



# CUSHIONED CLAMPING SYSTEMS



## 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 68 - 70)

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.

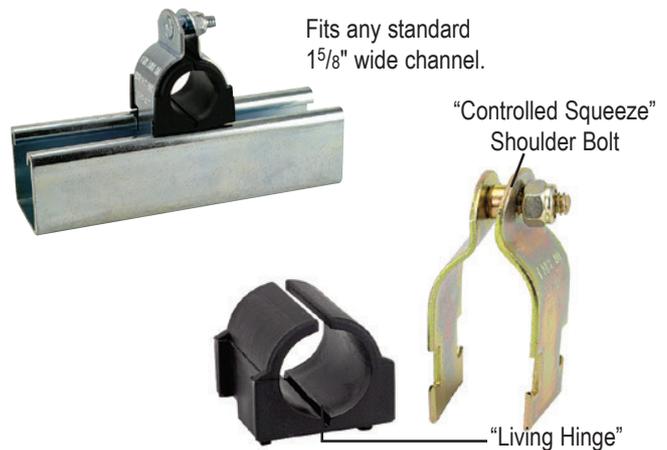
It is also a perfect solution for retrofit since the clamp can be installed on a pipe that is already resting on the channel support.



### CUSH-A-CLAMP® (See Page 71)

**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.



**OMEGA SERIES™** – 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.

### OMEGA SERIES™ (See Page 77)



**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.

### CUSH-A-CLAW (See Page 72)



**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

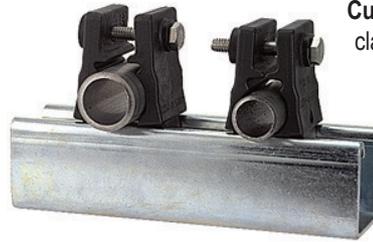
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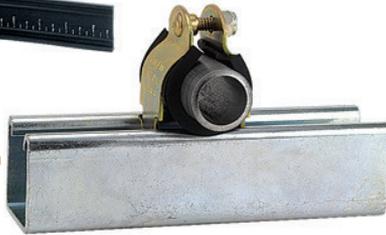
**Cush-A-Clip** is a simple, economical lightweight hanger for supporting tubing. The secure but non-tightening design allows for expansion, greatly reducing joint fractures

## CUSH-A-GRIP

(See Page 74)



**Cush-A-Grip** non-metallic strut clamps allow quick and easy corrosion resistant 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 75)

**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 1/4" 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 76)



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 78)



**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 79)



## 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.





## A NEW BREAKTHROUGH IN CUSHIONED CLAMPING DEVELOPED BY INDUSTRY LEADER ZSI

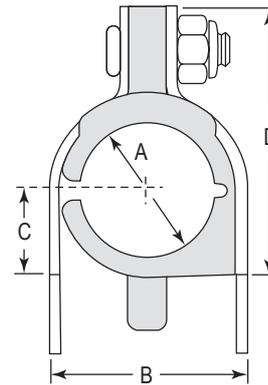


Cush-A-Nator "Cool Blue"

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.

#### **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.

Installation examples shown on page 8



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

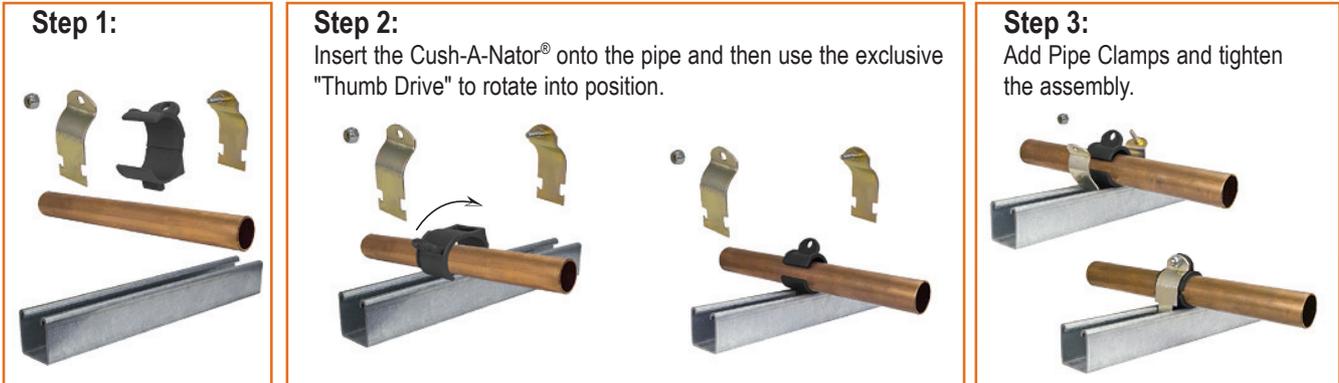
Cush-A-Nator® Standard - Pipe							
Part No.			Pipe Size	Dimensions (inches)			
Steel	SS304	SS316		A	B	C	D
CN14P	CN14PSS	CN14PS6	1/2"	0.840	1.29	0.58	1.82
CN17P	CN17PSS	CN17PS6	3/4"	1.050	1.57	0.70	2.08
CN21P	CN21PSS	CN21PS6	1"	1.315	1.76	0.81	2.34
CN30P	CN30PSS	CN30PS6	1 1/2"	1.900	2.32	1.09	2.86
CN38P	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

Contact Factory for Additional Sizes



## Cush-A-Nator® – New Installations



## 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!**

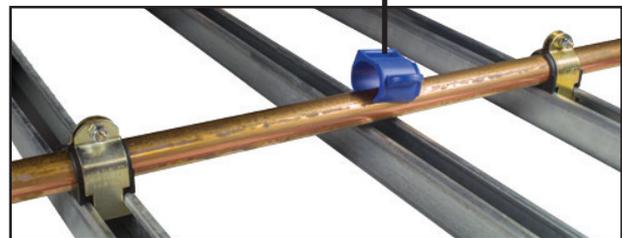
### Retrofit - The Common Problem

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 too often a work-around is used which compromises the connection.

### Retrofit - The Perfect Solution

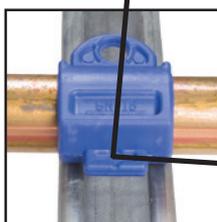
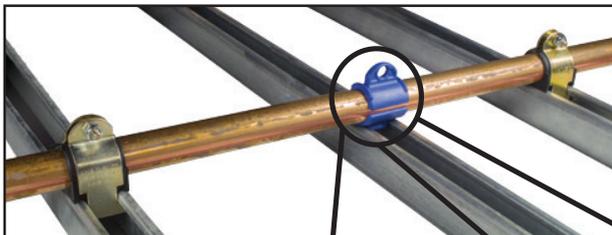
**Step 1:** Remove Bad Cushion.

**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.

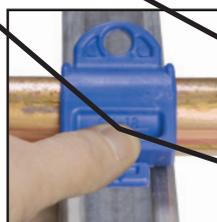


**Step 3:** Rotated into place while on the channel and the Self-Alignment tab automatically aligns with the channel opening ready for clamping.

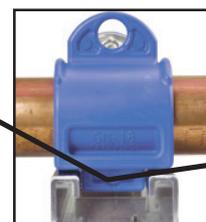
**Step 3:** Add Pipe Clamps and tighten the assembly.



Rotate into Position



Thumb Drive

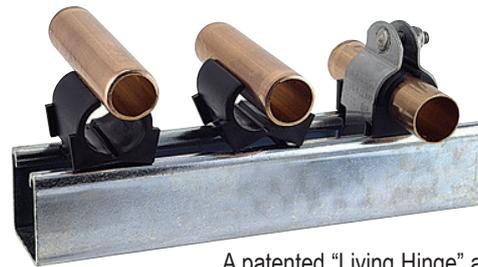


"Self-Alignment"



Gold Electro-Galvanized Steel

Stainless Steel



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

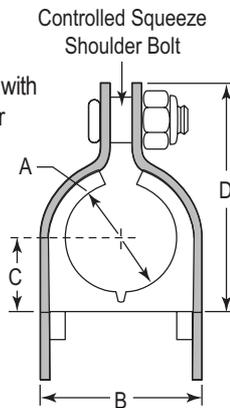
**CUSH-A-CLAMP®** — Channel mounted clamping systems are ideal for multiple line runs, while absorbing shock and vibration, reducing unwanted noise and preventing galvanic corrosion. Cush-A-Clamp® fits any standard 1-5/8" wide channel.

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".



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.

