16" (46.0)	1/4" x 1 1/4" (6.3 x 31.7)	300 (1.33)	120 (54.4)
B3040-1/2	1/2"-13	2 3/4" (69.8)	1 3/4" (44.4)	1/4" x 1 1/2" (6.3 x 38.1)	700 (3.11)	160 (72.6)
B3040-5/8	5/8"-11	3" (76.2)	1 3/4" (44.4)	1/4" x 1 3/4" (6.3 x 44.4)	1000 (4.45)	216 (98.0)
B3040-3/4	3/4"-10	3 3/8" (85.7)	1 7/8" (47.6)	3/8" x 2 1/2" (9.5 x 63.5)	1800 (8.00)	442 (200.5)

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

Beam Clamps

B3055 - Steel Beam Clamp

Size Range: 3/8"-16 thru 1"-8 rod

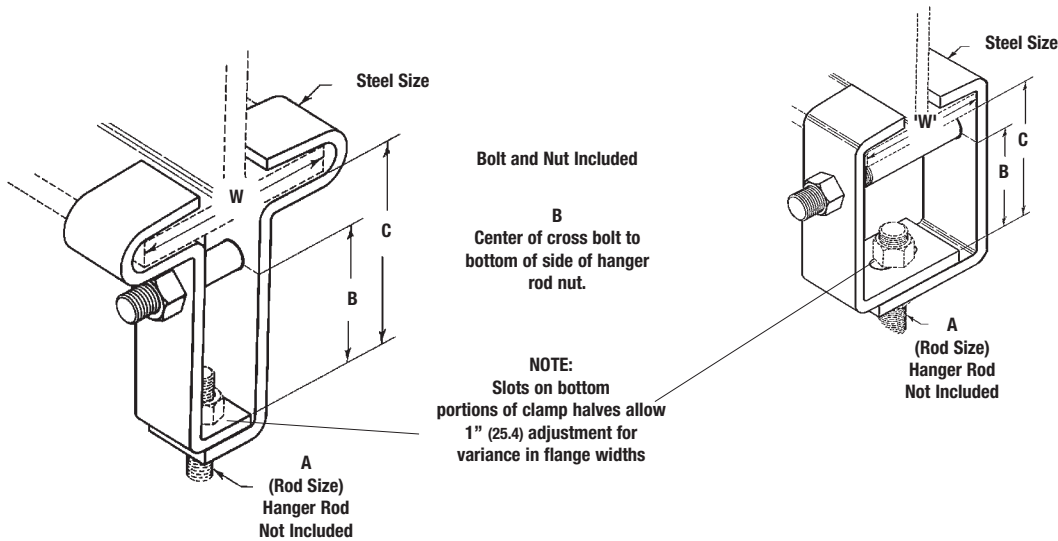
Material: Steel

Function: Designed for attaching a hanger rod to be centered under beam flanges. 2" (50.8mm) vertical adjustment is provided in the clamp.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 21 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 21.

Finish: Plain or Electro-Galvanized

Order By: Part number, flange width, and finish.



Note:
Box Style
Furnished For

B3055-3/8 x 2"
B3055-3/8 x 3"
B3055-3/8 x 4"
B3055-1/2 x 2"
B3055-1/2 x 3"
B3055-1/2 x 4"
B3055-5/8 x 2"
B3055-5/8 x 3"
B3055-5/8 x 4"
B3055-3/4 x 2"
B3055-3/4 x 3"
B3055-3/4 x 4"
B3055-7/8 x 3"
B3055-7/8 x 4"
B3055-7/8 x 5"
B3055-1 x 3"
B3055-1 x 4"
B3055-1 x 5"
B3055-1 x 6"
B3055-1 1/8 x 4"
B3055-1 1/8 x 5"
B3055-1 1/8 x 6"
B3055-1 1/8 x 7"
B3055-1 1/4 x 4"
B3055-1 1/4 x 5"
B3055-1 1/4 x 6"
B3055-1 1/4 x 7"

Part No.	Rod Size A	in.	B (mm)	in.	C (mm)	Steel Size in. (mm)	Design Load Lbs. (kN)
B3055-3/8	3/8"-16	3"	(76.2)	4"	(101.6)	1/4" x 1 1/4" (6.3 x 31.7)	550 (2.44)
B3055-1/2	1/2"-13	3"	(76.2)	4"	(101.6)	1/4" x 1 1/2" (6.3 x 38.1)	850 (3.78)
B3055-5/8	5/8"-11	3 1/4"	(82.5)	4 1/2"	(114.3)	3/8" x 1 1/2" (9.5 x 38.1)	1100 (4.89)
B3055-3/4	3/4"-10	3 1/4"	(82.5)	4 1/2"	(114.3)	3/8" x 2" (9.5 x 50.8)	1500 (6.67)
B3055-7/8	7/8"-9	3 1/2"	(88.9)	5"	(127.0)	1/2" x 2" (12.7 x 50.8)	2600 (11.56)
B3055-1	1"-8	3 1/2"	(88.9)	5 1/2"	(139.7)	1/2" x 2 1/2" (12.7 x 63.5)	4300 (19.12)

Flange Width W		Approximate Wt./100 For Beam Clamp Size Lbs. (kg)											
		B3055- ³ / ₈ "		B3055- ¹ / ₂ "		B3055- ⁵ / ₈ "		B3055- ³ / ₄ "		B3055- ⁷ / ₈ "		B3055-1"	
in.	(mm)												
4"	(101.6)	168	(76.2)	201	(91.2)	328	(148.8)	434	(196.8)	657	(298.0)	797	(361.5)
5"	(127.0)	181	(82.1)	217	(98.4)	352	(159.6)	466	(211.4)	667	(302.5)	824	(373.7)
6"	(152.4)	193	(87.5)	231	(104.8)	373	(169.2)	495	(224.5)	705	(319.8)	877	(397.8)
7"	(177.8)	205	(93.0)	246	(111.6)	395	(179.2)	525	(238.1)	744	(337.5)	926	(420.0)
8"	(203.2)	214	(97.1)	256	(116.1)	411	(186.4)	546	(247.6)	773	(350.6)	962	(436.3)
10"	(254.0)	235	(106.6)	282	(127.9)	449	(203.6)	596	(270.3)	840	(381.0)	1046	(474.4)
12"	(304.8)	259	(117.5)	311	(141.0)	493	(223.6)	655	(297.1)	918	(416.4)	1143	(518.4)

B3054 - Malleable Iron Beam Clamp With Extension

B3054W0 - Malleable Iron Beam Clamp Without Extension (TOLCO Fig. 329)

Size Range: 3/8"-16 thru 7/8"-9 rod

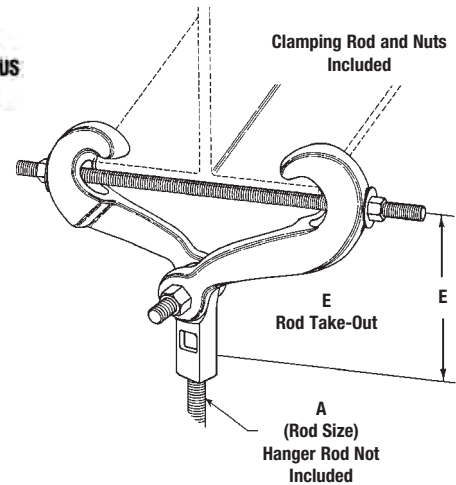
Material: Malleable Iron

Function: Designed for attaching a hanger rod to the bottom flange of a beam. Adjustable for flange widths of 3" (76.2mm) to 7" (177.8mm) and a flange thickness of no greater than 5/8" (15.9mm).

Approvals: Underwriters Laboratories Listed. Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 30 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 30.

Finish: Plain or Electro-Galvanized

Ordering: Part number and finish



B3054W0



B3054-Rod Size

Part No.	Rod Size A	Rod Take Out 'E' For Beam Flange Width Of									
		3" (76.2)		4" (101.6)		5" (127.0)		6" (152.4)		7" (177.8)	
B3054-3/8	3/8"-16	4 11/16"	(119.1)	4 9/16"	(115.9)	4 5/8"	(117.5)	4"	(101.6)	3 1/8"	(79.4)
B3054-1/2	1/2"-13	4 13/16"	(122.2)	4 1/2"	(114.3)	4 5/16"	(109.5)	3 15/16"	(100.0)	3 1/4"	(82.5)
B3054-5/8	5/8"-11	4 7/8"	(123.8)	4 5/8"	(117.5)	4 3/8"	(111.1)	3 3/4"	(95.2)	3 5/16"	(84.1)
B3054-3/4	3/4"-10	5 1/8"	(130.2)	5"	(127.0)	4 5/8"	(117.5)	4 1/4"	(107.9)	3 3/4"	(95.2)
B3054-7/8	7/8"-9	5 3/16"	(131.8)	4 7/8"	(123.8)	4 11/16"	(119.1)	4 5/16"	(109.5)	3 3/4"	(95.2)

Part No.	Design Load		Max. Iron Pipe Size Per UL		Approx. Wt./100	
	Lbs.	(kN)	in.	(mm)	Lbs.	(kg)
B3054-3/8	730	(3.25)	4"	(100)	236	(107.0)
B3054-1/2	1350	(6.00)	8"	(200)	254	(115.2)
B3054-5/8	1365	(6.07)	10"	(250)	260	(117.9)
B3054-3/4	1365	(6.07)	10"	(250)	278	(126.1)
B3054-7/8	1365	(6.07)	10"	(250)	292	(132.4)

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

Beam Clamps

B3291, B3292, B3293, B3294, B3295, B3296, B3297, B3298

UFS Beam Clamp With Weldless Eye Nut

Available with left hand threads by adding an L to part number Example: B3291L-*

Size Range: 3/8"-16 thru 2"-4 1/2 rod

Material: Forged Steel

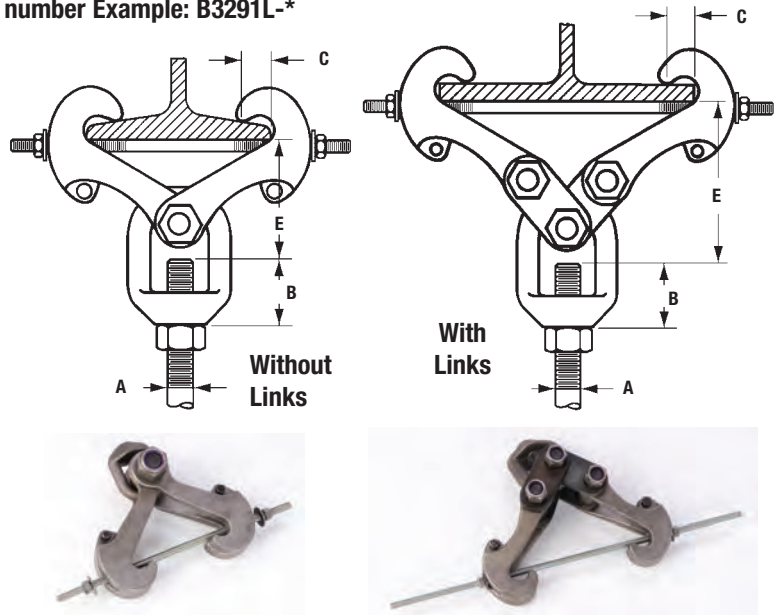
Function: Designed for attaching a hanger rod to the bottom flange of a beam. Adjustable from flange widths of 3" (76.2mm) to 15" (381.0mm). and flange thickness of no greater than 1 1/32" (26.2mm).

Approvals: Complies with Federal Specification WW-H-171E & A-A-1192A (Type 28 without links; Type 29 with links.) and ANSI/MSS SP-58 (Type 28 without links; Type 29 with links).

Finish: Plain or Electro-Galvanized

Order By: Part number, rod size and finish.

Note: Design load for B3291 thru B3295 based on maximum rod size shown. Use the appropriate all threaded rod design load shown on page 300 for sizes less than maximum.



Part No. *Rod Size	Maximum Beam Flange Thickness		Rod Size A (Specify) *	B		C		Design Load		Approx. Wt./100	
	In.	(mm)		In.	(mm)	In.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3291-*	.60	(15.2)	3/8"-16, 1/2"-13, 5/8"-11, 3/4"-10	1 1/4"	(31.7)	1 1/8"	(28.6)	3230	(14.36)	390	(176.9)
B3292-*	.60	(15.2)	7/8"-9, 1"-8	1 11/16"	(42.9)	1 1/8"	(28.6)	5900	(26.24)	915	(415.0)
B3293-* Δ	.60	(15.2)	3/8"-16, 1/2"-13, 5/8"-11, 3/4"-10, 7/8"-9, 1"-8	1 11/16"	(42.9)	1 1/8"	(28.6)	5900	(26.24)	1300	(589.6)
B3294-*	1.031	(26.2)	7/8"-9, 1"-8	1 1/2"	(38.1)	1 1/8"	(28.6)	5900	(26.24)	2165	(982.0)
B3295-* Δ	1.031	(26.2)	7/8"-9, 1"-8	1 1/2"	(38.1)	1 1/8"	(28.6)	5900	(26.24)	3385	(1535.4)
B3296-*	1.031	(26.2)	1"-8, 1 1/8"-7, 1 1/4"-7, 1 1/2"-6	2 1/8"	(54.0)	1 1/8"	(28.6)	11500	(51.15)	2390	(1084.1)
B3297-* Δ	1.031	(26.2)	1 1/8"-7, 1 1/4"-7, 1 1/2"-6	2 1/8"	(54.0)	1 1/8"	(28.6)	11500	(51.15)	3575	(1621.6)
B3298-*	1.031	(26.2)	1 3/4"-5, 2"-4 1/2	4 9/16"	(115.9)	1 1/8"	(28.6)	11500	(51.15)	3675	(1666.9)

Part No.	'E' Rod Take-Out For Flange Width												
	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	14"	15"
B3291-*	4 1/2"	5 5/16"	4 1/16"	3 5/8"	2 7/8"	--	--	--	--	--	--	--	--
B3292-*	--	4 3/4"	4 7/16"	4 1/16"	3 3/8"	--	--	--	--	--	--	--	--
B3293-* Δ	--	--	--	--	5 15/16"	6"	5 5/16"	5"	--	--	--	--	--
B3294-*	--	6 13/16"	6 5/8"	6 3/8"	5 7/8"	5 7/8"	5 3/8"	4 13/16"	--	--	--	--	--
B3295-* Δ	--	--	--	--	--	--	--	--	8 1/8"	7 3/4"	7 1/8"	6 5/8"	6 1/16"
B3296-*	--	7 3/16"	7"	6 3/4"	6 1/4"	6 5/16"	5 13/16"	5 3/16"	--	--	--	--	--
B3297-* Δ	--	--	--	--	--	--	--	--	8 1/2"	8 1/8"	7 1/2"	7"	6 7/16"
B3298-*	--	8 3/8"	8 7/16"	8 3/16"	7 3/4"	7 3/4"	7 1/4"	6 5/8"	--	--	--	--	--

To determine (mm) in the above chart, multiply inches by 25.4.

* Rod Size required to finish part number (see Rod Size 'A' in top chart).

Δ These part numbers are furnished with links.

B3042 - Top Beam Hook (TOLCO Fig. 61)

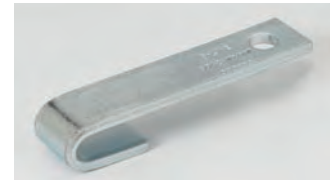
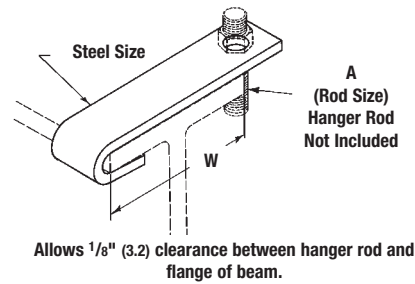
Size Range: 3/8"-16 and 1/2"-13 rod

Material: Steel

Function: Designed for attaching hanger rod to the top flange of a beam or angle truss. The support rod completes assembly and secures it to the flange.

Finish: Plain or Electro-Galvanized

Order By: Part number flange width, flange thickness and finish.



Part No.	A	For Pipe Size		Design Load	
		in.	(mm)	Lbs.	(kN)
B3042-3/8	3/8"-16	3/4"-2"	(20-50)	300	(1.33)
B3042-1/2	1/2"-13	2 1/2"-3 1/2"	(65-90)	500	(2.22)

Part No.	Approximate Wt./100 Lbs. (kg) For Width of Beam Flange 'W'							
	4" (101.6)	6" (152.4)	8" (203.2)	12" (304.8)				
B3042-3/8	47	(21.3)	62	(28.1)	72	(32.6)	108	(49.0)
B3042-1/2	65	(29.5)	86	(39.0)	105	(47.6)	146	(66.2)

B3045 - Side Beam Clamp (TOLCO Fig. 335)

Size Range: 3/8"-16 thru 7/8"-9 rods
3" (76.2mm) thru 9" (228.6mm) flange widths

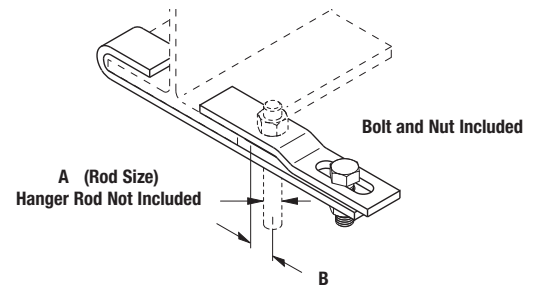
Material: Steel

Function: Designed for attaching hanger rod to the side of a beam flange. Works on top or bottom of beam.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 53 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 25.

Finish: Plain or Electro-Galvanized

Order By: Part number, flange width and thickness, and finish.



Part No.	Rod Size A	B		Flange Width		Design Load	
		in.	(mm)	in.	(mm)	Lbs.	(kN)
B3045-3/8	3/8"-16	2 1/16"	(52.4)	3" - 9"	(76.2 - 228.6)	300	(1.33)
B3045-1/2	1/2"-13	2 5/16"	(58.7)	3" - 9"	(76.2 - 228.6)	500	(2.22)
B3045-5/8	5/8"-11	2 7/16"	(61.9)	3" - 9"	(76.2 - 228.6)	700	(3.11)
B3045-3/4	5/8"-11	2 7/8"	(73.0)	3" - 9"	(76.2 - 228.6)	800	(3.55)
B3045-7/8	5/8"-11	3"	(76.2)	3" - 9"	(76.2 - 228.6)	1200	(5.33)

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

Beam Clamps

B3042T - Bar Joist Hanger (TOLCO Fig. 61T)

Size Range: 3/8"-16 and 1/2"-13 rod

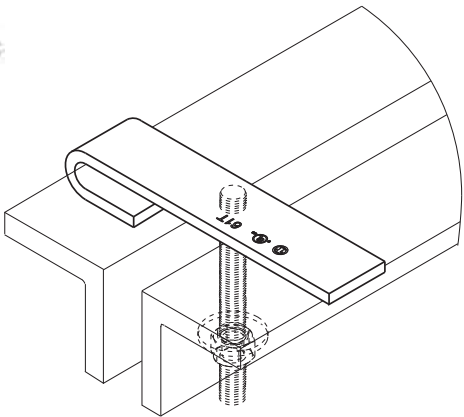
Material: Steel

Function: Designed to hook on top chord of metal bar joist. Hanger rod is threaded into product and secured with a washer and nut.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL) for up to 4" (100mm) pipe with 3/8"-16 rod, up to 6" (150mm) pipe with 1/2"-13 rod.

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

Order By: Part number, width and thickness of bar joist, and finish.



Part No.	Rod Size Size	For Pipe Size in. (mm)		Design Load Lbs. (kN)		Approx. Wt./100 Lbs. (kg)	
B3042T-3/8	3/8"-16	Up to 4"	(up to 100)	300	(1.33)	50.6	(22.9)
B3042T-1/2	1/2"-13	6"	(150)	600	(2.67)	50.0	(22.7)

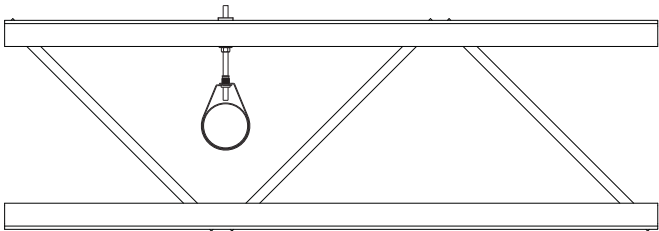
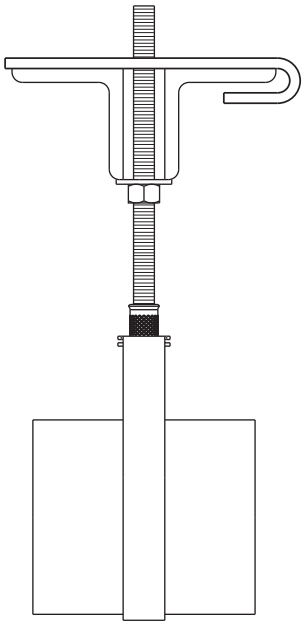


Fig. 130 - Trus Joist Beam Clamp (B-Line Fig. B3052)

Size Range: 130-1 = TJI 35
 130-2 = —
 130-3 = TJI 25
 130-4 = TJI 55 & 65
 130-5 = TJI 75
 130-6 = TJI 96

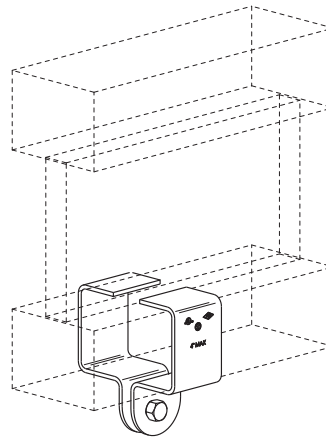
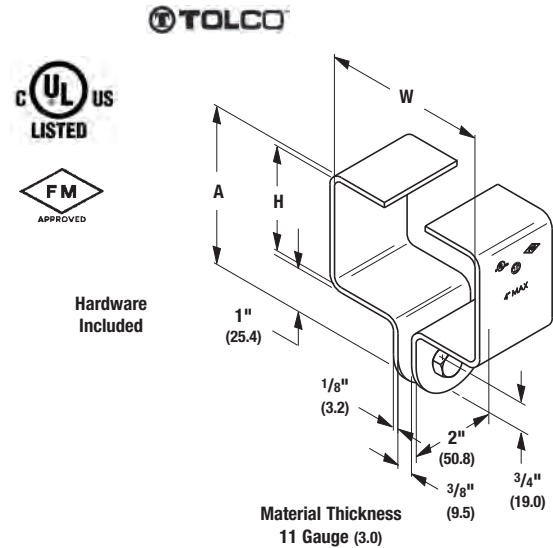
Material: Steel

Function: Designed for attachment to trus joist beams.
 Use with B3210 Series eye rods.

Approvals: Sizes 1 - 6 are Underwriters Laboratories Listed in the USA (**UL**) and Canada (**cUL**) list through 4" (100mm) pipe. All Fig. 130 Beam Clamps meet requirements of Factory Mutual Engineering and NFPA 13, through 4" (100mm) pipe.

Finish: Electro-Galvanized or Hot-Dip Galvanized

Order By: Part number and finish.



Part No.	Hardware Size	A in. (mm)	H in. (mm)	W in. (mm)	Approx. Wt./100 Lbs. (kg)
130-1	3/8"-16	3 1/4" (82.5)	1 1/2" (38.1)	2 5/16" (58.7)	65 (29.5)
130-2	3/8"-16	3 1/2" (88.9)	1 3/4" (44.4)	2 1/2" (63.5)	70 (31.7)
130-3	3/8"-16	3 1/4" (82.5)	1 1/2" (38.1)	1 3/4" (44.4)	58 (26.3)
130-4	3/8"-16	3 1/2" (88.9)	1 1/2" (38.1)	3 1/2" (88.9)	83 (37.6)
130-5†	1/2"-13	3 5/8" (92.1)	1 3/4" (44.4)	3 1/2" (88.9)	86 (39.0)
130-6†	1/2"-13	4 1/2" (114.3)	2 1/2" (63.5)	3 7/8" (98.4)	101 (45.8)

‘H’ and ‘W’ are beam dimensions.

* Maximum Recommended Load 500 Lbs. (2.22kN) Safety Factor of 5

† Larger bolts and I-rods are required for 5" (125mm) and 6" (150mm) pipe sizes

Pipe Hangers



Pipe hangers offered in this section are designed to support insulated or non-insulated pipe allowing for vertical adjustment and limited movement in the piping system.

Materials

Carbon Steel, Malleable Iron and AISI Type 304 & 316 Stainless Steel are used in the manufacturing of pipe hangers. Other materials are available.

Finishes

The standard finishes for mechanical supports are plain steel (oil coated) sometimes referred to as black, Electro-Galvanized Zinc (ASTM B633 SC3), Pre-Galvanized (ASTM A653 G90), Hot-Dip Galvanized After Fabrication (ASTM A123), Red Primer, Plastic Coating, DURA-GREEN™, DURA-COPPER™ and other special coatings are available upon request.

Note: Due to the design of some products, (threads, connecting hardware, swivels, etc.) items may or may not be uniformly coated with special finishes i.e. Hot-Dip Galvanized, DURA-GREEN, DURA-COPPER, PVC etc. In some cases, the hanger itself may be coated, however, the hardware may be supplied Electro-Plated, DURA-COPPER Painted or Stainless Steel. Consult B-Line Systems for availability.

Approvals (as noted)

Items in this section are Underwriters Laboratories Listed, Factory Mutual Approved, and comply with Federal Specification WW-H-171E & A-A-1192A or Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58. Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD)

Fig. 1CBS - Clevis Pipe Spacer (Cooper B-Line B3100PS)

Size Range: Size 1" (25mm) thru 20" (500mm) clevis hanger

Material: Steel

Function: Used as a spacer at a seismic brace location to keep clevis hanger from collapsing during seismic event.

Approvals: Included in our Seismic Restraints Catalog 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 the Seismic Restraint Systems Guidelines.

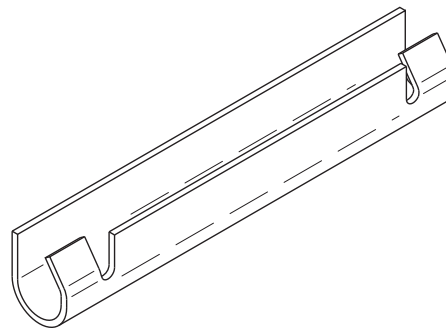
Installation Note: Fig. 1CBS fits easily over the cross bolt and attaches by pinching tabs down.

Finish: Pre-Galvanized. Contact B-Line for alternative finishes and materials.

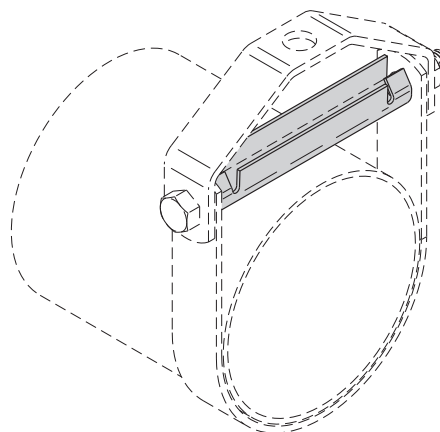
Order By: Part number and finish.



Component of State of California OSHPD Approved Seismic Restraints System



Part No.	Pipe Size		Approx. Wt./100	
	in.	(mm)	lbs.	(kg)
1CBS-1	1"	(25)	3.2	(1.4)
1CBS-1 ¹ / ₄	1 ¹ / ₄ "	(32)	4.1	(1.8)
1CBS-1 ¹ / ₂	1 ¹ / ₂ "	(40)	4.8	(2.2)
1CBS-2	2"	(50)	9.4	(4.2)
1CBS-2 ¹ / ₂	2 ¹ / ₂ "	(65)	11.4	(5.2)
1CBS-3	3"	(75)	13.9	(6.8)
1CBS-3 ¹ / ₂	3 ¹ / ₂ "	(90)	16.0	(7.2)
1CBS-4	4"	(100)	18.0	(8.1)
1CBS-5	5"	(125)	27.3	(12.4)
1CBS-6	6"	(150)	32.5	(14.7)
1CBS-8	8"	(200)	42.5	(19.2)
1CBS-10	10"	(250)	72.7	(32.9)
1CBS-12	12"	(300)	86.3	(39.1)
1CBS-14	14"	(350)	157.6	(71.5)
1CBS-16	16"	(400)	183.7	(83.3)
1CBS-18	18"	(450)	224.6	(101.9)
1CBS-20	20"	(500)	254.0	(115.2)



Pipe Hangers

B3100 - Standard Clevis Hanger (TOLCO Fig.1)

SLIDE-RITE™ Clevis Hanger Features

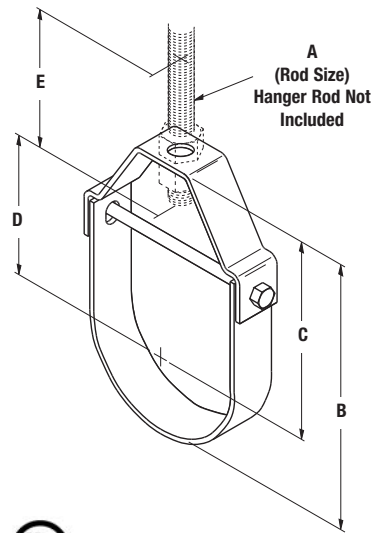
Pipe will not 'pinch' when installing.

15° swing in either direction allows pipe to easily feed thru.

Engineered design aligns bolt holes for quicker overhead installation.

*SLIDE-RITE™ Clevis Hanger design, as shown below, for sizes 2, 2½, 3, 4, 5 & 6.

Pat. No. 5,848,770
5,924,655



Component of State of California OSHPD Approved Seismic Restraints System

- B
Bottom of pipe to top of hanger.
- C
Center of pipe to top of hanger.
- D
Rod Take-Out
Center of pipe to bottom of hanger rod.
- E
Minimum thread length of hanger rod
- F
Adjustment
Top of cross bolt to bottom of hanger rod nut inside the hanger.



Part No.	Nominal Pipe Size		Rod Size A		B		C		D	
	in.	(mm)	Std	NFPA**	in.	(mm)	in.	(mm)	in.	(mm)
B3100-1½	1½"	(15)	¾"-16	¾"-16	2½"	(54.0)	1¾"	(44.4)	15/16"	(23.8)
B3100-¾	¾"	(20)	¾"-16	¾"-16	2½"	(63.5)	2"	(50.8)	1½"	(28.6)
B3100-1	1"	(25)	¾"-16	¾"-16	2⅞"	(73.0)	2¼"	(57.1)	1⅜"	(34.9)
B3100-1¼	1¼"	(32)	¾"-16	¾"-16	3½"	(88.9)	2⅞"	(68.2)	1⅜"	(46.0)
B3100-1½	1½"	(40)	¾"-16	¾"-16	4"	(101.6)	3⅞"	(77.8)	2¼"	(57.1)
B3100-2 *	2"	(50)	¾"-16	¾"-16	4½"	(114.3)	3⅞"	(84.1)	2½"	(63.5)
B3100-2½ *	2½"	(65)	1½"-13	¾"-16	5⅞"	(136.5)	3⅞"	(100.0)	3⅞"	(77.8)
B3100-3 *	3"	(80)	1½"-13	¾"-16	6½"	(165.1)	4¾"	(120.6)	3⅞"	(100.0)
B3100-3½	3½"	(90)	1½"-13	¾"-16	7¼"	(184.1)	5¼"	(133.3)	4⅞"	(103.2)
B3100-4 *	4"	(100)	5/8"-11	¾"-16	7¾"	(196.8)	5½"	(139.7)	5½"	(139.7)
B3100-5 *	5"	(125)	5/8"-11	1½"-13	8¾"	(222.2)	6⅞"	(155.6)	6"	(152.4)
B3100-6 *	6"	(150)	¾"-10	1½"-13	10⅞"	(261.9)	6⅞"	(176.2)	7"	(177.8)
B3100-8	8"	(200)	¾"-10	1½"-13	12¾"	(323.8)	8⅞"	(214.3)	7⅞"	(181.0)
B3100-10	10"	(250)	7/8"-9	5/8"-11	15⅞"	(384.2)	9¾"	(247.6)	8⅞"	(212.7)
B3100-12	12"	(300)	7/8"-9	5/8"-11	17½"	(444.5)	11⅞"	(282.6)	9⅞"	(246.1)
B3100-14	14"	(350)	1"-8	--	19⅞"	(492.1)	12⅞"	(314.3)	10⅞"	(269.9)
B3100-16	16"	(400)	1"-8	--	21⅞"	(542.9)	13⅞"	(339.7)	11⅞"	(293.7)
B3100-18	18"	(450)	1"-8	--	25"	(635.0)	16"	(406.4)	14⅞"	(360.3)
B3100-20	20"	(500)	1¼"-7	--	28¾"	(730.2)	17¾"	(450.8)	16⅞"	(422.3)
B3100-24	24"	(600)	1¼"-7	--	32¾"	(831.8)	19¾"	(501.6)	18⅞"	(473.1)
B3100-30	30"	(750)	1¼"-7	--	39⅞"	(1014.4)	24⅞"	(633.4)	22¾"	(577.8)
B3100-36	36"	(900)	1¼"-7	--	46"	(1168.4)	28"	(711.2)	25"	(635.0)

B3100 - Standard Clevis Hanger (TOLCO Fig.1)

Component of State of
California OSHPD Approved
Seismic Restraints System

Size Range: 1/2" (15mm) to 36" (900mm)

Material: Steel

Function: Recommended for the suspension of non-insulated pipe or insulated pipe with a B3151 shield.

Note: When an oversized clevis is used, a pipe spacer should be placed over the cross bolt to assure that the lower U-strap will not move in on the bolt. When attaching seismic bracing to the clevis hangers, a B3100PS (cross bolt spacer) must be installed. See Seismic Restraints Approval Guidelines.

Order pipe sleeves Fig. 1CBS-(pipe size) separately.

Approvals: Included in our Seismic Restraints Catalog 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 the B-Line/TOLCO Seismic Restraint Systems Guidelines. Underwriter's Laboratories Listed in the USA (UL) and Canada (cUL) for sizes 3/4" (20mm) thru 12" (300mm). Factory Mutual Engineering Approved (FM) for 3/4" (20mm) thru 12" (300mm) pipe. Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 1 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 1. Also available to accommodate rod schedule per per National Fire Protection Association (NFPA) Pamphlet 13.

Maximum Temperature: 650°F (343°C).

Standard Finish: Plain, Electro-Galvanized, DURA-GREEN™, or Hot-Dip Galvanized also available in Stainless Steel



Order By: Part number and finish.

For AWWA - Ductile Iron Clevis Hangers, see B3102, page 51.

**** Note:** Do not use the dimensions shown in the B3100 chart for NFPA hanger sizes. Contact B-Line for NFPA rod sizing on 1/2" (15mm) thru 12" (300mm) pipe. Part numbers will be 1NFPA-pipe size.

Part No.	E		Adjustment F		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3100-1/2	2 1/2"	(63.5)	7/16"	(11.1)	730	(3.25)	25	(11.3)
B3100-3/4	2 1/2"	(63.5)	1/2"	(12.7)	730	(3.25)	29	(13.1)
B3100-1	2 1/2"	(63.5)	5/8"	(15.9)	730	(3.25)	35	(15.9)
B3100-1 1/4	2 1/2"	(63.5)	7/8"	(22.2)	730	(3.25)	40	(18.1)
B3100-1 1/2	2 1/2"	(63.5)	1 3/16"	(30.2)	730	(3.25)	42	(19.0)
B3100-2 *	2 1/2"	(63.5)	1 5/8"	(41.3)	730	(3.25)	52	(23.6)
B3100-2 1/2 *	2 1/2"	(63.5)	2"	(50.8)	1350	(6.00)	90	(40.8)
B3100-3 *	2 1/2"	(63.5)	2"	(50.8)	1350	(6.00)	110	(49.9)
B3100-3 1/2	2 1/2"	(63.5)	2"	(50.8)	1350	(6.00)	142	(64.4)
B3100-4 *	2 1/2"	(63.5)	2"	(50.8)	1430	(6.36)	132	(59.9)
B3100-5 *	2 1/2"	(63.5)	2"	(50.8)	1430	(6.36)	215	(97.5)
B3100-6 *	3"	(76.2)	2"	(50.8)	1940	(8.63)	320	(145.1)
B3100-8	3 1/2"	(88.9)	2 5/16"	(58.7)	2000	(8.89)	485	(220.0)
B3100-10	3 1/2"	(88.9)	2 5/16"	(58.7)	3600	(16.01)	846	(383.7)
B3100-12	3 1/2"	(88.9)	2 5/8"	(66.7)	3800	(16.90)	1083	(491.2)
B3100-14	4"	(101.6)	2 7/8"	(73.0)	4200	(18.68)	1432	(649.5)
B3100-16	4"	(101.6)	2 11/16"	(68.3)	4600	(20.46)	2200	(997.9)
B3100-18	4 1/2"	(114.3)	3 15/16"	(100.0)	4800	(21.35)	2500	(1134.0)
B3100-20	5"	(127.0)	5 3/8"	(136.5)	4800	(21.35)	4400	(1995.8)
B3100-24	5"	(127.0)	5 3/8"	(136.5)	4800	(21.35)	5000	(2268.0)
B3100-30	5"	(127.0)	6 1/4"	(158.7)	6000	(26.69)	6600	(2993.7)
B3100-36	5"	(127.0)	5 7/16"	(138.1)	6000	(26.69)	8474	(3843.8)

*SLIDE-RITE™ Clevis Hanger design, as shown above, for sizes 2, 2 1/2, 3, 4, 5 & 6.

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

Pipe Hangers

B3102 - A.W.W.A. Clevis Hanger (TOLCO Fig.1C1)

Size Range: 4" (100mm) to 24" (600mm)

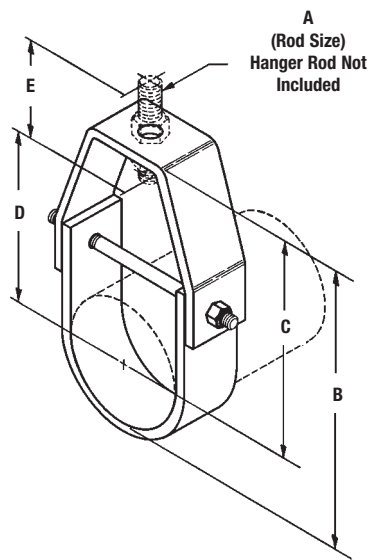
Material: Steel

Function: Recommended for the suspension of flanged or bell and spigot A.W.W.A. cast iron or ductile iron pipe. The O.D. of the A.W.W.A. iron pipe is shown in the data table.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 1 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 1.

Standard Finish: Plain & Electro-Galvanized.
Contact B-Line for alternative finishes and materials.

Order By: Part number and finish.



- B
Bottom of pipe to top of hanger.
- C
Center of pipe to top of hanger.
- D
Rod Take-Out
Center of pipe to bottom of hanger rod.
- E
Minimum thread-out length of hanger rod
- F
Adjustment
Top of cross bolt to bottom of hanger rod nut inside the hanger.



Part No.	Pipe O.D.		Rod Size A	B		C		D		E		F		Design Load		Approx. Wt./100	
	in.	(mm)		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3102-4	4.80	(121.9)	5/8"-11	8 ⁵ / ₁₆ "	(211.1)	5 ¹³ / ₁₆ "	(147.6)	4 ⁵ / ₈ "	(117.5)	2 ¹ / ₂ "	(63.5)	2"	(50.8)	1430	(6.36)	203	(92.1)
B3102-6	6.90	(175.2)	3/4"-10	10 ⁵ / ₈ "	(269.9)	7 ¹ / ₁₆ "	(179.4)	5 ¹³ / ₁₆ "	(147.6)	3"	(76.2)	2"	(50.8)	1940	(8.63)	352	(159.6)
B3102-8	9.05	(229.9)	3/4"-10	13 ¹ / ₄ "	(336.5)	8 ⁵ / ₈ "	(219.1)	7 ³ / ₁₆ "	(182.5)	3 ¹ / ₂ "	(88.9)	2 ¹ / ₈ "	(54.0)	2000	(8.89)	532	(241.3)
B3102-10	11.10	(281.9)	7/8"-9	15 ⁷ / ₈ "	(403.2)	10 ¹ / ₄ "	(260.3)	8 ¹¹ / ₁₆ "	(220.6)	3 ¹ / ₂ "	(88.9)	2 ¹ / ₄ "	(57.1)	3600	(16.01)	800	(362.9)
B3102-12	13.20	(335.3)	7/8"-9	18"	(457.2)	11 ⁵ / ₁₆ "	(287.3)	9 ³ / ₄ "	(247.6)	3 ¹ / ₂ "	(88.9)	2 ¹ / ₄ "	(57.1)	3800	(16.90)	1152	(522.5)
B3102-14	15.30	(388.6)	1"-8	20 ³ / ₈ "	(517.5)	12 ⁵ / ₈ "	(320.7)	11 ³ / ₁₆ "	(281.6)	4"	(101.6)	2 ⁷ / ₈ "	(73.0)	4200	(18.68)	1449	(657.2)
B3102-16	17.40	(441.9)	1"-8	23 ¹ / ₂ "	(569.9)	14 ¹¹ / ₁₆ "	(373.1)	12 ⁷ / ₈ "	(327.0)	4"	(101.6)	3 ³ / ₈ "	(85.7)	4600	(20.46)	2100	(952.6)
B3102-18	19.50	(495.3)	1"-8	25 ⁵ / ₈ "	(650.9)	15 ³ / ₄ "	(400.0)	13 ¹⁵ / ₁₆ "	(354.0)	4 ¹ / ₂ "	(114.3)	3 ³ / ₈ "	(85.7)	4800	(21.35)	2294	(1040.5)
B3102-20	21.60	(548.6)	1 ¹ / ₄ "-7	29 ¹ / ₂ "	(749.3)	18 ⁹ / ₁₆ "	(471.5)	17 ⁷ / ₁₆ "	(442.9)	5"	(127.0)	4 ¹³ / ₁₆ "	(122.2)	4800	(21.35)	3887	(1763.1)
B3102-24	25.80	(655.3)	1 ¹ / ₄ "-7	33"	(838.2)	19 ¹ / ₈ "	(508.0)	20"	(485.8)	5"	(127.0)	5 ¹ / ₄ "	(133.3)	4800	(21.35)	4844	(2197.2)

B3108 - Extended Clevis Hanger (TOLCO Fig.1A)

Size Range: 3/4" (20mm) thru 12" (300mm) pipe

Material: Steel

Function: Recommended for the suspension of insulated pipe where the temperature does not require the use of slides, guides, or rollers for movement.

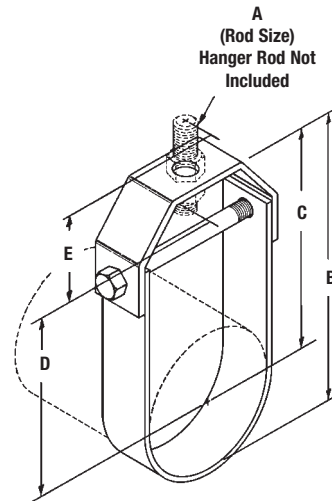
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 1 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 1.

Maximum Temperature: 650°F (343°C).

Order By: Part number and finish. For service For Stainless Steel add SS to part number.

Standard Finish: Plain, Electro-Galvanized or Hot Dip Galvanized

For service temperatures of 750°F (399°C) thru 1050°F (565°C) specify Type 304 Stainless Steel



- B
Bottom of pipe to top of hanger.
- C
Center of pipe to top of hanger.
- D
Rod Take-Out
Center of pipe to bottom of
hanger rod.
- E
Minimum thread length of
hanger rod.
- F
Adjustment
Top of cross bolt to bottom of
hanger rod nut inside the hanger.
- H
Maximum insulation thickness.

Part No.	Nominal Pipe Size		Rod Size A	B		C		D	
	in.	(mm)		in.	(mm)	in.	(mm)	in.	(mm)
B3108-3/4	3/4"	(20)	3/8"-16	4 3/8"	(111.1)	3 13/16"	(96.8)	3 1/16"	(77.8)
B3108-1	1"	(25)	3/8"-16	4 3/4"	(120.6)	4 1/16"	(103.2)	3 1/4"	(82.5)
B3108-1 1/4	1 1/4"	(32)	3/8"-16	5 3/8"	(136.5)	4 1/2"	(114.3)	3 5/16"	(84.1)
B3108-1 1/2	1 1/2"	(40)	3/8"-16	6 7/8"	(174.6)	5 15/16"	(150.8)	5 1/8"	(130.2)
B3108-2	2"	(50)	3/8"-16	8 13/16"	(223.8)	7 5/8"	(193.7)	6 7/8"	(174.6)
B3108-2 1/2	2 1/2"	(65)	1/2"-13	10"	(254.0)	8 1/2"	(215.9)	7 9/16"	(192.1)
B3108-3	3"	(80)	1/2"-13	10 5/8"	(269.9)	8 13/16"	(223.8)	7 7/8"	(200.0)
B3108-4	4"	(100)	5/8"-11	11 13/16"	(300.0)	9 1/2"	(241.3)	8 3/8"	(212.7)
B3108-5	5"	(125)	5/8"-11	13 1/8"	(333.4)	10 5/16"	(261.9)	9 1/8"	(231.8)
B3108-6	6"	(150)	3/4"-10	14 3/8"	(365.1)	11"	(279.5)	9 11/16"	(246.0)
B3108-8	8"	(200)	3/4"-10	16 3/4"	(425.4)	12 3/8"	(314.3)	11 1/8"	(282.6)
B3108-10	10"	(250)	7/8"-9	19 1/4"	(488.9)	13 13/16"	(350.8)	12 5/16"	(312.7)
B3108-12	12"	(300)	7/8"-9	21 5/8"	(549.3)	15 3/16"	(385.8)	13 5/8"	(346.1)



Part No.	E		F		H		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kN)	lbs.	(kg)
B3108-3/4	2 1/2"	(63.5)	1/2"	(12.7)	2"	(50.8)	730	(3.25)	45	(20.4)
B3108-1	2 1/2"	(63.5)	5/8"	(15.9)	2"	(50.8)	730	(3.25)	49	(22.2)
B3108-1 1/4	2 1/2"	(63.5)	7/8"	(22.2)	2"	(50.8)	730	(3.25)	55	(24.9)
B3108-1 1/2	2 1/2"	(63.5)	1 3/16"	(30.2)	2"	(50.8)	730	(3.25)	67	(30.4)
B3108-2	2 1/2"	(63.5)	1 5/8"	(41.3)	4"	(101.6)	730	(3.25)	83	(37.6)
B3108-2 1/2	2 1/2"	(63.5)	2"	(50.8)	4"	(101.6)	1350	(6.00)	177	(80.3)
B3108-3	2 1/2"	(63.5)	2"	(50.8)	4"	(101.6)	1350	(6.00)	191	(86.6)
B3108-4	2 1/2"	(63.5)	2"	(50.8)	4"	(101.6)	1430	(6.36)	237	(107.5)
B3108-5	2 1/2"	(63.5)	2"	(50.8)	4"	(101.6)	1430	(6.36)	302	(137.0)
B3108-6	3"	(76.2)	2"	(50.8)	4"	(101.6)	1940	(8.63)	397	(180.1)
B3108-8	3 1/2"	(88.9)	2 5/16"	(58.7)	4"	(101.6)	2000	(8.89)	582	(264.0)
B3108-10	3 1/2"	(88.9)	2 5/16"	(58.7)	4"	(101.6)	3600	(16.01)	968	(439.1)
B3108-12	3 1/2"	(88.9)	2 5/8"	(66.7)	4"	(101.6)	3800	(16.90)	1221	(553.8)

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

Pipe Hangers

B3100C - Standard Clevis Hanger - Plastic Coated (TOLCO Fig.1PVC)

B3100F - Standard Clevis Hanger - Felt Lined for Copper Tubing (TOLCO Fig.1F)

Size Range: 1/2" (15mm) to 8" (200mm) pipe

Material: Steel

Insulation Material: 3/16" (4.8mm) Felt

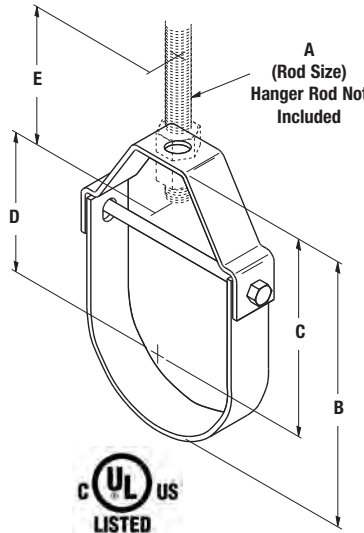
Service: The B3100F is designed for the suspension of copper tube so as to prevent electrolysis between tubing and hanger. The B3100C is designed for steel or other pipe types of the same O.D. Both B3100F and B3100C act to reduce noise and vibration in pipe or tubing systems.

Approvals: Underwriter's Laboratories Listed in the USA (UL) and Canada (cUL).

Maximum Temperature: 650°F (343°C).

Standard Finish: Plain, Electro-Galvanized, or Hot-Dip Galvanized. Contact B-Line for alternative finishes and materials.

Order By: Part number and finish.



- B Bottom of pipe to top of hanger.
- C Center of pipe to top of hanger.
- D Rod Take-Out
Center of pipe to bottom of hanger rod.
- E Minimum thread length of hanger rod
- F Adjustment
Top of cross bolt to bottom of hanger rod nut inside the hanger.

Part No.	Pipe Size		Rod Size A	B		C		D	
	in.	(mm)		in.	(mm)	in.	(mm)	in.	(mm)
B3100-1/2	1/2"	(15)	3/8"-16	2 1/8"	(54.0)	1 11/16"	(42.9)	15/16"	(23.8)
B3100-3/4	3/4"	(20)	3/8"-16	2 7/16"	(61.9)	1 7/8"	(47.6)	1 1/8"	(28.6)
B3100-1	1"	(25)	3/8"-16	2 13/16"	(71.4)	2 1/8"	(54.0)	1 3/8"	(34.9)
B3100-1 1/4	1 1/4"	(32)	3/8"-16	3 7/16"	(87.3)	2 9/16"	(65.1)	1 13/16"	(46.0)
B3100-1 1/2	1 1/2"	(40)	3/8"-16	4"	(101.6)	3"	(76.2)	2 1/4"	(57.1)
B3100-2	2"	(50)	3/8"-16	4 1/2"	(114.3)	3 1/4"	(82.5)	2 1/2"	(63.5)
B3100-2 1/2	2 1/2"	(65)	1/2"-13	5 9/16"	(141.3)	4"	(101.6)	3 1/16"	(77.8)
B3100-3	3"	(80)	1/2"-13	6 3/4"	(171.4)	4 7/8"	(123.8)	3 15/16"	(100.0)
B3100-3 1/2	3 1/2"	(90)	1/2"-13	7"	(177.8)	5"	(127.0)	4 1/16"	(103.2)
B3100-4	4"	(100)	5/8"-11	7 13/16"	(198.4)	5 1/2"	(139.7)	4 3/8"	(111.1)
B3100-5	5"	(125)	5/8"-11	9 1/16"	(230.2)	6 1/8"	(155.6)	5"	(127.0)
B3100-6	6"	(150)	3/4"-10	10 7/16"	(265.1)	6 15/16"	(176.2)	5 11/16"	(144.5)
B3100-8	8"	(200)	3/4"-10	12 3/4"	(323.8)	8 3/8"	(212.7)	7 1/8"	(181.0)

Part No.	E		Adjustment F		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3100-1/2	2 1/2"	(63.5)	7/16"	(11.1)	730	(3.25)	25	(11.3)
B3100-3/4	2 1/2"	(63.5)	1/2"	(12.7)	730	(3.25)	29	(13.1)
B3100-1	2 1/2"	(63.5)	5/8"	(15.9)	730	(3.25)	35	(15.9)
B3100-1 1/4	2 1/2"	(63.5)	7/8"	(22.2)	730	(3.25)	40	(18.1)
B3100-1 1/2	2 1/2"	(63.5)	1 3/16"	(30.2)	730	(3.25)	42	(19.0)
B3100-2	2 1/2"	(63.5)	1 5/8"	(41.3)	730	(3.25)	52	(23.6)
B3100-2 1/2	2 1/2"	(63.5)	2"	(50.8)	1350	(6.00)	90	(40.8)
B3100-3	2 1/2"	(63.5)	2"	(50.8)	1350	(6.00)	110	(49.9)
B3100-3 1/2	2 1/2"	(63.5)	2"	(50.8)	1350	(6.00)	142	(64.4)
B3100-4	2 1/2"	(63.5)	2"	(50.8)	1430	(6.36)	132	(59.9)
B3100-5	2 1/2"	(63.5)	2"	(50.8)	1430	(6.36)	215	(97.5)
B3100-6	3"	(76.2)	2"	(50.8)	1940	(8.63)	320	(145.1)
B3100-8	3 1/2"	(88.9)	2 5/16"	(58.7)	2000	(8.89)	485	(220.0)



B3100C



B3100F

B3690 - J-Hanger for Pipe or Conduit (TOLCO Fig. 3)

B3690F - Felt Lined J-Hanger for Copper Tubing (TOLCO Fig. 3F)

B3690C - PVC Coated J-Hanger for Pipe or Conduit (TOLCO Fig. 3PVC)

Size Range: 1/2" (15mm) to 10" (250mm) pipe size

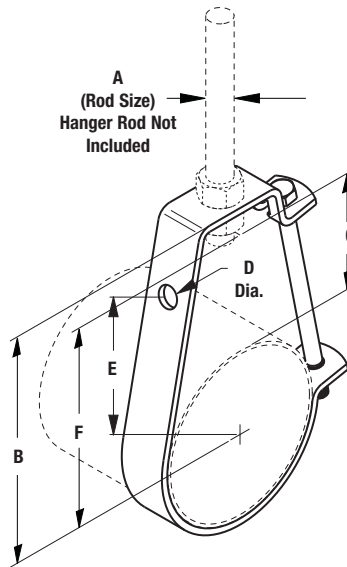
Material: Steel

Function: Recommended for the suspension of non-insulated pipe, or insulated pipe with B3151 shield. Side hole allows for wall mounting. B3690F and B3690C are designed to reduce noise and vibration and/or prevent electrolysis between pipe and hanger.

Approvals: Conforms Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 5.

Standard Finish: Electro-Plated. Contact B-Line for alternative finishes and materials.

Order By: Part number and finish.



B
Center of pipe to top of hanger.

F
Rod Take-Out
Center of pipe to bottom of
hanger rod.



B3690F



B3690C



Part No.	Pipe O.D. in. (mm)	Rod Size A	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3690-1/2	1/2" (15)	3/8"-16	2 5/8" (66.7)	1 3/4" (44.4)	7/16" (11.1)	1 1/2" (38.1)	1 15/16" (49.2)	400 (1.78)	18 (8.1)
B3690-3/4	3/4" (20)	3/8"-16	2 7/8" (73.0)	1 7/8" (47.6)	7/16" (11.1)	1 11/16" (42.9)	2 1/8" (54.0)	400 (1.78)	21 (9.5)
B3690-1	1" (25)	3/8"-16	2 15/16" (74.6)	1 15/16" (49.2)	7/16" (11.1)	1 13/16" (46.0)	2 5/16" (58.7)	400 (1.78)	22 (10.0)
B3690-1 1/4	1 1/4" (32)	3/8"-16	3 1/4" (82.5)	2" (50.8)	7/16" (11.1)	2 1/16" (52.4)	2 5/8" (66.7)	400 (1.78)	25 (11.3)
B3690-1 1/2	1 1/2" (40)	3/8"-16	3 9/16" (90.5)	2 3/16" (55.6)	7/16" (11.1)	2 7/16" (61.9)	2 7/8" (73.0)	400 (1.78)	27 (12.2)
B3690-2	2" (50)	3/8"-16	3 11/16" (93.7)	2 1/8" (54.0)	7/16" (11.1)	2 9/16" (65.1)	3 1/16" (77.8)	400 (1.78)	29 (13.1)
B3690-2 1/2	2 1/2" (65)	1/2"-13	4 7/16" (112.7)	2 7/16" (61.9)	9/16" (14.3)	3 3/16" (81.0)	3 5/8" (92.1)	500 (2.22)	64 (29.0)
B3690-3	3" (80)	1/2"-13	4 13/16" (122.2)	2 9/16" (65.1)	9/16" (14.3)	3 1/2" (88.9)	4 1/16" (103.2)	500 (2.22)	72 (32.6)
B3690-3 1/2	3 1/2" (90)	1/2"-13	5 1/8" (130.2)	2 5/8" (66.7)	9/16" (14.3)	3 3/4" (95.2)	4 3/8" (111.1)	500 (2.22)	84 (38.1)
B3690-4	4" (100)	5/8"-11	6 1/8" (155.6)	3 3/16" (81.0)	9/16" (14.3)	4 5/8" (117.5)	5 3/16" (131.8)	550 (2.44)	138 (62.6)
B3690-5	5" (125)	5/8"-11	6 3/4" (171.4)	3 1/4" (82.5)	9/16" (14.3)	5 1/16" (128.6)	5 3/4" (146.0)	550 (2.44)	162 (73.5)
B3690-6	6" (150)	3/4"-10	7 3/4" (196.8)	3 9/16" (90.5)	9/16" (14.3)	5 13/16" (147.6)	6 5/8" (168.3)	600 (2.67)	249 (112.9)
B3690-8	8" (200)	7/8"-9	9 3/16" (233.4)	3 15/16" (100.0)	9/16" (14.3)	6 15/16" (176.2)	8" (203.3)	760 (3.38)	291 (132.0)
B3690-10	10" (250)	7/8"-9	10 3/4" (273.0)	3 7/8" (98.4)	9/16" (14.3)	7 5/8" (193.7)	9 1/8" (231.8)	760 (3.38)	315 (142.9)

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

Pipe Hangers

B3109 - Flat Top Clevis Hanger

Size Range: 2" (50mm) to 8" (200mm) pipe size

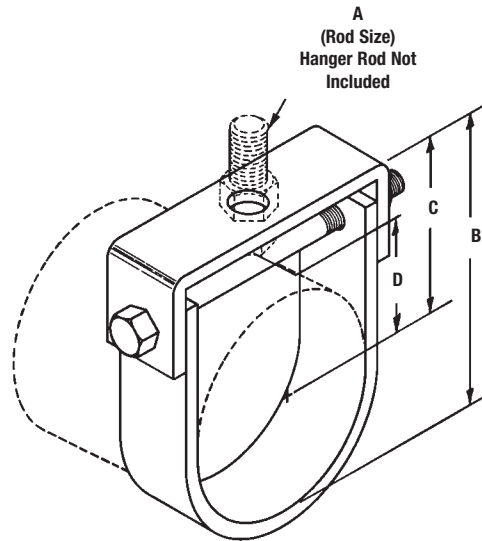
Material: Steel

Function: Recommended for suspending non-insulated, stationary pipe where space is limited.

Approvals: Complies with Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58 Type 1.

Standard Finish: Plain or Electro-Galvanized

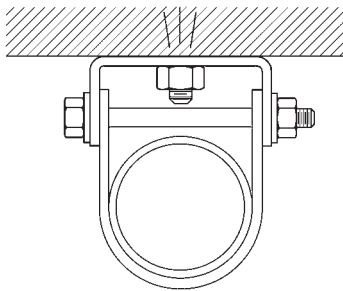
Order By: Part number and finish.



B
Bottom of pipe
to top of hanger.

C
Center of pipe
to top of hanger.

D
Rod Take-Out
Center of pipe to
bottom of hanger rod.



Part No.	Pipe Size		Rod Size A	B	
	in.	(mm)		in.	(mm)
B3109-2	2"	(50)	3/8"-16	3 ¹³ /16"	(96.8)
B3109-2 ¹ / ₂	2 ¹ / ₂ "	(65)	1/2"-13	4 ⁵ /8"	(117.5)
B3109-3	3"	(80)	1/2"-13	5 ⁵ /16"	(134.9)
B3109-3 ¹ / ₂	3 ¹ / ₂ "	(90)	1/2"-13	5 ¹³ /16"	(147.6)
B3109-4	4"	(100)	5/8"-11	6 ¹ / ₂ "	(165.1)
B3109-5	5"	(125)	5/8"-11	7 ¹³ /16"	(198.4)
B3109-6	6"	(150)	3/4"-10	9 ⁷ /16"	(230.2)
B3109-8	8"	(200)	3/4"-10	11 ³ /8"	(288.9)

Part No.	C		Rod Take-Out D		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3109-2	2 ⁵ / ₈ "	(66.7)	1 ⁷ / ₈ "	(47.6)	300	(1.33)	52	(23.6)
B3109-2 ¹ / ₂	3 ³ /16"	(81.0)	2 ³ /16"	(55.6)	500	(2.22)	116	(52.6)
B3109-3	3 ⁹ /16"	(90.5)	2 ⁵ / ₈ "	(66.7)	500	(2.22)	133	(60.3)
B3109-3 ¹ / ₂	3 ¹³ /16"	(96.8)	2 ⁷ / ₈ "	(73.0)	500	(2.22)	145	(65.8)
B3109-4	4 ¹ / ₄ "	(107.9)	3 ¹ / ₈ "	(79.4)	700	(3.11)	180	(81.6)
B3109-5	5"	(127.0)	3 ⁷ / ₈ "	(98.4)	700	(3.11)	248	(112.5)
B3109-6	5 ¹¹ /16"	(144.5)	4 ⁷ /16"	(112.7)	900	(4.00)	332	(150.6)
B3109-8	7"	(177.8)	5 ¹³ /16"	(147.6)	1000	(4.45)	513	(232.7)

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

B3106 - Vee Bottom Clevis Hanger (TOLCO Fig. 1V)

Size Range: 1/2" (15mm) to 4" (100mm) pipe

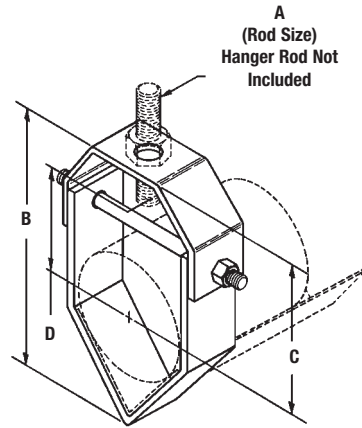
Material: Steel

Function: Recommended for the suspension of flexible plastic pipe. Use with B3106V support trough for plastic pipe.

Approvals: Complies with Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58 Type 1.

Standard Finish: Plain & Electro-Galvanized. Contact B-Line for alternative finishes and materials.

Order By: Part number and finish.



A
(Rod Size)
Hanger Rod Not
Included

B
Overall Height

C
Center of pipe to top of hanger.

D
Rod Take-Out
Center of pipe to bottom of hanger rod.

E
Minimum thread length of hanger rod.

Part No.	Pipe Size		Rod Size A	B		C	
	in.	(mm)		in.	(mm)	in.	(mm)
B3106-2	1/2" to 2"	(15 to 50)	3/8"-16	5 15/16"	(150.8)	4 1/16"	(103.2)
B3106-4	2 1/2" to 4"	(65 to 100)	1/2"-13	9 3/8"	(238.1)	6"	(152.4)



Part No.	Rod Take-Out D		Adjustment E		Design Load		Approx Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3106-2	3 5/16"	(84.1)	1 5/8"	(41.3)	150	(.67)	60	(27.2)
B3106-4	4 13/16"	(122.2)	2 3/16"	(55.6)	150	(.67)	143	(64.8)

B3106V - Plastic Pipe Support Channel (TOLCO Fig. 1VT)

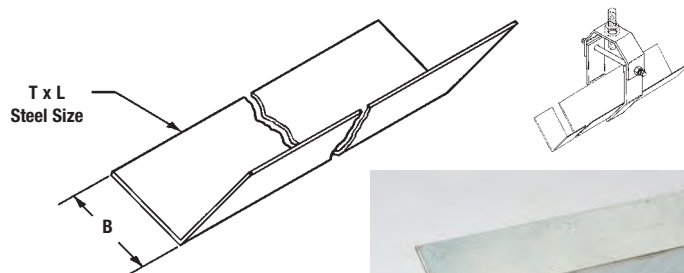
Size Range: 1/2" (15mm) to 4" (100mm) pipe

Material: Steel

Function: Designed for use with B3106 as a support for plastic or other flexible pipe systems.

Standard Finish: Pre-Galvanized. Contact B-Line for alternative finishes and materials.

Order By: Part number and finish.



Part No.	For Nominal Pipe Sizes		Steel Size T x L		B		Maximum Hanger Spacing		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	Ft.	(M)	Lbs.	(kN)	Lbs.	(kg)
B3106V-2	1/2" to 2"	(15 to 50)	18 Ga. x 96"	(1.2 x 2438.4)	1 9/16"	(39.7)	8	(2.44)	150	(.67)	449	(203.6)
B3106V-4	2 1/2" to 4"	(65 to 100)	18 Ga. x 120"	(1.2 x 3048.0)	3 1/8"	(79.4)	10	(3.05)	150	(.67)	1123	(509.4)

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

Pipe Hangers

B3104 - Light-Duty Clevis Hanger

B3104F - Light-Duty Clevis Hanger - Felt Lined

B3104C - Light-Duty Clevis Hanger - PVC Coated

Size Range: 1/2" (15mm) to 4" (100mm) pipe

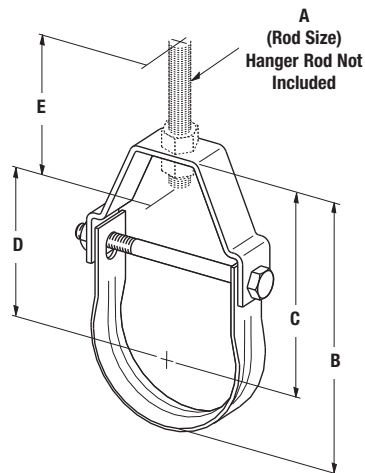
Material: Steel

Function: Recommended for the suspension of light stationary pipe allowing for vertical adjustment.

Approvals: Underwriter's Laboratories Listed in the USA (UL) and Canada (cUL) for sizes 3/4" (20mm) thru 4" (100mm). Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 12 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 1.

Standard Finish: Plain, Electro-Galvanized, or DURA-GREEN™

Order By: Part number and finish.



*Slide-Rite™ Clevis Hanger design for sizes 2, 3 & 4.

Pat. No. 5,848,770
5,924,655



B
Bottom of pipe to top of hanger.

C
Center of pipe to top of hanger.

D
Rod Take-Out
Center of pipe to bottom of
hanger rod.

E
Minimum thread length of
hanger rod.

F
Adjustment
Top of cross bolt to bottom of hanger rod
nut inside the hanger.



B3104C



B3104F

Part No.	Pipe Size		Rod Size A	B		C	
	in.	(mm)		in.	(mm)	in.	(mm)
B3104-1/2	1/2"	(15)	3/8"-16	1 15/16"	(49.2)	1 1/2"	(38.1)
B3104-3/4	3/4"	(20)	3/8"-16	2 5/16"	(58.7)	1 3/4"	(44.4)
B3104-1	1"	(25)	3/8"-16	2 3/4"	(69.8)	2 1/16"	(52.4)
B3104-1 1/4	1 1/4"	(32)	3/8"-16	3 5/16"	(84.1)	2 7/16"	(61.9)
B3104-1 1/2	1 1/2"	(40)	3/8"-16	3 5/8"	(92.1)	2 5/8"	(66.7)
B3104-2 *	2"	(50)	3/8"-16	4 13/16"	(122.2)	3 5/8"	(92.1)
B3104-2 1/2	2 1/2"	(65)	1/2"-13	5 13/16"	(147.6)	4 5/16"	(109.5)
B3104-3 *	3"	(80)	1/2"-13	6 7/16"	(163.5)	4 5/8"	(117.5)
B3104-3 1/2	3 1/2"	(90)	1/2"-13	6 15/16"	(176.2)	4 15/16"	(125.4)
B3104-4 *	4"	(100)	1/2"-13	7 3/4"	(196.8)	5 1/2"	(139.7)

Part No.	Rod Take-Out D		E	Adjustment F		Design Load		Approx. Wt./100	
	in.	(mm)		in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3104-1/2	13/16"	(20.6)	2 1/2"	7/16"	(11.1)	150	(.67)	13	(5.9)
B3104-3/4	1"	(25.4)	2 1/2"	7/16"	(11.1)	250	(1.11)	22	(10.0)
B3104-1	1 3/8"	(34.9)	2 1/2"	9/16"	(14.3)	250	(1.11)	24	(10.9)
B3104-1 1/4	1 3/4"	(44.4)	2 1/2"	13/16"	(20.6)	250	(1.11)	29	(13.1)
B3104-1 1/2	2"	(50.8)	2 1/2"	1"	(25.4)	250	(1.11)	30	(13.6)
B3104-2 *	2 15/16"	(74.6)	2 1/2"	1 3/4"	(44.4)	250	(1.11)	35	(15.9)
B3104-2 1/2	3 7/16"	(87.3)	2 1/2"	2"	(50.8)	350	(1.55)	82	(37.2)
B3104-3 *	3 3/4"	(95.2)	2 1/2"	2"	(50.8)	350	(1.55)	91	(41.3)
B3104-3 1/2	4"	(101.6)	2 1/2"	2"	(50.8)	350	(1.55)	98	(44.4)
B3104-4 *	4 9/16"	(115.9)	2 1/2"	2 3/16"	(55.6)	400	(1.78)	132	(59.9)

B3104CT - Clevis Hanger (TOLCO Fig. 81)

B3104CTC - Clevis Hanger - PVC Coated (TOLCO Fig. 81PVC)

Size Range: 1/2" (15mm) to 6" (150mm) copper tubing

Material: Steel

Function: Recommended for the suspension of non- insulated stationary copper tubing lines. Available with plastic coating to provide additional separation between tubing and hanger.

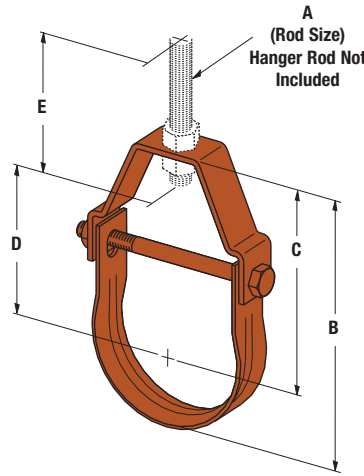
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 12 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 1.

Standard Finish: DURA-COPPER™

Order By: Part number and finish.



B3104CTC



- B
Bottom of pipe to top of hanger.
- C
Center of pipe to top of hanger.
- D
Rod Take-Out
Center of pipe to bottom of hanger rod.
- E
Minimum thread length of hanger rod.
- F
Adjustment
Top of cross bolt to bottom of hanger rod nut inside the hanger.



B3104CT

Part No.	Tubing Size		Rod Size	B		C		Rod Take-Out D	
	in.	(mm)	A	in.	(mm)	in.	(mm)	in.	(mm)
B3104CT-1/2	1/2"	(15)	3/8"-16	2 1/4"	(57.1)	1 15/16"	(49.2)	1 1/8"	(28.6)
B3104CT-3/4	3/4"	(20)	3/8"-16	1 15/16"	(49.2)	1 1/2"	(38.1)	1 1/8"	(28.6)
B3104CT-1	1"	(25)	3/8"-16	2 5/16"	(58.7)	1 3/4"	(44.4)	1 5/16"	(33.3)
B3104CT-1 1/4	1 1/4"	(32)	3/8"-16	2 3/4"	(69.8)	2 1/16"	(52.4)	1 9/16"	(39.7)
B3104CT-1 1/2	1 1/2"	(40)	3/8"-16	3 5/16"	(84.1)	2 7/16"	(61.9)	2 1/16"	(52.4)
B3104CT-2	2"	(50)	3/8"-16	4 1/2"	(114.3)	3 7/16"	(87.3)	3 3/8"	(85.7)
B3104CT-2 1/2	2 1/2"	(65)	1/2"-13	5 11/16"	(144.5)	4 1/2"	(114.3)	3 15/16"	(100.0)
B3104CT-3	3"	(80)	1/2"-13	5 3/16"	(131.8)	3 5/8"	(92.1)	4"	(101.6)
B3104CT-3 1/2	3 1/2"	(90)	1/2"-13	6 1/2"	(165.1)	4 9/16"	(115.9)	4 1/8"	(104.8)
B3104CT-4	4"	(100)	1/2"-13	7 3/8"	(187.3)	3 5/16"	(134.9)	4 3/8"	(111.1)
B3104CT-5	5"	(125)	1/2"-13	9"	(228.6)	6 7/16"	(163.5)	5 3/4"	(146.0)
B3104CT-6	6"	(150)	5/8"-11	10 5/16"	(261.9)	7 1/4"	(184.1)	6 1/2"	(165.1)

Part No.	E		Adjustment F		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3104CT-1/2	2 1/2"	(63.5)	3/8"	(9.5)	150	(.67)	12	(5.4)
B3104CT-3/4	2 1/2"	(63.5)	7/16"	(11.1)	250	(1.11)	12	(5.4)
B3104CT-1	2 1/2"	(63.5)	9/16"	(14.3)	250	(1.11)	22	(10.0)
B3104CT-1 1/4	2 1/2"	(63.5)	9/16"	(14.3)	250	(1.11)	24	(10.9)
B3104CT-1 1/2	2 1/2"	(63.5)	1 5/16"	(23.8)	250	(1.11)	30	(13.6)
B3104CT-2	2 1/2"	(63.5)	1 3/4"	(44.4)	250	(1.11)	35	(15.9)
B3104CT-2 1/2	2 1/2"	(63.5)	2 1/8"	(54.0)	350	(1.55)	80	(36.3)
B3104CT-3	2 1/2"	(63.5)	2 1/16"	(52.4)	350	(1.55)	88	(39.9)
B3104CT-3 1/2	2 1/2"	(63.5)	2 1/8"	(54.0)	350	(1.55)	94	(42.6)
B3104CT-4	2 1/2"	(63.5)	2 1/8"	(54.0)	400	(1.78)	116	(52.6)
B3104CT-5	2 1/2"	(63.5)	2 1/2"	(63.5)	550	(2.44)	208	(94.3)
B3104CT-6	2 1/2"	(63.5)	3"	(76.2)	550	(2.44)	247	(112.0)

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

Pipe Hangers

Fig. 2 - Adjustable Band Hanger (B-Line B3170)

Fig. 2F - Adjustable Band Hanger Felt Lined for Copper Tubing (B-Line B3170F)



Size Range:

Fig. 2 - 2 1/2" (65mm) thru 6" (150mm) pipe

Fig. 2F - 2 1/2" (65mm) thru 6" (150mm) pipe

Material: Pre-Galvanized Steel

Function: Recommended for the suspension of non-insulated pipe or insulated pipe with B3151 shield. Fig. 2NFPA accommodates the reduced rod schedule of the National Fire Protection Association Pamphlet 13.

Approvals: Factory Mutual Engineering Approved. Underwriters Laboratories Listed. Conforms to Federal Specification WW-H-171E & A-A-1192A Type 10 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 10.

Standard Finish: Pre-Galvanized

Note: Available in Stainless Steel material.

Order By: Part number and finish.



Fig. 2



Fig. 2F

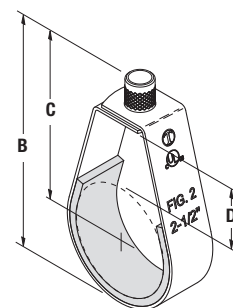
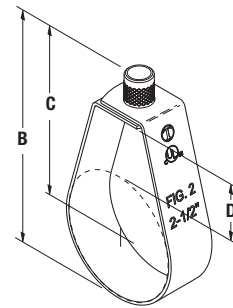


Fig. 2

Nominal Part No.	Pipe Size in. (mm)	Rod Size A	B in. (mm)	C in. (mm)	D in. (mm)	Max. Rec. Load lbs. (kN)	Approx Wt./100 lbs. (kg)
2-2 1/2	2 1/2" (65)	1/2"-13 *	5 3/4" (146.0)	4 1/4" (107.9)	1 5/8" (41.3)	600 (2.67)	41 (18.6)
2-3	3" (75)	1/2"-13 *	6" (152.4)	4 1/8" (104.8)	1 1/4" (31.7)	600 (2.67)	45 (20.4)
2-3 1/2	3 1/2" (90)	1/2"-13 *	7 3/8" (187.3)	5 1/4" (133.3)	2 1/8" (54.0)	600 (2.67)	52 (23.6)
2-4	4" (100)	5/8"-11 *	7 3/8" (187.3)	5" (127.0)	1 5/8" (41.3)	1000 (4.45)	59 (27.6)
2-5	5" (125)	5/8"-11 **	9" (228.6)	6 1/8" (155.6)	2 1/4" (57.1)	1250 (5.56)	97 (44.0)
2-6	6" (150)	3/4"-10 **	9 3/8" (238.1)	6 1/2" (165.1)	1 7/8" (47.6)	1250 (5.56)	139 (63.0)

Fig. 2F

Nominal Part No.	Pipe Size in. (mm)	Rod Size A	B in. (mm)	C in. (mm)	D in. (mm)	Max. Rec. Load lbs. (kN)	Approx Wt./100 lbs. (kg)
2F-2 1/2	2 1/2" (65)	1/2"-13 *	5 3/4" (146.0)	4 1/4" (107.9)	1 5/8" (41.3)	600 (2.67)	41 (18.6)
2F-3	3" (75)	1/2"-13 *	6" (152.4)	4 1/8" (104.8)	1 1/4" (31.7)	600 (2.67)	45 (20.4)
2F-3 1/2	3 1/2" (90)	1/2"-13 *	7 3/8" (187.3)	5 1/4" (133.3)	2 1/8" (54.0)	600 (2.67)	52 (23.6)
2F-4	4" (100)	5/8"-11 *	7 3/8" (187.3)	5" (127.0)	1 5/8" (41.3)	1000 (4.45)	59 (27.6)
2F-5	5" (125)	5/8"-11 **	9" (228.6)	6 1/8" (155.6)	2 1/4" (57.1)	1250 (5.56)	97 (44.0)
2F-6	6" (150)	3/4"-10 **	9 3/8" (238.1)	6 1/2" (165.1)	1 7/8" (47.6)	1250 (5.56)	139 (63.0)

* 3/8 nut is used when requested.

** 1/2 nut is used when requested.

B3170CT - Adjustable Swivel Hanger for Copper Tubing (TOLCO Fig. 202) B3170CTC - Adjustable Swivel Hanger for Copper Tubing - Plastic Coated

Size Range: 1/2" (15mm) thru 6" (150mm) copper tubing

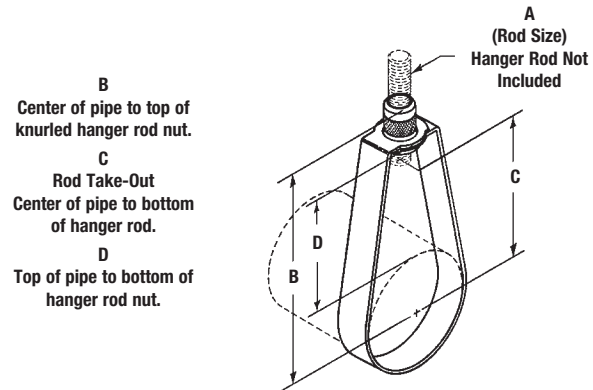
Material: Steel

Function: Recommended for the suspension of copper tubing, allowing for vertical adjustment. (Available with plastic coating to provide additional separation between tubing and hanger.)

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 10 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 10.

Standard Finish: DURA-COPPER™

Order By: Part number and finish.



Part No.	Nominal Pipe Size		Rod Size A	B		C		D	
				in.	(mm)	in.	(mm)	in.	(mm)
B3170CT-1/2	1/2"	(15)	3/8"-16	2 1/16"	(52.4)	1 1/8"	(28.6)	3 1/32"	(24.6)
B3170CT-3/4	3/4"	(20)	3/8"-16	2 5/16"	(58.7)	1 5/16"	(33.3)	1 1/32"	(26.2)
B3170CT-1	1"	(25)	3/8"-16	2 1/2"	(63.5)	1 9/16"	(39.7)	1 5/32"	(29.3)
B3170CT-1 1/4	1 1/4"	(32)	3/8"-16	2 1/2"	(63.5)	1 9/16"	(39.7)	1"	(25.4)
B3170CT-1 1/2	1 1/2"	(40)	3/8"-16	2 15/16"	(74.6)	2"	(50.8)	1 5/16"	(33.3)
B3170CT-2	2"	(50)	3/8"-16	3 1/8"	(79.4)	2 1/8"	(54.0)	1 3/16"	(30.2)
B3170CT-2 1/2	2 1/2"	(65)	1/2"-13	4 1/16"	(103.2)	2 9/16"	(65.1)	1 3/8"	(34.9)
B3170CT-3	3"	(75)	1/2"-13	3 15/16"	(100.0)	3 3/4"	(95.2)	1 1/4"	(31.7)
B3170CT-3 1/2	3 1/2"	(90)	1/2"-13	4 7/16"	(112.7)	3 1/4"	(82.5)	1 1/2"	(38.1)
B3170CT-4	4"	(100)	1/2"-13	4 11/16"	(119.1)	3 9/16"	(89.6)	1 9/16"	(39.7)
B3170CT-5	5"	(125)	1/2"-13	5 15/16"	(150.8)	4 5/16"	(109.5)	1 25/32"	(45.2)
B3170CT-6	6"	(150)	1/2"-13	6 11/16"	(169.9)	5 3/16"	(131.8)	2 1/8"	(54.0)

Part No.	Max. Rec. Load		Approx. Wt./100	
	lbs.	(kN)	lbs.	(kg)
B3170CT-1/2	180	(0.80)	8	(6.6)
B3170CT-3/4	180	(0.80)	10	(4.5)
B3170CT-1	180	(0.80)	10	(4.5)
B3170CT-1 1/4	180	(0.80)	12	(5.4)
B3170CT-1 1/2	180	(0.80)	12	(5.4)
B3170CT-2	180	(0.80)	12	(5.4)
B3170CT-2 1/2	200	(0.89)	31	(24.0)
B3170CT-3	250	(1.11)	33	(14.9)
B3170CT-3 1/2	300	(1.33)	39	(17.2)
B3170CT-4	360	(1.60)	40	(18.1)
B3170CT-5	480	(2.13)	95	(43.1)
B3170CT-6	630	(2.80)	118	(53.5)



B3170CT



B3170CTC

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

Pipe Hangers

Fig. 200 - "Trimline" Adjustable Band Hanger (B-Line B3170NF)

Fig. 200F - "Trimline" Adjustable Band Hanger with Felt Lining for Copper Tubing (B-Line B3170NFF)

Fig. 200C - "Trimline" Adjustable Band Hanger with Plastic Coated (B-Line B3170NFC)

Size Range:

Fig. 200 - 1/2" (15mm) thru 8" (200mm) pipe

Material: Steel, Pre-Galvanized to G90 specifications

Function: For fire sprinkler and other general piping purposes. Knurled swivel nut design permits hanger adjustment after installation.

Features:

- (1/2" (15mm) thru 2" (50mm)) Flared edges ease installation for all pipe types and protect CPVC plastic pipe from abrasion. Captured design keeps adjusting nut from separating with hanger. Hanger is easily installed around pipe.
- (2 1/2" (65mm) thru 8" (200mm)) Spring tension on nut holds it securely in hanger before installation. Adjusting nut is easily removed.

Approvals: Underwriters Laboratories listed (1/2" (15mm) thru 8" (200mm)) in the USA (**UL**) and Canada (**cUL**) for steel and CPVC plastic pipe and Factory Mutual Engineering Approved (3/4" (20mm) thru 8" (200mm)). Conforms to Federal Specifications WW-H-171E & A-A-1192A, Type 10 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 10.

Maximum Temperature: 650°F (343°C)

Finish: Pre-Galvanized. Stainless Steel materials will be supplied with (2) hex nuts in place of a knurl nut.

Order By: Part number and pipe size

TOLCO

UL
LISTED

FM
APPROVED

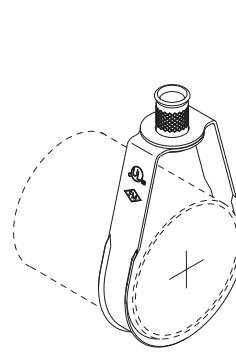


Fig. 200-1/2 to 200-2

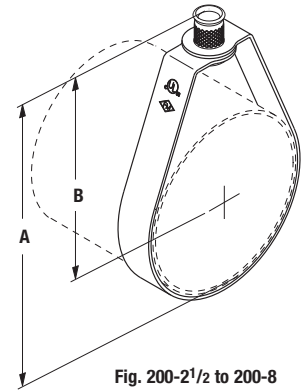


Fig. 200-2 1/2 to 200-8

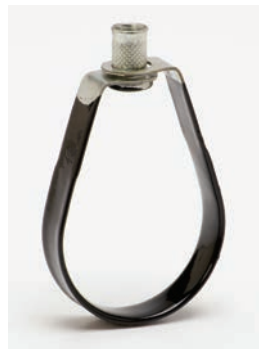


Fig. 200C



Fig. 200F



Fig. 200

**** Note:** For metric hanger rod sizes add the metric rod size to the figure number.
Example: 200M8-1 1/2 or 200M10-1 1/2

Part No.	Pipe Size		Rod Size		A		B		Max. Rec. Load		Approx. Wt./100	
	in.	(mm)	in.	mm**	in.	(mm)	in.	(mm)	lbs.	(kN)	lbs.	(kg)
200-1/2	1/2"	(15)	3/8"-16	M8 or M10	3 1/8"	(79.4)	2 5/8"	(66.7)	400	(1.78)	11	(5.0)
200-3/4	3/4"	(20)	3/8"-16	M8 or M10	3 1/8"	(79.4)	2 1/2"	(63.5)	400	(1.78)	11	(5.0)
200-1	1"	(25)	3/8"-16	M8 or M10	3 3/8"	(85.7)	2 5/8"	(66.7)	400	(1.78)	12	(5.5)
200-1 1/4	1 1/4"	(32)	3/8"-16	M8 or M10	3 3/4"	(94.0)	2 7/8"	(73.0)	400	(1.78)	13	(5.9)
200-1 1/2	1 1/2"	(40)	3/8"-16	M8 or M10	3 7/8"	(98.4)	2 7/8"	(73.0)	400	(1.78)	14	(6.4)
200-2	2"	(50)	3/8"-16	M8 or M10	4 1/2"	(114.3)	3"	(76.3)	400	(1.78)	15	(6.9)
200-2 1/2	2 1/2"	(65)	3/8"-16	M10	5 5/8"	(142.9)	4 1/8"	(104.7)	600	(2.67)	27	(12.3)
200-3	3"	(75)	3/8"-16	M10	5 7/8"	(149.1)	4"	(101.6)	600	(2.67)	29	(13.3)
200-3 1/2	3 1/2"	(90)	3/8"-16	M10	7 3/8"	(187.3)	5 1/4"	(133.3)	600	(2.67)	34	(15.6)
200-4	4"	(100)	3/8"-16	M10	7 3/8"	(187.3)	5"	(127.0)	1000	(4.45)	35	(16.0)
200-5	5"	(125)	1/2"-13	M12	9 1/8"	(231.8)	6 1/4"	(158.7)	1250	(5.56)	66	(30.2)
200-6	6"	(150)	1/2"-13	M12	10 1/8"	(257.2)	6 3/4"	(171.4)	1250	(5.56)	73	(33.4)
200-8	8"	(200)	1/2"-13	M12	13 1/8"	(333.4)	8 3/4"	(222.2)	1250	(5.56)	136	(62.3)

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

Fig. 200H - Heavy Duty Band Hanger (For Trapeze)

Size Range: 2" (50mm) thru 4" (100mm) trapeze pipe size.

Material: Steel — Pre-Galvanized to G40 Spec

Function: Designed primarily to support substantially heavier loads than is normally intended for the nominal hanger size. Used extensively to support trapeze installations and the increased loads from both above and below the trapeze assembly.

Features: Furnished with 3/8"-16 or 1/2"-13 adjusting threaded ring nut.

Approvals: Underwriters Laboratories listed in the USA (UL) and Canada** (cUL). Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 10 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 10.

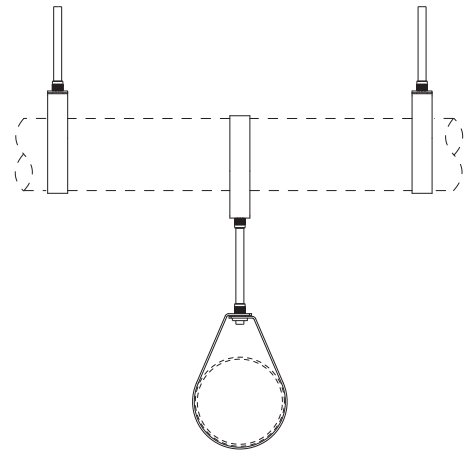
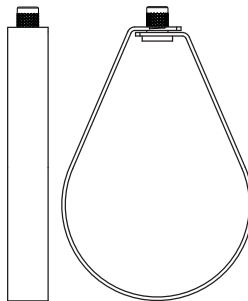
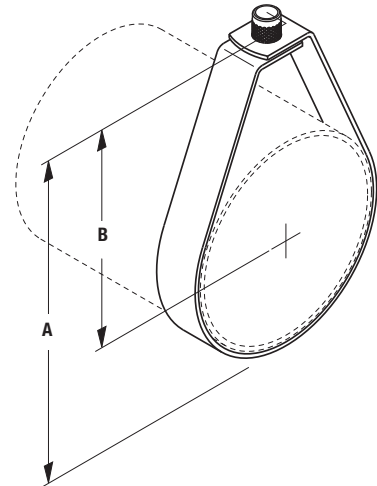
Maximum Temperature: 650°F (343°C)

Finish: Pre-Galvanized

Order By: Part number, pipe size and rod size.

Important Design Note. Because of the increased loads applied to the trapeze assembly, both the upper trapeze supports as well as the lower hanging unit must be able to hold the maximum loads intended.

TOLCO



Part No.	Pipe Size		Rod Size	A		B		Max. Rec. Load		Approx. Wt./100	
	in.	(mm)		in.	(mm)	in.	(mm)	lbs.	(kN)	lbs.	(kg)
200H-2-3/8	2"	(50)	3/8"-16	49/16"	(115.9)	37/32"	(81.7)	1200	(5.34)	48	(21.8)
200H-2-1/2	2"	(50)	1/2"-13	423/32"	(119.8)	33/8"	(85.7)	1200	(5.34)	45	(20.4)
200H-21/2-3/8	2 1/2"	(65)	3/8"-16	55/16"	(134.9)	323/32"	(94.4)	1200	(5.34)	59	(26.7)
200H-21/2-1/2	2 1/2"	(65)	1/2"-13	515/32"	(138.9)	37/8"	(98.3)	1200	(5.34)	56	(25.4)
200H-3-3/8	3"	(75)	3/8"-16	53/4"	(146.0)	327/32"	(97.6)	1200	(5.34)	63	(28.6)
200H-3-1/2	3"	(75)	1/2"-13	57/8"	(148.1)	331/32"	(100.8)	1200	(5.34)	60	(27.2)
200H-4-3/8	4"	(100)	3/8"-16	67/8"	(174.6)	47/16"	(112.7)	1200	(5.34)	76	(34.5)
200H-4-1/2	4"	(100)	1/2"-13	71/32"	(178.6)	419/32"	(1116.7)	1200	(5.34)	73	(33.1)

* Select trapeze pipe size based on section modulus required for span of trapeze per information provided in NFPA 13 (2002) Table 9.1.1.6.1 (a and b).

** All sizes are UL Listed to support up to 8" pipe at max spacing per NFPA 13. For 6" (150mm) and 8" (200mm) trapeze pipe, consult factory.

Pipe Hangers

B3198H - Hinged Extension Split Pipe Clamp (TOLCO Fig. 302)

Size Range: 3/8" (10mm) to 3" (80mm) pipe

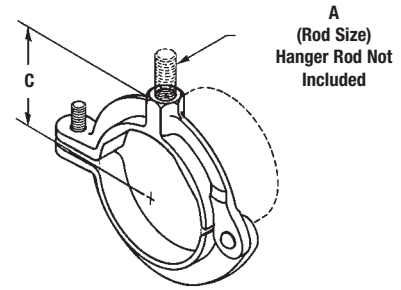
Material: Malleable Iron

Function: Designed for suspending non-insulated pipe horizontally or vertically.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 25 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 12.

Standard Finish: Plain or Electro-Galvanized

Order By: Part number and finish.



Part No.	Pipe Size		Rod Size A	C		Design Load		Approx. Wt./100	
	in.	(mm)		in.	(mm)	Lbs.	kN	Lbs.	kg
B3198H-3/8	3/8"	(10)	3/8"-16	31/32"	(24.6)	180	(.80)	9	(4.1)
B3198H-1/2	1/2"	(15)	3/8"-16	11/16"	(27.0)	180	(.80)	12	(5.4)
B3198H-3/4	3/4"	(20)	3/8"-16	17/32"	(30.9)	180	(.80)	12	(5.4)
B3198H-1	1"	(25)	3/8"-16	111/32"	(34.1)	180	(.80)	13	(5.9)
B3198H-11/4	11/4"	(32)	3/8"-16	119/32"	(39.7)	180	(.80)	18	(8.1)
B3198H-11/2	11/2"	(40)	3/8"-16	123/32"	(43.6)	180	(.80)	21	(9.5)
B3198H-2	2"	(50)	3/8"-16	2"	(50.8)	180	(.80)	44	(19.9)
B3198H-21/2	21/2"	(65)	1/2"-13	211/32"	(59.5)	300	(1.33)	73	(33.1)
B3198H-3	3"	(80)	1/2"-13	223/32"	(69.0)	300	(1.33)	95	(43.1)

B3198R - Extension Split Pipe Clamp

Size Range: 3/8" (10mm) to 4" (100mm) pipe

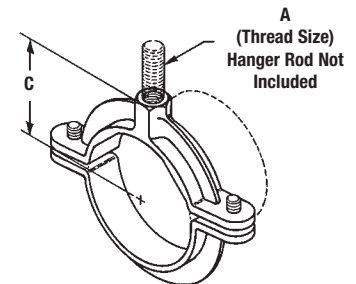
Material: Malleable Iron

Function: Designed for suspending non-insulated pipe horizontally or vertically.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 25 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 12.

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

Order By: Part number and finish.



Part No. Rod Thread	Pipe Size		Rod Thread Size A	C		Design Load		Approx. Wt./100	
	in.	(mm)		in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3198R-3/8	3/8"	(10)	3/8"-16	31/32"	(24.6)	180	(.80)	12	(5.4)
B3198R-1/2	1/2"	(15)	3/8"-16	11/16"	(27.0)	180	(.80)	16	(7.2)
B3198R-3/4	3/4"	(20)	3/8"-16	17/32"	(30.9)	180	(.80)	18	(8.1)
B3198R-1	1"	(25)	3/8"-16	111/32"	(34.1)	180	(.80)	24	(10.9)
B3198R-11/4	11/4"	(32)	3/8"-16	119/32"	(39.7)	180	(.80)	29	(13.1)
B3198R-11/2	11/2"	(40)	3/8"-16	123/32"	(43.6)	180	(.80)	32	(14.5)
B3198R-2	2"	(50)	3/8"-16	2"	(50.8)	180	(.80)	39	(17.7)
B3198R-21/2	21/2"	(65)	1/2"-13	211/32"	(59.5)	300	(1.33)	115	(52.1)
B3198R-3	3"	(80)	1/2"-13	223/32"	(69.0)	300	(1.33)	140	(63.5)
B3198R-4	4"	(100)	1/2"-13	311/32"	(84.9)	300	(1.33)	160	(72.6)

B3198HCT - Hinged Extension Split Pipe Clamp (TOLCO Fig. 301CT)

Size Range: 1/2" (15mm) to 2" (50mm) copper tubing

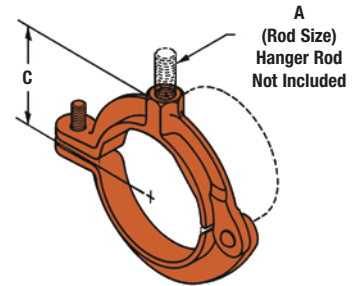
Material: Malleable Iron

Function: A rigid support to suspend tubing horizontally or vertically.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 25 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 12.

Standard Finish: DURA-COPPER™

Order By: Part number and finish.



Part No.	Tubing Size		Rod Size	C		Design Load		Approx. Wt./100	
	in.	(mm)	A	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3198HCT-1/2	1/2"	(15)	3/8"-16	5/8"	(15.9)	180	(.80)	8	(3.6)
B3198HCT-3/4	3/4"	(20)	3/8"-16	13/16"	(20.6)	180	(.80)	10	(4.5)
B3198HCT-1	1"	(25)	3/8"-16	15/16"	(23.8)	180	(.80)	10	(4.5)
B3198HCT-1 1/4	1 1/4"	(32)	3/8"-16	1 1/8"	(28.6)	180	(.80)	14	(6.3)
B3198HCT-1 1/2	1 1/2"	(40)	3/8"-16	1 9/16"	(39.7)	180	(.80)	18	(8.1)
B3198HCT-2	2"	(50)	3/8"-16	1 7/8"	(47.6)	180	(.80)	23	(10.4)

B3198RCT - Extension Split Pipe Clamp

Size Range: 1/2" (15mm) to 2" (50mm) copper tubing

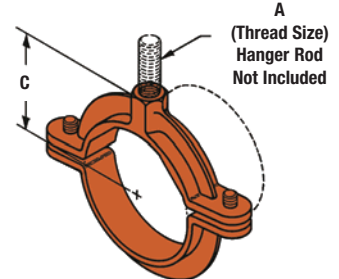
Material: Malleable Iron

Function: A rigid support to suspend tubing horizontally or vertically.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 25 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 12.

Standard Finish: DURA-COPPER™

Order By: Part number and finish.



Part No.	Tubing Size		Rod Size	C		Design Load		Approx. Wt./100	
	in.	(mm)	A	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3198RCT-3/8	3/8"	(10)	3/8"-16	1 1/16"	(17.5)	180	(.80)	12	(5.4)
B3198RCT-1/2	1/2"	(15)	3/8"-16	1 1/16"	(17.5)	180	(.80)	12	(5.4)
B3198RCT-3/4	3/4"	(20)	3/8"-16	7/8"	(22.2)	180	(.80)	14	(6.3)
B3198RCT-1	1"	(25)	3/8"-16	1 1/16"	(27.0)	180	(.80)	17	(7.7)
B3198RCT-1 1/4	1 1/4"	(32)	3/8"-16	1 1/8"	(28.6)	180	(.80)	17	(7.7)
B3198RCT-1 1/2	1 1/2"	(40)	3/8"-16	1 5/16"	(33.3)	180	(.80)	22	(10.0)
B3198RCT-2	2"	(50)	3/8"-16	1 1/2"	(38.1)	180	(.80)	26	(11.8)

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

Pipe Hangers

B3175 - Ring and Bolt Hanger

Size Range: 1/2" (15mm) to 6" (150mm) pipe

Material: Pre-Galvanized Steel

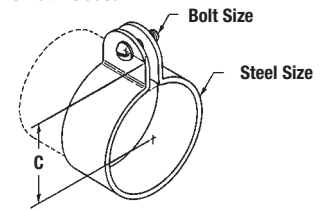
Function: Designed for suspending light-weight non-insulated pipe.
(Use with B3222 eye socket or B3224 hanger adjuster).

Standard Finish: Pre-Galvanized

Order By: Part number and finish.



Bolt and Nut Included



Part No.	Pipe Size		C		Bolt Size	Steel Size		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)		in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3175-1/2	1/2"	(15)	1 1/16"	(27.0)	1/4"-20	18 Ga. x 7/8"	(1.2 x 22.2)	275	(1.22)	7.5	(3.4)
B3175-3/4	3/4"	(20)	1 3/16"	(30.2)	1/4"-20	18 Ga. x 7/8"	(1.2 x 22.2)	275	(1.22)	8.0	(3.6)
B3175-1	1"	(25)	1 5/16"	(33.3)	1/4"-20	18 Ga. x 7/8"	(1.2 x 22.2)	275	(1.22)	9.0	(4.1)
B3175-1 1/4	1 1/4"	(32)	1 1/2"	(38.1)	1/4"-20	18 Ga. x 7/8"	(1.2 x 22.2)	275	(1.22)	10.5	(4.7)
B3175-1 1/2	1 1/2"	(40)	1 5/8"	(41.3)	1/4"-20	18 Ga. x 7/8"	(1.2 x 22.2)	275	(1.22)	11.5	(5.2)
B3175-2	2"	(50)	1 13/16"	(46.0)	1/4"-20	18 Ga. x 7/8"	(1.2 x 22.2)	275	(1.22)	13.0	(5.9)
B3175-2 1/2	2 1/2"	(65)	2 5/16"	(58.7)	5/16"-18	16 Ga. x 1 1/4"	(1.5 x 31.7)	500	(2.22)	30.0	(13.6)
B3175-3	3"	(80)	2 5/8"	(66.7)	5/16"-18	16 Ga. x 1 1/4"	(1.5 x 31.7)	500	(2.22)	35.0	(15.9)
B3175-3 1/2	3 1/2"	(90)	2 7/8"	(73.0)	5/16"-18	16 Ga. x 1 1/4"	(1.5 x 31.7)	500	(2.22)	38.5	(17.4)
B3175-4	4"	(100)	3 1/8"	(79.4)	5/16"-18	16 Ga. x 1 1/4"	(1.5 x 31.7)	500	(2.22)	42.0	(19.0)
B3175-5	5"	(125)	3 5/8"	(92.1)	5/16"-18	16 Ga. x 1 1/4"	(1.5 x 31.7)	500	(2.22)	51.0	(23.1)
B3175-6	6"	(150)	4 3/16"	(106.4)	5/16"-18	16 Ga. x 1 1/4"	(1.5 x 31.7)	500	(2.22)	58.5	(26.5)

B3175CT - Ring and Bolt Hanger, DURA-COPPER™ Coated

Size Range: 1/2" (15mm) to 4" (100mm) pipe

Material: Pre-Galvanized Steel

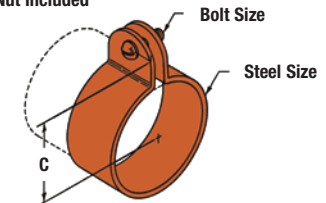
Function: Designed for suspending copper tubing allowing for vertical adjustment. (Use with B3222 eye socket or B3224 hanger adjuster).

Standard Finish: DURA-COPPER™

Order By: Part number and finish.



Bolt and Nut Included



Part No.	Tubing Size		C		Bolt Size	Steel Size		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)		in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3175CT-1/2	1/2"	(15)	1 5/16"	(33.3)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	8	(3.6)
B3175CT-3/4	3/4"	(20)	1 3/8"	(34.9)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	8	(3.6)
B3175CT-1	1"	(25)	1 3/16"	(30.2)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	8	(3.6)
B3175CT-1 1/4	1 1/4"	(32)	1 5/16"	(33.3)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	10	(4.5)
B3175CT-1 1/2	1 1/2"	(40)	1 1/2"	(38.1)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	11	(5.0)
B3175CT-2	2"	(50)	1 15/16"	(49.2)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	11	(5.0)
B3175CT-2 1/2	2 1/2"	(65)	2 3/16"	(55.6)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	12	(5.4)
B3175CT-3	3"	(80)	2 11/16"	(68.3)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	14	(6.3)
B3175CT-3 1/2	3 1/2"	(90)	2 15/16"	(74.6)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	16	(7.2)
B3175CT-4	4"	(100)	3 3/16"	(81.0)	1/4"-20 x 1"	1/16" x 7/8"	(1.6 x 22.2)	200	(.89)	18	(8.1)

B3190 Return Line Offset J-Hook (TOLCO Fig. 40)

Size Range: 1/2" (15mm) to 8" (200mm) pipe

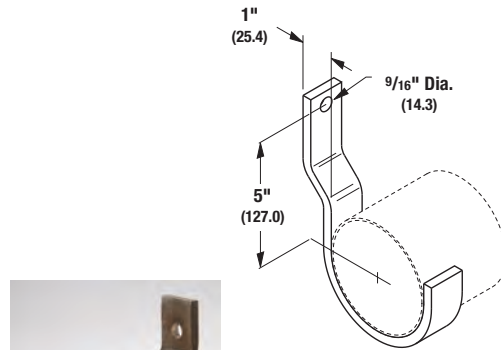
Material: Steel (Stainless steel available)

Function: Recommended for supporting light pipe runs with a 1" (25.4) offset from mounting surfaces.

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

Order By: Part number and finish.

Part No.	Pipe Size		Design Load		Approx. Wt./100	
	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3190-1/2	1/2"	(15)	200	(.89)	54	(24.5)
B3190-3/4	3/4"	(20)	200	(.89)	55	(24.9)
B3190-1	1"	(25)	200	(.89)	78	(35.4)
B3190-1 1/4	1 1/4"	(32)	200	(.89)	85	(38.5)
B3190-1 1/2	1 1/2"	(40)	200	(.89)	90	(40.8)
B3190-2	2"	(50)	200	(.89)	98	(44.4)
B3190-2 1/2	2 1/2"	(65)	350	(1.55)	126	(57.1)
B3190-3	3"	(80)	350	(1.55)	136	(61.7)
B3190-3 1/2	3 1/2"	(90)	350	(1.55)	147	(66.8)
B3190-4	4"	(100)	450	(2.00)	235	(106.6)
B3190-5	5"	(125)	450	(2.00)	350	(158.7)
B3190-6	6"	(150)	450	(2.00)	383	(173.7)
B3190-8	8"	(200)	450	(2.00)	605	(274.4)



B3191 Return Line Straight J-Hook (TOLCO Fig. 41)

Size Range: 1/2" (15mm) to 8" (200mm) pipe

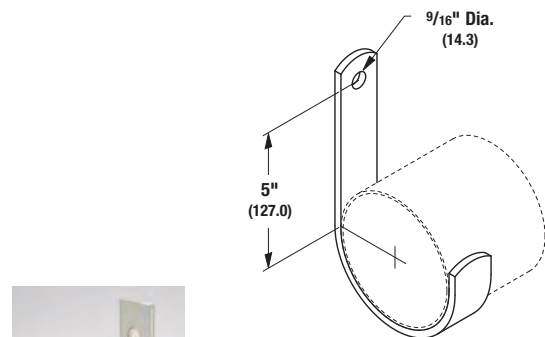
Material: Steel (Stainless steel available)

Function: Recommended for supporting light pipe runs flush with the mounting surfaces.

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

Order By: Part number and finish.

Part No.	Pipe Size		Design Load		Approx. Wt./100	
	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3191-1/2	1/2"	(15)	200	(.89)	54	(24.5)
B3191-3/4	3/4"	(20)	200	(.89)	55	(24.9)
B3191-1	1"	(25)	200	(.89)	76	(34.5)
B3191-1 1/4	1 1/4"	(32)	200	(.89)	82	(37.2)
B3191-1 1/2	1 1/2"	(40)	200	(.89)	87	(39.4)
B3191-2	2"	(50)	200	(.89)	96	(43.5)
B3191-2 1/2	2 1/2"	(65)	350	(1.55)	124	(56.2)
B3191-3	3"	(80)	350	(1.55)	134	(60.8)
B3191-3 1/2	3 1/2"	(90)	350	(1.55)	145	(65.8)
B3191-4	4"	(100)	450	(2.00)	153	(69.4)
B3191-5	5"	(125)	450	(2.00)	348	(157.8)
B3191-6	6"	(150)	450	(2.00)	381	(172.8)
B3191-8	8"	(200)	450	(2.00)	600	(272.1)



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

Pipe Hangers

Fig. 120RWA - (Model B) Retrofit Wrap Around “U” Hanger Clamp

Size Range: 1" (25mm) thru 6" (150mm) pipe

Material: Steel

Function: Designed to restrain movement of the pipe within standard U-hangers as required by NFPA 13. Where retrofit capability is crucial, the Fig. 120RWA is a labor efficient alternative to the standard Cooper B-Line Fig. 120W wrap around U-hanger.

Features Installs easily by tightening two hex nuts. Features a unique bracing slot that locks onto a standard U-hanger to become a solid unit that will stabilize the pipe during seismic activity or sprinkler head activation. Designed to be used in retrofit or new construction applications. Will clamp to existing U-Hangers without restriction to leg angle.

Approvals: Underwriters Laboratories listed in the USA (UL) and Canada (cUL) as a restrainer. Included in our Seismic Restraints Catalog 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 the Cooper B-Line Seismic Restraint Systems Guidelines. NFPA 13 (2010) 9.3.6.3.

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

Order By: Part number, type numbers and pipe size

Ordering Note: Order by the following type and pipe size:

Type 1 — (1" (25mm) and 1 1/4" (32mm) pipe size)

Type 2 — (1 1/2" (40mm) and 2" (50mm) pipe size)

Type 3 — (2 1/2" (65mm) and 3" (80mm) pipe size)

Type 4 — (4" (100mm) pipe size)

Type 6 — (5" (125mm) and 6" (150mm) pipe size)

Important Note: The bracing slot feature is sized to fit the U-Hanger rod schedule as required by NFPA 13 as follows:

5/16" (7.9mm) rod for up to 2" (50mm) pipe

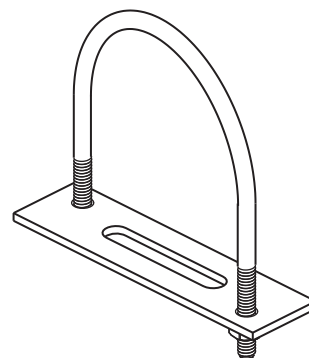
3/8" (9.5mm) rod for 2 1/2" (65mm) - 6" (160mm) pipe

For other rod size requirements consult factory.

Component of State of
California OSHPD Approved
Seismic Restraints System

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Part No.	Type	Pipe Size	
		in.	(mm)
120RWA-TYPE1-1	1	1"	(25)
120RWA-TYPE1-1 1/4	1	1 1/4"	(32)
120RWA-TYPE2-1 1/2	2	1 1/2"	(40)
120RWA-TYPE2-2	2	2"	(50)
120RWA-TYPE3-2 1/2	3	2 1/2"	(65)
120RWA-TYPE3-3	3	3"	(80)
120RWA-TYPE4-3 1/2	4	3 1/2"	(90)
120RWA-TYPE4-4	4	4"	(100)
120RWA-TYPE6-5	6	5"	(125)
120RWA-TYPE6-6	6	6"	(150)

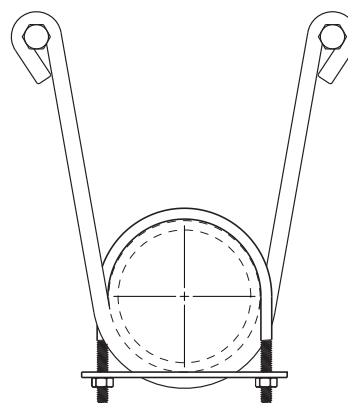


Fig. 120 - "U" Hanger

Size Range: Size 3/4" (20mm) thru 8" (200mm) pipe

Material: Steel

Function: Used to support piping from wood beams where no contraction is expected. Used extensively in automatic fire sprinkler systems.

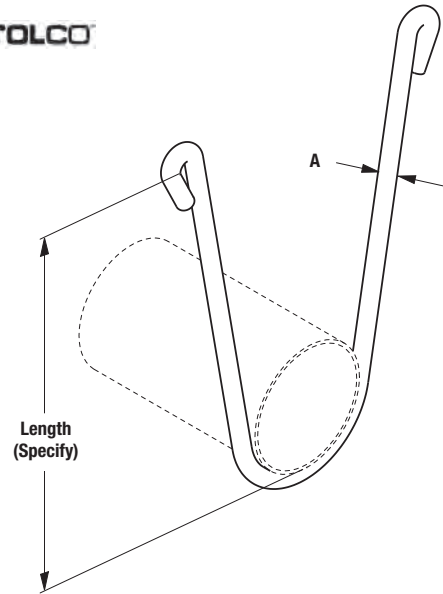
Approvals: Meets or exceeds the requirements of National Fire Protection Association (NFPA), Pamphlet 13. Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD). For additional load, spacing and placement information relating to OSHPD projects, please refer to the Seismic Restraint Systems Guidelines.

Maximum Temperature: 750°F (399°C)

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

Order By: Part number, pipe size, length and finish

TOLCO



Part No.	Pipe Size		A		Fastener Size	Max. Rec. Load***	
	in.	(mm)	in.	(mm)		lbs.	(kN)
120-3/4	3/4"	(20)	5/16"	(7.9)	16 x 2*	250	(1.11)
120-1	1"	(25)	5/16"	(7.9)	16 x 2*	250	(1.11)
120-1 1/4	1 1/4"	(32)	5/16"	(7.9)	16 x 2*	250	(1.11)
120-1 1/2	1 1/2"	(40)	5/16"	(7.9)	16 x 2*	250	(1.11)
120-2	2"	(50)	5/16"	(7.9)	16 x 2*	250	(1.11)
120-2 1/2	2 1/2"	(65)	3/8"	(9.5)	3/8 x 2 1/2**	320	(1.42)
120-3	3"	(80)	3/8"	(9.5)	3/8 x 2 1/2**	320	(1.42)
120-3 1/2	3 1/2"	(90)	3/8"	(9.5)	3/8 x 2 1/2**	560	(2.49)
120-4	4"	(100)	3/8"	(9.5)	1/2 x 3**	560	(2.49)
120-5	5"	(125)	1/2"	(12.7)	1/2 x 3**	560	(2.49)
120-6	6"	(150)	1/2"	(12.7)	1/2 x 3**	760	(3.38)
120-8	8"	(200)	1/2"	(12.7)	5/8 x 3**	--	(--)

* Drive Screw

** Lag Bolt

*** With minimum safety factor of 5
Fastener schedule per NFPA

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

Pipe Hangers

Fig. 120MJ - Mutt & Jeff “U” Hanger

Size Range: Size 3/4" (20mm) thru 8" (200mm) pipe

Material: Steel

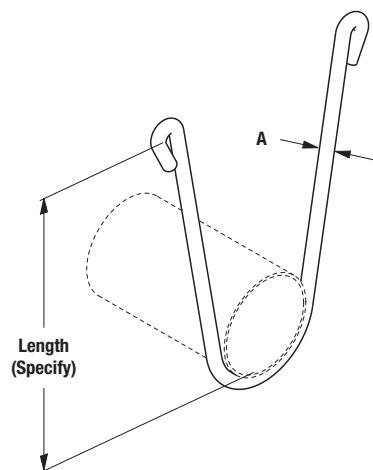
Function: Used to support piping from wood beams where no contraction is expected. Used extensively in automatic fire sprinkler systems. Fig. 120MJ is used when the wood beam is on a diagonal.

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

Order By: Part number, side length and finish

Part No.	Pipe Size		A		Fastener Size	Max. Rec. Load***	
	in.	(mm)	in.	(mm)		lbs.	(kN)
120MJ-3/4	3/4"	(20)	5/16"	(7.9)	16 x 2*	250	(1.11)
120MJ-1	1"	(25)	5/16"	(7.9)	16 x 2*	250	(1.11)
120MJ-1 1/4	1 1/4"	(32)	5/16"	(7.9)	16 x 2*	250	(1.11)
120MJ-1 1/2	1 1/2"	(40)	5/16"	(7.9)	16 x 2*	250	(1.11)
120MJ-2	2"	(50)	5/16"	(7.9)	16 x 2*	250	(1.11)
120MJ-2 1/2	2 1/2"	(65)	3/8"	(9.5)	3/8 x 2 1/2**	320	(1.42)
120MJ-3	3"	(80)	3/8"	(9.5)	3/8 x 2 1/2**	320	(1.42)
120MJ-3 1/2	3 1/2"	(90)	3/8"	(9.5)	3/8 x 2 1/2**	560	(2.49)
120MJ-4	4"	(100)	3/8"	(9.5)	1/2 x 3**	560	(2.49)
120MJ-5	5"	(125)	1/2"	(12.7)	1/2 x 3**	560	(2.49)
120MJ-6	6"	(150)	1/2"	(12.7)	1/2 x 3**	760	(3.38)
120MJ-8	8"	(200)	1/2"	(12.7)	5/8 x 3**	--	(--)

TOLCO



* Drive Screw
 ** Lag Bolt
 *** With minimum safety factor of 5
 Fastener schedule per NFPA

Fig. 120W - Wrap Around “U” Hanger

Size Range: Size 3/4" (20mm) thru 2" (50mm) pipe

Material: Steel

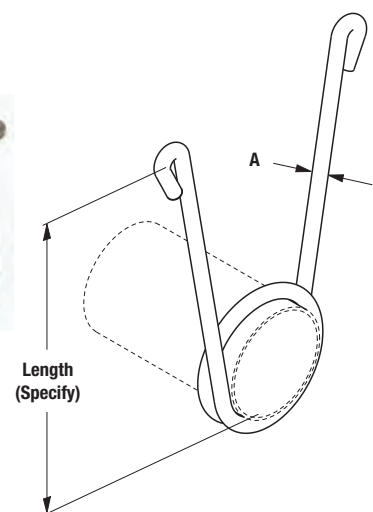
Function: Required for automatic fire protection agencies to be used on the end of branch lines to prevent pipe from whipping vertical and striking ceiling or beam.

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

Order By: Part number, side length and finish

Part No.	Pipe Size		A		Fastener Size	Max. Rec. Load***	
	in.	(mm)	in.	(mm)		lbs.	(kN)
120W-3/4	3/4"	(20)	5/16"	(7.9)	16 x 2*	250	(1.11)
120W-1	1"	(25)	5/16"	(7.9)	16 x 2*	250	(1.11)
120W-1 1/4	1 1/4"	(32)	5/16"	(7.9)	16 x 2*	250	(1.11)
120W-1 1/2	1 1/2"	(40)	5/16"	(7.9)	16 x 2*	250	(1.11)
120W-2	2"	(50)	5/16"	(7.9)	16 x 2*	250	(1.11)

TOLCO



* Drive Screw
 *** With minimum safety factor of 5
 Fastener schedule per NFPA

B3262 Light Duty Spring Hanger

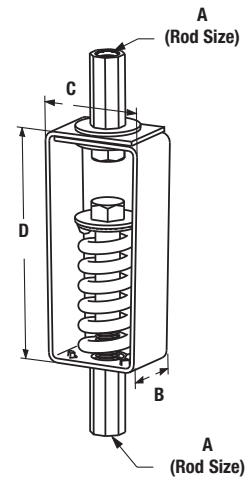
Rod Size Range: 3/8"-16 to 3/4"-10

Material: Steel

Service: Designed for use with a light piping system where vertical movement does not exceed 1 1/4" (31.7).

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 49 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 48.

Order By: Part number.



Part No.	Rod Size A	Spring Color	B		C		D	
			In	(mm)	In	(mm)	In	(mm)
B3262-3/8	3/8"-16	Brown	2"	(50.8)	2 3/4"	(69.8)	4 1/2"	(114.3)
B3262-1/2	1/2"-13	Black	2"	(50.8)	2 3/4"	(69.8)	4 1/2"	(114.3)
B3262-5/8	5/8"-11	Red	2"	(50.8)	2 3/4"	(69.8)	4 1/2"	(114.3)
B3262-3/4	3/4"-10	Orange	2"	(50.8)	3"	(76.2)	7"	(177.8)

Part No.	Spring Deflection		Rated Load		Approx. Wt./100	
	In	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3262-3/8	1.20	(30.1)	100-150	(.44 - .67)	390	(176.2)
B3262-1/2	1.10	(27.7)	150-250	(.67 - 1.11)	410	(186.0)
B3262-5/8	1.00	(25.4)	350-450	(1.56 - 2.00)	470	(213.2)
B3262-3/4	1.20	(30.1)	600-750	(2.67 - 3.34)	1240	(562.6)

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

Pipe Hangers

BH-2-4, BH-5-8, BH-9-12 - Parallel Strap Hangers

BH-2-4-R, BH-5-8-R, BH-9-12-R - Right Angle Strap Hangers

Material: Steel

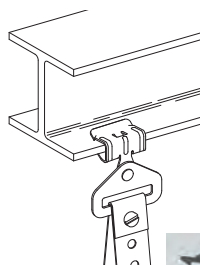
Function: The Parallel Strap Hanger series is designed for suspending up to 1" (50.8) wide straps parallel to beams.

The Right Angle Strap Hanger series is designed for suspending up to 1" (50.8) wide straps at right angle to the beam.

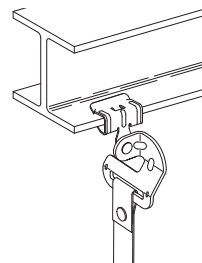
Note: Install clip to beam with hammer.

Standard Finish: Zinc Phosphate

Order By: Part number and finish.



Parallel Strap



Right Angle Strap



Part No.		Flange Thickness		Maximum Load		Approx. Wt./100			
Parallel	Right Angle	In.	(mm)	Lbs.	(kN)	BH-2-12		BH-2-12R	
						Lbs.	(kg)	Lbs.	(kg)
BH-2-4	BH-2-4-R	1/8" to 1/4"	(3.2 to 6.3)	200	(.89)	4.5	(2.0)	6.0	(2.7)
BH-5-8	BH-5-8-R	5/16" to 1/2"	(7.9 to 12.7)	200	(.89)	5.0	(2.3)	6.5	(2.9)
BH-9-12	BH-9-12-R	9/16" to 3/4"	(14.3 to 19.0)	200	(.89)	5.5	(2.5)	7.0	(3.2)

Design Load is a static straight down load.

BL1400 - Hanger

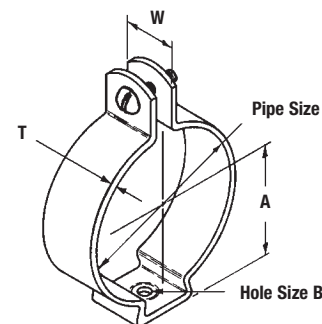
Size Range: 1/2" (15mm) to 4" (100mm) pipe

Material: Steel

Function: Designed to support or suspend light duty stationary pipe runs.

Standard Finish: Electro-Galvanized

Order By: Part number.



Part No.	Pipe Size		A		B		T		W		Approx. Wt./100	
	In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)	Lbs.	(kg)
BL1400	1/2"	(15)	29/32"	(23.0)	9/32"	(7.1)	16 Ga.	(1.5)	3/4"	(19.0)	6	(2.7)
BL1410	3/4"	(20)	31/32"	(24.6)	9/32"	(7.1)	16 Ga.	(1.5)	3/4"	(19.0)	7	(3.2)
BL1420	1"	(25)	1 1/4"	(31.7)	9/32"	(7.1)	16 Ga.	(1.5)	3/4"	(19.0)	8	(3.6)
BL1430	1 1/4"	(32)	1 13/32"	(35.7)	9/32"	(7.1)	18 Ga.	(1.5)	7/8"	(22.2)	10	(4.5)
BL1440	1 1/2"	(40)	5 5/8"	(41.3)	1 1/32"	(8.7)	16 Ga.	(1.5)	1"	(25.4)	17	(7.7)
BL1450	2"	(50)	1 7/8"	(47.6)	1 1/32"	(8.7)	16 Ga.	(1.5)	1 1/4"	(31.7)	25	(11.3)
BL1460	2 1/2"	(65)	2 1/16"	(52.4)	1 1/32"	(8.7)	16 Ga.	(1.5)	1 1/4"	(31.7)	26	(11.8)
BL1470	3"	(80)	2 1/2"	(63.5)	1 1/32"	(8.7)	16 Ga.	(1.5)	1 1/4"	(31.7)	33	(14.9)
BL1480	3 1/2"	(90)	2 3/4"	(69.8)	1 1/32"	(8.7)	16 Ga.	(1.5)	1 1/4"	(31.7)	36	(16.3)
BL1490	4"	(100)	3 1/2"	(88.9)	1 1/32"	(8.7)	16 Ga.	(1.5)	1 1/4"	(31.7)	40	(18.1)

Designed for positioning only, no load rating.

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

Pipe Clamps



Pipe clamps offered in this section are designed for support and attachment of pipe to structural members. A wide range of pipe clamps are available for various applications.

Materials

Carbon Steel is used in the manufacturing of riser and pipe clamps. Stainless Steel and other materials are available.

Finishes

The standard finishes for mechanical supports are plain steel (oil coated) sometimes referred to as black and Electro-Galvanized Zinc (ASTM B633 SC3). Hot-Dip Galvanized After Fabrication (ASTM A123), Red Primer, Plastic Coating, DURA-GREEN™, DURA-COPPER™ and other special coatings are available upon request.

Note: Due to the design of some products, (threads, connecting hardware, swivels, etc.) items may or may not be uniformly coated with special finishes. In some cases, the hanger itself may be coated, however, the hardware may be supplied Electro-Plated, Copper Plated, or in Stainless Steel.

Recommended Torque (Pipe Clamp Hardware)

1/4"-20	5/16"-18	3/8"-16	1/2"-13	5/8"-11	3/4"-10 & larger
6 ft/lbs (8 Nm)	11 ft/lbs (19 Nm)	19 ft/lbs (26 Nm)	50 ft/lbs (68 Nm)	65 ft/lbs (88 Nm)	75 ft/lbs (101 Nm)

Approvals (as noted)

Items in this section are Underwriters Laboratories Listed, Factory Mutual Approved, and comply with Federal Specification WW-H-171E & A-A-1192A or Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58.

All pipe hangers and supports in this section are sized to fit schedule 40/80 pipe unless otherwise noted. Some steel items may be specially fabricated to fit other pipe diameters i.e. ductile iron, cast iron, etc. Select pipe O.D. from charts on pages 294 thru 300.

B3373 - Standard Riser Clamp (TOLCO Fig. 6)

B3373F - Felt Lined Standard Riser Clamp for Copper Tubing (TOLCO Fig. 6F)

B3373C - PVC Coated Standard Riser Clamp (TOLCO Fig. 6PVC)

Size Range: (B3373) 1/2" (15mm) thru 30" (760mm) pipe
(B3373F) 1/2" (15mm) thru 2 1/2" (65mm) copper tubing
(B3373C) 1/2" (15mm) thru 6" (150mm) pipe

Material: Steel

Insulation Material: (Fig. 6F) 3/16" (4.8mm) felt.

Function: Used for supporting vertical piping.

Approvals: Underwriters Laboratories Listed in the USA (UL), Canada (cUL) 3/4" (20mm) - 8" (200mm). Factory Mutual Engineering Approved, 3/4" (20mm) thru 8" (200mm). Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 8, and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 8.

Maximum Temperature: 650°F (343°C)

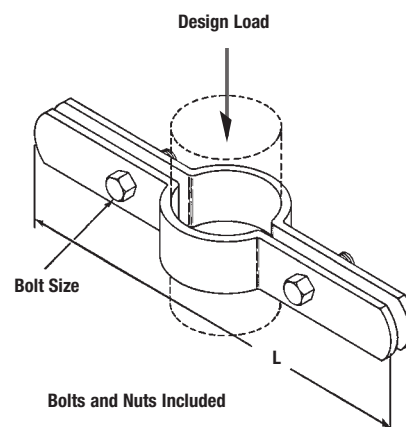
Finish: Plain. Contact B-Line for alternative finishes and materials.

Order By:

(B3373 and B3373C) pipe size and finish.

(B3373F) copper tube size and finish.

B3373F is available for Iron Pipe Size, consult factory.



B3373C



B3373F



Part No.	Pipe Size		L		Bolt Size	Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)		Lbs.	(kN)	Lbs.	(kg)
B3373-1/2	1/2"	(15)	9"	(228.6)	3/8"-16 x 1 1/4"	255	(1.13)	101	(45.9)
B3373-3/4	3/4"	(20)	9 1/4"	(234.9)	3/8"-16 x 1 1/4"	255	(1.13)	105	(47.7)
B3373-1	1"	(25)	9 9/16"	(242.9)	3/8"-16 x 1 1/4"	255	(1.13)	109	(49.4)
B3373-1 1/4	1 1/4"	(32)	10"	(254.0)	3/8"-16 x 1 1/4"	255	(1.13)	112	(50.9)
B3373-1 1/2	1 1/2"	(40)	10 1/4"	(260.3)	3/8"-16 x 1 1/2"	255	(1.13)	113	(51.1)
B3373-2	2"	(50)	10 3/4"	(273.0)	3/8"-16 x 1 1/2"	255	(1.13)	165	(75.0)
B3373-2 1/2	2 1/2"	(65)	11 1/4"	(285.7)	3/8"-16 x 1 1/2"	390	(1.73)	180	(81.6)
B3373-3	3"	(80)	11 15/16"	(303.2)	3/8"-16 x 1 1/2"	530	(2.35)	195	(88.4)
B3373-3 1/2	3 1/2"	(90)	12 3/8"	(314.3)	1/2"-13 x 1 3/4"	670	(2.98)	217	(98.5)
B3373-4	4"	(100)	12 7/8"	(327.0)	1/2"-13 x 1 3/4"	810	(3.60)	228	(103.5)
B3373-5	5"	(125)	14"	(355.6)	1/2"-13 x 1 3/4"	1160	(5.16)	480	(217.7)
B3373-6	6"	(150)	15 3/16"	(385.8)	1/2"-13 x 2"	1570	(6.98)	526	(238.6)
B3373-8	8"	(200)	17 3/4"	(450.8)	5/8"-11 x 2 1/2"	2500	(11.12)	957	(434.1)
B3373-10	10"	(250)	19 7/16"	(493.7)	5/8"-11 x 2 1/2"	2500	(11.12)	1101	(499.4)
B3373-12	12"	(300)	21 1 1/16"	(550.9)	5/8"-11 x 3"	2700	(12.01)	1622	(735.7)
B3373-14	14"	(350)	23 9/16"	(598.5)	5/8"-11 x 3"	2700	(12.01)	1732	(785.6)
B3373-16	16"	(400)	26 3/8"	(669.9)	3/4"-10 x 3 1/4"	2900	(12.90)	2959	(1342.2)
B3373-18	18"	(450)	28 7/8"	(733.4)	3/4"-10 x 3 1/4"	2900	(12.90)	3235	(1467.4)
B3373-20	20"	(500)	30 7/8"	(784.2)	3/4"-10 x 3 1/2"	2900	(12.90)	3568	(1618.4)
B3373-24	24"	(600)	34 7/8"	(885.8)	3/4"-10 x 3 1/2"	2900	(12.90)	4064	(1843.3)
B3373-30	30"	(750)	40 3/4"	(1035.0)	7/8"-9 x 3 1/2"	2900	(12.90)	6016	(2728.8)

Notes: For ductile iron (D.I.) pipe use part number B3373DI-pipe size. Contact B-Line Engineering for more information.

