ZSi-Foster

ZSi

Manufacturers of Cushioned Clamping, Support Systems, and Quick Disconnects

ENGINEERING CATALOG

No. 12b

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www.zsi-foster.com

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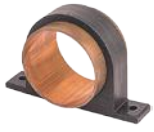

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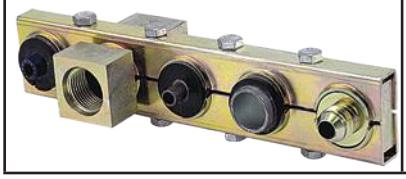

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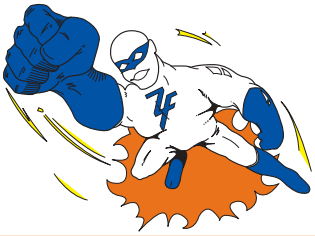


CUSHIONED CLAMPING

ZSi-Foster offers a comprehensive line of cushioning clamps – from the original Cush-A-Clamp® to the newer Cush-A-Nator®. There is a ZSi-Foster solution to cushion shock, vibration, noise and temperature.

CUSH-A-NATOR® (See Pages 6 - 8)

The Cush-A-Nator® is the newest breakthrough in cushioned clamping. It offers the user with an option for the highest temperature range of any cushion clamp on the market -65°F to 340°F (-53°C to 170°C), or just the advanced features of the superior new design.

The new Cush-A-Nator® features a "thumb drive" tab that simplifies installation.

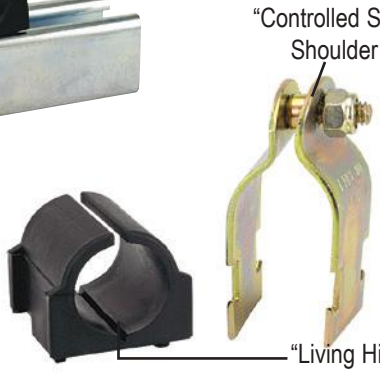
It is also a perfect solution for retrofit since the clamp can be installed on a pipe that is already resting on the channel support.

CUSH-A-CLAMP® (See Page 9)

CUSH-A-CLAMP® – channel mounted clamping systems is ideal for multiple line runs. It absorbs shock and vibration, reducing unwanted noise and it prevents galvanic corrosion.

THE CLAMP — This **Controlled Squeeze™** design eliminates over-tightening and rotation while a nylon-insert nut assures a positive lock. THE CUSHION — Manufactured from a thermoplastic elastomer, it's built tough to withstand the effects of most oils, chemicals and industrial cleaning compounds, in temperatures from -50°F to 275°F. A patented "Living Hinge" allows the cushion to be spread apart for quick, easy installation. Interlock edges and channel locator legs ensure that the cushion remains in place.

Fits any standard 1 5/8" wide channel.

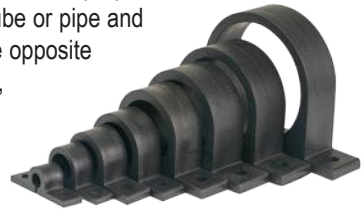


OMEGA SERIES™ (See Page 15)

The Omega Series™ clamp assembly retains, guides, protects and uniformly spaces line runs. Attached with two standard fasteners to any flat surface, providing a savings in both space and cost. THE CLAMP — Available in steel (with electro-dichromate finish), and stainless steel. THE CUSHION — Manufactured from a thermoplastic elastomer, it's built tough to withstand the effects of most oils, chemicals and industrial cleaning compounds, in temperatures from -50°F to 275°F.

CUSH-A-GLIDE™ (See Page 14)

The Cush-A-Glide is designed for fast installation of copper tube or pipe, and can be easily installed in seconds with fasteners of your choice. Just spread the clamp apart placing it over the top of a tube or pipe and fasten one side. Push in the opposite side to the desired tightness, allowing for expansion and contraction, then fasten the other side.



CUSH-A-CLAW (See Page 10)

Cush-A-Claw Grabs on to your Tube, Pipe, or Hose and holds it in place. The unique one piece patent pending design allows for quick, simple, and easy installation. It will not rust because it's molded from the same choice TPE Material of some of our other products that you've come to know and trust.

Available for surface mount, or strut mount.

CUSH-A-CLIP
(See Page 11)

Cush-A-Clip is a simple, economical lightweight hanger for supporting tubing. The secure but non-tightening design allows for expansion, greatly reducing joint fractures

CUSH-A-GRIP
(See Page 12)

Cush-A-Grip non-metallic strut clamps allow quick and easy corrosion resitant attachment of pipe, tube, and hose to Z-Strut support channels. They offer a cost effective alternative to metallic clamps.

CUSH-A-STRIP™
(See Page 13)

CUSH-A-STRIP™ is manufactured from a thermoplastic elastomer, Cush-A-Strip™ is designed for use from -50°F to 275°F.

Cush-A-Strip™ is designed for use with standard steel clamps ranging from ¼" tube to 6" pipe and is packaged in 20 Ft. rolls in an E-Z dispenser box.

The special locking lip edges ensure that Cush-A-Strip™ will remain in place with a balanced grip.

AIRSTRIP™
(See Page 14)

The AIRSTRIP™ is designed to dampen the noise and vibration that can occur between piping or duct work and the supporting channel. Made from 64 durometer Santoprene, the AIRSTRIP™ is light weight, dependable, and long-lasting.

ALPHA SERIES™
(See Page 16)

ALPHA SERIES™ – Designed for the tough jobs, the Alpha Series™ U-Bolt Assembly secures pipe runs to any flat surface. The cushion design provides total load distribution, allowing the U-Bolt to become a full contact hanger, eliminating knife-edge loading.

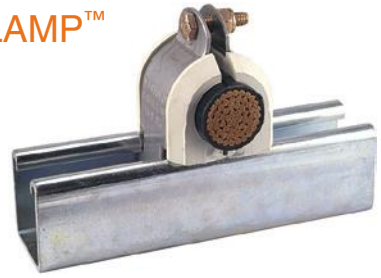
The U-Bolt traps and secures the cushion in place to prevent lateral movement, while nylon insert locknuts provide a positive lock. Available in electro-galvanized steel or 316 stainless steel.

The Cushion is a thermoplastic elastomer.

Porce-A-Clamp™ Replaces Porcelain and Maple Cable Clamp. Assembly consists of thermoplastic elastomer cushion with plated or stainless steel clamp. Plated steel and stainless are both supplied with Silicon Bronze bolt and nut used to breakup the magnetic field around the cable at the clamping location.

Porce-A-Clamp™ offers a convenient alternative to troublesome porcelain since it is made from non-breakable material.

PORCE-A-CLAMP™
(See Page 17)



FLAME RETARDANT PRODUCTS

ZSi-Foster offers flame retardant options for many of the clamping products. They are available in two different types of cushion. The Flame Retardant/High Hardness cushion is designed for applications such as wire and cable insulation, electrical connectors, seals, gaskets and boots. The Halogen-Free/Flame Retardant cushions contain an optimal combination of rubbers and thermoplastics reactively combined with non halogenated flame retardant additives.

Flame retardant options are indicated by the logos shown below.

Flame Retardant

Flame Retardant Halogen Free

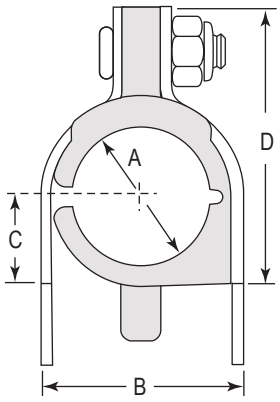
A NEW BREAKTHROUGH IN CUSHIONED CLAMPING DEVELOPED BY INDUSTRY LEADER ZSI

Cush-A-Nator "Cool Blue"

Cush-A-Nator Standard

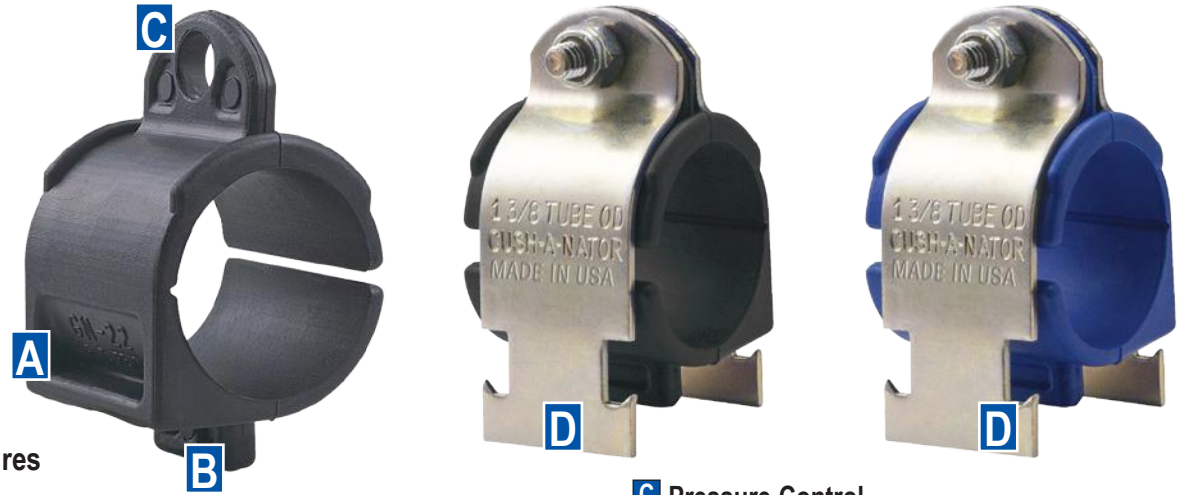
Patent Pending

The Cush-A-Nator® cushion is manufactured in the United States and made from a new incredibly durable thermoplastic rubber that resists high heat and provides longer life against vibration fatigue. The Cush-A-Nator is made from a proprietary thermoplastic vulcanized material cross-linked with high performance rubber and thermoplastic elastomers, which produces the highest operating temperature range in the industry.



The Cush-A-Nator® is designed to provide the user with a choice of the highest heat range resistance of any cushion on the market or simply the advanced features of a superior design.

The Cush-A-Nator® is designed and manufactured in Michigan.



Features

A Thumb Drive

The Cush-A-Nator® has the exclusive "Thumb Drive" that provides the installer a gripping point to easily open the cushion with the help of leverage tabs and a living hinge. Easy and effortlessly to install.

B Self-Alignment

Cushion can be opened and placed over the pipe or tube and rotated into place while on the channel and automatically aligned with the channel opening ready for clamping.

Installation examples shown on page 8

C Pressure Control

The Cush-A-Nator® cushion has a built in squeeze control as part of the cushion design. The side opening and the squeeze control tab provides evenly distributed pressure around the tube or pipe.

D Complete Clamping Unit

The Cush-A-Nator® is the only strut mounted cushion that is mechanically connected to the supporting steel clamp because the bolt passes through the squeeze control tab forming the single unit connection. This design helps prevent the cushion from excess vibration by being attached directly to the clamp.

Cush-A-Nator® "Cool Blue" has service temperatures of -65°F to 340°F (-53°C to 170°C).

Cush-A-Nator® standard has an operating range of -50°F to 275°F (-45°C to 135°C).

Cush-A-Nator® "Cool Blue" - Tube

Part No.			O.D. Tube Size	Dimensions (inches)			
Steel	SS304	SS316		A	B	C	D
HT04	HT04SS	HT04S6	1/4"	0.25	0.62	0.27	0.98
HT06	HT06SS	HT06S6	3/8"	0.37	0.82	0.33	1.13
HT08	HT08SS	HT08S6	1/2"	0.50	0.94	0.40	1.34
HT10	HT10SS	HT10S6	5/8"	0.62	1.06	0.46	1.54
HT12	HT12SS	HT12S6	3/4"	0.75	1.20	0.52	1.68
HT14	HT14SS	HT14S6	7/8"	0.87	1.31	0.58	1.82
HT16	HT16SS	HT16S6	1"	1.00	1.44	0.65	1.95
HT18	HT18SS	HT18S6	1 1/8"	1.12	1.57	0.70	2.08
HT20	HT20SS	HT20S6	1 1/4"	1.25	1.70	0.77	2.21
HT22	HT22SS	HT22S6	1 3/8"	1.37	1.82	0.83	2.34
HT24	HT24SS	HT24S6	1 1/2"	1.50	1.95	0.90	2.47
HT26	HT26SS	HT26S6	1 5/8"	1.62	2.07	0.96	2.60
HT28	HT28SS	HT28S6	1 3/4"	1.75	2.20	1.02	2.73
HT30	HT30SS	HT30S6	1 7/8"	1.87	2.32	1.09	2.86
HT32	HT32SS	HT32S6	2"	2.00	2.45	1.15	3.04
HT34	HT34SS	HT34S6	2 1/8"	2.12	2.57	1.27	3.23
HT36	HT36SS	HT36S6	2 1/4"	2.25	2.82	1.41	3.67
HT38	HT38SS	HT38S6	2 3/8"	2.37	2.82	1.41	3.67
HT40	HT40SS	HT40S6	2 1/2"	2.50	2.94	1.46	3.79
HT42	HT42SS	HT42S6	2 5/8"	2.62	3.07	1.53	3.92
HT46	HT46SS	HT46S6	2 7/8"	2.87	3.32	1.66	4.17
HT48	HT48SS	HT48S6	3"	3.00	3.57	1.78	4.42
HT50	HT50SS	HT50S6	3 1/8"	3.12	3.57	1.78	4.42
HT56	HT56SS	HT56S6	3 1/2"	3.50	3.95	1.97	4.79
HT64	HT64SS	HT64S6	4"	4.00	4.45	2.28	5.11
HT66	HT66SS	HT66S6	4 1/8"	4.12	4.57	2.34	5.54
HT72	HT72SS	HT72S6	4 1/2"	4.50	4.95	2.53	5.92

Cush-A-Nator® Standard - Tube

Part No.			O.D. Tube Size	Dimensions (inches)			
Steel	SS304	SS316		A	B	C	D
CN04	CN04SS	CN04S6	1/4"	0.25	0.62	0.27	0.98
CN06	CN06SS	CN06S6	3/8"	0.37	0.82	0.33	1.13
CN08	CN08SS	CN08S6	1/2"	0.50	0.94	0.40	1.34
CN10	CN10SS	CN10S6	5/8"	0.62	1.06	0.46	1.54
CN12	CN12SS	CN12S6	3/4"	0.75	1.20	0.52	1.68
CN14	CN14SS	CN14S6	7/8"	0.87	1.31	0.58	1.82
CN16	CN16SS	CN16S6	1"	1.00	1.44	0.65	1.95
CN18	CN18SS	CN18S6	1 1/8"	1.12	1.57	0.70	2.08
CN20	CN20SS	CN20S6	1 1/4"	1.25	1.70	0.77	2.21
CN22	CN22SS	CN22S6	1 3/8"	1.37	1.82	0.83	2.34
CN24	CN24SS	CN24S6	1 1/2"	1.50	1.95	0.90	2.47
CN26	CN26SS	CN26S6	1 5/8"	1.62	2.07	0.96	2.60
CN28	CN28SS	CN28S6	1 3/4"	1.75	2.20	1.02	2.73
CN30	CN30SS	CN30S6	1 7/8"	1.87	2.32	1.09	2.86
CN32	CN32SS	CN32S6	2"	2.00	2.45	1.15	3.04
CN34	CN34SS	CN34S6	2 1/8"	2.12	2.57	1.27	3.23
CN36	CN36SS	CN36S6	2 1/4"	2.25	2.82	1.41	3.67
CN38	CN38SS	CN38S6	2 3/8"	2.37	2.82	1.41	3.67
CN40	CN40SS	CN40S6	2 1/2"	2.50	2.94	1.46	3.79
CN42	CN42SS	CN42S6	2 5/8"	2.62	3.07	1.53	3.92
CN46	CN46SS	CN46S6	2 7/8"	2.87	3.32	1.66	4.17
CN48	CN48SS	CN48S6	3"	3.00	3.57	1.78	4.42
CN50	CN50SS	CN50S6	3 1/8"	3.12	3.57	1.78	4.42
CN56	CN56SS	CN56S6	3 1/2"	3.50	3.95	1.97	4.79
CN64	CN64SS	CN64S6	4"	4.00	4.45	2.28	5.11
CN66	CN66SS	CN66S6	4 1/8"	4.12	4.57	2.34	5.54
CN72	CN72SS	CN72S6	4 1/2"	4.50	4.95	2.53	5.92

Cush-A-Nator® "Cool Blue" - Pipe

Part No.			Pipe Size	Dimensions (inches)			
Steel	SS304	SS316		A	B	C	D
HT14P	HT14PSS	HT14PS6	1/2"	0.840	1.29	0.58	1.82
HT17P	HT17PSS	HT17PS6	3/4"	1.050	1.57	0.70	2.08
HT21P	HT21PSS	HT21PS6	1"	1.315	1.76	0.81	2.34
HT30P	HT30PSS	HT30PS6	1 1/2"	1.900	2.32	1.09	2.86
HT38P	HT38PSS	HT38PS6	2"	2.375	2.82	1.41	3.67
HT46P	HT46PSS	HT46PS6	2 1/2"	2.875	3.32	1.66	4.17
HT56P	HT56PSS	HT56PS6	3"	3.500	3.95	1.97	4.79
HT64P	HT64PSS	HT64PS6	3 1/2"	4.000	4.45	2.28	5.11
HT72P	HT72PSS	HT72PS6	4"	4.500	4.95	2.53	5.92

Contact Factory for Additional Sizes

Cush-A-Nator® Standard - Pipe

Part No.			Pipe Size	Dimensions (inches)			
Steel	SS304	SS316		A	B	C	D
CN14P	CN14PSS	CN14PS6	1/2"	0.840	1.29	0.58	1.82
CN17P	CN17PSS	CN17PS6	3/4"	1.050	1.57	0.70	2.08
CN21P	CN21PSS	CN21PS6	1"	1.315	1.76	0.81	2.34
CN30P	CN30PSS	CN30PS6	1 1/2"	1.900	2.32	1.09	2.86
CN38P	CN38PSS	CN38PS6	2"	2.375	2.82	1.41	3.67
CN46P	CN46PSS	CN46PS6	2 1/2"	2.875	3.32	1.66	4.17
CN56P	CN56PSS	CN56PS6	3"	3.500	3.95	1.97	4.79
CN64P	CN64PSS	CN64PS6	3 1/2"	4.000	4.45	2.28	5.11
CN72P	CN72PSS	CN72PS6	4"	4.500	4.95	2.53	5.92

Contact Factory for Additional Sizes

Cush-A-Nator® – New Installations

Step 1:

Step 2:
Insert the Cush-A-Nator® onto the pipe and then use the exclusive "Thumb Drive" to rotate into position.

Step 3:
Add Pipe Clamps and tighten the assembly.

Cush-A-Nator® – Retrofit / Replacement Applications

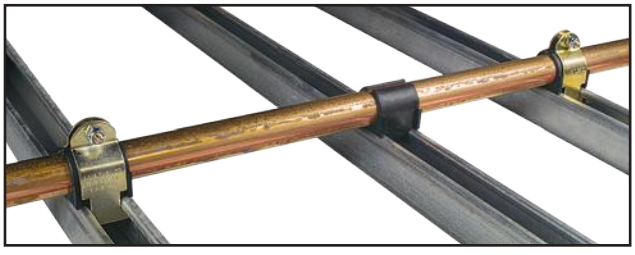
A key feature of the Cush-A-Nator® is this ability to place the cushion and rotate into position. ***Perfect for retrofit applications!***

Retrofit - The Common Problem

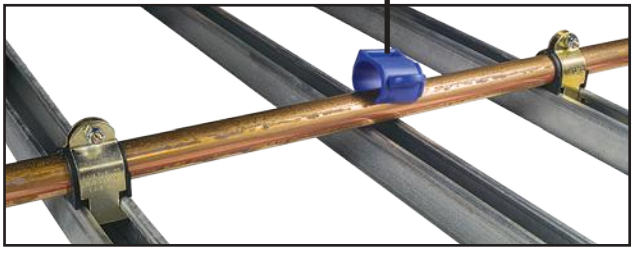
Replacing a cush-a-clamp within a long pipe run poses a problem. Clamps before and after the one to be replaced prohibit the pipe from being raised so that the new cushion can be installed correctly. All to often a work-around is used which compromises the connection.

Retrofit - The Perfect Solution

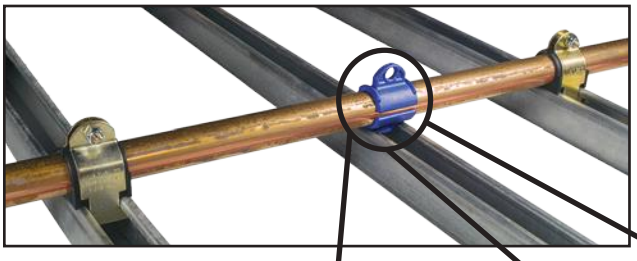
Step 1: Remove Bad Cushion.



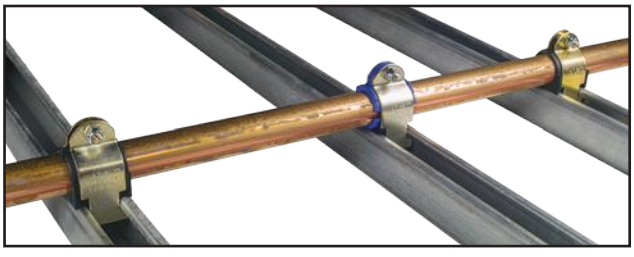
Step 2: The Cush-A-Nator can be installed without raising the pipe. The unique "Thumb Drive" allows you to rotate the Cush-A-Nator into position.

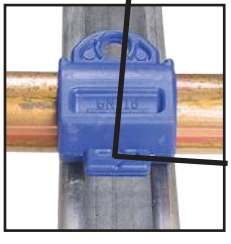


Step 3: Rotated into place while on the channel and the Self-Alignment tab automatically aligns with the channel opening ready for clamping.

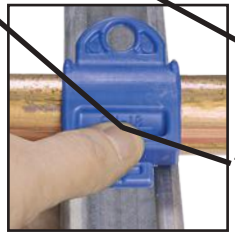


Step 3: Add Pipe Clamps and tighten the assembly.

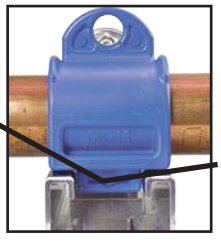




Rotate into Position



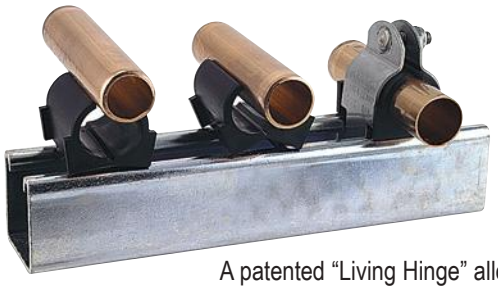
Thumb Drive



"Self-Alignment"

Gold Electro-Galvanized Steel

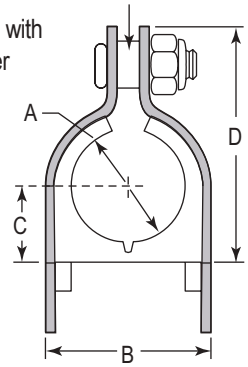
Stainless Steel



A patented "Living Hinge" allows the cushion to be spread apart for quick, easy installation.

CUSH-A-CLAMP® — Channel mounted clamping systems are ideal for multiple line runs, while absorbing shock and vibration, reducing unwanted noise and preventing galvanic corrosion. Cush-A-Clamp® fits any standard 1-5/8" wide channel.

Assembly consisting of steel clamp with locknut and thermoplastic elastomer cushion. All parts are marked for easy identification and packaged for small lot or bulk use. When specified, Cush-A-Clamp® assemblies up to 2", are available individually packaged.



THE CLAMP — Features a unique shoulder stud which is securely fastened to one clamp half. Steel clamps for tube sizes up to 1-3/8" have the "**Controlled Squeeze™**" design which eliminates over-tightening and rotation while a nylon-insert nut assures a positive lock. Clamps are available in steel (with electro-dichromate finish), and stainless steel type 304. (Contact factory for type 316).

THE CUSHION — Made from a thermoplastic elastomer, it's built tough to withstand the effects of most oils, chemicals and industrial cleaning compounds, in temperatures from -50°F to 275°F. Interlock edges and channel locator legs ensure that the cushion remains in place.

INSTALLATION — One man, one tool time savings. Retrofits can be added without disassembly. A patented "Living Hinge" allows the cushion to be spread apart for quick, easy installation on sizes from 1/4" through 1-3/4".

Loading Values Mounted in Standard 12 Gage Channel.					
Nut	Torque (in-lbs)	Products	Pullout (lbs)	Slip (lbs)	
				Along	Through
1/4"	40	004T008 - 022T026	1,000	100	100
5/16"	60	024T028 - 050N056	2,200	200	200
3/8"	150	053N050 - 106N114	3,600	600	350
Loads are the same for Stainless Steel Clamps (Example 024NS028)					

Steel Part No.	Stainless-Steel. Part No.	Dimension "A"			Dimensions (inches)			
		*Copper and Steel Tubing	Copper Water Pipe (Nom.)	Nom. Pipe Size	A	B	C	D
004T008	004NS008	1/4"	-	-	0.25	0.62	0.27	0.98
006T010	006NS010	3/8"	1/4"	-	0.37	0.82	0.33	1.13
008T012	008NS012	1/2"	3/8"	-	0.50	0.94	0.40	1.34
009N012	009NS012	-	-	1/4"	0.54	0.98	0.43	1.34
010T014	010NS014	5/8"	1/2"	-	0.62	1.06	0.46	1.54
011N014	011NS014	-	-	3/8"	0.67	1.13	0.49	1.54
012T016	012NS016	3/4"	5/8"	-	0.75	1.20	0.52	1.68
014N018	014NS018	-	-	1/2"	0.84	1.29	0.58	1.82
014T018	014NS018	7/8"	3/4"	-	0.87	1.31	0.58	1.82
016T020	016NS020	1"	-	-	1.00	1.44	0.65	1.95
017N022	017NS022	-	-	3/4"	1.05	1.57	0.70	2.08
018T022	018NS022	1-1/8"	1"	-	1.12	1.57	0.70	2.08
020T024	020NS024	1-1/4"	-	-	1.25	1.70	0.77	2.21
021N026	021NS026	-	-	1"	1.31	1.76	0.81	2.34
022T026	022NS026	1-3/8"	1-1/4"	-	1.37	1.82	0.83	2.34
024N028	024NS028	1-1/2"	-	-	1.50	1.95	0.90	2.47
026N030	026NS030	1-5/8"	1-1/2"	-	1.62	2.07	0.96	2.60
027N032	027NS032	-	-	1-1/4"	1.66	2.17	0.99	2.73
028N032	028NS032	1-3/4"	-	-	1.75	2.2	1.02	2.73
030N034	030NS034	1-7/8"	-	1-1/2"	1.90	2.32	1.09	2.86
032N036	032NS036	2"	-	-	2.00	2.45	1.15	3.04
034N040	034NS040	2-1/8"	2"	-	2.12	2.57	1.27	3.23
038N042	038NS042	2-1/4"	-	-	2.37	2.82	1.41	3.67
038N044	038NS044	2-3/8"	-	2"	2.37	2.82	1.41	3.67
040N046	040NS046	2-1/2"	-	-	2.50	2.94	1.46	3.79
042N048	042NS048	2-5/8"	2-1/2"	-	2.62	3.07	1.53	3.92
046N052	046NS052	2-7/8"	-	2-1/2"	2.87	3.32	1.66	4.17
050N054	050NS054	3"	-	-	3.00	3.57	1.78	4.42
050N056	050NS056	3-1/8"	3"	-	3.12	3.57	1.78	4.42
053N060	053NS060	3-5/16"	-	-	3.31	3.96	1.90	4.75
056N062	056NS062	3-1/2"	-	3"	3.50	3.95	1.97	4.79
058N064	058NS064	3-5/8"	3-1/2"	-	3.62	4.20	2.03	5.11
064N072	064NS072	4"	-	3-1/2"	4.00	4.45	2.28	5.11
066N074	066NS074	4-1/8"	4"	-	4.12	4.57	2.34	5.54
069N076	069NS076	4-5/16"	-	-	4.34	4.96	2.40	5.84
072N080	072NS080	4-1/2"	-	4"	4.50	4.95	2.53	5.92
082N090	082NS090	5-1/8"	5"	-	5.12	5.57	2.84	6.54
089N096	089NS096	-	-	5"	5.56	6.01	3.06	6.92
096N106	096NS106	6"	-	-	6.00	6.57	3.34	7.54
098N106	098NS106	6-1/8"	6"	-	6.12	6.57	3.34	7.54
106N114	106NS114	-	-	6"	6.62	7.07	3.59	8.23

*Tube O.D. is Cushion I.D. ; Design load deflection data available on request.

Strut Mounted

Insert	Twist & Lock	Position Pipe	Snap In

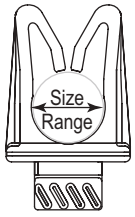
Surface Mounted

Position	Mount w/Screw	Position Pipe	Snap In
Side grooves provide Centering guide	Counter-sunk hole allows tightening of any type of #10 fastener		

The Cush-A-Claw Grabs on to your Tube, Pipe, or Hose and holds it in place. The unique one piece patent pending design allows for quick, simple, and easy installation. It will not rust because it's molded from the same choice TPE Material of some of our other products that you've come to know and trust.

- Easy Snap-in Installation of Tube, Pipe, or Hose
- Sure Grip Strut Base easily rotates into strut
- Will not Rust
- Non Conducting
- Saves Time and Money
- Temp Range: -50° to 275° F
- Works Great Indoors or Outdoors
- Six Sizes of Tube and Three Sizes of EMT
- Designed for Light Duty Loads and Applications
- Prevents Galvanic Corrosion of Dissimilar Metals
- An Excellent Alternative to Steel, Stainless Steel, or Galvanized Clamps.

O.D. Tube Size				EMTS Conduit Sizes			
Strut Mount Part #	Surface Mount Part #.	Size O.D.	Size In.	Strut Mount Part #	Surface Mount Part #.	Size O.D.	Size In.
CL-04	CLS-04	¼"	0.250	EMT-1/2	EMTS-1/2	½"	0.706
CL-06	CLS-06	⅜"	0.375	EMT-3/4	EMTS-3/4	¾"	0.922
CL-08	CLS-08	½"	0.500	EMT-1	EMTS-1	1"	1.163
CL-10	CLS-10	⅝"	0.625				
CL-12	CLS-12	¾"	0.750				
CL-14	CLS-14	⅞"	0.875				
CL-18	CLS-18	1⅛"	1.125				



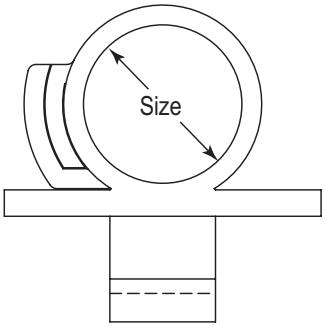
75 Lbs. Load
(safety Factor 3)

Cush-A-Claw® is manufactured under U.S. patent D631739

CUSH-A-CLIP

- Manufactured from polyamide alloy
- U.L. Rated
- Sizes from 3/8" to 1⅛"
- One piece design makes installation a snap.
- No nuts to tighten, no parts to lose.
- Temperatures from -40°F to 275°F
- Secure but non-tightening design allows for expansion, greatly reducing joint fractures

A SIMPLE, ECONOMICAL, LIGHTWEIGHT HANGER FOR SUPPORTING TUBING

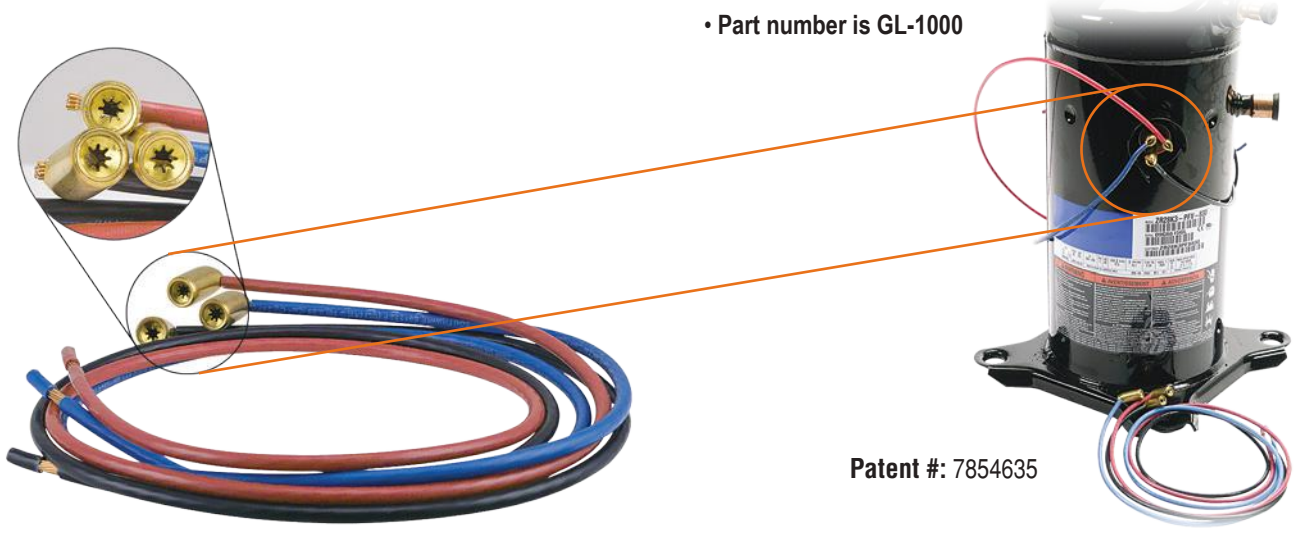


Part Number	Tube Sizes Only	
	O.D.	In.
RPC-3/8	3/8"	0.375"
RPC-1/2	1/2"	0.500"
RPC-5/8	5/8"	0.625"
RPC-3/4	3/4"	0.750"
RPC-7/8	7/8"	0.875"
RPC-1-1/8	1-1/8"	1.125"

GATOR-LOK
HVAC Terminal Repair Kit

Our patented design was made to be one-of-a-kind with not 1 but 2 layers of "Lok"ing technology. Constructed with 10 gauge, 30 inch copper-wire leads.

- Two layers of "Lok"ing technology
- No need for tools
- Easily replaces damaged wire leads
- Installs in under five minutes
- **Part number is GL-1000**



Patent #: 7854635

Multi-size adjustment capability allows four clamp sizes to fit fifteen sizes of tube and pipe. Comes complete with stainless steel bolt and captured nut hardware.

Patented Product

FEATURES

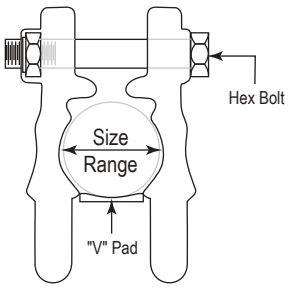
- Ten sizes of tube, five sizes of pipe
- Diameters from .25" to 1.31" (6mm to 32mm)

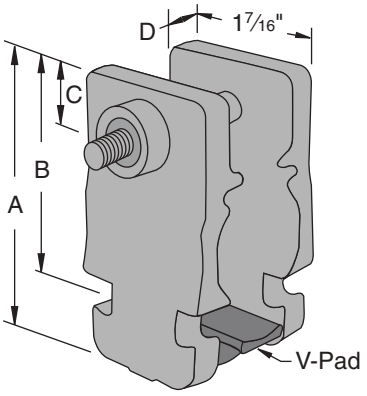
ADVANTAGES

- Reduces inventory SKU's
- Simplifies take-offs and requirements on projects using both tube and pipe sizes
- Easy installation, Non conducting
- Permissible outdoors
- Temperature range: -40˚F to +380˚F
- No galvanic reaction, Will not rust

BENEFITS

- Lowers overall inventory costs
- Works with screw or nut driver
- Resists vibration
- Use in place of steel clamps with steel tube
- Multi-environmental
- Covers a wide range of applications and maintains thermal barrier
- For use on copper tube
- Use in place of stainless, aluminum, PVC or hot dipped galvanized clamps



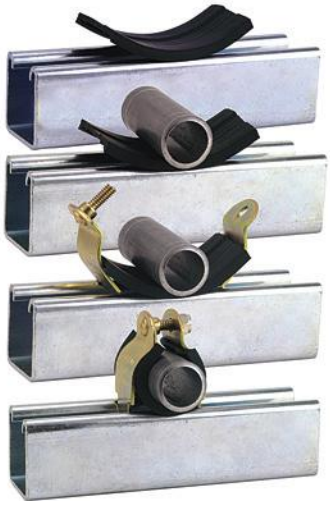


Part No.	O.D. Tube Sizes			Pipe Sizes	Metric Sizes	Diameters (in)
CG-10	1/4"	3/8"	1/2"	1/4"	6mm – 14mm	0.25 – 0.54
CG-20	5/8"	3/4"	7/8"	3/8" – 1/2"	15mm – 22mm	0.62 – 0.87
CG-30	7/8"	1"	1-1/8"	3/4"	22mm – 28mm	0.87 – 1.12
CG-40	1"	1-1/8"	1-1/4"	3/4" – 1"	26mm – 32mm	1.00 – 1.31

Part No.	Nominal Pipe Size	Dimensions				Hex Head Cap Screw & Lock Nut
		"A"	"B"	"C"	"D"	
CG-10	1/4"	1-15/16"	1-3/8"	3/8"	3/16"	1/4"-20 x 1-1/2"
CG-20	3/8"	2-3/8"	1-5/8"	7/16"	1/4"	1/4"-20 x 2"
CG-30	1/2"	2-9/16"	1-13/16"	7/16"	5/16"	1/4"-20 x 2"
CG-40	3/4"	2-11/16"	1-15/16"	7/16"	5/16"	1/4"-20 x 2"

- Manufactured from a thermoplastic elastomer, Cush-A-Strip™ is designed for use from -50°F to 275°F.
- Easy Stocking – Packaged in 20 foot rolls in an E-Z dispenser box for convenience in handling and storage. **Cush-A-Strip™ roll part number is S-716**
- Easy Measuring – Marked in ¼" increments for fast measuring and cutting, while eliminating waste.
- Lock-lip edges ensure that Cush-A-Strip™ will remain in place with a balanced grip.
- Clamps ordered separately. They are available with a standard bolt and nylon lock nut in steel (electro-dichromate), and stainless steel, in sizes ranging from ¼" tube to 6" pipe.

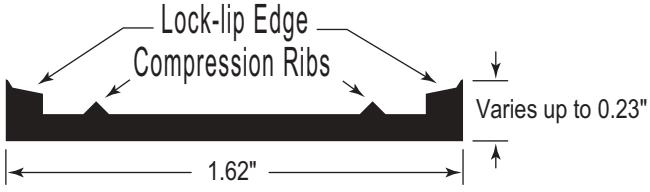
(1) Cut appropriate length strip using the cutting schedule shown on right.



(2) Place the pipe on the Cush-A-Strip™

(3) Insert the clamps in the strut

(4) Tighten the clamps.



Cush-A-Strip™ Cutting Guide

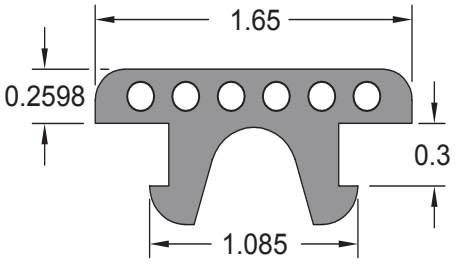
Clamp Part No.		Dimensions (Inches)			
Gold Plated Steel	Stainless Steel Type 304	Clamp Size O.D.	Tube Size O.D.	Pipe Size (Nom.)	Cutting Schedule
N008C	NS008	½"	¼"	–	⅞
N010C	NS010	⅝"	⅜"	–	1-⅛
N012C	NS012	¾"	½"	¼"	1-½
N014C	NS014	⅞"	⅝"	⅜"	2
N016C	NS016	1"	¾"	–	2-¼
N018C	NS018	1-⅛"	⅞"	½"	3
N020C	NS020	1-¼"	1"	¾"	3-¼
N022C	NS022	1-⅜"	1-⅛"	–	3-⅝
N024C	NS024	1-½"	1-3⁄16"	–	3-⅞
N024C	NS024	1-½"	1-¼"	1"	4
N026C	NS026	1-⅝"	1-⅜"	–	4-½
N028C	NS028	1-¾"	1-½"	–	4-⅞
N030C	CS030	1-⅞"	1-⅝"	1-¼"	5-¼
N032C	CS032	2"	1-¾"		5-½
N034C	CS034	2-⅛"	1-⅞"	1-½"	6
N036C	CS036	2-¼"	2"	–	6-⅜
N038C	CS038	2-⅜"	2-⅛"	–	6-¾
N040C	CS040	2-½"	2-¼"	–	7-¼
N042C	CS042	2-⅝"	2-⅜"	2"	7-½
N044C	CS044	2-¾"	2-½"	–	8
N048C	CS048	3"	2-¾"	–	8-¾
N050C	CS050	3-⅛"	2-⅞"	2-½"	9-¼
N054C	CS054	3-¼"	3"	–	9-½
N060C	CS060	3-¾"	3-½"	3"	11
N068C	CS068	4-¼"	4"	3-½"	12-¼
N076C	CS076	4-¾"	4-½"	4"	14
N092C	CS092	5-¾"	–	5"	15-½
N110C	CS110	6-⅞"	–	6"	18-½

* Gold Plated Steel Clamps Supplied with Fixed Stud and Nylon Lock Nut
* Stainless Steel Clamps Supplied with fixed Stud and Nylon Lock Nut from ½" through 1-¾" Sizes and 1-⅞" through 6-⅞" Sizes are supplied with a Loose Bolt and Hex Nut

AIRSTRIP™

The AIRSTRIP™ is designed to dampen the noise and vibration that can occur between piping or duct work and the supporting channel. Made from 64 Durometer Santoprene, the AIRSTRIP™ is light weight, dependable, and long-lasting.

- Temp Range: -40°F to 250°F (-40°C to 121°C)
- Available in 10' lengths
- Santoprene UL94HB rated
- Made in USA

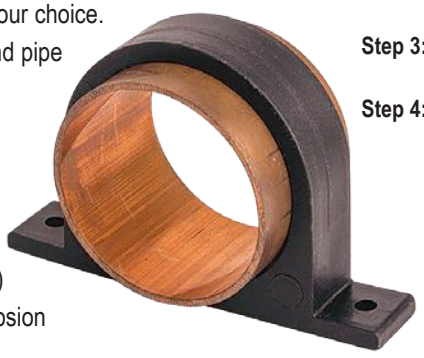


Part No.	Max. Load Lbs. per Lineal In.		Length	
	Lbs.	(kg/25.4mm)	Ft.	(m)
AS1	40	18.1	10	3.05

CUSH-A-GLIDE™

Cush-A-Glide is designed for fast installation of copper tube or pipe, and can be easily installed in seconds with fasteners of your choice.

- Allows for expansion and contraction of copper tube and pipe
- Excellent alternative to stainless or galvanized clamps
- Fits tightly and securely against mounting surfaces
- Made from trusted high quality TPE material
- One piece molded split ring design
- Suitable for indoor or outdoor applications
- Temperature range of -50°F to 275°F (-45°C to 135°C)
- Will not rust and prevents and eliminates galvanic corrosion
- Made in the USA

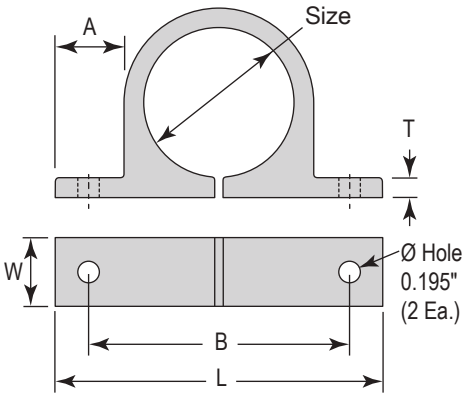


Step 1: Spread open Cush-a-Glide, and place it over tube, pipe, or hose

Step 2: Secure one side of Cush-a-Glide with a fastener of your choice

Step 3: Simply glide tube or pipe through the Cush-a-Glide to desired position

Step 4: Fasten second side of the Cush-a-Glide



Part No.	Pipe, Hose or Tube Size	Size	Dimensions – inches					Weight Ea. Lbs
			A	B.	L	T Thickness	W	
CAGB04	1/4"	0.245"	0.500"	1.000"	1.465"	0.110"	0.375"	0.003
CAGB06	3/8"	0.370"		1.125"	1.590"			0.004
CAGB08	1/2"	0.495"		1.250"	1.715"			0.005
CAGB10	5/8"	0.620"	0.563"	1.500"	2.045"	0.150"	0.500"	0.011
CAGB14	7/8"	0.870"		1.750"	2.295"			0.014
CAGB18	1 1/8"	1.120"	0.625"	2.125"	2.730"	0.180"	0.625"	0.025
CAGB22	1 3/8"	1.370"		2.375"	2.980"			0.035
CAGB26	1 5/8"	1.620"		2.625"	3.230"		0.750"	0.042
CAGB34	2 1/8"	2.120"		3.125"	3.730"			0.055

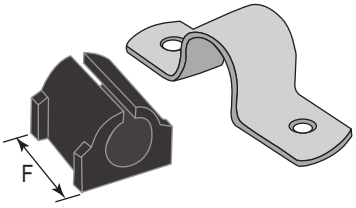
Gold Electro-Galvanized Steel

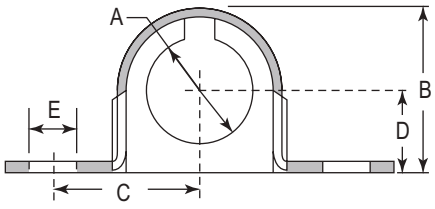
Stainless Steel

The Omega Series™ clamp assembly retains, guides, protects and uniformly spaces line runs. Attached with two standard fasteners to any flat surface, the Omega Series™ clamp eliminates the use of special channels, providing a savings in both space and cost. They go up fast, lines are rigid and look neat.

THE CLAMP — Steel with electro-dichromate finish, or stainless steel type 304.

THE CUSHION — Manufactured from a thermoplastic elastomer, it's built tough to withstand the effects of most oils, chemicals and industrial cleaning compounds, in temperatures from -50°F to 275°F. Interlock edge ensures that the cushion remains in place.





Assembly consists of clamp and thermoplastic elastomer cushion. Fasteners not included.

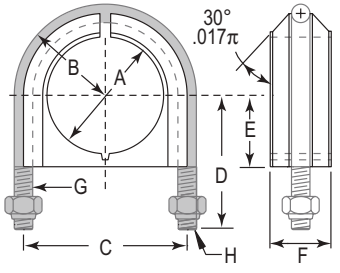
Steel Part No.	Stainless Steel Part No.	Copper & Steel Tubing O.D.	Copper Water Pipe (Nom.)	Pipe Size (Nom.)	Dimensions (inches)						Hanging Design Load
					A	B	C	D	E	F	
004M007	004MS007	1/4"	-	-	0.25	0.48	0.60	0.22	0.26	0.78	50
006M008	006MS008	3/8"	1/4"	-	0.37	0.62	0.66	0.31	0.26	0.81	50
008M011	008MS011	1/2"	3/8"	1/4"	0.50	0.81	0.83	0.40	0.26	0.98	50
010M013	010MS013	5/8"	1/2"	3/8"	0.62	0.93	0.85	0.46	0.26	0.98	50
012M015	012MS015	3/4"	5/8"	-	0.75	1.02	0.90	0.50	0.26	0.98	50
014M017	014MS017	7/8"	3/4"	1/2"	0.87	1.12	1.03	0.53	0.26	0.98	50
016M019	016MS019	1"	-	-	1.00	1.24	1.04	0.59	0.26	0.98	50
018M020	018MS020	-	-	3/4"	1.05	1.40	1.11	0.70	0.26	0.98	50
018M021	018MS021	1-1/8"	1"	-	1.12	1.40	1.17	0.70	0.26	0.98	50
020M024	020MS024	1-1/4"	-	-	1.25	1.60	1.20	0.77	0.26	1.56	50
021M026	021MS026	-	-	1"	1.31	1.71	1.28	0.81	0.26	1.56	50
022M026	022MS026	1-3/8"	1-1/4"	-	1.37	1.71	1.28	0.83	0.26	1.56	50
024M028	024MS028	1-1/2"	-	-	1.50	1.85	1.36	0.90	0.26	1.56	200
026M030	026MS030	1-5/8"	1-1/2"	-	1.62	1.98	1.43	0.96	0.26	1.56	200
027M032	027MS032	-	-	1-1/4"	1.66	2.12	1.55	0.99	0.34	1.56	400
028M032	028MS032	1-3/4"	-	-	1.75	2.12	1.55	1.02	0.34	1.56	400
030M034	030MS034	1-7/8"	-	1-1/2"	1.87	2.25	1.64	1.09	0.34	1.56	400
032M036	032MS036	2"	-	-	2.00	2.38	1.69	1.15	0.34	1.56	400
034M040	034MS040	2-1/8"	-	-	2.12	2.62	1.86	1.27	0.34	1.56	400
038M044	038MS044	2-3/8"	-	2"	2.37	2.88	1.94	1.41	0.34	1.56	400
040M046	040MS046	2-1/2"	-	-	2.50	3.00	2.00	1.47	0.34	1.56	400
042M048	042MS048	2-5/8"	2-1/2"	-	2.62	3.13	2.07	1.53	0.34	1.56	400
046M052	046MS052	2-7/8"	-	2-1/2"	2.87	3.38	2.19	1.65	0.34	1.56	400
050M056	050MS056	3-1/8"	3"	-	3.12	3.68	2.32	1.78	0.34	1.56	400
056M062	056MS062	3-1/2"	-	3"	3.50	4.06	2.50	1.97	0.34	1.56	400
058M064	058MS064	3-5/8"	3-1/2"	-	3.62	4.19	2.57	2.03	0.34	1.56	700
064M072	064MS072	4"	-	3-1/2"	4.00	4.68	2.82	2.28	0.34	1.56	700
066M074	066MS074	4-1/8"	4"	-	4.12	4.84	3.05	2.34	0.43	1.56	800
072M080	072MS080	4-1/2"	-	4"	4.50	5.22	3.24	2.53	0.43	1.56	800
082M090	082MS090	5-1/8"	5"	-	5.12	5.82	3.55	2.84	0.43	1.56	800
089M096	089MS096	-	-	5"	5.56	6.31	4.00	3.06	0.56	1.56	1,200
098M106	098MS106	6-1/8"	6"	-	6.12	6.90	4.31	3.34	0.56	1.56	1,200
106M114	106MS114	-	-	6"	6.62	7.39	4.56	3.58	0.56	1.56	1,200

PART NO. SUFFIX	Cushions	Example
NONE	Thermoplastic elastomer	004M007 (STEEL) 004MS007 (STAINLESS STEEL)
N	Flame Retardant	004M007N (STEEL) 004MS007N (STAINLESS STEEL)
NH	Flame Retardant Halogen Free	004M007NH (STEEL) 004MS007NH (STAINLESS STEEL)

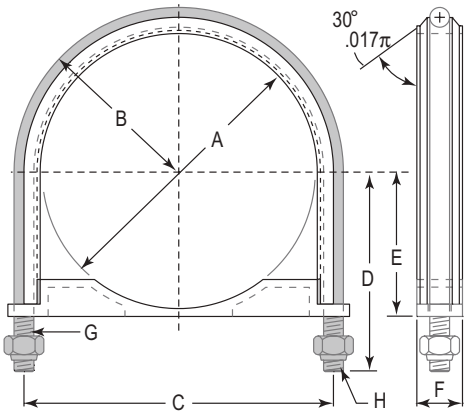
Note: Fasteners not included.

Designed for the tough jobs, the **Alpha Series**™ U-Bolt Assembly secures pipe runs to any flat surface. The cushion design provides total load distribution, allowing the U-Bolt to become a full contact hanger, eliminating knife-edge loading. The U-Bolt traps and secures the cushion in place to prevent lateral movement, while nylon insert locknuts provide a positive lock.

Alpha Series™ U-Bolt Assembly conforms to MIL-S-901D for shock testing.



1/2" thru 6" assembly.