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)



# CUSH-A-CLAW



Strut Mounted

Insert	Twist & Lock	Position Pipe	Snap In



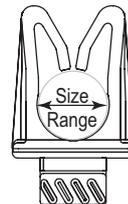
Surface Mounted

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		Strut Mount Part #	Surface Mount Part #	Size	
		O.D.	In.			O.D.	In.
CL-04	CLS-04	1/4"	0.250	EMT-1/2	EMTS-1/2	1/2"	0.706
CL-06	CLS-06	3/8"	0.375	EMT-3/4	EMTS-3/4	3/4"	0.922
CL-08	CLS-08	1/2"	0.500	EMT-1	EMTS-1	1"	1.163
CL-10	CLS-10	5/8"	0.625				
CL-12	CLS-12	3/4"	0.750				
CL-14	CLS-14	7/8"	0.875				
CL-18	CLS-18	1 1/8"	1.125				



75 Lbs. Load  
(safety Factor 3)



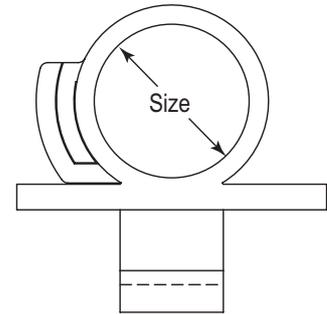
Cush-A-Claw® is manufactured under U.S. patent D631739

## CUSH-A-CLIP



A SIMPLE, ECONOMICAL,  
LIGHTWEIGHT HANGER FOR  
SUPPORTING TUBING

- Manufactured from polyamide alloy
- U.L. Rated
- Sizes from 3/8" to 1 1/8"
- 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

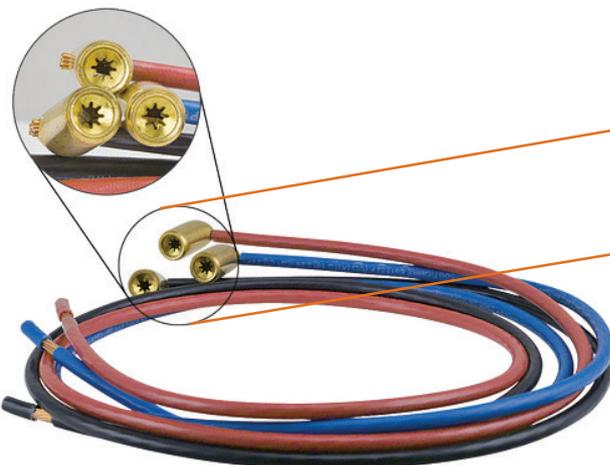


Part Number	Tube Sizes Only	
	O.D.	In.
RPC-3/8	3/8"	0.375"
RPC-1/2	1/2"	0.500"
RPC-5/8	5/8"	0.625"
RPC-3/4	3/4"	0.750"
RPC-7/8	7/8"	0.875"
RPC-1-1/8	1-1/8"	1.125"

## 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.

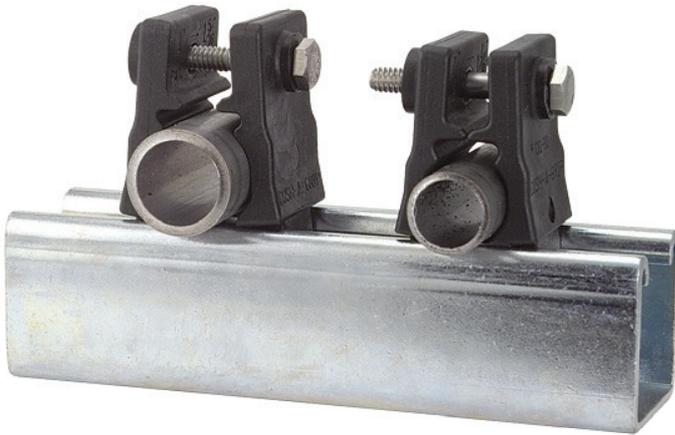
- Two layers of "Lok"ing technology
- No need for tools
- Easily replaces damaged wire leads
- Installs in under five minutes
- Part number is GL-1000



Patent #: 7854635



# CUSH-A-GRIP



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.

## FEATURES

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

## ADVANTAGES

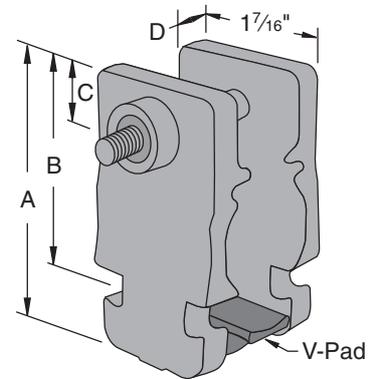
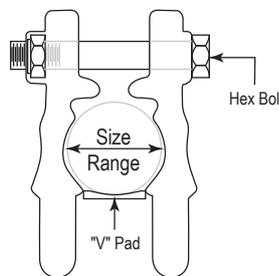
- Reduces inventory SKU's
- Simplifies take-offs and requirements on projects using both tube and pipe sizes
- Easy installation, Non conducting
- Permissible outdoors
- Temperature range: -40°F to +380°F
- No galvanic reaction, Will not rust

## 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



Patented Product



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 1/4" 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 1/4" tube to 6" pipe.



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



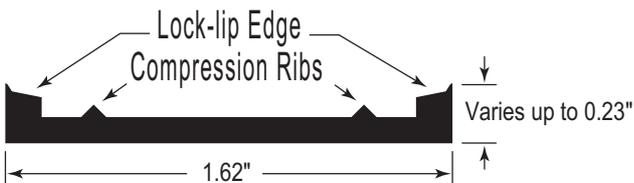
(2) Place the pipe on the Cush-A-Strip™



(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	1/2"	1/4"	-	7/8
N010C	NS010	5/8"	3/8"	-	1-1/8
N012C	NS012	3/4"	1/2"	1/4"	1-1/2
N014C	NS014	7/8"	5/8"	3/8"	2
N016C	NS016	1"	3/4"	-	2-1/4
N018C	NS018	1-1/8"	7/8"	1/2"	3
N020C	NS020	1-1/4"	1"	3/4"	3-1/4
N022C	NS022	1-3/8"	1-1/8"	-	3-5/8
N024C	NS024	1-1/2"	1-3/16"	-	3-7/8
N024C	NS024	1-1/2"	1-1/4"	1"	4
N026C	NS026	1-5/8"	1-3/8"	-	4-1/2
N028C	NS028	1-3/4"	1-1/2"	-	4-7/8
N030C	CS030	1-7/8"	1-5/8"	1-1/4"	5-1/4
N032C	CS032	2"	1-3/4"	-	5-1/2
N034C	CS034	2-1/8"	1-7/8"	1-1/2"	6
N036C	CS036	2-1/4"	2"	-	6-3/8
N038C	CS038	2-3/8"	2-1/8"	-	6-3/4
N040C	CS040	2-1/2"	2-1/4"	-	7-1/4
N042C	CS042	2-5/8"	2-3/8"	2"	7-1/2
N044C	CS044	2-3/4"	2-1/2"	-	8
N048C	CS048	3"	2-3/4"	-	8-3/4
N050C	CS050	3-1/8"	2-7/8"	2-1/2"	9-1/4
N054C	CS054	3-1/4"	3"	-	9-1/2
N060C	CS060	3-3/4"	3-1/2"	3"	11
N068C	CS068	4-1/4"	4"	3-1/2"	12-1/4
N076C	CS076	4-3/4"	4-1/2"	4"	14
N092C	CS092	5-3/4"	-	5"	15-1/2
N110C	CS110	6-7/8"	-	6"	18-1/2

\* Gold Plated Steel Clamps Supplied with Fixed Stud and Nylon Lock Nut  
 \* Stainless Steel Clamps Supplied with fixed Stud and Nylon Lock Nut from 1/2" through 1-3/4" Sizes and 1-7/8" through 6-7/8" Sizes are supplied with a Loose Bolt and Hex Nut



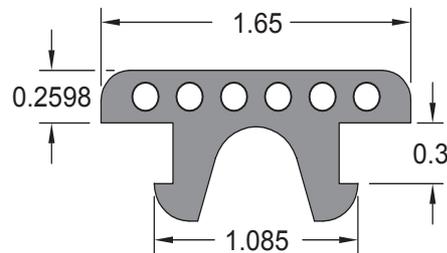
# AIRSTRIP



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.

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

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



Installs simply by pushing into place

To remove, squeeze the tabs at the end and push up





Gold Electro-Galvanized Steel

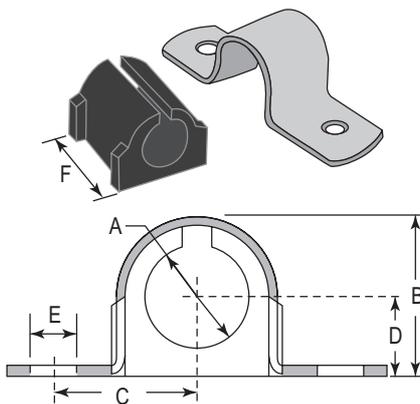


Stainless Steel

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.