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

Pipe Clamps

B3373CT - Cooper Tubing Riser Clamp (TOLCO Fig. 82)

B3373CTC - PVC Coated Cooper Tubing Riser Clamp (TOLCO Fig. 82PVC)

Size Range: — Size 1/2" (15mm) thru 6" (150mm) copper tubing

Material: — Steel

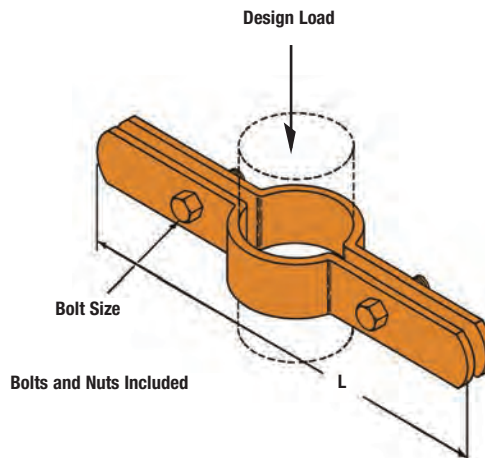
Function: — Used for supporting vertical copper tubing.

Approvals: — Conforms to Federal Specification WW-H-171E & A-A-1192A Type 8 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58 Type 8.

Finish: — DURA-COPPER™

Note: — Available with plastic coating, specify by ordering B3373CTC

Order By: — Part number and nominal tubing size



B3373CT



B3373CTC

Part No.	Tubing Size		L		Bolt Size	Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)		Lbs.	(kN)	Lbs.	(kg)
B3373CT-1/2	1/2"	(15)	8 3/4"	(222.2)	5/16"-18 x 1"	75	(.33)	72	(32.6)
B3373CT-3/4	3/4"	(20)	9 1/16"	(234.9)	5/16"-18 x 1"	75	(.33)	73	(33.2)
B3373CT-1	1"	(25)	9 5/16"	(236.5)	3/8"-16 x 1"	120	(.53)	74	(33.6)
B3373CT-1 1/4	1 1/4"	(32)	9 5/8"	(244.5)	3/8"-16 x 1"	150	(.67)	77	(34.8)
B3373CT-1 1/2	1 1/2"	(40)	9 3/4"	(247.6)	3/8"-16 x 1 1/4"	150	(.67)	111	(50.3)
B3373CT-2	2"	(50)	10 7/16"	(265.1)	3/8"-16 x 1 1/4"	150	(.67)	120	(54.5)
B3373CT-2 1/2	2 1/2"	(65)	10 15/16"	(277.8)	3/8"-16 x 1 1/4"	300	(1.33)	128	(58.1)
B3373CT-3	3"	(80)	11 7/16"	(290.5)	3/8"-16 x 1 1/4"	300	(1.33)	136	(61.5)
B3373CT-3 1/2	3 1/2"	(90)	11 15/16"	(303.2)	3/8"-16 x 1 1/4"	300	(1.33)	145	(65.7)
B3373CT-4	4"	(100)	12 1/2"	(317.5)	1/2"-13 x 1 3/4"	300	(1.33)	170	(77.3)
B3373CT-5	5"	(125)	13 5/8"	(346.1)	1/2"-13 x 2"	500	(2.22)	355	(161.0)
B3373CT-6	6"	(150)	14 5/8"	(371.5)	1/2"-13 x 2"	500	(2.22)	386	(175.1)

B3132 - Two-Bolt Underground Clamp (TOLCO Fig. 9)

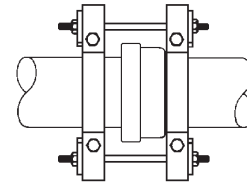
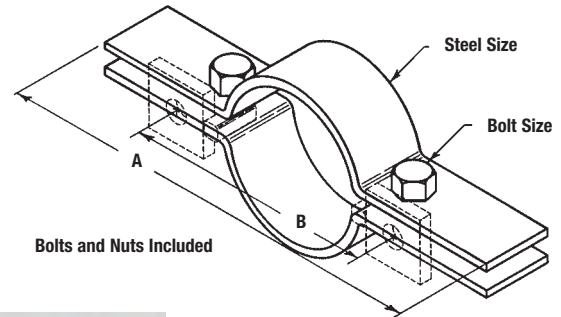
Size Range: 4" (100mm) thru 24" (600mm) pipe

Material: Steel

Function: Clamp is used for underground A.W.W.A. cast iron and ductile iron water pipe to prevent joints from separating. The O.D. of the A.W.W.A. pipe is shown in the data table.

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

Order By: Part number, pipe size and outside diameter of pipe.
Order B3132W lugs, tie rods and hex nuts separately.



Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	Clamp I.D. in. (mm)	Steel Size in. (mm)	Bolt Size	Approx. Wt./100 Lbs. (kg)
B3132-4	4" (100)	12 ⁷ / ₈ " (327.0)	9 ³ / ₄ " (247.6)	5" (127.0)	1 ¹ / ₂ " x 2" (12.7 x 50.8)	5/8"-11 x 3"	864 (391.9)
B3132-6	6" (150)	14 ³ / ₄ " (374.6)	12" (304.8)	7 ¹ / ₁₆ " (179.4)	1 ¹ / ₂ " x 2" (12.7 x 50.8)	5/8"-11 x 3"	1020 (462.6)
B3132-8	8" (200)	17 ¹ / ₄ " (438.1)	14 ¹ / ₄ " (361.9)	9 ³ / ₁₆ " (233.4)	1 ¹ / ₂ " x 2" (12.7 x 50.8)	5/8"-11 x 3"	1222 (554.3)
B3132-10	10" (250)	19 ³ / ₈ " (492.1)	16 ¹ / ₂ " (419.1)	11 ³ / ₈ " (288.9)	1 ¹ / ₂ " x 2" (12.7 x 50.8)	5/8"-11 x 3"	1409 (639.1)
B3132-12	12" (300)	21 ⁷ / ₈ " (555.6)	18 ⁷ / ₈ " (479.4)	13 ¹ / ₂ " (342.9)	1 ¹ / ₂ " x 2" (12.7 x 50.8)	5/8"-11 x 3"	1608 (729.4)
B3132-14	14" (350)	26" (660.4)	22 ¹ / ₄ " (565.1)	15 ³ / ₄ " (400.0)	3/4" x 3" (19.0 x 76.2)	7/8"-9 x 4 ¹ / ₂ "	4359 (1977.2)
B3132-16	16" (400)	28 ³ / ₈ " (720.7)	24 ⁵ / ₈ " (625.5)	17 ⁷ / ₈ " (454.0)	3/4" x 4" (19.0 x 101.6)	1"-8 x 4 ¹ / ₂ "	6403 (2904.4)
B3132-18	18" (450)	31 ³ / ₈ " (796.9)	27 ⁵ / ₈ " (701.7)	20" (508.0)	3/4" x 4" (19.0 x 101.6)	1 ¹ / ₄ "-7 x 5"	7293 (3308.1)
B3132-20	20" (500)	33 ¹ / ₂ " (850.9)	29 ³ / ₄ " (755.6)	22 ¹ / ₈ " (562.0)	3/4" x 4 ¹ / ₂ " (19.0 x 114.3)	1 ¹ / ₄ "-7 x 5"	8778 (3981.7)
B3132-24	24" (600)	39" (990.6)	35 ¹ / ₄ " (895.3)	26 ³ / ₈ " (669.9)	3/4" x 5" (19.0 x 127.0)	1 ¹ / ₄ "-6 x 5 ¹ / ₂ "	11659 (5288.5)

B3132W - Lug Washer (TOLCO Fig. 9X)

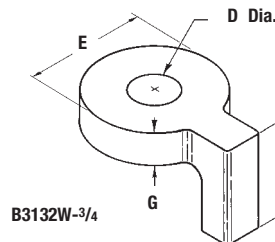
Size Range: 3/4" (20mm) thru 1¹/₂" (40mm) rod

Material: Cast Iron for B3132W-3/4, steel for other sizes

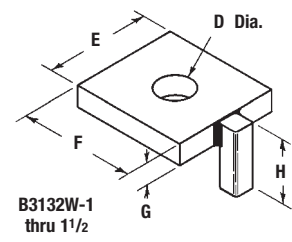
Function: Used with B3132 to secure tie rods. The projecting lug bears against the clamp bolt to prevent washer and tie rod from slipping off clamp.

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

Order By: Part number, rod size and finish



B3132W-3/4



B3132W-1
thru 1¹/₂



Part No.	Tie Rod Size	Use With Pipe Size in. (mm)	Dia. in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	Approx. Wt./100 Lbs. (kg)
B3132W-3/4	3/4"-10	4"-12" (100-300)	7/8" (22.2)	2 ³ / ₈ " (60.3)	--	5/8" (15.9)	1 ⁵ / ₈ " (41.3)	74 (33.7)
B3132W-1	1"-8	14"-16" (350-400)	1 ¹ / ₈ " (28.6)	3 ¹ / ₂ " (88.9)	3 ¹ / ₂ " (88.9)	5/8" (15.9)	2 ¹ / ₂ " (63.5)	207 (93.9)
B3132W-1 ¹ / ₄	1 ¹ / ₄ "-7	18" (450)	1 ³ / ₈ " (34.9)	3 ¹ / ₂ " (88.9)	4" (101.6)	5/8" (15.9)	3 ¹ / ₂ " (63.5)	236 (107.0)
B3132W-1 ³ / ₈	1 ³ / ₈ "-6	20" (500)	1 ¹ / ₂ " (38.1)	4" (101.6)	4 ¹ / ₄ " (107.9)	5/8" (15.9)	4" (101.6)	231 (104.8)
B3132W-1 ¹ / ₂	1 ¹ / ₂ "-6	24" (600)	1 ⁵ / ₈ " (41.3)	4" (101.6)	4 ³ / ₄ " (120.6)	5/8" (15.9)	4" (101.6)	259 (117.5)

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

Pipe Clamps

B3134 - Double Bolt Underground Socket Clamp (TOLCO Fig. 14)

Size Range: 4" (100mm) thru 24" (600mm) pipe

Material: Steel

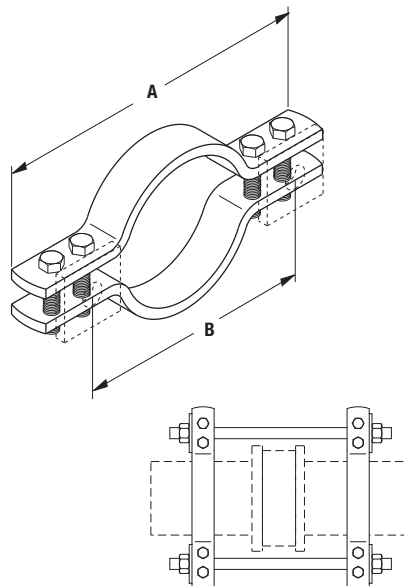
Function: Clamp is used for underground A.W.W.A. cast iron and ductile iron water pipe to prevent joints from separating. The O.D. of the A.W.W.A. pipe is shown in the data table.

Approvals: Conforms to National Fire Protection Association (NFPA) Pamphlet 24, 4" (100mm) thru 12" (300mm) pipe sizes.

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

Order By: Part number, pipe size and outside diameter of pipe.

Order B3134W plate washers, tie rods and hex nuts separately.



Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	Bolt Size	B3134 Washer Size)	Approx. Wt./100 lbs. (kg)
B3134-4	4.80" (121.9)	14 ¹ / ₁₆ " (357.2)	9 ⁵ / ₁₆ " (236.5)	5/8"-11	B3134W-3/4	1275 (578.3)
B3134-6	6.90" (175.3)	16 ⁷ / ₁₆ " (417.5)	11 ¹¹ / ₁₆ " (298.9)	5/8"-11	B3134W-3/4	1455 (660.0)
B3134-8	9.05" (229.9)	19 ⁵ / ₈ " (498.5)	14 ⁷ / ₈ " (442.6)	5/8"-11	B3134W-3/4	2350 (1065.9)
B3134-10	11.10" (281.9)	21 ¹³ / ₁₆ " (554.0)	17 ¹ / ₁₆ " (433.4)	3/4"-10	B3134W-3/4	2925 (1326.8)
B3134-12	13.20" (335.3)	24 ¹ / ₂ " (622.3)	19 ¹ / ₄ " (488.9)	7/8"-9	B3134W-1	4030 (1828.0)
B3134-14	15.30" (388.6)	26 ¹⁵ / ₁₆ " (684.2)	21 ¹¹ / ₁₆ " (550.9)	7/8"-9	B3134W-1	5385 (2442.6)
B3134-16	17.40" (441.9)	30 ³ / ₄ " (781.0)	24 ³ / ₄ " (628.6)	1"-8	B3134W-1 ¹ / ₈	7645 (3467.8)
B3134-18	19.50" (495.3)	34 ⁵ / ₁₆ " (871.5)	27 ⁵ / ₁₆ " (693.7)	1 ¹ / ₄ "-7	B3134W-1 ¹ / ₄	9425 (4275.2)
B3134-20	21.60" (548.6)	36 ⁵ / ₈ " (930.3)	29 ⁵ / ₈ " (752.5)	1 ¹ / ₄ "-7	B3134W-1 ¹ / ₂	10975 (4978.2)
B3134-24	25.80" (655.3)	42 ¹ / ₈ " (1070.0)	34 ³ / ₈ " (873.1)	1 ¹ / ₂ "-6	B3134W-1 ¹ / ₂	14865 (6742.6)

B3134W - Plate Washer (TOLCO Fig. 14X)

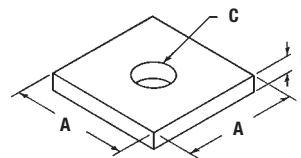
Size Range: 3/4"-10 thru 1¹/₂"-6 rod

Material: Steel

Function: Used with B3134 to secure tie rods.

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

Order By: Part number, rod size and finish



Part No.	Tie Rod Size	A in. (mm)	B in. (mm)	Hole Size C in. (mm)	Approx. Wt./100 lbs. (kg)
B3134W-3/4	3/4"-10	3" (76.2)	1/2" (12.7)	7/8" (22.2)	120 (54.4)
B3134W-1	1"-8	3 ¹ / ₂ " (88.9)	1/2" (12.7)	1 ¹ / ₈ " (28.6)	157 (71.2)
B3134W-1 ¹ / ₈	1 ¹ / ₈ "-7	3 ¹ / ₂ " (88.9)	5/8" (15.9)	1 ¹ / ₄ " (31.7)	194 (88.0)
B3134W-1 ¹ / ₄	1 ¹ / ₄ "-7	3 ¹ / ₂ " (88.9)	3/4" (19.0)	1 ³ / ₈ " (35.8)	230 (104.3)
B3134W-1 ¹ / ₂	1 ¹ / ₂ "-6	3 ¹ / ₂ " (88.9)	3/4" (19.0)	1 ⁵ / ₈ " (41.2)	240 (108.8)

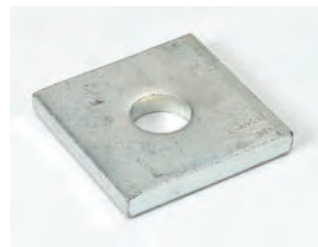


Fig. 4A - Pipe Clamp for Sway Bracing

Size Range: 4" (100mm) thru 8" (200mm) pipe.
For sizes smaller than 4" (100mm) use B3140.

Material: Steel

Function: For bracing pipe against sway and seismic disturbance.

Approvals: Underwriters Laboratories Listed in the USA (**UL**) and Canada (**cUL**) 4" (100mm) thru 8" (200mm). Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (**OSHPD**).

Installation Instructions: The Fig. 4A is the "braced pipe" attachment component of a longitudinal, lateral or riser brace assembly. It is intended to be combined with the "bracing pipe" and B-Line/TOLCO transitional and structural attachment component(s) to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

To Install: Place the Fig. 4A over the pipe to be braced. Attach Cooper B-Line/TOLCO transitional fitting, either Fig. 980, 910 or 909, to the clamp ears. Tighten bolts and nuts; torque requirement is a minimum of 50 ft./lbs. (68Nm).

Transitional fitting attachment can pivot for adjustment to proper brace angle.

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

Order By: Part number, pipe size and finish



Component of State of
California OSHPD Approved
Seismic Restraints System

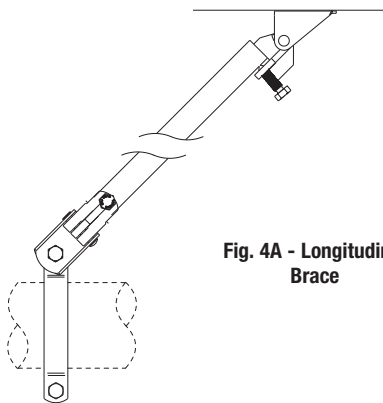
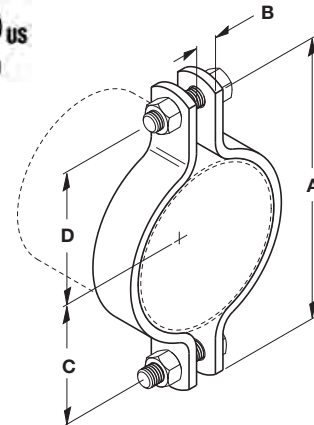


Fig. 4A - Longitudinal
Brace

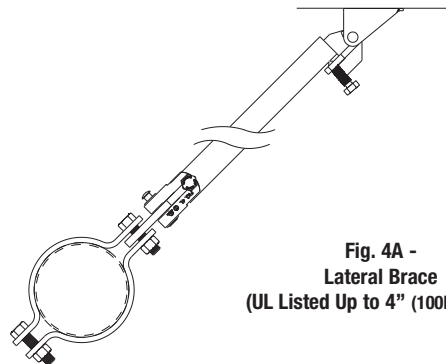


Fig. 4A -
Lateral Brace
(UL Listed Up to 4" (100MM) IPS)

Part No.	Pipe Size	A	B	C	D	Bolt Size	Max. Horizontal Design Load	Approx. Wt./100
	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)		lbs. (kN)	lbs. (kg)
4A-4	4" (100)	8 ¹ / ₂ " (215.9)	9 ¹ / ₁₆ " (14.3)	3 ³ / ₈ " (85.7)	3 ¹ / ₁₆ " (93.7)	1/2"-13	2015 (8.96)	221 (100.2)
4A-5	5" (125)	9 ³ / ₄ " (247.6)	9 ¹ / ₁₆ " (14.3)	3 ⁷ / ₈ " (98.4)	4 ³ / ₈ " (111.1)	1/2"-13	2015 (8.96)	253 (114.7)
4A-6	6" (150)	11 ¹ / ₂ " (292.1)	5 ⁵ / ₈ " (15.9)	5" (127.0)	5 ¹ / ₈ " (130.2)	1/2"-13	2015 (8.96)	513 (232.7)
4A-8	8" (200)	13 ¹ / ₄ " (336.5)	3 ³ / ₄ " (19.0)	6 ¹ / ₁₆ " (169.9)	6 ¹ / ₈ " (155.6)	1/2"-13	2015 (8.96)	601 (272.6)

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.

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

Pipe Clamps

B3140 - Standard Pipe Clamp (TOLCO Fig. 4)

B3140F - Standard Pipe Clamp Felt Lined for Copper Tubing (TOLCO Fig. 4F)

B3140C - Standard Pipe Clamp PVC Coated (TOLCO Fig. 4PVC)

Size Range: B3140/B3140C Size 1/2" (15mm) thru 30" (750mm) pipe.

B3140F Size 1/2" (15mm) thru 2 1/2" (65mm) copper tubing

Material: Steel

Function: Recommended for the suspension of non-insulated pipe or insulated pipe with B3151 shields. (Use B3200 weldless eye nut, B3210 eye rod or B3211 welded eye rod.) B3140F and B3140C are designed to reduce noise and vibration and/or prevent electrolysis.

Approvals: Underwriters Laboratories Listed in the USA (**UL**), Canada (**cUL**) 3/4" (20mm) - 12" (300mm), and approved by Factory Mutual Engineering (**FM**), 3/4" (20mm) - 8" (200mm). Federal Specification WW-H-171E & A-A-1192A, Type 4, and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 4. Included in our Seismic Restraints Catalog 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 the Seismic Restraint Systems Guidelines.

Note: For piping that requires sway bracing refer to Fig. 4A.

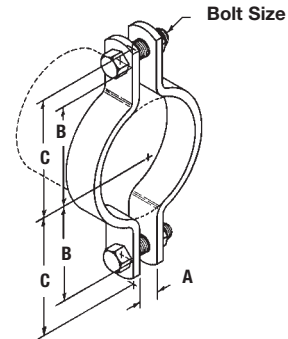
Maximum Temperature: — 750°F (399°C)

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

Order By: Part number, pipe size and finish.

Order Note: When ordering B3140F allow for 3/16" (4.8mm) felt on each half of clamp.

Component of State of
California OSHPD Approved
Seismic Restraints System



B3140



B3140F



B3140C

B3140 - Standard Pipe Clamp (TOLCO Fig. 4)

B3140F - Standard Pipe Clamp Felt Lined (TOLCO Fig. 4F)

B3140C - Standard Pipe Clamp PVC Coated (TOLCO Fig. 4PVC) Cont.

Part No.	Pipe Size		A		B		C		Bolt Size
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	
B3140-1/2	1/2"	(15)	3/8"	(9.5)	31/32"	(24.6)	117/32"	(38.9)	5/16"-18
B3140-3/4	3/4"	(20)	9/16"	(14.3)	13/32"	(27.8)	121/32"	(42.0)	5/16"-18
B3140-1	1"	(25)	9/16"	(14.3)	15/16"	(33.3)	17/8"	(47.6)	5/16"-18
B3140-1 1/4	1 1/4"	(32)	17/32"	(13.5)	17/16"	(36.5)	2"	(50.8)	5/16"-18
B3140-1 1/2	1 1/2"	(40)	19/32"	(15.1)	121/32"	(42.0)	27/32"	(56.4)	5/16"-18
B3140-2	2"	(50)	9/16"	(14.3)	21/8"	(54.0)	23/4"	(69.8)	1/2"-13
B3140-2 1/2	2 1/2"	(65)	5/8"	(15.9)	221/32"	(67.5)	39/32"	(83.3)	1/2"-13
B3140-3	3"	(75)	5/8"	(15.9)	215/16"	(74.6)	39/16"	(90.5)	1/2"-13
B3140-3 1/2	3 1/2"	(90)	5/8"	(15.9)	35/32"	(80.1)	325/32"	(96.0)	1/2"-13
B3140-4	4"	(100)	3/4"	(19.0)	39/16"	(90.5)	45/16"	(109.5)	5/8"-11
B3140-5	5"	(125)	3/4"	(19.0)	41/8"	(104.8)	47/8"	(123.8)	5/8"-11
B3140-6	6"	(150)	7/8"	(22.2)	415/16"	(125.4)	513/16"	(147.6)	3/4"-10
B3140-8	8"	(200)	1"	(25.4)	61/16"	(154.0)	615/16"	(176.2)	3/4"-10
B3140-10	10"	(250)	1"	(25.4)	73/8"	(187.3)	811/16"	(220.7)	7/8"-9
B3140-12	12"	(300)	1"	(25.4)	87/16"	(214.3)	93/4"	(247.6)	7/8"-9
B3140-14	14"	(350)	1 1/8"	(28.6)	91/4"	(234.9)	105/8"	(269.9)	7/8"-9
B3140-16	16"	(400)	1 1/8"	(28.6)	101/4"	(260.3)	115/8"	(295.3)	7/8"-9
B3140-18	18"	(450)	1 1/4"	(31.7)	117/8"	(301.6)	131/4"	(336.5)	1"-8
B3140-20	20"	(500)	13/8"	(34.9)	123/4"	(323.8)	141/8"	(358.8)	1 1/8"-7
B3140-24	24"	(600)	15/8"	(41.3)	151/4"	(387.3)	167/8"	(428.6)	1 1/4"-7
B3140-30	30"	(750)	2 1/4"	(57.1)	185/8"	(473.1)	21"	(533.4)	1 1/2"-6

Part No.	Pipe Size		Max. Design Load				Approx. Wt./100	
	in.	(mm)	650°F (343°C)		750°F (399°C)		lbs.	(kg)
			lbs.	(kN)	lbs.	(kN)		
B3140-1/2	1/2"	(15)	500	(2.22)	390	(1.73)	30	(13.6)
B3140-3/4	3/4"	(20)	500	(2.22)	390	(1.73)	31	(14.0)
B3140-1	1"	(25)	500	(2.22)	390	(1.73)	33	(14.5)
B3140-1 1/4	1 1/4"	(32)	500	(2.22)	390	(1.73)	39	(17.7)
B3140-1 1/2	1 1/2"	(40)	800	(3.56)	620	(2.76)	41	(18.6)
B3140-2	2"	(50)	1040	(4.62)	810	(3.60)	118	(53.5)
B3140-2 1/2	2 1/2"	(65)	1040	(4.62)	810	(3.60)	130	(58.9)
B3140-3	3"	(75)	1040	(4.62)	810	(3.60)	150	(68.0)
B3140-3 1/2	3 1/2"	(90)	1040	(4.62)	810	(3.60)	158	(71.6)
B3140-4	4"	(100)	1040	(4.62)	810	(3.60)	239	(108.4)
B3140-5	5"	(125)	1040	(4.62)	810	(3.60)	272	(123.4)
B3140-6	6"	(150)	1615	(7.18)	1260	(5.60)	541	(245.4)
B3140-8	8"	(200)	1615	(7.18)	1260	(5.60)	642	(291.2)
B3140-10	10"	(250)	2490	(11.07)	1950	(8.67)	1366	(619.6)
B3140-12	12"	(300)	2490	(11.07)	1950	(8.67)	1543	(699.9)
B3140-14	14"	(350)	2490	(11.07)	1950	(8.67)	2077	(942.1)
B3140-16	16"	(400)	2490	(11.07)	1950	(8.67)	2289	(1038.3)
B3140-18	18"	(450)	3060	(13.61)	2390	(10.63)	3206	(1454.2)
B3140-20	20"	(500)	3060	(13.61)	2390	(10.63)	3616	(1640.2)
B3140-24	24"	(600)	3060	(13.61)	2390	(10.63)	5161	(2341.0)
B3140-30	30"	(750)	3500	(15.57)	2740	(12.14)	10460	(4744.6)

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

Pipe Clamps

B3141 - A.W.W.A. Pipe Clamp (TOLCO Fig. 4C1)

Size Range: 4" (100mm) thru 24" (600mm) pipe

Material: Steel

Function: Recommended for the suspension of flanged or bell and spigot A.W.W.A. cast iron or ductile iron pipe. The O.D. of the A.W.W.A. iron pipe is shown in the data table. Used with B3200 weldless eye nut, B3210 eye rod or B3211 welded eye rod.

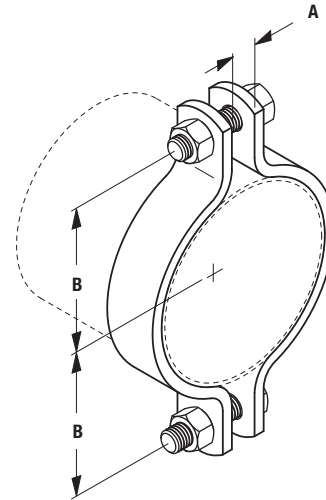
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 4, and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 4.

Maximum Temperature: 650°F (343°C)

Finish: Plain

Note: Available in Electro-Galvanized and HDG finish or Stainless Steel materials.

Order By: Part number, pipe size and finish



Part No.	Pipe O.D.		A		B		Bolt Size	Max. Recommended Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)		lbs.	(kN)	lbs.	(kg)
B3141-4	4.80"	(121.9)	1 1/8"	(28.6)	4 1/16"	(103.2)	5/8"-11	1400	(6.23)	860	(390.1)
B3141-6	6.90"	(175.2)	1 1/8"	(28.6)	5 1/16"	(128.6)	5/8"-11	1400	(6.23)	1060	(480.8)
B3141-8	9.05"	(229.9)	1 1/8"	(28.6)	6 3/16"	(157.2)	5/8"-11	1400	(6.23)	1230	(557.9)
B3141-10	11.10"	(281.9)	1 1/8"	(28.6)	7 1/4"	(184.1)	5/8"-11	1400	(6.23)	1430	(648.6)
B3141-12	13.20"	(335.3)	1 1/8"	(28.6)	8 5/16"	(211.1)	5/8"-11	1400	(6.23)	1630	(739.3)
B3141-14	15.30"	(388.6)	1 3/4"	(44.4)	9 7/8"	(250.7)	3/4"-10	2000	(8.89)	2300	(1043.3)
B3141-16	17.40"	(441.9)	1 3/4"	(44.4)	11 5/16"	(287.3)	7/8"-9	2500	(11.12)	3725	(1689.6)
B3141-18	19.50"	(495.3)	1 7/8"	(47.6)	12 9/16"	(319.1)	1"-8	3000	(13.34)	4200	(1905.1)
B3141-20	21.60"	(548.6)	2"	(50.8)	13 5/8"	(346.1)	1"-8	3100	(13.79)	4575	(2075.2)
B3141-24	25.80"	(655.3)	2"	(50.8)	16 5/16"	(414.3)	1 1/4"-7	4500	(20.01)	6400	(2903.0)

B3142 - Heavy Duty Pipe Clamp (TOLCO Fig. 4H)

Size Range: 3" (80mm) thru 24" (600mm) pipe

Material: Steel

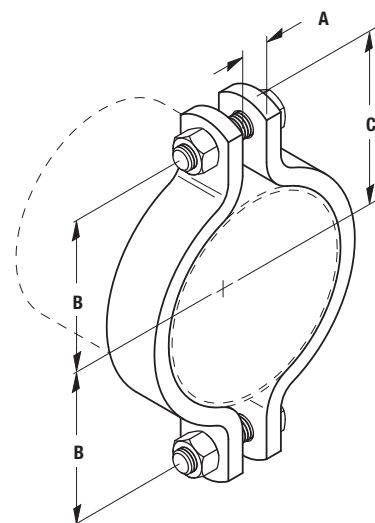
Function: Recommended for the suspension of heavy-duty pipe lines.
(Use with B3200 weldless eye nut, B3210 eye rod or B3211 welded eye rod).

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 4, and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 4.

Maximum Temperature: 750°F (399°C)

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

Order By: Part number, pipe size and finish



Part No.	Pipe Size in. (mm)		A in. (mm)		B in. (mm)		C in. (mm)		Bolt Size	Max. Design Load				Approx. Wt./100 lbs. (kg)	
										650°F (343°C) lbs. (kN)	750°F (399°C) lbs. (kN)				
B3142-3	3"	(80)	1"	(25.4)	3"	(76.2)	4 1/8"	(104.8)	3/4"-10	3370	(14.99)	3005	(13.36)	498	(225.9)
B3142-4	4"	(100)	1"	(25.4)	3 11/16"	(93.7)	4 15/16"	(125.4)	7/8"-9	3515	(15.63)	3135	(13.94)	634	(287.6)
B3142-5	5"	(125)	1"	(25.4)	4 5/16"	(109.5)	5 9/16"	(141.3)	7/8"-9	3515	(15.63)	3135	(13.94)	714	(323.9)
B3142-6	6"	(150)	1 1/8"	(28.6)	5 3/16"	(131.8)	6 11/16"	(169.9)	1"-8	4865	(21.64)	4340	(19.30)	1351	(612.8)
B3142-8	8"	(200)	1 1/8"	(28.6)	6 1/4"	(158.7)	7 3/4"	(196.8)	1"-8	4865	(21.64)	4340	(19.30)	1573	(713.5)
B3142-10	10"	(250)	1 1/4"	(31.7)	7 7/8"	(200.0)	9 1/2"	(241.3)	1 1/4"-7	6010	(26.73)	5360	(23.84)	2537	(1150.8)
B3142-12	12"	(300)	1 5/8"	(41.3)	9 1/2"	(241.3)	11 5/8"	(295.3)	1 1/2"-6	8675	(38.58)	7740	(34.43)	4300	(1950.5)
B3142-14	14"	(350)	1 5/8"	(41.3)	10 1/8"	(257.2)	12 1/4"	(311.1)	1 1/2"-6	9120	(40.56)	8135	(36.18)	5228	(2371.4)
B3142-16	16"	(400)	1 5/8"	(41.3)	11 3/16"	(284.2)	13 5/16"	(338.1)	1 1/2"-6	9120	(40.56)	8135	(36.18)	5657	(2566.0)
B3142-18	18"	(450)	1 5/8"	(41.3)	12 3/16"	(309.6)	14 5/16"	(363.5)	1 1/2"-6	9150	(40.70)	8160	(36.29)	6914	(3136.2)
B3142-20	20"	(500)	1 5/8"	(41.3)	13 5/16"	(338.1)	15 7/16"	(392.1)	1 1/2"-6	9150	(40.70)	8160	(36.29)	7468	(3387.5)
B3142-24	24"	(600)	1 3/4"	(44.4)	15 3/8"	(390.5)	17 3/4"	(450.8)	1 1/2"-6	9200	(40.92)	8205	(36.49)	12629	(5728.5)

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

Pipe Clamps

B3144 - Standard Double Bolt Pipe Clamp (TOLCO Fig. 5)

Size Range: — 1/2" (15mm) thru 36" (900mm) pipe.

Material: — Steel

Function: — Recommended for the suspension of pipe requiring up to 4" (101.6mm) of insulation and where flexibility of the clamp may be necessary. Use B3200 weldless eye nut, B3210 eye rod or B3211 welded eye rod. Also recommended for the attachment of sway bracing up to 8" (203.2mm). Refer to Cooper B-Line/TOLCO State of California Approved Seismic Restraint Product Manual.

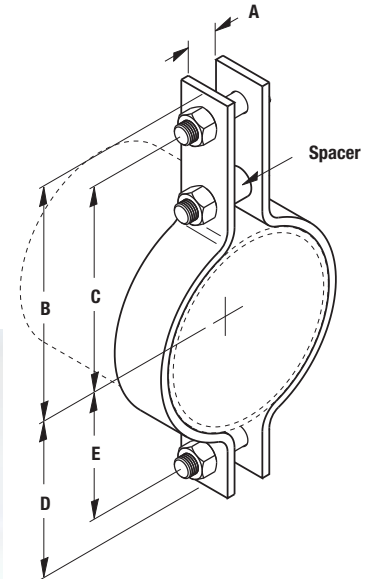
Approvals: — Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 3 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 3. Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD). For additional load, spacing and placement information relating to OSHPD projects, please refer to the B-Line/TOLCO Seismic Restraint Systems Guidelines.

Maximum Temperature: 750°F (399°C)

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

Order By: Part number, pipe size and finish.

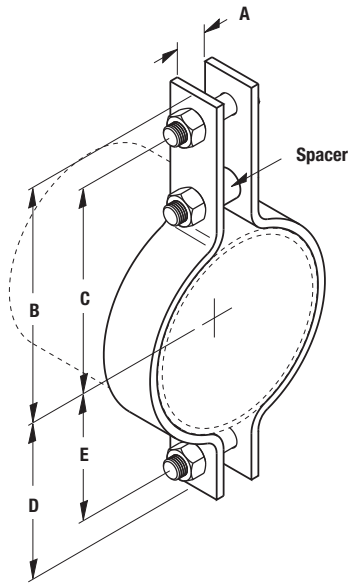
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Part No.	Pipe Size		A		B		C		D		E	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3144-1/2	1/2"	(15)	3/8"	(9.5)	2 3/16"	(71.4)	2 3/16"	(55.6)	1 1/2"	(38.1)	7/8"	(22.2)
B3144-3/4	3/4"	(20)	5/8"	(15.9)	3"	(76.2)	2 3/8"	(60.2)	1 11/16"	(42.9)	1 1/16"	(27.0)
B3144-1	1"	(25)	5/8"	(15.9)	3 1/4"	(82.5)	2 5/8"	(66.7)	1 15/16"	(49.2)	1 5/16"	(33.3)
B3144-1 1/4	1 1/4"	(32)	5/8"	(15.9)	3 1/2"	(88.9)	2 7/8"	(72.9)	2 3/16"	(58.7)	1 9/16"	(39.7)
B3144-1 1/2	1 1/2"	(40)	1"	(25.4)	5 3/8"	(136.5)	4 1/2"	(114.3)	2 5/8"	(66.7)	1 3/4"	(44.4)
B3144-2	2"	(50)	1"	(25.4)	5 13/16"	(147.6)	4 15/16"	(125.4)	2 15/16"	(74.6)	2 1/16"	(52.4)
B3144-2 1/2	2 1/2"	(65)	1"	(25.4)	6 1/8"	(155.6)	5 1/4"	(133.3)	3 1/4"	(82.5)	2 3/8"	(60.3)
B3144-3	3"	(75)	1"	(25.4)	6 3/4"	(171.4)	5 7/8"	(149.2)	3 5/8"	(92.1)	2 11/16"	(68.3)
B3144-3 1/2	3 1/2"	(90)	1"	(25.4)	7 3/16"	(182.6)	6 5/16"	(160.3)	3 7/8"	(98.4)	3"	(76.2)
B3144-4	4"	(100)	1"	(25.4)	7 3/4"	(196.8)	6 5/8"	(168.3)	4 11/16"	(119.1)	3 9/16"	(90.5)
B3144-5	5"	(125)	1"	(25.4)	8 9/16"	(217.5)	7 7/16"	(189.5)	5 5/16"	(134.9)	4 3/16"	(106.4)
B3144-6	6"	(150)	1 1/2"	(38.1)	9 7/8"	(250.8)	8 1/2"	(215.9)	6 1/8"	(155.6)	4 3/4"	(120.6)
B3144-8	8"	(200)	1 1/2"	(38.1)	11"	(279.4)	9 5/8"	(244.5)	7 5/16"	(185.7)	5 15/16"	(150.8)
B3144-10	10"	(250)	1 1/2"	(38.1)	12"	(304.8)	10 1/2"	(266.7)	8 7/8"	(225.4)	7 5/16"	(185.7)
B3144-12	12"	(300)	1 1/2"	(38.1)	13 1/8"	(333.4)	11 5/8"	(295.3)	9 15/16"	(252.4)	8 7/16"	(214.3)
B3144-14	14"	(350)	2"	(50.8)	14 5/16"	(363.5)	12 9/16"	(319.1)	11 5/16"	(287.3)	9 9/16"	(242.9)
B3144-16	16"	(400)	2"	(50.8)	15 9/16"	(395.3)	13 13/16"	(350.8)	12 5/16"	(312.7)	10 9/16"	(268.3)
B3144-18	18"	(450)	2"	(50.8)	16 7/8"	(428.6)	15 1/8"	(384.2)	13 3/8"	(339.7)	11 5/8"	(295.3)
B3144-20	20"	(500)	2"	(50.8)	18 1/4"	(463.5)	16 3/8"	(415.9)	15 1/8"	(384.2)	13 1/4"	(336.5)
B3144-24	24"	(600)	2"	(50.8)	20 7/16"	(519.7)	18 7/16"	(468.3)	17 5/16"	(439.7)	15 5/16"	(388.9)
B3144-30	30"	(750)	2 1/2"	(63.5)	26"	(660.4)	23"	(584.2)	22"	(558.8)	19"	(482.6)
B3144-36	36"	(900)	2 1/2"	(63.5)	32 3/8"	(822.2)	28 7/8"	(733.4)	25 5/8"	(650.9)	22 1/8"	(562.0)

B3144 - Standard Double Bolt Pipe Clamp (TOLCO Fig. 5) cont.

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Part No.	Pipe Size		Bolt Size	Max. Design Load				Approx. Wt./100	
	in.	(mm)		650°F (343°C)	750°F (399°C)			lbs.	(kg)
B3144-1/2	1/2"	(15)	3/8"-16	950 (4.22)	--	(--)		73	(33.1)
B3144-3/4	3/4"	(20)	3/8"-16	950 (4.22)	--	(--)		73	(33.1)
B3144-1	1"	(25)	3/8"-16	950 (4.22)	--	(--)		77	(34.9)
B3144-1 1/4	1 1/4"	(32)	3/8"-16	950 (4.22)	--	(--)		79	(35.8)
B3144-1 1/2	1 1/2"	(40)	5/8"-11	1545 (6.87)	1380 (6.14)			236	(107.0)
B3144-2	2"	(50)	5/8"-11	1545 (6.87)	1380 (6.14)			251	(113.8)
B3144-2 1/2	2 1/2"	(65)	5/8"-11	1545 (6.87)	1380 (6.14)			274	(124.3)
B3144-3	3"	(75)	5/8"-11	1545 (6.87)	1380 (6.14)			289	(131.1)
B3144-3 1/2	3 1/2"	(90)	5/8"-11	1545 (6.87)	1380 (6.14)			315	(142.9)
B3144-4	4"	(100)	3/4"-10	2500 (11.12)	2230 (9.92)			745	(337.9)
B3144-5	5"	(125)	3/4"-10	2500 (11.12)	2230 (9.92)			828	(375.6)
B3144-6	6"	(150)	7/8"-9	2865 (12.74)	2555 (11.36)			1261	(572.0)
B3144-8	8"	(200)	7/8"-9	2865 (12.74)	2555 (11.36)			1535	(696.3)
B3144-10	10"	(250)	1"-8	3240 (14.41)	2890 (12.85)			2173	(985.7)
B3144-12	12"	(300)	1"-8	3240 (14.41)	2890 (12.85)			2404	(1090.4)
B3144-14	14"	(350)	1 1/4"-7	4300 (19.12)	3835 (17.06)			4002	(1815.3)
B3144-16	16"	(400)	1 1/4"-7	4300 (19.12)	3835 (17.06)			4362	(1978.6)
B3144-18	18"	(450)	1 1/4"-7	4300 (19.12)	3835 (17.06)			4935	(2238.5)
B3144-20	20"	(500)	1 3/8"-6	5490 (24.42)	4900 (21.79)			6570	(2980.1)
B3144-24	24"	(600)	1 3/8"-6	4500 (20.01)	4015 (17.86)			7524	(3412.9)
B3144-30	30"	(750)	1 3/8"-6	7500 (33.36)	--	(--)		19502	(8846.1)
B3144-36	36"	(900)	1 3/4"-5	10500 (46.70)	--	(--)		23488	(10654.1)

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

Pipe Clamps

B3146 - Heavy Duty Double Bolt Pipe Clamp (TOLCO Fig. 5H)

Size Range: 6" (150mm) thru 36" (900mm) pipe.

Material: Steel

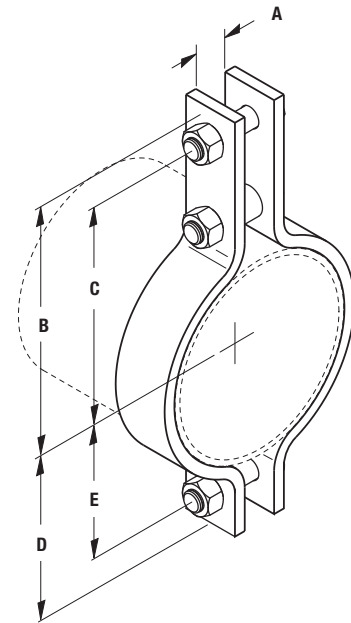
Function: Recommended for the suspension of heavy duty high temperature pipe runs requiring up to 4" (101.6mm) of insulation and where flexibility of the clamp may be necessary. Use with B3200 weldless eye nut, B3210 eye rod or B3211 welded eye rod.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 3 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 3.

Maximum Temperature: 750°F (399°C)

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

Order By: Part number, pipe size and finish.



Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)
B3146-6	6" (150)	1 ³ / ₄ " (44.4)	10 ³ / ₁₆ " (258.8)	8 ¹⁵ / ₁₆ " (227.0)	6" (152.4)	4 ³ / ₄ " (120.6)
B3146-8	8" (200)	2" (50.8)	11 ³ / ₈ " (288.9)	10 ¹ / ₈ " (257.2)	7 ¹ / ₄ " (184.1)	6" (152.4)
B3146-10	10" (350)	2 ¹ / ₄ " (57.1)	13 ¹ / ₈ " (333.4)	11 ³ / ₈ " (288.9)	9" (228.6)	7 ¹ / ₄ " (184.1)
B3146-12	12" (300)	2 ¹ / ₂ " (63.5)	14 ⁵ / ₁₆ " (363.5)	12 ⁹ / ₁₆ " (319.1)	10 ³ / ₈ " (263.5)	8 ⁵ / ₈ " (219.1)
B3146-14	14" (450)	2 ¹ / ₂ " (63.5)	15 ¹ / ₂ " (393.7)	13 ¹ / ₂ " (342.9)	11 ⁵ / ₈ " (295.3)	9 ⁵ / ₈ " (244.5)
B3146-16	16" (400)	3" (76.2)	17 ¹ / ₈ " (435.0)	14 ⁷ / ₈ " (377.7)	13 ¹ / ₈ " (333.4)	10 ⁷ / ₈ " (276.2)
B3146-18	18" (550)	3 ¹ / ₂ " (88.9)	18 ¹ / ₄ " (463.5)	16 ¹ / ₄ " (412.7)	14 ¹ / ₂ " (368.3)	12 ¹ / ₂ " (317.5)
B3146-20	20" (500)	3 ¹ / ₂ " (88.9)	19 ³ / ₄ " (501.6)	17 ¹ / ₄ " (438.1)	16" (406.4)	13 ¹ / ₂ " (342.9)
B3146-24	24" (600)	3 ¹ / ₂ " (88.9)	22 ³ / ₈ " (568.3)	19 ⁵ / ₁₆ " (490.5)	18 ¹ / ₂ " (469.9)	15 ¹ / ₂ " (393.7)
B3146-30	30" (750)	4 ¹ / ₄ " (107.9)	32 ³ / ₄ " (831.8)	28 ¹ / ₄ " (717.5)	24 ³ / ₈ " (619.1)	19 ⁷ / ₈ " (504.8)
B3146-36	36" (900)	4 ¹ / ₂ " (107.9)	40 ¹ / ₄ " (1022.3)	34 ³ / ₄ " (882.6)	30 ¹ / ₈ " (765.2)	22 ⁵ / ₈ " (574.7)

Part No.	Bolt Size in. (mm)	Maximum Design Load For Service Temperature				Approx. Wt./100	
		650°F (343°C)		750°F (399°C)		Lbs. (kg)	
B3146-6	1" (25.4)	3500	(15.57)	3125	(13.90)	1200	(544.3)
B3146-8	1 ¹ / ₈ " (28.6)	4800	(21.35)	4285	(19.06)	1850	(839.1)
B3146-10	1 ¹ / ₄ " (31.7)	5500	(24.46)	4910	(21.84)	3030	(1374.4)
B3146-12	1 ³ / ₈ " (34.9)	7000	(31.13)	6250	(27.80)	4200	(1905.1)
B3146-14	1 ¹ / ₂ " (38.1)	9500	(42.25)	8485	(37.74)	6000	(2721.6)
B3146-16	1 ³ / ₄ " (44.4)	10000	(44.48)	8930	(39.72)	8000	(3628.8)
B3146-18	2" (50.8)	13800	(61.38)	12325	(54.82)	11500	(5216.4)
B3146-20	2" (50.8)	15300	(68.05)	13665	(60.78)	14000	(6350.4)
B3146-24	2" (50.8)	16300	(72.50)	14555	(64.74)	19000	(8618.4)
B3146-30	2 ¹ / ₄ " (57.1)	20500	(91.18)	--	(--)	40600	(18416.1)
B3146-36	2 ³ / ₄ " (69.8)	28000	(124.54)	--	(--)	67800	(30754.1)

Fig. 4B - Pipe Clamp for Sway Bracing (Cooper B-Line B386)

Size Range: 3/4" (20mm) to 8" (200mm) pipe

Material: Steel

Function: For bracing pipe against sway and seismic disturbance

Approvals: Included in the Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD).

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

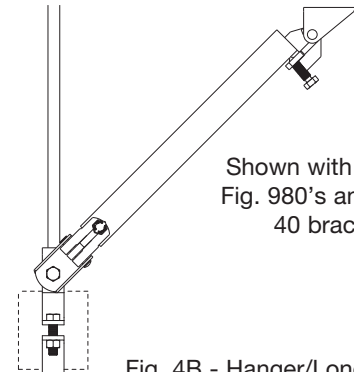
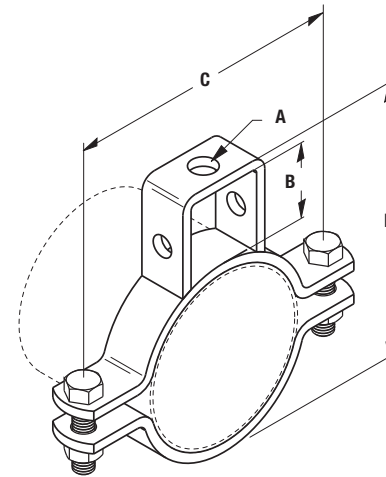
Order By: Part number and finish.

Installation Instructions: Fig. 4B is the "braced pipe" attachment component of a longitudinal or lateral sway brace assembly. It is intended to be combined with the "bracing pipe" and transitional and structural attachment component(s) to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

To Install: Place the Fig. 4B over the pipe to be braced. Attach other transitional fitting, Fig. 909, 910, or 980. Tighten bolts and nuts. Transitional fitting attachment can pivot for adjustment to proper brace angle.



Component of State of California OSHPD Approved Seismic Restraints System



Shown with two B-Line Fig. 980's and Schedule 40 brace pipe.

Fig. 4B - Hanger/Longitudinal Brace

Part No.	Pipe Size in. (mm)	Rod Size A (mm)	B in. (mm)	C in. (mm)	D in. (mm)	Bolt Size	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
4B-3/4	3/4" (20)	3/8"-16	1" (25.4)	27/8" (73.0)	25/8" (66.7)	5/16"-18	330 (1.47)	56 (3.6)
4B-1	1" (25)	3/8"-16	1" (25.4)	31/4" (82.5)	215/16" (74.6)	5/16"-18	330 (1.47)	60 (3.6)
4B-11/4	11/4" (32)	3/8"-16	1" (25.4)	39/16" (90.6)	31/4" (82.5)	5/16"-18	330 (1.47)	74 (4.5)
4B-11/2	11/2" (40)	3/8"-16	1" (25.4)	313/16" (96.8)	37/16" (87.3)	5/16"-18	330 (1.47)	79 (5.0)
4B-2	2" (50)	3/8"-16	11/2" (38.1)	51/8" (130.2)	45/8" (117.5)	5/16"-18	440 (1.78)	156 (5.0)
4B-21/2	21/2" (65)	1/2"-13	13/4" (44.4)	55/8" (142.9)	53/8" (136.5)	3/8"-16	440 (1.78)	176 (5.4)
4B-3	3" (80)	1/2"-13	17/8" (47.6)	63/4" (171.4)	61/8" (155.5)	3/8"-16	660 (2.93)	198 (6.3)
4B-31/2	31/2" (90)	1/2"-13	2" (50.8)	71/4" (184.1)	63/4" (171.4)	3/8"-16	660 (2.93)	219 (7.2)
4B-4	4" (100)	5/8"-11	2" (50.8)	85/8" (219.1)	71/4" (184.1)	21/2"-13	800 (3.56)	288 (8.1)
4B-5	5" (125)	5/8"-11	2" (50.8)	97/8" (250.8)	85/16" (211.1)	5/8"-11	980 (4.36)	390 (8.1)
4B-6	6" (150)	3/4"-10	21/8" (54.0)	1015/16" (277.8)	91/2" (241.3)	5/8"-11	980 (4.36)	448 (8.1)
4B-8	8" (200)	7/8"-9	21/8" (54.0)	137/16" (341.2)	111/2" (292.1)	3/4"-10	1200 (5.34)	691 (8.1)

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.

Pipe Clamps

B3148 - Offset Pipe Clamp (TOLCO Fig. 7)

Size Range: 1/2" (15mm) thru 12" (300mm) pipe

Material: Steel

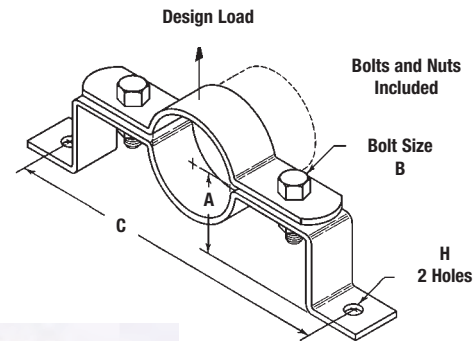
Function: Recommended for support of pipe lines running at a definite distance from the wall or floor of a building or structure.

Maximum Temperature: — 650°F (343°C)

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

Note: Special "A" dimensions available on request, consult factory.

Order By: Part number, pipe size and finish



Part No.	Pipe Size in. (mm)	A in. (mm)	Bolt Size B	C in. (mm)	H in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3148-1/2	1/2" (15)	27/16" (61.9)	3/8"-16	5 13/16" (147.6)	7/16" (11.1)	190 (.84)	107 (48.5)
B3148-3/4	3/4" (20)	2 1/2" (63.5)	3/8"-16	5 5/16" (150.8)	7/16" (11.1)	190 (.84)	109 (49.4)
B3148-1	1" (25)	2 5/8" (66.7)	3/8"-16	6 1/4" (158.7)	7/16" (11.1)	190 (.84)	116 (52.6)
B3148-1 1/4	1 1/4" (32)	2 3/4" (69.8)	3/8"-16	6 11/16" (169.9)	7/16" (11.1)	190 (.84)	126 (57.1)
B3148-1 1/2	1 1/2" (40)	3" (76.2)	3/8"-16	6 5/16" (176.2)	7/16" (11.1)	190 (.84)	134 (60.8)
B3148-2	2" (50)	3 3/16" (81.0)	3/8"-16	8 5/16" (211.1)	7/16" (11.1)	420 (1.87)	191 (86.6)
B3148-2 1/2	2 1/2" (65)	3 7/16" (87.3)	3/8"-16	8 7/8" (225.4)	7/16" (11.1)	420 (1.87)	209 (94.8)
B3148-3	3" (80)	3 3/4" (95.2)	3/8"-16	9 1/2" (241.3)	7/16" (11.1)	420 (1.87)	232 (105.3)
B3148-3 1/2	3 1/2" (90)	4" (101.6)	3/8"-16	10 1/16" (255.6)	7/16" (11.1)	420 (1.87)	250 (113.4)
B3148-4	4" (100)	4 1/4" (107.9)	1/2"-13	10 9/16" (268.3)	9/16" (14.3)	610 (2.71)	370 (167.8)
B3148-6	6" (150)	5 5/16" (134.9)	1/2"-13	14 3/8" (365.1)	9/16" (14.3)	870 (3.87)	650 (294.8)
B3148-8	8" (200)	6 5/16" (160.3)	1/2"-13	16 7/16" (417.5)	9/16" (14.3)	870 (3.87)	787 (357.0)
B3148-10	10" (250)	7 3/8" (187.3)	3/4"-10	21 1/2" (546.1)	1 3/16" (20.6)	925 (4.11)	1238 (561.5)
B3148-12	12" (300)	8 3/8" (212.7)	3/4"-10	24 7/8" (631.8)	1 3/16" (20.6)	1225 (5.45)	2100 (952.5)

B3149 - Extended Pipe Clamp (TOLCO Fig. 8)

Size Range: 3/4" (20mm) thru 8" (200mm) pipe

Material: Steel

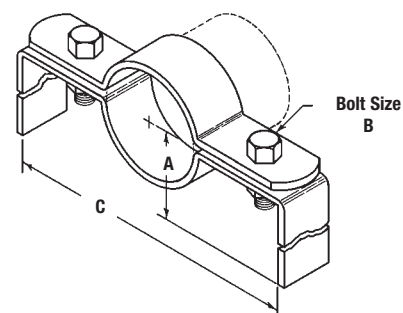
Function: For suspending or supporting piping runs where the pipe cannot be determined until installation. Field modify to suit conditions.

Maximum Temperature: 650°F (343°C)

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

Note: Special "A" dimensions available on request, consult factory.

Order By: Part number, pipe size and finish



Part No.	Pipe Size		A		Bolt Size B	C		Approx. Wt./100	
	in.	(mm)	in.	(mm)		in.	(mm)	Lbs.	(kg)
B3149-3/4	3/4"	(20)	12"	(304.8)	3/8"-16"	47/16"	(112.7)	225	(102.0)
B3149-1	1"	(25)	12"	(304.8)	3/8"-16"	4 11/16"	(119.1)	230	(104.3)
B3149-1 1/4	1 1/4"	(32)	12"	(304.8)	3/8"-16"	5"	(127.0)	235	(106.6)
B3149-1 1/2	1 1/2"	(40)	12"	(304.8)	3/8"-16"	5 1/4"	(133.3)	240	(108.8)
B3149-2	2"	(50)	12"	(304.8)	1/2"-13"	6"	(152.4)	345	(156.5)
B3149-2 1/2	2 1/2"	(65)	12"	(304.8)	1/2"-13"	7 1/4"	(184.1)	360	(163.3)
B3149-3	3"	(75)	12"	(304.8)	1/2"-13"	7 7/8"	(200.0)	375	(170.1)
B3149-3 1/2	3 1/2"	(90)	12"	(304.8)	1/2"-13"	8 3/8"	(212.7)	390	(176.9)
B3149-4	4"	(100)	12"	(304.8)	1/2"-13"	9 1/4"	(234.9)	500	(226.8)
B3149-5	5"	(125)	12"	(304.8)	1/2"-13"	10 1/2"	(266.7)	545	(247.2)
B3149-6	6"	(150)	12"	(304.8)	5/8"-11"	12 1/2"	(317.5)	870	(394.6)
B3149-8	8"	(200)	12"	(304.8)	5/8"-11"	14 5/8"	(371.5)	980	(444.5)

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

Pipe Clamps

B3180FL - Flush Mount Pipe Strap (TOLCO Fig. 20S)

Size Range: 1/2" (15mm) thru 8" (200mm) pipe

Material: Steel

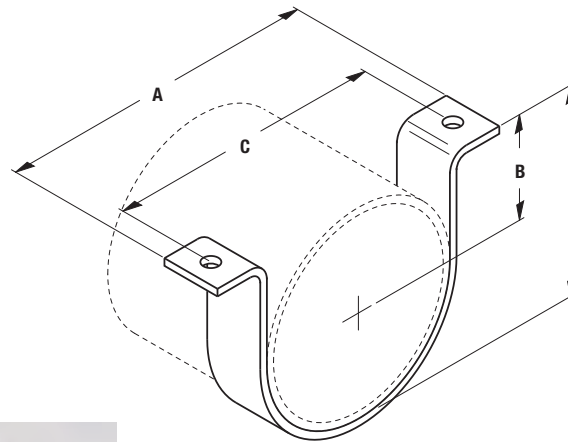
Function: Recommended for supporting pipe with fittings vertically or horizontally to walls or ceiling. Supports pipe flush with the mounting surface.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 26 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 26.

Finish: Plain

Note: Available in Electro-Galvanized and HDG finish or Stainless Steel materials.

Order By: Part number, pipe size and material/finish



Part No.	Pipe Size		A		B		C		D		Hole Size		Max. Rec. Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3180FL-1/2	1/2"	(15)	4 1/8"	(104.8)	5/16"	(7.9)	2 7/8"	(73.0)	3/4"	(19.0)	7/16"	(11.1)	410	(1.82)	21	(9.5)
B3180FL-3/4	3/4"	(20)	4 5/16"	(109.5)	7/16"	(11.1)	3"	(76.2)	1 5/16"	(23.8)	7/16"	(11.1)	410	(1.82)	24	(10.9)
B3180FL-1	1"	(25)	4 9/16"	(115.9)	9/16"	(14.3)	3 3/8"	(85.7)	1 1/8"	(28.6)	7/16"	(11.1)	410	(1.82)	26	(11.8)
B3180FL-1 1/4	1 1/4"	(32)	4 15/16"	(125.4)	1 1/16"	(17.5)	3 3/4"	(95.2)	1 1/2"	(38.1)	7/16"	(11.1)	410	(1.82)	30	(13.6)
B3180FL-1 1/2	1 1/2"	(40)	5 3/16"	(131.8)	1 3/16"	(20.6)	4 1/4"	(107.9)	1 5/8"	(41.3)	7/16"	(11.1)	410	(1.82)	33	(14.9)
B3180FL-2	2"	(50)	5 3/4"	(146.0)	1 1/16"	(27.0)	4 3/4"	(120.6)	2 1/4"	(57.1)	7/16"	(11.1)	410	(1.82)	38	(17.2)
B3180FL-2 1/2	2 1/2"	(65)	6 1/4"	(158.7)	1 9/16"	(39.7)	5 1/4"	(133.3)	2 3/4"	(69.8)	7/16"	(11.1)	610	(2.71)	102	(46.2)
B3180FL-3	3"	(75)	6 7/8"	(174.6)	1 5/8"	(41.3)	5 7/8"	(149.2)	3 3/8"	(85.7)	7/16"	(11.1)	610	(2.71)	118	(53.5)
B3180FL-3 1/2	3 1/2"	(90)	7 3/8"	(187.3)	1 7/8"	(47.6)	6 3/8"	(161.9)	3 7/8"	(98.3)	7/16"	(11.1)	610	(2.71)	130	(58.9)
B3180FL-4	4"	(100)	8 3/8"	(212.7)	2 1/8"	(53.9)	7"	(177.8)	4 3/8"	(111.1)	9/16"	(14.3)	725	(3.22)	159	(72.1)
B3180FL-5	5"	(125)	9 7/16"	(239.7)	2 5/8"	(66.7)	7 7/8"	(200.0)	5 3/8"	(136.5)	9/16"	(14.3)	725	(3.22)	191	(86.6)
B3180FL-6	6"	(150)	10 1/2"	(266.7)	3 3/16"	(80.9)	8 7/8"	(225.4)	6 7/16"	(163.5)	9/16"	(14.3)	725	(3.22)	234	(106.1)
B3180FL-8	8"	(200)	14"	(355.6)	4 1/4"	(107.9)	11 1/2"	(292.1)	8 3/8"	(212.7)	1 1/16"	(17.5)	900	(4.00)	446	(202.3)

B3180 - Standard Pipe Strap (TOLCO Fig. 20)

Size Range: 1/2" (15mm) thru 8" (200mm) pipe

Material: Steel

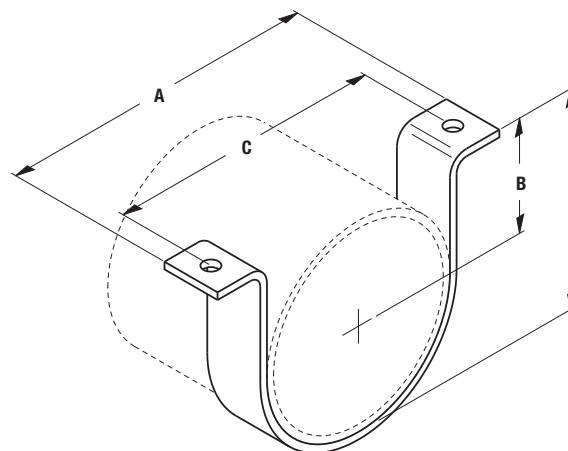
Function: Recommended for supporting pipe with fittings vertically or horizontally to walls or ceiling.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 26 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 26.

Finish: Plain

Note: Available in Electro-Galvanized and HDG finish or Stainless Steel materials.

Order By: Part number, pipe size and material/finish



Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	Hole Size in. (mm)	Max. Rec. Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3180-1/2	1/2" (15)	37/8" (98.4)	3/4" (19.0)	31/16" (77.8)	15/32" (11.9)	7/16" (11.1)	410 (1.82)	16 (7.2)
B3180-3/4	3/4" (20)	4" (101.6)	13/16" (20.6)	31/8" (79.4)	15/16" (33.3)	7/16" (11.1)	410 (1.82)	21 (9.5)
B3180-1	1" (25)	49/16" (115.9)	7/8" (22.2)	33/8" (85.7)	11/2" (38.1)	7/16" (11.1)	410 (1.82)	26 (11.8)
B3180-11/4	11/4" (32)	415/16" (125.4)	1" (25.4)	33/4" (95.2)	17/8" (47.6)	7/16" (11.1)	410 (1.82)	30 (13.6)
B3180-11/2	11/2" (40)	53/16" (131.8)	13/16" (30.2)	41/4" (107.9)	21/8" (54.6)	7/16" (11.1)	410 (1.82)	33 (14.9)
B3180-2	2" (50)	53/4" (146.0)	17/16" (36.5)	43/4" (120.6)	25/8" (66.7)	7/16" (11.1)	410 (1.82)	38 (17.2)
B3180-21/2	21/2" (65)	61/4" (158.7)	111/16" (42.9)	51/4" (133.3)	31/8" (79.4)	7/16" (11.1)	610 (2.71)	102 (46.2)
B3180-3	3" (75)	67/8" (174.6)	2" (50.8)	57/8" (149.2)	33/4" (95.2)	7/16" (11.1)	610 (2.71)	118 (53.5)
B3180-31/2	31/2" (90)	73/8" (187.3)	21/4" (57.1)	63/8" (161.9)	41/4" (107.9)	7/16" (11.1)	610 (2.71)	130 (58.9)
B3180-4	4" (100)	83/8" (212.7)	21/2" (63.5)	7" (177.8)	43/4" (120.6)	9/16" (14.3)	725 (3.22)	159 (72.1)
B3180-5	5" (125)	97/16" (239.7)	31/16" (77.8)	77/8" (200.0)	513/16" (147.6)	9/16" (14.3)	725 (3.22)	191 (86.6)
B3180-6	6" (150)	101/2" (266.7)	35/8" (92.1)	87/8" (225.4)	67/8" (174.6)	9/16" (14.3)	725 (3.22)	234 (106.1)
B3180-8	8" (200)	14" (355.6)	45/8" (117.5)	111/2" (292.1)	9" (228.6)	11/16" (17.5)	900 (4.00)	446 (202.3)

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

Pipe Clamps

B2400 - Standard Pipe Strap (TOLCO Fig. 2STR)

Size Range: 1/2" (15mm) thru 24" (600mm) pipe

Material: Steel

Function: Designed for supporting pipe runs from strut supports.

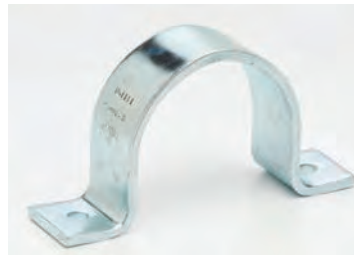
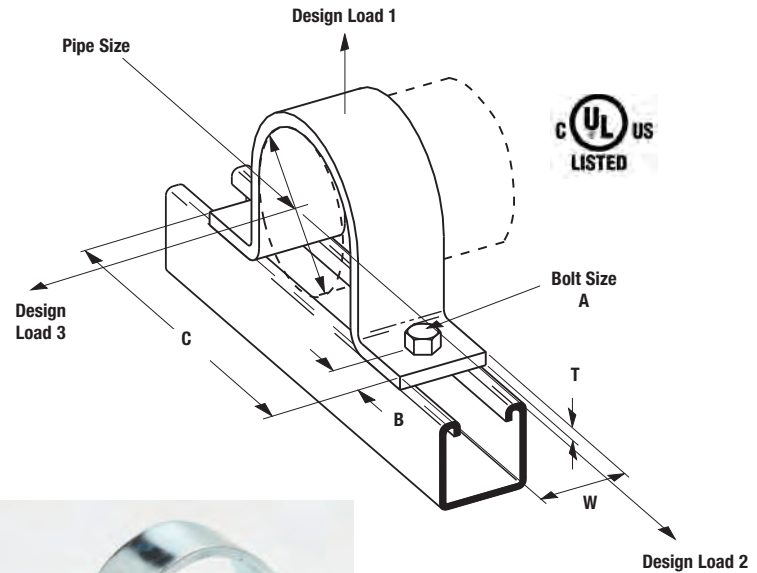
Approvals: Underwriters Laboratories Listed for B2400-3/4" thru B2400-8". Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 26 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 26.

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

Order By: Part number, pipe size and finish

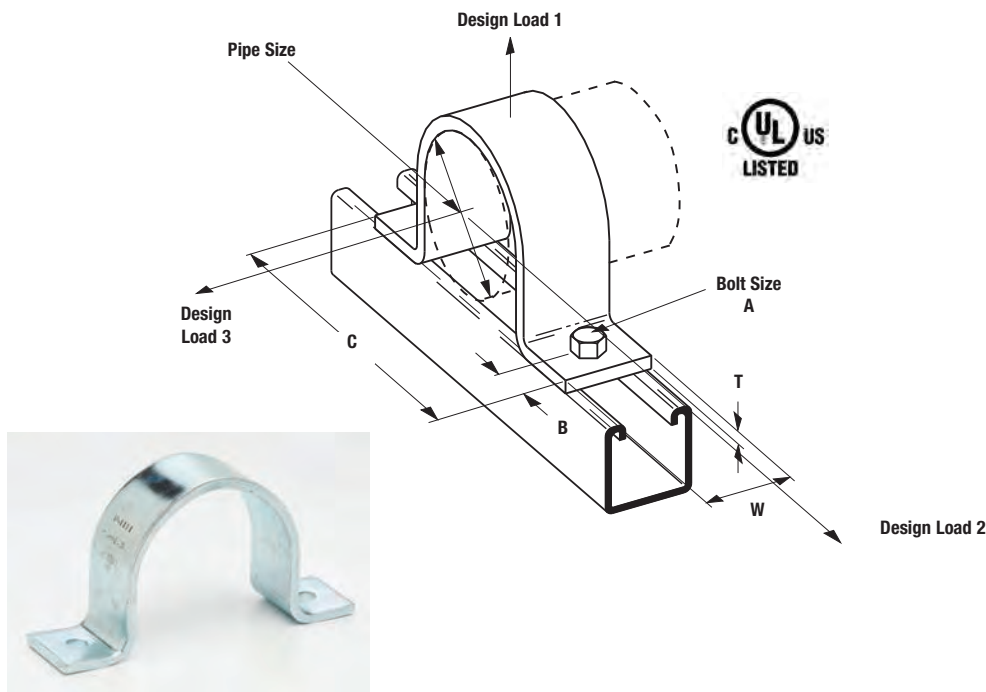
Note: Ductile iron sizes available.

Special "B" dimensions available on request, consult factory.



Part No.	Pipe Size		A		B		C		T		W	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B2400-1/2	1/2"	(15)	5/16"	(7.9)	7/16"	(11.1)	2 13/16"	(71.4)	10 Ga.	(3.4)	1 5/8"	(41.3)
B2400-3/4	3/4"	(20)	5/16"	(7.9)	7/16"	(11.1)	3"	(76.2)	10 Ga.	(3.4)	1 5/8"	(41.3)
B2400-1	1"	(25)	5/16"	(7.9)	7/16"	(11.1)	3 17/32"	(89.7)	10 Ga.	(3.4)	1 5/8"	(41.3)
B2400-1 1/4	1 1/4"	(32)	5/16"	(7.9)	7/16"	(11.1)	3 3/4"	(95.2)	10 Ga.	(3.4)	1 5/8"	(41.3)
B2400-1 1/2	1 1/2"	(40)	5/16"	(7.9)	7/16"	(11.1)	4 1/16"	(103.2)	10 Ga.	(3.4)	1 5/8"	(41.3)
B2400-2	2"	(50)	7/16"	(11.1)	1 1/16"	(17.4)	5 21/32"	(143.6)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-2 1/2	2 1/2"	(65)	7/16"	(11.1)	1 1/16"	(17.4)	6 5/32"	(156.3)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-3	3"	(80)	7/16"	(11.1)	1 1/16"	(17.4)	6 25/32"	(172.2)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-3 1/2	3 1/2"	(90)	7/16"	(11.1)	1 1/16"	(17.4)	7 9/32"	(184.9)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-4	4"	(100)	9/16"	(14.3)	1 1/16"	(17.4)	7 25/32"	(197.6)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-5	5"	(125)	9/16"	(14.3)	1 1/16"	(17.4)	8 7/8"	(225.4)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-6	6"	(150)	9/16"	(14.3)	1 1/16"	(17.4)	9 15/16"	(252.4)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-8	8"	(200)	9/16"	(14.3)	1 1/16"	(17.4)	11 31/32"	(304.0)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-10	10"	(250)	9/16"	(14.3)	1 1/16"	(17.4)	14"	(355.6)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-12	12"	(300)	9/16"	(14.3)	1 1/16"	(17.4)	16"	(406.4)	1/4"	(6.3)	1 5/8"	(41.3)
B2400-14	14"	(350)	1 5/16"	(23.8)	1 5/16"	(33.3)	20 3/8"	(517.5)	3/8"	(9.5)	1 3/4"	(44.4)
B2400-16	16"	(400)	1 5/16"	(23.8)	1 5/16"	(33.3)	22 3/8"	(568.3)	3/8"	(9.5)	1 3/4"	(44.4)
B2400-18	18"	(450)	1 5/16"	(23.8)	1 5/16"	(33.3)	26 1/8"	(663.6)	1/2"	(12.7)	1 3/4"	(44.4)
B2400-20	20"	(500)	1 5/16"	(23.8)	1 5/16"	(33.3)	28 1/8"	(714.4)	1/2"	(12.7)	1 3/4"	(44.4)
B2400-24	24"	(600)	1 5/16"	(23.8)	1 5/16"	(33.3)	32 1/8"	(816.0)	1/2"	(12.7)	1 3/4"	(44.4)

B2400 - Standard Pipe Strap (TOLCO Fig. 2STR) Cont.



Part No.	Design Load 1		Design Load 2		Design Load 3		Approx. Wt./100	
	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kg)
B2400-1/2	600	(2.67)	150	(.67)	105	(.47)	23	(10.4)
B2400-3/4	600	(2.67)	150	(.67)	105	(.47)	26	(11.8)
B2400-1	600	(2.67)	150	(.67)	120	(.53)	31	(14.0)
B2400-1 1/4	600	(2.67)	150	(.67)	120	(.53)	36	(16.3)
B2400-1 1/2	600	(2.67)	150	(.67)	120	(.53)	39	(17.7)
B2400-2	1200	(5.34)	480	(2.14)	180	(.80)	93	(42.2)
B2400-2 1/2	1200	(5.34)	480	(2.14)	180	(.80)	106	(48.1)
B2400-3	1200	(5.34)	480	(2.14)	300	(1.33)	132	(59.9)
B2400-3 1/2	1200	(5.34)	480	(2.14)	300	(1.33)	151	(68.5)
B2400-4	1500	(6.67)	600	(2.67)	450	(2.00)	160	(72.6)
B2400-5	1500	(6.67)	600	(2.67)	450	(2.00)	192	(87.1)
B2400-6	1500	(6.67)	600	(2.67)	450	(2.00)	219	(99.3)
B2400-8	2000	(8.90)	800	(3.56)	600	(2.67)	297	(134.7)
B2400-10	2000	(8.90)	800	(3.56)	600	(2.67)	465	(210.9)
B2400-12	2000	(8.90)	800	(3.56)	600	(2.67)	560	(254.0)
B2400-14	2000	(8.90)	800	(3.56)	600	(2.67)	761	(345.2)
B2400-16	2000	(8.90)	800	(3.56)	600	(2.67)	861	(390.5)
B2400-18	2000	(8.90)	800	(3.56)	600	(2.67)	1297	(588.3)
B2400-20	2000	(8.90)	800	(3.56)	600	(2.67)	1426	(646.8)
B2400-24	2000	(8.90)	800	(3.56)	600	(2.67)	1682	(762.9)

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

Pipe Clamps

Fig. 22 - Hanger for CPVC Plastic Pipe
Single Fastener Strap (Cooper B-Line B3181)

Size Range: 3/4" (20mm) thru 2" (50mm) CPVC pipe

Material: Pre-Galvanized Steel

Function: Intended to perform as a hanger to support CPVC piping used in automatic fire sprinkler systems. The product acts as a hanger when tab is upward and the fastener screw is in the horizontal position. Fig. 22 can be installed on the top of a beam, but in this situation acts as a guide to the piping which is supported by the beam itself. It is not intended to support CPVC pipe from under a flat horizontal surface, such as a ceiling.

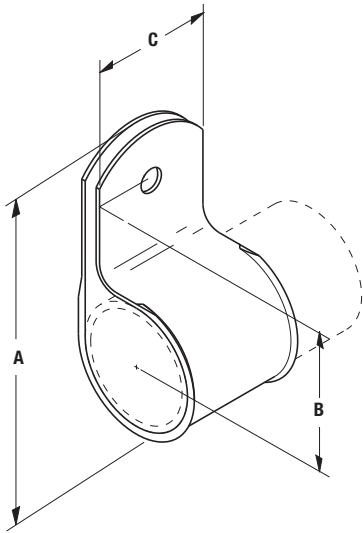
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL) to support fire sprinkler piping. May be installed in wood using fasteners supplied with product, or into minimum 20 gauge (0.9mm) steel using (1) 1/4" x 1" tek type screw. Meets and exceeds the requirements of NFPA 13, 13R and 13D.

Features: Fig. 22 incorporates features which protect the pipe and ease installation. The flared edge design protects CPVC pipe from any rough surface. It is easily attached to the building structure using the special UL Listed hex head self threading screw* furnished with the product. It is recommended that rechargeable electric drills fitted with a hex socket attachment to be used as installation tools. No impact tools (such as a hammer) are allowed. Damage has been known to result from installations using impact type tools. No pre-drilling of a pilot hole in wood is required.

Finish: Pre-Galvanized

Order By: Part number and CPVC pipe size.

* Hardened hex head self threading screw is furnished with the product and is the minimum fastener size acceptable.



Part No.	CPVC Pipe Size		A		B		C		Max. Hanger Spacing		Fastener Hex Head Size		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Ft.	(m)	in.	(mm)	Lbs.	(kg)
22-3/4	3/4"	(20)	27/16"	(61.9)	15/16"	(33.3)	13/16"	(30.2)	5 1/2	(1.67)	5/16"	(7.9)	9	(4.1)
22-1	1"	(25)	2 11/16"	(68.3)	17/16"	(36.5)	13/16"	(30.2)	6	(1.83)	5/16"	(7.9)	9	(4.1)
22-1 1/4	1 1/4"	(32)	3 1/16"	(77.8)	1 5/8"	(42.3)	13/16"	(30.2)	6 1/2	(1.98)	5/16"	(7.9)	11	(5.0)
22-1 1/2	1 1/2"	(40)	3 5/16"	(84.1)	1 3/4"	(44.4)	13/16"	(30.2)	7	(2.13)	5/16"	(7.9)	12	(5.4)
22-2	2"	(50)	3 3/4"	(95.2)	2 1/8"	(54.6)	13/16"	(30.2)	8	(2.44)	5/16"	(7.9)	15	(6.8)

Fig. 22L2 - One Hole Hanger/Restrainer for CPVC & Steel Pipe



Size Range: 3/4" (20mm) thru 2" (50mm) CPVC & steel pipe

Material: Pre-Galvanized Steel

Function: cULus Listed to perform as a hanger and restrainer for CPVC or IPS piping systems. The innovative design also allows for a preferred installation location close to a CPVC fitting without applying damaging compression forces on the pipe which could result in serious Mechanical ESC (Environmental Stress Cracking).

Approvals: Underwriters Laboratories Listed in the USA (**UL**) and Canada (**cUL**) to support fire sprinkler piping. May be installed in wood using fasteners supplied with product, or into minimum 20 gauge (0.9mm) steel using (1) 1/4" x 1" tek type screw. Meets and exceeds the requirements of NFPA 13, 13R and 13D.

Installation Note: Comes in open position for easier installation. Because of multi – structural installation possibilities, specific fastener not included; see notes below for various applications.

For Concrete Installation — UL requires a minimum test load of 340 lbs for CPVC hangers and 750 lbs for steel pipe hangers; verify anchors meet or exceed these requirements.

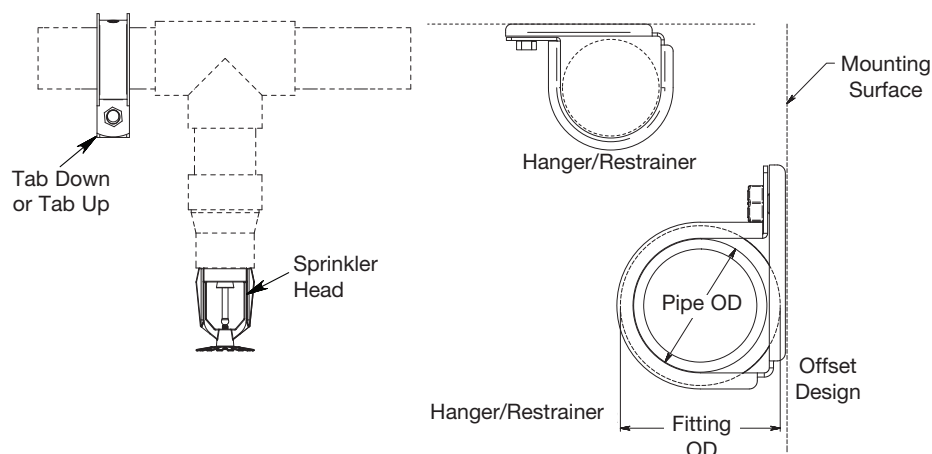
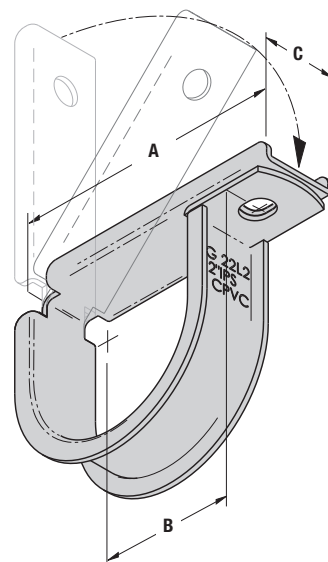
For Wood Installation — Test results have shown that #14 x 1 1/2" wood screws will support the required load for cUL us.

For Steel Installation — Test results have shown that 1/4" x 1" (min. 20ga steel) Tek type screw will support required UL load.

Finish: Pre-Galvanized

Order By: Part number

Patent Pending



Part No.	CPVC or Steel Pipe Size		A		B		C		Max. Hanger Spacing - CPVC		Max. Hanger Spacing - Steel		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Ft.	(m)	Ft.	(m)	Lbs.	(kg)
22L2-3/4	3/4"	(20)	2 ³ / ₁₆ "	(55.6)	1 ⁵ / ₁₆ "	(23.8)	3/4"	(19.0)	5 1/2	(1.67)	NA	(NA)	9	(4.1)
22L2-1	1"	(25)	2 1/2"	(63.5)	1 1/8"	(28.6)	3/4"	(19.0)	6	(1.83)	12	(3.66)	9	(4.1)
22L2-1 1/4	1 1/4"	(32)	2 ¹³ / ₁₆ "	(71.4)	1 1/4"	(31.7)	3/4"	(19.0)	6 1/2	(1.98)	12	(3.66)	11	(5.0)
22L2-1 1/2	1 1/2"	(40)	3 1/8"	(79.4)	1 7/16"	(36.5)	3/4"	(19.0)	7	(2.13)	15	(4.57)	12	(5.4)
22L2-2	2"	(50)	3 ⁹ / ₁₆ "	(90.5)	1 5/8"	(41.3)	3/4"	(19.0)	8	(2.44)	15	(4.57)	15	(6.8)

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

Pipe Clamps

Fig. 23 - Hanger for CPVC Plastic Pipe
Double Fastener Strap (Cooper B-Line B3182)



Size Range: 3/4" (20mm) thru 3" (80mm) CPVC pipe
Material: Pre-Galvanized Steel

Function: Intended to perform as a hanger to support CPVC piping used in automatic fire sprinkler systems. Fig. 23 can be installed on the top, bottom or side of a beam.

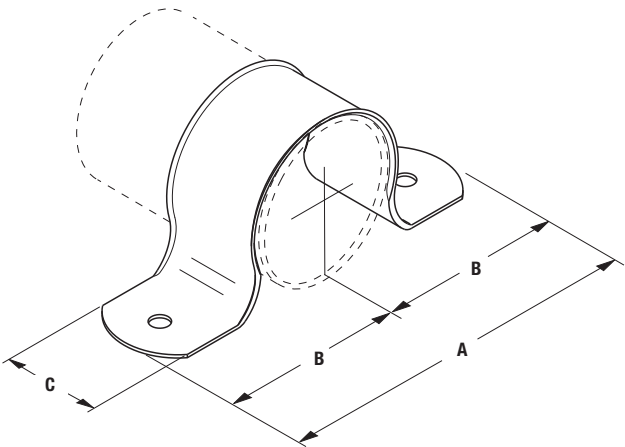
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL) sizes 3/4" (20mm) thru 2" (50mm) to support fire sprinkler piping. May be installed in wood using fasteners supplied with product, or into minimum 20 gauge (0.9mm) steel using (2) 1/4" x 1" tek type screw. Meets and exceeds the requirements of NFPA 13, 13R and 13D.

Features: Fig. 23 incorporates features which protect the pipe and ease installation. The flared edge design protects the CPVC pipe from any rough surface. It also incorporates snap restrainers allowing easier and faster installation. Easily attaches to the building structure using the two UL Listed hex head self threading screws* furnished with the product. It is recommended that rechargeable electric drills fitted with a hex socket attachment be used as installation tools. No impact tools (such as a hammer) are allowed. Damage has been known to result from installations using impact type tools. No pre-drilling of a pilot hole in wood is required.

Finish: Pre-Galvanized

Order By: Part number and pipe size

* Hardened hex head self threading screw is furnished with the product and is the minimum fastener size acceptable.



Part No.	CPVC Pipe Size		A		B		C		Max. Hanger Spacing		Fastener Hex Head Size		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Ft.	(m)	in.	(mm)	Lbs.	(kg)
23-3/4	3/4"	(20)	3 1/8"	(79.4)	1 9/16"	(39.7)	1 3/16"	(30.2)	5 1/2	(1.67)	5/16"	(7.9)	9	(4.1)
23-1	1"	(25)	3 3/8"	(85.7)	1 11/16"	(42.9)	1 3/16"	(30.2)	6	(1.83)	5/16"	(7.9)	9	(4.1)
23-1 1/4	1 1/4"	(32)	4 3/16"	(106.4)	2 3/32"	(53.1)	1 3/16"	(30.2)	6 1/2	(1.98)	5/16"	(7.9)	11	(5.0)
23-1 1/2	1 1/2"	(40)	4 7/16"	(112.7)	2 7/32"	(56.3)	1 3/16"	(30.2)	7	(2.13)	5/16"	(7.9)	12	(5.4)
23-2	2"	(50)	4 7/8"	(123.8)	2 7/16"	(61.9)	1 3/16"	(30.2)	8	(2.44)	5/16"	(7.9)	15	(6.8)
23-2 1/2	2 1/2"	(65)	5 3/8"	(136.5)	2 11/16"	(68.3)	1 3/16"	(30.2)	Consult Factory		5/16"	(7.9)	22	(10.0)
23-3	3"	(80)	6"	(152.4)	3"	(76.2)	1 3/16"	(30.2)	Consult Factory		5/16"	(7.9)	25	(11.3)

Fig. 24 - Hanger for CPVC Plastic Pipe
Double Fastener Strap Side Mounted (Cooper B-Line B3183)



Size Range: 3/4" (20mm) thru 2" (50mm) CPVC pipe

Material: Pre-Galvanized Steel

Function: Intended to perform as a hanger to support CPVC piping used in automatic fire sprinkler systems. Can be installed on the top or on the bottom of a beam.

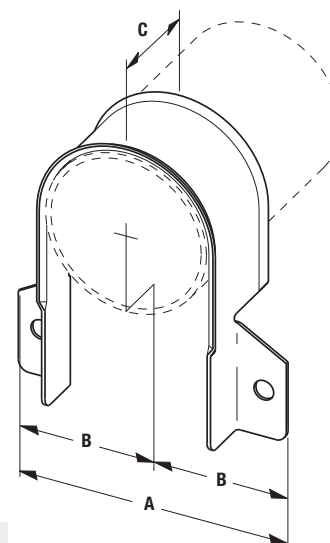
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL) to support fire sprinkler piping. May be installed in wood using fasteners supplied with product, or into minimum 20 gauge (0.912mm) steel using (2) 1/4" x 1" tek type screws. Meets and exceeds the requirements of NFPA 13, 13R and 13D.

Features: Fig. 24 incorporates features which protect the pipe and ease installation. The flared edge design protects the CPVC pipe from any rough surface. Easily attaches to the building structure using the two UL Listed hex head self threading screws* furnished with the product. It is recommended that rechargeable electric drills fitted with a hex socket attachment be used as installation tools. No impact tools (such as a hammer) are allowed. Damage has been known to result from installations using impact type tools. No pre-drilling of a pilot hole in wood is required.

Finish: Pre-Galvanized

Order By: Part number and pipe size

* Hardened hex head self threading screw is furnished with the product and is the minimum fastener size acceptable.



Part No.	CPVC Pipe Size		A		B		C		Max. Hanger Spacing		Fastener Hex Head Size		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Ft.	(m)	in.	(mm)	Lbs.	(kg)
24-3/4	3/4"	(20)	25/16"	(58.7)	15/32"	(27.8)	13/16"	(30.2)	5 1/2	(1.67)	5/16"	(7.9)	9	(4.1)
24-1	1"	(25)	25/8"	(66.7)	15/16"	(33.3)	13/16"	(30.2)	6	(1.83)	5/16"	(7.9)	9	(4.1)
24-1 1/4	1 1/4"	(32)	3"	(76.2)	1 1/2"	(38.1)	13/16"	(30.2)	6 1/2	(1.98)	5/16"	(7.9)	11	(5.0)
24-1 1/2	1 1/2"	(40)	3 1/4"	(82.5)	1 5/8"	(42.3)	13/16"	(30.2)	7	(2.13)	5/16"	(7.9)	12	(5.4)
24-2	2"	(50)	3 11/16"	(93.7)	1 27/32"	(43.6)	13/16"	(30.2)	8	(2.44)	5/16"	(7.9)	15	(6.8)

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

Pipe Clamps

Fig. 25 - Surge Restrainer

Size Range: — One size fits 3/4" (20mm) thru 2" (40mm) pipe.

Material: — Pre-Galvanized Steel

Function: — Designed to be used in conjunction with Fig. 200 band hangers to restrict the upward movement of piping as it occurs during sprinkler head activation or earthquake type activity. The surge restrainer is easily and efficiently installed by snapping into a locking position on the band hanger. This product is intended to satisfy the requirements as indicated in the National Fire Protection Association NFPA 13, 2010 edition, 9.2.3.4.4.1 and 9.2.3.4.4.4 Can be used to restrain either steel pipe or CPVC plastic Pipe.

Approvals: — Underwriters Laboratories Listed only when used with band hanger Fig. 200, in the USA (**UL**) and Canada (**cUL**).

Finish: Pre-Galvanized

Order By: Part number and band hanger, size from 3/4" (20mm) thru 2" (40mm).

Patent #5,344,108

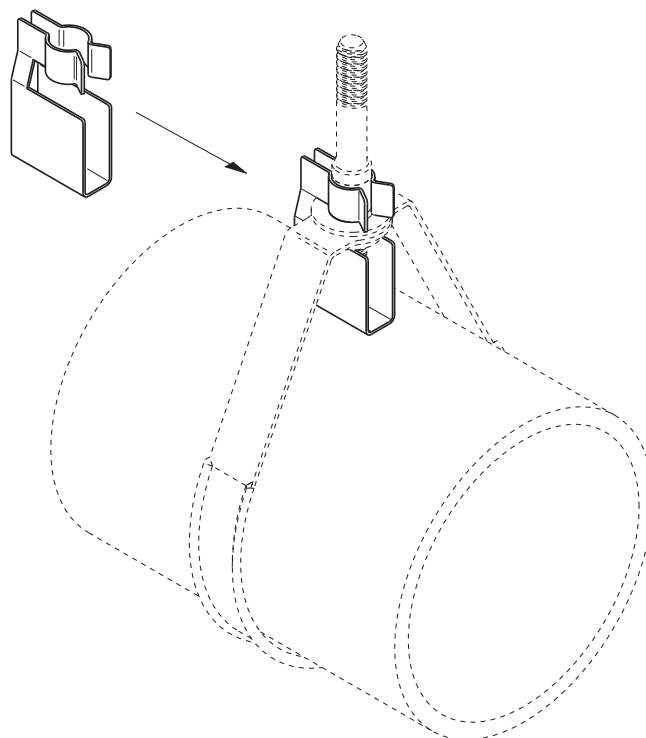
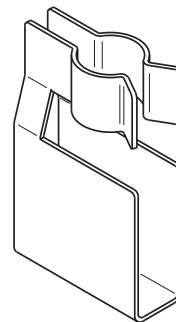


Fig. 27B - Speed Nut

Size Range: — Fits screws supplied with all CPVC hangers.

Material: — Steel

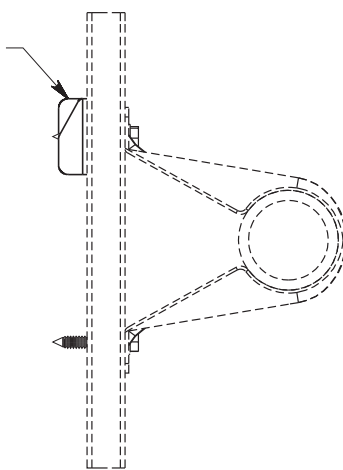
Finish: — Pre-Galvanized (Zinc)

Function: — To be used anywhere a screw cannot achieve full embedment due to thickness of wood structural material when installed. Fig. 27B allows full pull out load capacity of screws when installed to the standard screws supplied with all CPVC hangers (Fig. 22, 23, 24, 28, 28M, 29, and B3184).

TOLCO

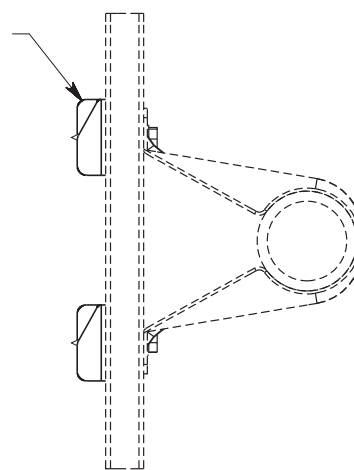


Fig. 27B
(1) Required High
Side of Hanger
Application

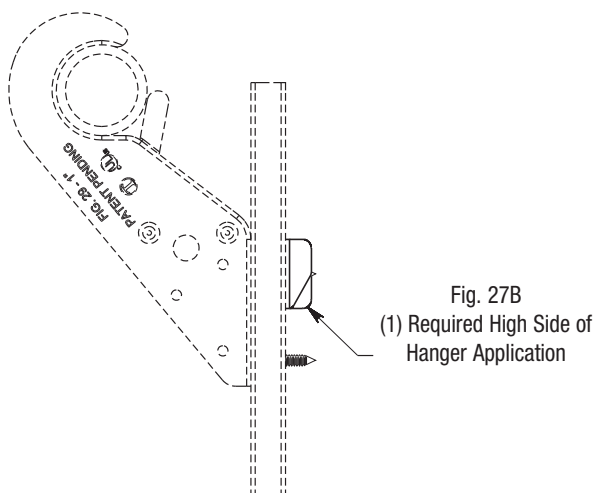


Hanger Application

Fig. 27B
(2) Required

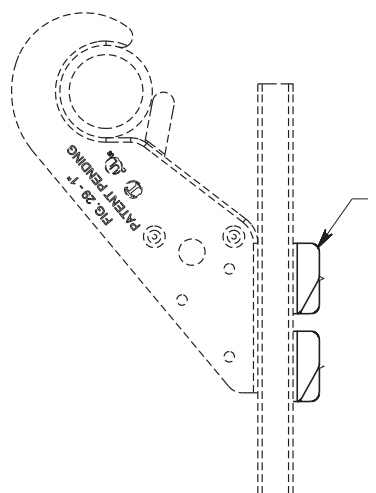


Hanger and Restraint
Application



Hanger Application

Fig. 27B
(2) Required



Hanger and Restraint
Application

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

Pipe Clamps

Fig. 28 - "Stand-Off" Hanger & Restrainer for CPVC Plastic Pipe

Size Range: — $\frac{3}{4}$ " (20mm) through 2" (50mm)

Material: — Steel, Pre-Galvanized

Function: — Designed to be used as a hanger and restrainer for CPVC piping where the "stand-off" design will ease installation by eliminating the need for wood blocking.

Features:

- Flared edge design protects CPVC pipe from any rough or abrasive surfaces.
- Unique twist and lock design holds pipe firmly in place and allows retrofit type of installation.
- The "Stand-Off" design eliminates the need for wood block extension.
- Can be installed on horizontal or vertical piping regardless of mounting surface orientation.
- Attaches easily to wood structure with two hex head self-threading screws furnished with product.
- Installs easily using rechargeable electrical driver with $\frac{5}{16}$ " (7.9mm) extension socket eliminating impact tool damage to pipe.
- Attaches easily to steel, minimum 18 gauge (1.024mm) with (2) $\frac{1}{4}$ " x 1" tek type self drilling tapping screws.
- UL Listed as a hanger and a restrainer for fire sprinkler piping.

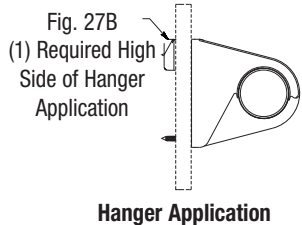
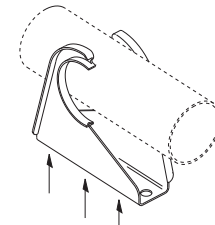
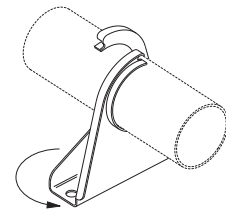
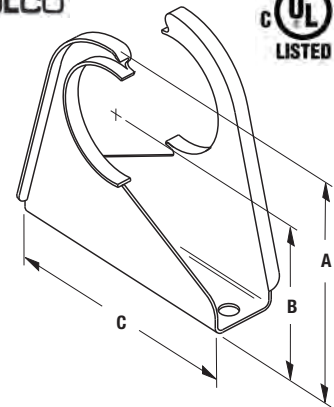
Approvals: — Underwriters Laboratory Listed in the USA (**UL**) and Canada (**cUL**) to support automatic fire sprinkler systems. May be installed into wood using fasteners supplied with product, or into minimum 18 gauge steel using (2) $\frac{1}{4}$ " x 1" tek type screws. Meets and exceeds the requirements of NFPA 13, 13R and 13D. Fig. 28 satisfies the UL vertical restraint requirement where needed. UL Listed as a hanger and vertical restraint when installed on $\frac{3}{8}$ " (9.5mm) composite wood material. Use two Fig. 27B Speed Nuts when used as a hanger and restraint. Use one Fig. 27B Speed Nut on the upper installed screw when used as a hanger only.

Order by: — Part number and pipe size.

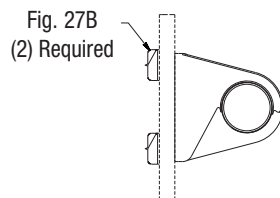
Pat. # 7,455,268, Pat. # 7,832,248

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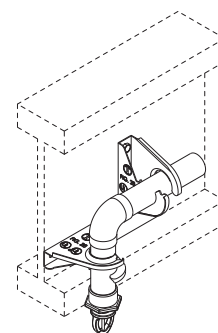
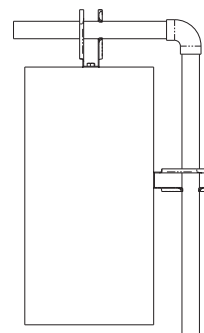
UL
LISTED



Hanger Application



Hanger and Restraint Application



Part No.	Pipe Size		A		B		C		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kg)
28-3/4	$\frac{3}{4}$ "	(20)	$\frac{31}{32}$ "	(77.0)	2"	(50.8)	$\frac{31}{2}$ "	(88.9)	18	(8.1)
28-1	1"	(25)	$\frac{35}{16}$ "	(84.1)	$\frac{23}{16}$ "	(55.6)	$\frac{31}{2}$ "	(88.9)	21	(9.5)
28-1 1/4	1 1/4"	(32)	$\frac{35}{8}$ "	(92.1)	$\frac{23}{8}$ "	(60.3)	$\frac{31}{2}$ "	(88.9)	23	(10.4)
28-1 1/2	1 1/2"	(40)	4"	(101.6)	$\frac{21}{2}$ "	(63.5)	$\frac{31}{2}$ "	(88.9)	31	(14.0)
28-2	2"	(50)	$\frac{41}{2}$ "	(114.3)	$\frac{211}{16}$ "	(68.3)	$\frac{35}{8}$ "	(92.1)	34	(15.4)

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

Fig. 28M - Offset Hanger & Restrainer for CPVC Plastic Pipe and IPS Pipe

Size Range: 3/4" (20mm) thru 2" (32mm)

Material: Steel, Pre-Galvanized

Function: Designed to be used as a hanger and restrainer for CPVC piping or steel piping where the "stand-off" design will ease installation by eliminating the need for wood blocking.

Features:

- Flared edge design protects CPVC pipe from any rough or abrasive surfaces
- Unique snap-on design holds pipe firmly in place and allows retrofit type of installation
- The "Stand-Off" design eliminates the need for wood block extension
- Can be installed on horizontal or vertical piping regardless of mounting surface orientation
- Attaches easily to wood structure with two hex head self-threading screws furnished with product
- Installs easily using rechargeable electrical driver with 5/16" (7.9mm) extension socket eliminating impact tool damage to pipe
- Attaches easily to steel, minimum 18 gauge (1.024mm) with (2) 1/4" x 1" tek type self drilling tapping screws
- **cULus** Listed as a hanger and a restrainer for fire sprinkler piping

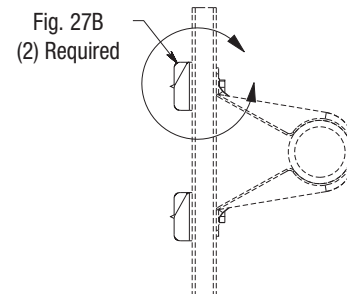
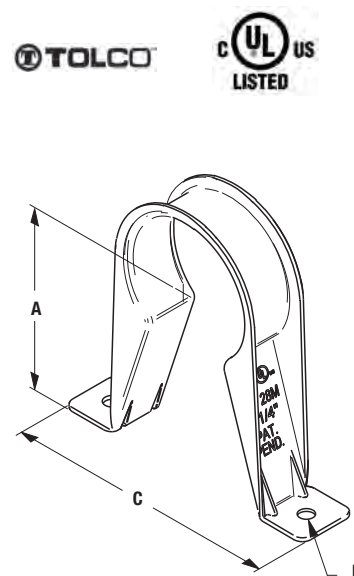
Installation Note: When installed in wood structural members and threads from the #10 x 1" screws are exposed, use Fig. 27B speed nut to secure

Approvals: Underwriters Laboratory Listed in the USA (**UL**) and Canada (**cUL**)

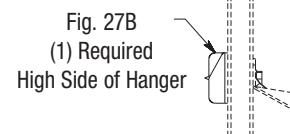
to support automatic fire sprinkler systems.
May be installed into wood using fasteners screws.
Meets and exceeds the requirements of NFPA 13, 13R and 13D. Fig. 28M satisfies the UL vertical restraint requirements where needed.

Order By: Part number and pipe size

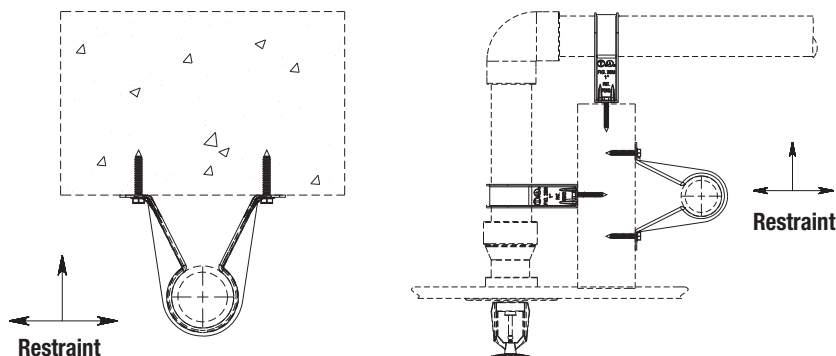
Patent #7,744,042



Hanger and Restraint Application



**Detail A
Hanger Application**



Part No.	Pipe Size in. (mm)	A in. (mm)	Hole Dia. B in. (mm)	C in. (mm)	Max Spacing* in. (mm)	Approx. Wt./100 lbs. (kg)
28M-3/4	3/4" (20)	2" (50.8)	3/16" (4.8)	35/16" (84.1)	5'-6" (1676)	9 (4.1)
28M-1	1" (25)	2 1/8" (54.0)	3/16" (4.8)	3 1/2" (88.9)	6'-0" (1829)	12 (5.4)
28M-1 1/4	1 1/4" (32)	2 5/16" (58.7)	3/16" (4.8)	3 1/2" (88.9)	6'-6" (1981)	13 (5.9)
28M-1 1/2	1 1/2" (49)	2 7/16" (61.9)	3/16" (4.8)	3 7/8" (98.4)	7'-0" (2133)	14 (6.3)
28M-2	2" (50)	2 5/8" (66.7)	3/16" (4.8)	4 7/16" (112.7)	8'-0" (2438)	15 (6.8)

* Required per NFPA 13 for CPVC plastic pipe

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

Pipe Clamps

Fig. 29 - Double Offset Hanger & Restrainer for CPVC Plastic Pipe

Size Range: Available in 3/4" (20mm) and 1" (25mm) pipe sizes

Material: Pre-Galvanized Steel

Function: Intended to perform as a hanger and restrainer for CPVC, plastic fire sprinkler pipe. Provides double offset 1 1/2" (20mm) x 1 1/2" (20mm) from mounting surface. This design will ease installation by eliminating the need for wood block extension and allow retro-fit attachment of hanger to sprinkler pipe.

Features:

- Thumb tab provides protection to restrain pipe in rough job site conditions. Tab is not required to be bent for listed installation.
- Offset edge eliminates abrasion.
- Attaches easily to wood structure with two special #10 x 1" hex head self-threading screws furnished with product.
- Can be used as a single offset hanger by aligning "dimples" with top of mounting surface and utilizing two fasteners in two of the three holes provided.

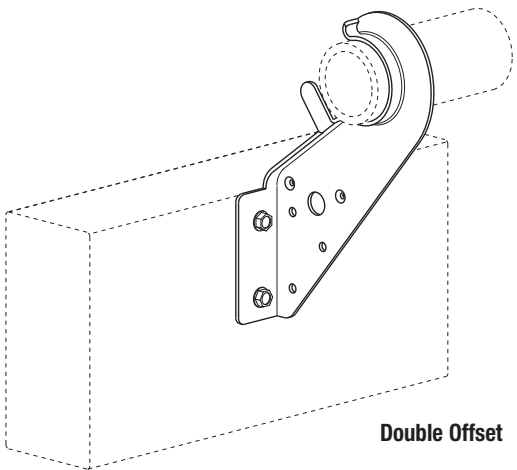
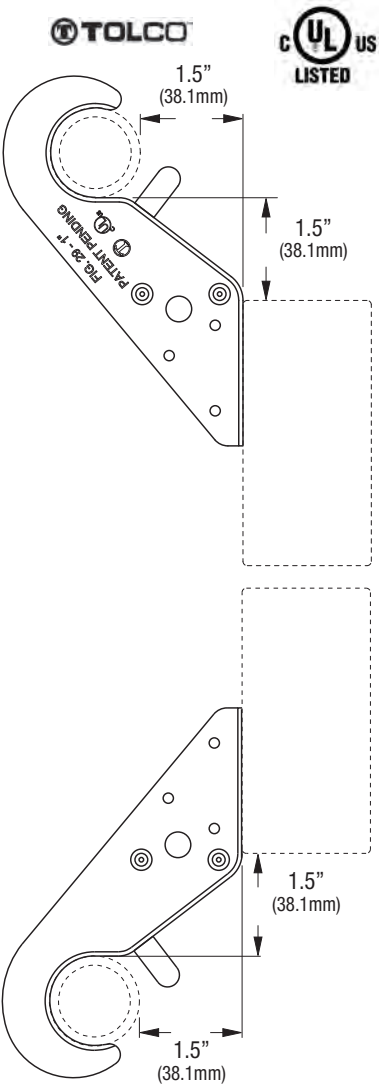
Approvals: Underwriters Laboratories Listed in the USA (**UL**) and Canada (**cUL**) as a hanger and restrainer to support fire sprinkler systems. Meets and exceeds requirements of NFPA 13, 13R and 13D.

Finish: Pre-Galvanized

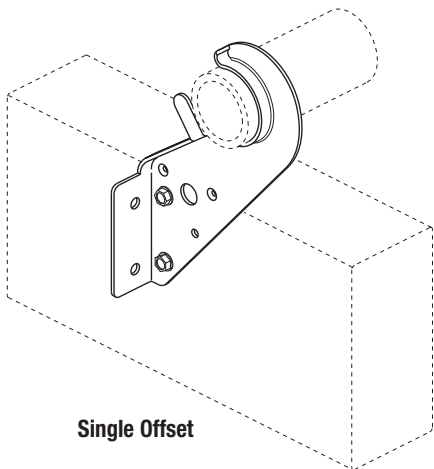
Order By: Part number and pipe size.

Patent Pending

Part No.	Pipe Size		Approx. Wt./100	
	in.	(mm)	lbs.	(kg)
29-3/4	3/4"	(20)	17.0	(7.7)
29-1	1"	(25)	18.6	(8.4)



Double Offset



Single Offset

Install using a rechargeable electric drill fitted with a 5/16" (7.9mm) socket attachment with the special hex head self-tapping screws provided. Install screws until they bottom out. Pipe can be "snapped" into hanger before or after installation of the screws to the mounting surface. "Thumb tab" may be bent up to provide additional protection to the pipe, but is not required for performance of the hanger / restrainer function.

B3184 - Offset Hanger for CPVC Plastic Pipe and IPS Pipe

Size Range: 3/4" (20mm) thru 2" (50mm)

Material: Pre-Galvanized Steel

Function: Designed to be used as a hanger for CPVC piping or steel piping where the "stand-off" design will ease installation by eliminating the need for wood blocking.

Features:

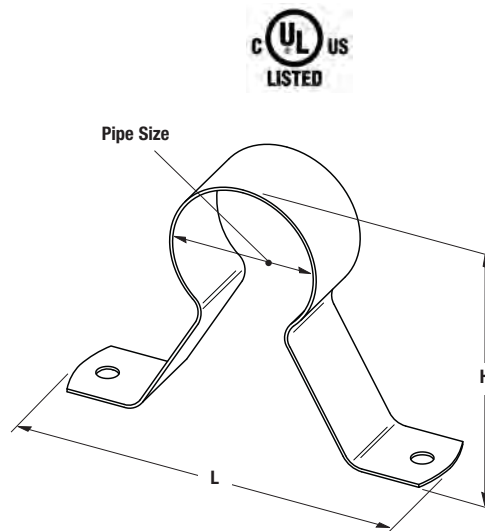
- Flared edge design protects CPVC pipe from any rough or abrasive surfaces
- The "Stand-Off" design eliminates the need for wood block extension
- Can be installed on horizontal or vertical piping regardless of mounting surface orientation
- Attaches easily to wood structure with two hex head self-threading screws furnished with product
- **cULus** Listed as a hanger for fire sprinkler piping

Installation Note: When installed in wood structural members and threads from the #10 x 1" screws are exposed, use Fig. 27B speed nut to secure

Approvals: Underwriters Laboratory Listed in the USA (**UL**) and Canada (**cUL**) 3/4" (20mm) thru 2" (50mm) to support automatic fire sprinkler systems. May be installed into wood using fasteners screws. Meets and exceeds the requirements of NFPA 13, 13R and 13D.

Order By: Part number and pipe size

Patent # 7,744,042



Part No.	CPVC Pipe Size		L Overall		H Overall		Max. Hanger Spacing		Fastener Hex Head Size		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	ft.	(m)	in.	(mm)	Lbs.	(kg)
B3184-3/4	3/4"	(20)	2 ⁹ / ₁₆ "	(65.1)	4 ¹ / ₄ "	(107.9)	5 ¹ / ₂	(1.67)	5/16"	(7.9)	9.0	(4.1)
B3184-1	1"	(25)	2 ¹³ / ₁₆ "	(71.4)	4 ¹ / ₂ "	(114.3)	6	(1.83)	5/16"	(7.9)	10.0	(4.5)
B3184-1¹/₄	1 ¹ / ₄ "	(32)	3 ³ / ₁₆ "	(81.0)	4 ⁵ / ₈ "	(117.5)	6 ¹ / ₂	(1.98)	5/16"	(7.9)	12.0	(5.4)
B3184-1¹/₂	1 ¹ / ₂ "	(40)	3 ⁷ / ₁₆ "	(87.3)	5"	(127.0)	7	(2.13)	5/16"	(7.9)	12.0	(5.4)
B3184-2	2"	(50)	3 ⁷ / ₈ "	(98.4)	5"	(127.0)	8	(2.44)	5/16"	(7.9)	15.0	(6.8)

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

Pipe Clamps

KWIK-CLIP™ Series

Size Range:

1/2" (15mm) thru 2" (50mm) Copper Tubing or CPVC pipe sizes

3/8" (9.5mm) thru 2 1/8" (54mm) O.D. Tubing sizes

Material: Plastic - Black

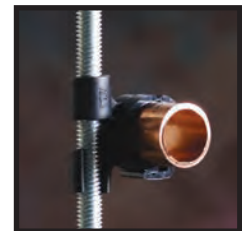
Features:

- One piece design greatly reduces installation time.
- No tools required to install.
- Non-metallic design eliminates metal-to-metal contact; preventing galvanic corrosion.
- Easily snaps into channel or onto 3/8"-16 all thread rod.
- Meets UL2043 requirements for plenum rating; and UL94 HB flame rating.
- Working temperature range of -40°F (-40°C) to +275°F (135°C).
- BPIC and BPSC clips can be used with insulation, maintaining an unbroken barrier seal and eliminating sweating.
- BPRC rod clip can be snapped onto 3/8"-16 all thread rod at any location.

Order By: Part number.



Part Number	Copper/CPVC Pipe		O.D. Tubing		Sch.40 Pipe		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kg)
BPRC062	1/2"	(15)	5/8"	(15.9)	--	(--)	1.2	(0.54)
BPRC075	5/8"	(16)	3/4"	(19.0)	--	(--)	1.3	(0.59)
BPRC087	3/4"	(20)	7/8"	(22.2)	1/2"	(12.7)	1.4	(0.63)
BPRC100	--	(--)	1"	(25.4)	3/4"	(19.0)	1.5	(0.68)
BPRC112	1"	(25)	1 1/8"	(28.6)	--	(--)	1.6	(0.72)
BPRC125	--	(--)	1 1/4"	(31.7)	1"	(25.4)	1.7	(0.77)
BPRC137	1 1/4"	(32)	1 3/8"	(34.9)	--	(--)	1.8	(0.81)
BPRC150	--	(--)	1 1/2"	(38.1)	--	(--)	2.1	(0.95)
BPRC162	1 1/2"	(40)	1 5/8"	(41.3)	--	(--)	2.3	(1.04)
BPRC200	--	(--)	2"	(50.8)	--	(--)	2.5	(1.13)
BPRC212	2"	(50)	2 1/8"	(54.0)	--	(--)	2.7	(1.22)



KWIK-CLIP™ Series - cont.



Part Number	Copper/CPVC Pipe		O.D. Tubing		Sch.40 Pipe		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kg)
BPSC037	1/4"	(6)	3/8"	(9.5)	--	(--)	2.3	(1.0)
BPSC050	3/8"	(10)	1/2"	(12.7)	--	(--)	2.6	(1.2)
BPSC062	1/2"	(15)	5/8"	(15.9)	--	(--)	2.8	(1.3)
BPSC075	5/8"	(16)	3/4"	(19.0)	--	(--)	3.3	(1.5)
BPSC087	3/4"	(20)	7/8"	(22.2)	1/2"	(12.7)	3.9	(1.7)
BPSC112	1"	(25)	1 1/8"	(28.6)	--	(--)	4.5	(2.0)
BPSC137	1 1/4"	(32)	1 3/8"	(34.9)	--	(--)	5.0	(2.2)
BPSC162	1 1/2"	(40)	1 5/8"	(41.3)	--	(--)	5.5	(2.5)



Part Number	Copper/CPVC Pipe		O.D. Tubing		Sch.40 Pipe		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kg)
BPIC062	1/2"	(15)	5/8"	(15.9)	--	(--)	2.9	(1.3)
BPIC075	5/8"	(16)	3/4"	(19.0)	--	(--)	2.9	(1.3)
BPIC087	3/4"	(20)	7/8"	(22.2)	1/2"	(12.7)	3.0	(1.4)
BPIC100	--	(--)	1"	(25.4)	3/4"	(19.0)	3.2	(1.4)
BPIC112	1"	(25)	1 1/8"	(28.6)	--	(--)	3.3	(1.5)
BPIC125	--	(--)	1 1/4"	(31.7)	1"	(25.4)	3.4	(1.5)
BPIC137	1 1/4"	(32)	1 3/8"	(34.9)	--	(--)	3.5	(1.6)
BPIC150	--	(--)	1 1/2"	(38.1)	--	(--)	3.8	(1.7)
BPIC162	1 1/2"	(40)	1 5/8"	(41.3)	--	(--)	4.0	(1.8)
BPIC200	--	(--)	2"	(50.8)	--	(--)	4.2	(1.9)
BPIC212	2"	(50)	2 1/8"	(54.0)	--	(--)	4.4	(2.0)



Insert in channel.



Twist into place.



Lay tubing/pipe into clip.



Snap clip closed.

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

Pipe Rollers & Roller Supports



Pipe rollers and roller supports offered in this section are designed to compensate for longitudinal movement due to the expansion or contraction of both insulated or non-insulated pipe.

Materials

Carbon Steel with Cast Iron rollers are used in the manufacture of pipe roller supports. Stainless Steel and other materials are available.

Finishes

The standard finishes for mechanical supports are plain steel (oil coated) sometimes referred to as black and Electro-Galvanized Zinc (ASTM B633 SC3). Hot-Dip Galvanized After Fabrication (ASTM A123), Red Primer, Plastic Coating, DURA-GREEN™ and other special coatings are available upon request.

Note: Due to the design of some products, (threads, connecting hardware, swivels, etc.) items may or may not be uniformly coated with special finishes. In some cases, the hanger itself may be coated, however, the hardware may be supplied Electro-Plated, Copper plated, or in Stainless Steel.

Approvals (as noted)

Items in this section comply with Federal Specification WW-H-171E & A-A-1192A or Manufacturers Standardization Society ANSI/MSS SP-69 SP-58.

Pipe Rollers & Roller Supports

B3110 - Adjustable Steel Yoke Pipe Roll (TOLCO Fig. 324)

Size Range: 2" (65mm) thru 24" (600mm) pipe

Material: Cast iron and steel

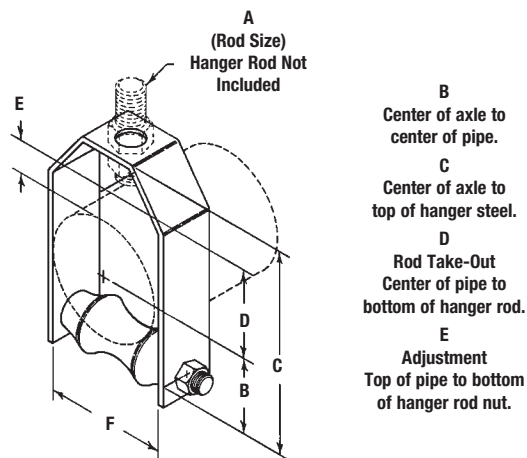
Function: For supporting pipe where movement may occur due to thermal expansion.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 44, 1" (25mm) thru 20" (500mm), and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 43. Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHDP). For additional load, spacing and placement information relating to OSHDP projects, please refer to the Seismic Restraint Systems Guidelines.

Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

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

Order By: Part number, pipe size and finish



Note: Not for continuous cycling applications.

Part No.	Pipe Size		Rod Size	B		C		D		E	
	in.	(mm)	A	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3110-2	2"	(50)	3/8"-16	19/16"	(39.7)	4 3/4"	(120.6)	2 3/8"	(60.3)	1 7/16"	(36.5)
B3110-2 1/2	2 1/2"	(65)	1/2"-13	1 7/8"	(47.6)	6"	(152.4)	3 3/16"	(81.0)	2"	(50.8)
B3110-3	3"	(80)	1/2"-13	2 3/16"	(55.6)	6 5/8"	(168.3)	3 1/2"	(88.9)	2"	(50.8)
B3110-3 1/2	3 1/2"	(90)	1/2"-13	2 1/2"	(63.5)	7 1/4"	(184.1)	3 3/4"	(95.2)	2"	(50.8)
B3110-4	4"	(100)	5/8"-11	2 3/4"	(69.8)	7 7/8"	(200.0)	4"	(101.6)	2"	(50.8)
B3110-5	5"	(125)	5/8"-11	3 3/8"	(85.7)	9 3/16"	(233.4)	4 9/16"	(115.9)	2"	(50.8)
B3110-6	6"	(150)	3/4"-10	3 15/16"	(100.0)	10 3/8"	(263.5)	5 1/16"	(128.6)	2"	(50.8)
B3110-8	8"	(200)	3/4"-10	5 1/16"	(128.6)	12 5/8"	(320.7)	6 1/16"	(154.0)	2"	(50.8)
B3110-10	10"	(250)	7/8"-9	6 1/4"	(158.7)	14 15/16"	(379.4)	7 3/16"	(182.6)	2 1/16"	(52.4)
B3110-12	12"	(300)	7/8"-9	7 3/8"	(187.3)	17 3/8"	(441.3)	8 3/8"	(212.7)	2 1/4"	(57.1)
B3110-14	14"	(350)	1"-8	8 1/4"	(209.5)	19"	(482.6)	8 3/4"	(222.2)	2 1/4"	(57.1)
B3110-16	16"	(400)	1"-8	9 1/4"	(234.9)	20 3/4"	(527.0)	9 3/4"	(247.6)	2"	(50.8)
B3110-18	18"	(450)	1"-8	10 3/8"	(263.5)	23 11/16"	(601.7)	11 7/16"	(290.5)	2 1/16"	(68.3)
B3110-20	20"	(500)	1 1/4"-7	11 1/2"	(292.1)	25 7/8"	(657.2)	12 1/4"	(311.1)	2 1/2"	(63.5)
B3110-24	24"	(600)	1 1/2"-6	13 13/16"	(350.8)	31 9/16"	(801.7)	15"	(381.0)	3 1/2"	(88.9)

Part No.	F		Maximum O.D. Covering		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	lbs.	(kN)	Lbs.	(kg)
B3110-2	2 7/8"	(73.0)	2 5/8"	(66.7)	150	(.67)	123	(55.8)
B3110-2 1/2	3 1/4"	(82.5)	3"	(76.2)	225	(1.00)	178	(80.7)
B3110-3	3 7/8"	(98.4)	3 5/8"	(92.1)	310	(1.38)	206	(93.4)
B3110-3 1/2	4 3/8"	(111.1)	4 1/8"	(104.8)	390	(1.73)	267	(121.1)
B3110-4	4 7/8"	(123.8)	4 11/16"	(119.1)	475	(2.11)	344	(156.0)
B3110-5	5 15/16"	(150.8)	5 3/4"	(146.0)	685	(3.04)	600	(272.1)
B3110-6	7"	(177.8)	6 3/4"	(171.4)	780	(3.47)	800	(362.9)
B3110-8	9"	(228.6)	8 3/4"	(222.2)	780	(3.47)	1300	(589.7)
B3110-10	11 1/8"	(282.6)	10 3/4"	(273.0)	965	(4.29)	1600	(725.7)
B3110-12	13 3/8"	(339.7)	13"	(330.2)	1200	(5.34)	2600	(1179.3)
B3110-14	14 1/2"	(368.3)	14 1/4"	(361.9)	1200	(5.34)	3400	(1542.2)
B3110-16	16 3/8"	(415.9)	16 1/8"	(409.6)	1200	(5.34)	3900	(1769.0)
B3110-18	18 3/8"	(466.7)	18 1/8"	(460.4)	1400	(6.23)	4900	(2222.6)
B3110-20	20 3/8"	(517.5)	20 1/8"	(511.2)	1600	(7.11)	6686	(3032.7)
B3110-24	24 5/8"	(625.5)	24 3/8"	(619.1)	1800	(8.00)	11630	(5275.3)



Notes: If using D.I. pipe refer to page 298 for sizing. Non-metallic rollers with stainless steel yoke and hardware are available for most sizes (B3110NM-Pipe Size). Contact B-Line Engineering for more information.

Pipe Rollers & Pipe Supports

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

Pipe Rollers & Roller Supports

B3114 - Pipe Roll with Sockets (TOLCO Fig. 322)

Size Range: 2" (25mm) thru 30" (750mm) pipe

Material: Cast iron and steel axle

Function: For supporting pipe where expansion may occur due to thermal movement. Double rod design provides support for greater loads.

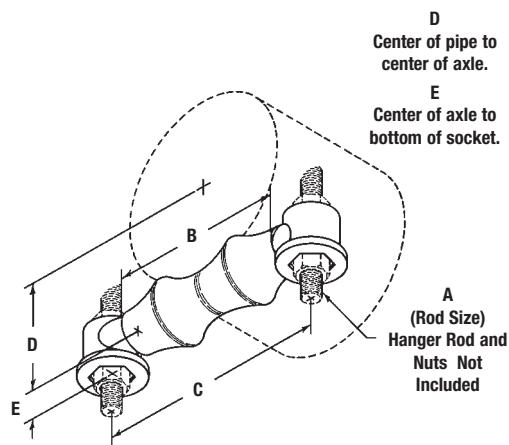
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 42, 2" (50mm) thru 24" (600mm), and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 41

Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

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

Order By: Part number, pipe size and finish

Note: Not for continuous cycling applications.



Part No.	Pipe Size		Rod Size		B		C		D	
	in.	(kg)	A		in.	(kg)	in.	(kg)	in.	(kg)
B3114-2	2"	(50)	3/8"-16		2 5/8"	(66.7)	4 1/8"	(104.8)	1 9/16"	(39.7)
B3114-2 1/2	2 1/2"	(65)	1/2"-13		3 1/8"	(79.4)	4 7/8"	(123.8)	1 7/8"	(47.6)
B3114-3	3"	(80)	1/2"-13		3 3/4"	(95.2)	5 1/2"	(139.7)	2 3/16"	(55.6)
B3114-3 1/2	3 1/2"	(90)	1/2"-13		4 1/4"	(107.9)	6 1/8"	(155.6)	2 1/2"	(63.5)
B3114-4	4"	(100)	5/8"-11		4 3/4"	(120.6)	6 3/4"	(171.4)	2 3/4"	(69.8)
B3114-5	5"	(125)	5/8"-11		5 13/16"	(147.6)	8 1/16"	(204.8)	3 3/8"	(85.7)
B3114-6	6"	(150)	3/4"-10		6 7/8"	(174.6)	9 9/16"	(242.9)	3 15/16"	(100.0)
B3114-8	8"	(200)	7/8"-9		8 7/8"	(225.4)	11 15/16"	(303.2)	5 1/16"	(128.6)
B3114-10	10"	(250)	7/8"-9		11"	(279.4)	14 1/16"	(357.2)	6 1/4"	(158.7)
B3114-12	12"	(300)	7/8"-9		13"	(330.2)	15 13/16"	(401.6)	7 3/8"	(187.3)
B3114-14	14"	(350)	1"-8		14 1/4"	(361.9)	17 3/4"	(450.8)	8 1/4"	(209.5)
B3114-16	16"	(400)	1"-8		16 1/4"	(412.7)	19 3/4"	(501.6)	9 1/4"	(234.9)
B3114-18	18"	(450)	1"-8		18 1/4"	(463.5)	21 7/8"	(555.6)	10 3/8"	(263.5)
B3114-20	20"	(500)	1 1/4"-7		20 1/4"	(514.3)	24 1/4"	(615.9)	11 1/2"	(292.1)
B3114-24	24"	(600)	1 1/2"-6		24 1/4"	(615.9)	28 7/8"	(733.4)	13 13/16"	(350.8)
B3114-30	30"	(750)	1 1/2"-6		30 1/4"	(768.3)	35 1/2"	(901.7)	17 1/4"	(438.1)

Notes: If using D.I. pipe refer to page 298 for sizing. Non-metallic rollers with hot-dip galvanized sockets and stainless steel hardware are available for most sizes (B3114NM-Pipe Size). Contact B-Line Engineering for more information.



Part No.	E		Max. O.D. Covering		Design Load		Approx. Wt./100	
	in.	(kg)	in.	(kg)	Lbs.	(kN)	Lbs.	(kg)
B3114-2	3/4"	(19.0)	3 3/4"	(82.5)	600	(2.67)	119	(54.0)
B3114-2 1/2	3/4"	(19.0)	3 3/4"	(95.2)	660	(2.93)	140	(63.5)
B3114-3	3/4"	(19.0)	4 1/2"	(114.3)	700	(3.11)	158	(71.6)
B3114-3 1/2	3/4"	(19.0)	5"	(127.0)	750	(3.33)	170	(77.1)
B3114-4	3/4"	(19.0)	5 7/8"	(149.2)	750	(3.33)	188	(85.3)
B3114-5	3/4"	(19.0)	7"	(177.8)	750	(3.33)	246	(111.6)
B3114-6	1 1/8"	(28.6)	8 1/4"	(209.5)	1070	(4.76)	504	(228.6)
B3114-8	1 1/8"	(28.6)	10 1/2"	(266.7)	1350	(6.00)	658	(298.4)
B3114-10	1 1/8"	(28.6)	12 3/4"	(323.8)	1730	(7.69)	849	(385.1)
B3114-12	1 1/8"	(28.6)	14 3/4"	(374.6)	2400	(10.67)	1200	(544.3)
B3114-14	1 1/2"	(38.1)	16 1/4"	(412.7)	3130	(13.92)	2289	(1038.3)
B3114-16	1 1/2"	(38.1)	18"	(457.2)	3970	(17.66)	2497	(1132.6)
B3114-18	1 1/2"	(38.1)	20 1/4"	(514.3)	4200	(18.68)	2899	(1315.0)
B3114-20	1 1/2"	(38.1)	22 1/2"	(571.5)	4550	(20.24)	3637	(1649.7)
B3114-24	2"	(50.8)	26 1/2"	(673.1)	6160	(27.40)	5664	(2569.2)
B3114-30	2"	(50.8)	32 1/2"	(825.5)	7290	(32.42)	9437	(4280.6)

36" (900) available upon request.