8" thru 12" assembly – Two piece cushion design

Assy. Part No.	Pipe Size (Nom.)	Dimensions (Inches)								Torque	Design Load	Slip Through
		A Dia.	B Radius	C	D	E	F	G	H			
UB1/2PA	1/2"	0.840	0.80	1.60	1.50	0.67	0.68	1/4	1/4-20 UNC-2B	100	485	500
UB3/4PA	3/4"	1.05	0.90	1.80	1.60	0.78	0.68	1/4	1/4-20 UNC-2B	100	485	500
UB1PA	1"	1.31	1.02	2.05	1.70	0.91	0.68	1/4	1/4-20 UNC-2B	100	485	500
UB1-1/4PA	1-1/4"	1.66	1.27	2.55	2.10	1.08	1.24	3/8	3/8-16 UNC-2B	150	1,220	500
UB1-1/2PA	1-1/2"	1.90	1.40	2.80	2.20	1.19	1.24	3/8	3/8-16 UNC-2B	150	1,220	500
UB2PA	2"	2.37	1.67	3.35	2.50	1.45	1.24	3/8	3/8-16 UNC-2B	150	1,220	500
UB2-1/2PA	2-1/2"	2.87	1.95	3.90	3.00	1.69	1.24	1/2	1/2-13 UNC-2B	200	2,260	500
UB3PA	3"	3.50	2.27	4.55	3.30	2.00	1.24	1/2	1/2-13 UNC-2B	200	2,260	500
UB3-1/2PA	3-1/2"	4.00	2.52	5.05	3.70	2.25	1.24	1/2	1/2-13 UNC-2B	200	2,260	500
UB4PA	4"	4.50	2.50	5.50	3.90	2.50	1.24	1/2	1/2-13 UNC-2B	200	2,260	500
UB5PA	5"	5.56	3.25	6.56	4.50	3.03	1.24	1/2	1/2-13 UNC-2B	200	2,260	500
UB6PA	6"	6.62	3.87	7.75	5.40	3.56	1.44	5/8	5/8-11 UNC-2B	250	3,620	500
UB8PA	8"	8.62	4.85	9.82	6.40	4.56	1.44	5/8	5/8-11 UNC-2B	250	3,620	500
UB10PA	10"	10.75	6.08	12.16	7.70	5.68	1.65	3/4	3/4-10 UNC-2B	275	5,420	500
UB12PA	12"	12.75	7.13	14.25	8.70	6.68	1.65	3/4	3/4-10 UNC-2B	275	5,420	500

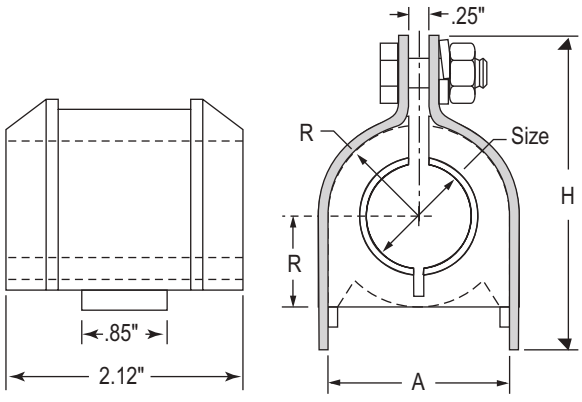
Assy. Part No.	Tube Size (O.D.)	Dimensions (Inches)								Torque	Design Load	Slip Through
		A Dia.	B Radius	C	D	E	F	G	H			
UB7/8TA	7/8"	0.875	0.80	1.60	1.50	0.67	0.68	1/4	1/4-20 UNC-2B	100	485	500
UB1TA	1"	1.00	0.90	1.80	1.60	0.78	0.68	1/4	1/4-20 UNC-2B	100	485	500
UB11/4TA	1-1/4"	1.25	1.02	2.05	1.70	0.91	0.68	1/4	1/4-20 UNC-2B	100	485	500
UB1 3/8TA	1-3/8"	1.375	1.02	2.05	1.70	0.91	0.68	1/4	1/4-20 UNC-2B	100	485	500
UB2TA	2"	2.00	1.40	2.80	2.20	1.19	1.24	3/8	3/8-16 UNC-2B	150	1,220	500
UB3TA	3"	3.00	1.95	3.90	3.00	1.69	1.24	1/2	1/2-13 UNC-2B	200	2,260	500
UB4TA	4"	4.00	2.52	5.05	3.70	2.25	1.24	1/2	1/2-13 UNC-2B	200	2,260	500
UB5TA	5"	5.00	3.25	6.56	4.50	3.03	1.24	1/2	1/2-13 UNC-2B	200	2,260	500
UB6TA	6"	6.00	3.87	7.75	5.40	3.56	1.44	5/8	5/8-11 UNC-2B	250	3,620	500

SUFFIX	Clamp	Cushion	Example
NONE	Electro-galvanized	Thermoplastic elastomer	UB1/2PA
6	Stainless Steel, Type 316	Thermoplastic elastomer	UB1/2PA6
N6	Stainless Steel, Type 316	Flame Retardant	UB1/2PAN6
N	Electro-galvanized	Flame Retardant	UB1/2PAN
NH	Electro-galvanized	Flame Retardant Halogen Free	UB1/2PANH
NH6	Stainless Steel,Type 316	Flame Retardant Halogen Free	UB1/2PANH6

PORCE-A-CLAMP™

Replaces Porcelain and Maple Cable Clamp. Assembly consists of thermoplastic elastomer cushion with plated or stainless steel clamp. Plated steel and stainless are both supplied with Silicon Bronze bolt and nut.

- Non-breakable material
- Chemical and UV resistant
- **U.L. Listed** - Burning stops within 10 seconds after two applications of ten seconds each of a flame to a test bar with no flaming drips.
- Plated Steel, or Stainless steel clamps
- Tapered flange to protect cable
- Dielectric strength 640 volts per mil
- One piece cushion design, available with Flame retardant / Halogen Free cushions
- Silicon Bronze Hardware used to Breakup the Magnetic field around the Cable at the Clamping Location.



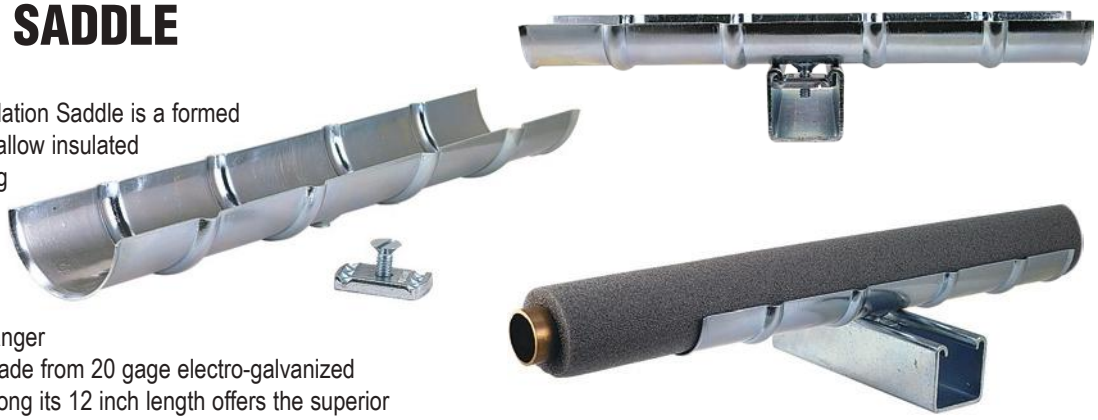
The hinged cushion allows easy installation of the wire, but the components will not get separated and lost or broken.

Part No.	Dimensions (Inches)			Total Assy. Height - H
	Hole Dia.	A	R	
006CC018	3/8	1.12	0.56	1.82
008CC018	1/2	1.12	0.56	1.82
010CC018	5/8	1.12	0.56	1.82
012CC026	3/4	1.62	0.81	2.34
014CC026	7/8	1.62	0.81	2.34
016CC026	1	1.62	0.81	2.34
018CC026	1-1/8	1.62	0.81	2.34
020CC034	1-1/4	2.12	1.06	2.86
022CC034	1-3/8	2.12	1.06	2.86
024CC034	1-1/2	2.12	1.06	2.86
026CC034	1-5/8	2.12	1.06	2.86
028CC042	1-3/4	2.62	1.31	3.50
030CC042	1-7/8	2.62	1.31	3.50
032CC042	2	2.62	1.31	3.50
034CC042	2-1/8	2.62	1.31	3.50
036CC050	2-1/4	3.12	1.56	4.05
038CC050	2-3/8	3.12	1.56	4.05
040CC050	2-1/2	3.12	1.56	4.05
042CC050	2-5/8	3.12	1.56	4.05
044CC058	2-3/4	3.62	1.81	4.75
046CC058	2-7/8	3.62	1.81	4.75
048CC058	3	3.62	1.81	4.75
050CC058	3-1/8	3.62	1.81	4.75
052CC066	3-1/4	4.12	2.06	5.125
054CC066	3-3/8	4.12	2.06	5.125
056CC066	3-1/2	4.12	2.06	5.125
058CC066	3-5/8	4.12	2.06	5.125
060CC074	3-3/4	4.62	2.31	5.54
062CC074	3-7/8	4.62	2.31	5.54
064CC074	4	4.62	2.31	5.54
066CC074	4-1/8	4.62	2.31	5.54
068CC080	4-1/4	5.00	2.50	5.92
070CC080	4-3/8	5.00	2.50	5.92
072CC080	4-1/2	5.00	2.50	5.92

Note: All clamps have Silicon Bronze Hardware

SUFFIX	Clamp	Cushion	Example
Z	Plated Steel	Flame Retardant	006CC018Z
S	Stainless Steel		006CC018S
ZH	Plated Steel	Flame Retardant Halogen Free	006CC018ZH
SH	Stainless Steel		006CC018SH

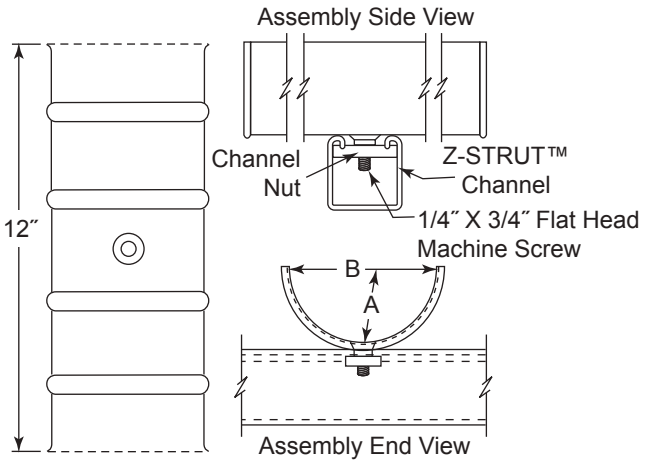
INSULATION SADDLE



The Saddle-Up Pipe Insulation Saddle is a formed metal shield designed to allow insulated refrigeration pipe or tubing to pass through the support without need to compromise the vapor barrier and protects from crushing or damage at hanger and support locations. Made from 20 gage electro-galvanized steel the ribbed design along its 12 inch length offers the superior support needed to spread out loading on insulation which reduces the potential for internal cavity creation between the pipe and insulation. The Z-Strut mounting option provides a time tested secure and safe attachment method so there is no need for other tie downs to the support.

OTHER FEATURES INCLUDE:

- Shipped with all necessary hardware to attach to Z-Strut or any other industry standard 1⅝" wide strut channel.
- Features flared edges to protect pipe insulation jacketing.
- Each Saddle individually marked with part number
- Counter Sunk attachment Hole and Flat Head Machine Screw prevent possible damage to insulation.
- Electro-Galvanized Steel provides excellent rust protection and has no exposed fabricated edges.



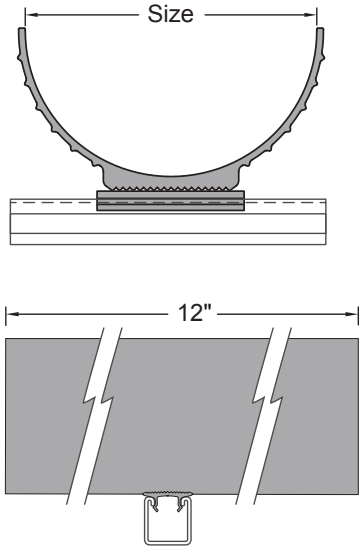
Dimensions (Inches)			½" Insulation		¾" Insulation		1" Insulation		1½" Insulation	
Part Number	B Width	A Radius	OD Tube Size	OD With Insulation	OD Tube Size	OD With Insulation	OD Tube Size	OD With Insulation	OD Tube Size	OD With Insulation
SD150	1½	¾	⅜	1⅜	–	–	–	–	–	–
			½	1½	–	–	–	–	–	–
SD200	2	1	⅝	1⅝	⅜	1⅞	–	–	–	–
			¾	1¾	½	2	–	–	–	–
			⅞	1⅞	–	–	–	–	–	–
SD250	2½	1¼	1⅛	2⅛	⅝	2⅛	⅜	2⅜	–	–
			1⅜	2⅜	¾	2¼	½	2½	–	–
			–	–	⅞	2⅜	–	–	–	–
SD300	3	1½	1⅝	2⅝	1⅛	2⅝	⅝	2⅝	–	–
			–	–	1⅜	2⅞	¾	2¾	–	–
			–	–	–	–	⅞	2⅞	–	–
SD350	3½	1¾	2⅛	3⅛	1⅝	3⅛	1⅛	3⅛	⅜	3⅜
			2⅜	3⅜	–	–	1⅜	3⅜	½	3½
SD450	4½	2¼	2⅝	3⅝	2⅛	3⅝	1⅝	3⅝	⅝	3⅝
			–	–	2⅜	3⅞	–	–	¾	3¾
			–	–	–	–	–	–	⅞	3⅞
			3⅛	4⅛	2⅝	4⅛	2⅛	4⅛	1⅛	4⅛
			–	–	–	–	2⅜	4⅜	1⅜	4⅜
SD550	5½	2¾	3⅝	4⅝	3⅛	4⅝	2⅝	4⅝	1⅝	4⅝
			4⅛	5⅛	3⅝	5⅛	3⅛	5⅛	2⅛	5⅛
			–	–	–	–	–	–	2⅜	5⅜
SD650	6½	3¼	–	–	4⅛	5⅝	3⅝	5⅝	2⅝	5⅝
			–	–	–	–	4⅛	6⅛	3⅛	6⅛

SNAP-A-SADDLE™

The SNAP-A-SADDLE™ provides an easy way to attach insulated pipes to support channel, with one step, tool-free installation.

Snaps easily into channel

- Temp Range: -50° to 275°F (-46° to 135° C)
- Available in both black and white
- UL94-HB1 Rated TPV Material
- Made in USA
- Easy Installation
- Standard 12" lengths. Special lengths available upon request



Part No.		Nominal Inside Opening
Black	White	
SB225	SW225	2¼
SB325	SW325	3¼
SB425	SW425	4¼
SB525	SW525	5¼
SB625	SW625	6¼
SB825	SW825	8⅝

Snap-A-Saddle Size Guide - Copper Tubing

Tubing Size	Insulation Thickness				
	½"	¾"	1"	1½"	2"
¼	S*225	S*225	S*325	S*425	S*525
⅜					
½					
⅝		S*325			
¾					
1					
1-¼	S*325		S*425	S*525	S*625
1-½					
2		S*425			
2-½	S*425		S*525	S*625	S*825
3		S*525			
3-½	S*525		S*625	S*825	
4		S*625			

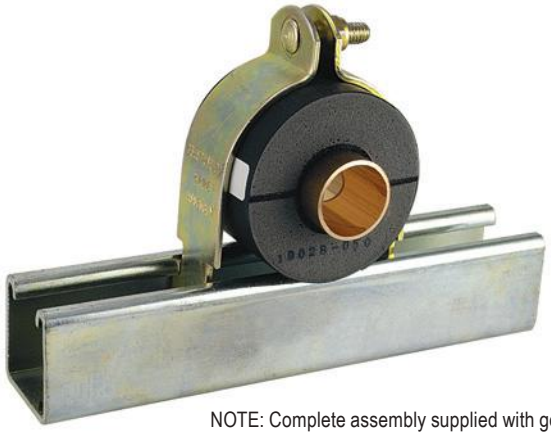
* Add "B" for Black or "W" for White

Snap-A-Saddle Size Guide - Schedule 40/80 Pipe

Pipe Size	Insulation Thickness				
	½"	¾"	1"	1½"	2"
¼	S*225	S*225	S*325	S*425	S*525
⅜					
½					
¾		S*325			
1	S*325		S*425	S*525	S*625
1-¼					
1-½		S*425			
2	S*425		S*525	S*625	S*825
2-½		S*525			
3	S*525		S*625	S*825	
3-½		S*625			
4	S*625		S*825		

* Add "B" for Black or "W" for White

AIRTIGHT CRUSH-RESISTANT INSULATION CLAMP



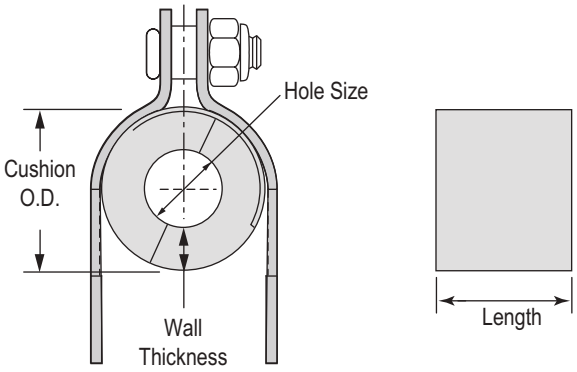
NOTE: Complete assembly supplied with gold electro-galvanized channel clamp and hardware

Cush-A-Therm™ Clamp is a perfect crush-resistant airtight seal for chilled refrigeration or mechanical pipe lines that require continuous insulation.

The rigid foam construction has an insulating tape inner lining which supports tube and absorbs vibration of operating pipe lines.

The outer cover consists of a special rubber coating which seals the cushion after installation in order to prevent condensation.

It's strong closed-cell structure is ideal for liquid cooling lines to prevent condensation, save energy, and maintain the vapor barrier.



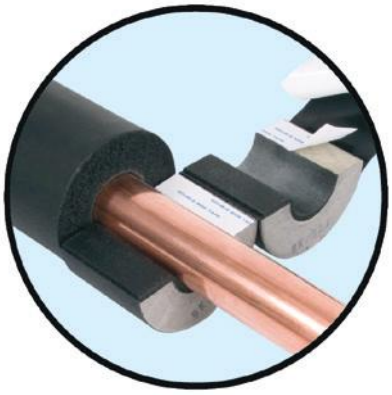
FEATURES

- Temperature range: -70°F to +250°F (-200°C to +125°C)
- Flammability is Self-Extinguishing as tested under ASTM D 635
- Maintains thermal barrier protection
- Prevents condensation
- Properly supports pipe and tube
- Absorbs vibration
- Polyurethane foam laminated with a rubber lining

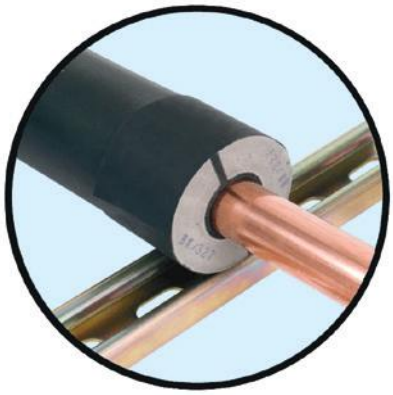
Dimensions (Inches)					Nominal ½" Wall Thickness		Nominal ¾" Wall Thickness		Nominal 1" Wall Thickness		Nominal 1-½" Wall Thickness		Nominal 2" Wall Thickness	
Hole Size	Copper I.D.	Pipe O.D.	IPS	Len.	Part No.	Cushion O.D.	Part No.	Cushion O.D.	Part No.	Cushion O.D.	Part No.	Cushion O.D.	Part No.	Cushion O.D.
¼ ID	-	¼	-	2.953"	UX1412	1¼ (1.250")	UX1434	1¾ (1.750")	UX1410	2¼ (2.250")			–	
⅜ ID	¼	⅜	-	2.953"	UX3812	1⅜ (1.375")	UX3834	1⅞ (1.875")	UX3810	2⅜ (2.375")	UX3815	3⅜ (3.375")	–	
½ ID	⅜	½	¼	2.953"	UX1212	1½ (1.500")	UX1234	2 (2.000")	UX1210	2½ (2.500")	UX1215	3½ (3.500")	–	
⅝ ID	½	⅝	⅜	2.953"	UX5812	1⅝ (1.625")	UX5834	2⅛ (2.125")	UX5810	2⅝ (2.625")	UX5815	3⅝(3.625")	UX5820	4⅝ (4.625")
¾ ID	⅝	¾	-	2.953"	UX3412	1¾ (1.750")	UX3434	2¼ (2.250")	UX3410	2¾ (2.750")	UX3415	3¾ (3.750")	UX3420	4¾ (4.750")
⅞ ID	¾	⅞	½	2.953"	UX7812	1⅞ (1.875")	UX7834	2⅜ (2.375")	UX7810	2⅞(2.875")	UX7815	3⅞ (3.875")	UX7820	4⅞ (4.875")
1-⅛ ID	1	1⅛	¾	2.953"	UX11812	2⅛ (2.125")	UX11834	2⅝ (2.625")	UX11810	3⅛ (3.125")	UX11815	4⅛ (4.125")	UX11820	5⅛ (5.125")
1-⅜ ID	1¼	1⅜	1	2.953"	UX13812	2⅜ (2.375")	UX13834	2⅞ (2.875")	UX13810	3⅜ (3.375")	UX13815	4⅜ (4.375")	UX13820	5⅜ (5.375")
1-⅝ ID	1½	1⅝	1¼	2.953"	UX15812	2⅝ (2.625")	UX15834	3⅛ (3.125")	UX15810	3⅝ (3.625")	UX15815	4⅝ (4.625")	UX15820	5⅝ (5.625")
1-⅞ ID	-	1⅞		2.953"	UX17812	2⅞ (2.875")	UX17834	3⅜ (3.375")	UX17810	3⅞ (3.875")	UX17815	4⅞ (4.875")	UX17820	5⅞ (5.875")
2-⅛ ID	2	2⅛	-	2.953"	UX21812	3⅛ (3.125")	UX21834	3⅝ (3.625")	UX21810	4⅛ (4.125")	UX21815	5⅛ (5.125")	UX21820	6⅛ (6.125")
2-⅜ ID	2¼	2⅜	2	2.953"	UX23812	3⅜ (3.375")	UX23834	3⅞ (3.875")	UX23810	4⅜ (4.375")	UX23815	5⅜ (5.375")	UX23820	6⅜ (6.375")
2-⅝ ID	2½	2⅝	-	3.937"	UX25812	3⅝ (3.625")	UX25834	4⅛ (4.125")	UX25810	4⅝ (4.625")	UX25815	5⅝ (5.625")	UX25820	6⅝ (6.625")
2-⅞ ID	-	2⅞	2½	3.937"	UX27812	3⅞ (3.875")	UX27834	4⅜ (4.375")	UX27810	4⅞ (4.875")	UX27815	5⅞ (5.875")	UX27820	6⅞ (6.875")
3-⅛ ID	3	3⅛	-	3.937"	UX31812	4⅛ (4.125")	UX31834	4⅝ (4.625")	UX31810	5⅛ (5.125")	UX31815	6⅛ (6.125")	UX31820	7⅛ (7.125")
3-½ ID	-	3½	3	3.937"	UX31212	4½ (4.500")	UX31234	5 (5.000")	UX31210	5½ (5.500")	UX31215	6½(6.500")	UX31220	7½ (7.500")
3-⅝ ID	3½	3⅝	-	3.937"	UX35812	4⅝ (4.625")	UX35834	5⅛ (5.125")	UX35810	5⅝ (5.625")	UX35815	6⅝ (6.625")	UX35820	7⅝ (7.625")
4-⅛ ID	4	4-⅛	3½	3.937"	UX41812	5⅛ (5.125")	UX41834	5⅝ (5.625")	UX41810	6⅛ (6.125")	UX41815	7⅛ (7.125")	UX41820	8⅛ (8.125")

AIRTIGHT CRUSH-RESISTANT INSULATION CLAMP

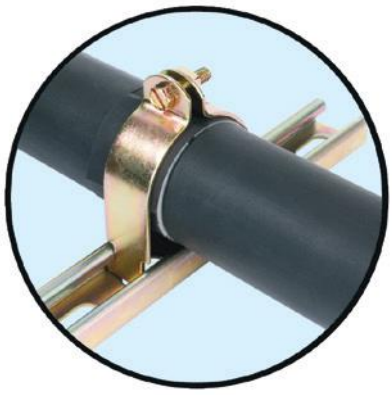
INSTALLATION IS AS EASY AS 1-2-3!



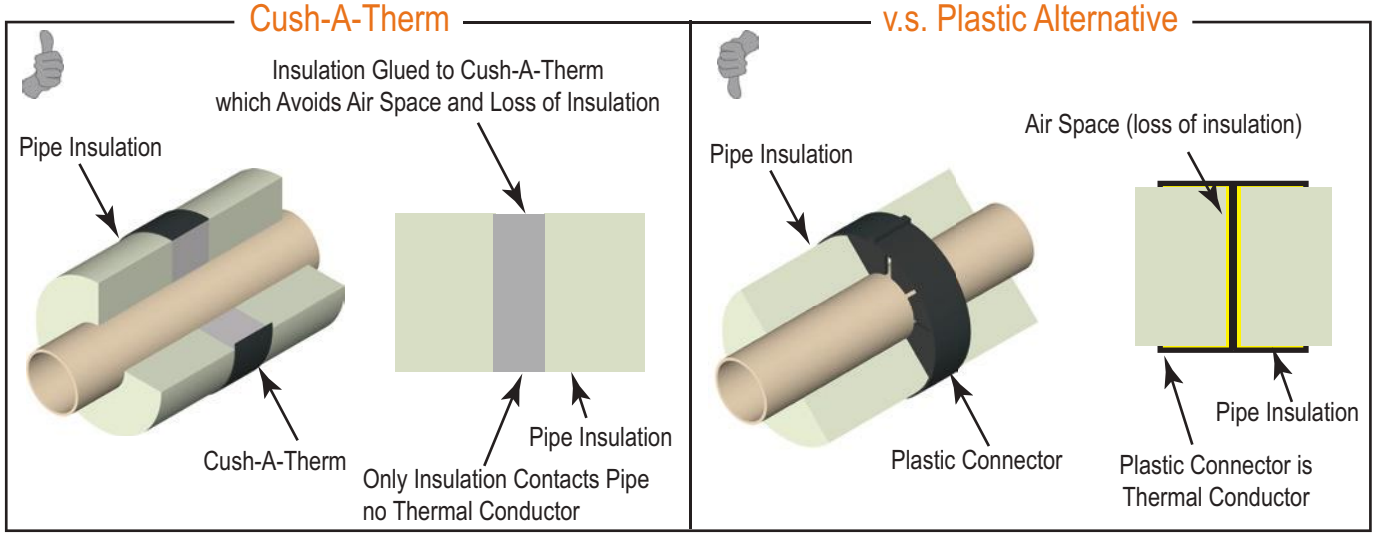
1. Insulation slides over pipes. Self adhesive surfaces provide seal.



2 Put in place and glue to insulation.



3. Wrap and seal with ProTape.



ASHRAE Insulation Recommendations

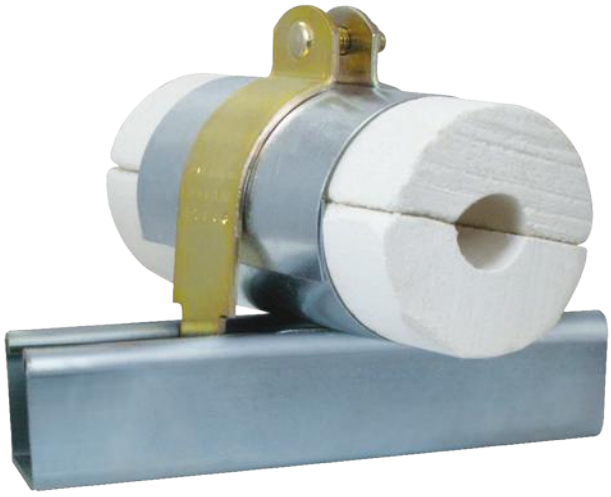
Cush-A-Therm is designed to meet the ASHRAE recommendations for insulation for mechanical systems which indicate that insulated pipe hangers should provide the following:

1. Complete sealing of pipe against water vapor ingress
2. No energy transfer of cold to supporting clamp to prevent condensation of water and possible growth of mold. If the support incasing the insulation is in contact with the pipe or tube and supported by a metallic clamp, which is not protected by insulation, below ambient temperatures will be transfer to the clamp causing energy transfer and condensation.
3. No interruption of the insulation envelope
4. Limit or avoid compression at support location

ASHRAE Section 23.13-23.14 further states "when the goal is avoiding compression of low-compressive-strength insulation products, it is recommended to use high-strength insulation inserts made of a product that offers the desired compressive strength and other necessary performance properties. Other higher-strength materials that are not thermal insulation material and interrupt the insulation envelope, or do not allow complete sealing of an insulation system against water vapor ingress are not recommended for supporting insulated piping on pipe hangers. Note that wood blocks have poor thermal conductivity and are not recommended, especially for cold pipe systems."

Insulated cold piping should receive special attention when exposed to ambient or unconditioned air. The Cush-A-Therm is a product that seals out air, and insulates the pipe/tube from the supporting clamp, and is therefore in compliance with the 2013 ASHRAE insulation recommendations.

CAL-CLAMP CRUSH RESISTANT INSULATION



MODEL “HW” - For Hot or Cold applications

- Works equally well on both hot and cold lines.
- Includes the strut clamps required for installation with strut.
- Special order insulation lengths, double sheet metal wrap, load bearing plates and alternate sheet metal gauges are available upon request.

MODEL “CWP” - For applications requiring a wet lag insulation

- Insulations extends 1" beyond sheet metal.
- The minimum length for our “CWP” insert is 6” .
- Includes the strut clamps required for installation with strut.
- Special order insulation lengths, double sheet metal wrap, load bearing plates and alternate sheet metal gauges are available upon request.

Maximum Allowable Load (lbs)	
Pipe Size	HW/CWP
½"	51
¾"	62
1"	72
1-¼"	92
1-½"	123
2"	164
2-½"	225
3"	276
4"	388
5"	500
6"	612
8"	827
10"	1102
12"	1326

Insulation Length Specification (in.)							
I.P.S. NOMINAL	Insulation Thickness						
	1"	1½"	2"	2½"	3"	4"	
½" to 1½"	4"*				6"		
2"	6"						
2-½"' to 6"	6"				9"		
8" to 10"	9"						
12" to 18"	12"						

**CWP Model Inserts have a minimum length of 6"*

***Larger Sizes Available Upon Requestt*

Sheet Metal Gauge[1]						
I.P.S. NOMINAL	Insulation Thickness					
	1"	1½"	2"	2½"	3"	4"
½" to 1-½"	24			20		
2" to 5"	20					
6"	20				16	
8" to 24"	16					

[1]A double thickness of sheet metal is recommended on the lower half when used with rollers or when hanger span exceeds ten feet.

Material:

- Asbestos Free Calcium Silicate (Cellular Glass and Polyurethane also available upon request), treated for water resistance, encased in a 360 degree A-653 Galvanized Sheet Metal jacket (304SS and 316SS available upon request).
- Minimum 140PSI compressive strength. Working Temperature is 42°F to 1200°F. (5.6°C to 649°C) Lower temps upon request.

MODEL "HW"

For Hot or Cold applications

Strut Clamp included

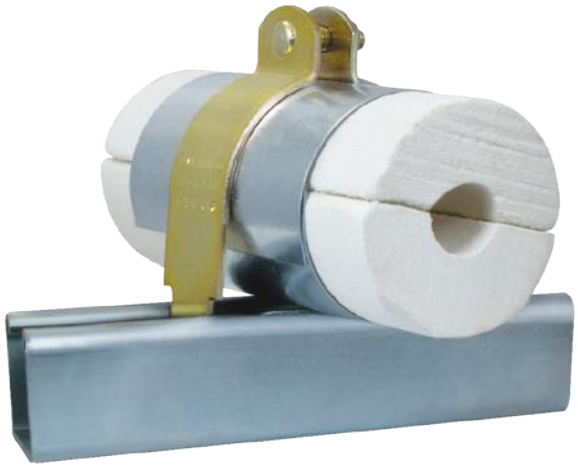
Model HWP, Insulation and Strut Clamps												
		½"		1"		1½"		2"		2½"		3"	
IPS	Pipe OD	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.
¾"	1.05	HWP3412	2.16	HWP3410	2.82	HWP3415	3.95	HWP3420	4.95	HWP3425	-	HWP3430	-
1"	1.315	HWP112	2.41	HWP110	3.45	HWP115	4.45	HWP120	5.51	HWP125	-	HWP130	-
1¼"	1.66	HWP11412	2.72	HWP11410	3.45	HWP11415	4.95	HWP11420	5.51	HWP11425	-	HWP11430	-
1½"	1.99	HWP11212	2.99	HWP11210	3.95	HWP11215	4.95	HWP11220	6.57	HWP11225	7.57	HWP11230	8.57
2"	2.375	HWP212	3.42	HWP210	4.45	HWP215	5.51	HWP220	6.57	HWP225	7.57	HWP230	8.57
2½"	2.875	HWP21212	3.93	HWP21210	4.95	HWP21215	6.57	HWP21220	7.57	HWP21225	8.57	HWP21230	9.57
3"	3.5	HWP312	4.56	HWP310	5.51	HWP315	6.57	HWP320	7.57	HWP325	8.57	HWP330	9.57
3½"	4	HWP31212	5.07	HWP31210	6.57	HWP31215	7.57	HWP31220	8.57	HWP31225	9.57	HWP31230	10.7
4"	4.5	HWP412	5.57	HWP410	6.57	HWP415	7.57	HWP420	8.57	HWP425	9.57	HWP430	10.7
5"	5.563	HWP512	6.64	HWP510	7.57	HWP515	8.57	HWP520	9.57	HWP525	10.7	HWP530	11.7
6"	6.625	HWP612	7.71	HWP610	8.57	HWP615	9.57	HWP620	10.7	HWP625	11.7	HWP630	12.7
8"	8.625	HWP812	9.74	HWP810	10.7	HWP815	11.7	HWP820	12.7	HWP825	13.95	HWP830	14.95
10"	10.75	HWP1012	11.87	HWP1010	12.7	HWP1015	13.95	HWP1020	14.95	HWP1025	15.95	HWP1030	16.95
12"	12.75	HWP1212	13.88	HWP1210	14.95	HWP1215	15.95	HWP1220	16.95	HWP1225	17.95	HWP1230	18.95

Model HWT, Copper Tube Sizes, Insulation and Strut Clamps													
		½"		1"		1½"		2"		2½"		3"	
Copper Tube	Tube OD	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.
½"	⅝"	HWT5812	1.66	HWT5810	2.82	HWT5815	3.45	-	-	-	-	-	-
¾"	⅞"	HWT7812	1.92	HWT7810	2.82	HWT7815	3.95	HWT7820	4.95	-	-	-	-
1"	1-⅛"	HWT11812	2.16	HWT11810	2.82	HWT11815	3.95	HWT11820	4.95	-	-	-	-
1¼"	1-⅜"	HWT13812	2.41	HWT13810	3.45	HWT13815	4.45	HWT13820	5.51	-	-	-	-
1½"	1-⅝"	HWT15812	2.72	HWT15810	3.45	HWT15815	4.95	HWT15820	5.51	-	-	-	-
2"	2-⅛"	HWT21812	3.16	HWT21810	3.95	HWT21815	4.95	HWT21820	6.57	HWT21825	7.57	HWT21830	8.57
2½"	2-⅝"	HWT25812	3.66	HWT25810	4.45	HWT25815	5.51	HWT25820	6.57	HWT25825	7.57	HWT25830	8.57
3"	3-⅛"	HWT31812	4.16	HWT31810	4.95	HWT31815	6.57	HWT31820	7.57	HWT31825	8.57	HWT31830	9.57
4"	4-⅛"	HWT41812	5.16	HWT41810	6.57	HWT41815	7.57	HWT41820	8.57	HWT41825	9.57	HWT41830	10.7
5"	5-⅛"	HWT51812	6.16	HWT51810	7.57	HWT51815	8.57	HWT51820	9.57	HWT51825	10.7	HWT51830	11.7
6"	6-⅛"	HWT61812	7.16	HWT61810	8.57	HWT61815	9.57	HWT61820	10.7	HWT61825	11.7	HWT61830	12.7

MODEL "CW"

For applications requiring a wet lag insulation. Insulations extends 1" beyond metal.

Strut Clamp included



Model CWP, Insulation and Strut Clamps													
		½"		1"		1½"		2"		2½"		3"	
IPS	Pipe OD	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.
¾"	1.05	CWP3412	2.16	CWP3410	2.82	CWP3415	3.95	CWP3420	4.95	-	-	-	-
1"	1.315	CWP112	2.41	CWP110	3.45	CWP115	4.45	CWP120	5.51	-	-	-	-
1¼"	1.66	CWP11412	2.72	CWP11410	3.45	CWP11415	4.95	CWP11420	5.51	-	-	-	-
1½"	1.99	CWP11212	2.99	CWP11210	3.95	CWP11215	4.95	CWP11220	6.57	CWP11225	7.57	CWP11230	8.57
2"	2.375	CWP212	3.42	CWP210	4.45	CWP215	5.51	CWP220	6.57	CWP225	7.57	CWP230	8.57
2½"	2.875	CWP21212	3.93	CWP21210	4.95	CWP21215	6.57	CWP21220	7.57	CWP21225	8.57	CWP21230	9.57
3"	3.5	CWP312	4.56	CWP310	5.51	CWP315	6.57	CWP320	7.57	CWP325	8.57	CWP330	9.57
3½"	4	CWP31212	5.07	CWP31210	6.57	CWP31215	7.57	CWP31220	8.57	CWP31225	9.57	CWP31230	10.7
4"	4.5	CWP412	5.57	CWP410	6.57	CWP415	7.57	CWP420	8.57	CWP425	9.57	CWP430	10.7
5"	5.563	CWP512	6.64	CWP510	7.57	CWP515	8.57	CWP520	9.57	CWP525	10.7	CWP530	11.7
6"	6.625	CWP612	7.71	CWP610	8.57	CWP615	9.57	CWP620	10.7	CWP625	11.7	CWP630	12.7
8"	8.625	CWP812	9.74	CWP810	10.7	CWP815	11.7	CWP820	12.7	CWP825	13.95	CWP830	14.95
10"	10.75	CWP1012	11.87	CWP1010	12.7	CWP1015	13.95	CWP1020	14.95	CWP1025	15.95	CWP1030	16.95
12"	12.75	CWP1212	13.88	CWP1210	14.95	CWP1215	15.95	CWP1220	16.95	CWP1225	17.95	CWP1230	18.95

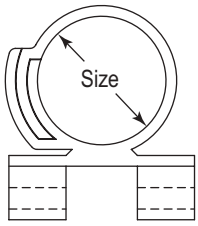
Model CWT, Copper Tube Sizes, Insulation and Strut Clamps													
		½"		1"		1½"		2"		2½"		3"	
Copper Tube	Tube OD	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.	Part No.	Insulation O.D.
½"	⅝"	CWT5812	1.66	CWT5810	2.82	CWT5815	3.45	-		-	-	-	-
¾"	⅞"	CWT7812	1.92	CWT7810	2.82	CWT7815	3.95	CWT7820	4.95	-	-	-	-
1"	1⅛"	CWT11812	2.16	CWT11810	2.82	CWT11815	3.95	CWT11820	4.95	-	-	-	-
1¼"	1⅜"	CWT13812	2.41	CWT13810	3.45	CWT13815	4.45	CWT13820	5.51	-	-	-	-
1½"	1⅝"	CWT15812	2.72	CWT15810	3.45	CWT15815	4.95	CWT15820	5.51	-	-	-	-
2"	2⅛"	CWT21812	3.16	CWT21810	3.95	CWT21815	4.95	CWT21820	6.57	CWT21825	7.57	CWT21830	8.57
2½"	2⅝"	CWT25812	3.66	CWT25810	4.45	CWT25815	5.51	CWT25820	6.57	CWT25825	7.57	CWT25830	8.57
3"	3⅛"	CWT31812	4.16	CWT31810	4.95	CWT31815	6.57	CWT31820	7.57	CWT31825	8.57	CWT31830	9.57
4"	4⅛"	CWT41812	5.16	CWT41810	6.57	CWT41815	7.57	CWT41820	8.57	CWT41825	9.57	CWT41830	10.7
5"	5⅛"	CWT51812	6.16	CWT51810	7.57	CWT51815	8.57	CWT51820	9.57	CWT51825	10.7	CWT51830	11.7
6"	6⅛""	CWT61812	7.16	CWT61810	8.57	CWT61815	9.57	CWT61820	10.7	CWT61825	11.7	CWT61830	12.7

QUICK-CLIP

Quick-Clip's unique one-piece composite polyamide alloy design combines strength with light weight. It will overcome the problems of using cable ties for piping, electrical, optical and network cabling

- Quick Clip locates easily on ⅜" rod
- No breaks in insulation material
- Fast and easy installation, saves time and money
- Single handed installation
- Manufactured from a composite polyamide, tested from -40°F to + 275°F, *(-40°C to +135°C)* makes it ideal for network cables
- Studding panel inserts.

CLAMPING RANGE					
Part No.	Standard Copper (no insulation)	Metric Copper (no insulation)	Copper Tube with ⅜" Insulation	Copper Tube with ½" Insulation	Condensate Drain
QC12	¾"	-	-	-	-
QC14	⅞"	22mm	-	-	yes
QC16	1"	-	¼" tube	-	-
QC18	1⅛"	28mm	⅜" tube	-	-
QC20	1¼"	-	½" tube	¼" tube	-
QC22	1⅜"	-	⅝" tube	⅜" tube	yes
QC24	1½"	-	⅞" tube	⅝" tube	-
QC26	1⅝"	42mm	1⅛" tube	¾" tube	yes
QC32	2"	-	-	⅞" tube	-
QC34	2⅛"	54mm	1⅜" tube	1⅛" tube	yes
Inside diameter: Certain clips have two or more positions to accommodate both metric and standard sizes					

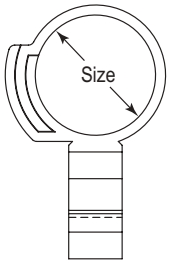


Slide onto threaded rod, twist to engage.
Insert pipe and clip to lock.

CUSH-A-CLICK

The great advantage with the **Cush-A-Click** is it retains an unbroken vapor barrier seal, eliminating the problem of sweating on metal fittings. The Cush-A-Click is ideal for the installation of refrigeration systems allowing the barrier seal to run the length of the pipe work without cutting the insulation material. The Cush-A-Click quickly secures both the pipe and the insulation.

- Time and labor savings
- Simple, secure installation of refrigeration and plumbing pipe work
- No break insulation material
- Corrosion resistance
- Light weight



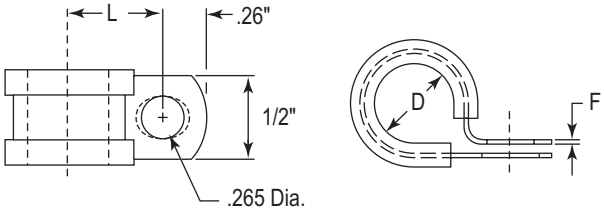
CLAMPING RANGE					
Part No.	Standard Copper (no insulation)	Metric Copper (no insulation)	Copper Tube with ⅜" Insulation	Copper Tube with ½" Insulation	Condensate Drain
CC12	¾"	-	-	-	-
CC14	⅞"	22mm	-	-	yes
CC16	1"	-	¼" tube	-	-
CC18	1⅛"	28mm	⅜" tube	-	-
CC20	1¼"	-	½" tube	¼" tube	-
CC22	1⅜"	-	⅝" tube	⅜" tube	yes
CC24	1½"	-	⅞" tube	⅝" tube	-
CC26	1⅝"	42mm	1⅛" tube	¾" tube	yes
CC32	2"	-	-	⅞" tube	-
CC34	2⅛"	54mm	1⅜" tube	1⅛" tube	yes
Inside diameter: Certain clips have two or more positions to accommodate both metric and standard sizes					

SPN LOOP CLAMPS

PLATED STEEL LOOP CLAMPS, ½" WIDE

FEATURES:

- Light to medium duty steel clamp
- E.P.D.M. cushion for electrical insulation and vibration absorption
- Steel clamps are zinc electroplated for corrosion resistance
- Some sizes available in aluminum. Contact factory for details.
- Temperature range -50°F to +275°F *(-45°C to 135°C)*



SPN					
Plated Steel Part No.	Stainless Steel Part No.	Size In.	Dimensions (in)		
			D	L	F
SPN-03	SPN-03SS	3/16"	0.188	0.499	0.032
SPN-04	SPN-04SS	1/4"	0.250	0.530	0.032
SPN-05	SPN-05SS	5/16"	0.312	0.561	0.032
SPN-06	SPN-06SS	3/8"	0.375	0.592	0.032
SPN-07	SPN-07SS	7/16"	0.438	0.623	0.032
SPN-08	SPN-08SS	1/2"	0.500	0.655	0.032
SPN-09	SPN-09SS	9/16"	0.562	0.749	0.032
SPN-10	SPN-10SS	5/8"	0.625	0.780	0.032
SPN-11	SPN-11SS	11/16"	0.688	0.811	0.032
SPN-12	SPN-12SS	3/4"	0.750	0.840	0.032
SPN-14	SPN-14SS	7/8"	0.875	0.889	0.032
SPN-16	SPN-16SS	1"	1.000	0.952	0.032
SPN-18	SPN-18SS	1 1/8"	1.125	1.030	0.032
SPN-20	SPN-20SS	1 1/4"	1.250	1.093	0.032
SPN-22	SPN-22SS	1 3/8"	1.375	1.155	0.032
SPN-24	SPN-24SS	1 1/2"	1.500	1.218	0.032
SPN-26	SPN-26SS	1 5/8"	1.625	1.280	0.032
SPN-28	SPN-28SS	1 3/4"	1.750	1.343	0.032
SPN-30	SPN-30SS	1 7/8"	1.875	1.405	0.032
SPN-32	SPN-32SS	2"	2.000	1.476	0.040
SPN-34	SPN-34SS	2 1/8"	2.125	1.538	0.040
SPN-36	SPN-36SS	2 1/4"	2.250	1.661	0.040
SPN-38	SPN-38SS	2 3/8"	2.375	1.663	0.040
SPN-40	SPN-40SS	2 1/2"	2.500	1.728	0.040
SPN-42	SPN-42SS	2 5/8"	2.625	1.788	0.040
SPN-48	SPN-48SS	3"	3.000	1.976	0.040
SPN-52	SPN-52SS	3 1/4"	3.250	2.100	0.040
SPN-56	SPN-56SS	3 1/2"	3.500	2.226	0.040
SPN-64	SPN-64SS	4"	4.000	2.476	0.040

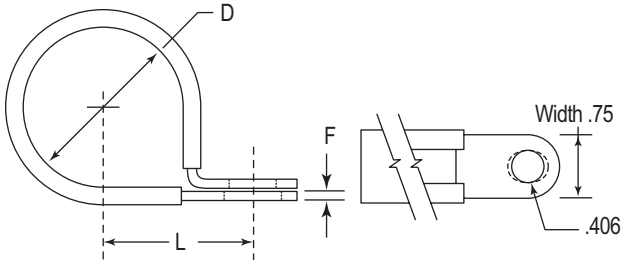
SPW LOOP CLAMPS

PLATED STEEL ¾" WIDE

FEATURES:

- Light to medium duty steel clamp
- E.P.D.M. cushion for electrical insulation and vibration absorption
- Steel clamps are zinc electroplate for corrosion resistance
- Color - Silver with black durable cushion.
- Temperature range -50°F to +275°F *(-45°C to 135°C)*

Available in stainless steel. Some sizes available in aluminum. Contact factory for details.



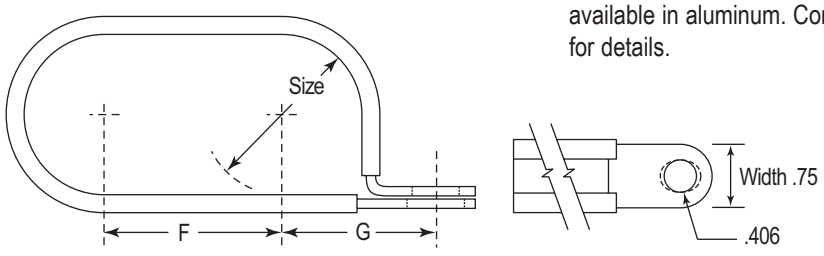
SPW				
Part No.	Size in	Dimensions (in)		
		D	L	F
SPW-04	¼"	0.250	0.639	0.031
SPW-06	⅜"	0.375	0.702	0.031
SPW-07	7/16"	0.438	0.732	0.031
SPW-08	½"	0.500	0.764	0.031
SPW-09	9/16"	0.563	0.795	0.031
SPW-10	⅝"	0.625	0.827	0.031
SPW-12	¾"	0.750	0.889	0.031
SPW-14	⅞"	0.875	0.952	0.031
SPW-16	1"	1.000	1.014	0.031
SPW-18	1⅛"	1.125	1.090	0.050
SPW-20	1¼"	1.250	1.159	0.050
SPW-24	1½"	1.500	1.284	0.050
SPW-26	1⅝"	1.625	1.346	0.050
SPW-28	1¾"	1.750	1.409	0.050
SPW-30	1⅞"	1.875	1.471	0.050
SPW-32	2"	2.000	1.534	0.050
SPW-36	2¼"	2.250	1.659	0.050
SPW-40	2½"	2.500	1.784	0.050
SPW-48	3"	3.000	2.034	0.050

SPD LOOP CLAMPS

2-TUBE CUSHIONED CABLE CLAMPS, PLATED STEEL ¾" WIDE

FEATURES:

- Medium duty steel clamp that can be slipped over two tubes or multiple wires and closed with a bolt at assembly.
- Steel clamps are zinc electroplate for corrosion resistance
- E.P.D.M. cushion for electrical insulation and vibration absorption
- Temperature range -50°F to +275°F (-45°C to 135°C)



SPD			
Part No.	Size In.	Dimensions (in)	
		F	G
SPD-08	½"	0.50	0.764
SPD-12	¾"	0.75	0.889
SPD-16	1"	1.00	1.014
SPD-20	1¼"	1.125	1.159

Available in stainless steel. Some sizes available in aluminum. Contact factory for details.

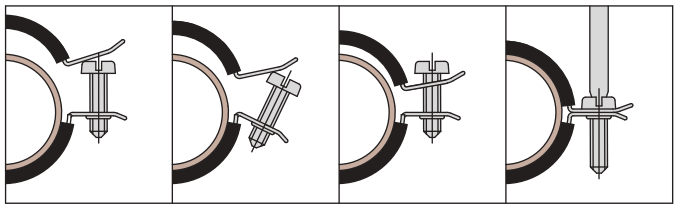
SPH CLAMP

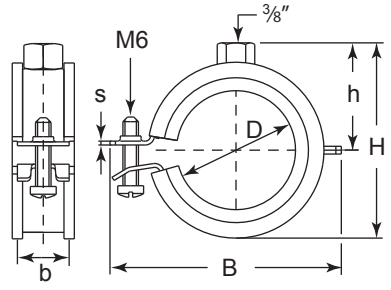
CUSH-A-RING

The Cush-A-Ring is a unique rubber lined hanger for copper and steel tube or pipe. The SPH-1 thru SPH-10 is a two-part clamp that has a hinged side with a single screw patented locking system. The quick locking system is easy to close with one hand which makes it easier and faster for installation. The noise insulating rubber lining is made of UV-resistant EPDM rubber. The Cush-A-Ring is zinc plated for corrosion resistance.

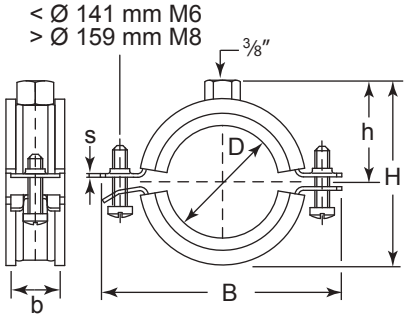
FEATURES:

- Rubber lined, noise insulated
- With quick locking system
- Clamp easy to close with one hand
- UV-resistant black EPDM rubber lining
- Zinc plated
- ASTM E-84
- Meets - Buy America Act





SPH-1 thru SPH-10



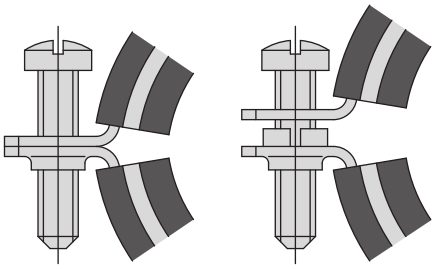
SPH-11 thru SPH-14

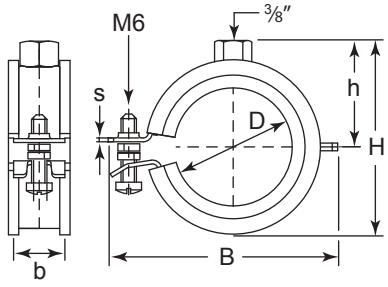
SPH							
Part No.	Dimensions (in)						
	D	IP	CT	B	H	h	b x s
SPH-1	11 – 14	1⁄4"	3⁄8"	1.9	1.4	0.87	20 x 1.25
SPH-2	15 – 18	3⁄8"	1⁄2"	1.9	1.4	0.87	20 x 1.25
SPH-3	20 – 23	1⁄2"	3⁄4"	2.2	1.6	0.94	20 x 1.25
SPH-4	25 – 28	3⁄4"	1	2.4	1.8	1.10	20 x 1.25
SPH-5	31 – 35	1	1 1⁄4"	2.6	2.0	1.20	20 x 1.25
SPH-6	40 – 43	1 1⁄4"	1 1⁄2"	3.0	2.4	1.30	20 x 1.25
SPH-7	48 – 53	1 1⁄2"	-	3.3	2.6	1.50	20 x 1.50
SPH-8	54 – 56	-	2	3.5	2.8	1.60	20 x 1.50
SPH-9	57 – 63	2	-	3.7	3.1	1.70	20 x 1.50
SPH-10	64-70	-	2 1⁄2"	4.5	3.9	2.20	23 x 2.00
BELOW PARTS HAVE 2 BOLT CONFIGURATIONS							
SPH-11	73-80	2 1⁄2"	3	5.0	4.3	2.40	23 x 2.00
SPH-12	83-91	3	-	5.4	4.8	2.60	25 x 2.50
SPH-13	100- 105	-	4	6.0	5.3	2.90	25 x 2.50
SPH-14	108-114	4	-	6.3	5.7	3.10	25 x 2.50

SPP CLAMPS

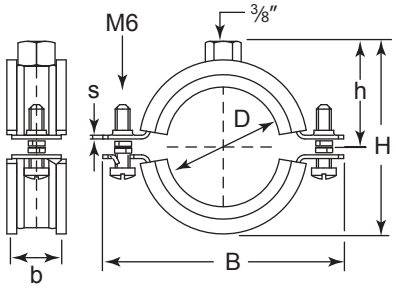
CUSH-A-RING

The Cush-A-Ring is a unique rubber lined hanger for PEX, CPVC, and PVC pipe. The SPP-1 thru SPP-10 has a two-part clamp with a hinged side and a single screw patented locking system. The quick locking system is easy to close with one hand which makes it easier and faster for installation. The noise insulating rubber lining is made of UV-resistant EPDM rubber. The Cush-A-Ring is zinc plated for corrosion resistance.