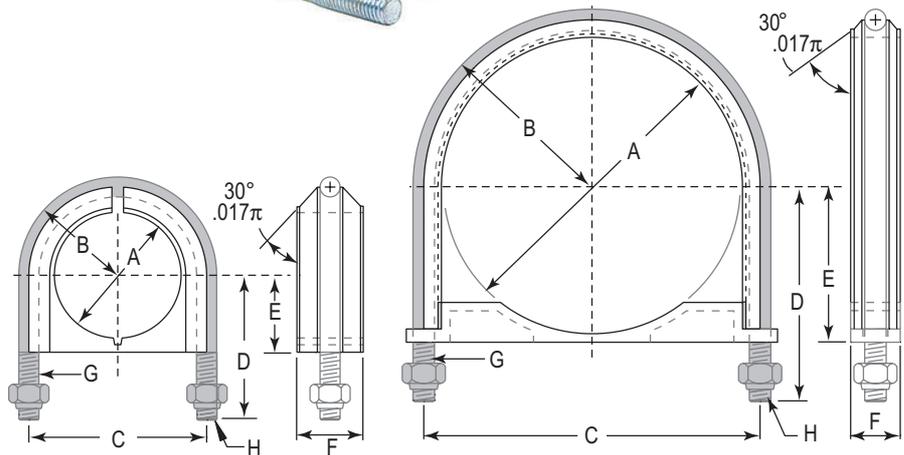


# ALPHA SERIES™



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.

**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

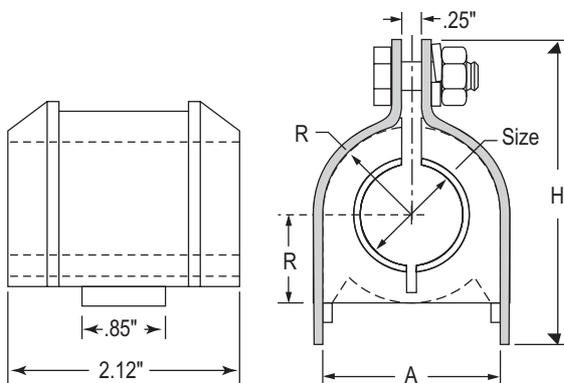
Assy. Part No.	Tube Size (O.D.)	Dimensions (Inches)								Torque	Design Load	Slip Through
		A Dia.	B Radius	C	D	E	F	G	H			
UB7/8TA	7/8"	0.875	0.80	1.60	1.50	0.67	0.68	1/4	1/4-20 UNC-2B	100	485	500
UB1TA	1"	1.00	0.90	1.80	1.60	0.78	0.68	1/4	1/4-20 UNC-2B	100	485	500
UB11/4TA	1-1/4"	1.25	1.02	2.05	1.70	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

↓ 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	 	UB1/2PAN6
N	Electro-galvanized		UB1/2PAN
NH	Electro-galvanized		UB1/2PANH
NH6	Stainless Steel, Type 316		UB1/2PANH6



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

SUFFIX	Note: All clamps have Silicon Bronze Hardware		
	Clamp	Cushion	Example
Z	Plated Steel	Flame Retardant	006CC018Z
S	Stainless Steel	Flame Retardant	006CC018S
ZH	Plated Steel	Flame Retardant Halogen Free	006CC018ZH
SH	Stainless Steel	Flame Retardant Halogen Free	006CC018SH



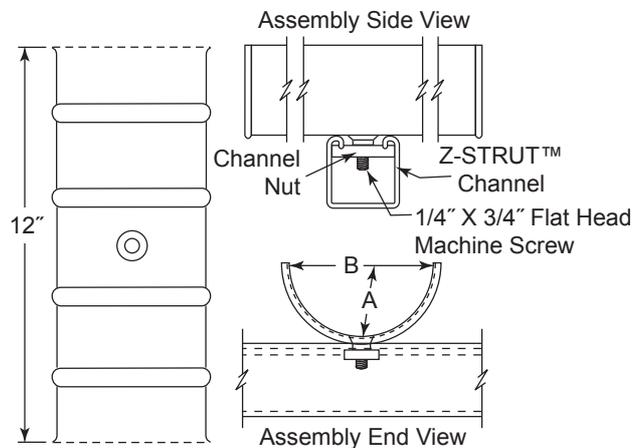
## INSULATION SADDLE

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 1 1/2" 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.

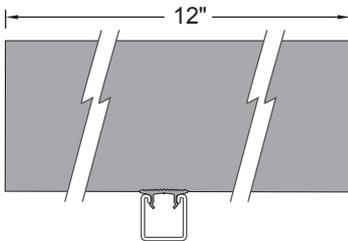
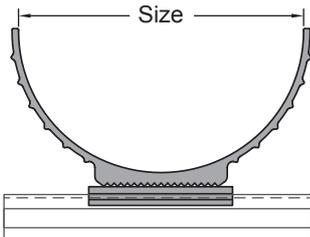


Dimensions (Inches)			1/2" Insulation		3/4" Insulation		1" Insulation		1 1/2" Insulation	
Part Number	B Width	A Radius	OD Tube Size	OD With Insulation	OD Tube Size	OD With Insulation	OD Tube Size	OD With Insulation	OD Tube Size	OD With Insulation
SD150	1 1/2	3/4	3/8	1 3/8	-	-	-	-	-	-
			1/2	1 1/2	-	-	-	-	-	-
SD200	2	1	5/8	1 5/8	3/8	1 7/8	-	-	-	-
			3/4	1 3/4	1/2	2	-	-	-	-
			7/8	1 7/8	-	-	-	-	-	-
SD250	2 1/2	1 1/4	1 1/8	2 1/8	5/8	2 1/8	3/8	2 3/8	-	-
			1 3/8	2 3/8	3/4	2 1/4	1/2	2 1/2	-	-
			-	-	7/8	2 3/8	-	-	-	-
SD300	3	1 1/2	1 5/8	2 5/8	1 1/8	2 5/8	5/8	2 5/8	-	-
			-	-	1 3/8	2 7/8	3/4	2 3/4	-	-
			-	-	-	-	7/8	2 7/8	-	-
SD350	3 1/2	1 3/4	2 1/8	3 1/8	1 5/8	3 1/8	1 1/8	3 1/8	3/8	3 3/8
			2 3/8	3 3/8	-	-	1 3/8	3 3/8	1/2	3 1/2
SD450	4 1/2	2 1/4	2 5/8	3 5/8	2 1/8	3 5/8	1 5/8	3 5/8	5/8	3 5/8
			-	-	2 3/8	3 7/8	-	-	3/4	3 3/4
			3 1/8	4 1/8	2 5/8	4 1/8	2 1/8	4 1/8	1 1/8	4 1/8
			-	-	-	-	2 3/8	4 3/8	1 3/8	4 3/8
SD550	5 1/2	2 3/4	3 5/8	4 5/8	3 1/8	4 5/8	2 5/8	4 5/8	1 5/8	4 5/8
			4 1/8	5 1/8	3 5/8	5 1/8	3 1/8	5 1/8	2 1/8	5 1/8
			-	-	-	-	-	-	2 3/8	5 3/8
SD650	6 1/2	3 1/4	-	-	4 1/8	5 5/8	3 5/8	5 5/8	2 5/8	5 5/8
			-	-	-	-	4 1/8	6 1/8	3 1/8	6 1/8

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



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"



- 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



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"					
¾"					
1"	S*325	S*425	S*525	S*625	
1-¼"					
1-½"					
2"	S*425	S*525	S*625	S*825	
2-½"					
3"	S*525	S*625	S*825		
3-½"					
4"	S*625	S*825			

\* 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"					
1"					
1-¼"	S*325	S*425	S*525	S*625	
1-½"					
2"	S*425	S*525	S*625	S*825	
2-½"					
3"	S*525	S*625	S*825		
3-½"					
4"	S*625	S*825			

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



# AIRTIGHT CRUSH-RESISTANT INSULATION CLAMP

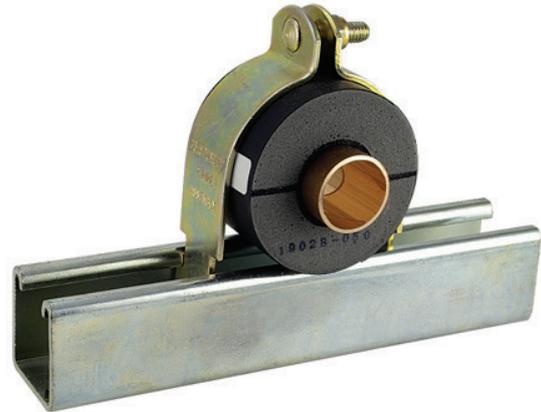


**Cush-A-Therm™ Clamp** is a perfect crush-resistant airtight seal for chilled refrigeration or mechanical pipe lines that require continuous insulation.