Pipe Rollers & Roller Supports

B3122 - Adjustable Roller Support (TOLCO Fig. 326)

Size Range: 2" (25mm) thru 24" (750mm) pipe

Material: Cast iron and steel

Function: Designed for suspending pipe where longitudinal movement and vertical adjustment is required.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 42, 2" (50mm) thru 24" (600mm), and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 41

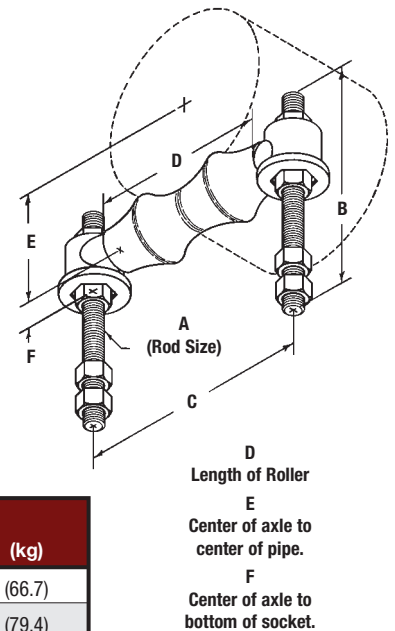
Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

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

Furnished With: B3114 Roller, two support rods and eight HN Hex Nuts — not assembled.

Order By: Part number, pipe size and finish

Note: Not for continuous cycling applications.



Part No.	Pipe Size		Rod Size		B		C		D	
	in.	(kg)	A		in.	(kg)	in.	(kg)	in.	(kg)
B3122-2	2"	(50)	3/8"-16		12"	(304.8)	4 1/8"	(104.8)	2 5/8"	(66.7)
B3122-2 1/2	2 1/2"	(65)	1/2"-13		12"	(304.8)	4 7/8"	(123.8)	3 1/8"	(79.4)
B3122-3	3"	(80)	1/2"-13		12"	(304.8)	5 1/2"	(139.7)	3 3/4"	(95.2)
B3122-3 1/2	3 1/2"	(90)	1/2"-13		12"	(304.8)	6 1/8"	(155.6)	4 1/4"	(107.9)
B3122-4	4"	(100)	5/8"-11		12"	(304.8)	6 3/4"	(171.4)	4 3/4"	(120.6)
B3122-5	5"	(125)	5/8"-11		12"	(304.8)	8 1/16"	(204.8)	5 13/16"	(147.6)
B3122-6	6"	(150)	3/4"-10		12"	(304.8)	9 9/16"	(242.9)	6 7/8"	(174.6)
B3122-8	8"	(200)	7/8"-9		12"	(304.8)	11 15/16"	(303.2)	8 7/8"	(225.4)
B3122-10	10"	(250)	7/8"-9		12"	(304.8)	14 1/16"	(357.2)	11"	(279.4)
B3122-12	12"	(300)	7/8"-9		12"	(304.8)	15 13/16"	(401.6)	13"	(330.2)
B3122-14	14"	(350)	1"-8		12"	(304.8)	17 3/4"	(450.8)	14 1/4"	(361.9)
B3122-16	16"	(400)	1"-8		18"	(457.2)	19 3/4"	(501.6)	16 1/4"	(412.7)
B3122-18	18"	(450)	1"-8		18"	(457.2)	21 7/8"	(555.6)	18 1/4"	(463.5)
B3122-20	20"	(500)	1 1/4"-7		18"	(457.2)	24 1/4"	(615.9)	20 1/4"	(514.3)
B3122-24	24"	(600)	1 1/2"-6		24"	(609.6)	28 7/8"	(733.4)	24 1/4"	(615.9)



Notes: If using D.I. pipe refer to page 298 for sizing. Non-metallic rollers with hot-dip galvanized sockets and stainless steel hardware are available for most sizes (B3122NM-Pipe Size). Contact B-Line Engineering for more information.

Part No.	E		F		Design Load		Approx. Wt./100	
	in.	(kg)	in.	(kg)	Lbs.	(kN)	Lbs.	(kg)
B3122-2	1 9/16"	(39.7)	3/4"	(19.0)	600	(2.67)	194	(88.0)
B3122-2 1/2	1 7/8"	(47.6)	3/4"	(19.0)	660	(2.93)	284	(128.8)
B3122-3	2 3/16"	(55.6)	3/4"	(19.0)	700	(3.11)	302	(137.0)
B3122-3 1/2	2 1/2"	(63.5)	3/4"	(19.0)	750	(3.33)	314	(142.4)
B3122-4	2 3/4"	(69.8)	3/4"	(19.0)	750	(3.33)	438	(198.7)
B3122-5	3 3/8"	(85.7)	3/4"	(19.0)	750	(3.33)	495	(224.5)
B3122-6	3 15/16"	(100.0)	1 1/8"	(28.6)	1070	(4.76)	867	(393.3)
B3122-8	5 1/16"	(128.6)	1 1/8"	(28.6)	1350	(6.00)	1176	(533.4)
B3122-10	6 1/4"	(158.7)	1 1/8"	(28.6)	1730	(7.69)	1368	(620.5)
B3122-12	7 3/8"	(187.3)	1 1/8"	(28.6)	2400	(10.67)	1861	(844.1)
B3122-14	8 1/4"	(209.5)	1 1/2"	(38.1)	3130	(13.92)	3116	(1413.4)
B3122-16	9 7/16"	(239.7)	1 1/2"	(38.1)	3970	(17.66)	3550	(1610.3)
B3122-18	10 1/2"	(266.7)	1 1/2"	(38.1)	4200	(18.68)	4328	(1963.2)
B3122-20	11 1/2"	(292.1)	1 1/2"	(38.1)	4550	(20.24)	5241	(2377.3)
B3122-24	13 13/16"	(350.8)	2"	(50.8)	6160	(27.40)	7773	(3525.8)

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

Pipe Rollers & Roller Supports

B3122A - Adjustable Double Roller Guide

Size Range: 2" (50mm) thru 24" (600mm) pipe

Material: Cast iron and steel

Function: Designed for supporting and guiding pipe where longitudinal movement and vertical adjustment are required.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 42, 2" (50mm) thru 24" (600mm), and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 41

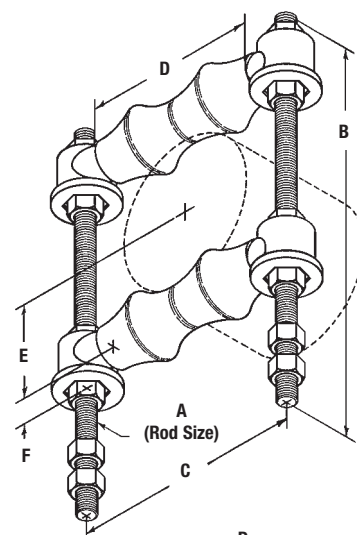
Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

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

Furnished With: B3114 Roller, two support rods and eight HN Hex Nuts — not assembled.

Order By: Part number, pipe size and finish

Note: Not for continuous cycling applications.



D
Length of Roller
E
Center of axle to
center of pipe.
F
Center of axle to
bottom of socket.

Part No.	Pipe Size		Rod Size	B		C		D	
	in.	(kg)	A	in.	(kg)	in.	(kg)	in.	(kg)
B3122A-2	2"	(50)	3/8"-16	12"	(304.8)	4 1/8"	(104.8)	2 5/8"	(66.7)
B3122A-2 1/2	2 1/2"	(65)	1/2"-13	14"	(355.6)	4 7/8"	(123.8)	3 1/8"	(79.4)
B3122A-3	3"	(80)	1/2"-13	14"	(355.6)	5 1/2"	(139.7)	3 3/4"	(95.2)
B3122A-3 1/2	3 1/2"	(90)	1/2"-13	14"	(355.6)	6 1/8"	(155.6)	4 1/4"	(107.9)
B3122A-4	4"	(100)	5/8"-11	18"	(457.2)	6 3/4"	(171.4)	4 3/4"	(120.6)
B3122A-5	5"	(125)	5/8"-11	18"	(457.2)	8 1/16"	(204.8)	5 13/16"	(147.6)
B3122A-6	6"	(150)	3/4"-10	24"	(609.6)	9 9/16"	(242.9)	6 7/8"	(174.6)
B3122A-8	8"	(200)	7/8"-9	24"	(609.6)	11 15/16"	(303.2)	8 7/8"	(225.4)
B3122A-10	10"	(250)	7/8"-9	30"	(762.0)	14 1/16"	(357.2)	11"	(279.4)
B3122A-12	12"	(300)	7/8"-9	30"	(762.0)	15 13/16"	(401.6)	13"	(330.2)
B3122A-14	14"	(350)	1"-8	36"	(914.4)	17 3/4"	(450.8)	14 1/4"	(361.9)
B3122A-16	16"	(400)	1"-8	36"	(914.4)	19 3/4"	(501.6)	16 1/4"	(412.7)
B3122A-18	18"	(450)	1"-8	42"	(1066.8)	21 7/8"	(555.6)	18 1/4"	(463.5)
B3122A-20	20"	(500)	1 1/4"-7	42"	(1066.8)	24 1/4"	(615.9)	20 1/4"	(514.3)
B3122A-24	24"	(600)	1 1/2"-6	48"	(1219.2)	28 7/8"	(733.4)	24 1/4"	(615.9)



Notes: If using D.I. pipe refer to page 298 for sizing. Non-metallic rollers with hot-dip galvanized sockets and stainless steel hardware are available for most sizes (B3122ANM-Pipe Size). Contact B-Line Engineering for more information.

Part No.	E		F		Design Load		Approx. Wt./100	
	in.	(kg)	in.	(kg)	Lbs.	(kN)	Lbs.	(kg)
B3122A-2	1 9/16"	(39.7)	3/4"	(19.0)	600	(2.67)	323	(146.5)
B3122A-2 1/2	1 7/8"	(47.6)	3/4"	(19.0)	660	(2.93)	465	(210.9)
B3122A-3	2 3/16"	(55.6)	3/4"	(19.0)	700	(3.11)	501	(227.2)
B3122A-3 1/2	2 1/2"	(63.5)	3/4"	(19.0)	750	(3.33)	525	(238.1)
B3122A-4	2 3/4"	(69.8)	3/4"	(19.0)	750	(3.33)	757	(343.4)
B3122A-5	3 3/8"	(85.7)	3/4"	(19.0)	750	(3.33)	872	(395.5)
B3122A-6	3 15/16"	(100.0)	1 1/8"	(28.6)	1070	(4.76)	1687	(765.2)
B3122A-8	5 1/16"	(128.6)	1 1/8"	(28.6)	1350	(6.00)	2277	(1032.8)
B3122A-10	6 1/4"	(158.7)	1 1/8"	(28.6)	1730	(7.69)	2830	(1283.7)
B3122A-12	7 3/8"	(187.3)	1 1/8"	(28.6)	2400	(10.67)	3817	(1731.4)
B3122A-14	8 1/4"	(209.5)	1 1/2"	(38.1)	3130	(13.92)	6513	(2954.3)
B3122A-16	9 7/16"	(242.9)	1 1/2"	(38.1)	3970	(17.66)	6759	(3065.9)
B3122A-18	10 1/2"	(266.7)	1 1/2"	(38.1)	4200	(18.68)	7518	(3410.1)
B3122A-20	11 1/2"	(292.1)	1 1/2"	(38.1)	4550	(20.24)	11222	(5090.3)
B3122A-24	13 13/16"	(350.8)	2"	(50.8)	6160	(27.40)	17666	(8013.3)

Pipe Rollers & Roller Supports

B3120 - Roller Chair (TOLCO Fig. 325)

Size Range: 2" (50mm) thru 24" (600mm) pipe

Material: Cast iron and steel

Function: For supporting pipe where movement may occur due to thermal expansion. Used when ceiling suspension is impractical.

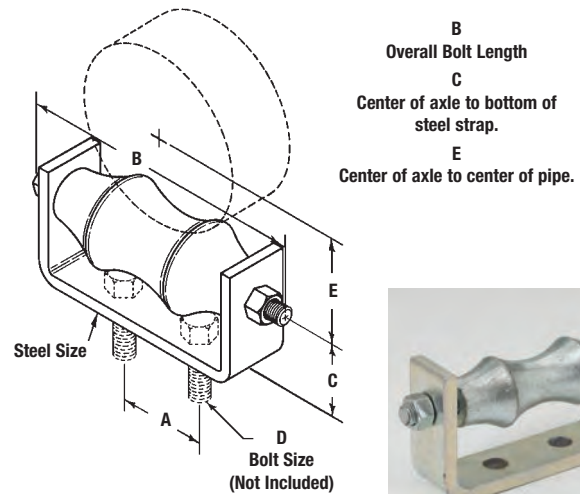
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 45 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 44.

Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

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

Order by: Part number, pipe size and finish

Note: Not for continuous cycling applications.



Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	Recommended Bolt Size D (Not Included)
B3120-2	2" (50)	1 1/4" (31.7)	4 5/8" (117.5)	1 1/2" (38.1)	3/8"-16 x 1 1/2"
B3120-2 1/2	2 1/2" (65)	1 1/4" (31.7)	5 3/8" (136.5)	1 5/8" (41.3)	3/8"-16 x 1 1/2"
B3120-3	3" (80)	2" (50.8)	6" (152.4)	1 3/4" (44.4)	3/8"-16 x 1 1/2"
B3120-3 1/2	3 1/2" (90)	2" (50.8)	6 3/4" (171.4)	2 1/16" (52.4)	3/8"-16 x 1 1/2"
B3120-4	4" (100)	2" (50.8)	7 1/4" (184.1)	2 5/16" (58.7)	1/2"-13 x 1 1/2"
B3120-5	5" (125)	3" (76.2)	8 7/16" (214.3)	2 1/2" (63.5)	1/2"-13 x 1 1/2"
B3120-6	6" (150)	3 1/8" (79.4)	9 3/4" (247.6)	2 3/4" (69.8)	1/2"-13 x 1 1/2"
B3120-8	8" (200)	3 3/8" (85.7)	12" (304.8)	3" (76.2)	5/8"-11 x 1 1/2"
B3120-10	10" (250)	5 1/4" (133.3)	14 7/16" (366.7)	3 5/8" (92.1)	5/8"-11 x 2"
B3120-12	12" (300)	5 1/2" (139.7)	16 5/8" (422.3)	4 1/8" (104.8)	5/8"-11 x 2"
B3120-14	14" (350)	6" (152.4)	18 1/4" (463.5)	4 5/8" (117.5)	5/8"-11 x 2"
B3120-16	16" (400)	8" (203.2)	21" (533.4)	5" (127.0)	5/8"-11 x 2 1/2"
B3120-18	18" (450)	9" (228.6)	23" (584.2)	5 1/4" (133.3)	5/8"-11 x 2 1/2"
B3120-20	20" (500)	10" (254.0)	25" (635.0)	5 3/4" (146.0)	3/4"-10 x 3"
B3120-24	24" (600)	12" (304.8)	30" (762.0)	7" (177.8)	3/4"-10 x 3"

Notes: If using D.I. pipe refer to page 298 for sizing. Non-metallic rollers with stainless steel chair and hardware are available for most sizes (B3120NM-Pipe Size). Contact B-Line Engineering for more information.

Part No.	E in. (mm)	Steel Size in. (mm)	Design Load lbs. (kN)	Approx. Wt./100 lbs. (kg)
B3120-2	1 9/16" (39.7)	1/4" x 1 1/4" (6.3 x 31.7)	300 (1.33)	119 (54.0)
B3120-2 1/2	1 7/8" (47.6)	1/4" x 1 1/4" (6.3 x 31.7)	600 (2.67)	146 (66.2)
B3120-3	2 3/16" (55.6)	1/4" x 1 1/4" (6.3 x 31.7)	600 (2.67)	172 (78.0)
B3120-3 1/2	2 1/2" (63.5)	3/8" x 1 1/2" (9.5 x 38.1)	600 (2.67)	264 (119.7)
B3120-4	2 3/4" (69.8)	3/8" x 1 1/2" (9.5 x 38.1)	700 (3.11)	303 (137.4)
B3120-5	3 3/8" (85.7)	3/8" x 1 1/2" (9.5 x 38.1)	700 (3.11)	401 (181.9)
B3120-6	3 15/16" (100.0)	3/8" x 2" (9.5 x 50.8)	1000 (4.45)	620 (281.2)
B3120-8	5 1/16" (128.6)	3/8" x 2" (9.5 x 50.8)	1300 (5.78)	874 (396.4)
B3120-10	6 1/4" (158.7)	1/2" x 2" (12.7 x 50.8)	1700 (7.56)	1270 (576.1)
B3120-12	7 3/8" (187.3)	1/2" x 2" (12.7 x 50.8)	2300 (10.33)	1918 (870.0)
B3120-14	8 1/4" (209.5)	1/2" x 2 1/2" (12.7 x 63.5)	3100 (13.79)	2629 (1192.5)
B3120-16	9 1/4" (234.9)	5/8" x 2 1/2" (15.9 x 63.5)	3900 (17.35)	3248 (1473.3)
B3120-18	10 3/8" (263.5)	5/8" x 2 1/2" (15.9 x 63.5)	4200 (18.68)	4120 (1868.8)
B3120-20	11 1/2" (292.1)	5/8" x 3" (15.9 x 76.2)	4500 (20.01)	5630 (3553.7)
B3120-24	13 3/4" (349.2)	3/4" x 3" (19.0 x 76.2)	6000 (26.69)	7702 (3493.6)

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

Pipe Rollers & Roller Supports

B3124 - Roller Support

Size Range: 2" (50mm) thru 20" (500mm) pipe

Material: Cast iron and steel

Function: Designed for supporting pipe where longitudinal movement and vertical adjustment are required.

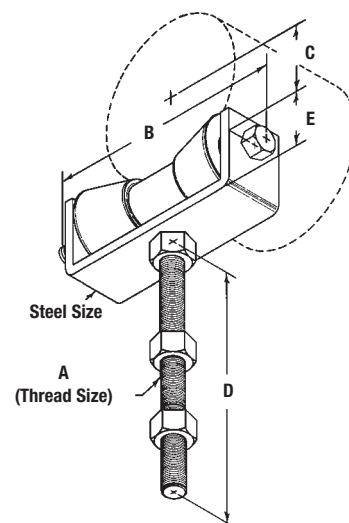
Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

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

Order By: Part number, pipe size and finish

Note: Not for continuous cycling applications.

B
Overall Bolt Length
C
Center of axle to
center of pipe.
D
Overall Stud Height
E
Center of roller to
bottom of chair.
F
Length of Roller



Part No.	Pipe Size		Thread Size A	B		C		D	
	in.	(mm)		in.	(mm)	in.	(mm)	in.	(mm)
B3124-2 to 3 1/2	2"	(50)	5/8"-11	4 3/4"	(120.6)	1 3/4"	(44.4)	5"	(127.0)
	2 1/2"	(65)	5/8"-11	4 3/4"	(120.6)	2 1/8"	(54.0)	5"	(127.0)
	3"	(80)	5/8"-11	4 3/4"	(120.6)	2 3/8"	(60.3)	5"	(127.0)
	3 1/2"	(90)	5/8"-11	4 3/4"	(120.6)	2 5/8"	(66.7)	5"	(127.0)
B3124-4 to 6	4"	(100)	3/4"-10	5 7/8"	(149.2)	2 3/4"	(69.8)	6"	(152.4)
	5"	(125)	3/4"-10	5 7/8"	(149.2)	3 3/8"	(85.7)	6"	(152.4)
	6"	(150)	3/4"-10	5 7/8"	(149.2)	4"	(101.6)	6"	(152.4)
B3124-8 to 10	8"	(200)	7/8"-9	8 3/4"	(222.2)	5 1/4"	(133.3)	6"	(152.4)
	10"	(250)	7/8"-9	8 3/4"	(222.2)	6 3/8"	(161.9)	6"	(152.4)
B3124-12 to 14	12"	(300)	1"-8	11 1/4"	(285.7)	7 1/2"	(190.5)	7"	(177.8)
	14"	(350)	1"-8	11 1/4"	(285.7)	8 1/8"	(206.4)	7"	(177.8)
B3124-16 to 20	16"	(400)	1 1/8"-7	12 1/2"	(317.5)	9 3/8"	(238.1)	8"	(203.2)
	18"	(450)	1 1/8"-7	12 1/2"	(317.5)	10 3/8"	(263.5)	8"	(203.2)
	20"	(500)	1 1/8"-7	12 1/2"	(317.5)	11 3/8"	(288.9)	8"	(203.2)

Notes: If using D.I. pipe refer to page 298 for sizing. Non-metallic rollers with stainless steel chair and hardware are available for most sizes (B3124NM-Pipe Size). Contact B-Line Engineering for more information.

Part No.	E		Length of Roller		Steel Size		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3124-2 to 3 1/2	1 13/16"	(46.0)	2 3/4"	(69.8)	3/16" x 1 1/2"	(4.8 x 38.1)	390	(1.73)	233	(105.7)
B3124-4 to 6	2"	(50.8)	3 3/4"	(95.2)	1/4" x 2"	(6.3 x 50.8)	600	(2.67)	368	(166.9)
B3124-8 to 10	2 11/16"	(68.3)	6"	(152.4)	3/8" x 2"	(9.5 x 50.8)	800	(3.56)	919	(416.8)
B3124-12 to 14	3 1/4"	(82.5)	8"	(203.2)	1/2" x 2"	(12.7 x 50.8)	1300	(5.78)	1660	(753.0)
B3124-16 to 20	3 1/2"	(88.9)	9"	(228.6)	1/2" x 2"	(12.7 x 50.8)	2300	(10.23)	2250	(1020.6)

Pipe Rollers & Roller Supports

B3126 Roller Support (TOLCO Fig. ROL-16)

Size Range: 2" (50mm) thru 20" (500mm) pipe

Material: Steel with Cast Iron Roller

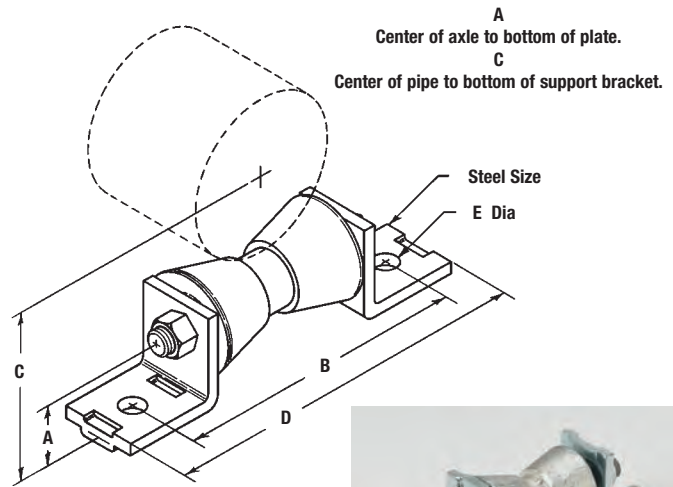
Function: Designed to mount on strut (metal framing) for the support of pipe with longitudinal movement.

Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

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

Order By: Part number, pipe size and finish

Notes: If using D.I. pipe refer to page 298 for sizing. Non-metallic rollers with stainless steel brackets and hardware are available (B3126NM-Pipe Size). Contact B-Line Engineering for more information. Not for continuous cycling applications.



Part No.	Pipe Size		A		B		C		D	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3126-2 to 3 1/2	2"	(50)	17/16"	(36.5)	6"	(152.4)	3 11/64"	(80.6)	7 5/8"	(193.7)
	2 1/2"	(65)	17/16"	(36.5)	6"	(152.4)	3 27/64"	(86.9)	7 5/8"	(193.7)
	3"	(80)	17/16"	(36.5)	6"	(152.4)	3 47/64"	(94.8)	7 5/8"	(193.7)
	3 1/2"	(90)	17/16"	(36.5)	6"	(152.4)	3 63/64"	(101.2)	7 5/8"	(193.7)
B3126-4 to 6	4"	(100)	17/16"	(36.5)	7"	(177.8)	4 13/64"	(106.8)	8 5/8"	(219.1)
	5"	(125)	17/16"	(36.5)	7"	(177.8)	4 47/64"	(120.2)	8 5/8"	(219.1)
	6"	(150)	17/16"	(36.5)	7"	(177.8)	5 17/64"	(133.8)	8 5/8"	(219.1)
B3126-8 to 10	8"	(200)	1 13/16"	(46.0)	8 3/4"	(222.3)	7"	(177.8)	10 3/8"	(263.5)
	10"	(250)	1 13/16"	(46.0)	8 3/4"	(222.3)	8 1/16"	(204.8)	10 3/8"	(263.5)
B3126-12 to 14	12"	(300)	2 7/16"	(61.9)	12 1/8"	(308.0)	9 27/32"	(250.1)	14 3/8"	(365.1)
	14"	(350)	2 7/16"	(61.9)	12 1/8"	(308.0)	10 15/32"	(265.9)	14 3/8"	(365.1)
B3126-16 to 20	16"	(400)	2 5/8"	(66.7)	13 1/8"	(333.4)	11 7/8"	(301.6)	15 3/8"	(390.5)
	18"	(450)	2 5/8"	(66.7)	13 1/8"	(333.4)	12 7/8"	(327.1)	15 3/8"	(390.5)
	20"	(500)	2 5/8"	(66.7)	13 1/8"	(333.4)	13 7/8"	(352.4)	15 3/8"	(390.5)

Part No.	E		Steel Size		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3126-2 to 3 1/2	9/16"	(14.3)	1/4" x 1 5/8"	(6.3 x 41.3)	390	(1.73)	177	(80.3)
B3126-4 to 6	9/16"	(14.3)	1/4" x 1 5/8"	(6.3 x 41.3)	600	(2.67)	231	(104.8)
B3126-8 to 10	9/16"	(14.3)	1/4" x 1 5/8"	(6.3 x 41.3)	800	(3.56)	542	(245.8)
B3126-12 to 14	1 3/16"	(20.6)	3/8" x 2"	(9.5 x 50.8)	1300	(5.78)	1040	(471.7)
B3126-16 to 20	1 3/16"	(20.6)	3/8" x 2"	(9.5 x 50.8)	2300	(10.23)	1508	(684.0)

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

Pipe Rollers & Roller Supports

B218 Pipe Rollers-1/2" (15mm) to 8" (200mm) Pipe (TOLCO Fig. ROL-12)

Size Range: 1/2" (15mm) thru 8" (200mm) pipe

Material: Steel with Malleable Iron Roller

Function: Designed to mount on strut (metal framing) for the support of pipe with longitudinal movement.

Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

Finish: Electro-Galvanized

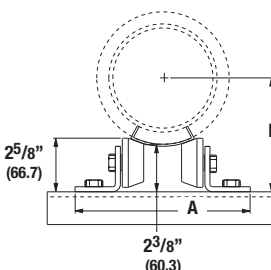
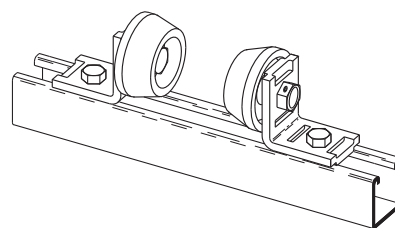
Order By: Part number, pipe size and finish

Design Load: 500 Lbs. (2.22kN)

Weight: Approx. weight per 100 - 256.0 Lbs. (116.1kg)

Notes: If using D.I. pipe refer to page 298 for sizing.
Not for continuous cycling applications.

Channel and mounting hardware not included.



Reference Chart - A Dimension in. (mm)

Pipe Size		Insulation Thickness													
		0" (0.0mm)		1" (25.4mm)		1½" (38.1mm)		2" (50.8mm)		2½" (63.5mm)		3" (76.2mm)		4" (101.6mm)	
1½"	(15)	7¼"	(184.1)	--	--	--	--	--	--	--	--	--	--	--	--
¾"	(20)	7¼"	(184.1)	7¼"	(184.1)	7⅝"	(193.7)	8"	(203.2)	--	--	--	--	--	--
1"	(25)	7¼"	(184.1)	7¼"	(184.1)	7⅝"	(193.7)	8¼"	(209.5)	--	--	--	--	--	--
1¼"	(32)	7¼"	(184.1)	7¼"	(184.1)	8"	(203.2)	8¼"	(209.5)	--	--	--	--	--	--
1½"	(40)	7¼"	(184.1)	7⅝"	(193.7)	8"	(203.2)	8½"	(215.9)	9"	(228.6)	--	--	--	--
2"	(50)	7¼"	(184.1)	7⅝"	(193.7)	8½"	(215.9)	8½"	(215.9)	9"	(228.6)	--	--	--	--
2½"	(65)	7¼"	(184.1)	8"	(203.2)	8½"	(215.9)	9"	(228.6)	10"	(254.0)	--	--	--	--
3"	(80)	7¼"	(184.1)	8½"	(215.9)	9"	(228.6)	9"	(228.6)	10"	(254.0)	10"	(254.0)	--	--
3½"	(90)	7¼"	(184.1)	8½"	(215.9)	9"	(228.6)	10"	(254.0)	10"	(254.0)	10"	(254.0)	--	--
4"	(100)	7⅝"	(193.7)	9"	(228.6)	9"	(228.6)	10"	(254.0)	10"	(254.0)	10"	(254.0)	--	--
5"	(125)	8½"	(215.9)	9"	(228.6)	10"	(254.0)	10"	(254.0)	11"	(279.4)	11"	(279.4)	12"	(304.8)
6"	(150)	9"	(228.6)	10"	(254.0)	10"	(254.0)	11"	(279.4)	11"	(279.4)	11"	(279.4)	12"	(304.8)
8"	(200)	10"	(254.0)	11"	(279.4)	11"	(279.4)	11"	(279.4)	12"	(304.8)	--	--	--	--

Reference Chart - B Dimension in. (mm)

Pipe Size		Insulation Thickness													
		0" (0.0mm)		1" (25.4mm)		1½" (38.1mm)		2" (50.8mm)		2½" (63.5mm)		3" (76.2mm)		4" (101.6mm)	
1½"	(15)	2Ⅰ⁄₁₆"	(68.3)	--	--	--	--	--	--	--	--	--	--	--	--
¾"	(20)	2Ⅲ⁄₁₆"	(71.4)	¾"	(98.4)	⅔"	(111.1)	⅞"	(123.8)	--	--	--	--	--	--
1"	(25)	2Ⅴ⁄₁₆"	(74.6)	⅔"	(106.4)	⅞"	(119.1)	5⁄₁₆"	(128.6)	--	--	--	--	--	--
1¼"	(32)	3⁄₈"	(79.4)	⅔"	(106.4)	⅞"	(117.5)	5⁄₈"	(130.2)	--	--	--	--	--	--
1½"	(40)	3¼"	(82.5)	⅔"	(111.1)	⅞"	(123.8)	5⁄₁₆"	(134.9)	5¾"	(146.0)	--	--	--	--
2"	(50)	3⁹⁄₁₆"	(90.5)	⅞"	(119.1)	5⁄₁₆"	(128.6)	5⁄₈"	(142.9)	6⁄₁₆"	(154.0)	--	--	--	--
2½"	(65)	3Ⅲ⁄₁₆"	(96.8)	⅞"	(123.8)	5⁄₁₆"	(134.9)	6"	(152.4)	6¾"	(161.9)	--	--	--	--
3"	(80)	4⁄₈"	(104.8)	5⁄₁₆"	(128.6)	5⁹⁄₁₆"	(141.3)	6⁄₈"	(155.6)	6⁷⁄₁₆"	(163.5)	7"	(177.8)	--	--
3½"	(90)	4¾"	(111.1)	5⁄₁₆"	(134.9)	5Ⅲ⁄₁₆"	(147.6)	6¼"	(158.7)	6Ⅰ⁄₁₆"	(169.9)	7¼"	(184.1)	--	--
4"	(100)	4⁵⁄₈"	(117.5)	5⁹⁄₁₆"	(141.3)	6⁄₁₆"	(154.0)	6⁷⁄₁₆"	(163.5)	6Ⅴ⁄₁₆"	(176.2)	7¾"	(187.3)	--	--
5"	(125)	5½"	(127.0)	6⁄₁₆"	(154.0)	6⁷⁄₁₆"	(163.5)	7"	(177.8)	7¾"	(187.3)	7⁷⁄₈"	(200.0)	8Ⅲ⁄₁₆"	(223.8)
6"	(150)	5½"	(139.7)	6⁷⁄₁₆"	(163.5)	6Ⅴ⁄₁₆"	(176.2)	7¾"	(187.3)	7Ⅴ⁄₁₆"	(201.6)	8½"	(215.9)	9½"	(241.3)
8"	(200)	6Ⅴ⁄₁₆"	(160.3)	7¾"	(187.3)	7Ⅴ⁄₁₆"	(201.6)	8⁷⁄₁₆"	(214.3)	8Ⅴ⁄₁₆"	(227.0)	--	--	--	--

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

Pipe Rollers & Roller Supports

B219 Pipe Rollers $\frac{3}{4}$ " (15mm) to 12" (300mm) Pipe (TOLCO Fig. ROL-13)

Size Range: $\frac{1}{2}$ " (20mm) thru 12" (300mm) pipe

Material: Steel with Malleable Iron Roller

Function: Designed to mount on strut (metal framing) for the support of pipe with longitudinal movement.

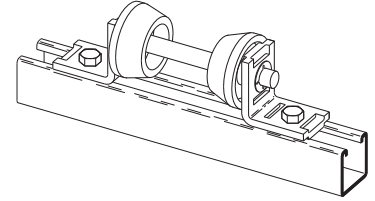
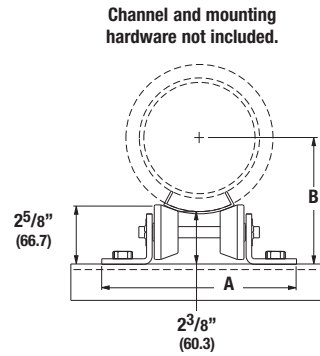
Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

Finish: Electro-Galvanized

Order By: Part number, pipe size and finish

Design Load: 750 Lbs. (3.33kN)

Notes: If using D.I. pipe refer to page 298 for sizing.
Not for continuous cycling applications.



B219 Sizing Chart

Pipe Size		Insulation Thickness in. (mm)						
		0" (0.0)	1" (25.4)	1 $\frac{1}{2}$ " (38.1)	2" (50.8)	2 $\frac{1}{2}$ " (63.5)	3" (76.2)	4" (101.6)
1/2" (15)	B219	--	--	--	--	--	--	--
3/4" (20)	B219	B219	B219	B219-1	B219-1	--	--	--
1" (25)	B219	B219	B219	B219-1	B219-1	--	--	--
1 $\frac{1}{4}$ " (32)	B219	B219	B219	B219-1	B219-1	--	--	--
1 $\frac{1}{2}$ " (40)	B219	B219	B219	B219-1	B219-2	B219-2	--	--
2" (50)	B219	B219-1	B219-1	B219-1	B219-2	B219-2	--	--
2 $\frac{1}{2}$ " (65)	B219	B219-1	B219-2	B219-2	B219-2	B219-3	--	--
3" (80)	B219	B219-1	B219-2	B219-2	B219-2	B219-3	B219-3	--
3 $\frac{1}{2}$ " (90)	B219-1	B219-2	B219-2	B219-2	B219-3	B219-3	B219-4	--
4" (100)	B219-1	B219-2	B219-2	B219-2	B219-3	B219-3	B219-4	--
5" (125)	B219-1	B219-2	B219-3	B219-3	B219-3	B219-4	B219-4	B219-5
6" (150)	B219-2	B219-3	B219-3	B219-3	B219-4	B219-4	B219-5	B219-5
8" (200)	B219-3	B219-4	B219-4	B219-4	B219-5	B219-5	--	--
10" (250)	B219-4	B219-5	--	--	--	--	--	--
12" (300)	B219-5	--	--	--	--	--	--	--

Reference Chart - A Dimension

Part No.	A in.	A (mm)	Wt./100 Lbs.	Wt./100 (kg)
B219	7 $\frac{1}{4}$ "	(184.1)	253	(114.7)
B219-1	8"	(203.2)	258	(117.0)
B219-2	9"	(228.6)	263	(119.3)
B219-3	10"	(254.0)	269	(122.0)
B219-4	10 $\frac{7}{8}$ "	(276.2)	274	(124.8)
B219-5	11 $\frac{5}{8}$ "	(295.3)	279	(126.5)

Reference Chart - B Dimension in. (mm)

Pipe Size		Insulation Thickness											
		0" (0.0mm)	1" (25.4mm)	1 $\frac{1}{2}$ " (38.1mm)	2" (50.8mm)	2 $\frac{1}{2}$ " (63.5mm)	3" (76.2mm)	4" (101.6mm)					
1/2" (15)		2 $\frac{11}{16}$ " (68.3)	--	--	--	--	--	--	--	--	--	--	--
3/4" (20)		2 $\frac{13}{16}$ " (71.4)	3 $\frac{7}{8}$ " (98.4)	4 $\frac{1}{2}$ " (114.3)	4 $\frac{7}{8}$ " (123.8)	--	--	--	--	--	--	--	--
1" (25)		2 $\frac{15}{16}$ " (74.6)	4 $\frac{3}{16}$ " (106.4)	4 $\frac{5}{8}$ " (117.5)	5 $\frac{1}{16}$ " (128.6)	--	--	--	--	--	--	--	--
1 $\frac{1}{4}$ " (32)		3 $\frac{1}{8}$ " (79.4)	4 $\frac{3}{16}$ " (106.4)	4 $\frac{5}{8}$ " (117.5)	5 $\frac{1}{8}$ " (130.2)	--	--	--	--	--	--	--	--
1 $\frac{1}{2}$ " (40)		3 $\frac{1}{4}$ " (82.5)	4 $\frac{7}{16}$ " (112.7)	4 $\frac{7}{8}$ " (123.8)	5 $\frac{1}{4}$ " (133.3)	5 $\frac{3}{8}$ " (146.0)	--	--	--	--	--	--	--
2" (50)		3 $\frac{9}{16}$ " (90.5)	4 $\frac{5}{8}$ " (117.5)	5 $\frac{3}{16}$ " (131.8)	5 $\frac{1}{2}$ " (139.7)	6 $\frac{1}{16}$ " (154.0)	--	--	--	--	--	--	--
2 $\frac{1}{2}$ " (65)		3 $\frac{3}{4}$ " (95.2)	4 $\frac{7}{8}$ " (123.8)	5 $\frac{1}{4}$ " (133.3)	6"	6 $\frac{3}{8}$ " (161.9)	--	--	--	--	--	--	--
3" (80)		4 $\frac{1}{8}$ " (104.8)	5 $\frac{1}{8}$ " (130.2)	5 $\frac{9}{16}$ " (141.3)	6 $\frac{1}{16}$ " (154.0)	6 $\frac{7}{16}$ " (163.5)	6 $\frac{15}{16}$ " (176.2)	--	--	--	--	--	--
3 $\frac{1}{2}$ " (90)		4 $\frac{1}{8}$ " (107.9)	5 $\frac{1}{4}$ " (133.3)	5 $\frac{13}{16}$ " (147.6)	6 $\frac{1}{4}$ " (158.7)	6 $\frac{11}{16}$ " (169.9)	7 $\frac{1}{16}$ " (179.4)	--	--	--	--	--	--
4" (100)		4 $\frac{9}{16}$ " (115.9)	5 $\frac{1}{2}$ " (139.7)	6 $\frac{1}{16}$ " (154.0)	6 $\frac{7}{16}$ " (163.5)	6 $\frac{15}{16}$ " (176.2)	7 $\frac{3}{8}$ " (187.3)	--	--	--	--	--	--
5" (125)		5 $\frac{1}{16}$ " (128.6)	6 $\frac{1}{16}$ " (154.0)	6 $\frac{7}{16}$ " (163.5)	7"	7 $\frac{3}{8}$ " (187.3)	7 $\frac{7}{8}$ " (200.0)	8 $\frac{15}{16}$ " (211.1)	8 $\frac{1}{16}$ " (211.1)	9 $\frac{1}{16}$ " (222.9)	--	--	--
6" (150)		5 $\frac{7}{16}$ " (138.1)	6 $\frac{7}{16}$ " (163.5)	6 $\frac{15}{16}$ " (176.2)	7 $\frac{3}{8}$ " (187.3)	7 $\frac{7}{8}$ " (200.0)	8 $\frac{15}{16}$ " (211.1)	9 $\frac{1}{16}$ " (222.9)	9 $\frac{1}{16}$ " (222.9)	10 $\frac{1}{16}$ " (233.7)	--	--	--
8" (200)		6 $\frac{3}{8}$ " (161.9)	7 $\frac{7}{16}$ " (188.9)	7 $\frac{15}{16}$ " (201.6)	8 $\frac{3}{8}$ " (212.7)	9"	9 $\frac{1}{16}$ " (222.9)	--	--	--	--	--	--
10" (250)		7 $\frac{5}{16}$ " (185.7)	8 $\frac{3}{16}$ " (208.0)	--	--	--	--	--	--	--	--	--	--
12" (300)		8 $\frac{1}{4}$ " (209.5)	--	--	--	--	--	--	--	--	--	--	--

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

Pipe Rollers & Roller Supports

B379 Pipe Roller - 6" (150mm) to 18" (450mm) Pipe (TOLCO Fig. ROL-14)

Size Range: 6" (150mm) thru 18" (450mm) pipe

Material: Steel with Malleable Iron Roller

Function: Designed to mount on strut (metal framing) for the support of pipe with longitudinal movement.

Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

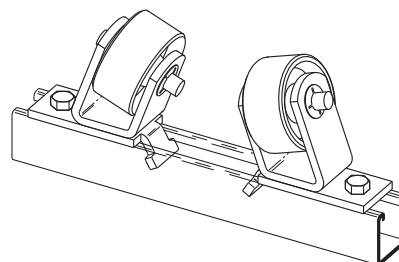
Finish: Electro-Galvanized

Order By: Part number, pipe size and finish

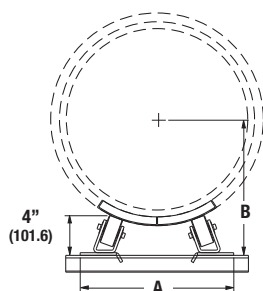
Design Load: 1500 Lbs. (6.67kN)

Weight: Approx. weight per 100 - 558.0 Lbs. (253.1kg)

Notes: If using D.I. pipe refer to page 298 for sizing.
Not for continuous cycling applications.



Channel and mounting hardware not included.



Reference Chart - A Dimension in. (mm)

Pipe Size		Insulation Thickness											
		0" (0.0mm)		1" (25.4mm)		1 1/2" (38.1mm)		2" (50.8mm)		2 1/2" (63.5mm)		3" (76.2mm)	
6"	(150)	9 9/16"	(242.9)	10 3/16"	(258.8)	10 5/8"	(269.9)	11"	(279.4)	11 3/8"	(288.9)	11 3/4"	(298.4)
8"	(200)	10 1/4"	(260.3)	11 1/16"	(281.0)	11 3/8"	(288.9)	11 3/4"	(298.4)	12 3/16"	(309.6)	12 1/2"	(317.5)
10"	(250)	11"	(279.4)	11 3/4"	(298.4)	12 1/8"	(308.0)	12 1/2"	(317.5)	12 13/16"	(325.4)	13 1/8"	(333.4)
12"	(300)	11 11/16"	(296.9)	12 9/16"	(319.1)	12 7/8"	(327.0)	13 1/4"	(336.5)	13 9/16"	(344.5)	13 7/8"	(352.4)
14"	(350)	12 1/16"	(306.4)	12 7/8"	(327.0)	13 3/16"	(335.0)	13 9/16"	(344.5)	13 7/8"	(352.4)	14 1/4"	(361.9)
16"	(400)	12 3/4"	(323.8)	13 1/2"	(342.9)	13 7/8"	(352.4)	14 13/16"	(360.4)	14 1/2"	(368.3)	14 7/8"	(377.8)
18"	(450)	13 1/2"	(342.9)	14 1/4"	(361.9)	14 5/8"	(371.5)	15"	(381.0)	15 5/16"	(388.9)	15 5/8"	(396.9)

Reference Chart - B Dimension in. (mm)

Pipe Size		Insulation Thickness											
		0" (0.0mm)		1" (25.4mm)		1 1/2" (38.1mm)		2" (50.8mm)		2 1/2" (63.5mm)		3" (76.2mm)	
6"	(150)	6 7/8"	(174.6)	7 7/8"	(200.0)	8 3/8"	(212.7)	8 7/8"	(225.4)	9 3/8"	(238.1)	9 7/8"	(250.8)
8"	(200)	7 13/16"	(198.4)	8 7/8"	(225.4)	9 3/8"	(238.1)	9 7/8"	(250.8)	10 7/16"	(265.1)	10 15/16"	(277.8)
10"	(250)	8 13/16"	(223.8)	9 7/8"	(250.8)	10 7/16"	(265.1)	10 15/16"	(277.8)	11 3/8"	(288.9)	11 7/8"	(301.6)
12"	(300)	9 3/4"	(247.6)	10 15/16"	(277.8)	11 3/8"	(288.9)	11 7/8"	(301.6)	12 5/16"	(312.7)	12 13/16"	(325.4)
14"	(350)	10 5/16"	(261.9)	11 3/8"	(288.9)	11 7/8"	(301.6)	12 5/16"	(312.7)	12 13/16"	(325.4)	13 1/4"	(336.5)
16"	(400)	11 5/16"	(287.3)	12 5/16"	(312.7)	12 13/16"	(325.4)	13 1/4"	(336.5)	13 3/4"	(349.2)	14 1/4"	(361.9)
18"	(450)	12 1/4"	(311.1)	13 1/4"	(336.5)	13 3/4"	(349.2)	14 3/16"	(360.4)	14 11/16"	(373.1)	15 1/8"	(384.2)

Pipe Rollers & Roller Supports

B479 Pipe Roller - 16" (400mm) to 30" (750mm) Pipe (TOLCO Fig. ROL-15)

Size Range: 16" (400mm) thru 30" (750mm) pipe

Material: Steel with Malleable Iron Roller

Function: Designed to mount on strut (metal framing) for the support of pipe with longitudinal movement.

Note: When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165.

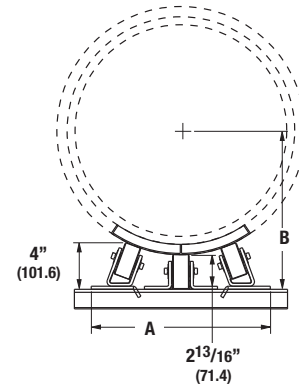
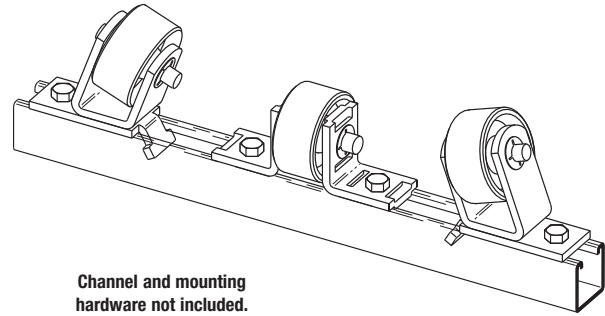
Finish: Electro-Galvanized

Order By: Part number, pipe size and finish

Design Load: 2000 Lbs. (8.89kN)

Weight: Approx. weight per 100 - 889.0 Lbs. (403.2kg)

Notes: If using D.I. pipe refer to page 298 for sizing.
Not for continuous cycling applications.



Reference Chart - A Dimension in. (mm)

Pipe Size	Insulation Thickness													
	0" (0.0mm)		1" (25.4mm)		1 1/2" (38.1mm)		2" (50.8mm)		2 1/2" (63.5mm)		3" (76.2mm)		4" (101.6mm)	
16" (400)	15 3/16"	(385.8)	15 5/8"	(396.9)	15 7/8"	(403.2)	16"	(406.4)	16 1/4"	(412.7)	16 1/2"	(419.1)	17"	(431.8)
18" (450)	15 1/2"	(393.7)	16"	(406.4)	16 3/16"	(411.2)	16 3/8"	(415.9)	16 9/16"	(420.7)	16 3/4"	(425.4)	17 3/16"	(436.6)
20" (500)	16"	(406.4)	16 3/8"	(415.9)	16 9/16"	(420.7)	16 7/8"	(428.6)	16 15/16"	(430.2)	17 3/16"	(436.6)	17 1/2"	(444.5)
24" (600)	16 13/16"	(427.0)	17 5/16"	(439.7)	17 1/2"	(444.5)	17 1/2"	(444.5)	17 11/16"	(449.3)	17 7/8"	(454.0)	18 1/8"	(460.4)
30" (750)	17 13/16"	(452.4)	18 1/4"	(463.5)	18 3/8"	(466.7)	18 9/16"	(471.5)	18 7/8"	(476.2)	18 7/8"	(476.2)	19 1/4"	(488.9)

Reference Chart - B Dimension in. (mm)

Pipe Size	Insulation Thickness													
	0" (0.0mm)		1" (25.4mm)		1 1/2" (38.1mm)		2" (50.8mm)		2 1/2" (63.5mm)		3" (76.2mm)		4" (101.6mm)	
16" (400)	10 13/16"	(274.6)	11 15/16"	(303.2)	12 3/8"	(314.3)	12 15/16"	(328.6)	13 3/8"	(339.7)	13 15/16"	(354.0)	14 15/16"	(379.4)
18" (450)	11 7/8"	(301.6)	12 15/16"	(328.6)	13 7/16"	(341.3)	13 15/16"	(354.0)	14 7/16"	(366.7)	14 15/16"	(379.4)	15 15/16"	(404.8)
20" (500)	12 3/16"	(325.4)	13 15/16"	(354.0)	14 7/16"	(366.7)	14 7/8"	(377.8)	15 7/16"	(392.1)	15 7/8"	(403.2)	16 15/16"	(430.2)
24" (600)	14 13/16"	(376.2)	15 7/8"	(403.2)	16 3/8"	(415.9)	16 7/8"	(428.6)	17 3/8"	(441.3)	17 7/8"	(454.0)	18 7/8"	(479.4)
30" (750)	17 13/16"	(452.4)	18 7/8"	(476.2)	19 3/8"	(492.1)	19 7/8"	(504.8)	20 3/8"	(517.5)	20 5/16"	(531.8)	21 15/16"	(557.2)

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

Pipe Rollers & Roller Supports

B3117SL Steel Roller Stand (TOLCO Fig.327)

Size Range: 2" (50mm) thru 42" (1067mm)

Material: Cast Iron Roller and Steel Base

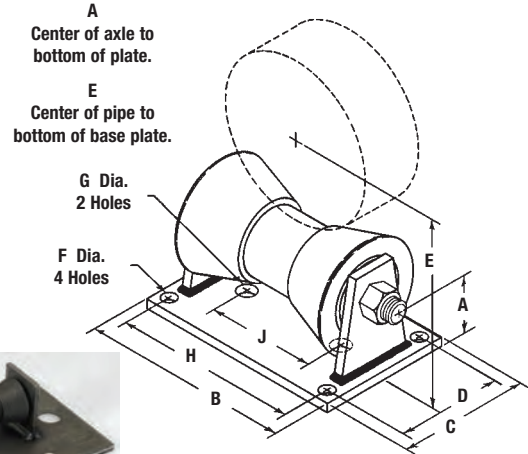
Function: Designed to support pipe where movement may occur due to thermal expansion. When used with insulated pipe, see B3160-B3165 pipe covering protection saddle charts for proper sizing on pages 155 thru 160.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 45 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 44.

Standard Finish: Plain, Available in Electro-Galvanized and HDG finish or Stainless Steel material

Order By: Part number and finish.

Notes: If using D.I. pipe refer to page 298 for sizing. Non-metallic rollers with stainless steel stand and hardware are available for most sizes (B3117SLNM-Pipe Size). Contact B-Line Engineering for more information. Not for continuous cycling applications.



Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)
B3117SL-2 to 3 1/2	2" (50)	1 3/4" (44.4)	8 3/8" (212.7)	6" (152.4)	4" (101.6)	3 11/16" (93.7)
	2 1/2" (65)	1 3/4" (44.4)	8 3/8" (212.7)	6" (152.4)	4" (101.6)	3 15/16" (100.0)
	3" (80)	1 3/4" (44.4)	8 3/8" (212.7)	6" (152.4)	4" (101.6)	4 1/4" (107.9)
	3 1/2" (90)	1 3/4" (44.4)	8 3/8" (212.7)	6" (152.4)	4" (101.6)	4 1/2" (114.3)
B3117SL-4 to 6	4" (100)	2 1/16" (52.4)	9 7/8" (250.8)	6" (152.4)	4 1/4" (107.9)	5" (127.0)
	5" (125)	2 1/16" (52.4)	9 7/8" (250.8)	6" (152.4)	4 1/4" (107.9)	5 9/16" (141.3)
	6" (150)	2 1/16" (52.4)	9 7/8" (250.8)	6" (152.4)	4 1/4" (107.9)	6 1/16" (154.0)
B3117SL-8 to 10	8" (200)	3 7/16" (87.3)	8 5/8" (219.1)	8" (203.2)	5" (127.0)	8 13/16" (223.8)
	10" (250)	3 7/16" (87.3)	8 5/8" (219.1)	8" (203.2)	5" (127.0)	9 7/8" (250.8)
B3117SL-12 to 14	12" (300)	3 7/8" (98.4)	10 15/16" (277.8)	8" (203.2)	6" (152.4)	11 7/16" (290.5)
	14" (350)	3 7/8" (98.4)	10 15/16" (277.8)	8" (203.2)	6" (152.4)	12 1/16" (306.4)
B3117SL-16 to 20	16" (400)	4 1/4" (107.9)	12 3/8" (314.3)	10" (254.0)	6 1/2" (165.1)	13 5/8" (346.1)
	18" (450)	4 1/4" (107.9)	12 3/8" (314.3)	10" (254.0)	6 1/2" (165.1)	14 11/16" (373.1)
	20" (500)	4 1/4" (107.9)	12 3/8" (314.3)	10" (254.0)	6 1/2" (165.1)	15 11/16" (398.5)
B3117SL-24	24" (600)	4 3/8" (111.1)	13 1/2" (342.9)	10" (254.0)	6 1/2" (165.1)	17 11/16" (449.3)
B3117SL-30	30" (750)	5 1/8" (130.2)	17" (431.8)	10 3/4" (273.0)	8" (203.2)	21 3/4" (552.4)
B3117SL-36 to 42	36" (900)	5 3/4" (146.0)	20" (508.0)	12" (304.8)	9" (203.2)	25 5/16" (642.9)
	42" (1050)	5 3/4" (146.0)	20" (508.0)	12" (304.8)	9" (203.2)	28 5/16" (719.1)

Part No.	Dia. F in. (mm)	Dia. G in. (mm)	H in. (mm)	J in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3117SL-2 to 3 1/2	1/2" (12.7)	1" (25.4)	3 7/16" (87.3)	6 3/8" (161.9)	390 (1.73)	508 (230.4)
B3117SL-4 to 6	1/2" (12.7)	1" (25.4)	4 11/16" (119.1)	7 7/8" (200.0)	950 (4.22)	631 (286.2)
B3117SL-8 to 10	5/8" (15.9)	1" (25.4)	7" (177.8)	4" (101.6)	2100 (9.34)	1271 (576.5)
B3117SL-12 to 14	3/4" (19.0)	1" (25.4)	9 1/16" (230.2)	5 3/4" (146.0)	3075 (13.68)	1994 (904.5)
B3117SL-16 to 20	13/16" (20.6)	1" (25.4)	10 1/4" (260.3)	6 3/4" (171.4)	4980 (22.15)	3423 (1552.7)
B3117SL-24	13/16" (20.6)	1" (25.4)	11 3/8" (288.9)	7 1/2" (190.5)	6100 (27.13)	4710 (2136.4)
B3117SL-30	1 1/16" (27.0)	1" (25.4)	14 1/4" (361.9)	10" (254.0)	7500 (33.36)	7132 (3235.1)
B3117SL-36 to 42	1 3/16" (30.2)	1" (25.4)	17" (431.8)	12" (304.8)	12000 (53.37)	10386 (4711.1)

Pipe Rollers & Roller Supports

B3118SL Adjustable Roller Stand with Base Plate (TOLCO Fig.328)

Size Range: 2" (50mm) thru 30" (750mm)

Material: Cast Iron Roller and Steel Base

Function: Designed to support pipe where movement may occur due to thermal expansion. Set screws allow for vertical adjustment. When used with insulated pipe, see B3160-B3165 pipe covering protection saddle charts for proper sizing on pages 155 thru 160.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 47 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 46.

Finish: Plain, Available in Electro-Galvanized and HDG finish or Stainless Steel material

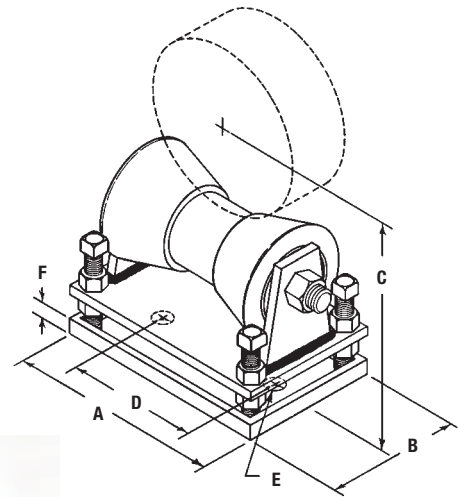
Order by: Part number and finish.

Notes: If using D.I. pipe refer to page 298 for sizing. Non-metallic rollers with stainless steel stand and hardware are available for most sizes (B3118SLNM-Pipe Size). Contact B-Line Engineering for more information. Not for continuous cycling applications.

C
Center of pipe to bottom of base plate.

D
Center to center of mounting holes in bottom plate.

E Dia.
Mounting holes in bottom plate.



Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	Minimum in. (mm)	C Maximum in. (mm)	D in. (mm)
B3118SL-2 to 3 1/2	2" (50)	6 7/8" (174.6)	6" (152.4)	4 3/4" (120.6)	5 5/8" (142.9)	3 7/8" (98.4)
	2 1/2" (65)	6 7/8" (174.6)	6" (152.4)	5" (127.0)	5 7/8" (142.9)	3 7/8" (98.4)
	3" (80)	6 7/8" (174.6)	6" (152.4)	5 5/16" (134.9)	6 3/16" (157.2)	3 7/8" (98.4)
	3 1/2" (90)	6 7/8" (174.6)	6" (152.4)	5 9/16" (141.3)	6 7/16" (163.5)	3 7/8" (98.4)
B3118SL-4 to 6	4" (100)	8 1/8" (206.4)	6" (152.4)	6 3/16" (157.2)	7 7/16" (188.9)	5 1/8" (130.2)
	5" (125)	8 1/8" (206.4)	6" (152.4)	6 3/4" (171.4)	8" (203.2)	5 1/8" (130.2)
	6" (150)	8 1/8" (206.4)	6" (152.4)	7 1/4" (184.1)	8 1/2" (215.9)	5 1/8" (130.2)
B3118SL-8 to 10	8" (200)	10 5/8" (269.9)	8" (203.2)	10 1/8" (257.2)	11 11/16" (296.9)	7 3/8" (187.3)
	10" (250)	10 5/8" (269.9)	8" (203.2)	11 3/16" (284.2)	12 3/4" (323.8)	7 3/8" (187.3)
B3118SL-12 to 14	12" (300)	13" (330.2)	8" (203.2)	12 3/4" (323.8)	14 1/8" (358.8)	9 1/2" (241.3)
	14" (350)	13" (330.2)	8" (203.2)	13 3/8" (339.7)	14 3/8" (365.1)	9 1/2" (241.3)
B3118SL-16 to 20	16" (400)	14 5/8" (371.5)	10" (254.0)	15 3/8" (390.5)	17 1/4" (438.1)	11 1/8" (282.6)
	18" (450)	14 5/8" (371.5)	10" (254.0)	16 3/8" (415.9)	18 1/4" (463.5)	11 1/8" (282.6)
	20" (500)	14 5/8" (371.5)	10" (254.0)	17 3/8" (441.3)	19 1/4" (488.9)	11 1/8" (282.6)
B3118SL-24	24" (600)	15 3/4" (400.0)	10" (254.0)	19 1/4" (488.9)	21 1/4" (539.7)	12 1/4" (311.1)
B3118SL-30	30" (750)	19 1/4" (488.9)	10 1/2" (266.7)	24 7/16" (620.7)	26 11/16" (677.9)	15 3/4" (400.0)

Part No.	E in. (mm)	F in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3118SL-2 to 3 1/2	1" (25.4)	1" (25.4)	390 (1.73)	1100 (498.9)
B3118SL-4 to 6	1" (25.4)	1" (25.4)	950 (4.22)	1310 (594.2)
B3118SL-8 to 10	1" (25.4)	1 1/8" (28.6)	2100 (9.34)	2725 (1236.0)
B3118SL-12 to 14	1" (25.4)	1 1/8" (28.6)	3075 (13.68)	3612 (1638.4)
B3118SL-16 to 20	1" (25.4)	1 1/4" (31.7)	4980 (22.15)	6384 (2895.8)
B3118SL-24	1" (25.4)	1 3/8" (34.9)	6100 (27.13)	8437 (3827.0)
B3118SL-30	1" (25.4)	1 5/8" (41.3)	7500 (33.36)	12528 (5682.7)

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

Pipe Rollers & Roller Supports

B3119SL Roller with Steel Base Plate

Size Range: — 2" (50mm) thru 30" (750mm) pipe

Material: — Steel with Cast Iron Roller

Function: — Designed for the support of pipe with longitudinal movement.

Note: — When pipe line is insulated, total outside diameter of pipe and covering should be used to determine size of hanger; also see B3160 to B3165 on pages 155 thru 160.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 46 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 45.

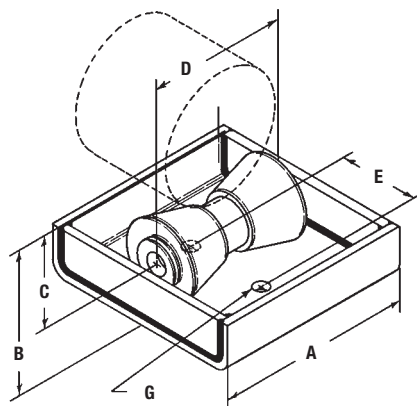
Finish: — Plain. Contact B-Line for alternative finishes and materials.

Order By: Part number, pipe size and finish

Notes: If using D.I. pipe refer to page 298 for sizing.

Non-metallic rollers with stainless steel brackets and hardware are available (B3119SLNM-Pipe Size).

Contact B-Line Engineering for more information.



B
Center of pipe
to bottom of plate.
C
Center of pipe to center
of roller.
D
Length of Roller
E
Center to center of
mounting holes in
bottom plate.
F
Roller Travel
G Dia.
1 hole for sizes 2 thru 6
2 holes for sizes 8 thru 30

Note: Not for continuous cycling applications.

Part No.	Pipe Size in. (mm)	Structural Channel Size	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)
B3119SL-2 to 3 1/2	2" (50)	C4 x 5.4	4 3/4" (120.6)	3 1/16" (77.8)	1 15/16" (49.2)	2 3/4" (69.8)
	2 1/2" (65)		4 3/4" (120.6)	3 5/16" (84.1)	2 3/16" (55.6)	2 3/4" (69.8)
	3" (80)		4 3/4" (120.6)	3 5/8" (92.1)	2 1/2" (63.5)	2 3/4" (69.8)
	3 1/2" (90)		4 3/4" (120.6)	3 7/8" (98.4)	2 3/4" (69.8)	2 3/4" (69.8)
B3119SL-4 to 6	4" (100)	C5 x 6.7	5 3/4" (146.0)	4 1/8" (104.8)	2 15/16" (74.6)	3 3/4" (95.2)
	5" (125)		5 3/4" (146.0)	4 11/16" (119.1)	3 1/2" (88.9)	3 3/4" (95.2)
	6" (150)		5 3/4" (146.0)	5 3/16" (131.8)	4" (101.6)	3 3/4" (95.2)
B3119SL-8 to 10	8" (200)	C6 x 8.2	8" (203.2)	7 3/16" (182.6)	5 3/8" (136.5)	6" (152.4)
	10" (250)		8" (203.2)	8 1/4" (209.5)	6 7/16" (163.5)	6" (152.4)
B3119SL-12 to 14	12" (300)	C8 x 11.5	10" (254.0)	9 13/16" (249.2)	7 9/16" (192.1)	8" (203.2)
	14" (350)		10" (254.0)	10 7/16" (265.1)	8 3/16" (208.0)	8" (203.2)
B3119SL-16 to 20	16" (400)	C8 x 11.5	11" (279.4)	11 7/8" (301.6)	9 3/8" (238.1)	9" (228.6)
	18" (450)		11" (279.4)	12 15/16" (328.6)	10 7/16" (265.1)	9" (228.6)
	20" (500)		11" (279.4)	13 15/16" (354.0)	11 7/16" (290.5)	9" (228.6)
B3119SL-24	24" (600)	C8 x 11.5	12" (304.8)	15 13/16" (401.6)	13 5/16" (338.1)	10" (254.0)
B3119SL-30	30" (750)	C10 x 15.3	14 1/2" (368.3)	19 5/8" (498.5)	16 5/8" (422.3)	12 1/2" (317.5)

Part No.	E in. (mm)	F in. (mm)	Dia. G in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3119SL-2 to 3 1/2	-	1 3/4" (44.4)	9/16" (14.3)	390 (1.73)	314 (142.3)
B3119SL-4 to 6	-	2 1/2" (63.5)	1 1/16" (17.5)	950 (4.22)	489 (225.9)
B3119SL-8 to 10	3" (76.2)	2 1/2" (63.5)	1 3/16" (20.6)	2100 (9.34)	950 (430.9)
B3119SL-12 to 14	4" (101.6)	3 5/8" (92.1)	1 3/16" (20.6)	3075 (13.68)	1741 (789.7)
B3119SL-16 to 20	4" (101.6)	3 1/8" (79.4)	1 3/16" (20.6)	4980 (22.15)	2018 (915.3)
B3119SL-24	4" (101.6)	3 1/8" (79.4)	1 3/16" (20.6)	6100 (27.13)	2175 (986.6)
B3119SL-30	6" (152.4)	4 1/8" (104.8)	1 3/16" (20.6)	7500 (33.36)	3510 (1592.1)



Pipe Rollers & Roller Supports

B3264 - Spring Cushion Hanger (TOLCO Fig.500)

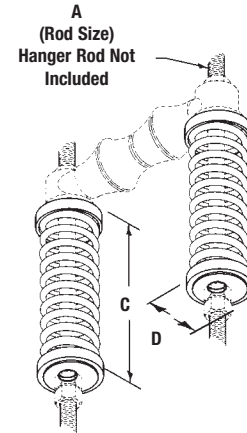
Size Range: 2" (50mm) thru 30" (750mm) pipe

Material: Steel

Function: Designed for use with B3114 as a cushion spring for a piping system where vertical movement does not exceed 1 1/4" (31.7mm).

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 50 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 49.

Order By: Part number



Includes:
2 Springs
4 Cup Washers



Part No.	Rod Size A	Free Height C		D		Spring Deflection Per Spring		Maximum Load at 1" (25.4mm) Deflection-2 Springs		Approx. Wt./100 Pair	
		in.	(mm)	in.	(mm)	Lbs./In.	(kg/mm)	Lbs.	(kN)	Lbs.	(kg)
B3264-1	3/8"-16	3"	(76.2)	1 11/16"	(42.8)	30	(0.5)	78	(.34)	100	(45.3)
B3264-5	3/4"-10	4 5/8"	(117.5)	2 5/16"	(58.7)	707	(12.6)	1500	(6.67)	400	(181.4)
B3264-6	1"-8	4 7/8"	(123.8)	3 1/4"	(82.5)	1600	(28.6)	3200	(14.23)	700	(317.5)

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

Pipe Rollers & Roller Supports

B3114R Long Pattern Pipe Roller Only

Size Range: 2" (50mm) thru 30" (750mm) pipe

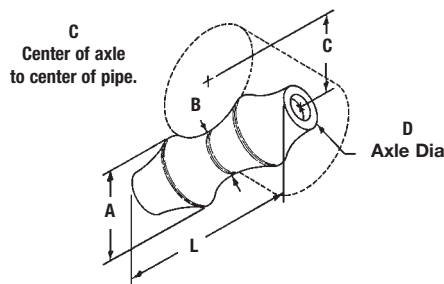
Material: Cast Iron

Function: Designed for supporting pipe runs with longitudinal movement. Use with steel axle rod.

Finish: Plain

Order By: Part number and finish.

Notes: If using D.I. pipe refer to page 298 for sizing.
Non-metallic roller with stainless steel axle sleeve are available for most sizes (BFP3114R-Pipe Size). Contact B-Line Engineering for more information.



Part No.	Pipe Size		Axle Dia. A		B		C		D		L		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3114R-2	2"	(50)	1 ¹ / ₁₆ "	(27.0)	3/4"	(19.0)	1 ⁹ / ₁₆ "	(39.7)	3/8"	(9.5)	2 ⁵ / ₈ "	(66.7)	29	(13.1)
B3114R-2 ¹ / ₂	2 ¹ / ₂ "	(65)	1 ¹ / ₄ "	(31.7)	7/8"	(22.2)	1 ⁷ / ₈ "	(47.6)	1/2"	(12.7)	3 ¹ / ₈ "	(79.4)	47	(21.3)
B3114R-3	3"	(80)	1 ³ / ₈ "	(34.9)	7/8"	(22.2)	2 ³ / ₁₆ "	(55.6)	1/2"	(12.7)	3 ³ / ₄ "	(95.2)	62	(28.1)
B3114R-3 ¹ / ₂	3 ¹ / ₂ "	(90)	1 ¹ / ₂ "	(38.1)	1"	(25.4)	2 ¹ / ₂ "	(63.5)	1/2"	(12.7)	4 ¹ / ₄ "	(107.9)	71	(32.2)
B3114R-4	4"	(100)	1 ⁹ / ₃₂ "	(40.5)	1"	(25.4)	2 ³ / ₄ "	(69.8)	1/2"	(12.7)	4 ³ / ₄ "	(120.6)	96	(43.5)
B3114R-5	5"	(125)	1 ⁷ / ₈ "	(47.6)	1 ¹ / ₄ "	(28.6)	3 ³ / ₈ "	(85.7)	5/8"	(15.9)	5 ¹³ / ₁₆ "	(147.6)	131	(59.4)
B3114R-6	6"	(150)	2 ¹ / ₈ "	(54.0)	1 ¹ / ₄ "	(31.7)	3 ¹⁵ / ₁₆ "	(100.0)	3/4"	(19.0)	6 ⁷ / ₈ "	(174.6)	207	(93.9)
B3114R-8	8"	(200)	2 ⁵ / ₈ "	(66.7)	1 ¹ / ₂ "	(38.1)	5 ¹ / ₁₆ "	(128.6)	7/8"	(22.2)	8 ⁷ / ₈ "	(225.4)	323	(146.5)
B3114R-10	10"	(250)	3 ³ / ₁₆ "	(81.0)	1 ³ / ₄ "	(44.4)	6 ¹ / ₄ "	(158.7)	7/8"	(22.2)	11"	(279.4)	482	(218.6)
B3114R-12	12"	(300)	3 ³ / ₄ "	(95.2)	2"	(50.8)	7 ³ / ₈ "	(187.3)	1"	(25.4)	13"	(330.2)	854	(387.4)
B3114R-14	14"	(350)	4 ³ / ₈ "	(111.1)	2 ¹ / ₂ "	(63.5)	8 ¹ / ₄ "	(209.5)	1 ¹ / ₈ "	(28.6)	14 ¹ / ₄ "	(361.9)	1150	(521.6)
B3114R-16	16"	(400)	4 ⁵ / ₈ "	(117.5)	2 ¹ / ₂ "	(63.5)	9 ¹ / ₄ "	(234.9)	1 ¹ / ₄ "	(31.7)	16 ¹ / ₄ "	(412.7)	1200	(544.3)
B3114R-18	18"	(450)	5 ¹ / ₈ "	(130.2)	2 ³ / ₄ "	(69.8)	10 ³ / ₈ "	(263.5)	1 ¹ / ₄ "	(31.7)	18 ¹ / ₄ "	(463.5)	1550	(703.1)
B3114R-20	20"	(500)	5 ⁵ / ₈ "	(142.9)	3"	(76.2)	11 ¹ / ₂ "	(292.1)	1 ³ / ₈ "	(34.9)	20 ¹ / ₄ "	(514.3)	2080	(943.5)
B3114R-24	24"	(600)	6 ³ / ₄ "	(171.4)	3 ⁵ / ₈ "	(92.1)	13 ¹³ / ₁₆ "	(350.8)	1 ¹ / ₂ "	(38.1)	24 ¹ / ₄ "	(615.9)	3300	(1496.9)
B3114R-30	30"	(750)	8 ¹ / ₂ "	(215.9)	4 ¹ / ₂ "	(114.3)	17 ¹ / ₄ "	(438.1)	1 ³ / ₄ "	(44.4)	30 ¹ / ₄ "	(768.3)	6200	(2812.3)

Pipe Rollers & Roller Supports

B3117R - Short Pattern Pipe Roller Only

Size Range: 2" (50mm) thru 42" (1050mm) pipe

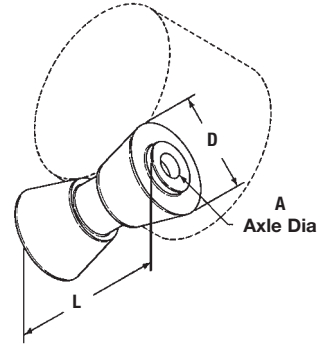
Material: Cast Iron

Function: Designed for supporting pipe runs with longitudinal movement. Use with steel axle rod.

Finish: Plain

Order By: Part number and finish.

Notes: If using D.I. pipe refer to page 298 for sizing.
Non-metallic roller with stainless steel axle sleeve are available for most sizes (BFP3117R-Pipe Size). Contact B-Line Engineering for more information.



Part No.	Pipe Size		Axle Dia. A		D		L		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3117R-2 to 3 1/2	2" to 3 1/2"	(50 to 90)	1/2"	(12.7)	1 7/8"	(47.6)	2 3/4"	(69.8)	70	(31.7)
B3117R-4 to 6	4" to 6"	(100 to 150)	1/2"	(12.7)	2 1/16"	(52.4)	3 3/4"	(95.2)	114	(51.7)
B3117R-8 to 10	8", 10"	(200 to 250)	3/4"	(19.0)	3 1/4"	(82.5)	6"	(152.4)	329	(149.2)
B3117R-12 to 14	12", 14"	(300 to 350)	7/8"	(22.2)	4"	(101.6)	8"	(203.2)	600	(272.1)
B3117R-16 to 20	16" to 20"	(400 to 500)	1 1/8"	(28.6)	4 1/2"	(114.3)	9"	(228.6)	781	(354.2)
B3117R-24	24"	(600)	1 1/4"	(31.7)	4 7/16"	(112.7)	10"	(254.0)	842	(381.9)
B3117R-30	30"	(750)	1 3/4"	(44.4)	5 1/2"	(139.7)	12 1/2"	(317.5)	1385	(628.2)
B3117R-36 to 42	36" to 42"	(900 to 1050)	2"	(50.8)	6"	(152.4)	14 7/8"	(377.8)	1585	(718.9)

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

Pipe Supports, Guides, Shields & Saddles



Pipe supports offered in this section are designed to support pipe from a base structure where vertical adjustment may be required. Pipe guides and slides are designed to allow longitudinal movement due to thermal expansion and contraction of pipe. Protection shields and saddles are designed to prevent damage to pipe insulation.

Materials

Carbon Steel is used in the manufacturing of pipe supports, guides, shields and saddles. Stainless Steel and other materials are available.

Finishes

The standard finishes for mechanical supports are plain steel (oil coated) sometimes referred to as black and Electro-Plated Zinc (ASTM B633 SC3). Hot-Dip Galvanized After Fabrication (ASTM A123), Red Primer, DURA-GREEN™ and other special coatings are available upon request.

Note: Due to the design of some products, (threads, connecting hardware, swivels, etc.) items may or may not be uniformly coated with special finishes. In some cases, the hanger itself may be coated, however, the hardware may be supplied Electro-Plated, Copper plated, or in Stainless Steel.

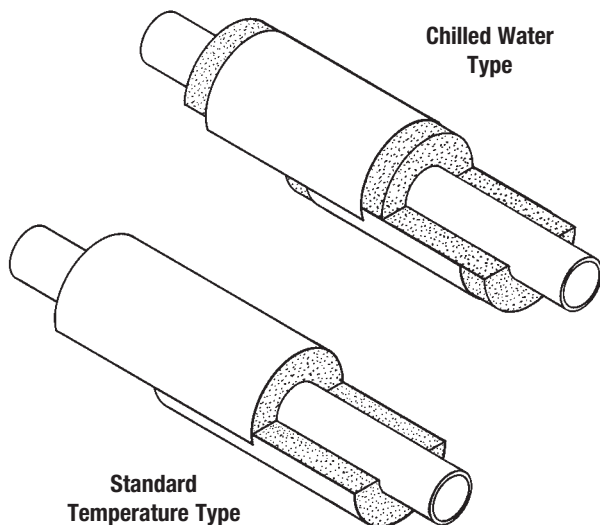
Approvals (as noted)

Items in this section comply with Federal Specification WW-H-171E & A-A-1192A or Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58.

All pipe supports in this section are sized to fit schedule 40/80 pipe unless otherwise noted. Some steel items may be specially fabricated to fit other pipe diameters i.e. ductile iron, cast iron, etc. See pipe data charts on pages 297 thru 303 for proper size selection.

Pipe Supports, Guides, Shields & Saddles

B3380 thru B3387 360° Calcium Silicate Shield Pre-Insulated Support



Size Range: Up to 24" (600mm)

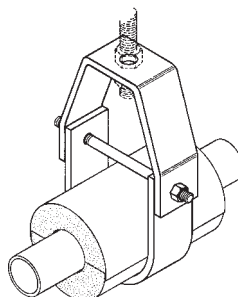
Material: Asbestos-free, Hydrous Calcium Silicate Insulation with Pre-Galvanized steel jacket

Function: Designed to provide a crush resistant insulation insert at pipe support points. Can be used with hangers or straps.

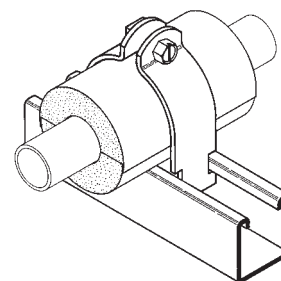
Miscellaneous Information: Flame retardant, water and rot resistant, temperature range from ambient to 1200°F (649°C). Easily installed in a pipe hanger or mounted to strut.

Order By: Part number.
(See part number legend below.)
For additional information, contact factory.

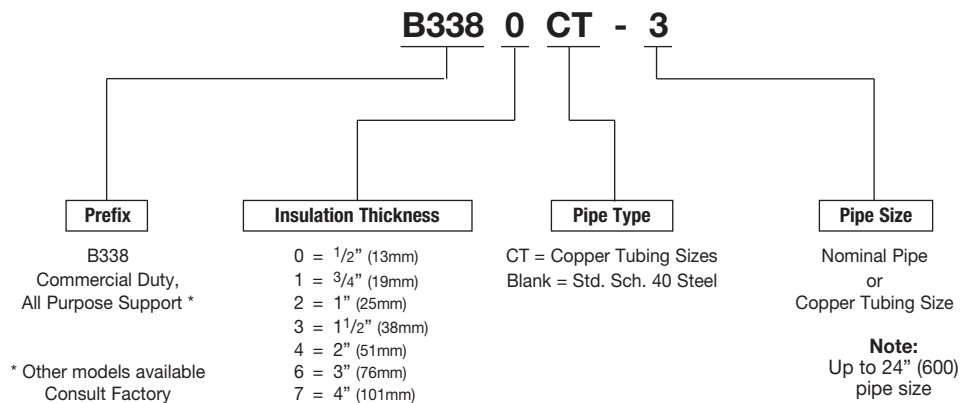
Applications



Pipe Hanger



Strut Mounted



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

Pipe Supports, Guides, Shields & Saddles

B3088 - Base Stand (TOLCO Fig. 316)

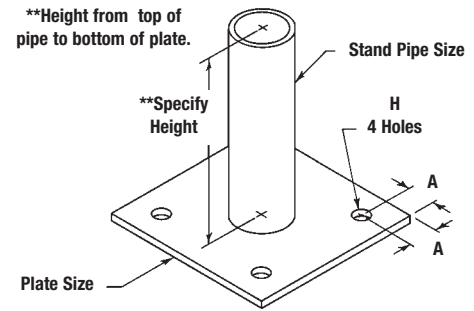
Size Range: 3/4" (20mm) thru 6" (150mm) pipe

Material: Steel

Function: Designed as an unthreaded base stand for pipe supports B3090, B3094, B3095, B3096, B3097 and B3098.

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

Order By: Part number, height and finish.



Note: Match B3088 part number with dimension 'D' from B3090, B3094, B3095, B3096, B3097 or B3098 charts.

Part No.	Plate Size		Stand Pipe Size		A		Dia. H		Approx. Wt./100*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3088-3/4	1/4" x 6" x 6"	(6.3 x 152.4 x 152.4)	3/4"	(20)	7/8"	(22.2)	3/4"	(14.3)	420	(190.5)
B3088-1	1/4" x 6" x 6"	(6.3 x 152.4 x 152.4)	1"	(25)	7/8"	(22.2)	3/4"	(14.3)	480	(216.0)
B3088-1 1/4	1/4" x 6" x 6"	(6.3 x 152.4 x 152.4)	1 1/4"	(32)	7/8"	(22.2)	3/4"	(14.3)	590	(267.6)
B3088-1 1/2	1/4" x 6" x 6"	(6.3 x 152.4 x 152.4)	1 1/2"	(40)	7/8"	(22.2)	3/4"	(14.3)	655	(297.1)
B3088-2	1/4" x 6" x 6"	(6.3 x 152.4 x 152.4)	2"	(50)	7/8"	(22.2)	3/4"	(14.3)	1211	(549.3)
B3088-2 1/2	3/8" x 8" x 8"	(9.5 x 203.2 x 203.2)	2 1/2"	(65)	1 1/4"	(31.7)	13/16"	(14.3)	2376	(1077.7)
B3088-3	3/8" x 12" x 12"	(9.5 x 203.2 x 203.2)	3"	(80)	1 1/2"	(38.1)	13/16"	(20.6)	3137	(1422.9)
B3088-4	1/2" x 12" x 12"	(12.7 x 304.8 x 304.8)	4"	(100)	1 1/2"	(38.1)	15/16"	(23.8)	4338	(1967.7)
B3088-6	1/2" x 18" x 18"	(12.7 x 304.8 x 304.8)	6"	(150)	1 1/2"	(38.1)	1 1/8"	(28.6)	7378	(3346.6)

*Based on a height of 18" (457.2mm).

B3088T - Threaded Base Stand (TOLCO Fig. 316T)

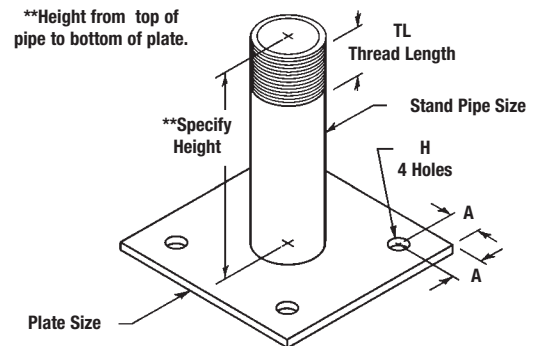
Size Range: 1" (25mm) thru 6" (150mm) pipe

Material: Steel

Function: Designed as a threaded base stand where vertical adjustment is required for pipe supports B3089, B3092, and B3093.

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

Order By: Part number, height and finish.



Note: Match B3088T part number with dimension 'D' from B3089, B3092, and B3093 charts.

Part No.	Plate Size		Stand Pipe Size		A		Dia. H		TL		Approx. Wt./100*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3088T-1	1/4" x 6" x 6"	(6.3 x 152.4 x 152.4)	1"	(25)	7/8"	(22.2)	3/4"	(19.0)	1 1/2"	(38.1)	495	(224.5)
B3088T-1 1/4	1/4" x 6" x 6"	(6.3 x 152.4 x 152.4)	1 1/4"	(32)	7/8"	(22.2)	3/4"	(19.0)	1 1/2"	(38.1)	583	(264.4)
B3088T-1 1/2	1/4" x 6" x 6"	(6.3 x 152.4 x 152.4)	1 1/2"	(40)	7/8"	(22.2)	3/4"	(19.0)	1 1/2"	(38.1)	649	(294.4)
B3088T-2	1/4" x 6" x 6"	(6.3 x 152.4 x 152.4)	2"	(50)	7/8"	(22.2)	3/4"	(19.0)	1 1/2"	(38.1)	785	(356.1)
B3088T-2 1/2	3/8" x 8" x 8"	(9.5 x 203.2 x 203.2)	2 1/2"	(65)	1 1/4"	(31.7)	13/16"	(20.6)	1 1/2"	(38.1)	1524	(691.3)
B3088T-3	3/8" x 12" x 12"	(9.5 x 304.8 x 304.8)	3"	(80)	1 1/2"	(38.1)	13/16"	(20.6)	1 1/2"	(38.1)	2624	(1190.2)
B3088T-4	1/2" x 12" x 12"	(12.7 x 304.8 x 304.8)	4"	(100)	1 1/2"	(38.1)	15/16"	(23.8)	2"	(50.8)	3594	(1630.2)
B3088T-6	1/2" x 18" x 18"	(12.7 x 457.2 x 457.2)	6"	(150)	1 1/2"	(38.1)	1 1/8"	(28.6)	2"	(50.8)	7346	(3332.1)

*Based on a height of 18" (457.2mm).

Pipe Supports, Guides, Shields & Saddles

B3088S - Seismic Base Stand

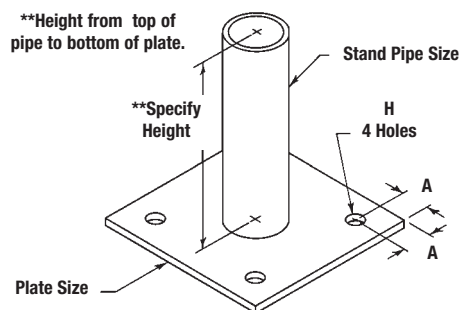
Size Range: 3/4" (20mm) thru 4" (100mm) pipe

Material: Steel

Function: Designed as an unthreaded base stand for pipe supports, B3090, B3094, B3095, B3096, B3097 and B3098, to meet requirements of 12X anchor diameter hole spacing for seismic applications. The standard B3088-3 & B3088-6 already meet this requirement.

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

Order By: Part number, height and finish.



Supports, Guides, Shields & Saddles

Note: Match B3088 part number with dimension 'D' from B3090, B3094, B3095, B3096, B3097 or B3098 charts.

Part No.	Plate Size		Stand Pipe Size		A		Dia. H		Approx. Wt./100*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3088S-3/4	1/4" x 8" x 8"	(6.3 x 203.2 x 203.2)	3/4"	(20)	1"	(25.4)	9/16"	(14.3)	618	(280.3)
B3088S-1	1/4" x 8" x 8"	(6.3 x 203.2 x 203.2)	1"	(25)	1"	(25.4)	9/16"	(14.3)	708	(321.1)
B3088S-1 1/4	1/4" x 8" x 8"	(6.3 x 203.2 x 203.2)	1 1/4"	(20)	1"	(25.4)	9/16"	(14.3)	798	(362.0)
B3088S-1 1/2	1/4" x 8" x 8"	(6.3 x 203.2 x 203.2)	1 1/2"	(32)	1"	(25.4)	9/16"	(14.3)	858	(389.2)
B3088S-2	1/4" x 8" x 8"	(6.3 x 203.2 x 203.2)	2"	(50)	1"	(25.4)	9/16"	(14.3)	993	(450.4)
B3088S-2 1/2	3/8" x 8 1/2" x 8 1/2"	(9.5 x 215.9 x 215.9)	2 1/2"	(65)	1 1/4"	(31.7)	9/16"	(14.3)	1638	(743.0)
B3088S-4	1/2" x 13 1/2" x 13 1/2"	(12.7 x 342.9 x 342.9)	4"	(100)	1 1/2"	(38.1)	15/16"	(23.8)	4202	(1906.0)

*Based on a height of 18" (457.2mm).

B3088ST - Threaded Seismic Base Stand

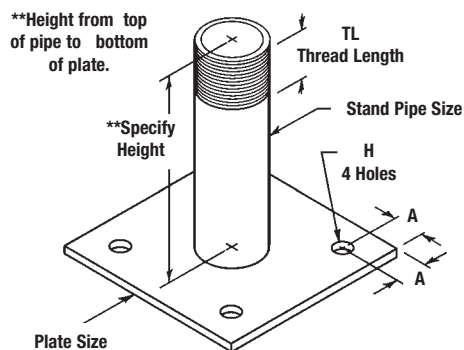
Size Range: 1" (25mm) thru 4" (100mm) pipe

Material: Steel

Function: Designed as a threaded base stand where vertical adjustment is required for pipe supports B3089, B3092, and B3093, to meet requirements of 12X anchor diameter hole spacing for seismic applications. The standard B3088T-3 & B3088T-6 already meet this requirement.

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

Order By: Part number, height and finish.



Note: Match B3088T part number with dimension 'D' from B3089, B3092, and B3093 charts.

Part No.	Plate Size		Stand Pipe Size		A		Dia. H		TL		Approx. Wt./100*	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3088ST-1	1/4" x 8" x 8"	(6.3 x 203.2 x 203.2)	1"	(25)	1"	(25.4)	9/16"	(14.3)	1 1/2"	(38.1)	708	(321.1)
B3088ST-1 1/4	1/4" x 8" x 8"	(6.3 x 203.2 x 203.2)	1 1/4"	(32)	1"	(25.4)	9/16"	(14.3)	1 1/2"	(38.1)	798	(362.0)
B3088ST-1 1/2	1/4" x 8" x 8"	(6.3 x 203.2 x 203.2)	1 1/2"	(40)	1"	(25.4)	9/16"	(14.3)	1 1/2"	(38.1)	858	(389.2)
B3088ST-2	1/4" x 8" x 8"	(6.3 x 203.2 x 203.2)	2"	(50)	1"	(25.4)	9/16"	(14.3)	1 1/2"	(38.1)	993	(450.4)
B3088ST-2 1/2	3/8" x 8 1/2" x 8 1/2"	(9.5 x 215.9 x 215.9)	2 1/2"	(65)	1 1/4"	(31.7)	9/16"	(14.3)	1 1/2"	(38.1)	1638	(743.0)
B3088ST-4	1/2" x 13 1/2" x 13 1/2"	(12.7 x 342.9 x 342.9)	4"	(100)	1 1/2"	(38.1)	15/16"	(23.8)	2"	(50.8)	4202	(1906.0)

*Based on a height of 18" (457.2mm).

*Based on a height of 18" (457.2).

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

Pipe Supports, Guides, Shields & Saddles

B3096 - Adjustable Pipe Saddle Support (TOLCO Fig. 312)

Size Range: Size 2" (505mm) thru 12" (300mm) pipe

Material: Steel

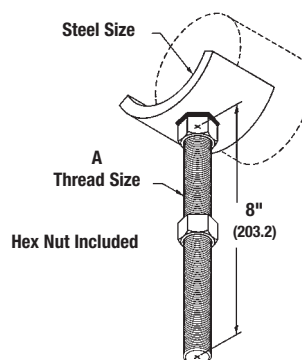
Function: Designed to support horizontal pipe from floor stanchion where vertical adjustment is required.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 39 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 38.

Maximum Temperature: 650°F (343°C)

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

Order By: Part number, pipe size and finish



Shank will fit into Sch. 40 Pipe Size 'D' (not included)

Part No.	Pipe Size		Max. Pipe O.D.		Thread Size A	D		Steel Size		Approx. Wt./100	
	in.	(mm)	in.	(mm)		in.	(mm)	in.	(mm)	Lbs.	(kg)
B3096-2	2"	(50)	2 ³ / ₈ "	(60.3)	7/8"-9	1"	(25)	3/8" x 2"	(9.5 x 50.8)	212	(96.1)
B3096-3	3"	(80)	3 ¹ / ₂ "	(88.9)	7/8"-9	1"	(25)	3/8" x 2 ¹ / ₂ "	(9.5 x 63.5)	259	(117.5)
B3096-4	4"	(100)	4 ¹ / ₂ "	(114.3)	1"-8	1"	(25)	3/8" x 3"	(9.5 x 76.2)	370	(167.8)
B3096-5	5"	(125)	5 ⁹ / ₁₆ "	(141.3)	1"-8	1"	(25)	3/8" x 3"	(9.5 x 76.2)	404	(183.2)
B3096-6	6"	(150)	6 ⁵ / ₈ "	(168.3)	1 ¹ / ₄ "-7	1 ¹ / ₄ "	(32)	1/2" x 3 ¹ / ₂ "	(12.7 x 88.9)	714	(323.9)
B3096-8	8"	(200)	8 ⁵ / ₈ "	(219.1)	1 ¹ / ₄ "-7	1 ¹ / ₄ "	(32)	1/2" x 3 ¹ / ₂ "	(12.7 x 88.9)	819	(371.5)
B3096-10	10"	(250)	10 ³ / ₄ "	(273.0)	1 ¹ / ₂ "-6	1 ¹ / ₂ "	(40)	1/2" x 4"	(12.7 x 101.6)	1194	(541.6)
B3096-12	12"	(300)	12 ³ / ₄ "	(323.8)	1 ¹ / ₂ "-6	1 ¹ / ₂ "	(40)	1/2" x 4"	(12.7 x 101.6)	1315	(596.5)

Pipe Supports, Guides, Shields & Saddles

B3089 - Pipe Adjuster (TOLCO Fig. 319)

Size Range: For use with 1½" (40mm) thru 36" (900mm) pipe

Material: Steel

Function: Straight threaded shank that permits adjustment after installation

Maximum Temperature: 650°F (343°C)

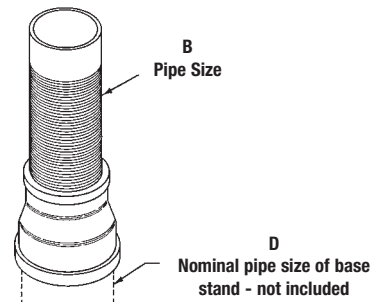
Finish: Plain. Contact B-Line for alternative finishes and materials.

Order By: Part number and finish

Note:

If combining a Figure B3089 (Pipe adjuster) with a Figure B3090 (Pipe Support - pages 129 & 130) the catalog number will become a Figure B3092 (see pages 133 & 134).

If combining a Figure B3089 (Pipe adjuster) with a Figure B3095 (Pipe Support Saddle - pages 131 & 132) the catalog number will become a Figure B3093 (see pages 135 & 136).



Part No.	To Support Pipe Size		B		D		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3089-¾	1½" - 2"	(40 - 50)	¾"	(20)	1½"	(40)	140	(63.5)
B3089-1½	2½" - 3½"	(65 - 90)	1½"	(40)	2½"	(65)	400	(181.4)
B3089-2½	4" - 12"	(100 - 300)	2½"	(65)	3"	(80)	700	(317.5)
B3089-3	14" - 16"	(350 - 400)	3"	(80)	4"	(100)	1000	(453.6)
B3089-4	18" - 36"	(450 - 900)	4"	(100)	6"	(150)	2200	(997.9)

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

Pipe Supports, Guides, Shields & Saddles

B3090 - Pipe Support with U-Bolt (TOLCO Fig. 318)

Size Range: — 3/4" (20mm) thru 36" (900mm) pipe

Material: — Steel

Function: — Designed to support horizontal pipe from floor stanchion. U-bolts and hex nuts are provided to hold pipe securely to saddle. To complete floor stanchion, use with B3088 pipe stand.

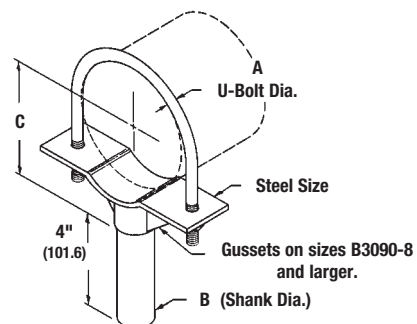
Approvals: — Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 38 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 37

Maximum Temperature: — 750°F (399°)

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

Order By: — Part number and finish

Note: — For vertical adjustment see Figure B3092 (pages 133 & 134)



C
Center of pipe to
bottom lip of support.

* Shank will fit into nominal
Schedule 40 pipe size 'D' of
Base Stand Figure B3088
(not included).



Part No.	Pipe Size		Max. O.D. of Pipe		Steel Size		A	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3090-3/4	3/4"	(20)	13/8"	(34.9)	1/4" x 1 1/2"	(6.3 x 38.1)	1/4"	(6.4)
B3090-1	1"	(25)	13/8"	(34.9)	1/4" x 1 1/2"	(6.3 x 38.1)	1/4"	(6.4)
B3090-1 1/4	1 1/4"	(32)	1 11/16"	(42.9)	1/4" x 2"	(6.3 x 50.8)	3/8"	(9.5)
B3090-1 1/2	1 1/2"	(40)	2"	(50.8)	1/4" x 2"	(6.3 x 50.8)	3/8"	(9.5)
B3090-2	2"	(50)	2 7/16"	(61.9)	1/4" x 2"	(6.3 x 50.8)	3/8"	(9.5)
B3090-2 1/2	2 1/2"	(65)	2 7/8"	(73.0)	1/4" x 3"	(6.3 x 76.2)	1/2"	(12.7)
B3090-3	3"	(80)	3 1/2"	(88.9)	1/4" x 3"	(6.3 x 76.2)	1/2"	(12.7)
B3090-3 1/2	3 1/2"	(90)	4"	(101.6)	1/4" x 3"	(6.3 x 76.2)	1/2"	(12.7)
B3090-4	4"	(100)	4 7/8"	(123.8)	3/8" x 3 1/2"	(9.5 x 88.9)	1/2"	(12.7)
B3090-5	5"	(125)	5 5/8"	(142.9)	3/8" x 3 1/2"	(9.5 x 88.9)	1/2"	(12.7)
B3090-6	6"	(150)	6 29/32"	(175.4)	1/2" x 3 1/2"	(12.7 x 88.9)	5/8"	(15.9)
B3090-8	8"	(200)	9 1/8"	(231.8)	1/2" x 3 1/2"	(12.7 x 88.9)	5/8"	(15.9)
B3090-10	10"	(250)	11 3/32"	(281.8)	1/2" x 3 1/2"	(12.7 x 88.9)	3/4"	(19.0)
B3090-12	12"	(300)	13 3/16"	(335.0)	1/2" x 3 1/2"	(12.7 x 88.9)	7/8"	(22.2)
B3090-14	14"	(350)	14"	(355.6)	5/8" x 4"	(19.0 x 101.6)	7/8"	(22.2)
B3090-16	16"	(400)	16"	(406.4)	5/8" x 4"	(19.0 x 101.6)	7/8"	(22.2)
B3090-18	18"	(450)	18"	(457.2)	3/4" x 5"	(19.0 x 127.0)	1"	(25.4)
B3090-20	20"	(500)	20"	(508.0)	3/4" x 5"	(19.0 x 127.0)	1"	(25.4)
B3090-24	24"	(600)	24"	(609.6)	1" x 5"	(25.4 x 127.0)	1"	(25.4)
B3090-30	30"	(750)	30"	(762.0)	1" x 5"	(25.4 x 127.0)	1"	(25.4)
B3090-36	36"	(900)	36"	(914.4)	1" x 5"	(25.4 x 127.0)	1"	(25.4)

Note:

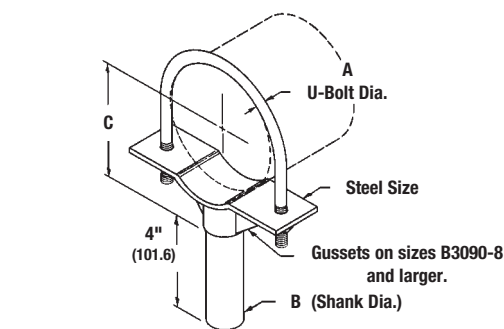
4" (100) thru 12" (300) fits both steel and ductile iron pipe.

For other ductile iron pipe sizes specify B3090DI - size.

3" (80) Ductile Iron uses B3090-3 1/2

Pipe Supports, Guides, Shields & Saddles

B3090 - Pipe Support with U-Bolt (TOLCO Fig. 318) cont.



C
Center of pipe to
bottom lip of support.

* Shank will fit into nominal
Schedule 40 pipe size 'D' of
Base Stand Figure B3088
(not included).

Note: — For vertical adjustment see Figure B3092 (pages 133 & 134)

Part No.	B		C		D *		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3090-3/4	3/4"	(19.0)	2"	(50.8)	3/4"	(19)	107	(48.5)
B3090-1	3/4"	(19.0)	2 ⁵ / ₃₂ "	(54.8)	3/4"	(19)	117	(53.1)
B3090-1 ¹ / ₄	3/4"	(19.0)	2 ²¹ / ₆₄ "	(59.1)	3/4"	(19)	149	(67.6)
B3090-1 ¹ / ₂	3/4"	(19.0)	2 ¹ / ₂ "	(63.5)	3/4"	(19)	166	(75.3)
B3090-2	3/4"	(19.0)	2 ¹¹ / ₁₆ "	(68.3)	3/4"	(19)	186	(84.4)
B3090-2 ¹ / ₂	1 ⁵ / ₁₆ "	(33.3)	3 ¹ / ₈ "	(79.4)	1 ¹ / ₂ "	(40)	251	(113.8)
B3090-3	1 ⁵ / ₁₆ "	(33.3)	3 ⁷ / ₁₆ "	(87.3)	1 ¹ / ₂ "	(40)	316	(143.3)
B3090-3 ¹ / ₂	1 ⁵ / ₁₆ "	(33.3)	3 ¹¹ / ₁₆ "	(93.7)	1 ¹ / ₂ "	(40)	317	(143.8)
B3090-4	2 ³ / ₈ "	(60.3)	4 ¹ / ₁₆ "	(103.2)	2 ¹ / ₂ "	(65)	586	(265.8)
B3090-5	2 ³ / ₈ "	(60.3)	4 ¹⁷ / ₃₂ "	(115.1)	2 ¹ / ₂ "	(65)	621	(281.7)
B3090-6	2 ³ / ₈ "	(60.3)	5 ⁵ / ₁₆ "	(134.9)	2 ¹ / ₂ "	(65)	895	(406.0)
B3090-8	2 ³ / ₈ "	(60.3)	6 ³ / ₄ "	(171.4)	2 ¹ / ₂ "	(65)	1115	(505.7)
B3090-10	2 ³ / ₈ "	(60.3)	7 ¹³ / ₁₆ "	(198.4)	2 ¹ / ₂ "	(65)	1423	(645.5)
B3090-12	2 ³ / ₈ "	(60.3)	8 ¹³ / ₁₆ "	(223.8)	2 ¹ / ₂ "	(65)	1846	(837.3)
B3090-14	2 ⁷ / ₈ "	(73.0)	10 ⁹ / ₁₆ "	(268.3)	3"	(80)	2593	(1176.2)
B3090-16	2 ⁷ / ₈ "	(73.0)	11 ⁹ / ₁₆ "	(293.7)	3"	(80)	2825	(1281.4)
B3090-18	4"	(101.6)	13 ⁹ / ₁₆ "	(344.5)	4"	(100)	4843	(2196.8)
B3090-20	4"	(101.6)	14 ⁹ / ₁₆ "	(369.9)	4"	(100)	5225	(2370.0)
B3090-24	4"	(101.6)	16 ⁹ / ₁₆ "	(420.7)	4"	(100)	6970	(3161.6)
B3090-30	4"	(101.6)	20 ¹¹ / ₁₆ "	(525.5)	4"	(100)	8587	(3895.0)
B3090-36	4"	(101.6)	23 ¹¹ / ₁₆ "	(601.7)	4"	(100)	9977	(4525.5)

Note:

4" (100) thru 12" (300) fits both steel and ductile iron pipe.

For other ductile iron pipe sizes specify B3090DI - size.

3" (80) Ductile Iron uses B3090-3¹/₂

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

Pipe Supports, Guides, Shields & Saddles

B3095 - Pipe Saddle Support (TOLCO Fig. 317)

Size Range: 1 1/2" (40mm) thru 36" (900mm) pipe

Material: Steel

Function: Designed to support horizontal pipe from floor stanchion. To complete floor stanchion, use with B3088 pipe stand.

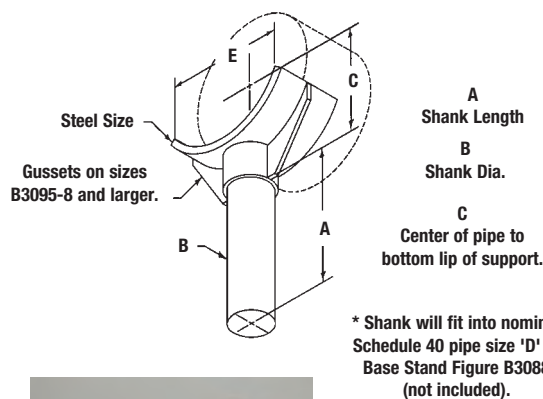
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 37 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 36

Maximum Temperature: 750°F (399°C)

Finish: Plain. Available in Electro-Galvanized and HDG finish or Stainless Steel materials.

Order By: Part number and finish

Note: — For vertical adjustment see Figure B3093 (pages 135 & 136)



Part No.	Pipe Size		Max. O.D. of Pipe		A		B		C	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3095-1	1"	(25)	1 5/16"	(33.3)	3"	(76.2)	3/4"	(19.0)	1 29/32"	(48.4)
B3095-1 1/4	1 1/4"	(32)	1 11/16"	(42.9)	3"	(76.2)	3/4"	(19.0)	2 5/64"	(52.8)
B3095-1 1/2	1 1/2"	(40)	1 15/16"	(49.2)	3"	(76.2)	3/4"	(19.0)	2 13/64"	(55.9)
B3095-2	2"	(50)	2 3/8"	(60.3)	3"	(76.2)	3/4"	(19.0)	2 7/16"	(61.9)
B3095-2 1/2	2 1/2"	(65)	2 7/8"	(73.0)	4"	(101.6)	1 5/16"	(33.3)	2 9/16"	(65.1)
B3095-3	3"	(80)	3 1/2"	(88.9)	4"	(101.6)	1 5/16"	(33.3)	3"	(76.2)
B3095-3 1/2	3 1/2"	(90)	4"	(101.6)	4"	(101.6)	1 5/16"	(33.3)	3 1/4"	(82.5)
B3095-4	4"	(100)	4 7/8"	(123.8)	4"	(101.6)	2 3/8"	(60.3)	3 1/2"	(88.9)
B3095-5	5"	(125)	5 5/8"	(142.9)	4"	(101.6)	2 3/8"	(60.3)	4 1/32"	(102.4)
B3095-6	6"	(150)	7"	(177.8)	4"	(101.6)	2 3/8"	(60.3)	4 11/16"	(119.1)
B3095-8	8"	(200)	9 1/8"	(231.8)	4"	(101.6)	2 3/8"	(60.3)	6 1/16"	(154.0)
B3095-10	10"	(250)	11 1/8"	(282.6)	4"	(101.6)	2 3/8"	(60.3)	7 3/4"	(196.8)
B3095-12	12"	(300)	13 1/2"	(342.9)	4"	(101.6)	2 3/8"	(60.3)	8 3/4"	(222.2)
B3095-14	14"	(350)	14"	(355.6)	4"	(101.6)	2 7/8"	(72.9)	10 3/4"	(273.0)
B3095-16	16"	(400)	16"	(406.4)	4"	(101.6)	2 7/8"	(72.9)	11 3/4"	(298.4)
B3095-18	18"	(450)	18"	(457.2)	4"	(101.6)	4"	(101.6)	14 1/2"	(368.3)
B3095-20	20"	(500)	20"	(508.0)	4"	(101.6)	4"	(101.6)	14 1/2"	(368.3)
B3095-24	24"	(600)	24"	(609.6)	4"	(101.6)	4"	(101.6)	17 3/4"	(450.8)
B3095-30	30"	(750)	30"	(762.0)	4"	(101.6)	4"	(101.6)	21 1/4"	(539.7)
B3095-36	36"	(900)	36"	(914.4)	4"	(101.6)	4"	(101.6)	24 1/4"	(615.9)

Note:

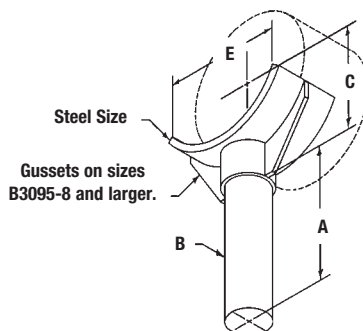
4" (100) thru 12" (300) fits both steel and ductile iron pipe.

For other ductile iron pipe sizes specify B3095DI - size.

3" (80) Ductile Iron uses B3095-3 1/2

Pipe Supports, Guides, Shields & Saddles

B3095 - Pipe Saddle Support (TOLCO Fig. 317) cont.



A
Shank Length

B
Shank Dia.

C
Center of pipe to
bottom lip of support.

* Shank will fit into nominal
Schedule 40 pipe size 'D' of
Base Stand Figure B3088
(not included).

Note: — For vertical adjustment see Figure B3093 (pages 135 & 136)

Part No.	D *		E		Approx. Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3095-1	3/4"	(20)	1 1/8"	(28.6)	49	(22.2)
B3095-1 1/4	3/4"	(20)	1 7/16"	(36.5)	81	(36.7)
B3095-1 1/2	3/4"	(20)	1 21/32"	(42.0)	88	(39.9)
B3095-2	3/4"	(20)	2 1/16"	(52.4)	94	(42.6)
B3095-2 1/2	1 1/2"	(40)	2 1/2"	(63.5)	167	(75.7)
B3095-3	1 1/2"	(40)	3 1/32"	(77.0)	176	(79.8)
B3095-3 1/2	1 1/2"	(40)	3 7/16"	(87.3)	188	(85.3)
B3095-4	2 1/2"	(65)	4 1/4"	(107.9)	364	(165.1)
B3095-5	2 1/2"	(65)	4 13/16"	(122.2)	381	(172.8)
B3095-6	2 1/2"	(65)	6 1/16"	(154.0)	534	(242.2)
B3095-8	2 1/2"	(65)	7 15/16"	(201.5)	796	(361.0)
B3095-10	2 1/2"	(65)	9 5/8"	(244.5)	914	(414.6)
B3095-12	2 1/2"	(65)	11 11/16"	(296.9)	1068	(484.4)
B3095-14	3"	(80)	12 1/8"	(308.0)	1654	(750.2)
B3095-16	3"	(80)	13 7/8"	(352.4)	1817	(824.2)
B3095-18	4"	(100)	15 19/32"	(396.1)	2798	(1269.2)
B3095-20	4"	(100)	17 5/16"	(439.7)	3018	(1368.9)
B3095-24	4"	(100)	20 25/32"	(527.8)	3018	(1368.9)
B3095-30	4"	(100)	26"	(660.4)	7624	(3458.2)
B3095-36	4"	(100)	31 3/16"	(792.2)	8877	(4026.6)

Note:

4" (100) thru 12" (300) fits both steel and ductile iron pipe.

For other ductile iron pipe sizes specify B3095DI - size.

3" (80) Ductile Iron uses B3095-3 1/2

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

Pipe Supports, Guides, Shields & Saddles

B3092 - Adjustable Pipe Saddle Support with Yoke (TOLCO Fig. 318A)

Size Range: 3/4" (20mm) thru 36" (900mm) pipe

Material: Steel with cast iron reducer

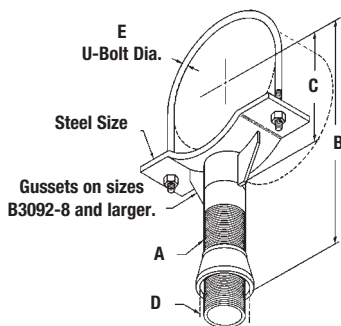
Function: Designed to support horizontal pipe from floor stanchion where vertical adjustment is required. U-bolt and hex nuts are provided to hold pipe securely to saddle. To complete floor stanchion, use with B3088T threaded pipe stand.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 38 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 37.

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

Order By: Part number and finish

Notes: Order with B3088T for complete stanchion support.
4" (100mm) thru 12" (300mm) fits both steel and ductile iron pipe. For other ductile iron pipe sizes specify B3092DI - size.
3" (80mm) Ductile Iron uses B3092-3 1/2



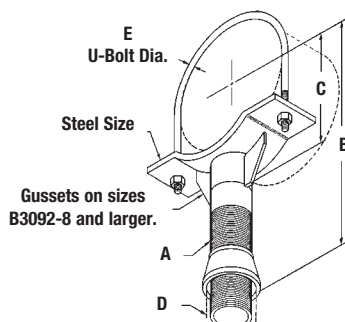
A
Schedule 40 Pipe Size
B
Center of pipe to
bottom of pipe reducer.
C
Center of pipe to
bottom lip of support.
D
Nominal pipe size of base stand -
Figure B3088T, not included.
E
U-Bolt Dia.



Part No.	Pipe Size		Maximum		A		Minimum B		Maximum	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3092-3/4	3/4"	(19)	1 3/8"	(34.9)	3/4"	(19)	5 3/4"	(146.0)	10 1/4"	(260.3)
B3092-1	1"	(25)	1 3/8"	(34.9)	3/4"	(19)	5 29/32"	(150.0)	10 13/32"	(264.3)
B3092-1 1/4	1 1/4"	(32)	1 11/16"	(42.9)	3/4"	(19)	6 5/64"	(154.4)	10 37/64"	(268.7)
B3092-1 1/2	1 1/2"	(38)	2"	(50.8)	3/4"	(19)	6 1/4"	(158.7)	10 3/4"	(273.0)
B3092-2	2"	(50)	2 7/16"	(61.9)	3/4"	(19)	6 7/16"	(163.5)	10 15/16"	(277.8)
B3092-2 1/2	2 1/2"	(65)	2 7/8"	(73.0)	1 1/2"	(40)	6 7/8"	(174.6)	11 3/8"	(288.9)
B3092-3	3"	(80)	3 1/2"	(88.9)	1 1/2"	(40)	7 3/16"	(182.6)	11 11/16"	(296.9)
B3092-3 1/2	3 1/2"	(90)	4"	(101.6)	1 1/2"	(40)	7 7/16"	(188.9)	11 15/16"	(303.2)
B3092-4	4"	(100)	4 7/8"	(123.8)	2 1/2"	(65)	7 13/16"	(198.4)	12 5/16"	(312.7)
B3092-5	5"	(125)	5 5/8"	(142.9)	2 1/2"	(65)	8 9/32"	(210.3)	12 25/32"	(324.6)
B3092-6	6"	(150)	6 29/32"	(175.4)	2 1/2"	(65)	9 1/16"	(230.2)	13 9/16"	(344.5)
B3092-8	8"	(200)	9 1/8"	(231.8)	2 1/2"	(65)	10 1/2"	(266.7)	15"	(381.0)
B3092-10	10"	(250)	11 3/32"	(281.8)	2 1/2"	(65)	11 9/16"	(293.7)	16 1/16"	(408.0)
B3092-12	12"	(300)	13 3/16"	(334.9)	2 1/2"	(65)	12 9/16"	(319.1)	17 1/16"	(433.4)
B3092-14	14"	(350)	14"	(355.6)	3"	(80)	14 5/16"	(363.5)	18 13/16"	(477.8)
B3092-16	16"	(400)	16"	(406.4)	3"	(80)	15 5/16"	(388.9)	19 13/16"	(503.2)
B3092-18	18"	(450)	18"	(457.2)	4"	(100)	17 5/16"	(439.7)	21 13/16"	(554.0)
B3092-20	20"	(500)	20"	(508.0)	4"	(100)	18 5/16"	(465.1)	22 13/16"	(579.4)
B3092-24	24"	(600)	24"	(609.6)	4"	(100)	20 5/16"	(515.9)	24 13/16"	(630.2)
B3092-30	30"	(750)	30"	(762.0)	4"	(100)	24 7/16"	(620.7)	28 15/16"	(735.0)
B3092-36	36"	(900)	36"	(914.4)	4"	(100)	27 7/16"	(696.9)	31 15/16"	(811.2)

Pipe Supports, Guides, Shields & Saddles

B3092 - Adjustable Pipe Saddle Support with Yoke (TOLCO Fig. 318A) cont.



A
Schedule 40 Pipe Size

B
Center of pipe to
bottom of pipe reducer.

C
Center of pipe to
bottom lip of support.

D
Nominal pipe size of base stand -
Figure B3088T, not included.

E
U-Bolt Dia.

Part No.	C		D		E		Saddle Steel Size		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3092-3/4	2"	(50.8)	1 1/2"	(38)	1/4"	(6.4)	1/4" x 1 1/2"	(6.3 x 38.1)	247	(112.0)
B3092-1	2 5/32"	(54.8)	1 1/2"	(38)	1/4"	(6.4)	1/4" x 1 1/2"	(6.3 x 38.1)	257	(116.6)
B3092-1 1/4	2 21/64"	(59.1)	1 1/2"	(38)	3/8"	(9.5)	1/4" x 2"	(6.3 x 50.8)	289	(131.1)
B3092-1 1/2	2 1/2"	(63.5)	1 1/2"	(38)	3/8"	(9.5)	1/4" x 2"	(6.3 x 50.8)	306	(138.8)
B3092-2	2 11/16"	(68.3)	1 1/2"	(38)	3/8"	(9.5)	1/4" x 2"	(6.3 x 50.8)	326	(147.9)
B3092-2 1/2	3 1/8"	(79.4)	2 1/2"	(65)	1/2"	(12.7)	1/4" x 3"	(6.3 x 76.2)	651	(295.3)
B3092-3	3 7/16"	(87.3)	2 1/2"	(65)	1/2"	(12.7)	1/4" x 3"	(6.3 x 76.2)	716	(324.8)
B3092-3 1/2	3 11/16"	(93.7)	2 1/2"	(65)	1/2"	(12.7)	1/4" x 3"	(6.3 x 76.2)	717	(325.2)
B3092-4	4 1/4"	(107.9)	3"	(80)	1/2"	(12.7)	3/8" x 3 1/2"	(9.5 x 88.9)	1286	(583.3)
B3092-5	4 9/16"	(115.9)	3"	(80)	1/2"	(12.7)	3/8" x 3 1/2"	(9.5 x 88.9)	1321	(599.2)
B3092-6	5 1/2"	(139.7)	3"	(80)	5/8"	(15.9)	1/2" x 3 1/2"	(12.7 x 88.9)	1595	(723.5)
B3092-8	7"	(177.8)	3"	(80)	5/8"	(15.9)	1/2" x 3 1/2"	(12.7 x 88.9)	1815	(823.3)
B3092-10	8"	(203.2)	3"	(80)	3/4"	(19.0)	1/2" x 3 1/2"	(12.7 x 88.9)	2123	(963.0)
B3092-12	9 3/16"	(233.4)	3"	(80)	7/8"	(22.2)	1/2" x 3 1/2"	(12.7 x 88.9)	2546	(1154.8)
B3092-14	10 9/16"	(268.3)	4"	(100)	7/8"	(22.2)	5/8" x 4"	(15.9 x 101.6)	3593	(1629.8)
B3092-16	11 9/16"	(293.7)	4"	(100)	7/8"	(22.2)	5/8" x 4"	(15.9 x 101.6)	3825	(1735.0)
B3092-18	13 9/16"	(344.5)	6"	(150)	1"	(25.4)	3/4" x 5"	(19.0 x 127.0)	7043	(3194.7)
B3092-20	14 9/16"	(369.9)	6"	(150)	1"	(25.4)	3/4" x 5"	(19.0 x 127.0)	7425	(3368.0)
B3092-24	16 9/16"	(420.7)	6"	(150)	1"	(25.4)	1" x 5"	(25.4 x 127.0)	9170	(4159.5)
B3092-30	20 11/16"	(525.5)	6"	(150)	1"	(25.4)	1" x 5"	(25.4 x 127.0)	10787	(4893.0)
B3092-36	23 11/16"	(601.7)	6"	(150)	1"	(25.4)	1" x 5"	(25.4 x 127.0)	12177	(5523.5)

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

Pipe Supports, Guides, Shields & Saddles

B3093 - Adjustable Pipe Saddle Support (TOLCO Fig. 317A)

Size Range: 1" (25mm) thru 36" (900mm) pipe

Material: Steel with cast iron reducer

Function: Designed to support horizontal pipe from floor stanchion where vertical adjustment is required. U-bolt and hex nuts are provided to hold pipe securely to saddle. To complete floor stanchion, use with B3088T threaded pipe stand.

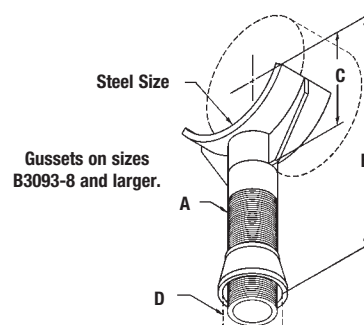
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 39 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 38.

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

Order By: Part number and finish

Note: Order with B3088T for complete stanchion support.

A
Schedule 40 Pipe Size
B
Center of pipe to bottom of pipe reducer.
C
Center of pipe to bottom lip of support.
D
Nominal pipe size of base stand - Figure B3088T, not included.



Part No.	Pipe Size		Maximum		A		Minimum		B		C	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3093-1	1"	(25)	15/16"	(33.3)	3/4"	(20)	521/32"	(143.6)	105/32"	(257.9)	129/32"	(48.4)
B3093-1 1/4	1 1/4"	(32)	1 11/16"	(42.9)	3/4"	(20)	553/64"	(148.0)	102 1/64"	(2262.3)	25/64"	(52.8)
B3093-1 1/2	1 1/2"	(40)	1 29/32"	(48.4)	3/4"	(20)	6"	(152.4)	10 1/2"	(266.7)	2 1/4"	(58.1)
B3093-2	2"	(50)	2 3/8"	(60.3)	3/4"	(20)	6 3/16"	(157.2)	10 11/16"	(271.5)	2 7/16"	(61.9)
B3093-2 1/2	2 1/2"	(65)	2 7/8"	(73.0)	1 1/2"	(40)	6 5/16"	(160.3)	10 13/16"	(274.6)	2 9/16"	(65.1)
B3093-3	3"	(80)	3 1/2"	(88.9)	1 1/2"	(40)	6 5/8"	(168.3)	11 1/8"	(282.6)	2 7/8"	(73.0)
B3093-3 1/2	3 1/2"	(90)	4"	(101.6)	1 1/2"	(40)	6 7/8"	(174.6)	11 3/8"	(288.9)	3 1/8"	(79.4)
B3093-4	4"	(100)	4 7/8"	(123.8)	2 1/2"	(65)	7 1/4"	(184.1)	11 3/4"	(298.4)	3 1/2"	(88.9)
B3093-5	5"	(125)	5 9/16"	(141.3)	2 1/2"	(65)	7 25/32"	(197.6)	12 9/32"	(311.9)	4 1/32"	(102.4)
B3093-6	6"	(150)	7"	(177.8)	2 1/2"	(65)	8 7/16"	(214.3)	12 15/16"	(328.6)	4 11/16"	(119.1)
B3093-8	8"	(200)	9 1/8"	(231.8)	2 1/2"	(65)	10 1/4"	(260.3)	14 3/4"	(374.6)	6 1/2"	(165.1)
B3093-10	10"	(250)	11 1/8"	(282.6)	2 1/2"	(65)	11 5/16"	(287.3)	15 13/16"	(401.6)	7 9/16"	(192.1)
B3093-12	12"	(300)	13 1/2"	(342.9)	2 1/2"	(65)	12 1/8"	(308.0)	16 5/8"	(422.3)	8 3/8"	(212.7)
B3093-14	14"	(350)	14"	(355.6)	3"	(80)	14 1/2"	(368.3)	19"	(482.6)	10 3/4"	(273.0)
B3093-16	16"	(400)	16"	(406.4)	3"	(80)	15 1/2"	(393.7)	20"	(508.0)	11 3/4"	(298.4)
B3093-18	18"	(450)	18"	(457.2)	4"	(100)	17 1/4"	(438.1)	21 3/4"	(552.4)	13 1/2"	(342.9)
B3093-20	20"	(500)	20"	(508.0)	4"	(100)	18 1/4"	(463.5)	22 3/4"	(577.8)	14 1/2"	(368.3)
B3093-24	24"	(600)	24"	(609.6)	4"	(100)	21 1/2"	(546.1)	26"	(660.4)	17 3/4"	(450.8)
B3093-30	30"	(750)	30"	(762.0)	4"	(100)	24 5/8"	(625.5)	29 1/8"	(739.8)	20 7/8"	(530.2)
B3093-36	36"	(900)	36"	(914.4)	4"	(100)	27 5/8"	(701.7)	32 1/8"	(816.0)	23 7/8"	(606.4)

Note:

4" (100) thru 12" (300) fits both steel and ductile iron pipe.

For other ductile iron pipe sizes specify B3093DI - size.

3" (80) Ductile Iron uses B3093-3 1/2

Pipe Supports, Guides, Shields & Saddles

B3093 - Adjustable Pipe Saddle Support (TOLCO Fig. 317A) cont.

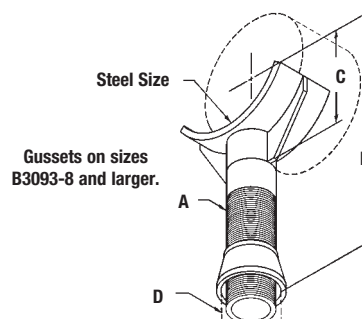


A
Schedule 40 Pipe Size

B
Center of pipe to bottom of pipe reducer.

C
Center of pipe to bottom lip of support.

D
Nominal pipe size of base stand - Figure B3088T, not included.



Part No.	D		Saddle Steel Size		Approx. Wt./100			
	in.	(mm)	in.	(mm)	Complete Lbs. (kg)	Saddle Only Lbs. (kg)	Complete Lbs. (kg)	Saddle Only Lbs. (kg)
B3093-1	1 1/2"	(40)	1/4" x 1 3/4"	(6.3 x 44.4)	189	(85.7)	49	(22.2)
B3093-1 1/4	1 1/2"	(40)	1/4" x 1 3/4"	(6.3 x 44.4)	221	(100.2)	81	(36.7)
B3093-1 1/2	1 1/2"	(40)	1/4" x 1 3/4"	(6.3 x 44.4)	228	(103.4)	88	(39.9)
B3093-2	1 1/2"	(40)	1/4" x 1 3/4"	(6.3 x 44.4)	234	(106.1)	94	(42.6)
B3093-2 1/2	2 1/2"	(65)	1/4" x 3"	(6.3 x 76.2)	567	(257.2)	167	(75.8)
B3093-3	2 1/2"	(65)	1/4" x 3"	(6.3 x 76.2)	576	(261.3)	176	(79.9)
B3093-3 1/2	2 1/2"	(65)	1/4" x 3"	(6.3 x 76.2)	588	(266.7)	188	(85.3)
B3093-4	3"	(80)	1/4" x 4"	(6.3 x 101.6)	1064	(482.6)	364	(165.1)
B3093-5	3"	(80)	1/4" x 4"	(6.3 x 101.6)	1081	(490.3)	381	(172.8)
B3093-6	3"	(80)	3/8" x 4"	(9.5 x 101.6)	1234	(559.7)	534	(242.2)
B3093-8	3"	(80)	3/8" x 4"	(9.5 x 101.6)	1496	(678.6)	796	(361.1)
B3093-10	3"	(80)	3/8" x 4"	(9.5 x 101.6)	1614	(732.1)	914	(414.6)
B3093-12	3"	(80)	3/8" x 4"	(9.5 x 101.6)	1768	(801.9)	1068	(484.4)
B3093-14	4"	(100)	3/8" x 5"	(9.5 x 127.0)	2654	(1203.8)	1654	(750.2)
B3093-16	4"	(100)	3/8" x 5"	(9.5 x 127.0)	2817	(1277.8)	1817	(824.2)
B3093-18	6"	(150)	1/2" x 5"	(12.7 x 127.0)	4998	(2267.1)	2798	(1269.1)
B3093-20	6"	(150)	1/2" x 5"	(12.7 x 127.0)	5218	(2366.8)	3018	(1368.9)
B3093-24	6"	(150)	1/2" x 6"	(12.7 x 152.4)	6346	(2878.5)	4146	(1880.6)
B3093-30	6"	(150)	1" x 6"	(25.4 x 152.4)	9824	(4456.1)	7624	(3458.2)
B3093-36	6"	(150)	1" x 6"	(25.4 x 152.4)	11077	(5024.4)	8877	(4026.5)

Note:

4" (100) thru 12" (300) fits both steel and ductile iron pipe.

For other ductile iron pipe sizes specify B3093DI - size.

3" (80) Ductile Iron uses B3093-3 1/2

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

Pipe Supports, Guides, Shields & Saddles

B3097 - Pipe Saddle With Strap (TOLCO Fig. 311)

Size Range: Size 4" (100mm) thru 36" (900mm) pipe

Material: Steel

Function: Designed to support horizontal pipe from floor stanchion. Top clamp holds pipe securely to saddle. To complete floor stanchion use with B3088 pipe stand.

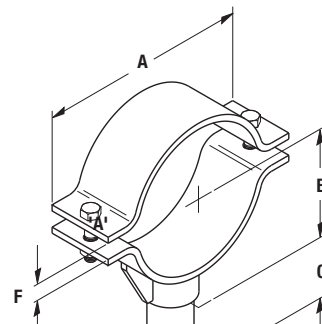
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 38 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 37.

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

Order By: Part number, pipe size and finish

Note: — For vertical adjustment use with Figure B3089 (Pipe Adjuster - page 128) and Figure B3088T (Threaded Pipe Stand - page 125).

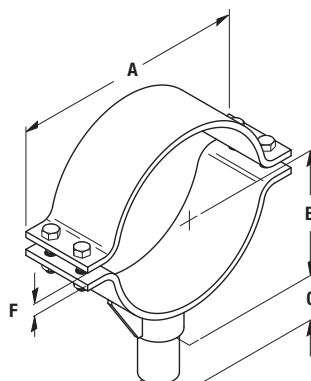
Gussets on sizes B3097-8 and larger.



'D' Shank Diameter

* Shank will fit into nominal Schedule 40 pipe size 'E' of Base Stand Figure B3088 (not included).

Sizes 4" (100mm) thru 12" (300mm)



'D' Shank Diameter

* Shank will fit into nominal Schedule 40 pipe size 'E' of Base Stand Figure B3088 (not included).