SPP-1 thru SPP-9



SPP-10 thru SPP-14

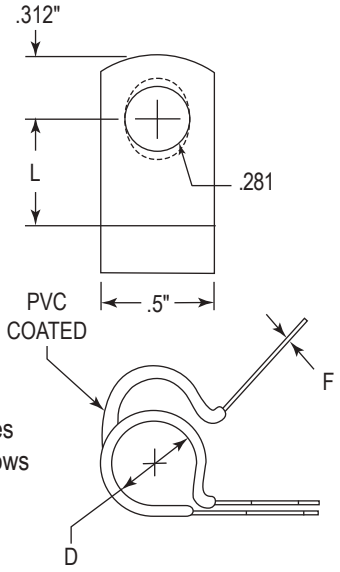
FEATURES:

- With quick locking system
- Clamp easy to close with one hand
- Specially formulated, green, UV and age resistant EPDM rubber lining
- Perfect for PEX, Fusion, CPVC and PVC pipe
- ASTM E-84
- Complies with MSS SP-58 and SP-69
- Material steel, zinc plated

SPP							
Part No.	Dimensions (in)						
	D (mm)	IP	CT	B	H	h	Rod Size
SPP-2	15 – 18	3/8"	1/2"	1.9	1.4	0.87	3/8"
SPP-3	20 – 23	1/2"	3/4"	2.2	1.7	0.94	3/8"
SPP-4	25 – 28	3/4"	1	2.4	1.9	1.0	3/8"
SPP-5	31 – 35	1"	1 1/4"	2.6	2.2	1.2	3/8"
SPP-6	40 – 43	1 1/4"	1 1/2"	3.0	2.6	1.3	3/8"
SPP-7	48 – 53	1 1/2"	-	3.3	3.0	1.5	3/8"
SPP-8	54 – 56	-	2	3.5	3.0	1.6	3/8"
SPP-9	60 – 65	2	-	4.3	3.4	1.7	3/8"
SPP-10	70 – 76	2 1/2"	-	4.9	4.1	2.2	3/8"
SPP-11	86 – 91	3"	-	5.4	4.6	2.4	3/8"
SPP-12	110 – 114	4"	-	6.3	5.8	2.9	3/8"
SPP-13	124 – 132	-	-	6.8	5.9	3.1	1/2"
SPP-14	155 – 160	-	-	8.0	7.4	3.9	1/2"

SVN LOOP CLAMPS

VINYL DIPPED - GALVANIZED STEEL ½" WIDE



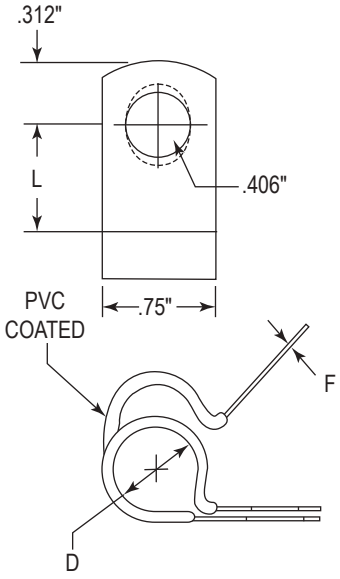
FEATURES:

- Medium duty steel clamp that can be slipped over a tube or wire and closed with a bolt at assembly. Holes provide easy alignment. Its pre developed shape allows for proper closing and excellent fit of the clamp.
- Galvanized Steel
- PVC coated, black color
- Temperature range -25°F to +160°F

SVN				
Part No.	Size in.	Dimensions (in)		
		D	L	F
SVN-03	3/16"	0.187	0.500	0.032
SVN-04	1/4"	0.250	0.531	0.032
SVN-05	5/16"	0.312	0.562	0.032
SVN-06	3/8"	0.375	0.593	0.032
SVN-08	1/2"	0.500	0.656	0.048
SVN-09	9/16"	0.562	0.687	0.048
SVN-10	5/8"	0.625	0.718	0.048
SVN-12	3/4"	0.750	0.781	0.048
SVN-14	7/8"	0.875	0.843	0.048
SVN-16	1"	1.000	0.906	0.048
SVN-18	1 1/8"	1.125	0.968	0.048

SVW LOOP CLAMPS

VINYL DIPPED GALVANIZED STEEL ¾" WIDE



FEATURES:

- Medium duty steel clamp that can be slipped over a tube or wire and closed with a bolt at assembly. Holes provide easy alignment. Its pre developed shape allows for proper closing and excellent fit of the clamp..
- Galvanized Steel
- PVC coated, black color
- Temperature range -25°F to +160°F

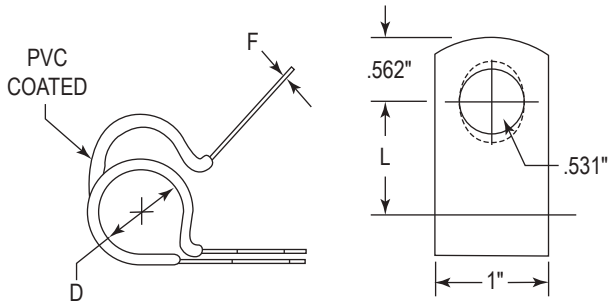
SVW				
Part No.	Size in.	Dimensions (in)		
		D	L	F
SVW-04	1/4"	0.250	0.656	0.032
SVW-05	5/16"	0.312	0.562	0.032
SVW-06	3/8"	0.375	0.0718	0.032
SVW-08	1/2"	0.500	0.781	0.048
SVW-09	9/16"	0.562	0.812	0.048
SVW-10	5/8"	0.625	0.843	0.048
SVW-12	3/4"	0.750	0.906	0.048
SVW-13	13/16"	0.812	0.937	0.048
SVW-14	7/8"	0.875	0.968	0.048
SVW-15	15/16"	0.937	1.000	0.048
SVW-16	1"	1.000	1.031	0.048
SVW-18	1 1/8"	1.125	1.092	0.048
SVW-20	1 1/4"	1.125	1.156	0.048
SVW-22	1 3/8"	1.375	1.218	0.048

LVZ LOOP CLAMPS

VINYL DIPPED GALVANIZED STEEL 1" WIDE

FEATURES:

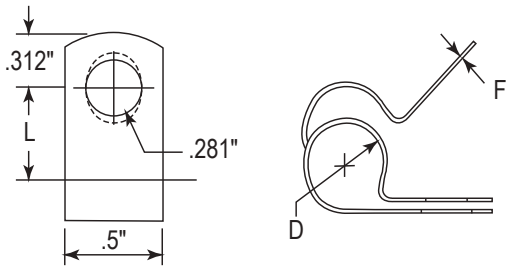
- Heavy duty steel clamp
- Galvanized Steel
- PVC coated, black color
- Temperature range -25°F to +160°F



LVZ				
Part No.	Size in.	Dimensions (in)		
		D	L	F
LVZ-18	1 1/8"	1.13	1.218	0.048
LVZ-19	1 3/16"	1.19	1.250	0.048
LVZ-20	1 1/4"	1.25	1.281	0.048
LVZ-21	1 5/16"	1.31	1.312	0.048
LVZ-24	1 1/2"	1.50	1.406	0.048
LVZ-25	1 9/16"	1.56	1.437	0.048
LVZ-28	1 3/4"	1.75	1.531	0.048
LVZ-29	1 13/16"	1.81	1.562	0.048
LVZ-32	2"	2.00	1.687	0.048
LVZ-33	2-1/16"	2.06	1.718	0.048
LVZ-36	2-1/4"	2.25	1.812	0.048
LVZ-40	2-1/2"	2.50	1.937	0.048
LVZ-42	2-5/8"	2.63	2.000	0.048
LVZ-44	2-3/4"	2.75	2.062	0.048
LVZ-46	2-7/8"	2.88	2.125	0.048
LVZ-57	3-9/16"	3.56	2.437	0.048

SSN LOOP CLAMPS

STAINLESS STEEL ½" WIDE



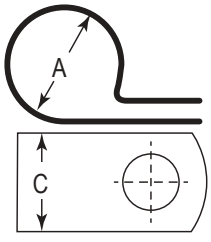
FEATURES:

- Medium duty steel clamp that can be slipped over a tube or wire and closed with a bolt at assembly. Holes provide easy alignment. Its pre-developed shape allows for proper closing and excellent fit.
- Stainless steel, type 301 or 304

SSN stainless steel				
Part No.	Size in.	Dimensions (in)		
		D	L	F
SSN-03	3/16"	0.187	0.500	0.032
SSN-04	1/4"	0.250	0.531	0.032
SSN-05	5/16"	0.312	0.562	0.032
SSN-06	3/8"	0.375	0.593	0.032
SSN-08	1/2"	0.500	0.656	0.048
SSN-09	9/16"	0.562	0.687	0.048
SSN-10	5/8"	0.625	0.718	0.048
SSN-12	3/4"	0.750	0.781	0.048
SSN-14	7/8"	0.875	0.843	0.048
SSN-16	1"	1.000	0.906	0.048
SSN-18	1 1/8"	1.125	0.968	0.048

CABLE CLAMPS

Cable Clamps are perfect for securing wires and cables in the electric, automotive and aircraft industries.



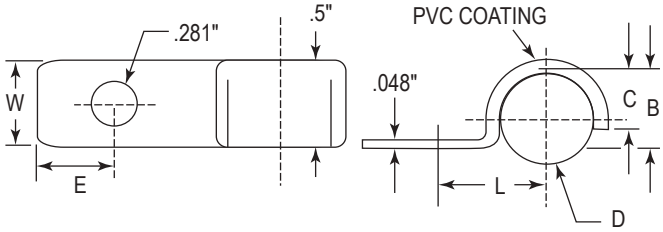
CC UV Black also available upon request Closed Bottom			
Part No.	A (in.)	C (in.).	Screw Dia. (in.)
CC3-1/8	0.130	0.358	0.21
CC3-3/16	0.189	0.358	0.21
CC3-1/4	0.260	0.358	0.21
CC3-5/16	0.307	0.358	0.21
CC3-3/8	0.382	0.362	0.21
CC5-1/8	0.114	0.500	0.21
CC5-1/4	0.232	0.500	0.21
CC5-3/8	0.358	0.500	0.21
CC5-1/2	0.480	0.500	0.21
CC5-9/16	0.543	0.500	0.21
CC5-3/4	0.732	0.500	0.21
CC5-7/8	0.858	0.500	0.21
CC5-1-1/8	1.100	0.500	0.21

HVN LOOP CLAMPS

VINYL DIPPED GALVANIZED STEEL ½" WIDE

FEATURES:

- Black vinyl plastic coated (PVC)
- Galvanized Steel for corrosion resistance
- Temperature range -25°F to +160°F



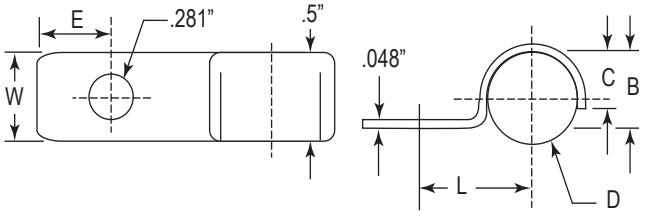
HVN							
Part No.	Size in.	Dimensions (in)					
		D	L	E	B	C	W
HVN-04	1/4"	0.250	0.500	0.250	0.250	0.188	1/2"
HVN-05	5/16"	0.312	0.531	0.312	0.312	0.218	5/8"
HVN-06	3/8"	0.375	0.562	0.312	0.375	0.281	5/8"
HVN-08	1/2"	0.500	0.687	0.312	0.500	0.343	5/8"
HVN-09	9/16"	0.562	0.750	0.312	0.562	0.437	5/8"
HVN-10	5/8"	0.625	0.812	0.312	0.625	0.406	5/8"
HVN-12	3/4"	0.750	0.875	0.312	0.750	0.468	5/8"

HSN LOOP CLAMPS

STAINLESS STEEL ½" WIDE

FEATURES:

- Stainless steel, Type 301 or 304



HSN Stainless Steel							
Part Number	Size in.	Dimensions (in)					
		D	L	E	B	C	W
HSN-04	1/4"	0.250	0.500	0.250	0.250	0.188	1/2"
HSN-05	5/16"	0.312	0.531	0.312	0.312	0.218	5/8"
HSN-06	3/8"	0.375	0.562	0.312	0.375	0.281	5/8"
HSN-08	1/2"	0.500	0.687	0.312	0.500	0.343	5/8"
HSN-09	9/16"	0.562	0.750	0.312	0.562	0.437	5/8"
HSN-10	5/8"	0.625	0.812	0.312	0.625	0.406	5/8"
HSN-12	3/4"	0.750	0.875	0.312	0.750	0.468	5/8"

PYTHON SERIES

STRONG: Load is applied at right angles to ensure tight fit. Python hose clamps keep their grip on the hose and can be reused. Rolled up band edges ensure a smooth transition between band and hose. Hexagonal screw head with drive slot makes for easy accessibility.

The **Python II** provides greater clamping force with less trouble than heavy-duty T-Bolt type clamps.

- Lower cost than T-Bolts with superb performance.
- Thicker band for greater tensile strength.
- Greater clamping range than T-Bolt 1½" clamping range over 2" diameter
- Zinc plated or 304, 316, or 430 stainless steel
- Non perforated band with embossed threads safely seals without cutting the hose.

Python – Zinc Plated, or Stainless Steel Type 304				
Zinc Plated Part No.	Stainless Steel Part No.	SAE Size	Clamping Range	
			in.	mm
PY-3	PY-30	3	5/16 – 9/16	8 – 14
PY-4	PY-40S	4	7/16 – 11/16	11 – 17
PY-6	PY-60	6	1/2 – 13/16	13 – 20
PY-8	PY-80S	8	5/8 – 15/16	15 – 24
PY-10	PY-100	10	3/4 – 1 1/8	19 – 28
PY-12	PY-120	12	7/8 – 1 1/4	22 – 32
PY-16	PY-160	16	1 1/16 – 1 1/2	26 – 38
PY-20	PY-200	20	1 1/4 – 1 3/4	32 – 44
PY-24	PY-240	24	1 1/2 – 2	38 – 50
PY-28	PY-280	28	1 3/4 – 2 1/4	44 – 56
PY-32	PY-320	32	2 – 2 9/16	50 – 65
PY-40	PY-400	40	2 5/16 – 3	58 – 75
PY-44	PY-440	44	2 11/16 – 3 3/8	68 – 85
PY-52	PY-520	52	3 – 3 3/4	77 – 95
PY-64	PY-640	64	3 7/16 – 4 7/16	87 – 112
PY-80	PY-800	80	4 1/8 – 5 7/16	104 – 138
PY-96	PY-960	96	5 1/8 – 6 1/2	130 – 165
PY-104	PY-1040	104	5 7/8 – 7 1/8	150 – 180
PY-122	PY-1220	122	6 7/8 – 8 1/8	175 – 205
PY-138	PY-1380	138	7 7/8 – 9 1/8	200 – 231
PY-154	PY-1540	154	8 7/8 – 10 1/16	226 – 256
PY-170	PY-1700	170	9 7/8 – 11 1/8	251 – 282
PY-186	PY-1860	186	10 7/8 – 12 1/8	277 – 307

PYTHON II – Stainless Steel Type 316		
Part No.	Clamping Range	
	in.	mm
PY-331	5/16 – 9/16	8 – 14
PY-431	7/16 – 11/16	11 – 17
PY-631	1/2 – 13/16	13 – 20
PY-831	5/8 – 15/16	15 – 24
PY-1031	3/4 – 1 1/8	19 – 28
PY-1231	7/8 – 1 1/4	22 – 32
PY-1631	1 1/16 – 1 1/2	26 – 38
PY-2031	1 1/4 – 1 3/4	32 – 44
PY-2431	1 1/2 – 2	38 – 50
PY-2831	1 1/4 – 2 1/4	32 – 57
PY-3231	1 1/2 – 2 1/2	38 – 64
PY-3631	1 3/4 – 2 3/4	44 – 70
PY-4031	2 – 3	51 – 76
PY-4431	2 1/4 – 3 1/4	57 – 83
PY-4831	2 1/2 – 3 1/2	64 – 89
PY-5231	2 3/4 – 3 3/4	70 – 95
PY-5631	3 – 4	76 – 102
PY-6031	3 1/4 – 4 1/4	83 – 108
PY-6431	3 1/2 – 4 1/2	89 – 114
PY-7231	3 1/2 – 5	89 – 127
PY-8031	4 – 5 1/2	102 – 140
PY-8831	4 1/2 – 6	114 – 152
PY-9631	5 – 6 1/2	127 – 165
PY-10431	5 1/2 – 7	140 – 178
PY-11231	6 – 7 1/2	152 – 191
PY-12031	6 1/2 – 8	165 – 203
PY-12831	7 – 8 1/2	178 – 216
PY-13831	7 5/8 – 9 1/8	194 – 232
PY-15431	8 5/8 – 10 1/8	219 – 257
PY-17031	9 5/8 – 11 1/8	244 – 283
PY-18631	10 5/8 – 12 1/8	270 – 308

Cush-A-Block - Rooftop Supports

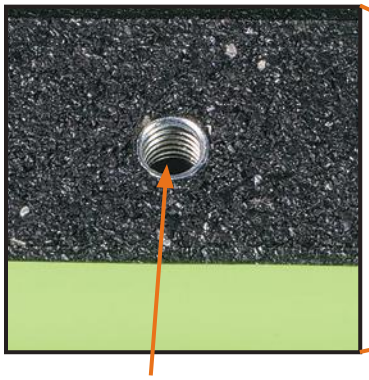
Cush-A-Block Features:

- 100% Recycled Rubber
- Qualifies for LEED Credits
- Meets the Buy America Act and American Reinvestment Recovery Act (A.R.R.A.)
- Resistance to Freeze and Thaw
- Reflective Eco-Green Stripes for Easy Visibility
- Dampens Vibrations
- Compatible With Most Rooftop Materials
- Easy to Change Strut Without Moving or Lifting Block
- Strut is Available in Corrosion Resistant Stainless Steel and Aluminum

The channel for Cush-A-Block support assemblies includes a variety of options. The strut can be made in special lengths, finishes, and alloys including Aluminum, Stainless Steel both 304 & 316, PVC coated, Powder coated, Zinc Trivalent Chromium, Pre-Galvanized and Hot Dipped Galvanized.

Cush-A-Block Support Applications:

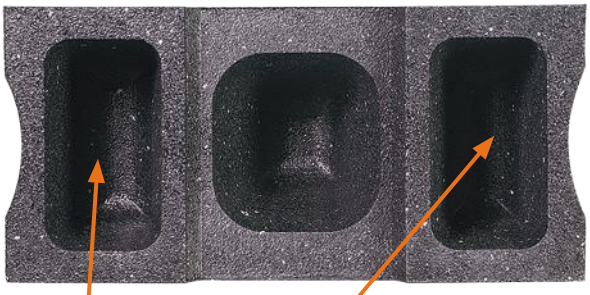
- Solar Racking
- Pipe & Conduit Supports
- HVAC, Duct, Cable Tray Supports
- Air Conditioning Supports
- Roof Walkway Supports



Embedded fastener reduces time to install or change strut. Use ⅜" x 1" bolts

Built in channel guide to easily install strut straight.

Eco-Green Reflective Safety Strip is molded into the block, and will not flake or peel.



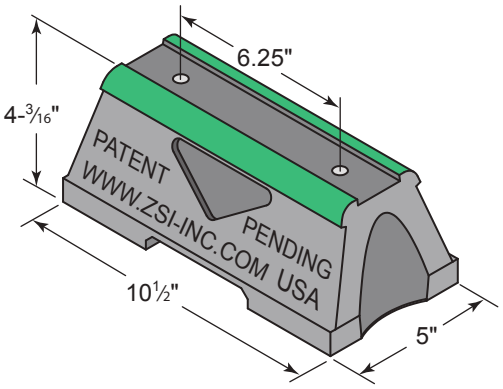
Embedded nut eliminates any thru holes and prevents leaks or any rust from forming on the underside of the fastener.

Handgrip makes it very easy to move blocks.

Built in slot will allow water to flow and not get trapped. Avoids water or ice dams buildup.

CUSH-A-BLOCK - CBN SERIES

PLAIN BASE



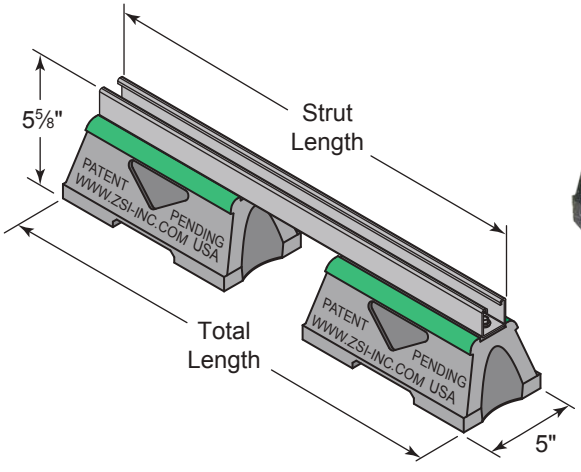
The CBN-Base Rooftop Support is UV resistant and suitable for installation on most types of roofing material or other flat surfaces. Can be used as a curb (sleeper) replacement. Screw fasteners can be used to attach one or two hole pipe straps or a piece of strut (not included).

CBN-Base Series		
Part No.	Weight	Uniform Load Capacity (Lbs) *
CBN	3.2 lbs.	2,500 *

* This load is only for the capacity of the components in this assembly. Please consult roofing manufacturer or engineer for roof load capacity.

CUSH-A-BLOCK - CBN-BR BRIDGE SERIES

SUPPORT WITH CHANNEL



Like all of the Cush-A-Block supports, the CBN-BR Bridge Rooftop Supports are perfect for supporting natural gas and refrigeration piping systems, cable tray, electrical conduit, multiple lines, HVAC equipment and many other applications.

The CBN-BR Series provides a longer mounting surface with strut lengths up to 60". Custom lengths are available upon request.

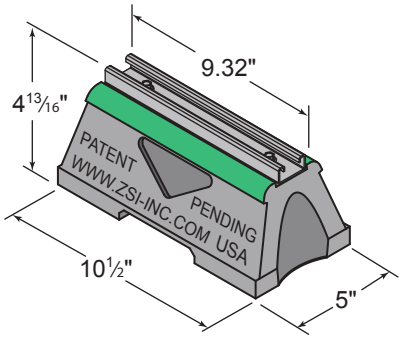
Standard strut mount pipe clamps are used to secure the pipes.

CBN-CB–Bridge Series Bridge Length Supports with 2 CBN Bases and Strut				
Part No.	Strut Length	Total Length	Weight (Lbs)	Uniform Load Capacity (Lbs) *
CBN28BR	28"	29.18"	10.8	1,491*
CBN36BR	36"	37.18"	12.0	1,160*
CBN42BR	42"	43.18"	12.9	994*
CBN50BR	50"	51.18"	14.1	835*
CBN60BR	60"	61.18"	15.6	696*

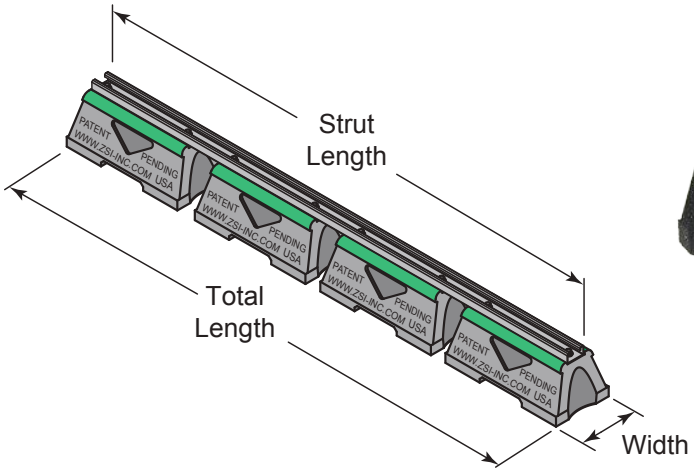
* This load is only for the capacity of the components in this assembly. Please consult roofing manufacturer or engineer for roof load capacity.

CUSH-A-BLOCK - CBN SERIES

SUPPORT WITH METAL CHANNEL



Shown with 13/16" Strut



CBN2RD shown with two bases

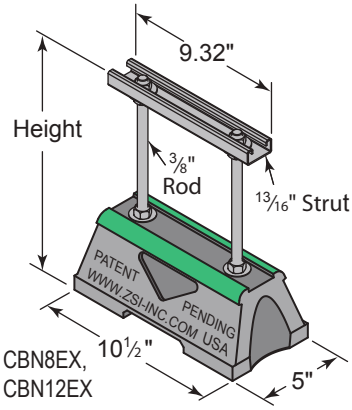
The CBN Series provides a longer mounting surface with strut lengths up to 46.82". Custom lengths are available upon request

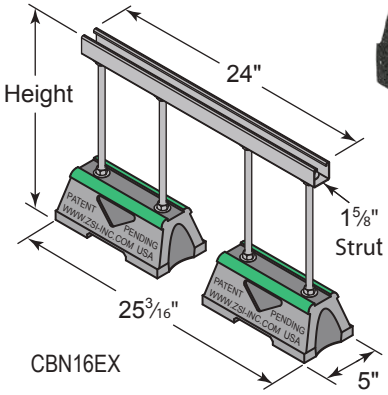
Part No.	No. of Bases	Height	Strut Length	Total Length	Weight (Lbs)	Uniform Load Capacity (Lbs) *
CBN-Support With 13/16" Pre-Galv. Steel Channel						
CBN1S	1	4-13/16"	9.32"	10-1/2"	4.0	2,500 *
CBN2S	2		22.82"	24"	8.4	5,000 *
CBN3S	3		34.82"	36"	12.6	7,500 *
CBN4S	4		46.82"	48"	16.9	10,000 *
CBN-Support With 1-5/8" Pre-Galv. Steel Channel						
CBN1D	1	5-5/8"	9.32"	10-1/2"	4.7	2,500 *
CBN2D	2		22.82"	24"	9.9	5,000 *
CBN3D	3		34.82"	36"	15.0	7,500 *
CBN4D	4		46.82"	48"	20.0	10,000 *
CBN Support With 2-7/16" Pre-Galv. Steel Channel						
CBN1RD	1	6-7/16"	9.32"	10-1/2"	5.1	2,500 *
CBN2RD	2		22.82"	24"	10.9	5,000 *
CBN3RD	3		34.82"	36"	16.6	7,500 *
CBN4RD	4		46.82"	48"	22.2	10,000 *

* This load is only for the capacity of the components in this assembly.
Please consult roofing manufacturer or engineer for roof load capacity.

CUSH-A-BLOCK - CBN-CE SERIES

SUPPORT WITH RAISED CHANNEL





CBN-BR Extension Rooftop Supports are perfect for supporting natural gas and refrigeration piping systems, cable tray, electrical conduit, multiple lines, HVAC equipment and many other applications.

Standard strut mount pipe clamps are used to secure the pipes. Custom lengths are available upon request.

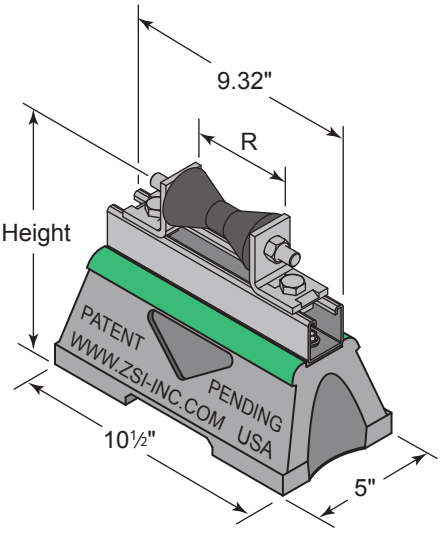
CBN-EX-Extension Series Support With ⅜" Threaded Rod Extension and Channel

Part No.	Height	Strut Size	Weight (Lbs)	Uniform Load Capacity (Lbs) *
CBN8EX	8"	13/16"	5.3	1,000 *
CBN12EX	12"		5.7	1,000 *
CBN16EX	16"	1-⅝"	12.7	2,000 *

* This load is only for the capacity of the components in this assembly. Please consult roofing manufacturer or engineer for roof load capacity.

CUSH-A-BLOCK - CBN-PRB SERIES

SUPPORT WITH PIPE ROLLER



The CBN-PRB Rooftop Supports are designed for superior support of natural gas and refrigeration pipes. The roller allows for longitudinal movements of the pipe. This support is suitable for most types of roofing material or other flat surfaces.

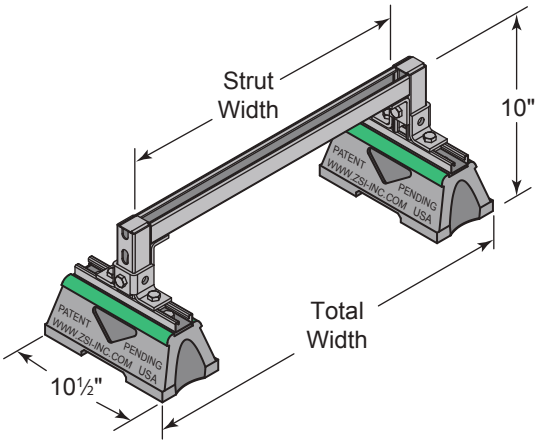
CBN-R-Roller-Series With 1⅝" Pre-Galv. Steel Channel With Rollers

Part No.	R Pipe Size (O.D.)	Height	Overall Height to Roller Center	Base Length	Weight (Lbs)	Uniform Load Capacity (Lbs) *
CBN1PRB	1" to 2"	8"	7"	10-½" (1-Base)	7.5	2,500 *
CBN2PRB	2" to 3-½"				7.3	2,500 *
CBN3PRB	4" to 6"	8-⅛"			7.8	2,500 *
CBN4PRB	8" to 10"	10-5/16"	8-¼"	24" (2-Bases)	18.1	2,500 *

* This load is only for the capacity of the components in this assembly. Please consult roofing manufacturer or engineer for roof load capacity.

CUSH-A-BLOCK - CBN-RB SERIES

SUPPORT WITH RAISED BRIDGE MEDIUM SUPPORT



The CBN-RB Medium Rooftop Supports can support natural gas and refrigeration piping systems, cable tray, electrical conduit, multiple lines, HVAC equipment and many other applications. They are designed for rooftop applications requiring a heavier load bearing capacity, and are suitable for most types of roofing material or other flat surfaces. Custom lengths are available upon request.

Standard strut mount pipe clamps are used to secure the pipes.

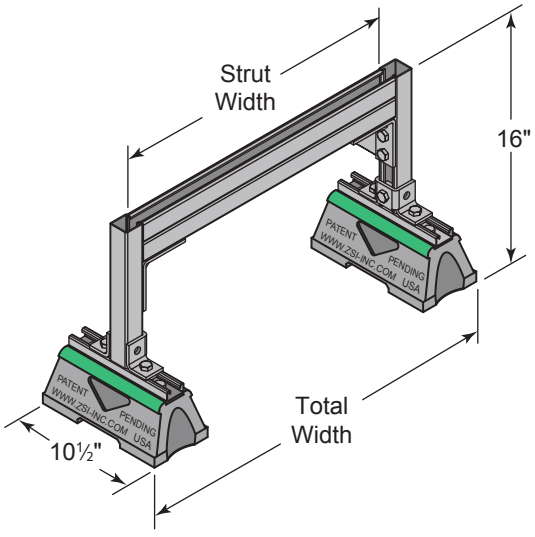
Raised Bridge Medium Support
With 2 CBN Bases & 1⅝" Pre-Galv Steel Channel

Part No.	Total Width	Strut Width	Base Length	Weight (Lbs)	Uniform Load Capacity (Lbs) *
CBN1RB	18.65"	12"	10-½"	16.2	3,000 *
CBN2RB	30.65"	24"		17.9	1,500 *

* This load is only for the capacity of the components in this assembly.
Please consult roofing manufacturer or engineer for roof load capacity.

CUSH-A-BLOCK - CBN-RB SERIES

SUPPORT WITH RAISED CHANNEL HEAVY SUPPORT



The CBN-RB Heavy Rooftop Supports is designed for rooftop applications requiring a heavier load bearing capacity. It is suitable for most types of roofing material or other flat surfaces. Custom lengths are available upon request.

Standard strut mount pipe clamps are used to secure the pipes.

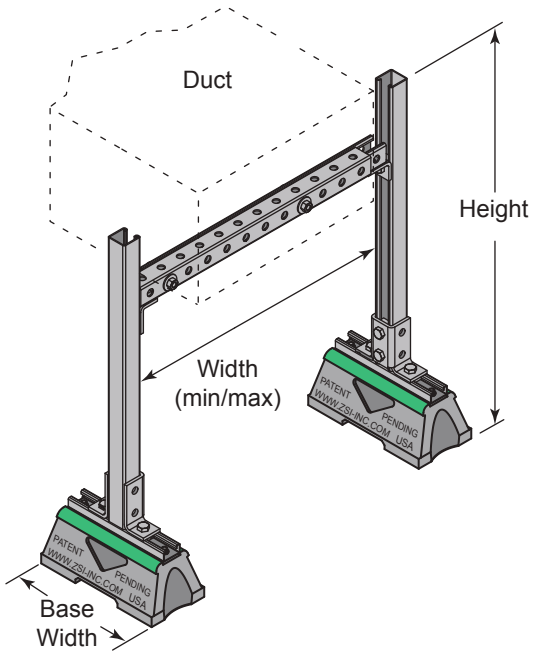
Raised Bridge Heavy Support
With 2 CBN Bases & 3¼" Back-to-Back Pre-Galv Steel Channel

Part No.	Total Width	Strut Width	Weight (Lbs)	Uniform Load Capacity (Lbs) *
CBN3RB	30.65"	24"	27.4	3,500 *
CBN4RB	42.65"	36"	29.8	3,250 *

* This load is only for the capacity of the components in this assembly.
Please consult roofing manufacturer or engineer for roof load capacity.

CUSH-A-BLOCK - CBN-DS SERIES

ADJUSTABLE WIDTH DUCT SUPPORT



The CBN-DS Series is designed specifically for supporting duct work. The telescopic cross beam provides easy width and height adjustments.

A wide range of support widths are provided from 19-1/4" to 103-5/8"

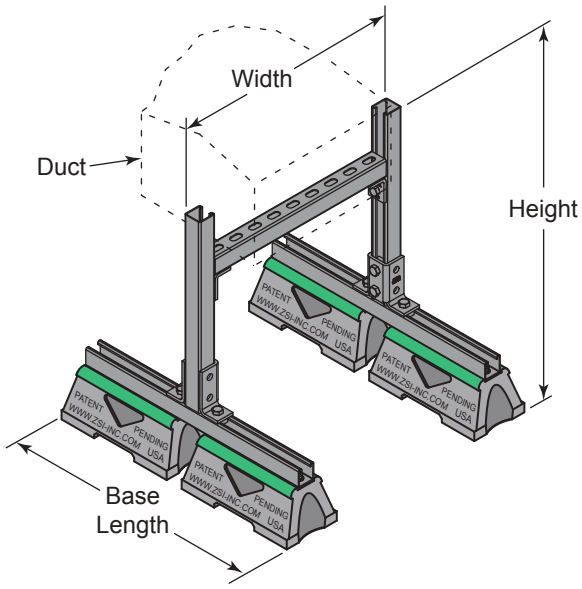
Standard strut mount pipe clamps are used to secure the pipes.

CBN-DS-Duct Support Series With Adjustable Width and Height					
Part No.	Width		Height	Weight (Lbs)	Uniform Load at Min. Width(Lbs) *
	Min.	Max.			
CBN1DS	19-1/4"	26-3/4"	28.813"	26.4	1,909 *
CBN2DS	24-7/8"	39-7/8"		28.0	1,477 *
CBN3DS	38"	62-3/8"		31.7	967 *
CBN4DS	62-3/8"	103-5/8"		38.5	589 *
CBN5DS	19-1/4"	26-3/4"	36"	26.4	1,909 *
CBN6DS	24-7/8"	39-7/8"		28.0	1,477 *
CBN7DS	38"	62-3/8"		31.7	967 *
CBN8DS	62-3/8"	103-5/8"		38.5	589 *

* This load is only for the capacity of the components in this assembly.
Please consult roofing manufacturer or engineer for roof load capacity.

CUSH-A-BLOCK - CBN-DSFW SERIES

FIXED WIDTH DUCT SUPPORT



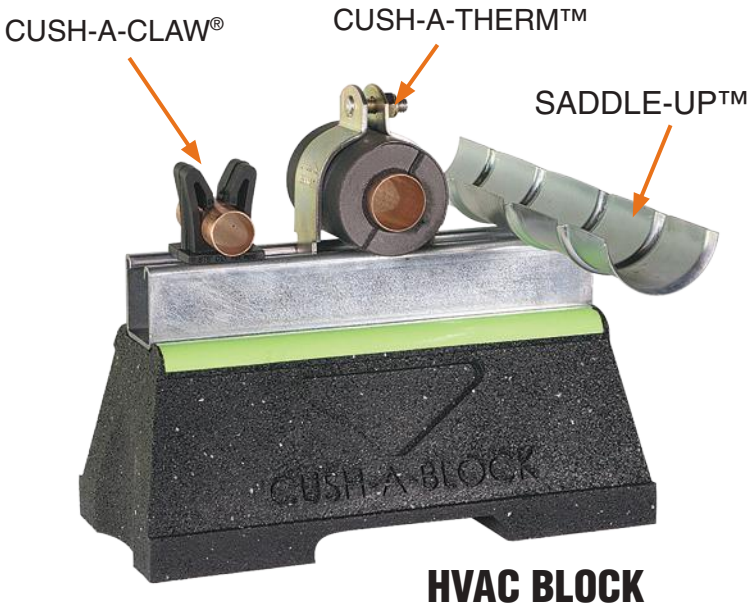
The CBN-DS Series is designed specifically for supporting duct work. The cross beam provides easy size adjustments. Custom lengths are available upon request.

Standard strut mount pipe clamps are used to secure the pipes.

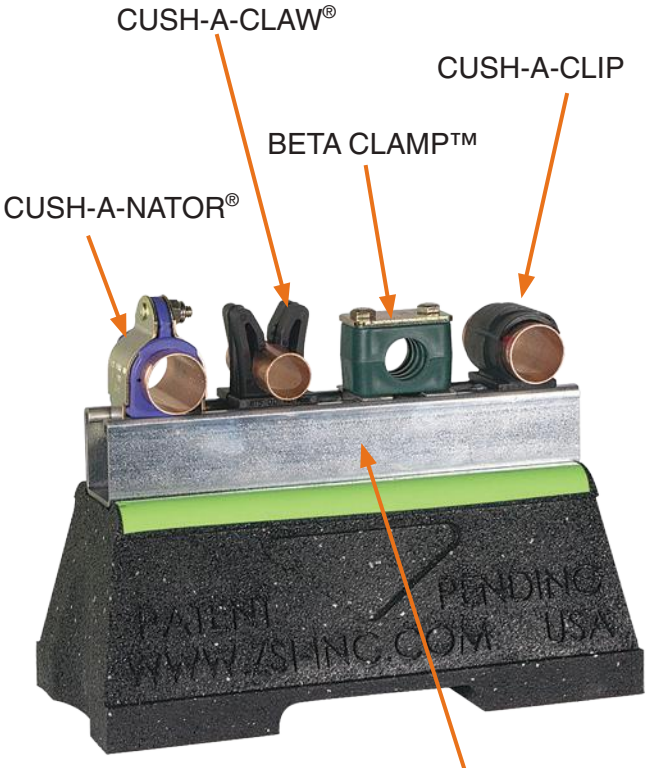
CBN-DSF Duct Support Series With Fixed Width & Adjustable Height						
Model No.	Height	Width	Base Length	No. of Bases	Weight (Lbs)	Uniform Load Capacity (Lbs) *
CBN1-DSFW	23"	18"	24"	4	33.4	2042 *
CBN2-DSFW		24"			34.3	1531 *
CBN3-DSFW		36"			35.9	1021 *
CBN4-DSFW		48"			37.6	766 *
CBN5-DSFW	29"	18"	24"	4	35.2	2042 *
CBN6-DSFW		24"			36.0	1531 *
CBN7-DSFW		36"			37.7	1021 *
CBN8-DSFW		48"			39.3	766 *
CBN9-DSFW	41"	18"	24"	4	38.7	2042 *
CBN10-DSFW		24"			39.5	1531 *
CBN11-DSFW		36"			41.2	1021 *
CBN12-DSFW		48"			42.8	766 *
CBN13-DSFW	53"	18"	36"	6	55.8	2042 *
CBN14-DSFW		24"			56.7	1531 *
CBN15-DSFW		36"			58.3	1021 *
CBN16-DSFW		48"			60.0	766 *

* This load is only for the capacity of the components in this assembly.
Please consult roofing manufacturer or engineer for roof load capacity.

YOUR SINGLE SOURCE FOR ALL PRODUCTS SHOWN.



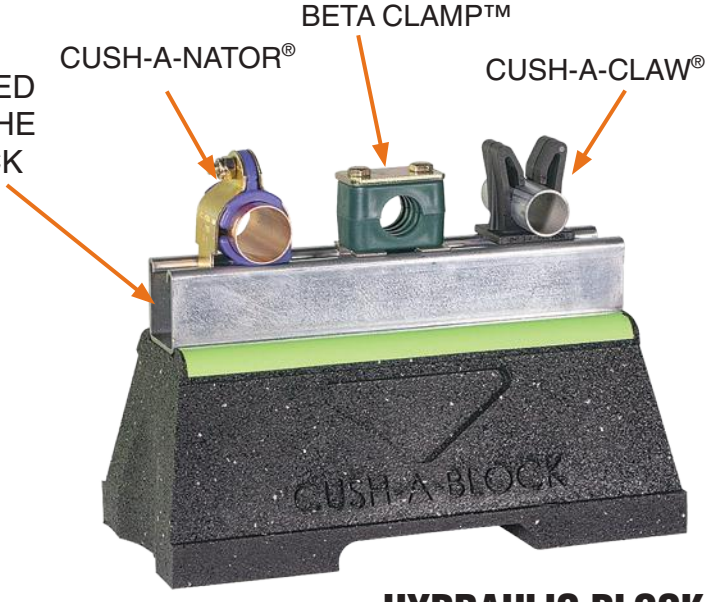
HVAC BLOCK



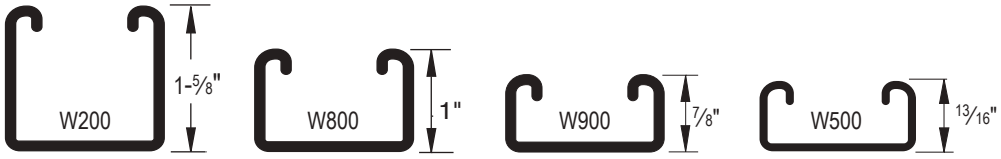
MECHANICAL BLOCK

PRE-CUT & HOLE PUNCHED STRUT FOR THE CUSH-A-BLOCK

Refer to our Wesanco® Product Catalogs for Strut and Accessories that can be used with the Cush-A-Block®



HYDRAULIC BLOCK



All Wesanco is 1-5/8" Wide, With 7/8" opening

STRUT PRODUCTS

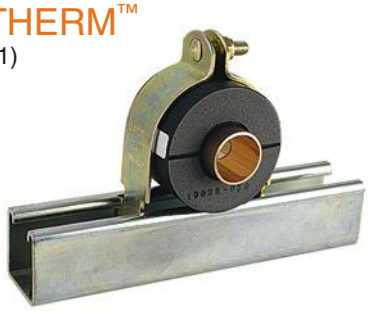
ZSi-Foster offers a line of standard strut channel and a variety of clamps tailored for use with strut. Cush-A-Clamp®, Cush-A-Therm™, and Porce-A-Clamp™ provide cushioned clamping solutions.

Complementing products are offered for quick connection of pipe, tube and hose to strut.

ZSi-Fosters's family of cushioned clamps presented earlier in the catalog offer solutions for isolation of the pipes from vibration or thermal transfers. And, "fire retardant" and "fire retardant, halogen free" options are available.

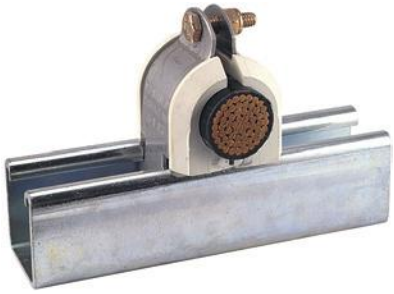
CUSH-A-NATOR®
(See Page 6 - 8)

CUSH-A-THERM™
(See Page 20-21)



PORCE-A-CLAMP™
(See Page 17)

CUSH-A-CLAMP®
(See Page 9)



SADDLE-UP
(See Page 18)

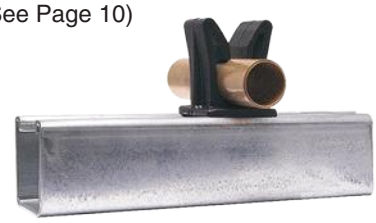
ZSi-Fosters's family of non-metallic strut clamps allow quick and easy attachment of pipe, tube, and hose to Wesanco support channels and are corrosion resistant. They are all a great and cost effective alternative to metallic clamps.

CUSH-A-CLIP
(See Page 11)

CUSH-A-CLICK
(See Page 25)

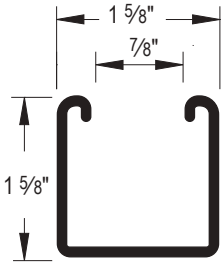
QUICK-CLIP
(See Page 25)

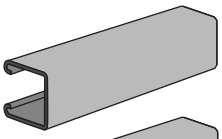
CUSH-A-CLAW
(See Page 10)



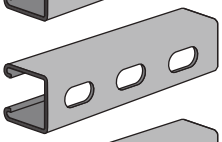
CUSH-A-GRIP
(See Page 10)

W200 SERIES

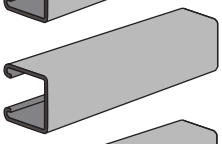




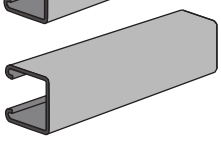
W200 PG
Solid Channel
Pre-Galvanized



W200 SS PG
Slotted Channel
Pre-Galvanized



W200 ST304
Solid Channel
304 Stainless Steel



W200 AL
Solid Channel
Extruded Aluminum

W200 - 1 5/8" x 1 5/8" Channel, 12 Ga.

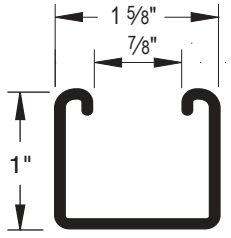
Solid Channel			Slotted Channel	Length
Pre-galvanized Part No.	Stainless Steel Type 304 Part No.	Extruded Aluminum Part No.	Pre-galvanized Part No.	
W200PG06IN	W200ST30406IN	W200AL06IN	W200SSPG06IN	0' – 6"
W200PG12IN	W200ST30412IN	W200AL12IN	W200SSPG12IN	1' – 0"
W200PG18IN	W200ST30418IN	W200AL18IN	W200SSPG18IN	1' – 6"
W200PG24IN	W200ST30424IN	W200AL24IN	W200SSPG24IN	2' – 0"
W200PG30IN	W200ST30430IN	W200AL30IN	W200SSPG30IN	2' – 6"
W200PG36IN	W200ST30436IN	W200AL36IN	W200SSPG36IN	3' – 0"
W200PG42IN	W200ST30442IN	W200AL42IN	W200SSPG42IN	3' – 6"
W200PG48IN	W200ST30448IN	W200AL48IN	W200SSPG48IN	4' – 0"
W200PG54IN	W200ST30454IN	W200AL54IN	W200SSPG54IN	4' – 6"
W200PG60IN	W200ST30460IN	W200AL60IN	W200SSPG60IN	5' – 0"

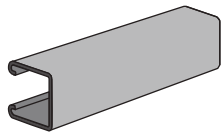
Note: Custom cut lengths are available by special order
Refer to the Wesanco Engineering Catalog for beam and column loading information.

MATERIAL/FINISH

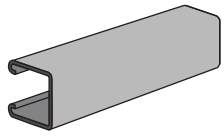
- Pre-galvanized – Steel conforming to ASTM A653 GR 33.
- Stainless Steel - Type 304 Stainless Steel conforming to ASTM A 240 Type 304
- Aluminum - Extruded Aluminum conforming to ASTM B221 Type 6063-T6

W800 SERIES





W800 PG
Solid Channel
Pre-Galvanized



W800 ST304
Solid Channel
304 Stainless Steel

W800 - 1 5/8" x 1" Channel, 12 Ga.
Solid Channel

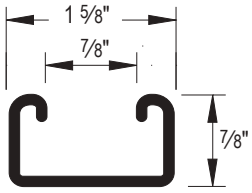
Pre-galvanized Part No.	Stainless Steel Type 304 Part No.	Length
W800PG06IN	W800ST30406IN	0' – 6"
W800PG12IN	W800ST30412IN	1' – 0"
W800PG18IN	W800ST30418IN	1' – 6"
W800PG24IN	W800ST30424IN	2' – 0"
W800PG30IN	W800ST30430IN	2' – 6"
W800PG36IN	W800ST30436IN	3' – 0"
W800PG42IN	W800ST30442IN	3' – 6"
W800PG48IN	W800ST30448IN	4' – 0"
W800PG54IN	W800ST30454IN	4' – 6"
W800PG60IN	W800ST30460IN	5' – 0"

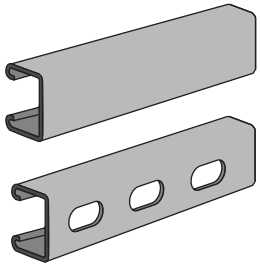
Note: Custom cut lengths are available by special order
Refer to the Wesanco Engineering Catalog for beam and column loading information.

MATERIAL/FINISH

- Pre-galvanized – Steel conforming to ASTM A653 GR 33.
- Stainless Steel - Type 304 Stainless Steel conforming to ASTM A 240 Type 304

W900 SERIES





W900 PG
Solid Channel
Pre-Galvanized

W900SS PG
Slotted Channel
Pre-Galvanized

W900 - 1 5/8" x 7/8" Channel, 12 Ga.

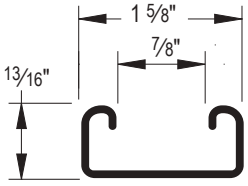
Solid Channel	Slotted Channel	Length
Pre-galvanized Part No.	Pre-galvanized Part No.	
W900PG06IN	W900SSPG06IN	0' – 6"
W900PG12IN	W900SSPG12IN	1' – 0"
W900PG18IN	W900SSPG18IN	1' – 6"
W900PG24IN	W900SSPG24IN	2' – 0"
W900PG30IN	W900SSPG30IN	2' – 6"
W900PG36IN	W900SSPG36IN	3' – 0"
W900PG42IN	W900SSPG42IN	3' – 6"
W900PG48IN	W900SSPG48IN	4' – 0"
W900PG54IN	W900SSPG54IN	4' – 6"
W900PG60IN	W900SSPG60IN	5' – 0"

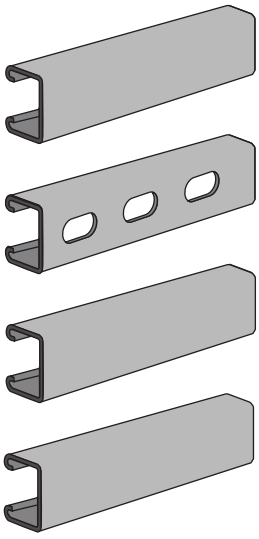
Note: Custom cut lengths are available by special order
Refer to the Wesanco Engineering Catalog for beam and column loading information.

MATERIAL/FINISH

- Pre-galvanized – Steel conforming to ASTM A653 GR 33.
- Stainless Steel - Type 304 Stainless Steel conforming to ASTM A 240 Type 304
- Aluminum - Extruded Aluminum conforming to ASTM B221 Type 6063-T6

W500 SERIES





W500 PG
Solid Channel
Pre-Galvanized

W500SS PG
Slotted Channel
Pre-Galvanized

W500 ST304
Solid Channel
Stainless Steel

W500 AL
Solid Channel
Extruded
Aluminum

W500 - 1 5/8" x 13/16" Channel, 14 Ga.