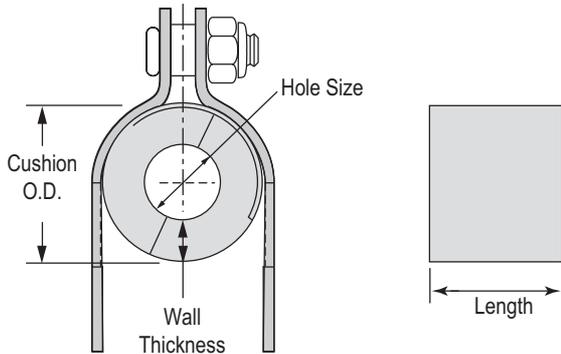
The rigid foam construction has an insulating tape inner lining which supports tube and absorbs vibration of operating pipe lines.

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.



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



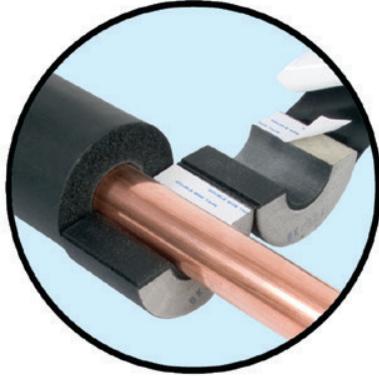
### FEATURES

- 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

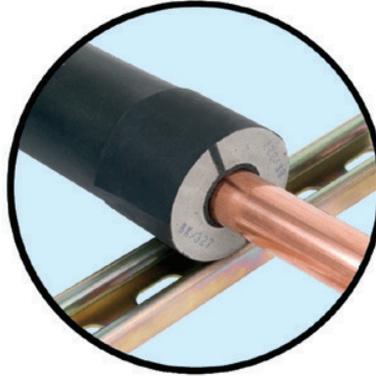
Dimensions (Inches)					Nominal 1/2" Wall Thickness		Nominal 3/4" Wall Thickness		Nominal 1" Wall Thickness		Nominal 1-1/2" Wall Thickness		Nominal 2" Wall Thickness	
Hole Size	Copper I.D.	Pipe O.D.	IPS	Len.	Part No.	Cushion O.D.	Part No.	Cushion O.D.	Part No.	Cushion O.D.	Part No.	Cushion O.D.	Part No.	Cushion O.D.
1/4	-	1/4	-	2.953"	<b>UX1412</b>	1 1/4 (1.250")	<b>UX1434</b>	1 3/4 (1.750")	<b>UX1410</b>	2 1/4 (2.250")			-	
3/8	1/4	3/8	-	2.953"	<b>UX3812</b>	1 3/8 (1.375")	<b>UX3834</b>	1 7/8 (1.875")	<b>UX3810</b>	2 3/8 (2.375")	<b>UX3815</b>	3 3/8 (3.375")	-	
1/2	3/8	1/2	1/4	2.953"	<b>UX1212</b>	1 1/2 (1.500")	<b>UX1234</b>	2 (2.000")	<b>UX1210</b>	2 1/2 (2.500")	<b>UX1215</b>	3 1/2 (3.500")	-	
5/8	1/2	5/8	3/8	2.953"	<b>UX5812</b>	1 5/8 (1.625")	<b>UX5834</b>	2 1/8 (2.125")	<b>UX5810</b>	2 5/8 (2.625")	<b>UX5815</b>	3 5/8 (3.625")	<b>UX5820</b>	4 5/8 (4.625")
3/4	5/8	3/4	-	2.953"	<b>UX3412</b>	1 3/4 (1.750")	<b>UX3434</b>	2 1/4 (2.250")	<b>UX3410</b>	2 3/4 (2.750")	<b>UX3415</b>	3 3/4 (3.750")	<b>UX3420</b>	4 3/4 (4.750")
7/8	3/4	7/8	1/2	2.953"	<b>UX7812</b>	1 7/8 (1.875")	<b>UX7834</b>	2 3/8 (2.375")	<b>UX7810</b>	2 7/8 (2.875")	<b>UX7815</b>	3 7/8 (3.875")	<b>UX7820</b>	4 7/8 (4.875")
1-1/8	1	1 1/8	3/4	2.953"	<b>UX11812</b>	2 1/8 (2.125")	<b>UX11834</b>	2 5/8 (2.625")	<b>UX11810</b>	3 1/8 (3.125")	<b>UX11815</b>	4 1/8 (4.125")	<b>UX11820</b>	5 1/8 (5.125")
1-3/8	1 1/4	1 3/8	1	2.953"	<b>UX13812</b>	2 3/8 (2.375")	<b>UX13834</b>	2 7/8 (2.875")	<b>UX13810</b>	3 3/8 (3.375")	<b>UX13815</b>	4 3/8 (4.375")	<b>UX13820</b>	5 3/8 (5.375")
1-5/8	1 1/2	1 5/8	1 1/4	2.953"	<b>UX15812</b>	2 5/8 (2.625")	<b>UX15834</b>	3 1/8 (3.125")	<b>UX15810</b>	3 5/8 (3.625")	<b>UX15815</b>	4 5/8 (4.625")	<b>UX15820</b>	5 5/8 (5.625")
1-7/8	-	1 7/8		2.953"	<b>UX17812</b>	2 7/8 (2.875")	<b>UX17834</b>	3 3/8 (3.375")	<b>UX17810</b>	3 7/8 (3.875")	<b>UX17815</b>	4 7/8 (4.875")	<b>UX17820</b>	5 7/8 (5.875")
2-1/8	2	2 1/8	-	2.953"	<b>UX21812</b>	3 1/8 (3.125")	<b>UX21834</b>	3 5/8 (3.625")	<b>UX21810</b>	4 1/8 (4.125")	<b>UX21815</b>	5 1/8 (5.125")	<b>UX21820</b>	6 1/8 (6.125")
2-3/8	2 1/4	2 3/8	2	2.953"	<b>UX23812</b>	3 3/8 (3.375")	<b>UX23834</b>	3 7/8 (3.875")	<b>UX23810</b>	4 3/8 (4.375")	<b>UX23815</b>	5 3/8 (5.375")	<b>UX23820</b>	6 3/8 (6.375")
2-5/8	2 1/2	2 5/8	-	3.937"	<b>UX25812</b>	3 5/8 (3.625")	<b>UX25834</b>	4 1/8 (4.125")	<b>UX25810</b>	4 5/8 (4.625")	<b>UX25815</b>	5 5/8 (5.625")	<b>UX25820</b>	6 5/8 (6.625")
2-7/8	-	2 7/8	2 1/2	3.937"	<b>UX27812</b>	3 7/8 (3.875")	<b>UX27834</b>	4 3/8 (4.375")	<b>UX27810</b>	4 7/8 (4.875")	<b>UX27815</b>	5 7/8 (5.875")	<b>UX27820</b>	6 7/8 (6.875")
3-1/8	3	3 1/8	-	3.937"	<b>UX31812</b>	4 1/8 (4.125")	<b>UX31834</b>	4 5/8 (4.625")	<b>UX31810</b>	5 1/8 (5.125")	<b>UX31815</b>	6 1/8 (6.125")	<b>UX31820</b>	7 1/8 (7.125")
3-1/2	-	3 1/2	3	3.937"	<b>UX31212</b>	4 1/2 (4.500")	<b>UX31234</b>	5 (5.000")	<b>UX31210</b>	5 1/2 (5.500")	<b>UX31215</b>	6 1/2 (6.500")	<b>UX31220</b>	7 1/2 (7.500")
3-5/8	3 1/2	3 5/8	-	3.937"	<b>UX35812</b>	4 5/8 (4.625")	<b>UX35834</b>	5 1/8 (5.125")	<b>UX35810</b>	5 5/8 (5.625")	<b>UX35815</b>	6 5/8 (6.625")	<b>UX35820</b>	7 5/8 (7.625")
4-1/8	4	4 1/8	3 1/2	3.937"	<b>UX41812</b>	5 1/8 (5.125")	<b>UX41834</b>	5 5/8 (5.625")	<b>UX41810</b>	6 1/8 (6.125")	<b>UX41815</b>	7 1/8 (7.125")	<b>UX41820</b>	8 1/8 (8.125")

## AIRTIGHT CRUSH-RESISTANT INSULATION CLAMP

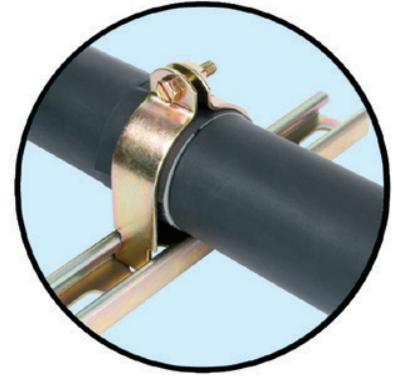
INSTALLATION IS AS EASY AS 1-2-3!