Sizes 14" (350mm) thru 36" (900mm)



Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E * in. (mm)	F in. (mm)	Bolt Size	Approx. Wt./100 Lbs. (kg)
B3097-4	4" (100)	7" (123.8)	3 ³ / ₁₆ " (65)	2" (50.8)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	3/4" (19.0)	1/2"-13	1050 (476.4)
B3097-5	5" (125)	8 ⁵ / ₈ " (141.3)	4 ³ / ₁₆ " (65)	2" (50.8)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	3/4" (19.0)	1/2"-13	1162 (527.1)
B3097-6	6" (150)	11" (177.8)	4 ⁷ / ₈ " (65)	2" (50.8)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	7/8" (22.2)	5/8"-11	1371 (622.0)
B3097-8	8" (200)	12 ⁷ / ₈ " (231.8)	6 ¹⁵ / ₁₆ " (65)	2" (50.8)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	1" (25.4)	5/8"-11	1751 (794.4)
B3097-10	10" (250)	16 ¹ / ₄ " (282.6)	7 ¹⁵ / ₁₆ " (65)	2" (50.8)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	1" (25.4)	3/4"-10	2174 (986.3)
B3097-12	12" (300)	18 ¹ / ₄ " (342.9)	9 ¹ / ₈ " (65)	3" (76.2)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	1" (25.4)	3/4"-10	2496 (1132.2)
B3097-14	14" (350)	19 ³ / ₄ " (355.6)	10 ¹ / ₂ " (80)	3" (76.2)	2 ⁷ / ₈ " (73.0)	3" (76.2)	1 ¹ / ₈ " (28.6)	3/4"-10	5220 (2367.8)
B3097-16	16" (400)	22 ³ / ₄ " (406.4)	11 ¹ / ₂ " (80)	3" (76.2)	2 ⁷ / ₈ " (73.0)	3" (76.2)	1 ¹ / ₈ " (28.6)	3/4"-10	5965 (2705.6)
B3097-18	18" (450)	25 ⁷ / ₈ " (457.2)	13 ¹ / ₂ " (100)	4" (101.6)	3 ³ / ₄ " (95.2)	4" (101.6)	1 ¹ / ₄ " (31.7)	3/4"-10	7265 (3295.3)
B3097-20	20" (500)	27 ³ / ₄ " (508.0)	14 ¹ / ₂ " (100)	4" (101.6)	3 ³ / ₄ " (95.2)	4" (101.6)	1 ³ / ₈ " (34.9)	3/4"-10	7722 (3502.8)
B3097-22	22" (550)	29 ³ / ₄ " (609.6)	15 ¹ / ₂ " (100)	4" (101.6)	3 ³ / ₄ " (95.2)	4" (101.6)	1 ³ / ₈ " (34.9)	3/4"-10	8336 (3781.3)
B3097-24	24" (600)	33" (609.6)	17 ¹ / ₂ " (100)	4" (101.6)	3 ³ / ₄ " (95.2)	4" (101.6)	1 ⁵ / ₈ " (41.3)	7/8"-9	9583 (4346.8)
B3097-26	26" (650)	35" (762.0)	18 ¹ / ₂ " (100)	4" (101.6)	3 ³ / ₄ " (95.2)	4" (101.6)	2" (50.8)	7/8"-9	9913 (4496.4)
B3097-30	30" (750)	41 ³ / ₈ " (762.0)	20 ⁵ / ₈ " (100)	4" (101.6)	3 ³ / ₄ " (95.2)	4" (101.6)	2" (50.8)	7/8"-9	13778 (6249.6)
B3097-32	32" (800)	43 ³ / ₈ " (762.0)	21 ⁵ / ₈ " (100)	4" (101.6)	3 ³ / ₄ " (95.2)	4" (101.6)	2" (50.8)	7/8"-9	14481 (6568.6)
B3097-36	36" (900)	47 ³ / ₈ " (1203.2)	23 ⁵ / ₈ " (600.1)	4" (101.6)	3 ³ / ₄ " (95.2)	4" (101.6)	2" (50.8)	7/8"-9	15767 (7151.8)

Pipe Supports, Guides, Shields & Saddles

B3098 - Adjustable Pipe Support With U-Bolt (TOLCO Fig. 313)

Size Range: 2" (50mm) thru 12" (300mm) pipe

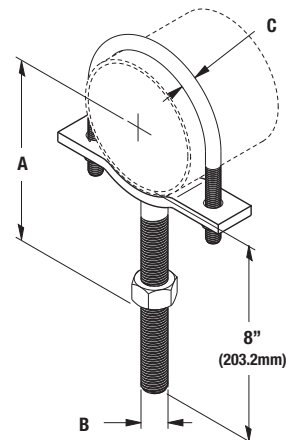
Material: Steel

Function: Designed to support horizontal pipe from floor stanchion where vertical adjustment is required. U-bolt and hex nuts are provided to hold pipe securely to saddle.

Maximum Temperature: 650°F (343°C)

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

Order By: Part number and finish



Part No.	Pipe Size		Max. Pipe O.D.		A		Bolt Size	C		Use With B3088	Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	B	in.	(mm)	Pipe Stand	Lbs.	(kg)
B3098-2	2"	(50)	2 ³ / ₄ "	(69.8)	6"	(152.4)	7/8"-9	3/8"	(9.5)	1"	210	(95.2)
B3098-2 ¹ / ₂	2 ¹ / ₂ "	(650)	3 ¹ / ₄ "	(82.5)	6 ¹ / ₂ "	(165.1)	7/8"-9	3/8"	(9.5)	1"	219	(99.3)
B3098-3	3"	(80)	3 ¹ / ₂ "	(88.9)	6 ³ / ₄ "	(171.4)	7/8"-9	1/2"	(12.7)	1"	240	(108.8)
B3098-3 ¹ / ₂	3 ¹ / ₂ "	(90)	4"	(101.6)	6 ³ / ₄ "	(171.4)	7/8"-9	1/2"	(12.7)	1"	240	(108.8)
B3098-4	4"	(100)	4 ⁷ / ₈ "	(123.8)	7 ¹ / ₂ "	(190.5)	1"-8	1/2"	(12.7)	1"	340	(154.2)
B3098-5	5"	(125)	5 ⁵ / ₈ "	(142.9)	7 ³ / ₄ "	(196.8)	1"-8	1/2"	(12.7)	1"	360	(163.3)
B3098-6	6"	(150)	7"	(177.8)	8 ³ / ₈ "	(212.7)	1 ¹ / ₄ "-7	5/8"	(15.9)	1 ¹ / ₄ "	580	(263.1)
B3098-8	8"	(200)	9 ¹ / ₈ "	(231.8)	9 ¹ / ₂ "	(241.2)	1 ¹ / ₄ "-7	5/8"	(15.9)	1 ¹ / ₄ "	640	(290.3)
B3098-10	10"	(250)	11 ¹ / ₈ "	(282.6)	10"	(254.0)	1 ¹ / ₄ "-7	3/4"	(19.0)	1 ¹ / ₄ "	1060	(480.8)
B3098-12	12"	(300)	13 ¹ / ₂ "	(342.9)	11 ¹ / ₄ "	(285.7)	1 ¹ / ₄ "-7	7/8"	(22.2)	1 ¹ / ₄ "	1060	(480.8)

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

Pipe Supports, Guides, Shields & Saddles

B3094 - Flange Support (TOLCO Fig. 314)

Size Range: 4" (100mm) thru 36" (900mm) pipe

Material: Steel

Function: Designed to support 125 lb. cast iron and 150 lb. forged steel flanged connections. (Consult factory for other flanged bolt patterns). To complete floor stanchion, use B3088 pipe stand.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 38 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 37.

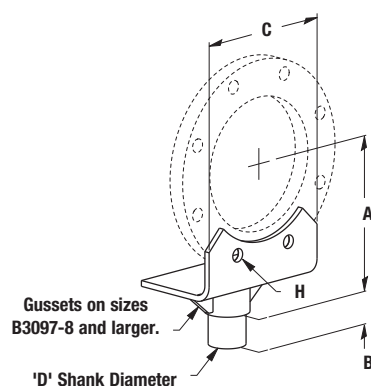
Maximum Temperature: 750°F (399°C)

Finish: Plain

Note: Available in Electro-Galvanized, and Hot Dip Galvanized finish or Stainless Steel materials.

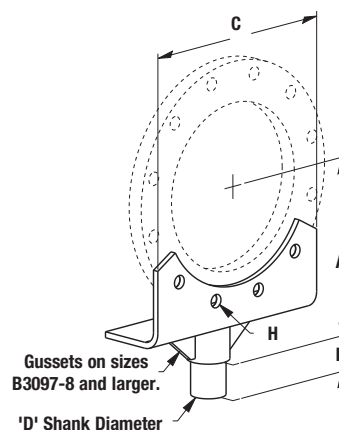
Order By: Part number and finish

Note: — For vertical adjustment use with Figure B3089 (Pipe Adjuster - page 128) and Figure B3088T (Threaded Pipe Stand - page 125).



* Shank will fit into nominal Schedule 40 pipe size 'E' of Base Stand Figure B3088 (not included).

Sizes 4" (100mm) thru 12" (300mm)



* Shank will fit into nominal Schedule 40 pipe size 'E' of Base Stand Figure B3088 (not included).

Sizes 14" (350mm) thru 36" (900mm)

Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E * in. (mm)	H Dia. in. (mm)	Approx. Wt./100 Lbs. (kg)
B3094-4	4" (100)	6 ⁷ / ₈ " (174.5)	2" (50.8)	6 ³ / ₈ " (161.9)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	3/4" (19.0)	707 (320.7)
B3094-5	5" (125)	7 ³ / ₈ " (187.3)	2" (50.8)	7 ¹ / ₁₆ " (179.4)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	7/8" (22.2)	775 (351.5)
B3094-6	6" (150)	7 ³ / ₈ " (187.3)	2" (50.8)	7 ³ / ₄ " (196.8)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	7/8" (22.2)	844 (382.8)
B3094-8	8" (200)	10 ¹ / ₈ " (257.2)	2" (50.8)	9 ⁹ / ₁₆ " (242.9)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	7/8" (22.2)	1429 (648.2)
B3094-10	10" (250)	11 ³ / ₈ " (288.8)	2" (50.8)	8" (203.2)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	1" (25.4)	1250 (567.0)
B3094-12	12" (300)	12 ⁷ / ₈ " (327.0)	3" (76.2)	9 ¹ / ₂ " (241.3)	2 ³ / ₈ " (60.3)	2 ¹ / ₂ " (63.5)	1" (25.4)	1446 (655.9)
B3094-14	14" (350)	15" (381.0)	3" (76.2)	18 ³ / ₁₆ " (462.0)	2 ⁷ / ₈ " (73.0)	3" (76.2)	1 ¹ / ₈ " (28.6)	3149 (1429.4)
B3094-16	16" (400)	16 ¹ / ₄ " (412.7)	3" (76.2)	16 ⁵ / ₈ " (422.3)	2 ⁷ / ₈ " (73.0)	3" (76.2)	1 ¹ / ₈ " (28.6)	3068 (1391.6)
B3094-18	18" (450)	18" (457.2)	4" (101.6)	17 ¹¹ / ₁₆ " (449.3)	3 ³ / ₄ " (95.2)	4" (101.6)	1 ¹ / ₄ " (31.7)	3339 (1514.6)
B3094-20	20" (500)	19 ¹ / ₄ " (488.9)	4" (101.6)	15 ³ / ₄ " (400.0)	3 ³ / ₄ " (95.2)	4" (101.6)	1 ¹ / ₄ " (31.7)	2994 (1358.1)
B3094-24	24" (600)	22 ¹ / ₂ " (571.5)	4" (101.6)	18 ³ / ₈ " (466.7)	3 ³ / ₄ " (95.2)	4" (101.6)	1 ³ / ₈ " (34.9)	4255 (1930.0)
B3094-30	30" (750)	25 ⁷ / ₈ " (657.2)	4" (101.6)	16 ³ / ₈ " (415.9)	3 ³ / ₄ " (95.2)	4" (101.6)	1 ³ / ₈ " (34.9)	5210 (2363.2)
B3094-36	36" (900)	29 ¹ / ₂ " (749.3)	4" (101.6)	17 ¹ / ₂ " (444.5)	3 ³ / ₄ " (95.2)	4" (101.6)	1 ⁵ / ₈ " (41.3)	5382 (2441.3)

Pipe Supports, Guides, Shields & Saddles

B3195 - I.P.S. Isolator (TOLCO Fig. 84)

B3195CT - Copper Tubing Isolator (TOLCO Fig. 83)

Size Range:

B3195 - 3/8" (10mm) thru 8" (200mm) pipe

B3195CT - 3/8" (10mm) thru 4" (100mm) pipe

Material: Pre-Galvanized steel and felt

Function: A non-conductive felt lining serves to dampen sound vibration and prevent transmission of sound to the building structure.

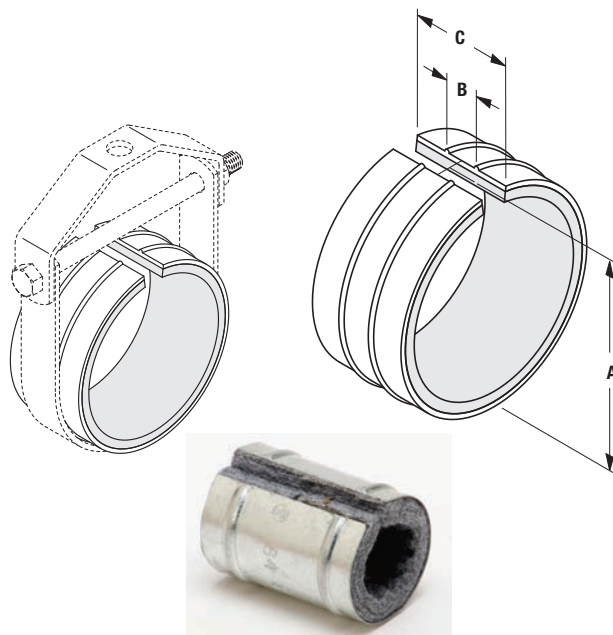
Finish: Pre-Galvanized

Standard Steel Pipe Hangers for use with Isolators:

B3100 clevis hanger, Fig. 2 band hanger, B3690

J-hanger and B2000 Series rigid or O.D. pipe clamps

Order By: Part number and finish



Supports, Guides,
Shields & Saddles

Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	Hanger Size in. (mm)	Strut Clamp	Approx. Wt./100 Lbs. (kg)
B3195-3/8	3/8" (10)	1 1/8" (28.6)	1 1/4" (31.7)	2 1/4" (57.1)	1" (25)	1" (25) Rigid	4 (1.8)
B3195-1/2	1/2" (15)	1 3/8" (34.9)	1 1/4" (31.7)	2 1/4" (57.1)	1" (25)	1" (25) Rigid	4 (1.8)
B3195-3/4	3/4" (20)	1 1/2" (38.1)	1 1/4" (31.7)	2 1/4" (57.1)	1 1/4" (32)	1 1/4" (32) O.D.	6 (2.7)
B3195-1	1" (25)	1 13/16" (46.0)	1 1/4" (31.7)	2 1/4" (57.1)	1 1/2" (40)	1 1/2" (38) O.D.	10 (4.5)
B3195-1 1/4	1 1/4" (32)	2 1/8" (54.0)	1 1/4" (31.7)	2 1/4" (57.1)	2" (50)	2" (51) O.D.	10 (4.5)
B3195-1 1/2	1 1/2" (40)	2 3/8" (60.3)	1 1/4" (31.7)	2 1/4" (57.1)	2" (50)	2" (50) Rigid	12 (5.4)
B3195-2	2" (50)	2 7/8" (73.0)	1 1/4" (31.7)	2 1/4" (57.1)	2 1/2" (65)	2 1/2" (65) Rigid	14 (6.3)
B3195-2 1/2	2 1/2" (65)	3 3/8" (85.7)	1 1/4" (31.7)	3" (76.2)	3" (80)	3" (76) O.D.	20 (9.1)
B3195-3	3" (80)	4" (101.6)	1 1/4" (31.7)	3" (76.2)	3 1/2" (90)	3 1/2" (90) Rigid	25 (11.3)
B3195-3 1/2	3 1/2" (90)	4 1/2" (114.3)	1 1/4" (31.7)	3" (76.2)	4" (100)	4" (100) Rigid	36 (16.3)
B3195-4	4" (100)	5 1/2" (139.7)	1 1/4" (31.7)	3 1/2" (88.9)	5" (125)	5" (125) Rigid	65 (29.5)
B3195-5	5" (125)	6 1/2" (165.1)	1 1/4" (31.7)	4" (101.6)	6" (150)	6" (150) Rigid	67 (30.4)
B3195-6	6" (150)	7 5/8" (193.7)	2 1/8" (54.0)	5 1/2" (139.7)	8" (200)	7 5/8" (193) O.D.	196 (88.9)
B3195-8	8" (200)	9 5/8" (244.5)	2 1/8" (54.0)	5 1/2" (139.7)	10" (250)	9 5/8" (244) O.D.	210 (95.2)

Part No.	Pipe Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	Hanger Size in. (mm)	Strut Clamp	Approx. Wt./100 Lbs. (kg)
B3195CT-3/8	3/8" (10)	1" (25.4)	1 1/4" (31.7)	2 1/4" (57.1)	3/4" (20)	1 1/8" (28) O.D.	4 (1.8)
B3195CT-1/2	1/2" (15)	1 1/8" (28.6)	1 1/4" (31.7)	2 1/4" (57.1)	3/4" (20)	1 1/8" (28) O.D.	4 (1.8)
B3195CT-3/4	3/4" (20)	1 3/8" (34.9)	1 1/4" (31.7)	2 1/4" (57.1)	1" (25)	1" (25) Rigid	4 (1.8)
B3195CT-1	1" (25)	1 5/8" (41.3)	1 1/4" (31.7)	2 1/4" (57.1)	1 1/4" (32)	1 1/2" (38) O.D.	6 (2.7)
B3195CT-1 1/4	1 1/4" (32)	1 7/8" (47.6)	1 1/4" (31.7)	2 1/4" (57.1)	1 1/2" (40)	1 3/4" (44) O.D.	10 (4.5)
B3195CT-1 1/2	1 1/2" (40)	2 1/8" (54.0)	1 1/4" (31.7)	2 1/4" (57.1)	2" (50)	2 1/8" (54) O.D.	10 (4.5)
B3195CT-2	2" (50)	2 5/8" (66.7)	1 1/4" (31.7)	2 1/4" (57.1)	2 1/2" (65)	2 5/8" (66) O.D.	12 (5.4)
B3195CT-2 1/2	2 1/2" (65)	3 1/8" (79.4)	1 1/4" (31.7)	2 1/4" (57.1)	3" (80)	3 1/8" (79) O.D.	13 (5.9)
B3195CT-3	3" (80)	3 5/8" (92.1)	1 1/4" (31.7)	2 1/4" (57.1)	3" (80)	3" (80) Rigid	15 (6.8)
B3195CT-3 1/2	3 1/2" (90)	4 1/8" (104.8)	1 1/4" (31.7)	2 1/4" (57.1)	3 1/2" (90)	3 1/2" (90) Rigid	28 (12.7)
B3195CT-4	4" (100)	5 1/8" (130.2)	1 1/4" (31.7)	3 1/2" (88.9)	5" (125)	5" (127) O.D.	44 (19.9)

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

Pipe Supports, Guides, Shields & Saddles

B3281 thru B3287 - Pipe Alignment Guide (TOLCO Fig. 420 thru Fig. 426)

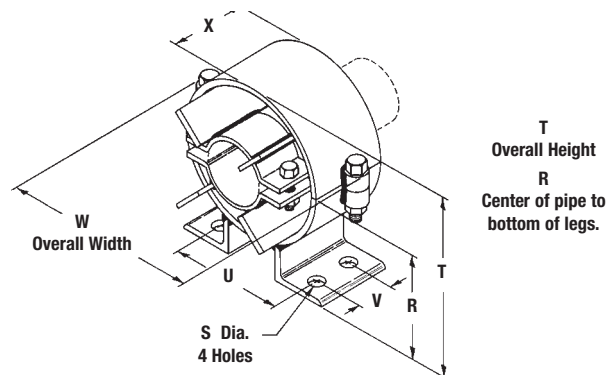
Size Range: For use with 1½" (40mm) thru 24" (600mm) pipe

Material: Steel

Finish: Black Primer

Function: Designed for use in directing thermal expansion of insulated or non-insulated pipe in the direction permitted by expansion joints or loops. The use of two or more guides on both sides of an expansion joint or loop is recommended. Pipe lines should be supported with hangers or rollers so that when properly installed, the guides will not be supporting any pipe loads. Maximum operating temperature should not exceed 750°F (399°C).

Order By: Part number and finish. For use with copper tubing, add CT suffix to the part number.



Body Size	R		S		T		U		V	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
001	3½"	(88.9)	5/8"	(15.9)	57/8"	(149.2)	41/8"	(104.8)	1¾"	(44.4)
002	4"	(101.6)	5/8"	(15.9)	6¾"	(171.4)	4¾"	(111.1)	1¾"	(44.4)
003	4¾"	(111.1)	5/8"	(15.9)	75/8"	(193.7)	51/8"	(130.2)	1¾"	(44.4)
004	5¼"	(133.3)	5/8"	(15.9)	9¼"	(234.9)	61/8"	(155.6)	1¾"	(44.4)
005	6¼"	(158.7)	5/8"	(15.9)	115/8"	(295.3)	7"	(177.8)	2¾"	(69.8)
006	7"	(177.8)	5/8"	(15.9)	13¾"	(339.7)	8¼"	(209.5)	2¾"	(69.8)
007	77/8"	(200.0)	¾"	(19.0)	151/8"	(384.2)	97/8"	(250.8)	4"	(101.6)
008	87/8"	(225.4)	¾"	(19.0)	17"	(431.8)	107/8"	(276.2)	4"	(101.6)
009	9¾"	(247.6)	¾"	(19.0)	18¾"	(476.2)	117/8"	(301.6)	4"	(101.6)
010	107/8"	(276.2)	¾"	(19.0)	21"	(533.4)	11¾"	(298.4)	6"	(152.4)
011	121/8"	(308.0)	7/8"	(22.2)	231/8"	(587.4)	14½"	(368.3)	6"	(152.4)
012	13"	(330.2)	7/8"	(22.2)	25"	(635.0)	15½"	(393.7)	6"	(152.4)
013	14¾"	(374.6)	11/8"	(28.6)	27¾"	(704.8)	171/8"	(435.0)	6"	(152.4)
014	16½"	(419.1)	11/8"	(28.6)	31½"	(800.1)	19¼"	(488.9)	6"	(152.4)

Body Size	W		X		Approx. Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	(kg)
001	61/8"	(155.6)	3"	(76.2)	700	(317.5)
002	71/8"	(181.0)	3"	(76.2)	800	(362.9)
003	81/8"	(206.4)	3"	(76.2)	900	(408.2)
004	101/8"	(257.2)	3"	(76.2)	1100	(498.9)
005	121/8"	(308.0)	4"	(101.6)	1700	(771.1)
006	141/8"	(358.8)	4"	(101.6)	2000	(907.2)
007	161/8"	(409.6)	6"	(152.4)	4000	(1814.4)
008	181/8"	(460.4)	6"	(152.4)	4800	(2177.3)
009	201/8"	(511.2)	6"	(152.4)	5400	(2449.4)
010	221/8"	(562.0)	8"	(203.2)	6100	(2766.9)
011	241/8"	(612.8)	8"	(203.2)	8900	(4037.0)
012	261/8"	(663.6)	8"	(203.2)	10200	(4626.7)
013	281/8"	(714.4)	8"	(203.2)	11000	(4989.6)
014	321/8"	(816.0)	8"	(203.2)	15000	(6804.0)

Note: CT sizes have lead shims between the steel clamp and the copper tubing.

Guides with greater allowable movement available, Contact B-Line Engineering for more information.

Pipe Supports, Guides, Shields & Saddles

B3281 thru B3287 - Pipe Alignment Guide (TOLCO Fig. 420 thru Fig. 426) (Continued)

Pipe Size		Insulation Thickness											
		1" (25.4mm)				1 1/2" (38.1mm)				2" (50.8mm)			
		Part No.	BS*	SAM**		Part No.	BS*	SAM**		Part No.	BS*	SAM**	
1/2"	(15)	B3281-1/2	001	4"	(101.6)	B3281-1/2	001	4"	(101.6)	B3283-1/2	002	4"	(101.6)
3/4"	(20)	B3281-3/4	001	4"	(101.6)	B3282-3/4	002	4"	(101.6)	B3283-3/4	003	4"	(101.6)
1"	(25)	B3281-1	001	4"	(101.6)	B3282-1	002	4"	(101.6)	B3283-1	003	4"	(101.6)
1 1/4"	(32)	B3281-1 1/4	001	4"	(101.6)	B3282-1 1/4	002	4"	(101.6)	B3283-1 1/4	003	4"	(101.6)
1 1/2"	(40)	B3281-1 1/2	002	4"	(101.6)	B3281-1 1/2	002	4"	(101.6)	B3283-1 1/2	003	4"	(101.6)
2"	(50)	B3281-2	002	4"	(101.6)	B3282-2	003	4"	(101.6)	B3283-2	004	4"	(101.6)
2 1/2"	(65)	B3281-2 1/2	003	4"	(101.6)	B3281-2 1/2	003	4"	(101.6)	B3283-2 1/2	004	4"	(101.6)
3"	(80)	B3281-3	003	4"	(101.6)	B3282-3	004	4"	(101.6)	B3283-3	004	4"	(101.6)
4"	(100)	B3281-4	004	4"	(101.6)	B3281-4	004	4"	(101.6)	B3283-4	005	4"	(101.6)
5"	(125)	B3281-5	005	4"	(101.6)	B3281-5	005	4"	(101.6)	B3281-5	005	4"	(101.6)
6"	(150)	B3281-6	005	4"	(101.6)	B3281-6	005	4"	(101.6)	B3283-6	006	4"	(101.6)
8"	(200)	B3281-8	006	4"	(101.6)	B3281-8	006	4"	(101.6)	B3283-8	007	6"	(152.4)
10"	(250)	B3281-10	008	6"	(152.4)	B3281-10	008	6"	(152.4)	B3281-10	008	6"	(152.4)
12"	(300)	B3281-12	009	6"	(152.4)	B3281-12	009	6"	(152.4)	B3281-12	009	6"	(152.4)
14"	(350)	B3281-14	010	6"	(152.4)	B3281-14	010	6"	(152.4)	B3281-14	010	6"	(152.4)
16"	(400)	B3281-16	011	8"	(203.2)	B3281-16	011	8"	(203.2)	B3281-16	011	8"	(203.2)
18"	(450)	B3281-18	012	8"	(203.2)	B3281-18	012	8"	(203.2)	B3281-18	012	8"	(203.2)
20"	(500)	B3281-20	013	8"	(203.2)	B3281-20	013	8"	(203.2)	B3281-20	013	8"	(203.2)
24"	(600)	B3281-24	014	8"	(203.2)	B3281-24	014	8"	(203.2)	B3281-24	014	8"	(203.2)

Supports, Guides,
Shields & Saddles

Nominal Pipe Size		Insulation Thickness											
		3" (76.2)				3 1/2" (88.9)				4" (101.6)			
		Part No.	BS*	SAM**		Part No.	BS*	SAM**		Part No.	BS*	SAM**	
1/2"	(15)	B3285-1/2	004	4"	(101.6)	B3285-1/2	004	4"	(101.6)	B3287-1/2	005	4"	(101.6)
3/4"	(20)	B3284-3/4	004	4"	(101.6)	B3286-3/4	005	4"	(101.6)	B3286-3/4	005	4"	(101.6)
1"	(25)	B3284-1	004	4"	(101.6)	B3286-1	005	4"	(101.6)	B3286-1	005	4"	(101.6)
1 1/4"	(32)	B3284-1 1/4	004	4"	(101.6)	B3286-1 1/4	005	4"	(101.6)	B3286-1 1/4	005	4"	(101.6)
1 1/2"	(40)	B3284-1 1/2	004	4"	(101.6)	B3286-1 1/2	005	4"	(101.6)	B3286-1 1/2	005	4"	(101.6)
2"	(50)	B3285-2	005	4"	(101.6)	B3285-2	005	4"	(101.6)	B3287-2	006	4"	(101.6)
2 1/2"	(65)	B3285-2 1/2	005	4"	(101.6)	B3285-2 1/2	005	4"	(101.6)	B3287-2 1/2	006	4"	(101.6)
3"	(80)	B3284-3	005	4"	(101.6)	B3286-3	006	4"	(101.6)	B3286-3	006	4"	(101.6)
4"	(100)	B3285-4	006	4"	(101.6)	B3286-4	006	4"	(101.6)	B3287-4	007	6"	(152.4)
5"	(125)	B3284-5	006	4"	(101.6)	B3286-5	007	6"	(152.4)	B3287-5	008	6"	(152.4)
6"	(150)	B3285-6	007	6"	(152.4)	B3286-6	008	6"	(152.4)	B3286-6	008	6"	(152.4)
8"	(200)	B3284-8	008	6"	(152.4)	B3286-8	009	6"	(152.4)	B3286-8	009	6"	(152.4)
10"	(250)	B3284-10	009	6"	(152.4)	B3286-10	010	6"	(152.4)	B3286-10	010	6"	(152.4)
12"	(300)	B3284-12	010	6"	(152.4)	B3286-12	011	6"	(152.4)	B3286-12	011	6"	(152.4)
14"	(350)	B3285-14	011	8"	(203.2)	B3285-14	011	8"	(203.2)	B3287-14	012	8"	(203.2)
16"	(400)	B3285-16	012	8"	(203.2)	B3285-16	012	8"	(203.2)	B3287-16	013	8"	(203.2)
18"	(450)	B3285-18	013	8"	(203.2)	B3285-18	013	8"	(203.2)	B3287-18	014	8"	(203.2)
20"	(500)	B3285-20	014	8"	(203.2)	B3285-20	014	8"	(203.2)	B3285-20	014	8"	(203.2)
24"	(600)	---	---	---	---	---	---	---	---	---	---	---	---

BS* = Body Size

SAM** = Standard Allowable Movement

Note: Use 1" (25.4mm) insulation thickness column when no insulation is present.

Installation: Attach outer housing of the first pipe guide to the structure a maximum of four pipe diameters from an expansion joint. The second pipe guide should be located a maximum of 14 pipe diameters from the first pipe guide. The spider pipe clamp should be offset at a minimum of half the distance in the opposite direction of the axial expansion. See chart for Standard Allowable Movement (SAM).

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

Pipe Supports, Guides, Shields & Saddles

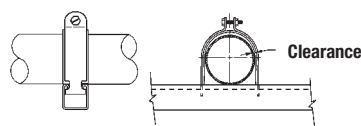
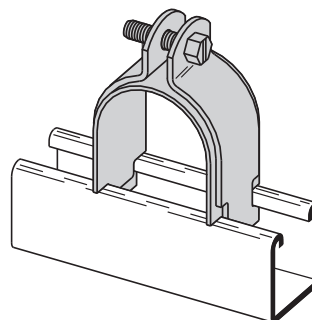
B2417 - Strut Mounted Pipe Guide

Material: Steel

Finish: Electro-Galvanized

Function: Designed as a guide to permit longitudinal movement of pipe.

Order By: Part number and finish.
(Includes guide and pipe clamp).



Part No.	Pipe Size		Min. Radial Clearance		Includes	Approx. Wt./100	
	in.	(mm)	in.	(mm)		Lbs.	(kg)
B2417-1/2	1/2"	(15)	1/16"	(1.6)	B2009	22	(10.0)
B2417-3/4	3/4"	(20)	1/16"	(1.6)	B2010	25	(11.3)
B2417-1	1"	(25)	3/32"	(2.3)	B2034	30	(13.6)
B2417-1 1/4	1 1/4"	(32)	3/32"	(2.3)	B2037	47	(21.8)
B2417-1 1/2	1 1/2"	(40)	3/32"	(2.3)	B2039	51	(23.1)
B2417-2	2"	(50)	1/8"	(3.2)	B2043	62	(28.1)
B2417-2 1/2	2 1/2"	(65)	1/8"	(3.2)	B2047	69	(31.3)
B2417-3	3"	(80)	5/32"	(3.9)	B2016	108	(49.0)
B2417-3 1/2	3 1/2"	(90)	5/32"	(3.9)	B2017	118	(53.5)
B2417-4	4"	(100)	5/32"	(3.9)	B2018	128	(58.0)

Note: Strut Mounted Pipe Guides are available for copper tubing: B2417CT-Size

B3147A & B3147B - Pipe Anchor (TOLCO Fig. 32) (dimensional charts on following page)

Size Range: For use with 1/2" (15mm) thru 24" (600mm) pipe

Material: Steel

Function: Recommended for anchoring pipe to structure.

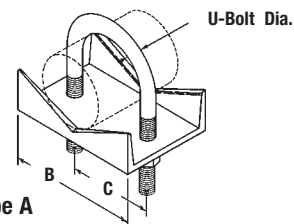
Finish: Plain

Note: 1/2" (15mm) thru 4" (100mm), use U-bolt to fasten chair to support; 5" (125mm) thru 24" (600mm) U-bolt attaches directly to support structure.

Holes are provided in chair for fastening to support if required.

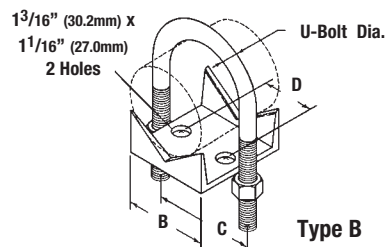
Available in Electro-Galvanized and Hot Dip Galvanized finish or Stainless Steel materials.

Order By: Part number and pipe size



Type A

A
Center of pipe to
bottom of base
plate.



Type B



Pipe Supports, Guides, Shields & Saddles

B3147A & B3147B - Pipe Anchor (TOLCO Fig. 32) cont.



Type A



Type B

Supports, Guides,
Shields & Saddles

Part No.	Pipe Size		U-Bolt Dia.		A		B		C		D		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3147A-1/2	1/2"	(15)	1/4"	(6.3)	15/16"	(23.8)	23/16"	(55.5)	13/16"	(30.2)	--	(--)	80	(36.3)
B3147A-3/4	3/4"	(20)	1/4"	(6.3)	11/16"	(27.0)	23/8"	(60.3)	13/8"	(34.9)	--	(--)	88	(39.9)
B3147A-1	1"	(25)	1/4"	(6.3)	13/16"	(30.2)	25/8"	(66.7)	15/8"	(41.3)	--	(--)	96	(43.5)
B3147A-1 1/4	1 1/4"	(32)	3/8"	(9.4)	13/8"	(34.9)	27/8"	(73.0)	2 1/16"	(52.4)	--	(--)	107	(48.5)
B3147A-1 1/2	1 1/2"	(40)	3/8"	(9.4)	19/16"	(39.7)	3 1/4"	(82.5)	23/8"	(60.3)	--	(--)	118	(53.5)
B3147A-2	2"	(50)	3/8"	(9.4)	13/4"	(44.4)	35/8"	(92.1)	2 13/16"	(71.4)	--	(--)	132	(59.9)
B3147A-2 1/2	2 1/2"	(65)	1/2"	(12.7)	2"	(50.8)	4 15/16"	(125.4)	37/16"	(87.3)	--	(--)	175	(79.4)
B3147A-3	3"	(80)	1/2"	(12.7)	23/8"	(60.3)	5 9/16"	(141.3)	4 1/16"	(103.2)	--	(--)	215	(97.5)
B3147A-3 1/2	3 1/2"	(90)	1/2"	(12.7)	23/8"	(60.3)	6 1/16"	(154.0)	4 9/16"	(115.9)	--	(--)	240	(108.8)
B3147A-4	4"	(100)	1/2"	(12.7)	27/8"	(73.0)	6 9/16"	(166.7)	5 1/16"	(128.6)	--	(--)	265	(120.2)
B3147B-5	5"	(125)	1/2"	(12.7)	37/16"	(87.3)	4"	(101.6)	6 5/32"	(156.3)	2 1/4"	(57.1)	290	(131.5)
B3147B-6	6"	(150)	5/8"	(15.9)	4"	(101.6)	5"	(127.0)	7 3/8"	(187.3)	3"	(76.2)	315	(142.9)
B3147B-8	8"	(200)	5/8"	(15.9)	5 1/4"	(133.3)	7"	(177.9)	9 3/8"	(138.0)	5 1/2"	(139.7)	885	(401.4)
B3147B-10	10"	(250)	3/4"	(19.0)	6 7/16"	(164.1)	8"	(203.2)	11 5/8"	(295.2)	5 1/2"	(139.7)	1050	(476.3)
B3147B-12	12"	(300)	7/8"	(22.2)	7 1/2"	(190.5)	9"	(228.6)	13 3/4"	(349.2)	6"	(152.4)	1210	(548.8)
B3147B-14	14"	(350)	7/8"	(22.2)	8 3/16"	(208.0)	10"	(254.0)	15"	(381.0)	7"	(177.9)	1480	(671.3)
B3147B-16	16"	(400)	7/8"	(22.2)	9 1/4"	(234.9)	10"	(254.0)	17"	(431.8)	7"	(177.9)	1735	(787.0)
B3147B-18	18"	(450)	1"	(25.4)	10 3/8"	(263.5)	11"	(279.4)	19 1/8"	(485.8)	7"	(177.9)	2011	(912.2)
B3147B-20	20"	(500)	1"	(25.4)	11 3/8"	(288.9)	12"	(304.8)	21 1/8"	(536.6)	7"	(177.9)	2332	(1057.8)
B3147B-24	24"	(600)	1"	(25.4)	13 5/8"	(346.1)	12"	(304.8)	25 1/8"	(638.2)	8"	(203.2)	2550	(1156.7)

Type A

Type B

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

Pipe Supports, Guides, Shields & Saddles

B3256 Hold-Down Anchor Clamp (TOLCO Fig. 405)

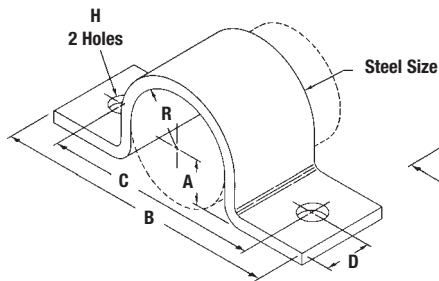
Size Range: 2" (50mm) thru 30" (750mm) pipe

Material: Steel

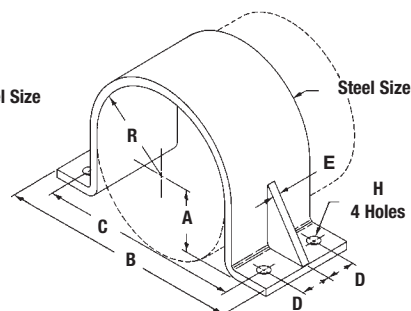
Function: Designed to prevent longitudinal or lateral movement of pipe where pipe is anchored to concrete piers or other supporting structures.

Finish: Plain or Electro-Galvanized

Order By: Part number and finish.



B3256-2 thru B3256-8



B3256-10 thru B3256-30

Part No.	Pipe Size		A		B		C		D		E	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3256-2	2"	(50)	15/16"	(23.8)	8 1/8"	(206.4)	5 7/8"	(149.2)	1 1/2"	(38.1)	-	-
B3256-2 1/2	2 1/2"	(65)	1 3/16"	(30.2)	8 5/8"	(219.1)	6 3/8"	(161.9)	1 1/2"	(38.1)	-	-
B3256-3	3"	(75)	1 1/2"	(38.1)	9 1/4"	(234.9)	7"	(177.8)	1 1/2"	(38.1)	-	-
B3256-3 1/2	3 1/2"	(90)	1 3/4"	(44.4)	9 3/4"	(247.6)	7 1/2"	(190.5)	1 1/2"	(38.1)	-	-
B3256-4	4"	(100)	2"	(50.8)	10 1/4"	(260.3)	8"	(203.2)	1 1/2"	(38.1)	-	-
B3256-5	5"	(125)	2 9/16"	(65.1)	11 5/16"	(287.3)	9 1/16"	(230.2)	1 1/2"	(38.1)	-	-
B3256-6	6"	(150)	3 1/16"	(77.8)	13 9/16"	(346.1)	10 5/8"	(269.9)	3"	(76.2)	-	-
B3256-8	8"	(200)	4 1/16"	(103.2)	15 3/4"	(396.9)	12 5/8"	(320.7)	3"	(76.2)	-	-
B3256-10	10"	(250)	5 1/8"	(130.2)	18 3/4"	(476.2)	15 1/4"	(387.3)	2 1/2"	(63.5)	1/2"	(12.7)
B3256-12	12"	(300)	6 1/8"	(155.6)	20 3/4"	(527.0)	17 1/4"	(438.1)	2 1/2"	(63.5)	1/2"	(12.7)
B3256-14	14"	(350)	6 3/4"	(171.4)	22"	(558.8)	18 1/2"	(469.9)	3"	(76.2)	1/2"	(12.7)
B3256-16	16"	(400)	7 3/4"	(196.8)	24"	(609.6)	20 1/2"	(520.7)	3"	(76.2)	1/2"	(12.7)
B3256-18	18"	(450)	8 3/4"	(222.2)	26"	(660.4)	22 1/2"	(571.2)	3 1/2"	(88.9)	1/2"	(12.7)
B3256-20	20"	(500)	9 3/4"	(247.6)	28"	(711.2)	24 1/2"	(622.3)	3 1/2"	(88.9)	1/2"	(12.7)
B3256-24	24"	(600)	11 3/4"	(298.4)	32"	(812.8)	28 1/2"	(723.9)	3 1/2"	(88.9)	1/2"	(12.7)
B3256-30	30"	(750)	14 3/4"	(374.6)	38"	(965.2)	34 1/2"	(876.3)	3 1/2"	(88.9)	1/2"	(12.7)

Part No.	H		R		Steel Size		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3256-2	7/8"	(22.2)	1 3/16"	(30.2)	3/8" x 3"	(9.5 x 76.2)	342	(155.1)
B3256-2 1/2	7/8"	(22.2)	1 7/16"	(36.5)	3/8" x 3"	(9.5 x 76.2)	386	(175.1)
B3256-3	7/8"	(22.2)	1 3/4"	(44.4)	3/8" x 3"	(9.5 x 76.2)	434	(196.8)
B3256-3 1/2	7/8"	(22.2)	2"	(50.8)	3/8" x 3"	(9.5 x 76.2)	478	(216.8)
B3256-4	7/8"	(22.2)	2 1/4"	(57.1)	3/8" x 3"	(9.5 x 76.2)	518	(234.9)
B3256-5	7/8"	(22.2)	2 13/16"	(71.4)	3/8" x 3"	(9.5 x 76.2)	610	(276.7)
B3256-6	1"	(25.4)	3 5/16"	(84.1)	1/2" x 6"	(12.7 x 152.4)	1961	(889.5)
B3256-8	1"	(25.4)	4 5/16"	(109.5)	1/2" x 6"	(12.7 x 152.4)	2397	(1087.3)
B3256-10	1 1/8"	(28.6)	5 3/8"	(136.5)	1/2" x 8"	(12.7 x 203.2)	4155	(1884.7)
B3256-12	1 1/8"	(28.6)	6 3/8"	(161.9)	1/2" x 8"	(12.7 x 203.2)	4789	(2172.3)
B3256-14	1 1/8"	(28.6)	7"	(177.8)	1/2" x 10"	(12.7 x 254.0)	6421	(2912.5)
B3256-16	1 1/8"	(28.6)	8"	(203.2)	1/2" x 10"	(12.7 x 254.0)	7210	(3270.4)
B3256-18	1 1/8"	(28.6)	9"	(228.6)	1/2" x 12"	(12.7 x 304.8)	9509	(4313.3)
B3256-20	1 1/8"	(28.6)	10"	(254.0)	1/2" x 12"	(12.7 x 304.8)	10434	(4732.8)
B3256-24	1 1/8"	(28.6)	12"	(304.8)	1/2" x 12"	(12.7 x 304.8)	12295	(5577.0)
B3256-30	1 1/8"	(28.6)	15"	(381.0)	1/2" x 12"	(12.7 x 304.8)	15082	(6841.2)



Pipe Supports, Guides, Shields & Saddles

B3257 - Base Plate (TOLCO Fig. 406)

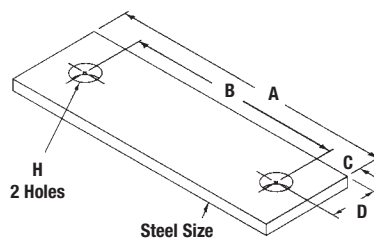
Size Range: 2" (50mm) thru 30" (750mm) pipe

Material: Steel

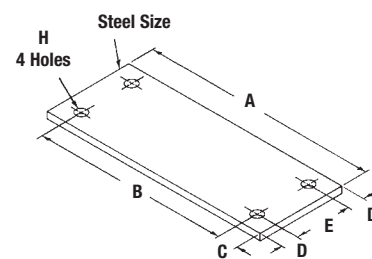
Function: Designed as a base plate for B3256 pipe anchor.

Finish: Plain or Electro-Galvanized

Order By: Part part number and finish.



B3257-2 thru B3257-8



B3257-10 thru B3257-30

Part No.	Pipe Size		A		B		C		D	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3257-2	2"	(50)	8 1/8"	(206.4)	5 7/8"	(149.2)	1 1/8"	(28.6)	1 1/2"	(38.1)
B3257-2 1/2	2 1/2"	(65)	8 5/8"	(219.1)	6 3/8"	(161.9)	1 1/8"	(28.6)	1 1/2"	(38.1)
B3257-3	3"	(80)	9 1/4"	(234.9)	7"	(177.8)	1 1/8"	(28.6)	1 1/2"	(38.1)
B3257-3 1/2	3 1/2"	(90)	9 3/4"	(247.6)	7 1/2"	(190.5)	1 1/8"	(28.6)	1 1/2"	(38.1)
B3257-4	4"	(100)	10 1/4"	(260.3)	8"	(203.2)	1 1/8"	(28.6)	1 1/2"	(38.1)
B3257-5	5"	(125)	11 5/16"	(287.3)	9 1/16"	(230.2)	1 1/8"	(28.6)	1 1/2"	(38.1)
B3257-6	6"	(150)	13 5/8"	(346.1)	10 5/8"	(269.9)	1 1/2"	(38.1)	3"	(76.2)
B3257-8	8"	(200)	15 5/8"	(396.9)	12 5/8"	(320.7)	1 1/2"	(38.1)	3"	(76.2)
B3257-10	10"	(250)	18 3/4"	(476.2)	15 1/4"	(387.3)	1 3/4"	(44.4)	1 1/2"	(38.1)
B3257-12	12"	(300)	20 3/4"	(527.0)	17 1/4"	(438.1)	1 3/4"	(44.4)	1 1/2"	(38.1)
B3257-14	14"	(350)	22"	(558.8)	18 1/2"	(469.9)	1 3/4"	(44.4)	2"	(50.8)
B3257-16	16"	(400)	24"	(609.6)	20 1/2"	(520.7)	1 3/4"	(44.4)	2"	(50.8)
B3257-18	18"	(450)	26"	(660.4)	22 1/2"	(571.5)	1 3/4"	(44.4)	2 1/2"	(63.5)
B3257-20	20"	(500)	28"	(711.2)	24 1/2"	(622.3)	1 3/4"	(44.4)	2 1/2"	(63.5)
B3257-24	24"	(600)	32"	(812.8)	28 1/2"	(723.9)	1 3/4"	(44.4)	2 1/2"	(63.5)
B3257-30	30"	(750)	38"	(965.2)	34 1/2"	(876.3)	1 3/4"	(44.4)	2 1/2"	(63.5)

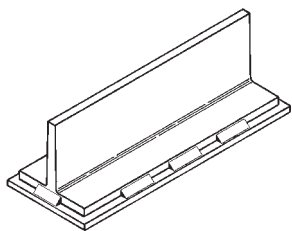


Part No.	E		H		Steel Size		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3257-2	-	-	7/8"	(22.2)	3/8" x 3"	(9.5 x 76.2)	246	(111.6)
B3257-2 1/2	-	-	7/8"	(22.2)	3/8" x 3"	(9.5 x 76.2)	262	(118.8)
B3257-3	-	-	7/8"	(22.2)	3/8" x 3"	(9.5 x 76.2)	282	(127.9)
B3257-3 1/2	-	-	7/8"	(22.2)	3/8" x 3"	(9.5 x 76.2)	298	(135.2)
B3257-4	-	-	7/8"	(22.2)	3/8" x 3"	(9.5 x 76.2)	314	(142.4)
B3257-5	-	-	7/8"	(22.2)	3/8" x 3"	(9.5 x 76.2)	348	(157.8)
B3257-6	-	-	1"	(25.4)	1/2" x 6"	(12.7 x 152.4)	1137	(515.7)
B3257-8	-	-	1"	(25.4)	1/2" x 6"	(12.7 x 152.4)	1307	(592.8)
B3257-10	5"	(127.0)	1 1/8"	(28.6)	1/2" x 8"	(12.7 x 203.2)	2071	(939.4)
B3257-12	5"	(127.0)	1 1/8"	(28.6)	1/2" x 8"	(12.7 x 203.2)	2298	(1042.4)
B3257-14	6"	(152.4)	1 1/8"	(28.6)	1/2" x 8"	(12.7 x 254.0)	3064	(1389.8)
B3257-16	6"	(152.4)	1 1/8"	(28.6)	1/2" x 8"	(12.7 x 254.0)	3347	(1518.2)
B3257-18	7"	(177.8)	1 1/8"	(28.6)	1/2" x 12"	(12.7 x 304.8)	4368	(1981.3)
B3257-20	7"	(177.8)	1 1/8"	(28.6)	1/2" x 12"	(12.7 x 304.8)	4709	(2136.0)
B3257-24	7"	(177.8)	1 1/8"	(28.6)	1/2" x 12"	(12.7 x 304.8)	5389	(2444.4)
B3257-30	7"	(177.8)	1 1/8"	(28.6)	1/2" x 12"	(12.7 x 304.8)	6410	(2907.6)

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

Pipe Supports, Guides, Shields & Saddles

B3891 - B3897 Pipe Slide Assembly Series (TOLCO Fig. 424 thru Fig. 431)



Material: Tee - Steel;
Facing Plate - Stainless Steel Type 304;
Base - Steel with 3/32" (2.4mm) thick Teflon®† slide pads.

Finish: Black paint.

Service: Designed to support pipe where horizontal movement from expansion and contraction is present. Fits up to 3" (76.2mm) insulation thickness.

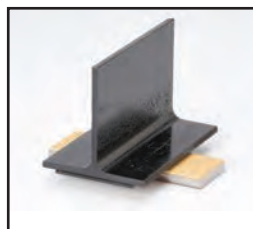
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 35.

Operating Temperature Rating:
400°F (204°C) maximum

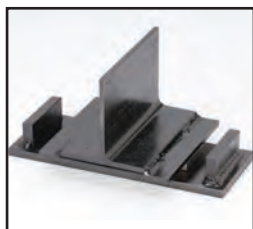
Loading: Capable of supporting constant loads up to 2000 Psi at 70°F (21°C).

† Mark shown in this document is the property of its respective owner.

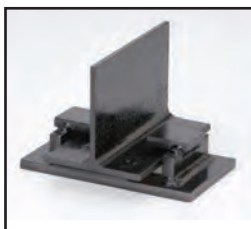
B3891 - 10 - CL		
Base Style	Travel	Options
1	04" (101) (except B3897)	Standard Slide = Blank
2	10" (254) (except B3897)	W/ End Plates = EP - Pipe Size
3	2 1/2" (63) (B3897 only)	W/ B3140 Clamps = CL - Pipe Size
4		
5		
6		
7		



B3891



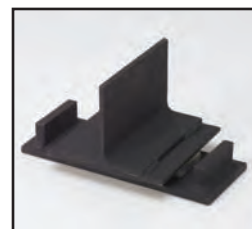
B3892



B3893



B3894



B3895



B3896



B3897

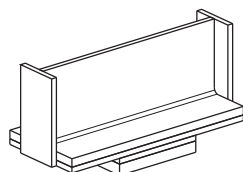
Notes:

B3891, B3892 and B3893 are designed for longitudinal movement only.

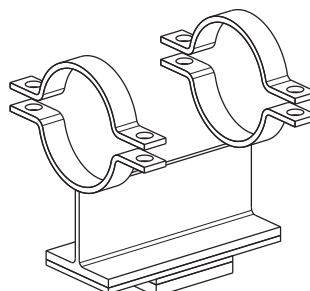
B3894, B3895 and B3896 are designed for longitudinal and limited transverse movement.

B3897 is designed for up to 5 inches (127mm) of horizontal movement in any direction, depending on the installed position.

Options:



End Plates



B3140 Clamps

Pipe Supports, Guides, Shields & Saddles

B3891 - B3897 - Pipe Slide Assembly Series (TOLCO Fig. 424 thru Fig. 431)

Pipe Size	Travel		Part No.	Height H		Length L		Depth B		Diameter D	
	In.	(mm)		In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)
1" to 24" (25 to 600)	2 1/2"	(63.5)	B3897	5 5/16"	(134.9)	9 1/2"	(241.3)	5"	(127.0)	4"	(101.6)
	4"	(127.0)	B3891	4 5/8"	(117.5)	6"	(152.4)	2"	(50.8)	N/A	N/A
			B3892	5 1/8"	(130.2)	6"	(152.4)	4"	(101.6)	N/A	N/A
			B3893	5 1/8"	(130.2)	6"	(152.4)	4"	(101.6)	N/A	N/A
			B3894	4 5/8"	(117.5)	6"	(152.4)	2"	(50.8)	N/A	N/A
			B3895	5 1/8"	(130.2)	6"	(152.4)	4"	(101.6)	N/A	N/A
			B3896	5 1/8"	(130.2)	6"	(152.4)	4"	(101.6)	N/A	N/A
	10"	(254.0)	B3891	4 5/8"	(117.5)	12"	(304.8)	2"	(50.8)	N/A	N/A
			B3892	5 1/8"	(130.2)	12"	(304.8)	4"	(101.6)	N/A	N/A
			B3893	5 1/8"	(130.2)	12"	(304.8)	4"	(101.6)	N/A	N/A
			B3894	4 5/8"	(117.5)	12"	(304.8)	2"	(50.8)	N/A	N/A
			B3895	5 1/8"	(130.2)	12"	(304.8)	4"	(101.6)	N/A	N/A
			B3896	5 1/8"	(130.2)	12"	(304.8)	4"	(101.6)	N/A	N/A

Pipe Size	Travel		Part No.	Width P		Width W		Max Recommended Load	
	In.	mm		In.	mm	In.	mm	Lbs.	kN
1" to 24" (25 to 600)	2 1/2"	(63.5)	B3897	N/A	N/A	9 1/2"	(241.3)	16000	(71.2)
	4"	(127.0)	B3891	4"	(101.6)	N/A	N/A	12000	(53.4)
			B3892	4"	(101.6)	7"	(177.8)	12000	(53.4)
			B3893	4"	(101.6)	7"	(177.8)	12000	(53.4)
			B3894	N/A	N/A	6"	(152.4)	12000	(53.4)
			B3895	6"	(152.4)	10"	(254.0)	24000	(106.8)
			B3896	6"	(152.4)	10"	(254.0)	24000	(106.8)
	10"	(254.0)	B3891	4"	(101.6)	N/A	N/A	12000	(53.4)
			B3892	4"	(101.6)	7"	(177.8)	12000	(53.4)
			B3893	4"	(101.6)	7"	(177.8)	12000	(53.4)
			B3894	N/A	N/A	6"	(152.4)	12000	(53.4)
			B3895	6"	(152.4)	10"	(254.0)	24000	(106.8)
			B3896	6"	(152.4)	10"	(254.0)	24000	(106.8)

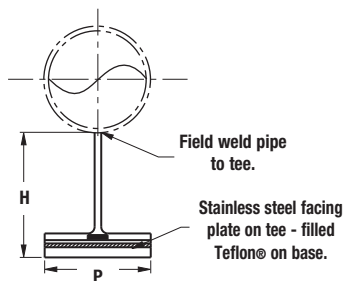
*Based on Teflon® † of 500 psi.

† Mark shown in this document is the property of its respective owner.

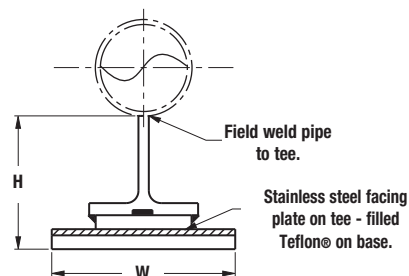
All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

Pipe Supports, Guides, Shields & Saddles

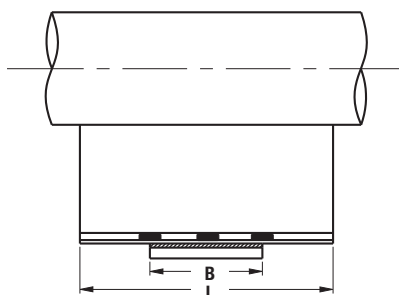
B3891 - B3897 - Pipe Slide Assembly Series (TOLCO Fig. 424 thru Fig. 431)



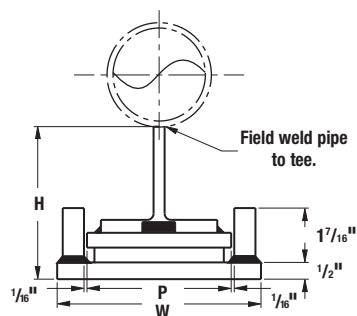
B3891 Front View



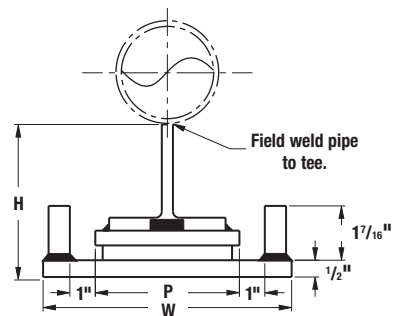
B3894 Front View



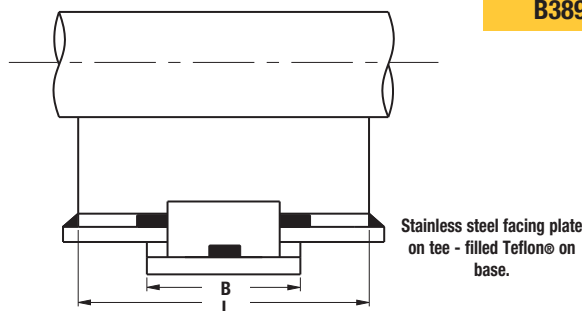
B3891 & B3894 Side View



B3892 Front View



B3895 Front View

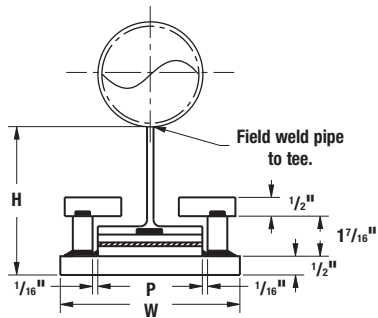


B3892 & B3895 Side View

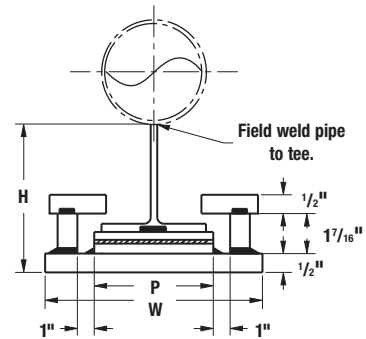
Pipe Supports, Guides, Shields & Saddles

B3891 - B3897 - Pipe Slide Assembly Series (TOLCO Fig. 424 thru Fig. 431)

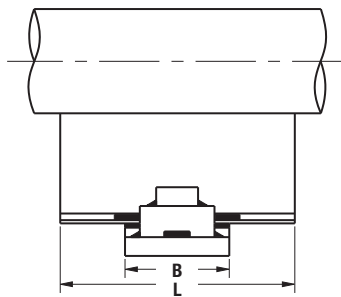
Supports, Guides,
Shields & Saddles



B3893 Front View

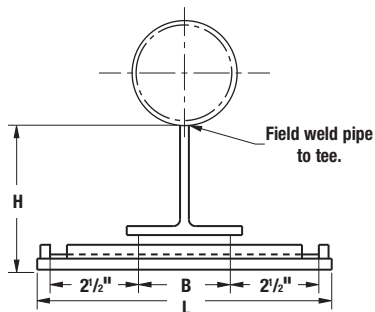


B3896 Front View



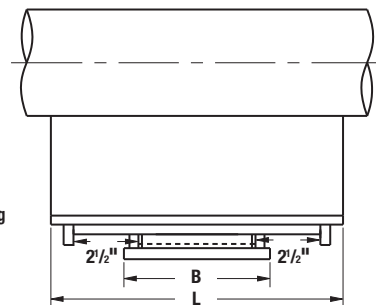
B3893 & B3896 Side View

Stainless steel facing
plate on tee - filled
Teflon® on base.



B3897 Front View

Stainless steel facing
plate on tee - filled
Teflon® on disc.



B3897 Side View

† Mark shown in this document is the property of its respective owner.

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

Pipe Supports, Guides, Shields & Saddles

B3991 - B3993B

Pipe Slide Assembly Series

(TOLCO Fig. 424 thru Fig. 431)

Material: Tee & H Slides - Steel with Heat Cured PTFE modified coating at slide plate.

Base - Steel with $\frac{3}{32}$ " (2.4mm) thick Teflon®† slide pads.

Finish: Black paint.

Service: Designed to support pipe where horizontal movement from expansion and contraction is present.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 35.

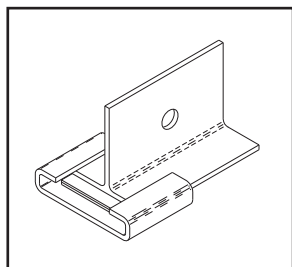
Operating Temperature Rating:

400°F (204°C) maximum at base

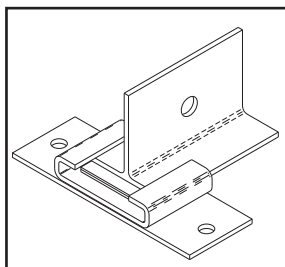
Loading: Capable of supporting constant loads up to 2000 Psi at 70°F (21°C)

† Mark shown in this document is the property of its respective owner.

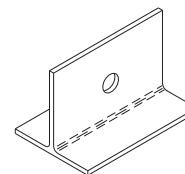
B3993 - 5 - 04 - CL			
Base Style	Pipe Size	Travel	Options
3	5 = 1" (25) - 8" (200)	04 = 4" (100)	Standard Slide = Blank
3B	10 = 10" (250) - 24" (600)	10 = 10" (250)	W/ End Plates = EP - Pipe Size
			W/ B3140 Clamps = CL - Pipe Size



B3993-5

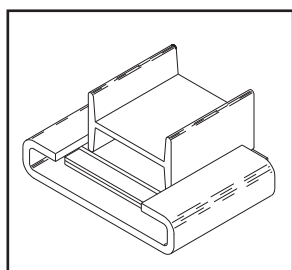


B3993B-5

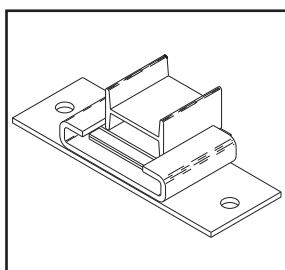


T-Slide

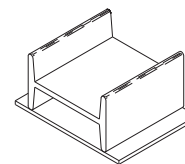
B3991-5



B3993-10



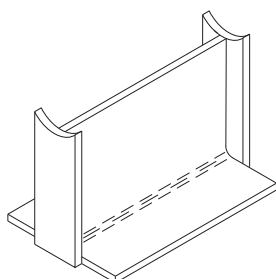
B3993B-10



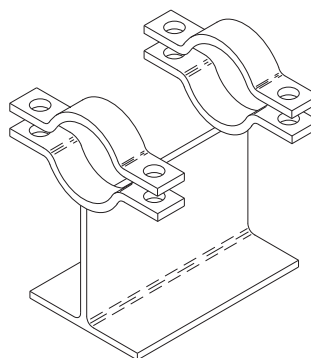
H-Slide

B3991-10

Options:



EP (standard slide with end plates)



CL (standard slide with B3140 clamps)

Pipe Supports, Guides, Shields & Saddles

B3991 - B3993B - Pipe Slide Assembly Series (TOLCO Fig. 424 thru Fig. 431)

Pipe Size	Travel		Part No.	Height H		Length L		Depth B		Width C	
	In.	(mm)		In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)
1" to 24" (25 to 600)	4"	(101.6)	B3991-5	4 ⁷ / ₁₆ "	(112.7)	6"	(152.4)	3"	(76.2)	8 ¹ / ₂ "	(215.9)
			B3993-5	4 ⁷ / ₁₆ "	(112.7)	6"	(152.4)	3"	(76.2)	N/A	N/A
			B3993B-5	4 ¹¹ / ₁₆ "	(119.1)	6"	(152.4)	3"	(76.2)	8 ¹ / ₂ "	(215.9)
			B3991-10	4 ⁷ / ₈ "	(123.8)	6"	(152.4)	4"	(101.6)	14 ¹ / ₂ "	(368.3)
			B3993-10	4 ⁷ / ₈ "	(123.8)	6"	(152.4)	4"	(101.6)	N/A	N/A
			B3993B-10	5 ¹ / ₈ "	(130.2)	6"	(152.4)	4"	(101.6)	14 ¹ / ₂ "	(368.3)
	10"	(254.0)	B3991-5	4 ⁷ / ₁₆ "	(112.7)	12"	(304.8)	3"	(76.2)	8 ¹ / ₂ "	(215.9)
			B3993-5	4 ⁷ / ₁₆ "	(112.7)	12"	(304.8)	3"	(76.2)	N/A	N/A
			B3993B-5	4 ¹¹ / ₁₆ "	(119.1)	12"	(304.8)	3"	(76.2)	8 ¹ / ₂ "	(215.9)
			B3991-10	4 ⁷ / ₈ "	(123.8)	12"	(304.8)	4"	(101.6)	14 ¹ / ₂ "	(368.3)
			B3993-10	4 ⁷ / ₈ "	(123.8)	12"	(304.8)	4"	(101.6)	N/A	N/A
			B3993B-10	5 ¹ / ₈ "	(130.2)	12"	(304.8)	4"	(101.6)	14 ¹ / ₂ "	(368.3)

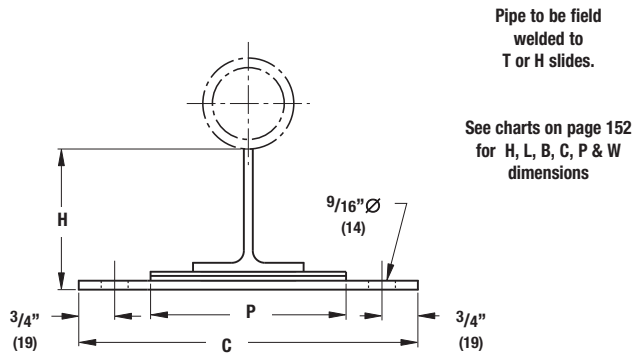
Pipe Size	Travel		Part No.	Width P		Width W		Max Recommended Load	
	In.	(mm)		In.	(mm)	In.	(mm)	Lbs.	(kN)
1" to 24" (25 to 600)	4"	(101.6)	B3991-5	6"	(152.4)	N/A	N/A	16000	(71.2)
			B3993-5	2"	(50.8)	4 ¹ / ₂ "	(114.3)	12000	(53.4)
			B3993B-5	2"	(50.8)	4 ¹ / ₂ "	(114.3)	12000	(53.4)
			B3991-10	12"	(304.8)	N/A	N/A	32000	(142.3)
			B3993-10	6"	(152.4)	8 ¹¹ / ₁₆ "	(220.7)	24000	(106.8)
			B3993B-10	6"	(152.4)	8 ¹¹ / ₁₆ "	(220.7)	24000	(106.8)
	10"	(254.0)	B3991-5	6"	(152.4)	N/A	N/A	16000	(71.2)
			B3993-5	2"	(50.8)	4 ¹ / ₂ "	(114.3)	12000	(53.4)
			B3993B-5	2"	(50.8)	4 ¹ / ₂ "	(114.3)	12000	(53.4)
			B3991-10	12"	(304.8)	N/A	N/A	32000	(142.3)
			B3993-10	6"	(152.4)	8 ¹¹ / ₁₆ "	(220.7)	24000	(106.8)
			B3993B-10	6"	(152.4)	8 ¹¹ / ₁₆ "	(220.7)	24000	(106.8)

*Based on Teflon® † of 2000 psi.

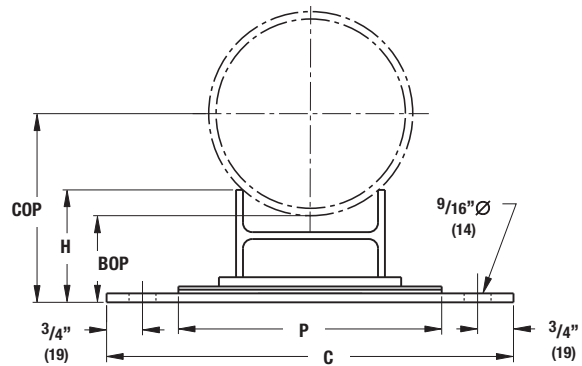
† Mark shown in this document is the property of its respective owner.

Pipe Supports, Guides, Shields & Saddles

B3991 - Pipe Slide Assembly Series dimensional drawings (TOLCO Fig. 424 thru Fig. 431)

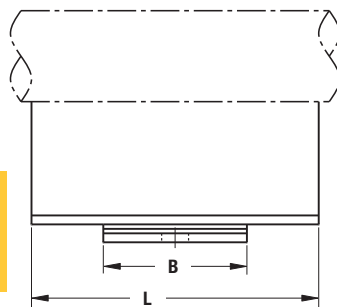


B3991-5 Front View



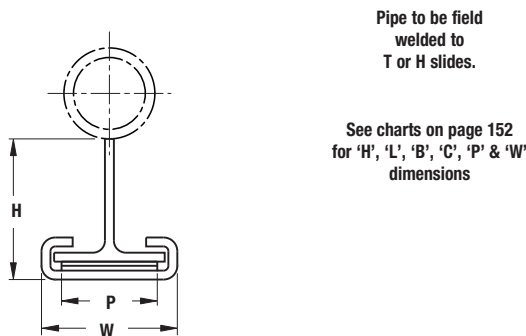
B3991-10 Front View

**B3991-5 (shown)
& B3991-10
Side View**

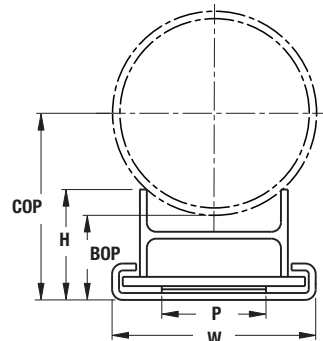


Pipe In.	Size (mm)	'BOP' In.	(mm)	'COP' In.	(mm)
10"	(250)	4 ¹ / ₈ "	(104.8)	9 ¹ / ₂ "	(241.3)
12"	(300)	4 ¹ / ₄ "	(107.9)	10 ⁵ / ₈ "	(269.9)
14"	(350)	4 ³ / ₈ "	(111.1)	11 ³ / ₈ "	(288.9)
16"	(400)	4 ³ / ₈ "	(111.1)	12 ³ / ₈ "	(314.3)
18"	(450)	4 ³ / ₈ "	(111.1)	13 ³ / ₈ "	(339.7)
20"	(500)	4 ¹ / ₂ "	(114.3)	14 ¹ / ₂ "	(368.3)
24"	(600)	4 ⁵ / ₈ "	(117.5)	16 ⁵ / ₈ "	(422.3)

B3993 Pipe Slide Assembly Series dimensional drawings (TOLCO Fig. 424 thru Fig. 431)

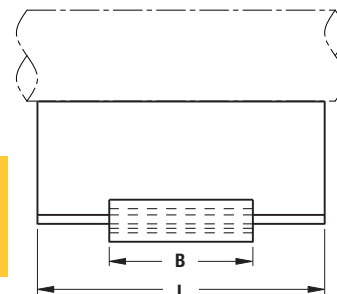


B3993-5 Front View



B3993-10 Front View

**B3993-5 (shown)
& B3993-10
Side View**

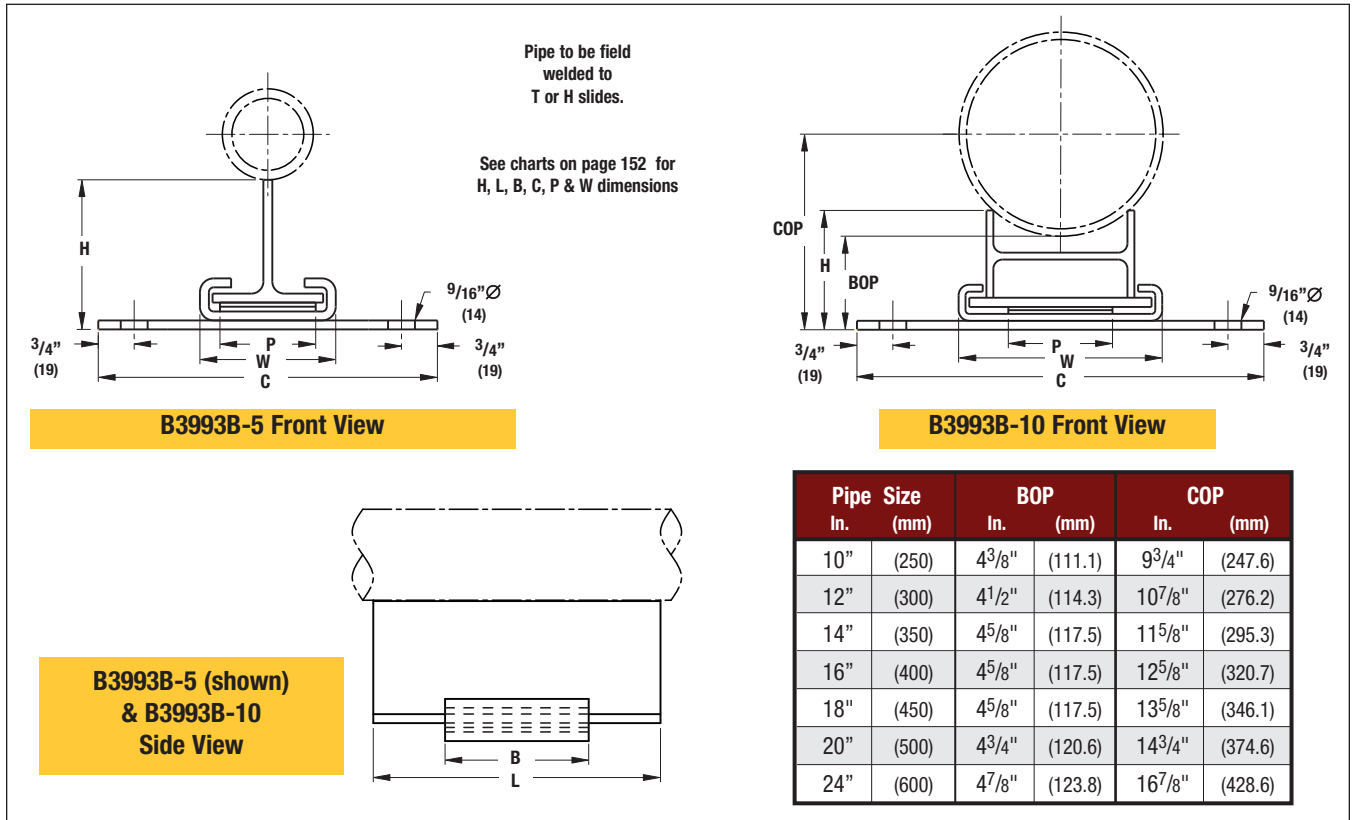


Pipe In.	Size (mm)	BOP In.	(mm)	COP In.	(mm)
10"	(250)	4 ¹ / ₈ "	(104.8)	9 ¹ / ₂ "	(241.3)
12"	(300)	4 ¹ / ₄ "	(107.9)	10 ⁵ / ₈ "	(269.9)
14"	(350)	4 ³ / ₈ "	(111.1)	11 ³ / ₈ "	(288.9)
16"	(400)	4 ³ / ₈ "	(111.1)	12 ³ / ₈ "	(314.3)
18"	(450)	4 ³ / ₈ "	(111.1)	13 ³ / ₈ "	(339.7)
20"	(500)	4 ¹ / ₂ "	(114.3)	14 ¹ / ₂ "	(368.3)
24"	(600)	4 ⁵ / ₈ "	(117.5)	16 ⁵ / ₈ "	(422.3)

† Mark shown in this document is the property of its respective owner.

Pipe Supports, Guides, Shields & Saddles

B3993B Pipe Slide Assembly Series dimensional drawings (TOLCO Fig. 424 thru Fig. 431)



† Mark shown in this document is the property of its respective owner.

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

Pipe Supports, Guides, Shields & Saddles

B3160 thru B3165 - Pipe Covering Protection Saddle (TOLCO Fig. 260 thru Fig. 265)

Material: Steel; Stainless Steel available

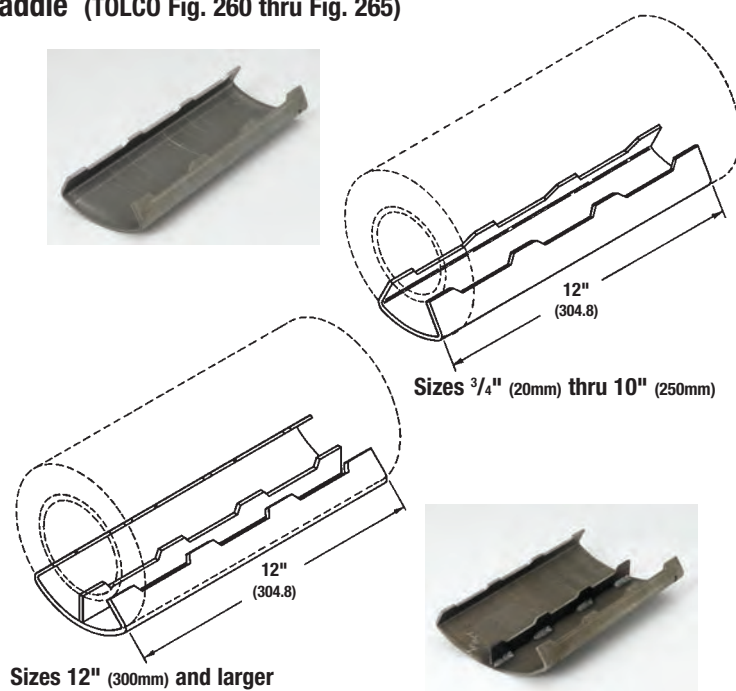
Standard Finish: Plain or Electro-Galvanized

Service: Designed to protect pipe insulation on high temperature pipe lines. Saddles are 12" (304.8mm) long. Center rib is furnished on all saddle sizes 12" (300mm) and above.

Order By: Part number and finish. Select part number by insulation thickness and add nominal pipe size (Ex: B3161-1 1/4 PLN).

Approvals: Complies with Federal Specification WW-H-171E & A-A-1192A Type 40A and Type 40B and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58 Type 39A and Type 39B.

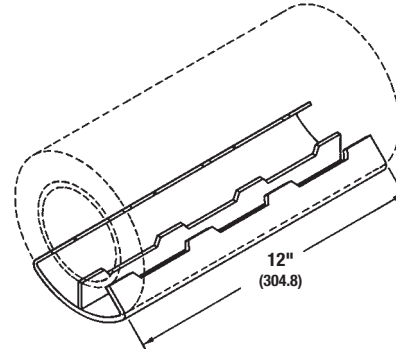
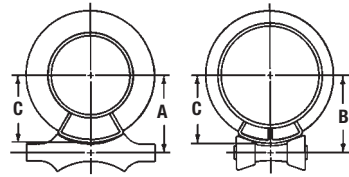
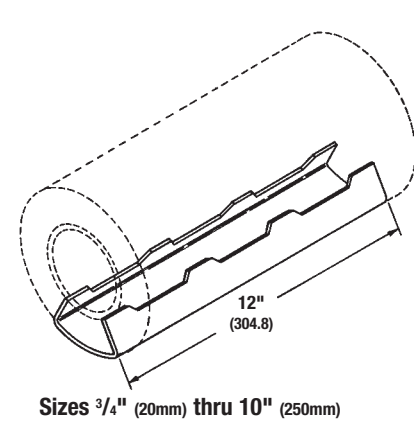
Insulation Thickness	Part Number
1" (25.4mm)	B3160
1 1/2" (38.1mm)	B3161
2" (50.8mm)	B3162
2 1/2" (63.5mm)	B3163
3" (76.2mm)	B3164
4" (101.6mm)	B3165



Part No.	Pipe Size in. (mm)		Size For Roller Part Number			Design Load Lbs. (kN)		Approx. Wt./100 Lbs. (kg)	
			B3114 B3120 B3122 B3122A	B3117SL B3118SL B3119SL B3124 B3126	B3110				
B3160-3/4	3/4"	(20)	2	2-3 1/2	2 1/2	1200	(5.34)	122	(55.3)
B3161-3/4			3	2-3 1/2	3 1/2	1200	(5.34)	228	(103.4)
B3162-3/4			4	2-3 1/2	5	1200	(5.34)	297	(134.7)
B3160-1	1"	(25)	2 1/2	2-3 1/2	3	1200	(5.34)	156	(70.7)
B3161-1			3	2-3 1/2	4	1200	(5.34)	228	(103.4)
B3162-1			4	2-3 1/2	5	1200	(5.34)	297	(134.7)
B3160-1 1/4	1 1/4"	(32)	2 1/2	2-3 1/2	3	1200	(5.34)	156	(70.7)
B3161-1 1/4			3 1/2	2-3 1/2	5	1200	(5.34)	228	(103.4)
B3162-1 1/4			4	2-3 1/2	5	1200	(5.34)	297	(134.7)
B3163-1 1/4			5	4-6	6	1200	(5.34)	342	(155.1)
B3160-1 1/2	1 1/2"	(40)	3	2-3 1/2	3 1/2	1200	(5.34)	172	(78.0)
B3161-1 1/2			3 1/2	2-3 1/2	5	1200	(5.34)	239	(108.4)
B3162-1 1/2			5	4-6	6	1800	(8.00)	311	(141.0)
B3163-1 1/2			6	4-6	8	1800	(8.00)	417	(189.1)
B3160-2	2"	(50)	3 1/2	2-3 1/2	4	1200	(5.34)	172	(78.0)
B3161-2			4	2-3 1/2	5	1200	(5.34)	239	(108.4)
B3162-2			5	4-6	6	1800	(8.00)	311	(141.0)
B3163-2			6	4-6	8	1800	(8.00)	417	(189.1)
B3164-2			8	4-6	8	1800	(8.00)	441	(200.0)
B3165-2			10	8-10	10	1800	(8.00)	584	(264.9)
B3160-2 1/2	2 1/2"	(65)	3 1/2	2-3 1/2	5	1200	(5.34)	210	(95.2)
B3161-2 1/2			5	4-6	6	1200	(5.34)	268	(121.5)
B3162-2 1/2			6	4-6	8	1800	(8.00)	358	(162.4)
B3163-2 1/2			8	4-6	8	1800	(8.00)	417	(189.1)
B3164-2 1/2			8	4-6	10	1800	(8.00)	459	(208.2)
B3165-2 1/2			12	8-10	12	1800	(8.00)	630	(285.8)

Pipe Supports, Guides, Shields & Saddles

B3160 thru B3165 - Pipe Covering Protection Saddle (TOLCO Fig. 260 thru Fig. 265) (Continued)



Insulation Thickness		Part Number
1"	(25.4mm)	B3160
1 1/2"	(38.1mm)	B3161
2"	(50.8mm)	B3162
2 1/2"	(63.5mm)	B3163
3"	(76.2mm)	B3164
4"	(101.6mm)	B3165

Part No.	Pipe Size In. (mm)		Centerline of Pipe to Centerline of Roll						Centerline of Pipe to Outside of Saddle C In. (mm)		Thickness of Covering (Per ASTM C 585) In. (mm)	
			A		B		A					
			B3114, B3120, B3122, B3122A In. (mm)	In. (mm)	B3117SL, B3118SL, B3119SL, B3124, B3126 In. (mm)	In. (mm)	B3110 In. (mm)	In. (mm)				
B3160-3/4	3/4"	(20)	2"	(50.8)	2 1/4"	(57.1)	2"	(50.8)	1 9/16"	(39.7)	7/8"	(22.2)
B3161-3/4			2 7/16"	(61.9)	2 7/8"	(73.0)	2 3/8"	(69.8)	2 3/16"	(55.6)	1 1/2"	(38.1)
B3162-3/4			3 5/16"	(84.1)	3 7/16"	(87.3)	3 3/8"	(85.7)	2 3/4"	(69.8)	1 15/16"	(49.2)
B3160-1	1"	(25)	2 5/16"	(58.7)	2 1/2"	(63.5)	2 5/16"	(58.7)	1 13/16"	(46.0)	1 1/16"	(27.0)
B3161-1			2 7/8"	(73.0)	3"	(76.2)	2 7/8"	(73.0)	2 5/16"	(58.7)	1 9/16"	(39.7)
B3162-1			3 7/16"	(87.3)	3 5/8"	(92.1)	3 1/2"	(88.9)	2 7/8"	(73.0)	2 1/8"	(54.0)
B3160-1 1/4	1 1/4"	(32)	2 9/16"	(65.1)	2 1 1/16"	(68.3)	2 1/2"	(63.5)	2"	(50.8)	1 5/16"	(23.8)
B3161-1 1/4			3 1/8"	(79.4)	3 1/4"	(82.5)	3 1/8"	(79.4)	2 9/16"	(65.1)	1 7/16"	(36.5)
B3162-1 1/4			3 11/16"	(93.7)	3 13/16"	(96.8)	3 7/16"	(87.3)	3 1/16"	(77.8)	2 1/8"	(54.0)
B3163-1 1/4			4 1/16"	(103.2)	4 1/8"	(104.8)	4 1/16"	(103.2)	3 7/16"	(87.3)	2 7/16"	(61.9)
B3160-1 1/2	1 1/2"	(40)	2 11/16"	(68.3)	2 7/8"	(73.0)	2 7/16"	(61.9)	2 1/8"	(54.0)	1 1/32"	(26.2)
B3161-1 1/2			3 3/16"	(81.0)	3 5/16"	(84.1)	3 3/16"	(81.0)	2 9/16"	(65.1)	1 17/32"	(38.9)
B3162-1 1/2			3 9/16"	(90.5)	3 13/16"	(96.8)	3 13/16"	(96.8)	3 1/8"	(79.4)	2"	(50.8)
B3163-1 1/2			4 7/16"	(112.7)	4 3/8"	(111.1)	4 1/2"	(114.3)	3 5/8"	(92.1)	2 27/32"	(72.2)
B3160-2	2"	(50)	2 15/16"	(74.6)	3 1/8"	(79.4)	2 15/16"	(74.6)	2 3/8"	(60.3)	1 1/16"	(27.0)
B3161-2			3 7/16"	(87.3)	3 5/8"	(92.1)	3 1/2"	(88.9)	2 7/8"	(73.0)	1 19/32"	(40.5)
B3162-2			4 1/8"	(104.8)	4 1/8"	(104.8)	4 1/16"	(103.2)	3 7/16"	(87.3)	2 1/8"	(54.0)
B3163-2			4 11/16"	(119.1)	4 1 1/16"	(119.1)	4 3/4"	(120.6)	3 15/16"	(100.0)	2 5/8"	(66.7)
B3164-2			5 1/4"	(133.3)	5 3/16"	(131.8)	5 1/4"	(133.3)	4 1/2"	(114.3)	3 1/8"	(79.4)
B3165-2			6 3/8"	(161.9)	6 1/2"	(165.1)	6 3/8"	(161.9)	5 1/2"	(139.7)	4 3/16"	(106.4)
B3160-2 1/2	2 1/2"	(65)	3 1/4"	(82.5)	3 3/8"	(85.7)	3 1/4"	(82.5)	2 5/8"	(66.7)	1 1/16"	(27.0)
B3161-2 1/2			3 7/8"	(98.4)	3 15/16"	(100.0)	3 7/8"	(98.4)	3 1/4"	(82.5)	1 7/8"	(47.6)
B3162-2 1/2			4 9/16"	(115.9)	4 9/16"	(115.9)	4 5/8"	(117.5)	3 7/8"	(98.4)	2 5/16"	(58.7)
B3163-2 1/2			5 1/8"	(130.2)	5"	(127.0)	5 1/8"	(130.2)	4 1/4"	(107.9)	2 7/8"	(73.0)
B3164-2 1/2			5 7/16"	(138.1)	5 5/16"	(134.9)	5 1/2"	(139.7)	4 9/16"	(115.9)	3 1/16"	(77.8)
B3165-2 1/2			6 15/16"	(176.2)	7"	(177.8)	6 15/16"	(176.2)	5 15/16"	(150.8)	4 7/16"	(112.7)

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

Pipe Supports, Guides, Shields & Saddles

B3160 thru B3165 - Pipe Covering Protection Saddle (TOLCO Fig. 260 thru Fig. 265) (Continued)

Supports, Guides,
Shields & Saddles

Insulation Thickness	Part Number
1" (25.4mm)	B3160
1½" (38.1mm)	B3161
2" (50.8mm)	B3162

Insulation Thickness	Part Number
2½" (63.5mm)	B3163
3" (76.2mm)	B3164
4" (101.6mm)	B3165

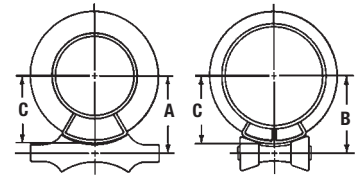
Part No.	Pipe Size In. (mm)		Size For Roller Part Number			Design Load Lbs. (kN)		Approx. Wt./100 Lbs. (kg)	
			B3114 B3120 B3122 B3122A	B3117SL B3118SL B3119SL B3124 B3126	B3110				
B3160-3	3"	(80)	4	2-3½	5	1800	(8.00)	210	(95.2)
B3161-3			5	4-6	6	1800	(8.00)	268	(166.9)
B3162-3			6	4-6	8	1800	(8.00)	358	(162.4)
B3163-3			8	4-6	8	1800	(8.00)	417	(189.1)
B3164-3			8	8-10	10	1800	(8.00)	459	(208.2)
B3165-3			12	8-10	12	1800	(8.00)	600	(272.2)
B3160-3½	3½"	(90)	5	4-6	6	1200	(5.34)	226	(102.5)
B3161-3½			6	4-6	8	1800	(8.00)	289	(131.1)
B3162-3½			8	4-6	8	1800	(8.00)	364	(165.1)
B3163-3½			8	8-10	10	1800	(8.00)	422	(191.4)
B3164-3½			10	8-10	10	1800	(8.00)	488	(221.3)
B3165-3½			10	8-10	10	1800	(8.00)	488	(221.3)
B3160-4	4"	(100)	5	4-6	6	1800	(8.00)	226	(102.5)
B3161-4			6	4-6	8	1800	(8.00)	289	(131.1)
B3162-4			8	8-10	8	1800	(8.00)	364	(165.1)
B3163-4			8	8-10	10	1800	(8.00)	422	(191.4)
B3164-4			10	8-10	10	1800	(8.00)	488	(221.3)
B3165-4			10	8-10	12	1800	(8.00)	616	(279.4)
B3160-5	5"	(125)	6	4-6	8	1800	(8.00)	250	(113.4)
B3161-5			8	4-6	8	1800	(8.00)	289	(131.1)
B3162-5			8	8-10	10	1800	(8.00)	364	(165.1)
B3163-5			10	8-10	10	1800	(8.00)	422	(191.4)
B3164-5			10	8-10	12	1800	(8.00)	488	(221.3)
B3165-5			12	8-10	14	1800	(8.00)	643	(291.6)
B3160-6	6"	(150)	8	8-10	8	1800	(8.00)	387	(175.5)
B3161-6			8	8-10	10	1800	(8.00)	498	(225.9)
B3162-6			10	8-10	10	1800	(8.00)	594	(269.4)
B3163-6			10	8-10	12	1800	(8.00)	694	(314.8)
B3164-6			12	8-10	12	1800	(8.00)	794	(360.1)
B3165-6			14	12-14	16	1800	(8.00)	1009	(457.7)
B3160-8	8"	(200)	10	8-10	12	1800	(8.00)	478	(216.8)
B3161-8			10	8-10	12	1800	(8.00)	554	(251.3)
B3162-8			10	8-10	12	1800	(8.00)	674	(305.7)
B3163-8			12	8-10	14	1800	(8.00)	782	(354.7)
B3164-8			14	12-14	16	1800	(8.00)	893	(405.0)
B3165-8			16	12-14	18	1800	(8.00)	1089	(494.0)
B3160-10	10"	(250)	12	12-14	14	1800	(8.00)	546	(247.6)
B3161-10			12	12-14	14	1800	(8.00)	642	(291.2)
B3162-10			14	16-20	16	1800	(8.00)	750	(340.2)
B3163-10			14	16-20	16	1800	(8.00)	850	(385.5)
B3164-10			16	16-20	18	1800	(8.00)	957	(434.1)
B3165-10			18	16-20	20	1800	(8.00)	1137	(515.7)

Pipe Supports, Guides, Shields & Saddles

B3160 thru B3165 - Pipe Covering Protection Saddle (Continued)

Insulation Thickness	Part Number
1" (25.4mm)	B3160
1½" (38.1mm)	B3161
2" (50.8mm)	B3162

Insulation Thickness	Part Number
2½" (63.5mm)	B3163
3" (76.2mm)	B3164
4" (101.6mm)	B3165



Part No.	Pipe Size In. (mm)		Centerline of Pipe to Centerline of Roll						Centerline of Pipe to Outside C In. (mm)		Thickness of Covering (Per ASTM C 585) In. (mm)	
			A B3114 B3114, B3120, B3122, B3122A In. (mm)		B B3117ST, B3118SL, B3119SL, B3124, B3126 In. (mm)		A of Saddle B3110 In. (mm)					
B3160-3	3"	(80)	33/8"	(85.7)	31/2"	(88.9)	35/8"	(91.1)	3"	(76.2)	11/32"	(26.2)
B3161-3			41/4"	(107.9)	45/16"	(109.5)	41/4"	(107.9)	39/16"	(90.5)	19/16"	(39.7)
B3162-3			415/16"	(125.4)	415/16"	(125.4)	415/16"	(125.4)	43/16"	(106.4)	21/16"	(52.4)
B3163-3			57/16"	(138.1)	53/8"	(136.5)	57/16"	(138.1)	45/8"	(117.5)	29/16"	(65.1)
B3164-3			513/16"	(147.6)	6"	(152.4)	57/8"	(149.2)	415/16"	(125.4)	31/16"	(77.8)
B3165-3			7"	(177.8)	71/16"	(179.4)	7"	(177.8)	6"	(152.4)	41/8"	(104.8)
B3160-31/2	31/2"	(90)	313/16"	(96.8)	37/8"	(98.4)	313/16"	(96.8)	33/16"	(81.0)	11/32"	(26.2)
B3161-31/2			43/8"	(111.1)	43/8"	(111.1)	43/8"	(111.1)	311/16"	(93.7)	19/16"	(39.7)
B3162-31/2			5"	(127.0)	5"	(127.0)	5"	(127.0)	41/4"	(107.9)	21/16"	(52.4)
B3163-31/2			51/2"	(139.7)	511/16"	(144.5)	59/16"	(141.3)	45/8"	(117.5)	225/32"	(70.6)
B3164-31/2			63/16"	(157.2)	65/16"	(160.3)	63/16"	(157.2)	51/4"	(133.3)	31/16"	(77.8)
B3160-4	4"	(100)	41/8"	(104.8)	41/8"	(104.8)	41/8"	(104.8)	37/16"	(87.3)	11/16"	(27.0)
B3161-4			411/16"	(119.1)	47/16"	(112.7)	43/4"	(120.6)	4"	(101.6)	19/16"	(39.7)
B3162-4			55/16"	(134.9)	51/4"	(133.3)	55/16"	(134.9)	41/2"	(114.3)	21/16"	(52.4)
B3163-4			513/16"	(147.6)	6"	(152.4)	57/8"	(149.2)	415/16"	(125.4)	29/16"	(65.1)
B3164-4			67/16"	(163.5)	69/16"	(166.7)	67/16"	(163.5)	51/2"	(139.7)	31/8"	(79.4)
B3165-4			79/16"	(192.1)	75/8"	(193.7)	79/16"	(192.1)	61/2"	(165.1)	41/8"	(104.8)
B3160-5	5"	(125)	411/16"	(119.1)	411/16"	(119.1)	43/4"	(120.6)	315/16"	(100.0)	11/32"	(26.2)
B3161-5			55/16"	(134.9)	51/4"	(133.3)	55/16"	(134.9)	49/16"	(115.9)	117/32"	(38.9)
B3162-5			57/8"	(149.2)	61/8"	(155.6)	6"	(152.4)	51/8"	(130.2)	21/32"	(51.6)
B3163-5			67/16"	(163.5)	69/16"	(166.7)	67/16"	(163.5)	59/16"	(141.3)	29/16"	(65.1)
B3164-5			7"	(177.8)	73/16"	(182.6)	71/8"	(181.0)	61/8"	(155.6)	33/32"	(78.6)
B3165-5			83/16"	(208.0)	83/16"	(208.0)	83/8"	(212.7)	71/16"	(179.4)	45/32"	(105.5)
B3160-6	6"	(150)	51/4"	(133.3)	51/4"	(133.3)	51/4"	(133.3)	41/2"	(114.3)	1"	(25.4)
B3161-6			57/8"	(149.2)	61/16"	(154.0)	515/16"	(150.8)	5"	(127.0)	11/2"	(38.1)
B3162-6			61/2"	(165.1)	65/8"	(168.3)	61/2"	(165.1)	59/16"	(141.3)	21/16"	(52.4)
B3163-6			71/16"	(179.4)	71/8"	(181.0)	71/8"	(181.0)	61/16"	(154.0)	29/16"	(65.1)
B3164-6			75/8"	(193.7)	711/16"	(195.3)	75/8"	(193.7)	69/16"	(166.7)	31/16"	(77.8)
B3165-6			91/16"	(230.2)	815/16"	(227.0)	9"	(228.6)	73/4"	(196.8)	43/16"	(106.4)
B3160-8	8"	(200)	61/2"	(165.1)	65/8"	(168.3)	69/16"	(166.7)	59/16"	(141.3)	11/32"	(26.2)
B3161-8			71/16"	(179.4)	71/8"	(181.0)	71/16"	(179.4)	61/16"	(154.0)	19/16"	(39.7)
B3162-8			79/16"	(192.1)	75/8"	(193.7)	75/8"	(193.7)	69/16"	(166.7)	21/16"	(52.4)
B3163-8			85/16"	(211.1)	85/16"	(211.1)	81/2"	(215.9)	73/16"	(182.6)	211/16"	(68.3)
B3164-8			91/16"	(230.2)	815/16"	(227.0)	9"	(228.6)	73/4"	(196.8)	33/16"	(81.0)
B3165-8			10"	(254.0)	915/16"	(252.4)	101/16"	(255.6)	811/16"	(220.7)	43/16"	(106.4)
B3160-10	10"	(250)	711/16"	(195.3)	73/4"	(196.8)	77/8"	(200.0)	65/8"	(168.3)	31/32"	(24.6)
B3161-10			85/16"	(211.1)	85/16"	(211.1)	87/16"	(214.3)	73/16"	(182.6)	15/8"	(41.3)
B3162-10			9"	(228.6)	87/8"	(225.4)	87/8"	(225.4)	711/16"	(195.3)	21/8"	(54.0)
B3163-10			95/8"	(244.5)	97/16"	(239.7)	91/2"	(241.3)	83/16"	(208.0)	25/8"	(66.7)
B3164-10			101/8"	(257.2)	103/16"	(258.8)	103/16"	(258.8)	83/4"	(222.2)	31/8"	(79.4)
B3165-10			111/4"	(285.7)	113/16"	(284.2)	111/4"	(285.7)	93/4"	(247.6)	41/8"	(104.8)

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

Pipe Supports, Guides, Shields & Saddles

B3160 thru B3165 - Pipe Covering Protection Saddle (TOLCO Fig. 260 thru Fig. 265) (Continued)

Supports, Guides,
Shields & Saddles

Insulation Thickness	Part Number
1" (25.4mm)	B3160
1½" (38.1mm)	B3161
2" (50.8mm)	B3162

Insulation Thickness	Part Number
2½" (63.5mm)	B3163
3" (76.2mm)	B3164
4" (101.6mm)	B3165

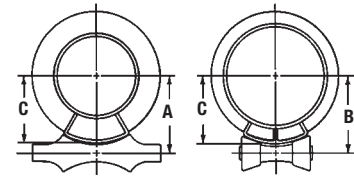
Part No.	Pipe Size In. (mm)		Size For Roller Part Number			Design Load Lbs. (kN)		Approx. Wt./100 Lbs. (kg)	
			B3114 B3114 B3120, B3122 B3122A	B3117SL B3118SL B3119SL B3124, B3126	B3110				
B3160-12	12"	(300)	14	12-14	16	5000	(22.24)	688	(312.1)
B3161-12			14	12-14	16	5000	(22.24)	836	(379.2)
B3162-12			16	16-20	18	5000	(22.24)	963	(436.8)
B3163-12			16	16-20	18	5000	(22.24)	1091	(494.9)
B3164-12			18	16-20	20	5000	(22.24)	1218	(552.5)
B3165-12			20	16-20	24	5000	(22.24)	1462	(663.1)
B3161-14	14"	(350)	16	16-20	18	5000	(22.24)	828	(375.6)
B3162-14			16	16-20	18	5000	(22.24)	963	(436.8)
B3163-14			18	16-20	20	5000	(22.24)	1099	(498.5)
B3164-14			18	16-20	20	5000	(22.24)	1230	(557.9)
B3165-14			20	24	24	5000	(22.24)	1486	(674.0)
B3161-16	16"	(400)	18	16-20	20	5000	(22.24)	907	(411.4)
B3162-16			18	16-20	20	5000	(22.24)	1039	(471.3)
B3163-16			20	16-20	24	7200	(32.02)	1163	(527.5)
B3164-16			20	24	24	7200	(32.02)	1298	(588.8)
B3165-16			24	24	24	7200	(32.02)	1554	(704.9)
B3161-18	18"	(450)	20	16-20	24	5000	(22.24)	979	(444.1)
B3162-18			20	24	24	7200	(32.02)	1107	(502.1)
B3163-18			24	24	24	7200	(32.02)	1230	(557.9)
B3164-18			24	24	24	7200	(32.02)	1362	(617.8)
B3165-18			24	24	-	7200	(32.02)	1617	(733.5)
B3161-20	20"	(500)	24	24	24	7200	(32.02)	1043	(473.1)
B3162-20			24	24	24	7200	(32.02)	1171	(531.1)
B3163-20			24	24	-	7200	(32.02)	1294	(586.9)
B3164-20			24	24	-	7200	(32.02)	1430	(648.6)
B3165-20			30	30	-	7200	(32.02)	1689	(766.1)
B3161-24	24"	(600)	30	30	-	7200	(32.02)	1179	(534.8)
B3162-24			30	30	-	7200	(32.02)	1306	(592.4)
B3163-24			30	30	-	7200	(32.02)	1442	(654.1)
B3164-24			30	30	-	7200	(32.02)	1562	(708.5)
B3165-24			30	30	-	7200	(32.02)	1821	(826.0)
B3161-30	30"	(750)	-	36-42	-	7200	(32.02)	1370	(621.4)
B3162-30			-	36-42	-	7200	(32.02)	1502	(681.3)
B3163-30			-	36-42	-	7200	(32.02)	1640	(743.9)
B3164-30			-	36-42	-	7200	(32.02)	1761	(798.8)
B3165-30			-	36-42	-	7200	(32.02)	2008	(910.8)
B3161-36	36"	(900)	-	36-42	-	7200	(32.02)	1574	(713.9)
B3162-36			-	36-42	-	7200	(32.02)	1701	(771.6)
B3163-36			-	36-42	-	7200	(32.02)	1857	(842.3)
B3164-36			-	36-42	-	7200	(32.02)	1961	(889.5)
B3165-36			-	36-42	-	7200	(32.02)	2216	(1005.2)

Pipe Supports, Guides, Shields & Saddles

B3160 thru B3165 - Pipe Covering Protection Saddle (Continued)

Insulation Thickness	Part Number
1" (25.4mm)	B3160
1 1/2" (38.1mm)	B3161
2" (50.8mm)	B3162

Insulation Thickness	Part Number
2 1/2" (63.5mm)	B3163
3" (76.2mm)	B3164
4" (101.6mm)	B3165



Part No.	Nominal Pipe Size In. (mm)		Centerline of Pipe to Centerline of Roll						Centerline of Pipe to Outside of Saddle C In. (mm)		Thickness of Covering (Per ASTM C 585) In. (mm)	
			A		B		A					
			B3114, B3120 B3122, B3122A In. (mm)		B3117SL, B3118SL B3119SL B3124, B3126 In. (mm)		B3110 In. (mm)					
B3160-12	12"	(300)	8 ¹⁵ / ₁₆ "	(227.0)	8 ¹³ / ₁₆ "	(223.8)	8 ⁷ / ₈ "	(225.4)	7 ⁵ / ₈ "	(193.7)	1 ¹ / ₁₆ "	(27.0)
B3161-12			9 ⁹ / ₁₆ "	(242.9)	9 ⁷ / ₁₆ "	(239.7)	9 ¹ / ₂ "	(241.3)	8 ³ / ₁₆ "	(208.0)	1 ⁵ / ₈ "	(41.3)
B3162-12			10 ¹ / ₁₆ "	(255.6)	10 ¹ / ₈ "	(257.2)	10 ¹ / ₈ "	(257.2)	8 ³ / ₄ "	(222.2)	2 ¹ / ₈ "	(54.0)
B3163-12			10 ⁵ / ₈ "	(269.9)	10 ⁵ / ₈ "	(269.9)	10 ⁵ / ₈ "	(269.9)	9 ¹ / ₄ "	(234.9)	2 ⁵ / ₈ "	(66.7)
B3164-12			11 ³ / ₁₆ "	(284.2)	11 ³ / ₁₆ "	(284.2)	11 ¹ / ₄ "	(285.7)	9 ¹¹ / ₁₆ "	(246.1)	3 ¹ / ₈ "	(79.4)
B3165-12			12 ⁵ / ₁₆ "	(312.7)	12 ³ / ₁₆ "	(309.6)	12 ⁵ / ₁₆ "	(312.7)	10 ³ / ₄ "	(273.0)	4 ¹ / ₈ "	(104.8)
B3161-14	14"	(350)	10 ¹ / ₁₆ "	(255.6)	9 ¹⁵ / ₁₆ "	(252.4)	10 ¹ / ₁₆ "	(255.6)	8 ¹¹ / ₁₆ "	(220.7)	1 ¹ / ₂ "	(38.1)
B3162-14			10 ⁵ / ₈ "	(269.9)	10 ⁵ / ₈ "	(269.9)	10 ⁵ / ₈ "	(269.9)	9 ³ / ₁₆ "	(233.4)	2"	(50.8)
B3163-14			11 ³ / ₁₆ "	(284.2)	11 ³ / ₁₆ "	(284.2)	11 ¹ / ₄ "	(285.7)	9 ³ / ₄ "	(247.6)	2 ¹ / ₂ "	(63.5)
B3164-14			11 ³ / ₄ "	(298.4)	11 ¹¹ / ₁₆ "	(296.9)	11 ³ / ₄ "	(298.4)	10 ¹ / ₄ "	(260.3)	3"	(76.2)
B3165-14			12 ⁷ / ₈ "	(327.0)	12 ⁷ / ₁₆ "	(315.9)	12 ⁷ / ₈ "	(327.0)	11 ³ / ₁₆ "	(284.2)	4"	(101.6)
B3161-16	16"	(400)	11 ¹ / ₈ "	(282.6)	11 ¹ / ₈ "	(282.6)	11 ³ / ₁₆ "	(284.2)	9 ¹¹ / ₁₆ "	(246.1)	1 ¹ / ₂ "	(38.1)
B3162-16			11 ¹³ / ₁₆ "	(300.0)	11 ¹¹ / ₁₆ "	(296.9)	11 ³ / ₄ "	(298.4)	10 ¹ / ₄ "	(260.3)	2"	(50.8)
B3163-16			12 ⁵ / ₁₆ "	(312.7)	12 ¹ / ₈ "	(308.0)	12 ⁵ / ₁₆ "	(312.7)	10 ¹¹ / ₁₆ "	(271.5)	2 ¹ / ₂ "	(63.5)
B3164-16			12 ⁷ / ₈ "	(327.0)	12 ⁹ / ₁₆ "	(319.1)	12 ⁷ / ₈ "	(327.0)	11 ¹ / ₄ "	(285.7)	3"	(76.2)
B3165-16			13 ¹⁵ / ₁₆ "	(354.0)	13 ⁹ / ₁₆ "	(344.5)	13 ¹⁵ / ₁₆ "	(354.0)	12 ¹ / ₄ "	(311.1)	4"	(101.6)
B3161-18	18"	(450)	12 ¹ / ₄ "	(311.1)	12 ¹ / ₈ "	(308.0)	12 ¹ / ₄ "	(311.1)	10 ¹¹ / ₁₆ "	(271.5)	1 ¹ / ₂ "	(38.1)
B3162-18			12 ⁷ / ₈ "	(327.0)	12 ¹ / ₂ "	(317.5)	12 ⁷ / ₈ "	(327.0)	11 ¹ / ₄ "	(285.7)	2"	(50.8)
B3163-18			13 ³ / ₈ "	(339.7)	13"	(330.2)	13 ³ / ₈ "	(339.7)	11 ¹¹ / ₁₆ "	(296.9)	2 ¹ / ₂ "	(63.5)
B3164-18			13 ¹⁵ / ₁₆ "	(354.0)	13 ⁹ / ₁₆ "	(344.5)	13 ¹⁵ / ₁₆ "	(354.0)	12 ¹ / ₄ "	(311.1)	3"	(76.2)
B3165-18			15"	(381.0)	14 ⁹ / ₁₆ "	(369.9)	--	--	13 ¹ / ₄ "	(336.5)	4"	(101.6)
B3161-20	20"	(500)	13 ³ / ₈ "	(339.7)	13"	(330.2)	13 ³ / ₈ "	(339.7)	11 ¹¹ / ₁₆ "	(296.9)	1 ¹ / ₂ "	(38.1)
B3162-20			13 ¹⁵ / ₁₆ "	(354.0)	13 ¹ / ₂ "	(342.9)	13 ¹⁵ / ₁₆ "	(354.0)	12 ³ / ₁₆ "	(309.6)	2"	(50.8)
B3163-20			14 ⁷ / ₁₆ "	(366.7)	14"	(355.6)	--	--	12 ¹¹ / ₁₆ "	(322.3)	2 ¹ / ₂ "	(63.5)
B3164-20			14 ¹⁵ / ₁₆ "	(379.4)	14 ⁹ / ₁₆ "	(369.9)	--	--	13 ³ / ₁₆ "	(350.8)	3"	(76.2)
B3165-20			16 ¹ / ₄ "	(412.7)	15 ⁷ / ₈ "	(403.2)	--	--	14 ¹ / ₄ "	(361.9)	4"	(101.6)
B3161-24	24"	(600)	15 ¹¹ / ₁₆ "	(398.5)	15 ⁵ / ₁₆ "	(388.9)	--	--	13 ¹¹ / ₁₆ "	(347.7)	1 ¹ / ₂ "	(38.1)
B3162-24			16 ¹ / ₄ "	(412.8)	15 ⁷ / ₈ "	(403.2)	--	--	14 ³ / ₁₆ "	(360.4)	2"	(50.8)
B3163-24			16 ³ / ₄ "	(425.4)	16 ⁵ / ₁₆ "	(414.3)	--	--	14 ⁵ / ₈ "	(377.8)	2 ¹ / ₂ "	(63.5)
B3164-24			17 ³ / ₈ "	(441.3)	16 ⁷ / ₈ "	(428.6)	--	--	15 ¹ / ₄ "	(387.3)	3"	(76.2)
B3165-24			18 ⁷ / ₁₆ "	(468.3)	17 ¹⁵ / ₁₆ "	(455.6)	--	--	16 ¹ / ₄ "	(412.7)	4"	(101.6)
B3161-30	30"	(750)	--	--	18 ⁷ / ₈ "	(479.4)	--	--	16 ¹¹ / ₁₆ "	(423.9)	1 ¹ / ₂ "	(38.1)
B3162-30			--	--	19 ³ / ₈ "	(492.1)	--	--	17 ³ / ₁₆ "	(436.6)	2"	(50.8)
B3163-30			--	--	19 ¹⁵ / ₁₆ "	(506.4)	--	--	17 ¹¹ / ₁₆ "	(449.3)	2 ¹ / ₂ "	(63.5)
B3164-30			--	--	20 ¹ / ₂ "	(520.7)	--	--	18 ³ / ₁₆ "	(462.0)	3"	(76.2)
B3165-30			--	--	21 ¹ / ₂ "	(546.1)	--	--	19 ³ / ₁₆ "	(487.4)	4"	(101.6)
B3161-36	36"	(900)	--	--	22 ¹ / ₈ "	(562.0)	--	--	19 ¹¹ / ₁₆ "	(500.1)	1 ¹ / ₂ "	(38.1)
B3162-36			--	--	22 ⁵ / ₈ "	(574.7)	--	--	20 ³ / ₁₆ "	(512.8)	2"	(50.8)
B3163-36			--	--	23 ³ / ₁₆ "	(589.0)	--	--	20 ¹¹ / ₁₆ "	(525.5)	2 ¹ / ₂ "	(63.5)
B3164-36			--	--	23 ¹¹ / ₁₆ "	(601.7)	--	--	21 ³ / ₁₆ "	(538.2)	3"	(76.2)
B3165-36			--	--	24 ¹¹ / ₁₆ "	(627.1)	--	--	22 ³ / ₁₆ "	(563.6)	4"	(101.6)

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

Pipe Supports, Guides, Shields & Saddles

Insulation Protection Shields (TOLCO Fig. 219 & Fig. 220)

Shield Size Selection Table

Selection Tables for:

B3151 Insulation Protection Shield (Page 162)

B3153 Insulation Protection Shield with 'Loc' Tabs (Page 162)

B3154 Short Insulation Protection Shield (Page 163)

B3155 Short Insulation Protection Shield with 'Loc' Tabs (Page 163)

Nominal Pipe or Tubing Size		Insulation Thickness							
		1/2" (12.7mm)	3/4" (19.0mm)	1" (25.4mm)	1 1/2" (38.1mm)	2" (50.8mm)	2 1/2" (63.5mm)	3" (76.2mm)	4" (101.6mm)
1/2"	(15)	1X	2X	3X	5X	7X	--	--	--
3/4"	(20)	2X	3X	3X	5X	7X	--	--	--
1"	(25)	2X	3X	4X	6X	8X	--	--	--
1 1/4"	(32)	3X	4X	4X	7X	8X	--	--	--
1 1/2"	(40)	3X	4X	5X	7X	9X	--	--	--
2"	(50)	4X	5X	6X	8X	9X	10X*	11X*	--
2 1/2"	(65)	5X	6X	7X	9X	10X*	11X*	11X*	13Y*
3"	(80)	6X	7X	8X	9X	10X*	11X*	12Y*	14Z
3 1/2"	(90)	7X	8X	9X	10X*	11X*	12Y*	13Y*	15Z
4"	(100)	8X	9X	9X	10X*	11X*	12Y*	13Y*	15Z
5"	(125)	--	--	10Y*	11Y*	12Y*	13Y*	14Z	16Z
6"	(150)	--	--	11Y*	12Y*	13Y*	14Z	15Z	17Z
8"	(200)	--	--	13Y*	14Z	15Z	16Z	17Z	19Z
10"	(250)	--	--	15Z	16Z	17Z	18Z	19Z	21Z
12"	(300)	--	--	17Z	18Z	19Z	20Z	21Z	23Z
14"	(350)	--	--	18Z	19Z	20Z	21Z	22Z	24Z
16"	(400)	--	--	20Z	21Z	22Z	23Z	24Z	26Z
18"	(450)	--	--	22Z	23Z	24Z	25Z	26Z	28Z
20"	(500)	--	--	24Z	25Z	26Z	27Z	28Z	30Z
24"	(600)	--	--	28Z	29Z	30Z	31Z	32Z	33Z

*When selecting B3154 or B3155, replace 'X' or 'Y' designation with 'Z'.

Pipe Hanger Size Selection Table

Nominal Pipe or Tubing Size		Insulation Thickness							
		1/2" (12.7mm)	3/4" (19.0mm)	1" (25.4mm)	1 1/2" (38.1mm)	2" (50.8mm)	2 1/2" (63.5mm)	3" (76.2mm)	4" (101.6mm)
1/2"	(15)	1 1/2	2	2 1/2	3 1/2	5	--	--	--
3/4"	(20)	2	2 1/2	2 1/2	3 1/2	5	--	--	--
1"	(25)	2	2 1/2	3	4	5	--	--	--
1 1/4"	(32)	2 1/2	3	3	5	5	--	--	--
1 1/2"	(40)	2 1/2	3	3 1/2	5	6	--	--	--
2"	(50)	3	3 1/2	4	5	6	8	8	--
2 1/2"	(65)	3 1/2	4	5	6	8	8	10	10
3"	(80)	4	5	5	6	8	8	10	12
3 1/2"	(90)	5	5	6	8	8	10	10	12
4"	(100)	5	6	6	8	8	10	10	12
5"	(125)	--	--	8	8	10	10	12	14
6"	(150)	--	--	8	10	10	12	12	16
8"	(200)	--	--	10	12	12	14	16	18
10"	(250)	--	--	12	14	16	16	18	20
12"	(300)	--	--	14	16	18	18	20	22
14"	(350)	--	--	16	18	18	20	20	22
16"	(400)	--	--	18	20	20	22	22	24
18"	(450)	--	--	20	22	22	24	24	26
20"	(500)	--	--	22	24	24	26	26	28
24"	(600)	--	--	26	28	28	30	30	32

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

Pipe Supports, Guides, Shields & Saddles

B3151 - Insulation Protection Shield (TOLCO Fig. 220)

B3153 - Insulation Protection Shield with "Loc" Tabs (TOLCO Fig. 219)

Material: Steel (Stainless steel available)

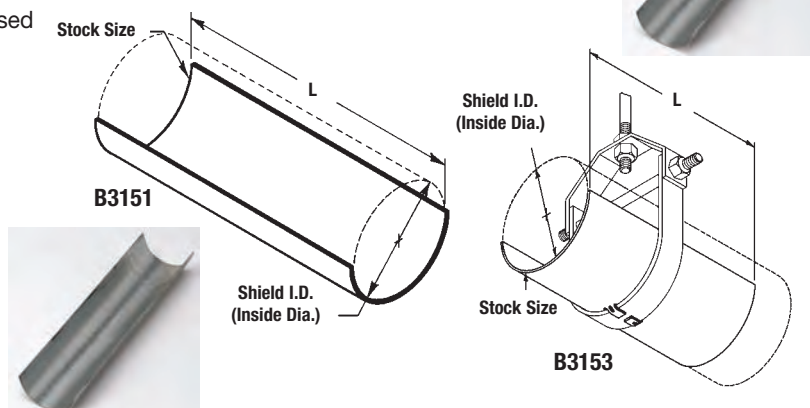
Function: Designed to protect pipe insulation when used with hangers.

Approvals: Complies with Federal Specification WW-H-171E & A-A-1192A Type 41 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58 Type 40.

Finish: Pre-Galvanized

Order By: Part number and finish.

Note: See Selection Tables on page 161 for proper sizing.



B3153 same dimension as B3151, but with bottom tabs for centering and securing the shield to hanger.

Part No.	Part No.	Stock Size in. (mm)	L in. (mm)	Shield 'I.D.' in. (mm)	Approx. Wt./100 Lbs. (kg)	Pipe Hanger Size in. (mm)
B3151-1X	B3153-1X	18 Ga. (1.2)	12" (304.8)	1.90 (48.2)	50 (22.7)	1 1/2" (40)
B3151-2X	B3153-2X	18 Ga. (1.2)	12" (304.8)	2.38 (60.4)	62 (28.1)	2" (50)
B3151-3X	B3153-3X	18 Ga. (1.2)	12" (304.8)	2.88 (73.1)	75 (34.0)	2 1/2" (65)
B3151-4X	B3153-4X	18 Ga. (1.2)	12" (304.8)	3.50 (88.9)	92 (41.7)	3" (80)
B3151-5X	B3153-5X	18 Ga. (1.2)	12" (304.8)	4.00 (101.6)	104 (47.2)	3 1/2" (90)
B3151-6X	B3153-6X	18 Ga. (1.2)	12" (304.8)	4.50 (114.3)	118 (53.5)	4" (100)
B3151-7X	B3153-7X	18 Ga. (1.2)	12" (304.8)	5.00 (127.0)	129 (58.5)	5" (125)
B3151-8X	B3153-8X	18 Ga. (1.2)	12" (304.8)	5.56 (141.2)	147 (66.7)	5" (125)
B3151-9X	B3153-9X	16 Ga. (1.5)	12" (304.8)	6.64 (168.6)	219 (99.3)	6" (150)
B3151-10X	B3153-10X	16 Ga. (1.5)	12" (304.8)	7.64 (194.0)	253 (114.7)	8" (200)
B3151-11X	B3153-11X	16 Ga. (1.5)	12" (304.8)	8.64 (219.4)	286 (129.7)	8" (200)
B3151-10Y	--	16 Ga. (1.5)	18" (457.2)	7.64 (194.0)	377 (171.0)	8" (200)
B3151-11Y	--	16 Ga. (1.5)	18" (457.2)	8.64 (219.4)	424 (192.3)	8" (200)
B3151-12Y	--	16 Ga. (1.5)	18" (457.2)	9.64 (244.8)	475 (215.4)	10" (250)
B3151-13Y	--	16 Ga. (1.5)	18" (457.2)	10.76 (273.3)	529 (239.9)	10" (250)
B3151-14Z	--	14 Ga. (1.9)	24" (609.6)	11.76 (298.7)	964 (437.3)	12" (300)
B3151-15Z	--	14 Ga. (1.9)	24" (609.6)	12.76 (324.1)	1045 (474.0)	12" (300)
B3151-16Z	--	14 Ga. (1.9)	24" (609.6)	14.00 (355.6)	1146 (519.8)	14" (350)
B3151-17Z	--	14 Ga. (1.9)	24" (609.6)	15.00 (381.0)	1227 (556.5)	16" (400)
B3151-18Z	--	14 Ga. (1.9)	24" (609.6)	16.00 (406.4)	1308 (593.3)	16" (400)
B3151-19Z	--	14 Ga. (1.9)	24" (609.6)	17.00 (431.8)	1393 (631.8)	18" (450)
B3151-20Z	--	12 Ga. (2.6)	24" (609.6)	18.00 (457.2)	2064 (936.2)	18" (450)
B3151-21Z	--	12 Ga. (2.6)	24" (609.6)	19.00 (482.6)	2178 (987.9)	20" (500)
B3151-22Z	--	12 Ga. (2.6)	24" (609.6)	20.00 (508.0)	2292 (1039.6)	20" (500)
B3151-23Z	--	12 Ga. (2.6)	24" (609.6)	21.00 (533.4)	2406 (1091.3)	24" (600)
B3151-24Z	--	12 Ga. (2.6)	24" (609.6)	22.00 (558.8)	2520 (1143.1)	24" (600)
B3151-25Z	--	12 Ga. (2.6)	24" (609.6)	23.00 (584.2)	2634 (1194.8)	24" (600)
B3151-26Z	--	12 Ga. (2.6)	24" (609.6)	24.00 (609.6)	2753 (1248.7)	24" (600)
B3151-27Z	--	12 Ga. (2.6)	24" (609.6)	25.00 (635.0)	2862 (1298.2)	30" (750)
B3151-28Z	--	12 Ga. (2.6)	24" (609.6)	26.00 (660.4)	2980 (1351.7)	30" (750)
B3151-29Z	--	12 Ga. (2.6)	24" (609.6)	27.00 (685.8)	3094 (1403.4)	30" (750)
B3151-30Z	--	12 Ga. (2.6)	24" (609.6)	28.00 (711.2)	3208 (1455.1)	30" (750)

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

Pipe Supports, Guides, Shields & Saddles

B3154 - Short Insulation Protection Shield (TOLCO Fig. 220)

B3155 - Short Insulation Protection Shield with "Loc" Tabs (TOLCO Fig. 219)

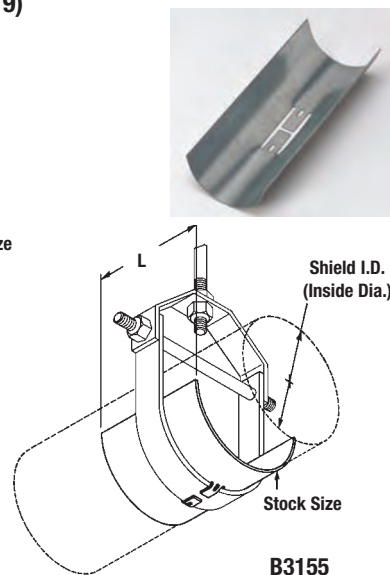
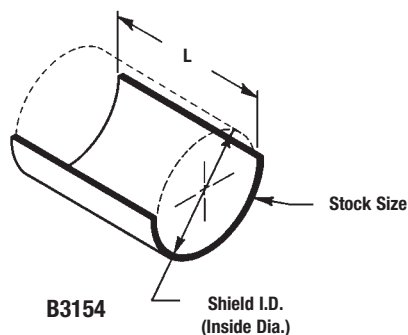
Material: Steel (Stainless steel available)

Function: Designed for protection of foam, fiberglass, or high density insulation when used with pipe hangers.

Finish: Pre-Galvanized

Order By: Part part number and finish.

Note: See Selection Tables on page 161 for proper sizing.



B3155

B3155 same dimension as B3154 but with bottom tabs for centering and securing the shield to hanger.

Part No.	Part No.	Stock Size in.	(mm)	L in.	(mm)	Shield 'I.D.' in.	(mm)	Approx.Wt./100 Lbs.	(kg)	Pipe Hanger Size in.	(mm)
B3154-1X	B3155-1X	18 Ga.	(1.2)	8"	(203.2)	1.90	(48.2)	36	(16.3)	1 1/2"	(40)
B3154-2X	B3155-2X	18 Ga.	(1.2)	8"	(203.2)	2.38	(60.4)	45	(20.4)	2"	(50)
B3154-3X	B3155-3X	18 Ga.	(1.2)	8"	(203.2)	2.88	(73.1)	54	(24.5)	2 1/2"	(65)
B3154-4X	B3155-4X	18 Ga.	(1.2)	8"	(203.2)	3.50	(88.9)	66	(29.9)	3"	(80)
B3154-5X	B3155-5X	18 Ga.	(1.2)	8"	(203.2)	4.00	(101.6)	75	(34.0)	3 1/2"	(90)
B3154-6X	B3155-6X	18 Ga.	(1.2)	8"	(203.2)	4.50	(114.3)	84	(38.1)	4"	(100)
B3154-7X	B3155-7X	18 Ga.	(1.2)	8"	(203.2)	5.00	(127.0)	93	(42.2)	5"	(125)
B3154-8X	B3155-8X	18 Ga.	(1.2)	8"	(203.2)	5.56	(141.2)	105	(47.6)	5"	(125)
B3154-9X	B3155-9X	18 Ga.	(1.2)	8"	(203.2)	6.64	(168.6)	126	(57.1)	6"	(150)
B3154-10Z	B3155-10Z	18 Ga.	(1.2)	12"	(304.8)	7.64	(194.0)	218	(98.9)	8"	(200)
B3154-11Z	B3155-11Z	18 Ga.	(1.2)	12"	(304.8)	8.64	(219.4)	247	(112.0)	8"	(200)
B3154-12Z	B3155-12Z	18 Ga.	(1.2)	12"	(304.8)	9.64	(244.8)	273	(123.8)	10"	(250)
B3154-13Z	B3155-13Z	18 Ga.	(1.2)	12"	(304.8)	10.76	(273.3)	304	(137.9)	10"	(250)
B3154-14Z	B3155-14Z	18 Ga.	(1.2)	12"	(304.8)	11.76	(298.7)	332	(150.6)	12"	(300)
B3154-15Z	B3155-15Z	18 Ga.	(1.2)	12"	(304.8)	12.76	(324.1)	360	(163.3)	12"	(300)

Pipe Supports, Guides, Shields & Saddles

Snap 'N Shield™ Clevis

Size Range:

2.34" (59.4mm), 3.45" (87.6mm), 4.50" (114.3mm), 5.53" (140.4mm), 8.64" (168.5mm), and 8.64" (219.4mm) Shield Openings

Material: Plastic - Gray Thermylene P6-20FG-0738

Features:

- UV resistant
- Operating temperature -40°F (87.6°C) to +178°F (87.6°C)
- Paintable (preserves mechanical properties even after painting)
- Shield length is 12" (304.8mm).
- Non-adhesive surface for linear expansion of thermal insulation
- Protects insulation from damage caused by rubbing against other pipes and fittings.

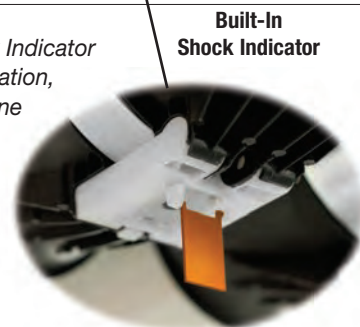
Order By: Part number.



Clevis Shield Part Number	Inside Opening		Approx. Wt./100		Clevis Hanger Size
	in.	(mm)	lbs.	(kg)	
BPH250G	2.34"	(59)	28.1	(12.7)	B3100-2
BPH350G	3.45"	(87)	40.6	(18.4)	B3100-3
BPH450G	4.50"	(114)	56.2	(25.5)	B3100-4
BPH550G	5.53"	(140)	74.2	(33.6)	B3100-5
BPH650G	6.64"	(168)	86.7	(39.3)	B3100-6
BPH850G	8.64"	(219)	150.0	(68.0)	B3100-8



Note: For Shock Indicator sizes and information, contact the B-Line Engineering Department.