Solid Channel			Slotted Channel	Length
Pre-galvanized Part No.	Stainless Steel Type 304 Part No.	Extruded Aluminum Part No.	Pre-galvanized Part No.	
W500PG06IN	W500ST30406IN	W500AL06IN	W500SS-06IN	0' – 6"
W500PG12IN	W500ST30412IN	W500AL12IN	W500SS-12IN	1' – 0"
W500PG18IN	W500ST30418IN	W500AL18IN	W500SS-18IN	1' – 6"
W500PG24IN	W500ST30424IN	W500AL24IN	W500SS-24IN	2' – 0"
W500PG30IN	W500ST30430IN	W500AL30IN	W500SS-30IN	2' – 6"
W500PG36IN	W500ST30436IN	W500AL36IN	W500SS-36IN	3' – 0"
W500PG42IN	W500ST30442IN	W500AL42IN	W500SS-42IN	3' – 6"
W500PG48IN	W500ST30448IN	W500AL48IN	W500SS-48IN	4' – 0"
W500PG54IN	W500ST30454IN	W500AL54IN	W500SS-54IN	4' – 6"
W500PG60IN	W500ST30460IN	W500AL60IN	W500SS-60IN	5' – 0"

Note: Custom cut lengths are available by special order
Refer to the Wesanco Engineering Catalog for beam and column loading information.

MATERIAL/FINISH

- Pre-galvanized – Steel conforming to ASTM A653 GR 33.
- Stainless Steel - Type 304 Stainless Steel conforming to ASTM A 240 Type 304
- Aluminum - Extruded Aluminum conforming to ASTM B221 Type 6063-T6

Beta Clamps - Overview

Beta Clamps are ideal for clamping pipe, tube, hose, and electric cables. They are an economical and easy way of securing them in all types of terrestrial, marine, O.E.M. and Industrial applications. Thanks to the advanced features and the breadth and depth of our product offering, Beta Clamps are used in all areas of industrial, mobile and marine hydraulics, general industrial pipe construction, the field of press technology, instrumentation and control technology and many more.

- Beta Clamps offer shock-absorption, vibration dampening and noise reducing properties.
- Beta Clamps feature a practical and economical design which make for quick, easy pipe installation and layout.
- Using weldable plates, it's easy to anchor the clamps to machinery and steel work.
- Fast, safe, economic installation and service in piping system.
- Upper and lower clamp half are identical.
- Ribs in clamp bore are designed to absorb shock and vibration in the direction of the tube axis.
- Due to their design the clamps can be easily cleaned.

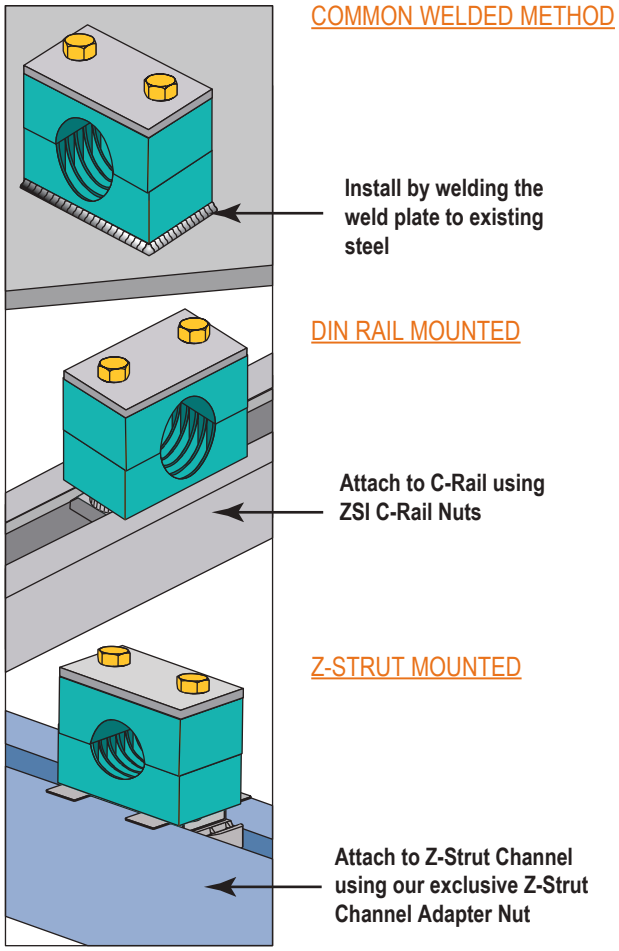
CLAMP BODY

- Standard – Polypropylene (Green Color)
  -22°F to 194°F *(-30°C to +90°C)*
- Aluminum is available for use in high heat applications

CLAMP COMPONENTS – The other metallic components of the clamps are manufactured in:

- Lower and upper plates: steel, stainless steel type 304
- Screw bolts: steel, S40C, stainless steel type 304
- Other metallic on request.

ZSi-Foster offers an installation option for all of your application needs.

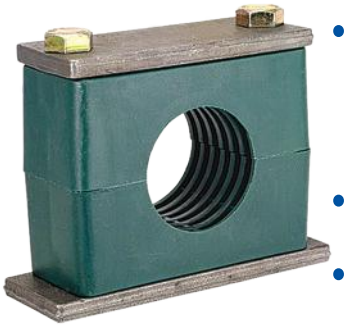


Beta Clamps - Overview

BETA STANDARD (Pages 48-49)

- For standard hydraulics and systems with less than 1500 PSI without dynamic loads
- Polypropylene cushion
- Steel components

BETA HEAVY (Pages 50-51)



- For systems with greater than 1500 PSI operating pressure, operations with pressure surges, and applications with wide temperature fluctuations.
- Absorbs high levels of shock, noise, and vibration
- Polypropylene cushion & steel components

BETA TWIN (Pages 52-53)

- For standard hydraulics, general pipe construction and electrical cables
- Polypropylene cushion
- Steel components

BETA SMOOTHIE (Page 54)

- Reduces wear on hose connection caused by vibration and surge.
- Chamfered and smooth core protects hose cover and extends hose life.
- Uses Beta Standard hardware
- Polypropylene cushion
- Steel components

BETA SMOOTHIE TWIN (Page 55)

- Reduces wear on hose connection caused by vibration and surge.
- Chamfered and smooth core protects hose cover and extends hose life.
- Uses Beta Twin hardware
- Polypropylene cushion
- Steel components

BETA SPECIAL METALS (Pages 48-51)
(ALUMINUM, STAINLESS STEEL)

- Aluminum cushions with steel components are used in high heat applications up to 500°F
- Stainless steel clamp hardware with polypropylene cushion are used in applications where external corrosion is a concern.

BETA RUBBER INSERTS (Pages 56-57)

- Available in standard and heavy
- One cushion block provides flexible size range of cushioning.
- Smooth bore core can be used on hose, or for vibration reduction

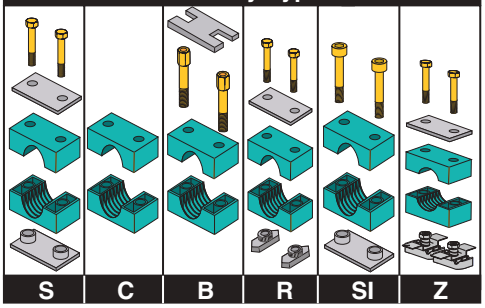
BETA ADAPTER (Page 58)

- Allows a clamping junction to be inserted into hydraulic lines.
- The adapter body is offered in two sizes for use with the Z-Clamp adapter inserts.

BETA CLAMPS

STANDARD SERIES

Assembly Types



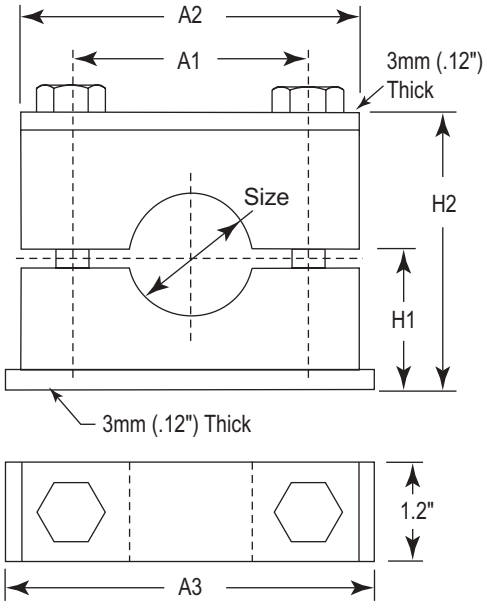
Steel w/ Polypropylene Cushion

Steel w/ Aluminum Cushion

BETA STANDARD SERIES

- Cushions are Polypropylene (Green Color)
- Recommended for systems with less than 1500 PSI without dynamic loads.
- Use for standard hydraulics, general pipe construction, electrical cables, and general duty piping applications subject to moderate levels of shock and vibration.
- Aluminum cushions and are used in higher heat applications up to 500 Degrees.

INSTALLATION - Refer to pages 115-116 for complete installation guide.

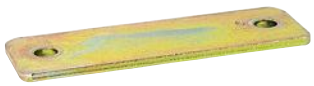


Group	Part No. *	Tube Size	Pipe Size	Metric Size	Dimensions - inch (mm) A1	A2	A3	H1	H2	Bolt
S1	S1004	1/4" (0.250)	–	–	0.78 (20)	1.34 (34)	1.41 (36)	0.62 (16)	1.25 (32)	1/4"-20 x 1 1/4"
	S1006	3/8"(0.375)	–	–						
	SM1006	–	–	6mm						
	S1007	–	1/8" (0.405)	–						
	SM1008	–	–	8mm						
	SM1012	–	–	12mm						
S2	S2008	1/2" (0.500)	–	–	1.02 (26)	1.57 (40)	1.65 (42)	0.76 (19.5)	1.54 (39)	1/4"-20 x 1 3/8"
	S2009	–	1/4" (0.540)	–						
	S2010	5/8" (0.625)	–	–						
	S2011	–	3/8" (0.675)	–						
	SM2014	–	–	14mm						
	SM2015	–	–	15mm						
	SM2018	–	–	18mm						
S3	S3012	3/4" (0.750)	–	–	1.29 (33)	1.96 (50)	2.04 (52)	0.80 (20.5)	1.61 (41)	1/4"-20 x 1 1/2"
	S3014	–	1/2" (0.840)	–						
	S3015	7/8" (0.875)	–	–						
	S3016	1" (1.000)	–	–						
	SM3020	–	–	20mm						
	SM3025	–	–	25mm						
S4	S4017	–	3/4" (1.050)	–	1.57 (40)	2.28 (58)	2.36 (60)	0.94 (24)	1.88 (48)	1/4"-20 x 1 3/4"
	S4018	1 1/8" (1.125)	–	–						
	SM4030	–	–	30mm						
S5	S5020	1 1/4" (1.250)	–	–	2.04 (52)	2.75 (70)	2.83 (72)	1.25 (32)	2.52 (64)	1/4"-20 x 2 1/2"
	S5021	–	1" (1.315)	–						
	S5024	1 1/2" (1.500)	–	–						
	S5027	–	1 1/4" (1.660)	–						
	SM5035	–	–	35mm						
S6	S6028	1 3/4" (1.750)	–	–	2.59 (66)	3.38 (86)	3.46 (88)	1.41 (36)	2.83 (72)	1/4"-20 x 2 3/4"
	S6030	–	1 1/2" (1.900)	–						
	S6032	2" (2.000)	–	–						
S7	S7038	–	2" (2.375)	–	3.70 (94)	4.75 (121)	4.81 (122)	2.00 (51)	4.05 (103)	1/4"-20 x 4"
	S7036	2 1/4" (2.250)	–	–						
	S7040	2 1/2" (2.500)	–	–						
	S7044	2 3/4" (2.750)	–	–						
	S7048	3" (3.000)	–	–						

*For additional sizes contact factory.
Note: Add assembly type to part number. Example: **S1004S-SS** provides the complete assembly as shown with stainless steel components.
NOTE: SM (metric) only available in Steel with Polypropylene (green) cushion.

SUFFIX	Components	Cushion	Example
none	Steel	Polypropylene (green)	S1004S
-AL	Steel	Aluminum	S1004S-AL
-SS	Stainless Steel	Polypropylene (green)	S1004S-SS

Beta Clamps - Standard

STANDARD SERIES COVER PLATE		
	SCP1	Use with Group S1
	SCP2	Use with Group S2
	SCP3	Use with Group S3
	SCP4	Use with Group S4
	SCP5	Use with Group S5
	SCP6	Use with Group S6
	SCP7	Use with Group S7

STANDARD SERIES SAFETY PLATE		
	SP1	Use with Group S1
	SP2	Use with Group S2
	SP3	Use with Group S3
	SP4	Use with Group S4
	SP5	Use with Group S5
	SP6	Use with Group S6

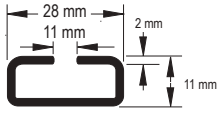
HEX BOLT (Two required per assembly)		
	SHB1	Use with Group S1
	SHB2	Use with Group S2
	SHB3	Use with Group S3
	SHB4	Use with Group S4
	SHB5	Use with Group S5
	SHB6	Use with Group S6
	SHB7	Use with Group S7

STANDARD SERIES CAP SCREW (Two required per assembly)		
	SC-1	Use with Group S1
	SC-2	Use with Group S2
	SC-3	Use with Group S3
	SC-4	Use with Group S4
	SC-5	Use with Group S5
	SC-6	Use with Group S6

STACKING BOLTS (Two required per assembly)		
	SB1	Use with Group S1
	SB2	Use with Group S2
	SB3	Use with Group S3
	SB4	Use with Group S4
	SB5	Use with Group S5
	SB6	Use with Group S6

C-RAIL NUT (Two required per assembly)		
	SRN1-6	1/4" nut, Use with SCR Rail

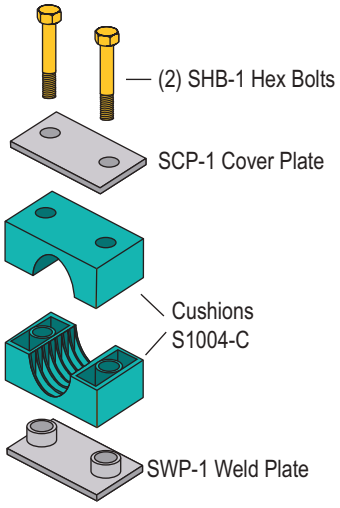
STANDARD SERIES WELD PLATE		
	SWP1	Use with Group S1
	SWP2	Use with Group S2
	SWP3	Use with Group S3
	SWP4	Use with Group S4
	SWP5	Use with Group S5
	SWP6	Use with Group S6
	SWP7	Use with Group S7

C-RAIL		
	SCR1	39" (1 meter)
	SCR2	78" (2 meter)
		

STRUT NUT - For connection to Z-Strut Channel (Two required per assembly)		
	ZSA1-8	Use with Groups S1-S8

Z-Strut		
	Z1625	$1\frac{5}{8}$" x $1\frac{5}{8}$"
	Z8125	$1\frac{5}{8}$" x $1\frac{13}{16}$"
	Z1000	$1\frac{5}{8}$" x 1"
	Z875	$1\frac{5}{8}$" x $\frac{7}{8}$"

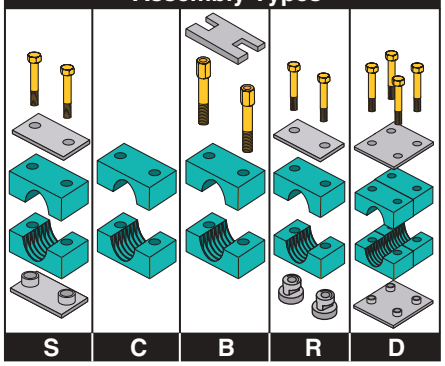
ORDERING EXAMPLE		
S1004S		
Assembly Includes		
Quantity	Part No.	Description
1 Each	SWP1	Weld Plate
1 Each	SCP1	Cover Plate
2 Each	SHB1	Hex Bolts
1 set	S1004C	Cushions



BETA CLAMPS

HEAVY SERIES

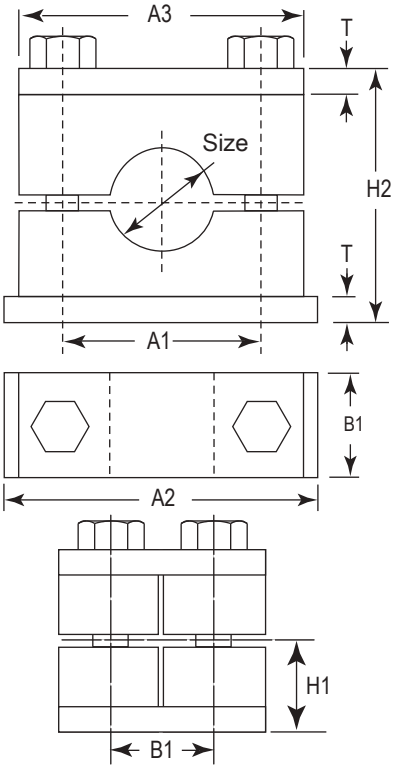
Assembly Types



BETA HEAVY SERIES

- Recommended systems with greater than 1500 PSI operating pressure, operations with pressure surges, and applications with wide temperature fluctuations.
- Absorbs high levels of shock, noise, and vibration
- Cushions are polypropylene (Green color) or Aluminum.
- Aluminum cushions and are used in higher heat applications up to 500 Degrees.

INSTALLATION - Refer to pages 115-116 for complete installation guide.



Steel w/ Polypropylene Cushion

Steel w/ Aluminum Cushion

Group	Part No.	Tube Size	Pipe Size	Dimensions-inch(mm) A1	A2	A3	B1	H1	H2	T	Hex Bolt
H3	H3004	1/4"(0.250)	–	1.29 (33)	2.87 (73)	2.16 (55)	1.18 (30)	0.94 (24)	1.88 (48)	0.31 (8)	3/8"-16 x 1 3/4"
	H3006	3/8" (0.375)	–								
	H3007	–	1/8" (0.405)								
	H3008	1/2" (0.500)	–								
	H3009	–	1/4" (0.540)								
	H3010	5/8" (0.625)	–								
	H3011	–	3/8" (0.675)								
H4	H4012	3/4" (0.750)	–	1.77 (45)	3.34 (85)	2.75 (70)	1.18 (30)	1.25 (32)	2.51 (64)	0.31 (8)	3/8"-16 x 2-1/4"
	H4014	–	1/2 (0.840)								
	H4015	7/8" (0.875)	–								
	H4016	1" (1.000)	–								
	H4017	–	3/4" (1.050)								
H5	H5020	1 1/4" (1.250)	–	2.36 (60)	3.93 (100)	3.30 (84)	1.18 (30)	1.49 (38)	2.99 (76)	0.31 (8)	3/8"-16 x 2-3/4"
	H5021	–	1" (1.315)								
	H5024	1 1/2" (1.500)	–								
	H5027	–	1 1/4" (1.660)								
H6	H6028	1 3/4" (1.750)	–	3.54 (90)	5.90 ()150	4.52 (115)	1.77 (45)	2.16 (55)	4.33 (110)	0.39 (10)	1/2"-13 x 4"
	H6030	–	1 1/2" (1.900)								
	H6032	2" (2.000)	–								
	H6034	2 1/4" (2.250)	–								
	H6038	2 3/8" (2.375)	2" (2.375)								
	H6040	2 1/2 (2.500)	–								
H7	H7044	2 3/4" (2.750)	–	4.80 (122)	7.08 (180)	5.98 (152)	2.36 (60)	2.75 (70)	5.51 (140)	0.39 (10)	5/8"-11x 5-1/4"
	H7046	–	2 1/2"(2.870)								
	H7050	3"(3.000)	–								
	H7056	–	3"(3.500)								
	H7057	3 1/2"(3.500)	–								
H8	H8072	–	4" (4.500)	6.61 (168)	8.86 (225)	8.07 (205)	3.15 (80)	3.94 (100)	7.87 (200)	0.59 (15)	M20 x 190mm
H9	H9089	–	5" (5.563)	8.07 (221)	10.63 (270)	9.92 (252)	3.54 (90)	4.53 (115)	9.06 (230)	0.59 (15)	M24 x 220mm
	H9106	–	6" (6.625)								
H10	H10137	–	8" (8.625)	10.43 (265)	13.39 (340)	12.60 (320)	4.72 (120)	6.30 (160)	12.60 (320)	0.98 (25)	M30 x 300mm
H11	H11170	–	10" (10.750)	15.55 (395)	20.47 (520)	18.35 (466)	6.30 (160)	9.25 (235)	18.50 (470)	1.18 (30)	M30 x 450mm

*For additional sizes contact factory.
Note: Add assembly type to part number. Example: H3004S-SS provides the complete assembly as shown with stainless steel components.

SUFFIX	Components	Cushion	Example (complete assembly):
NONE	Steel	Polypropylene (green)	H3004S
-AL	Steel	Aluminum	H3004S-AL
-SS	Stainless Steel	Polypropylene(green)	H3004S-SS

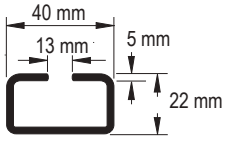
HEAVY SERIES COVER PLATE		
	HCP3	Use w/Group H3
	HCP4	Use w/Group H4
	HCP5	Use w/Group H5
	HCP6	Use w/Group H6
	HCP7	Use w/Group H7
	HCP8	Use w/Group H8
	HCP9	Use w/Group H9

HEAVY SERIES SAFETY PLATE		
	HSP3	Use w/Group H3
	HSP4	Use w/Group H4
	HSP5	Use w/Group H5
	HSP6	Use w/Group H6
	HSP7	Use w/Group H7
	HSP8	Use w/Group H8
	HSP9	Use w/Group H9

C-RAIL NUTS (Two required per single assembly)		
	HRN-3-5	3/8" nut, Use w/ Groups H3-H5
	HRN6	7/16" nut, Use w/ Group H6
	Note: Rail mounted stacking kit is only available on groups H3, H4, and H5	

HEAVY SERIES HEX BOLTS (Two required per single assembly)		
	HHB3	Use w/Group H3
	HHB4	Use w/Group H4
	HHB5	Use w/Group H5
	HHB6	Use w/Group H6
	HHB7	Use w/Group H7
	HHB8	Use w/Group H8
	HHB9	Use w/Group H9

HEAVY SERIES STACKING BOLTS (Two required per single assembly)		
	HSB3	Use w/Group H3
	HSB4	Use w/Group H4
	HSB5	Use w/Group H5
	HSB6	Use w/Group H6
	HSB7	Use w/Group H7
	HSB8	Use w/Group H8
	HSB9	Use w/Group H9

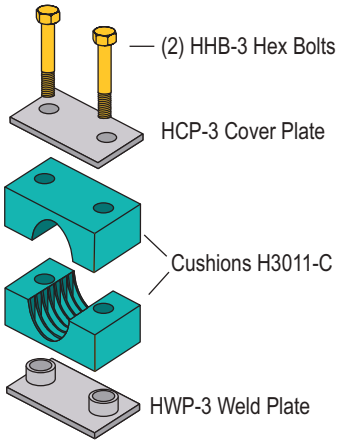
C-RAIL		
	HCR-1	39" (1 meter)
	HCR-2	78" (2 meter)
		

HEAVY SERIES WELD PLATE		
	HWP3	Use w/Group H3
	HWP4	Use w/Group H4
	HWP5	Use w/Group H5
	HWP6	Use w/Group H6
	HWP7	Use w/Group H7
	HWP8	Use w/Group H8
	HWP9	Use w/Group H9

HEAVY SERIES DOUBLE WELD PLATE		
	HDP3	Use w/Group H3
	HDP4	Use w/Group H4
	HDP5	Use w/Group H5
	HDP6	Use w/Group H6
	HDP7	Use w/Group H7

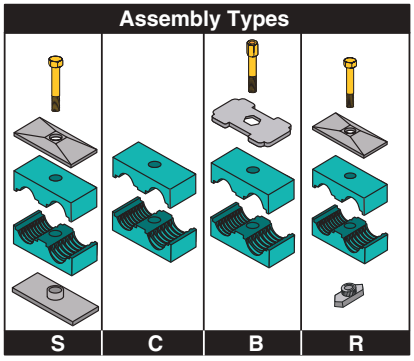
HEAVY SERIES DOUBLE COVER PLATE		
	DCP3	Use w/Group H3
	DCP4	Use w/Group H4
	DCP5	Use w/Group H5
	DCP6	Use w/Group H6
	DCP7	Use w/Group H7

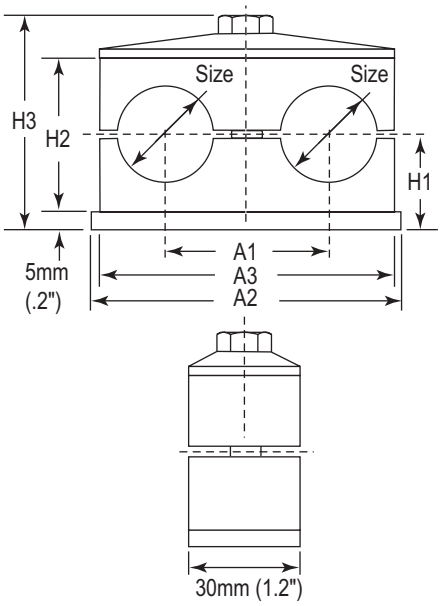
ORDERING EXAMPLE		
H3004S		
Assembly Includes		
Quantity	Part No.	Description
1 Each	HWP-3	Weld Plate
1 Each	HCP-3	Cover Plate
2 Each	HHB-3	Hex Bolts
1 set	H3011C	Cushions



BETA CLAMPS

TWIN SERIES





BETA CLAMPS TWIN SERIES are ideal for general-duty applications subject to moderate levels of shock and vibration. Cushions in this series are Polypropylene (Green Color).

Call factory for additional sizes and cushion materials

INSTALLATION - Refer to pages 115-116 for complete installation guide.

Group	Steel Part No.	Tube Size	Pipe Size	Dimensions - inch (mm)						WT/ 100	Hex Bolt
				A1	A2	A3	H1	H2	H3		
T1	T1004	1/4"		0.78 (20)	1.45 (37)	1.41 (36)	0.72 (18.5)	1.06 (27)	1.69 (43)	21	1/4"-20 x 1 3/8"
	T1006	3/8"								21	
	T1007		1/8"							21	
T2	T2008	1/2"		1.14 (29)	2.16 (55)	2.08 (53)	0.70 (18)	1.02 (26)	1.71 (43.5)	31	5/16"-18 x 1 3/8"
	T2009		1/4"							31	
	T2010	5/8"								31	
	T2011		3/8"							31	
T3	T3012	3/4"		1.41 (36)	2.75 (70)	2.63 (67)	0.92 (23.5)	1.45 (37)	2.14 (54.5)	40	5/16"-18 x 1 3/4"
	T3014		1/2"							39	
	T3015	7/8"								39	
	T3016	1"								38	
T4	T4017		3/4"	1.77 (45)	3.34 (85)	3.22 (82)	1.02 (26)	1.65 (42)	2.34 (59.5)	49	5/16"-18 x 2"
	T4018	1 1/8"								49	
T5	T5020	1 1/4"		2.20 (56)	4.33 (110)	4.17 (106)	1.25 (32)	2.12 (54)	2.81 (71.5)	65	5/16-18 x 2-3/8
	T5021		1"							65	
	T5024	1 1/2"								64	
	T5027		1 1/4"							62	

* For additional sizes contact factory.
Note: Add assembly type to part number.
Example: **T1004S-SS** provides the complete assembly as shown with stainless steel components.

SUFFIX	Components	Cushion	Example
none	Steel	Polypropylene (green)	**T1004S**
SS	Stainless Steel	Polypropylene (green)	**T1004S-SS**

Beta Clamps - Twin

TWIN SERIES COVER PLATE

TC1	Use with Group T1
TC2	Use with Group T2
TC3	Use with Group T3
TC4	Use with Group T4
TC5	Use with Group T5

TWIN SERIES SAFETY PLATE

TSP1	Use with Group T1
TSP2	Use with Group T2
TSP3	Use with Group T3
TSP4	Use with Group T4
TSP5	Use with Group T5

TWIN HEX BOLT

TB1	Use with Group T1
TB2	Use with Group T2
TB3	Use with Group T3
TB4	Use with Group T4
TB5	Use with Group T5

C-RAIL NUT

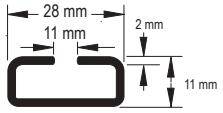
SRN1-6	1/4" Nut, Use with Group T1
TRN2-5	5/16" Nut, Use with Group T2 to T5

TWIN STACKING BOLT

TSB1	Use with Group T1
TSB2	Use with Group T2
TSB3	Use with Group T3
TSB4	Use with Group T4
TSB5	Use with Group T5

C-RAIL

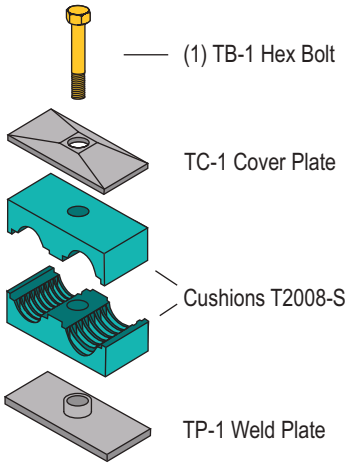
SCR1	39" (1 meter)
SCR2	78" (2 meter)



TWIN SERIES WELD PLATE

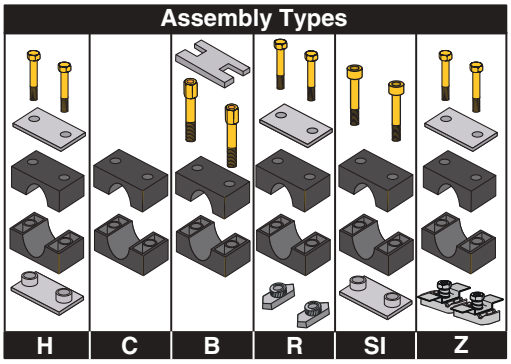
TP1	Use with Group T1
TP2	Use with Group T2
TP3	Use with Group T3
TP4	Use with Group T4
TP5	Use with Group T5

ORDERING EXAMPLE		
T2008S		
Assembly Includes		
Quantity	Part No.	Description
1 Each	TP1	Weld Plate
1 Each	TC1	Cover Plate
1 Each	TB1	Hex Bolts
1 set	T2008S	Cushions



BETA "SMOOTHIE"

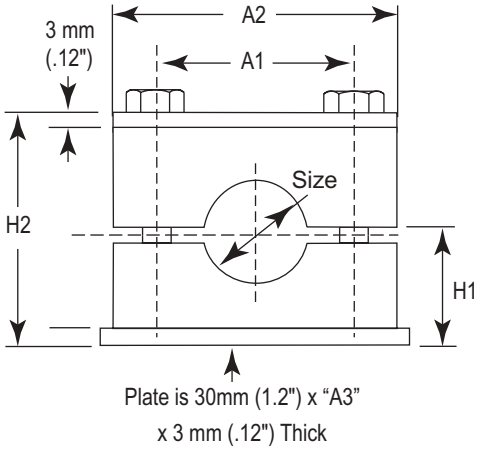
STANDARD SERIES



Beta "Smoothie" is ideal for general-duty applications where there is a need to reduce wear on hose connection caused by vibration and surge.

- Chamfered and smooth core protects hose cover and extends the life of the hose
- Uses Standard Beta hardware
- Reduces wear on hose connection caused by vibration and surge

INSTALLATION - Refer to pages 115-116 for complete installation guide.

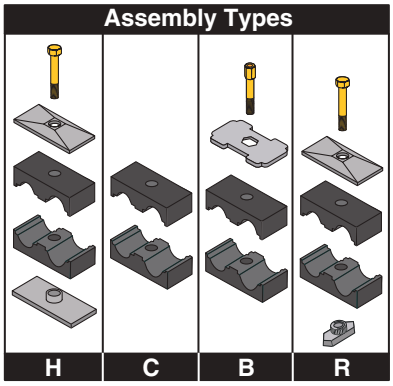


Group	Part No.	SAE 100R1 Hose Size	Dimensions (Inches)					WT/ 100	Bolt
			A1	A2	A3	H1	H2		
S2	S2004H	1/4" (0.53)	1.02	1.57	1.65	0.76	1.535	20	1/4 – 20 x 1 3/8
	S2006H	3/8" (0.69)	1.02	1.57	1.65	0.76	1.535	20	
S3	S3008H	1/2" (0.81)	1.29	1.96	2.04	0.80	1.61	25	1/4 – 20 x 1 1/2
	S3010H	5/8" (0.93)	1.29	1.96	2.04	0.80	1.61	25	
S4	S4012H	3/4" (1.10)	1.57	2.28	2.36	0.94	1.88	29	1/4 – 20 x 1 3/4
S5	S5016H	1" (1.42)	2.05	2.75	2.83	1.25	2.52	39	1/4 – 20 x 2 1/2

*For additional sizes and stainless steel contact factory.
Note: For configurations other than "H", Add Assembly type to Part No.
Example: S2004H provides the complete assembly as shown and S2004H-Z provides the "Z" assembly as shown

BETA "SMOOTHIE"

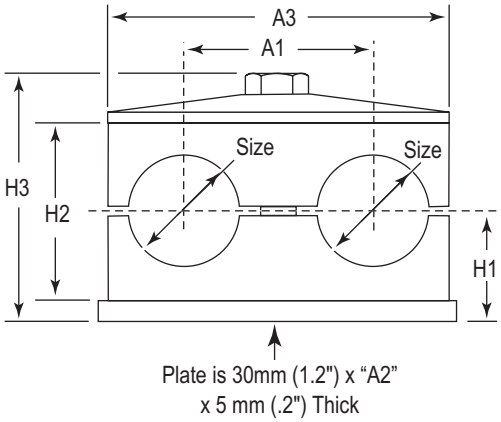
TWIN SERIES



Beta "Smoothie" is ideal for general-duty applications where there is a need to reduce wear on hose connection caused by vibration and surge.

- Chamfered and smooth core protects hose cover and extends the life of the hose
- Uses Standard Beta Twin hardware
- Reduces wear on hose connection caused by vibration and surge

INSTALLATION - Refer to pages 115-116 for complete installation guide.

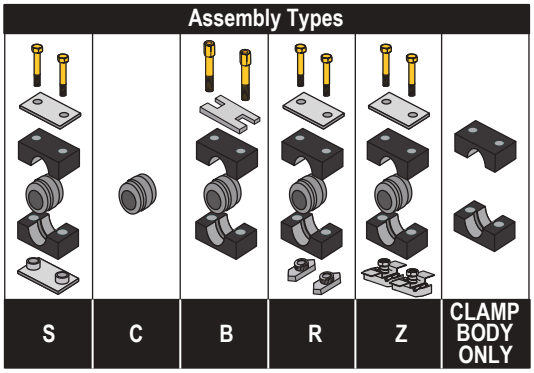


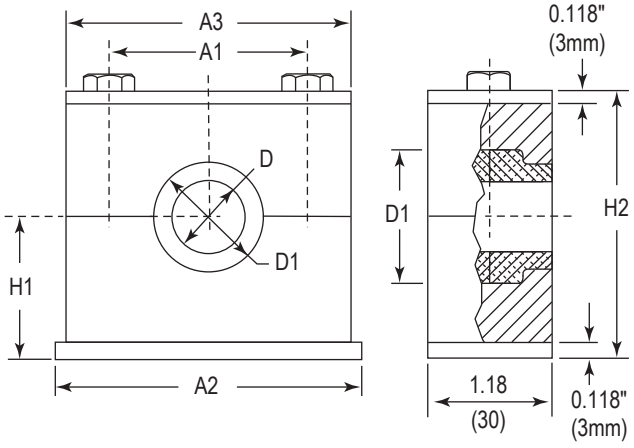
Group	Part No.	SAE 100R1 Hose Size	Dimensions (Inches)						WT/ 100	Bolt
			A1	A2	A3	H1	H2	H3		
T2	T2004H	1/4" (0.53)	1.14	2.16	2.08	0.70	1.02	1.71	31	5/16 – 18 x 1 3/8
	T2006H	3/8" (0.69)	1.14	2.16	2.08	0.70	1.02	1.71	31	
T3	T3008H	1/2" (0.81)	1.41	2.75	2.63	0.92	1.45	2.14	39	5/16 – 18 x 1 3/4
T4	T4010H	5/8" (0.93)	1.77	3.34	3.22	1.02	1.65	2.34	49	5/16 – 18 x 2
	T4012H	3/4" (1.10)	1.77	3.34	3.22	1.02	1.65	2.34	49	
T5	T5016H	1" (1.42)	2.2	4.33	4.17	1.25	2.12	2.81	65	5/16 – 18 x 2 3/8

*For additional sizes and stainless steel contact factory.
Note: For configurations other than "H", Add Assembly type to Part No.
Example: T2004H provides the complete assembly as shown and T2004H-B provides the "B" assembly as shown

BETA CLAMPS

STANDARD RUBBER INSERT





- One cushion block provides flexible size range of cushioning.
- Smooth bore core can be used on hose, or for vibration reduction
- Broad range of metric sizes.
- Maintains center line when used in groups.

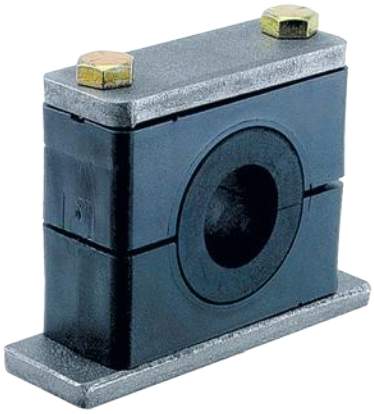
INSTALLATION - Refer to pages 115-116 for complete installation guide.

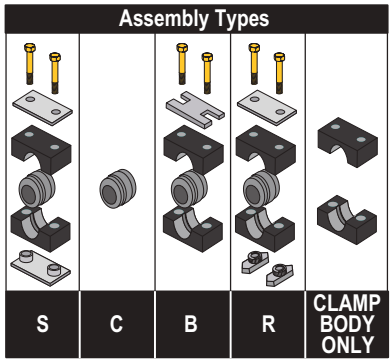
Group	Part No.	Bore Size Ø D		Tube O.D.	Pipe Size	Nom. Size Hose O.D. Min - Max	Dimensions – inches (mm)							Bolt Size
		in	(mm)				D	D1	H1	H2	A1	A2	A3	
S4	SM4006RI	0.24	6	-	-	0.22 - 0.24	1.00 (25.5)	1.22 (31)	0.925 (23.5)	1.85 (47)	1.57 (40)	2.32 (59)	2.24 (57)	1/4-20 x 1 3/4
	SM4008RI	0.32	8	1/16"	-	0.30 - 0.32								
	S4007RI	0.39	10	-	1/8"	0.37 - 0.39								
	SM4012RI	0.47	12	-	-	0.45 - 0.47								
	S4008RI	0.50	12.7	1/2"	-	0.48 - 0.50								
	SM4014RI	0.55	14	-	-	0.53 - 0.55								
	SM4015RI	0.59	15	-	-	0.57 - 0.59								
	S4010RI	0.63	16	5/8"	-	0.61 - 0.63								
	S4011RI	0.68	17.2	-	3/8"	0.66 -0.68								
	S4012RI	0.75	19	3/4"	-	0.73 - 0.75								
	S4C	Clamp Body Only (Group S4)												
S6	S6014RI	0.79	20	-	1/2"	0.77 - 0.79	1.54 (39)	1.81 (46)	1.40 (35.5)	2.80 (71)	2.60 (66)	3.46 (88)	3.39 (86)	1/4-20 x 2-3/4
	S6015RI	0.87	22	7/8"	-	0.85 - 0.87								
	S6016RI	0.98	25	1"	-	0.96 - 0.98								
	S6017RI	1.06	26.9	-	3/4"	1.04 - 1.06								
	SM6028RI	1.10	28	-	-	1.08 - 1.10								
	SM6030RI	1.18	30	-	-	1.16 - 1.18								
	S6020RI	1.26	32	1 1/4"	-	1.24 - 1.26								
	S6C	Clamp Body Only (Group S5)												

*For additional sizes and stainless steel contact factory.
Note: Add Assembly type to Part No.- **Example:** SM4006RIS provides the complete assembly as shown

BETA CLAMPS

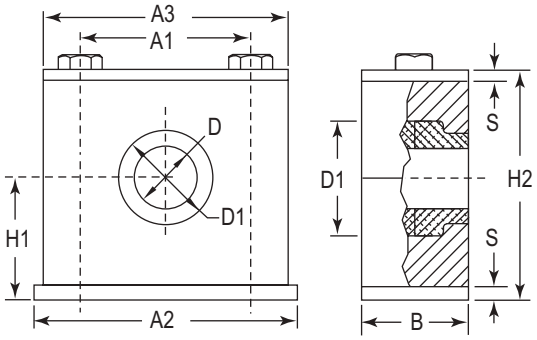
HEAVY RUBBER INSERT





INSTALLATION - Refer to pages 115-116 for installation guide.

- One block provides flexible size range of cushioning.
- Smooth bore core for hose, or vibration reduction
- Broad range of metric sizes.
- Maintains center line when used in groups.
- For high pressure hydraulics and heavy duty operations.
- Used for intermittent load and high oil speeds.
- Increase size range over standard series.

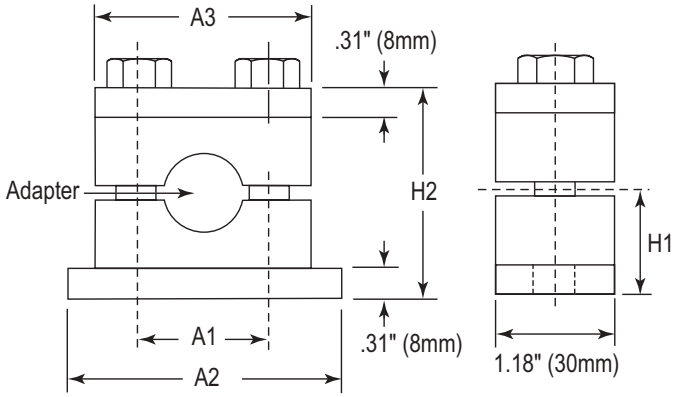


Group	Part No.	Bore Ø D in. (mm)	Tube O.D.	Pipe Size	Nom. Size Hose O.D	Dimensions –inches (mm)									Bolt Size
						D	D1	B	H1	H2	A1	A2	A3	S	
H4	HM4006RI	0.24 (6)	-	-	0.22 - 0.24	1.00 (25.5)	1.24 (31.5)	1.18 (30)	1.22 (31)	2.44 (62)	1.77 (45)	3.35 (85)	2.76 (70)	0.32 (8)	3/8 -16x 2-1/4
	HM4008RI	0.32 (8)	1/16"	-	0.30 - 0.32										
	H4007RI	0.39 (10)	-	1/8"	0.37 - 0.39										
	HM4012RI	0.47 (12)	-	-	0.45 - 0.47										
	H4008RI	0.50 (12.7)	1/2"	-	0.48 - 0.50										
	HM4014RI	0.55 (14)	-	-	0.53 - 0.55										
	HM4015RI	0.59 (15)	-	-	0.57 - 0.59										
	H4010RI	0.63 (16)	5/8"	-	0.61 - 0.63										
	H4011RI	0.68 (17.2)	-	3/8"	0.66 -0.68										
	H4012RI	0.75 (19)	3/4"	-	0.73 - 0.75										
	H4C	Clamp Body Only (Group H4)													
H5	H5014RI	0.79 (20)	-	1/2"	0.77 - 0.79	1.54 (39)	1.83 (46.5)	1.18 (30)	1.46 (37)	2.91 (74)	2.36 (60)	3.94 (100)	3.35 (85)	0.32 (8)	3/8-16x 2-3/4
	H5015RI	0.87 (22)	7/8"	-	0.85 - 0.87										
	H5016RI	0.98 (25)	1"	-	0.96 - 0.98										
	H5017RI	1.06 (26.9)	-	3/4"	1.04 - 1.06										
	HM5028RI	1.10 (28)	-	-	1.08 - 1.10										
	HM5030RI	1.18 (30)	-	-	1.16 - 1.18										
	H5020RI	1.26 (32)	1 1/4"	-	1.24 - 1.26										
	H5C	Clamp Body Only (Group H5)													
H6	H6021RI	1.33 (33.7)	-	1"	1.31 - 1.33	2.56 (65)	2.91 (74)	1.77 (45)	2.11 (53.5)	4.21 (107)	3.56 (90.5)	5.51 (140)	4.53 (115)	0.39 (10)	1/2-13x 4
	HM6035RI	1.38 (35)	-	-	1.36 - 1.38										
	H6024RI	1.50 (38)	1 1/2"	-	1.48 - 1.50										
	HM6040RI	1.58 (40)	-	-	1.56 - 1.58										
	H6027RI	1.65 (42)	-	1 1/4"	1.63 - 1.65										
	HM6045RI	1.79 (45.5)	-	-	1.77 - 1.79										
	H6030RI	1.89 (48)	-	1 1/2"	1.87 - 1.89										
	H6032RI	2.01 (51)	2"	-	1.99 - 2.01										
	H6034RI	2.10 (53.4)	2 1/8"	-	2.08 - 2.10										
	HM6056RI	2.22 (56.4)	-	-	2.2 - 2.22										
	H6C	Clamp Body Only (Group H6)													
H7	H7038RI	2.36 (60)	-	2"	2.34 - 2.36	3.50 (89)	3.86 (98)	2.36 (60)	2.70 (68.5)	5.39 (137)	4.80 (122)	7.09 (180)	5.98 (152)	0.39 (10)	5/8-11x 5-1/2
	HM7065RI	2.56 (65)	-	-	2.54 - 2.56										
	HM7070RI	2.76 (70)	-	-	2.74 - 2.76										
	H7046RI	2.87 (73)	-	2 1/2"	2.85 - 2.87										
	H7050RI	2.99 (76)	3"	-	2.97 - 2.99										
	H7C	Clamp Body Only (Group H7)													
H8	HM8083RI	3.27 (83)	-	-	3.19 - 3.27	4.57 (116)	5.20 (132)	3.15 (80)	3.88 (98.5)	7.76 (197)	6.61 (168)	8.86 (225)	8.07 (205)	0.59 (15)	3/4-10x 7-1/2
	H8056RI	3.50 (89)	3 1/2"	3"	3.43 - 3.50										
	H8C	Clamp Body Only (Group H8)													

*For additional sizes and stainless steel contact factory.

Note: Add Assembly type to Part No.- **Example:** HM4006RIS provides the complete assembly as shown

BETA ADAPTER



Group	A1	A2	A3	H1	H2	Hex Bolt
Group 1 H4 BETA	45mm 1.77	85mm 3.34	70mm 2.75	32mm 1.25	64mm 2.51	3/8"-16 x 2-1/4"
Group 2 H5 BETA	60mm 2.36	100mm 3.93	84mm 3.30	38mm 1.49	76mm 2.99	3/8"-16 x 2-3/4"

The **BETA-ADAPTER** allows a clamping junction to be inserted into virtually any hydraulic line. The exclusive square bodied junction adapter design can be used with metallic tubing or hydraulic hose ends. It provides a point of union for hydraulic runs which transition from one form of conveyance to another (i.e. hose to tubing). Once inserted into the customized Beta-Adapter clamp body, the junction point is securely clamped fighting the effects of vibration, insuring a leak-free system.

- Beta-Adapter cushions can also be used with rubber inserts.
- Z-Clamp split bushings from Group 1 can be utilized with the basic Beta-Adapter Group 4 cushion.
- Z-Clamp bushings from Group 2 coincide with Group 5 Beta-Adapter assemblies.
- The split bushings provide extra vibration absorption for delicate clamping surfaces.

INSTALLATION - Refer to page 117 for complete installation guide.

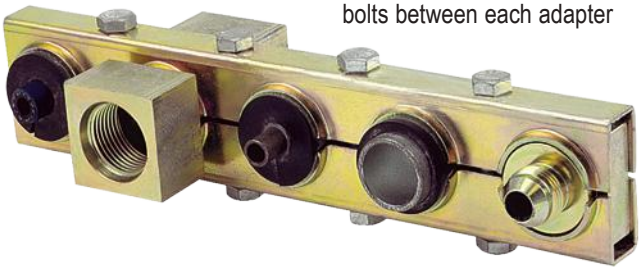
		Tube Size	Group 1 (H4) Part No.	Group 2 (H5) Part No.
	37° JIC	1/4"	H4MJA1-4-S	H5MJA2-4-S
		3/8"	H4MJA1-6-S	H5MJA2-6-S
		1/2"	H4MJA1-8-S	H5MJA2-8-S
		5/8"	H4MJA1-10S	H5MJA2-10S
		3/4"	–	H5MJA2-12S
		5/8"	–	H5MJA2-14S
		1"	–	H5MJA2-16S
	O-Ring Face Seal	3/8"	H4MJO1-6-S	H5MJO2-6-S
		1/2"	H4MJO1-8-S	H5MJO2-8-S
		5/8"	H4MJO1-10S	H5MJO2-10S
		3/4"	–	H5MJO2-12S
		1"	–	H5MJO2-16S
	Female Junction	1/2"	H4FJA1-8-S	–
		3/4"	–	H5FJA2-12S
	Female Pipe	3/8" NPT	H4FJA1-6P-S	H5FJA2-12P-S
	Beta Cushions Only (Set of Two)	–	H4JCN-C	H5JCN-C
	Z-Clamp Split Bushing	–	HAC-1 (1-1/2" SERIES) CAN BE USED	HAC-2 (2" SERIES) CAN BE USED

Z-CLAMP UNITS

The **Z-Clamp** is designed to maintain a consistent center line dimension for horizontal clamping or vertical stackable clamping applications. Z-Clamp maintains that center line while accommodating the same, or different diameter tubing, hose or pipe. Suited for all types of hydraulic hose, tubing, and pipe clamping applications, the Z-Clamp provides yet another alternative to the broadest cushion clamping product line in the world.

A Z-Clamp consists of an adapter framework which is offered in two versions. One has mounting bolts between each adapter insert and the other has two additional mounting bolts at each end of the frame.

Standard framework, bolts between each adapter



Z-Clamps can be stacked for even more line clamping ability.

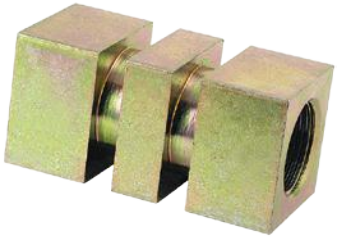
Outside hole framework, bolts between each adapter and two additional bolts at each end

Z-CLAMP & BETA ADADPTER

OPTIONAL ADAPTERS

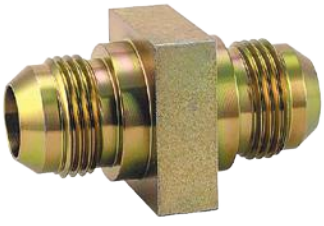
O-RING FACE SEAL

FEMALE JUNCTION ADAPTER



The Z-Clamp inserts are also used with the Beta Adapter.

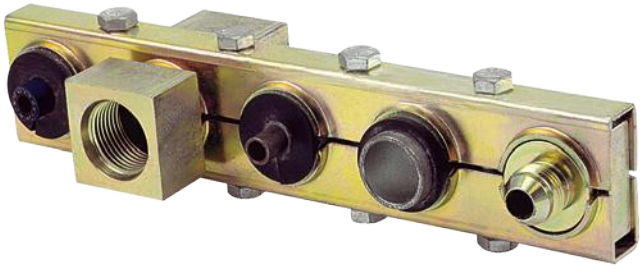
RUBBER SPLIT BUSHINGS



37° FLARE MALE JUNCTION ADAPTER

Z-CLAMP - MULTIPLE LINE CLAMPING SYSTEM

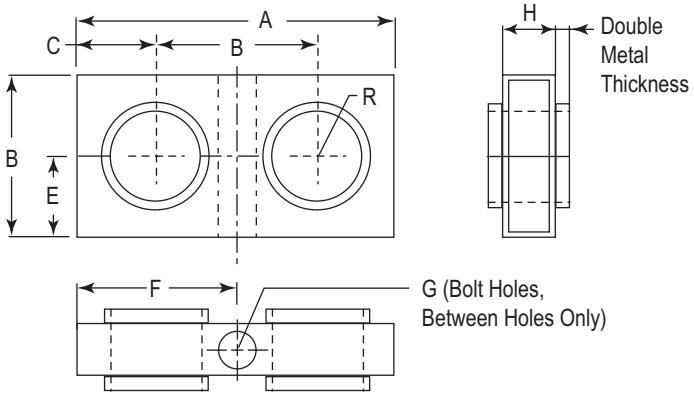
STANDARD CLAMP UNITS



The standard Z-Clamp unit features an anchor bolt between each of the adapter inserts.

The junction adapter provides break points in lines allowing for shorter hose and tubing runs reducing leaks at connection points by securing the adapter against vibration within the Z-Clamp units. These break points may also serve as securely clamped changeover points between hose and tube, and vice versa.

- Stackable for space conservation
- Maintains consistent center line dimensions between lines both horizontally and vertically (in a stacking application)
- Mix and match pipe, tube, hose and junction adapters
- Suited for all types of hydraulic applications
- Available in standard and outside hole mounting configurations



INSTALLATION - Refer to page 117 for complete installation guide.

Note: Adapters and Hardware are ordered separately. Please see pages 62--64 for selection of these items.