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



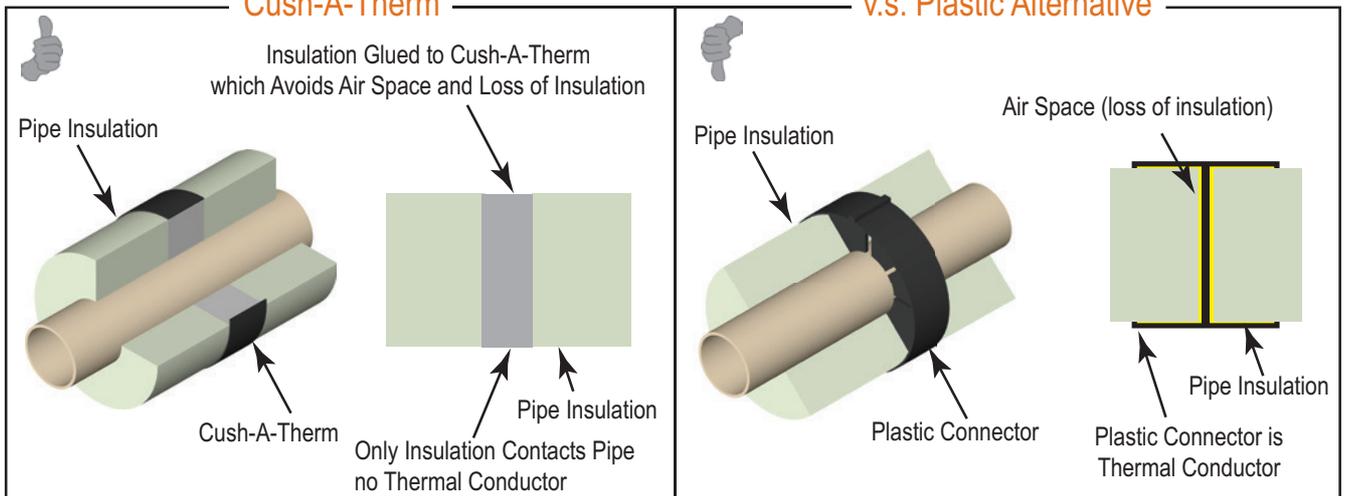
2 Put in place and glue to insulation.



3. Wrap and seal with ProTape.

### Cush-A-Therm

### v.s. Plastic Alternative



### 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
1/2"	51
3/4"	62
1"	72
1-1/4"	92
1-1/2"	123
2"	164
2-1/2"	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"	1 1/2"	2"	2 1/2"	3"	4"
1/2" to 1 1/2"	4"				6"	
2"	6"					
2-1/2" 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 Request

#### 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.

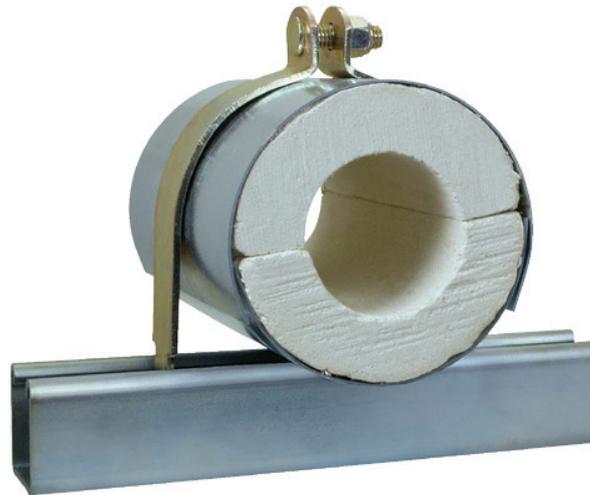
Sheet Metal Gauge <sup>1</sup>						
I.P.S. NOMINAL	Insulation Thickness					
	1"	1 1/2"	2"	2 1/2"	3"	4"
1/2" to 1-1/2"	24			20		
2" to 5"	20					
6"	20			16		
8" to 24"	16					

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

## MODEL "HW"

For Hot or Cold applications

Strut Clamp included



Model HWP, Insulation and Strut Clamps													
IPS	Pipe OD	1/2"		1"		1 1/2"		2"		2 1/2"		3"	
		Part No.	Insulation O.D.										
3/4"	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	-
1 1/4"	1.66	HWP11412	2.72	HWP11410	3.45	HWP11415	4.95	HWP11420	5.51	HWP11425	-	HWP11430	-
1 1/2"	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
2 1/2"	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
3 1/2"	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													
Copper Tube	Tube OD	1/2"		1"		1 1/2"		2"		2 1/2"		3"	
		Part No.	Insulation O.D.										
1/2"	5/8"	HWT5812	1.66	HWT5810	2.82	HWT5815	3.45	-	-	-	-	-	-
3/4"	7/8"	HWT7812	1.92	HWT7810	2.82	HWT7815	3.95	HWT7820	4.95	-	-	-	-
1"	1-1/8"	HWT11812	2.16	HWT11810	2.82	HWT11815	3.95	HWT11820	4.95	-	-	-	-
1 1/4"	1-3/8"	HWT13812	2.41	HWT13810	3.45	HWT13815	4.45	HWT13820	5.51	-	-	-	-
1 1/2"	1-5/8"	HWT15812	2.72	HWT15810	3.45	HWT15815	4.95	HWT15820	5.51	-	-	-	-
2"	2-1/8"	HWT21812	3.16	HWT21810	3.95	HWT21815	4.95	HWT21820	6.57	HWT21825	7.57	HWT21830	8.57
2 1/2"	2-5/8"	HWT25812	3.66	HWT25810	4.45	HWT25815	5.51	HWT25820	6.57	HWT25825	7.57	HWT25830	8.57
3"	3-1/8"	HWT31812	4.16	HWT31810	4.95	HWT31815	6.57	HWT31820	7.57	HWT31825	8.57	HWT31830	9.57
4"	4-1/8"	HWT41812	5.16	HWT41810	6.57	HWT41815	7.57	HWT41820	8.57	HWT41825	9.57	HWT41830	10.7
5"	5-1/8"	HWT51812	6.16	HWT51810	7.57	HWT51815	8.57	HWT51820	9.57	HWT51825	10.7	HWT51830	11.7
6"	6-1/8"	HWT61812	7.16	HWT61810	8.57	HWT61815	9.57	HWT61820	10.7	HWT61825	11.7	HWT61830	12.7



# CAL-CLAMP INSULATION



## MODEL "CW"

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

Strut Clamp included



Model CWP, Insulation and Strut Clamps

IPS	Pipe OD	1/2"		1"		1 1/2"		2"		2 1/2"		3"	
		Part No.	Insulation O.D.										
3/4"	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	-	-	-	-
1 1/4"	1.66	CWP11412	2.72	CWP11410	3.45	CWP11415	4.95	CWP11420	5.51	-	-	-	-
1 1/2"	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
2 1/2"	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
3 1/2"	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

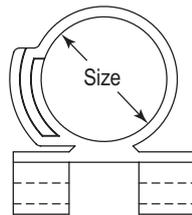
Copper Tube	Tube OD	1/2"		1"		1 1/2"		2"		2 1/2"		3"	
		Part No.	Insulation O.D.										
1/2"	5/8"	CWT5812	1.66	CWT5810	2.82	CWT5815	3.45	-	-	-	-	-	-
3/4"	7/8"	CWT7812	1.92	CWT7810	2.82	CWT7815	3.95	CWT7820	4.95	-	-	-	-
1"	1 1/8"	CWT11812	2.16	CWT11810	2.82	CWT11815	3.95	CWT11820	4.95	-	-	-	-
1 1/4"	1 3/8"	CWT13812	2.41	CWT13810	3.45	CWT13815	4.45	CWT13820	5.51	-	-	-	-
1 1/2"	1 5/8"	CWT15812	2.72	CWT15810	3.45	CWT15815	4.95	CWT15820	5.51	-	-	-	-
2"	2 1/8"	CWT21812	3.16	CWT21810	3.95	CWT21815	4.95	CWT21820	6.57	CWT21825	7.57	CWT21830	8.57
2 1/2"	2 5/8"	CWT25812	3.66	CWT25810	4.45	CWT25815	5.51	CWT25820	6.57	CWT25825	7.57	CWT25830	8.57
3"	3 1/8"	CWT31812	4.16	CWT31810	4.95	CWT31815	6.57	CWT31820	7.57	CWT31825	8.57	CWT31830	9.57
4"	4 1/8"	CWT41812	5.16	CWT41810	6.57	CWT41815	7.57	CWT41820	8.57	CWT41825	9.57	CWT41830	10.7
5"	5 1/8"	CWT51812	6.16	CWT51810	7.57	CWT51815	8.57	CWT51820	9.57	CWT51825	10.7	CWT51830	11.7
6"	6 1/8"	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 3/8" 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.