Copper Tubing Size	Insulation Thickness				
	1/2"	3/4"	1"	1 1/2"	2"
1/4"	BPH250	BPH250	BPH350	BPH350	BPH450
3/8"	BPH250	BPH250	BPH350	BPH450	BPH450
1/2"	BPH250	BPH250	BPH350	BPH450	BPH550
5/8"	BPH250	BPH250	BPH350	BPH450	BPH550
3/4"	BPH250	BPH350	BPH350	BPH450	BPH550
1"	BPH250	BPH350	BPH350	BPH450	BPH550
1 1/4"	BPH350	BPH350	BPH350	BPH450	BPH550
1 1/2"	BPH350	BPH350	BPH450	BPH550	BPH650
2"	BPH350	BPH450	BPH450	BPH550	BPH650
2 1/2"	BPH450	BPH450	BPH550	BPH650	BPH850
3"	BPH450	BPH550	BPH550	BPH650	BPH850
3 1/2"	BPH550	BPH550	BPH650	BPH850	BPH850
4"	BPH550	BPH650	BPH650	BPH850	BPH850

Sch. 40/80 Pipe	Insulation Thickness				
	1/2"	3/4"	1"	1 1/2"	2"
1/4"	BPH250	BPH250	BPH350	BPH450	BPH550
3/8"	BPH250	BPH250	BPH350	BPH450	BPH550
1/2"	BPH250	BPH250	BPH350	BPH450	BPH550
3/4"	BPH250	BPH350	BPH350	BPH450	BPH550
1"	BPH250	BPH350	BPH350	BPH450	BPH550
1 1/4"	BPH350	BPH350	BPH450	BPH550	BPH650
1 1/2"	BPH350	BPH350	BPH450	BPH550	BPH650
2"	BPH350	BPH450	BPH450	BPH550	BPH650
2 1/2"	BPH450	BPH450	BPH550	BPH650	BPH850
3"	BPH450	BPH550	BPH550	BPH650	BPH850
3 1/2"	BPH550	BPH550	BPH650	BPH850	BPH850
4"	BPH550	BPH650	BPH650	BPH850	BPH850

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

Pipe Supports, Guides, Shields & Saddles

Snap 'N Shield™ Series

Size Range:

2 1/4" (57.1mm), 3 1/4" (82.5mm), 4 1/4" (107.9mm), 5 1/4" (133.3mm), 6 1/4" (158.7mm), and 8 5/8" (219.1mm) Shield Openings

Material: Plastic - Black & White

Features:

- Ideal for horizontal pipe runs.
- Offers maximum protection for insulated pipe.
- Snaps directly onto channel.
- Shield length is 12" (304.8mm).
- Fast, easy installation – no tools required.
- Snap-on design eliminates shield movement, preventing insulation damage that can lead to costly leaks.
- Allows pipe to expand without damaging the insulation.
- Protects insulation from damage caused by rubbing against other pipes and fittings.
- Designed for side-by-side installations.
- The most reliable, durable, and cost-effective way to protect your insulation.
- Patent Pending.

Order By: Part number.



Technical Specifications

Applications: Refrigeration, Air Conditioning, and Plumbing

Material: Basell Pro-Fax 8523 Polypropylene Copolymer

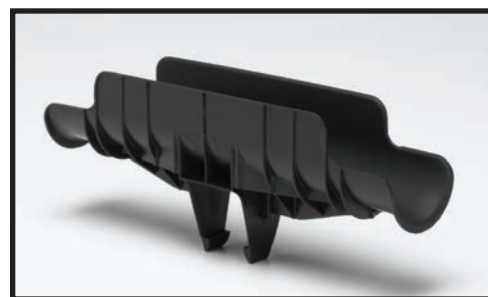
- UV resistant
- Operating temperature -40°F to +178°F
- Paintable (Preserves mechanical properties even after painting)
- Non-adhesive surface for linear expansion of thermal insulation

Certification: UL Classified for USA (UL-723 (ASTM E84)) and ULC listed for Canada (ULC-S102.2). Meets UL94 HB flammability standards

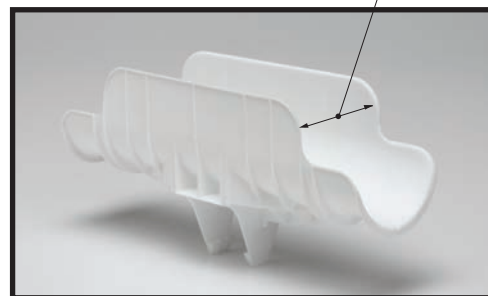
Pipe Supports, Guides, Shields & Saddles

Snap'N Shield™ Series

Black Shields Part Number	White Shields Part Number	Gray Shields Part Number	Inside Opening in. (mm)		Approx. Wt./100 Lbs. (kg)	
BPS225B	BPS225W	--	2 1/4"	(57)	26	(11.8)
BPS325B	BPS325W	--	3 1/4"	(82)	37	(16.8)
BPS425B	BPS425W	--	4 1/4"	(108)	52	(23.6)
BPS525B	BPS525W	--	5 1/4"	(133)	69	(31.3)
BPS625B	BPS625W	--	6 1/4"	(159)	83	(37.6)
BPS825B	BPS825W	BPS825G	8 1/4"	(209)	103	(46.7)
BPSCB	BPSCW		Universal Cover		22	(10.0)



Inside Opening



Supports, Guides, Shields & Saddles

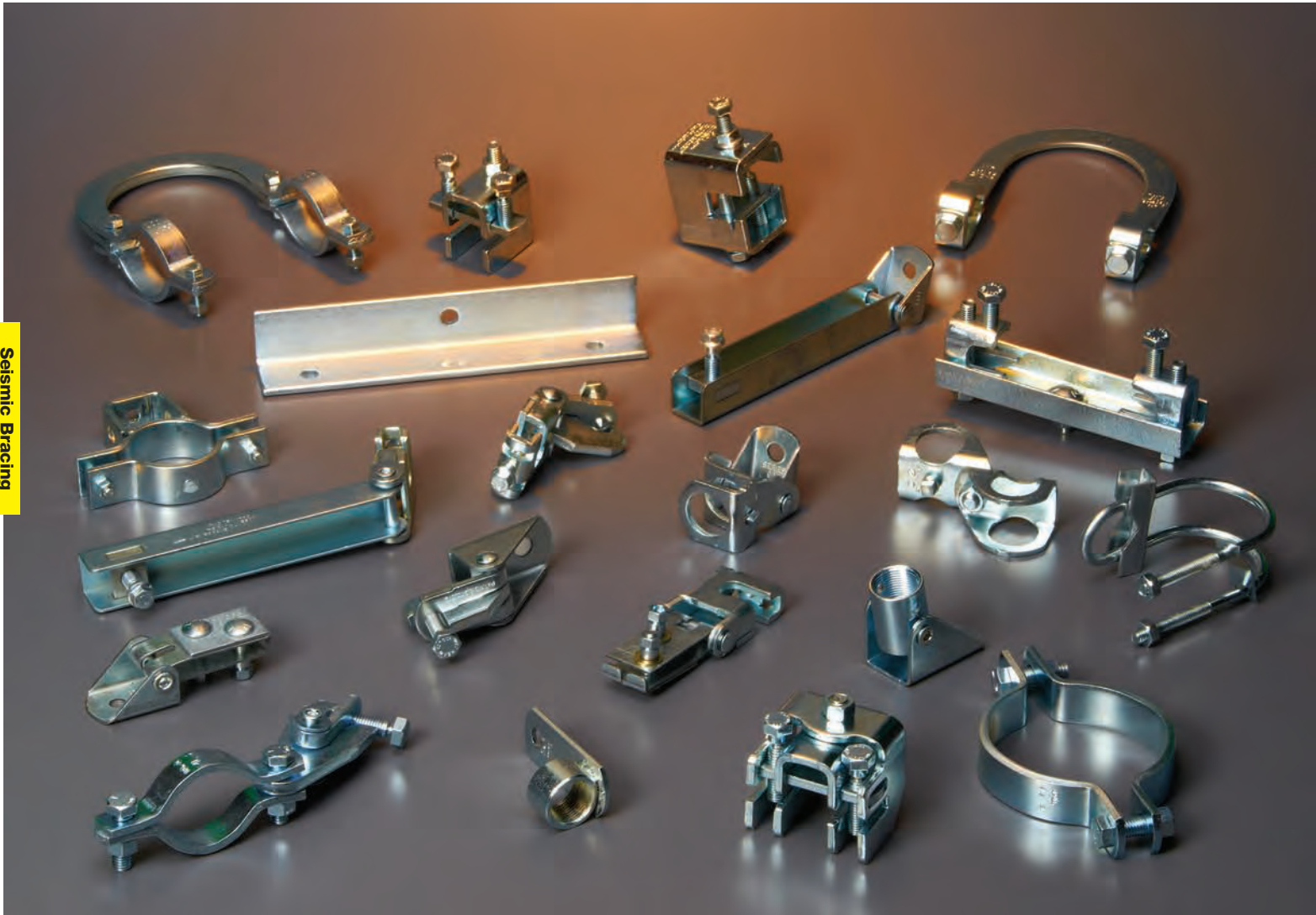
Copper Tubing Size	Insulation Thickness				
	1/2"	3/4"	1"	1 1/2"	2"
1/4"	BPS225	BPS225	BPS325	BPS425	BPS525
3/8"	BPS225	BPS225	BPS325	BPS425	BPS525
1/2"	BPS225	BPS225	BPS325	BPS425	BPS525
5/8"	BPS225	BPS325	BPS325	BPS425	BPS525
3/4"	BPS225	BPS325	BPS325	BPS425	BPS525
1"	BPS225	BPS325	BPS325	BPS425	BPS525
1 1/4"	BPS325	BPS325	BPS425	BPS525	BPS625
1 1/2"	BPS325	BPS325	BPS425	BPS525	BPS625
2"	BPS325	BPS425	BPS425	BPS525	BPS625
2 1/2"	BPS425	BPS425	BPS525	BPS625	BPS825
3"	BPS425	BPS525	BPS525	BPS625	BPS825
3 1/2"	BPS525	BPS525	BPS625	BPS825	BPS825
4"	BPS525	BPS625	BPS625	BPS825	BPS825

Sch. 40/80 Pipe	Insulation Thickness				
	1/2"	3/4"	1"	1 1/2"	2"
1/4"	BPS225	BPS225	BPS325	BPS425	BPS525
3/8"	BPS225	BPS225	BPS325	BPS425	BPS525
1/2"	BPS225	BPS325	BPS325	BPS425	BPS525
3/4"	BPS225	BPS325	BPS325	BPS425	BPS525
1"	BPS325	BPS325	BPS425	BPS525	BPS625
1 1/4"	BPS325	BPS325	BPS425	BPS525	BPS625
1 1/2"	BPS325	BPS425	BPS425	BPS525	BPS625
2"	BPS425	BPS425	BPS425	BPS525	BPS625
2 1/2"	BPS425	BPS525	BPS525	BPS625	BPS825
3"	BPS525	BPS525	BPS625	BPS625	BPS825
3 1/2"	BPS525	BPS625	BPS625	BPS825	BPS825
4"	BPS625	BPS625	BPS825	BPS825	BPS825

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

TOLCO™ Seismic Bracing

Seismic Bracing



The TOLCO™ seismic bracing products are the most complete line of bracing components in the industry. Our offering includes both rigid and cable bracing systems and many components are multi-size adaptable or universal in application.

Some of the key features of our seismic products include:

- Visual verification of proper installation
- OSHPD Approval (OPA-0300)
- Underwriters Laboratories Listed
- FM Approved
- Engineering Support & TOLBrace™ Software
- Buy American Act & ARRA Compliant



The TOLCO brand has a history of over 40 years in seismic bracing of non-structural systems including fire sprinklers, plumbing, mechanical, HVAC and electrical. In addition to the products shown in this catalog we also offer engineered solutions for any seismic bracing application.

Fig. 4A - Pipe Clamp for Sway Bracing

Size Range: 4" (100mm) thru 8" (200mm) pipe. For sizes smaller than 4" (100mm) use B3140.

Material: Steel

Function: For bracing pipe against sway and seismic disturbance.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL) 4" (100mm) thru 8" (200mm). Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD).

Installation Instructions: Fig. 4A is the "braced pipe" attachment component of a longitudinal, lateral or riser brace assembly. It is intended to be combined with the "bracing pipe" and TOLCO transitional and structural attachment component(s) to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

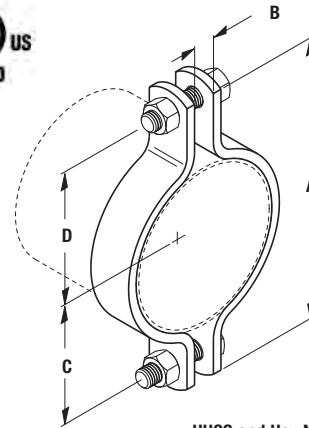
To Install: Place the Fig. 4A over the pipe to be braced. Attach TOLCO transitional fitting, either Fig. 980, 910 or 909, to the clamp ears. Tighten bolts and nuts; torque requirement is a minimum of 50 ft./lbs. (68Nm). Transitional fitting attachment can pivot for adjustment to proper brace angle.

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

Order By: Figure number, pipe size and finish



Component of State of California OSHPD Approved Seismic Restraints System



HHCS and Hex Nuts Included

Seismic Bracing

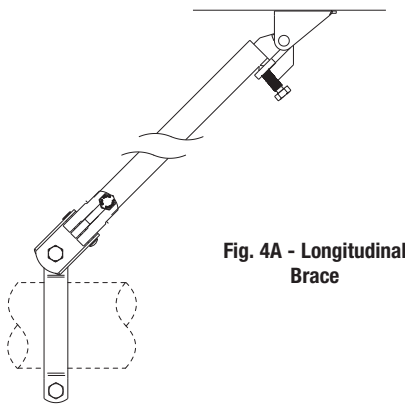


Fig. 4A - Longitudinal Brace

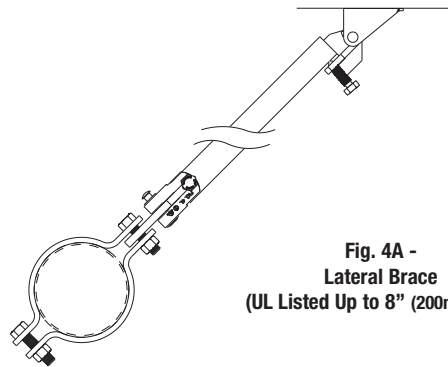


Fig. 4A - Lateral Brace
(UL Listed Up to 8" (200mm) IPS)



Part No.	Pipe Size	A	B	C	D	Bolt Size	Max. Horizontal Design Load	Approx. Wt./100
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)		lbs. (kN)	lbs. (kg)
4A-4	4" (100)	8 1/2" (215.9)	9/16" (14.3)	3 3/8" (85.7)	3 11/16" (93.7)	1/2"-13	1600 (7.11)	221 (100.2)
4A-5	5" (125)	9 3/4" (247.6)	9/16" (14.3)	3 7/8" (98.4)	4 3/8" (111.1)	1/2"-13	1600 (7.11)	253 (114.7)
4A-6	6" (150)	11 1/2" (292.1)	5/8" (15.9)	5" (127.0)	5 1/8" (130.2)	1/2"-13	2015 (8.96)	513 (232.7)
4A-8	8" (200)	13 1/4" (336.5)	3/4" (19.0)	6 11/16" (169.9)	6 1/8" (155.6)	1/2"-13	2015 (8.96)	601 (272.6)

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.

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

TOLCO™ Seismic Bracing

Figure 4B Pipe Clamp for Sway Bracing (Cooper B-Line B386)

Size Range: 3/4" (20mm) to 8" (200mm) pipe

Material: Steel

Function: For bracing pipe against sway and seismic disturbance

Approvals: Included in the Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD).

Standard Finish: Plain or Electro-Plated, Contact B-Line for alternative finishes and materials.

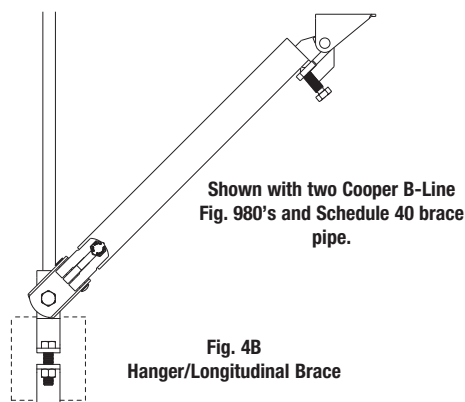
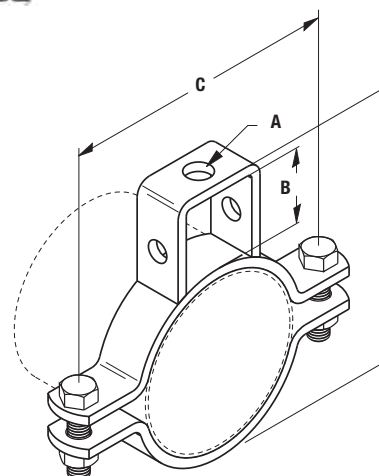
Ordering: Specify part number and finish.

Installation Instructions: Fig. 4B is the "braced pipe" attachment component of a longitudinal or lateral sway brace assembly. It is intended to be combined with the "bracing pipe" and transitional and structural attachment component(s) to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

To Install: Place the Fig. 4B over the pipe to be braced. Attach other transitional fitting, Fig. 909, 910, or 980. Tighten bolts and nuts. Transitional fitting attachment can pivot for adjustment to proper brace angle.



Component of State of California OSHPD Approved Seismic Restraints System



Part No.	Pipe Size in. (mm)	Rod Size A (mm)	B in. (mm)	C in. (mm)	D in. (mm)	Bolt Size	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
4B-3/4	3/4" (20)	3/8"-16	1" (25.4)	2 7/8" (73.0)	2 5/8" (66.7)	5/16"-18	330 (1.47)	56 (25.4)
4B-1	1" (25)	3/8"-16	1" (25.4)	3 1/4" (82.5)	2 15/16" (74.6)	5/16"-18	330 (1.47)	60 (27.2)
4B-1 1/4	1 1/4" (32)	3/8"-16	1" (25.4)	3 9/16" (90.6)	3 1/4" (82.5)	5/16"-18	330 (1.47)	74 (33.5)
4B-1 1/2	1 1/2" (40)	3/8"-16	1" (25.4)	3 13/16" (96.8)	3 7/16" (87.3)	5/16"-18	330 (1.47)	79 (35.8)
4B-2	2" (50)	3/8"-16	1 1/2" (38.1)	5 1/8" (130.2)	4 5/8" (117.5)	5/16"-18	440 (1.78)	156 (70.7)
4B-2 1/2	2 1/2" (65)	1/2"-13	1 3/4" (44.4)	5 5/8" (142.9)	5 3/8" (136.5)	3/8"-16	440 (1.78)	176 (79.8)
4B-3	3" (80)	1/2"-13	1 7/8" (47.6)	6 3/4" (171.4)	6 1/8" (155.5)	3/8"-16	660 (2.93)	198 (89.9)
4B-3 1/2	3 1/2" (90)	1/2"-13	2" (50.8)	7 1/4" (184.1)	6 3/4" (171.4)	3/8"-16	660 (2.93)	219 (99.3)
4B-4	4" (100)	5/8"-11	2" (50.8)	8 5/8" (219.1)	7 1/4" (184.1)	2/2"-13	800 (3.56)	288 (130.6)
4B-5	5" (125)	5/8"-11	2" (50.8)	9 7/8" (250.8)	8 5/16" (211.1)	5/8"-11	980 (4.36)	390 (176.9)
4B-6	6" (150)	3/4"-10	2 1/8" (54.0)	10 15/16" (277.8)	9 1/2" (241.3)	5/8"-11	980 (4.36)	448 (203.2)
4B-8	8" (200)	7/8"-9	2 1/8" (54.0)	13 7/16" (341.2)	11 1/2" (292.1)	3/4"-10	1200 (5.34)	691 (313.4)

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. 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.

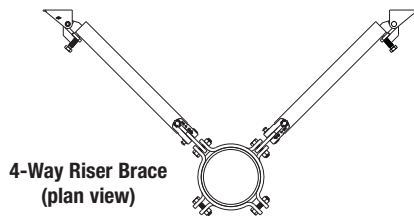
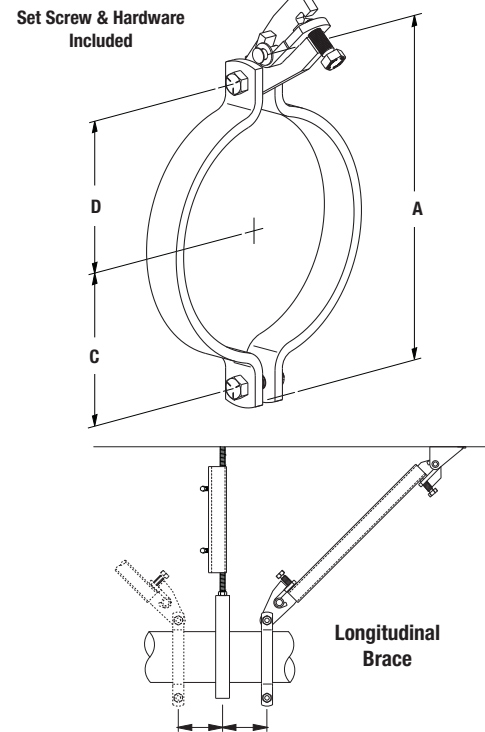
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL) 2 1/2" (65mm) through 8" (200mm) pipe. Approved by Factory Mutual Engineering (FM), 2" (50mm) through 8" (200mm) pipe.

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.



Seismic Bracing

Part No.	Pipe Size in. (mm)	A in. (mm)	C in. (mm)	D in. (mm)	Bolt Size	Max. Rec. Load (cULuc) lbs. (kN)	*Max. Design Load (FM) lbs. (kN)	Approx. Wt./100 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 in. (mm)	Max. Rec. Load (cULuc) lbs. (kN)	*Max. Design Load (FM)			
			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 θ is 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: Underwriters Laboratories Listed in the USA (**UL**) and Canada (**cUL**) 1" (25mm) through 10" (250mm) pipe. 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.

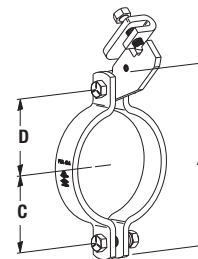
To Install: Place the Fig. 4LA pipe clamp component over the pipe to be braced and tighten down the break-off nuts until the hex head portion breaks off to verify correct installation torque. Next engage brace member (pipe or strut) with jaw component and tighten break-off head bolt until the hex head 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.

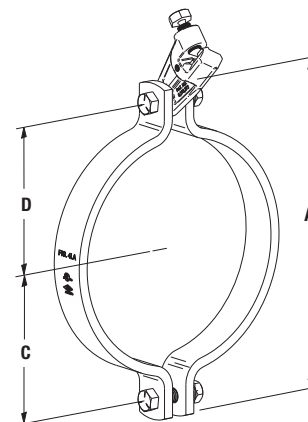
Order By: Figure number, pipe size and finish.



4LA-1 thru 4LA-4



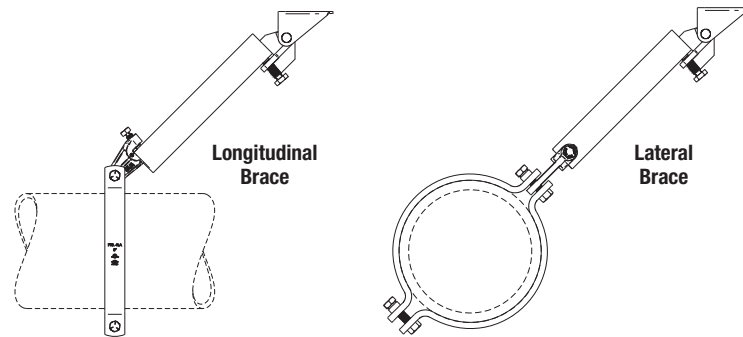
4LA-5 thru 4LA-12



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 ¹⁹ / ₃₂ "	(91.2)	1 ⁵ / ₁₆ "	(33.5)	1 ⁵ / ₁₆ "	(33.5)	3/8"-16	119	(54.0)
4LA-1 ¹ / ₄	1 ¹ / ₄ "	(32)	3 ²⁹ / ₃₂ "	(99.3)	1 ³ / ₈ "	(35.3)	1 ³ / ₈ "	(35.3)	3/8"-16	123	(55.8)
4LA-1 ¹ / ₂	1 ¹ / ₂ "	(40)	4 ⁵ / ₃₂ "	(105.7)	1 ¹ / ₂ "	(38.5)	1 ¹ / ₂ "	(38.5)	3/8"-16	127	(57.6)
4LA-2	2"	(50)	5 ¹¹ / ₃₂ "	(135.6)	2 ¹ / ₃₂ "	(51.9)	2 ¹ / ₁₆ "	(51.9)	3/8"-16	142	(64.4)
4LA-2 ¹ / ₂	2 ¹ / ₂ "	(65)	5 ²⁷ / ₃₂ "	(148.7)	2 ⁵ / ₁₆ "	(58.5)	2 ⁵ / ₁₆ "	(58.5)	3/8"-16	173	(78.5)
4LA-3	3"	(80)	6 ¹ / ₂ "	(164.9)	2 ⁵ / ₈ "	(66.6)	2 ⁵ / ₈ "	(66.6)	3/8"-16	187	(84.8)
4LA-3 ¹ / ₂	3 ¹ / ₂ "	(90)	7.407"	(188.1)	2 ⁷ / ₈ "	(73.1)	2 ⁷ / ₈ "	(73.1)	3/8"-16	198	(89.8)
4LA-4	4"	(100)	7 ¹³ / ₃₂ "	(190.8)	3 ¹ / ₈ "	(79.5)	3 ¹ / ₈ "	(79.5)	3/8"-16	209	(94.8)
4LA-5	5"	(125)	8 ³ / ₄ "	(222.3)	3 ⁵ / ₈ "	(92.1)	3 ⁵ / ₈ "	(92.1)	1/2"-13	298	(135.2)
4LA-6	6"	(150)	10 ⁵ / ₈ "	(269.9)	4 ⁹ / ₁₆ "	(115.9)	4 ⁹ / ₁₆ "	(115.9)	1/2"-13	521	(236.3)
4LA-8	8"	(200)	12 ¹³ / ₁₆ "	(325.5)	5 ⁹ / ₁₆ "	(143.7)	5 ²¹ / ₃₂ "	(143.7)	1/2"-13	629	(285.3)
4LA-10	10"	(250)	16 ¹ / ₂ "	(419.1)	7 ¹ / ₄ "	(184.2)	7 ¹ / ₄ "	(184.2)	1/2"-13	1320	(598.7)
4LA-12	12"	(300)	18 ¹ / ₂ "	(469.9)	8 ¹ / ₄ "	(209.6)	8 ¹ / ₄ "	(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								UL Max. Rec.	
Part No.	Pipe Size		30°-44°		45°-59°		60°-74°		75°-90°		Load	
	in.	(mm)	lbs.	(kN)	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								UL Max. Rec.	
Part No.	Pipe Size		30°-44°		45°-59°		60°-74°		75°-90°		Load	
	in.	(mm)	lbs.	(kN)	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)	-	-

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. 800 - Adjustable Sway Brace Attachment to Steel

Size Range: 4" (101.6mm) thru 18" (457.2mm) beam width

Material: Steel

Function: Seismic brace attachment to steel.

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 connection to steel where drilling and/or welding of brace connection could present structural issues.

Installation Instructions: Fig. 800 is the structural attachment component of a longitudinal or lateral sway brace assembly. It is intended to be combined with a Cooper B-Line/TOLCO transitional attachment, "bracing pipe" and a Cooper B-Line/TOLCO "braced pipe" attachment to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

To Install: Place the Fig. 800 on the steel beam, tighten the cone point set screws on flange until the heads break off. Tighten hex head bolts into clamp body until lock washers are fully flat. Attach other TOLCO transitional attachment fitting, Fig. 909, 910, 980 or 986. Transitional fitting attachment can pivot for adjustment to proper brace angle.

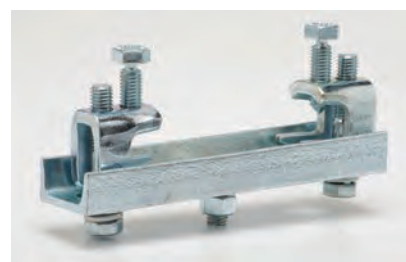
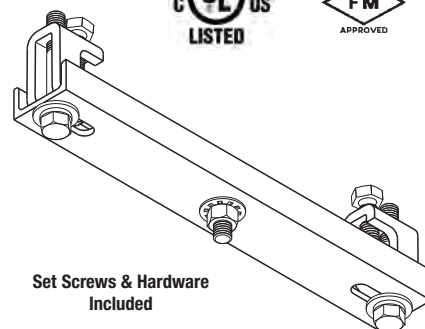
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved by Factory Mutual Engineering (FM). Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD). For additional load, spacing and placement information relating to OSHPD projects, please refer to the TOLCO Seismic Restraint Systems Guidelines.

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

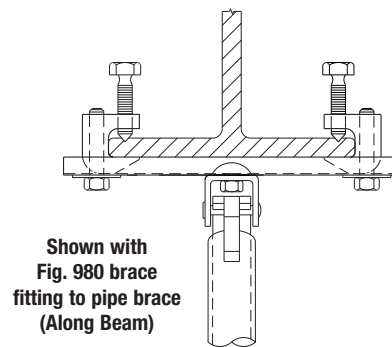
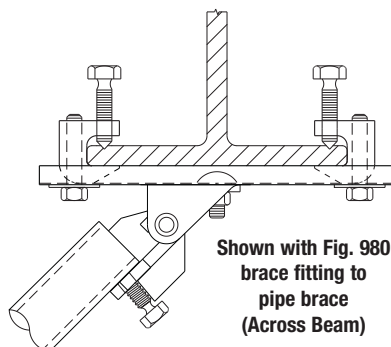
Order By: Figure number, type number and size number.



Component of State of
California OSHPD Approved
Seismic Restraints System



Part No.	Fits Beam Flange Width	
	in.	(mm)
800-1	4" - 6"	(101.6-152.4)
800-2	6" - 8"	(152.4-203.2)
800-3	8" - 10"	(203.2-254.0)
800-4	10" - 12"	(254.0-304.8)
800-5	12" - 14"	(304.8-355.6)
800-6	14" - 16"	(355.6-406.4)
800-7	16" - 18"	(406.4-457.2)



Type	Fits Beam Flange Thickness		Max. Design Loads (cULus)		Max. Design Load (FM)							
					Lateral - Parallel to Structural Member				Longitudinal - Perpendicular to Structural Member			
	in.	(mm)	lbs./ (kN)	lbs./ (kN)	30°-44° lbs./ (kN)	45°-59° lbs./ (kN)	60°-74° lbs./ (kN)	75°-90° lbs./ (kN)	30°-44° lbs./ (kN)	45°-59° lbs./ (kN)	60°-74° lbs./ (kN)	75°-90° lbs./ (kN)
1	Up to 3/4"	(Up to 19.0)	1265 (5.62)	2015 (8.96)	1430 (6.36)	1970 (8.76)	1980 (8.81)	NR (NR)	930 (4.13)	1310 (5.82)	1610 (7.16)	1800 (8.00)
2	3/4" to 1 1/4"	(19.0 to 31.7)	1265 (5.62)	2015 (8.96)	NR (NR)	NR (NR)	NR (NR)	NR (NR)	NR (NR)	NR (NR)	NR (NR)	NR (NR)

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. 825 - Bar Joist Sway Brace Attachment

Size Range: One size accommodates all Fig. 900 Series sway brace attachments. Maximum Horizontal Design Load 2015 lbs (8.96kN).

Material: Steel

Function: To attach sway bracing and hanger assemblies to steel open web structural 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 screw design assures verification of proper installation torque (min. 31 ft.-lbs.).

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved by Factory Mutual Engineering (FM). Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines.

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 and/or OSHPD guidelines should be followed.

To Install: Place the Fig. 825 on the steel beam, tighten the cone point set screws until heads break off. Attach other TOLCO transitional attachment fitting, Fig. 909, 910, 980 or 986. Transitional fitting attachment can pivot for adjustment to proper brace angle.

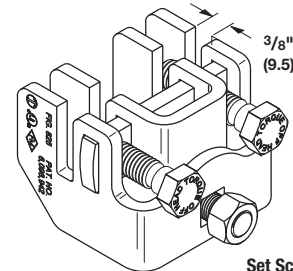
Finish: Plain, Electro-Galvanized and HDG

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

Order By: Figure number and finish
US Patent #6,098,942,
Canada Patent #2,286,659



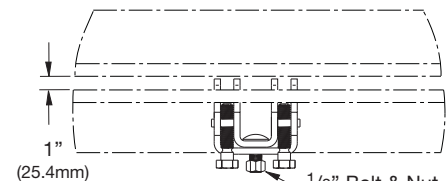
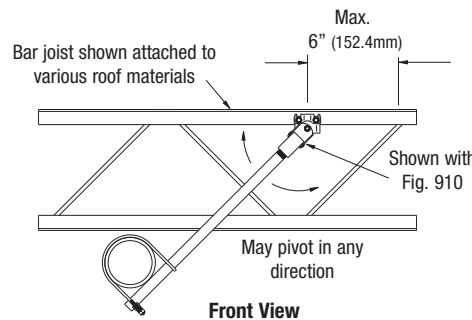
Component of State of
California OSHPD Approved
Seismic Restraints System



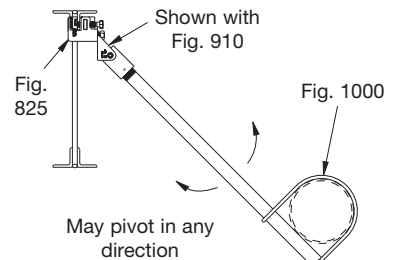
Set Screws &
Hardware Included

Maximum Design Load 2015 lbs. (8.96kN)

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

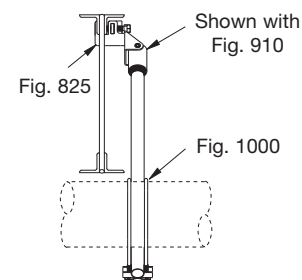


Top View



Side View

		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	Lateral - Parallel to Structural Member	990 (4.40)	1360 (6.05)	1670 (7.43)	1860 (8.27)
Maximum 3/8" Thick Flange	Longitudinal - Perpendicular to Structural Member	460 (2.04)	630 (2.80)	770 (3.42)	860 (3.82)



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.

Seismic Bracing

Fig. 825A - Bar Joist Sway Brace Attachment

Size Range: One size accommodates all Fig. 900 Series sway brace attachments. Maximum Horizontal Design Load 1600 lbs (7.11kN).

Material: Steel

Function: To attach sway bracing to steel open web structural 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 bolt design assures verification of proper installation.

Approvals: Underwriters Laboratories Listed in the USA (**UL**) and Canada (**cUL**). For additional load, spacing and placement information relating to OSHPD projects, please refer to the TOLCO Seismic Restraint Systems Guidelines.

Installation Instructions: Fig. 825A 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 and/or OSHPD guidelines should be followed.

To Install: Place the Fig. 825A on the steel beam, tighten the cone point set screws until heads break off. Attach other TOLCO transitional attachment fitting, Fig. 909, 910, 980 or 986. Transitional fitting attachment can pivot for adjustment to proper brace angle.

Finish: Plain or Electro-Galvanized

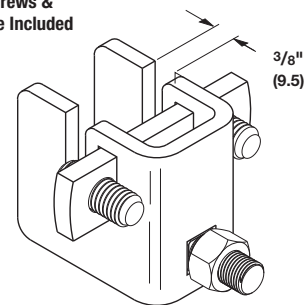
Approx. Wt./100: 154.5 Lbs. (70.1kg)

Order By: Figure number and finish

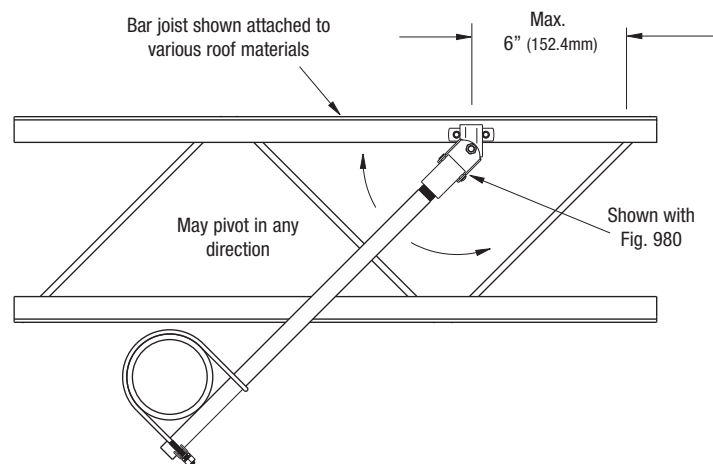
Patent #6,098,942



Set Screws &
Hardware Included



Maximum Design Load
1600 lbs.



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. 828 - Universal Sway Brace Attachment

Size Range: One size accommodates all Fig. 900 Series sway brace attachments. Fits from 3/8" (9.4mm) to 7/8" (22.2mm) thick steel structure. For thicknesses less than 3/8" (9.4mm) refer to Fig. 825 and Fig. 825A.

Material: Steel

Function: To attach sway bracing to various types of steel structural members.

Features: Permits secure non-friction connection without drilling or welding. Unique design allows offset placement on wide flange beam, I-beam, C-channel, open web, welded steel trusses, etc.. Secures brace to structure either across or along the beam. Break-off set screws allow for visual verification of proper installation torque.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Factory Mutual Approved (FM).

Installation Instructions: The Fig. 828 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 and/or OSHPD guidelines should be followed.

To Install: Place the Fig. 828 on the flange of the beam, truss, or girder. Be sure the attachment is fully engaged to the rear of the opening. Tighten the cone point set screws (A) until the heads break off. Tighten the cone point set screw (B) until the head breaks off. Remove the flange nut from set screw (B). Install a TOLCO swivel fitting (Fig. 909, 910, 980, 986). Use flange nut to secure the swivel fitting.

Finish: Plain or Electro-Galvanized

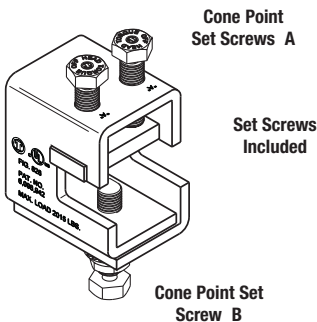
Approx. Weight/100: 275 Lbs. (124.7kg)

Order By: Figure number and finish

Patent #6,098,942, #8,534,625

Canada Patent #2,286,659

Patent Pending

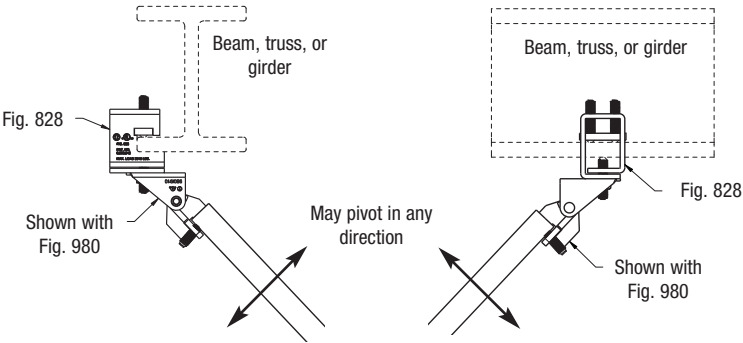


UL Horizontal Design Load
Maximum Design Load Across Beam 2015 lbs. (8.96kN)
Maximum Design Load Along Beam 2015 lbs. (8.96kN)



FM Approved Allowable Horizontal Load* With Brace Perpendicular To Beam				
Brace Angle (degrees from vertical)				
30°-44°	45°-59°	60°-74°	75°-90°	
1570 (6.98kN)	2220 (9.87kN)	1210 (5.38kN)	700 (3.11kN)	

FM Approved Allowable Horizontal Load* With Brace Parallel To Beam				
Brace Angle (degrees from vertical)				
30°-44°	45°-59°	60°-74°	75°-90°	
690 (3.07kN)	970 (4.31kN)	1210 (5.38kN)	1330 (5.91kN)	



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.

Seismic Bracing

Fig. 906 - Sway Brace Multi-Fastener Adapter

Size Range: Use with 1" (25.4mm) and 1 1/4" (31.7mm) UL listed Fig. 900 Series Earthquake Brace Attachments.

Material: Steel

Application: Allows sway brace fittings to develop greater load carrying ability by providing multiple fastener attachments. The National Fire Protection (NFPA) provides information on fastener loads to various structures. Refer to NFPA 13 (2010) 9.3.5.9.1.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL) only when used with TOLCO Fig. 900 Series Earthquake Brace Attachments. Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines.

Installation Instructions: Fig. 906 is a multiple fastener 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 and/or OSHPD guidelines should be followed.

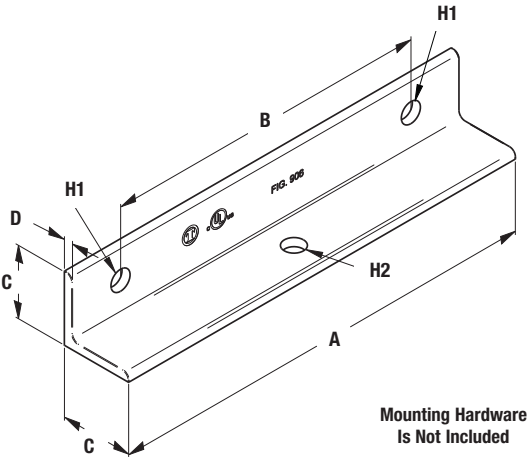
To Install: Attach the Fig. 906 to the structural surface as per fastener design guidelines. Attach other TOLCO transitional attachment fitting Fig. 909, 910, 980 or 986. Transitional fitting attachment can pivot for adjustment to proper brace angle.

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

Order By: Figure number and specify dimensions H1 and H2.



Component of State of California OSHPD Approved Seismic Restraints System



Part Number	A		B		C		D		H1	H2	Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)			Lbs.	(kg)
906	12"	(305.0)	9"	(228.6)	2"	(50.8)	1/4"	(6.3)	Specify	Specify	307	(139.3)

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. 907 - 4-Way Longitudinal Sway Brace Attachment

Size Range: 1" (25.4mm) x 1" (25.4mm), 1" (25.4mm) x 1 1/4" (31.7mm) and 1 1/4" (25.4mm) x 1 1/4" (25.4mm) bracing pipe.

Material: Steel, hardened cone (or cup) point set screw

Function: For bracing pipe against sway and seismic disturbances, Functions as a longitudinal brace connection when attached to a lateral brace pipe. Bracing connection must be positioned as close as physically possible to the braced pipe (No more than 3" (76.2mm) away). Must be used only with TOLCO bracing components. When used in conjunction with Fig. 1000, this combination bracing restricts piping movement in tension and compression both laterally and longitudinally.

Approvals: Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines.

Installation Instructions: Fig. 907 is a transitional component of a longitudinal 4-way sway brace assembly. It is intended to be installed with the longitudinal and lateral "bracing pipes", TOLCO structural attachment fittings, Fig. 909, 910 and 980 and the Fig. 1000 TOLCO "braced pipe" fitting, to form a complete bracing assembly.

NFPA 13 and/or OSHPD guidelines should be followed.

To Install: Attach the Fig. 907 over the lateral "bracing pipe" to within 3" (76.2mm) of its position relative to the "braced pipe" connection. Adjust brace angle and tighten set screws until the heads bottom out on surface.

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

Order By: Figure number, bracing pipe sizes and finish.



Component of State of California OSHPD Approved Seismic Restraints System

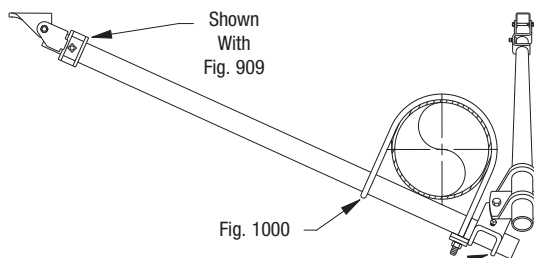
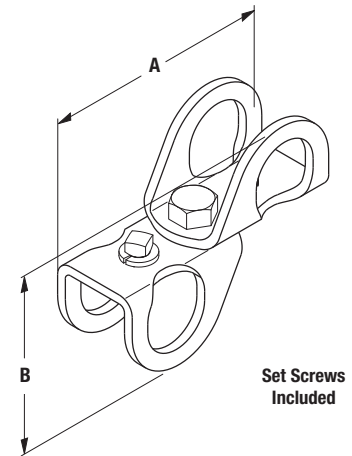
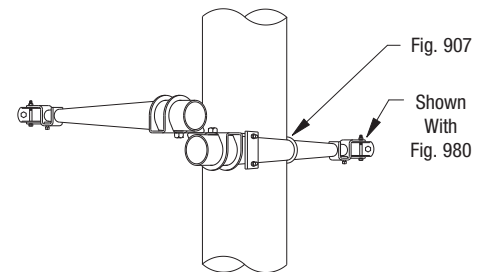


Fig. 907 Can Be Attached On Either Side Of The Pipe Being Braced



4-Way Riser Brace

Part Number	Brace Pipe Size		A		B		Max. Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kN)	lbs.	(kg)
907-1 X 1	1" x 1"	(25 x 25)	4 3/4"	(120.6)	4 3/4"	(120.6)	655*	(2.91)	103	(46.7)
907-1 X 1 1/4	1" x 1 1/4"	(25 x 32)	5 3/16"	(128.6)	4 13/16"	(122.2)	655*	(2.91)	107	(48.5)
907-1 1/4 X 1 1/4	1 1/4" x 1 1/4"	(32 x 32)	5 3/8"	(136.5)	5 1/4"	(133.1)	655*	(2.91)	109	(49.4)

* Load will accommodate up to 4" (100mm) pipe at maximum spacing.

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.

Seismic Bracing

Fig. 909 - No-Thread Swivel Sway Brace Attachment

Size Range: 1" (25mm) bracing pipe. For brace pipe sizes larger than 1" (25mm), use Fig. 980. Available with holes for 3/8"-16 thru 3/4"-10 fastener attachment.

Material: Steel, hardened cone point set screw

Function: The structural component of a sway and seismic bracing system.

Features: This product's design incorporates a concentric attachment opening which is critical to the performance of structural seismic connections. NFPA 13 (2010) 9.3.5.8.4 indicates clearly that fastener table load values are based only on concentric loading. No threading of the bracing pipe is required. Open design allows for easy inspection of pipe engagement.

Application Note: Fig. 909 is used in conjunction with the Fig. 1000, Fig. 1001, Fig. 4 (A) or Fig. 4L pipe clamp, and joined together with bracing pipe. Sway brace assemblies are intended to be installed in accordance with NFPA 13 (or TOLCO State of California OSHPD Approved Seismic Restraint Manual) and the manufacturer's installation instructions. The required type, number and size of fasteners used for the structure attachment fitting shall be in accordance with NFPA 13 and/or OSHPD.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines.

Installation Instructions: Fig. 909 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, 4A, 4B or 4L to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

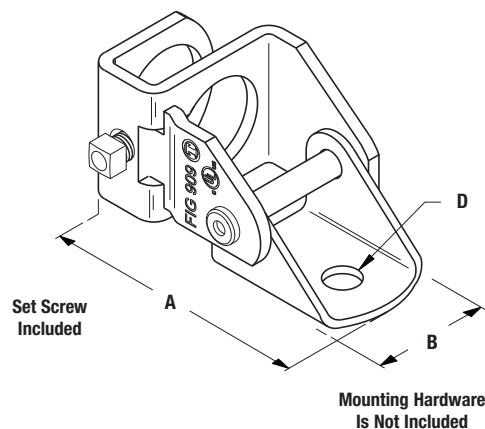
To Install: Place the Fig. 909 onto the bracing pipe. Tighten the set screw until the head bottoms out on surface. Attachment can pivot for adjustment to proper brace angle.

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

Order By: Figure number, fastener attachment size and finish.



Component of State of California OSHPD Approved Seismic Restraints System



Part Number	Hole Size D*		Brace Pipe Size		A		B		Max. Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kN)	lbs.	(kg)
909-3/8	13/32"	(10.3)	1"	(25)	6"	(152.4)	15/8"	(41.3)	2015	(8.96)	92	(41.7)
909-1/2	17/32"	(13.5)	1"	(25)	6"	(152.4)	15/8"	(41.3)	2015	(8.96)	91	(41.3)
909-5/8	11/16"	(17.5)	1"	(25)	6"	(152.4)	15/8"	(41.3)	2015	(8.96)	90	(40.8)
909-3/4	13/16"	(20.6)	1"	(25)	6"	(152.4)	15/8"	(41.3)	2015	(8.96)	89	(40.4)

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. 910 - Swivel Sway Brace Attachment



Component of State of
California OSHPD Approved
Seismic Restraints System

Size Range: 1" (25mm) bracing pipe. For brace pipe sizes larger than 1" (25mm), use Fig. 980. Available with holes for 3/8"-16 thru 3/4"-10 fastener attachment.

Material: Steel

Function: For bracing pipe against sway and seismic disturbances. The building attachment component of a sway brace system; the Fig. 910 is used in conjunction with the Fig. 1001, Fig. 1000 or with a Fig. 4A, Fig. 4L, or Fig. 4LA pipe clamp and joined together with a brace pipe per NFPA 13.

Features: This product's design incorporates a concentric attachment opening which is critical to the performance of structural seismic connections. NFPA 13 (2010) 9.3.5.8.4 indicates that fastener table load values are based only on concentric loading. Universal swivel design allows Fig. 910 to be attached at any surface angle.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD, OPA-0300). For additional load, spacing and placement information relating to OSHPD projects, please refer to the TOLCO Seismic Restraint Systems Guidelines.

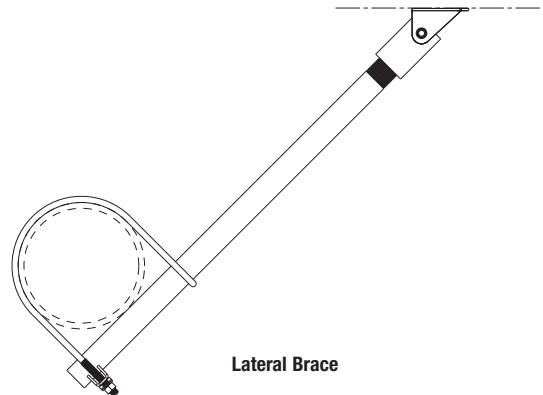
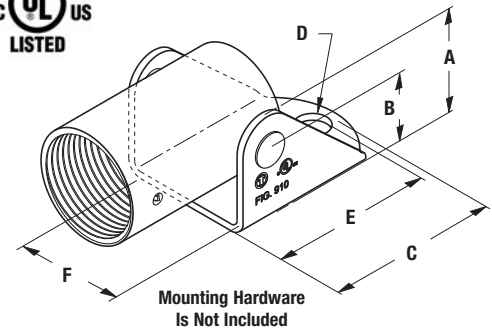
Installation Instructions: Fig. 910 is a structural or transitional attachment component of a longitudinal or lateral sway brace assembly. It is intended to be combined with the "bracing pipe", and TOLCO "braced pipe" attachment, Fig. 1000, Fig. 1001, Fig. 4A, Fig. 4L or Fig. 4LA to form a complete bracing assembly. Follow NFPA 13 and/or OSHPD guidelines.

To Install: Thread the pipe into the Fig. 910 until pipe threads are visible through inspection site hole. Attachment can pivot for adjustment to proper brace angle.

Note: Fig. 910 swivel attachment and Fig. 1001, Fig. 1000, Fig. 4A Fig. 4L, or Fig. 4LA pipe clamps 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: Pre-Galvanized. Contact B-Line for alternative finishes and materials.

Order By: Figure number, pipe size, fastener attachment size, and finish.



Part Number	Brace Pipe Size in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	Hole Size D in. (mm)	E in. (mm)	F in. (mm)	Max. Design Load lbs. (kN)	Approx. Wt./100 lbs. (kg)
910-1 X 1 1/2	1" (25)	2" (50.8)	1 1/2" (38.1)	3" (76.2)	9/16" (14.3)	2 5/16" (58.7)	2" (50.8)	1600 (8.96)	88 (39.9)
910-1 X 5/8	1" (25)	2" (50.8)	1 1/2" (38.1)	3" (76.2)	11/16" (17.5)	2 5/16" (58.7)	2" (50.8)	1600 (8.96)	87 (39.4)
910-1 X 3/4	1" (25)	2" (50.8)	1 1/2" (38.1)	3" (76.2)	13/16" (20.6)	2 5/16" (58.7)	2" (50.8)	1600 (8.96)	86 (39.0)

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.

Seismic Bracing

Fig. 975 - Straight Sway Brace Fitting

Size Range: 1" (25mm) bracing pipe. For brace pipe sizes larger than 1" (25mm), use Fig. 980. Available with holes for 1/2"-13 thru 3/4"-10 fastener attachment.

Material: Steel

Function: For bracing pipe against sway and seismic disturbances. The building attachment component of a sway brace system; the Fig. 975 is used in conjunction with the Fig. 1000, Fig. 1001 or with a Fig. 4A pipe clamp and joined together with a brace pipe per NFPA 13.

Features: Open design allows for easy checking of thread engagement.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL).

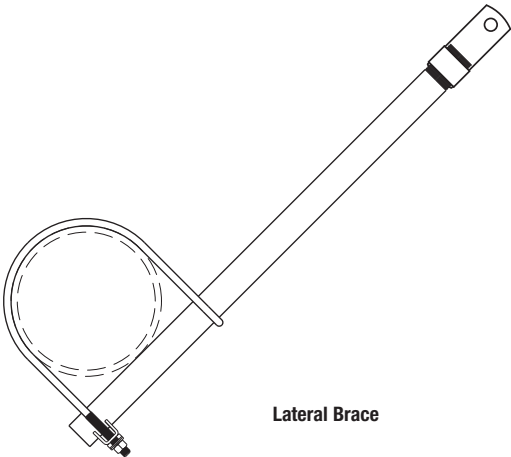
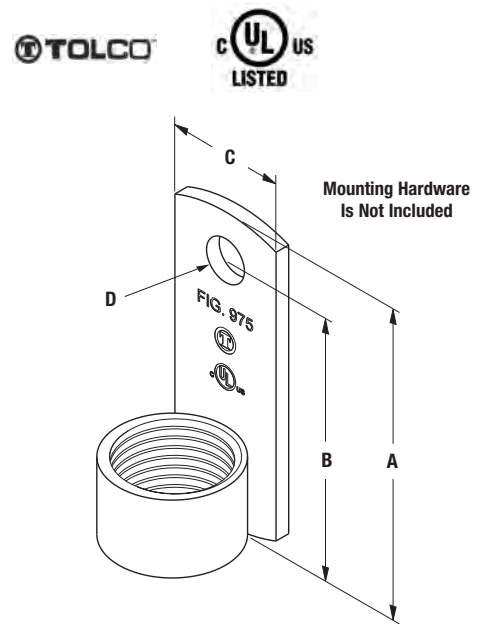
Installation: Fig. 975 is the structural or transitional attachment component of a longitudinal or lateral sway brace assembly. It is intended to be combined with the "bracing pipe" and TOLCO "braced pipe" attachment, Fig. 1000, 1001, 4A, 4B or 4L to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

To Install: Thread the Fig. 975 onto the threaded bracing pipe. Attachment can pivot for adjustment to proper brace angle. (Bending of plate not permitted.)

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

Order By: Figure number and finish.

Note: Bending of this fitting alters the material strength. Use Fig. 909 or Fig. 910 when angle fitting is required.



Lateral Brace

Part Number in.	Brace Pipe Size (mm) in.	A (mm) in.	B (mm) in.	C (mm) in.	Hole Size D (mm) lbs.	Max. Design Load (kN) lbs.	Approx. Wt./100 (kg)
975-1/2	1" (25)	4" (101.6)	3 1/2" (88.9)	1 1/2" (38.1)	9/16" (14.3)	2015 (8.96)	88 (39.9)
975-5/8	1" (25)	4" (101.6)	3 1/2" (88.9)	1 1/2" (38.1)	11/16" (17.5)	2015 (8.96)	87 (39.4)
975-3/4	1" (25)	4" (101.6)	3 1/2" (88.9)	1 1/2" (38.1)	13/16" (20.6)	2015 (8.96)	86 (39.0)

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. 980 - Universal Swivel Sway Brace Attachment - 3/8"-16 to 3/4"-10 rods

Fig. 980H - Universal Swivel Sway Brace Attachment - 7/8"-9 to 1 1/4"-7 rods

Component of State of California OSHPD Approved Seismic Restraints System

Size Range: One size fits bracing pipe 1" (25mm) thru 2" (50mm), Cooper B-Line 12 gauge (2.6mm) channel, and all structural steel up to 1/4" (31.7mm) thick.

Material: 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. NFPA 13 (2010) 9.3.5.8.4 indicates clearly that fastener table load values are based only on concentric loading. Mounts to any surface angle. 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, 2002, 4L, 4A or 4B to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

To Install: Place the Fig. 980 onto the "bracing pipe". Tighten the set screw 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). Approved by Factory Mutual Engineering (FM). Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines.

Note: Fig. 980 Swivel Attachment and Fig. 1001, Fig. 1000, Fig. 2002, Fig. 4A, Fig. 4B or Fig. 4L pipe clamps 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)

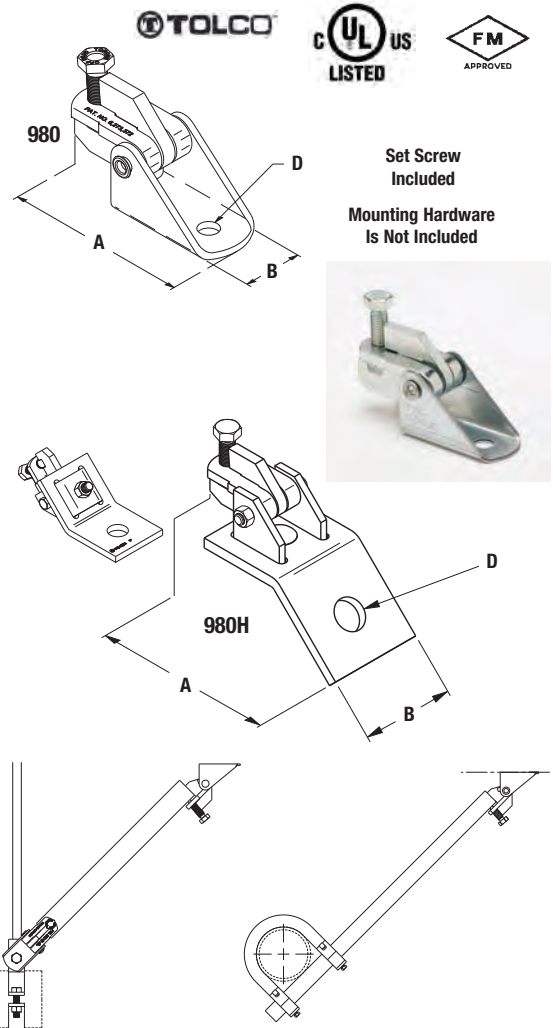
Finish: Plain, Electro-Galvanized or Stainless Steel. Contact B-Line for alternative finishes.

Order By: Figure number and finish.

US Patent Numbers

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



Part Number	A		B		D*		Max. Design Load (cULus) lbs./(kN)	Max. Design Load** (FM)				Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)		30°-44° lbs./(kN)	45°-59° lbs./(kN)	60°-74° lbs./(kN)	75°-90° lbs./(kN)	lbs.	(kg)
980-3/8	5 1/4"	(133.3)	1 7/8"	(47.6)	1 3/32"	(10.3)	2015 (8.96)	1320 (5.87)	1970 (8.76)	2310 (10.27)	2550 (11.34)	149	(67.6)
980-1/2	5 1/4"	(133.3)	1 7/8"	(47.6)	1 7/32"	(13.5)						148	(67.1)
980-5/8	5 1/4"	(133.3)	1 7/8"	(47.6)	1 1/16"	(17.5)						147	(66.7)
980-3/4	5 1/4"	(133.3)	1 7/8"	(47.6)	1 3/16"	(20.5)						146	(66.2)
980H-7/8	6 3/4"	(171.4)	3 1/2"	(88.9)	1 5/16"	(23.8)						402	(182.3)
980H-1	6 3/4"	(171.4)	3 1/2"	(88.9)	1 1/16"	(27.0)						400	(181.4)
980H-1 1/8	6 3/4"	(171.4)	3 1/2"	(88.9)	1 3/16"	(30.2)						397	(180.1)
980H-1 1/4	6 3/4"	(171.4)	3 1/2"	(88.9)	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 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.

Seismic Bracing

Fig. 981 - Fast Attach – Universal Swivel Sway Brace Attachment

Size Range: Fits bracing pipe 1" (25mm) thru 2" (50mm), 12 gauge (2.6mm) channel and all structural steel up to 1/4" (6.3mm) thick.

Fig. 981-S fits rod sizes 3/8" thru 5/8".

Fig. 981-L fits rod sizes 3/4" thru 7/8".

Material: Steel

Function: Multi-functional attachment to hanger rod, trapeze rod, structure or braced pipe fitting.

Features: Fits multiple sizes of bracing pipe, strut or structural steel. Swivel allows adjustment to various surface angles. Breakaway bolt heads assure verification of proper installation torque. Unique "fast attach" yoke design fits multiple rod sizes; 3/8" thru 5/8" and 3/4" thru 7/8". "Stackable" design allows installation of both lateral and longitudinal braces to be easily installed on a single hanger rod, with no disassembly.

Installation: Fig. 981 is the "braced pipe" attachment component of a lateral or longitudinal brace assembly. It is intended to be combined with the pipe hanger, all-thread rod, "bracing pipe" and TOLCO transitional and structural attachment component(s) to form a complete bracing assembly. NFPA 13 and or OSHPD guidelines should be followed.

To Install: Spin nut on top of hanger counterclockwise to loosen the nut and raise it above the top of the hanger. Attach Fig. 981 by slipping the open side of the 981 yoke onto the all thread rod above the top of the hanger. Tighten 3/8" cone point set screw on yoke until head breaks-off to ensure proper installation torque. Spin the hex nut clockwise and tighten securely. Insert brace pipe into the jaw of the 981 and tighten the cone point set screw until the head breaks off ensuring proper installation torque. Pivot brace pipe to proper angle and attach to structure using a TOLCO swivel structural attachment.

Approvals: Included in our Seismic Restraint Systems Guidelines, approved by the California Office of Statewide Health Planning and Development (OSHPD). For additional load, spacing and placement information relating to OSHPD projects, please refer to the TOLCO Seismic Restraint Systems Guidelines.

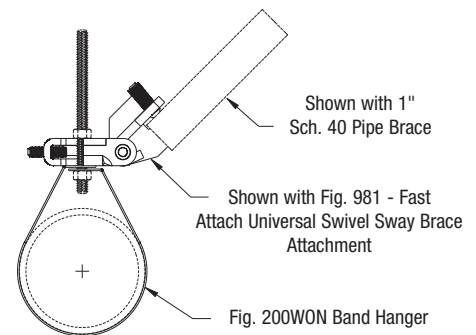
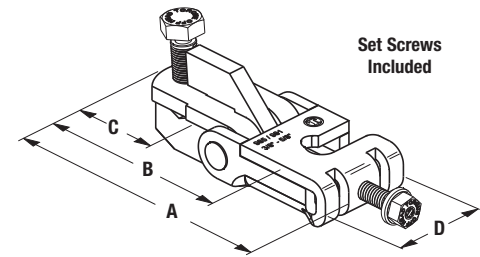
Finish: Electro-Galvanized

Order By: Figure number, rod size

US Patent Numbers

Pat. #6,273,372, Pat. #7,097,141, Pat. #7,654,043, Pat. #7,654,043 B2

Component of State of California OSHPD Approved Seismic Restraints System



Part Number	Rod Size Range	A		B		C		D		Max. Design Load		Approx. Wt./100	
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kN)	lbs.	(kg)
981-S	3/8" thru 5/8"	5 1/8"	(130.2)	4 1/8"	(104.8)	1 1/4"	(31.7)	2 1/4"	(57.1)	2015	(8.96)	88	(39.9)
981-L	3/4" & 7/8"	5 1/8"	(130.2)	4 1/8"	(104.8)	1 1/4"	(31.7)	2 1/4"	(57.1)	2015	(8.96)	82	(37.2)

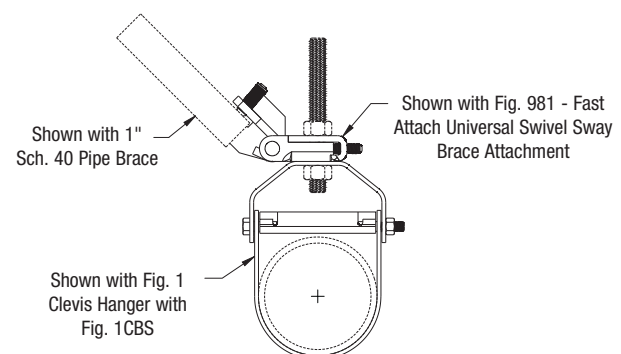
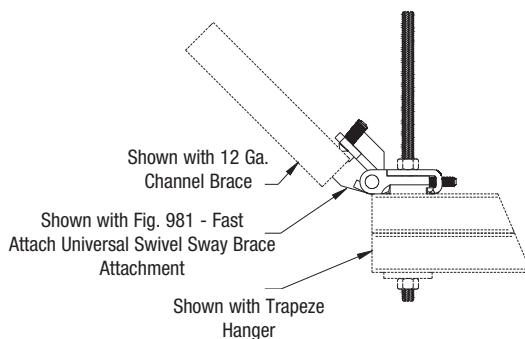


Fig. 985 - Mechanical Fast Clamp

Size Range: Fig. 985-S fits rod sizes $\frac{3}{8}$ " thru $\frac{5}{8}$ "
Fig. 985-L fits rod sizes $\frac{3}{4}$ " thru $\frac{7}{8}$ " rod sizes

Material: Steel

Function: Used for attachment of seismic bracing to pipe hanger or trapeze

Features: Allows up to 12" (304.8mm) of adjustability in brace length, when used with Fig. 986. Break-off set screw heads visually verify required installation torque. Unique "Fast Attach" yoke design allows Fig. 985 to be installed to hanger rods $\frac{3}{8}$ " thru $\frac{5}{8}$ " or $\frac{3}{4}$ " thru $\frac{7}{8}$ "

Finish: Electro-galvanized

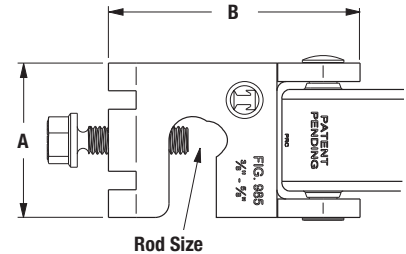
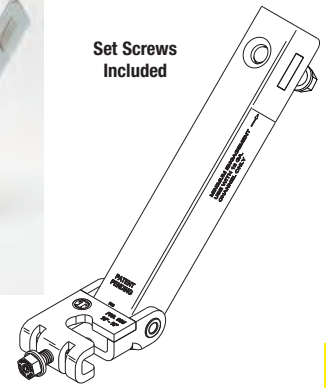
Order By: Figure number, rod size & finish

Patent Pending

TOLCO



Set Screws Included



Part Number	Rod Size	A in. (mm)	B in. (mm)	Max. Rec. Load* lbs. (kN)	Approx. Wt./100 lbs. (kg)
985-S	$\frac{3}{8}$ " thru $\frac{5}{8}$ "	2" (50.8)	1 $\frac{1}{2}$ " (38.1)	2015 (8.96)	204 (92.5)
985-L	$\frac{3}{4}$ " & $\frac{7}{8}$ "	2" (50.8)	1 $\frac{5}{8}$ " (41.3)	2015 (8.96)	198 (89.8)

Fig. 986 - Mechanical Fast Clamp

Size Range: Available with holes for $\frac{1}{2}$ "-13 thru $\frac{3}{4}$ "-10 fastener attachment.

Material: Steel

Function: Used for attachment of seismic bracing to structure or hanger.

Features: Allows up to 12" (304.8mm) of adjustability in brace length, when used with Fig. 985. Break-off set screw heads visually verify required installation torque. Swivel allows adjustment to various surface angles.

Finish: Electro-galvanized

Order By: Figure number, rod size & finish

Patent Pending

TOLCO

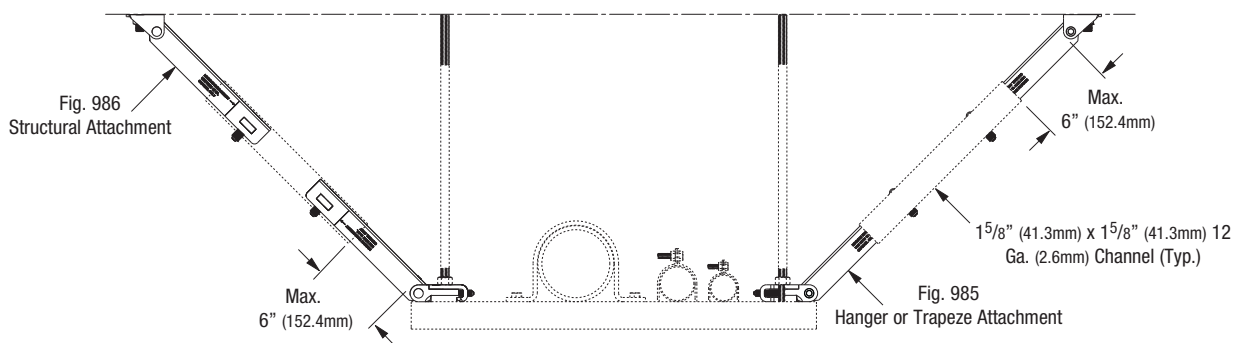


Mounting Hardware Is Not Included



Part Number	Rod Size	Hole Dia. D in. (mm)	Max. Rec. Load* lbs. (kN)	Approx. Wt./100 lbs. (kg)
986- $\frac{1}{2}$	$\frac{1}{2}$ "	$\frac{9}{16}$ " (14.3)	2015 (8.96)	204 (92.5)
986- $\frac{5}{8}$	$\frac{5}{8}$ "	$\frac{11}{16}$ " (17.5)	2015 (8.96)	203 (92.1)
986- $\frac{3}{4}$	$\frac{3}{4}$ "	$\frac{13}{16}$ " (20.6)	2015 (8.96)	202 (91.6)

* When used with 1 $\frac{5}{8}$ " (41.3mm) x 1 $\frac{5}{8}$ " (41.3mm) 12 Ga. (2.6mm) channel



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

Seismic Bracing

Fig. BRC CABLE - Pre-Stretched 7 x 19 Galvanized Aircraft Cable

Size Range: Available in cable diameters of 1/8", 3/16", and 1/4"

Material: Steel

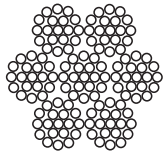
Function: Used for attachment of seismic bracing to structure or hanger.

Features: Meets requirements of IBC 2009 and ASCE 7-05 for seismic bracing.

Finish: Galvanized

Order By: Figure number and size

Note: Only pre-stretched aircraft cable should be used in seismic bracing installations where cable is used as the bracing component. Use of other types of cable will, over time, begin to sag and deform, thus rendering the bracing system to not perform properly.



7 x 19

Part Number	Cable Diameter		Max. Rec. Load*		Approx. Wt./100 Ft.	
	in.	(mm)	lbs.	(kN)	lbs.	(kg)
BRC CABLE-1/8	1/8"	(3.2)	975	(4.33)	2.9	(1.31)
BRC CABLE-3/16	3/16"	(4.8)	2050	(9.12)	6.5	(2.95)
BRC CABLE-1/4	1/4"	(6.3)	3150	(14.01)	11.0	(4.99)

* Cable breaking strength

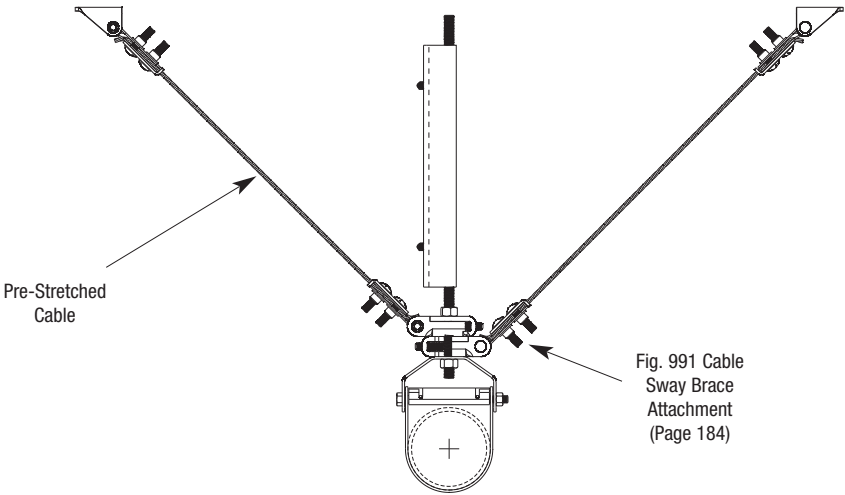


Fig. 991 Cable Sway Brace Attachment (Page 184)

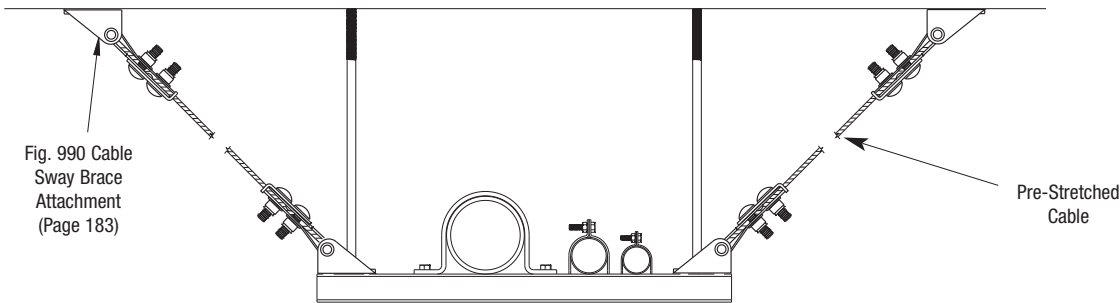


Fig. 990 Cable Sway Brace Attachment (Page 183)

Pre-Stretched Cable

Fig. 990 - Cable Sway Brace Attachment - 3/8"-16 to 7/8"-9 rods

Fig. 990H - Cable Sway Brace Attachment - 1"-8 to 1 1/4"-7 rods

Size Range: — 1/8", 3/16" and 1/4" pre-stretched cable.

Fig. 990 for 3/8", 1/2", 5/8", or 3/4" hanger rod, bolt, or fastener.

Fig. 990H for 3/4" or 7/8" hanger rod, bolt, or fastener.

Material: — Steel

Function: — Cable attachment for sway bracing. Attaches sway brace to structure or to hanger. To be used with 7 x 19 strand core pre-stretched galvanized aircraft cable.

Features: — Cable easily slides into oversized front arch opening. Breakaway hex nuts assure verification of proper installation. Will mount to any surface angle.

Approvals: — Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHDP). For additional load, spacing and placement information relating to OSHDP projects, please refer to the TOLCO Seismic Restraint System Guidelines.

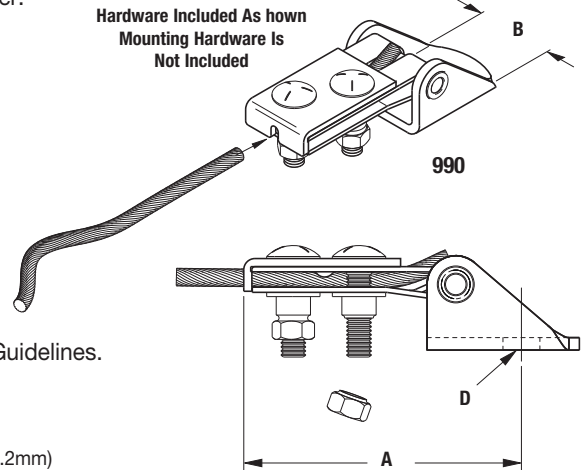
Finish: — Electro-Galvanized

Order By: — Figure number, cable size and mounting hole size.

Note: — Order 990H for hanger rod, bolt or fastener holes sized for 7/8" (22.2mm) thru 1 1/4" (31.7mm) rods.

TOLCO

Component of State of California OSHDP Approved Seismic Restraints System

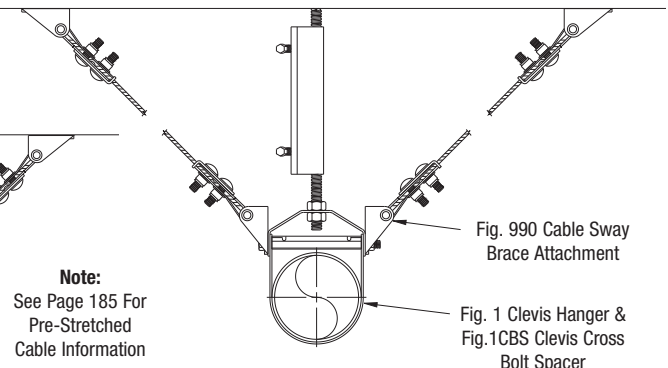
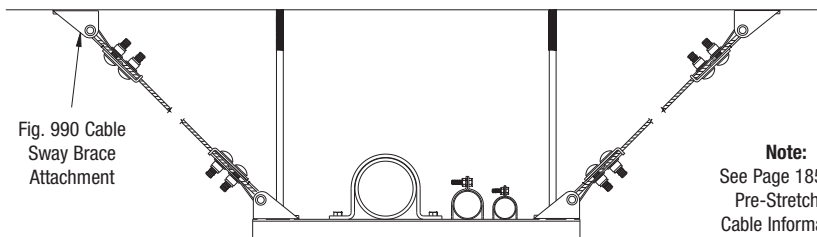
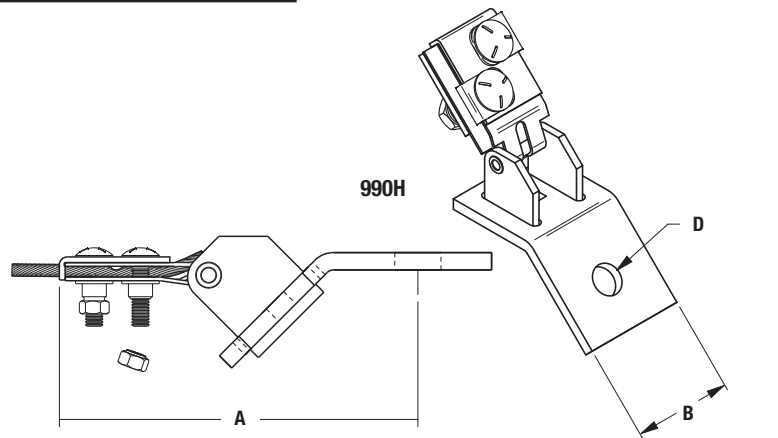


Cable ** Diameter in. (mm)	990 Dimensions				990H Dimensions				Max. Design Load *	
	A in. (mm)	B in. (mm)	D in. (mm)		A in. (mm)	B in. (mm)	D in. (mm)			
1/8" (3.2)	4 5/16" (114.3)	2" (50.8)	7 3/4" (196.8)	3 1/2" (88.9)	975 (4.33)					
3/16" (4.8)	5" (127.0)	2 1/4" (57.1)	8 1/2" (215.9)	3 1/2" (88.9)	2050 (9.12)					
1/4" (6.3)	5" (127.0)	2 5/8" (66.7)	8 1/2" (215.9)	3 1/2" (88.9)	3150 (14.01)					

* Maximum load rating controlled by cable breaking strength.

Part Number	Rod Sizes	D in. (mm)	Approx. Wt./100
990-3/8 X **	3/8"	13/32" (10.3)	Varies
990-1/2 X **	1/2"	17/32" (13.5)	Varies
990-5/8 X **	5/8"	11/16" (17.4)	Varies
990-3/4 X **	3/4"	13/16" (20.6)	Varies
990H-7/8 X **	7/8"	15/16" (23.8)	Varies
990H-1 X **	1"	1 1/8" (28.6)	Varies
990H-1 1/8 X **	1 1/8"	1 1/4" (31.7)	Varies
990H-1 1/4 X **	1 1/4"	1 3/8" (34.9)	Varies

** Insert cable diameter in part number.



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

Seismic Bracing

Fig. 991 - Fast Attach – Cable Sway Brace Attachment

Size Range: 1/8", 3/16" and 1/4" pre-stretched cable.

Fig. 991S fits rod sizes 3/8" thru 5/8".

Fig. 991L fits rod sizes 3/4" thru 7/8".

Material: Steel

Function: Cable attachment for sway bracing. Attaches sway brace to hanger rod. To be used with 7 x 19 strand core pre-stretched galvanized aircraft cable.

Features: Cable easily slides into oversized front arch opening. Swivel allows adjustment to various surface angles. Break-away hex nuts assure verification of proper installation torque. Unique "Fast-Attach" yoke design fits multiple rod sizes; 3/8" thru 5/8" or 3/4" thru 7/8". To verify proper installation to hanger rod, simply install yoke to hanger rod and tighten 3/8" cone point set screw until head breaks off. "Stackable" design allows installation of both lateral and longitudinal braces, as well as opposing braces, to be easily installed on a single hanger rod, with no disassembly. The retrofit yoke has a visual verification of proper installation torque. Tighten existing hex nut down until the slight gap in the yoke assembly closes completely.

Approvals: Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint System Guidelines.

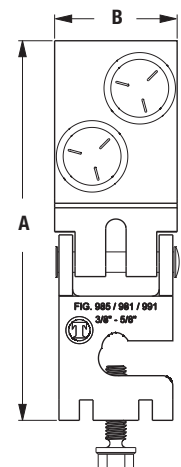
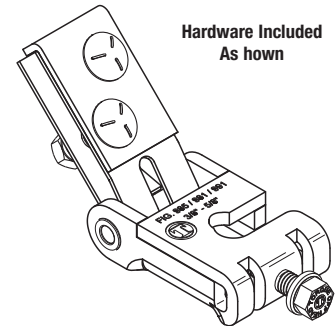
Finish: Electro-Galvanized

Order By: — Figure number, rod size range 3/8" thru 5/8" or 3/4" thru 7/8"

US Patent Nubers: Pat. #7,097,141, Pat. #7,654,043, Pat. #7,654,043 B2



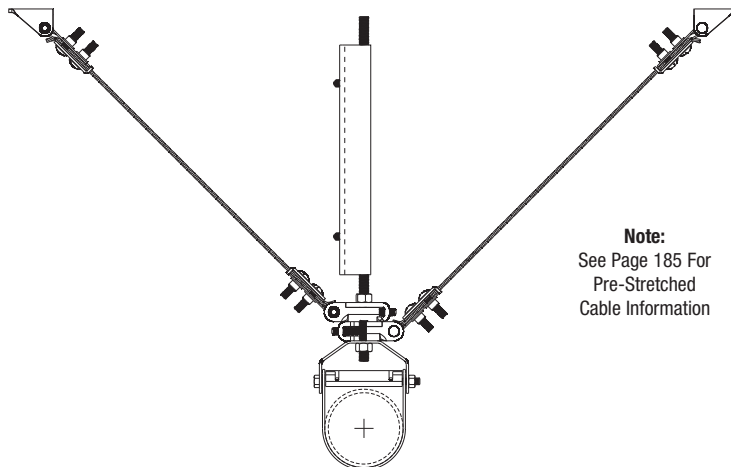
Component of State of
California OSHPD Approved
Seismic Restraints System



Part Number	Rod Sizes	Cable Diameter in. (mm)	A in. (mm)	B in. (mm)	Max. Design Load* lbs. (kN)	Approx. Wt./100 lbs. (kg)
991-S-1/8	3/8" thru 5/8"	1/8" (3.2)	4 ⁵ / ₁₆ " (14.3)	2" (50.8)	975 (4.33)	128.3 (58.2)
991-S-3/16		3/16" (4.8)	5" (127.0)	2 ¹ / ₄ " (57.1)	2050 (9.12)	182.1 (82.6)
991-S-1/4		1/4" (6.3)	5" (127.0)	2 ⁵ / ₈ " (66.7)	3150 (14.01)	221.1 (100.3)

Part Number	Rod Sizes	Cable Diameter in. (mm)	A in. (mm)	B in. (mm)	Max. Design Load* lbs. (kN)	Approx. Wt./100 lbs. (kg)
991-L-1/8	3/4" & 7/8"	1/8" (3.2)	4 ⁵ / ₁₆ " (14.3)	2" (50.8)	975 (4.33)	122.3 (55.5)
991-L-3/16		3/16" (4.8)	5" (127.0)	2 ¹ / ₄ " (57.1)	2050 (9.12)	176.1 (79.9)
991-L-1/4		1/4" (6.3)	5" (127.0)	2 ⁵ / ₈ " (66.7)	3150 (14.01)	215.1 (97.5)

* Maximum load rating controlled by cable breaking strength.



Note:
See Page 185 For
Pre-Stretched
Cable Information

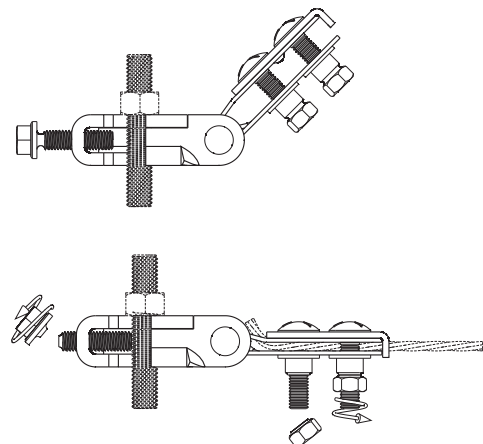


Fig. 1000 - "Fast Clamp" Sway Brace Attachment

Size Range: Pipe size to be braced: 1" (25mm) thru 6" (150mm) Schedule 10 thru 40 IPS.

Pipe size used for bracing: 1" (25mm) and 1 1/4" (32mm) Schedule 40 IPS.

Material: Steel

Function: A restraint device intended for lateral bracing.

Features: Field adjustable, making critical pre-engineering of bracing pipe unnecessary. Unique design requires no threading of bracing pipe. Can be used as a component of a 4-way riser brace. Can be used as longitudinal brace with Fig. 907. Steel leaf spring insert provided to assure installer and inspector necessary minimum torque has been achieved.

Installation: Fig. 1000 is the "braced pipe" attachment component of a lateral sway brace assembly. It is intended to be combined with the "bracing pipe" and TOLCO structural attachment component, Fig. 980, 910 or 909 to form a complete bracing assembly. Follow NFPA 13 and/or OSHPD guidelines.

To Install: Place the Fig. 1000 over the pipe to be braced, insert bracing pipe through opening leaving a minimum of 1" extension. Brace pipe can be installed on top or bottom of pipe to be braced. Tighten hex nuts until leaf spring is flat. It is recommended that the brace angle be adjusted before hex nuts are fully tightened.

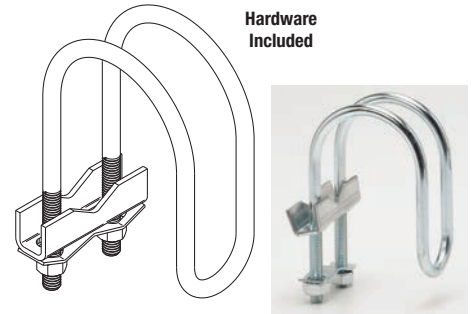
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved for use with Allied Dyna Flow sprinkler pipe up to 2" as a restraint device. Maximum horizontal design load is 655 lbs. (2.91kN) Torque requirement is 6-8 ft./lbs. (8-10Nm) Approved by Factory Mutual Engineering (FM). Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines.

Application Note: Position Fast Clamp and tighten two hex nuts until leaf spring flattens. A minimum of 1" pipe extension beyond the Fig. 1000 is recommended.

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

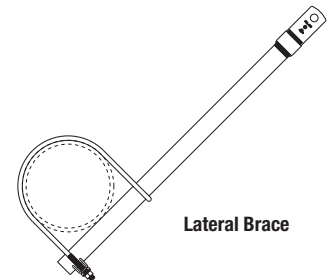
Order By: Order first by pipe size to be braced, followed by pipe size used for bracing, figure number and finish.

Component of State of California OSHPD Approved Seismic Restraints System



Hardware Included

UL Listed Design Load
1" (25mm) thru 2" (50mm) pipe size - 655 lbs. (2.91kN)



Lateral Brace

Pipe Size in. (mm)	Part Number & Approx. Wt./100				Design Load - Allowable Horizontal Capacity (lb) Per Installation ^{1,2,3}							
	1" (24mm) Brace Pipe		1 1/4" (32mm) Brace Pipe		30°-44°		45°-59°		60°-74°		75°-90°	
		Lbs. (kg)		Lbs. (kg)	Lbs. (kg)	(kN)	Lbs. (kg)	(kN)	Lbs. (kg)	(kN)	Lbs. (kg)	(kN)
1" (25)	1000-1 X 1	71.6 (32.5)	1000-1 X 1 1/4	75.8 (34.4)	200	(0.89)	280	(1.24)	340	(1.51)	380	(1.69)
1 1/4" (32)	1000-1 1/4 X 1	74.8 (33.9)	1000-1 1/4 X 1 1/4	79.1 (35.9)	200	(0.89)	280	(1.24)	340	(1.51)	380	(1.69)
1 1/2" (40)	1000-1 1/2 X 1	77.8 (35.3)	1000-1 1/2 X 1 1/4	82.1 (37.2)	200	(0.89)	280	(1.24)	340	(1.51)	380	(1.69)
2" (50)	1000-2 X 1	84.1 (38.1)	1000-2 X 1 1/4	88.4 (40.1)	200	(0.89)	280	(1.24)	340	(1.51)	380	(1.69)
2 1/2" (65)	1000-2 1/2 X 1	90.2 (40.9)	1000-2 1/2 X 1 1/4	94.6 (42.9)	200	(0.89)	280	(1.24)	340	(1.51)	380	(1.69)
3" (80)	1000-3 X 1	97.3 (44.1)	1000-3 X 1 1/4	101.7 (46.1)	230	(1.02)	320	(1.42)	400	(1.78)	450	(2.00)
3 1/2" (90)	1000-3 1/2 X 1	104.0 (47.2)	1000-3 1/2 X 1 1/4	108.4 (49.2)	230	(1.02)	320	(1.42)	400	(1.78)	450	(2.00)
4" (100)	1000-4 X 1	110.3 (50.0)	1000-4 X 1 1/4	114.6 (52.0)	230	(1.02)	320	(1.42)	400	(1.78)	450	(2.00)
5" (125)	1000-5 X 1	123.1 (55.8)	1000-5 X 1 1/4	127.4 (57.8)	--	--	--	--	--	--	--	--
6" (150)	1000-6 X 1	136.5 (61.9)	1000-6 X 1 1/4	140.8 (63.8)	--	--	--	--	--	--	--	--

¹ FM Approved when used with 1, 1 1/4, 1 1/2, or 2 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.

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.

Seismic Bracing

Fig. 1001 - Sway Brace Attachment

Size Range: Pipe size to be braced: 1" (25mm) thru 8" (200mm) IPS.
 * Pipe size used for bracing: 1" (25mm) and 1 1/4" (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 schedules 7 through 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 screws 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). Approved by Factory Mutual Engineering (FM). Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines, OPA-0300-10.

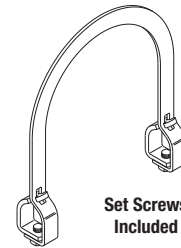
Finish: Plain or Electro-Galvanized. Contact B-Line for alternative finishes and materials.

Order By: Indicate pipe size to be braced followed by pipe size used for bracing, figure number 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 UL Listing requires that Fig. 1001 must be used only with other TOLCO bracing products.

TOLCO

Component of State of California OSHPD Approved Seismic Restraints System



Pipe Size	UL Listed Design Load - Lbs. For Brace Pipe Size 1" / 1 1/4"		
	Sch. 7 1" / 1 1/4"	Sch. 10 1" / 1 1/4"	Sch. 40 1" / 1 1/4"
1" (25)	-- / --	1000 / 1000	1000 / 1000
1 1/4" (32)	-- / --	1000 / 1000	1000 / 1000
1 1/2" (40)	-- / --	1500 / 1500	1500 / 1500
2" (50)	-- / --	2015 / 2015	2015 / 2015
2 1/2" (65)	1600 / 1600	2015 / 2765	2015 / 2765
3" (80)	1600 / 1600	2015 / 2765	2015 / 2765
4" (100)	1600 / 1600	2015 / 2765	2015 / 2765
6" (150)	1600 / 1600	2015 / 2765	2015 / 2765
8" (200)	1600 / 1600	2015 / 2765	2015 / 2765

Pipe Size in. (mm)	Part Number & Approx. Wt./100				FM Design Load - For Sch. 7, Sch. 10, & Sch. 40 Pipe Allowable Horizontal Capacity (lb) Per Installation ^{1,2,3}							
	1" (24mm) Brace Pipe		1 1/4" (32mm) Brace Pipe		30°-44°		45°-59°		60°-74°		75°-90°	
	Lbs.	(kg)	Lbs.	(kg)	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)
1" (25)	1001-1 X 1	100.0 (45.3)	1001-1 X 1 1/4	118.0 (53.5)	1800	(8.00)	2550	(11.34)	3120	(13.88)	3490	(25.52)
1 1/4" (32)	1001-1 1/4 X 1	100.0 (45.3)	1001-1 1/4 X 1 1/4	114.0 (51.7)	1230	(5.47)	1740	(7.74)	2140	(9.52)	2380	(10.58)
1 1/2" (40)	1001-1 1/2 X 1	100.0 (45.3)	1001-1 1/2 X 1 1/4	115.0 (52.1)	1230	(5.47)	1740	(7.74)	2140	(9.52)	2380	(10.58)
2" (50)	1001-2 X 1	108.0 (49.0)	1001-2 X 1 1/4	121.0 (54.9)	1230	(5.47)	1740	(7.74)	2140	(9.52)	2380	(10.58)
2 1/2" (65)	1001-2 1/2 X 1	138.6 (62.8)	1001-2 1/2 X 1 1/4	160.4 (72.7)	800	(3.56)	1130	(5.02)	1380	(6.14)	1540	(6.85)
3" (80)	1001-3 X 1	147.2 (66.7)	1001-3 X 1 1/4	168.7 (76.5)	850	(3.78)	1200	(5.34)	1470	(6.54)	1640	(7.29)
4" (100)	1001-4 X 1	160.9 (73.0)	1001-4 X 1 1/4	182.4 (82.7)	850	(3.78)	1200	(5.34)	1470	(6.54)	1640	(7.29)
6" (150)	1001-6 X 1	190.0 (86.2)	1001-6 X 1 1/4	211.4 (95.9)	510	(2.27)	730	(3.25)	890	(3.96)	990	(4.40)
8" (200)	1001-8 X 1	217.4 (98.6)	1001-8 X 1 1/4	238.8 (108.3)	510	(2.27)	730	(3.25)	890	(3.96)	990	(4.40)

¹ FM Approved when used with 1 or 1 1/4 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 with 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.

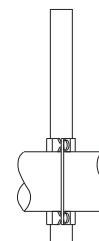
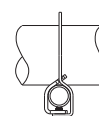
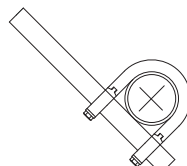
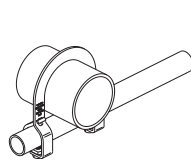


Fig. 2002 - Sway Brace Attachment

Size Range: Pipe size to be braced: 2½" (65mm) thru 8" (200mm) all steel schedules, copper, plastic, FRP, cast iron and ductile iron. Consult factory when bracing other than steel. The Fig. 2002 accepts brace pipes sizes 1½" (40mm) and 2" (50mm) steel schedule 100 through schedule 40.

Material: Steel

Function: For bracing pipe against sway and seismic disturbance. The pipe attachment component of a sway brace system: Fig. 2002 is used in conjunction with a TOLCO 900 Series sway brace attachments and joined together with bracing pipe. Install per NFPA 13 and/or TOLCO State of California OSHPD Approved Seismic Restrain Manual.

Features: Unique design will not damage thin wall, plastic, copper or ductile iron pipe. Easy verification of proper installation by tightening bolts until ears touch.

Installation: Place Fig. 2002 over pipe to be braced. Slide bracing pipe through attachment and tighten hex nuts until ears touch.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines.

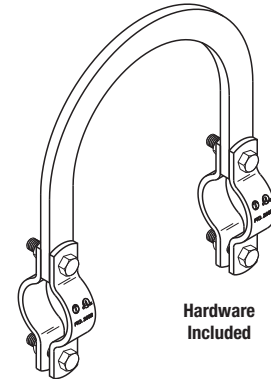
Finish: Plain. Contact B-Line for alternative finishes and materials.

Order By: Figure number, pipe size to be braced, pipe size used for bracing (1½" (40mm) or 2" (50mm)) and finish.

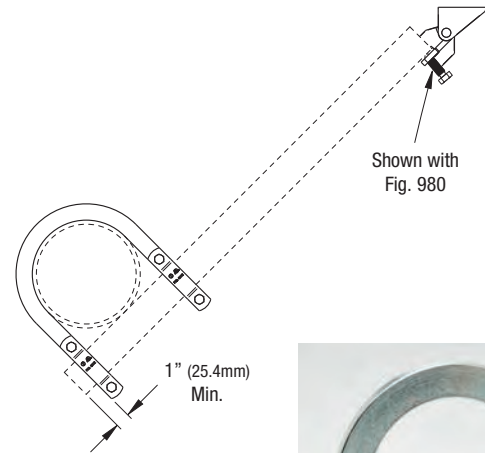
Important Note: Fig. 2002 is precision manufactured to perform its function as a critical component of a complete bracing assembly. To ensure performance, the UL Listing requires that the Fig. 2002 must be used only with other TOLCO bracing products.



Component of State of California OSHPD Approved Seismic Restraints System

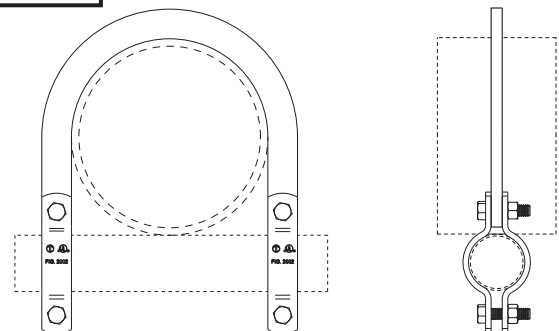


UL Listed Design Load
2015 lbs. (8.96kN)



Pipe Size in. (mm)	Part Number & Approx. Wt./100						Design Load **
	1½" (32mm) Brace Pipe	Lbs.	(kg)	2" (50mm) Brace Pipe	Lbs.	(kg)	
2½" (65)	2002-2½ X 1½	224.9	(102.0)	2002-2½ X 2	283.3	(128.6)	UL
3" (80)	2002-3 X 1½	241.0	(109.3)	2002-3 X 2	299.4	(135.8)	UL
4" (100)	2002-4 X 1½	268.4	(121.7)	2002-4 X 2	326.8	(148.2)	UL
6" (150)	2002-6 X 1½	326.6	(148.1)	2002-6 X 2	385.0	(174.6)	UL
8" (200)	2002-8 X 1½	381.3	(172.9)	2002-8 X 2	439.7	(199.4)	UL

** See load ratings in UL Listed Design Load chart.



Concrete Inserts



Concrete Inserts

Concrete inserts offered in this section are designed to provide a pre-set support point in concrete ceilings, walls, and floors. A range of inserts with varying design loads are available.

Materials

Carbon Steel and Malleable Iron are used in the manufacture of concrete inserts. Stainless Steel and other materials are available.

Finishes

The standard finishes for mechanical supports are plain steel (oil coated) sometimes referred to as black and Electro-Galvanized Zinc (ASTM B633 SC3). Hot-Dip Galvanized After Fabrication (ASTM A123), Red Primer, Plastic Coating, DURA-GREEN™ and other special coatings are available upon request.

Approvals (as noted)

Items in this section are Underwriters Laboratories Listed and comply with Federal Specification WW-H-171E & A-A-1192A or Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58.

Fig. 109A - Concrete Deck Insert

Size Range: 3/8"-16 thru 7/8"-9 rod

Material: Steel

Function: For use in metal deck formed concrete to attach hanger rods. Allows for pre-positioning of hanger rods in poured concrete decks.

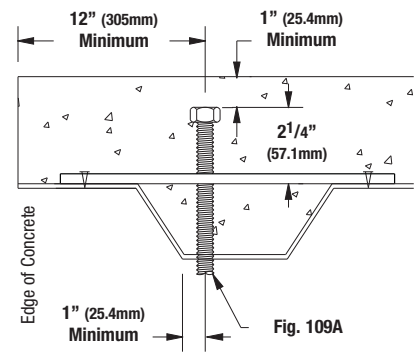
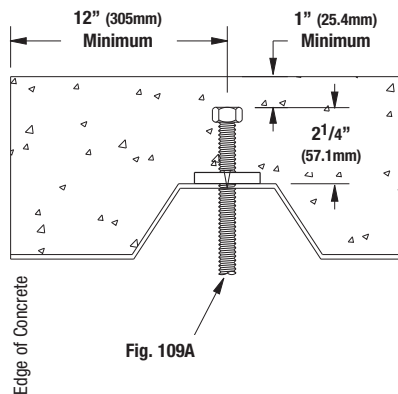
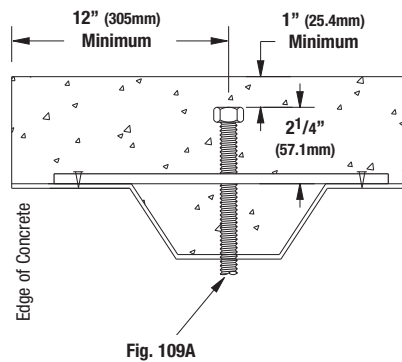
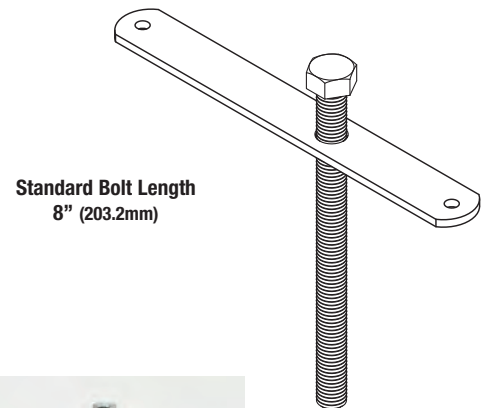
Approvals: 3/8" - 5/8" rod size is Underwriters Laboratories listed in the USA (UL) and Canada (cUL). Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development (OSHPD). For additional load, spacing and placement information relating to OSHPD projects, please refer to the TOLCO Seismic Restraints Systems Guidelines. Hangers certified by a registered professional engineer to conform to Section 6-1.1 of NFPA #13 (1999) and Section 9.1.1.2 of NFPA 13 (2002).

Finish: Plate: Plain Steel. Rod: Electro-Galvanized. Contact B-Line for alternative finishes and materials.

Order By: Part number, rod size and finish. Contact B-Line for custom rod lengths.



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Part No.	Rod Size	Max. Pipe Size	Max. Hanger Spacing	Max. Recommended Loads	Approx. Wt./100
		in. (mm)	in. (m)	lbs. (kN)	lbs. (kg)
109A-3/8	3/8"-16	4" (101.6)	15'-0" (4.57)	1144 (3.25)	67.0 (30.4)
109A-1/2	1/2"-13	8" (203.2)	15'-0" (4.57)	1158 (6.00)	69.0 (31.3)
109A-5/8	5/8"-11	Contact Cooper B-Line		1430 (9.61)	71.0 (32.2)
109A-3/4	3/4"-10	Contact Cooper B-Line		2000 (14.37)	213.0 (96.6)
109A-7/8	7/8"-9	Contact Cooper B-Line		2000 (14.37)	217.0 (98.4)

NOTES:

1. Mounting holes are standard. If the plate is not mechanically secured to the deck ribs, a jam nut is required to prevent the anchor bolt from laying over when concrete is poured.
2. Minimum spacing between inserts shall be not less than 4 1/2" (114.3mm) for 3/8" and 6" (152.4mm) for 1/2"

Max. Recommended Loads shown include safety factor of 5.
Weight is based on the standard bolt length.

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

Concrete Inserts

B3019 - Adjustable Metal Deck Ceiling Bolt

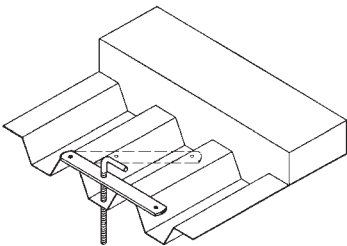
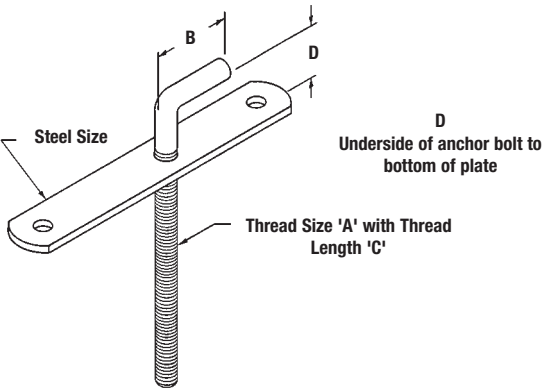
Size Range: 3/8"-16 thru 3/4"-10 rod

Material: Steel

Function: For use in metal deck formed concrete to attach hanger rods. Allows for pre-positioning of hanger rods in poured concrete decks.

Finish: Plate: Plain Steel. Rod: Electro-Galvanized. Contact Cooper B-Line for alternative finishes and materials.

Order By: Part number and finish. Contact B-Line for custom rod lengths.



Part No.	Thread A	B		Thread Length C		D		Steel Size		Design Design Load		Approx. Wt./100	
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs	(kN)	Lbs.	(kg)
B3019-3/8	3/8"-16	2 1/2"	(63.5)	6 3/8"	(161.9)	1 1/4"	(31.7)	7 Ga. x 1 1/4" x 10"	(4.5 x 31.7 x 254.0)	730	(3.25)	80	(36.3)
B3019-1/2	1/2"-13	2 1/2"	(63.5)	6 1/2"	(165.1)	1 1/4"	(31.7)	7 Ga. x 1 1/4" x 10"	(4.5 x 31.7 x 254.0)	1350	(6.00)	99	(44.9)
B3019-5/8	5/8"-11	2 1/2"	(63.5)	6 3/4"	(171.4)	1 1/4"	(31.7)	7 Ga. x 1 1/4" x 10"	(4.5 x 31.7 x 254.0)	2160	(9.61)	129	(58.5)
B3019-3/4	3/4"-10	2 1/2"	(63.5)	6 3/16"	(157.2)	2 1/4"	(57.1)	1/4" x 3" x 10"	(6.3 x 76.2 x 254.0)	3230	(14.37)	238	(107.9)

For maximum load rating, install plate on top of deck ribs.

Fig. 109AF - Concrete Insert (Cooper B-Line B2501)

Size Range: 3/8"-16 thru 7/8"-9 rod

Material: Steel

Function: Designed to be embedded in concrete to provide a point of support.

Approvals: Underwriters Laboratories listed in the USA (UL) and Canada (cUL) for 3/8" and 1/2". Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines.

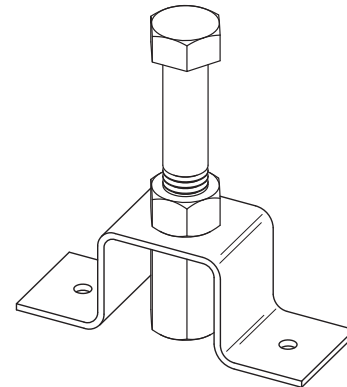
Finish: Plain anchor bolt with Electro-Galvanized hardware and plate.

Order By: Part number, rod size and finish.

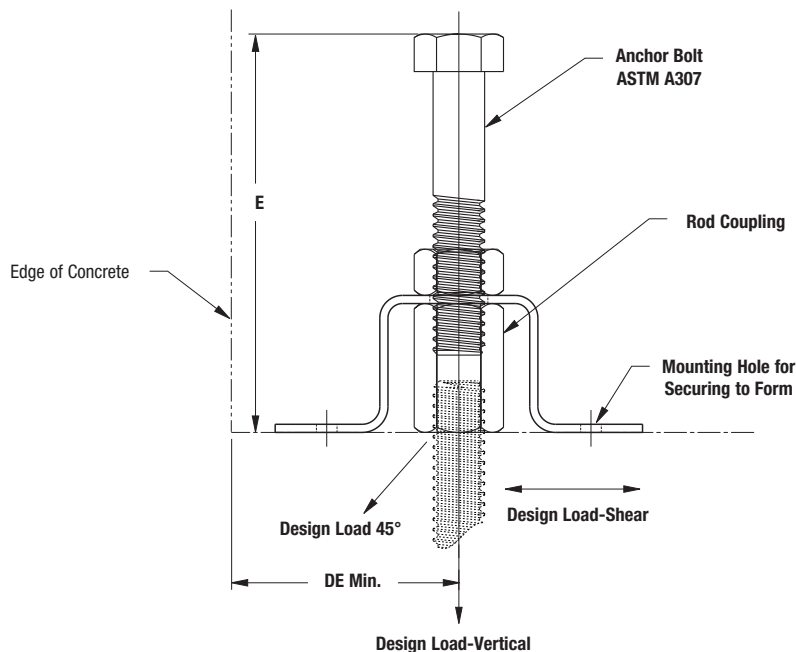
Note: The hex or jam nut has NO value in determining the loads. Their function is to assist in locking the coupling snug to the bottom of the deck form preventing the concrete from leaking into the coupling threads. Any other suitable locking device may be substituted if desired.



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Concrete Inserts



Part No.	Approx. Wt./100	
	lbs.	(kg)
109AF-3/8	38.1	(17.3)
109AF-1/2	54.7	(24.8)
109AF-5/8	82.2	(37.3)
109AF-3/4	113.8	(51.6)
109AF-7/8	130.6	(59.2)

Part No.	Rod Size	Design Load Vertical		Design Load Shear		Design Load 45°		Embedment Depth E		DE Min.	
		Hard Rock	Light Wt.	Hard Rock	Light Wt.	Hard Rock	Light Wt.	in.	(mm)	in.	(mm)
109AF-3/8	3/8"-16	1255 (55.82)	735 (3.28)	978 (4.35)	733 (3.26)	777 (3.45)	525 (2.33)	3 1/2"	(88.9)	2"	(50.8)
109AF-1/2	1/2"-13	2321 (10.32)	1392 (6.19)	978 (4.35)	733 (3.26)	980 (4.36)	679 (3.02)	3 1/2"	(88.9)	2"	(50.8)
109AF-5/8	5/8"-11	780 (3.47)	468 (2.08)	1278 (5.68)	958 (4.26)	688 (3.06)	445 (1.98)	4"	(101.6)	2"	(50.8)
109AF-3/4	3/4"-10	1346 (5.99)	806 (3.58)	1278 (5.68)	958 (4.26)	927 (4.12)	619 (2.75)	4"	(101.6)	2 1/2"	(63.6)
109AF-7/8	7/8"-9	2321 (10.32)	1391 (6.19)	1278 (5.68)	958 (4.26)	1166 (5.18)	803 (3.57)	4"	(101.6)	6"	(152.4)

Max. Recommended Loads shown include safety factor of 5.

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

Concrete Inserts

B2499 - Concrete Insert (TOLCO Fig. 107F)

Size Range: 5/8"-11 thru 1 1/2"-6 rod

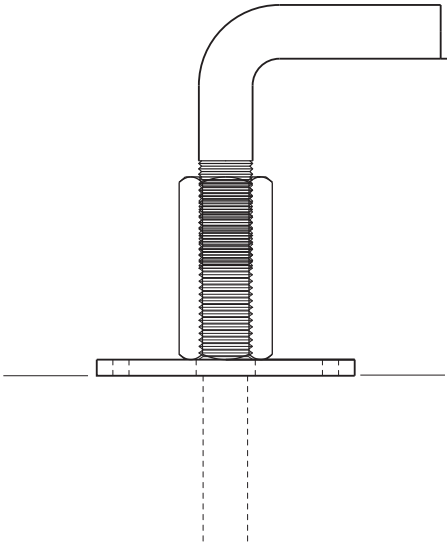
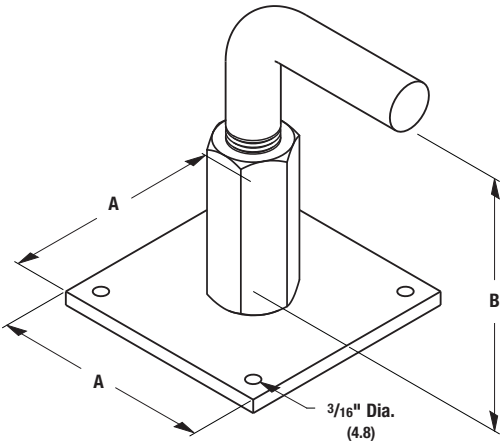
Material: Steel

Function: Designed to be embedded in concrete to provide a point of support for 5/8"-11 thru 1 1/2"-6 rod or bolt sizes .

Finish: Plain anchor bolt with Electro-Galvanized coupling. Contact B-Line for alternative finishes and materials.

Note: For rod sizes 3/8"-16 and 1/2"-13, refer to Fig. 109AF.

Order By: Part number and rod size.
For 1 1/8"-7, 1 1/4"-6, and 1 1/2"-6 consult factory.



Part No.	Rod Size	A		Min. Embedment B		Max. Recommended Loads (In 3000 lb. (13.34kN) Hard Rock Concrete)		Approx. Wt./100	
		in.	(mm)	in.	(m)	lbs.	(kN)	lbs.	(kg)
B2499-5/8	5/8"-11	3"	(76.2)	3 1/2"	(88.9)	1810	(8.05)	118.0	(53.5)
B2499-3/4	3/4"-10	3"	(76.2)	3 1/2"	(88.9)	2710	(12.05)	154.0	(69.8)
B2499-7/8	7/8"-9	3"	(76.2)	4"	(101.6)	3770	(16.77)	210.0	(95.3)
B2499-1	1"-8	3"	(76.2)	4"	(101.6)	4960	(22.06)	276.0	(125.2)

Consult factory for specifications on rod sizes 1 1/8"-7, 1 1/4"-6, and 1 1/2"-6

B2500 - Light Duty Spot Insert (TOLCO Fig. 310)

Material: Steel

Function: Designed to be embedded in concrete to attach 1/4"-20 to 7/8"-9 hanger rods.

How to Install: Attach concrete insert to forms and install reinforcing rods as required. After forms are dismantled, the knockout can be removed from the insert. The N2500 insert nut can be installed and the rod fastened to the nut. The rod should touch the inside top of the insert but should not be forced further to avoid damaging the insert.

Approvals: Underwriters Laboratories Listed for maximum pipe size 6" (150). Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 19 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 18.

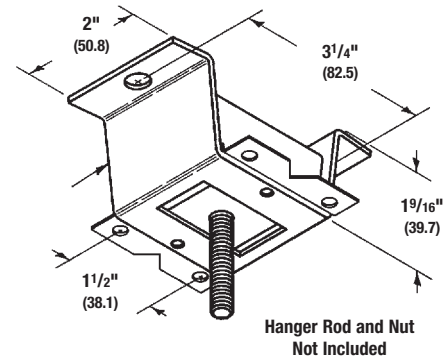
Weight: Approx. Wt./100 - 46 Lbs. (20.8kg)

Finish: Electro-Galvanized.

Order By: Part number and finish.
(Order N2500 nuts separately).

Design Load: Loading based on a straight pull of 600 Lbs. (2.67kN).

Note: Before installation ensure that concrete is sufficient to carry the load.



Material Thickness
12 Gauge (2.6)



N2500 - Steel Insert Nut (TOLCO Fig. 310N)

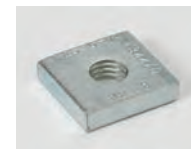
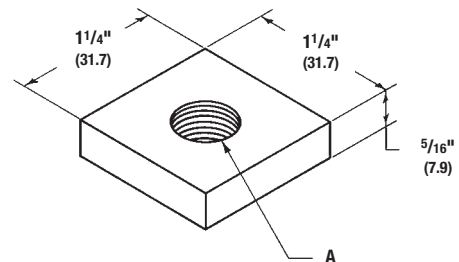
Size Range: 1/4"-20 through 7/8"-9.

Material: Steel

Function: Designed for use with B2500 spot insert.

Finish: Plain or Electro-Galvanized.

Order By: Part number and size.



Part No.	Tap Size A	Approx. Wt./100	
		Lbs.	(kg)
N2500-1/4	1/4"-20	14	(6.3)
N2500-3/8	3/8"-16	13	(5.9)
N2500-1/2	1/2"-13	12	(5.4)
N2500-5/8	5/8"-11	11	(5.0)
N2500-3/4	3/4"-10	11	(5.0)
N2500-7/8	7/8"-9	10	(4.5)

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

Concrete Inserts

B3014 - Malleable Iron Insert (TOLCO Fig. 309)

Material: Malleable Iron

Function: Designed to be embedded in concrete to attach $\frac{3}{8}$ "-16 to $\frac{7}{8}$ "-9 hanger rods.

How to Install: Attach concrete insert to forms and install reinforcing rods as required. After forms are dismantled, the B3014N nut can be installed and the rod fastened to the nut. The rod should touch the inside top of the insert.

Approvals: Underwriters Laboratories Listed when used with B3014N Insert Nut. Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 18 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 18.

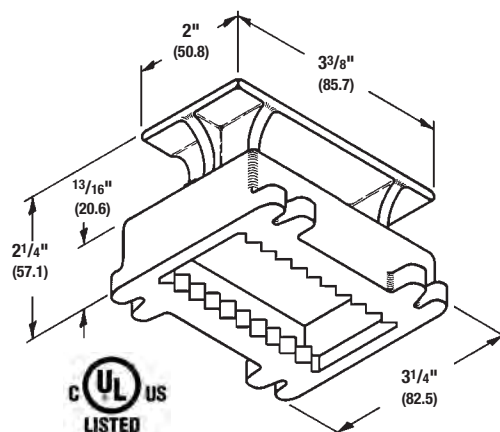
Weight: Approx. Wt./100 - 166 Lbs. (75.3kg)

Finish: Plain or Electro-Galvanized.

Order By: Part number and finish.
(Order B3014N nuts separately).

Design Load: Design Loads based on B3014N malleable iron insert nut below.

Note: Before installation ensure that concrete is sufficient to carry the load.



Horizontal Adjustment:

For $\frac{3}{8}$ "-16, $\frac{1}{2}$ "-13, $\frac{5}{8}$ "-11 rods - Adjustment is $\frac{1}{4}$ " (4.4)

For $\frac{3}{4}$ "-10, $\frac{7}{8}$ "-9 rods - Adjustment is $\frac{1}{8}$ " (3.2)



B3014N - Malleable Iron Insert Nut (TOLCO Fig. 309N)

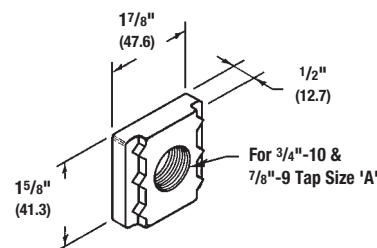
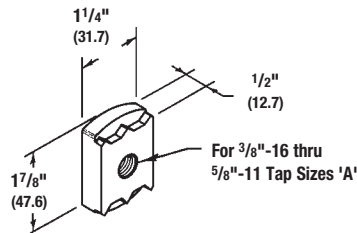
Size Range: $\frac{3}{8}$ "-20 through $\frac{7}{8}$ "-9.

Material: Malleable Iron

Standard Finish: Plain or Electro-Galvanized

Service: Designed for use with the B3014 malleable iron insert shown above.

Ordering: Part number and finish.



Part No.	Tap Size 'A'	UL Max. Pipe Size	Design Load*		Approx. Wt./100	
			Lbs.	(kN)	Lbs.	(kg)
B3014N- $\frac{3}{8}$	$\frac{3}{8}$ "-16	4"	730	(3.25)	22	(10.0)
B3014N- $\frac{1}{2}$	$\frac{1}{2}$ "-13	8"	1350	(6.00)	22	(10.0)
B3014N- $\frac{5}{8}$	$\frac{5}{8}$ "-11	10"	1400	(6.23)	20	(9.1)
B3014N- $\frac{3}{4}$	$\frac{3}{4}$ "-10	10"	1400	(6.23)	29	(13.1)
B3014N- $\frac{7}{8}$	$\frac{7}{8}$ "-9	10"	1400	(6.23)	29	(13.1)

* When used with B3014 Malleable Iron Insert.



B2505 thru B2508 - Spot Insert

Material: Steel (Stainless steel available on B2505 only)

Standard Finish: Plain or Pre-Galvanized

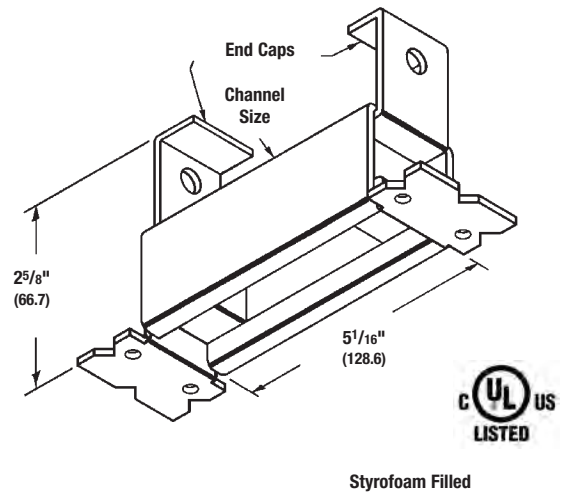
Function: Designed to be embedded in concrete to attach 1/4"-20 to 7/8"-9 hanger rods.

How to Install: Attach concrete insert to forms and install reinforcing rods as required. After forms are dismantled, the channel nut can be installed and the rod fastened to the nut. The rod should touch the inside top of the insert.

Approvals: Underwriters Laboratories Listed. Conforms to Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 18.

Order By: Part number and finish. When supporting 10" (254mm) pipe, order B2505 Insert with 5/8"-11 channel nuts.

Note: For appropriate channel nut selection, see page 16. Before installation ensure that concrete is sufficient to carry the load.



Part No.	Channel Size	End Cap Part No.	Design Load		Max. Pipe Size		Approx. Wt./100	
			Lbs.	(kN)	in.	(mm)	Lbs.	(kg)
B2505	B22	B3322	1200	(5.34)	10"	(250)	96	(43.5)
B2506	B32	B3332	1000	(4.45)	8"	(200)	88	(39.9)
B2507	B42	B3342	1000	(4.45)	8"	(200)	77	(34.9)
B2508	B52	B3352	1000	(4.45)	8"	(200)	69	(31.3)

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

Concrete Inserts

B2503 - Heavy Duty Spot Insert

Material: Steel

Standard Finish: Electro-Galvanized

Function: Designed to be embedded in concrete where heavy loads are required in curtain wall applications. Styrofoam end caps prevent concrete seepage into the channel.

How to Install: Attach concrete insert to forms and install reinforcing rods as required. After forms are dismantled, the channel nut can be installed and the rod fastened to the nut. The rod should touch the inside top of the insert.

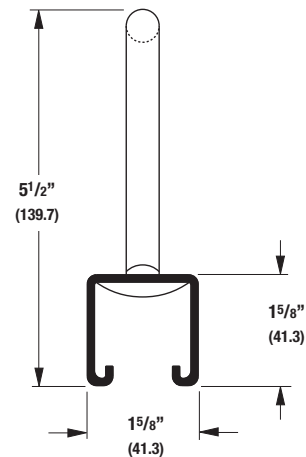
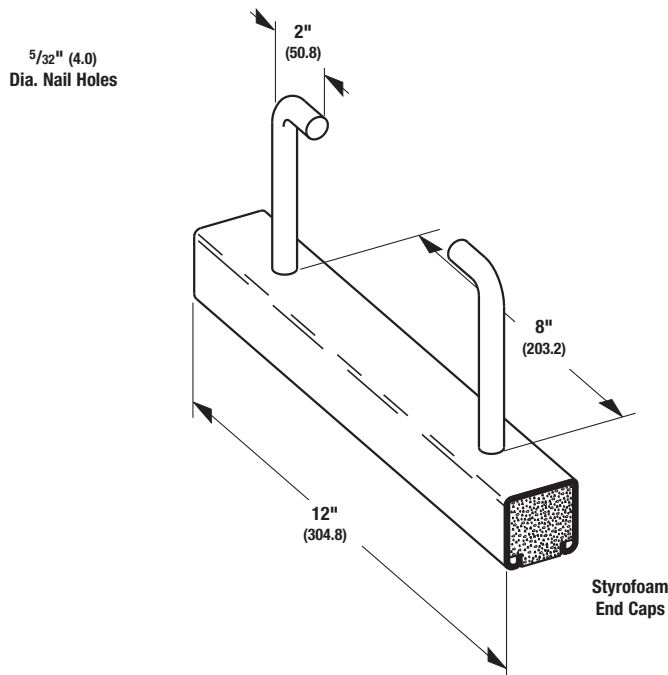
Approvals: Conforms to Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 18.

Design Load: 5000 Lbs. (22.2kN).

Loading based on two N225 channel nuts spaced 3" (76.2mm) on center and a minimum of 2" (50.8mm) from the end of the insert.

Weight: Approx. Wt./100 - 42 Lbs. (19.0kg)

Order By: Part number and finish. Channel nuts are sold separately, see page 16 for appropriate selection.



B22I - Continuous Concrete Insert

Material: Steel

Standard Finish: Plain, Pre-Galvanized, or Hot-Dip Galvanized

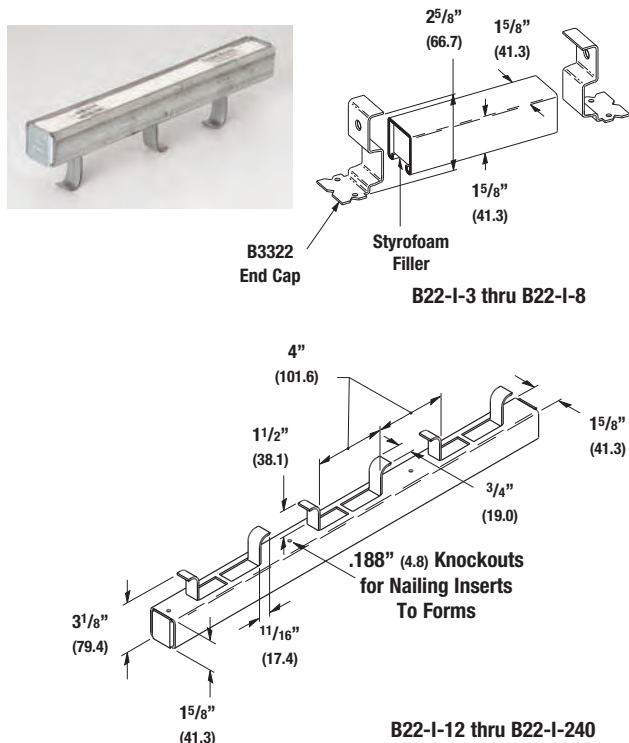
Function: Concrete insert should be secured to forms on 16" (406.4mm) to 24" (609.6mm) intervals.

How to Install: Attach concrete insert to forms and install reinforcing rods as required. After forms are dismantled, the channel nut can be installed and the rod fastened to the nut. The rod should touch the inside top of the insert.

Approvals: Conforms to Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 18.

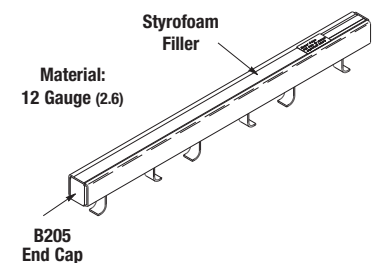
Design Load: 2000 Lbs. (8.89kN) per foot for B22-I-12 thru B22-I-240 in 3000 psi concrete. Loads concentrated within the last 2" (50.8mm) of inserts 8" (203.2mm) and longer should not exceed 1000 Lbs. (4.45kN).

Order By: Part number and finish. Channel nuts are sold separately, see page 16 for appropriate selection. To order inserts without styrofoam and end caps add insert only to the part number.



Part No.	Length		Approx. Wt./100		Design Load	
	in.	(mm)	Lbs.	(kg)	Lbs.	(kN)
B22-I-3	3"	(76)	72	(32.6)	500	(2.22)
B22-I-4	4"	(101)	88	(39.9)	800	(3.56)
B22-I-6	6"	(152)	120	(54.4)	1000	(4.45)
B22-I-8	8"	(203)	152	(68.9)	1200	(5.34)

Part No.	Length		Approx. Wt./100	
	in.	(mm)	Lbs.	(kg)
B22-I-12	12"	(305)	224	(101.6)
B22-I-16	16"	(406)	289	(131.1)
B22-I-20	20"	(508)	353	(160.1)
B22-I-24	24"	(609)	420	(190.5)
B22-I-32	32"	(813)	553	(250.8)
B22-I-36	36"	(914)	620	(281.2)
B22-I-40	40"	(1016)	686	(311.1)
B22-I-48	48"	(1219)	820	(371.9)
B22-I-60	60"	(1524)	1018	(461.7)
B22-I-72	72"	(1829)	1218	(552.5)
B22-I-84	84"	(2133)	1417	(642.7)
B22-I-96	96"	(2438)	1616	(733.0)
B22-I-108	108"	(2743)	1816	(823.7)
B22-I-120	120"	(3048)	2016	(914.4)
B22-I-144	144"	(3657)	2416	(1095.9)
B22-I-168	168"	(4267)	2816	(1277.3)
B22-I-192	192"	(4877)	3216	(1458.7)
B22-I-216	216"	(5486)	3616	(1640.2)
B22-I-240	240"	(6096)	4016	(1821.6)



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

Concrete Inserts

B32I - Continuous Concrete Insert

Material: Steel

Standard Finish: Plain, Pre-Galvanized, or Hot-Dip Galvanized

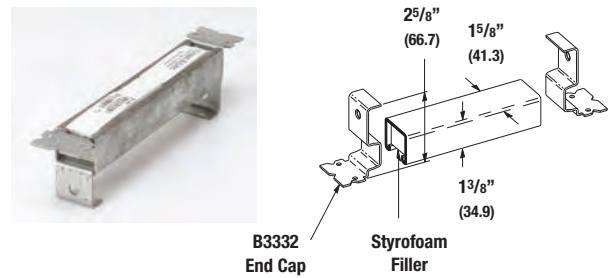
Function: Concrete insert should be secured to forms on 16" (406.4mm) to 24" (609.6mm) intervals.

How to Install: Attach concrete insert to forms and install reinforcing rods as required. After forms are dismantled, the channel nut can be installed and the rod fastened to the nut. The rod should touch the inside top of the insert.

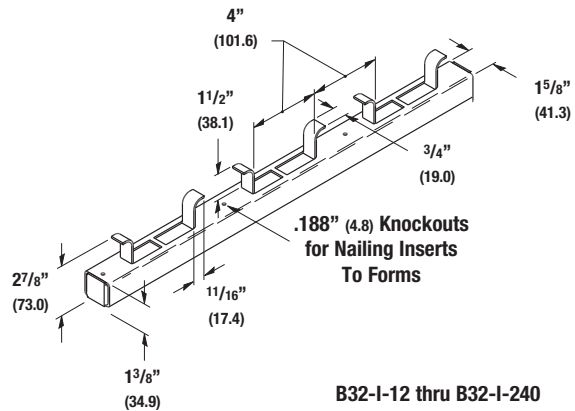
Approvals: Conforms to Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 18.

Design Load: 2000 Lbs. (8.89kN) per foot for B32-I-12 thru B32-I-240 in 3000 psi concrete. Loads concentrated within the last 2" (50.8mm) of inserts 8" (203.2mm) and longer should not exceed 1000 Lbs. (4.45kN).