Part No.	# Adapter Holes	# Bolts	A	B	C	E	F	G	H	R
HAC1 Series 1½" 14 Gauge										
HAC1-2	2	1	2.938"	1.5"	0.719"	0.75"	1.469"	0.344"	0.550"	0.422"
HAC1-3	3	2	4.406"	1.5"	0.719"	0.75"	1.469"	0.344"	0.550"	0.422"
HAC1-4	4	3	5.940"	1.5"	0.719"	0.75"	1.469"	0.344"	0.550"	0.422"
HAC1-5	5	4	7.140"	1.5"	0.594"	0.75"	1.343"	0.344"	0.550"	0.422"
HAC1-6	6	5	8.938"	1.5"	0.719"	0.75"	1.469"	0.344"	0.550"	0.422"
HAC1-7	7	6	10.188"	1.5"	0.594"	0.75"	1.343"	0.344"	0.550"	0.422"
HAC1-32	32	31	48.000"	1.5"	-	0.75"	-	0.344"	0.550"	0.422"
HAC2 Series 2" 14 Gauge										
HAC2-2	2	1	3.875"	2"	0.938"	1"	1.938"	0.344"	0.550"	0.594"
HAC2-3	3	2	5.641"	2"	0.844"	1"	1.844"	0.344"	0.550"	0.594"
HAC2-4	4	3	7.891"	2"	0.938"	1"	1.938"	0.344"	0.550"	0.594"
HAC2-5	5	4	9.672"	2"	0.844"	1"	1.844"	0.344"	0.550"	0.594"
HAC2-6	6	5	11.672"	2"	0.813"	1"	1.813"	0.344"	0.550"	0.594"
HAC2-7	7	6	13.625"	2"	0.813"	1"	1.813"	0.344"	0.550"	0.594"
HAC2-24	24	23	48.000"	2"	-	1"	-	0.344"	0.550"	0.594"
HAC3 Series 3" 11 Gauge										
HAC3-2	2	1	6.766"	3"	1.875"	1.5"	3.375"	0.406"	0.750"	1.063"
HAC3-3	3	2	8.703"	3"	1.406"	1.5"	2.984"	0.406"	0.750"	1.063"
HAC3-4	4	3	11.703"	3"	1.406"	1.5"	2.797"	0.406"	0.750"	1.063"
HAC3-5	5	4	14.703"	3"	1.406"	1.5"	2.859"	0.406"	0.750"	1.063"
HAC3-6	6	5	17.703"	3"	1.406"	1.5"	2.859"	0.406"	0.750"	1.063"
HAC3-16	16	15	48.000"	3"	-	1.5"	-	0.406"	0.750"	1.063"

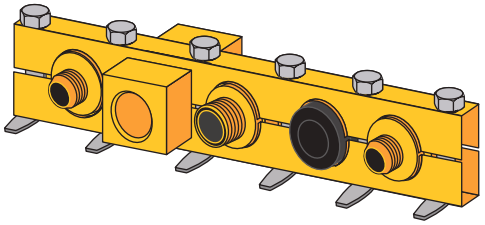
NOTE: Hardware & Adapters not included.

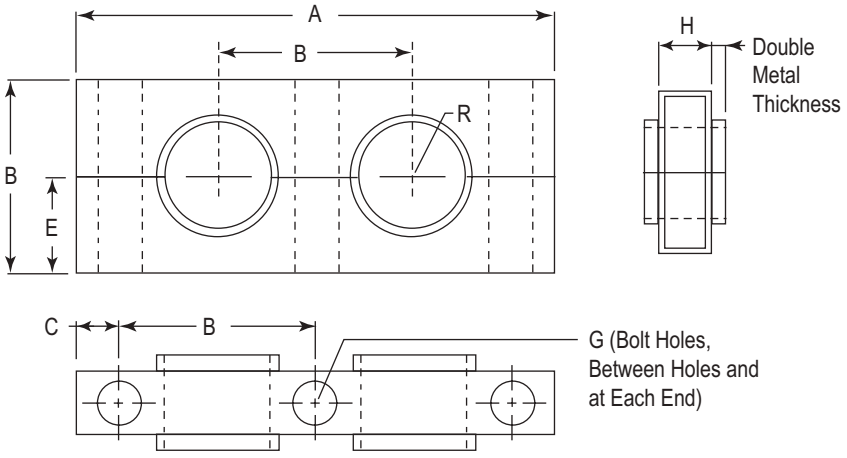
Z-CLAMP

OUTSILICONEDE HOLE CLAMP UNITS

- Stackable for space conservation
- Maintains consistent center line dimensions between lines both horizontally and vertically (in a stacking application)
- Mix and match pipe, tube, hose and junction adapters
- Suited for all types of hydraulic applications
- Available in standard and outside hole mounting configurations

INSTALLATION - Refer to page 117 for complete installation guide.





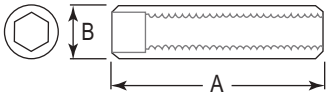
Note: Adapters and Hardware are ordered separately. Please see pages 62--64 for selection of these items.

Part No.	# Adapter Holes	# Bolts	A	B	C	E	G	H	R
HAC1 Series 1½"									
HAC1-1-2	1	2	2.188"	1.5"	0.344"	0.75"	0.344"	0.550"	0.422"
HAC1-2-3	2	3	3.797"	1.5"	0.391"	0.75"	0.344"	0.550"	0.422"
HAC1-3-4	3	4	5.297"	1.5"	0.391"	0.75"	0.344"	0.550"	0.422"
HAC1-4-5	4	5	6.797"	1.5"	0.391"	0.75"	0.344"	0.550"	0.422"
HAC1-5-6	5	6	8.297"	1.5"	0.391"	0.75"	0.344"	0.550"	0.422"
HAC2 Series 2"									
HAC2-1-2	1	2	2.656"	2"	0.328"	1"	0.344"	0.550"	0.594"
HAC2-2-3	2	3	4.766"	2"	0.391"	1"	0.344"	0.550"	0.594"
HAC2-3-4	3	4	6.797"	2"	0.391"	1"	0.344"	0.550"	0.594"
HAC2-4-5	4	5	8.297"	2"	0.391"	1"	0.344"	0.550"	0.594"
HAC3 Series 3"									
HAC3-1-2	1	2	4.000"	3"	0.500"	1.5"	0.406"	0.750"	1.063"
HAC3-2-3	2	3	6.859"	3"	0.422"	1.5"	0.406"	0.750"	1.063"
HAC3-3-4	3	4	9.859"	3"	0.422"	1.5"	0.406"	0.750"	1.063"
HAC3-4-5	4	5	12.859"	3"	0.422"	1.5"	0.406"	0.750"	1.063"

Z-CLAMP

HARDWARE

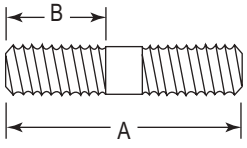
SOCKET HEAD STACKING NUT



Part No.	HAC Series	A	B Dia.	Thread size
S-1	1	1.335"	1/2"	5/16"-18
S-2	2	1.800"	1/2"	5/16"-18
S-3	3	2.780"	11/16"	3/8"

THREAD ADAPTER

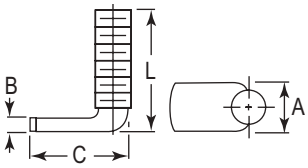
(Install or Stack)



Part No.	HAC Series	A	B	Thread size
T-1	1 & 2	1.38"	0.63"	5/16"-18
T-3	3	2.00"	0.88"	3/8"-16

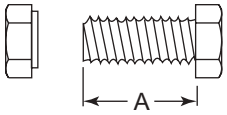
WELD NUT

Part No.	HAC Series	Thread Size	A	B	C	L
W-1/W-2	HAC 1	5/16-18	0.437"	0.12"	0.875"	3/4"
W-1/W-2	HAC 2	5/16-18	0.437"	0.12"	0.875"	3/4"
W-3	HAC 3	3/8-16	0.531"	0.151"	1.00"	1.00"



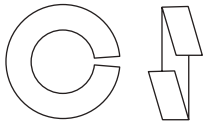
HEX BOLT and HEX NUT

Part No.	Type	HAC Series	Thread Size	A
HB-1	Bolt	HAC 1 & 2	5/16"-18	3/4"
HN-1	Nut			–
HB-3	Bolt	HAC 3	3/8"-16	1"
HN-3	Nut			–



LOCK WASHER

Part No.	HAC Series	Size
HW-1	HAC 1 & 2	5/16"
HW-3	HAC 3	3/8"

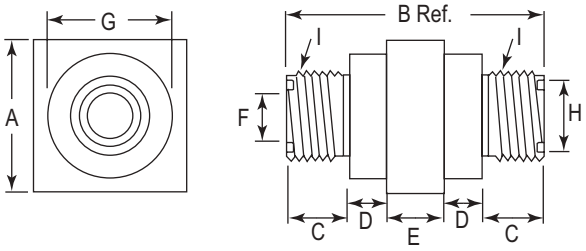


O-RING FACE SEAL

FOR USE with BETA ADAPTERS & Z-CLAMPS

Part No.	Tube Size	Dimensions – inches								
		A	B.	C	D	E	F.	G	I (Thread)	H
MJO-1-6	3/8"	1.00"	1.96"	0.43"	0.28"	0.54"	0.26"	0.84"	11/16"-16	0.496"
MJO-1-8	1/2"	1.00"	2.10"	0.50"	0.28"	0.54"	0.38"	0.84"	13/16"-16	0.621"
MJO-1-10	5/8"	1.00"	2.30"	0.60"	0.28"	0.54"	0.48"	0.84"	1"-14	0.748"
MJO-2-6	3/8"	1.50"	2.08"	0.43"	0.34"	0.54"	0.26"	1.20"	11/16"-16	0.496"
MJO-2-8	1/2"	1.50"	2.22"	0.50"	0.34"	0.54"	0.38"	1.20"	13/16"-16	0.621"
MJO-2-10	5/8"	1.50"	2.42"	0.60"	0.34"	0.54"	0.48"	1.20"	1"-14	0.748"
MJO-2-12	3/4"	1.50"	2.52"	0.65"	0.34"	0.54"	0.61"	1.20"	13/16"-12	0.873"
MJO-2-16	1"	1.50"	2.58"	0.68"	0.34"	0.54"	0.81"	1.20"	17/16"-12	1.058"
MJO-3-20	1 1/4"	2.25"	2.98"	0.68"	0.437"	0.75"	1.02"	2.12"	111/16"-12	1.309"
MJO-3-24	1 1/2"	2.25"	2.98"	0.68"	0.437"	0.75"	1.26"	2.12"	2"-12	1.621"

- Offered in a wide range of sizes in JIC, NPT, SAE, and ORFS thread configurations.
- Zinc plated to prevent corrosion
- Clamping at the fitting prevents loosening and other vibration related leaks

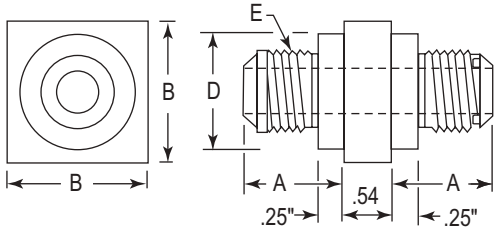


37° FLARE MALE JUNCTION ADAPTER

FOR USE with BETA ADAPTERS & Z-CLAMPS

Part No.	Tube Size	Dimensions – Inches			E (Thread)
		A	B	D	
1½" Series					
MJA-1-4	1/4"	0.76"	1"	0.84"	7/16"-20
MJA-1-6	3/8"	0.76"	1"	0.84"	9/16"-18
MJA-1-8	1/2"	0.87"	1"	0.84"	3/4"-16
MJA-1-10	5/8"	0.96"	1"	0.84"	7/8"-14
2" Series					
MJA-2-4	1/4"	0.76"	1 1/2"	1.20"	7/16"-20
MJA-2-6	3/8"	0.76"	1 1/2"	1.20"	9/16"-18
MJA-2-8	1/2"	0.87"	1 1/2"	1.20"	3/4"-16
MJA-2-10	5/8"	0.96"	1 1/2"	1.20"	7/8"-14
MJA-2-12	3/4"	1.07"	1 1/2"	1.20"	11/16"-12
MJA-2-14	7/8"	1.10"	1 1/2"	1.20"	13/16"-12
MJA-2-16	1"	1.10"	1 1/2"	1.20"	15/16"-12

- Offered in a wide range of sizes in JIC, NPT, SAE, and ORFS thread configurations.
- Zinc plated to prevent corrosion
- Clamping at the fitting prevents loosening and other vibration related leaks

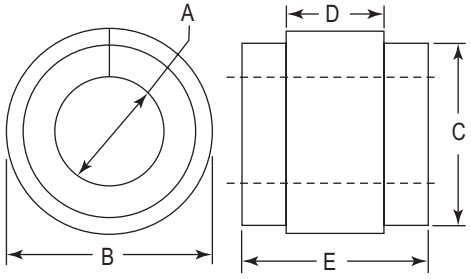


SPLIT RUBBER BUSHINGS

FOR USE with BETA ADAPTERS & Z-CLAMPS

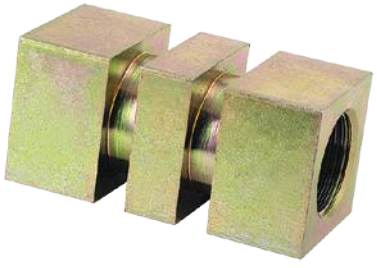
ANTI-VIBRATION SPLIT RUBBER BUSHING

- Unique "grip" design secures cushion in place
- High quality EPDM rubber provides superior vibration damping with excellent oil resistance.



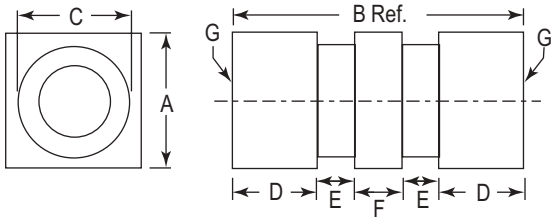
Part No.	Tube Size	Pipe Size	A	B	C	D	E
HAC-1 Series 1½"							
G-1-4	¼"	–	0.235"	0.975"	0.875"	0.50"	1.312"
G-1-6	⅜"	–	0.360"	0.975"	0.875"	0.50"	1.312"
G-1-8	½"	–	0.485"	0.975"	0.875"	0.50"	1.312"
G-1-10	⅝"	–	0.610"	0.975"	0.875"	0.50"	1.312"
G-1-12	¾"	–	0.735"	0.975"	0.875"	0.50"	1.312"
HAC-2 Series 2"							
G-2-4	¼"	–	0.235"	1.350"	1.250"	0.50"	1.312"
G-2-6	⅜"	–	0.360"	1.350"	1.250"	0.50"	1.312"
G-2-8	½"	–	0.485"	1.350"	1.250"	0.50"	1.312"
G-2-4P	–	¼"	0.525"	1.350"	1.250"	0.50"	1.312"
G-2-10	⅝"	–	0.610"	1.350"	1.250"	0.50"	1.312"
G-2-6P		⅜"	0.660"	1.350"	1.250"	0.50"	1.312"
G-2-12	¾"		0.735"	1.350"	1.250"	0.50"	1.312"
G-2-8P	–	½"	0.825"	1.350"	1.250"	0.50"	1.312"
G-2-14	⅞"	–	0.860"	1.350"	1.250"	0.50"	1.312"
G-2-16	1"	–	0.985"	1.350"	1.250"	0.50"	1.312"
G-2-12P		¾"	1.035"	1.350"	1.250"	0.50"	1.312"
HAC-3 Series 3"							
G-3-4	¼"	–	0.234"	2.287"	2.187"	0.750"	1.750"
G-3-6	⅜"	–	0.360"	2.287"	2.187"	0.750"	1.750"
G-3-8	½"	–	0.485"	2.287"	2.187"	0.750"	1.750"
G-3-4P	–	¼"	0.525"	2.287"	2.187"	0.750"	1.750"
G-3-10	⅝"	–	0.610"	2.287"	2.187"	0.750"	1.750"
G-3-6P	–	⅜"	0.660"	2.287"	2.187"	0.750"	1.750"
G-3-12	¾"	–	0.735"	2.287"	2.187"	0.750"	1.750"
G-3-8P	–	½"	0.825"	2.287"	2.187"	0.750"	1.750"
G-3-14	⅞"	–	0.860"	2.287"	2.187"	0.750"	1.750"
G-3-16	1"	–	0.985"	2.287"	2.187"	0.750"	1.750"
G-3-12P	–	¾"	1.035"	2.287"	2.187"	0.750"	1.750"
G-3-20	1¼"		1.235"	2.287"	2.187"	0.750"	1.750"
G-3-16P	–	1"	1.300"	2.287"	2.187"	0.750"	1.750"
G-3-24	1½"	–	1.485"	2.287"	2.187"	0.750"	1.750"
G-3-20P	–	1¼"	1.645"	2.287"	2.187"	0.750"	1.750"
G-3-24P	–	1½"	1.885"	2.287"	2.187"	0.750"	1.750"
G-3-32	2"	–	1.985"	2.287"	2.187"	0.750"	1.750"

FEMALE JUNCTION ADAPTER



For Use With Beta Adapters & Z-CLAMPS

Part No.	Dimensions – Inches						G (Thread)
	A	B	C	D	E.	F	
FJA-1-6-P	1"	2-13/16"	0.84"	0.84"	0.30"	0.54"	⅜" N.P.T.
FJA-2-12-P	1½"	3-⅛"	1.20"	0.97"	0.32"	0.54"	¾" N.P.T.
FJA-3-20-P	2-¼"	2-⅝"	2.12"	0.49"	0.45"	0.74"	1¼" N.P.T.
FJA-1-8	1"	2-13/16"	0.84"	0.84"	0.30"	0.54"	¾"-16 SAE
FJA-2-12	1½"	3-⅛"	1.20"	0.97"	0.32"	0.54"	1 1/16"-12 SAE
FJA-3-20	2-¼"	2-⅝"	2.12"	0.49"	0.45"	0.74"	1⅝"-12 SAE



- Offered in a wide range of sizes in JIC, NPT, SAE, and ORFS thread configurations.
- Zinc plated to prevent corrosion
- Clamping at the fitting prevents loosening and other vibration related leaks

GAMMA PADS

When installing pipe, tube, hose, or equipment the effects of vibration, shock, surge, galvanic corrosion and unwanted noise are a major concern. Improperly cushioned equipment, pipe, tube, or hose invites failure and potential problems. New developments in cushioned clamping and vibration isolation products from ZSi provide the proper solutions to combat these effects.

ZSi's products have earned a well-deserved reputation for unparalleled quality and effectiveness. As industry develops new needs, ZSi can and will respond with superior quality products and innovative solutions.

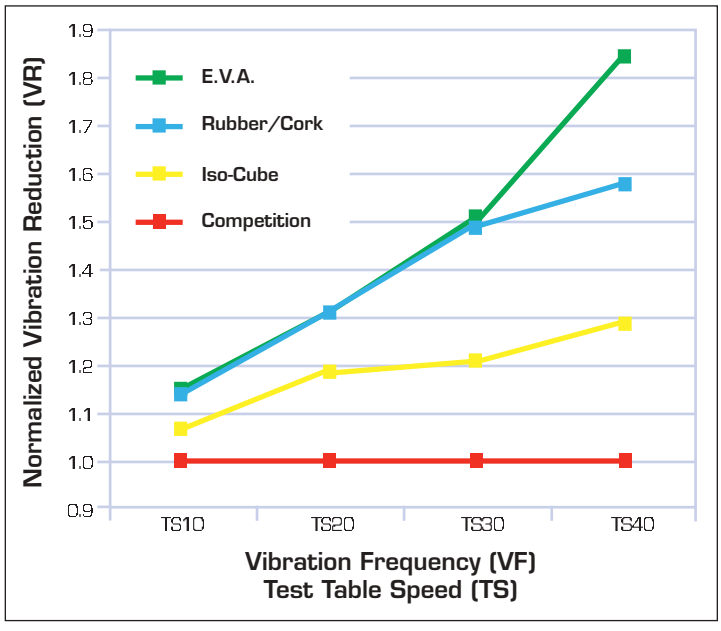
EXTREME

STANDARD

ISO-CUBE

SHIELD

ANTI-VIBRATION PAD PERFORMANCE



GAMMA SHIELD

RUBBER MAT

Shields equipment from vibration and movement when lesser amounts of vibration absorption is needed.

Part No.	Description
AR-2	2" x 2" x 3/8" All Rubber AV Pad
AR-3	3" x 3" x 3/8" All Rubber AV Pad
AR-4	4" x 4" x 3/8" All Rubber AV Pad
AR-6	6" x 6" x 3/8" All Rubber AV Pad
AR-18	18" x 18" x 3/8" All Rubber AV Pad

GAMMA STANDARD PAD

The Industry Standard Highest quality elastomeric oil resistant padding. Designed to withstand 50 psi. The rubber pads are corrugated on both sides and laminated to the cork center.

Part No.	Description
AC-2	2" x 2" x 7/8" Cork / Rubber AV Pad
AC-3	3" x 3" x 7/8" Cork / Rubber AV Pad
AC-4	4" x 4" x 7/8" Cork / Rubber AV Pad
AC-6	6" x 6" x 7/8" Cork / Rubber AV Pad
AC-18	18" x 18" x 7/8" Cork / Rubber AV Pad

ISO - CUBE

SOLID RUBBER TOUGH

Natural rubber pads designed to reduce vibration and noise emanating from refrigeration or AC equipment. Circular design offers a suction cup effect eliminating the need to bolt the pads down. A standard 18" pad divides into eighty-one 2" segments which may be cut or torn into smaller pads. The 50 durometer pads will withstand a load of 180 psi with great resiliency.

Part No.	Description
AS-2	2" x 2" x 3/4" Iso-Cube
AS-18	18" x 18" x 3/4" Iso-Cube

GAMMA EXTREME PAD

The **BEST** Performer E.V.A. (Extreme Vibration Attenuation) is the latest generation in vibration dampening technology. In the most severe vibration extremes, testing shows the E.V.A. pad outperforms cork and rubber by greater than 3:1 and outperforms our competitor's "waffle" pad by greater than 8:1! The enhanced performance comes from the special composite foam center which is structurally more sound than cork. E.V.A. is not affected by oils or chemicals that can break down cork and is much more effective at vibration dampening than solid rubber. Designed to withstand 50 psi. Choose E.V.A. to get the best of both worlds!

Part No.	Description
AV-2	2" x 2" x 7/8" EVA Pad
AV-3	3" x 3" x 7/8" EVA Pad
AV-4	4" x 4" x 7/8" EVA Pad
AV-6	6" x 6" x 7/8" EVA Pad
AV-18	18" x 18" x 7/8" EVA Pad

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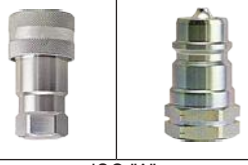
6600 Sockets / Plugs Page 89 

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How to Select:

Proper coupler selection is important because of the variety of media for which they are used. All couplers consist of two basic components – a socket and a plug. The type of coupler varies by the valving arrangements in these two components.

Four basic factors should be considered to assure proper selection:

Type – Operation – Flow – Media

Manual

Manual sockets require manual retraction of the sleeve to both connect and disconnect the plug. The "BL Series" is an optional feature available on manual sockets. After connection, the sleeve is rotated locking the coupler against accidental disconnect.

Automatic

Automatic sockets accept the plug by simple insertion into the socket and do not require retraction of the sleeve to connect. The "SL Series" is an optional feature on automatic sockets to prevent accidental disconnect. It is functionally the same as the "BL Series" on manual sockets.

Safety Coupler

Safety sockets are a variation of automatic operation. The socket accepts the plug by insertion. The sleeve is moved straight forward to lock and turn on the air. The sleeve is moved back by rotating first to the left and then to the right. This shuts off the supply line, exhausts the downstream line, and then releases the plug.

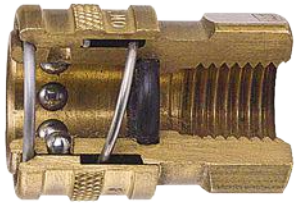
One Way Shut-Off

In a "One Way Shut-Off," only the socket has valving to shut off the flow when disconnected; it is, therefore, installed on the pressure side of the line. The plug has no valving and exhausts the downstream line at disconnect.

Two Way Shut-Off

The "Two Way Shut-Off" provides valving in both the socket and the plug, thereby shutting off flow at both of the disconnected ends. Originally developed for hydraulic lines, they are suitable for many other media because of the variety of metals and seal compounds offered.

Straight-Thru



"Straight-Thru" couplers, as the name implies, do not have valving in either the socket or the plug. Therefore, both ends of the line are exhausted at disconnect.

Operation: Operation refers to the action required to connect and disconnect a coupler. Operation is a function of sockets only and does not vary for plugs.

Flow: The most important factor in properly sizing couplers is flow. Flow data is given throughout the catalog for industrial interchange design couplers, as well as many of BRECO's interchanges for competitors' non-standard designs. Where flow information is not shown, it is the same as the originating competitors' non-standard design. Most One Way Shut-Off non-standard couplers have the same flow as the same basic size industrial interchange design. All flows shown are for FPT couplers.

Media: The media flowing through the coupler will usually determine the type. Compressed air, many other gasses, and some liquids can be handled by One Way Shut-Off couplers. Hydraulic fluids as well as many other liquids and some gasses require Two Way Shut-Off. Straight-Thru couplers are suitable where there is no pressure in the line at connect or disconnect and loss of media at disconnect does not matter.

"B" Series Sockets

BRECO "B" Series couplers are designed for rigid mounting that allows a simple push-to-connect operation, constructed of a solid brass body and a steel valve. The "B" Series are mechanically interchangeable with the "C" , "SV", "SVPC" & "D" Series, and similar industrial interchange couplings made by other manufacturers and accept plugs that conform to MIL-C4109-F. Plugs used with the "B" Series are the Industrial Interchange plugs that are found on page 77 of this catalog.

Sleeve-Lock **Option (shown on right)**

Sleeve-Lock feature locks manual socket against accidental disconnect. To connect, align ball with slot. After connection, rotate sleeve to lock. To disconnect, realign ball with slot and retract sleeve. Sizes available with sleeve lock are shown in the tables on following pages.

Specifications:

	Body Size			
	¼"	⅜"	½"	¾"
Rated Pressure (psi)	300			
Temperature Range (std seals)	-40° to +250° F			
Locking Device	3 pins	4 pins	6 pins	6 pins
Vacuum Data				
-- Disconnected (coupler only)	Not Recommended			
-- Connected	27.4 inches Hg			

Specifications

Material: Brass body and sleeve

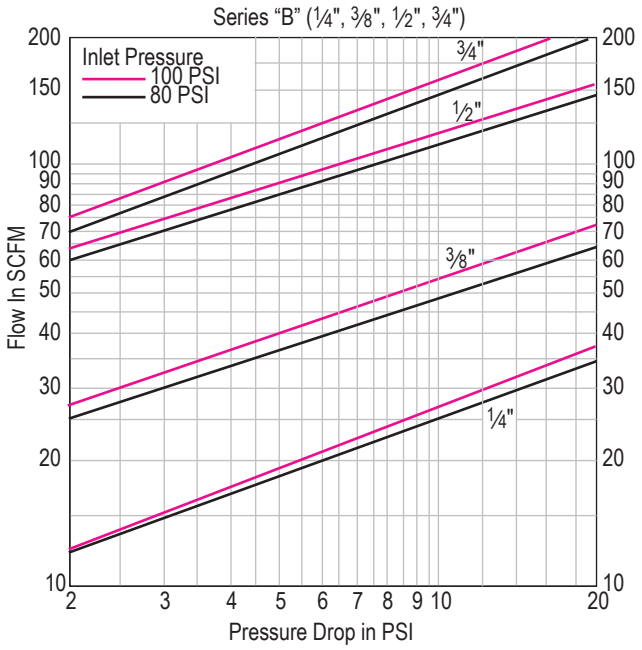
Seal: Buna-N

Working Pressure: 300 PSIG; vacuum to 26"Hg

Connection Sizes: ⅛" to 1" NPT
¼" to 1" Hose Barb
¼" to ½" Push-on Hose Barb

Interchangeability: Complies with A-A-59439, ANSilicone/NFPA T3.20.14-1990 & IS0 6150-B

Performance:



Female Thread

Size	Automatic	Sleeve Lock	Thd Size NPT
1/4"	B-2BF1-B	B-2BF1-B-SL	1/8-27
	B-2BF2-B	B-2BF2-B-SL	1/4-18
	B-2BF3-B	B-2BF3-B-SL	3/8-18
3/8"	B-3BF2-B	B-3BF2-B-SL	1/4-18
	B-3BF3-B	B-3BF3-B-SL	3/8-18
	B-3BF4-B	B-3BF4-B-SL	1/2-14
1/2"	B-4BF2-B	B-4BF2-B-SL	1/4-18
	B-4BF3-B	B-4BF3-B-SL	3/8-18
	B-4BF4-B	B-4BF4-B-SL	1/2-14
	B-4BF6-B	B-4BF6-B-SL	3/4-14
3/4"	B-6BF4-B	B-6BF4-B-SL	1/2-14
	B-6BF6-B	B-6BF6-B-SL	3/4-14
	B-6BF8-B	B-6BF8-B-SL	1-11 1/2

Standard Hose Barb

Size	Automatic	Sleeve Lock	Hose I.D.
1/4"	B-2BS2-B	B-2BS2-B-SL	1/4"
	B-2BS5-B	B-2BS5-B-SL	5/16"
	B-2BS3-B	B-2BS3-B-SL	3/8"
3/8"	B-3BS2-B	B-3BS2-B-SL	1/4"
	B-3BS5-B	B-3BS5-B-SL	5/16"
	B-3BS3-B	B-3BS3-B-SL	3/8"
	B-3BS4-B	B-3BS4-B-SL	1/2"
1/2"	B-4BS2-B	B-4BS2-B-SL	1/4"
	B-4BS3-B	B-4BS3-B-SL	3/8"
	B-4BS4-B	B-4BS4-B-SL	1/2"
	B-4BS6-B	B-4BS6-B-SL	3/4"
3/4"	B-6BS4-B	B-6BS4-B-SL	1/2"
	B-6BS6-B	B-6BS6-B-SL	3/4"
	B-6BS8-B	B-6BS8-B-SL	1

Requires Hose Clamp

Male Thread

Size	Automatic	Sleeve Lock	Thd Size NPT
1/4"	B-2BM1-B	B-2BM1-B-SL	1/8-27
	B-2BM2-B	B-2BM2-B-SL	1/4-18
	B-2BM3-B	B-2BM3-B-SL	3/8-18
3/8"	B-3BM2-B	B-3BM2-B-SL	1/4-18
	B-3BM3-B	B-3BM3-B-SL	3/8-18
	B-3BM4-B	B-3BM4-B-SL	1/2-14
1/2"	B-4BM2-B	B-4BM2-B-SL	1/4-18
	B-4BM3-B	B-4BM3-B-SL	3/8-18
	B-4BM4-B	B-4BM4-B-SL	1/2-14
	B-4BM6-B	B-4BM6-B-SL	3/4-14
3/4"	B-6BM4-B	B-6BM4-B-SL	1/2-14
	B-6BM6-B	B-6BM6-B-SL	3/4-14
	B-6BM8-B	B-6BM8-B-SL	1-11 1/2

Push-Lock Barb

Size	Part No.		Hose I.D.
	Automatic	Sleeve Lock	
1/4"	B-2BPS2-B	B-2BPS2-B-SL	1/4"
	B-2BPS3-B	B-2BPS3-B-SL	3/8"
3/8"	B-3BPS3-B	B-3BPS3-B-SL	3/8"
	B-3BPS4-B	B-3BPS4-B-SL	1/2"
1/2"	B-4BPS4-B	B-4BPS4-B-SL	1/2"

Hose clamps not required when used with "Push On" hose.

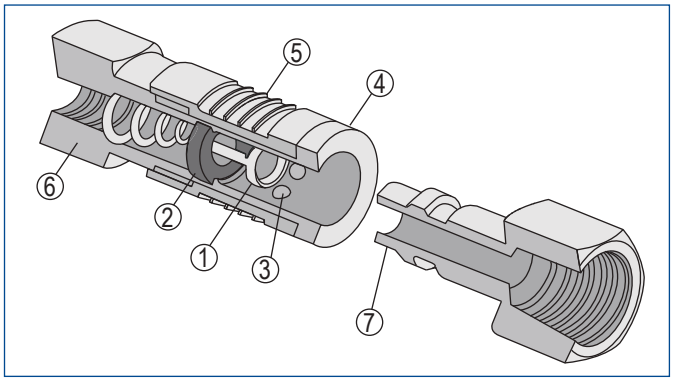
Reuseable Hose Fittings

Size	Part No.		Hose	
	Brass	Sleeve Lock	I.D.	O.D.
1/4"	B-2BE2-B	-	1/4"	1/2"
	B-2BG2-B	-		9/16"
	B-2BH2-B	B-2BH2-B-SL		5/8"
3/8"	B-3BH3-B	B-3BH3-B-SL	3/8"	5/8"
	B-3BK3-B	B-3BK3-B-SL		11/16"

"C", "D" Series Sockets

Features:

1. High flow metal valves.
2. Precision molded seals form a "bubble tight" seal for reliable operation within rated working pressures. Nitrile (Buna-N) seals are standard. Ethelyne Propelyne, Viton and Neoprene seals are available as options with the "D" series.
3. Proven ball locking mechanism with large numbers of hardened steel or stainless steel locking balls evenly distribute the load to resist wear and provide positive connections and allows a swiveling action to reduce hose torque.
4. Integral sleeve guard protects the sleeve and resists accidental disconnects for the "C" series.
5. Knurling and/or grooves on the sleeve provide a gripping surface for ease of operation.
6. Wide range of body sizes, materials, options and end terminations are available to meet specific needs.
7. Accepts Industrial Interchange Plug.



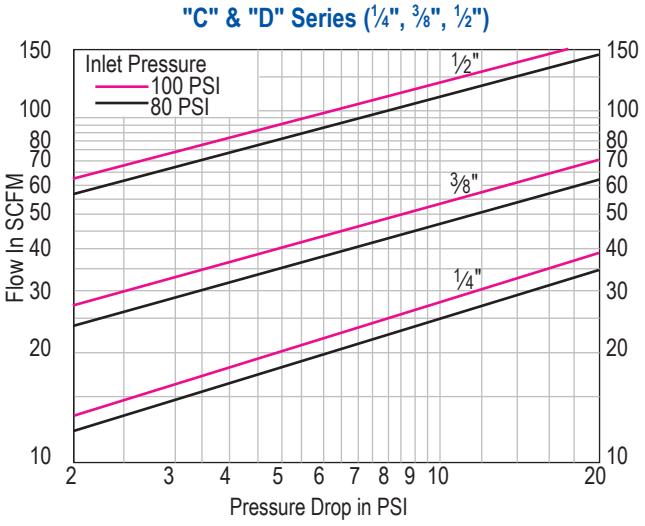
Operation:

Sleeve type couplings are widely used to connect air and low pressure fluid lines. Their compact and economical design uses a ball locking mechanism consisting of captive steel balls that engage the locking groove on the mating plug. The sliding spring loaded sleeve on the socket must be manually retracted in order to connect or disconnect the plug.

"D" Series Options:

Sleeve-Lock feature locks manual socket against accidental disconnect. Sizes available with sleeve-lock are shown in tables on following page.

Performance:



Material: Brass body and socket end, zinc-plated steel sleeve
Working Pressure: 300 PSIG; vacuum to 26"Hg
Interchangeability: Complies with ANSilicone/NFPA T3.20.14-1990 & IS0 6150-B

Specifications:

	Body Size		
	¼"	⅜"	½"
Rated Pressure (psi)	300	300	300
Temp. Range (Buna-N Seal)	-40° to +250° F		
Locking Device	Stainless Steel Balls		
Vacuum Data (inches Hg)			
-- Disconnected (coupler only)	Not Recommended		
-- Connected	27.4	27.4	27.4
Approximate CFM at 100 (psi)	37	70	150

Female Pipe Thread

Body Size	Thd or Hose Size	"C" Series Brass w/ Brass Sleeve	"C" Series Steel (-S) Stainless -(SS)
¼"	⅛–27	B-2CF1-B	-
	¼–18	B-2CF2-B	B-2CF2-SS
	⅜–18	B-2CF3-B	-
⅜"	¼–18	-	B-3CF2-S
	⅜–18	B-3CF3-B	B-3CF3-S
	½–14	-	B-3CF4-S
½"	⅜–18	-	B-4CF3-S
	½–14	B-4CF4-B	B-4CF4-S
	¾–14	-	B-4CF6-S

Body Size	Thd or Hose Size	"D" Series Brass w/ Steel Sleeve	"D" Series Brass w Steel Sleeve & Sleeve Lock
¼"	⅛–27	D320	D320BL
	¼–18	D340	D340BL
	⅜–18	D360	D360BL
⅜"	¼–18	D440	D440BL
	⅜–18	D460	D460BL
	½–14	D480	D480BL
½"	¼–18	D540	D540BL
	⅜–18	D560	D560BL
	½–14	D580	D580BL
	¾–14	D5120	D5120BL

"C", "D" Series Sockets

Notes: Plugs for use with "C" & "D" Series sockets are shown on page 77.

Male Thread

Body Size	Thd or Hose Size	"C" Series Brass w/ Brass Sleeve	"C" Series Steel (-S) Stainless -(SS)
1/4"	1/8–27	B-2CM1-B	-
	1/4–18	B-2CM2-B	B-2CM2-SS
	3/8–18	B-2CM3-B	-
3/8"	1/4–18	-	B-3CM2-S
	3/8–18	B-3CM3-B	B-3CM3-S
	1/2–14	-	B-3CM4-S
1/2"	3/8–18	-	B-4CM3-S
	1/2–14	B-4CM4-B	B-4CM4-S
	3/4–14	-	B-4CM6-S

Male Thread

Body Size	Thd or Hose Size	"D" Series Brass w/ Steel Sleeve	"D" Series Brass w/ Steel Sleeve & Sleeve Lock
1/4"	1/8–27	D321	D321BL
	1/4–18	D341	D341BL
	3/8–18	D361	D361BL
3/8"	1/4–18	D441	D441BL
	3/8–18	D461	D461BL
	1/2–14	D481	D481BL
1/2"	1/4–18	D541	D541BL
	3/8–18	D561	D561BL
	1/2–14	D581	D581BL
	3/4–14	D5121	D5121BL

Standard Hose Barb

Body Size	Thd or Hose Size	"C" Series Brass w/ Brass Sleeve	"C" Series Steel (-S) Stainless -(SS)
1/4"	1/4"	B-2CS2-B	-
	5/16"	B-2CS25-B	-
	3/8"	B-2CS3-B	-
3/8"	3/8"	-	B-3CS3-S
	1/2"	-	B-3CS4-S
1/2"	3/8"	-	B-4CS3-S
	1/2"	-	B-4CS4-S
	3/4"	-	B-4CS6-S

Requires Hose Clamp

Standard Hose Barb

Body Size	Thd or Hose Size	"D" Series Brass w/ Steel Sleeve	"D" Series Brass w/ Steel Sleeve & Sleeve Lock
1/4"	1/4"	D342	D342BL
	5/16"	D352	D352BL
	3/8"	D362	D362BL
3/8"	1/4"	D442	D442BL
	5/16"	D452	D452BL
	3/8"	D462	D462BL
	1/2"	D482	D482BL
1/2"	1/4"	D542	D542BL
	3/8"	D562	D562BL
	1/2"	D582	D582BL
	3/4"	D5122	D5122BL

Requires Hose Clamp

Push-Lock Barb

Body Size	Thd or Hose Size	"C" Series Brass w/ Brass Sleeve	"C" Series Steel (-S) Stainless -(SS)
1/4"	1/4"	B-2CPS2-B	-
	3/8"	B-2CPS3-B	-
3/8"	3/8"	-	B-3CPS3-S
1/2"	3/8"	-	B-4CPS3-S
	1/2"	-	B-4CPS4-S

Hose clamps not required when used with "Push On" hose.

Push-Lock Barb

Body Size	Thd or Hose Size	"D" Series Brass w/ Steel Sleeve	"D" Series Brass w/ Steel Sleeve & Sleeve Lock
1/4"	1/4"	D344	D344BL
	3/8"	D364	D364BL
3/8"	3/8"	D464	D464BL
	1/2"	D484	D484BL
1/2"	1/2"	D584	D584BL

Hose clamps not required when used with "Push On" hose.

Reuseable Hose Fittings

Body Size	Thread Size or Hose Size	Brass w/Brass Sleeve
1/4"	1/2"	B-2CE2-B
	9/16"	B-2CG2-B
	5/8"	B-2CH2-B
3/8"	5/8"	B-2CH3-B
	11/16"	B-2CK3-B

Safety Vent - Zero Pressure Connect and Disconnect Design

Steel	Protective Covered Body	Fully Protective Covered	Fully Protective Covered w/Strain Relief

BRECO SV and SVPC Series Safety Vent couplings are designed for maximum user and equipment safety. BRECO SV and SVPC Series couplings allow for safe and easy connection/disconnection under zero line pressure to minimize the possibility of inadvertent disconnection and potential hose whip.

The fully encapsulated non-marring models significantly reduce the risk of surface nicks and scratches. Ideal for use in paint booth applications or for air lines used around finished surfaces, such as fiberglass, painted metal or glass surfaces.

Features:

- Made in the USA
- Rubber or polyurethane hose connections available
- Extra thick heat-treated steel walls extend service life
- Zero pressure connect/disconnect design vents down stream pressure for safe, easy connect/disconnect. It also minimizes possible inadvertent disconnection and potentially dangerous hose whip
- "O-ring" plug seal for leak-free performance
- No replacement parts used (valve, spring, or washer) that could block flow of air.
- Silicone-free assembly.
- Meets ISO 4414, 9.6 Quick-Action Couplings requirements:

  Quick-Action (quick release) couplings shall be selected so that when they are coupled or uncoupled

  a) the coupling shall not be forced apart in a hazardous manner
  b) compressed air particles shall not be expelled in a hazardous manner
  c) a controlled pressure-release system shall be provided where a hazard may exist.

Specifications

Material: Zinc-plated steel, Acetal Copolymer outside cover, Steel internals

Seal: Buna-N

Working Pressure:300 PSIG; vacuum to 26"Hg

Body Sizes: ¼" to ¾" Industrial Interchange Design

Connection Sizes: ¼" to 1" NPT; ¼" to ¾" Hose Barb

Interchangeability: Complies with ANSilicone/NFPA T3.20.14-1990, IS0 6150-B, & ISO 4414

Rated Pressure: 300 psi

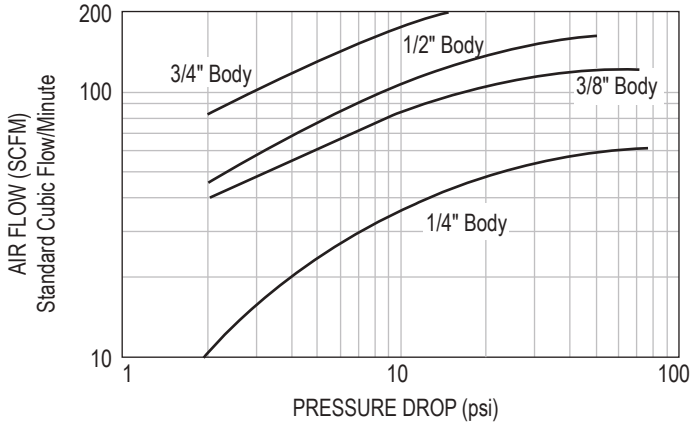
Temperature Range (std seals): 0° to +150° F

Locking Device: Stainless Steel Balls

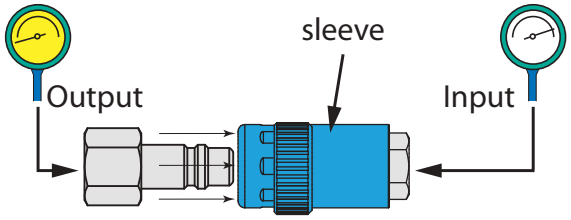
Force required to Connect: Less than 10 lbs

Performance – "SV", "SVPC" Series (¼", ⅜",½", ¾")

Pressure Drop/Flow Performance Curves @100 PSIG Inlet

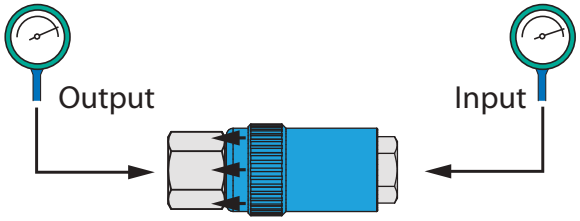


INSERT PLUG – OUTPUT IS ZERO PRESSURE



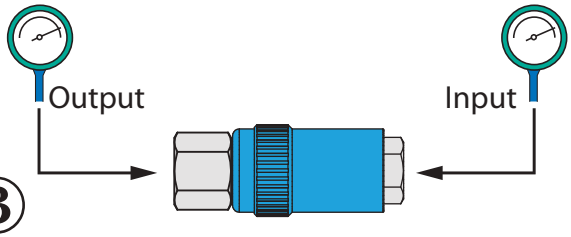
① Make sure sleeve is fully retracted to allow insertion of the plug. Output pressure is zero at this point.

PLUG IS LOCKED IN PLACE, NOW RESTORE OUTPUT PRESSURE



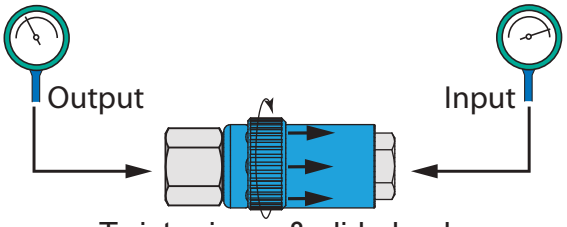
② Make sure sleeve is fully extended to allow pressure on the output plug

SYSTEM UNDER PRESSURE (BOTH SOURCE AND OUTPUT)

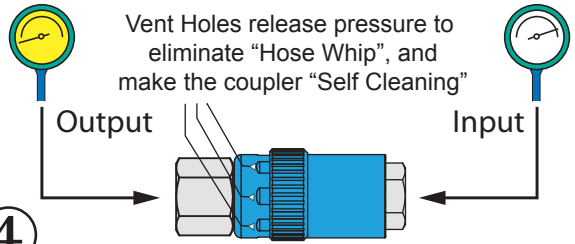


③

REMOVE PRESSURE FROM OUTPUT -- ACTS AS A SHUT-OFF VALVE --

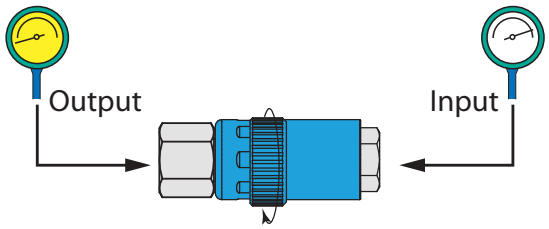


Twist grip up & slide back to release pressure

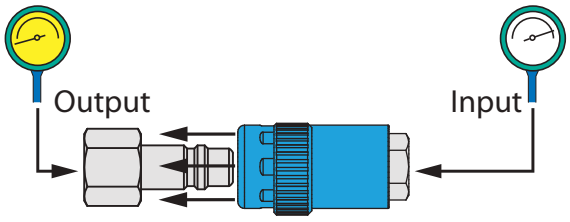


④ Output Pressure is Released

REMOVE PLUG – OUTPUT PRESSURE IS AUTOMATICALLY ZERO



When Output=0 pressure turn slightly down & forward to allow release. Coupler automatically prevents this action if pressure not yet released



⑤ Since output pressure is zero, and coupler is in release position, Plug can be removed

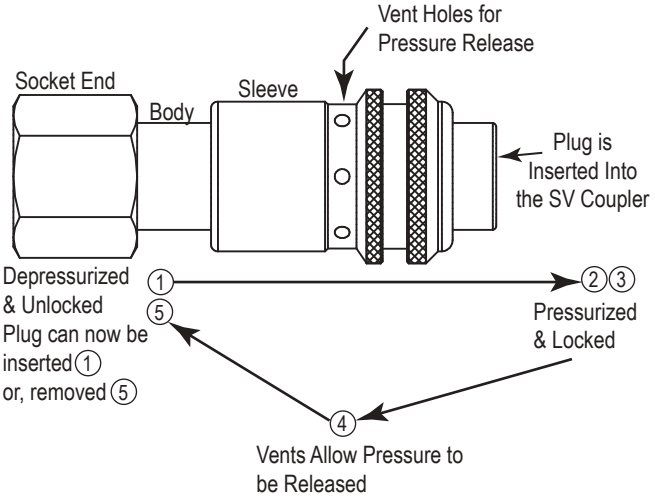
Operation:

SV and SVPC Series Safety Vent couplers are nearly effortless to connect and great for hose use. They are also especially useful for single-hand operation when they are mounted to hard lines such as an overhead air drop.

Once inserted into the SV or SVPC socket, the plug is lightly gripped and will stay in place allowing the operator to use the same hand to slide the sleeve straight forward to the "on" position.

SV or SVPC Series sockets can also be used as a 3-way valve to turn off the flow of air and exhaust the downstream pressure without disengaging the plug. By turning and sliding the sleeve to the "exhaust" position, downstream air pressure is relieved but the plug remains locked in place. Turning and sliding the sleeve in the opposite direction allows air to flow again.

BRECO SV or SVPC Series couplers are the ultimate solution to accidental disconnect hose whip dangers.



"SV" & "SVPC" Series [Safety Vent, Industrial Interchange]

Push-On Hose Stem

Body	Size	Part No. / Steel	Size	Part No. / Body Protective Covered
1/4"	1/4"	SV1513	1/4"	SVPC1513
1/4"	3/8"	SV1713	3/8"	SVPC1713
3/8"	3/8"	SV1714	3/8"	SVPC1714
3/8"	1/2"	SV1814	1/2"	SVPC1814
1/2"	1/2"	SV1815	1/2"	SVPC1815

Hose clamps not required when used with "Push On" hose.

Male Pipe Thread

Body	Size	Part No. / Steel	Size	Part No. / Body Protective Covered
1/4"	1/4"	SV3103	1/4"	SVPC3103
1/4"	3/8"	SV3303	3/8"	SVPC3303
3/8"	1/4"	SV4104	1/4"	SVPC4104
3/8"	3/8"	SV4304	3/8"	SVPC4304
3/8"	1/2"	SV4504	1/2"	SVPC4504
1/2"	3/8"	SV5105	3/8"	SVPC5105
1/2"	1/2"	SV5305	1/2"	SVPC5305
1/2"	3/4"	SV5505	3/4"	SVPC5505
3/4"	3/4"	SV6506	3/4"	SVPC6506
3/4"	1"	SV6706	1"	SVPC6706
3/8	–	SV4-PC	Plasticol Rubber Protective Cover for SV4 Couplers	
1/2"	–	SV5-PC	Plasticol Rubber Protective Cover for SV5 Couplers	

Hose Barb (requires Hose Clamp)

Body	Size	Part No.	Steel	Size	Part No.	Body Protective Covered
1/4"	1/4"	SV3603		1/4"	SVPC3603	
1/4"	3/8"	SV3703		3/8"	SVPC3703	
1/2"	3/8"	SV5705		3/8"	SVPC5705	
1/2"	1/2"	SV5805		1/2"	SVPC5805	
1/2"	3/4"	SV5905		3/4"	SVPC5905	
3/8"	1/4"	SV4604		1/4"	SVPC4604	
3/8"	3/8"	SV4804		3/8"	SVPC4804	
3/8"	1/2"	SV4904		1/2"	SVPC4904	
3/4"	3/4"	SV6906		3/4"	SVPC6906	

Body	Size	Part No.	Fully Protective Covered, w/Strain Relief	Size	Part No	Fully Protective Covered, w/o Strain Relief
3/8"	3/8"	SVPCA66.R		3/8"	SVPCA62.R	
3/8"	3/8"	SVPCA66.P		3/8"	SVPCA62.P	
3/8"	7/16"	SVPCA76.P		7/16"	SVPCA72.P	
3/8"	1/2"	SVPCA86		1/2"	SVPCA82	
1/2"	7/16"	SVPC276.P		7/16"	SVPC272.P	
1/2"	3/8"	SVPC266.R		3/8"	SVPC262.R	
1/2"	3/8"	SVPC266.P		3/8"	SVPC262.P	
–				1/2"	SVPC282	

3/8" Body

1/2" Body

Note:

- All SV, SVPC Sockets feature a Silicone-free assembly.
- ".P" part number - Poly Hose
- ".R" part number - Rubber Hose
- SVPCA82, SVPCA86 can be used with either Rubber or Poly Hose
- Part numbers ending in "6" have strain relief as shown

PUSH-BUTTON SAFETY VENT SERIES

ZERO PRESSURE CONNECT AND DISCONNECT DESIGN

Features

- Industrial Interchange, Pneumatic Application
- Anodized Aluminum Body for long life
- Swivel body to keep hose untangled
- Push twice for release. First push vents, second releases
- Button, Valve & Venting Ring: Hardened zinc plated steel
- Springs, Balls: Stainless Steel
- ISO 4414 Norm
- Flow capacity: 37SCFM (at 90 psi with connected insert)
- Max working pressure: 175 psi (safety factor 4:1)
- Recommended working Temperature: 0°F - 160°F

FEMALE PIPE THREAD INDUSTRIAL INTERCHANGE

SIZE	PART NO.	DESCRIPTION
1/4"	SPB3003	Safety Push Button FPT
3/8"	SPB4204	Safety Push Button FPT

MALE PIPE THREAD INDUSTRIAL INTERCHANGE

SIZE	PART NO.	DESCRIPTION
1/4"	SPB3103	Safety Push Button MPT
3/8"	SPB4304	Safety Push Button MPT

Note: Breco approved components (May be imported)

"L" SERIES - [INTERCHANGE WITH LINCOLN LONG NOSE]

BRECO "L" Series couplings are interchangeable with Lincoln's "Long Nose" series couplings. They are only available in 1/4" body size, brass and steel construction.