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

Part No.	CLAMPING RANGE				Condensate Drain
	Standard Copper	Metric Copper	Copper Tube		
	(no insulation)		with 3/8" Insulation	with 1/2" Insulation	
QC12	3/4"	-	-	-	-
QC14	7/8"	22mm	-	-	yes
QC16	1"	-	1/4" tube	-	-
QC18	1 1/8"	28mm	3/8" tube	-	-
QC20	1 1/4"	-	1/2" tube	1/4" tube	-
QC22	1 3/8"	-	5/8" tube	3/8" tube	yes
QC24	1 1/2"	-	7/8" tube	5/8" tube	-
QC26	1 5/8"	42mm	1 1/8" tube	3/4" tube	yes
QC32	2"	-	-	7/8" tube	-
QC34	2 1/8"	54mm	1 3/8" tube	1 1/8" tube	yes

Inside diameter: Certain clips have two or more positions to accommodate both metric and standard sizes

Cushioned Clamping

Insulating Clamping

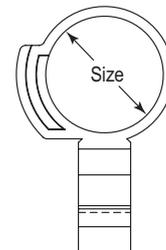
Loop & Hose Clamps

Cush-A-Block

## 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



Part No.	CLAMPING RANGE				Condensate Drain
	Standard Copper	Metric Copper	Copper Tube		
	(no insulation)		with 3/8" Insulation	with 1/2" Insulation	
CC12	3/4"	-	-	-	-
CC14	7/8"	22mm	-	-	yes
CC16	1"	-	1/4" tube	-	-
CC18	1 1/8"	28mm	3/8" tube	-	-
CC20	1 1/4"	-	1/2" tube	1/4" tube	-
CC22	1 3/8"	-	5/8" tube	3/8" tube	yes
CC24	1 1/2"	-	7/8" tube	5/8" tube	-
CC26	1 5/8"	42mm	1 1/8" tube	3/4" tube	yes
CC32	2"	-	-	7/8" tube	-
CC34	2 1/8"	54mm	1 3/8" tube	1 1/8" tube	yes

Inside diameter: Certain clips have two or more positions to accommodate both metric and standard sizes

Z-Strut Channels

Beta Clamps

Z-Clamps

Gamma Pads



# SPN LOOP CLAMPS

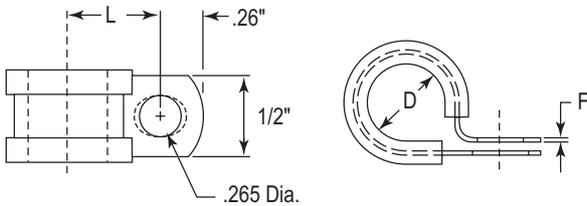


## SPN LOOP CLAMPS

PLATED STEEL LOOP CLAMPS, 1/2" 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	
SPN-05	SPN-05SS	5/16"	0.312	0.561	
SPN-06	SPN-06SS	3/8"	0.375	0.592	
SPN-07	SPN-07SS	7/16"	0.438	0.623	
SPN-08	SPN-08SS	1/2"	0.500	0.655	
SPN-09	SPN-09SS	9/16"	0.562	0.749	
SPN-10	SPN-10SS	5/8"	0.625	0.780	
SPN-11	SPN-11SS	11/16"	0.688	0.811	
SPN-12	SPN-12SS	3/4"	0.750	0.840	
SPN-14	SPN-14SS	7/8"	0.875	0.889	
SPN-16	SPN-16SS	1"	1.000	0.952	
SPN-18	SPN-18SS	1 1/8"	1.125	1.030	
SPN-20	SPN-20SS	1 1/4"	1.250	1.093	
SPN-22	SPN-22SS	1 3/8"	1.375	1.155	
SPN-24	SPN-24SS	1 1/2"	1.500	1.218	
SPN-26	SPN-26SS	1 5/8"	1.625	1.280	
SPN-28	SPN-28SS	1 3/4"	1.750	1.343	
SPN-30	SPN-30SS	1 7/8"	1.875	1.405	
SPN-32	SPN-32SS	2"	2.000	1.476	0.040
SPN-34	SPN-34SS	2 1/8"	2.125	1.538	
SPN-36	SPN-36SS	2 1/4"	2.250	1.661	
SPN-38	SPN-38SS	2 3/8"	2.375	1.663	
SPN-40	SPN-40SS	2 1/2"	2.500	1.728	
SPN-42	SPN-42SS	2 5/8"	2.625	1.788	
SPN-48	SPN-48SS	3"	3.000	1.976	
SPN-52	SPN-52SS	3 1/4"	3.250	2.100	
SPN-56	SPN-56SS	3 1/2"	3.500	2.226	
SPN-64	SPN-64SS	4"	4.000	2.476	

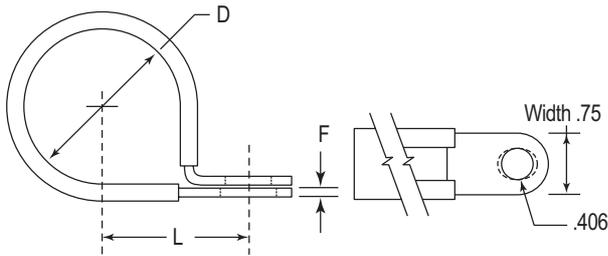
## SPW LOOP CLAMPS

PLATED STEEL  $\frac{3}{4}$ " 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  $-50^{\circ}\text{F}$  to  $+275^{\circ}\text{F}$  ( $-45^{\circ}\text{C}$  to  $135^{\circ}\text{C}$ )

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



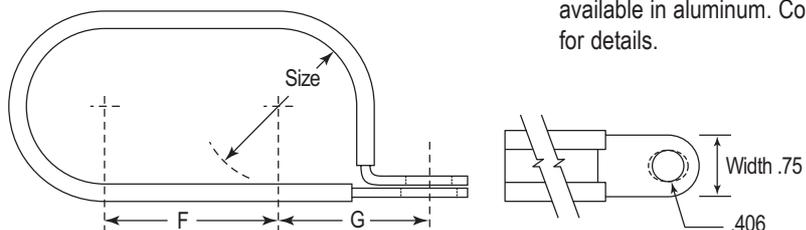
SPW				
Part No.	Size in	Dimensions (in)		
		D	L	F
SPW-04	$\frac{1}{4}$ "	0.250	0.639	0.031
SPW-06	$\frac{3}{8}$ "	0.375	0.702	
SPW-07	$\frac{7}{16}$ "	0.438	0.732	
SPW-08	$\frac{1}{2}$ "	0.500	0.764	
SPW-09	$\frac{9}{16}$ "	0.563	0.795	
SPW-10	$\frac{5}{8}$ "	0.625	0.827	
SPW-12	$\frac{3}{4}$ "	0.750	0.889	
SPW-14	$\frac{7}{8}$ "	0.875	0.952	
SPW-16	1"	1.000	1.014	
SPW-18	$1\frac{1}{8}$ "	1.125	1.090	0.050
SPW-20	$1\frac{1}{4}$ "	1.250	1.159	
SPW-24	$1\frac{1}{2}$ "	1.500	1.284	
SPW-26	$1\frac{5}{8}$ "	1.625	1.346	
SPW-28	$1\frac{3}{4}$ "	1.750	1.409	
SPW-30	$1\frac{7}{8}$ "	1.875	1.471	
SPW-32	2"	2.000	1.534	
SPW-36	$2\frac{1}{4}$ "	2.250	1.659	
SPW-40	$2\frac{1}{2}$ "	2.500	1.784	
SPW-48	3"	3.000	2.034	

## SPD LOOP CLAMPS

2-TUBE CUSHIONED CABLE CLAMPS, PLATED STEEL  $\frac{3}{4}$ " 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  $-50^{\circ}\text{F}$  to  $+275^{\circ}\text{F}$  ( $-45^{\circ}\text{C}$  to  $135^{\circ}\text{C}$ )



SPD			
Part No.	Size In.	Dimensions (in)	
		F	G
SPD-08	$\frac{1}{2}$ "	0.50	0.764
SPD-12	$\frac{3}{4}$ "	0.75	0.889
SPD-16	1"	1.00	1.014
SPD-20	$1\frac{1}{4}$ "	1.125	1.159

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



# SPH LOOP CLAMPS



## SPH CLAMP

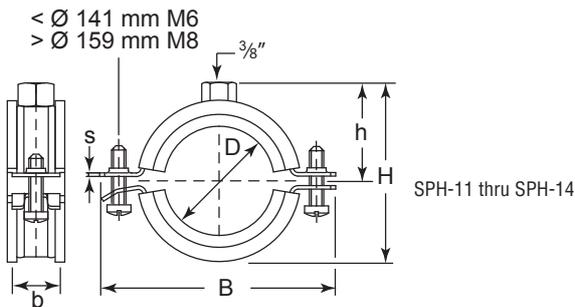
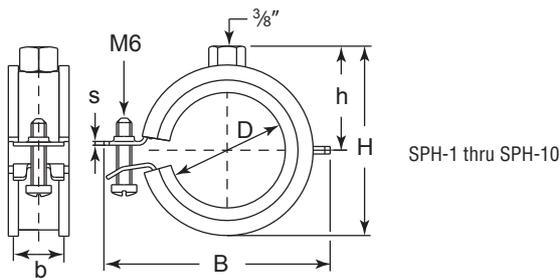
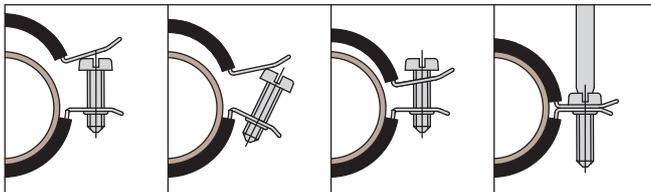
CUSH-A-RING