Order By: Part number and finish. Channel nuts are sold separately, see page 16 for appropriate selection. To order inserts without styrofoam and end caps add insert only to the part number.



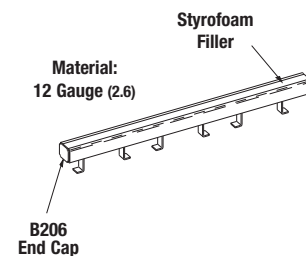
B32-I-3 thru B32-I-8



B32-I-12 thru B32-I-240

Part No.	Length		Approx. Wt./100		Design Load	
	in.	(mm)	Lbs.	(kg)	Lbs.	(kN)
B32-I-3	3"	(76)	65	(29.5)	500	(2.22)
B32-I-4	4"	(101)	80	(36.3)	800	(3.56)
B32-I-6	6"	(152)	108	(49.0)	1000	(4.45)
B32-I-8	8"	(203)	137	(62.1)	1200	(5.34)

Part No.	Length		Approx. Wt./100	
	in.	(mm)	Lbs.	(kg)
B32-I-12	12"	(305)	202	(91.6)
B32-I-16	16"	(406)	262	(118.8)
B32-I-20	20"	(508)	316	(143.3)
B32-I-24	24"	(609)	376	(170.5)
B32-I-32	32"	(813)	496	(225.0)
B32-I-36	36"	(914)	556	(252.2)
B32-I-40	40"	(1016)	616	(279.4)
B32-I-48	48"	(1219)	736	(333.8)
B32-I-60	60"	(1524)	915	(415.0)
B32-I-72	72"	(1829)	1095	(496.7)
B32-I-84	84"	(2133)	1274	(577.9)
B32-I-96	96"	(2438)	1453	(659.0)
B32-I-108	108"	(2743)	1633	(740.7)
B32-I-120	120"	(3048)	1813	(822.3)
B32-I-144	144"	(3657)	2173	(985.6)
B32-I-168	168"	(4267)	2533	(1148.9)
B32-I-192	192"	(4877)	2893	(1312.2)
B32-I-216	216"	(5486)	3253	(1475.5)
B32-I-240	240"	(6096)	3613	(1638.8)



B52I - Continuous Concrete Insert

Material: Steel

Standard Finish: Plain, Pre-Galvanized, or Hot-Dip Galvanized

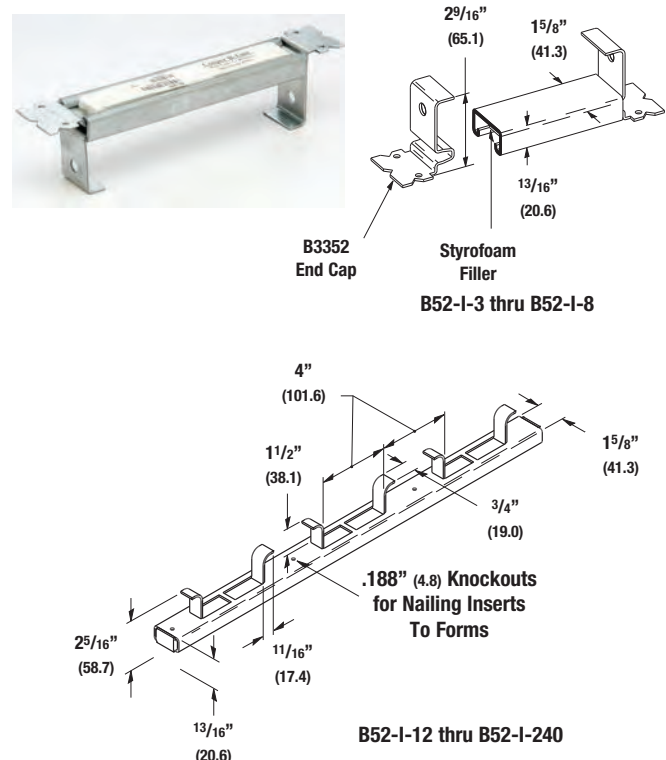
Function: Concrete insert should be secured to forms on 16" (406.4mm) to 24" (609.6mm) intervals.

How to Install: Attach concrete insert to forms and install reinforcing rods as required. After forms are dismantled, the channel nut can be installed and the rod fastened to the nut. The rod should touch the inside top of the insert.

Approvals: Conforms to Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 18.

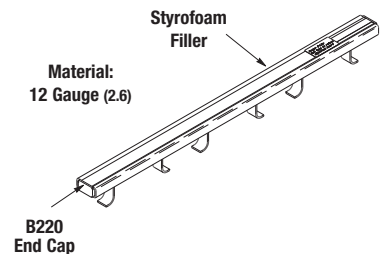
Design Load: 1500 Lbs. (6.67kN) per foot for B52-I-12 thru B52-I-240 in 3000 psi concrete. Loads concentrated within the last 2" (50.8mm) of inserts 8" (203.2mm) and longer should not exceed 750 Lbs. (3.33kN).

Order By: Part number and finish. Channel nuts are sold separately, see page 16 for appropriate selection. To order inserts without styrofoam and end caps add insert only to the part number.



Part No.	Length		Approx. Wt./100		Design Load	
	in.	(mm)	Lbs.	(kg)	Lbs.	(kN)
B52-I-3	3"	(76)	53	(24.0)	400	(1.78)
B52-I-4	4"	(101)	63	(28.6)	500	(2.22)
B52-I-6	6"	(152)	85	(38.5)	750	(3.33)
B52-I-8	8"	(203)	106	(48.1)	1000	(4.45)

Part No.	Length		Approx. Wt./100	
	in.	(mm)	Lbs.	(kg)
B52-I-12	12"	(305)	157	(71.2)
B52-I-16	16"	(406)	202	(91.6)
B52-I-20	20"	(508)	237	(107.5)
B52-I-24	24"	(609)	282	(127.9)
B52-I-32	32"	(813)	373	(169.2)
B52-I-36	36"	(914)	419	(190.0)
B52-I-40	40"	(1016)	464	(210.4)
B52-I-48	48"	(1219)	556	(252.2)
B52-I-60	60"	(1524)	692	(313.9)
B52-I-72	72"	(1829)	829	(376.0)
B52-I-84	84"	(2133)	965	(437.7)
B52-I-96	96"	(2438)	1107	(502.1)
B52-I-108	108"	(2743)	1237	(561.1)
B52-I-120	120"	(3048)	1374	(623.2)
B52-I-144	144"	(3657)	1648	(747.5)
B52-I-168	168"	(4267)	1922	(871.8)
B52-I-192	192"	(4877)	2196	(996.1)
B52-I-216	216"	(5486)	2470	(1120.4)
B52-I-240	240"	(6096)	2744	(1244.6)



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

Concrete Inserts

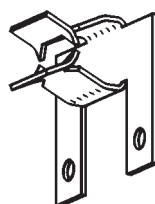
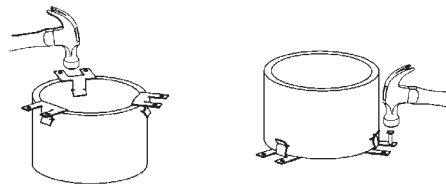
BD40 - Pipe Sleeve Fastener

Material: Steel

Function: Designed to attach pipe sleeves to wall or floor forms before concrete pours.

Standard Finish: Zinc Phosphate

Order By: Part number and finish.



Part No.	Sleeve Diameter	Wall Thickness	Approx. Wt./100	
			Lbs.	(kg)
BD40	All Diameters	5/16" (7.9mm) and under	1.5	(.68)
	2" (50.8mm) to 6" (152.4mm)	Schedule 40 Pipe		

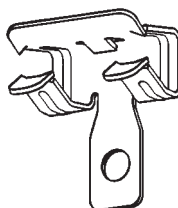
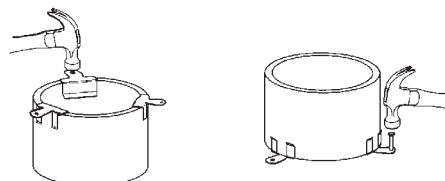
BE-5-8 and BE-9-12 - Pipe Sleeve Fastener

Material: Steel

Function: Designed to attach pipe sleeves to wall or floor forms before concrete pours.

Standard Finish: Zinc Phosphate

Order By: Part number and finish.



Part No.	Sleeve Diameter		Wall Thickness	Approx. Wt./100	
	in.	(mm)		Lbs.	(kg)
BE-5-8	6"	(152.4)	Schedule 80 Pipe	3.5	(1.6)
	8" to 10"	(203.2 to 254.0)	Schedule 40 Pipe		
BE-9-12	9" to 14"	(228.6 to 355.6)	Schedule 80 Pipe	4.0	(1.8)

Brackets



Brackets offered in this section are designed for support of pipe or hanger rod attachments. Brackets offer a convenient means of supporting pipe from a vertical surface.

Materials

Carbon Steel material is mig-welded into bracket assemblies. Stainless Steel and other materials are available.

Finishes

The standard finishes for mechanical supports are plain steel (oil coated) sometimes referred to as black and Electro-Galvanized Zinc (ASTM B633 SC3). Hot-Dip Galvanized After Fabrication (ASTM A123), Red Primer, Plastic Coating, DURA-GREEN™ and other special coatings are available upon request.

Approvals (as noted)

Items in this section comply with Federal Specification WW-H-171E & A-A-1192A or Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58.

B3068 - Light Duty Welded Bracket (TOLCO Fig. 30)

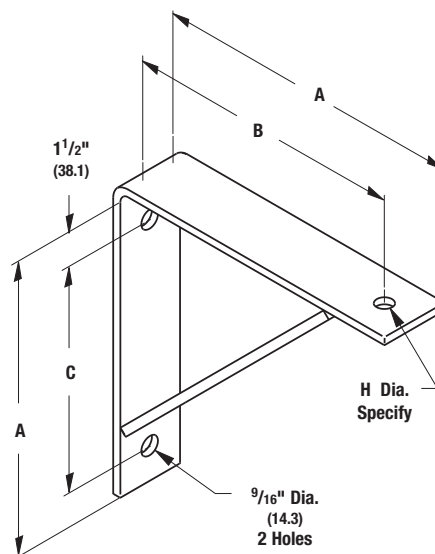
Material: Steel

Function: Recommended for suspending pipe outward from mounting surface.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 32 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 31.

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

Order By: Part number, hole size 'H', and finish



Part No.	A		B		C		H Dia.		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3068-1	9"	(228.6)	8"	(203.2)	6 1/2"	(165.1)	Specify	(Specify)	750	(3.33)	360	(163.3)
B3068-2	13"	(330.2)	12"	(304.8)	10 1/2"	(266.7)	Specify	(Specify)	750	(3.33)	582	(264.0)
B3068-3	19"	(482.6)	18"	(457.2)	16 1/2"	(419.1)	Specify	(Specify)	750	(3.33)	860	(390.1)

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

Brackets

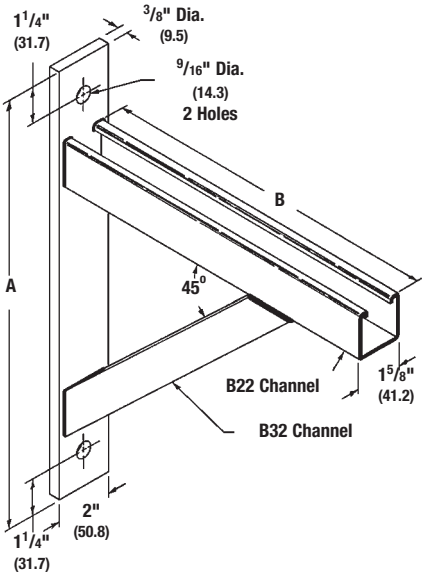
B3064 - Adjustable Strut Bracket

Material: Steel

Function: Designed for supporting pipe from walls or structures where lateral adjustment is required.

Standard Finish: Plain or Electro-Galvanized

Order By: Part number and finish.



Part No.	A		B		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3064-1	15"	(381.0)	12"	(304.8)	1200	(5.34)	660	(299.4)
B3064-2	21"	(533.4)	18"	(457.2)	800	(3.56)	1004	(455.4)
B3064-3	27"	(685.8)	24"	(609.6)	600	(2.67)	1346	(610.5)

B3065 - Welded Bracket - Light Duty (TOLCO Fig. 30L)

Max. Recommended Load: 750 lbs. (3.33kN)

Material: Steel

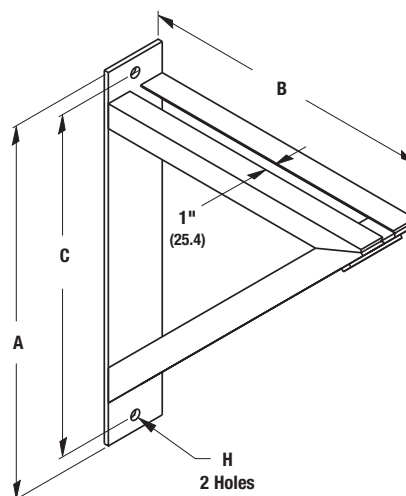
Function: Recommended for supporting pipe on top or hanging through support bracket outward from mounting surface.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 32 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 31.

Finish: Plain

Note: Available in Electro-Galvanized and HDG finish or Stainless Steel materials.

Order By: Part number and finish



Part No.	Mtg. Hole H		A		B		C	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3065-1	9/16"	(14.3)	13"	(330.2)	9"	(228.6)	11 1/2"	(292.1)
B3065-2	9/16"	(14.3)	17"	(431.8)	13"	(330.2)	15 1/2"	(393.7)
B3065-3	9/16"	(14.3)	23"	(584.2)	19"	(482.6)	21 1/2"	(546.1)

Part No.	Design Load		Approx. Wt./100	
	Lbs.	(kN)	Lbs.	(kg)
B3065-1	750	(3.33)	571	(259.0)
B3065-2	750	(3.33)	769	(348.8)
B3065-3	750	(3.33)	1057	(479.4)

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

Brackets

Figure B3066 - Welded Bracket - Medium Duty (TOLCO Fig. 30M)

Max. Recommended Load: 1500 lbs. (6.67kN)

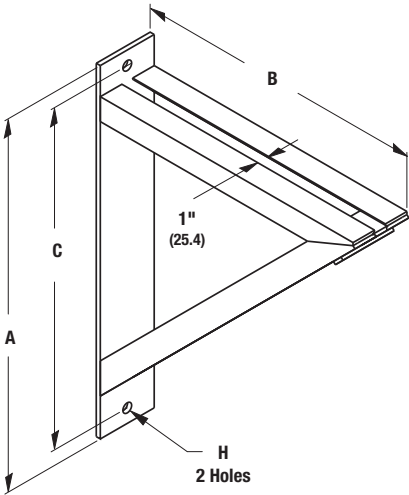
Material: Steel

Function: Recommended for supporting pipe on top or hanging through support bracket outward from mounting surface.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 33 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 32.

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

Order By: Part number and finish



Part No.	Mtg. Hole H		A		B		C	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3066-0	13/16"	(20.6)	18"	(457.2)	12"	(304.8)	15 1/2"	(393.7)
B3066-1	13/16"	(20.6)	24"	(609.6)	18"	(457.2)	21 1/2"	(546.1)
B3066-2	13/16"	(20.6)	30"	(762.0)	24"	(609.6)	27 1/2"	(698.5)

Part No.	Design Load		Approx. Wt./100	
	Lbs.	(kN)	Lbs.	(kg)
B3066-0	1500	(6.67)	1577	(715.3)
B3066-1	1500	(6.67)	2578	(1169.4)
B3066-2	1500	(6.67)	4446	(2016.7)

B3067 - Welded Bracket - Heavy Duty (TOLCO Fig. 30H)

Max. Recommended Load: 3000 lbs. (13.34kN)

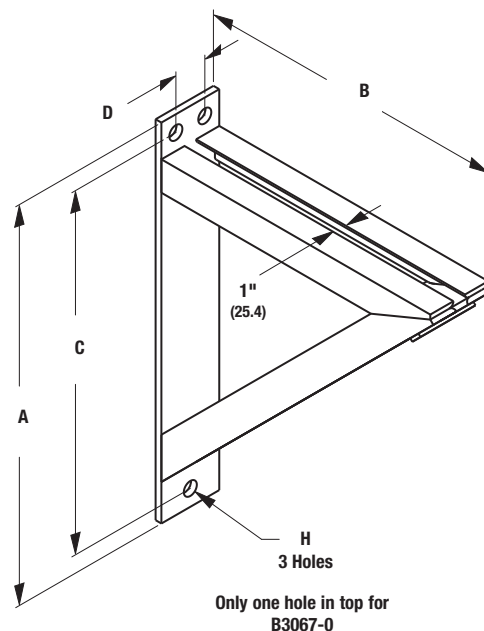
Material: Steel

Function: Recommended for supporting pipe on top or hanging through support bracket outward from mounting surface.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 33 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 33.

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

Order By: Part number and finish



Part No.	Mtg. Hole H in. (mm)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)
B3067-0	1 1/8" (28.6)	18" (457.2)	12" (304.8)	15 1/4" (387.3)	** **
B3067-1	1 1/8" (28.6)	24" (609.6)	18" (457.2)	21 1/4" (539.7)	2 1/2" (63.5)
B3067-2	1 1/8" (28.6)	30" (762.0)	24" (609.6)	27 1/4" (692.1)	2 1/2" (63.5)
B3067-3	1 1/8" (28.6)	36" (914.4)	30" (762.0)	33" (838.2)	2 1/2" (63.5)
B3067-4	1 1/8" (28.6)	42" (1066.8)	36" (914.4)	39" (990.6)	3 1/2" (88.9)
B3067-5	1 1/8" (28.6)	50" (1270.0)	42" (1066.8)	46" (1168.4)	3 1/2" (88.9)

** One Hole

Part No.	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3067-0	3000 (13.34)	2195 (995.6)
B3067-1	3000 (13.34)	4398 (1994.9)
B3067-2	3000 (13.34)	6294 (2854.9)
B3067-3	3000 (13.34)	7196 (3264.1)
B3067-4	3000 (13.34)	13197 (5986.2)
B3067-5	3000 (13.34)	15795 (7164.6)

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

Brackets

B3069W - Welded Knee Bracket (TOLCO Fig. 31-M)

Size Range: 1/2" (15mm) thru 8" (200mm) pipe

Material: Steel

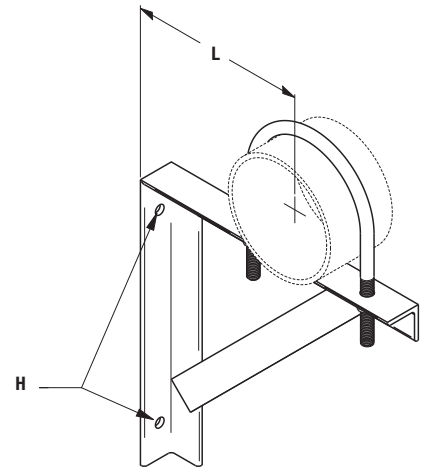
Function: Recommended for suspending pipe outward from mounting surface.

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

Note: Maximum "L" dimension 16" (406.4mm).

Order By: Part number, pipe size, (**) "L" dimension and finish

Part No.	Pipe Size in. (mm)	Hole Size H in. (mm)	Max. Rec. Load Lbs. (kN)
B3069W-1/2-**-	1/2" (15)	9/16" (14.3)	1000 (4.45)
B3069W-3/4-**-	3/4" (20)	9/16" (14.3)	1000 (4.45)
B3069W-1-**-	1" (25)	9/16" (14.3)	1000 (4.45)
B3069W-1 1/4-**-	1 1/4" (32)	9/16" (14.3)	1000 (4.45)
B3069W-1 1/2-**-	1 1/2" (40)	9/16" (14.3)	1000 (4.45)
B3069W-2-**-	2" (50)	9/16" (14.3)	1000 (4.45)
B3069W-2 1/2-**-	2 1/2" (65)	9/16" (14.3)	1000 (4.45)
B3069W-3-**-	3" (80)	9/16" (14.3)	1000 (4.45)
B3069W-3 1/2-**-	3 1/2" (90)	9/16" (14.3)	1000 (4.45)
B3069W-4-**-	4" (100)	1 1/16" (17.5)	1000 (4.45)
B3069W-5-**-	5" (125)	1 1/16" (17.5)	1000 (4.45)
B3069W-6-**-	6" (150)	1 1/16" (17.5)	1000 (4.45)
B3069W-8-**-	8" (200)	1 1/16" (17.5)	1000 (4.45)



** Length to be specified as shown on the drawing.

B3069E - "O" Bracket (TOLCO Fig. 31-O)

Size Range: 1/2" (15mm) thru 8" (200mm) pipe

Material: Carbon Steel

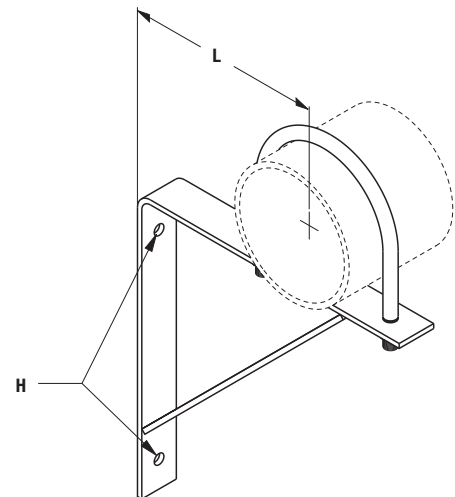
Function: Recommended for suspending pipe outward from mounting surface.

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

Note: Maximum "L" dimension 16" (406.4mm).

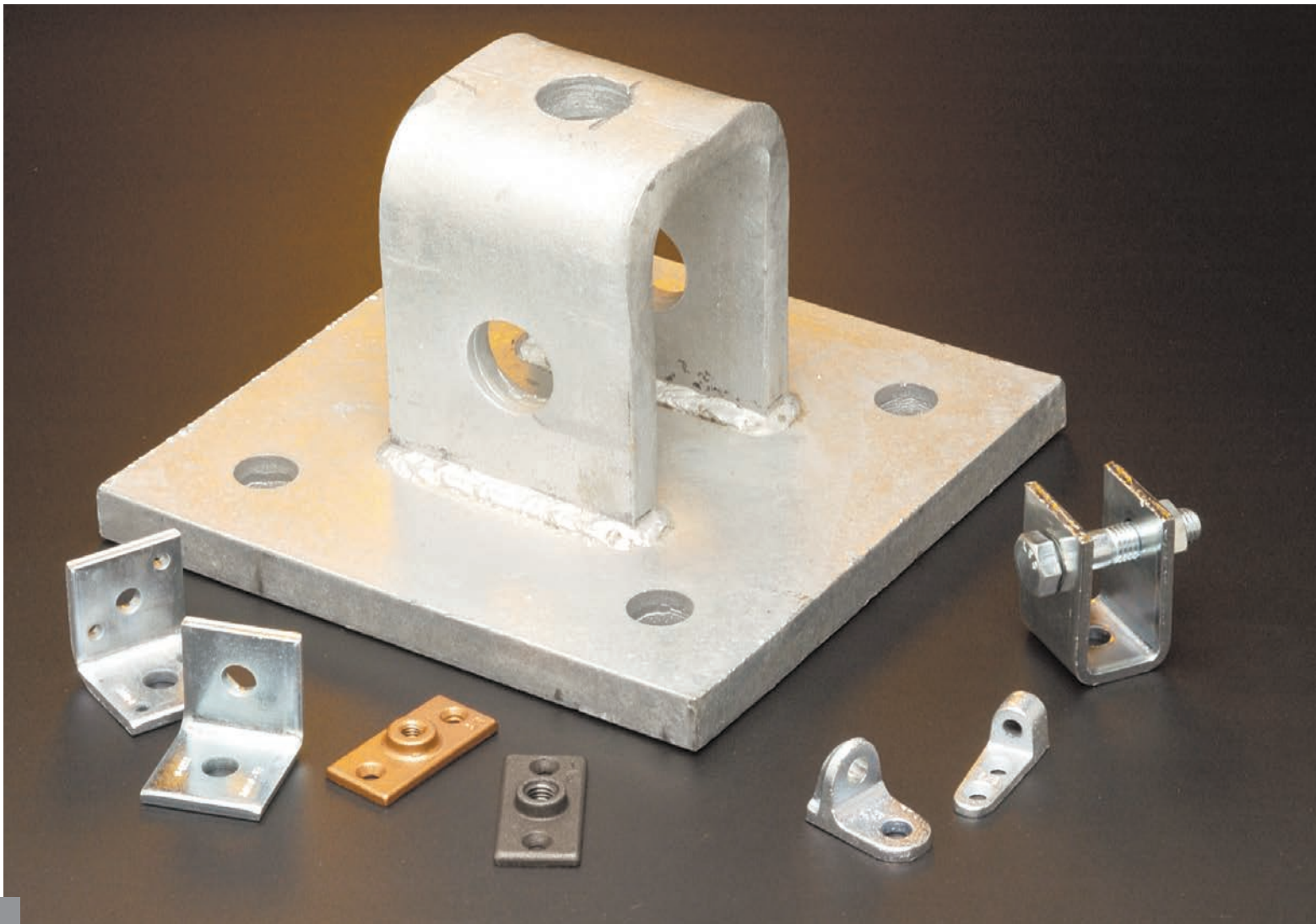
Order By: Part number, pipe size, (**) "L" dimension and finish

Part No.	Pipe Size in. (mm)	Hole Size H in. (mm)	Max. Rec. Load Lbs. (kN)
B3069E-1/2-**-	1/2" (15)	9/16" (14.3)	450 (2.00)
B3069E-3/4-**-	3/4" (20)	9/16" (14.3)	450 (2.00)
B3069E-1-**-	1" (25)	9/16" (14.3)	450 (2.00)
B3069E-1 1/4-**-	1 1/4" (32)	9/16" (14.3)	450 (2.00)
B3069E-1 1/2-**-	1 1/2" (40)	9/16" (14.3)	450 (2.00)
B3069E-2-**-	2" (50)	9/16" (14.3)	450 (2.00)
B3069E-2 1/2-**-	2 1/2" (65)	9/16" (14.3)	450 (2.00)
B3069E-3-**-	3" (80)	9/16" (14.3)	450 (2.00)
B3069E-3 1/2-**-	3 1/2" (90)	9/16" (14.3)	450 (2.00)
B3069E-4-**-	4" (100)	1 1/16" (17.5)	450 (2.00)
B3069E-5-**-	5" (125)	1 1/16" (17.5)	450 (2.00)
B3069E-6-**-	6" (150)	1 1/16" (17.5)	450 (2.00)
B3069E-8-**-	8" (200)	1 1/16" (17.5)	450 (2.00)



** Length to be specified as shown on the drawing.

Upper Attachments



Upper
Attachments

Upper attachments offered in this section are designed to suspend hanger rods from beams, concrete, and other structural surfaces by bolting or welding.

Materials

Carbon Steel and Malleable Iron are used in the manufacturing of upper attachments and provide the high strength properties required. Stainless Steel and other materials are available.

Finishes

The standard finishes for mechanical supports are plain steel (oil coated) sometimes referred to as black and Electro-Galvanized Zinc (ASTM B633 SC3). Hot-Dip Galvanized After Fabrication (ASTM A123), Red Primer, Plastic Coating, DURA-GREEN™ and other special coatings are available upon request.

Note: Due to the design of some products, (threads, connecting hardware, swivels, etc.) items may or may not be uniformly coated with special finishes. In some cases, the hanger itself may be coated, however, the hardware may be supplied Electro-Plated, copper plated, or in stainless steel.

Approvals (as noted)

Items in this section are Underwriters Laboratories Listed, Factory Mutual Approved, and comply with Federal Specification WW-H-171E & A-A-1192A or Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58.

B3199R - Ceiling Flange

B3199RCT - Ceiling Flange Dura-Copper Coated

Size Range: 3/8"-16 & 1/2"-13 rod

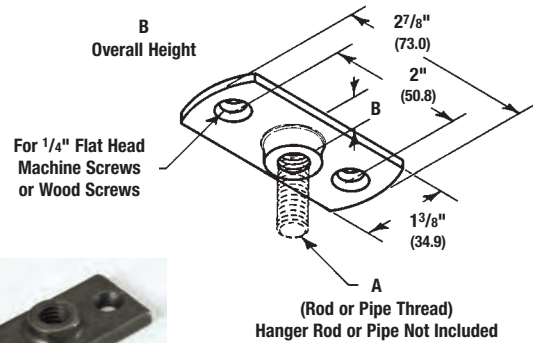
Material: Malleable Iron (Stainless Steel Type 304 available)

Standard Finish: Plain or Electro-Galvanized

B3199RCT is DURA-COPPER™ coated

Function: Designed for attaching a hanger or support rod to beams, ceilings, or walls.

Order By: Part number and finish.



B3199RCT



B3199R

Part No.		Thread Size A	B in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)	
B3199R-3/8	B3199RCT-3/8	3/8"-16	7/16" (11.1)	180 (.80)	13	(5.9)
B3199R-1/2	B3199RCT-1/2	1/2"-13	1/2" (12.7)	180 (.80)	17	(7.7)

Fig. 78 - All Steel Ceiling Plate

Size Range: 3/8"-16 rod

Material: Pre-Galvanized Steel

Function: Attachment to wood beams, ceilings, metal decks or walls. Can also be welded to steel beams.

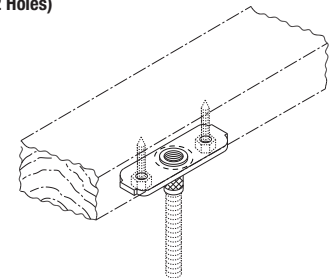
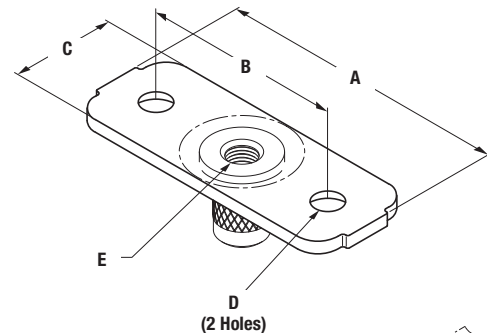
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Additionally, UL has listed the Fig. 78 with fasteners as shown in the table below.

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

Order By: Part number, rod size and finish

US Patent #5,702,077

TOLCO



Upper Attachments

UL Listed Fastener Table			
Pipe Size	Qty	Fastener Type	Material
1/2" - 2"	2	#14 x 1 1/4" A-point hex-washer-head sheet metal screw	Wood
2 1/2" - 4"	2	1/4" x 1 1/2" wood screws*	Wood
1/2" - 2"	2	1/4" x 1" tek screws	Metal (18 gauge)
1/2" - 2"	2	#14 x 1 1/4" A-point hex-washer-head sheet metal screw	Wood
1/2" - 2"	2	#14 x 2" A-point-hex-washer-head sheet metal screw	Wood thru 5/8" gyp board

* No pre-drilling



Part No.	Pipe Size		A		B		C		Hole Dia. D		Thread Size E	Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)		Lbs.	(kN)	Lbs.	(kg)
78-3/8	1/2" - 2"	(15 - 60)	3"	(76.2)	2 1/8"	(54.0)	1 1/8"	(28.6)	5/16"	(7.9)	3/8"-16	150*	(0.67)	15	(6.8)
--	Consult Factory For Data														

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

Upper Attachments

B3060L - Light Duty Angle Clip

Size Range: 3/8"-16 rod

Material: Steel (Stainless steel available)

Function: Designed for attaching 3/8"-16 hanger rod to the side of beams or walls.

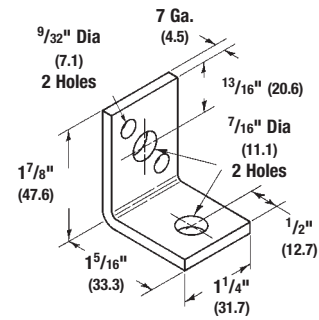
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 35 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 34.

Finish: Plain or Electro-Galvanized

Order By: number and finish.

Design Load: 300 Lbs. (1.33kN)

Weight: Approx. Wt./100 - 15 Lbs. (6.8 kg)



B3070 - Reversible Angle Clip (TOLCO Fig. 52)

Size Range: 3/8"-16 and 1/2"-13 rod, 1/2" (15mm) thru 3 1/2" (90mm) pipe

Material: Steel

Function: Designed for attaching hanger rod to the side of beams or walls.

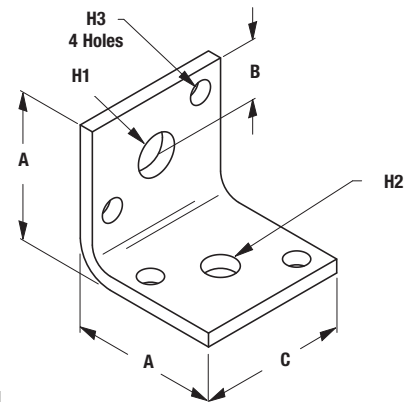
Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 35 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 34.

Finish: Plain or Electro-Galvanized

Order By: number and finish.

Design Load: 500 Lbs. (2.22 kN) when installed in either direction.

Weight: Approx. Wt./100 - 49 Lbs. (22.2 kg)



Part No.	Rod Size	A in. (mm)	B in. (mm)	C in. (mm)	Hole 1 in. (mm)	Hole 2 in. (mm)	Hole 3 in. (mm)	Max. Rec. Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3070-3/8x1/2	3/8"-16 x 1/2"-13	2" (50.8)	13/16" (20.6)	2" (50.8)	9/16" (14.3)	7/16" (11.1)	5/16" (7.9)	700 (3.11)	35 (15.9)
B3070-1/2x1/2	1/2"-13 x 1/2"-13	2" (50.8)	3/4" (19.0)	2" (50.8)	9/16" (14.3)	9/16" (14.3)	5/16" (7.9)	700 (3.11)	34 (15.4)

B3060 - Side Beam Angle Clip

Size Range: 3/8"-16 and 7/8"-9 rod

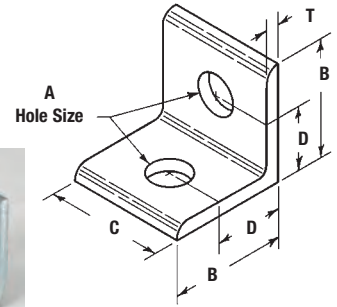
Material: Steel (Stainless steel available)

Function: Designed for attaching a hanger rod to the side of beams or walls.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 35 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 34.

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

Order By: Part number and finish.



Part No.	Hole Size A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	T in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3060-3/8	7/16" (11.1)	2 3/16" (55.6)	2" (50.8)	1 1/4" (31.7)	1/4" (6.3)	305 (1.35)	53 (24.0)
B3060-1/2	9/16" (14.3)	2 3/16" (55.6)	2" (50.8)	1 1/4" (31.7)	1/4" (6.3)	565 (2.51)	51 (23.1)
B3060-5/8	1 1/16" (17.5)	2 3/16" (55.6)	2" (50.8)	1 1/4" (31.7)	1/4" (6.3)	909 (4.02)	48 (21.8)
B3060-3/4	1 3/16" (20.6)	3" (76.2)	3" (76.2)	1 3/4" (44.4)	3/8" (9.5)	1355 (6.03)	169 (74.8)
B3060-7/8	1 5/16" (23.8)	4" (101.6)	4" (101.6)	2 1/2" (63.5)	3/8" (9.5)	1870 (8.32)	312 (141.5)

Fig. 51 - Side Beam Bracket for NFPA Rod & Fastener Sizing

Size Range: 3/8"-16 thru 1/2"-13 rod, 1/2" (15mm) thru 8" pipe (200mm)

Material: Steel

Function: Recommended for attaching hanger rod to side of beams or walls. Designed to accommodate current rod schedule and fastener requirements per National Fire Protection Association (NFPA) Pamphlet 13.

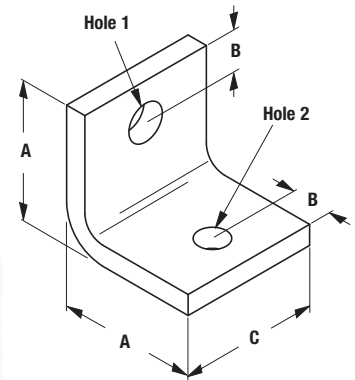
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL), and Factory Mutual Engineering approved.

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

Order By: Part number, rod size and finish



TOLCO



Part No.	Pipe Size in. (mm)	Rod Size	A in. (mm)	B in. (mm)	C in. (mm)	Hole 1 in. (mm)	Hole 2 in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
51-1/2-2	1/2" - 2" (15 - 60)	3/8"-16	2" (50.8)	3/4" (19.0)	2" (50.8)	7/16" (11.1)	7/16" (11.1)	700 (3.11)	35 (15.9)
51-2 1/2-4	2 1/2" - 4" (65 - 100)	3/8"-16	2" (50.8)	3/4" (19.0)	2" (50.8)	9/16" (14.3)	7/16" (11.1)	700 (3.11)	34 (15.4)
51-5-6	5" - 6" (125 - 150)	1/2"-13	2 1/2" (63.5)	3/4" (19.0)	2 1/2" (63.5)	9/16" (14.3)	9/16" (14.3)	1250 (5.56)	71 (32.2)
51-8	8" (200)	1/2"-13	2 1/2" (63.5)	3/4" (19.0)	2 1/2" (63.5)	1 1/16" (17.5)	9/16" (14.3)	1250 (5.56)	70 (31.7)

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

Upper Attachments

Fig. 50 - Side Beam Bracket for NFPA Rod & Fastener Sizing

Size Range: 3/8"-16 thru 7/8"-9 rod

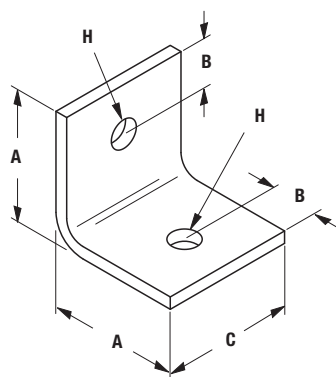
Material: Steel

Function: Recommended for attaching hanger rod to side of beams or walls.

Approvals: 3/8"-16 - Underwriters Laboratories Listed in the USA (UL) and Canada (cUL), and Factory Mutual Engineering approved.

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

Order By: Part number, rod size and finish



Part No.	Rod Size	A in. (mm)	B in. (mm)	C in. (mm)	Hole Size H in. (mm)	Max. Rec. Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
50-3/8	3/8"-16	2" (50.8)	3/4" (19.0)	2" (50.8)	7/16" (11.1)	700 (3.22)	35 (15.9)
50-1/2	1/2"-13	2" (50.8)	3/4" (19.0)	2" (50.8)	9/16" (14.3)	700 (3.22)	35 (15.9)
50-5/8	5/8"-11	2" (50.8)	3/4" (19.0)	2" (50.8)	11/16" (17.5)	700 (3.22)	32 (14.5)
50-3/4	3/4"-10	2 1/2" (63.5)	3/4" (19.0)	2 1/2" (63.5)	13/16" (20.6)	1250 (5.56)	110 (49.9)
50-7/8	7/8"-9	2 1/2" (63.5)	3/4" (19.0)	2 1/2" (63.5)	15/16" (23.8)	1250 (5.56)	100 (45.3)

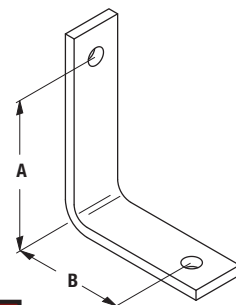
B3061 - Angle Bracket (TOLCO Fig. 42)

Material: Steel

Function: — Recommended for supporting pipe at various distances from wall or column.

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

Order By: Part number and finish



Part No.	Size in.	A in. (mm)	B in. (mm)	Hole Size in. (mm)	Max. Rec. Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3061-1	1	3" (76.2)	2" (50.8)	7/16" (11.1)	180 (0.80)	46 (20.8)
B3061-2	2	4" (101.6)	3" (76.1)	7/16" (11.1)	180 (0.80)	65 (29.5)
B3061-3	3	3" (76.2)	2" (50.8)	9/16" (14.3)	390 (1.73)	85 (38.5)
B3061-4	4	4" (101.6)	3" (76.1)	9/16" (14.3)	390 (1.73)	115 (52.1)

Fig. 56 - Tapped Side Beam Connector (Stainless Steel)

Size Range: 1/2" (15mm) thru 4" (100mm) pipe (3/8"-16 rod)

Material: Stainless Steel

Function: Recommended for attaching hanger rod to steel or wood beams. Tapped hole allows easy adjustment of hanger rod.

Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL), and Factory Mutual Engineering approved for 1/2" (15mm) thru 4" (100mm) pipe.

Weight: Approx. Wt./100 - 20.0 Lbs. (9.1kg)

Order By: Part number

Note: Available only in Stainless Steel materials.

Per NFPA 13: 1/2" (15mm) thru 2" (50mm) pipe use 3/8"-16 fastener; 2 1/2" (65mm) thru 4" (100mm) pipe, use 1/2"-13 fastener.

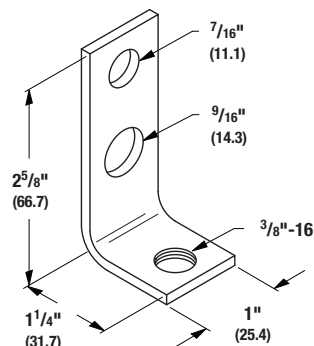


Fig. 58 - Threaded Side Beam Bracket

Size Range: 3/8" - 16 rod, pipe sizes 1/2" (15mm) thru 4" (100mm)

Material: Pre-Galvanized Steel

Function: Practical and economical bracket used to support piping from wood, concrete or steel beams.

Features: Unique design allows rod to be easily threaded into bracket. Offset design permits unlimited rod adjustment. Center mounting hole will accept 3/8" and 1/2" fastener bolts. Per NFPA 13: 1/2" (15mm) thru 2" (50mm) pipe requires 3/8" fastener, 2 1/2" (65mm) thru 4" (100mm) pipe requires 1/2" fastener.*

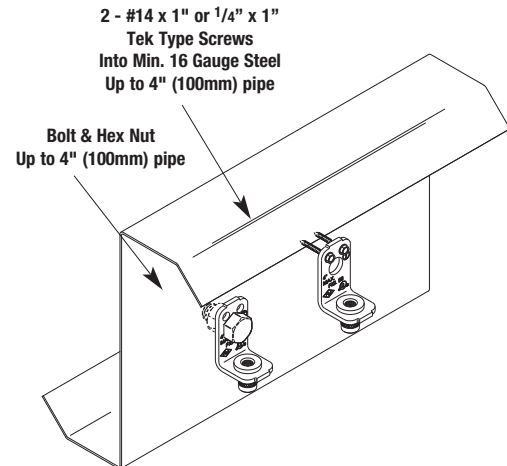
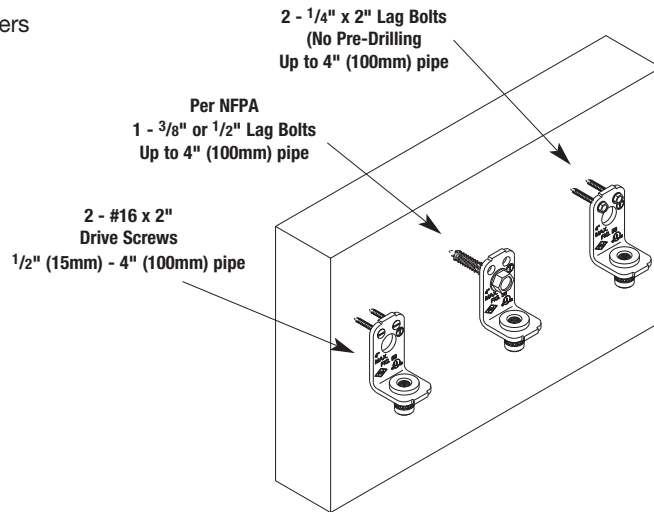
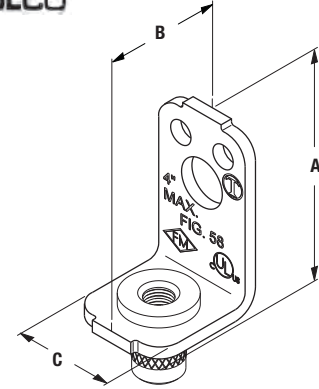
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL), and Factory Mutual Engineering approved thru 4" (100mm) pipe.

Finish: Pre-Galvanized

Order By: Part number and finish

***Note:** Additionally UL has listed the Fig. 58 with fasteners as shown in table below.

TOLCO



UL Listed Fastener Table			
Pipe Size	Qty	Fastener Type	Material
2"	2	#16 x 2" Drive screws	Wood
2"	1	3/8" Lag bolt	Wood
2 1/2" - 4"	1	1/2" Lag bolt	Wood
3 1/2"	2	1/4" x 1 1/2" Lag bolts	Wood
4"	2	1/4" x 2" Lag bolts **	Wood
4"	2	#14 x 1" or 1/4" x 1" Tek type screws	Metal (15 gauge)
4"	2	#14 x 1" or 1/4" x 1" Tek type screws	Metal (16 gauge)

** No pre-drilling

Part No.	Pipe Size in. (mm)	Rod Size (mm)	A in. (mm)	B in. (mm)	C in. (mm)	Max. Rec. Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
58	1/2" - 4" (15 - 100)	3/8" - 16	2 3/4" (69.8)	1 1/2" (38.1)	1 1/8" (28.6)	300*** (1.33)	14 (6.3)

*** With Safety Factor of 5.

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

Upper Attachments

Fig. 75 - Swivel Attachment

Size Range: — 3/8"-16 Rod Attachment

Material: Steel

Function: Three recommended applications for this product:

- May be used as a Branch Line Restraint for structural attachment to anchor bolt, beam clamp, etc.
- May be used as an upper attachment with short hanger rod to omit seismic bracing.
- May be used in a pitched or sloped roof application, to meet requirements of NFPA 13 (2010) 9.1.2.6.

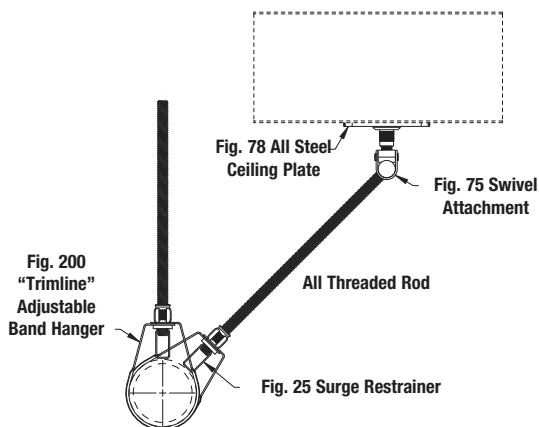
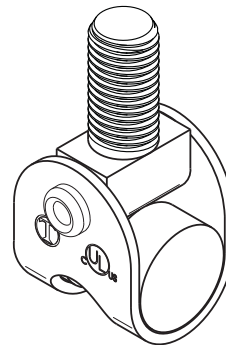
Approvals: Underwriters Laboratories Listed in the USA (UL) and Canada (cUL) to support up to 4" (100mm) pipe.

Finish: Electro-Galvanized

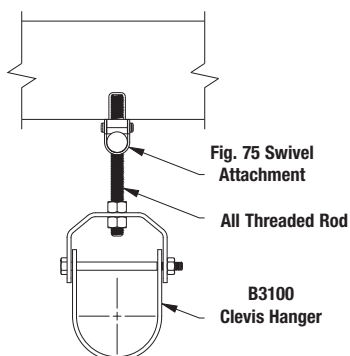
Weight: Approx. Wt./100 - 13.3 Lbs. (6.0kg)

Order By: Part number

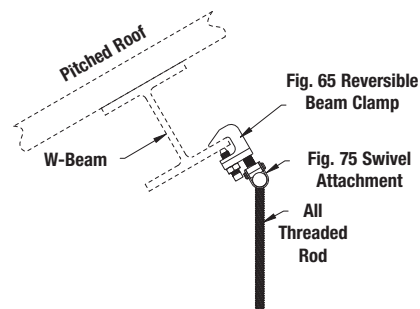
Patent: #7,887,248



May be used as a structural attachment component of a branch line restraint



May be used as an upper attachment with short hanger rod to omit seismic bracing



May be used with a pitched roof application, to meet requirements of NFPA 13 (2010) Sec. 9.1.2.5.

B3058 - Side Beam Connector

Size Range: 3/8"-16 & 1/2"-13 rods

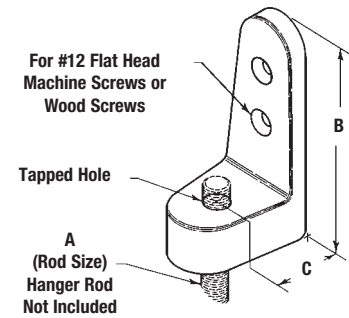
Material: Malleable Iron

Function: Designed for attaching hanger rod to the side of beams or walls.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 35 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 34.

Finish: Plain or Electro-Galvanized

Order By: Part number and finish.



Part No.	Rod Size A	B		C		Design Load		Approx. Wt./100	
		in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3058-3/8	3/8"-16	2 3/8"	(60.3)	9/16"	(14.3)	250	(1.11)	13	(5.9)
B3058-1/2	1/2"-13	2 3/4"	(69.8)	3/4"	(19.0)	480	(2.13)	25	(11.3)

B3062 - Side Beam Bracket

Size Range: 3/8"-16 thru 5/8"-11 rods

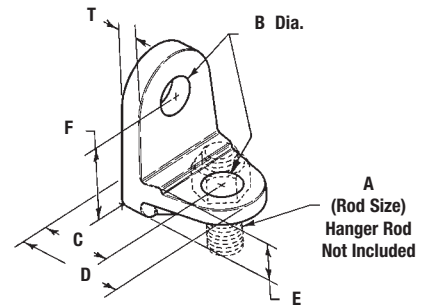
Material: Malleable Iron

Function: Designed for attaching hanger rod to the side of beams or walls.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 35 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 34.

Finish: Plain or Electro-Galvanized

Order By: Part number and finish.



Part No.	Rod Size A	For Nominal Pipe Sizes		Design Load				Approx. Wt./100	
		in.	(mm)	With Lag Screw Lbs.	(kN)	With Bolt To Steel Lbs.	(kN)	Lbs.	(kg)
B3062-3/8	3/8"-16	3/4"-2"	(20-50)	390	(1.73)	730	(3.25)	21	(9.5)
B3062-1/2	1/2"-13	2 1/2"-3 1/2"	(65-95)	640	(2.84)	1350	(6.00)	44	(19.9)
B3062-5/8	5/8"-11	4"-5"	(100-125)	760	(3.38)	2160	(9.71)	81	(36.7)

Part No.	B		C		D		E		F		T	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3062-3/8	7/16"	(11.1)	7/8"	(22.2)	1 3/8"	(34.9)	5/8"	(15.9)	1 7/16"	(36.5)	1/4"	(6.3)
B3062-1/2	9/16"	(14.3)	1 3/16"	(30.2)	1 13/16"	(46.0)	3/4"	(19.0)	1 7/8"	(47.6)	1 1/32"	(8.7)
B3062-5/8	3/4"	(19.0)	1 7/16"	(36.5)	2 3/16"	(55.6)	7/8"	(22.2)	2 1/4"	(54.0)	7/16"	(11.1)

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

Upper Attachments

B3083 - Welded Beam Attachment (TOLCO Fig. 305)

B3083WO - Welded Beam Attachment Without Pin (TOLCO Fig. 304)

Size Range: 3/8"-16 thru 2"-4 1/2 rod

Material: Steel (Stainless steel available)

Function: Designed for attaching hanger rod to the bottom of structural steel where heavy loads and large hanger rod sizes are required. Can be welded in place in either the upright or inverted position. When using B3083WO, attach hanger rod to bolt or pin with a B3200 weldless eye nut or B3210 and B3211 series eye rods.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 22 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 22.

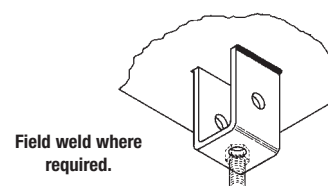
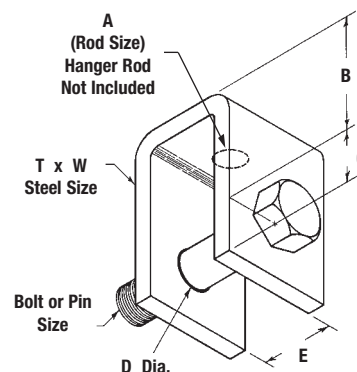
Finish: Plain or Electro-Galvanized. Contact B-Line for alternative finishes and materials.

Order By: Part number (with or without hardware) and finish.

Note: When ordering with hardware for sizes 3/8 thru 1 1/8, hex head cap screws and hex nuts will be supplied. For 1 1/4 thru 2, clevis pin and cotter pins will be supplied. Must be specified with or without hardware.

B
Center of cross bolt to bottom of attachment.

C
Center of cross bolt to top of attachment.



Part No.	Rod Size A	Pin or Bolt Size in. (mm)	Design Load				Approx. Wt./100				
			650° F (349°C)		750°F (399°C)		W/O Hardware		With Hardware		
			Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kg)	Lbs.	(kg)	
B3083-3/8	3/8"-16	1/2"	(12.7)	730	(3.25)	572	(2.54)	89	(40.3)	110	(49.9)
B3083-1/2	1/2"-13	5/8"	(15.9)	1350	(6.00)	1057	(4.70)	87	(39.4)	123	(55.8)
B3083-5/8	5/8"-11	3/4"	(19.0)	2160	(9.61)	1692	(7.52)	84	(38.1)	140	(63.5)
B3083-3/4	3/4"-10	7/8"	(22.2)	3230	(14.37)	2530	(11.25)	173	(78.4)	268	(121.5)
B3083-7/8	7/8"-9	1"	(25.4)	4480	(19.93)	3508	(15.60)	234	(106.1)	376	(170.4)
B3083-1	1"-8	1 1/8"	(28.6)	5900	(26.24)	4620	(20.55)	394	(178.6)	596	(270.2)
B3083-1 1/8	1 1/8"-7	1 1/4"	(31.7)	7450	(33.14)	5830	(25.93)	402	(182.2)	680	(308.3)
B3083-1 1/4	1 1/4"-7	1 3/8"	(34.9)	9500	(42.25)	7440	(33.09)	734	(332.7)	955	(432.9)
B3083-1 1/2	1 1/2"-6	1 5/8"	(41.3)	13800	(61.38)	10807	(48.07)	1460	(661.8)	1817	(823.7)
B3083-1 3/4	1 3/4"-5	1 7/8"	(47.6)	18600	(82.73)	14566	(64.79)	1746	(791.5)	2310	(1047.1)
B3083-2	2"-4 1/2	2 1/4"	(57.1)	24600	(109.42)	19625	(87.29)	2190	(992.7)	2996	(1358.1)

Part No.	B		C		Dia. D		E		T x W	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3083-3/8	2"	(50.8)	7/8"	(22.2)	9/16"	(14.3)	1 1/4"	(31.7)	1/4" x 2"	(6.3 x 50.8)
B3083-1/2	2"	(50.8)	7/8"	(22.2)	1 1/16"	(17.5)	1 1/4"	(31.7)	1/4" x 2"	(6.3 x 50.8)
B3083-5/8	2"	(50.8)	7/8"	(22.2)	13/16"	(20.6)	1 1/4"	(31.7)	1/4" x 2"	(6.3 x 50.8)
B3083-3/4	2"	(50.8)	1 1/8"	(28.6)	15/16"	(23.8)	1 1/2"	(38.1)	3/8" x 2 1/2"	(9.5 x 63.5)
B3083-7/8	3"	(76.2)	1 1/4"	(31.7)	1 1/8"	(28.6)	2"	(50.8)	3/8" x 2 1/2"	(9.5 x 63.5)
B3083-1	3"	(76.2)	1 1/2"	(38.1)	1 1/4"	(31.7)	2"	(50.8)	1/2" x 3"	(12.7 x 76.2)
B3083-1 1/8	3"	(76.2)	1 1/2"	(38.1)	1 3/8"	(34.9)	2 3/4"	(69.8)	1/2" x 3"	(12.7 x 76.2)
B3083-1 1/4	3"	(76.2)	2"	(50.8)	1 1/2"	(38.1)	3"	(76.2)	5/8" x 4"	(15.9 x 101.6)
B3083-1 1/2	4"	(101.6)	2 1/2"	(63.5)	1 3/4"	(44.4)	3 1/2"	(88.9)	3/4" x 5"	(19.0 x 127.0)
B3083-1 3/4	5"	(127.0)	2 3/4"	(69.8)	2"	(50.8)	3 3/4"	(95.2)	3/4" x 5"	(19.0 x 127.0)
B3083-2	5"	(127.0)	3 1/4"	(82.5)	2 3/8"	(60.3)	3 3/4"	(95.2)	3/4" x 6"	(19.0 x 152.4)

B3080S - (Short) Structural Welding Lug (TOLCO Fig. 343 Short)

B3080L - (Long) Structural Welding Lug (TOLCO Fig. 343 Long)

Size Range: Short lug is available for use with 1/2"-13 thru 2"-4 1/2 rods; Long lug may be used with 1/2"-13 thru 2"-4 1/2 rod.

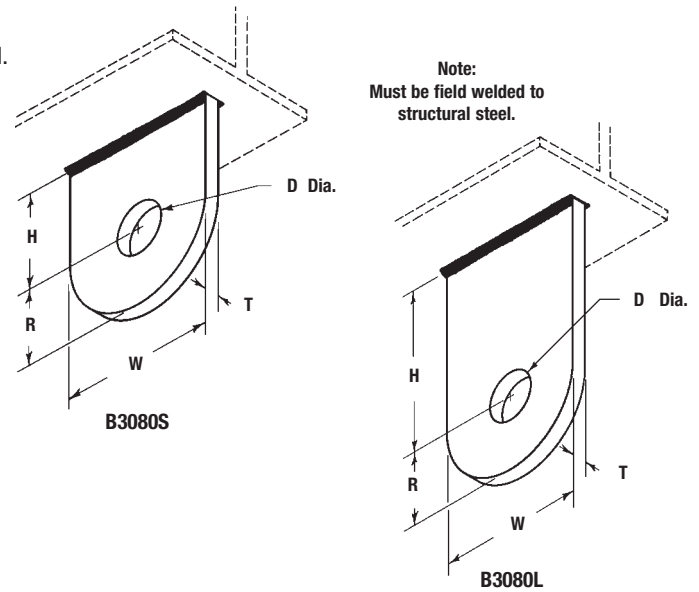
Material: Steel

Function: Designed for attachment to structural steel. Use with B3201 forged steel clevis.

Approvals: Conforms to Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 57.

Finish: Plain or Electro-Galvanized

Order By: Part number and finish.



Part No.		For Hanger	Pin or Bolt Size		Design Load		Approx. Wt./100			
Short	Long		in.	(mm)	Lbs.	(kN)	Short Lbs.	(kg)	Long Lbs.	(kg)
B3080S-1/2	B3080L-1/2	1/2"-13	5/8"	(15.9)	1350	(6.00)	44	(19.9)	71	(32.2)
B3080S-5/8	B3080L-5/8	5/8"-11	3/4"	(19.0)	2160	(9.61)	44	(19.9)	68	(30.8)
B3080S-3/4	B3080L-3/4	3/4"-10	7/8"	(22.0)	3230	(14.37)	63	(28.6)	100	(45.3)
B3080S-7/8	B3080L-7/8	7/8"-9	1"	(25.4)	4480	(19.93)	71	(32.2)	100	(45.3)
B3080S-1	B3080L-1	1"-8	1 1/8"	(28.6)	5900	(26.24)	126	(57.1)	169	(76.6)
B3080S-1 1/8	B3080L-1 1/8	1 1/8"-7	1 1/4"	(31.7)	7450	(33.14)	166	(75.3)	208	(94.3)
B3080S-1 1/4	B3080L-1 1/4	1 1/4"-7	1 3/8"	(38.1)	9500	(42.25)	310	(140.6)	381	(172.8)
B3080S-1 1/2	B3080L-1 1/2	1 1/2"-6	1 5/8"	(41.3)	13800	(61.38)	503	(228.1)	662	(300.3)
B3080S-1 3/4	B3080L-1 3/4	1 3/4"-5	1 7/8"	(47.6)	18600	(82.73)	487	(220.9)	646	(293.0)
B3080S-2	B3080L-2	2"-4 1/2	2 1/4"	(57.1)	24600	(109.42)	744	(337.5)	808	(366.5)

Part No.		Hole Dia. 'D'		Short		H		Long		R		T		W	
Short	Long	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3080S-1/2	B3080L-1/2	1 1/16"	(17.5)	1 1/2"	(38.1)	3"	(76.2)	1 1/4"	(31.7)	1/4"	(6.3)	2 1/2"	(63.5)	2 1/2"	(63.5)
B3080S-5/8	B3080L-5/8	13/16"	(20.6)	1 1/2"	(38.1)	3"	(76.2)	1 1/4"	(31.7)	1/4"	(6.3)	2 1/2"	(63.5)	2 1/2"	(63.5)
B3080S-3/4	B3080L-3/4	15/16"	(23.8)	1 1/2"	(38.1)	3"	(76.2)	1 1/4"	(31.7)	3/8"	(9.5)	2 1/2"	(63.5)	2 1/2"	(63.5)
B3080S-7/8	B3080L-7/8	1 1/8"	(28.6)	2"	(50.8)	3"	(76.2)	1 1/4"	(31.7)	3/8"	(9.5)	2 1/2"	(63.5)	2 1/2"	(63.5)
B3080S-1	B3080L-1	1 1/4"	(31.7)	2"	(50.8)	3"	(76.2)	1 1/2"	(38.1)	1/2"	(12.7)	3"	(76.2)	3"	(76.2)
B3080S-1 1/8	B3080L-1 1/8	1 3/8"	(34.9)	3"	(76.2)	4"	(101.6)	1 1/2"	(38.1)	1/2"	(12.7)	3"	(76.2)	3"	(76.2)
B3080S-1 1/4	B3080L-1 1/4	1 1/2"	(38.1)	3"	(76.2)	4"	(101.6)	2"	(50.8)	5/8"	(15.9)	4"	(101.6)	4"	(101.6)
B3080S-1 1/2	B3080L-1 1/2	1 3/8"	(44.4)	3"	(76.2)	4 1/2"	(114.3)	2 1/2"	(63.5)	3/4"	(19.0)	5"	(127.0)	5"	(127.0)
B3080S-1 3/4	B3080L-1 3/4	2"	(50.8)	3"	(76.2)	4 1/2"	(114.3)	2 1/2"	(63.5)	3/4"	(19.0)	5"	(127.0)	5"	(127.0)
B3080S-2	B3080L-2	2 3/8"	(60.3)	4"	(101.6)	4 1/2"	(114.3)	3"	(76.2)	3/4"	(19.0)	6"	(152.4)	6"	(152.4)

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

Upper Attachments

B3085 - Rod Attachment Concrete Plate (TOLCO Fig. 35)

Size Range: 3/8"-16 thru 2"-4 1/2 rod

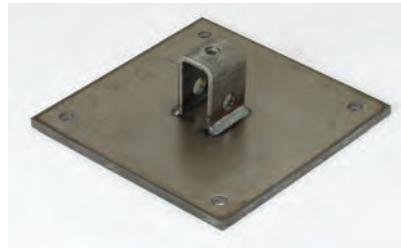
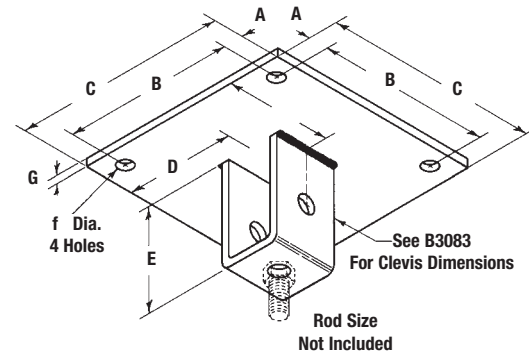
Material: Steel

Function: Structural attachment to concrete ceiling where vertical attachment is desired. Attach hanger rod directly to support bracket.

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

Order By: Part number and finish

Note: Design load is based off rod sizes. Before installation ensure that concrete and anchorage are sufficient to carry the load.



Part No.	Rod Size	A		B		C		D	
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3085-3/8	3/8"-16	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)
B3085-1/2	1/2"-13	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)
B3085-5/8	5/8"-11	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)
B3085-3/4	3/4"-10	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)
B3085-7/8	7/8"-9	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)
B3085-1	1"-8	2"	(50.8)	8"	(203.2)	12"	(304.8)	6"	(152.4)
B3085-1 1/8	1 1/8"-7	2"	(50.8)	8"	(203.2)	12"	(304.8)	6"	(152.4)
B3085-1 1/4	1 1/4"-7	2"	(50.8)	8"	(203.2)	12"	(304.8)	6"	(152.4)
B3085-1 1/2	1 1/2"-6	2"	(50.8)	8"	(203.2)	12"	(304.8)	6"	(152.4)

Part No.	E		F		G		Max. Rec. Load*		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3085-3/8	2 7/8"	(73.0)	9/16"	(14.3)	3/8"	(9.5)	730	(3.25)	1145	(519.4)
B3085-1/2	2 7/8"	(73.0)	9/16"	(14.3)	3/8"	(9.5)	1450	(6.00)	1143	(518.4)
B3085-5/8	2 7/8"	(73.0)	9/16"	(14.3)	1/2"	(12.7)	2160	(9.61)	1490	(675.8)
B3085-3/4	3 1/8"	(79.4)	1 1/16"	(17.5)	1/2"	(12.7)	3230	(14.37)	1574	(713.9)
B3085-7/8	4 1/4"	(107.7)	1 1/16"	(17.5)	1/2"	(12.7)	4480	(19.93)	1635	(741.6)
B3085-1	4 1/2"	(114.3)	1 3/16"	(20.6)	3/4"	(19.0)	5900	(26.24)	3420	(1551.3)
B3085-1 1/8	4 3/4"	(120.6)	1 5/16"	(23.8)	3/4"	(19.0)	7450	(33.14)	3413	(1548.1)
B3085-1 1/4	5"	(127.0)	1 5/16"	(23.8)	3/4"	(19.0)	9500	(42.25)	3747	(1699.6)
B3085-1 1/2	6 1/2"	(165.1)	1 1/8"	(28.6)	1"	(25.4)	13800	(61.38)	5438	(2466.7)

* Based on allowable stresses shown in the ANSI code for pressure piping.

B3086 - Clevis Concrete Plate (TOLCO Fig. 34)

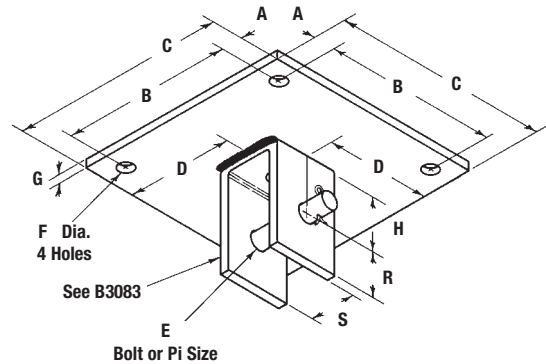
Size Range: 3/8"-16 thru 2"-4 1/2 rod

Material: Steel

Function: Structural attachment to concrete ceiling where flexibility is desired. (Use with B3200 weldless eye nut, B3210 eye rod or B3211 welded eye rod.)

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

Order By: Part number, rod size and finish



Part No.	For Hanger Rod Size	A		B		C		D		E		F	
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3086-3/8	3/8"-16	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)	1/2"	(12.7)	9/16"	(14.3)
B3086-1/2	1/2"-13	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)	5/8"	(15.9)	9/16"	(14.3)
B3086-5/8	5/8"-11	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)	3/4"	(19.0)	9/16"	(14.3)
B3086-3/4	3/4"-10	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)	7/8"	(22.2)	11/16"	(17.5)
B3086-7/8	7/8"-9	1"	(25.4)	8"	(203.2)	10"	(254.0)	5"	(127.0)	1"	(25.4)	11/16"	(17.5)
B3086-1	1"-8	2"	(50.8)	8"	(203.2)	12"	(304.8)	6"	(152.4)	1 1/8"	(28.6)	13/16"	(20.6)
B3086-1 1/8	1 1/8"-7	2"	(50.8)	8"	(203.2)	12"	(304.8)	6"	(152.4)	1 1/4"	(31.7)	15/16"	(23.8)
B3086-1 1/4	1 1/4"-7	2"	(50.8)	8"	(203.2)	12"	(304.8)	6"	(152.4)	1 3/8"	(34.9)	15/16"	(23.8)
B3086-1 1/2	1 1/2"-6	2"	(50.8)	8"	(203.2)	12"	(304.8)	6"	(152.4)	1 5/8"	(41.3)	1 1/8"	(28.6)

Part No.	G		H		R		S		Max. Rec. Load*		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3086-3/8	3/8"	(9.5)	2"	(50.8)	7/8"	(22.2)	1 1/4"	(31.7)	730	(3.25)	1165	(528.4)
B3086-1/2	3/8"	(9.5)	2"	(50.8)	7/8"	(22.2)	1 1/4"	(31.7)	1350	(6.00)	1178	(534.4)
B3086-5/8	1/2"	(12.7)	2"	(50.8)	7/8"	(22.2)	1 1/4"	(31.7)	2160	(9.61)	1546	(701.2)
B3086-3/4	1/2"	(12.7)	2"	(50.8)	1 1/8"	(28.6)	1 1/2"	(38.1)	3230	(14.37)	1673	(758.9)
B3086-7/8	1/2"	(12.7)	3"	(76.2)	1 1/4"	(31.7)	2"	(50.8)	4480	(19.93)	1783	(808.7)
B3086-1	3/4"	(19.0)	3"	(76.2)	1 1/2"	(38.1)	2"	(50.8)	5900	(26.24)	3636	(1649.3)
B3086-1 1/8	3/4"	(19.0)	3"	(76.2)	1 3/4"	(44.4)	2 3/4"	(69.8)	7450	(33.14)	3708	(1681.9)
B3086-1 1/4	3/4"	(19.0)	3"	(76.2)	2"	(50.8)	3"	(76.2)	9500	(42.25)	3986	(1808.0)
B3086-1 1/2	1"	(25.4)	4"	(101.6)	2 1/2"	(63.5)	3 1/2"	(88.9)	13800	(61.38)	5816	(2638.1)

* Based on allowable stresses shown in the ANSI code for pressure piping.

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

Upper Attachments

B3084 - Single Lug Concrete Plate (TOLCO Fig. 33)

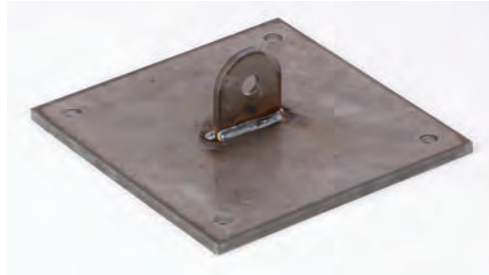
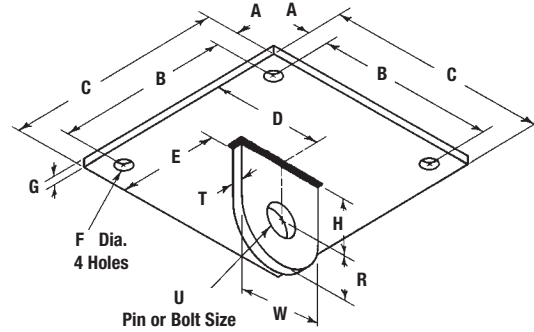
Size Range: 1/2"-13 thru 2"-4 1/2" rod

Material: Steel

Function: Structural attachment to concrete ceiling.
Use with B3201 bridge clevis to attach to center lug.

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

Order By: Part number, rod size and finish



Part No.	For Hanger Rod Size	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)
B3084-1/2	1/2"-13	1" (25.4)	8" (203.2)	10" (254.0)	5" (127.0)	4 7/8" (123.8)	9/16" (14.3)	3/8" (9.5)
B3084-5/8	5/8"-11	1" (25.4)	8" (203.2)	10" (254.0)	5" (127.0)	4 7/8" (123.8)	9/16" (14.3)	1/2" (12.7)
B3084-3/4	3/4"-10	1" (25.4)	8" (203.2)	10" (254.0)	5" (127.0)	4 13/16" (122.2)	11/16" (17.5)	1/2" (12.7)
B3084-7/8	7/8"-9	1" (25.4)	8" (203.2)	10" (254.0)	5" (127.0)	4 13/16" (122.2)	11/16" (17.5)	3/4" (19.0)
B3084-1	1"-8	2" (50.8)	8" (203.2)	12" (304.8)	6" (152.4)	5 3/4" (146.0)	13/16" (20.6)	3/4" (19.0)
B3084-1 1/8	1 1/8"-7	2" (50.8)	8" (203.2)	12" (304.8)	6" (152.4)	5 3/4" (146.0)	15/16" (23.8)	3/4" (19.0)
B3084-1 1/4	1 1/4"-7	2" (50.8)	8" (203.2)	12" (304.8)	6" (152.4)	5 11/16" (144.5)	15/16" (23.8)	3/4" (19.0)
B3084-1 1/2	1 1/2"-6	2" (50.8)	8" (203.2)	12" (304.8)	6" (152.4)	5 5/8" (142.9)	1 1/8" (28.6)	1" (25.4)

Part No.	H in. (mm)	R in. (mm)	U in. (mm)	T x W in. (mm)	Max. Rec. Load* Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3084-1/2	1 1/2" (38.1)	1 1/4" (31.7)	5/8" (15.9)	1/4" x 2 1/2" (6.3 x 63.5)	1350 (6.00)	1096 (497.1)
B3084-5/8	1 1/2" (38.1)	1 1/4" (31.7)	3/4" (19.0)	1/4" x 2 1/2" (6.3 x 63.5)	2160 (9.61)	1447 (656.3)
B3084-3/4	1 1/2" (38.1)	1 1/4" (31.7)	7/8" (22.2)	3/8" x 2 1/2" (9.5 x 63.5)	3230 (14.37)	1459 (661.8)
B3084-7/8	2" (50.8)	1 1/4" (31.7)	1" (25.4)	3/8" x 2 1/2" (9.5 x 63.5)	4480 (19.93)	2166 (982.5)
B3084-1	2" (50.8)	1 1/2" (38.1)	1 1/8" (28.6)	1/2" x 3" (12.7 x 76.2)	5900 (26.24)	3145 (1426.6)
B3084-1 1/8	3" (76.2)	1 1/2" (38.1)	1 1/4" (31.7)	1/2" x 3" (12.7 x 76.2)	7450 (33.14)	3170 (1437.9)
B3084-1 1/4	3" (76.2)	2" (50.8)	1 3/8" (34.9)	5/8" x 4" (15.9 x 101.6)	9500 (42.25)	4312 (1955.9)
B3084-1 1/2	3" (76.2)	2 1/2" (63.5)	1 5/8" (41.3)	3/4" x 5" (19.0 x 127.0)	13800 (61.38)	4470 (2027.6)

* Based on allowable stresses shown in the ANSI code for pressure piping.

B3082 - Adjustable Rod Beam Attachment (TOLCO Fig. 337)

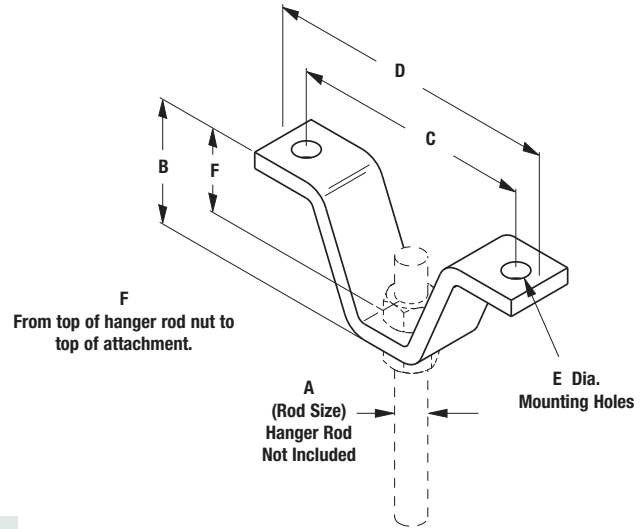
Size Range: 3/8"-16 thru 7/8"-9 rod

Material: Steel

Function: Designed for attaching hanger rod to bottom flange of beam or ceilings allowing for vertical adjustment where required.

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

Order By: Part number and finish.



Part No.	Rod Size A	Adjustment F in. (mm)	Design Load		Approx. Wt./100	
			Lbs.	(kN)	Lbs.	(kg)
B3082-3/8	3/8"-16	2 1/8" (54.0)	810	(3.60)	53	(24.0)
B3082-1/2	1/2"-13	2 5/16" (58.7)	1130	(5.02)	129	(58.5)
B3082-5/8	5/8"-11	2 3/16" (55.6)	1810	(8.05)	128	(58.0)
B3082-3/4	3/4"-10	2 9/16" (65.1)	2710	(12.05)	196	(88.9)
B3082-7/8	7/8"-9	2 1/2" (63.5)	3770	(16.77)	282	(1278.9)

Part No.	B		C		D		Dia. E	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3082-3/8	2 3/4"	(69.8)	3 7/8"	(98.4)	4 7/8"	(123.8)	7/16"	(11.1)
B3082-1/2	3 1/8"	(97.4)	4 3/4"	(120.6)	6"	(152.4)	9/16"	(14.3)
B3082-5/8	3 1/8"	(79.4)	4 3/4"	(120.6)	6"	(152.4)	9/16"	(14.3)
B3082-3/4	3 11/16"	(93.7)	6 1/4"	(158.7)	7 3/4"	(196.8)	1 1/16"	(17.5)
B3082-7/8	3 3/4"	(95.2)	6 3/8"	(161.9)	8 1/4"	(209.5)	1 3/16"	(20.6)

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

Threaded Accessories



Threaded accessories offered in this section are designed to reduce installation time. A wide range of types and sizes are available for various applications.

Materials

For maximum loading design, Carbon Steel, Forged Steel, and Malleable Iron are used in the manufacturing of threaded accessories. Stainless Steel and other materials are available.

Finishes

The standard finishes for threaded accessories are plain steel (oil coated) sometimes referred to as black and Electro-Galvanized Zinc (ASTM B633 SC1). Hot-Dip Galvanized After Fabrication (ASTM A153) and other special coatings are available upon request.

Approvals (as noted)

Items in this section are Underwriters Laboratories Listed and comply with Federal Specification WW-H-171E & A-A-1192A or Manufacturers Standardization Society ANSI/MSS SP-69 SP-58.

B3222 - Eye Socket (TOLCO Fig. 307)

Size Range: 1/4"-20 thru 3/4"-10 rod

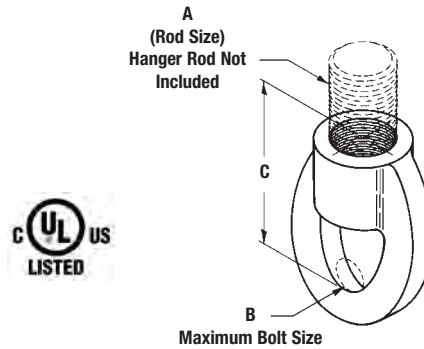
Material: Malleable Iron

Function: To provide an adjustable threaded connection for hanger rods.

Approvals: Underwriters Laboratories Listed 3/8"-16 thru 3/4"-10. Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 16 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 16.

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

Order By: Part number and finish



Part No.	Rod Size A	Max. Bolt Size B		C		Design Load		Approx. Wt./100	
		in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3222-1/4	1/4"-20	1/4"	(6.3)	1 1/8"	(28.6)	400	(1.78)	6	(2.7)
B3222-3/8	3/8"-16	1/4"	(6.3)	1 3/8"	(34.9)	730	(3.25)	9	(4.1)
B3222-1/2	1/2"-13	1/4"	(6.3)	1 1/2"	(38.1)	1350	(6.00)	16	(7.2)
B3222-5/8	5/8"-11	3/8"	(9.5)	1 3/4"	(44.4)	1580	(7.03)	21	(9.5)
B3222-3/4	3/4"-10	1/2"	(12.7)	2"	(50.8)	1900	(8.45)	38	(17.2)

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

Threaded Accessories

B3200 - Weldless Eye Nut (TOLCO Fig. 330)

Size Range: 3/8"-16 thru 2 1/2"-4 1/2 machine thread.

Material: Forged Steel

Quality Assurance: Conforms to the requirements of NCA 3800.

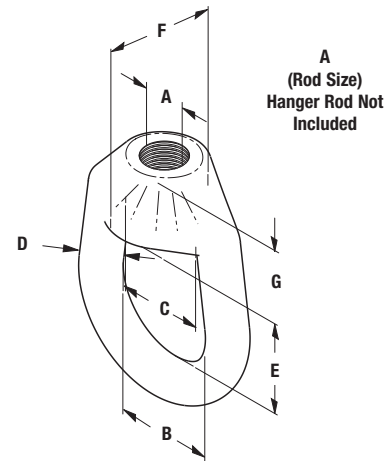
Threads: Tapped UNC Class 2B. Right hand threads are standard. Left hand threads supplied upon request.

Function: Used on piping installations where high strength and swivel action are required. Left hand tap is also available.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 17 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 17.

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

Order By: Part number and finish.



Part No.	Rod Size A	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)
B3200-3/8	3/8"-16	1 1/2" (38.1)	1 3/16" (30.2)	1/2" (12.7)	2" (50.8)	1 3/8" (34.9)	1 1/16" (17.5)
B3200-1/2	1/2"-13	1 1/2" (38.1)	1 3/16" (30.2)	1/2" (12.7)	2" (50.8)	1 3/8" (34.9)	1 1/16" (17.5)
B3200-5/8	5/8"-11	1 1/2" (38.1)	1 3/16" (30.2)	1/2" (12.7)	2" (50.8)	1 3/8" (34.9)	1 1/16" (17.5)
B3200-3/4	3/4"-10	1 1/2" (38.1)	1 3/16" (30.2)	1/2" (12.7)	2" (50.8)	1 3/8" (34.9)	1 1/16" (17.5)
B3200-7/8	7/8"-9	2" (50.8)	1 11/16" (42.9)	3/4" (19.0)	2 5/8" (66.7)	1 15/16" (49.2)	1" (25.4)
B3200-1	1"-8	2" (50.8)	1 11/16" (42.9)	3/4" (19.0)	2 5/8" (66.7)	1 15/16" (49.2)	1" (25.4)
B3200-1 1/8	1 1/8"-7	2 1/2" (63.5)	1 13/16" (46.0)	1" (25.4)	3 3/8" (85.7)	2 3/8" (60.3)	1 1/4" (31.7)
B3200-1 1/4	1 1/4"-7	2 1/2" (63.5)	1 13/16" (46.0)	1" (25.4)	3 3/8" (85.7)	2 3/8" (60.3)	1 1/4" (31.7)
B3200-1 1/2	1 1/2"-6	2 1/2" (63.5)	1 13/16" (46.0)	1" (25.4)	3 3/8" (85.7)	2 3/8" (60.3)	1 1/4" (31.7)
B3200-1 3/4	1 3/4"-5	4" (101.6)	4" (101.6)	1 1/2" (38.1)	6 1/4" (158.7)	4" (101.6)	2 1/4" (57.1)
B3200-2	2"-4 1/2	4" (101.6)	4" (101.6)	1 1/2" (38.1)	6 1/4" (158.7)	4" (101.6)	2 1/4" (57.1)
B3200-2 1/4	2 1/4"-4 1/2	4" (101.6)	4" (101.6)	1 1/2" (38.1)	6 1/4" (158.7)	4" (101.6)	2 1/4" (57.1)
B3200-2 1/2	2 1/2"-4 1/2	4" (101.6)	4" (101.6)	1 1/2" (38.1)	6 1/4" (158.7)	4" (101.6)	2 1/4" (57.1)

Part No.	Design Load				Approx. Wt./100 Lbs. (kg)	
	650°F (343°C) Lbs. (kN)	750°F (399°C) Lbs. (kN)				
B3200-3/8	610 (2.71)	540 (2.40)			63 (28.6)	
B3200-1/2	1130 (5.02)	1010 (4.49)			60 (27.2)	
B3200-5/8	1810 (8.05)	1610 (7.16)			59 (26.7)	
B3200-3/4	2710 (12.05)	2420 (10.76)			56 (25.4)	
B3200-7/8	3770 (16.77)	3360 (14.94)			170 (77.1)	
B3200-1	4950 (22.02)	4420 (19.66)			174 (78.9)	
B3200-1 1/8	6230 (27.71)	5560 (24.73)			373 (169.2)	
B3200-1 1/4	8000 (35.58)	7140 (31.76)			364 (165.1)	
B3200-1 1/2	11630 (51.73)	10370 (46.12)			345 (156.5)	
B3200-1 3/4	15700 (69.83)	14000 (62.27)			1657 (751.6)	
B3200-2	20700 (92.07)	18460 (82.11)			1614 (732.1)	
B3200-2 1/4	27200 (120.98)	24260 (107.91)			1562 (708.5)	
B3200-2 1/2	33500 (149.01)	29880 (132.90)			1506 (683.1)	



B501 - Light Weight U-Bolt with 2 Hex Nuts (TOLCO Fig. 111)

Size Range: Size 1/2" (15mm) thru 8" (200mm) pipe

Material: Carbon Steel

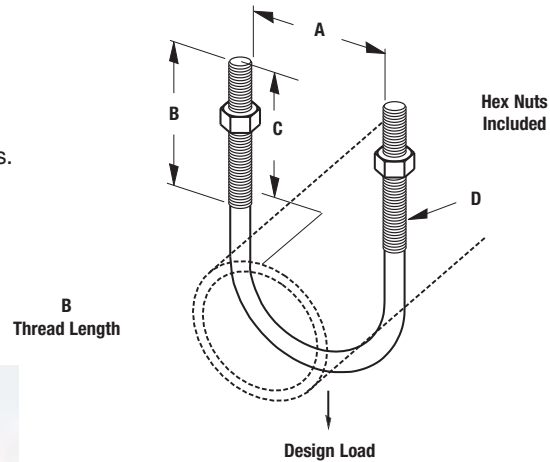
Function: Recommended for supporting or anchoring light pipe loads.

Maximum Temperature: 650°F (343°C)

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

Order By: Part number and finish.

Note: When furnished in Hot-Dip Galvanized finish, oversize tapped hex nuts must be used.



Part No.	A		B		C		D	Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)		Lbs.	(kN)	Lbs.	(kg)
B501-1/2	15/16"	(23.8)	1 3/4"	(44.4)	1 1/2"	(38.1)	5/16"-18	600	(2.67)	12	(5.4)
B501-3/4	1 1/8"	(28.6)	1 3/4"	(44.4)	1 5/8"	(41.3)	5/16"-18	600	(2.67)	13	(5.9)
B501-1	1 3/8"	(29.9)	1 7/8"	(47.6)	1 5/8"	(41.3)	5/16"-18	900	(4.00)	14	(6.3)
B501-1 1/4	1 23/32"	(43.6)	1 3/4"	(44.4)	1 15/32"	(37.3)	5/16"-18	900	(4.00)	15	(6.8)
B501-1 1/2	2"	(50.8)	1 3/4"	(44.4)	1 7/16"	(36.5)	5/16"-18	900	(4.00)	16	(7.2)
B501-2	2 7/16"	(61.9)	2 1/16"	(52.4)	1 7/8"	(47.6)	3/8"-16	1200	(5.34)	27	(12.2)
B501-2 1/2	2 15/16"	(74.6)	2 1/16"	(52.4)	1 13/16"	(46.0)	3/8"-16	1200	(5.34)	32	(14.5)
B501-3	3 9/16"	(90.5)	2"	(50.8)	1 3/4"	(44.4)	3/8"-16	1800	(8.00)	36	(16.3)
B501-3 1/2	4 3/32"	(94.6)	2"	(50.8)	1 23/32"	(43.6)	3/8"-16	1800	(8.00)	38	(17.2)
B501-4	4 19/32"	(116.7)	2 1/4"	(57.1)	1 21/32"	(50.0)	3/8"-16	1800	(8.00)	42	(19.0)
B501-5	5 21/32"	(143.6)	2 1/4"	(57.1)	2"	(50.8)	1/2"-13	2400	(10.70)	92	(41.7)
B501-6	6 3/4"	(171.4)	2 5/8"	(66.7)	2 3/8"	(60.3)	5/8"-11	2400	(10.70)	176	(79.8)
B501-8	8 3/4"	(222.2)	2 5/8"	(66.7)	2 3/8"	(60.3)	5/8"-11	2400	(10.70)	191	(86.6)

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

Threaded Accessories

B3188 - Standard U-Bolt with 4 Hex Nuts (TOLCO Fig. 110)

B3188C - Standard Plastic Coated U-Bolt

Size Range: Size 1/2" (15mm) thru 30" (900mm) pipe

Material: Steel

Function: Recommended for support, anchor or guide of pipe.

Approvals: Underwriters Laboratories Listed 3/4" (20mm) thru 12" (300mm).
Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 24
and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58,
Type 24.

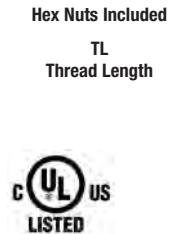
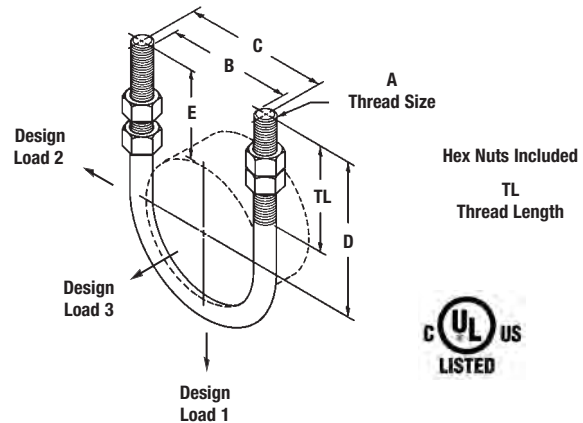
Maximum Temperature: 750°F (399°C)

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

Order By: Part number and finish. U-bolt can be furnished with longer tangents "D" or with longer threads "E". Consult factory.

Note: When furnished in Hot-Dip Galvanized finish, oversize tapped hex nuts must be used.

B3188NS - Non-standard (NS) U-bolts are available upon request. Specify dimensions other than standard. B3188DI - For ductile iron pipe.



B3188C
Plastic Coated

Part No.	Pipe Size		Thread Size	Thread Length TL		B	
	in.	(mm)		in.	(mm)	in.	(mm)
B3188-1/2	1/2"	(15)	1/4"-20	2 1/8"	(54.0)	1 5/16"	(23.8)
B3188-3/4	3/4"	(20)	1/4"-20	2 1/8"	(54.0)	1 1/8"	(28.6)
B3188-1	1"	(25)	1/4"-20	2 1/8"	(54.0)	1 3/8"	(34.9)
B3188-1 1/4	1 1/4"	(32)	3/8"-16	2 1/8"	(54.0)	1 11/16"	(42.9)
B3188-1 1/2	1 1/2"	(40)	3/8"-16	2 1/2"	(63.5)	2"	(50.8)
B3188-2	2"	(50)	3/8"-16	2 1/2"	(63.5)	2 7/16"	(61.9)
B3188-2 1/2	2 1/2"	(65)	1/2"-13	3"	(76.2)	2 15/16"	(74.6)
B3188-3	3"	(80)	1/2"-13	3"	(76.2)	3 9/16"	(90.5)
B3188-3 1/2	3 1/2"	(90)	1/2"-13	3"	(76.2)	4 1/16"	(103.2)
B3188-4	4"	(100)	1/2"-13	3"	(76.2)	4 9/16"	(115.9)
B3188-5	5"	(125)	1/2"-13	3"	(76.2)	5 21/32"	(143.6)
B3188-6	6"	(150)	5/8"-11	3 3/4"	(95.2)	6 3/4"	(171.4)
B3188-8	8"	(200)	5/8"-11	3 3/4"	(95.2)	8 3/4"	(222.2)
B3188-10	10"	(250)	3/4"-10	4"	(101.6)	10 7/8"	(276.2)
B3188-12	12"	(300)	7/8"-9	4 1/4"	(107.9)	12 7/8"	(327.0)
B3188-14	14"	(350)	7/8"-9	4 1/4"	(107.9)	14 1/8"	(358.8)
B3188-16	16"	(400)	7/8"-9	4 1/4"	(107.9)	16 1/8"	(409.6)
B3188-18	18"	(450)	1"-8	4 3/4"	(120.6)	18 1/8"	(460.4)
B3188-20	20"	(500)	1"-8	4 3/4"	(120.6)	20 1/8"	(511.2)
B3188-24	24"	(600)	1"-8	4 3/4"	(120.6)	24 1/8"	(612.8)
B3188-30	30"	(750)	1"-8	4 3/4"	(120.6)	30 1/8"	(765.2)

B3188 - Standard U-Bolt with 4 Hex Nuts (TOLCO Fig. 110) cont.

Part No.	C		Tangent D		E		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
B3188-1/2	1 ³ / ₁₆ "	(30.2)	2 ³ / ₄ "	(69.8)	2 ⁵ / ₁₆ "	(58.7)	10	(4.5)
B3188-3/4	1 ³ / ₈ "	(34.9)	2 ³ / ₄ "	(69.8)	2 ⁷ / ₃₂ "	(56.3)	11	(5.0)
B3188-1	1 ⁵ / ₈ "	(41.3)	2 ³ / ₄ "	(69.8)	2 ³ / ₃₂ "	(53.2)	11	(5.0)
B3188-1 ¹ / ₄	2 ³ / ₃₂ "	(53.2)	2 ⁷ / ₈ "	(73.0)	2 ¹ / ₃₂ "	(51.6)	28	(12.7)
B3188-1 ¹ / ₂	2 ³ / ₈ "	(60.3)	3"	(76.2)	2 ¹ / ₁₆ "	(52.4)	29	(13.1)
B3188-2	2 ¹³ / ₁₆ "	(71.4)	3 ¹ / ₄ "	(82.5)	2 ¹ / ₁₆ "	(52.4)	31	(14.0)
B3188-2 ¹ / ₂	3 ⁷ / ₁₆ "	(87.3)	3 ³ / ₄ "	(95.2)	2 ⁵ / ₁₆ "	(58.7)	72	(32.6)
B3188-3	4 ¹ / ₁₆ "	(103.2)	4"	(101.6)	2 ¹ / ₄ "	(57.1)	79	(35.8)
B3188-3 ¹ / ₂	4 ⁹ / ₁₆ "	(115.9)	4 ¹ / ₄ "	(107.9)	2 ¹ / ₄ "	(57.1)	84	(38.1)
B3188-4	5 ¹ / ₁₆ "	(128.6)	4 ¹ / ₂ "	(114.3)	2 ¹ / ₄ "	(57.1)	94	(42.6)
B3188-5	6 ⁵ / ₃₂ "	(156.3)	5"	(127.0)	2 ⁷ / ₃₂ "	(56.3)	104	(47.2)
B3188-6	7 ³ / ₈ "	(187.3)	6 ¹ / ₈ "	(155.6)	2 ¹³ / ₁₆ "	(71.4)	203	(92.1)
B3188-8	9 ³ / ₈ "	(238.1)	7 ¹ / ₈ "	(181.0)	2 ¹³ / ₁₆ "	(71.4)	241	(109.3)
B3188-10	11 ⁵ / ₈ "	(295.3)	8 ³ / ₈ "	(212.7)	3"	(76.2)	412	(186.9)
B3188-12	13 ³ / ₄ "	(349.2)	9 ⁵ / ₈ "	(244.5)	3 ¹ / ₄ "	(82.5)	661	(299.8)
B3188-14	15"	(381.0)	10 ¹ / ₄ "	(260.3)	3 ¹ / ₄ "	(82.5)	707	(320.7)
B3188-16	17"	(431.8)	11 ¹ / ₄ "	(285.7)	3 ¹ / ₄ "	(82.5)	782	(354.7)
B3188-18	19 ¹ / ₈ "	(485.8)	12 ⁵ / ₈ "	(320.7)	3 ⁵ / ₈ "	(92.1)	1344	(609.6)
B3188-20	21 ¹ / ₈ "	(536.6)	13 ⁵ / ₈ "	(346.1)	3 ⁵ / ₈ "	(92.1)	1458	(661.3)
B3188-24	25 ¹ / ₈ "	(638.2)	15 ⁵ / ₈ "	(396.9)	3 ⁵ / ₈ "	(92.1)	1687	(765.2)
B3188-30	31 ¹ / ₈ "	(790.6)	18 ⁵ / ₈ "	(473.1)	3 ⁵ / ₈ "	(92.1)	2030	(920.8)

Part No.	Design Load 1		Design Load 2		Design Load 3	
	650°F (343°C) Lbs. (kN)	750°F (399°C) Lbs. (kN)	650°F (343°C) Lbs. (kN)	650°F (343°C) Lbs. (kN)	650°F (343°C) Lbs. (kN)	650°F (343°C) Lbs. (kN)
B3188-1/2	580 (2.58)	454 (2.02)	145 (0.64)	180 (0.80)	180 (0.80)	180 (0.80)
B3188-3/4	580 (2.58)	454 (2.02)	145 (0.64)	300 (1.33)	300 (1.33)	300 (1.33)
B3188-1	580 (2.58)	454 (2.02)	145 (0.64)	480 (2.13)	480 (2.13)	480 (2.13)
B3188-1 ¹ / ₄	1460 (6.49)	1144 (5.09)	365 (1.62)	600 (2.67)	600 (2.67)	600 (2.67)
B3188-1 ¹ / ₂	1460 (6.49)	1144 (5.09)	365 (1.62)	600 (2.67)	600 (2.67)	600 (2.67)
B3188-2	1460 (6.49)	1144 (5.09)	365 (1.62)	720 (3.20)	720 (3.20)	720 (3.20)
B3188-2 ¹ / ₂	2700 (12.01)	2114 (9.40)	675 (3.00)	720 (3.20)	720 (3.20)	720 (3.20)
B3188-3	2700 (12.01)	2114 (9.40)	675 (3.00)	900 (4.00)	900 (4.00)	900 (4.00)
B3188-3 ¹ / ₂	2700 (12.01)	2114 (9.40)	675 (3.00)	900 (4.00)	900 (4.00)	900 (4.00)
B3188-4	2700 (12.01)	2114 (9.40)	675 (3.00)	900 (4.00)	900 (4.00)	900 (4.00)
B3188-5	2700 (12.01)	2114 (9.40)	675 (3.00)	1080 (4.80)	1080 (4.80)	1080 (4.80)
B3188-6	4320 (19.21)	3382 (15.04)	1080 (4.80)	1080 (4.80)	1080 (4.80)	1080 (4.80)
B3188-8	4320 (19.21)	3382 (15.04)	1080 (4.80)	--	--	--
B3188-10	6460 (28.73)	5060 (22.50)	1615 (7.18)	--	--	--
B3188-12	9960 (44.30)	7016 (31.21)	2490 (11.07)	--	--	--
B3188-14	9960 (44.30)	7016 (31.21)	2490 (11.07)	--	--	--
B3188-16	9960 (44.30)	7016 (31.21)	2490 (11.07)	--	--	--
B3188-18	11800 (52.48)	9240 (41.10)	--	--	--	--
B3188-20	11800 (52.48)	9240 (41.10)	--	--	--	--
B3188-24	11800 (52.48)	9240 (41.10)	--	--	--	--
B3188-30	11800 (52.48)	9240 (41.10)	--	--	--	--

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

Threaded Accessories

B3201 - Forged Steel Clevis with Pin (TOLCO Fig. 332 with pin)

B3201W0 - Forged Steel Clevis without Pin (TOLCO Fig. 332 without pin)

Size Range: 3/8"-16 thru 2"-4 1/2 rod

Material: Forged Steel

Function: For use on high temperature piping installations providing hanger rod adjustability.

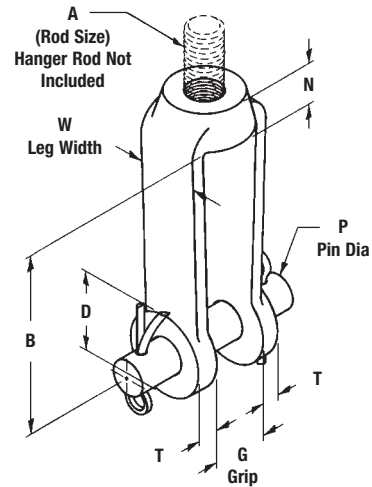
Features: Complies fully with code for pressure piping. Supports loads equal to the full limitation of the hanger rod. Available with pin and cotter pins, if required.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 14 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 14.

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

Order By: Part number, rod size and finish. If pin and cotter pins are required, specify "with pin". If other than standard combination of clevis size and rod tapping is required, specify clevis number, special rod tapping size and grip.

B
Center of clevis pin to
underside of top
D
Boss Dia.
N
Thickness of threaded top.



Part No.	Rod Size A	B in. (mm)	D in. (mm)	Grip G in. (mm)	Pin Dia. N in. (mm)	P in. (mm)
B3201-3/8	3/8"-16	39/16" (90.5)	17/16" (36.5)	1/2" (12.7)	5/8" (15.9)	1/2" (12.7)
B3201-1/2	1/2"-13	39/16" (90.5)	17/16" (36.5)	1/2" (12.7)	5/8" (15.9)	5/8" (15.9)
B3201-5/8	5/8"-11	39/16" (90.5)	17/16" (36.5)	5/8" (15.9)	5/8" (15.9)	3/4" (19.0)
B3201-3/4	3/4"-10	4" (101.6)	2 1/2" (63.5)	3/4" (19.0)	1 1/8" (28.6)	7/8" (22.2)
B3201-7/8	7/8"-9	4" (101.6)	2 1/2" (63.5)	7/8" (22.2)	1 1/8" (28.6)	1" (25.4)
B3201-1	1"-8	5 1/16" (128.6)	3" (76.2)	1" (25.4)	1 1/4" (31.7)	1 1/8" (28.6)
B3201-1 1/8	1 1/8"-7	5 1/16" (128.6)	3" (76.2)	1 1/8" (28.6)	1 1/4" (31.7)	1 1/4" (31.7)
B3201-1 1/4	1 1/4"-7	5 1/16" (128.6)	3" (76.2)	1 1/4" (31.7)	1 1/4" (31.7)	1 3/8" (34.9)
B3201-1 1/2	1 1/2"-6	6" (152.4)	3 1/2" (88.9)	1 1/2" (38.1)	1 1/2" (38.1)	1 5/8" (41.3)
B3201-1 3/4	1 3/4"-5	5 15/16" (150.8)	4" (101.6)	1 1/2" (38.1)	1 3/4" (44.4)	1 7/8" (47.6)
B3201-2	2"-4 1/2	7" (177.8)	5" (127.0)	2 1/2" (63.5)	2 1/4" (57.1)	2 1/4" (57.1)

Part No.	T		W		Design Load				Approx. Wt./100			
	in.	(mm)	in.	(mm)	650°F (343°C)		750°F (399°C)		With Pin		Without Pin	
					Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kg)	Lbs.	(kg)
B3201-3/8	5/16"	(7.9)	1 1/16"	(27.0)	730	(3.25)	572	(2.54)	102	(46.2)	85	(38.5)
B3201-1/2	5/16"	(7.9)	1 1/16"	(27.0)	1350	(6.00)	1057	(4.70)	112	(50.8)	82	(37.2)
B3201-5/8	5/16"	(7.9)	1 1/16"	(27.0)	2160	(9.61)	1692	(7.52)	134	(60.8)	78	(35.4)
B3201-3/4	3/8"	(9.5)	1 1/4"	(31.7)	3230	(14.37)	2530	(11.25)	250	(113.4)	163	(73.9)
B3201-7/8	3/8"	(9.5)	1 1/4"	(31.7)	4480	(19.93)	3508	(15.60)	305	(138.3)	161	(73.0)
B3201-1	1/2"	(12.7)	1 1/2"	(38.1)	5900	(26.24)	4620	(20.55)	656	(297.5)	449	(203.6)
B3201-1 1/8	1/2"	(12.7)	1 1/2"	(38.1)	7450	(33.14)	5830	(25.93)	718	(325.7)	433	(196.4)
B3201-1 1/4	1/2"	(12.7)	1 1/2"	(38.1)	9500	(42.25)	7440	(33.09)	603	(273.5)	382	(173.3)
B3201-1 1/2	1/2"	(12.7)	1 3/4"	(44.4)	13800	(61.38)	10807	(48.07)	952	(431.8)	600	(272.1)
B3201-1 3/4	1/2"	(12.7)	2"	(50.8)	18600	(82.73)	14566	(64.79)	1357	(615.5)	800	(362.9)
B3201-2	5/8"	(15.9)	2 1/2"	(63.5)	24600	(109.42)	19625	(87.29)	2403	(1090.0)	1600	(725.7)

B3203 - Extension Piece (TOLCO Fig. 333)

Size Range: 3/8"-16 thru 7/8"-9 rod

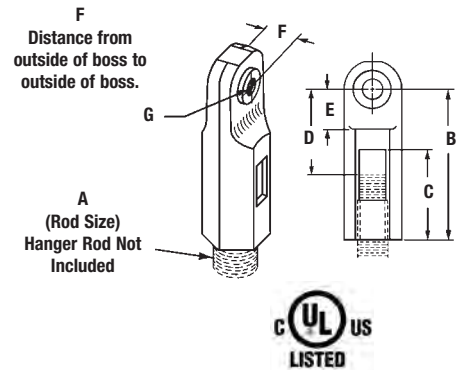
Material: Malleable Iron

Function: For use in attaching hanger rod to other attachments. (Use with B3054.)

Approvals: Underwriters Laboratories Listed

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

Order By: Part number, rod size and finish



Part No.	Rod Size A	For Pipe Sizes		B		C		D	
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
B3203-3/8	3/8"-16	3/4" to 2"	(20 to 50)	2 1/16"	(52.4)	1 1/4"	(31.7)	1 1/4"	(31.7)
B3203-1/2	1/2"-13	2 1/2" to 3 1/2"	(65 to 90)	2 1/16"	(58.7)	1 3/8"	(34.9)	1 3/8"	(34.9)
B3203-5/8	5/8"-11	4" - 5"	(100 to 125)	2 7/16"	(61.9)	1 1/2"	(38.1)	1 7/16"	(36.5)
B3203-3/4	3/4"-10	6"	(150)	2 7/8"	(73.0)	1 3/4"	(44.4)	1 11/16"	(42.9)
B3203-7/8	7/8"-9	8" to 12"	(200 to 300)	3"	(76.2)	1 7/8"	(47.6)	1 3/4"	(44.4)

Part No.	E		F		G		Design Load		Approx. Wt./100	
	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3203-3/8	9/16"	(14.3)	1/2"	(12.7)	1/2"	(12.7)	730	(3.25)	18	(8.1)
B3203-1/2	1 1/16"	(17.5)	5/8"	(15.9)	1/2"	(12.7)	1350	(6.00)	37	(16.8)
B3203-5/8	3/4"	(19.0)	5/8"	(15.9)	1/2"	(12.7)	1550	(6.89)	42	(19.0)
B3203-3/4	7/8"	(22.2)	5/8"	(15.9)	1/2"	(12.7)	2100	(9.34)	56	(25.4)
B3203-7/8	7/8"	(22.2)	3/4"	(19.0)	9/16"	(14.3)	2350	(10.45)	75	(34.0)

B3223-3/8" - Offset Eye Socket

Size Range: 3/8"-16 rod

Material: Steel

Function: Designed for attachment of 3/8"-16 hanger rod to structure.

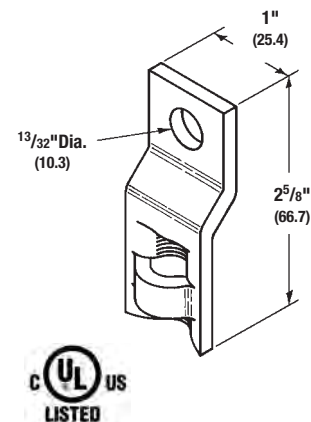
Approvals: Underwriters Laboratories Listed for up to 2" (50mm) pipe.

Weight: Approx. Wt./100 - 6.0 lbs. (2.7kg)

Finish: Electro-Galvanized

Order By: Part number and finish

Design Load: 610 lbs (2.71kN)



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

Threaded Accessories

B3224 - Hanger Adjuster (TOLCO Fig. 306)

B3224CT - Copper Tubing Hanger Adjuster

Size Range: 1/4"-20 thru 3/4"-10 rod

Material: Malleable Iron

Function: To provide an adjustable threaded connection for hanger rods.

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 15 and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 15.

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

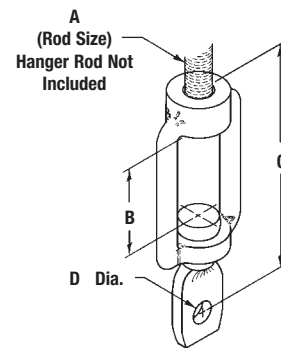
Order By: Part number, rod size and finish



B3224



B3224CT



Part No.	Rod Size A	For Pipe Sizes in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	Design Load Lbs. (kN)	Approx. Wt./100 Lbs. (kg)
B3224-1/4	1/4"-20	3/8" (10)	1 3/4" (44.4)	3 7/8" (98.4)	7/32" (5.5)	230 (1.02)	9 (4.1)
B3224-3/8	3/8"-16	1/2" to 2" (15 to 50)	1 3/4" (44.4)	3 7/8" (98.4)	13/32" (10.3)	730 (3.25)	28 (12.7)
B3224-1/2	1/2"-13	2 1/2" to 3 1/2" (65 to 90)	1 3/4" (44.4)	3 7/8" (98.4)	13/32" (10.3)	730 (3.25)	29 (13.1)
B3224-5/8	5/8"-11	4" to 5" (100 to 125)	2 1/4" (57.1)	5 1/8" (130.2)	1/2" (12.7)	730 (3.25)	30 (13.6)
B3224-3/4	3/4"-10	6" (150)	2 1/4" (57.1)	5 1/8" (130.2)	9/16" (14.3)	860 (3.82)	74 (33.5)

B3202 - Turnbuckle (TOLCO Fig. 331)

Size Range: 3/8"-16 thru 2"-4 1/2 machine thread

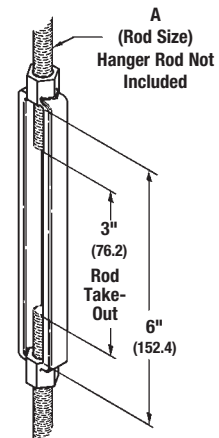
Material: Forged Steel

Function: Standard turnbuckle tapped right and left hand which provides 6" (152.4mm) take up (3" (76.2mm) rod take out).

Approvals: Conforms to Federal Specification WW-H-171E & A-A-1192A, Type 13, 3/8"-16 thru 1 1/2"-6 rod, and Manufacturers Standardization Society ANSI/MSS SP-69 & SP-58, Type 13.

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

Order By: Part number, rod size and finish



Part No.	Rod Size A	Design Load				Approx. Wt./100 Lbs. (kg)	
		650°F (343°C) Lbs. (kN)		750°F (399°C) Lbs. (kN)			
B3202-3/8	3/8"-16	730	(3.25)	572	(2.54)	38	(17.2)
B3202-1/2	1/2"-13	1350	(6.00)	1057	(4.70)	54	(24.5)
B3202-5/8	5/8"-11	2160	(9.61)	1692	(7.52)	91	(41.3)
B3202-3/4	3/4"-10	3230	(14.37)	2530	(11.25)	130	(58.9)
B3202-7/8	7/8"-9	4480	(19.93)	3508	(15.60)	202	(91.6)
B3202-1	1"-8	5900	(26.24)	4620	(20.55)	270	(122.5)
B3202-1 1/8	1 1/8"-7	7450	(33.14)	5830	(25.93)	354	(160.6)
B3202-1 1/4	1 1/4"-7	9500	(42.25)	7440	(33.09)	445	(201.8)
B3202-1 1/2	1 1/2"-6	13800	(61.38)	10807	(48.07)	640	(290.3)
B3202-1 3/4	1 3/4"-5	18600	(82.73)	14566	(64.79)	1100	(498.9)
B3202-2	2"-4 1/2	24600	(109.42)	19625	(87.29)	1490	(675.8)

B3205 - Threaded Rod (right-hand threads - both ends) (TOLCO Fig. 103)

B3205L - Threaded Rod (right & left hand threads)

Size Range: 3/8"-16 thru 3"-4 rod

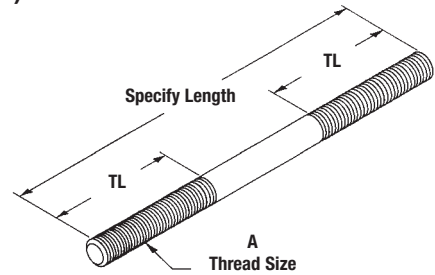
Material: Steel

Function: Recommended for use as a hanger support in hanger assemblies. Rod is threaded on both ends with right hand threads of the length shown. Also available with left and right hand threads - specify Fig. B3205L when ordering.

Maximum Temperature: 750°F (399°C)

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

Order By: Part number, rod size, length and finish



Part No.	Thread Size A	Standard Thread Length TL		Design Load			
		in.	(mm)	650°F (343°C)		750°F (399°C)	
				Lbs.	(kN)	Lbs.	(kN)
B3205-3/8 x 'L'	3/8"-16	2 1/2"	(63.5)	730	(3.25)	572	(2.54)
B3205-1/2 x 'L'	1/2"-13	2 1/2"	(63.5)	1350	(6.00)	1057	(4.70)
B3205-5/8 x 'L'	5/8"-11	2 1/2"	(63.5)	2160	(9.61)	1692	(7.52)
B3205-3/4 x 'L'	3/4"-10	3"	(76.2)	3230	(14.37)	2530	(11.25)
B3205-7/8 x 'L'	7/8"-9	3 1/2"	(88.9)	4480	(19.93)	3508	(15.60)
B3205-1 x 'L'	1"-8	4"	(101.6)	5900	(26.24)	4620	(20.55)
B3205-1 1/8 x 'L'	1 1/8"-7	4 1/2"	(114.3)	7450	(33.14)	5830	(25.93)
B3205-1 1/4 x 'L'	1 1/4"-7	5"	(127.0)	9500	(42.25)	7440	(33.09)
B3205-1 1/2 x 'L'	1 1/2"-6	6"	(152.4)	13800	(61.38)	10807	(48.07)
B3205-1 3/4 x 'L'	1 3/4"-5	7"	(177.8)	18600	(82.73)	14566	(64.79)
B3205-2 x 'L'	2"-4 1/2	8"	(203.2)	24600	(109.42)	19625	(87.29)
B3205-2 1/4 x 'L'	2 1/4"-4 1/2	9"	(228.6)	32300	(143.67)	25295	(112.51)
B3205-2 1/2 x 'L'	2 1/2"-4	10"	(254.0)	39800	(177.03)	31169	(138.64)
B3205-2 3/4 x 'L'	2 3/4"-4	11"	(279.4)	49400	(219.73)	38687	(172.08)
B3205-3 x 'L'	3"-4	12"	(304.8)	60100	(267.32)	47066	(209.35)

ATR - All Threaded Rod (TOLCO Fig. 99 & Fig. 100)

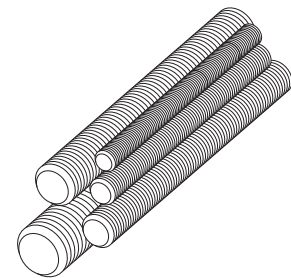
Size Range: 3/8"-16 thru 1 1/2"-6 rod in 10' (3.05m) lengths

Material: Steel

Maximum Temperature: 750°F (399°C)

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

Order By: Part number, rod diameter and finish



Part No. & Size	Threads Per Inch	Recommended Load		Approx. Wt./100 Ft.	
		Lbs.	(kN)	Lbs.	(kg)
ATR 1/4" x 'L'	20	240	(1.07)	12	(5.44)
ATR 3/8" x 'L'	16	730	(3.24)	29	(13.15)
ATR 1/2" x 'L'	13	1350	(6.00)	53	(24.04)
ATR 5/8" x 'L'	11	2160	(9.60)	89	(40.37)
ATR 3/4" x 'L'	10	3230	(14.37)	123	(55.79)
ATR 7/8" x 'L'	9	4480	(19.93)	170	(77.11)
ATR 1" x 'L'	8	5900	(26.24)	225	(102.06)

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

Threaded Accessories

Fig. 98 - Rod Stiffener

Fig. 98B - Rod Stiffener with Break-Off Bolt Head

Size Range: Secures 3/8"-16 thru 7/8"-9 hanger rod

Material: Steel

Function: Secures channel to hanger rod for vertical seismic bracing. Slight distortion of the channel (strut) may occur upon installation of rod stiffeners.

Approvals: Included in our Seismic Restraints Catalog 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 the TOLCO Seismic Restraint Systems Guidelines

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

Weight: Approx. Wt./100: Fig. 98 - 11.8 Lbs. (5.3kg)
Fig. 98B - 12.7 Lbs. (5.7kg)

Order By: Part number

TOLCO



Fig. 98

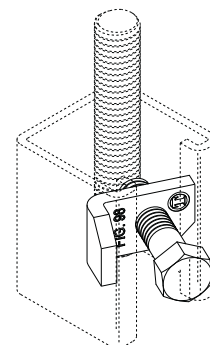
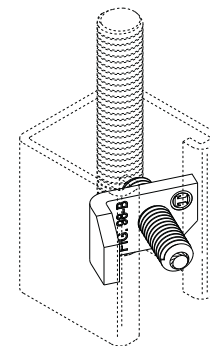


Fig. 98B



SC228 - Hanger Rod Stiffener

Size Range: Secures 3/8"-16 thru 5/8"-11 hanger rod

Material: Steel

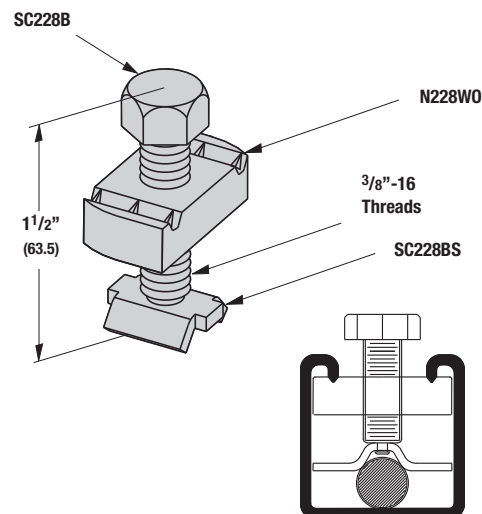
Function: Secures channel to hanger rod for vertical seismic bracing. Slight distortion of the channel (strut) may occur upon installation of rod stiffeners.

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

Weight: Approx. Wt./100: 21.0 Lbs. (9.5kg)

Order By: Part part number

Note: Order channel separately



Rod Stiffener Requirements

Rod Size	Maximum Rod Length Without Rod Stiffener	Maximum Spacing Between Rod Stiffeners
3/8"	19" (482mm)	13" (330mm)
1/2"	25" (635mm)	18" (457mm)
5/8"	31" (787mm)	23" (584mm)
3/4"	37" (940mm)	28" (711mm)
7/8"	43" (1092mm)	33" (838mm)
1"	50" (1270mm)	38" (965mm)
1 1/4"	60" (1524mm)	43" (1092mm)

Notes:

- 1.) Rod stiffeners are required only on hanger and trapeze assemblies that have seismic bracing attached at or within 4" (101.6mm) of the rod. A minimum of two rod stiffeners (Figure 98, 98B, or SC228) must be installed.
- 2.) Recommended torque on Figure 98 and SC228 is 8 ft-lbs. (10.8Nm) or finger tight and one full turn with a wrench. Figure 98B has the break off bolt head.

B3214 - Tie Bolt (TOLCO Fig. 106)

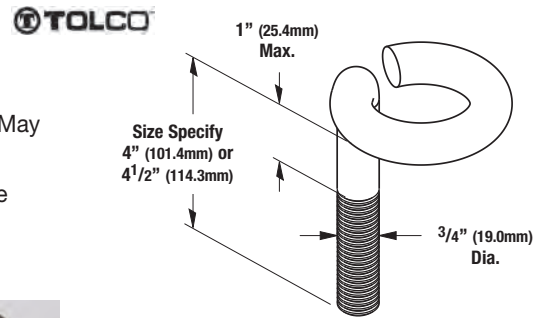
Material: Steel

Function: Recommended for securing the connection of steel pipe to ductile pipe first attach tie bolts to pipe flanges then connect tie rods. May be used in vertical or horizontal applications.

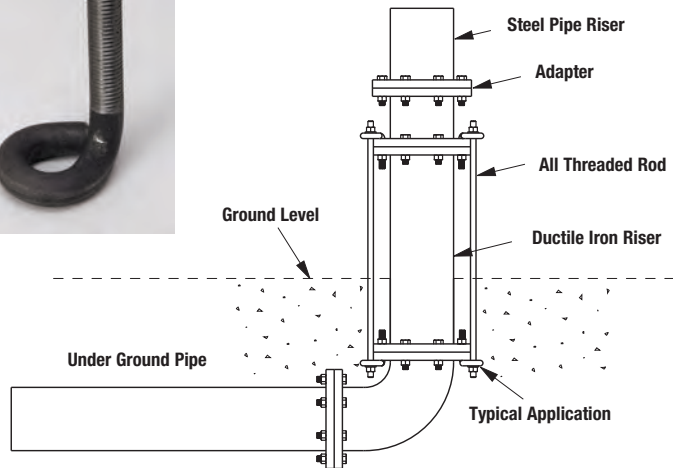
Approvals: Conforms to NFPA Pamphlet 24, Installation of Private Fire Service Maintenance 4" (100mm) - 12" (300mm) pipe size.

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

Order By: Part number, size and finish.
Custom lengths for thicker flange available.



Part No.	Length in.	(mm)	Approx. Wt./100 Lbs.	(kg)
B3214-4	4"	(101.6)	107.5	(48.5)
B3214-4 1/2	4 1/2"	(114.3)	113.7	(51.6)



B3213 - Coach Screw Rod (TOLCO Fig. 105)

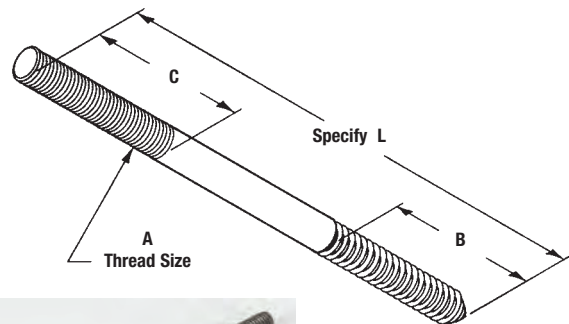
Size Range: 3/8"-16 rod thru 1/2"-13 rod

Material: Steel

Function: Typically used to suspend pipe from wood joists. Machine threaded on one end and lag threaded on the other end. It is recommended that pilot holes be pre-drilled to prevent beam from splitting and to aid in starting lag threads.

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

Order By: Part number, rod size, length and finish



Part No.	Thread Size A	Standard Rod Lengths L in.	(mm)	Coach Screw Thread Length B in.	(mm)	Rod Thread Length C in.	(mm)	Design Load Lbs.	(kg)
B3213-3/8 x 'L'	3/8"-16	*3 1/2", 8"	(88.9, 203.2)	2"	(50.8)	2"	(50.8)	390	(1.73)
B3213-1/2 x 'L'	1/2"-13	*3 1/2", 8"	(88.9, 203.2)	2 1/2"	(63.5)	2 1/2"	(63.5)	640	(2.84)

*3/8 x 3 1/2 and 1/2 x 3 1/2 will have a coach screw thread length of 2" (50.8) and a rod thread length of 1" (25.4).
Design Load is based on proper installation and solid wood.

Threaded Accessories

B3210 - Eye Rod (right-hand threads) (TOLCO Fig. 102)

B3210L - Eye Rod (Left & right hand threads)

B3211 - Welded Eye Rod (right-hand threads) (TOLCO Fig. 101)

B3211L - Welded Eye Rod (Left & right hand threads)

Size Range: 3/8"-16 thru 2"-4 1/2 rod

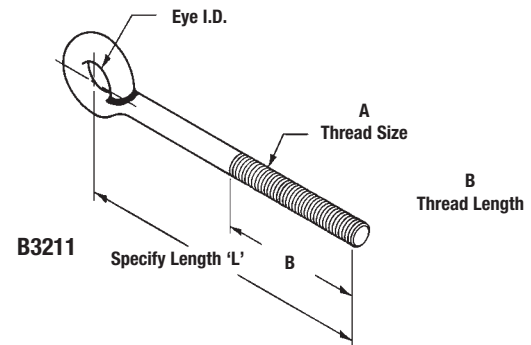
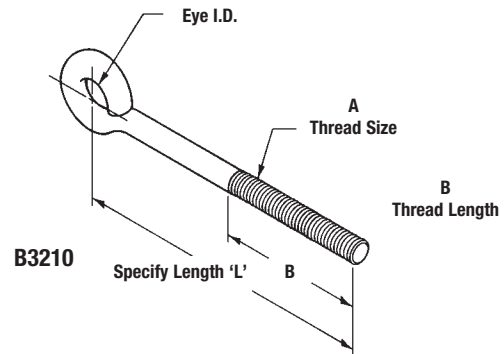
Material: Steel

Function: Designed for use as support hanger rod that may be attached directly to structure or to other pipe support product. The welded eye allows for heavier loads.

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

Order By: Part number, rod size, length and finish

Important Note: The Eye I.D. dimension may be larger if needed. Contact Cooper B-line if larger Eye I.D. dimension is required.



Part No.		Thread Size A	Thread Length B in. (mm)	Eye I.D. in. (mm)	Design Load					
					B3210		B3211			
					650°F (343°C)	650°F (343°C)	650°F (343°C)	650°F (343°C)	750°F (399°C)	750°F (399°C)
					Lbs. (kN)	Lbs. (kN)	Lbs. (kN)	Lbs. (kN)	Lbs. (kN)	Lbs. (kN)
B3210-3/8 x 'L'	B3211-3/8 x 'L'	3/8"-16	2 1/2" (63.5)	1 1/2" (12.7)	240 (1.07)	730 (3.25)	572 (2.54)			
B3210-1/2 x 'L'	B3211-1/2 x 'L'	1/2"-13	2 1/2" (63.5)	5/8" (15.9)	440 (1.96)	1350 (6.00)	1057 (4.70)			
B3210-5/8 x 'L'	B3211-5/8 x 'L'	5/8"-11	2 1/2" (63.5)	3/4" (19.0)	705 (3.13)	2160 (9.61)	1692 (7.52)			
B3210-3/4 x 'L'	B3211-3/4 x 'L'	3/4"-10	3" (76.2)	7/8" (22.2)	1050 (4.67)	3230 (14.37)	2530 (11.25)			
B3210-7/8 x 'L'	B3211-7/8 x 'L'	7/8"-9	3 1/2" (88.9)	1" (25.4)	1470 (6.54)	4480 (19.93)	3508 (15.60)			
B3210-1 x 'L'	B3211-1 x 'L'	1"-8	4" (101.6)	1 1/8" (28.6)	1940 (8.63)	5900 (26.24)	4620 (20.55)			
B3210-1 1/8 x 'L'	B3211-1 1/8 x 'L'	1 1/8"-7	4 1/2" (114.3)	1 1/4" (31.7)	2430 (10.81)	7450 (33.14)	5830 (25.93)			
B3210-1 1/4 x 'L'	B3211-1 1/4 x 'L'	1 1/4"-7	5" (127.0)	1 3/8" (34.9)	3120 (13.88)	9500 (42.25)	7440 (33.09)			
B3210-1 1/2 x 'L'	B3211-1 1/2 x 'L'	1 1/2"-6	6" (152.4)	1 5/8" (41.3)	4650 (20.68)	13800 (61.38)	10807 (48.07)			
B3210-1 3/4 x 'L'	B3211-1 3/4 x 'L'	1 3/4"-5	7" (177.8)	2" (50.8)	6380 (28.38)	18600 (82.73)	14566 (64.79)			
B3210-2 x 'L'	B3211-2 x 'L'	2"-4 1/2	8" (203.2)	2 1/4" (57.1)	8280 (36.83)	24600 (109.42)	19625 (87.29)			

Threaded Accessories

B3210X - Linked Eye Rods (Right-hand threads-both ends) (TOLCO Fig. 102L)

B3210XL - Linked Eye Rods (Left & right threads)

B3211X - Linked Welded Eye Rods (Right-hand threads-both ends) (TOLCO Fig. 101L)

B3211XL - Linked Welded Eye Rods (Left & right threads)

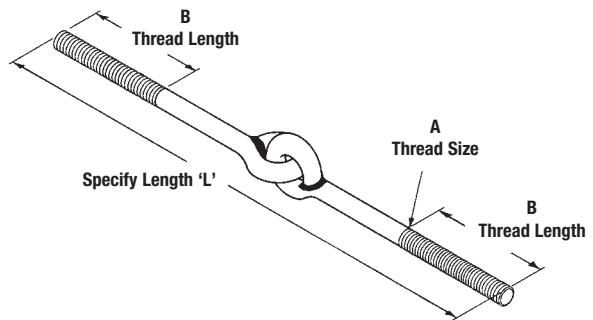
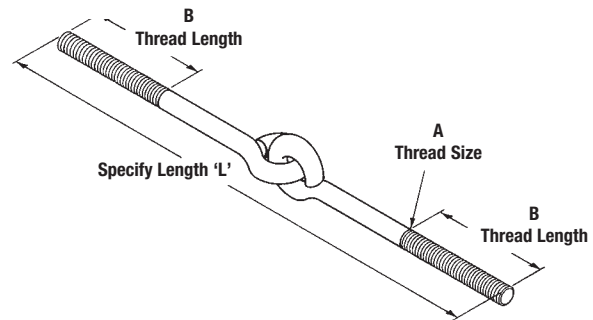
Size Range: 3/8"-16 thru 2"-4 1/2 rod

Material: Steel

Function: Designed for use in a hanger assembly where universal movement is necessary. The welded eye rods allow for heavier loads.

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

Order By: Part number, rod size, and length.