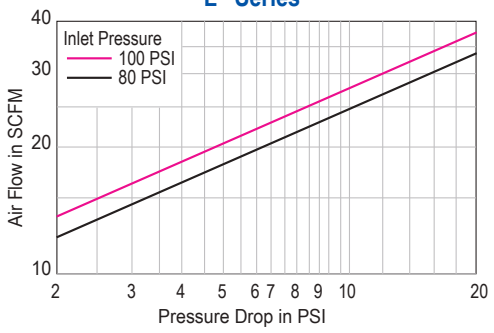
Specifications:

Rated Pressure (psi): 300

Temperature Range (std seals): -40° to +250°F.

Locking Device: Balls or pins

Performance:



"L" SERIES SOCKETS

FEMALE THREAD

SIZE	PART NO. BRASS	THREAD SIZE NPTF
1/4"	B-2LF2-B	1/4-18

MALE THREAD

SIZE	PART NO. BRASS	THREAD SIZE NPTF
1/4"	B-2LM2-B	1/4-18

"L" SERIES PLUGS

FEMALE THREAD

SIZE	PART NO. STEEL	THREAD SIZE NPTF
1/4"	B-L2F2-S	1/4-18

MALE THREAD

SIZE	PART NO. STEEL	THREAD SIZE NPTF
1/4"	B-L2M2-S	1/4-18

Industrial Interchange Plugs

BRECO Industrial Interchange plugs mate with sockets which conform to MIL -C4109-F. They are for use with any BRECO "B", "C", "D", "SV", "DM" & "SVPC" Series sockets. The industrial Interchange Plugs are completely interchangeable with similar plugs manufactured by other quick coupling manufacturers conforming to MIL-C4109-F requirements.

Hardened wear points (*Steel plugs only*) and solid barstock construction provide long service life. Precision machined surfaces and hardened load bearing areas resist the efforts of mechanical shock in the most rugged applications.

Interchange Plugs Female Pipe

Part No. Brass	Size	Thread Size
B-B2F2-B	1/4"	1/4"–18
B-B3F3-B	3/8"	3/8"–18
B-B4F4-B	1/2"	1/2"–14

Part No. Steel (S) Stainless (SS)	Size	Thread Size
B-B2F1-S	1/4"	1/8–27
B-B2F2-S		1/4"–18
B-B2F2-SS		1/4"–18
B-B2F3-S		3/8"–18
B-B3F2-S	3/8"	1/4"–18
B-B3F3-S		3/8"–18
B-B3F4-S		1/2"–14
B-B4F2-S	1/2"	1/4"–18
B-B4F3-S		3/8"–18
B-B4F4-S		1/2"–14
B-B4F6-S		3/4"–14
B-B6F4-S	3/4"	1/2"–14
B-B6F6-S		3/4"–14
B-B6F8-S		1-11 1/2"

Interchange Plugs Hose Barb

Part No. Steel	Size	Hose "ID"
B-B2S2-S	1/4"	1/4"
B-B2S25-S		5/16"
B-B2S3-S		3/8"
B-B3S2-S	3/8"	1/4"
B-B3S3-S		3/8"
B-B3S4-S		1/2"
B-B4S3-S	1/2"	3/8"
B-B4S4-S		1/2"
B-B4S6-S		3/4"
B-B6S4-S	3/4"	1/2"
B-B6S6-S		3/4"
B-B6S8-S		1

Requires Hose Clamp

Interchange Plugs Male Pipe

Part No. Brass	Size	Thread Size
B-B2M2-B	1/4"	1/4"–18
B-B3M3-B	3/8"	3/8"–18
B-B4M4-B	1/2"	1/2"–14
B-B6M6-B	3/4"	3/4"–14

Part No. Steel Stainless (SS)	Size	Thread Size
B-B2M1-S	1/4"	1/8–27
B-B2M2-S		1/4"–18
B-B2M2-SS		1/4"–18
B-B2M3-S		3/8"–18
P421.A	3/8"	1/8–27
B-B3M2-S		1/4"–18
B-B3M3-S		3/8"–18
B-B3M4-S		1/2"–14
B-B4M2-S	1/2"	1/4"–18
B-B4M3-S		3/8"–18
B-B4M4-S		1/2"–14
B-B4M6-S		3/4"–14
B-B6M4-S	3/4"	1/2"–14
B-B6M6-S		3/4"–14
B-B6M8-S		1-11 1/2"

Interchange Plugs Push-Lock Barb

Part No. Steel	Size	Hose "ID"
B-B2PS2-S	1/4"	1/4"
B-B2PS3-S		3/8"
B-B3PS2-S	3/8"	1/4"
B-B3PS3-S		3/8"
B-B3PS4-S		1/2"
B-B4PS3-S	1/2"	3/8"
B-B4PS4-S		1/2"

Hose clamps not required when used with "Push On" hose.

Interchange Plugs Re-Usable

Part No. Steel	Size ID	Size OD
B-B2E2-S	1/4"	1/2"
B-B2H2-S	1/4"	5/8"
B-B3H3-S	3/8"	5/8"
B-B2K3-S	3/8"	11/16"

"J" Series Sockets & Plugs [Interchange with Tru-Flate design]

Female Thread

Size	Part No. Brass	Part No. Steel	Thread Size
1/4"	B-2JF1-B	-	1/8–27
	B-2JF2-B	-	1/4–18
	B-2JF3-B	-	3/8–18
3/8"	-	B-3JF2-S	1/4–18
	-	B-3JF3-S	3/8–18
	-	B-3JF4-S	1/2–14
1/2"	-	B-4CF3-S	3/8–18
	B-4CF4-B	B-4CF4-S	1/2–14
	-	B-4CF6-S	3/4–14

Female Thread

Size	Part No. Brass	Part No. Steel	Thread Size
1/4"	-	B-J2F1-S	1/8–27
	B-J2F2-B	B-J2F2-S	1/4–18
	-	B-J2F3-S	3/8–18
3/8"	-	B-J3F2-S	1/4–18
	-	B-J3F3-S	3/8–18
1/2"	-	B-B4F3-S	3/8–18
	-	B-B4F4-S	1/2–14
	-	B-B4F6-S	3/4–14

Male Thread

Size	Part No. Brass	Part No. Steel	Thread Size
1/4"	B-2JM2-B	-	1/4–18
	B-2JM3-B	-	3/8–18
3/8"	-	B-3JM2-S	1/4–18
	B-3JM3-B	B-3JM3-S	3/8–18
	-	B-3JM4-S	1/2–14
1/2"	-	B-4CM3-S	3/8–18
	B-4CM4-B	B-4CM4-S	1/2–14
	-	B-4CM6-S	3/4–14

Male Thread

Size	Part No. Brass	Part No. Steel	Thread Size
1/4"	-	B-J2M1-S	1/8–27
	B-J2M2-B	B-J2M2-S	1/4–18
	-	B-J2M3-S	3/8–18
3/8"	-	B-J3M2-S	1/4–18
	-	B-J3M3-S	3/8–18
1/2"	-	B-B4M3-S	3/8–18
	-	B-B4M4-S	1/2–14
	-	B-B4M6-S	3/4–14

Standard Hose Barb

Size	Part No. Brass	Part No. Steel	Thread Size
1/4"	B-2JS2-B	-	1/4"
	B-2JS3-B	-	3/8"
3/8"	-	B-3JS3-S	3/8"
	-	B-3JS4-S	1/2"
1/2"	-	B-4CS3-S	3/8"
	-	B-4CS4-S	1/2"
	-	B-4CS6-S	3/4"

Requires Hose Clamp

Standard Hose Barb

Size	Part No. Steel	Hose I.D.
1/4"	B-J2S2-S	1/4"
	B-J2S3-S	3/8"
3/8"	B-J3S3-S	3/8"
1/2"	B-B4S3-S	3/8"
	B-B4S4-S	1/2"
	B-B4S6-S	3/4"

Requires Hose Clamp

Push Lock Barb

Size	Part No. Brass	Part No. Steel	Thread Size
1/4"	B-2JPS2-B	-	1/4"
	B-2JPS3-B	-	3/8"
3/8"	-	B-3JPS3-S	3/8"
1/2"	-	B-4CPS3-S	3/8"
	-	B-4CPS4-S	1/2"

Hose clamps not required when used with "Push On" hose.

Push-Lock Barb

Size	Part No. Steel	Hose I.D.
1/4"	B-J2PS2-S	1/4"
	B-J2PS3-S	3/8"
3/8"	B-J3PS3-S	3/8"
1/2"	B-B4PS3-S	3/8"
	B-B4PS4-S	1/2"

Hose clamps not required when used with "Push On" hose.

"O" Series - [Interchange with ARO 210]

BRECO "O" Series couplings are manual to connect designs and interchange with ¼" body size ARO 210 series plugs.

Specifications:

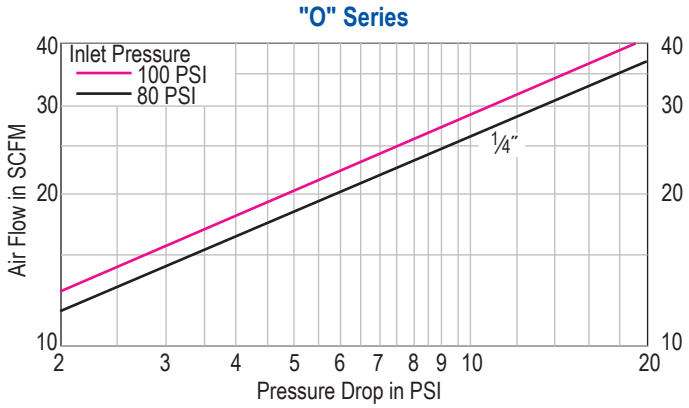
Rated Pressure: 300 psi

Temperature Range (Buna seal): -40° to +250°F.

Locking Device: Stainless Steel balls

All Brass construction

Performance:



Female Thread

Size	Part No. Brass	Part No. Steel	Thd Size NPTF
¼"	B-2OF2-B	B-2OF2-S	¼–18
	B-2OF3-B	-	⅜–18
⅜"	B-3OF3-B	B-3OF3-S	⅜–18

Male Thread

Size	Part No. Brass	Part No. Steel	Thd Size NPTF
¼"	B-2OM2-B	B-2OM2-S	¼–18
	B-2OM3-B	-	⅜–18
⅜"		B-3OM3-S	⅜-27

Standard Hose Barb

Size	Part No. Brass	Hose I.D.
¼"	B-2OS2-B	¼"
	B-2OS3-B	⅜"
Requires Hose Clamp		

Push-Lock Hose Barb

Size	Part No. Brass	Hose I.D.
¼"	B-2OPS2-B	¼"
	B-2OPS3-B	⅜"

**Push-Lock hose barbs are designed for use with Push-Lock hose and do not require clamps.*

Female Pipe Thread

Size	Part No. Steel	Thread Size NPTF
¼"	B-O2F2-S	¼-18
	B-O2F3-S	⅜-18
⅜"	B-O3F3-S	⅜-18

Male Pipe Thread

Size	Part No. Steel	Thread Size NPTF
¼"	B-O2M1-S	⅛"
	B-O2M2-S	¼-18
	B-O2M3-S	⅜-18
⅜"	B-O3M3-S	⅜-18

Standard Hose Barb

Size	Part No. Steel	Hose I.D.
¼"	B-O2S2-S	¼"
	B-O2S3-S	⅜"
Requires Hose Clamp		

Push-Lok Hose Barb

Size	Part No. Steel	Hose I.D.
¼"	B-O2PS2-S	¼"

Hose clamps not required when used with "Push On" hose.

"U" Series - [Universal Coupler]

BRECO Pneumatic Universal Coupler Accepts Multiple Series Nipples

Features:

- The ¼" Universal Coupler will accept the Industrial Interchange series, "J" series (Tru-Flate) & "O" Series (ARO-210) Plugs.
- The coupler features automatic push-to-connect operation, high flow machined "window valve" and a sleeve guard which helps prevent accidental disconnects and protects the sleeve from damage.
- While the best quick coupling performance is obtained by matching like series sockets and plugs, the universal coupler permits multiple series plugs to mate with one socket.

"J" Series (see page 78)

"O" Series ARO-210 (see page 79)

"B" Series (see pages 69-70)

"U" Series Sockets Female Pipe

Size	Part No. Brass	Part No. Steel	Thd Size NPTF
¼"	B-2UF2-B	DW340A	¼–18
	-	DW360A	⅜"
⅜" *	-	DW440A	¼–18
	-	DW460A	⅜"

"U" Series Sockets Male Pipe

Size	Part No. Brass	Part No. Steel	Thd Size NPTF
¼"	B-2UM2-B	DW341A	¼–18
	-	DW361A	⅜"
⅜" *	-	DW441A	¼–18
	-	DW461A	⅜"

Specifications:

Rated Pressure (psi): 150

Temperature Range (Nitrile seal): -40° to +250°F.

Locking Device: Stainless Steel balls

Vacuum Service: **Not Recommended**

"U" Series Sockets Std Hose Barb

Part No. Steel	Size	Thread Size
DW342A	¼"	¼–18
DW362A		⅜"
DW462A	⅜" *	⅜"

Requires Hose Clamp

*Note:

⅜" size accept industrial interchange and "J" series (Tru-Flate) plugs only.

"TL" Series - [Standard and Heavy Duty Schrader Interchange]

Push to Connect/Lock... Twist to Unlock

Features

- Engineered for speedy coupling and uncoupling.

  To lock - push in;

  To unlock - give the coupler unit sleeve a ⅛" turn.

- Designed to protect against accidental uncoupling. A variety of types and sizes are available to meet specific needs.

Standard Twist-Lock couplings are ideal for low to medium air flows, such as air tools.

Specifications

Rated Pressure (psi): 250

Temperature Range (Nitrile seal): -10° to +165°F.

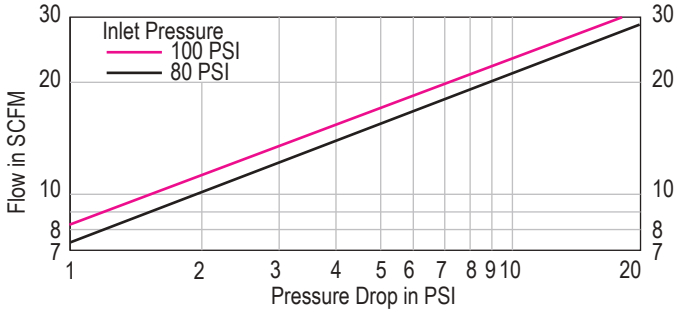
Locking Device: Twist-Lock

Vacuum Service: 27 HG

Materials:

Aluminum bodies and zinc plated steel sleeves. Buna-N seals. Brass adapters.

Performance:



"TL" Series Sockets

Female Thread

Size	Part No.	Thread Size NPT
¼"	B-2TLF1-S	⅛"
	B-2TLF2-S	¼"
	B-2TLF3-S	⅜"
½"	B-4TLF2-S	¼"
	B-4TLF3-S	⅜"
	B-4TLF4-S	½"
	B-4TLF6-S	¾"

Male Thread

Size	Part No.	Thread Size NPT
¼"	B-2TLM2-S	¼"
	B-2TLM3-S	⅜"
½"	B-4TLM2-S	¼"
	B-4TLM3-S	⅜"
	B-4TLM4-S	½"

"TL" Series Plugs

Female Thread

Size	Part No.	Thread Size NPT
¼"	B-TL2F1-S	⅛"
	B-TL2F2-S	¼"
½"	B-TL4F2-S	¼"
	B-TL4F3-S	⅜"

Male Thread

Size	Part No.	Thread Size NPT
¼"	B-TL2M1-S	⅛
	B-TL2M2-S	¼"
½"	B-TL4M2-S	¼"
	B-TL4M3-S	⅜"
	B-TL4M4-S	½"
	B-TL4M6-S	¾"

Std. Hose Barb

Size	Part No.	Thread Size NPT
¼"	B-TL2S2-S	¼"

Requires Hose Clamp

DR Series Quick Disconnects... Automatic Push-to-Connect Design

BRECO DR Series couplers are designed to interchange with Rectus 21 KA couplers using un-valved plugs. The DR Series products provide automatic push-to-connect ease and high flow in a ⅛" connection size.

Features:

- Maximized flow path allows greater flow than other ⅛" NPT coupler designs
- 6 retaining balls versus 5 in the Rectus 21 KA provides greater plug retention
- 9/16" Wrench flats versus 14mm on Rectus 21 KA
- Ball-holes with corner radius have 65% more ball-to-body contact area and provides longer life and increased reliability
- Precision molded leak-proof seal
- Quick, easy push-to-connect design
- Brass construction for corrosion resistance

Specifications

Material: Brass plugs & sockets

Seal: Buna-N

Air Flow: 17 CFM @ 100 PSIG @ 5.0 PSIG Pressure Drop

Working Pressure: 300 PSIG

Body Sizes: ⅛"

Connection Sizes: ⅛" NPT

Interchangeability: Rectus 21 KA, Tomco SC, Camozzi 5000 and CEJN 223 Series

	Part No.	Description
	DR21-1F	⅛" Socket Brass x ⅛" NPT Female
	DR21-1M	⅛" Socket Brass x ⅛" NPT Male
	DR21-1PF	⅛" Plug Brass x ⅛" NPT Female
	DR21-1PM	⅛" Plug Brass x ⅛" NPT Male

"DS" Series Double ShutOff - [ISO 7241-1 Series B]

Features:

1. ISO B, Hardened plugs and sleeves constructed from solid bar stock ensures long service life and maximum resistance to damage from hydraulic and mechanical shock.
2. High flow capacity.
3. BRECO's conical valve with its 360° metal to metal valve stop maintains valve alignment and insures that poppets open fully every time.
4. Captive valve seal ensures "bubble tight" poppet sealing since seal is positively captured by the metal poppet to minimize seal washout or damage from high fluid velocity.
5. Ball locking mechanism ensures reliable connections every time. Many ball bearings distribute the load while providing alignment and excellent swiveling action to reduce hose torque and prolong hose life.
6. Broad range of metals and seal materials allow the use of most fluids.
7. Industrial Interchange

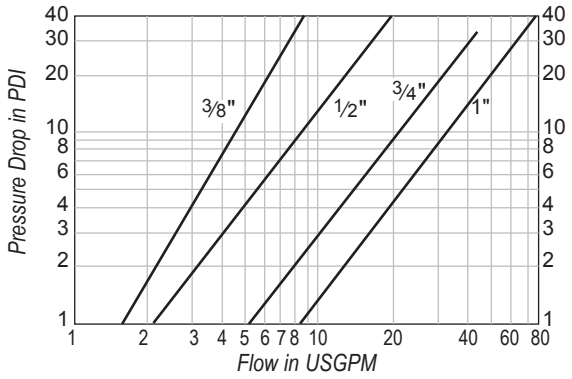
Ordering Information:

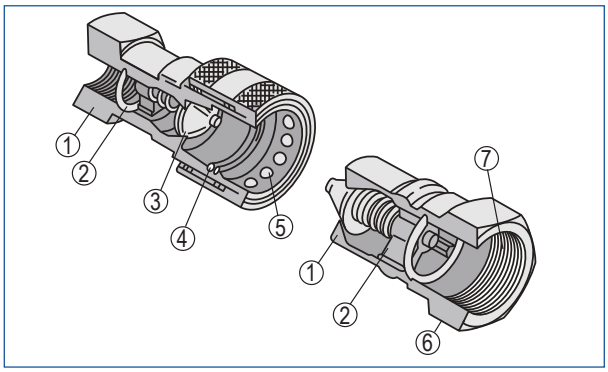
"DS" Series couplings are available in ROHS compliant plated steel, brass, and 303 Stainless as standard. Brass couplings have double O-Ring seals (excluding 1/8") and stainless locking balls. Standard seals are Buna-N (Nitrile). Consult factor for optional seals.

All sizes can be furnished with locking sleeves designated by "SL" (Sleeve-Lock) suffix after regular catalog numbers.

Performance:

DS Series 3/8" to 1"
Test Fluid: Oil-200 SUS



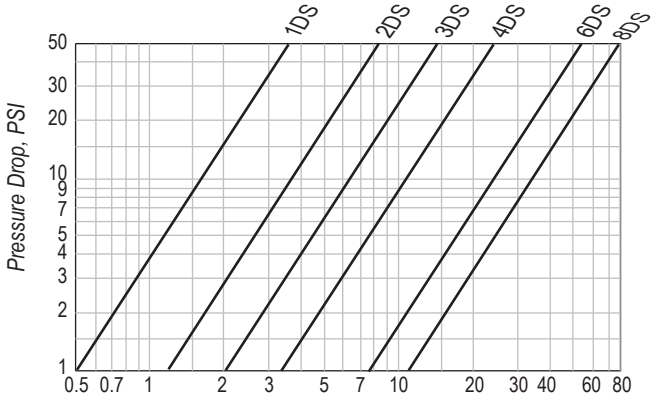


Applications

"DS" Series sockets incorporate valves in both socket and plug halves to prevent fluid loss when the socket is disconnected. These sockets are normally referred to as "hydraulic couplings", but they are used extensively with other media where objectionable. The ""DS" Series sockets are available in ROHS compliant steel and brass.

Specifications:

Size	Rated Pressure, Coupled					
	Brass		Steel		Stainless Steel	
	PSI	BAR	PSI	BAR	PSI	BAR
1DS	1/8"	3,000	207	4,000	275	5,000	344
2DS	1/4"	2,700	186	3,700	225	3,700	255
3DS	3/8"	2,200	152	3,700	255	3,700	255
4DS	1/2"	2,250	155	5,000	345	4,250	293
6DS	3/4"	2,000	138	4,000	275	3,500	242
8DS	1"	1,500	103	4,000	275	2,500	173



"DS" Series "Carpet Cleaning" Socket

Female Thread	Size	Part No. (Brass)	Option	Thread Size NPTF
	1/4"	2DSF2-BI	–	1/4-18

Newly designed to exacting standards, our latest Carpet Cleaning ISO-B quick disconnect includes a redesigned valve and internal components, specifically engineered to offer strong airflow, high PSI and efficient performance. Field tested and subjected to rigorous cleaning applications, it has been proven to perform under pressure without leaking or failing. It is ideal for carpet cleaning equipment, car washes, pressure washers and water based hydraulic applications.

"DS" Series "Carpet Cleaning" Plugs

Female Thread	Size	Part No. (Brass)	Thread Size NPTF
	1/4"	DS2F2-BI	1/4-18

"DS" Series Double ShutOff - [ISO 7241-1 Series B]

"DS" Series Sockets

Female Thread

Size	Part No. (Brass)	Option	Thread Size NPTF
1/8"	1DSF1-B		1/8-27
	1DSF1-B-Y	Viton Seal	1/8-27
1/4"	2DSF2-B		1/4-18
	2DSF2-B-SL	Sleeve Lock	1/4-18
	2DSF2-BY	Viton Seal	1/4-18
	2DSF2-BI-SL	Sleeve Lock Viton Seal	1/4-18
3/8"	3DSF3-B		3/8-18
	3DSF3-BY	Viton Seal	3/8-18
1/2"	4DSF4-B		1/2-14
3/4"	6DSF6-B		3/4-14
1"	8DSF8-B		1-11 1/2

Size	Part No. (Steel)	Option	Thread Size NPTF
1/8"	1DSF1-S		1/8-27
1/4"	2DSF2-S		1/4-18
	2DSF2-SY	Viton Seal	1/4-18
	2DSF2-S-SL	Viton Seal	1/4-18
3/8"	3DSF3-S		3/8-18
1/2"	4DSF4-SY	Viton Seal	1/2-14
	4DSF4-S		1/2-14
3/4"	6DSF6-S		3/4-14
1"	8DSF8-S		1-11 1/2

Size	Part No. (Stainless Steel)	Option	Thread Size NPTF
1/8"	1DSF1-SS		1/8-27
1/4"	2DSF2-SS		1/4-18
	2DSF2-SS-SL	Sleeve Lock	1/4-18
3/8"	3DSF3-SS		3/8-18
	3DSF3-SS-SL	Sleeve Lock	3/8-18
1/2"	4DSF4-SS		1/2-14
3/4"	6DSF6-SS		3/4-14
	6DSF6-SS-SL	Sleeve Lock	3/4-14
	6DSF6-SS-Y	Viton Seal	3/4-14
1"	8DSF8-SS		1-11 1/2
	8DSF8-SS-SL	Sleeve Lock	1-11 1/2

"DS" Series Plugs

Female Thread

Size	Part No. (Brass)	Thread Size NPTF
1/8"	DS1F1-B	1/8-27
1/4"	DS2F2-B	1/4-18
3/8"	DS3F3-B	3/8-18
1/2"	DS4F4-B	1/2-14
3/4"	DS6F6-B	3/4-14
1"	DS8F8-B	1-11 1/2

Size	Part No. (Steel)	Thread Size NPTF
1/8"	DS1F1-S	1/8-27
1/4"	DS2F2-S	1/4-18
3/8"	DS3F3-S	3/8-18
1/2"	DS4F4-S	1/2-14
3/4"	DS6F6-S	3/4-14
1"	DS8F8-S	1-11 1/2

Size	Part No. (Stainless Steel)	Thread Size NPTF
1/8"	DS1F1-SS	1/8-27
1/4"	DS2F2-SS	1/4-18
3/8"	DS3F3-SS	3/8-18
1/2"	DS4F4-SS	1/2-14
3/4"	DS6F6-SS	3/4-14
1"	DS8F8-SS	1-11 1/2

"DS" Series Dust Plugs and Caps

Dust Plugs and Dust Caps

- Protective dust plugs and caps play a crucial role in the use of quick couplings and no purchase of a hydraulic quick coupling is complete without the selection of an appropriate dust plug and cap. Dust plugs and caps serve a two-fold function. They keep the mating surface clean and free of contamination and protect the critical mating elements of the coupling halves when they are disconnected. In this way the plug is protected from damage that would make the total coupling unusable.
- When ordering the dust cap/plug body size must correspond to that of the socket or plug.

Size	Dust Plug - Part No.		Dust Cap - Part No.	
	Aluminum	Polyurethane	Aluminum	Polyurethane
1/8"	BH1-65	BH1-65M	BH1-66	BH1-66M
1/4"	BH2-65	BH2-65M	BH2-66	BH2-66M
3/8"	BH3-65	BH3-65M	BH3-66	BH3-66M
1/2"	BH4-65	BH4-65M	BH4-66	BH4-66M
3/4"	BH6-65	BH6-65M	BH6-66	BH6-66M
1"	BH8-65	BH8-65M	BH8-66	BH8-66M

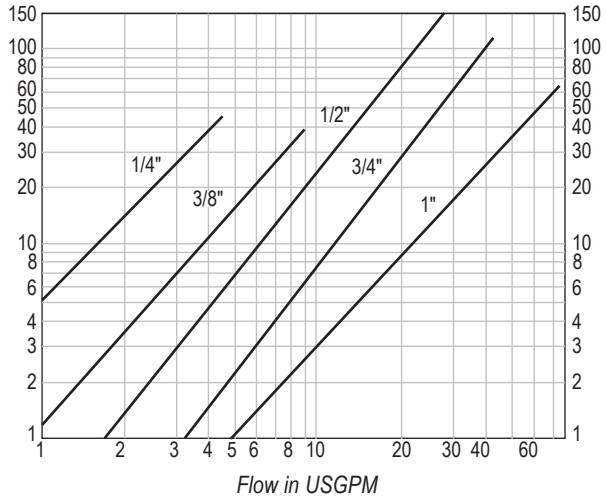
"4000" Series - [Pioneer AG Interchange]

Features:

- The "4000" Series is a proven design for use on construction equipment, agricultural machinery, oil tools, steel mill machinery, and other demanding hydraulic applications.
- Couplings feature steel ball check valves for dependability in heavy-duty hydraulic applications, within rated working pressures.
- Socket and plug are precision machined from solid barstock. A ball-locking mechanism holds the mating halves together, and critical parts are induction hardened for durability.

Performance:

"4000" Series (¼" to 1")
Test Fluid: Oil-200 SUS



Specifications:

Body Size	¼"	⅜"	½"	¾"	1"
Rated Pressure (PSI)	3000	3000	3000	3000	3000
Rated Flow (GPM)	3	6	12	28	50
Temperature Range (Std seals)	-40° to +250°F				

"4000" Series Sockets

Female Thread

Size	Part No. Steel	Thread Size NPTF	Thread Size ORB
¼"	B-4050-2	¼"-18	-
⅜"	B-4050-3	⅜"-18	-
½"	B-4050-4	½"-14	-
	B-4050-5	¾"-14	-
	B-4050-15	-	¾"-16
	B-4050-16	-	⅞"-14
¾"	B-4150-5	¾"-14	-
1"	B-4050-6	1-11 ½"	-

Size	Part No. Steel Poppet Style	Thread Size NPTF
¼"	B-4050-2P	¼"-18
⅜"	B-4050-3P	⅜"-18
½"	B-4050-4P	½"-14
1"	B-4050-6P	1-11 ½"

"4000" Series Plugs

Female Thread

Size	Part No. Steel	Thread Size NPTF	Thread Size ORB
¼"	B-4010-2	¼"-18	
⅜"	B-4010-3	⅜"-18	-
½"	B-4010-4	½"-14	-
	B-8010-5	¾"-14	-
	B-8010-15	-	¾"-16
	B-8010-16	-	⅞"-14
¾"	B-4110-5	¾"-14	-
1"	B-4010-6	1-11 ½"	

Size	Part No. Steel Poppet Style	Thread Size NPTF
¼"	B-4010-2P	¼"-18
⅜"	B-4010-3P	⅜"-18
½"	B-8010-4P	½"-14
1"	B-4010-6P	1-11 ½"

Rubber Dust Plugs & Dust Caps

Size	Dust Plug Part No.	Dust Cap Part No.
	Rubber	Rubber
¼"	B-5205-2M	B-5209-2M
⅜"	B-5205-3	B-5209-3
½"	B-5205-4M	B-5209-4M
¾"	B-5205-5	B-5209-5
1	B-5205-6	B-5209-6

Special Order Information:

Standard seal material is Buna-N (Nitrile), other seal options are available. Consult factory.

"6100" Series - [Wing Nut]

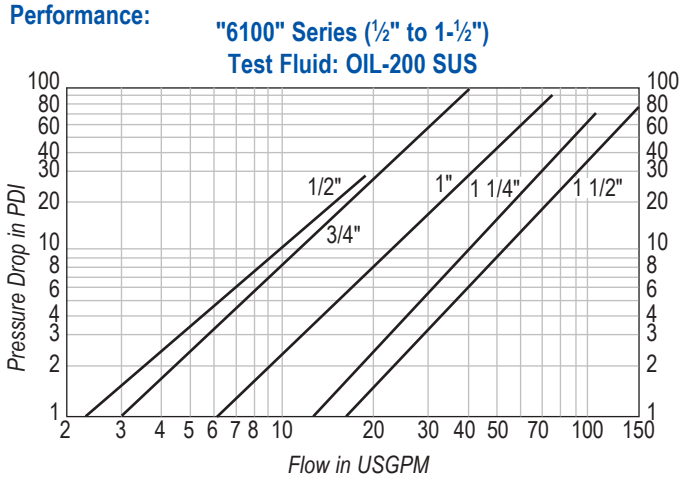
Specifications:

	Size				
	¾"	¾"	1	1¼"	1½"
Dash Number	-08	-12	-16	-20	-24
*Rated Pressure (PSI)					
Female Half	3000	3000	3000	2750	2000
Male Half	3000	3000	3000	2500	2500
Complete Coupling Assembly	3000	3000	3000	2750	2500
Temperature Range (std seals)	-40° to +250° F.				
Rated Flow (GPM)	12	28	50	76	100

**Minimum burst pressure is equal to three times the rated pressure.*

Not recommended for continuous hydraulic impulse applications at rated pressures.

Performance:



"6100" Series Coupling Assemblies

Coupling With Wing Nut

Size	Thread Size NPTF	Part No. With Flange	Part No. Without Flange
¾"	½ - 14	B-6100-08	B-6120-08
	¾ - 14	B-6100-12	B-6120-12
1"	1 - 11½	B-6100-16	B-6120-16
1¼"	1¼ - 11½	B-6100-20	B-6120-20
1½"	1½ - 11½	B-6100-24	B-6120-24

Coupling With Hex Nut

Size	Thread Size NPTF	Part No. With Flange	Part No. Without Flange
¾"	½-14	B-6110-08	B-6130-08
	¾-14	B-6110-12	B-6130-12
1"	1 - 11½	B-6110-16	B-6130-16
1¼"	1¼ - 11½	B-6110-20	B-6130-20
1½"	1½ - 11½	B-6110-24	B-6130-24

Plugs

Plug

Size	Part No. - Brass Without Flange	Part No. - Brass With Flange	Thread Size NPTF
¾"	B-6105-08	B-6115-08	½-14
	B-6105-12	B-6115-12	¾-14
1"	B-6105-16	B-6115-16	1 -11 ½
1 ¼"	B-6105-20	B-6115-20	1¼-11 ½
1 ½"	B-6105-24	B-6115-24	1½-11 ½

Optional Flange

Size	Part No. - Steel
¾"	B-6107-08
1"	B-6107-16
1 ¼"	B-6107-20
1 ½"	B-6107-24

Sockets

Wing Nut

Size	Part No. Brass	Thread Size NPTF
¾"	B-6125-08	½ - 14
	B-6125-12	¾ - 14
1"	B-6125-16	1 - 11½
1¼"	B-6125-20	1¼ - 11½
1½"	B-6125-24	1½ - 11½

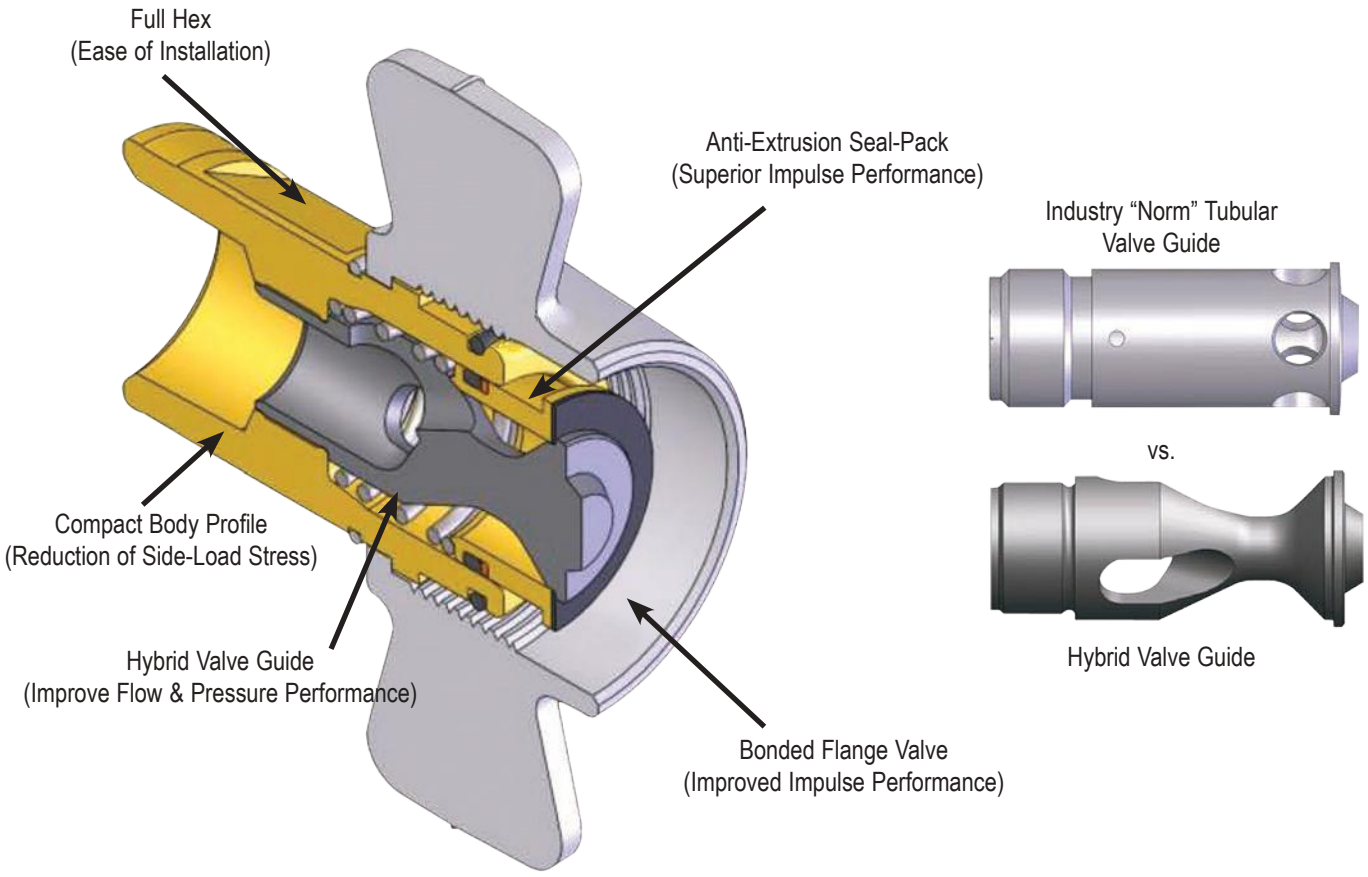
Hex Nut

Size	Part No. Brass	Thread Size NPTF
¾"	B-6135-08	½ - 14
	B-6135-12	¾ - 14
1"	B-6135-16	1 - 11½
1¼"	B-6135-20	1¼ - 11½
1½"	B-6135-24	1½ - 11½

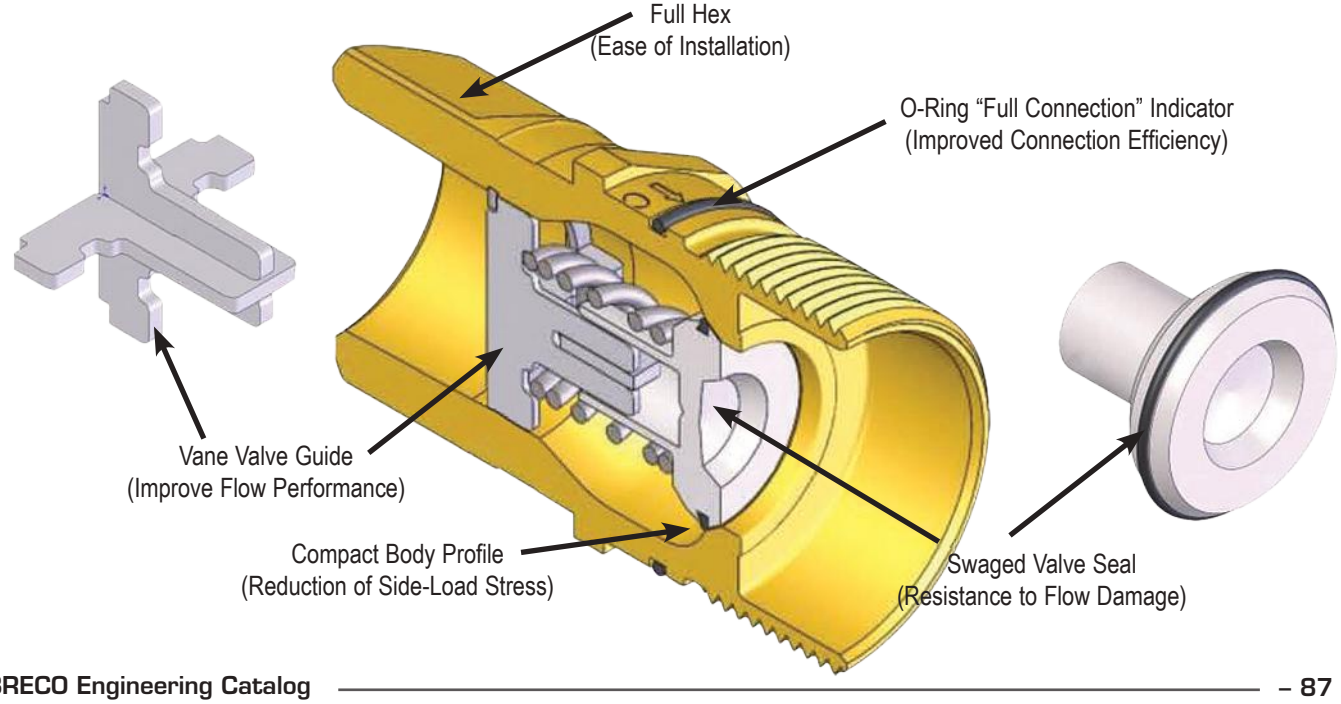
Dust Plugs & Dust Caps

Size	Dust Plug Part No. - Brass	Dust Cap Part No. - Brass
¾"	B-6109-08	B-6108-08
1"	B-6109-16	B-6108-16
1¼"	B-6109-20	B-6108-20
1½"	B-6109-24	B-6108-24

"6100" Series Socket Features



"6100" Series Plug Features



"FF" Series - [Flush Face]

Features:

- Meets dimensional and performance standards of ISO 16028 as well as HTMA* and NFPA.
- "FF" Series style double shut-off hydraulic couplings are intended for use on medium pressure hydraulic systems up to 2500 psi operating pressures.
- Combines dual flush face valving, push-to-connect operation, minimum fluid loss upon disconnect, low air inclusion and sleeve lock.
- Primary applications are with hydraulic tools where cleaner automatic connections are needed and in machine tool line connections where minimum fluid leaks can be tolerated.

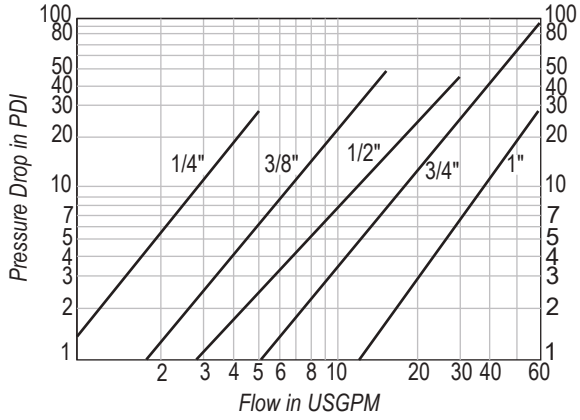
**Hydraulic Tool Mfg. Assoc. and National Fluid Power Assoc.*

Specifications:

	Size				
	1/4"	3/8"	1/2"	3/4"	1
Rated Pressure (psi)	5,000	5,000	5,000	5,000	5,000
Minimum Burst pressure, Male half (psi)	27,000	22,000	24,000	23,000	21,000
Minimum Burst pressure, Female half (psi)	27,000	25,000	23,000	20,000	20,000
Minimum Burst pressure, Coupled (psi)	27,000	23,000	25,000	22,000	22,000
Rated Flow (gpm)	3	6	12	26	50
Temperature Range	-10°F to +250° F				
Spillage (ML) (max. per disconnect)	.015	.015	.020	.150	.200
Air Inclusion (max. per disconnect)	.020	.020	.070	.100	.150

Performance:

FF Series (1/4"; 3/8"; 1/2"; 3/4"; 1")
Test Fluid: Oil-200 SUS



"FF" Series Sockets

Female Thread	Size	Part No. Steel	Dust Plug	Thread Size NPT
	1/4"	B-2FF2-FP	SDC-2	1/4–20 FPT
		B-2FF2-FP-SAE		9/16–18 SAE
	3/8"	B-3FF3-FP	SDC-3	3/8–18 FPT
		B-3FF4-FP		1/2–14 FPT
	1/2"	B-4FF4-FP	SDC-4	1/2–14 FPT
		B-4FF4-FP-SAE		3/4–16 SAE
		B-4FF6-FP		3/4–14 FPT
		B-4FF6-FP-SAE		1 1/16–12-SAE
	3/4"	B-6FF6-FP	SDC-6	3/4–14 FPT
		B-6FF6-FP-SAE		1 1/16–12-SAE
	1"	B-8FF8-FP	SDC-8	1 - 11 1/2 FPT

"FF" Series Plugs

Female Thread	Size	Part No. Steel	Dust Cap	Thread Size NPT
	1/4"	B-FF2F2-FP	PDC-2	1/4–20 FPT
		B-FF2F2-FP-SAE		9/16–18 SAE
	3/8"	B-FF3F3-FP	PDC-3	3/8-18 FPT
		B-FF3F4-FP		1/2-14 FPT
	1/2"	B-FF4F4-FP	PDC-4	1/2-14 FPT
		B-FF4F4-FP-SAE		3/4-16 SAE
		B-FF4F6-FP		3/4–14 FPT
		B-FF4F6-FP-SAE		1 1/16–12-SAE
	3/4"	B-FF6F6-FP	PDC-6	3/4-14 FPT
		B-FF6F6-FP-SAE		1 1/16-12-SAE
	1"	B-FF8F8-FP	PDC-8	1 - 11 1/2 FPT

"6600" Series - [ISO 7241-1 Series A]

Features:

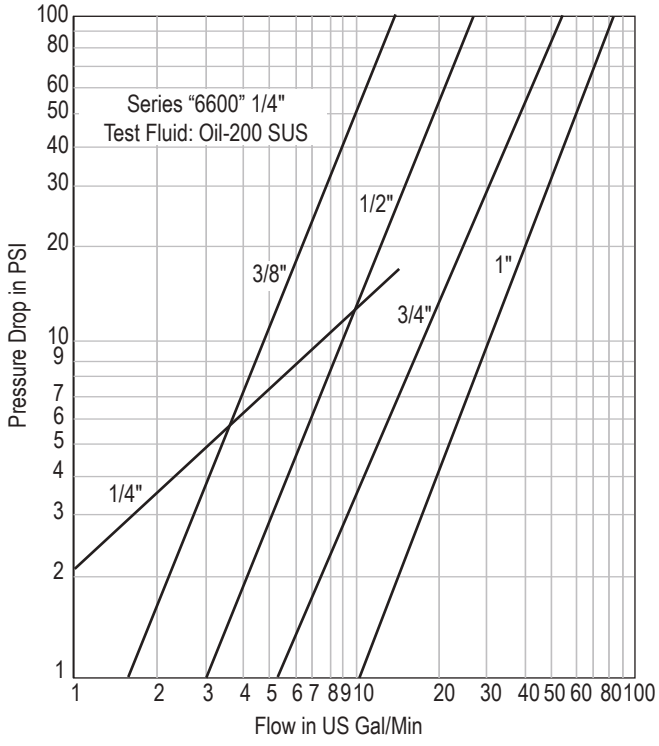
- BRECO "6600" Series couplings feature poppet valves with solid metal perch that maintains valve alignment and prevents flow checking. Both the sleeves of the socket and plug are case hardened to make the couplings resistant to damage from brinelling and mechanical shock.
- The durable ball-locking mechanism ensures a reliable connection every time.
- These couplings have female pipe and straight thread end configurations as standard. The dimensional requirements of Series A in ISO 7241-1. Socket and plug are interchangeable with other parts compatible with ISO 7241-1.

Applications:

The versatile "6600" Series couplings are used in a wide range of hydraulic applications including construction equipment, manufacturing machinery, and in-plant systems. They can be found anywhere the fluid transfer lines need to be connected and disconnected for operation or maintenance of equipment. Rugged construction makes it a good choice for mobile applications including dump trucks, snow plows, refuse hauling, mining, asphalt paving, truck trailer connections and many more. In-plant machinery applications include hydraulic fluid, chemicals and gas lines for paper mills, steel production, and many varieties of plant maintenance and production equipment.

Specifications:

	Size				
	1/4"	3/8"	1/2"	3/4"	1
	Rated Pressure (PSI)				
Working Pressure	5000	4000	4000	4000	4000
Temperature Range (std seals)	-10° to +250° F.				



"6600" Series Sockets

Female Thread

Size	Part No. Steel	Thread Size NPTF	Thread Size ORB
1/4"	B-6601-2-4	1/8-27	-
	B-6601-4-4	1/4-18	-
3/8"	B-6601-6-6	3/8-18	-
1/2"	B-6601-8-10	1/2-14	-
	B-6601-12-10	3/4-14	-
	B-6608-8-10	-	3/4-16
	B-6608-10-10	-	7/8-14
	B-6608-12-10	-	1 1/16-12
3/4"	B-6601-12-12	3/4-14	-
	B-6608-12-12	-	1 1/16 - 12
1"	B-6601-16-16	1 - 11 1/2	
	B-6608-16-16	-	1 5/16-12

"6600" Series Plugs

Female Thread

Size	Part No. Steel	Thread Size NPTF	Thread Size ORB
1/4"	B-6602-2-4	1/8-27	-
	B-6602-4-4	1/4-18	-
3/8"	B-6602-6-6	3/8-18	-
1/2"	B-6602-8-10	1/2-14	-
	B-6602-12-10	3/4-14	-
	B-6610-8-10	-	3/4-16
	B-6610-10-10	-	7/8-14
	B-6610-12-10	-	1 1/16-12
3/4"	B-6602-12-12	3/4-14	-
	B-6610-12-12	-	1 1/16-12
1"	B-6602-16-16	1 - 11 1/2	
	B-6610-16-16	-	1 5/16-12

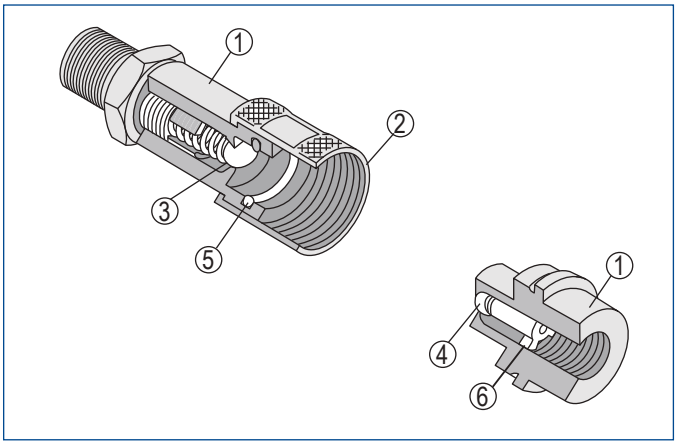
Dust Plugs & Dust Caps

Size	Dust Plug Part No.	Dust Cap Part No.
1/4"	B-6659-4	B-6657-4
3/8"	B-6659-6	B-6657-6
1/2"	B-6659-10	B-6657-10
3/4"	B-6659-12	B-6657-12
1"	B-6659-16	B-6657-16

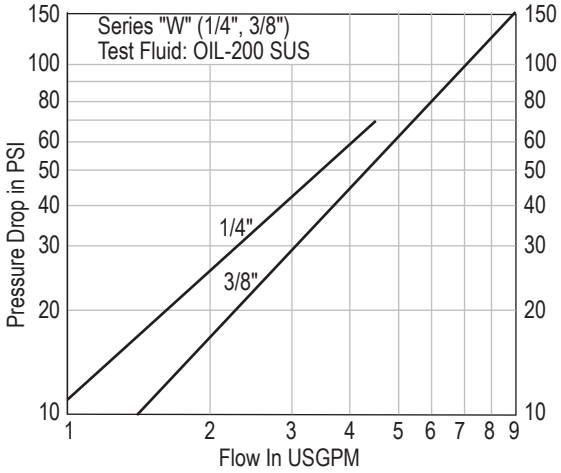
"W" Series - [High Pressure Coupling, Enerpac Interchange]

Features:

1. Machined from solid steel bar stock for durability.
2. The "W" Series has a threaded sleeve locking mechanism, mates with matching male threads on the plug. The two halves must be manually threaded together for connection.
3. Hard, chrome alloy balls are used for valving. They are spring loaded for positive sealing of the valve.
4. The valve provides a metal-to-metal seal between the ball and a coined seat.
5. The body seal is polyurethane which resists high pressure extrusion.
6. A threaded valve retainer provides a valve stop that assures positive valve alignment.



Performance:



Applications:

The "W" Series couplings with their threaded union locking system and precision ball-type check valves, are designed for extreme high pressure applications such as found on portable hydraulic rams.

Specifications:

	Size
	1/4" 3/8"
Rated Pressure (psi) Static	10,000
Temperature Range (std seals)	-10° to +250°F.

Note:

Protective dust plugs and caps play a crucial role in the life of a quick coupling and no purchase of a hydraulic quick coupling is complete without the selection of an appropriate dust plug and cap.

"W" Series Sockets

Male Thread

Size	Part No. Valve	Part No. Non-Valve	Thread Size
1/4"	B-2WM2-S	B-2WEM2-S	1/4-18
3/8"	B-3WM3-S	B-3WEM3-S	3/8-18

Female Thread

Size	Part No. Valve	Part No. Non-Valve	Thread Size
3/8"	B-3WF3-S	B-3WEF3-S	3/8 -18

"W" Series Plugs

Female Thread

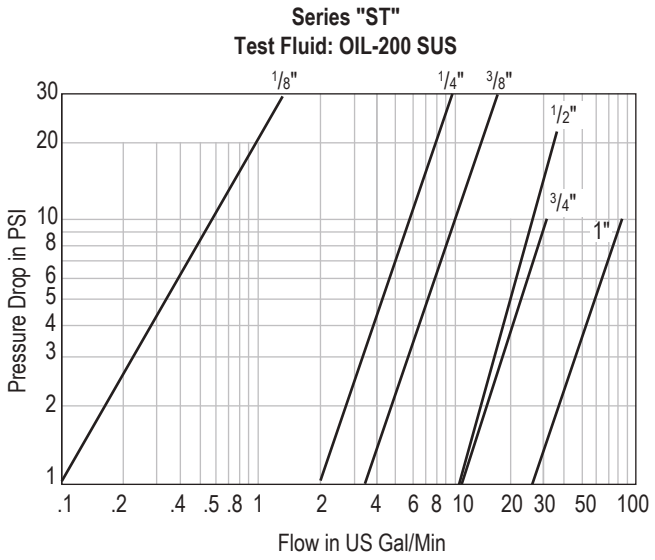
Size	Part No. Valve	Part No. Non-Valve	Thread Size NPFT
1/4"	B-W2F2-S	B-W2EF2-S	1/4-18
3/8"	B-W3F3-S	B-W3EF3-S	3/8-18

Dust Plugs & Dust Caps

Size	Dust Plug Part No. Steel	Dust Cap Part No. Steel
1/4"	B-3005-2	B-3009-2
3/8"	B-3005-3	B-3009-3

"ST" Series - [Straight Thru Design]

Performance:



Specifications:

	Size							
	1/8"	1/4"	3/8"	1/2"	3/4"	1	1 1/4"	1 1/2"
Rated Pressure (PSI)								
Brass	2500	5200	2700	2200	1700	1200	1700	1400
Steel	2600	5500	3500	2700	2700	2000	-	-
Stainless Steel	4200	6700	5500	3000	3000	1700	-	-
Temperature Range (std seals)	-40° to +250°F.							