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							
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	
SPH-3	20 – 23	1/2"	3/4"	2.2	1.6	0.94	
SPH-4	25 – 28	3/4"	1	2.4	1.8	1.10	
SPH-5	31 – 35	1	1 1/4"	2.6	2.0	1.20	
SPH-6	40 – 43	1 1/4"	1 1/2"	3.0	2.4	1.30	
SPH-7	48 – 53	1 1/2"	-	3.3	2.6	1.50	
SPH-8	54 – 56	-	2	3.5	2.8	1.60	
SPH-9	57 – 63	2	-	3.7	3.1	1.70	
SPH-10	64-70	-	2 1/2"	4.5	3.9	2.20	
Below parts have 2 bolt configurations							
SPH-11	73-80	2 1/2"	3	5.0	4.3	2.40	25 x 2.50
SPH-12	83-91	3	-	5.4	4.8	2.60	
SPH-13	100- 105	-	4	6.0	5.3	2.90	
SPH-14	108-114	4	-	6.3	5.7	3.10	

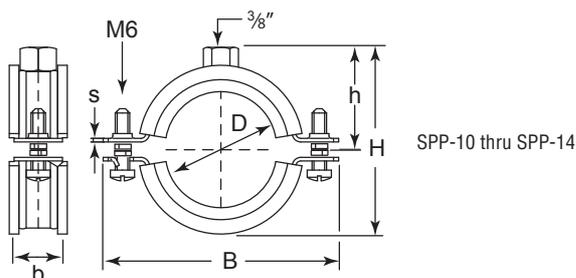
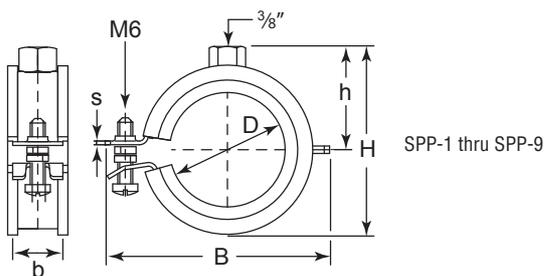
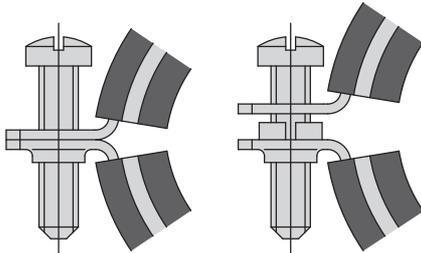
## SPP CLAMPS CUSH-A-RING



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.

### 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	
SPP-4	25 – 28	3/4"	1"	2.4	1.9	1.0	
SPP-5	31 – 35	1"	1 1/4"	2.6	2.2	1.2	
SPP-6	40 – 43	1 1/4"	1 1/2"	3.0	2.6	1.3	
SPP-7	48 – 53	1 1/2"	-	3.3	3.0	1.5	
SPP-8	54 – 56	-	2"	3.5	3.0	1.6	
SPP-9	60 – 65	2"	-	4.3	3.4	1.7	
SPP-10	70 – 76	2 1/2"	-	4.9	4.1	2.2	
SPP-11	86 – 91	3"	-	5.4	4.6	2.4	
SPP-12	110 – 114	4"	-	6.3	5.8	2.9	1/2"
SPP-13	124 – 132	-	-	6.8	5.9	3.1	
SPP-14	155 – 160	-	-	8.0	7.4	3.9	

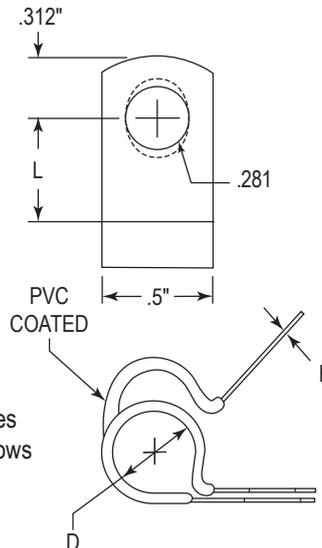


# SVN, SVW LOOP CLAMPS



## SVN LOOP CLAMPS

VINYL DIPPED - GALVANIZED STEEL 1/2" WIDE



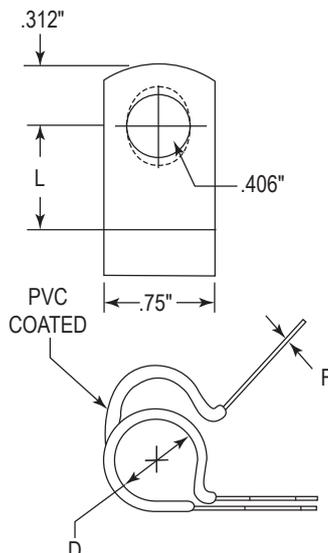
**FEATURES:**

- 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	
SVN-05	5/16"	0.312	0.562	
SVN-06	3/8"	0.375	0.593	
SVN-08	1/2"	0.500	0.656	
SVN-09	9/16"	0.562	0.687	
SVN-10	5/8"	0.625	0.718	0.048
SVN-12	3/4"	0.750	0.781	
SVN-14	7/8"	0.875	0.843	
SVN-16	1"	1.000	0.906	
SVN-18	1 1/8"	1.125	0.968	

## SVW LOOP CLAMPS

VINYL DIPPED GALVANIZED STEEL 3/4" 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	
SVW-06	3/8"	0.375	0.0718	
SVW-08	1/2"	0.500	0.781	0.048
SVW-09	9/16"	0.562	0.812	
SVW-10	5/8"	0.625	0.843	
SVW-12	3/4"	0.750	0.906	
SVW-13	13/16"	0.812	0.937	
SVW-14	7/8"	0.875	0.968	
SVW-15	15/16"	0.937	1.000	
SVW-16	1"	1.000	1.031	
SVW-18	1 1/8"	1.125	1.092	
SVW-20	1 1/4"	1.125	1.156	
SVW-22	1 3/8"	1.375	1.218	

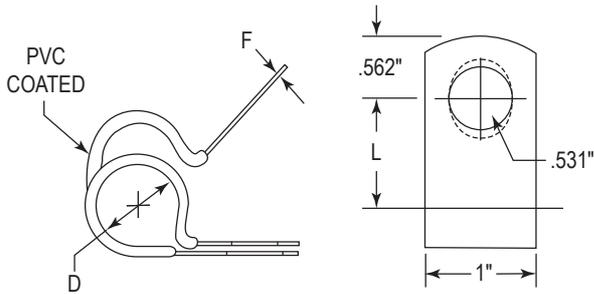
## LVZ LOOP CLAMPS

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	
LVZ-20	1 1/4"	1.25	1.281	
LVZ-21	1 5/16"	1.31	1.312	
LVZ-24	1 1/2"	1.50	1.406	
LVZ-25	1 9/16"	1.56	1.437	
LVZ-28	1 3/4"	1.75	1.531	
LVZ-29	1 13/16"	1.81	1.562	
LVZ-32	2"	2.00	1.687	
LVZ-33	2 1/16"	2.06	1.718	
LVZ-36	2 1/4"	2.25	1.812	
LVZ-40	2 1/2"	2.50	1.937	
LVZ-42	2 5/8"	2.63	2.000	
LVZ-44	2 3/4"	2.75	2.062	
LVZ-46	2 7/8"	2.88	2.125	
LVZ-57	3 9/16"	3.56	2.437	

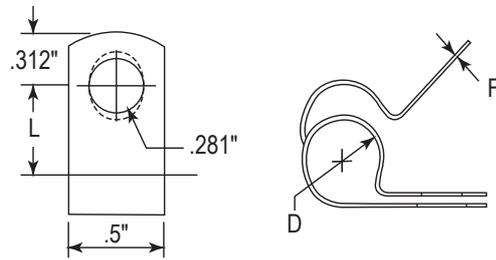


# SSN, CABLE LOOP CLAMPS



## SSN LOOP CLAMPS

STAINLESS STEEL 1/2" WIDE



### FEATURES:

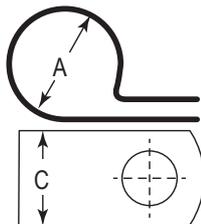
- Medium duty steel clamp that can be slipped over a tube or wire and closed with a bolt at assembly. Holes provide easy alignment. Its pre-developed shape allows for proper closing and excellent fit.
- Stainless steel, type 301 or 304