Part No.		Thread Size A	Thread Length B		Eye I.D.		Design Load					
							B3210		B3211			
			in.	(mm)	in.	(mm)	650°F (343°C)		650°F (343°C)		750°F (399°C)	
							Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)
B3210X-3/8 x 'L'	B3211X-3/8 x 'L'	3/8"-16	2 1/2"	(63.5)	1/2"	(12.7)	240	(1.07)	730	(3.25)	572	(2.54)
B3210X-1/2 x 'L'	B3211X-1/2 x 'L'	1/2"-13	2 1/2"	(63.5)	5/8"	(15.9)	440	(1.96)	1350	(6.00)	1057	(4.70)
B3210X-5/8 x 'L'	B3211X-5/8 x 'L'	5/8"-11	2 1/2"	(63.5)	3/4"	(19.0)	705	(3.13)	2160	(9.61)	1692	(7.52)
B3210X-3/4 x 'L'	B3211X-3/4 x 'L'	3/4"-10	3"	(76.2)	7/8"	(22.2)	1050	(4.67)	3230	(14.37)	2530	(11.25)
B3210X-7/8 x 'L'	B3211X-7/8 x 'L'	7/8"-9	3 1/2"	(88.9)	1"	(25.4)	1470	(6.54)	4480	(19.93)	3508	(15.60)
B3210X-1 x 'L'	B3211X-1 x 'L'	1"-8	4"	(101.6)	1 1/8"	(28.6)	1940	(8.63)	5900	(26.24)	4620	(20.55)
B3210X-1 1/8 x 'L'	B3211X-1 1/8 x 'L'	1 1/8"-7	4 1/2"	(114.3)	1 1/4"	(31.7)	2430	(10.81)	7450	(33.14)	5830	(25.93)
B3210X-1 1/4 x 'L'	B3211X-1 1/4 x 'L'	1 1/4"-7	5"	(127.0)	1 3/8"	(34.9)	3120	(13.88)	9500	(42.25)	7440	(33.09)
B3210X-1 1/2 x 'L'	B3211X-1 1/2 x 'L'	1 1/2"-6	6"	(152.4)	1 5/8"	(41.3)	4650	(20.68)	13800	(61.38)	10807	(48.07)
B3210X-1 3/4 x 'L'	B3211X-1 3/4 x 'L'	1 3/4"-5	7"	(177.8)	2"	(50.8)	6380	(28.38)	18600	(82.73)	14566	(64.79)
B3210X-2 x 'L'	B3211X-2 x 'L'	2"-4 1/2	8"	(203.2)	2 1/4"	(57.1)	8280	(36.83)	24600	(109.42)	19625	(87.29)

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

Threaded Accessories

B3212 - J-Bolt (TOLCO Fig. 104)

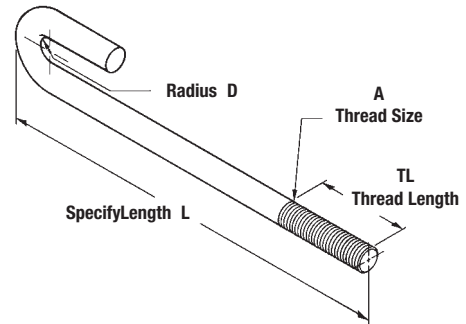
Size Range: 3/8"-16 thru 7/8"-19 rod

Material: Steel

Function: Designed to be hooked or hung from beam flange or purlin.

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

Order By: Part number, length and finish



Part No.	Thread Size A	Thread Length in.	TL (mm)	Radius D in.	(mm)	Design Load Lbs.	(kg)
B3212-3/8 x 'L'	3/8"-16	2"	(50.8)	1/2"	(12.7)	240	(1.07)
B3212-1/2 x 'L'	1/2"-13	2"	(50.8)	5/8"	(15.9)	440	(1.96)
B3212-5/8 x 'L'	5/8"-11	2 1/2"	(63.5)	3/4"	(19.0)	705	(3.13)
B3212-3/4 x 'L'	3/4"-10	2 1/2"	(63.5)	7/8"	(22.2)	1050	(4.67)
B3212-7/8 x 'L'	7/8"-9	2 1/2"	(63.5)	1"	(25.4)	1470	(6.54)

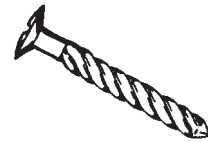
DS 16 x 2 - Drive Screw (Formerly TOLCO Fig. 125)

Material: Steel

Function: Equivalent to a nail, but has greater holding power

Finish: Plain and Electro-Galvanized

Order By: Part number, size and finish



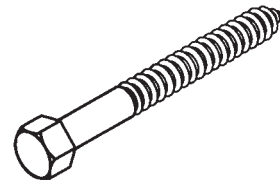
B3228 - Hex Head Lag Bolt (TOLCO Fig. 126)

Material: Steel

Function: Designed to fasten metal to wood. Lag screws are made with hex heads in lengths of 6" (152.5mm) or shorter and square heads in lengths longer than 6" (152.5mm). Both types have coarse lag threads and gimlet points and are available in diameters of 1/4" (6.3mm) to 5/8" (15.9mm) inclusive. Square-head lag screws are also available in 3/4" (19.0mm), 7/8" (22.2mm) and 1" (25.4mm) diameters.

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

Order By: Part number, bolt size, length and finish



Length		Bolt Diameter and Wt./C									
		1/4"	(6.3)	3/8"	(9.5)	1/2"	(12.7)	5/8"	(15.9)	3/4"	(19.0)
1 1/2"	(38.1)	2.3	(1.0)	6.0	(2.7)	11.8	(5.3)	19.4	(8.8)	32.3	(14.6)
2"	(50.8)	2.8	(1.3)	7.0	(3.2)	14.4	(6.5)	23.2	(10.5)	38.3	(17.4)
2 1/2"	(63.5)	3.3	(1.5)	8.3	(3.7)	16.2	(7.3)	27.0	(12.2)	44.0	(19.9)
3"	(76.2)	3.9	(1.7)	9.8	(4.4)	18.6	(8.4)	31.0	(14.0)	47.7	(21.6)
3 1/2"	(88.9)	4.4	(2.0)	11.4	(5.2)	21.2	(9.6)	34.8	(15.8)	56.3	(25.5)
4"	(101.6)	5.0	(2.2)	12.5	(5.7)	23.3	(10.5)	37.6	(17.0)	58.5	(26.5)
4 1/2"	(114.3)	5.7	(2.6)	14.0	(6.3)	26.1	(11.8)	42.6	(19.3)	64.0	(29.0)
5"	(127.0)	6.3	(2.8)	15.4	(7.0)	29.0	(13.1)	45.5	(20.6)	68.0	(30.8)
5 1/2"	(139.7)	7.0	(3.2)	16.4	(7.4)	31.5	(14.3)	49.3	(22.3)	74.0	(33.5)
6"	(152.4)	7.4	(3.3)	18.3	(8.3)	34.0	(15.4)	53.0	(24.0)	77.0	(34.9)

B655 - Steel Rod Coupling (TOLCO Fig. 70)

B656 - Steel Reducing Rod Coupling (TOLCO Fig. 70R)

Size Range: 1/4"-20 thru 1"-8 rod

Material: Steel

Function: Used for coupling two threaded rods together of equal or reduced rod sizes, with or without inspection hole.

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

Order By: Part number and finish

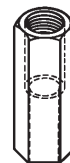
Part No.	For Rod Size	Length		Design Load		Approx. Wt./100	
		in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B655-1/4	1/4"-20	7/8"	(22.2)	300	(1.33)	1.9	(0.86)
B655-3/8	3/8"-16	1 1/8"	(28.6)	730	(3.25)	3.6	(1.63)
B655-1/2	1/2"-13	1 3/4"	(44.4)	1350	(6.00)	11.3	(5.12)
B655-5/8	5/8"-11	2 1/8"	(54.0)	2160	(9.61)	17.6	(7.98)
B655-3/4	3/4"-10	2 1/4"	(57.1)	3230	(14.37)	28.1	(12.74)
B655-7/8	7/8"-9	2 1/2"	(63.5)	4480	(19.93)	57.2	(25.94)
B655-1	1"-8	2 3/4"	(69.8)	5900	(26.24)	73.7	(33.43)



B655



Part No.	For Rod Size	Length		Design Load		Approx. Wt./100	
		in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B656-3/8 x 1/4	3/8"-16 & 1/4"-20	1"	(25.4)	300	(1.33)	3.7	(1.68)
B656-1/2 x 3/8	1/2"-13 & 3/8"-16	1 1/4"	(31.7)	730	(3.25)	6.6	(2.99)
B656-5/8 x 1/2	5/8"-11 & 1/2"-13	1 1/4"	(31.7)	1350	(6.00)	11.6	(5.26)
B656-3/4 x 5/8	3/4"-10 & 5/8"-11	1 1/2"	(38.1)	2160	(9.61)	20.6	(9.34)
B656-7/8 x 3/4	7/8"-9 & 3/4"-10	1 3/4"	(44.4)	3230	(14.37)	39.4	(17.87)



B656



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

Threaded Accessories

B3220 - Rod Coupling (TOLCO Fig. 71)

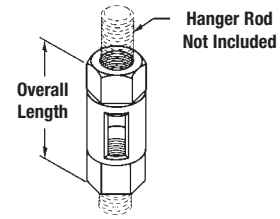
Size Range: 3/8"-16 thru 1"-8 rod

Material: Malleable Iron

Function: Used for coupling two threaded rods together of equal rod sizes, with inspection hole.

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

Order By: Part number and finish



Part No.	For Rod Size	Overall Length		Design Load		Approx. Wt./100	
		in.	(mm)	Lbs.	(kN)	Lbs.	(kg)
B3220-1/4	1/4"-20	1 3/8"	(34.9)	300	(1.33)	6	(2.7)
B3220-3/8 x 1/4	3/8"-16 to 1/4"-20	1 5/8"	(41.3)	300	(1.33)	11	(5.0)
B3220-3/8	3/8"-16	1 5/8"	(41.3)	730	(3.25)	10	(4.5)
B3220-1/2 x 3/8	1/2"-13 to 3/8"-16	2 1/8"	(54.0)	730	(3.25)	20	(9.1)
B3220-1/2	1/2"-13	2 1/8"	(54.0)	1350	(6.00)	20	(9.1)
B3220-5/8	5/8"-11	2 1/2"	(63.5)	2160	(9.61)	32	(14.5)
B3220-3/4	3/4"-10	2 5/8"	(66.7)	3230	(14.37)	42	(19.0)
B3220-7/8	7/8"-9	3 3/16"	(55.6)	4480	(19.93)	91	(41.3)
B3220-1	1"-8	2 3/4"	(69.8)	5900	(26.24)	100	(45.3)

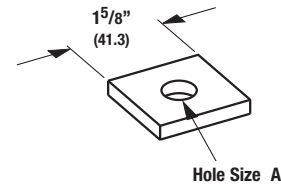
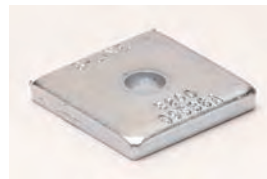
B200 - Series Square Washer (TOLCO F13 - F17)

Material: Steel

Standard Finish: Electro-Galvanized

Service: Designed as a washer to suspend hanger rods.

Order by: Part number and finish.



Part No.	Hole Size A		Bolt Size	Thickness		Approx. Wt./100	
	in.	(mm)		in.	(mm)	Lbs.	(kg)
B200	3/8"	(9.5)	5/16"-18	1/4"	(6.3)	18	(8.1)
B201	7/16"	(11.1)	3/8"-16	1/4"	(6.3)	18	(8.1)
B202	9/16"	(14.2)	1/2"-13	1/4"	(6.3)	17	(7.7)
B202-1	11/16"	(17.4)	5/8"-11	1/4"	(6.3)	16	(7.2)
B202-2	13/16"	(20.6)	3/4"-10	1/4"	(6.3)	15	(6.8)

B3248 - Steel Washer Plate (TOLCO Fig. 118)

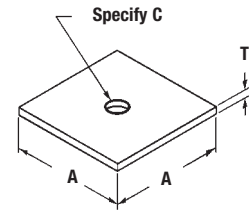
Size Range: 3/8" thru 1" rod sizes

Material: Steel

Function: Heavy duty washer for use on top of channels or angles to support hanger rod.

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

Order By: Part number size and finish



Part No.	Rod Size	Hole Size C in. (mm)	A in. (mm)	T in. (mm)	Approx. Wt./100 Lbs. (kg)
B3248-3/8	3/8"-16	7/16" (11.1)	2" (50.8)	1/4" (6.3)	27 (12.2)
B3248-1/2	1/2"-13	9/16" (14.3)	2" (50.8)	1/4" (6.3)	27 (12.2)
B3248-5/8	5/8"-11	11/16" (17.5)	2 1/2" (63.5)	1/4" (6.3)	47 (21.3)
B3248-3/4	3/4"-10	13/16" (20.6)	2 1/2" (63.5)	3/8" (9.5)	52 (23.6)
B3248-7/8	7/8"-9	15/16" (23.8)	3" (76.2)	3/8" (9.5)	85 (38.5)
B3248-1	1"-8	1 1/8" (28.6)	4" (101.6)	3/8" (9.5)	160 (72.6)

B3234 - Bevel Washer (TOLCO Fig. 116)

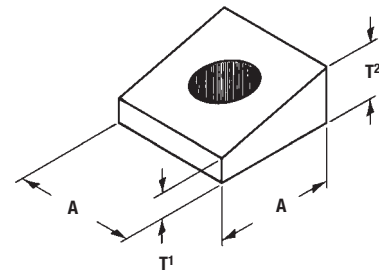
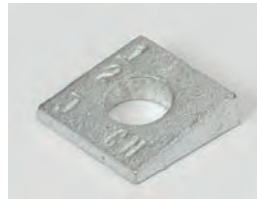
Size Range: 3/8"-16 thru 7/8"-9 bolt

Material: Malleable Iron

Function: Designed to match taper of flange of I-beam or channel to permit right angle fastening of bolt.

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

Order By: Part number size and finish



Part No.	For Bolt Size	A in. (mm)	T ¹ in. (mm)	T ² in. (mm)	Approx. Wt./100 Lbs. (kg)
B3234-3/8	3/8"-16	1 1/4" (31.7)	5/32" (3.9)	11/32" (8.7)	9 (4.1)
B3234-1/2	1/2"-13	1 1/4" (31.7)	5/32" (3.9)	11/32" (8.7)	9 (4.1)
B3234-5/8	5/8"-11	1 1/2" (38.1)	5/32" (3.9)	13/32" (10.3)	14 (6.3)
B3234-3/4	3/4"-10	1 1/2" (38.1)	7/32" (5.5)	15/32" (11.9)	16 (7.2)
B3234-7/8	7/8"-9	2" (50.8)	7/32" (5.5)	9/16" (14.3)	33 (14.9)

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

Threaded Accessories

HN - Standard Hex Nut (TOLCO Fig. 113)

Size Range: 1/4"-20 thru 7/8"-9

Material: Steel

Finish: Plain or Electro-Galvanized.

Contact B-Line for alternative finishes and materials.

Order By: Part number size and finish



Part Number	For Rod Size	Width Across Flats		Width Across Points		Thickness		Approx. Wt./100	
		in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kg)
HN-1/4	1/4"-20	7/16"	(11.1)	1/2"	(12.7)	7/32"	(5.7)	0.7	(0.3)
HN-3/8	3/8"-16	9/16"	(14.3)	21/32"	(16.6)	21/64"	(8.3)	1.6	(0.7)
HN-1/2	1/2"-13	3/4"	(19.0)	55/64"	(21.8)	7/16"	(11.1)	3.7	(1.7)
HN-5/8	5/8"-11	15/16"	(23.8)	13/32"	(27.8)	35/64"	(13.9)	7.3	(3.3)
HN-3/4	3/4"-10	1 1/8"	(28.6)	15/16"	(33.3)	41/64"	(16.3)	12.0	(5.4)
HN-7/8	7/8"-9	1 5/16"	(33.3)	1 33/64"	(38.5)	3/4"	(19.0)	19.0	(8.6)

HHN - Heavy Hex Nut (TOLCO Fig. 114)

Size Range: 1/4"-20 thru 7/8"-9

Material: Steel

Finish: Plain or Electro-Galvanized.

Contact B-Line for alternative finishes and materials.

Order By: Part number size and finish



Part Number	For Rod Size	Width Across Flats		Width Across Points		Thickness		Approx. Wt./100	
		in.	(mm)	in.	(mm)	in.	(mm)	lbs.	(kg)
HHN-1/4	1/4"-20	1/2"	(12.7)	37/64"	(14.7)	15/64"	(5.9)	1.2	(0.5)
HHN-3/8	3/8"-16	11/16"	(17.5)	51/64"	(20.2)	23/64"	(9.1)	3.1	(1.4)
HHN-1/2	1/2"-13	7/8"	(22.2)	1 1/8"	(28.6)	31/64"	(12.3)	6.5	(2.9)
HHN-5/8	5/8"-11	1 1/16"	(27.0)	1 15/64"	(31.3)	39/64"	(15.5)	12.0	(5.4)
HHN-3/4	3/4"-10	1 1/4"	(31.7)	1 29/64"	(36.9)	47/64"	(18.6)	19.0	(8.6)
HHN-7/8	7/8"-9	1 7/16"	(36.5)	1 21/32"	(42.6)	55/64"	(21.8)	30.0	(13.6)

FW - Flat Washer (TOLCO Fig. 115)

Size Range: 1/4"-20 thru 1"-8 rods

Material: Steel

Finish: Plain or Electro-Galvanized.

Contact B-Line for alternative finishes and materials.

Order By: Part number size and finish



Part Number	For Rod Size	Outside Diameter		Approx. Wt./100	
		in.	(mm)	lbs.	(kg)
FW-1/4	1/4"-20	3/4"	(19.0)	0.7	(0.3)
FW-3/8	3/8"-16	1"	(25.4)	3.9	(1.7)
FW-1/2	1/2"-13	1 3/8"	(34.9)	6.7	(3.0)
FW-5/8	5/8"-11	1 3/4"	(44.4)	7.3	(3.3)
FW-3/4	3/4"-10	2"	(50.8)	11.0	(5.0)
FW-7/8	7/8"-9	2 1/4"	(57.1)	19.0	(8.6)
FW-1	1"-8	2 1/2"	(69.8)	22.0	(10.0)

LW - Lock Washer (TOLCO Fig. 117)

Size Range: 1/4"-20 thru 1"-8 rods

Material: Steel

Finish: Plain or Electro-Galvanized.

Note: Available in Hot Dip Galvanized finish or Stainless Steel materials.

Order By: Part number size and finish



Part Number	For Rod Size	Outside Diameter		Approx. Wt./100	
		in.	(mm)	lbs.	(kg)
LW-1/4	1/4"-20	.49"	(12.4)	0.3	(0.13)
LW-3/8	3/8"-16	.68"	(17.3)	0.6	(0.27)
LW-1/2	1/2"-13	.88"	(22.3)	1.3	(0.59)
LW-5/8	5/8"-11	1.08"	(27.4)	2.4	(1.09)
LW-3/4	3/4"-10	1.27"	(32.2)	3.8	(1.72)
LW-7/8	7/8"-9	1.46"	(37.1)	5.9	(2.67)
LW-1	1"-8	1.66"	(42.1)	8.8	(3.99)

FFW - Flat Fender Washer (TOLCO Fig. 119)

Size Range: 3/8"-16 and 1/2"-13 rods

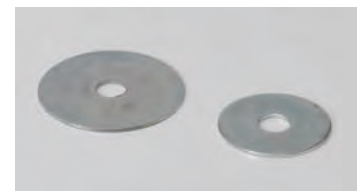
Material: Steel

Function: To provide a greater bearing surface than standard washer.

Finish: Plain or Electro-Galvanized.

Contact B-Line for alternative finishes and materials.

Order By: Part number and size



Part Number	For Rod Size	Inside Diameter		Outside Diameter		Approx. Wt./100	
		in.	(mm)	in.	(mm)	lbs.	(kg)
FFW-3/8	3/8"-16	1/2"	(12.7)	1 1/8"	(28.6)	3.0	(1.3)
FFW-1/2	1/2"-13	9/16"	(14.3)	2"	(50.8)	2.8	(1.3)

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

Threaded Accessories

ATB - Toggle Bolt (TOLCO Fig. 123)

Material: Steel

Function: Used with threaded rod in hollow walls

Finish: Electro-Galvanized

Order By: Part number and size



Part Number	Rod Size	Drill Size		Approx. Wt./100	
		lbs.	(kg)		
ATB-18-300	3/16"-24	1/2"	(12.7)	3.8	(1.7)
ATB-18-400	3/16"-24	1/2"	(12.7)	4.4	(2.0)
ATB-25-300	1/4"-20	5/8"	(15.9)	6.6	(3.0)
ATB-25-400	1/4"-20	5/8"	(15.9)	7.8	(3.5)
ATB-37-300	3/8"-16	7/8"	(22.2)	15.6	(7.1)
ATB-37-400	3/8"-16	7/8"	(22.2)	17.6	(8.0)

AWA - Wedge Anchor (TOLCO Fig. 209)

Material: Steel or Stainless Steel

Function: Designed for use in solid concrete and grout fill blocks

Finish: Electro-Galvanized

Order By: Part number and finish



Part Number	Anchor Size	Thread Length		Approx. Wt./100	
		in.	(mm)	lbs.	(kg)
AWA-25-175	1/4"-20 x 1 3/4" (44.4mm)	3/4"	(19.0)	3.2	(1.4)
AWA-25-225	1/4"-20 x 2 1/4" (44.4mm)	1 1/4"	(31.7)	3.7	(1.7)
AWA-25-325	1/4"-20 x 3 1/4" (44.4mm)	2 1/4"	(57.1)	4.8	(2.2)
AWA-37-225	3/8"-16 x 2 1/4" (44.4mm)	1 1/4"	(31.7)	9.4	(4.2)
AWA-37-275	3/8"-16 x 2 3/4" (69.8mm)	1 5/8"	(41.3)	10.4	(4.7)
AWA-37-300	3/8"-16 x 3" (76.2mm)	1 7/8"	(47.6)	11.4	(5.2)
AWA-37-350	3/8"-16 x 3 1/2" (88.9mm)	2 3/8"	(60.3)	12.2	(5.5)
AWA-37-375	3/8"-16 x 3 3/4" (95.2mm)	2 5/8"	(66.7)	13.2	(6.0)
AWA-37-500	3/8"-16 x 5" (127.0mm)	3 7/8"	(98.4)	16.0	(7.2)
AWA-50-275	1/2"-13 x 2 3/4" (69.8mm)	1 3/8"	(34.9)	19.0	(8.6)
AWA-50-375	1/2"-13 x 3 3/4" (95.2mm)	2 3/8"	(60.3)	23.0	(10.4)
AWA-50-450	1/2"-13 x 4 1/2" (114.3mm)	3 1/8"	(79.4)	26.6	(12.0)
AWA-50-550	1/2"-13 x 5 1/2" (139.7mm)	4 1/8"	(104.8)	34.0	(15.4)
AWA-50-700	1/2"-13 x 7" (177.8mm)	5 5/8"	(142.9)	38.0	(17.2)
AWA-62-350	5/8"-11 x 3 1/2" (88.9mm)	2"	(50.8)	41.2	(18.7)
AWA-62-450	5/8"-11 x 4 1/2" (114.3mm)	3"	(76.2)	47.6	(21.6)
AWA-62-500	5/8"-11 x 5" (127.0mm)	3 1/2"	(88.9)	52.0	(23.6)
AWA-62-600	5/8"-11 x 6" (152.4mm)	4 1/2"	(114.3)	58.8	(26.7)
AWA-62-700	5/8"-11 x 7" (177.8mm)	5 1/2"	(139.7)	65.2	(29.6)

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Threaded Accessories

Pipe Hangers & Supports



To address the ever increasing issue of controlling/dampening vibration in mechanical, refrigeration, and HVAC installations, B-Line offers the following vibration and isolation products. It is our continuing effort to offer industry with quality support products that meet the demands of today's construction environment.

The following pages depict isolation and vibration control products that are commonly specified and required on piping and equipment, but not limited to, mechanical rooms. As an aid in choosing the proper vibration control device, the chart shown on the following page is a reference for obtaining Vibration Isolation Efficiency. Considerations must be given to the desired deflection and the amount of disturbing frequency (R.P.M.).

Selection

Disturbing Frequency (RPM)	Isolator Deflection						VIBRATION ISOLATION EFFICIENCY
	1/16"	1/8"	1/4"	1/2"	1"	2"	
250-299	N/R	N/R	N/R	N/R	N/R	N/R	
300-349	N/R	N/R	N/R	N/R	N/R	76%	
350-399	N/R	N/R	N/R	N/R	N/R	83%	
400-449	N/R	N/R	N/R	N/R	74%	87%	
450-499	N/R	N/R	N/R	N/R	79%	90%	
500-599	N/R	N/R	N/R	N/R	83%	92%	
600-699	N/R	N/R	N/R	75%	89%	95%	
700-799	N/R	N/R	N/R	83%	92%	96%	
800-899	N/R	N/R	N/R	87%	94%	97%	
900-999	N/R	N/R	78%	90%	95%	98%	
1000-1099	N/R	N/R	83%	92%	96%	98%	
1100-1199	N/R	N/R	86%	94%	97%	99%	
1200-1299	N/R	83%	89%	95%	97%	99%	
1300-1399	N/R	86%	91%	97%	98%	99%	
1400-1499	N/R	89%	92%	97%	98%	99%	
1500-1599	N/R	90%	93%	97%	99%	99%	
1600-1699	N/R	91%	94%	97%	99%	99%	
1700-1799	75%	93%	95%	97%	99%	99%	
1800-1899	78%	93%	95%	98%	99%	99%	
1900-1999	80%	94%	96%	98%	99%	99%	
2000-2249	82%	95%	96%	98%	99%	99%	
2250-2499	85%	95%	97%	98%	99%	99%	
2500-2999	87%	96%	97%	98%	99%	99%	
3000-3499	88%	97%	98%	99%	99%	99%	
3500-3999	90%	98%	98%	99%	99%	99%	

N/R = Not Recommended

Critical Installations 96% to 99% Vibration Isolation Efficiency recommended (only 1% to 4% of disturbing vibration transmitted).

Typical installations: TV and Radio Broadcast Studios, Concert Halls, Libraries, Churches, Hospitals, Schools and Universities, Hotels, Private Offices, Theaters, Recording Studios

Standard Installations 90% to 95% Vibration Isolation Efficiency recommended (only 5% to 10% of disturbing vibration transmitted).

Typical installations: Computer Equipment Areas, Restaurants, Shopping Malls, Gymnasiums, Health Clubs and Spas, Sports Arenas, Indoor Swimming Pools, Building Service Areas, Night Clubs, General Office Buildings

Non-Critical Installations 75% to 89% Vibration Isolation Efficiency recommended (only 11% to 24% of disturbing vibration transmitted).

Typical installations: In factory Offices, Motor Vehicle Inspection Stations and Facilities, Laundramats, Roller and Ice Skating Rinks, Factory Production Areas

For 1/16" (1.6) deflection: Specify B-Line series NNP Ribbed Neoprene Pads.

For 1/8" (3.2) deflection: Specify B-Line series CNP Combination Cork and Ribbed Neoprene Pads or B-Line Series VRP Pads.

For 1/4" (6.3) deflection: Specify B-Line series N Neoprene Mountings or B-Line series RH Neoprene Hangers.

For 1/2" (12.7) deflection: Specify B-Line series ND Neoprene Mountings or B-Line series RH Neoprene Hangers.

For 1"-2" (25.4-50.8) deflection: Specify B-Line series HM Housed Spring Mountings or B-Line series OM Open Spring Mountings or B-Line series HS Spring Hangers.

For larger deflection requirements, consult factory.

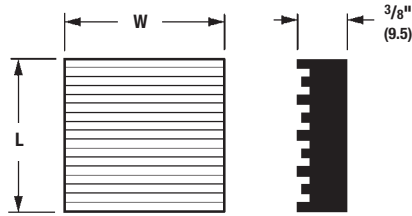
Proper Sizing

Once it is determined as to what type of vibration dampening device is needed, weight loading is the next crucial step. As a built in safety measure, take the actual weight of supported pipe or equipment (consider all accessories - i.e. valves, insulation, brackets, etc...) and multiply by 1.25. Then refer to the sizing chart for the selected product to determine part number.

Sizing: Divide weight of equipment by points of support to determine load requirement per support.

Example: 240 Lb. (90.7 kg) piece of equipment, 4 support points, take $240 \times 1.25 = 300$ Lbs. (136.1kg) (safety measure), then take $300 \div 4 = 75$ Lbs. (34.0 kg) Specify appropriate vibration device rated at 75 Lbs. (34.0 kg) for each of the support points.

If weight of equipment is unequally proportionate, select mounts to satisfy the weight distribution.



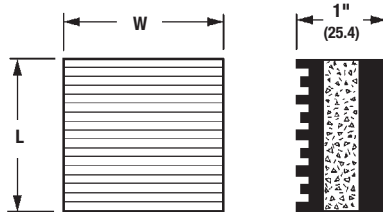
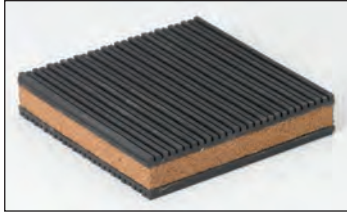
Features: The NNP pad is made of oil-resistant neoprene. The pad has an alternate height rib pattern to minimize slip. Recommended load is 50 Lbs. per inch² with a range of 25-70 Lbs. per inch². The NNP type has a deflection of 1/8" (3.1mm). For greater deflection, use multiple pads in layers.

Typical Applications: Air conditioners, cooling towers, compressors, fans, generators, pumps, piping, process equipment, transformers, etc.

NNP Type - Ribbed Neoprene Vibration Pad

Use: Dampen noise and vibration in floor caused by medium and high speed equipment.

Part No.	Rated Load		Dimensions				Std. Pkg.	Wt. Each	
	Lbs.	(kN)	L in.	(mm)	W in.	(mm)		Lbs.	(kg)
NNP-4	200	(.89)	2"	(50.8)	2"	(50.8)	48	.04	(.02)
NNP-9	450	(2.00)	3"	(76.2)	3"	(76.2)	36	.10	(.05)
NNP-16	800	(3.56)	4"	(101.6)	4"	(101.6)	24	.17	(.08)
NNP-36	1800	(8.00)	6"	(152.4)	6"	(152.4)	24	.39	(.18)
NNP-81	4050	(18.01)	9"	(228.6)	9"	(228.6)	Bulk	.87	(.39)
NNP-324	16200	(72.06)	18"	(457.2)	18"	(457.2)	6	3.50	(1.59)



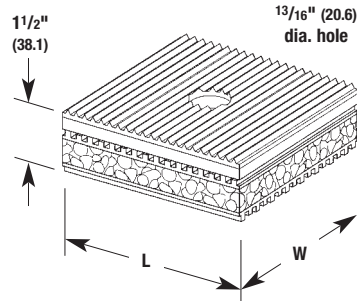
Features: The CNP pad is made of oil-resistant neoprene. The pad has an alternate height rib pattern to minimize slip. Recommended load is 50 Lbs. per inch² with a range of 25-70 Lbs. per inch². The CNP type is rated at 3/16" (4.7mm) deflection. For greater deflection, use multiple pads in layers.

Typical Applications: Air conditioners, cooling towers, compressors, fans, generators, pumps, piping, process equipment, transformers, etc.

CNP Type - Cork and Ribbed Neoprene Vibration Pad

Use: Dampen noise and vibration in floor caused by medium and high speed equipment.

Part No.	Rated Load		Dimensions				Std. Pkg.	Wt. Each	
	Lbs.	(kN)	L in.	(mm)	W in.	(mm)		Lbs.	(kg)
CNP-4	200	(.89)	2"	(50.8)	2"	(50.8)	48	.07	(.03)
CNP-9	450	(2.00)	3"	(76.2)	3"	(76.2)	36	.16	(.07)
CNP-16	800	(3.56)	4"	(101.6)	4"	(101.6)	24	.28	(.13)
CNP-25	1250	(5.56)	5"	(127.0)	5"	(127.0)	24	.44	(.20)
CNP-36	1800	(8.00)	6"	(152.4)	6"	(152.4)	24	.63	(.29)
CNP-81	4050	(18.01)	9"	(228.6)	9"	(228.6)	Bulk	1.40	(.64)
CNP-324	16200	(72.06)	18"	(457.2)	18"	(457.2)	6	5.60	(2.54)
CNP-3x36	5400	(24.02)	3"	(76.2)	36"	(914.4)	6	1.89	(.86)
CNP-4x36	7200	(32.02)	4"	(101.6)	36"	(914.4)	6	2.52	(1.14)



Features: The CNNK pad is made of oil-resistant neoprene. The pad has an alternate height rib pattern to minimize slip. Recommended load is 50 Lbs. per inch² with a range of 25-70 Lbs. per inch². The CNNK type is rated at 3/16" (4.7mm) deflection. For greater deflection, use multiple pads in layers.

Typical Applications: Air conditioners, cooling towers, compressors, fans, generators, pumps, piping, process equipment, transformers, etc.

CNNK Type - Cork, Ribbed Neoprene and Steel Vibration Pad

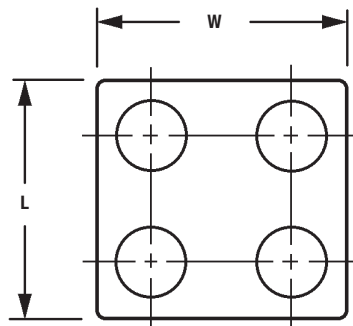
Use: Dampen noise and vibration in floor caused by medium and high speed equipment.

Part No.	Rated Load		Dimensions				Std. Pkg.	Wt. Each	
	Lbs.	(kN)	L in.	(mm)	W in.	(mm)		Lbs.	(kg)
CNNK-4	200	(.89)	2"	(50.8)	2"	(50.8)	48	.40	(.18)
CNNK-9	450	(2.00)	3"	(76.2)	3"	(76.2)	36	.90	(.41)
CNNK-16	800	(3.56)	4"	(101.6)	4"	(101.6)	24	1.60	(.73)
CNNK-25	1250	(5.56)	5"	(127.0)	5"	(127.0)	24	2.50	(1.13)
CNNK-36	1800	(8.00)	6"	(152.4)	6"	(152.4)	Bulk	3.50	(1.59)
CNNK-64	3200	(14.23)	8"	(203.2)	8"	(203.2)	6	6.20	(2.81)

Note: Has 1/4" (6.3mm) thick steel plate for even weight distribution. Hole in center will accept up to 3/4" (19.0mm) bolt.



VRP-16 shown



Features: The VRP pad is made of a natural rubber composition that will withstand a load of 45 Lbs. per 1" square. Rated deflection is 3/16" (4.7mm). Each square has 4 suction holes (1/2" (12.7mm) diameter) to provide a non-skid effect. The standard VRP pad has 81 squares that are 2" x 2" (50.8mm x 50.8mm) making the pad itself 18" x 18" (457.2mm x 457.2mm). These squares are easily cut or torn to desired sizes.

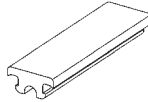
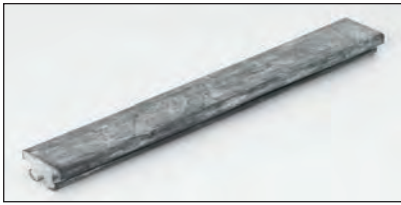


VRP Type - Rubber Cube Vibration Pad

Use: Dampen noise and vibration in floor caused by medium and high speed equipment.

Part No.	Rated Load		Dimensions				Std. Pkg.	Wt. Each	
	Lbs.	(kN)	L in.	(mm)	W in.	(mm)		Lbs.	(kg)
VRP-4	180	(.80)	2"	(50.8)	2"	(50.8)	Bulk	.10	(.05)
VRP-16	720	(3.20)	4"	(101.6)	4"	(101.6)	Bulk	.41	(.19)
VRP-36	1620	(7.20)	6"	(152.4)	6"	(152.4)	Bulk	.90	(.41)
VRP-324	14580	(64.85)	18"	(457.2)	18"	(457.2)	3	8.15	(3.70)

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



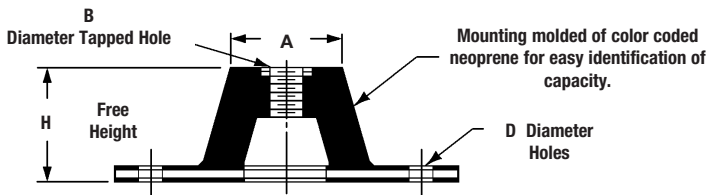
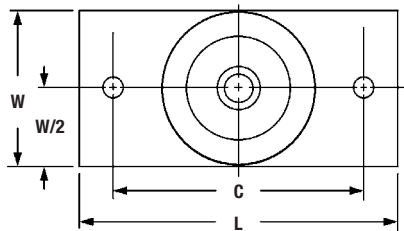
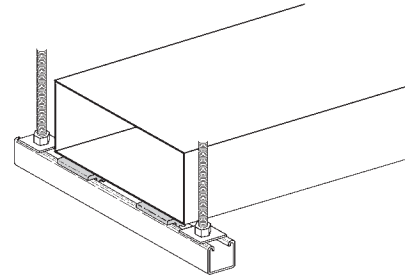
Use: Dampen noise and vibration of equipment when mounted on strut.

Features: Vibra Strip™ is made of 45 durometer neoprene that when inserted in channel slot, provides an excellent isolation medium between equipment, duct, piping, etc., and the support channel. The inherent quality of neoprene offers noise and vibration dampening qualities. Strip is furnished in 12" (304.8mm) lengths, may be cut to satisfy specific requirement. Longer lengths are available upon request.

Temperature Range: -20°F (-28.9°C) to 212°F (100°C) (continuous)

BVS Type - Vibra Strip™ for 1 5/8" (41.3mm) wide B-Line channel

Part No.	Max. Load Lbs. per Lineal In.		Length		Std. Pkg.	Wt. Each	
	Lbs.	(kg/25.4 mm)	in.	(mm)		Lbs.	(kg)
BVS-12	40	(18.1)	12"	(304.8)	25	.46	(.21)
BVS-120	40	(18.1)	120"	(3048.0)	1	4.56	(2.07)



Use: Double (NVD) deflection mount helps prevent noise and high frequency vibration (1200 RPM or greater) between equipment and solid support structures in non-critical areas.

Features: Color-coded for load identification. All metal parts are encapsulated by oil-resistant neoprene. Base of mount incorporates a non-skid backing that eliminates attachment hardware where no lateral or severe vertical motion is present.

Typical Applications: Air handling units, fans, air conditioners, compressors, pumps, machine tools, motors, business machines, transformers, furnaces, etc.

NVD Type - Double Deflection Molded Neoprene Mount

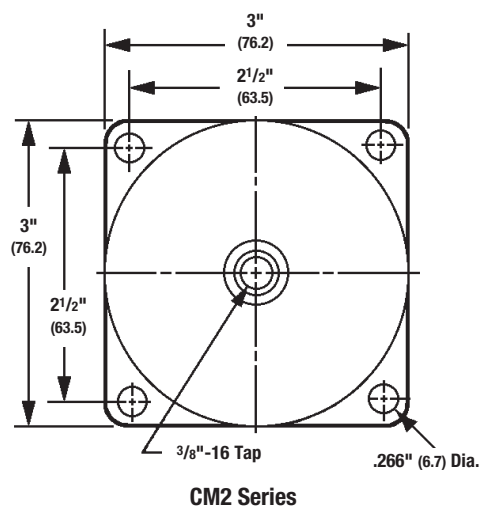
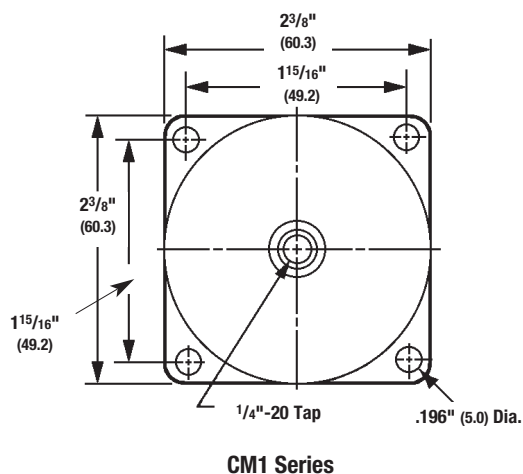
Part No.	Color	Rated Load		Isolator Deflection		Dimensions in Inches (mm)							Wt. Each	
		Lbs.	(kN)	in.	(mm)	L	W	H	A	B	C	D	Lbs.	(kg)
NVD-1-A	Black	25-45	(.11-.20)	.38"	(9.53)	3 1/4" (82.5)	1 7/8" (47.6)	1 7/8" (47.6)	1 3/8" (34.9)	3/8" (9.5)	2 1/2" (63.5)	5/16" (7.9)	.19	(.09)
NVD-1-B	Green	45-110	(.20-.49)	.38"	(9.53)									
NVD-1-C	Red	110-210	(.49-.93)	.38"	(9.53)									
NVD-1-D	Gray	210-340	(.93-1.51)	.38"	(9.53)									
NVD-2-C	Green	230-380	(1.02-1.70)	.43"	(11.11)	4 1/4" (107.9)	2 1/2" (63.5)	2 1/8" (54.0)	1 7/8" (47.6)	1/2" (12.7)	3 1/4" (82.5)	7/16" (11.1)	.46	(.21)
NVD-2-D	Red	380-700	(1.70-3.11)	.43"	(11.11)									
NVD-3-B	Green	550-930	(2.44-4.13)	.48"	(11.91)	6" (152.4)	3 1/2" (88.9)	2 3/8" (60.3)	2 7/8" (73.0)	1/2" (12.7)	4 5/8" (117.5)	9/16" (14.3)	1.00	(.45)
NVD-3-C	Black	930-1540	(2.44-4.13)	.48"	(11.91)									
NVD-3-D	Red	930-1920	(4.13-8.54)	.48"	(11.91)									



Use: Designed for the protection of sensitive electronic, electrical, and mechanical equipment from high frequency vibration and impact shock.

Features: Cup mounts accommodate multi-directional loading, can support loads radially and axially in both compression and tension. Effectively isolate frequencies above 45 Hz. Metal housing is zinc plated and furnished with either 1/4"-20 or 3/8"-16 tapped hole. The elastomer element is a high grade neoprene with excellent oil and ozone resistance.

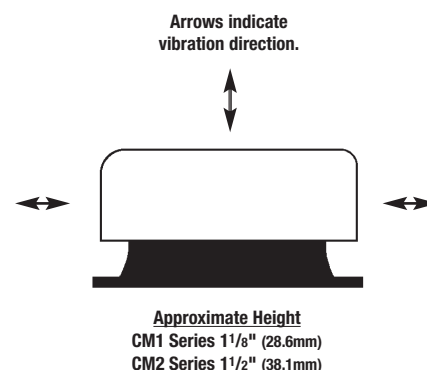
Temperature Range: -20°F (-28.9°C) to 180°F (82.2°C).



Ideal for wall or ceiling mounts.

CM Type - Metal Housing and Neoprene Cup Mount

Part Number	Load Range		Tap Size	Wt. Each	
	Lbs.	(kN)		Lbs.	(kg)
CM1-14BNT	8 to 14	(.03-.06)	1/4"-20	.60	(.27)
CM1-24BNT	14 to 24	(.06-.10)	1/4"-20	.60	(.27)
CM1-38BNT	24 to 38	(.10-.17)	1/4"-20	.60	(.27)
CM1-60BNT	38 to 60	(.17-.26)	1/4"-20	.60	(.27)
CM2-30BNT	15 to 30	(.07-.13)	3/8"-16	.70	(.32)
CM2-50BNT	30 to 50	(.13-.22)	3/8"-16	.70	(.32)
CM2-80BNT	50 to 80	(.22-.35)	3/8"-16	.70	(.32)
CM2-110BNT	80 to 110	(.35-.49)	3/8"-16	.70	(.32)





OML*/OM Type - Free Standing Spring Mount

Use: The economical OM series free standing spring mounts are utilized to isolate floor mounted equipment where transmission of noise and vibration (below 1200RPM) is apparent.

Note: *Not recommended when subject to wind loads and weight changes.*

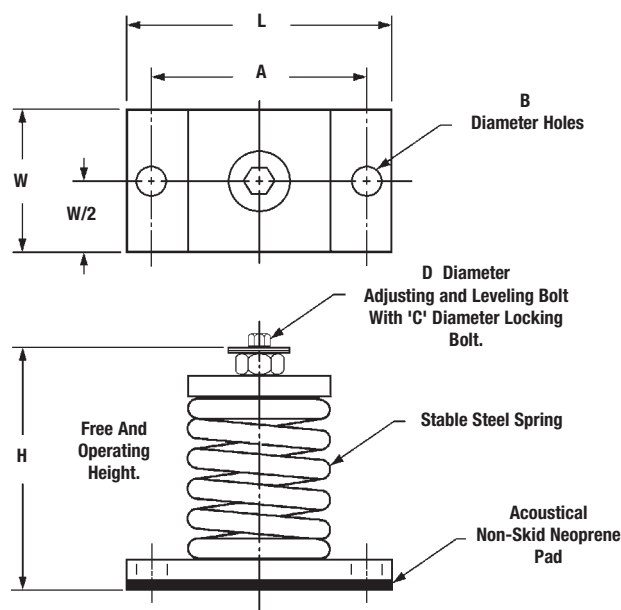
Features: Spring is welded to lower load plate and upper compression plate. Mounting is facilitated by an adjustable leveling bolt. Base plate is furnished with a skid-resistant neoprene backing, making anchoring optional. Allows up to 2.10" (53.3mm) deflection (larger deflection mounts available).

Typical Applications: Refrigeration compressors, packaged air handling and refrigeration equipment, centrifugal fans, close coupled and base mounted pumps and similar apparatus. May also be used as a vibration dampening device for pipe risers.

* OML Series are Lower profile.

Notes: To ensure minimum effective vibration control, the spring mount must have a static deflection at least three times (3X) greater than the floor spans deflection.

Spring devices are stable with a vertical and horizontal spring constant equal to one ($K_x/K_y=1$). A 50% additional run-out from rated capacity to solid load is also characteristic of spring type isolators.





OML*/OM Type - Free Standing Spring Mount

Part No.	Rated Load		Spring Deflection		Dimensions in Inches (mm)							Wt. Each	
	Lbs.	(kN)	in.	(mm)	L	W	H	A	B	C	D	Lbs.	(kg)
OML-1-101	25-50	(.11-.22)	1.20"	(30.5)	4 1/2" (114.3)	2" (50.8)	3 5/8" (92.1)	3 1/2" (88.9)	9/16" (14.3)	5/16" (7.9)	1/2" (12.7)	2.0	(.9)
OML-1-102	50-100	(.22-.44)	1.20"	(30.5)									
OML-1-103	100-150	(.44-.67)	1.20"	(30.5)									
OML-1-104	150-250	(.67-1.11)	1.10"	(27.9)									
OML-1-105	250-350	(1.11-1.55)	1.10"	(27.9)									
OML-1-106	350-450	(1.55-2.00)	1.00"	(25.4)									
OML-1-107	450-600	(2.00-2.67)	1.00"	(25.4)									
OM-1-171	75-150	(.33-.67)	1.30"	(33.0)	4 1/2" (114.3)	2" (50.8)	4 3/4" (120.6)	3 1/2" (88.9)	9/16" (14.3)	5/16" (7.9)	1/2" (12.7)	3.0	(1.4)
OM-1-172	150-250	(.67-1.11)	1.30"	(33.0)									
OM-1-173	250-350	(1.11-1.55)	1.30"	(33.0)									
OM-1-174	350-500	(1.55-2.22)	1.30"	(33.0)									
OM-1-175	500-600	(2.22-2.67)	1.10"	(27.9)									
OM-1-176	600-750	(2.67-3.34)	1.10"	(27.9)									
OM-1-177	750-900	(3.34-4.00)	1.10"	(27.9)									
OM-1-178	900-1100	(4.00-4.90)	1.00"	(25.4)									
OM-1-2010	75-150	(.33-.67)	2.10"	(53.3)	6 1/4" (158.7)	4" (101.6)	7 5/8" (193.7)	5" (127.0)	9/16" (14.3)	1/2" (9.5)	3/4" (19.0)	12.0	(5.4)
OM-1-2100	150-275	(.67-1.22)	2.10"	(53.3)									
OM-1-2103	275-425	(1.22-1.90)	2.10"	(53.3)									
OM-1-2200	425-500	(1.90-2.22)	2.10"	(53.3)									
OM-1-2202	500-650	(2.22-2.90)	2.10"	(53.3)									
OM-1-2203	650-775	(2.90-3.44)	2.10"	(53.3)									
OM-1-2300	775-1000	(3.44-4.45)	2.10"	(53.3)									
OM-1-2302	1000-1150	(4.45-5.11)	2.00"	(50.8)									

* OML Series are Lower profile.

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

HMLE*/HME Type - Housed 1" (25.4mm) & 2" (50.8mm) Deflection Fail Safe Spring Mount (External Adjustment Bolt)



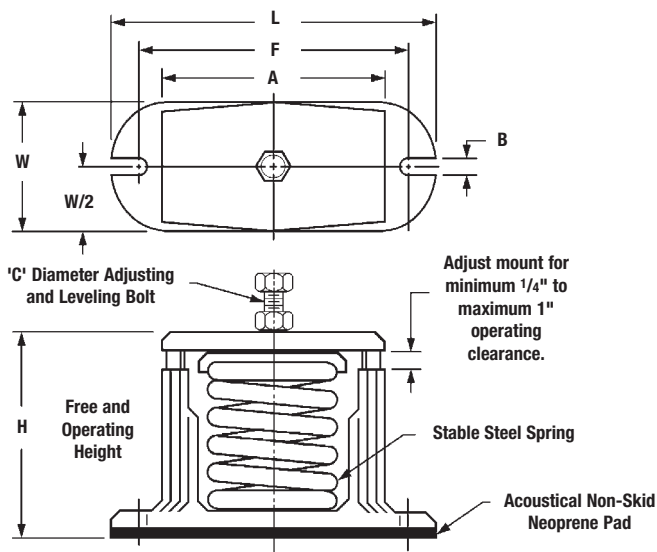
Use: HM series housed spring mounts are utilized to isolate floor mounted equipment where transmission of noise and vibration (below 1200 RPM) is apparent. This type of mount is most commonly used to support equipment on upper floors where structural deflection may occur.

Features: Telescopic two-piece cast iron housing to stabilize spring where external motion may occur. Slotted mounting holes on base with skid-resistant pad. Mounting is facilitated by an adjustable leveling bolt. (If bolt mount is not required, a skid-resistant pad on top load surface is available in the HMLT/HMT series shown on pages 259 & 260). Springs are color-coded for load identification. Housing components are isolated by rubber acoustical pads. Larger capacity mountings are available.

Typical Applications: Compressors, air handling units, centrifugal fans, pumps and other similar applications. May also be used as a vibration dampening device for pipe risers.

*HMLE Series are Lower profile.

Notes: To ensure minimum effective vibration control, the spring mount must have a static deflection at least three times (3X) greater than the floor spans deflection.
Spring devices are stable with a vertical and horizontal spring constant equal to one ($K_x/K_y=1$). A 50% additional run-out from rated capacity to solid load is also characteristic of spring type isolators.





HMLE*/HME Type - Housed 1" (25.4mm) & 2" (50.8mm) Deflection Fail Safe Spring Mount (External Adjustment Bolt)

Part No.	Spring Color	Rated Load		Spring Spring		Dimensions in Inches (mm)							Wt. Each
		Lbs.	(kN)	in.	(mm)	L	W	H	F	A	B	C	Lbs.(kg)
HMLE-1-101	Yellow	25-50	(.11-.22)	1.20"	(30.5)	5 1/8" (130.2)	2 1/2" (63.5)	3 3/4" (95.2)	4 3/4" (120.6)	3 1/2" (88.9)	7/16" (11.1)	3/8" (9.5)	5.0 (2.3)
HMLE-1-102	Blue	50-100	(.22-.44)	1.20"	(30.5)								
HMLE-1-103	Brown	100-150	(.44-.67)	1.20"	(30.5)								
HMLE-1-104	Black	150-250	(.67-1.11)	1.00"	(25.4)								
HMLE-1-105	Gray	250-350	(1.11-1.55)	1.00"	(25.4)								
HMLE-1-106	Red	350-450	(1.55-2.00)	1.00"	(25.4)								
HMLE-1-107	Green	450-600	(2.00-2.67)	1.00"	(25.4)								
HME-1-121	Black	45-90	(.20-.40)	1.40"	(35.5)	6 3/8" (161.9)	2 5/8" (66.7)	5 1/8" (130.2)	5 1/2" (139.7)	4" (101.6)	5/8" (15.9)	1 1/2" (12.7)	11.0 (5.0)
HME-1-122	Green	90-120	(.40-.53)	1.40"	(35.5)								
HME-1-123	Yellow	120-175	(.53-.78)	1.40"	(35.5)								
HME-1-124	Brown	175-250	(.78-1.11)	1.30"	(33.0)								
HME-1-125	Red	250-330	(1.11-1.47)	1.30"	(33.0)								
HME-1-126	Purple	330-450	(1.47-2.00)	1.30"	(33.0)								
HME-1-127	Blue	450-600	(2.00-2.67)	1.20"	(30.5)								
HME-1-128	Orange	600-750	(2.67-3.34)	1.20"	(30.5)								
HME-1-129	Pink	750-900	(3.34-4.00)	1.10"	(27.9)								
HME-1-130	Gray	900-1100	(4.00-4.90)	1.00"	(25.4)								
HME-1-131	Wht/Blk	1100-1300	(4.90-5.78)	1.00"	(25.4)								
HME-1-132	Gold/Blk	1300-1500	(5.78-6.70)	0.90"	(22.8)								
HME-1-221	Black	48-90	(.21-.40)	2.00"	(50.8)	6 3/8" (161.9)	2 5/8" (66.7)	5 5/8" (142.9)	5 1/2" (139.7)	4" (101.6)	5/8" (15.9)	1 1/2" (12.7)	11.0 (5.0)
HME-1-222	White	90-120	(.40-.53)	2.00"	(50.8)								
HME-1-223	Yellow	120-175	(.53-.78)	2.00"	(50.8)								
HME-1-224	Brown	175-250	(.78-1.11)	2.00"	(50.8)								
HME-1-225	Red	250-330	(1.11-1.47)	2.00"	(50.8)								
HME-1-226	Purple	330-450	(1.47-2.00)	2.00"	(50.8)								
HME-1-227	Blue/Blk	450-600	(2.00-2.67)	2.00"	(50.8)								
HME-1-228	Orn/Blk	600-750	(2.67-3.34)	2.00"	(50.8)								
HME-2-225	Red	500-660	(2.22-2.93)	2.00"	(50.8)	9 3/4" (247.6)	2 5/8" (66.7)	5 3/4" (146.0)	8 3/4" (222.2)	7 3/8" (187.3)	5/8" (15.9)	5/8" (15.9)	19.0 (8.6)
HME-2-226	Purple	660-900	(2.93-4.00)	2.00"	(50.8)								
HME-2-227	Blue/Blk	900-1200	(4.00-5.34)	2.00"	(50.8)								
HME-2-228	Orn/Blk	1200-1500	(5.34-6.67)	2.00"	(50.8)								

*HMLE Series are Lower profile.

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

HMLT*/HMT Type - Housed 1" (25.4mm) & 2" (50.8mm) Deflection Fail Safe Spring Mount (Skid Resistant Neoprene Top & Internal Adjustment Bolt)



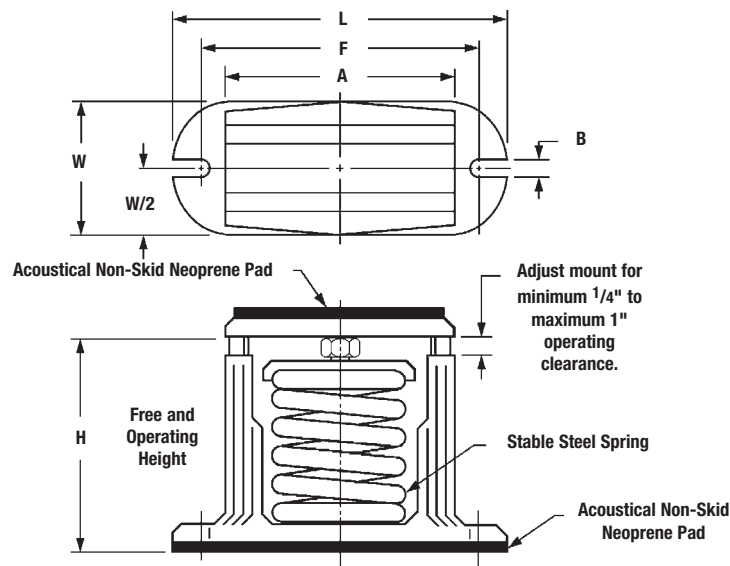
Use: HM series housed spring mounts are utilized to isolate floor mounted equipment where transmission of noise and vibration (below 1200 RPM) is apparent. This type of mount is most commonly used to support equipment on upper floors where structural deflection may occur.

Features: Telescopic two-piece cast iron housing to stabilize spring where external motion may occur. Slotted mounting holes on base with skid-resistant pad. Mounting is facilitated by an internal adjustable leveling bolt. Springs are color-coded for load identification. Housing components are isolated by rubber acoustical pads. Larger capacity mountings are available.

Typical Applications: Compressors, air handling units, centrifugal fans, pumps and other similar applications. May also be used as a vibration dampening device for pipe risers.

*HMLT Series are Lower profile.

Notes: To ensure minimum effective vibration control, the spring mount must have a static deflection at least three times (3X) greater than the floor spans deflection.
Spring devices are stable with a vertical and horizontal spring constant equal to one ($K_x/K_y=1$). A 50% additional run-out from rated capacity to solid load is also characteristic of spring type isolators.



**HMLT*/HMT Type - Housed 1" (25.4mm) & 2" (50.8mm) Deflection Fail Safe Spring Mount
(Skid Resistant Neoprene Top & Internal Adjustment Bolt)**



Part No.	Spring Color	Rated Load		Spring Deflection		Dimensions in Inches (mm)						Wt. Each	
		Lbs.	(kN)	in.	(mm)	L	W	H	F	A	B	Lbs.	(kg)
HMLT-1-101	Yellow	25-50	(.11-.22)	1.20"	(30.5)	5 1/8" (130.2)	2 1/2" (63.5)	4 1/8" (104.8)	4 3/4" (120.6)	3 1/2" (88.9)	7/16" (11.1)	3.0	(1.4)
HMLT-1-102	Blue	50-100	(.22-.44)	1.20"	(30.5)								
HMLT-1-103	Brown	100-150	(.44-.67)	1.20"	(30.5)								
HMLT-1-104	Black	150-250	(.67-1.11)	1.00"	(25.4)								
HMLT-1-105	Gray	250-350	(1.11-1.55)	1.00"	(25.4)								
HMLT-1-106	Red	350-450	(1.55-2.00)	1.00"	(25.4)								
HMLT-1-107	Green	450-600	(2.00-2.67)	1.00"	(25.4)								
HMT-1-121	Black	45-90	(.20-.40)	1.40"	(35.5)	6 3/8" (161.9)	2 5/8" (66.7)	5 5/8" (142.9)	5 1/2" (139.7)	4" (101.6)	5/8" (15.9)	8.0	(3.6)
HMT-1-122	Green	90-120	(.40-.53)	1.40"	(35.5)								
HMT-1-123	Yellow	120-175	(.53-.78)	1.40"	(35.5)								
HMT-1-124	Brown	175-250	(.78-1.11)	1.30"	(33.0)								
HMT-1-125	Red	250-330	(1.11-1.47)	1.30"	(33.0)								
HMT-1-126	Purple	330-450	(1.47-2.00)	1.30"	(33.0)								
HMT-1-127	Blue	450-600	(2.00-2.67)	1.20"	(30.5)								
HMT-1-128	Orange	600-750	(2.67-3.34)	1.20"	(30.5)								
HMT-1-129	Pink	750-900	(3.34-4.00)	1.10"	(27.9)								
HMT-1-130	Gray	900-1100	(4.00-4.90)	1.00"	(25.4)								
HMT-1-131	Wht/Blk	1100-1300	(4.90-5.78)	1.00"	(25.4)								
HMT-1-132	Gold/Blk	1300-1500	(5.78-6.70)	0.90"	(22.8)								

*HMLT Series are Lower profile.

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

HSL*/HS Type - Vibration Spring Hanger



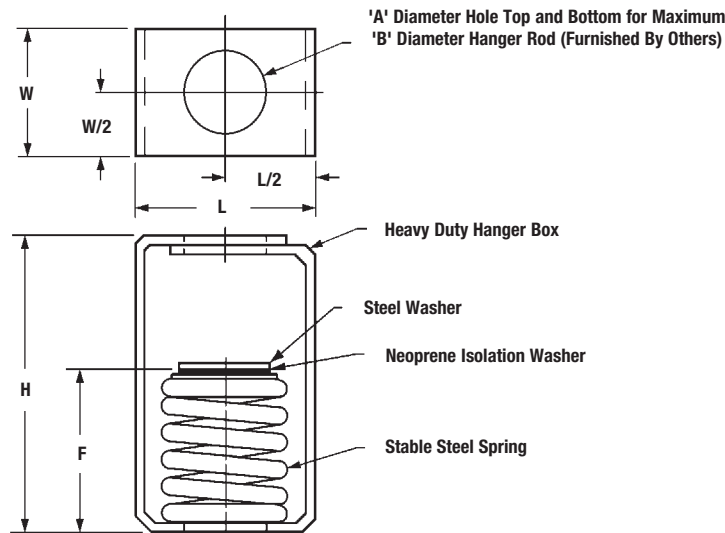
Use: HS series spring hangers should be utilized to minimize damaging vibration from suspended low frequency equipment (above 1200 RPM). Frequency below 600 RPM require springs with deflection 2.0" (50.8mm) or greater. Hangers also absorb shock and limit noise in critical areas.

Features: Color-coded spring for load identification. Loads up to 1500 Lbs. (6.67 kN), deflections up to 2.10" (53.3mm). Spring assembly includes neoprene washer for additional noise isolation. Options available include: 30° rod swing; scale with pointer; and positioning plate or pre-compressed spring to hold equipment at fixed elevations (see bottom page 262). Any or all of these options must be specified. Hanger units are shipped assembled.

Typical Applications: Fans, ductwork, piping, suspended ceilings, etc. To be used in-line with all thread rod for single and trapeze type support systems.

*HSL Series are Lower profile.

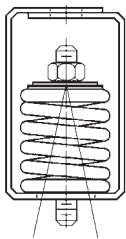
Note: Vibration hangers should not come in direct contact with equipment being suspended. Spring devices are stable with a vertical and horizontal spring constant equal to one ($K_x/K_y=1$). A 50% additional run-out from rated capacity to solid load is also characteristic of spring type isolators.



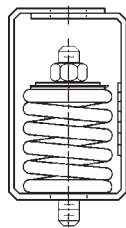
HSL*/HS Type - Vibration Spring Hanger

Part No.	Spring Color	Rated Load		Spring Deflection		Dimensions in Inches (mm)						Wt. Each	
		Lbs.	(kN)	in.	(mm)	L	W	H	F	A	B	Lbs.	(kg)
HSL-1-101	Yellow	25-50	(.11-.22)	1.20"	(30.5)	2 ³ / ₄ " (69.8)	2" (50.8)	4 ¹ / ₂ " (114.3)	3 ¹ / ₈ " (79.4)	7/ ₈ " (22.2)	5/ ₈ " (15.9)	2.0	(.9)
HSL-1-102	Blue	50-100	(.22-.44)	1.20"	(30.5)								
HSL-1-103	Brown	100-150	(.44-.67)	1.20"	(30.5)								
HSL-1-104	Black	150-250	(.67-1.11)	1.10"	(27.9)								
HSL-1-105	Gray	250-350	(1.11-1.55)	1.10"	(25.4)								
HSL-1-106	Red	350-450	(1.55-2.00)	1.00"	(25.4)								
HSL-1-107	Green	450-600	(2.00-2.67)	1.00"	(25.4)								
HS-1-121	Black	45-90	(.20-.40)	1.40"	(35.5)	3" (76.2)	2" (50.8)	7" (177.8)	4 ⁵ / ₈ " (117.5)	1" (25.4)	3/ ₄ " (19.0)	4.5	(2.0)
HS-1-122	Green	90-120	(.40-.53)	1.40"	(35.5)								
HS-1-123	Yellow	120-175	(.53-.78)	1.40"	(35.5)								
HS-1-124	Brown	175-250	(.78-1.11)	1.30"	(33.0)								
HS-1-125	Red	250-330	(1.11-1.47)	1.30"	(33.0)								
HS-1-126	Purple	330-450	(1.47-2.00)	1.30"	(33.0)								
HS-1-127	Blue	450-600	(2.00-2.67)	1.20"	(30.5)								
HS-1-128	Orange	600-750	(2.67-3.33)	1.20"	(30.5)								
HS-1-129	Pink	750-900	(3.33-4.00)	1.10"	(27.9)								
HS-1-130	Gray	900-1100	(4.00-4.89)	1.00"	(25.4)								
HS-1-131	Wht/Blk	1100-1300	(4.89-5.78)	1.00"	(25.4)								
HS-1-132	Gold/Blk	1300-1500	(5.78-6.67)	0.90"	(22.8)								
HS-1-221	Black	45-90	(.20-.40)	2.00"	(50.8)	3" (76.2)	2" (50.8)	7" (177.8)	5 ¹ / ₈ " (130.2)	1" (25.4)	3/ ₄ " (19.0)	8.0	(3.6)
HS-1-222	White	90-120	(.40-.53)	2.00"	(50.8)								
HS-1-223	Yellow	120-175	(.53-.78)	2.00"	(50.8)								
HS-1-224	Brown	175-250	(.78-1.11)	2.00"	(50.8)								
HS-1-225	Red	250-330	(1.11-1.47)	2.00"	(50.8)								
HS-1-226	Purple	330-450	(1.47-2.00)	2.00"	(50.8)								
HS-1-227	Blue/Blk	450-600	(2.00-2.67)	2.00"	(50.8)								
HS-1-228	Orn/Blk	600-750	(2.67-3.33)	2.00"	(50.8)								
HS-1-204	NA	350-500	(1.55-2.22)	2.10"	(53.3)	3 ¹ / ₂ " (88.9)	2" (50.8)	9 ¹ / ₄ " (234.9)	6 ¹ / ₂ " (165.1)	1" (25.4)	3/ ₄ " (19.0)	8.0	(3.6)
HS-1-205	NA	500-800	(2.22-3.56)	2.10"	(53.3)								
HS-1-206	NA	800-1200	(3.56-5.34)	2.10"	(53.3)								

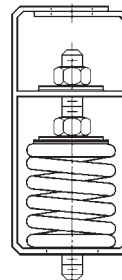
Ordering information: Specify desired 'option type' after part number.



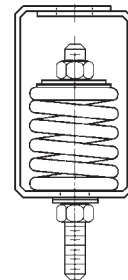
Option 1
Furnished with hanger box to accept 30° rod swing.



Option 2
Furnished with a scale and pointer to insure specified spring deflection.



Option 3
Furnished with a positioning plate to hold equipment at a fixed elevation during installation.



Option 4
Furnished with spring pre-compressed (75%) to hold equipment at a fixed elevation during installation.

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

HESL*/HES Type - Combination Spring & Neoprene Vibration Hanger



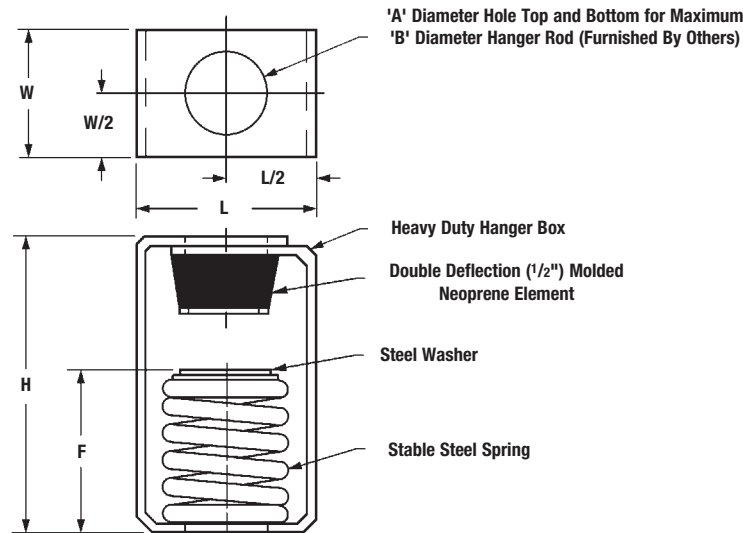
Use: HES series vibration spring hangers are suited to isolate both high and low frequency vibration generated by mechanical equipment. The high deflection spring addresses the vibration while the neoprene insert dampens noise. HES hangers are recommended for critical areas and with vibration sensitive spans.

Features: Color-coded spring for load identification and double deflection neoprene element. Loads up to 1500 Lbs. (6.67 kN), deflections up to 2.50" (63.5mm). Options available include: 30° rod swing; scale with pointer; and positioning plate or pre-compressed spring to hold equipment at fixed elevations (see bottom page 264). Any or all of these options must be specified. Hanger units are shipped assembled.

Typical Applications: Fan equipment, ductwork, piping, suspended ceilings, etc. To be used in-line with all thread rod for single and trapeze type support systems.

*HESL Series are Lower profile.

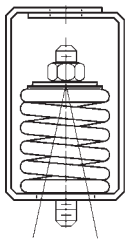
Note: Vibration hangers should not come in direct contact with equipment being suspended. Spring devices are stable with a vertical and horizontal spring constant equal to one ($K_x/K_y=1$). A 50% additional run-out from rated capacity to solid load is also characteristic of spring type isolators.



HESL*/HES Type - Combination Spring & Neoprene Vibration Hanger

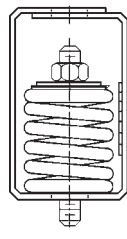
Part No.	Spring Color	Rated Load		Spring Deflection		Dimensions in Inches (MM)						Wt. Each	
		Lbs.	(kN)	in.	(mm)	L	W	H	F	A	B	Lbs.	(kg)
HESL-1-101	Yellow	25-50	(.11-.22)	1.70"	(43.2)	3" (76.2)	2" (50.8)	7" (177.8)	3 1/8" (79.4)	7/8" (22.2)	5/8" (15.9)	4.0	(1.8)
HESL-1-102	Blue	50-100	(.22-.44)	1.70"	(43.2)								
HESL-1-103	Brown	100-150	(.44-.67)	1.70"	(43.2)								
HESL-1-104	Black	150-250	(.67-1.11)	1.60"	(40.6)								
HESL-1-105	Gray	250-350	(1.11-1.55)	1.60"	(40.6)								
HESL-1-106	Red	350-450	(1.55-2.00)	1.50"	(38.1)								
HESL-1-107	Green	450-600	(2.00-2.67)	1.50"	(38.1)								
HES-1-121	Black	45-90	(.20-.40)	1.90"	(48.2)	3 1/2" (88.9)	2" (50.8)	9 1/4" (234.9)	4 5/8" (117.5)	1" (25.4)	3/4" (19.0)	11.0	(5.0)
HES-1-122	Green	90-120	(.40-.53)	1.90"	(48.2)								
HES-1-123	Yellow	120-175	(.53-.78)	1.90"	(48.2)								
HES-1-124	Brown	175-250	(.78-1.11)	1.80"	(45.7)								
HES-1-125	Red	250-330	(1.11-1.47)	1.80"	(45.7)								
HES-1-126	Purple	330-450	(1.47-2.00)	1.80"	(45.7)								
HES-1-127	Blue	450-600	(2.00-2.67)	1.70"	(43.2)								
HES-1-128	Orange	600-750	(2.67-3.33)	1.70"	(43.2)								
HES-1-129	Pink	750-900	(3.33-4.00)	1.60"	(40.6)								
HES-1-130	Gray	900-1100	(4.00-4.89)	1.50"	(38.1)								
HES-1-131	Wht/Blk	1100-1300	(4.89-5.78)	1.50"	(38.1)								
HES-1-132	Gold/Blk	1300-1500	(5.78-6.67)	1.40"	(35.5)								
HES-1-221	Black	45-90	(.20-.40)	2.50"	(63.5)	3 1/2" (88.9)	2" (50.8)	9 1/4" (234.9)	5 1/8" (130.2)	1" (25.4)	3/4" (19.0)	12.0	(5.4)
HES-1-222	White	90-120	(.40-.53)	2.50"	(63.5)								
HES-1-223	Yellow	120-175	(.53-.78)	2.50"	(63.5)								
HES-1-224	Brown	175-250	(.78-1.11)	2.50"	(63.5)								
HES-1-225	Red	250-330	(1.11-1.47)	2.50"	(63.5)								
HES-1-226	Purple	330-450	(1.47-2.00)	2.50"	(63.5)								
HES-1-227	Blue/Blk	450-600	(2.00-2.67)	2.50"	(63.5)								
HES-1-228	Orn/Blk	600-750	(2.67-3.33)	2.50"	(63.5)								

Ordering information: Specify desired 'option type' after part number.



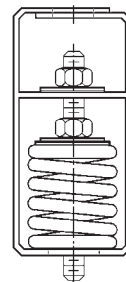
Option 1

Furnished with hanger box to accept 30° rod swing.
(Standard)



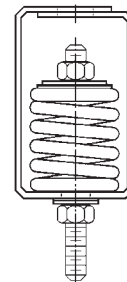
Option 2

Furnished with a scale and pointer to insure specified spring deflection.



Option 3

Furnished with a positioning plate to hold equipment at a fixed elevation during installation.



Option 4

Furnished with spring pre-compressed (75%) to hold equipment at a fixed elevation during installation.

*HESL Series are Lower profile.

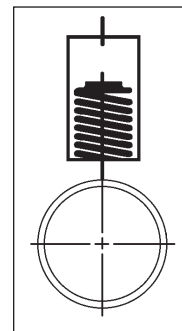
*HSL Series are Lower profile.

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

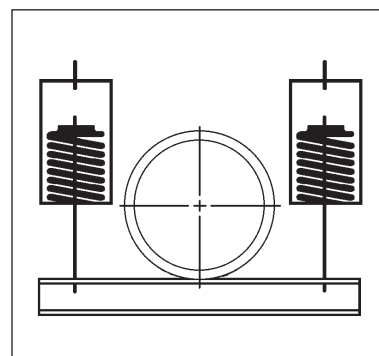
Spring & Neoprene Hanger Selection

B-Line Series HS and HES Spring & Neoprene Hanger selections for trapeze hung water filled piping based on 10 foot spacing between hangers.

Pipe Size in. (mm)		Weight of Pipe Filled With Water Lbs./Ft. (kg/m)		HS Type Hanger Selection	HES Type Hanger Selection
1"	(25)	3	(4.4)	HSL-1-101	HESL-1-101
1 1/4"	(32)	4	(5.9)	HSL-1-102	HESL-1-102
1 1/2"	(40)	5	(7.4)	HSL-1-102	HESL-1-102
2"	(50)	7	(10.4)	HSL-1-102	HESL-1-102
2 1/2"	(65)	10	(14.9)	HSL-1-103	HESL-1-103
3"	(80)	13	(19.3)	HSL-1-104	HESL-1-104
4"	(100)	19	(28.3)	HSL-1-104	HESL-1-104
5"	(125)	27	(40.2)	HSL-1-106	HESL-1-106
6"	(150)	35	(52.1)	HS-1-127	HES-1-127
8"	(200)	56	(83.3)	HS-1-128	HES-1-128
10"	(250)	81	(120.5)	HS-1-130	HES-1-130
12"	(300)	110	(163.7)	HS-1-131	HES-1-131
14"	(350)	125	(186.0)	HS-1-132	HES-1-132



Pipe Size in. (mm)		Weight of Pipe Filled With Water Lbs./Ft. (kg/m)		HS Type Hanger Selection	HES Type Hanger Selection
1"	(25)	3	(4.4)	(2) HSL-1-101	(2) HESL-1-101
1 1/4"	(32)	4	(5.9)	(2) HSL-1-101	(2) HESL-1-101
1 1/2"	(40)	5	(7.4)	(2) HSL-1-101	(2) HESL-1-101
2"	(50)	7	(10.4)	(2) HSL-1-101	(2) HESL-1-101
2 1/2"	(65)	10	(14.9)	(2) HSL-1-102	(2) HESL-1-102
3"	(80)	13	(19.3)	(2) HSL-1-102	(2) HESL-1-102
4"	(100)	19	(28.3)	(2) HSL-1-103	(2) HESL-1-103
5"	(125)	27	(40.2)	(2) HSL-1-104	(2) HESL-1-104
6"	(150)	35	(52.1)	(2) HS-1-124	(2) HES-1-124
8"	(200)	56	(83.3)	(2) HS-1-126	(2) HES-1-126
10"	(250)	81	(120.5)	(2) HS-1-127	(2) HES-1-127
12"	(300)	110	(163.7)	(2) HS-1-128	(2) HES-1-128
14"	(350)	125	(186.0)	(2) HS-1-129	(2) HES-1-129



The above charts are for reference only. Applicable codes require different support spans thus selection of spring hanger size may change. Calculate as follows:

$$\text{Wt. per Ft. (Lbs.)} \times \text{Support Span} = \text{Load Requirement}$$

(Refer to hanger sizing charts)

RH Type - Neoprene Vibration Hanger

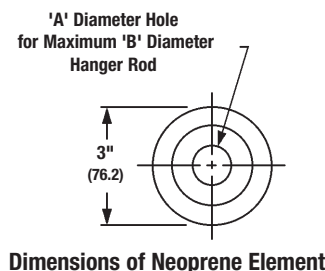
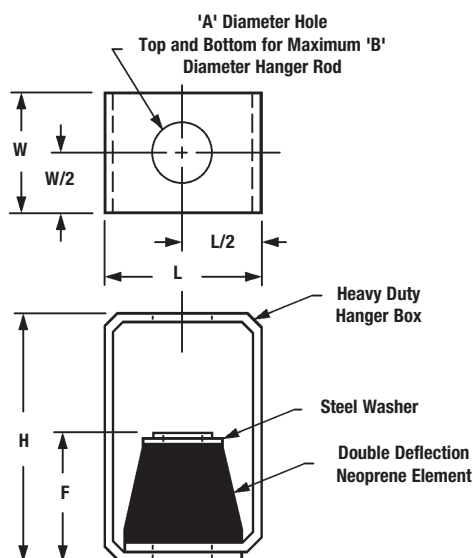


Use: RH series neoprene hangers are suggested to dampen noise and minor vibration from suspended high speed equipment (1200 RPM or greater). To be used in-line with all thread rod for single and trapeze type support systems.

Features: Color-coded neoprene in-shear insert for load identification. Loads to 2000 Lbs. (8.89kN) with deflections to .50" (12.7mm). RH hangers are available with a 30° rod swing (must specify). Hanger units are shipped assembled.

Typical Applications: Suspended mechanical equipment, exhaust fans, ductwork, piping, ceilings, etc. When equipment is suspended from vibration sensitive spans, avoid using RH type hangers. Higher deflection hangers such as the HS and HES series are recommended.

Note: Vibration hangers should not come in direct contact with equipment being suspended.



Part No.	Rated Load		Isolator Deflection		Dimensions in Inches (mm)						Wt. Each	
	Lbs.	(kN)	in.	(mm)	L	W	H	F	A	B	Lbs.	(kg)
RHB-Black	60-100	(.27-.44)	.50"	(12.7)	2 ³ / ₄ "	2"	4 ¹ / ₂ "	2"	3/ ₄ "	5/ ₈ "	2.0	(.9)
RHB-Red	100-175	(.44-.78)	.50"	(12.7)	(69.8)	(50.8)	(114.3)	(50.8)	(19.0)	(15.9)		
RHC-Green	175-300	(.78-1.33)	.50"	(12.7)	2 ³ / ₄ "	2"	4 ¹ / ₂ "	2"	3/ ₄ "	5/ ₈ "	3.0	(1.4)
RHC-Purple	300-700	(1.33-3.11)	.50"	(12.7)	(69.8)	(50.8)	(114.3)	(50.8)	(19.0)	(15.9)		
RHD-Yellow	700-1100	(3.11-4.90)	.50"	(12.7)	3"	2"	7"	2"	3/ ₄ "	5/ ₈ "	4.0	(1.8)
RHD-Pink	1100-2000	(4.90-8.90)	.50"	(12.7)	(76.2)	(50.8)	(177.8)	(50.8)	(19.0)	(15.9)		

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

SHE Type - Isolation Spring Hanger

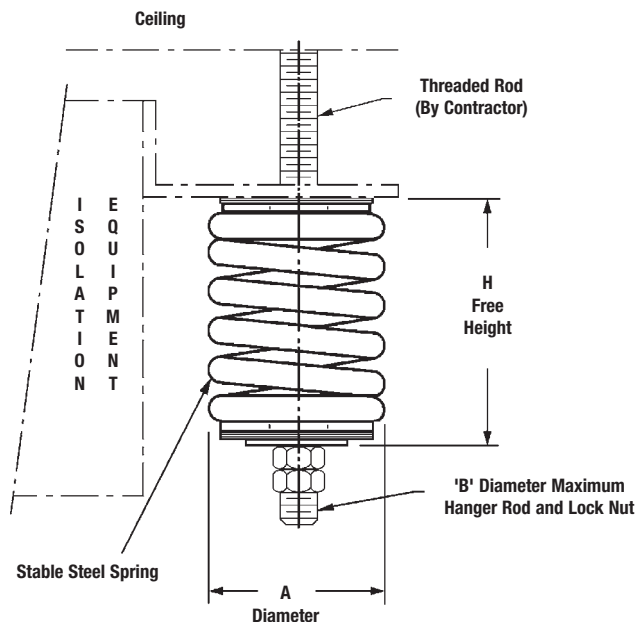


Use: SHE series isolation hangers are general purpose vibration isolation springs. Spring isolators are used on platform and trapeze type support assemblies in non-critical areas for low frequency vibration.

Features: Color-coded spring for load identification. Loads up to 1500 Lbs. (6.67 kN), deflections up to 1.40" (35.5mm). Spring assembly includes steel load washers with neoprene element for additional noise isolation. Spring units are shipped assembled. Larger loads available upon request.

Typical Applications: Use in-line with hanger rod below strut or angle iron trapeze systems, under two rod pipe rollers, or simply beneath mounting device of suspended mechanical equipment; i.e. fans, piping, ductwork, etc.

Note: Spring devices are stable with a vertical and horizontal spring constant equal to one ($K_x/K_y=1$). A 50% additional run-out from rated capacity to solid load is also characteristic of spring type isolators.



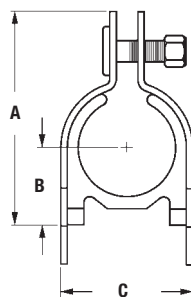
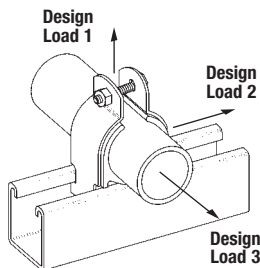
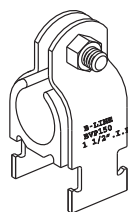


SHE Type - Isolation Spring Hanger

Part No.	Spring Color	Rated Load		Spring Deflection		Dimensions in Inches (mm)			Wt. Each	
		Lbs.	(kN)	in.	(mm)	A	B	H	Lbs.	(kg)
SHE-1-101	Yellow	25-50	(.11-.22)	1.20"	(30.5)	2" (50.8)	5/8" (15.9)	3 3/8" (85.7)	1.0	(.4)
SHE-1-102	Blue	50-100	(.22-.44)	1.20"	(30.5)					
SHE-1-103	Brown	100-150	(.44-.67)	1.20"	(30.5)					
SHE-1-104	Black	150-250	(.67-1.11)	1.10"	(27.9)					
SHE-1-105	Gray	250-350	(1.11-1.55)	1.10"	(27.9)					
SHE-1-106	Red	350-450	(1.55-2.00)	1.00"	(25.4)					
SHE-1-107	Green	450-600	(2.00-2.67)	1.00"	(25.4)					
SHE-1-121	Black	45-90	(.20-.40)	1.40"	(35.5)	2" (50.8)	3/4" (19.0)	4 5/8" (117.5)	2.2	(1.0)
SHE-1-122	Green	90-120	(.40-.53)	1.40"	(35.5)					
SHE-1-123	Yellow	120-175	(.53-.78)	1.40"	(35.5)					
SHE-1-124	Brown	175-250	(.78-1.11)	1.30"	(33.0)					
SHE-1-125	Red	250-330	(1.11-1.47)	1.30"	(33.0)					
SHE-1-126	Purple	330-450	(1.47-2.00)	1.30"	(33.0)					
SHE-1-127	Blue	450-600	(2.00-2.67)	1.20"	(30.5)					
SHE-1-128	Orange	600-750	(2.67-3.33)	1.20"	(30.5)					
SHE-1-129	Pink	750-900	(3.33-4.00)	1.10"	(27.9)					
SHE-1-130	Gray	900-1100	(4.00-4.89)	1.00"	(25.4)					
SHE-1-131	Wht/Blk	1100-1300	(4.89-5.78)	1.00"	(25.4)					
SHE-1-132	Gold/Blk	1300-1500	(5.78-6.67)	0.90"	(22.8)					

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

BVT Series - VibraClamp™



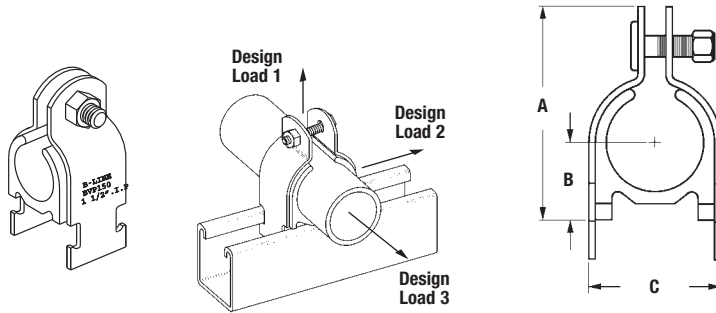
- Easy one tool installation.
- Temperature Range:
-40°F (-40°C) to +300°F (148.9°C)
- Dampens vibration and noise.
- Eliminates galvanic corrosion due to metal to metal contact.
- Resists most industrial oils and solvents.
- Secures tubing firmly to strut channel.

Part No.	O.D. Size		Pipe Size		A		B		C		Wt. Each	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	Lbs.	(kg)
BVT025	1/4"	(6.3)	1/8"	(3)	1.22"	(30.9)	0.19"	(4.8)	0.49"	(12.4)	.11	(.05)
BVT037	3/8"	(9.5)	1/4"	(6)	1.36"	(34.5)	0.25"	(6.3)	0.61"	(15.5)	.12	(.05)
BVT050	1/2"	(12.7)	3/8"	(10)	1.49"	(37.8)	0.31"	(7.8)	0.74"	(18.8)	.14	(.06)
BVT062	5/8"	(15.9)	1/2"	(15)	1.62"	(41.1)	0.38"	(9.6)	0.86"	(21.8)	.15	(.07)
BVT075	3/4"	(19.0)	5/8"	(17)	1.87"	(47.4)	0.50"	(12.7)	1.15"	(29.2)	.19	(.08)
BVT087	7/8"	(22.2)	3/4"	(20)	2.00"	(50.8)	0.56"	(14.2)	1.27"	(32.2)	.21	(.09)
BVT112	1 1/8"	(28.6)	1"	(25)	2.25"	(57.1)	0.69"	(17.5)	1.52"	(38.6)	.26	(.12)
BVT137	1 3/8"	(34.9)	1 1/4"	(32)	2.51"	(63.7)	0.81"	(20.6)	1.78"	(45.2)	.38	(.17)
BVT162	1 5/8"	(41.3)	1 1/2"	(40)	3.00"	(76.2)	1.00"	(25.4)	2.20"	(55.9)	.40	(.18)
BVT212	2 1/8"	(54.0)	2"	(50)	3.52"	(89.4)	1.25"	(31.7)	2.70"	(68.6)	.55	(.25)
BVT262	2 5/8"	(66.6)	2 1/2"	(65)	4.02"	(102.1)	1.50"	(38.1)	3.20"	(81.3)	.55	(.25)
BVT312	3 1/8"	(79.4)	3"	(80)	4.53"	(115.0)	1.75"	(44.4)	3.70"	(93.9)	.64	(.29)
BVT362	3 5/8"	(92.1)	3 1/2"	(90)	5.05"	(128.2)	2.00"	(50.8)	4.23"	(107.4)	.76	(.34)
BVT412	4 1/8"	(104.8)	4"	(100)	5.55"	(140.9)	2.25"	(57.1)	4.73"	(120.1)	.93	(.42)
BVT612	6 1/8"	(155.5)	6"	(150)	7.62"	(193.5)	3.25"	(82.5)	6.74"	(171.1)	1.36	(.61)

Part No.	Design Load 1		Design Load 2		Design Load 3	
	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)
BVT025	400	(1.78)	50	(0.22)	50	(0.22)
BVT037	400	(1.78)	50	(0.22)	50	(0.22)
BVT050	400	(1.78)	50	(0.22)	50	(0.22)
BVT062	400	(1.78)	50	(0.22)	50	(0.22)
BVT075	600	(2.67)	75	(0.33)	75	(0.33)
BVT087	600	(2.67)	75	(0.33)	75	(0.33)
BVT112	600	(2.67)	75	(0.33)	75	(0.33)
BVT137	600	(2.67)	75	(0.33)	75	(0.33)
BVT162	800	(3.56)	125	(0.55)	125	(0.55)
BVT212	800	(3.56)	125	(0.55)	125	(0.55)
BVT262	800	(3.56)	125	(0.55)	125	(0.55)
BVT312	800	(3.56)	125	(0.55)	125	(0.55)
BVT362	1000	(4.45)	200	(0.67)	150	(0.67)
BVT412	1000	(4.45)	200	(0.67)	150	(0.67)
BVT612	1000	(4.45)	200	(0.67)	150	(0.67)



BVP Series - VibraClamp™



- Easy one tool installation.
- Temperature Range:
-40°F (-40°C) to +300°F (148.9°C)
- Dampens vibration and noise.
- Eliminates galvanic corrosion due to metal to metal contact.
- Resists most industrial oils and solvents.
- Secures pipe firmly to strut channel.

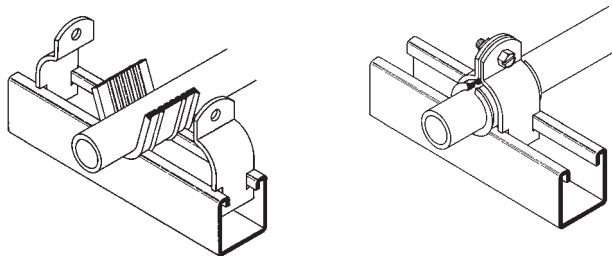
Part No.	O.D. Size		Pipe Size		Dimensions						Wt. Each	
	in.	(mm)	in.	(mm)	A		B		C		Lbs.	(kg)
BVP025	0.540"	(13.7)	1/4"	(6)	1.61"	(39.9)	0.37"	(9.4)	0.87"	(22.1)	.15	(.07)
BVP037	0.675"	(17.1)	3/8"	(10)	1.86"	(47.2)	0.50"	(12.7)	1.15"	(29.2)	.18	(.08)
BVP050	0.875"	(22.2)	1/2"	(15)	1.99"	(50.5)	0.56"	(14.2)	1.27"	(32.3)	.20	(.09)
BVP075	1.050"	(26.7)	3/4"	(20)	2.25"	(57.1)	0.69"	(17.5)	1.52"	(38.6)	.21	(.09)
BVP100	1.312"	(33.3)	1"	(25)	2.51"	(63.8)	0.81"	(20.6)	1.77"	(45.0)	.20	(.09)
BVP125	1.660"	(42.2)	1 1/4"	(32)	3.00"	(76.2)	1.00"	(25.4)	2.21"	(56.1)	.36	(.16)
BVP150	1.900"	(48.3)	1 1/2"	(40)	3.21"	(81.5)	1.12"	(28.4)	2.41"	(61.2)	.40	(.18)
BVP200	2.375"	(60.3)	2"	(50)	3.77"	(95.8)	1.37"	(34.8)	2.96"	(75.2)	.45	(.20)
BVP250	2.875"	(73.0)	2 1/2"	(65)	4.28"	(108.7)	1.62"	(41.1)	3.46"	(87.9)	.54	(.24)
BVP300	3.500"	(88.9)	3"	(80)	5.05"	(128.3)	2.00"	(50.8)	4.24"	(107.7)	.81	(.37)
BVP350	4.000"	(101.6)	3 1/2"	(90)	5.55"	(140.9)	2.25"	(57.1)	4.74"	(120.3)	.87	(.39)
BVP400	4.500"	(114.3)	4"	(100)	6.05"	(153.7)	2.50"	(63.5)	5.24"	(133.1)	1.09	(.49)
BVP500	5.563"	(141.3)	5"	(125)	6.84"	(173.7)	3.00"	(76.2)	6.24"	(158.4)	1.36	(.61)
BVP600	6.625"	(168.3)	6"	(150)	8.24"	(209.3)	3.56"	(90.4)	7.36"	(186.9)	1.63	(.74)

Part No.	Design Load 1		Design Load 2		Design Load 3	
	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)
BVP025	400	(1.78)	50	(0.22)	50	(0.22)
BVP037	600	(2.67)	75	(0.33)	75	(0.33)
BVP050	600	(2.67)	75	(0.33)	75	(0.33)
BVP075	600	(2.67)	75	(0.33)	75	(0.33)
BVP100	600	(2.67)	75	(0.33)	75	(0.33)
BVP125	800	(3.56)	125	(0.55)	125	(0.55)
BVP150	800	(3.56)	125	(0.55)	125	(0.55)
BVP200	800	(3.56)	125	(0.55)	125	(0.55)
BVP250	800	(3.56)	125	(0.55)	125	(0.55)
BVP300	1000	(4.45)	200	(0.89)	150	(0.67)
BVP350	1000	(4.45)	200	(0.89)	150	(0.67)
BVP400	1000	(4.45)	200	(0.89)	150	(0.67)
BVP500	1000	(4.45)	200	(0.89)	150	(0.67)
BVP600	1000	(4.45)	200	(0.89)	150	(0.67)



B1999

Vibra Cushion™



Packaged 20 Ft.
per carton.

Note: See Strut Catalog for sizing information.

- Ideal Isolation Material
- Inhibits Galvanic Corrosion
- Dampens Sound and Vibration
- Service Temperature Range
-75° F (-60°C) to +375° F (+190°C)

Vibra Cushion is designed for use with refrigeration lines, HVAC, copper tubing, glass pipe and hydraulic lines. It provides an energy-absorption barrier between the lines and the mounting material and remains flexible thru its entire service range of -75°F (-60°C) to +375°F (+190°C).

This elastomer allows for expansion and contraction within the mounting system and prevents galvanic reaction between dissimilar metals.

ISO

Iso Pipe



Packaged 36 Ft. (11 M)
per carton.

1" (25.4) wide
.020" (0.5) thick

- Non-adhesive rubber tape
- Fuses to itself
- Water resistant
- Prevents galvanic reaction caused by dissimilar metal contact
- Service Temperature Range
-140° F (-95°C) to +395° F (+200°C)

DURA-BLOK™ Rooftop Supports

DURA-BLOK
Rooftop Supports



DURA-BLOK is made from 100% recycled rubber and qualifies for LEED credits. Reflective strips on both sides allow for easy product visibility.

Channels are through bolted on all sizes for added strength and a 1" (25.4mm) gap between blocks allows water to flow freely around longer assemblies.

Product composition is not sharp or abrasive, helping to extend the roof life and no penetration through the roof is required.

The DURA-BLOK dampens vibration, needs no supplemental rubber pad, and will not float or blow away.

DURA-BLOK can be used to support piping, HVAC/Ducts, roof walkways, conduit and cable tray.

Base Only



Base Only

Dimensions - 4" (101mm) High x 6" (152mm) Wide x Base Length

Material - 100% recycled rubber, UV resistant

Ultimate Load Capacity - (uniform load) *

DBP = 500 lbs. (2.22kN)

DBM = 200 lbs. (0.89kN)

DURA-BLOK channel support is designed as an economical support for piping systems, cable tray, HVAC equipment and many other applications. The DURA-BLOK is UV resistant and is suitable for any type of roofing material or other flat surfaces. Material effectively accepts screw fasteners for securing accessories.

Part No.	Weight Each
DBP	4.48 (2.03kg)
DBM	2.35 (1.07kg)

Part No.	Height	Width	Length
DBP	4" (101mm)	6" (152mm)	9.6" (244mm)
DBM	4" (101mm)	6" (152mm)	4.8" (122mm)

* For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

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

DURA-BLOK™ Rooftop Supports

DB - Series



Base with 14 ga. (1.9mm) Galv. Channel - 1" (25.4mm) high

Dimensions - 5" (127mm) High x 6" (152mm) Wide x Length (overall length)

Material - 100% recycled rubber, UV resistant

Ultimate Load Capacity - (uniform load) *

DB5 = 500 lbs. (2.22kN)

DB10 = 500 lbs. (2.22kN)

DB20 = 1,000 lbs. (4.45kN)

DB30 = 1,500 lbs. (6.67kN)

DB40 = 2,000 lbs. (8.89kN)

DB48 = 2,500 lbs. (11.12kN)



DURA-BLOK DB-Series channel support is designed for superior support of piping systems, cable tray, HVAC equipment, walkway systems and many other applications. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces. For sloped roofs see adjustable hinge fitting (B634).

Part No.	Weight Each
DB5	2.75 (1.25kg)
DB10	5.28 (2.39kg)
DB20	10.63 (4.82kg)
DB30	15.99 (7.25kg)
DB40	21.34 (9.68kg)
DB48	26.70 (12.4kg)



Part No.	Height	Width	Overall Length
DB5	5" (127mm)	6" (152mm)	4.8" (122mm)
DB10	5" (127mm)	6" (152mm)	9.6" (244mm)
DB20	5" (127mm)	6" (152mm)	20.2" (513mm)
DB30	5" (127mm)	6" (152mm)	30.8" (782mm)
DB40	5" (127mm)	6" (152mm)	41.4" (1052mm)
DB48	5" (127mm)	6" (152mm)	52.0" (1321mm)



For pipe straps/clamps, rollers and roller supports that can be used with these DURA-BLOK supports, see page 284.

*** For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.**

DURA-BLOK™ Rooftop Supports

DB6 - Series

DURA-BLOK
Rooftop Supports



Base with 12 ga. (2.6mm) Galv. Channel - 2⁷/₁₆" (62mm) high

Dimensions - 6⁷/₁₆" (163mm) High x 6" (152mm) Wide x Length (overall length)

Material - 100% recycled rubber, UV resistant

Ultimate Load Capacity - (uniform load) *

DB610 = 500 lbs. (2.22kN)

DB620 = 1,000 lbs. (4.45kN)

DB630 = 1,500 lbs. (6.67kN)

DB640 = 2,000 lbs. (8.89kN)

DB648 = 2,500 lbs. (11.12kN)



DURA-BLOK DB6-Series channel support is designed for superior support of piping systems, cable tray, HVAC equipment, walkway systems and many other applications. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces. For sloped roofs see adjustable hinge fitting (B634).

Part No.	Weight Each
DB610	6.36 (2.88kg)
DB620	12.90 (5.85kg)
DB630	19.45 (8.82kg)
DB640	26.00 (11.79kg)
DB648	32.55 (14.76kg)



Part No.	Height	Width	Overall Length
DB610	6 ⁷ / ₁₆ " (167mm)	6" (152mm)	9.6" (244mm)
DB620	6 ⁷ / ₁₆ " (167mm)	6" (152mm)	20.2" (513mm)
DB630	6 ⁷ / ₁₆ " (167mm)	6" (152mm)	30.8" (782mm)
DB640	6 ⁷ / ₁₆ " (167mm)	6" (152mm)	41.4" (1052mm)
DB648	6 ⁷ / ₁₆ " (167mm)	6" (152mm)	52.0" (1321mm)

For pipe straps/clamps, rollers and roller supports that can be used with these DURA-BLOK supports, see page 284.

*** For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.**

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

DURA-BLOK™ Rooftop Supports

DB10 - Series



Two (2) Bases with 12 ga. (2.6mm) Galv. Channel - 1⁵/₈" (41mm) high

Dimensions - 5⁵/₈" (143mm) High x 6" (152mm) Wide x Length (overall length)

Material - 100% recycled rubber, UV resistant

Ultimate Load Capacity - 1,000 lbs. (4.45kN) (uniform load) *

DURA-BLOK DB10-Series channel support is designed for superior support of piping systems, cable tray, HVAC equipment, walkway systems and many other applications. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces.

Part No.	Weight Each
DB10-28	13.16 (5.97kg)
DB10-36	14.36 (6.51kg)
DB10-42	15.52 (7.04kg)
DB10-50	16.45 (7.46kg)
DB10-60	17.94 (8.14kg)

Part No.	Height	Individual Base Length	Bridge Length
DB10-28	5 ⁵ / ₈ " (143mm)	9.6" (244mm)	28" (711mm)
DB10-36	5 ⁵ / ₈ " (143mm)	9.6" (244mm)	36" (914mm)
DB10-42	5 ⁵ / ₈ " (143mm)	9.6" (244mm)	42" (1067mm)
DB10-50	5 ⁵ / ₈ " (143mm)	9.6" (244mm)	50" (1270mm)
DB10-60	5 ⁵ / ₈ " (143mm)	9.6" (244mm)	60" (1524mm)

For pipe straps/clamps, rollers and roller supports that can be used with these DURA-BLOK supports, see page 284.

*** For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.**

DURA-BLOK™ Rooftop Supports

DBM - Series



DBM-2CT



DBM-1

Base with one (1) 3/8"-16 Electro Zinc All Threaded Rod and Hinged Pipe Clamp

Dimensions - Height to Pipe Center x 6" (152mm) Wide x

4.8" (122mm) Long (overall length)

Material - 100% recycled rubber, UV resistant

Pipe Clamp Material - Malleable Iron -

Pipe Sizes - Electro Plated

Copper Tubing Sizes - Dura Copper™

Threaded Rod/Hardware - Electro Plated Steel

Ultimate Load Capacity - 50 lbs. (0.22kN) (uniform load) *



DURA-BLOK DBM-Series pipe/tubing support is designed for support of single piping systems where elevation adjustment is needed. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces.

Part No.	Clamp Part No.†	Weight Each
DBM-1/2CT	B3198HCT-1/2	2.75 (1.25kg)
DBM-3/4CT	B3198HCT-3/4	2.76 (1.25kg)
DBM-1CT	B3198HCT-1	2.84 (1.29kg)
DBM-1 1/4CT	B3198HCT-1 1/2	2.95 (1.34kg)
DBM-1 1/2CT	B3198HCT-1 1/2	2.96 (1.34kg)
DBM-2CT	B3198HCT-2	3.03 (1.37kg)
DBM-1/2	B3198H-1/2	2.78 (1.26kg)
DBM-3/4	B3198H-3/4	2.84 (1.29kg)
DBM-1	B3198H-1	2.86 (1.30kg)
DBM-1 1/4	B3198H-1 1/4	2.93 (1.33kg)
DBM-1 1/2	B3198H-1 1/2	2.99 (1.36kg)
DBM-2	B3198H-2	3.10 (1.41kg)

Part No.	Height (Minimum) **	Height (Maximum) **	Width	Length
DBM-1/2CT	9.69" (246mm)	11.19" (284mm)	6" (152mm)	4.80" (122mm)
DBM-3/4CT	9.84" (250mm)	11.34" (288mm)	6" (152mm)	4.80" (122mm)
DBM-1CT	9.95" (253mm)	11.45" (291mm)	6" (152mm)	4.80" (122mm)
DBM-1 1/4CT	10.13" (257mm)	11.63" (295mm)	6" (152mm)	4.80" (122mm)
DBM-1 1/2CT	10.28" (261mm)	11.78" (299mm)	6" (152mm)	4.80" (122mm)
DBM-2CT	10.53" (267mm)	12.03" (305mm)	6" (152mm)	4.80" (122mm)
DBM-1/2	9.86" (250mm)	11.36" (288mm)	6" (152mm)	4.80" (122mm)
DBM-3/4	10.06" (255mm)	11.56" (293mm)	6" (152mm)	4.80" (122mm)
DBM-1	10.14" (257mm)	11.64" (296mm)	6" (152mm)	4.80" (122mm)
DBM-1 1/4	10.25" (260mm)	11.75" (298mm)	6" (152mm)	4.80" (122mm)
DBM-1 1/2	10.42" (265mm)	11.92" (303mm)	6" (152mm)	4.80" (122mm)
DBM-2	10.66" (271mm)	12.16" (309mm)	6" (152mm)	4.80" (122mm)

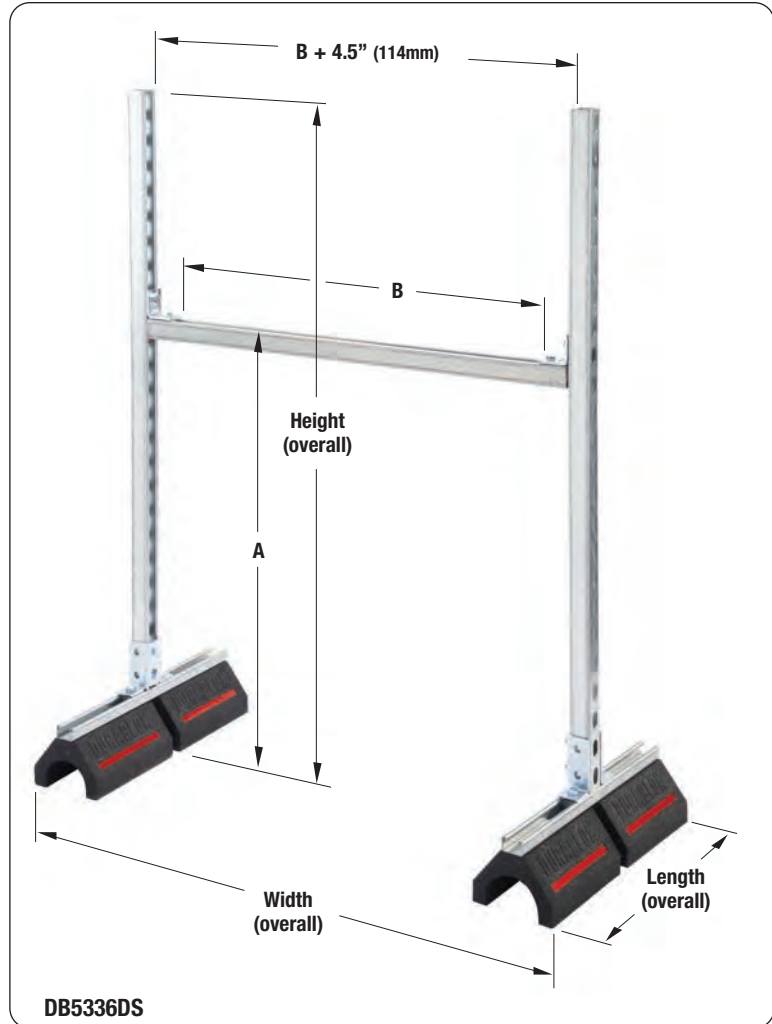
† See Pipe Hanger Catalog for dimensions and specifications. ** From bottom of rubber block to center of pipe/tubing.

* For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

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

DURA-BLOK™ Rooftop Supports

DB_DS - Series



Product is shipped unassembled.

**Two (2) Base Supports with 12 ga. (2.6mm) Galv. Channel - 1⁵/₈" (41mm) high
Riser Channels (SH Style) - 1⁵/₈" (41mm) x 1⁵/₈" (41mm) x 12 ga. (2.6mm)
Fittings & Hardware - Electro-Plated Steel**

Dimensions - Height (overall) x Width (overall) x Length (overall)

Material - 100% recycled rubber, UV resistant

Ultimate Load Capacity - 1,000 lbs. (4.45kN) (uniform load) *

DURA-BLOK DB_DS-Series channel support with risers is designed for superior support of piping systems, cable tray, HVAC equipment, walkway systems and many other applications. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces.

For pipe straps/clamps, rollers and roller supports that can be used with these DURA-BLOK supports, see page 284.

*** For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.**

DURA-BLOK™ Rooftop Supports

DB_DS - Series cont.

Part No.	A (Minimum)	A (Maximum)	B	Weight Each
DB2318DS	10.56" (268mm)	20.75" (527mm)	13.50" (343mm)	33.31 (15.11kg)
DB2918DS	10.56" (268mm)	26.75" (679mm)	13.50" (343mm)	35.00 (15.88kg)
DB4118DS	10.56" (268mm)	38.75" (984mm)	13.50" (343mm)	38.40 (17.42kg)
DB5318DS	10.56" (268mm)	50.75" (1289mm)	13.50" (343mm)	41.80 (18.96kg)
DB2324DS	10.56" (268mm)	20.75" (527mm)	19.50" (495mm)	34.15 (15.49kg)
DB2924DS	10.56" (268mm)	26.75" (679mm)	19.50" (495mm)	35.84 (16.26kg)
DB4124DS	10.56" (268mm)	38.75" (984mm)	19.50" (495mm)	39.25 (17.80kg)
DB5324DS	10.56" (268mm)	50.75" (1289mm)	19.50" (495mm)	42.65 (19.34kg)
DB2336DS	10.56" (268mm)	20.75" (527mm)	31.50" (800mm)	35.84 (16.26kg)
DB2936DS	10.56" (268mm)	26.75" (679mm)	31.50" (800mm)	37.55 (17.03kg)
DB4136DS	10.56" (268mm)	38.75" (984mm)	31.50" (800mm)	40.95 (18.57kg)
DB5336DS	10.56" (268mm)	50.75" (1289mm)	31.50" (800mm)	44.34 (20.11kg)
DB2348DS	10.56" (268mm)	20.75" (527mm)	43.50" (1105mm)	37.55 (17.03kg)
DB2948DS	10.56" (268mm)	26.75" (679mm)	43.50" (1105mm)	39.25 (17.80kg)
DB4148DS	10.56" (268mm)	38.75" (984mm)	43.50" (1105mm)	42.65 (19.34kg)
DB5348DS	10.56" (268mm)	50.75" (1289mm)	43.50" (1105mm)	46.03 (20.88kg)

Part No.	Height (overall)	Width (overall)	Length (overall)
DB2318DS	23" (584mm)	25 ⁵ / ₈ " (651mm)	20.2" (513mm)
DB2918DS	29" (736mm)	25 ⁵ / ₈ " (651mm)	20.2" (513mm)
DB4118DS	41" (1041mm)	25 ⁵ / ₈ " (651mm)	20.2" (513mm)
DB5318DS	53" (1346mm)	25 ⁵ / ₈ " (651mm)	20.2" (513mm)
DB2324DS	23" (584mm)	31 ⁵ / ₈ " (803mm)	20.2" (513mm)
DB2924DS	29" (736mm)	31 ⁵ / ₈ " (803mm)	20.2" (513mm)
DB4124DS	41" (1041mm)	31 ⁵ / ₈ " (803mm)	20.2" (513mm)
DB5324DS	53" (1346mm)	31 ⁵ / ₈ " (803mm)	20.2" (513mm)
DB2336DS	23" (584mm)	43 ⁵ / ₈ " (1108mm)	20.2" (513mm)
DB2936DS	29" (736mm)	43 ⁵ / ₈ " (1108mm)	20.2" (513mm)
DB4136DS	41" (1041mm)	43 ⁵ / ₈ " (1108mm)	20.2" (513mm)
DB5336DS	53" (1346mm)	43 ⁵ / ₈ " (1108mm)	20.2" (513mm)
DB2348DS	23" (584mm)	55 ⁵ / ₈ " (1415mm)	20.2" (513mm)
DB2948DS	29" (736mm)	55 ⁵ / ₈ " (1415mm)	20.2" (513mm)
DB4148DS	41" (1041mm)	55 ⁵ / ₈ " (1415mm)	20.2" (513mm)
DB5348DS	53" (1346mm)	55 ⁵ / ₈ " (1415mm)	20.2" (513mm)

A = Adjustable height from bottom of DURA-BLOK to top of horizontal channel.

B = Space between fittings that support horizontal channel.

Height (overall) = Distance from bottom of DURA-BLOK to top of upright channel.

Width (overall) = Distance from outside-to-outside of DURA-BLOK supports.

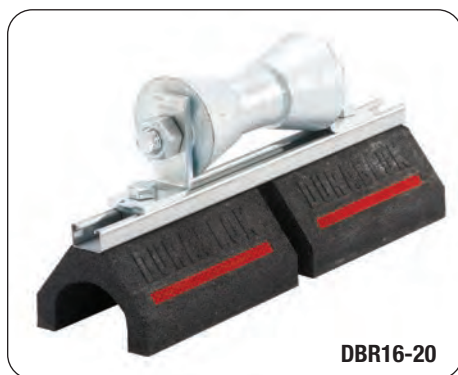
Length (overall) = Distance from end-to-end of DURA-BLOK supports.

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

DURA-BLOK™ Rooftop Supports

DBR - Series

Fixed Height



Base with 14 ga. (1.9mm) Galv. Channel - 1" (25.4mm) high and Pipe Roller Assembly

Dimensions - Height to Bottom of Pipe x 6" (152mm) Wide x Long (overall length)

Material - 100% recycled rubber, UV resistant

Pipe Roller Material - Cast Iron - Electro Plated

Brackets, Axle, & Hardware - Electro Plated Steel

Ultimate Load Capacity - (uniform load) *

DBR2-3 1/2 = 500 lbs. (2.22kN)

DBR4-6 = 500 lbs. (2.22kN)

DBR8-10 = 1000 lbs. (4.44kN)

DBR12-14 = 1000 lbs. (4.44kN)

DBR16-20 = 1000 lbs. (4.44kN)



DURA-BLOK DBR-Series support is designed to support pipe where longitudinal movement is expected. The DURA-BLOK is UV resistant and approved for installation on any type of roofing material or other flat surfaces.

Part No.	Roller Part No.†	Weight Each
DBR2-3 1/2	B3126-2 to 3 1/2	5.28 (2.39kg)
DBR4-6	B3126-4 to 6	10.63 (4.82kg)
DBR8-10	B3126-8 to 10	15.99 (7.25kg)
DBR12-14	B3126-12 to 14	21.34 (9.68kg)
DBR16-20	B3126-16 to 20	26.70 (12.11kg)

Part No.	Height **	Width	Length
DBR2-3 1/2	7.09" (180mm)	6" (152mm)	9.6" (244mm)
DBR4-6	7.09" (180mm)	6" (152mm)	9.6" (244mm)
DBR8-10	8.34" (212mm)	6" (152mm)	20.2" (513mm)
DBR12-14	9.38" (238mm)	6" (152mm)	20.2" (513mm)
DBR16-20	9.78" (248mm)	6" (152mm)	20.2" (513mm)

† See Pipe Hanger Catalog for dimensions and specifications. ** From bottom of rubber block to bottom of pipe/tubing.

* For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

DURA-BLOK™ Rooftop Supports

DBR - Series Adjustable Height



Base with two (2) 1/2"-13 Electro Zinc All Threaded Rod Risers and a B3114-3 1/2 Pipe Roll with Sockets

Dimensions - Overall Height 12" (305mm) from bottom of base to pipe contact point on roller.

Base - 4" High (101mm) x 6" (152mm) Wide x 9.6" (244mm) Length (base length)

Material - 100% recycled rubber, UV resistant

Pipe Roll & Sockets - For up to 3 1/2" (90mm) pipe sizes.

Ultimate Load Capacity - 200 lbs. (0.89kN) * (To increase load capacity use CLDP10 load distribution plate.)



DURA-BLOK DBR-Series support is designed to support pipe up to 3 1/2" (90mm) nominal size where difference in elevation is required and longitudinal movement is expected. The DURA-BLOK is UV resistant and approved for installation on any type of roofing material or other flat surfaces.

Part No.	Adjustable Height	Width	Length	Weight Each
DBR10-12	up to 12" (305mm)	6" (152mm)	9.6" (244mm)	6.46 (2.93kg)

DBE - Series



DBE10-12

Base with two (2) 1/2"-13 Electro Zinc All Threaded Rod Risers and 14 ga. (1.9mm) Galv. Slotted Channel - 1" (25mm) high



Dimensions - Overall Height as Specified

Base - 4" High (101mm) x 6" (152mm) Wide x 9.6" (244mm) Length (base length)

Material - 100% recycled rubber, UV resistant

Ultimate Load Capacity - 200 lbs. (0.89kN) * (To increase load capacity use CLDP10 load distribution plate.)

DURA-BLOK DBE-Series channel support is designed as a support of piping systems, cable tray, HVAC equipment and many other applications where elevation adjustment is critical. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces.

For pipe straps/clamps, rollers and roller supports that can be used with these DURA-BLOK supports, see page 284.

Part No.	Adjustable Height	Width	Channel Length	Weight Each
DBE10-8	5 1/2" - 8" (140 - 203mm)	6" (152mm)	9.35" (161mm)	5.68 (2.58kg)
DBE10-12	5 1/2" - 12" (140 - 305mm)	6" (152mm)	9.35" (161mm)	5.72 (2.59kg)
DBE10-16	5 1/2" - 16" (140 - 406mm)	6" (152mm)	9.35" (161mm)	5.76 (2.61kg)

** Longer base lengths available.

Note: At heights above 12" (305mm), we suggest using the DB_DS Series Channel Support with Risers for additional stability to piping system.

*** For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.**

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

DURA-BLOK™ Rooftop Supports

CLDP10 Load Distribution Plate



Steel Plate with Slots

Dimensions - 1⁵/₈" (41mm) Wide x 6¹/₂" (165mm) Long

Material - 11 Ga. steel (3.0mm)

Increases ultimate uniform load capacity on DBE & DBR Series supports to 500 lbs. (2.22kN)

DURA-BLOK CLDP10 load bearing stabilizer plate increases load ratings for DBE Series and DBR Series supports by allowing the load from the threaded rods to be distributed over the length of the base instead of the point load where the rods attach to the base.



Loosen hex nuts and slide plate under the flat washers



Retighten the hex nuts with plate in place

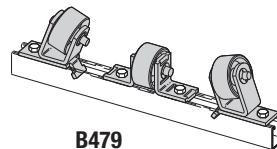
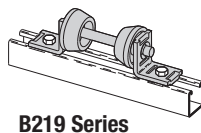
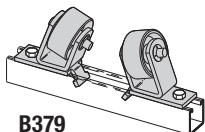
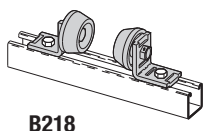
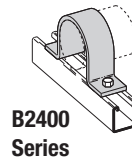
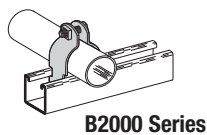
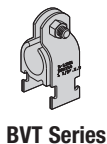
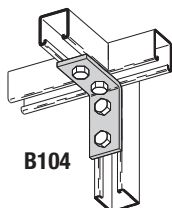
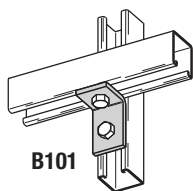
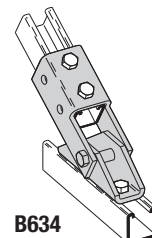
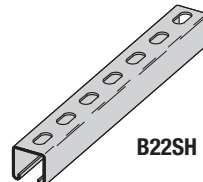
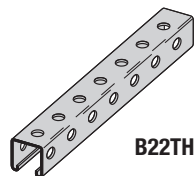
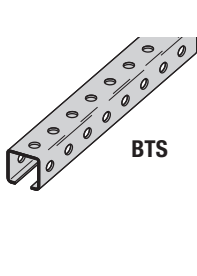
Part No.	Weight Each
CLDP10	0.53 (0.24kg)

Part No.	Thickness	Width	Length
CLDP10	11 Ga. (3.05mm)	1 ⁵ / ₈ " (41mm)	9 ¹ / ₂ " (241mm)

DURA-BLOK™ Rooftop Supports

Compatible Components Available to make DURA-BLOK bases more versatile

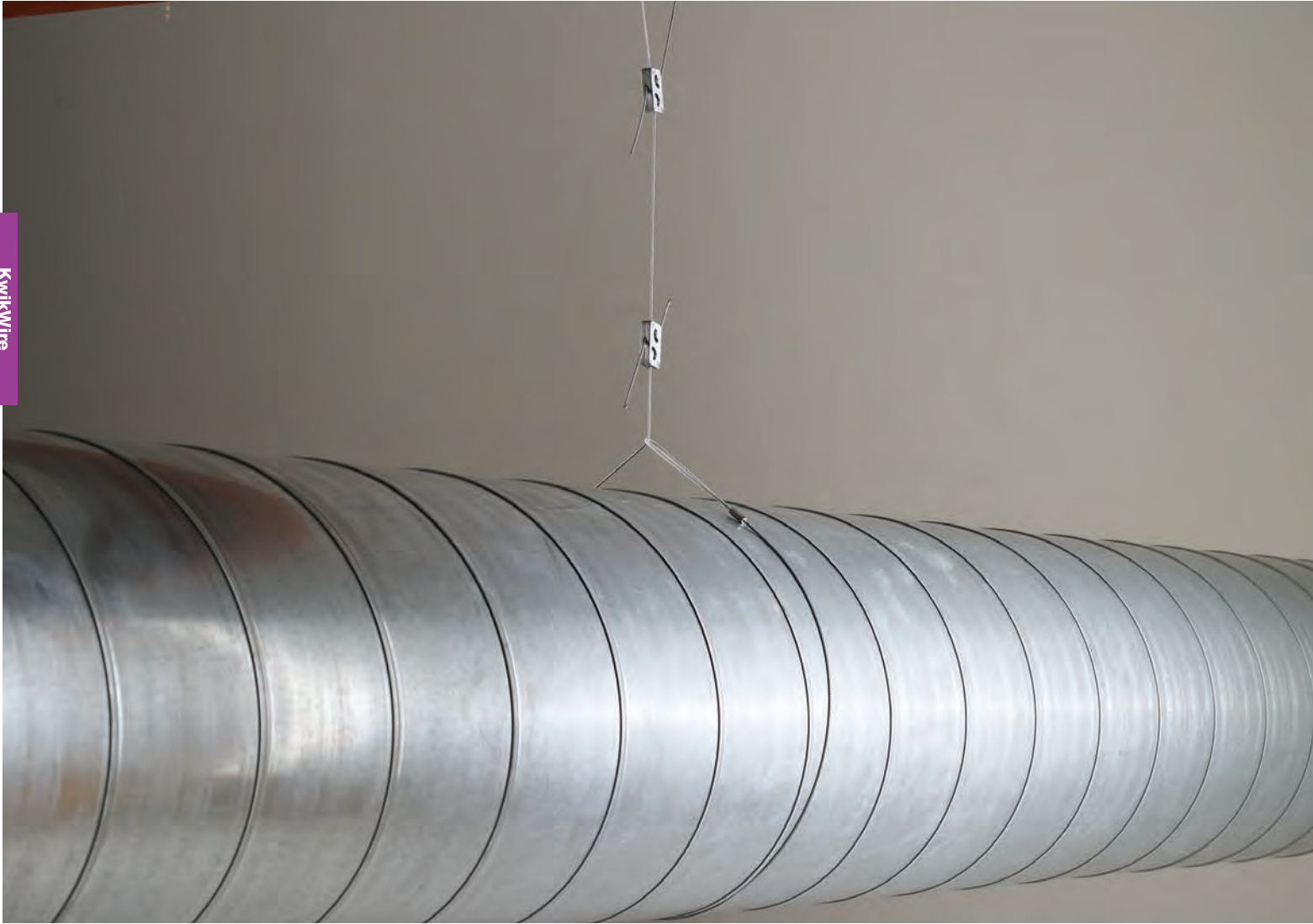
DURA-BLOK
Rooftop Supports



Above rollers can be mounted on DB Series, DB6 Series, and DB10 Series units.



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



The new KwikWire Hanging System is a flexible replacement for jack chain and all thread rod. The KwikWire System will slash your hanging time and the clamp can be easily adjusted by hand.

Some of the key benefits of using the new KwikWire System include:

- Installs up to 50% faster - can quickly wrap around beam with no drilling required
- Simple height adjustments are made by releasing the clamp's adjustment pin – no tools required
- Aesthetic appeal - blends in with upper structural supports
- Compatibility with many B-Line fastener, anchor and hanger products
- Ideal for sloped ceiling applications - will support loads at up to a 60° angle from vertical

Applications for the KwikWire Hanging System include light fixture supports, HVAC duct supports, sway bracing, sign/banner supports, wire basket cable tray supports, bus duct supports and air handling equipment supports.



KwikWire Clamps

Part No.	For Use With Wire Rope Diameters	Box Qty.
BKC100	1/16" (1.6mm) & 3/32" (2.3mm)	100
BKC200	1/8" (3.2mm) & 3/16" (4.8mm)	50

See table below for KwikWire Clamp Working Loads

KwikWire Clamp Working Loads*

Clamp Part No.	Wire Rope Dia.	Lbs. Safety Factor 5
BKC100	1/16"	0-75
BKC100	3/32"	25-150
BKC200	1/8"	25-250
BKC200	3/16"	50-640

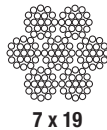
* Working loads shown are for hanging vertically. For suspending at 15°, 30°, 45° or 60° angles from vertical, use the following percentage of the working loads from the chart:

15° = 96%
30° = 86%
45° = 70%
60° = 50%

KwikWire



7 x 19



KwikWire Wire Rope (Uncoated Galvanized Wire)

Part No.	Rope Dia. in. (mm)	Working Load Lbs. (kg)	Spool
BKW063 ⁽¹⁾	1/16" (1.6)	96 (43.5)	500 ft.
BKW094 ⁽¹⁾	3/32" (2.3)	184 (83.4)	500 ft.
BKW125 ⁽¹⁾	1/8" (3.2)	340 (154.2)	500 ft.
BKW188 ⁽²⁾	3/16" (4.8)	840 (381.0)	250 ft.

(1) Wire Rope Construction Type 7 x 7
(2) Wire Rope Construction Type 7 x 19

Instructions for installing the wire rope in the clamp - No tools are required.



Pass the wire rope through the KwikWire Clamp



Loop wire rope through/around support



Pass wire rope back through KwikWire Clamp



Push wire rope through clamp leaving 2" to 3" tail, then apply tension on wire rope



To adjust, remove tension and pull wire rope slightly to disengage teeth, slide adjustment pin in direction shown by arrow to release wire rope.

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



KwikPak Wire Rope & Clamps

Part No.	For Use With Wire Rope Diameters	Box Qty.
BKP10063	BKC100 (100 pcs.) 1/16" Ø Wire Rope (500 ft.)	1
BKP10094	BKC100 (100 pcs.) 3/32" Ø Wire Rope (500 ft.)	1
BKP20125	BKC200 (50 pcs.) 1/8" Ø Wire Rope (500 ft.)	1
BKP20188	BKC200 (50 pcs.) 3/16" Ø Wire Rope (250 ft.)	1

KwikPak™ makes handling KwikWire a breeze!

- KwikPak includes KwikWire clamps and a spool of wire rope.
- KwikPak is shipped in a specially designed dispenser box to ease field cutting of wire.

KwikWire System Recommendations:

- Do not exceed the safe working load of the products
- KwikWire Clamp load ratings are guaranteed only when used in combination with B-Line supplied wire rope
- Do not use for overhead lifting or hoisting
- Do not use if cable or components are visibly distorted or worn. Remove damaged cable end prior to inserting in KwikWire Clamp
- Do not paint cable near working area of KwikWire Clamp
- Do not apply lubricant
- Keep product clean and free of dirt
- Do not use clamp on coated wire rope
- Do not use in chlorinated or caustic atmospheres
- For use in dry locations
- Cooper's BKCC tool is recommended for cutting wire rope to prevent fraying



KwikWire Cable Cutter **

Part No.	Box Qty.
BKCC	1

- Wire rope cutter for cutting all wire rope sizes

**** Danger:** Never use cutters on energized circuits, wire, or cable.



- KwikWire hanger combines the versatility of a bolt with an adjustable wire rope solution.
- Can be quickly installed in existing anchors or metal brackets with a nut.
- ARS, ARC, and ARW anchors are ideal for use with KwikWire Hangers.
- Ideal for supporting light fixtures, wire basket cable tray, HVAC ducts, and sign/banner supports.
- Allows for tool-less adjustment of wire rope.

KwikWire Hanger

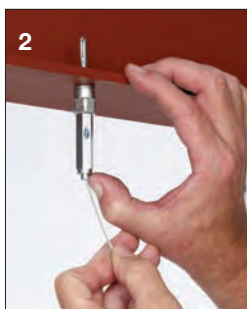
Part No.	Thread Size	Wire Rope Dia. in. (mm)	Loading* SF5 Lbs. (kg)	
BKF100-4	1/4"-20	1/16"	45	(20.4)
		3/32"	90	(40.8)
BKF100-6	3/8"-16	1/16"	45	(20.4)
		3/32"	90	(40.8)

KwikWire

KwikWire Hanger installation



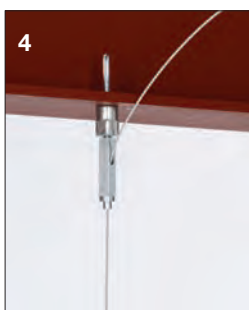
1
Screw KwikWire Hanger into installed hanger support (ARS anchor pictured)



2
Push cable wire up through the bottom of KwikWire Hanger



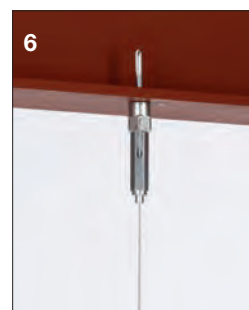
3
Continue pushing through until 1/4" minimum is extending out the side of the KwikWire Hanger



4
To adjust up – pull or push more cable wire through KwikWire Hanger



5
To adjust down – push up on bottom of KwikWire Hanger and allow cable wire to feed down



6
When hanging the cable wire is complete, cut off any excess cable wire if desired

KwikWire™ Accessories

KwikWire Accessory Features

- Reduces on the job installation time
- Can be installed quickly without drilling into existing structure
- Increases versatility in the field
- KwikWire accessory system reduces inventory and shipping costs
- No more sawing, filing, or fixing nuts
- Designed for use with cable tray, lighting, and HVAC
- Eliminates the need for all threaded rod
- Cost effective solution for jack chain
- “Y” style accessories require 50% less drilling



KwikWire Accessory Numbering System

Product Line	Assembly Configuration	Leg Termination	Leg Length	Wire Rope Diameter	Straight Length	Assembly or Kit
BK = KwikWire	Blank = Single Leg Y = 2 Legs 3 = 3 Legs	A = Angle Bracket w/Pin H = Hook L = Loop T = Toggle W = Fuse Cut B25 = Bolt w/ 1/4"-20 Thread B38 = Bolt w/ 3/8"-16 Thread BM6 = Bolt w/ M6 Thread BM8 = Bolt w/ M8 Thread BM10 = Bolt w/ M10 Thread	Blank = See Straight Length 18 = 18" Leg 30 = 30" Leg	063 = 1/16" 094 = 3/32"	Blank = Loop w/ Plastic Tube 18 = 18" 30 = 30" 40 = 40" 80 = 80" 120 = 120" 180 = 180" 240 = 240" 360 = 360"	Blank = Assembly Only K = Kit (Assembly & BKC100 Clamp)

Examples

BKYT18-094-120K

BK **Y** **T** **18** - **094** - **120** **K**

Cooper B-Line KwikWire Accessory

2 legs - toggle leg termination - 18" legs - 3/32" diameter wire - 120" straight length - kit with clamp

BKL-063-120K

BK **L** - **063** - **120** **K**

Cooper B-Line KwikWire Accessory

single leg - looped leg termination - 1/16" diameter wire - 120" straight length - kit with clamp

Custom assemblies are available as shown by the red dot ● on pages 290 - 293.
Lead time on custom assemblies is 2 to 3 weeks depending on quantities.