"ST" Series Sockets

Female Thread

Size	Part No. Brass	Part No. Type 303 Stainless	Thread Size NPTF
1/8"	1STF1-B	1STF1-SS	1/8-27
1/4"	2STF2-B	2STF2-SS	1/4-18
3/8"	3STF3-B	3STF3-SS	3/8 -18
1/2"	4STF4-B	4STF4-SS	1/2-14
3/4"	6STF6-B	6STF6-SS	3/4-14
1"	8STF8-B	8STF8-SS	1 -11 1/2

Female Thread

Size	Part No. Brass	Part No. Steel	Part No. Type 303 Stainless	Thread Size NPTF
1/8"	ST1F1-B	ST1F1-S	ST1F1-SS	1/8 -27
1/4"	ST2F2-B	ST2F2-S	ST2F2-SS	1/4-18
	-	ST2F2-S-E	-	
3/8"	ST3F3-B	ST3F3-S	ST3F3-SS	3/8-14
1/2"	ST4F4-B	ST4F4-S	ST4F4-SS	1/2-14
3/4"	ST6F6-B	ST6F6-S	ST6F6-SS	3/4-14
1"	ST8F8-B	ST8F8-S	ST8F8-SS	1 -11 1/2

Note: ST2F2-S-E is extended plug

Male Thread

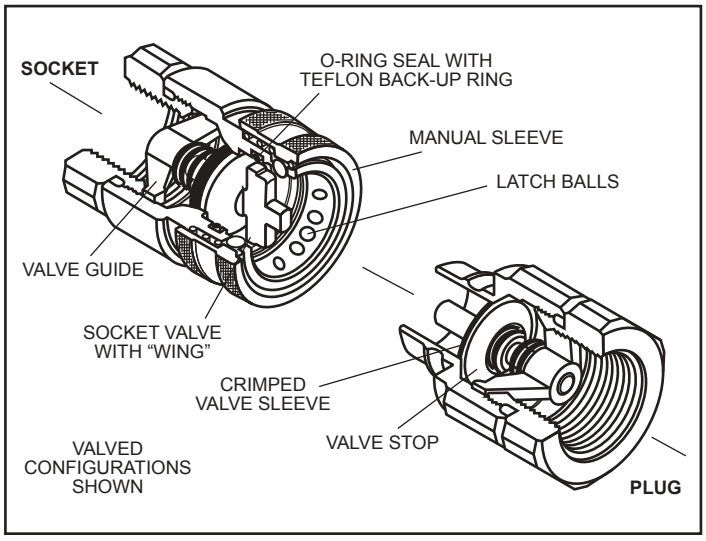
Size	Part No. Brass	Part No. Type 303 Stainless	Thread Size NPTF
1/8"	1STM1-B	1STM1-SS	1/8-27
1/4"	2STM2-B	2STM2-SS	1/4-18
3/8"	3STM3-B	3STM3-SS	3/8-18
1/2"	4STM4-B	4STM4-SS	1/2-14
3/4"	6STM6-B	6STM6-SS	3/4-14
1"	8STM8-B	8STM8-SS	1 -11 1/2

Male Thread

Size	Part No. Brass	Part No. Steel	Part No. Type 303 Stainless	Thread Size NPTM
1/8"	ST1M1-B	ST1M1-S	ST1M1-SS	1/8-27
1/4"	ST2M2-B	ST2M2-S	ST2M2-SS	1/-18
3/8"	ST3M3-B	ST3M3-S	ST3M3-SS	3/8-14
1/2"	ST4M4-B	ST4M4-S	ST4M4-SS	1/2-14
3/4"	ST6M6-B	ST6M6-S	ST6M6-SS	3/4-14
1"	ST8M8-B	ST8M8-S	ST8M8-SS	1 -11 1/2

Socket Features:

- Latch Mechanism
  - Manual connect and disconnect
  - Steel sleeves are hardened to provide maximum service life
- Material and Finish
  - Machined from solid bar stock
  - Steel components are zinc plated
- Coupled Seal
- Valved units incorporate a Teflon back-up ring to withstand dynamic impulse

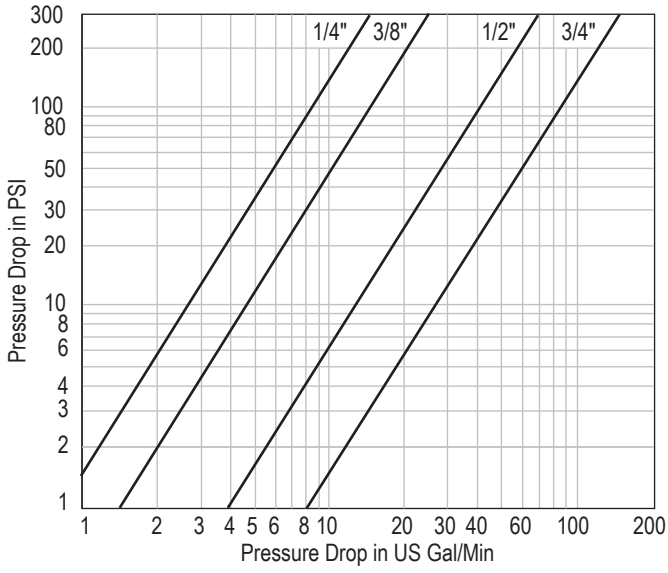


Plug Features:

- Machined from solid bar stock
- Steel plugs are hardened and zinc plated to provide heavy duty performance
- Flow - Large diameters provide for higher flow than other double shut-off quick disconnects
- Seals
  - Buna-N (Nitrile) seals are standard
  - Valve seals are crimped in place to maintain integrity during excessive flow conditions

Performance:

Series "H" - Valved or Non-Valved
Test Fluid: Hydraulic Oil at 100°F



"H" Series - [Interchange with SnapTite Series H]

"H" Series Sockets (with Valve)

Female Pipe

Size	NPT Thread Size	Part No. Steel With Valve	Part No. Brass With Valve
1/4"	1/4-18	B-VHC4-4F	B-VHC4-4F-B
3/8"	3/8-18	B-VHC6-6F	B-VHC6-6F-B
1/2"	1/2-14	B-VHC8-8F	B-VHC8-8F-B
3/4"	3/4-14	B-VHC12-12F	B-VHC12-12F-B

Male Pipe

Size	NPT Thread Size	Part No. Steel With Valve	Part No. Brass With Valve
1/4"	1/4-18	B-VHC4-4M	B-VHC4-4M-B
3/8"	3/8-18	B-VHC6-6M	B-VHC6-6M-B
1/2"	1/2-14	B-VHC8-8M	B-VHC8-8M-B
3/4"	3/4-14	B-VHC12-12M	B-VHC12-12M-B

"H" Series Plugs (with Valve)

Female Pipe

Size	Thread Size	Part No. Steel With Valve	Part No. Brass With Valve
1/4"	1/4-18	B-VHN4-4F	B-VHN4-4F-B
3/8"	3/8-18	B-VHN6-6F	B-VHN6-6F-B
1/2"	1/2-14	B-VHN8-8F	B-VHN8-8F-B
3/4"	3/4-14	B-VHN12-12F	B-VHN12-12F-B

Male Pipe

Size	Thread Size	Part No. Steel With Valve	Part No. Brass With Valve
1/4"	1/4-18	B-VHN4-4M	B-VHN4-4M-B
3/8"	3/8-18	B-VHN6-6M	B-VHN6-6M-B
1/2"	1/2-14	B-VHN8-8M	B-VHN8-8M-B
3/4"	3/4-14	B-VHN12-12M	B-VHN12-12M-B

"H" Series Sockets (non Valve)

Female Pipe

Size	NPT Thread Size	Part No. Steel Non-Valve	Part No. Brass Non-Valve
1/4"	1/4-18	B-PHC4-4F	B-PHC4-4F-B
3/8"	3/8-18	B-PHC6-6F	B-PHC6-6F-B
1/2"	1/2-14	B-PHC8-8F	B-PHC8-8F-B
3/4"	3/4-14	B-PHC12-12F	B-PHC12-12F-B

Male Pipe

Size	NPT Thread Size	Part No. Steel Non-Valve	Part No. Brass Non-Valve
1/4"	1/4-18	B-PHC4-4M	B-PHC4-4M-B
3/8"	3/8-18	B-PHC6-6M	B-PHC6-6M-B
1/2"	1/2-14	B-PHC8-8M	B-PHC8-8M-B
3/4"	3/4-14	B-PHC12-12M	B-PHC12-12M-B

"H" Series Plugs (non Valve)

Female Pipe

Size	Thread Size	Part No. Steel Non-Valve	Part No. Brass Non-Valve
1/4"	1/4-18	B-PHN4-4F	B-PHN4-4F-B
3/8"	3/8-18	B-PHN6-6F	B-PHN6-6F-B
1/2"	1/2-14	B-PHN8-8F	B-PHN8-8F-B
3/4"	3/4-14	B-PHN12-12F	B-PHN12-12F-B

Male Pipe

Size	Thread Size	Part No. Steel Non-Valve	Part No. Brass Non-Valve
1/4"	1/4-18	B-PHN4-4M	B-PHN4-4M-B
3/8"	3/8-18	B-PHN6-6M	B-PHN6-6M-B
1/2"	1/2-14	B-PHN8-8M	B-PHN8-8M-B
3/4"	3/4-14	B-PHN12-12M	B-PHN12-12M-B

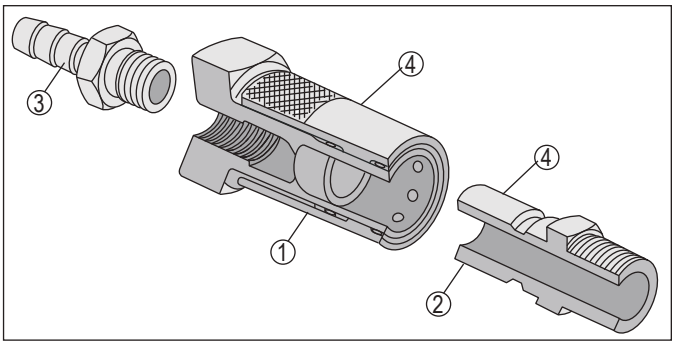
Configuration: Valved, or Non-Valved

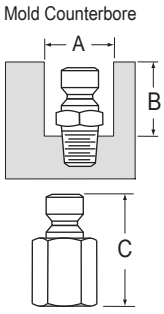
Size	Static Pressure Rating (psi) —Material— Brass	Static Pressure Rating (psi) —Material— Steel	Rated Flow (gpm) Valved	Rated Flow (gpm) Non-Valved
1/4"	2,250	6,500	4.5	4.5
3/8"	2,250	4,500	6.5	6.5
1/2"	2,000	4,000	17	20
3/4"	2,000	3,500	35	40

Injection Mold Series

[Interchange with Foster FJT, DME Jiffy-Tite and Jiffy-Matic ' and Parker Injection Mold Series]

1. Available with or without valves in the coupler. Non-valved couplers have minimum flow resistance for maximum cooling. Valved couplers shut off automatically upon disconnect. Valved couplers can be used with either valved or non-valved nipples. A valved nipple, however, must be used with a newly designed "AV" coupler.
2. Nipples are designed to be recessed below mold surfaces to provide more efficient storage of molds and prevent damage to the nipple.
3. Widest choice of end fittings available, including straight, 45° or 90° with standard hose barb or Push-Lok barbs for easy installation.
4. Couplers and nipples are made of corrosion resistant brass, and valved couplers or valved nipples have a Viton O-ring on poppet and Silicone interface seal as standard for use with water glycol (anti-freeze) type fluids commonly used in heat transfer systems.





Cat. No.	NPT	A	B	C
B-PN251	1/8"	.687	.687	1.000
B-PN252	1/4"	.843	.937	1.278
B-PN253	3/8"	1.00	.937	1.373
B-PN352	1/4"	1.00	1.092	1.450
B-PN353	3/8"	1.00	1.125	1.574
B-PN354	1/2"	1.187	1.250	–
B-PN554	1/2"	1.250	1.500	1.750
B-PN556	3/4"	1.500	1.562	1.750

Applications

Injection Mold Series couplings are specifically designed for connecting coolant lines to molds and dies, on injection molding machinery in the plastics and die casting industries. Injection Mold Series couplings significantly reduce machine downtime by providing fast and easy connection of coolant lines during mold changes. Their short nipples can be recessed below the surface of the mold for more efficient storage of molds. Injection Mold Series couplers are available with or without valves in the female half. Non-valved couplers provide maximum flow for efficient cooling. Valved couplers shut off when disconnected.

Selection Guidelines

Injection Mold Series couplings are designed for a maximum working pressure of 200 PSI. Most thermoplastic and thermostat heat transfer systems have pumps which provide relatively high flow rates at relatively low pressures. Water and water glycol (anti-freeze) systems usually have capacities ranging from 10 to 40 gpm, with most from 10 to 15 gpm Normal medial opening pressures are 20 to 60 PSI for these systems. Heat transfer systems using oil generally operate from 10 to 30 PSI. However, their flow rates are usually much higher, requiring the total volume of oil to be circulated at least once per minute.

Specifications:

Rated Pressure: 200 PSI

Temperature Range: -90° to +440°

Performance Data		Flow - water - GPM, 10 PSIG pressure drop
200 Series	Straight-Thru	4.5
	One Way (valved)	2.3
300 Series	Straight-Thru	10.0
	High Flow	13.8
	One Way (valved)	5.9
500 Series	Straight-Thru	28.2

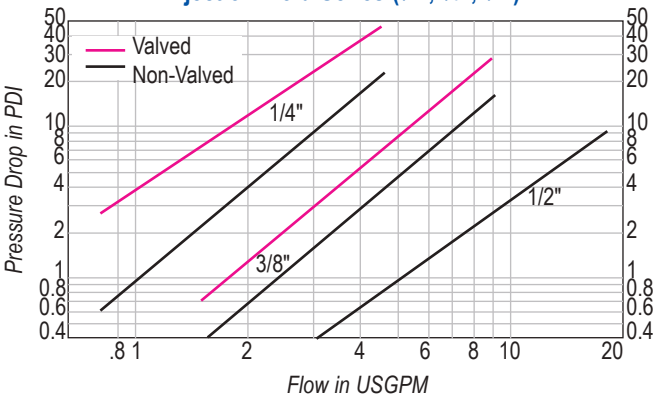
The number of hose connections in a single mold system results in a cumulative pressure drop. Please note the Pressure Drop vs. Flow Rate chart provided, to select the appropriate size.

Temperature is another important consideration. Injection Mold Series couplings with their standard Silicone seal have a temperature capability of -90° to +440°F. Rapid deterioration of the seal and leaking may result if used beyond these limits.

External conditions of temperature, corrosive atmospheres, and other abnormalities may affect coupling performance and must be considered when selection is made consult factory with questions.

Performance:

Injection Mold Series (1/4"; 3/8"; 1/2")



Injection Mold Series Sockets

Straight - Hose Barb

Size	Part No. Brass Non-Valved	Part No. Brass With Valve	Hose ID
1/4"	B-PC204	B-PC204AV	1/4"
	B-PC205	B-PC205AV	5/16"
	B-PC206	B-PC206AV	3/8"
3/8"	B-PC306	B-PC306V	3/8"
	B-PC308	B-PC308V	1/2"
1/2"	B-PC504	-	1/2"
	B-PC506	-	3/4"

Requires Hose Clamp

45° Hose Barb

Size	Part No. Brass Non-Valved	Part No. Brass With Valve	Hose ID
1/4"	B-PC224	B-PC224AV	1/4"
	B-PC225	B-PC225AV	5/16"
	B-PC226	B-PC226AV	3/8"
3/8"	B-PC326	B-PC326V	3/8"
	B-PC328	B-PC328V	1/2"

Requires Hose Clamp

90° Hose Barb

Size	Part No. Brass Non-Valved	Part No. Brass With Valve	Hose ID
1/4"	B-PC214	B-PC214AV	1/4"
	B-PC215	B-PC215AV	5/16"
	B-PC216	B-PC216AV	3/8"
3/8"	B-PC316	B-PC316V	3/8"
	B-PC318	B-PC318V	1/2"

Requires Hose Clamp

Straight - Push-On Hose Barb

Size	Part No. Brass Non-Valved	Part No. Brass With Valve	Hose ID
1/4"	B-PC204-BP	PC204AV-BP	1/4"
	B-PC206-BP	B-PC206AV-BP	3/8"
3/8"	B-PC306-BP	B-PC306V-BP	3/8"
	B-PC308-BP	B-PC308V-BP	1/2"
1/2"	B-PC504-BP	-	1/2"

Hose clamps not required when used with "Push On" hose.

45° Push-On Hose Barb

Size	Part No. Brass Non-Valved	Part No. Brass With Valve	Hose ID
1/4"	B-PC224-BP	B-PC224AV-BP	1/4"
	B-PC226-BP	B-PC226AV-BP	3/8"
3/8"	B-PC326-BP	B-PC326V-BP	3/8"
	B-PC328-BP	B-PC328V-BP	1/2"

Hose clamps not required when used with "Push On" hose.

90° Push-On Hose Barb

Size	Part No. Brass Non-Valved	Part No. Brass With Valve	Hose ID
1/4"	B-PC214-BP	B-PC214AV-BP	1/4"
	B-PC216-BP	B-PC216AV-BP	3/8"
3/8"	B-PC316-BP	B-PC316V-BP	3/8"
	B-PC318-BP	B-PC318V-BP	1/2"

Hose clamps not required when used with "Push On" hose.

Injection Mold Series Plugs

Female Pipe Thread

Size	Part No. Brass	Part No. Steel	Thread Size NPTF
1/4"	B-BPN251F	B-PN251F	1/8"-27
	B-BPN252F	B-PN252F	1/4"-18
	B-BPN253F	B-PN253F	3/8"-18
3/8"	B-BPN352F	B-PN352F	1/4"-18
	B-BPN353F	B-PN353F	3/8"-18

Male Pipe Thread

Size	Part No. Brass	Thread Size NPTF
1/4"	B-PN251	1/8"-27
	B-PN252	1/4"-18
	B-PN253	3/8"-18
3/8"	B-PN352	1/4"-18
	B-PN353	3/8"-18
	B-PN354	1/2"-14
1/2"	B-PN554	1/2"-14
	B-PN556	3/4"-14

Garden Hose Couplings

Features:

- Brass and stainless steel construction for heavy duty service.
- Durable 4-ball locking mechanism for secure connections.
- Temperature-resistant BUNA seals for a leak-free service life.

Applications:

The Garden Hose couplings are used anywhere water hoses are connected and disconnected frequently. They are used on a wide variety of applications including garden hoses, wash down system, and mobile water tank lines. The unvalved design permits maximum flow with minimum pressure drop.

Specifications:

Body Size ¾"

Rated Pressure (psi): 200

Temperature Range (BUNA seals): -40° to +250° F.

Features:

- Provides secure nipple-to-hose clamping. Made from high-quality bar stock.

Socket

Size	Part No.	Thread Size NH
¾"	B-7455	¾-11½

Plug

Size	Part No.	Thread Size NH
¾"	B-7465	¾-11½

Drain Cocks - Brass Fittings

The design of the drain cock uses metal-to-metal seal which requires only hand tightening to assure positive leak-proof performance.

External seal.

Materials: Brass bodies/steel handles except where noted.

Pressure: 150 psi max. (does not include hose or plastic tubing).

Used With: Copper, aluminum, steel hose and plastic tubing where applicable.

Temperature: -65° to +250°F

Conformance: Designed for automotive or industrial use. Not intended for natural gas, LPG, nuclear or aircraft application, except as noted.

Male Pipe Thread	Part No.
⅛"	DC-1
¼"	DC-2
⅜"	DC-3

Hose Barbs & Push-Lock Hose Barbs

Features:

- Push-Lock deep grooved barbs create a tight hose connection. They are easy to use... right on the job - just push the hose on!

Male Pipe Thread Hose Barb

Part No.	Hose I.D.	NPT Thread Size
HBM-1-1	1/8"	1/8-27
HBM-1-2	1/8"	1/4-18
HBM-25-1	3/16"	1/8-27
HBM-25-2	3/16"	1/4-18
HBM-2-1	1/4"	1/8-27
HBM-2-2	1/4"	1/4-18
HBM-2-3	1/4"	3/8-18
HBM-5-1	5/16"	1/8-27
HBM-5-2	5/16"	1/4-18
HBM-5-3	5/16"	3/8-18
HBM-3-1	3/8"	1/8-27
HBM-3-2	3/8"	1/4-18
HBM-3-3	3/8"	3/8-18
HBM-3-4	3/8"	1/2-14
HBM-3-6	3/8"	3/4-14
HBM-4-2	1/2"	1/4-18
HBM-4-3	1/2"	3/8-18
HBM-4-4	1/2"	1/2-14
HBM-4-6	1/2"	3/4-14
HBM-7-3	5/8"	3/8-18
HBM-7-4	5/8"	1/2-14
HBM-7-6	5/8"	3/4-14
HBM-6-4	3/4"	1/2-14
HBM-6-6	3/4"	3/4-14
HBM-8-6	1	3/4"-14
HBM-8-8	1	1 -11 1/2"
Requires Hose Clamp		

Female Pipe Thread Hose Barb

Part No.	Hose I.D.	NPT Thread Size
HBF-1-1	1/8"	1/8-27
HBF-1-2	1/8"	1/4-18
HBF-25-1	3/16"	1/8-27
HBF-25-2	3/16"	1/4-18
HBF-2-1	1/4"	1/8-27
HBF-2-2	1/4"	1/4-18
HBF-2-3	1/4"	3/8-18
HBF-5-1	5/16"	1/8-27
HBF-5-2	5/16"	1/4-18
HBF-5-3	5/16"	3/8-18
HBF-3-1	3/8"	1/8-27
HBF-3-2	3/8"	1/4-18
HBF-3-3	3/8"	3/8-18
HBF-3-4	3/8"	1/2-14
HBF-4-2	1/2"	1/4-18
HBF-4-3	1/2"	3/8-18
HBF-4-4	1/2"	1/2-14
HBF-6-6	3/4"	3/4-14
Requires Hose Clamp		

Male Pipe Thread Push-Lock Hose Barb

Part No.	Hose I.D.	NPT Thread
POM-2-1	1/4"	1/8-27
POM-2-2	1/4"	1/4-18
POM-2-3	1/4"	3/8-18
POM-3-1	3/8"	1/8-27
POM-3-2	3/8"	1/4-18
POM-3-3	3/8"	3/8-18
POM-3-4	3/8"	1/2-14
POM-3-6	3/8"	3/4-14
POM-4-2	1/2"	1/4-18
POM-4-3	1/2"	3/8-18
POM-4-4	1/2"	1/2-14
POM-4-6	1/2"	3/4-14
POM-6-4	3/4"	1/2-14
POM-6-6	3/4"	3/4-14
Hose clamps not required when used with "Push On" hose.		

Female Pipe Thread Push-Lock Hose Barb

Part No.	Hose I.D.	NPT Thread
POF-2-1	1/4"	1/8-27
POF-2-2	1/4"	1/4-18
POF-2-3	1/4"	3/8-18
POF-3-1	3/8"	1/8-27
POF-3-2	3/8"	1/4-18
POF-3-3	3/8"	3/8-18
POF-3-4	3/8"	1/2-14
POF-4-2	1/2"	1/4-18
POF-4-3	1/2"	3/8-18
POF-4-4	1/2"	1/2-14
POF-6-6	3/4"	3/4-14
Hose clamps not required when used with "Push On" hose.		

Hose Splicer Push-Lock

Part No.	Hose I.D.
POS-2-2	1/4"
POS-3-3	3/8"
POS-4-4	1/2"
POS-6-6	3/4"
Hose clamps not required when used with "Push On" hose.	

Hose Splicer Stqandard Hose Barb

Part No.	Hose I.D.
HS-2-2	1/4"
HS-3-3	3/8"
HS-4-4	1/2"
Requires Hose Clamp	

45° Street Elbow

Part No.	NPT Thread
SE45-1-1	1/8"
SE45-2-2	1/4"
SE45-3-3	3/8"
SE45-4-4	1/2"

90° Internal Pipe Union

Part No.	NPT Thread
FPE90-1-1	1/8"
FPE90-2-2	1/4"
FPE90-3-3	3/8"
FPE90-4-4	1/2"

90° Street Elbow

Part No.	NPT Thread
SE90-1-1	1/8"
SE90-2-2	1/4"
SE90-3-3	3/8"
SE90-4-4	1/2"

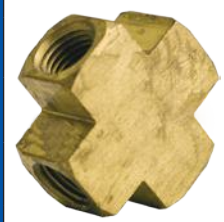
Female Pipe Tee

Part No.	NPT Thread
PT-1	1/8"
PT-2	1/4"
PT-3	3/8"
PT-4	1/2"

Male Branch Tee

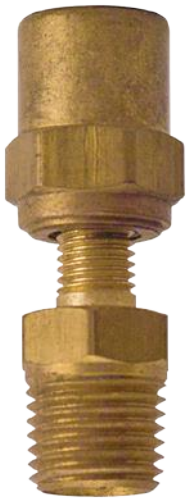
Part No.	NPT Thread
B-324-0202	1/8"
B-324-0404	1/4"
B-324-0606	3/8"
B-324-0808	1/2"

Female Pipe Cross



Part No.	NPT Thread
C-1	1/8"
C-2	1/4"
C-3	3/8"
C-4	1/2"

Re-Useable Male Fitting



Part No.	Hose I.D.	Hose O.D.	NPT Thread Size
B-183-4084	1/4"	1/2"	1/4"-18
B-183-4094		9/16"	1/4"-18
B-183-4104		5/8"	1/4"-18
B-183-4086		1/2"	3/8"-18
B-183-5104	5/16"	5/8"	1/4"-18
B-183-5114		11/16"	1/4"-18
B-183-5116		11/16"	3/8"-18
B-183-6104	3/8"	5/8"	1/4"-18
B-183-6114		11/16"	1/4"-18
B-183-6124		3/4"	1/4"-18
B-183-6106		5/8"	3/8"-18
B-183-6116		11/16"	3/8"-18
B-183-6126		3/4"	3/8"-18
B-183-6108		5/8"	1/2"-14
B-183-6128		3/4"	1/2"-14
B-183-8146	1/2"	7/8"	3/8"-18
B-183-8148		7/8"	1/2"-14
B-183-8158		15/16"	1/2"-14

Brass - Bushings, Adapters, Nipples

Female Reducer Bushing

Part No.	NPT Thread External	NPTF Thread Internal
PRB-2-1	1/4"	1/8"
PRB-3-1	3/8"	1/8"
PRB-3-2	3/8"	1/4"
PRB-4-1	1/2"	1/8"
PRB-4-2	1/2"	1/4"
PRB-4-3	1/2"	3/8"
PRB-6-3	3/4"	3/8"
PRB-6-4	3/4"	1/2"
PRB-8-4	1	1/2"
PRB-8-6	1	3/4"

Male Reducing Hex Nipple

Part No.	NPTF Thread External	NPTF Thread External
B-379-0402	1/4"	1/8"
B-379-0602	3/8"	1/8"
B-379-0604	3/8"	1/4"
B-379-0804	1/2"	1/4"
B-379-0806	1/2"	3/8"

Male - Female Adapter

Part No.	NPT Thread External	NPTF Thread Internal
AD-1-1	1/8"	1/8"
AD-1-2	1/8"	1/4"
AD-2-2	1/4"	1/4"
AD-2-3	1/4"	3/8"
AD-3-3	3/8"	3/8"
AD-3-4	3/8"	1/2"
AD-4-4	1/2"	1/2"
AD-4-6	1/2"	3/4"
AD-6-6	3/4"	3/4"

Female Hex Nipple

Part No.	NPT Thread
B-371-0202	1/8"
B-371-0404	1/4"
B-371-0606	3/8"
B-371-0808	1/2"

Reducing Adapter

Part No.	NPT Thread Internal	NPTF Thread Internal
B-377-0402	1/8"	1/4"
B-377-0604	1/4"	3/8"
B-377-0806	3/8"	1/2"

Hex Head Plugs

Part No.	NPT Thread
SHP-1	1/8"
SHP-2	1/4"
SHP-3	3/8"
SHP-4	1/2"

Male Hex Nipple

Part No.	NPT Thread
B-370-0202	1/8"
B-370-0404	1/4"
B-370-0606	3/8"
B-370-0808	1/2"
B-370-1212	3/4"

Close Nipples

Part No.	NPT Thread
N-1	1/8"
N-2	1/4"
N-3	3/8"
N-4	1/2"
N-6	3/4"

Steel Pipe Fittings

Pipe Coupling

Part Number	Female Pipe 1	Female Pipe 2
B-5000-2	1/8"	1/8"
B-5000-4-2	1/4"	1/8"
B-5000-4	1/4"	1/4"
B-5000-6-2	3/8"	1/8"
B-5000-6-4	3/8"	1/4"
B-5000-6-6	3/8"	3/8"
B-5000-8-4	1/2"	1/4"
B-5000-8-6	1/2"	3/8"
B-5000-8	1/2"	1/2"

Hex Pipe Nipple

Part Number	Male Pipe 1	Male Pipe 2
B-5404-2	1/8"	1/8"
B-5404-4-2	1/4"	1/8"
B-5404-4	1/4"	1/4"
B-5404-6	3/8"	3/8"
B-5404-8-4	1/2"	1/4"
B-5404-8-6	1/2"	3/8"
B-5404-8	1/2"	1/2"

Expanding Pipe Adapter B-5405

Part Number	Male Pipe 1	Female Pipe 2
B-5405-2-4	1/8"	1/4"
B-5405-2-6	1/8"	3/8"
B-5405-2-8	1/8"	1/2"
B-5405-4-4	1/4"	1/4"
B-5405-4-6	1/4"	3/8"
B-5405-4-8	1/4"	1/2"
B-5405-4-12	1/4"	3/4"
B-5405-6-6	3/8"	3/8"
B-5405-6-8	3/8"	1/2"
B-5405-8-8	1/2"	1/2"

Clamps

Part No.	Size	Hose O.D.
B-1113	1/2"	1/4"
B-1315	9/16	5/16
B-1518	5/8"	3/8"

Female Pipe Tee

Part Number	Female Pipe Connections
B-5605-2	1/8"
B-5605-4	1/4"
B-5605-6	3/8"
B-5605-8	1/2"

90° Street Elbow

Part Number	Male Pipe 1	Female Pipe 2
B-5502-2	1/8"	1/8"
B-5502-2-4	1/8"	1/4"
B-5502-2-6	1/8"	3/8"
B-5502-4-2	1/4"	1/8"
B-5502-4	1/4"	1/4"
B-5502-4-6	1/4"	3/8"
B-5502-6-4	3/8"	1/4"
B-5502-6	3/8"	3/8"
B-5502-6-8	3/8"	1/2"
B-5502-8-4	1/2"	1/4"
B-5502-8-6	1/2"	3/8"
B-5502-8-8	1/2"	1/2"

Male Elbow

Part Number	Male Pipe 1	Male Pipe 2
B-5500-2	1/8"	1/8"
B-5500-4-2	1/4"	1/8"
B-5500-4	1/4"	1/4"
B-5500-6-4	3/8"	1/4"
B-5500-6	3/8"	3/8"
B-5500-8-4	1/2"	1/4"
B-5500-8-6	1/2"	3/8"
B-5500-8	1/2"	1/2"

Swivel Tip Nozzle

Features:

- Brass, 3-Position Swivel
- Allows user to get to those hard to reach places without bending or being a contortionist!

Applications:

- Used on Power-Washers

Swivel	Size	Part No.
	¼"	2STF2-SWVL

Swivel Fittings

Zero Pressure Connect and Disconnect Design

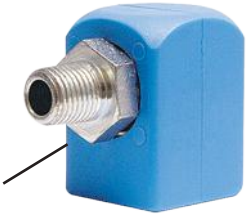
BRECO Swivel Fittings improve maneuverability and ergonomics when using air tools and spray guns. Functioning like a universal joint, swivel fittings allow the hose to remain vertical at all times, which reduces operator fatigue, repetitive motion trauma, and fitting chafe. The patented non-marring series (plastic encapsulated) is ideal for applications where non-marring and scratch reduction is needed.

Features:

- Steel body (¼" and ⅜"), Aluminum body (½")
- High flow capacity, low pressure drop
- More sizes for simplified plumbing
- Plastic encapsulation (non-marring Series)
- 300 PSIG inlet maximum

UP TO 300 PSI

Non-Marring Dual Swivel



Non-Marring Single Swivel

Standard Swivel

Non-Marring Dual Swivel	
Part No.	Description
190010A	⅜" FPT x ¼" MPT
190011A	⅜" FPT x ⅜" MPT
190012	½" FPT x ½" MPT

Non-Marring Single Swivel	
Part No.	Description
190040	⅜" FPT x ¼" MPT
190041	⅜" FPT x ⅜" MPT
190042	½" FPT x ½" MPT

Standard Swivel (Without Plastic Covering)	
Part No.	Description
190026A	¼" FPT x ¼"MPT
190029A	⅜" " FPT x ¼" MPT
190027A	⅜" FPT x ⅜" MPT
190028	½" FPT x ½" MPT

When used with percussion tools, a minimum of 18" of hose between tool and swivel is required.

BG Series Blow Guns & Tips

BG-CPLR
SHOWN W/OPTIONAL
QUICK CHANGE ADAPTER

UP TO 150 PSI

BRECO BG Series Blowguns combine durability, performance, and safety to meet your specific cleaning or drying applications.

Features:

- Lever activation
- 10 different nozzle choices
- Blow gun kit provides versatility
- Quick-disconnect nozzle adapter
- ¼" NPT inlet
- OSHA Compliant* @ Max 150 PSI inlet Pressure

BG45

UP TO 125 PSI

Pistol grip blow guns are ergonomically designed for operator comfort and safety.

Features:

- Lightweight nylon body insulates from refrigerated air
- Machined brass valve, nozzle & hose inlet for strength
- Lever style trigger with comfortable grip for variable air flow
- ¼" NPT female inlet
- 125 PSIG inlet maximum
- OSHA Compliant* meets 1910.242(b) pressure relief and 1910.95 noise level @ Max 150 PSI inlet Pressure

Part No.	Description	Flow (CFM) @ 100 PSIG
BG45	Pistol Grip Gun with BGN5 (shown in photo above)	20.0
BG4X12	Pistol Grip Gun with BGX12	13.3
301804	Pistol Grip Gun Only	–
Other BG Series nozzles and extensions may also be used with this blow gun.		

** WARNING: To be OSHA compliant, non-relieving nozzles may only be used when the blowgun's inlet pressure is regulated to 30 PSI maximum.*

Guns Only, No Tips Included	
Gun Only	**Description**
116482	Lever Action Gun Only- NO TIPS INCLUDED
301804	Pistol Grip Gun Only - NO TIPS INCLUDED

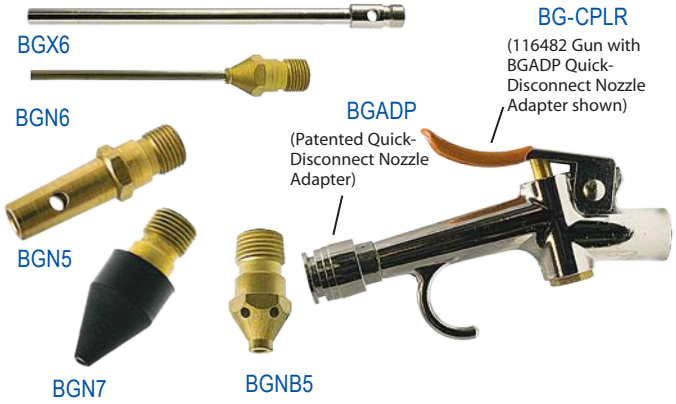
Blow Guns and Tips					
Gun w/Nozzle Shown	Nozzle Only	Description	Performance @100 PSIG		
			Flow CFM	Outlet Blocked	Noise Level dbA
BG21 LEVER GUN W/NOZZLE	BGN1	Standard nozzle for general blowing and drying applications	17.5	20	89.5
BG2B5 LEVER GUN W/NOZZLE	BGNB5	Air Screen nozzle reduces chip fly back	5	18	85
BG25 LEVER GUN W/NOZZLE BG45 PISTOL GUN W/NOZZLE	BGN5	High flow safety nozzle for general dusting and chip removal	20	20	89
BG26 (*) LEVER GUN W/NOZZLE	BGN6	Needle tip nozzle for fine flow and for small holes	(*)	-	-
BG27 (*) LEVER GUN W/NOZZLE	BGN7	Rubber tipped nozzle for delicate surfaces and for blowing out fluid lines	(*)	-	-
BG2X3 LEVER GUN W/NOZZLE	BGX3	Extension nozzle (3 inch) for extending reach	15	21	85.5
BG2X6 LEVER GUN W/NOZZLE	BGX6	Extension nozzle (6 inch) for extending reach	14.1	22	84
BG2X12 LEVER GUN W/NOZZLE BG4X12 PISTOL GUN W/NOZZLE	BGX12	Extension nozzle (12 inch) for extending reach	13.3	24	85.5
–	BGN2	Flexible extension nozzle (4 inch)	-	-	-
–	BGN3	Flexible extension nozzle (12 inch)	-	-	-
BG-CPLR LEVER GUN W/NOZZLE	BGADP	Quick change nozzle adapter	-	-	-
* WARNING: To be OSHA compliant, non-relieving nozzles may only be used when the blowgun's inlet pressure is regulated to 30 PSI maximum.					

BLOW GUN KIT

The BRECO BGQKIT contains five of the most popular nozzles for industrial and automotive uses. This kit includes a high quality, lever-operated heavy-duty blow gun featuring a patented quick disconnect nozzle adapter which allows users to switch nozzles quickly and easily. This multi-use kit contains a high flow safety nozzle, six inch extension safety nozzle, rubber tip nozzle, needle tip nozzle, and air-screen safety nozzle. For handy storage, a clear vinyl compartmented snap pouch is included. Ideally suited as a counter sale product.

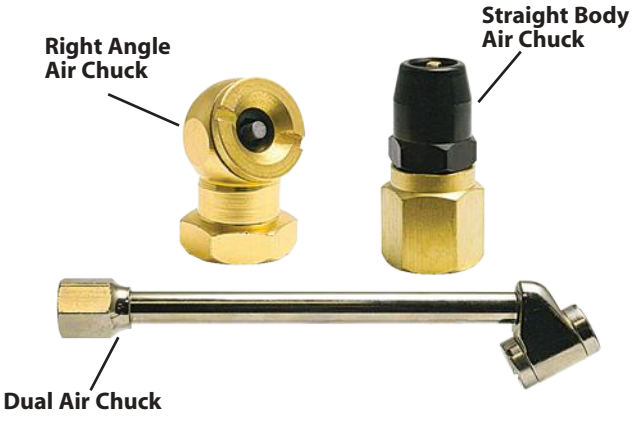
UP TO 150 PSI

To Order Complete Kit Use Part Number - BGQKIT



AIR CHUCKS

Three BRECO Air Chucks are available: a right angle heavy-duty air chuck, a heavy duty straight body air chuck, and a dual air chuck for all your air fill needs. All three air chucks have ¼" FPT inlets.



PART NO.	DESCRIPTION
AC40	Right Angle Air Chuck, ¼" FPT
AC42	Dual Air Chuck
AC45	Straight Body Air Chuck, ¼" FPT

SAFETY BLOW GUN B-8003

The BRECO Blow gun provides greater force for chip removal with less air consumption... saving energy without loss of performance. The features of this low cost blow gun offer top performance for any application.

Easy Operation: Thumb lever operation allows operator to have maximum control. Hooked shaped body for convenient storage when not in use. Built-in orifice and tamper resistant relieved tip prevents pressure buildup above 29 PSIG if nozzle is obstructed.

Specifications:

Inlet Sizes: ¼" NPT

Temp. Range: 32° to 175° (0 to 79°C) Max

Inlet Pressure: 180 PSIG (12 bar)

Regulated Pressure: 29 PSIG (2 bar) Max

Caution: These blow guns should not be used for fluids other than air, nor in applications which may exceed maximum recommended operating conditions.

3-Way Hose Manifold

Add versatility to your compressed air systems and simplify multiple tool operations. The BRECO 3-Way Hose Manifolds allow three work stations to use the same air supply. Featuring a port design to maximize air flow through the body for less restriction on flow than other similar products on the market. Each manifold accepts three quick couplers or outlet hoses. Manifold has female NPT inlet and three female NPT outlets. Manifolds are available in three different inlet/outlet sizes.

3-Way Manifold

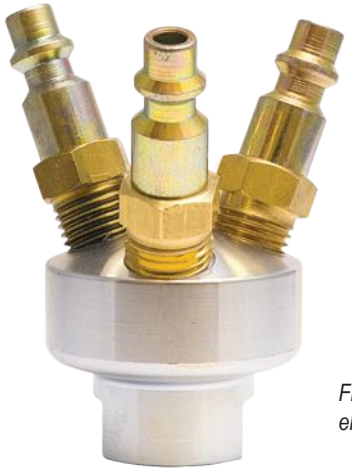
3-Way Flat Manifold

Part No.	Description	Inlet	Outlet
301787.01 (B-3404)	3-Way Manifold	1/4"	1/4"
301805 (B-3406)		3/8"	1/4"
6124-A	3-Way Flat Manifold	1/4"	1/4"

3-Way Hose Manifold with Sockets or Swivel Plugs

An expanded style of our 3-Way Hose Manifold is available pre-assembled with a choice of three D Series manual sockets or three swivel plugs. This operational versatility allows three independent work stations to function with the same air supply. The port design of the BRECO 3-Way Hose Manifold maximizes air flow through the body and is less restrictive on flow than other similar products on the market. The flexibility of quick disconnects, swivel plugs, or outlet hoses maximizes air operations while improving efficiencies.

3-Way Manifold Shown



Free swivel under pressure eliminates hose twist

Part No.	Description	Inlet	Outlet
MAN2525A	3-Way Manifold with three D341 Sockets	1/4" FPT	Sockets 1/4" Industrial Interchange
MAN3825A	3-Way Manifold with three D341 Sockets	3/8" FPT;	Sockets 1/4" Industrial Interchange
6124	Flat Manifold w/ 3 sockets & 1 plug (Industrial)	1/4" plug	1/4" sockets
MF-2	Manifold w/ 3 sockets & 1 plug (Industrial)	1/4" plug	1/4" sockets
MF-3	Manifold w/ 3 sockets & 1 plug (Industrial)	3/8" plug	3/8" sockets

Part No.	Description	Inlet	Outlet
MAN2525S*	3-Way Manifold with three Swivel Plugs	1/4" FPT	Swivel Plug 1/4" Industrial Interchange
MAN3825S*		3/8" FPT	Swivel Plug 1/4" Industrial Interchange

** Note:*
Swivel Plugs are OPEN. Connection is needed to avoid leak path.

Polyurethane Recoil Hose

Fully Assembled and Ready to Use Configurations with and without DW-Series Universal Sockets Includes Swivel NPT Fitting End Pre-Installed with Thread Compound 15' and 25' Lengths

BRECO Polyurethane Recoil Hose has greater durability than other types of hose due to exceptional wear characteristics. Polyurethane Recoil Hose is kink resistant and has exceptional memory characteristics due to elastic properties of the polyurethane hose. Hoses are pre-assembled with reusable brass fittings for reduced assembly time.

UP TO 170 PSI

Two assembly configurations include BRECO DW Series Universal Sockets ready for connection to air tools or other accessories. The BRECO Polyurethane Recoil Hose products are pre-bagged for convenience. Ideally suited as counter sale products.

Features:

- Greater durability than other recoil hoses due to exceptional wear characteristics
- Longer life expectancy due to kink resistant properties
- Superior recoil memory due to elastic properties
- Pre-assembled and ready to use

Specifications

- Construction: Yellow polyurethane recoil hose with reusable brass fitting ends Inlet end includes in-line brass swivel fitting
- Working Pressure: 170 PSIG @ 75F
- Temperature Range: -40F to +125F
- Working Length: 80-90% of hose length

Part No.	I.D. x O.D.	Length	MPT Fittings
DCPOLY15	1/4" x 3/8"	15'	1/4" Rigid x 1/4" Swivel
DCPOLY25	1/4" x 3/8"	25'	1/4" Rigid x 1/4" Swivel
DCPOLY15ASSY	1/4" x 3/8"	15'	DW340A Universal Socket x 1/4" Swivel
DCPOLY25ASSY	1/4" x 3/8"	25'	DW340A Universal Socket x 1/4" Swivel

Pressurized lines employing quick-disconnect couplers should be considered potentially hazardous and must be used with safety in mind. Proper selection and use of appropriate couplers will help you maintain a safe working environment for personnel, equipment, and products.

BRECO quick-disconnect couplers are precision devices—do not modify, strike, or otherwise abuse the coupling halves. Never exceed the pressure or temperature limits and always protect the hose and coupler assembly from moving equipment.

Be cautious when moving pressurized hoses as some types of quick-disconnect couplers may unintentionally disconnect if the coupler encounters an obstacle as the hose is dragged. The pressurized media subsequently escaping from the freed line can force the hose assembly to violently whip about, possibly causing personal injury, equipment/product damage, and economic loss. BRECO Safety Vent couplers and plugs, designed to minimize hose whip hazards, should be used wherever the risk is present. Personnel must be instructed to maintain a firm grip on both coupler halves when connecting or disconnecting pressurized lines.

Above all, always wear appropriate personal protection equipment and safety glasses when working with, or near, pressurized lines utilizing quick-disconnect couplers.

Safety Vent Couplers

BRECO Safety Vent couplers are designed to minimize the possibility of inadvertent disconnection and potentially hazardous hose whip. BRECO SV and SVPC Series Safety Vent couplers are "zero pressure" connect/disconnect type couplers designed to safely vent downstream pressure prior to disengaging the plug.

BRECO SVPC and SV Series Safety Vent Couplers

Safety Vent couplers are nearly effortless to connect and great for hose use. They are also especially useful for single-hand operation when they are mounted to hard lines such as an overhead air drop. Once inserted into the SV socket, the plug is lightly gripped and will stay in place allowing the operator to use the same hand to slide the sleeve straight forward to the "on" position. As the sleeve is being moved to the "on" position, the SV socket will securely lock the plug in place and then turn the flow "on".

SV Series sockets can also be used as a 3-way valve to turn off the flow of air and exhaust the downstream pressure without disengaging the plug. By turning and sliding the sleeve to the "exhaust" position, downstream air pressure is relieved but the plug remains locked in place. Turning and sliding the sleeve in the opposite direction allows air to flow again.

BRECO SV Series couplers are the ultimate solution to accidental disconnect hose whip dangers.

BRECO SVPC Series Safety Vent Couplers

The SVPC Series Safety Vent couplers provide the same safety vent features as the SV Series, and are plastic encapsulated to prevent scratching or marring of finished or fragile surfaces. The SVPC Series sockets will prevent plug release until the downstream line pressure is vented to atmosphere and the plug can be safely removed.

Ball-Lock Option

"Ball-Lock" (BL) option employs a ball or pin to restrict sleeve retraction and is available on BRECO D Series and DM Series sockets. Couplers with the BL designation are constructed with sleeves having a slot that must be aligned with a ball or pin before the sleeve is allowed to retract. Rotating the sleeve 180 degrees so the slot is not aligned with the ball or pin will minimize the chance of accidental sleeve retraction.

Ball Check Plugs

Ball check plugs are offered in several sizes of Industrial Interchange plugs. Ball check plugs have a free-floating internal ball that acts as a check valve when the plug is disconnected from the coupler. The check valve action minimizes hose whip by causing the pressurized gas to escape slowly from the disconnected hose.

Air Blowguns

BRECO Blow Gun products are designed for cleaning, blow-off, inflation, and other operations. The blowguns are available with zinc or nylon bodies with a variety of optional nozzles for nearly any use. BRECO Blow Gun tips are available in OSHA compliant and (*) non-compliant models to suit your particular needs.

Blow Guns and nozzles that comply with OSHA regulations will limit the pressure of air exiting the nozzle to less than 30 PSIG when the nozzle is dead-headed.

(*) Note: If a non-OSHA compliant blow gun nozzle (BGN6, or BGN7) is used, air pressure to the gun's inlet must be regulated to less than 30 PSIG to meet OSHA regulations.

We strongly recommend that the end user obtain proper training before using quick-disconnect couplers, air blowguns, and other BRECO products. Thoughtful analysis of the user's needs and application must be given before selecting a product.

OUR DEDICATED EMPLOYEES AND DISTRIBUTORS ARE EAGER TO EXPLAIN THE FEATURES, BENEFITS, AND PROPER SELECTION OF BRECO PRODUCTS, AND ANSWER YOUR QUESTIONS REGARDING THEIR CORRECT APPLICATION AND SAFE USE.

Be Safe When Selecting Quick Couplings!

Quick disconnect couplings can fail without warning! Prior to the operation of quick coupling products, be sure to inspect and replace worn out fittings and safety devices. If a leak is detected during operation, release the pressure from the circuit before investigating the cause of the fluid leak. Do not use your fingers or skin to check for leaks, high pressure leaks of fluids can easily penetrate the skin and can cause serious injury or death.

Safe Quick Coupling Practices

Always wipe the coupling cavities and faces clean before connecting a coupling.
Connect coupling before installation to ensure that it works properly.
3. Always check the body seals before connecting a coupling.
4. Shut-off power source before connecting a coupling.
5. Always install a safety check valve on a pneumatic line and/or compressor.
6. Always use a safety cable on large air lines (½" lines and larger).
7. Always use a whip hose on hydraulic or air tools.
8. Use dust caps or plugs when couplings are not in use.
9. If the locking sleeve is inoperable, check the safety lock.
10. Wear eye protection while connecting or disconnecting a coupling.

Unsafe Quick Coupling Practices

1. Never hit coupling valves to release trapped pressure.
2. Never leave couplings in the path of moving equipment.
3. Never use couplings near a welder, flash heat, or fire / flame sources.
4. Never use API modified sealants or over apply PTFE tape during installation.
5. Use care if you must install quick couplings onto black iron pipe.
6. Never hit a coupling sleeve with a hammer or blunt object.
7. Never overtighten a coupling connection.
8. Never rotate a quick disconnect coupling under pressure.
9. Do not overpressurize quick disconnect couplings.
10. Never use a hose with a quick disconnect coupling to lift a tool.

OSHA Regulations Ensure Operator Safety

Safety Cables

Safety Check Valves

Standard - 29 CFR, 1926.302 (partial):
(b)(1) Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.

(b)(2) Safety Clips or retainers shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.

(b)(4) Compressed air shall not be used for cleaning purposes except where reduced to 30 PSI and then only with effective chip guarding and personal protective equipment which meets the requirements of Subpart E of this part. The 30 PSI requirement does not apply for concrete form, mill scale and similar cleaning purposes.

(b)(5) The manufacturer's safe operating pressure for hoses, pipes, valves, filters and other fittings shall not be exceeded.

(b)(6) The use of hoses for hoisting or lowering tools shall not be permitted.

(b)(7) All hoses exceeding ½" inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

Standard - 29 CFR, 1926.603 (partial):
(a)(9) Steam hose leading to a steam hammer or jet pipe shall be securely attached to the hammer with an adequate length of at least ¼" diameter chain or cable to prevent whipping in the event the joint at the hammer is broken. Air hammer hoses shall be provided with the same protection as required for steam lines.

(a)(10) Safety chains, or equivalent means, shall be provided for each hose connection to prevent the line from thrashing around in case the coupling becomes disconnected.