KwikWire Loop Termination

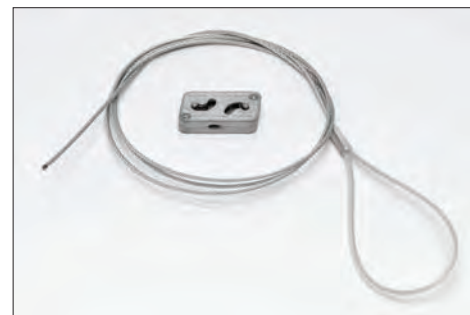
Part No.	Wire Rope Dia.		Length	
	in.	(mm)	in.	(mm)
● BKL-063-40	1/16"	(1.6)	40"	(1016)
● BKL-063-80	1/16"	(1.6)	80"	(2032)
● BKL-063-120	1/16"	(1.6)	120"	(3048)
● BKL-063-180	1/16"	(1.6)	180"	(4572)
● BKL-063-240	1/16"	(1.6)	240"	(6096)
● BKL-063-360	1/16"	(1.6)	360"	(9144)
● BKL-094-40	3/32"	(2.3)	40"	(1016)
● BKL-094-80	3/32"	(2.3)	80"	(2032)
● BKL-094-120	3/32"	(2.3)	120"	(3048)
● BKL-094-180	3/32"	(2.3)	180"	(4572)
● BKL-094-240	3/32"	(2.3)	240"	(6096)
● BKL-094-360	3/32"	(2.3)	360"	(9144)



Box Quantity - 20
5 bags containing 4 pieces per bag

KwikWire Loop Termination Kits

Part No.	Wire Rope Dia.		Length	
	in.	(mm)	in.	(mm)
● BKL-063-40K	1/16"	(1.6)	40"	(1016)
● BKL-063-80K	1/16"	(1.6)	80"	(2032)
● BKL-063-120K	1/16"	(1.6)	120"	(3048)
● BKL-063-180K	1/16"	(1.6)	180"	(4572)
● BKL-063-240K	1/16"	(1.6)	240"	(6096)
● BKL-063-360K	1/16"	(1.6)	360"	(9144)
● BKL-094-40K	3/32"	(2.3)	40"	(1016)
● BKL-094-80K	3/32"	(2.3)	80"	(2032)
● BKL-094-120K	3/32"	(2.3)	120"	(3048)
● BKL-094-180K	3/32"	(2.3)	180"	(4572)
● BKL-094-240K	3/32"	(2.3)	240"	(6096)
● BKL-094-360K	3/32"	(2.3)	360"	(9144)



Box Quantity - 20
5 bags containing 4 pieces per bag

- Available as a wire rope with loop termination only or as a ready-to-use kit with a BKC100 clamp.
- Available in lengths of 40", 80", 120", 180", 240", and 360".

● = Stock item, lead time 2 - 3 working days ● = Non-stock item, lead time 10 - 15 working days

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

KwikWire Single Style Hook Termination



Part No.	Wire Rope Dia.		Length	
	in.	(mm)	in.	(mm)
● BKH-094-40	3/32"	(2.3)	40"	(1016)
● BKH-094-80	3/32"	(2.3)	80"	(2032)
● BKH-094-120	3/32"	(2.3)	120"	(3048)
● BKH-094-180	3/32"	(2.3)	180"	(4572)
● BKH-094-240	3/32"	(2.3)	240"	(6096)
● BKH-094-360	3/32"	(2.3)	360"	(9144)

Box Quantity - 20

5 bags containing 4 pieces per bag

KwikWire Single Style Hook Termination Kits



Part No.	Wire Rope Dia.		Length	
	in.	(mm)	in.	(mm)
● BKH-094-40K	3/32"	(2.3)	40"	(1016)
● BKH-094-80K	3/32"	(2.3)	80"	(2032)
● BKH-094-120K	3/32"	(2.3)	120"	(3048)
● BKH-094-180K	3/32"	(2.3)	180"	(4572)
● BKH-094-240K	3/32"	(2.3)	240"	(6096)
● BKH-094-360K	3/32"	(2.3)	360"	(9144)

Box Quantity - 20

5 bags containing 4 pieces per bag

KwikWire 'Y' Style Hook Termination With Loop



Part No.	Wire Rope Dia.		Length	
	in.	(mm)	in.	(mm)
● BKYH18-094	3/32"	(2.3)	18"	(457)
● BKYH30-094	3/32"	(2.3)	30"	(762)

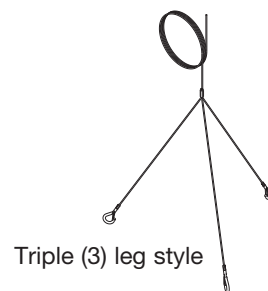
Box Quantity - 10

5 bags containing 2 pieces per bag

- Hook designed to accept up to 3/8" diameter wire.
- Available as a wire rope with hook termination only or as a ready-to-use kit with a BKC100 clamp.
- Available in lengths of 40", 80", 120", 180", 240", and 360".
- Available in single, double (Y), and triple (3) leg styles

● = Stock item, lead time 2 - 3 working days

● = Non-stock item, lead time 10 - 15 working days



KwikWire 'Y' Style Hook Termination

Part No.	Leg Length		Wire Rope Dia.		Length	
	in.	(mm)	in.	(mm)	in.	(mm)
● BKYH18-094-40	18"	(457)	3/32"	(2.3)	40"	(1016)
● BKYH18-094-80	18"	(457)	3/32"	(2.3)	80"	(2032)
● BKYH18-094-120	18"	(457)	3/32"	(2.3)	120"	(3048)
● BKYH18-094-180	18"	(457)	3/32"	(2.3)	180"	(4572)
● BKYH18-094-240	18"	(457)	3/32"	(2.3)	240"	(6096)
● BKYH18-094-360	18"	(457)	3/32"	(2.3)	360"	(9144)
● BKYH30-094-40	30"	(762)	3/32"	(2.3)	40"	(1016)
● BKYH30-094-80	30"	(762)	3/32"	(2.3)	80"	(2032)
● BKYH30-094-120	30"	(762)	3/32"	(2.3)	120"	(3048)
● BKYH30-094-180	30"	(762)	3/32"	(2.3)	180"	(4572)
● BKYH30-094-240	30"	(762)	3/32"	(2.3)	240"	(6096)
● BKYH30-094-360	30"	(762)	3/32"	(2.3)	360"	(9144)



Box Quantity - 10

5 bags containing 2 pieces per bag

KwikWire 'Y' Style Hook Termination Kits

Part No.	Leg Length		Wire Rope Dia.		Length	
	in.	(mm)	in.	(mm)	in.	(mm)
● BKYH18-094-40K	18"	(457)	3/32"	(2.3)	40"	(1016)
● BKYH18-094-80K	18"	(457)	3/32"	(2.3)	80"	(2032)
● BKYH18-094-120K	18"	(457)	3/32"	(2.3)	120"	(3048)
● BKYH18-094-180K	18"	(457)	3/32"	(2.3)	180"	(4572)
● BKYH18-094-240K	18"	(457)	3/32"	(2.3)	240"	(6096)
● BKYH18-094-360K	18"	(457)	3/32"	(2.3)	360"	(9144)
● BKYH30-094-40K	30"	(762)	3/32"	(2.3)	40"	(1016)
● BKYH30-094-80K	30"	(762)	3/32"	(2.3)	80"	(2032)
● BKYH30-094-120K	30"	(762)	3/32"	(2.3)	120"	(3048)
● BKYH30-094-180K	30"	(762)	3/32"	(2.3)	180"	(4572)
● BKYH30-094-240K	30"	(762)	3/32"	(2.3)	240"	(6096)
● BKYH30-094-360K	30"	(762)	3/32"	(2.3)	360"	(9144)



Box Quantity - 10

5 bags containing 2 pieces per bag

- Hook designed to accept up to 3/8" diameter wire.
- Available as a wire rope with loop termination only or as a ready-to-use kit with a BKC100 clamp.
- Available in lengths of 40", 80", 120", 180", 240", and 360".

● = Stock item, lead time 2 - 3 working days

● = Non-stock item, lead time 10 - 15 working days

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

KwikWire Angle Bracket Termination



Box Quantity - 20

5 bags containing 4 pieces per bag

Part No.	Wire Rope Dia.		Length	
	in.	(mm)	in.	(mm)
● BKA-063-40	1/16"	(1.6)	40"	(1016)
● BKA-063-80	1/16"	(1.6)	80"	(2032)
● BKA-063-120	1/16"	(1.6)	120"	(3048)
● BKA-063-180	1/16"	(1.6)	180"	(4572)
● BKA-063-240	1/16"	(1.6)	240"	(6096)
● BKA-063-360	1/16"	(1.6)	360"	(9144)

KwikWire Angle Bracket Termination Kits



Box Quantity - 20

5 bags containing 4 pieces per bag

Part No.	Wire Rope Dia.		Length	
	in.	(mm)	in.	(mm)
● BKA-063-40K	1/16"	(1.6)	40"	(1016)
● BKA-063-80K	1/16"	(1.6)	80"	(2032)
● BKA-063-120K	1/16"	(1.6)	120"	(3048)
● BKA-063-180K	1/16"	(1.6)	180"	(4572)
● BKA-063-240K	1/16"	(1.6)	240"	(6096)
● BKA-063-360K	1/16"	(1.6)	360"	(9144)

- Available as a wire rope with angle bracket termination only or as a ready-to-use kit with a BKC100 clamp.
- Available in lengths of 40", 80", 120", 180", 240", and 360".

● = Stock item, lead time 2 - 3 working days

● = Non-stock item, lead time 10 - 15 working days

Reference Data - Metric Conversion Chart

To Convert From	To	Multiply By	To Convert From	To	Multiply By
Angle			Length		
degree	radian (rad)	1.745329×10^{-2}	foot (ft)	meter (m)	3.048000×10^{-1}
radian (rad)	degree	$5.729578 \times 10^{+1}$	inch (in)	meter (m)	2.540000×10^{-2}
Area			mil	meter (m)	2.540000×10^{-5}
foot ²	square meter (m ²)	9.290304×10^{-2}	inch (in)	micrometer (μm)	$2.540000 \times 10^{+4}$
inch ²	square meter (m ²)	6.451600×10^{-4}	meter (m)	foot (ft)	3.280840
circular mil	square meter (m ²)	5.067075×10^{-10}	meter (m)	inch (in)	$3.937008 \times 10^{+1}$
sq. centimeter (cm ²)	square inch (in ²)	1.550003×10^{-1}	meter (m)	mil	$3.937008 \times 10^{+4}$
square meter (m ²)	foot ²	$1.076391 \times 10^{+1}$	micrometer (μm)	inch (in)	3.937008×10^{-5}
square meter (m ²)	inch ²	$1.550003 \times 10^{+3}$	Volume		
square meter (m ²)	circular mil	$1.973525 \times 10^{+9}$	foot ³	cubic meter (m ³)	2.831685×10^{-2}
Temperature			inch ³	cubic meter (m ³)	1.638706×10^{-5}
degree Fahrenheit	degree Celsius	$t^{\circ}\text{C} = (t^{\circ}\text{F} - 32) / 1.8$	cubic centimeter (cm ³)	cubic inch (in ³)	6.102374×10^{-2}
degree Celsius	degree Fahrenheit	$t^{\circ}\text{F} = 1.8 t^{\circ}\text{C} + 32$	cubic meter (m ³)	foot ³	$3.531466 \times 10^{+1}$
Force			cubic meter (m ³)	inch ³	$6.102376 \times 10^{+4}$
pounds-force (lbf)	newtons (N)	4.448222	gallon (U.S. liquid)	cubic meter (m ³)	3.785412×10^{-3}
Section Properties			section modulus S (m ³)	S (in ³)	$6.102374 \times 10^{+4}$
section modulus S (in ³)	S (m ³)	1.638706×10^{-5}	moment of inertia I (m ⁴)	I (in ⁴)	$2.402510 \times 10^{+6}$
moment of inertia I (in ⁴)	I (m ⁴)	4.162314×10^{-7}	modulus of elasticity E (Pa)	E (psi)	1.450377×10^{-4}
modulus of elasticity E (psi)	E (Pa)	$6.894757 \times 10^{+3}$			

To Convert From	To	Multiply By	Abbreviations	
Bending Moment or Torque			AISC	= American Institute of Steel Construction
lbf•ft	newton meter (N•m)	1.355818	AISI	= American Iron & Steel Institute
lbf•in	newton meter (N•m)	1.129848×10^{-1}	ANSI	= American National Standards Institute
N•m	lbf•ft	7.375621×10^{-1}	ASTM	= American Society for Testing & Materials
N•m	lbf•in	8.850748	AWWA	= American Water Works Association
Mass			Dia.	= Diameter
ounce (avoirdupois)	kilogram (kg)	2.834952×10^{-2}	Ft.	= Feet
pound (avoirdupois)	kilogram (kg)	4.535924×10^{-1}	Ga.	= Gauge
ton (short, 2000 lb)	kilogram (kg)	$9.071847 \times 10^{+2}$	I.D.	= Inside Diameter
ton (long, 2240 lb)	kilogram (kg)	$1.016047 \times 10^{+3}$	In.	= Inch
kilogram (kg)	ounce (avoirdupois)	$3.527396 \times 10^{+1}$	Lbs.	= Pounds
kilogram (kg)	pound (avoirdupois)	2.204622	Max.	= Maximum
kilogram (kg)	ton (short 2000 lb)	1.102311×10^{-3}	Min.	= Minimum
kilogram (kg)	ton (long 2240 lb)	9.842064×10^{-4}	MSS	= Manufacturers Standardization Society
Mass Per Unit Length			NFPA	= National Fire Protection Association
lb/ft	kilogram per meter (kg/m)	1.488164	O.D.	= Outside Diameter
lb/in	kilogram per meter (kg/m)	$1.785797 \times 10^{+1}$	Oz.	= Ounces
kg/m	lb/ft	6.719689×10^{-1}	Pre-Galv.	= Pre-galvanized
kg/m	lb/in	5.599741×10^{-2}	psi	= Pounds Per Square Inch
Mass Per Unit Volume			PVC	= Polyvinyl Chloride
lb/ft ³	kilogram per cubic meter (kg/m ³)	$1.601846 \times 10^{+1}$	UL	= Underwriters' Laboratories, Inc.
lb/in ³	kilogram per cubic meter (kg/m ³)	$2.767990 \times 10^{+4}$	UNC	= Unified Coarse Threads
kg/m ³	lb/ft ³	6.242797×10^{-2}	UNCR	= Unified Coarse Threads (Rounded Root)
kg/m ³	lb/in ³	3.612730×10^{-5}	Wt./C	= Weight per 100
lbs/ft ³	lbs/in ³	$1.728000 \times 10^{+3}$	Metric Symbols	
Mass Per Area Unit			cm	= centimeter
lb/ft ²	kilogram per square meter (kg/m ²)	4.882428	kg	= kilogram
kg/m ²	pound per square foot (lb/ft ²)	2.048161×10^{-1}	kN	= kilonewton
Pressure or Stress			m	= meter
lbf/in ² (psi)	pascal (Pa)	$6.894757 \times 10^{+3}$	μm	= micrometer
kip/in ² (ksi)	pascal (Pa)	$6.894757 \times 10^{+6}$	mm	= millimeter
lbf/in ² (psi)	megapascals (MPa)	6.894757×10^{-3}	MPa	= megapascal
pascal (Pa)	pound force per sq. inch (psi)	1.450377×10^{-4}	N	= newton
pascal (Pa)	kip per sq. inch (ksi)	1.450377×10^{-7}	Nm	= newton-meter
megapascals (MPa)	lbf/in ² (psi)	$1.450377 \times 10^{+2}$	Pa	= pascal

Decimals of a Foot

Inch	0"	1"	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"
0	.0000	.0833	.1667	.2500	.3330	.4167	.5000	.5833	.6667	.7500	.8333	.9167
1/16	.0052	.0085	.1719	.2552	.3385	.4219	.5052	.5885	.6719	.7552	.8385	.9219
1/8	.0104	.0938	.1771	.2604	.3438	.4271	.5104	.5938	.6771	.7604	.8438	.9271
3/16	.0156	.0990	.1823	.2656	.3490	.4323	.5156	.5990	.6823	.7656	.8490	.9323
1/4	.0208	.1042	.1875	.2708	.3542	.4375	.5208	.6042	.6875	.7708	.8542	.9375
5/16	.0260	.1094	.1927	.2760	.3594	.4427	.5260	.6094	.6927	.7760	.8594	.9427
3/8	.0313	.1146	.1979	.2812	.3646	.4479	.5313	.6146	.6979	.7813	.8646	.9479
7/16	.0365	.1198	.2031	.2891	.3724	.4557	.5391	.6224	.7057	.7891	.8724	.9557
1/2	.0417	.1250	.2083	.2917	.3750	.4583	.5417	.6250	.7083	.7917	.8750	.9583
9/16	.0469	.1302	.2135	.2969	.3802	.4635	.5469	.6302	.7135	.7969	.8802	.9635
5/8	.0521	.1354	.2188	.3021	.3854	.4688	.5521	.6354	.7188	.8021	.8854	.9688
11/16	.0573	.1406	.2240	.3073	.3906	.4740	.5573	.6406	.7240	.8073	.8906	.9740
3/4	.0625	.1458	.2292	.3125	.3958	.4792	.5625	.6458	.7292	.8125	.8958	.9792
13/16	.0677	.1510	.2344	.3177	.4010	.4844	.5677	.6510	.7344	.8177	.9010	.9844
7/8	.0729	.1563	.2396	.3229	.4063	.4896	.5729	.6563	.7396	.8229	.9063	.9896
15/16	.0781	.1615	.2448	.3281	.4118	.4948	.5781	.6615	.7448	.8221	.9115	.9948

Decimals of a Foot

Fraction	Decimal	Fraction	Decimal
1/32	.0312	17/32	.5312
1/16	.0625	9/16	.5625
3/32	.0937	19/32	.5937
1/8	.1250	5/8	.6250
5/32	.1562	21/32	.6562
3/16	.1875	11/16	.6875
7/32	.2187	23/32	.7187
1/4	.2500	3/4	.7500
9/32	.2812	25/32	.7812
5/16	.3125	13/16	.8125
11/32	.3437	27/32	.8437
3/8	.3750	7/8	.8750
13/32	.4062	29/32	.9062
7/16	.4375	15/16	.9375
15/32	.4687	31/32	.9687
1/2	.500		

Reference Data

Schedule 40 Steel Pipe Data

Nominal Pipe Size		Pipe O.D.		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water		Maximum Span*		Recommended Hanger Rod Sizes
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m	Ft.	Meter	
3/8"	(10)	.675	(17.1)	.091	(2.3)	.6	(.9)	.7	(1.0)	7	(2.13)	3/8"-16
1/2"	(15)	.840	(21.3)	.109	(2.7)	.8	(1.2)	.9	(1.3)	7	(2.13)	3/8"-16
3/4"	(20)	1.050	(26.7)	.113	(2.9)	1.1	(1.7)	1.3	(2.0)	7	(2.13)	3/8"-16
1"	(25)	1.315	(33.4)	.133	(3.4)	1.7	(2.5)	2.1	(3.0)	7	(2.13)	3/8"-16
1 1/4"	(32)	1.660	(42.1)	.140	(3.5)	2.3	(3.4)	2.9	(4.3)	7	(2.13)	3/8"-16
1 1/2"	(40)	1.900	(48.2)	.145	(3.7)	2.7	(4.0)	3.6	(5.3)	9	(2.74)	3/8"-16
2"	(50)	2.375	(60.3)	.154	(3.9)	3.6	(5.4)	5.0	(7.5)	10	(3.05)	3/8"-16
2 1/2"	(65)	2.875	(73.0)	.203	(5.1)	5.8	(8.6)	7.9	(11.7)	11	(3.35)	1/2"-13
3"	(80)	3.500	(88.9)	.216	(5.5)	7.6	(11.2)	10.8	(15.9)	12	(3.66)	1/2"-13
3 1/2"	(90)	4.000	(101.6)	.226	(5.7)	9.1	(13.5)	13.4	(19.8)	13	(3.96)	1/2"-13
4"	(100)	4.500	(114.3)	.237	(6.0)	10.8	(16.0)	16.3	(24.2)	14	(4.27)	5/8"-11
5"	(125)	5.563	(141.3)	.258	(6.5)	14.6	(21.7)	23.2	(34.6)	16	(4.87)	5/8"-11
6"	(150)	6.625	(168.3)	.280	(7.1)	19.0	(28.2)	31.5	(46.8)	17	(5.18)	3/4"-10
8"	(200)	8.625	(219.1)	.322	(8.2)	28.5	(42.5)	50.1	(74.6)	19	(5.79)	3/4"-10
10"	(250)	10.750	(273.0)	.365	(9.3)	40.5	(60.2)	74.6	(110.9)	22	(6.69)	7/8"-9
12"	(300)	12.750	(323.8)	.406	(10.3)	51.1	(75.9)	102.1	(151.9)	23	(7.01)	7/8"-9
14"	(350)	14.000	(355.6)	.437	(11.1)	63.0	(93.7)	121.5	(180.7)	25	(7.62)	1"-8
16"	(400)	16.000	(406.4)	.500	(12.7)	83.0	(123.5)	159.5	(237.3)	27	(8.23)	1"-8
18"	(450)	18.000	(457.2)	.563	(14.3)	105.0	(156.2)	202.2	(300.8)	28	(8.53)	1"-8
20"	(500)	20.000	(508.0)	.593	(15.1)	123.0	(183.0)	243.4	(361.8)	30	(9.14)	1 1/4"-7
24"	(600)	24.000	(609.6)	.687	(17.4)	171.0	(254.5)	345.2	(513.7)	32	(9.75)	1 1/4"-7

Reference Data

Schedule 80 Steel Pipe Data

Nominal Pipe Size		Pipe O.D.		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water		Maximum Span*		Recommended Hanger Rod Sizes
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m	Ft.	Meter	
3/8"	(10)	.675	(17.1)	.126	(3.2)	.7	(1.1)	.8	(1.2)	7	(2.13)	3/8"-16
1/2"	(15)	.840	(21.3)	.147	(3.7)	1.1	(1.6)	1.2	(1.7)	7	(2.13)	3/8"-16
3/4"	(20)	1.050	(26.7)	.154	(3.9)	1.5	(2.2)	1.7	(2.5)	7	(2.13)	3/8"-16
1"	(25)	1.315	(33.4)	.179	(4.5)	2.2	(3.2)	2.5	(3.6)	7	(2.13)	3/8"-16
1 1/4"	(32)	1.660	(42.1)	.191	(4.8)	3.0	(4.4)	3.5	(5.2)	7	(2.13)	3/8"-16
1 1/2"	(40)	1.900	(48.2)	.200	(5.1)	3.6	(5.4)	4.3	(6.5)	9	(2.74)	3/8"-16
2"	(50)	2.375	(60.3)	.218	(5.5)	5.0	(7.5)	6.3	(9.4)	10	(3.05)	3/8"-16
2 1/2"	(65)	2.875	(73.0)	.276	(7.0)	7.6	(11.4)	9.4	(14.1)	11	(3.35)	1/2"-13
3"	(80)	3.500	(88.9)	.300	(7.6)	10.2	(15.2)	13.0	(19.4)	12	(3.66)	1/2"-13
3 1/2"	(90)	4.000	(101.6)	.318	(8.1)	12.5	(18.6)	16.3	(24.3)	13	(3.96)	1/2"-13
4"	(100)	4.500	(114.3)	.337	(8.5)	15.0	(22.3)	20.0	(29.7)	14	(4.27)	5/8"-11
5"	(125)	5.563	(141.3)	.375	(9.5)	20.8	(30.9)	28.7	(42.6)	16	(4.87)	5/8"-11
6"	(150)	6.625	(168.3)	.432	(11.0)	28.6	(42.5)	39.9	(59.3)	17	(5.18)	3/4"-10
8"	(200)	8.625	(219.1)	.500	(12.7)	43.4	(64.5)	63.1	(93.9)	19	(5.79)	3/4"-10
10"	(250)	10.750	(273.0)	.593	(15.0)	64.4	(95.8)	95.5	(142.1)	22	(6.69)	7/8"-9
12"	(300)	12.750	(323.8)	.687	(17.4)	88.6	(131.8)	132.6	(197.3)	23	(7.01)	7/8"-9
14"	(350)	14.000	(355.6)	.750	(19.0)	107.0	(159.2)	158.2	(235.4)	25	(7.62)	1"-8
16"	(400)	16.000	(406.4)	.843	(21.4)	137.0	(203.9)	206.7	(306.6)	27	(8.23)	1"-8
18"	(450)	18.000	(457.2)	.937	(23.8)	171.0	(254.5)	259.5	(386.2)	28	(8.53)	1"-8
20"	(500)	20.000	(508.0)	1.031	(26.2)	209.0	(311.0)	318.4	(473.8)	30	(9.14)	1 1/4"-7
24"	(600)	24.000	(609.6)	1.218	(30.9)	297.0	(442.0)	455.2	(677.4)	32	(9.75)	1 1/4"-7

Based on ASTM A53-86.

1 cubic ft. of water weighs 62.41 lbs.

1 gallon (U.S.) weighs 8.335 lbs.

1 cubic meter of water weighs 999.97 kg.

1 liter weighs .999 kg.

Based on MSS SP-69 Table 3 & 4.

*Many codes require pipe hangers to be spaced every 10' (3.048 meters) regardless of size. Check local codes.

Spacing and capacities are based on water filled pipe. Closer hanger spacing may be required where additional valves and fittings increase the load.

AWWA Ductile Iron Pipe Data

Nominal Pipe Size		Class	O.D. of Ductile Iron Pipe		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water	
In.	mm		In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
3"	(80)	53	3.96	(100.6)	.31	(7.9)	11.2	(16.6)	15.0	(22.2)
4"	(100)	53	4.80	(121.9)	.32	(8.1)	14.2	(21.1)	20.1	(29.9)
6"	(150)	53	6.90	(175.2)	.34	(8.6)	22.0	(32.7)	35.1	(52.2)
8"	(200)	53	9.05	(229.9)	.36	(9.1)	31.0	(46.1)	54.0	(80.3)
10"	(250)	53	11.10	(281.9)	.38	(9.6)	40.4	(60.1)	76.8	(114.2)
12"	(300)	53	13.20	(335.3)	.40	(10.1)	50.7	(75.4)	103.0	(153.2)
14"	(350)	53	15.30	(388.6)	.42	(10.6)	62.4	(92.8)	133.5	(198.6)
16"	(400)	53	17.40	(441.9)	.43	(10.9)	72.8	(108.3)	165.9	(246.8)
18"	(450)	53	19.50	(495.3)	.44	(11.1)	83.6	(124.4)	201.5	(299.8)
20"	(500)	53	21.60	(548.6)	.45	(11.4)	95.2	(141.7)	241.0	(358.7)
24"	(600)	53	25.80	(655.3)	.47	(11.9)	119.2	(177.4)	329.4	(490.2)
30"	(750)	53	32.00	(812.8)	.51	(12.9)	161.3	(240.0)	487.8	(597.1)
36"	(900)	53	38.30	(972.8)	.58	(14.7)	219.5	(326.6)	688.8	(1025.0)
42"	(1050)	53	44.50	(1130.3)	.65	(16.5)	285.2	(424.4)	920.1	(1369.2)
48"	(1200)	53	50.80	(1290.3)	.72	(18.3)	360.3	(536.2)	1189.2	(1769.7)
54"	(1350)	53	57.10	(1450.3)	.81	(20.6)	455.0	(677.1)	1502.2	(2135.5)

Based on AWWA C108-70, Table 8.2.
Add flange weight for flanged cast iron pipe.

Ductile Iron Pipe Size

Ductile Iron Pipe Size		B3110	B3114	B3120	B3122	B3122A	B3124	B3126	B3117SL
In.	mm								
3"	(80)	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	2 to 3 1/2	2 to 3 1/2	2 to 3 1/2
4"	(100)	4	4	4	4	4	4 to 6	4 to 6	4 to 6
6"	(150)	6	6	6	6	6			
8"	(200)	10	8	8	8	8	8 to 10	8 to 10	8 to 10
10"	(250)	12	10	10	10	10			
12"	(300)	12	12	12	12	12	12 to 14	12 to 14	12 to 14
14"	(350)	16	14	14	14	14			
16"	(400)	18	16	16	16	16			
18"	(450)	20	18	18	18	18	16 to 20	16 to 20	16 to 20
20"	(500)	24	20	20	20	20			
24"	(600)	30	24	24	24	24	---	---	24

Ductile Iron Pipe Size		B3118SL	B3119SL	B218	B219	B379	B479	B3114R	B3117R
In.	mm								
3"	(80)	2 to 3 1/2	2 to 3 1/2	B218	B219-1	---	---	3 1/2	2 to 3 1/2
4"	(100)	4 to 6	4 to 6	B218	B219-2	---	---	4	4 to 6
6"	(150)			B218	B219-3	B379	---	6	
8"	(200)	8 to 10	8 to 10	---	B219-4	B379	---	8	8 to 10
10"	(250)			---	B219-4	B379	---	10	
12"	(300)	12 to 14	12 to 14	---	B219-5	B379	---	12	12 to 14
14"	(350)			---	---	B379	---	14	
16"	(400)			---	---	B379	B479	16	
18"	(450)	16 to 20	16 to 20	---	---	---	B479	18	16 to 20
20"	(500)			---	---	---	B479	20	
24"	(600)	24	24	---	---	---	B479	24	24

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

Reference Data

Service Weight Cast Iron Soil Pipe Data (Bell and Spigot Type)

Nominal Pipe Size		O.D. of Cast Iron Pipe		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water	
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
2"	(50)	2.25	(57.1)	.17	(4.3)	4.0	(5.9)	5.5	(8.1)
3"	(80)	3.25	(82.5)	.17	(4.3)	6.0	(8.9)	9.4	(13.9)
4"	(100)	4.25	(107.9)	.18	(4.6)	8.0	(11.9)	14.2	(21.1)
5"	(125)	5.25	(133.3)	.18	(4.6)	10.4	(15.5)	22.7	(33.8)
6"	(150)	6.25	(158.7)	.18	(4.6)	13.0	(19.3)	26.9	(40.0)
8"	(200)	8.38	(212.8)	.23	(5.8)	20.0	(29.7)	45.7	(67.9)
10"	(250)	10.50	(266.7)	.28	(7.1)	29.0	(43.1)	69.6	(103.5)
12"	(300)	12.50	(317.5)	.28	(7.1)	38.0	(56.5)	96.2	(143.1)
15"	(380)	15.62	(396.7)	.31	(7.9)	51.0	(75.9)	147.6	(219.6)

Based on ASTM A74 - Table 2.

Extra Weight Cast Iron Soil Pipe Data (Bell and Spigot Type)

Nominal Pipe Size		O.D. of Cast Iron Pipe		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water	
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
2"	(50)	2.38	(60.4)	.190	(4.8)	5.0	(7.2)	6.6	(9.5)
3"	(80)	3.50	(88.9)	.250	(6.3)	9.0	(13.0)	12.7	(18.3)
4"	(100)	4.50	(114.3)	.250	(6.3)	12.0	(17.4)	18.5	(26.8)
5"	(125)	5.50	(139.7)	.250	(6.3)	15.0	(21.7)	25.2	(36.5)
6"	(150)	6.50	(165.1)	.250	(6.3)	19.0	(27.5)	33.7	(48.8)
8"	(200)	8.62	(218.9)	.310	(7.9)	30.0	(43.4)	56.1	(81.2)
10"	(250)	10.75	(273.0)	.375	(9.5)	43.0	(62.3)	83.8	(121.4)
12"	(300)	12.75	(323.8)	.375	(9.5)	54.0	(78.2)	112.8	(163.3)
15"	(380)	15.88	(403.3)	.440	(11.2)	75.0	(108.6)	166.8	(241.5)

Based on ASTM A74 - Table 1.

No-Hub Cast Iron Soil Pipe Data

Nominal Pipe Size		O.D. of Cast Iron Pipe		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water	
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
1 1/2"	(40)	1.90	(48.2)	.16	(4.0)	2.7	(4.0)	6.2	(9.2)
2"	(50)	2.35	(59.7)	.16	(4.0)	3.6	(5.3)	8.6	(12.5)
3"	(80)	3.35	(85.1)	.16	(4.0)	5.2	(7.7)	13.5	(20.0)
4"	(100)	4.38	(111.2)	.19	(4.8)	7.4	(11.0)	20.2	(30.0)
5"	(125)	5.30	(134.6)	.19	(4.8)	9.6	(14.3)	27.5	(41.0)
6"	(150)	6.30	(160.0)	.19	(4.8)	11.0	(16.3)	34.0	(50.5)
8"	(200)	8.38	(212.8)	.23	(5.8)	18.0	(26.8)	57.5	(85.6)

Based on Cast Iron Soil Pipe Institute Standards 301-72, Table 1.

Copper Tubing (Type L) Data

Nominal Tubing Size		O.D. Size		Wall Thickness		Weight of Tubing		Weight of Pipe Filled With Water	
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
1/4"	(6)	.375	(9.5)	.030	(.7)	.12	(.17)	.15	(.21)
3/8"	(10)	.500	(12.7)	.035	(.9)	.20	(.30)	.26	(.39)
1/2"	(15)	.625	(15.9)	.040	(1.0)	.28	(.41)	.38	(.56)
5/8"	(17)	.750	(19.0)	.042	(1.0)	.36	(.53)	.51	(.75)
3/4"	(20)	.875	(22.2)	.045	(1.1)	.45	(.67)	.66	(.98)
1"	(25)	1.125	(28.6)	.050	(1.3)	.65	(.97)	1.01	(1.50)
1 1/4"	(32)	1.375	(34.9)	.055	(1.4)	.88	(1.31)	1.42	(2.11)
1 1/2"	(40)	1.625	(41.3)	.060	(1.5)	1.14	(1.69)	1.91	(2.83)
2"	(50)	2.125	(54.0)	.070	(1.8)	1.75	(2.60)	3.09	(4.59)
2 1/2"	(65)	2.625	(66.7)	.080	(2.0)	2.48	(3.69)	4.54	(6.75)
3"	(80)	3.125	(79.4)	.090	(2.3)	3.33	(4.95)	6.28	(9.34)
3 1/2"	(90)	3.625	(92.1)	.100	(2.5)	4.29	(6.38)	8.28	(12.32)
4"	(100)	4.125	(104.8)	.110	(2.8)	5.38	(8.00)	10.57	(15.72)
5"	(125)	5.125	(130.2)	.125	(3.2)	7.61	(11.32)	15.69	(23.34)
6"	(150)	6.125	(155.6)	.140	(3.5)	10.20	(15.18)	21.81	(32.46)
8"	(200)	8.125	(206.4)	.200	(5.1)	19.29	(28.70)	39.49	(58.89)

Dimensions taken from ASTM B88-83.

Copper Tubing (Type K) Data

Nominal Tubing Size		O.D. Size		Wall Thickness		Weight of Tubing		Weight of Pipe Filled With Water	
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
1/4"	(6)	.375	(9.5)	.035	(.9)	.14	(.21)	.17	(.25)
3/8"	(10)	.500	(12.7)	.049	(1.2)	.27	(.40)	.32	(.47)
1/2"	(15)	.625	(15.9)	.049	(1.2)	.34	(.50)	.43	(.63)
5/8"	(17)	.750	(19.0)	.049	(1.2)	.42	(.62)	.56	(.83)
3/4"	(20)	.875	(22.2)	.065	(1.6)	.64	(.95)	.83	(1.23)
1"	(25)	1.125	(28.6)	.065	(1.6)	.84	(1.25)	1.18	(1.75)
1 1/4"	(32)	1.375	(34.9)	.065	(1.6)	1.04	(1.55)	1.57	(2.34)
1 1/2"	(40)	1.625	(41.3)	.072	(1.8)	1.36	(2.02)	2.10	(3.12)
2"	(50)	2.125	(54.0)	.083	(2.1)	2.06	(3.06)	3.37	(5.01)
2 1/2"	(65)	2.625	(66.7)	.095	(2.4)	2.92	(4.34)	4.92	(7.31)
3"	(80)	3.125	(79.4)	.109	(2.8)	4.00	(5.95)	6.96	(10.35)
3 1/2"	(90)	3.625	(92.1)	.120	(3.0)	5.12	(7.62)	9.02	(13.42)
4"	(100)	4.125	(104.8)	.134	(3.4)	6.51	(9.69)	11.57	(17.22)
5"	(125)	5.125	(130.2)	.160	(4.0)	9.67	(14.39)	17.67	(26.29)
6"	(150)	6.125	(155.6)	.192	(4.9)	13.87	(20.60)	25.07	(37.27)
8"	(200)	8.125	(206.4)	.271	(6.9)	25.90	(38.50)	45.40	(67.52)

Dimensions taken from ASTM B88-83.

1 cubic ft. of water weighs 62.41 lbs.

1 cubic meter of water weighs 999.97 kg.

1 gallon (U.S.) weighs 8.335 lbs.

1 liter weighs .999 kg.

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

Reference Data

Recommended Hanger Spacing And Rod Size For Copper Tubing

Nominal Tubing Size		Maximum Span		Recommended Hanger Rod Size
In.	mm	Ft.	Meter	
1/2"	(15)	5	(1.52)	3/8" - 16
3/4"	(20)	5	(1.52)	3/8" - 16
1"	(25)	6	(1.83)	3/8" - 16
1 1/4"	(32)	7	(2.13)	3/8" - 16
1 1/2"	(40)	8	(2.44)	3/8" - 16
2"	(50)	8	(2.44)	3/8" - 16
2 1/2"	(65)	9	(2.74)	1/2" - 13
3"	(80)	10	(3.05)	1/2" - 13
3 1/2"	(90)	11	(3.35)	1/2" - 13
4"	(100)	12	(3.66)	1/2" - 13
5"	(125)	13	(3.96)	1/2" - 13
6"	(150)	14	(4.27)	5/8" - 11
8"	(200)	16	(4.87)	3/4" - 10

Based on MSS-SP-69, Table 3 & 4.

Glass Pipe Data Regular Schedule

Nominal Pipe Size		O.D. Size		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water	
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
1 1/2"	(40)	1.84	(46.7)	.12	(3.0)	.6	(.9)	1.5	(2.2)
2"	(50)	2.34	(59.4)	.14	(3.5)	.9	(1.4)	2.3	(3.5)
3"	(80)	3.41	(86.6)	.17	(4.3)	1.6	(2.4)	4.8	(7.1)
4"	(100)	4.53	(115.0)	.20	(5.1)	2.6	(3.8)	8.4	(12.4)
6"	(150)	6.66	(169.1)	.24	(6.1)	4.7	(7.0)	17.5	(26.0)

Consult manufacturer for support spacing requirements.

Heavy Schedule

Nominal Pipe Size		O.D. Size		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water	
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
1"	(25)	1.31	(33.3)	.16	(4.0)	.6	(.9)	.9	(1.4)
1 1/2"	(40)	1.84	(46.7)	.17	(4.3)	.8	(1.3)	1.5	(2.4)
2"	(50)	2.34	(59.4)	.17	(4.3)	1.1	(1.6)	2.4	(3.6)
3"	(80)	3.41	(86.6)	.20	(5.1)	2.0	(3.0)	5.0	(7.5)
4"	(100)	4.53	(115.0)	.26	(6.6)	3.4	(5.0)	8.8	(13.1)
6"	(150)	6.66	(169.1)	.33	(8.4)	6.3	(9.4)	18.7	(27.9)

Consult manufacturer for support spacing requirements.

1 cubic ft. of water weighs 62.41 lbs.

1 cubic meter of water weighs 999.97 kg.

1 gallon (U.S.) weighs 8.335 lbs.

1 liter weighs .999 kg.

Schedule 40 PVC Plastic Pipe Data

Nominal Pipe Size		Pipe O.D.		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water	
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
1/8"	(3)	.405	(10.3)	.068	(1.7)	.04	(.06)	.06	(.09)
1/4"	(6)	.540	(13.7)	.088	(2.2)	.07	(.11)	.11	(.17)
3/8"	(10)	.675	(17.1)	.091	(2.3)	.10	(.14)	.18	(.26)
1/2"	(15)	.840	(21.3)	.109	(2.7)	.15	(.20)	.25	(.40)
3/4"	(20)	1.050	(26.7)	.113	(2.9)	.20	(.30)	.40	(.60)
1"	(25)	1.315	(33.4)	.133	(3.4)	.30	(.40)	.70	(.90)
1 1/4"	(32)	1.660	(42.1)	.140	(3.5)	.40	(.60)	1.00	(1.50)
1 1/2"	(40)	1.900	(48.2)	.145	(3.7)	.50	(.70)	1.40	(2.00)
2"	(50)	2.375	(60.3)	.154	(3.9)	.60	(.90)	2.00	(3.00)
2 1/2"	(65)	2.875	(73.0)	.203	(5.1)	1.00	(1.50)	3.10	(4.51)
3"	(80)	3.500	(88.9)	.216	(5.5)	1.30	(2.00)	4.50	(6.70)
3 1/2"	(90)	4.000	(101.6)	.226	(5.7)	1.60	(2.40)	5.90	(8.70)
4"	(100)	4.500	(114.3)	.237	(6.0)	1.90	(2.80)	7.40	(11.00)
5"	(125)	5.563	(141.3)	.258	(6.5)	2.80	(4.10)	11.40	(17.00)
6"	(150)	6.625	(168.3)	.280	(7.1)	3.30	(4.90)	15.40	(23.00)
8"	(200)	8.625	(219.1)	.322	(8.2)	5.30	(7.80)	26.90	(39.90)
10"	(250)	10.750	(273.0)	.366	(9.3)	7.50	(11.10)	41.60	(61.80)
12"	(300)	12.750	(323.8)	.406	(10.3)	10.00	(14.90)	58.50	(87.00)

Reference Data

Schedule 80 PVC Plastic Pipe Data

Nominal Pipe Size		Pipe O.D.		Wall Thickness		Weight of Pipe		Weight of Pipe Filled With Water	
In.	mm	In.	mm	In.	mm	Lbs./Ft.	kg/m	Lbs./Ft.	kg/m
1/8"	(3)	.405	(10.3)	.095	(2.4)	.05	(.08)	.06	(.10)
1/4"	(6)	.540	(13.7)	.119	(3.0)	.09	(.14)	.12	(.18)
3/8"	(10)	.675	(17.1)	.126	(3.2)	.10	(.19)	.16	(.28)
1/2"	(15)	.840	(21.3)	.147	(3.7)	.10	(.20)	.20	(.30)
3/4"	(20)	1.050	(26.7)	.154	(3.9)	.20	(.40)	.40	(.70)
1"	(25)	1.315	(33.4)	.179	(4.5)	.40	(.50)	.70	(.90)
1 1/4"	(32)	1.660	(42.1)	.191	(4.8)	.50	(.80)	1.00	(1.60)
1 1/2"	(40)	1.900	(48.2)	.200	(5.1)	.60	(.90)	1.30	(2.00)
2"	(50)	2.375	(60.3)	.218	(5.5)	.90	(1.30)	2.20	(3.20)
2 1/2"	(65)	2.875	(73.0)	.276	(7.0)	1.30	(2.00)	3.10	(4.70)
3"	(80)	3.500	(88.9)	.300	(7.6)	1.80	(2.70)	4.60	(6.90)
3 1/2"	(90)	4.000	(101.6)	.318	(8.1)	2.20	(3.20)	6.00	(8.90)
4"	(100)	4.500	(114.3)	.337	(8.5)	2.60	(3.90)	7.60	(11.30)
5"	(125)	5.563	(141.3)	.375	(9.5)	4.10	(6.10)	12.00	(17.80)
6"	(150)	6.625	(168.3)	.432	(11.0)	5.00	(7.50)	16.30	(24.30)
8"	(200)	8.625	(219.1)	.500	(12.7)	8.00	(11.90)	27.80	(41.30)
10"	(250)	10.750	(273.0)	.593	(15.0)	11.90	(17.70)	43.20	(77.60)
12"	(300)	12.750	(323.8)	.687	(17.4)	16.30	(24.30)	60.30	(89.80)

1 cubic ft. of water weighs 62.41 lbs.
 1 cubic meter of water weighs 999.97 kg.
 1 gallon (U.S.) weighs 8.335 lbs.
 1 liter weighs .999 kg.

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

Reference Data

Spacing Of Hangers For Schedule 40 PVC Plastic Pipe

Temperature		Support Spacing in Ft. (Meter) For Pipe Sizes of													
		1/2"-3/4"	(15-20)	1"-1 1/4"	(25-32)	1 1/2"-2"	(40-50)	2 1/2"	(65)	3"	(80)	4"	(100)	6"	(150)
20°F	(-6.6°C)	5.00	(1.52)	5.50	(1.67)	5.80	(1.77)	6.66	(2.03)	6.80	(2.07)	7.33	(2.23)	7.80	(2.38)
40°F	(4.4°C)	4.75	(1.45)	5.25	(1.60)	5.50	(1.67)	6.33	(1.93)	6.50	(1.98)	7.00	(2.13)	7.50	(2.28)
60°F	(15.5°C)	4.50	(1.37)	5.00	(1.52)	5.25	(1.60)	6.00	(1.83)	6.25	(1.90)	6.50	(1.98)	7.00	(2.13)
80°F	(26.6°C)	4.25	(1.29)	4.66	(1.42)	5.00	(1.52)	5.50	(1.67)	5.80	(1.77)	6.25	(1.90)	6.80	(2.07)
100°F	(37.8°C)	4.00	(1.22)	4.33	(1.32)	4.66	(1.42)	5.25	(1.60)	5.50	(1.67)	5.80	(1.77)	6.33	(1.93)
110°F	(43.3°C)	3.75	(1.14)	4.00	(1.22)	4.33	(1.32)	4.80	(1.46)	5.25	(1.60)	5.50	(1.67)	5.80	(1.77)
120°F	(48.9°C)	3.33	(1.01)	3.75	(1.14)	3.80	(1.16)	4.50	(1.37)	4.75	(1.45)	5.00	(1.52)	5.33	(1.62)
130°F	(54.4°C)	3.00	(.91)	3.33	(1.01)	3.50	(1.06)	4.00	(1.22)	4.25	(1.29)	4.50	(1.37)	4.80	(1.46)
140°F	(60.0°C)	2.66	(.81)	2.80	(.85)	3.00	(.91)	3.50	(1.06)	3.66	(1.11)	3.80	(1.16)	4.25	(1.29)
150°F	(65.5°C)	2.00	(.61)	2.25	(.68)	2.50	(.76)	2.80	(.85)	3.00	(.91)	3.25	(.99)	3.50	(1.06)

Spacing Of Hangers For Schedule 80 PVC Plastic Pipe

Temperature		Support Spacing in Ft. (Meter) For Pipe Sizes of													
		1/2"-3/4"	(15-20)	1"	(25)	1 1/4"-1 1/2"	(32-40)	2"	(50)	2 1/2"	(65)	3"	(80)	4"	(100)
20°F	(-6.6°C)	5.75	(1.75)	6.33	(1.93)	6.66	(2.03)	7.00	(2.13)	7.80	(2.38)	8.20	(2.50)	8.66	(2.64)
40°F	(4.4°C)	5.50	(1.67)	6.00	(1.83)	6.33	(1.93)	6.50	(1.98)	7.50	(2.28)	7.75	(2.36)	8.25	(2.51)
60°F	(15.5°C)	5.25	(1.60)	5.75	(1.75)	6.00	(1.83)	6.25	(1.90)	7.00	(2.13)	7.33	(2.23)	7.80	(2.38)
80°F	(26.6°C)	4.80	(1.46)	5.33	(1.62)	5.66	(1.72)	6.00	(1.83)	6.66	(2.03)	7.00	(2.13)	7.33	(2.23)
100°F	(37.8°C)	4.50	(1.37)	5.00	(1.52)	5.25	(1.60)	5.50	(1.67)	6.33	(1.93)	6.50	(1.98)	6.80	(2.07)
110°F	(43.3°C)	4.33	(1.32)	4.60	(1.40)	4.80	(1.46)	5.12	(1.56)	5.80	(1.77)	6.00	(1.83)	6.33	(1.93)
120°F	(48.9°C)	3.80	(1.16)	4.33	(1.32)	4.50	(1.37)	4.75	(1.45)	5.33	(1.62)	5.50	(1.67)	5.80	(1.77)
130°F	(54.4°C)	3.50	(1.06)	3.80	(1.16)	4.00	(1.22)	4.33	(1.32)	4.75	(1.45)	5.00	(1.52)	5.25	(1.60)
140°F	(60.0°C)	3.00	(.91)	3.33	(1.01)	3.50	(1.06)	3.66	(1.11)	4.25	(1.29)	4.33	(1.32)	4.66	(1.42)
150°F	(65.5°C)	2.50	(.76)	2.75	(.84)	3.00	(.91)	3.12	(.95)	3.33	(1.01)	3.50	(1.06)	3.75	(1.14)

Hanger spacing for PVC plastic Pipe assumes fluid loads up to 1.35 specific gravity [85 Lbs./Ft.³ (136.5 kg/m³)] but not concentrated heavy loads.

Rod Size As Determined By Steel Pipe Size For Fire Protection

Steel Pipe Size		Maximum Span		Rod Size
In.	mm	Ft.	m	
1"-1 1/4"	(25-30)	12	(3.66)	3/8"-16
1 1/2"-4"	(40-100)	15	(4.57)	3/8"-16
5"-8"	(125-200)	15	(4.57)	1/2"-13
10"-12"	(250-300)	15	(4.57)	5/8"-11

Based on NFPA 13-1999, Table 6-2.2 & Table 6-1.4.1

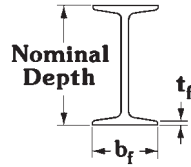
Rod Size As Determined By Copper Tubing Size For Fire Protection

Copper Tubing Size		Maximum Span		Rod Size
In.	mm	Ft.	m	
3/4"-1"	(20-35)	8	(2.44)	3/8"-16
1 1/4"-1 1/2"	(32-40)	15	(3.05)	3/8"-16
2"-3"	(50-80)	15	(3.66)	3/8"-16
3 1/4"-4"	(90-100)	15	(4.57)	3/8"-16
5"-8"	(125-200)	15	(4.57)	1/2"-13

Based on NFPA 13-1999, Table 6-2.2 & Table 6-1.4.1

Rod Size	Root Area Thread		Maximum Safe Loads			
	In. ²	cm ²	650°F (349°C)		750°F (399°C)	
			Lbs.	kN	Lbs.	kN
3/8"-16	0.0678	(.43)	730	(3.24)	572	(2.54)
1/2"-13	0.126	(.81)	1350	(6.00)	1057	(4.70)
5/8"-11	0.202	(1.30)	2160	(9.60)	1692	(7.52)
3/4"-10	0.302	(1.95)	3230	(14.37)	2530	(11.25)
7/8"-9	0.419	(2.70)	4480	(19.93)	3508	(15.60)
1"-8	0.551	(3.55)	5900	(26.24)	4620	(20.55)
1 1/8"-7	0.693	(4.47)	7450	(33.14)	5830	(25.93)
1 1/4"-7	0.890	(5.74)	9500	(42.25)	7440	(33.09)
1 1/2"-6	1.29	(8.32)	13800	(61.38)	10807	(48.07)
1 3/4"-5	1.74	(11.22)	18600	(82.73)	14566	(64.79)
2"-4 1/2	2.30	(14.84)	24600	(109.42)	19625	(87.29)
2 1/4"-4 1/2	3.02	(19.48)	32300	(143.67)	25295	(112.51)
2 1/2"-4	3.72	(24.00)	39800	(177.03)	31169	(138.64)
2 3/4"-4	4.62	(29.80)	49400	(219.73)	38687	(172.08)
3"-4	5.62	(36.26)	60100	(267.32)	47066	(209.35)
3 1/4"-8UN	6.72	(43.35)	71900	(319.81)	56307	(250.45)
3 1/2"-8UN	7.92	(51.09)	84700	(376.74)	66331	(295.04)
3 3/4"-8UN	9.21	(59.42)	98500	(438.13)	77139	(343.64)

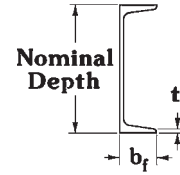
Extracted from MSS SP-58, 2002, with permission of the publisher, the Manufacturers Standardization Society.



American Standard 'S' Shape I-Beams

Designation Nominal Depth & Weight		Flange Width b_f		Flange Thickness t_f	
In. x Lbs./Ft.	(mm x kg/m)				
S3 x 5.7	(S75 x 8.5)	2 ³ / ₈ "	(59)	0.260	(6.6)
S3 x 7.5	(S75 x 11.2)	2 ¹ / ₂ "	(63)	0.260	(6.6)
S4 x 7.7	(S100 x 11.5)	2 ⁵ / ₈ "	(68)	0.293	(7.4)
S4 x 9.5	(S100 x 14.1)	2 ³ / ₄ "	(71)	0.293	(7.4)
S5 x 10	(S130 x 15)	3"	(76)	0.326	(8.3)
S5 x 14.75	(S130 x 22)	3 ¹ / ₄ "	(83)	0.326	(8.3)
S6 x 12.5	(S150 x 18.6)	3 ³ / ₈ "	(85)	0.359	(9.1)
S6 x 17.25	(S150 x 25.7)	3 ¹¹ / ₁₆ "	(91)	0.359	(9.1)
S7 x 15.3	(S180 x 22.8)	3 ⁵ / ₈ "	(93)	0.392	(10.0)
S7 x 20	(S180 x 29.8)	3 ⁷ / ₈ "	(98)	0.392	(10.0)
S8 x 18.4	(S200 x 27.4)	4"	(102)	0.425	(10.8)
S8 x 23	(S200 x 34)	4 ¹ / ₈ "	(106)	0.425	(10.8)
S10 x 25.4	(S250 x 37.8)	4 ⁵ / ₈ "	(118)	0.491	(12.5)
S10 x 35	(S250 x 52)	4 ¹⁵ / ₁₆ "	(126)	0.491	(12.5)
S12 x 31.8	(S310 x 47.3)	5"	(127)	0.544	(13.8)
S12 x 35	(S310 x 52)	5 ¹ / ₁₆ "	(129)	0.544	(13.8)
S12 x 40.8	(S310 x 60.7)	5 ¹ / ₄ "	(133)	0.659	(16.7)
S12 x 50	(S310 x 74)	5 ¹ / ₂ "	(139)	0.659	(16.7)
S15 x 42.9	(S380 x 64)	5 ¹ / ₂ "	(140)	0.622	(15.8)
S15 x 50	(S380 x 74)	5 ⁵ / ₈ "	(143)	0.622	(15.8)
S18 x 54.7	(S460 x 81.4)	6"	(152)	0.691	(17.6)
S18 x 70	(S460 x 104)	6 ¹ / ₄ "	(159)	0.691	(17.6)
S20 x 66	(S510 x 98.2)	6 ¹ / ₄ "	(159)	0.795	(20.2)
S20 x 75	(S510 x 112)	6 ³ / ₈ "	(162)	0.795	(20.2)
S20 x 86	(S510 x 128)	7 ¹ / ₁₆ "	(179)	0.920	(23.4)
S20 x 96	(S510 x 143)	7 ³ / ₁₆ "	(183)	0.920	(23.4)
S24 x 80	(S610 x 119)	7"	(178)	0.870	(22.1)
S24 x 90	(S610 x 134)	7 ¹ / ₈ "	(181)	0.870	(22.1)
S24 x 100	(S610 x 149)	7 ¹ / ₄ "	(184)	0.870	(22.1)
S24 x 106	(S610 x 158)	7 ⁷ / ₈ "	(200)	1.090	(27.7)
S24 x 121	(S610 x 180)	8 ¹ / ₁₆ "	(204)	1.090	(27.7)

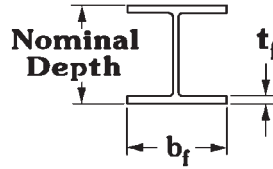
Dimensions taken from ASTM A6-86.



American Standard 'C' Shape I-Beams

Designation Nominal Depth & Weight		Flange Width b_f		Flange Thickness t_f	
In. x Lbs./Ft.	(mm x kg/m)				
C3 x 4.1	(C75 x 6.1)	1 ³ / ₈ "	(35)	0.273	(6.9)
C3 x 5	(C75 x 7.4)	1 ¹ / ₂ "	(37)	0.273	(6.9)
C3 x 6	(C75 x 8.9)	1 ⁵ / ₈ "	(40)	0.273	(6.9)
C4 x 5.4	(C100 x 8)	1 ⁹ / ₁₆ "	(40)	0.296	(7.5)
C4 x 7.25	(C100 x 10.8)	1 ³ / ₄ "	(44)	0.296	(7.5)
C5 x 6.7	(C130 x 10)	1 ³ / ₄ "	(44)	0.320	(8.1)
C5 x 9	(C130 x 13.4)	1 ⁷ / ₈ "	(47)	0.320	(8.1)
C6 x 8.2	(C150 x 12.2)	1 ¹⁵ / ₁₆ "	(48)	0.343	(8.7)
C6 x 10.5	(C150 x 15.6)	2"	(51)	0.343	(8.7)
C6 x 13	(C150 x 19.3)	2 ¹ / ₈ "	(54)	0.343	(8.7)
C7 x 9.8	(C180 x 14.6)	2 ¹ / ₁₆ "	(53)	0.366	(9.3)
C7 x 12.25	(C180 x 18.2)	2 ³ / ₁₆ "	(55)	0.366	(9.3)
C7 x 14.75	(C180 x 22)	2 ¹ / ₄ "	(57)	0.366	(9.3)
C8 x 11.5	(C200 x 17.1)	2 ¹ / ₄ "	(57)	0.390	(9.9)
C8 x 13.75	(C200 x 20.5)	2 ³ / ₈ "	(59)	0.390	(9.9)
C8 x 18.75	(C200 x 27.9)	2 ¹ / ₂ "	(63)	0.390	(9.9)
C9 x 13.4	(C230 x 19.9)	2 ⁷ / ₁₆ "	(61)	0.413	(10.5)
C9 x 15	(C230 x 22)	2 ¹ / ₂ "	(63)	0.413	(10.5)
C9 x 20	(C230 x 30)	2 ⁵ / ₈ "	(67)	0.413	(10.5)
C10 x 15.3	(C250 x 22.8)	2 ⁵ / ₈ "	(67)	0.436	(11.1)
C10 x 20	(C250 x 30)	2 ³ / ₄ "	(69)	0.436	(11.1)
C10 x 25	(C250 x 37)	2 ⁷ / ₈ "	(73)	0.436	(11.1)
C10 x 30	(C250 x 45)	3"	(76)	0.436	(11.1)
C12 x 20.7	(C310 x 30.8)	2 ¹⁵ / ₁₆ "	(74)	0.501	(12.7)
C12 x 25	(C310 x 37)	3"	(76)	0.501	(12.7)
C12 x 30	(C310 x 45)	3 ¹ / ₈ "	(80)	0.501	(12.7)
C15 x 33.9	(C380 x 50.4)	3 ³ / ₈ "	(86)	0.650	(16.5)
C15 x 40	(C380 x 60)	3 ¹ / ₂ "	(89)	0.650	(16.5)
C15 x 50	(C380 x 74)	3 ³ / ₄ "	(94)	0.650	(16.5)
C18 x 42.7	(C460 x 63.5)	4"	(102)	0.625	(15.8)
C18 x 45.8	(C460 x 68.1)	4"	(102)	0.625	(15.8)
C18 x 51.9	(C460 x 77.2)	4 ¹ / ₈ "	(106)	0.625	(15.8)
C18 x 58	(C460 x 86.3)	4 ¹ / ₄ "	(112)	0.625	(15.8)

Reference Data



Wide Flange I-Beams

Designation Nominal Depth & Weight		Flange Width b_f		Flange Thickness t_f	
In. x Lbs./Ft.	(mm x kg/m)				
W4 x 13	(W100 x 19.3)	4 ¹ / ₁₆ "	(103)	0.345	(8.8)
W5 x 16	(W130 x 23.8)	5"	(127)	0.360	(9.1)
W5 x 19	(W130 x 28.1)	5"	(128)	0.430	(10.9)
W6 x 9	(W150 x 13.5)	3 ¹⁵ / ₁₆ "	(100)	0.215	(5.5)
W6 x 12	(W150 x 18.0)	4"	(101)	0.280	(7.1)
W6 x 16	(W150 x 24.0)	4"	(101)	0.405	(10.3)
W6 x 20	(W150 x 29.8)	6"	(153)	0.365	(9.3)
W6 x 25	(W150 x 37.1)	6 ¹ / ₁₆ "	(154)	0.455	(11.6)
W8 x 10	(W200 x 15.0)	3 ¹⁵ / ₁₆ "	(100)	0.205	(5.2)
W8 x 13	(W200 x 19.3)	4"	(101)	0.255	(6.5)
W8 x 15	(W200 x 22.5)	4"	(101)	0.315	(8.0)
W8 x 18	(W200 x 26.6)	5 ¹ / ₄ "	(133)	0.330	(8.4)
W8 x 21	(W200 x 31.3)	5 ¹ / ₄ "	(133)	0.400	(10.2)
W8 x 24	(W200 x 35.9)	6 ¹ / ₂ "	(165)	0.400	(10.2)
W8 x 28	(W200 x 41.7)	6 ¹ / ₂ "	(166)	0.465	(11.8)
W8 x 31	(W200 x 46.1)	8"	(203)	0.435	(11.0)
W8 x 35	(W200 x 52)	8"	(203)	0.495	(12.6)
W8 x 40	(W200 x 59)	8 ¹ / ₁₆ "	(205)	0.560	(14.2)
W8 x 48	(W200 x 71)	8 ¹ / ₈ "	(206)	0.685	(17.4)
W8 x 58	(W200 x 86)	8 ¹ / ₄ "	(209)	0.810	(20.6)
W8 x 67	(W200 x 100)	8 ¹ / ₄ "	(210)	0.935	(23.7)
W10 x 12	(W250 x 17.9)	4"	(101)	0.210	(5.3)
W10 x 15	(W250 x 22.3)	4"	(101)	0.270	(6.9)
W10 x 17	(W250 x 25.3)	4"	(101)	0.330	(8.4)
W10 x 19	(W250 x 28.4)	4"	(101)	0.395	(10.0)
W10 x 22	(W250 x 32.7)	5 ³ / ₄ "	(146)	0.360	(9.1)
W10 x 26	(W250 x 38.5)	5 ³ / ₄ "	(147)	0.440	(11.2)
W10 x 30	(W250 x 44.8)	5 ¹³ / ₁₆ "	(148)	0.510	(13.0)
W10 x 33	(W250 x 49.1)	7 ¹⁵ / ₁₆ "	(202)	0.435	(11.0)
W10 x 39	(W250 x 58)	8"	(203)	0.530	(13.5)
W10 x 45	(W250 x 67)	8"	(203)	0.620	(15.7)
W10 x 49	(W250 x 73)	10"	(254)	0.560	(14.2)
W10 x 54	(W250 x 80)	10 ¹ / ₁₆ "	(255)	0.615	(15.6)
W10 x 60	(W250 x 89)	10 ¹ / ₁₆ "	(256)	0.680	(17.3)
W10 x 68	(W250 x 101)	10 ¹ / ₈ "	(257)	0.770	(19.6)
W10 x 77	(W250 x 115)	10 ³ / ₁₆ "	(259)	0.870	(22.1)
W10 x 88	(W250 x 131)	10 ¹ / ₄ "	(261)	0.990	(25.1)
W10 x 100	(W250 x 149)	10 ³ / ₈ "	(263)	1.120	(28.4)
W10 x 112	(W250 x 167)	10 ⁷ / ₁₆ "	(265)	1.250	(31.8)

Designation Nominal Depth & Weight		Flange Width b_f		Flange Thickness t_f	
In. x Lbs./Ft.	(mm x kg/m)				
W12 x 14	(W310 x 21.0)	4"	(101)	0.225	(5.7)
W12 x 16	(W310 x 23.8)	4"	(101)	0.265	(6.7)
W12 x 19	(W310 x 28.3)	4"	(101)	0.350	(8.9)
W12 x 22	(W310 x 32.7)	4"	(101)	0.425	(10.8)
W12 x 26	(W310 x 38.7)	6 ¹ / ₂ "	(165)	0.380	(9.7)
W12 x 30	(W310 x 44.5)	6 ¹ / ₂ "	(165)	0.440	(11.2)
W12 x 35	(W310 x 52)	6 ⁹ / ₁₆ "	(167)	0.520	(13.2)
W12 x 40	(W310 x 60)	8"	(203)	0.515	(13.1)
W12 x 45	(W310 x 67)	8 ¹ / ₁₆ "	(205)	0.575	(14.6)
W12 x 50	(W310 x 74)	8 ¹ / ₁₆ "	(205)	0.640	(16.3)
W12 x 53	(W310 x 79)	10"	(254)	0.575	(14.6)
W12 x 58	(W310 x 86)	10"	(254)	0.640	(16.3)
W12 x 65	(W310 x 97)	12"	(306)	0.605	(15.4)
W12 x 72	(W310 x 107)	12"	(306)	0.670	(17.0)
W12 x 79	(W310 x 117)	12 ¹ / ₁₆ "	(307)	0.735	(18.7)
W12 x 87	(W310 x 129)	12 ¹ / ₈ "	(308)	0.810	(20.6)
W12 x 96	(W310 x 143)	12 ¹ / ₈ "	(308)	0.900	(22.9)
W12 x 106	(W310 x 158)	12 ¹ / ₄ "	(310)	0.990	(25.1)
W12 x 120	(W310 x 179)	12 ⁵ / ₁₆ "	(313)	1.105	(28.1)
W12 x 136	(W310 x 202)	12 ³ / ₈ "	(315)	1.250	(31.8)
W12 x 152	(W310 x 226)	12 ¹ / ₂ "	(317)	1.400	(35.6)
W12 x 170	(W310 x 253)	12 ⁹ / ₁₆ "	(319)	1.560	(39.6)
W12 x 190	(W310 x 283)	12 ¹¹ / ₁₆ "	(322)	1.735	(44.1)
W12 x 210	(W310 x 313)	12 ³ / ₄ "	(325)	1.900	(48.3)
W12 x 230	(W310 x 342)	12 ⁷ / ₈ "	(328)	2.070	(52.6)
W12 x 252	(W310 x 375)	13"	(330)	2.250	(57.2)
W14 x 22	(W360 x 32.9)	5"	(127)	0.335	(8.5)
W14 x 26	(W360 x 39.0)	5"	(127)	0.420	(10.7)
W14 x 30	(W360 x 44.8)	6 ³ / ₄ "	(172)	0.385	(9.8)
W14 x 34	(W360 x 51)	6 ³ / ₄ "	(172)	0.455	(11.6)
W14 x 38	(W360 x 57)	6 ³ / ₄ "	(172)	0.515	(13.1)
W14 x 43	(W360 x 64)	8"	(203)	0.530	(13.5)
W14 x 48	(W360 x 72)	8"	(203)	0.595	(15.1)
W14 x 53	(W360 x 79)	8 ¹ / ₁₆ "	(205)	0.660	(16.8)
W14 x 61	(W360 x 91)	10"	(254)	0.645	(16.4)
W14 x 68	(W360 x 101)	10"	(254)	0.720	(18.3)
W14 x 74	(W360 x 110)	10 ¹ / ₁₆ "	(256)	0.785	(19.9)
W14 x 82	(W360 x 122)	10 ¹ / ₈ "	(257)	0.855	(21.7)
W14 x 90	(W360 x 134)	14 ¹ / ₂ "	(369)	0.710	(18.0)

Dimensions taken from ASTM A6-86.

(Continued on next page)

Wide Flange I-Beams (Continued)

Designation Nominal Depth & Weight In. x Lbs./Ft. (mm x kg/m)		Flange Width b_f		Flange Thickness t_f	
W14 x 99	(W360 x 147)	14 ⁹ / ₁₆ "	(370)	0.780	(19.8)
W14 x 109	(W360 x 162)	14 ⁵ / ₈ "	(371)	0.860	(21.8)
W14 x 120	(W360 x 179)	14 ¹¹ / ₁₆ "	(373)	0.940	(23.9)
W14 x 132	(W360 x 196)	14 ³ / ₄ "	(374)	1.030	(26.2)
W14 x 145	(W360 x 216)	15 ¹ / ₂ "	(394)	1.090	(27.7)
W14 x 159	(W360 x 237)	15 ⁹ / ₁₆ "	(395)	1.190	(30.2)
W14 x 176	(W360 x 262)	15 ⁵ / ₈ "	(397)	1.310	(33.3)
W14 x 193	(W360 x 287)	15 ³ / ₄ "	(400)	1.440	(36.6)
W14 x 211	(W360 x 314)	15 ³ / ₄ "	(400)	1.560	(39.6)
W14 x 233	(W360 x 347)	15 ⁷ / ₈ "	(403)	1.720	(43.7)
W14 x 257	(W360 x 382)	16"	(406)	1.890	(48.0)
W14 x 283	(W360 x 421)	16 ¹ / ₈ "	(409)	2.070	(52.6)
W14 x 311	(W360 x 463)	16 ¹ / ₄ "	(413)	2.260	(57.4)
W14 x 342	(W360 x 509)	16 ³ / ₈ "	(416)	2.470	(62.7)
W14 x 370	(W360 x 551)	16 ¹ / ₂ "	(419)	2.660	(67.6)
W14 x 398	(W360 x 592)	16 ⁹ / ₁₆ "	(421)	2.845	(72.3)
W14 x 426	(W360 x 634)	16 ¹¹ / ₁₆ "	(424)	3.035	(77.1)
W16 x 26	(W410 x 38.8)	5 ¹ / ₂ "	(140)	0.345	(8.8)
W16 x 31	(W410 x 46.1)	5 ¹ / ₂ "	(140)	0.440	(11.2)
W16 x 36	(W410 x 53)	7"	(178)	0.430	(10.9)
W16 x 40	(W410 x 60)	7"	(178)	0.505	(12.8)
W16 x 45	(W410 x 67)	7"	(178)	0.565	(14.4)
W16 x 50	(W410 x 75)	7 ¹ / ₁₆ "	(179)	0.630	(16.0)
W16 x 57	(W410 x 85)	7 ¹ / ₈ "	(181)	0.715	(18.2)
W16 x 67	(W410 x 100)	10 ¹ / ₄ "	(260)	0.665	(16.9)
W16 x 77	(W410 x 114)	10 ⁵ / ₁₆ "	(262)	0.760	(19.3)
W16 x 89	(W410 x 132)	10 ³ / ₈ "	(263)	0.875	(22.2)
W16 x 100	(W410 x 149)	10 ⁷ / ₁₆ "	(265)	0.985	(25.0)
W18 x 35	(W460 x 52)	6"	(152)	0.425	(10.8)
W18 x 40	(W460 x 60)	6"	(152)	0.525	(13.3)
W18 x 46	(W460 x 68)	6 ¹ / ₁₆ "	(154)	0.605	(15.4)
W18 x 50	(W460 x 74)	7 ¹ / ₂ "	(190)	0.570	(14.5)
W18 x 55	(W460 x 82)	7 ¹ / ₂ "	(190)	0.630	(16.0)
W18 x 60	(W460 x 89)	7 ⁹ / ₁₆ "	(192)	0.695	(17.7)
W18 x 65	(W460 x 97)	7 ⁹ / ₁₆ "	(192)	0.750	(19.0)
W18 x 71	(W460 x 106)	7 ⁵ / ₈ "	(193)	0.810	(20.6)
W18 x 76	(W460 x 113)	11"	(279)	0.680	(17.3)
W18 x 86	(W460 x 128)	11 ¹ / ₁₆ "	(281)	0.770	(19.6)
W18 x 97	(W460 x 144)	11 ¹ / ₈ "	(282)	0.870	(22.1)
W18 x 106	(W460 x 158)	11 ³ / ₁₆ "	(284)	0.940	(23.9)
W18 x 119	(W460 x 177)	11 ¹ / ₄ "	(286)	1.060	(26.9)
W21 x 44	(W530 x 66)	6 ¹ / ₂ "	(165)	0.450	(11.4)
W21 x 50	(W530 x 74)	6 ¹ / ₂ "	(165)	0.535	(13.6)
W21 x 57	(W530 x 85)	6 ⁹ / ₁₆ "	(167)	0.650	(16.5)
W21 x 62	(W530 x 92)	8 ¹ / ₄ "	(209)	0.615	(15.6)
W21 x 68	(W530 x 101)	8 ¹ / ₄ "	(209)	0.685	(17.4)

Designation Nominal Depth & Weight In. x Lbs./Ft. (mm x kg/m)		Flange Width b_f		Flange Thickness t_f	
W21 x 73	(W530 x 109)	8 ¹ / ₄ "	(209)	0.740	(18.8)
W21 x 83	(W530 x 123)	8 ⁷ / ₈ "	(213)	0.835	(21.2)
W21 x 93	(W530 x 138)	8 ⁷ / ₁₆ "	(214)	0.930	(23.6)
W21 x 101	(W530 x 150)	12 ¹ / ₄ "	(311)	0.800	(20.3)
W21 x 111	(W530 x 165)	12 ³ / ₈ "	(314)	0.875	(22.2)
W21 x 122	(W530 x 182)	12 ³ / ₈ "	(314)	0.960	(24.4)
W21 x 132	(W530 x 196)	12 ⁷ / ₁₆ "	(316)	0.035	(26.3)
W21 x 147	(W530 x 219)	12 ¹ / ₂ "	(317)	0.150	(29.2)
W24 x 55	(W610 x 82)	7"	(178)	0.505	(12.8)
W24 x 62	(W610 x 92)	7 ¹ / ₁₆ "	(179)	0.590	(15.0)
W24 x 68	(W610 x 101)	8 ¹⁵ / ₁₆ "	(227)	0.585	(14.9)
W24 x 76	(W610 x 113)	9"	(228)	0.680	(17.3)
W24 x 84	(W610 x 125)	9"	(228)	0.770	(19.6)
W24 x 94	(W610 x 140)	9 ¹ / ₁₆ "	(230)	1.875	(22.2)
W24 x 104	(W610 x 155)	12 ³ / ₄ "	(324)	1.750	(19.0)
W24 x 117	(W610 x 174)	12 ³ / ₄ "	(324)	0.850	(21.6)
W24 x 131	(W610 x 195)	12 ⁷ / ₈ "	(327)	0.960	(24.4)
W24 x 146	(W610 x 217)	12 ⁷ / ₈ "	(327)	1.090	(27.7)
W24 x 162	(W610 x 241)	12 ¹⁵ / ₁₆ "	(328)	1.220	(31.0)
W27 x 84	(W690 x 125)	9 ¹⁵ / ₁₆ "	(252)	0.640	(16.3)
W27 x 94	(W690 x 140)	10"	(254)	0.745	(18.9)
W27 x 102	(W690 x 152)	10"	(254)	0.830	(21.1)
W27 x 114	(W690 x 170)	10 ¹ / ₁₆ "	(255)	0.930	(23.6)
W27 x 146	(W690 x 217)	13 ¹⁵ / ₁₆ "	(354)	0.975	(24.8)
W27 x 161	(W690 x 240)	14"	(355)	1.080	(27.4)
W27 x 178	(W690 x 265)	14 ¹ / ₁₆ "	(357)	1.190	(30.2)
W30 x 99	(W760 x 147)	10 ⁷ / ₁₆ "	(265)	0.670	(17.0)
W30 x 108	(W760 x 161)	10 ¹ / ₂ "	(267)	0.760	(19.3)
W30 x 116	(W760 x 173)	10 ¹ / ₂ "	(267)	0.850	(21.6)
W30 x 124	(W760 x 185)	10 ¹ / ₂ "	(267)	0.930	(23.6)
W30 x 132	(W760 x 196)	10 ⁹ / ₁₆ "	(268)	1.000	(25.4)
W30 x 173	(W760 x 257)	15"	(381)	1.065	(27.1)
W30 x 191	(W760 x 284)	15"	(381)	1.185	(30.1)
W30 x 211	(W760 x 314)	15 ¹ / ₈ "	(384)	1.315	(33.4)
W33 x 118	(W840 x 176)	11 ¹ / ₂ "	(292)	0.740	(18.8)
W33 x 130	(W840 x 193)	11 ¹ / ₂ "	(292)	0.855	(21.7)
W33 x 141	(W840 x 210)	11 ¹ / ₂ "	(292)	0.960	(24.4)
W33 x 152	(W840 x 226)	11 ⁹ / ₁₆ "	(294)	1.055	(26.8)
W33 x 201	(W840 x 299)	15 ³ / ₄ "	(400)	1.150	(29.2)
W36 x 135	(W920 x 201)	11 ¹⁵ / ₁₆ "	(303)	0.790	(20.1)
W36 x 150	(W920 x 223)	12"	(305)	0.940	(23.9)
W36 x 160	(W920 x 238)	12"	(305)	1.020	(25.9)
W36 x 170	(W920 x 253)	12"	(305)	1.100	(27.9)
W36 x 182	(W920 x 271)	12 ¹ / ₁₆ "	(306)	1.180	(30.0)
W36 x 194	(W920 x 289)	12 ¹ / ₈ "	(308)	1.260	(32.0)
W36 x 210	(W920 x 313)	12 ³ / ₁₆ "	(309)	1.360	(34.5)

Dimensions taken from ASTM A6-86.

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

Reference Data

Trapeze Hangers Using B-Line Strut Or Angle Iron

Trapeze Length		Nominal Pipe Size			
		2 1/2" (65) or less	3" (80)	3 1/2" (90)	4" (100)
18"	(457.2)	1 1/2" x 1 1/2" x 3/16" B26SH	1 1/2" x 1 1/2" x 3/16" B26SH	1 1/2" x 1 1/2" x 3/16" B26SH	2" x 1 1/2" x 3/16" B22SH
24"	(609.6)	1 1/2" x 1 1/2" x 3/16" B26SH	2" x 1 1/2" x 3/16" B22SH	2" x 1 1/2" x 3/16" B22SH	2" x 1 1/2" x 3/16" B22SH
30"	(762.0)	2" x 1 1/2" x 3/16" B22SH	2" x 1 1/2" x 3/16" B22SH	2" x 1 1/2" x 3/16" B22SH	2" x 1 1/2" x 3/16" B22SH
36"	(914.4)	2" x 1 1/2" x 3/16" B22SH	2" x 1 1/2" x 3/16" B22SH	2 1/2" x 1 1/2" x 3/16" B12SH	2 1/2" x 1 1/2" x 3/16" B12SH
48"	(1219.2)	2 1/2" x 1 1/2" x 3/16" B12SH	2 1/2" x 1 1/2" x 3/16" B12SH	2 1/2" x 1 1/2" x 3/16" B12SH	3" x 2" x 3/16" B11SH
60"	(1524.0)	2 1/2" x 1 1/2" x 3/16" B12SH	2 1/2" x 1 1/2" x 3/16" B12SH	3" x 2" x 3/16" B11SH	3" x 2" x 3/16" B11SH
72"	(1828.8)	2 1/2" x 1 1/2" x 3/16" B12SH	3" x 2" x 3/16" B11SH	3" x 2" x 3/16" B11SH	3" x 2" x 1/4" B11SH
84"	(2133.6)	3" x 2" x 3/16" B11SH	3" x 2" x 3/16" B11SH	3" x 2" x 1/4" B11SH	3" x 2" x 1/4" B11SH
96"	(2438.4)	3" x 2" x 3/16" B11SH	3" x 2" x 1/4" B11SH	3" x 2" x 1/4" B11SH	3 1/2" x 2 1/2" x 5/16" B12SHA
108"	(2743.2)	3" x 2" x 3/16" B11SH	3" x 2" x 1/4" B11SH	3 1/2" x 2 1/2" x 5/16" B12SHA	3 1/2" x 2 1/2" x 5/16" B12SHA
120"	(3048.0)	3" x 2" x 1/4" B11SH	3" x 2" x 1/4" B11SH	3 1/2" x 2 1/2" x 5/16" B12SHA	3 1/2" x 2 1/2" x 5/16" B12SHA

Based on NFPA 13-1999, Table 6-1.1.3 (a) & Table 6-1.1.3 (b).

* For all finishes excluding plain.

Trapeze Hangers Using B-Line Strut Or Angle Iron

Trapeze Length		Nominal Pipe Size			
		5" (125)	6" (150)	8" (200)	10" (250)
18"	(457.2)	2" x 1 1/2" x 3/16" B22SH	2 1/2" x 1 1/2" x 3/16" B12SH	3" x 2" x 3/16" B11SH	3" x 2" x 1/4" B11SH
24"	(609.6)	2 1/2" x 1 1/2" x 3/16" B12SH	2 1/2" x 1 1/2" x 3/16" B12SH	3" x 2" x 3/16" B11SH	3" x 2" x 1/4" B11SH
30"	(762.0)	2 1/2" x 1 1/2" x 3/16" B12SH	3" x 2" x 3/16" B11SH	3" x 2" x 1/4" B11SH	3" x 2" x 1/4" B11SH
36"	(914.4)	3" x 2" x 3/16" B11SH	3" x 2" x 3/16" B11SH	3 1/2" x 2 1/2" x 1/4" B12SHA	3 1/2" x 2 1/2" x 5/16" B12SHA
48"	(1219.2)	3" x 2" x 3/16" B11SH	3" x 2" x 1/4" B11SH	3 1/2" x 2 1/2" x 5/16" B12SHA	4" x 3" x 5/16" B12SHA
60"	(1524.0)	3" x 2" x 1/4" B11SH	3 1/2" x 2 1/2" x 5/16" B12SHA	4" x 3" x 5/16" B12SHA	5" x 3 1/2" x 5/16" B11SHA
72"	(1828.8)	3 1/2" x 2 1/2" x 5/16" B12SHA	4" x 3" x 5/16" B12SHA	4" x 3" x 5/16" B12SHA	5" x 3 1/2" x 5/16" B11SHA
84"	(2133.6)	3 1/2" x 2 1/2" x 5/16" B12SHA	4" x 3" x 5/16" B12SHA	5" x 3 1/2" x 5/16" B11SHA	6" x 4" x 1/4" B12SHA4
96"	(2438.4)	3 1/2" x 2 1/2" x 5/16" B12SHA	4" x 3" x 5/16" B12SHA	5" x 3 1/2" x 5/16" B11SHA	6" x 4" x 1/4" B12SHA4
108"	(2743.2)	3 1/2" x 2 1/2" x 5/16" B12SHA	4" x 3" x 5/16" B12SHA	5" x 3 1/2" x 5/16" B11SHA	6" x 4" x 3/8" B11SHA4
120"	(3048.0)	4" x 3" x 5/16" B12SHA	5" x 3 1/2" x 5/16" B11SHA	6" x 4" x 1/4" B12SHA4	6" x 4" x 3/8" B11SHA4

Based on NFPA 13-1999, Table 6-1.1.3 (a) & Table 6-1.1.3 (b).

* For all finishes excluding plain.

Reference Data

MSS To B-Line & Federal Specification Cross Reference

Reference Data

MSS SP-69 MSS SP-58	B-Line Part No.	A-A-1192A WW-H-171E
Type 1	B3100	Type 1
Type 1	B3100C	Type 1
Type 1	B3100F	Type 1
Type 1	B3102	Type 1
Type 1*	B3104	Type 12
Type 1	B3104CT	Type 12
Type 1	B3106	--
Type 1	B3108	Type 1
Type 1	B3109	--
Type 3	B3144	Type 3
Type 3	B3146	Type 3
Type 4	B3140	Type 4
Type 4	B3141	Type 4
Type 4	B3142	Type 4
Type 5	B3690	--
Type 5	B3690C	--
Type 5	B3690F	--
Type 6	B3171	Type 6
Type 8	B3373	Type 8
Type 8	B3373C	Type 8
Type 8	B3373CT	Type 8
Type 8	B3373CTC	Type 8
Type 10	200	Type 10
Type 10	200C	Type 10
Type 10	200F	Type 10
Type 10	200H	Type 10
Type 10	2	Type 10
Type 10	B3170CT	Type 10
Type 10	B3170CTC	Type 10
Type 10	2F	Type 10
Type 12	B3198H	Type 25
Type 12	B3198HCT	Type 25
Type 12	B3198R	Type 25
Type 12	B3198RCT	Type 25
Type 13	B3202	Type 13
Type 14	B3201	Type 14
Type 15	B3224	Type 15
Type 15	B3224CT	Type 15
Type 16	B3222	Type 16
Type 17	B3200	Type 17
Type 18	B221, B321, B521	--
Type 18	B2500	Type 19
Type 18	B2503	--
Type 18	B2505-B2508	--
Type 18	B3014	Type 18
Type 19	65	Type 23
Type 19	65XT	Type 23
Type 19	66	Type 23
Type 19	67SS	--
Type 19	68S	Type 23
Type 19	68SS	--
Type 19	68W	Type 23
Type 19	B303-B309	Type 19

* For all finishes excluding plain.

MSS SP-69 MSS SP-58	B-Line Part No.	A-A-1192A WW-H-171E
Type 19	B321	Type 19
Type 19	B3031	Type 19
Type 19 & 23	B3033	Type 19 & 23
Type 19 & 23	B3034	Type 19 & 23
Type 21	B3050	Type 21
Type 21	B3055	Type 21
Type 22	B3083	Type 22
Type 23	B351L	Type 23
Type 23	B3036L	Type 23
Type 23	B3037	Type 23
Type 24	B3188	Type 24
Type 24	B3188C	Type 24
Type 25	B3045	Type 53
Type 26	B2400	Type 26
Type 26	B3180	Type 26
Type 26	B3180FL	Type 26
Type 27	B3040	Type 54
Type 28	B3291, B3292 B3294, B3296 B3298	Type 28
Type 29	B3293, B3295 B3297	Type 29
Type 30	B3054	Type 30
Type 31	B3065	Type 32
Type 31	B3068	Type 32
Type 32	B3066	Type 33
Type 33	B3067	Type 34
Type 34	B3058	Type 35
Type 34	B3060	Type 35
Type 34	B3060L	Type 35
Type 34	B3062	Type 35
Type 34	B3070	Type 35
Type 35	B3891-B3897	Type 35
Type 35	B3991 & B3993	Type 35
Type 36	B3095	Type 37
Type 37	B3090	Type 38
Type 37	B3092	Type 38
Type 37	B3094	Type 38
Type 37	B3097	Type 38
Type 38	B3093	Type 39
Type 38	B3096	Type 39
Type 39A & 39B	B3160-B3165	Type 40A & 40B
Type 40	B3151	Type 41
Type 41	B3114	Type 42
Type 41	B3122	Type 42
Type 41	B3122A	Type 42
Type 43	B3110	Type 44
Type 44	B3117SL	Type 45
Type 44	B3120	Type 45
Type 45	B3119SL	Type 46
Type 46	B3118SL	Type 47
Type 48	B3262	Type 49
Type 49	B3264	Type 50
Type 57	B3080S & L	--

Federal Specification To B-Line & MSS Cross Reference

A-A-1192A WW-H-171E	B-Line Part No.	MSS SP-69 MSS SP-58
--	B3106	Type 1
--	B3109	Type 1
--	B3690	Type 5
--	B3690C	Type 5
--	B3690F	Type 5
--	B22I, B32I, B52I	Type 18
--	B2503	Type 18
--	B2505-B2508	Type 18
--	67SS	Type 19
--	68SS	Type 19
--	B3080 S & L	Type 57
Type 1	1NFPA	Type 1
Type 1	B3100	Type 1
Type 1	B3100C	Type 1
Type 1	B3100F	Type 1
Type 1	B3102	Type 1
Type 1	B3104	Type 1
Type 1	B3108	Type 1
Type 3	B3144	Type 3
Type 3	B3146	Type 3
Type 4	B3140	Type 4
Type 4	B3141	Type 4
Type 4	B3142	Type 4
Type 6	B3171	Type 6
Type 8	B3373	Type 8
Type 8	B3373C	Type 8
Type 8	B3373CT	Type 8
Type 8	B3373CTC	Type 8
Type 10	200	Type 10
Type 10	200C	Type 10
Type 10	200F	Type 10
Type 10	200H	Type 10
Type 10	2 & 2F	Type 10
Type 10	B3170CT	Type 10
Type 10	B3170CTC	Type 10
Type 12	B3104	Type 1*
Type 12	B3104C	Type 1*
Type 12	B3104CT	Type 1
Type 13	B3202	Type 13
Type 14	B3201	Type 14
Type 15	B3224	Type 15
Type 15	B3224CT	Type 15
Type 16	B3222	Type 16
Type 17	B3200	Type 17
Type 18	B3014	Type 18
Type 19	B303-B309	Type 19
Type 19	B321	Type 19
Type 19	B2500	Type 18
Type 19	B3031	Type 19
Type 19 & 23	B3033	Type 19 & 23
Type 19 & 23	B3034	Type 19 & 23
Type 21	B3050	Type 21
Type 21	B3055	Type 21
Type 22	B3083	Type 22

A-A-1192A WW-H-171E	B-Line Part No.	MSS SP-69 MSS SP-58
Type 23	65 & 65XT	Type 19
Type 23	66	Type 19
Type 23	68S & 68W	Type 19
Type 23	B351L	Type 23
Type 23	B3036L	Type 23
Type 23	B3037	Type 23
Type 24	B3188	Type 24
Type 24	B3188C	Type 24
Type 25	B3198H	Type 12
Type 25	B3198HCT	Type 12
Type 25	B3198R	Type 12
Type 25	B3198RCT	Type 12
Type 26	B2400	Type 26
Type 26	B3180	Type 26
Type 26	B3180FL	Type 26
Type 28	B3291, B3292 B3294, B3296 B3298	Type 28
Type 29	B3293, B3295 B3297	Type 29
Type 30	B3054	Type 30
Type 32	B3065	Type 31
Type 32	B3068	Type 31
Type 33	B3066	Type 32
Type 34	B3067	Type 33
Type 35	B3058	Type 34
Type 35	B3060	Type 34
Type 35	B3060L	Type 34
Type 35	B3062	Type 34
Type 35	B3070	Type 34
Type 35	B3891-B3897	Type 35
Type 35	B3991 & B3993	Type 35
Type 37	B3095	Type 36
Type 38	B3090	Type 37
Type 38	B3092	Type 37
Type 38	B3094	Type 37
Type 38	B3097	Type 37
Type 39	B3093	Type 38
Type 39	B3096	Type 38
Type 40A & 40B	B3160-3165	Type 39A & 39B
Type 41	B3151	Type 40
Type 42	B3114	Type 41
Type 42	B3122	Type 41
Type 42	B3122A	Type 41
Type 44	B3110	Type 43
Type 45	B3117SL	Type 44
Type 45	B3120	Type 44
Type 46	B3119SL	Type 45
Type 47	B3118SL	Type 46
Type 49	B3262	Type 48
Type 50	B3264	Type 49
Type 53	B3045	Type 25
Type 54	B3040	Type 27

* For all finishes excluding plain.

Reference Data

Reference Data

B-Line Compliances & Approvals

Part No.	ANSI/MSS SP-69 ANSI/MSS SP-58	A-A-1192A WW-H-171E	UL Listed	FM Approved
1NFPA	Type 1	Type 1	Yes	Yes
2	Type 10	Type 10	Yes	Yes
2F	Type 10	Type 10	Yes	Yes
4A	--	--	Yes	--
4B	--	--	Yes	--
4L	--	--	Yes	Yes
4LA	--	--	Yes	Yes
22	--	--	Yes	--
22L2	--	--	Yes	--
23	--	--	Yes	--
24	--	--	Yes	--
25	--	--	Yes	--
28	--	--	Yes	--
28M	--	--	Yes	--
29	--	--	Yes	--
50	--	--	Yes	Yes
51	--	--	Yes	Yes
56	--	--	Yes	Yes
58	--	--	Yes	Yes
65	--	--	Yes	--
65XT	--	--	Yes	Yes
66	--	--	Yes	--
67SS	--	--	Yes	--
68S	Type 19 & 23	Type 19 & 23	Yes	Yes
68SS	--	--	Yes	--
68W	Type 19 & 23	Type 19 & 23	Yes	Yes
69	--	--	Yes	--
69R	--	--	Yes	--
75	--	--	Yes	--
78	--	--	Yes	--
109A	--	--	Yes	--
109AF	--	--	Yes	--
120RWA	--	--	Yes	--
130	--	--	Yes	Yes
200	Type 10	Type 10	Yes	Yes
200C	Type 10	Type 10	--	--
200F	Type 10	Type 10	--	--
200H	Type 10	Type 10	Yes	--
200M	Type 10	Type 10	Yes	Yes
800	--	--	Yes	Yes
825	--	--	Yes	Yes
825A	--	--	Yes	--
828	--	--	Yes	Yes
906	--	--	Yes	--

Part No.	ANSI/MSS SP-69 ANSI/MSS SP-58	A-A-1192A WW-H-171E	UL Listed	FM Approved
909	--	--	Yes	--
910	--	--	Yes	--
975	--	--	Yes	--
980	--	--	Yes	Yes
980H	--	--	Yes	Yes
1000	--	--	Yes	Yes
1001	--	--	Yes	Yes
2002	--	--	Yes	--
B22I	Type 18	--	--	--
B32I	Type 18	--	--	--
B52I	Type 18	--	--	--
B351L	Type 23	Type 23	Yes	--
B2400	Type 26	Type 26	Yes	--
B2500	Type 18	Type 19	Yes	--
B2503	Type 18	--	--	--
B2505-B2508	Type 18	--	Yes	--
B3014	Type 18	Type 18	Yes	--
B3031	Type 19	Type 19	Yes	--
B3033	Type 19 & 23	Type 19 & 23	Yes	Yes
B3034	Type 19 & 23	Type 19 & 23	Yes	Yes
B3036L	Type 23	Type 23	Yes	--
B3037	Type 23	Type 23	Yes	--
B3040	Type 27	Type 27	--	--
B3042T	--	--	Yes	--
B3045	Type 25	Type 53	--	--
B3050	Type 21	Type 21	--	--
B3054	Type 30	Type 30	Yes	--
B3055	Type 21	Type 21	--	--
B3058	Type 34	Type 35	--	--
B3060	Type 34	Type 35	--	--
B3060L	Type 34	Type 35	--	--
B3062	Type 34	Type 35	--	--
B3065	Type 31	Type 32	--	--
B3066	Type 32	Type 33	--	--
B3067	Type 33	Type 34	--	--
B3068	Type 31	Type 32	--	--
B3070	Type 34	Type 35	--	--
B3080S & L	Type 57	--	--	--
B3083	Type 22	Type 22	--	--
B3090	Type 37	Type 38	--	--
B3092	Type 37	Type 38	--	--
B3093	Type 38	Type 39	--	--
B3094	Type 37	Type 38	--	--
B3095	Type 36	Type 37	--	--

Note: Refer to the catalog page for specific sizes that are UL Listed and/or FM Approved.

Reference Data - Crosses

B-Line Compliances & Approvals

Part No.	ANSI/MSS SP-69 ANSI/MSS SP-58	A-A-1192A WW-H-171E	UL Listed	FM Approved
B3096	Type 38	Type 39	--	--
B3097	Type 37	Type 38	--	--
B3100	Type 1	Type 1	Yes	Yes
B3100C	Type 1	Type 1	--	--
B3100F	Type 1	Type 1	--	--
B3102	Type 1	--	--	--
B3104	Type 1*	Type 12	Yes	--
B3104C	Type 1*	Type 12	--	--
B3104CT	Type 1	Type 12	--	--
B3104CTC	Type 1	Type 12	--	--
B3104F	Type 1*	Type 12	--	--
B3106	Type 1	--	--	--
B3108	Type 1	Type 1	--	--
B3109	Type 1	--	--	--
B3110	Type 43	Type 44	--	--
B3114	Type 41	Type 42	--	--
B3117SL	Type 44	Type 45	--	--
B3118SL	Type 46	Type 47	--	--
B3119SL	Type 45	Type 46	--	--
B3120	Type 44	Type 45	--	--
B3122	Type 41	Type 42	--	--
B3122A	Type 41	Type 42	--	--
B3140	Type 4	Type 4	Yes	Yes
B3141	Type 4	Type 4	--	--
B3142	Type 4	Type 4	--	--
B3144	Type 3	Type 3	--	--
B3146	Type 3	Type 3	--	--
B3151	Type 40	Type 41	--	--
B3160-B3165	Type 39A & 39B	Type 40A & 40B	--	--
B3170CT	Type 10	Type 10	--	--
B3170CTC	Type 10	Type 10	--	--
B3180	Type 26	Type 26	--	--
B3180FL	Type 26	Type 26	--	--
B3184	--	--	Yes	--
B3188	Type 24	Type 24	Yes	--
B3188C	Type 24	Type 24	--	--
B3198H	Type 12	Type 25	--	--
B3198HCT	Type 12	Type 25	--	--
B3198R	Type 12	Type 25	--	--
B3198RCT	Type 12	Type 25	--	--
B3200	Type 17	Type 17	--	--
B3201	Type 14	Type 14	--	--

[illegible]

Reference Data

Note: Refer to the catalog page for specific sizes that are UL Listed and/or FM Approved.

Reference Data - Crosses

B-Line	TOLCO	B-Line	TOLCO	B-Line	TOLCO
1CBS	1CBS	907	907	B3014N	309N
1U (Disc.)	1U (Disc.)	909	909	B3019	109A
4A	4A	910	910	B3031	N/A
4B	4B	975	975	B3033	68, 68W
4L	4L	980	980	B3034	68S
4LA	4LA	980H	980H	B3036L	N/A
22	22	981	981	B3037	N/A
22L2	22L2	985	985	B3040	336
23	23	986	986	B3042	61
24	24	990	990	B3042T	61T
25	25	990H	990H	B3045	335
27B	27B	991	991	B3050	62
28	28	1000	1000	B3052 (Disc.)	130
28M	28M	1001	1001	B3054	329
29	29	2002	2002	B3055	N/A
50	60	ATR	99	B3058	N/A
51	51	ATR	100	B3060	50
56	56	AWA	209	B3060L	N/A
58	58	B22I	N/A	B3061	42
65	65	B32I	N/A	B3062	N/A
65XT	65XT	B52I	N/A	B3064	N/A
66	66	B200	F13	B3065	30L
67S	67S	B201	F14	B3066	30M
67SS	67SS	B202	F15	B3067	30H
68SS	68SS	B202-1	F16	B3068	30
68W	68W	B202-2	F17	B3069E	31-0
69	69	B218	ROL-12	B3069W	31-M
69R	69R	B219	ROL-13	B3070	52
75	75	B303 - B309	N/A	B3080 L & S	343
78	78	B312 Series	N/A	B3082	337
98	98	B321 Series	N/A	B3083	305
98B	98B	B351L	64	B3083W0	304
109A	109A	B379	ROL-14	B3084	33
109AF	109AF	B386 (Disc.)	4B	B3085	35
120	120	B479	ROL-14	B3086	34
120MJ	120MJ	B501	111	B3088	316
120RWA	120RWA	B655	70	B3088S	N/A
120W	120W	B656	70R	B3088ST	N/A
200	200	B1999	N/A	B3088T	316T
200C	200C	B2400	2STR	B3089	319
200F	200H	B2417	N/A	B3090	318
200H	200H	B2499	107F	B3092	318A
800	800	B2500	310	B3093	317A
825	825	B2501 (Disc.)	109AF	B3094	314
825A	825A	B2503	N/A	B3095	317
828	828	B2505 - B2508	N/A	B3096	312
906	906	B3014	309	B3097	311

(Disc.) = Discontinued Item

Reference Data - Crosses

B-Line	TOLCO	B-Line	TOLCO	B-Line	TOLCO
B3098	313	B3161	261	B3224	306
B3100	1	B3162	262	B3227 (Disc.)	N/A
B3100C	1PVC	B3163	263	B3234	116
B3100F	1F	B3164	264	B3248	118
B3100PS (Disc.)	1CBS	B3165	265	B3256	405
B3102	1CI	B3170	2 (Disc.)	B3257	406
B3104	1LD (Disc.)	B3170CT	202 (Disc.)	B3262	506
B3104C	N/A	B3170CTC	N/A	B3264	500
B3104CT	81	B3170F	2F (Disc.)	B3281 - B3287	420
B3104CTC	81PVC	B3170NF (Disc.)	200	B3281 - B3287	421
B3104F	N/A	B3170NF (Disc.)	200R (Disc.)	B3281 - B3287	422
B3106	1V	B3170NFC (Disc.)	200C	B3281 - B3287	422C
B3106V	1VT	B3170NFF (Disc.)	200F	B3291 - B3298	N/A
B3108	1A	B3171	N/A	B3362 - B3365	N/A
B3109	N/A	B3175	N/A	B3367 (Disc.)	69
B3110	324	B3175CT	N/A	B3373	6
B3114	322	B3180	20	B3373C	6PVC
B3114R	N/A	B3180FL	20S	B3373CT	82
B3117R	N/A	B3181 (Disc.)	22	B3373CTC	82PVC
B3117SL	327	B3182 (Disc.)	23	B3373F	6F
B3118SL	328	B3183 (Disc.)	24	B3380 - B3387	N/A
B3119SL	N/A	B3184	N/A	B3690	3
B3120	325	B3188	110	B3690C	3PVC
B3122	326	B3188C	N/A	B3690F	3F
B3122A	N/A	B3190	40	B3891	425 (Disc.)
B3124	N/A	B3191	41	B3891	426 (Disc.)
B3126	ROL-16	B3195	84	B3891	429 (Disc.)
B3132	9	B3195CT	83	B3892	430 (Disc.)
B3132W-1 & 11/2	9X	B3198H	302	B3894	N/A
B3134	14	B3198HCT	301CT	B3895	N/A
B3134W	14X	B3199R	78	B3993-10	428 (Disc.)
B3140	4	B3199RCT	N/A	B3393-10/B3393-10B	431 (Disc.)
B3140C	4PVC	B3200	330	DS15x2	125
B3140F	4F	B3201	332	DURA-BLOK™	Pipe Pier (Disc.)
B3141	4CI	B3202	331	FFW	119
B3142	4H	B3203	333	FW	115
B3144	5	B3205	103	HHN	114
B3146	5H	B3210	102	HN	113
B3147A-1/2 thru 4	32-1/2 thru 4	B3210X	102L	ISO	N/A
B3147B 4 thru 24	32-5 thru 34	B3211	101	KwikClips™	N/A
B3148	7	B3211X	101L	LW	117
B3149	8	B3212	104	N2500	310N
B3151	220	B3213	105	Snap 'N Shields™ Clevis Hangers	N/A
B3153	219	B3214	106	Snap 'N Shields™	N/A
B3154	220	B3220	71	Toggle Bolts	123
B3155	219	B3222	307		
B3160	260	B3223	N/A		

(Disc.) = Discontinued Item

Reference Data - Crosses

TOLCO	B-Line	TOLCO	B-Line	TOLCO	B-Line	TOLCO	B-Line
1	B3100	32-5 thru 34	B3147B 5 thru 24	116	B3234	325	B3120
1A	B3108	33	B3084	117	LW	326	B3122
1CBS	B3100PS (Disc.)	34	B3086	118	B3248	327	B3117SL
1CI	B3102	35	B3085	119	FFW	328	B3118SL
1F	B3100F	40	B3190	120	120	329	B3054
1LD (Disc.)	B3104	41	B3191	120MJ	120MJ	330	B3200
1NFPA	1NFPA	42	B3061	120RWA	120RWA	331	B3202
1PVC	B3100C	50	50	120W	120W	332	B3201
1U (Disc.)	1U (Disc.)	51	51	122 (Disc.)	N/A	333	B3203
1V	B3106	52	B3070	123	Toggle Bolts	335	B3045
1VT	B3106V	56	56	124	Toggle Bolt Head	336	B3040
2	B3170 (Disc.)	58	58	125	DS15x2	337	B3082
2F	B3170F (Disc.)	60 (Disc.)	N/A	126 (Disc.)	N/A	343	B3080 L & S
2FWON (Disc.)	N/A	61	B3042	130	130	405	B3256
2WON	N/A	61T	B3042T	150 (Disc.)	N/A	406	B3257
3	B3690	62	B3050	200	B3170NF (Disc.)	420	B3281 - B3287
3F	B3690F	64	B351L	200F	B3170NFF (Disc.)	421	B3281 - B3287
3PVC	B3690C	65	65	200H	200H	422	B3281 - B3287
4	B3140	65XT	65XT	200R (Disc.)	B3170NF (Disc.)	422C	B3281 - B3287
4A	4A	66	66	200WON (Disc.)	N/A	425 (Disc.)	B3891
4B	B386	67SS	67SS	202 (Disc.)	B3170CT	426 (Disc.)	B3891
4CI	B3141	68S	B3034	203 (Disc.)	B3170NFC (Disc.)	426A (Disc.)	N/A
4F	B3140F	68SS	68SS	207 (Disc.)	N/A	426AC (Disc.)	N/A
4H	B3142	68W	B3033	209	AWA	426AG (Disc.)	N/A
4L	4L	69	B3367	219	B3153	426C (Disc.)	N/A
4LA	4LA	69R	69R	219	B3155	426G (Disc.)	N/A
4PVC	B3140C	70	B655	220	B3151	427 (Disc.)	N/A
5	B3144	70R	B656	220	B3154	428 (Disc.)	B3993-10
5H	B3146	70S (Disc.)	B655	260	B3160	429 (Disc.)	B3891
6	B3373	71	B3220	261	B3161	430 (Disc.)	B3892
6F	B3373F	75	75	262	B3162	431 (Disc.)	B3393-10
6PVC	B3373C	78	78 & B3199	263	B3163	/B3393-10B	
7	B3148	81	B3104CT	264	B3164	432 (Disc.)	N/A
8	B3149	81PVC	B3104CTC	265	B3165	433 (Disc.)	N/A
9	B3132	82	B3373CT	301CT	B3198HCT	434 (Disc.)	N/A
9X	B3132W-1 & 1 1/2	82PVC	B3373CTC	302	B3198H	500	B3264
14	B3134	83	B3195CT	304	B3083WO	506	B3262
14X	B3134W	84	B3195	305	B3083	800	800
20	B3180	98	98	306	B3224	825	825
20S	B3180FL	98B	98B	307	B3222	825A	825A
21 (Disc.)	N/A	99	ATR	309	B3014	828	828
22	B3181 (Disc.)	100	ATR	309N	B3014N	906	906
22L2	22L2	101	B3211	310	B2500	907	907
23	B3182 (Disc.)	101L	B3211X	310N	N2500	909	909
24	B3183 (Disc.)	102	B3210	311	B3097	910	910
25	25	102L	B3210X	312	B3096	975	975
27B	27B	103	B3205	313	B3098	980	980
28	28	104	B3212	314	B3094	981	981
28M	28M	105	B3213	315 (Disc.)	N/A	985	985
29	29	106	B3214	316	B3088	986	986
30	B3068	107F	B2499	316T	B3088T	990	990
30H	B3067	109A	B3019	317	B3095	991	991
30L	B3065	109AF	B2501	317A	B3093	1000	1000
30M	B3066	110	B3188	318	B3090	1001	1001
31-M	B3069W	111	B501	318A	B3092	2002	2002
31-O	B3069E	113	HN	319	B3089	Pipe Pier (Disc.)	DURA-BLOK
32-1/2 thru 4	B3147A-1/2 thru 4	114	HHN	322	B3114		
		115	FW	323 (Disc.)	N/A		
				324	B3110		

(Disc.) = Discontinued Item

Reference Data - Crosses

Anvil/Grinnell®†	B-Line/TOLCO	Anvil/Grinnell®†	B-Line/TOLCO	Anvil/Grinnell®†	B-Line/TOLCO
14	B3040 (Fig. 336)	165	B3165 (Fig. 265)	438-1	Consult Factory
40	Consult Factory	167	B3151 (Fig. 220)	438-2	Consult Factory
47	B3084 (Fig. 33)	168	B3153 (Fig. 219)	438-3	Consult Factory
49	B3086 (Fig. 34)	171	B3114 (Fig. 322)	590	B3102 (Fig. 1CI)
51	B422	175	B3120 (Fig. 325)	594	B3134W (Fig. 14X)
52	B3085 (Fig. 35)	177	B3122 (Fig. 326)	595	B3134 (Fig. 14)
54	Consult Factory	178	B3264 (Fig. 500)	599	B3132W-1 & 1½ (Fig. 9X)
55	B3080 L & S (Fig. 343 LONG & FG 343 SHORT)	181	B3110 (Fig. 324)	600	B3132 (Fig. 9)
60	B3248 (Fig. 118)	191	B3098 (Fig. 313)	218, 229	B3054 (Fig. 329)
62	Consult Factory	192	B3096 (Fig. 312)		
63	Consult Factory	194	B3068 (Fig. 30)		
CT65	B3104CT (Fig. 81)	195	B3066 (Fig. 30M)		
66	B3083 (Fig. 305)/ B3083WO (Fig. 304)	199	B3067 (Fig. 30H)		
67	B3690 (Fig. 3)	202	B3060 (Fig. 50)		
68	Consult Factory	206	Fig. 51		
69	Fig. 200 (B3170NF)	212	B3140 (Fig. 4)		
69C	Fig. 200C (B3170NFC)	212FP	Fig. 4A		
89, 87	B3367 (Fig. 69)	216	B3142 (Fig. 4H)		
92	Fig. 65/Fig. 65XT	217	B3045 (Fig. 335)		
93	Fig. 66	227	B3042 (Fig. 61)		
95	B351L (Fig. 64)	230	B3202 (Fig. 331)		
100	B3149 (Fig. 8)	247	B3262 (Fig. 506)		
103	B3148 (Fig. 7)	248	B3210 (Fig. 102)		
110R	B3222 (Fig. 307)	248X	B3210X (Fig. 102L)		
112	Fig. 910	255	B3281 - B3287 (Fig. 422)		
114	B3224 (Fig. 306)	256	B3281 - B3287 (Fig. 421)		
CT121	B3373CT (Fig. 82)	257	B3891 (Fig. 426)		
CT138R	B3198HCT (Fig. 301CT)	259	B3090 (Fig. 318)		
128R	B3199 (Fig. 78)	260	B3100 (Fig. 1)		
133-134	B3050 (Fig. 62)	261	B3373 (Fig. 6)		
135	B655 (Fig. 70) & B3220 (Fig. 71)	262	B3180 (Fig. 20)		
136R	B656 (Fig. 70R)	264	B3093 (Fig. 317A)		
137	B3188 (Fig. 110)	271	B3117SL (Fig. 327)		
138R	B3198H (Fig. 302)	274	B3118SL (Fig. 328)		
140	B3205 (Fig. 103)	278	B3211 (Fig. 101)		
142	B3213 (Fig. 105)	278X	B3211X (Fig. 101L)		
146	ATR (Fig. 99 & Fig. 100)	280	B3891 (Fig. 426)		
157	B3203 (Fig. 333)	282	B3014 (FG 309) & B3014N (Fig. 309N)		
160	B3160 (Fig. 260)	285N	N2500 (Fig. 310N)		
161	B3161 (Fig. 261)	290	B3200 (Fig. 330)		
162	B3162 (Fig. 262)	295	B3144 (Fig. 5)		
163	B3163 (Fig. 263)	299	B3201 (Fig. 332)		
164	B3164 (Fig. 264)	300	B3108 (Fig. 1A)		
		436	Consult Factory		
		437	Consult Factory		

† Mark shown is the property of its respective owner.
Chart provides a cross reference to help determine equivalent products.

Reference Data - Crosses

Erico®†	B-Line/TOLCO	Erico®†	B-Line/TOLCO	Erico®†	B-Line/TOLCO
10	HN (Fig. 113)	360	B3054 (Fig. 329)	640-2	B3892
10H	HHN (Fig. 114)	361	B3050 (Fig. 62)	640-3	B3393-10/B3393-10B
11	FW (Fig. 115)	363	B3040 (Fig. 336)	651	B3281 - B3287 (Fig. 421)
12	FFW (Fig. 119)	367	B3045 (Fig. 335)	651	B3281 - B3287 (Fig. 421)
13	LW (Fig. 117)	370A	Fig. 109A (B3019)	700	B3148 (Fig. 7)
25	B655 (Fig. 70)	371	B3080 L & S (Fig. 343 LONG & Fig. 343 SHORT)	705	B3149 (Fig. 8)
25R	B656 (Fig. 70R)	373	B3084 (Fig. 33)	720	B3095 (Fig. 317)
25S	B655S (Fig. 70S)	374	B3086 (Fig. 34)	721	B3090 (Fig. 318)
26	B3203 (Fig. 333)	374A	B3085 (Fig. 35)	724	B3098 (Fig. 313)
30	B3202 (Fig. 331)	400	B3100 (Fig. 1)	420	B3100C (Fig. 1PVC)
31	B3201 (Fig. 332)	400FL	B3100F (Fig. 1F)	520	B3373C (Fig. 6PVC)
35	B3200 (Fig. 330)	402	B3104CT (Fig. 81)	107	Fig. 22
40	B3210 (Fig. 102)	40	B3102 (Fig. 1CI)	108	Fig. 23
40W	B3211 (Fig. 101)	410	B3104	109	Fig. 24
43	DS15x2 (Fig. 125)	41	B3108 (Fig. 1A)		
46	B3214 (Fig. 106)	418	B3690 (Fig. 3)		
47	B3222 (Fig. 307)	418FL	B3690F (Fig. 3F)		
50	ATR (Fig. 99 & 100)	450	B3140 (Fig. 4)		
51	ATR (Fig. 99 & 100)	451	B3142 (Fig. 4H)		
100	B3170 (Fig. 2)	452	B3144 (Fig. 5)		
125	B3151 (Fig. 220)	455	B3198H (Fig. 302)		
130	Fig. 200	456	B3198HCT (Fig. 301CT)		
150	B3188 (Fig. 110)	457	B3190 (FFig. 40)		
200	B351L (Fig. 64)	458	B3191 (Fig. 41)		
255C	B3367 (Fig. 69)	470	B3180 (Fig. 20)		
282	B3014 (Fig. 309)	510	B3373 (Fig. 6)		
282N	B3014N (Fig. 309N)	511	B3373CT (FFig. 82)		
300	B351L (Fig. 64)	516	B3132W-1 & 1½ (FFig. 9X)		
310	Fig. 66	517	B3132 (Fig. 9)		
319	B3061 (Fig. 42)	605	B3114 (FFig. 322)		
320L	B3083W0 (Fig. 304)	610	B3110 (Fig. 324)		
320W	B3083 (Fig. 305)	615	B3120 (Fig. 325)		
321	B3082 (Fig. 337)	617	B3117SL (Fig. 327)		
325	B3060 (Fig. 50)	619	B3118SL (Fig. 328)		
326	B3070 (Fig. 52)	620	B3122 (Fig. 326)		
335A	Fig. 975	625	B3264 (Fig. 500)		
335AB	Fig. 910	630	B3160 (Fig. 260)		
340	B3248 (Fig. 118)	631	B3161 (Fig. 261)		
348	B3068 (Fig. 30)	632	B3162 (Fig. 262)		
351	B3065 (Fig. 30L)	633	B3163 (Fig. 263)		
352	B3066 (Fig. 30M)	634	B3164 (Fig. 264)		
353	B3067 (Fig. 30H)	635	B3165 (Fig. 265)		
355	B2500 (Fig. 310)	640	B3891 (Fig. 426)		
355N	N2500 (Fig. 310N)	640-1	B3891		
356	Fig. 130				
359	B3042 (Fig. 61)				

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Reference Data - Crosses

PHD®†	B-Line/TOLCO	PHD®†	B-Line/TOLCO	PHD®†	B-Line/TOLCO
10	ATR (Fig. 99 & 100)	490	B3114 (Fig. 322)	885	Fig 109A (B3019)
15	B3205 (Fig. 103)	508	B3198H (Fig. 302)	890	Fig. 975
20	ATR (Fig. 99 & 100)	512H	B3198HCT (Fig. 301CT)	900	B3083 (Fig. 305)
25	B3203 (Fig. 333)	520	B3140 (Fig. 4)	900-1	B3083WO (Fig. 304)
32	B3222 (Fig. 307)	522	B3142 (Fig. 4H)	903	B3085 (Fig. 35)
35	B3200 (Fig. 330)	525	B3144 (Fig. 5)	904	B3086 (Fig. 34)
38	B3201 (Fig. 332)	535	B3148 (Fig. 7)	910	B3061 (Fig. 42)
40	B3213 (Fig. 105)	545	B3149 (Fig. 8)	925	B3070 (Fig. 52)
44	B3224 (Fig. 306)	550	B3373 (Fig. 6)	930	B3248 (Fig. 118)
47W	AWA (Fig. 209)	552	B3373CT (Fig. 82)	936	B3080 L & S (Fig. 343 LONG & Fig. 343 SHORT)
48	DS15x2 (Fig. 125)	553	B3373C (Fig. 6PVC)	940	B3199 (Fig. 78)
50	B3210 (Fig. 102)	554	B3373CTC (Fig. 82PVC)	950	B3014 (Fig. 309)
55	B3211 (Fig. 101)	580	B3132 (Fig. 9)	950N	B3014N (Fig. 309N)
60	B3212 (Fig. 104)	585	B3132W-1 & 1 1/2 (Fig. 9X)	960	B3202 (Fig. 331)
70	B2499 (Fig. 107F)	590	B3134 (Fig. 14)	970	B3690 (Fig. 3)
80	Fig. 120	595	B3134W (Fig. 14X)	970F	B3690F (Fig. 3F)
90	B3188 (Fig. 110)	610, 620	B3050 (Fig. 62)	980	B3195 (Fig. 84)
95, 110	B501 (Fig. 111)	630	B3054 (Fig. 329)	982	B3195CT (Fig. 83)
100	B655 (Fig. 70)	635	B3040 (Fig. 336)		
104	B655S (Fig. 70S)	651	B3160 (Fig. 260)		
105	B656 (Fig. 70R)	653	B3161 (Fig. 261)		
110	HN (Fig. 113)	654	B3162 (Fig. 262)		
110H	HHN (Fig. 114)	655	B3163 (Fig. 263)		
130	FW (Fig. 115)	656	B3164 (Fig. 264)		
134	LW (Fig. 117)	658	B3165 (Fig. 265)		
135	B3234 (Fig. 116)	670-678	B3281 - B3287 (Fig. 421)		
136	FFW (Fig. 119)	690	B3891 (Fig. 426)		
151	B3170 (Fig. 2)	690-1	B3891		
160	B3153 (Fig. 219)	690-2	B3892		
170	B3151 (Fig. 220)	690-3	B3393-10/B3393-10B		
250	B351L (Fig. 64)	810	B3191 (Fig. 41)		
350	Fig. 65	820	B3190 (Fig. 40)		
359	B3367 (Fig. 69)	825	B3180 (Fig. 20)		
360	B3367 (Fig. 69)	830	B3180FL (Fig. 20S)		
420	B3102 (Fig. 1CI)	840	B3147A-1/2 thru 4 (Fig. 32-1/2 thru 4)		
430	B3108 (Fig. 1A)	840	B3147B 4 thru 24 (Fig. 32-5 thru 34)		
440	B3104	850	B3065 (Fig. 30L)		
450	B3100 (Fig. 1)	855	B3066 (Fig. 30M)		
450F	B3100F (Fig. 1F)	860	B3067 (Fig. 30H)		
450V	B3106 (Fig. 1V)	871	B3088T (Fig. 316T)		
453	B3100C (Fig. 1PVC)	875	B3093 (Fig. 317A)		
460	B3120 (Fig. 325)	876	B3092 (Fig. 318A)		
470	B3110 (Fig. 324)	880	B3095 (Fig. 317)		
480	B3122 (Fig. 326)	882	B3090 (Fig. 318)		
486	B3117SL (Fig. 327)				
487	B3118SL (Fig. 328)				

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Reference Data - Crosses

Super Strut®†	B-Line/TOLCO	Super Strut®†	B-Line/TOLCO	Super Strut®†	B-Line/TOLCO
164	B3180 (Fig. 20)	C790	B3151 (Fig. 220)		
452	B2500 (Fig. 310)	CF729A	B3120 (Fig. 325)		
540	B3060 (Fig. 50)	CI710	B3102 (Fig. 1CI)		
542	B3070 (Fig. 52)	CL710	B3104		
AB102	N2500 (Fig. 310N)	CT720	B3373CT (Fig. 82)		
AB201	Fig. 51	CTL710	B3104CT (Fig. 81)		
C475	Fig 109A (B3019)	CX710	B3108 (Fig. 1A)		
C704	B3191(Fig. 41)	E120	B3222 (Fig. 307)		
C704A	B3190 (Fig. 40)	E120A	B3200 (Fig. 330)		
C710	B3100 (Fig. 1)	E145	HN (Fig. 113)		
C710F	B3100F (Fig. 1F)	E147	FW (Fig. 115)		
C710P	B3100C (Fig. 1PVC)	EF147	FFW (Fig. 119)		
C720P	B3373C (Fig. 6PVC)	E148	LW (Fig. 117)		
C724	B3132 (Fig. 9)	E151	B3213 (Fig. 105)		
C725	B3140 (Fig. 4)	E151D	DS15x2 (Fig. 125)		
C726	B3144 (Fig. 5)	E156	B3210 (Fig. 102)		
C727	B3170 (Fig. 2)	E157	B3211 (Fig. 101)		
C729-2	B3110 (Fig. 324)	F111	B3201 (Fig. 332)		
C730C	B3117SL (Fig. 327)	F112	B3202 (Fig. 331)		
C730D	B3118SL (Fig. 328)	H104	ATR (Fig. 99 & 100)		
C736	B3068 (Fig. 30)	H115	B3188 (Fig. 110)		
C739H	B3067 (Fig. 30H)	H119	B655 (Fig. 70)		
C739M	B3066 (Fig. 30M)	H119R	B656 (Fig. 70R)		
C747	B3082 (Fig. 337)	HL115	B501 (Fig. 111)		
C755T-C757T	B3050 (Fig. 62)	M129	B3203 (Fig. 333)		
C769	B3045 (Fig. 335)	M718	B3198H (Fig. 302)		
C775L	B351L (Fig. 64)	M724R	B3199 (Fig. 78)		
C777	Fig. 65/Fig. 65XT	M732	B3054 (Fig. 329)		
C778	Fig. 66	M778	B3034 (Fig. 68S) & B3033 (Fig. 68W)		
C711	B3690 (Fig. 3)	PG794	B3281 - B3287 (Fig. 21)		
C711F	B3690F (Fig. 3F) B3690C (FG 3PVC)	RC729	B3122 (Fig. 326)		
C716	B3195CT (Fig. 83)	RCS	B3147A-1/2 thru 4 (Fig. 32-1/2 thru 4)		
C720	B3373 (Fig. 6)	RCS	B3147B 4 thru 24 (Fig. 32-5 thru 34)		
C720L	B3148 (Fig. 7)	U568	B3367 (Fig. 69)		
C780W/HW	B3083 (Fig. 305)	W724	B3132W-1 & 1 1/2 (Fig. 9X)		
C780W/O	B3083W0 (Fig. 304)				
C781	B3248 (Fig. 118)				
C785	B3090 (Fig. 318)				
C786	B3093 (Fig. 317A)				
C789	B3160 (Fig. 260)				
C789A	B3160 (Fig. 260)				
C789B	B3162 (Fig. 262)				
C789C	B3163 (Fig. 263)				
C789D	B3164 (Fig. 264)				
C789E	B3165 (Fig. 265)				

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Reference Data - Crosses

Carpenter & Paterson®†	B-Line/TOLCO	Carpenter & Paterson®†	B-Line/TOLCO	Carpenter & Paterson®†	B-Line/TOLCO
6	B3042 (Fig. 61)	258	B3132W-1 & 1 1/2 (Fig. 9X)		
12	B3222 (Fig. 307)	260	B3134W (Fig. 14X)		
14	B3040 (Fig. 336)	267	B3149 (Fig. 8)		
15	B3050 (Fig. 62)	276	B3201 (Fig. 332)		
18	B3367 (Fig. 69)	283	B3188 (Fig. 110)		
28	B3213 (Fig. 105)	293	B3054 (Fig. 329)		
31	B3212 (Fig. 104)	298	B3142 (Fig. 4H)		
33	B3210 (Fig. 102)	303	B3060 (Fig. 50)		
38	B3224 (Fig. 306)	304	B3144 (Fig. 5)		
39	B3120 (Fig. 325)	306	B3210X (Fig. 102L)		
44	Fig. 120	341	B3211X (Fig. 101L)		
53	B3118SL (Fig. 328)	351	B3160 (Fig. 260)		
59	Toggle Bolts (Fig. 123)	352	B3160 (Fig. 260)		
69	B3068 (Fig. 30)	353	B3162 (Fig. 262)		
84	B3066 (Fig. 30M)	354	B3163 (Fig. 263)		
85	B3199 (Fig. 78)	355	B3164 (Fig. 264)		
92	B3045 (Fig. 335)	356	B3165 (Fig. 265)		
93	B3211 (Fig. 101)	478	B3264 (Fig. 500)		
94	ATR (Fig. 99 & 100)	706	B3234 (Fig. 116)		
100	B3100 (Fig. 1)	800	B3170 (Fig. 2)		
102	B3248 (Fig. 118)	800	Fig. 200		
103	FW (Fig. 115)	100C.I.	B3102 (Fig. 1CI)		
109	B3122 (Fig. 326)	100CT	B3104CT (Fig. 81)		
114	B3180 (Fig. 20)	100EL	B3108 (Fig. 1A)		
123	B655 (Fig. 70)	100PVC	B3100C (Fig. 1PVC)		
125	B3090 (Fig. 318)	100PVC	B3104CTC (Fig. 81PVC)		
126	B3373 (Fig. 6)	123R	B656 (Fig. 70R)		
132	B3202 (Fig. 331)	123W	B3220 (Fig. 71)		
133	B3205 (Fig. 103)	126CT	B3373CT (Fig. 82)		
137	B3096 (Fig. 312)	126PVC	B3373C (Fig. 6PVC)		
139	B3067 (Fig. 30H)	158DB	B3134 (Fig. 14)		
140	B3110 (Fig. 324)	200VT	B3106 (Fig. 1V)		
152	B3061 (Fig. 42)	227S	B3191 (Fig. 41)		
158	B3132 (Fig. 9)	265P	B3151 (Fig. 220)		
165	HN (Fig. 113)	650-266-75	B3014N (Fig. 309N)		
166	DS15x2 (Fig. 125)	81CT	B3198HCT (Fig. 301CT)		
175	B3140 (Fig. 4)				
176	LW (Fig. 117)				
179	B3148 (Fig. 7)				
192	Fig. 65				
200	B3104				
220	B3080 L & S (Fig. 343 LONG & Fig. 343 SHORT)				
222	B501 (Fig. 111)				
227	B3190 (Fig. 40)				

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Reference Data - Crosses

Empire®†	B-Line/TOLCO	Empire®†	B-Line/TOLCO	Empire®†	B-Line/TOLCO
11	B3100 (Fig. 1)	110	B3104	1902	B3162 (Fig. 262)
11CI	B3102 (Fig. 1CI)	110CT	B3104CT (Fig. 81)	1903	B3163 (Fig. 263)
11V	B3106 (Fig. 1V)	110PC	B3100C (Fig. 1PVC)	1904	B3164 (Fig. 264)
11X	B3108 (Fig. 1A)	110PC	B3104CTC (Fig. 81PVC)	1905	B3165 (Fig. 265)
21L	B351L (Fig. 64)	114	B3224 (Fig. 306)	4000 Series	B3891 (Fig. 426)
22R	B3367 (Fig. 69)	131	B3200 (Fig. 330)		
26	B3210 (Fig. 102)	137	B3188 (Fig. 110)		
26W	B3211 (Fig. 101)	145	B3191 (Fig. 41)		
31	B3170 (Fig. 2)	146	B3190 (Fig. 40)		
31	Fig. 200	150	Fig. 130		
35	B3262 (Fig. 506)	155	B3040 (Fig. 336)		
41H	B3198H (Fig. 302)	156	B3045 (Fig. 335)		
41HCT	B3198HCT (Fig. 301CT)	157	B3203 (Fig. 333)		
47	B3222 (Fig. 307)	158	B3042 (Fig. 61)		
49PC	B3373C (Fig. 6PVC)	167	B3151 (Fig. 220)		
50	B3373 (Fig. 6)	180	B3180FL (Fig. 20S)		
50CT	B3373CT (Fig. 82)	189	B3144 (Fig. 5)		
50CTI or 49PC	B3373CTC (Fig. 82PVC)	202	B3060 (Fig. 50)		
51	B655 (Fig. 70)	212	B3140 (Fig. 4)		
51R	B656 (Fig. 70R)	216	B3142 (Fig. 4H)		
52	FW (Fig. 115)	218	B3050 (Fig. 62)		
52F	FFW (Fig. 119)	229	B3054 (Fig. 329)		
52L	LW (Fig. 117)	231	B3180 (Fig. 20)		
53	B3061 (Fig. 42)	256	B3281 - B3287 (Fig. 421)		
54	ATR (Fig. 99 & 100)	272	B3110 (Fig. 324)		
55	B3213 (Fig. 105)	273	B3122 (Fig. 326)		
56	HN (Fig. 113)	275	B3120 (Fig. 325)		
57	B3205 (Fig. 103)	277	B3114 (Fig. 322)		
59	DS15x2 (Fig. 125)	320	B3202 (Fig. 331)		
61	Fig. 66	420	B3095 (Fig. 317)		
62	Fig. 65/Fig. 65XT	422	B3096 (Fig. 312)		
67	B3086 (Fig. 34)	426	B3093 (Fig. 317A)		
68	B3085 (Fig. 35)	427	B3092 (Fig. 318A)		
69	B3080 L & S (Fig. 343 LONG & Fig. 343 SHORT)	427	B3090 (Fig. 318)		
72	B3234 (Fig. 116)	595	B3134 (Fig. 14)		
75	B3134W (Fig. 14X)	599	B3132W-1 & 1½ (Fig. 9X)		
75	B3248 (Fig. 118)	600	B3132 (Fig. 9)		
77	B2499 (Fig. 107F)	801	B3066 (Fig. 30M)		
80	AWA (Fig. 209)	802	B3067 (Fig. 30H)		
81N	B3014N (Fig. 309N)	820	B3068 (Fig. 30)		
83	Toggle Bolts (Fig. 123)	909	B3201 (Fig. 332)		
95	B3148 (Fig. 7)	279S	B3117SL (Fig. 327)		
97	B3149 (Fig. 8)	280S	B3118SL (Fig. 328)		
		425 or 427	B3098 (Fig. 313)		
		1900	B3160 (Fig. 260)		
		1901	B3160 (Fig. 260)		

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