MEDIA	BODY	SEAL
Acetic Acid (5%)	SS	Viton
Acetone	B, SS	Ethylene Propylene
Acetophenone	SS	Ethylene Propylene
Acetylene	SS	Standard
Air (up tp 200°F)	B, SS	Standard
Air (up to 400°F)	B, SS	Viton,Silicone
Ammonia (Anhydrous)	SS	Neoprene
Ammonia (Cold, Gas)	SS	Ethylene Propylene
Ammonium Nitrite	SS	Standard
Amyl Chloride	SS	Viton
Arsenic Acid	SS	Standard
Asphalt	SS	Viton
Brine (Sodium Chloride)	SS	Standard
Butane	SS	Standard
Butanol (Butyl Alcohol)	SS	Standard
Calcium Acetate	B, STD	Ethylene Propylene
Carbon Dioxide	B, SS	Standard
Carbon Tetrachloride	B	Viton
Castor Oil	B, STD, SS	Standard
China Wood Oil (Tung Oil)	SS	Standard
Chloroform	SS	Viton
Corn Oil	B, STD, SS	Standard
Creosote	SS	Standard
Crude Oil	SS	Viton
Cutting Oil	STD, SS	Standard
Detergent, Water Solution	SS	Standard
Diesel Fuel	B,SS	Standard
Diethylene Glycol	STD, SS	Standard
Dimethyl Formamide	SS	Ethylene Propylene
Ethanol	B	Ethylene Propylene
Freon 11	B	Viton
Freon 12	B, STD, SS	Neoprene
Freon 22	B,SS	Neoprene
Freon R134a	B, STD, SS	Neoprene
Fuel Oil	SS	Standard
Gas, Liquid Propane (LPG)	B, SS	Standard
Gas, Natural	B, SS	Standard
Gasoline (unleaded)	B, SS	Viton
Glucose	B, STD, SS	Standard
Glycerine (Glycercol)	STD, SS	Standard
Glycols	STD, SS	Standard
Helium	B, STD, SS	Standard
Heptane	B, STD, SS	Standard
Hydraulic Oil (Petroleum Base)	B, STD, SS	Standard
Hydraulic Oil (Water Base)	STD, SS	Ethylene Propylene
Hydrazine	SS	Ethylene Propylene
Hydrogen Gas	B, STD, SS	Standard
Isobutyl Alcohol	SS	Viton
Isopropyl Alcohol	B, STD, SS	Viton
Isopropyl Ether	B, STD, SS	Standard
Isocyanate	STD	Viton
Kerosene	B, SS	Standard
Linseed Oil	STD, SS	Standard
Lubricating Oil (SAE 10 thru 50)	B, STD, SS	Standard
Mercury	SS	Standard
Methane	B, SS	Standard
Methanol	B, SS	Standard
Methyl Bromide	STD, SS	Viton
Methyl Chloride (wet)	B	Viton
Methyl Ethyl Ketone (MEK)	B, STD, SS	Ethylene Propylene
Mineral Oils	B, STD, SS	Standard
Potassium Acetate	STD	Ethylene Propylene
Potassium Dichromate	STD	Standard
Potassium Nitrate	STD, SS	Standard
Potassium Sulfate	SS	Standard

MEDIA	BODY	SEAL
Propane	B, SS	Standard
Propyl Alcohol	B, STD, SS	Standard
Propylene	B, STD, SS	Viton
Pydraul 10E	STD, SS	Ethylene Propylene
Pydraul A-200, C-Series	STD, SS	Viton
Pydraul, 3 Series	STD, SS	Viton
Sea Water / Salt Water	SS	Standard
Silicone Greases	B, STD, SS	Standard
Skydrol 500, Type 2	STD, SS	Ethylene Propylene
Skydrol 7000, type 2	STD, SS	Ethylene Propylene
Soap Solutions	SS	Standard
Sodium Acetate	B, STD, SS	Ethylene Propylene
Sodium Carbonate (Soda Ash)	STD, SS	Standard
Sodium Cyanide	STD, SS	Standard
Sodium Metaphosphate	STD	Standard
Sodium Nitrate	SS	Ethylene Propylene
Sodium Perborate	SS	Viton
Sodium Peroxide	STD	Viton
Sodium Phosphates	B, SS	Standard
Sodium Sulfate	SS	Standard
Soybean Oil	STD, SS	Standard
Steam (below 400°F)	B, SS	Ethylene Propylene
Sucrose Solutions	B, STD, SS	Standard
Tannic Acid (10%)	B	Standard
Tertiary Butyl Alcohol	B, STD, SS	Viton
Tetraethyl Lead	B, STD, SS	Viton
Tetraethyl Lead (blend)	B, STD, SS	Viton
Titanium Tetrachloride	STD	Viton
Toluene	B, STD, SS	Viton
Transmission Fluid (Type A)	B, STD, SS	Standard
Turbine Oil #15	SS	Viton
Turpentine	SS	Standard
Varnish	B, STD, SS	Viton
Water (below 100°F)	B, SS	Standard
Water (above 100°F)	B, SS	Ethylene Propylene
Xylene	B, SS	Viton
Naphtha	STD	Viton
Napthalene	STD	Viton
Napthenic Acid	STD	Viton
Nickel, Acetate	SS	Ethylene Propylene
Nickel Sulfate	SS	Standard
Nitrogen	B, STD, SS	Standard
Nitrous Oxide	SS	Standard
Octyl Alcohol	B, STD, SS	Viton
Oxalic Acid	SS	Viton
Oxygen (200-400°F)	B, SS	Viton
Oxygen (below 200°F)	B, SS	Standard
Ozone	SS	Viton
Palmitic Acid	B, SS	Standard
Para-Dichlorobenzene	STD	Viton
Peanut Oil	STD, SS	Standard
Petrolatum	B, STD, SS	Standard
Petroleum Oil (below 200°F)	B, STD, SS	Standard
Phenol	B, STD, SS	Viton
Phosphorous Trichloride	SS	Viton
Plating Solutions (Chrome)	B, SS	Viton
Plating Solutions (other)	SS	Viton

Disclaimer: Data is only to be used as a guideline, please test individual parts thoroughly for each application.

Body Material:

SS = 303SS
B = Brass
STD = Brass & Steel

BE SAFE WHEN INSTALLING QUICK COUPLINGS

INSTALLATION OF REUSABLE HOSE COUPLINGS

1 Trim the end of the hose as square as possible.

2 Insert Hose completely into ferrule and make note of how deep the hose goes.

3 Mark the point of full hose insertion depth with a piece of tape.

4 Verify tape line is correct for full insertion.

5 Add a bit of lubricant to the reusable hose barb before inserting into the ferrule.

6 Turn reusable hose barb into ferrule ensuring hose stays completely inserted.

7 Tighten reusable hose barb into ferrule ensuring hose stays completely inserted.

8 Completed connection, ensuring hose is completely inserted.

BE SAFE WHEN INSTALLING QUICK COUPLINGS

AUTOMATIC SAFETY EXHAUSTING COUPLER OPERATION

1 To Disconnect;
Begin by holding the hose with three of your fingers leaving your thumb and index finger free.

2 Grab the sleeve with your thumb and index finger and begin to pull the sleeve towards the palm of your hand.

3 After pulling the sleeve, the plug will move out of the couple slightly. Continue to hold the hose and couple sleeve until ***all air is fully exhausted***.

4 After the line is fully exhausted, you are able to safely separate the plug from the coupler.

BE SAFE WHEN INSTALLING QUICK COUPLINGS

INSTALLATION OF TAPERED THREAD CONNECTIONS

1 Apply 1½ to 2 wraps of PTFE tape, starting one or two threads from the lead edge, in a clockwise direction. For type 316 stainless steel, be sure to use stainless grade tape.

2 Check threads to make sure there is no damage and that tape is properly installed. Align threaded connections and carefully begin threading the two halves together..

3 Finger tighten the connection.

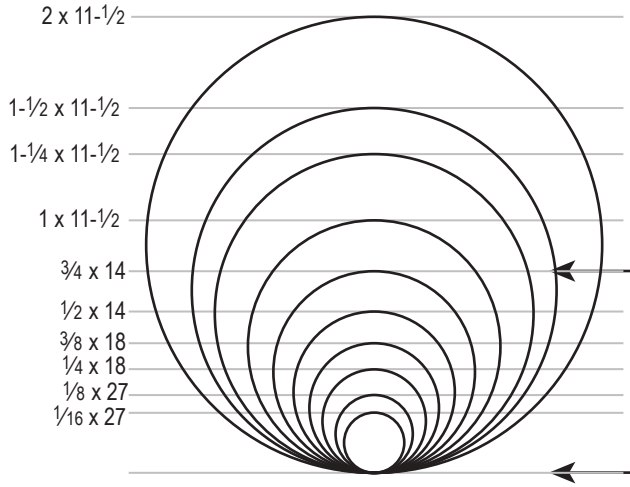
4 With ***even and smooth*** force applied, wrench tighten according to the "Turns From Finger Tight" values listed in the table below.
DO NOT OVERTIGHTEN!

5 Coupling is ready for use.

SAE Size	NPFE Thread Size	Turns from Finger Tight
-4	¼" - 18	2
-6	⅜" - 18	2
-8	½" - 14	2
-12	¾" - 14	1.5
-16	1" - 11½	1.5
Do Not Overtighten!		

Pipe Thread Identification

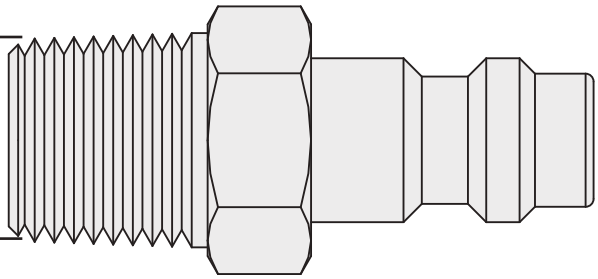
Nominal Pipe Size (inches)	Actual Pipe Size (inches)	Nominal Thread Size (inches)
1/8"	0.41"	1/8" - 27
1/4"	0.54"	1/4" - 18
3/8"	0.68"	3/8" - 18
1/2"	0.84"	1/2" - 14
3/4"	1.05"	3/4" - 14
1"	1.32"	1" - 11 1/2
1-1/4"	1.66"	1-1/4" - 11 1/2
1-1/2"	1.90"	1-1/2" - 11 1/2
2"	2.38"	2" - 11 1/2
2-1/2"	2.88"	2-1/2" - 8
3"	3.50"	3" - 8

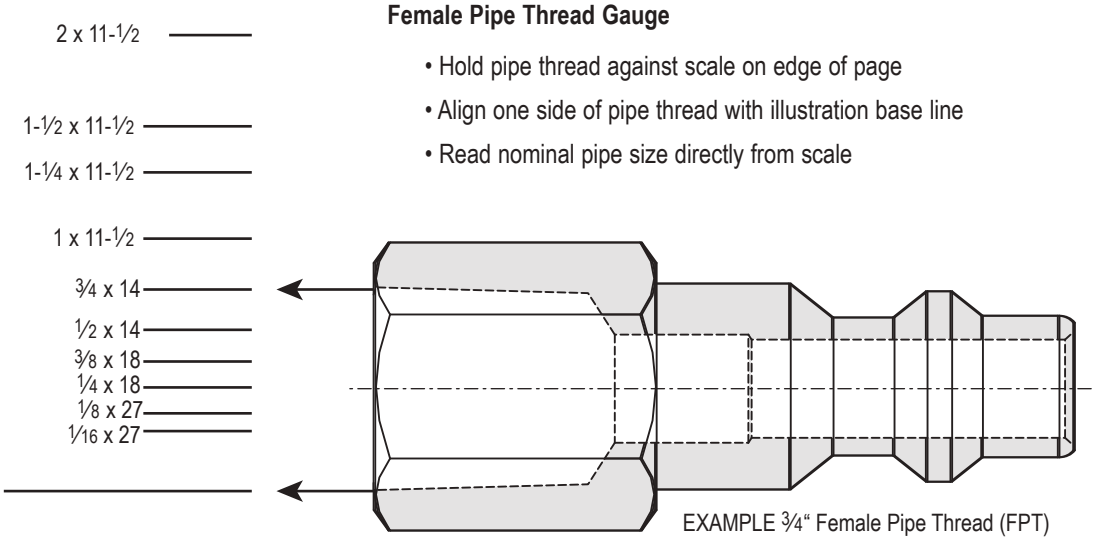


Male Pipe Thread Gauge

- Stand pipe thread vertically on diagram
- Align outside diameter of pipe thread with matching circle
- Read nominal pipe size directly above circle

EXAMPLE 3/4" Male Pipe Thread (MPT)



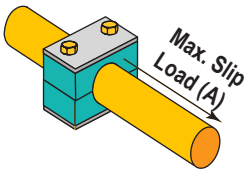


Female Pipe Thread Gauge

- Hold pipe thread against scale on edge of page
- Align one side of pipe thread with illustration base line
- Read nominal pipe size directly from scale

EXAMPLE 3/4" Female Pipe Thread (FPT)

Maximum Slip Load



Max. Pipe Slip indicates that Sliding starts when the specified values (A) are reached.

Beta Standard Series

ZSI (DIN)	Hex Head Bolt UNC Thread (Metric ISO)	Polypropylene		Polyamide		Aluminium	
		Tightening Torque ft•lb (N•m)	Max. Pipe Slip lbf (kN)	Tightening Torque ft•lb (N•m)	Max. Pipe Slip lbf (kN)	Tightening Torque ft•lb (N•m)	Max. Pipe Slip lbf (kN)
S1 (1)	¼–20 UNC (M6)	6 (8)	247 (11)	7 (10)	157 (7)	9 (12)	944 (42)
S2 (2)			292 (13)		180 (8)		967 (43)
S3 (3)			315 (14)		360 (16)		1,101 (49)
S4 (4)			337 (15)		382 (17)		1,124 (50)
S5 (5)			427 (19)		450 (20)		1,641 (73)
S6 (6)			450 (20)		562 (25)		2,000 (89)
S7 (7)			517 (23)		719 (32)	-	
S8 (8)			585 (26)		787 (35)		

Beta Heavy Series

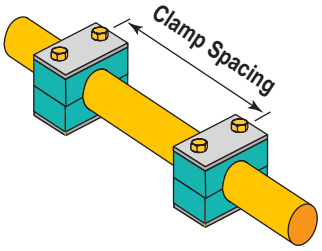
ZSI (DIN)	Hex Head Bolt UNC Thread (Metric ISO)	Polypropylene		Polyamide		Aluminium	
		Tightening Torque ft•lb (N•m)	Max. Pipe Slip lbf (kN)	Tightening Torque ft•lb (N•m)	Max. Pipe Slip lbf (kN)	Tightening Torque ft•lb (N•m)	Max. Pipe Slip lbf (kN)
H3 (1)	⅜–16 (M10)	9 (12)	360 (16)	15 (20)	944 (42)	22 (30)	2,720 (121)
H4 (2)		9 (12)	652 (29)	15 (20)	1044 (45)	22 (30)	3,395 (151)
H5 (3))		11 (15)	742 (33)	18 (25)	1146 (51)	26 (35)	3,485 (155)
H6 (4)	7/16–14 (M12)	22 (30)	1843 (82)	30 (40)	2090 (93)	41 (55)	6,609 (295)
H7 (5)	⅝–11 (M16)	33 (45)	2472 (110)	41 (55)	3551 (158)	86 (120)	7,845 (349)
H8 (6)	¾–10 (M20)	59 (80)	3147 (140)	111 (150)	4720 (210)	162 (220)	11,240 (500)
H9 (7)	⅞–9 (M24)	81 (110)	6300 (280)	148 (200)	7193 (320)	184 (250)	15,871 (706)
H10 (8)	1-⅛–7 (M30)	133 (180)	8992 (400)	258 (350)	10790 (480)	369 (500)	18,996 (845)
H11 (9)		148 (200)	26752 (1,190)	273 (370)	27650 (1,250)	369 (500)	40,802 (1,815)
H12 (10)		199 (270)	37767 (1,680)	332 (450)	40465 (1,800)	443 (600)	54,965 (2,445)

Beta Twin Series

ZSI (DIN)	Hex Head Bolt UNC Thread (Metric ISO)	Polypropylene		Polyamide	
		Tightening Torque ft•lb (N•m)	Max. Pipe Slip lbf (kN)	Tightening Torque ft•lb (N•m)	Max. Pipe Slip lbf (kN)
T1 (1)	¼–20 (M6)	4 (5)	202 (09)	4 (5)	202 (09)
T2 (2)	5/16–18 (M8)	9 (12)	472 (21)	9 (12)	495 (22)
T3 (3)	5/16–18 (M10)	9 (12)	427 (19)	9 (12)	450 (20)
T4 (4)	5/16–18 (M12)	9 (12)	607 (27)	9 (12)	652 (29)
T5 (5)	5/16–18 (M16)	6 (8)	382 (17)	6 (8)	562 (25)

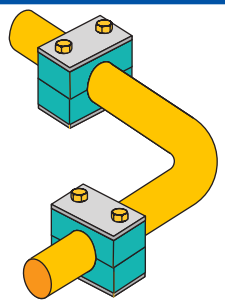
Beta Clamp Technical Data

Recommended Pipe Clamp Spacing



Pipe OD in (mm)	Spacing ft - in. (m)
0.24" – 0.5" (6 – 12.7)	3' - 3" (1)
0.5" – 0.87" (12.7 – 22)	3' - 11" (1.2)
0.87" – 1.26" (22 – 32)	4' - 11" (1.5)
1.26" – 1.5" (32 – 38)	6' - 7" (2)
1.5" – 2.24" (38 – 57)	8' - 10" (2.7)
2.24" – 2.95" (57 – 75)	9' - 10" (3)
2.95" – 3" (75 – 76.1)	11' - 6" (3.5)
3" – 3.5" (76.1 – 88.9)	12' - 2" (3.7)
3.5" – 4" (88.9 – 102)	13' - 1" (4)
4" – 4.5" (102 – 114)	14' - 9" (4.5)
4.5" – 6.6" (114 – 168)	16' - 5" (5)
6.6" – 8.6" (168 – 219)	19' - 8" (6)
8.6" – 12.8" (219 – 324)	21' - 12" (6.7)
12.8" – 14" (324 – 356)	22' - 12" (7)
14" – 16" (356 – 406)	24' - 7" (7.5)
16" – 16.5" (406 – 419)	26' - 11" (8.2)
16.5" – 20" (419 – 508)	27' - 11" (8.5)
20" – 20.5" (508 – 521)	29' - 6" (9)
20.5" – 22" (521 – 558)	32' - 10" (10)
22" – 31.5" (558 – 800)	41' - 0" (12.5)

Recommended Clamping for Bends



Bends in the line should be clamped on BOTH sides of the bend as shown.

BETA CLAMP MATERIAL PROPERTIES
Polypropylene (PP) Cushion

Material Properties		
Density	–	0.906 g/cm3
Tensile strength	DIN 53454	25-35 N/mm2
Flexure stress limit	DIN 53452	36N N/mm2
Compressive strength	DIN 53454	90 N/mm2
Impact strength	DIN 53453	No break
Thermo Properties		
Max. temp. resistance		-30 to 90°C
Thermal conductivity		15 x 10-5 /°C
Linear expansion coeff.		0.22 W/[mk]
Electrical Properties		
Specific volume	DIN 53482	1016 ohm x cm
Chemical Properties		
Consistent for weak acids, solvents, mineral oils and seawater.		

Beta Bolt Tightening Torque

Clamp	Group	Bolt Size	Aluminum Cushion		Polypropylene Cushion		Polyamide Cushion	
			Lbf	Nm	Lbf	Nm	Lbf	Nm
Beta Standard	S1 - S7	1/4"-20	7	10	6	8	6	8
Beta Heavy	H3, H4	3/8"-16	22	30	9	12	15	20
	H5	3/8"-16	26	35	11	15	18	25
	H6	1/2"-13	41	55	29	30	30	40
	H7	5/8"-11	89	120	33	45	41	55
Beta Twin	T1	1/4"-20	-	-	4	6	4	6
	T2 - T5	5/16"-18	-	-	9	12	9	12

The outlined particulars are approximate values and are only valid as references, which are not binding, also with regard to possible protection of third parties, and they do not exempt you from your own examination of suitability of the products delivered by us. Therefore, these values can only be used in a limited sense for construction purposes. The application of the products is carried out outside our control possibilities and, therefore, is exclusively subject to your own area of responsibility. If, however, liability should be possible, it would be limited for all damages to the value of the goods supplied by us and in use by you. It goes without saying, that we guarantee the perfect quality of our products according to our general sales and delivery conditions.

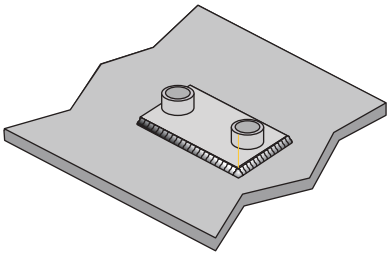
Beta Clamp Installation

INSTALLATION ON WELD PLATES

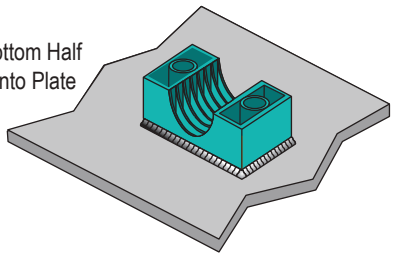
ZSi weld plates are available for the following Series:

- Standard-Series
- Heavy-Series
- Twin-Series
- Beta Adapters

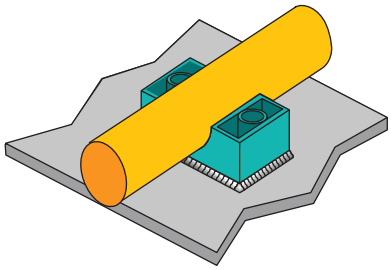
For best alignment of ZSi clamps we recommend that you mark their location before welding.



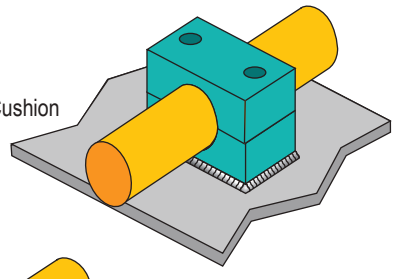
(1) Weld Plate to Supporting Steel



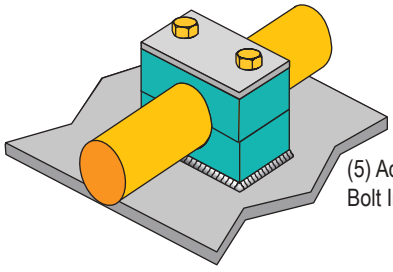
(2) Push Bottom Half of Clamp Onto Plate



(3) Install Pipe



(4) Add Top Cushion



(5) Add Top Plate and Bolt Into Position

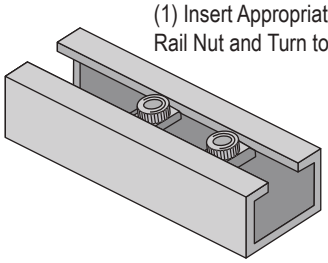
INSTALLATION ON MOUNTING RAILS

ZSi mounting rails can be used with the following Series:

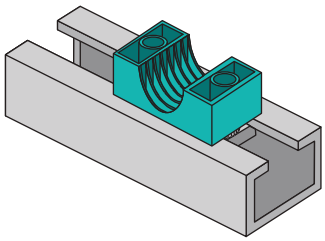
- Standard-Series
- Heavy-Series (Group H3 to H6)
- Twin-Series
- Beta Adapters

ZSi mounting rails are available in two different height sizes and are either welded or bolted to the supporting construction.

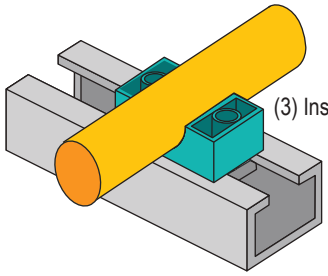
For Standard-Series and Twin-Series insert hexagon rail nut and turn to lock. For Heavy-Series slide in rail nut.



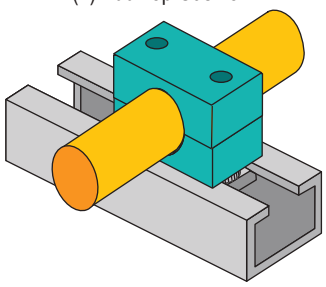
(1) Insert Appropriate Rail Nut and Turn to Lock



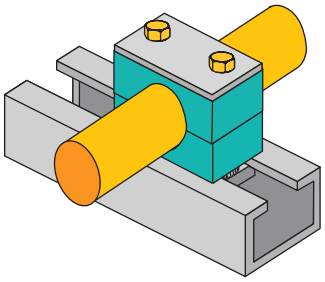
(2) Push Bottom Half of Clamp Onto Plate



(3) Install Pipe



(4) Add Top Cushion



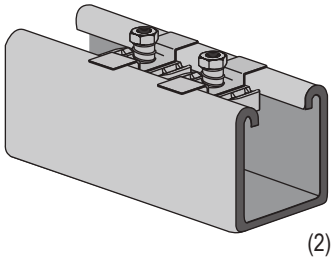
(5) Add Top Plate and Bolt Into Position

NOTE: The rail nut will slide within the rail so clamp units can be adjusted before being firmly bolted.

INSTALLATION ON Z-STRUT CHANNEL

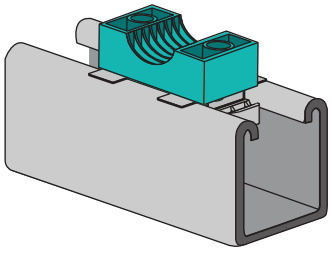
The Z-Strut Nuts can be used with any clamp using a 1/4-20 mounting bolt. This includes:

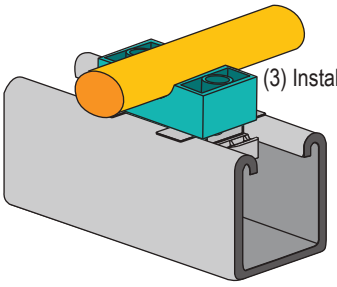
- Standard-Series
- Twin-Series (T1 Only)
- Beta Rubber Inserts



(1) Insert Z-Strut Nuts Into Z-Strut Channel And Turn to Lock

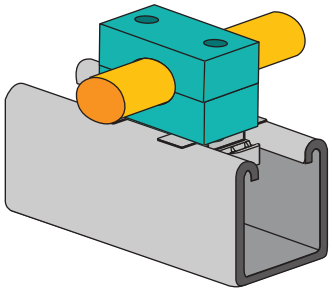
(2) Push Bottom Half of Clamp Onto Z-Strut Nuts



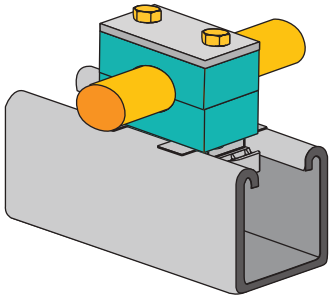


(3) Install Pipe

(4) Add Top Cushion



(5) Add Top Plate and Bolt Into Position



NOTE: The Z-Strut Nut will slide within the Z-Strut Channel so clamp units can be adjusted before being firmly bolted.

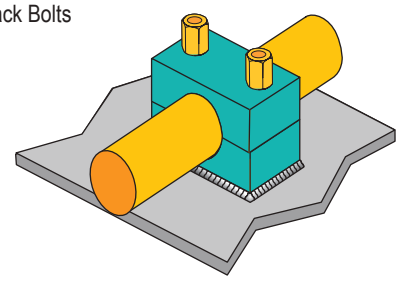
MULTI-LEVEL ASSEMBLY

ZSi multi-level pipe clamps permit easy stacking of several tubes or pipes of the same group. The clamps are connected by stacking bolts.

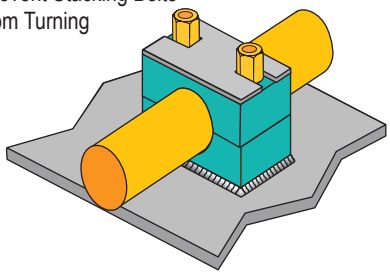
Safety plates are inserted between the clamps to prevent the stacking bolts from turning.

The example below shows a stacking clamp added to a welded clamp, however, ZSi stacking assemblies can be fitted to weld plates, rails, or strut in the same manner.

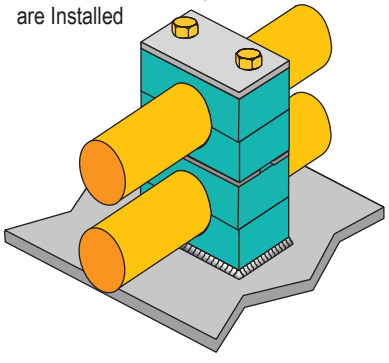
(1) After the Top Cushion is Added, Secure it with the Stack Bolts



(2) Add Safety Plate to Prevent Stacking Bolts from Turning



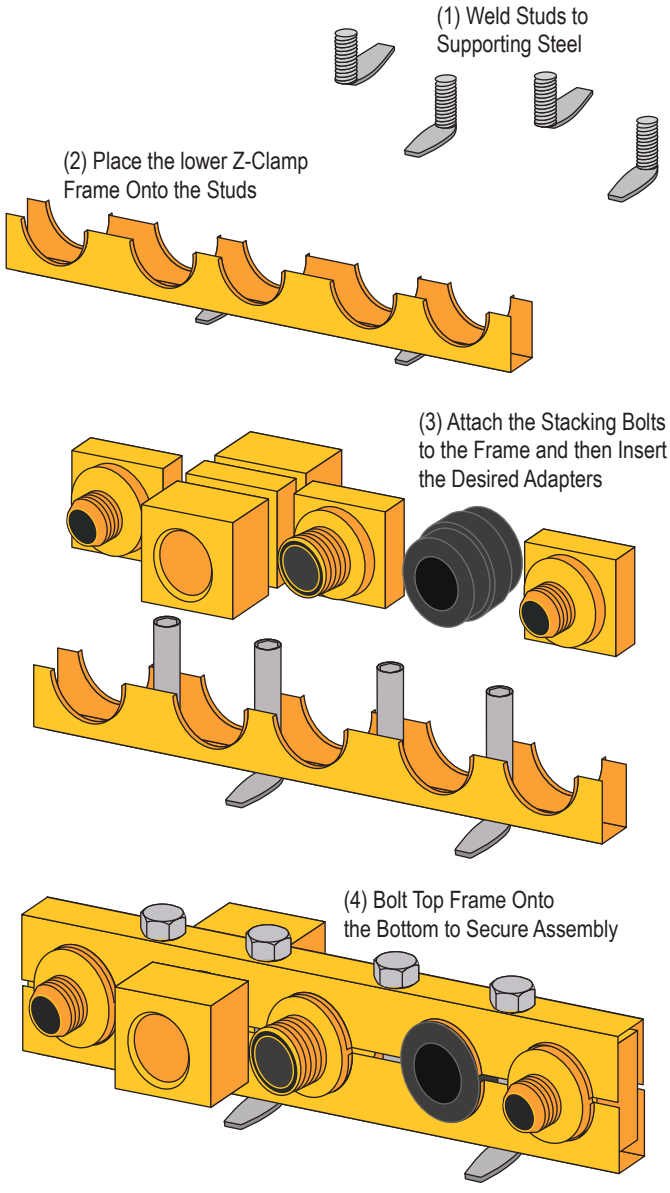
(2) Assemble Another Clamp Onto the Stacking Bolt in Same Manner as Single Clamps are Installed



Beta Clamp Installation

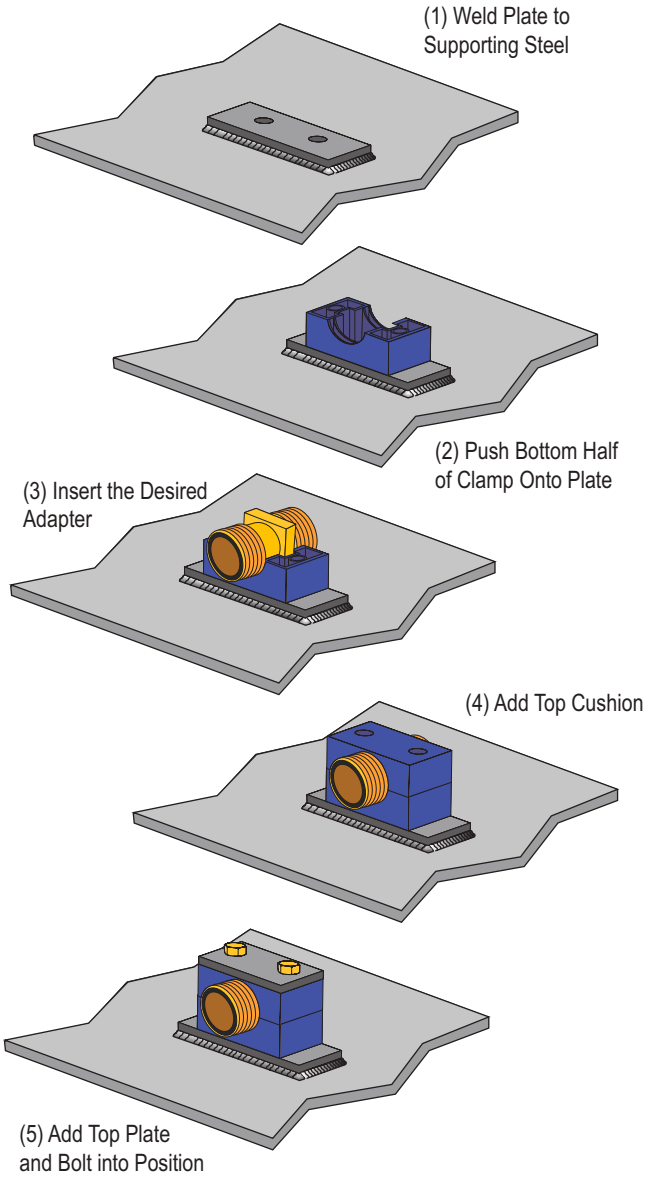
Installation of Z-Clamps

Z-Clamps are installed in much the same manner as Beta Clamps. The weld studs are welded onto exiting structure and the clamp assembled onto them.

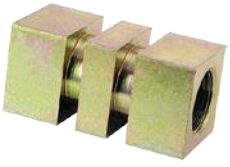


Installation of Beta Adapter

Beta Adapters are installed in much the same manner as Beta Clamps. The weld plate is welded onto existing structure and the Beta cushion and adapter is assembled onto it.



Z-CLAMP & BETA ADAPTER OPTIONAL ADAPTERS



FEMALE JUNCTION ADAPTER

O-RING FACE SEAL

37° FLARE MALE JUNCTION ADAPTER

RUBBER SPLIT BUSHINGS

Drill Sizes for NPT Pipe Taps		
Tap Size (In.)	Threads/ Inch	Drill Dia. (In.)
1/8	27	R
1/4	18	7/16
3/8	18	37/64
1/2	14	23/32
3/4	14	59/64
1	11 1/2	1 5/32
1 1/4	11 1/2	1 1/2
1 1/2	11 1/2	1 47/64
2	11 1/2	2 7/32
2 1/2	8	2 5/8
3	8	3 1/4
3 1/2	8	3 3/4
4	8	4 1/4

Tap & Drill Sizes (Unified National Coarse)		
Tap Size (In.)	Threads/ Inch	Drill Size (In.)
1/4	20	7
5/16	18	F
3/8	16	5/16
7/16	14	U
1/2	13	27/64
9/16	12	31/64
5/8	11	17/32
3/4	10	21/32
7/8	9	49/64
1	8	7/8
1 1/8	7	63/64
1 1/4	7	1 7/64
1 3/8	6	1 7/32
1 1/2	6	1 11/32
1 3/4	5	1 9/16
2	4 1/2	1 25/32

Standard Weight Pipe Data					
Nom. Diameter (In.)			Nom. Wt./Ft. (lbs.)	Length Containing One Cu. Ft.	Gallons / Linear Ft. (Gallons)
Pipe	Inside	Outside			
1/8	0.269	0.405	0.245	2,526.000	0.0030
1/4	0.364	0.540	0.425	1,383.800	0.0054
3/8	0.493	0.675	0.568	754.360	0.0099
1/2	0.622	0.840	0.851	473.910	0.0158
3/4	0.824	1.050	1.131	270.030	0.0277
1	1.049	1.315	1.679	166.620	0.0449
1 1/4	1.380	1.660	2.273	96.275	0.0777
1 1/2	1.610	1.900	2.718	70.733	0.1058
2	2.067	2.375	3.653	49.913	0.1743
2 1/2	2.469	2.875	5.793	30.077	0.2487
3	3.068	3.500	7.580	19.479	0.3840
3 1/2	3.548	4.000	9.110	14.565	0.5136
4	4.026	4.500	10.790	11.312	0.6613
5	5.047	5.563	14.620	7.198	1.0393
6	6.065	6.625	18.970	4.984	1.5008
8	7.981	8.625	28.550	2.878	2.5988
10	10.020	10.750	40.480	1.826	4.0963

Copper Tube Data - Type L					
Size (In.)	O.D. (In.)	O.D. (In.)	Wall Thick. (In.)	Weight per Foot (lbs)	Weight of Water / Ft. (lbs)
1/4	3/8	0.375	0.030	0.126	0.034
3/8	1/2	0.500	0.035	0.198	0.062
1/2	5/8	0.625	0.040	0.285	0.100
5/8	3/4	0.750	0.042	0.362	0.151
3/4	7/8	0.875	0.045	0.455	0.209
1	1 1/8	1.125	0.050	0.655	0.357
1 1/4	1 3/8	1.375	0.055	0.884	0.546
1 1/2	1 5/8	1.625	0.060	1.140	0.767
2	2 1/8	2.125	0.070	1.750	1.341
2 1/2	2 5/8	2.625	0.080	2.480	2.064
3	3 1/8	3.125	0.090	3.330	2.949
3 1/2	3 5/8	3.625	0.100	4.290	3.989
4	4 1/8	4.125	0.110	5.380	5.188
5	5 1/8	5.125	0.125	7.610	8.081
6	6 1/8	6.125	0.140	10.200	11.616
8	8 1/8	8.125	0.200	19.290	20.289
10	10 1/8	10.125	0.250	30.100	31.590
12	12 1/8	12.125	0.280	40.400	45.426

Copper Tube Data - Type K					
Size (In.)	O.D. (In.)	O.D. (In.)	Wall Thick. (In.)	Weight per Foot (lbs)	Weight of Water / Ft. (lbs)
1/4	3/8	0.375	0.035	0.145	0.032
3/8	1/2	0.500	0.049	0.269	0.055
1/2	5/8	0.625	0.049	0.344	0.094
5/8	3/4	0.750	0.049	0.418	0.144
3/4	7/8	0.875	0.065	0.641	0.188
1	1 1/8	1.125	0.065	0.839	0.337
1 1/4	1 3/8	1.375	0.065	1.040	0.527
1 1/2	1 5/8	1.625	0.072	1.360	0.743
2	2 1/8	2.125	0.083	2.060	1.310
2 1/2	2 5/8	2.625	0.095	2.920	2.000
3	3 1/8	3.125	0.109	4.000	2.960
3 1/2	3 5/8	3.625	0.120	5.120	3.900
4	4 1/8	4.125	0.134	6.510	5.060
5	5 1/8	5.125	0.160	9.670	8.000
6	6 1/8	6.125	0.192	13.870	11.200
8	8 1/8	8.125	0.271	25.900	19.500
10	10 1/8	10.125	0.338	40.300	30.423
12	12 1/8	12.125	0.405	57.800	43.675

Steel Pipe Data — Schedule No 40 & 80					
Nominal Size (In.)	O.D. (In.)	Schedule No.	Wall Thick. (In.)	Weight. per Foot (lbs)	Weight of Water per Foot (lbs)
3/8	0.675	40	0.091	0.567	0.083
		80	0.126	0.738	0.061
1/2	0.840	40	0.109	0.850	0.132
		80	0.147	1.087	0.101
3/4	1.050	40	0.113	1.130	0.230
		80	0.154	1.473	0.186
1	1.315	40	0.133	1.678	0.374
		80	0.179	2.171	0.311
1 1/4	1.660	40	0.140	2.272	0.647
		80	0.191	2.996	0.555
1 1/2	1.900	40	0.145	2.717	0.882
		80	0.200	3.631	0.765
2	2.375	40	0.154	3.652	1.452
		80	0.218	5.022	1.279
2 1/2	2.875	40	0.203	5.790	2.072
		80	0.276	7.660	1.834
3	3.500	40	0.216	7.570	3.200
		80	0.300	10.250	2.860
3 1/2	4.000	40	0.226	9.110	4.280
		80	0.318	12.510	3.850
4	4.500	40	0.237	10.790	5.510
		80	0.337	14.980	4.980
5	5.563	40	0.258	14.620	8.660
		80	0.375	20.780	7.870
6	6.625	40	0.280	18.970	12.510
		80	0.432	28.570	11.290
8	8.625	40	0.322	28.550	21.600
		80	0.500	43.390	19.800
10	10.750	40	0.365	40.480	34.100
		80	0.593	64.400	31.100
12	12.75	40	0.406	53.600	48.500
		80	0.687	88.600	44.000
14	14.000	40	0.437	63.000	58.500
		80	0.750	107.000	51.200
16	16.000	40	0.500	83.000	76.500
		80	0.843	137.000	69.700
18	18.000	40	0.563	105.000	97.200
		80	0.937	171.000	88.500
20	20.000	40	0.593	123.000	120.400
		80	1.031	209.000	109.400

PVC and CPVC Pipes - Schedule 40 (inches)					
Nominal Pipe Size	Outside Diameter	Minimum Wall Thickness	Nominal Inside Diameter	Weight (lb/100 ft)	
				PVC	CPVC
½	0.840	0.109	0.622	16	17
¾	1.050	0.113	0.824	21	23
1	1.315	0.133	1.049	32	34
1¼	1.660	0.140	1.380	43	46
1½	1.900	0.145	1.610	51	55
2	2.375	0.154	2.067	68	74
2½	2.875	0.203	2.469	107	118
3	3.500	0.216	3.068	141	154
4	4.500	0.237	4.026	201	220
5	5.563	0.258	5.047	273	–
6	6.625	0.280	6.065	353	386
8	8.625	0.322	7.981	539	581
10	10.750	0.365	10.020	755	824
12	12.750	0.406	11.938	1001	1089
14	14.000	0.438	13.124	1180	–
16	16.000	0.500	15.000	1543	–

PVC and CPVC Pipes - Schedule 80 (inches)					
Nominal Pipe Size	Outside Diameter	Minimum Wall Thickness	Nominal Inside Diameter	Weight (lb/100 ft)	
				PVC	CPVC
½	0.840	0.147	0.546	20	22
¾	1.050	0.154	0.742	27	30
1	1.315	0.179	0.957	41	44
1¼	1.660	0.191	1.278	52	61
1½	1.900	0.200	1.500	67	74
2	2.375	0.218	1.939	95	102
2½	2.875	0.276	2.323	145	156
3	3.500	0.300	2.900	194	209
4	4.500	0.337	3.826	275	305
5	5.563	0.375	4.813	387	–
6	6.625	0.432	5.761	542	582
8	8.625	0.500	7.625	805	883
10	10.750	0.593	9.564	1200	1309
12	12.750	0.687	11376	1650	180
14	14.000	0.750	12.500	1930	–
16	16.000	0.843	14.314	2544	–

PVC - Wall Schedule 40 - Support Spacing (feet)			
NPS (inches)	Operating Temperature (°F)		
	60	100	140
½	4½	4	2½
¾	5	4	2 ½
1	5½	4½	2½
1¼	5½	5	3
1½	6	5	3
2	6	5	3
3	7	6	3½
4	7½	6½	4
6	8½	7½	4½
8	9	8	4½

PVC - Wall Schedule 80 - Support Spacing (feet)			
NPS (inches)	Operating Temperature (°F)		
	60	100	140
½	5	4½	2½
¾	5½	4½	2½
1	6	5	3
1¼	6½	5½	3½
1½	7	6	3½
2	8	7	4
3	9	7½	4½
4	10	9	5
6	11	9½	5½
8	9	8	4½

Hydraulic Hose - No Skive SAE 100R1 Type AT				
SAE Number	Hose I.D.		Hose O.D.	
	(in.)	(mm)	(in.)	(mm)
SAE-3	3/16	5.0	0.46	12
SAE-4	1/4	6.3	0.53	13
SAE-5	5/16	8.0	0.59	15
SAE-6	3/8	10.0	0.68	17
SAE-8	1/2	12.5	0.81	21
SAE-10	5/8	16.0	0.94	24
SAE-12	3/4	19.0	1.09	28
SAE-16	1	25.0	1.41	36
SAE-20	1-1/4	31.5	1.79	45
SAE-24	1-1/2	38.0	2.00	51
SAE-32	2	51.0	2.54	64

Hydraulic Hose - No Skive SAE 100R2 Type AT - ISO 1436 Type 2AT - EN 853 Type 2SN				
SAE Number	Hose I.D.		Hose O.D.	
	(in.)	(mm)	(in.)	(mm)
SAE-4	1/4	6.3	0.53	13
SAE-5	5/16	8.0	0.59	15
SAE-6	3/8	10.0	0.68	17
SAE-8	1/2	12.5	0.81	21
SAE-10	5/8	16.0	0.94	24
SAE-12	3/4	19.0	1.09	28
SAE-16	1	25.0	1.41	36
SAE-20	1-1/4	31.5	1.79	45
SAE-24	1-1/2	38.0	2.00	51
SAE-32	2	51.0	2.54	64

Hydraulic Hose - SAE 100R16 Type AT				
SAE Number	Hose I.D.		Hose O.D.	
	(in.)	(mm)	(in.)	(mm)
SAE-4	1/4	6.3	0.53	13
SAE-5	5/16	8.0	0.59	15
SAE-6	3/8	10.0	0.68	17
SAE-8	1/2	12.5	0.81	21
SAE-10	5/8	16.0	0.94	24
SAE-12	3/4	19.0	1.09	28
SAE-16	1	25.0	1.41	36

Hydraulic Hose - No Skive SAE 100R17 Abrasion Resistant "Tough Cover" and "Super Tough" Cover				
SAE Number	Hose I.D.		Hose O.D.	
	(in.)	(mm)	(in.)	(mm)
SAE-4	1/4	6.3	0.53	13
SAE-6	3/8	10.0	0.68	17
SAE-8	1/2	12.5	0.81	21
SAE-10	5/8	16.0	0.94	24
SAE-12	3/4	19.0	1.09	28
SAE-16	1	25.0	1.41	36
SAE-20	1-1/4	31.5	1.79	45

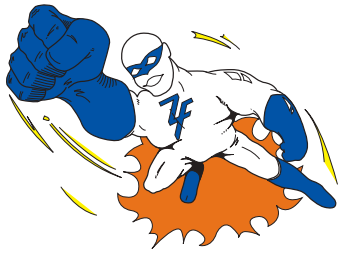
Fraction Conversion Table

Fractions	Decimal (in)	Metric (mm)
1/64	0.016	0.40
1/32	0.031	0.79
	0.039	1
3/64	0.047	1.19
1/16	0.063	1.59
5/64	0.078	1.98
	0.079	2
3/32	0.094	2.38
7/64	0.109	2.78
	0.118	3
1/8	0.125	3.18
9/64	0.141	3.57
5/32	0.156	3.97
	0.157	4
11/64	0.172	4.37
3/16	0.188	4.76
	0.197	5
13/64	0.203	5.16
7/32	0.219	5.56
15/64	0.234	5.95
	0.236	6
1/4	0.250	6.35
17/64	0.266	6.75
	0.276	7
9/32	0.281	7.14
19/64	0.297	7.54
5/16	0.313	7.94
	0.315	8
21/64	0.328	8.33
11/32	0.344	8.73
	0.354	9
23/64	0.359	9.13
3/8	0.375	9.53
25/64	0.391	9.92
	0.394	10
13/32	0.406	10.32
27/64	0.422	10.72
	0.433	11
7/16	0.438	11.11
29/64	0.453	11.51
15/32	0.469	11.91
	0.472	12
31/64	0.484	12.30
1/2	0.500	12.70
	0.512	13
33/64	0.516	13.10
17/32	0.531	13.49
35/64	0.547	13.89
	0.551	14
9/16	0.563	14.29
37/64	0.578	14.68
	0.591	15
19/32	0.594	15.08
39/64	0.609	15.48
5/8	0.625	15.88
	0.630	16
41/64	0.641	16.27
21/32	0.656	16.67
	0.669	17
43/64	0.672	17.07
11/16	0.688	17.46
45/64	0.703	17.86
	0.709	18
23/32	0.719	18.26
47/64	0.734	18.65
	0.748	19
3/4	0.750	19.05
49/64	0.766	19.45
25/32	0.781	19.84

Fractions	Decimal (in)	Metric (mm)
	0.787	20
51/64	0.797	20.24
13/16	0.813	20.64
53/64	0.828	21.03
27/32	0.844	21.43
55/64	0.859	21.83
7/8	0.875	22.23
57/64	0.891	22.62
29/32	0.906	23
59/64	0.922	23.42
15/16	0.938	23.81
61/64	0.953	24.21
31/32	0.969	24.61
63/64	0.984	25
1	1	25.40
1 1/32	1.031	26.19
1 1/16	1.063	26.99
1 3/32	1.094	27.78
1 1/8	1.125	28.58
1 5/32	1.156	29.37
	1.181	30
1 3/16	1.188	30.16
1 7/32	1.219	30.96
1 1/4	1.250	31.75
1 9/32	1.281	32.54
1 5/16	1.313	33.34
1 11/32	1.344	34.13
1 3/8	1.375	34.93
	1.378	35
1 13/32	1.406	35.72
1 7/16	1.438	36.51
1 15/32	1.469	37.31
1 1/2	1.500	38.10
1 17/32	1.531	38.89
1 9/16	1.563	39.69
	1.575	40
1 19/32	1.594	40.48
1 5/8	1.625	41.28
1 21/32	1.656	42.07
1 11/16	1.688	42.86
1 23/32	1.719	43.66
1 3/4	1.750	44.45
	1.772	45
1 25/32	1.781	45.24
1 13/16	1.813	46.04
1 27/32	1.844	46.83
1 7/8	1.875	47.63
1 29/32	1.906	48.42
1 15/16	1.938	49.21
	1.969	50
1 31/32	1.969	50.01
2	2	50.80
2 1/32	2.031	51.59
2 1/16	2.063	52.39
2 3/32	2.094	53.18
2 1/8	2.125	53.98
2 5/32	2.156	54.77
	2.165	55
2 3/16	2.188	55.56
2 7/32	2.219	56.36
2 1/4	2.250	57.15
2 9/32	2.281	57.94
2 5/16	2.313	58.74
2 11/32	2.344	59.53
	2.362	60
2 3/8	2.375	60.33
2 13/32	2.406	61.12
2 7/16	2.438	61.91
2 15/32	2.469	62.71

Fractions	Decimal (in)	Metric (mm)
2 1/2	2.500	63.50
2 17/32	2.531	64.29
	2.559	65
2 9/16	2.563	65.09
2 19/32	2.594	65.88
2 5/8	2.625	66.68
2 21/32	2.656	67.47
2 11/16	2.688	68.26
2 23/32	2.719	69.06
2 3/4	2.750	69.85
	2.756	70
2 25/32	2.781	70.64
2 13/16	2.813	71.44
2 27/32	2.844	72.23
2 7/8	2.875	73.03
2 29/32	2.906	73.82
2 15/16	2.938	74.61
	2.953	75
2 31/32	2.969	75.41
3	3	76.20
3 1/32	3.031	76.99
3 1/16	3.063	77.79
3 3/32	3.094	78.58
3 1/8	3.125	79.38
	3.150	80
3 5/32	3.156	80.17
3 3/16	3.188	80.96
3 7/32	3.219	81.76
3 1/4	3.250	82.55
3 9/32	3.281	83.34
3 5/16	3.313	84.14
3 11/32	3.344	84.93
	3.346	85
3 3/8	3.375	85.73
3 13/32	3.406	86.52
3 7/16	3.438	87.31
3 15/32	3.469	88.11
3 1/2	3.500	88.90
3 17/32	3.531	89.69
	3.543	90
3 9/16	3.563	90.49
3 19/32	3.594	91.28
3 5/8	3.625	92.08
3 21/32	3.656	92.87
3 11/16	3.688	93.66
3 23/32	3.719	94.46
	3.740	95
3 3/4	3.750	95.25
3 25/32	3.781	96.04
3 13/16	3.813	96.84
3 27/32	3.844	97.63
3 7/8	3.875	98.43
3 29/32	3.906	99.22
	3.937	100
3 15/16	3.938	100.01
3 31/32	3.969	100.81
4	4	101.60
4 1/16	4.063	103.19
4 1/8	4.125	104.78
4 3/16	4.188	106.36
4 1/4	4.250	107.95
4 5/16	4.313	109.54
	4.331	110
4 3/8	4.375	111.13
4 7/16	4.438	112.71
4 1/2	4.500	114.30
4 9/16	4.563	115.89
4 5/8	4.625	117.48
4 11/16	4.688	119.06

Fractions	Decimal (in)	Metric (mm)
	4.724	120
4 3/4	4.750	120.65
4 13/16	4.813	122.24
4 7/8	4.875	123.83
4 15/16	4.938	125.41
5	5	127.00
	5.118	130
5 1/4	5.250	133.35
5 1/2	5.500	139.70
	5.512	140
5 3/4	5.750	146.05
	5.906	150
6	6	152.40
6 1/4	6.250	158.75
	6.299	160
6 1/2	6.500	165.10
	6.693	170
6 3/4	6.750	171.45
7	7	177.80
	7.087	180
	7.480	190
7 1/2	7.500	190.50
	7.874	200
8	8	203.20
8 1/2	8.500	215.90
9	9	228.60
9 1/2	9.500	241.30
	9.843	250
10	10	254.00
11	11	279.40
	11.811	300
12	12	304.80
13	13	330.20
	13.780	350
14	14	355.60
15	15	381.00
	15.748	400
16	16	406.40
17	17	431.80
	17.717	450
18	18	457.20
19	19	482.60
	19.685	500
20	20	508.00



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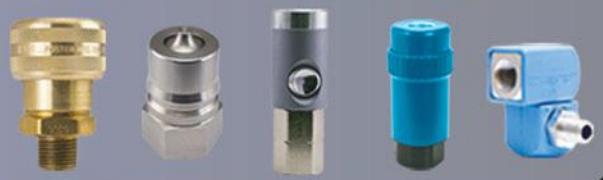

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