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	
SSN-05	5/16"	0.312	0.562	
SSN-06	3/8"	0.375	0.593	
SSN-08	1/2"	0.500	0.656	0.048
SSN-09	9/16"	0.562	0.687	
SSN-10	5/8"	0.625	0.718	
SSN-12	3/4"	0.750	0.781	
SSN-14	7/8"	0.875	0.843	
SSN-16	1"	1.000	0.906	
SSN-18	1 1/8"	1.125	0.968	

## 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		
CC3-1/4	0.260		
CC3-5/16	0.307		
CC3-3/8	0.382	0.362	
CC5-1/8	0.114	0.500	
CC5-1/4	0.232		
CC5-3/8	0.358		
CC5-1/2	0.480		
CC5-9/16	0.543		
CC5-3/4	0.732		
CC5-7/8	0.858		
CC5-1-1/8	1.100		

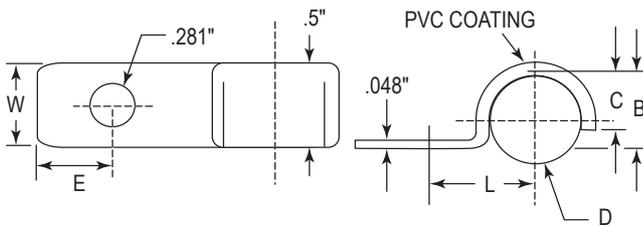
## HVN LOOP CLAMPS

VINYL DIPPED GALVANIZED STEEL 1/2" 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	
HVN-08	1/2"	0.500	0.687	0.312	0.500	0.343	
HVN-09	9/16"	0.562	0.750	0.312	0.562	0.437	
HVN-10	5/8"	0.625	0.812	0.312	0.625	0.406	
HVN-11	3/4"	0.750	0.875	0.312	0.750	0.468	
HVN-12	3/4"	0.750	0.875	0.312	0.750	0.468	

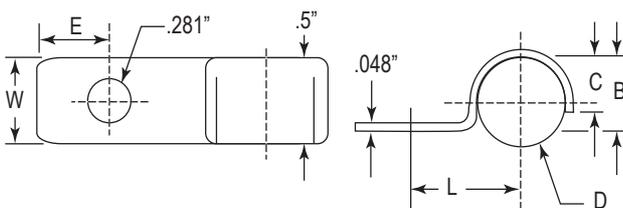
## HSN LOOP CLAMPS

STAINLESS STEEL 1/2" 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	
HSN-08	1/2"	0.500	0.687	0.312	0.500	0.343	
HSN-09	9/16"	0.562	0.750	0.312	0.562	0.437	
HSN-10	5/8"	0.625	0.812	0.312	0.625	0.406	
HSN-11	3/4"	0.750	0.875	0.312	0.750	0.468	
HSN-12	3/4"	0.750	0.875	0.312	0.750	0.468	



# PYTHON CABLE CLAMPS



## 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 1 1/2" 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

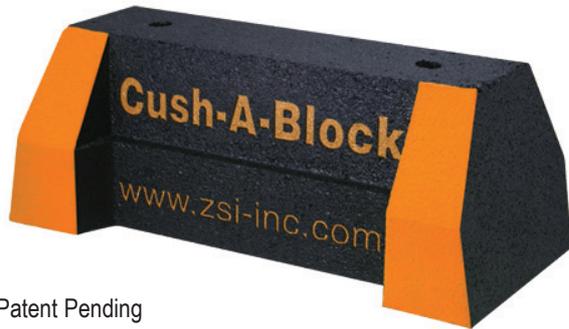
Part No.	Clamping Range	
	in.	mm
PY-331	5/16 – 9/16	8 – 14
PY-431	7/16 – 11/16	11 – 17
PY-631	1/2 – 13/16	13 – 20
PY-831	5/8 – 15/16	15 – 24
PY-1031	3/4 – 1 1/8	19 – 28
PY-1231	7/8 – 1 1/4	22 – 32
PY-1631	1 1/16 – 1 1/2	26 – 38
PY-2031	1 1/4 – 1 3/4	32 – 44
PY-2431	1 1/2 – 2	38 – 50
PY-2831	1 3/4 – 2 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 SUPPORTS



Patent Pending



Cush-A-Block features:

- 100% Recycled Rubber
- LEED Certifiable
- Meets the Buy America Act and American Reinvestment Recovery Act (A.R.R.A.)
- Independent Laboratory Tested to the following
  - ASTM D575 Method B – Modified, Compression/Deflection
  - ASTM D1171 Modified – Ozone Resistance
  - Freeze/Thaw Environmental Simulation
- Resistance to Freeze and Thaw
- All 4 Corners coated with reflective safety orange for visibility
- Dampens Vibrations
- Compatible with most rooftop materials

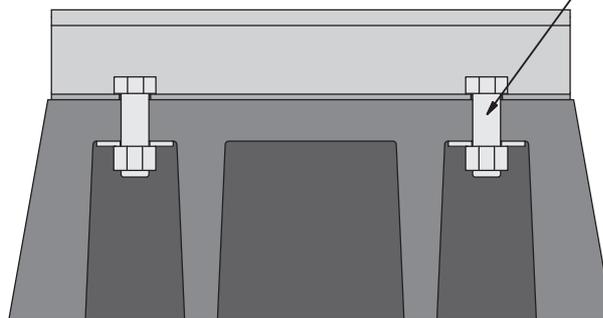
Cush-A-Block support applications:

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

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.



All Cush-A-Block products made with 1-5/8" and higher channel is equipped with (2) 1/2" x 1-1/2" hex head cap screws, washers and nuts.



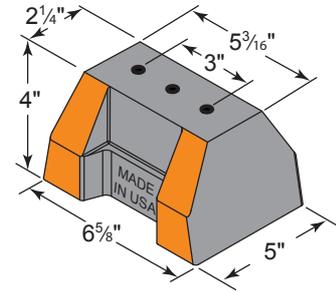


# CUSH-A-BLOCK - ROOFTOP SUPPORTS



## CUSH-A-BLOCK SUPPORTS

### CBS-MINI SERIES



CBS-Mini Series	
Part No.	Uniform Load Capacity (Lbs) *
CBS-MINI	400 *

\* 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 SUPPORTS

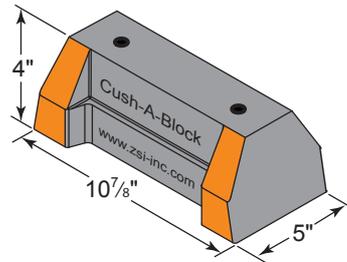
### CBS BASE SERIES



Base Area Shown = 33.1 Sq. In.  
For use in bearing calculations

CBS-Base Series	
Part No.	Uniform Load Capacity (Lbs) *
CBS	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 - ROOFTOP SUPPORTS



## CUSH-A-BLOCK SUPPORTS

CBS SERIES W/METAL CHANNEL

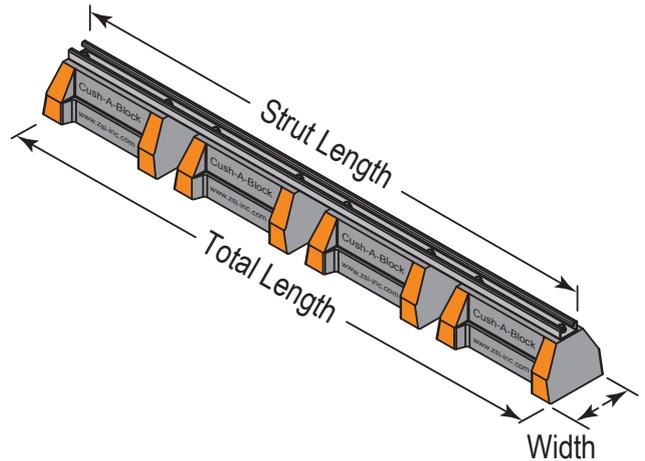
Standard strut mount pipe clamps are used to secure the pipes.

Note: Roof supports come pre-assembled

The CBS Series provides a longer mounting surface with strut lengths up to 46<sup>3</sup>/<sub>8</sub>"



CBS2RD shown with two bases



CBS-Support With 1 <sup>3</sup> / <sub>16</sub> " Pre-Galv. Steel Channel					
	Part No.	No. of Bases	Strut Length	Total Length	Uniform Load Capacity (Lbs) *
	CBS1S	1	9.312"	10 <sup>-7</sup> / <sub>8</sub> "	2,500 *
	CBS2S	2	22.375"	24"	5,000 *
	CBS3S	3	34.375"	36"	7,500 *
	CBS4S	4	46.375"	48"	10,000 *
CBS-Support With 1 <sup>5</sup> / <sub>16</sub> " Pre-Galv. Steel Channel					
	CBS1D	1	9.312"	10 <sup>-7</sup> / <sub>8</sub> "	2,500 *
	CBS2D	2	22.375"	24"	5,000 *
	CBS3D	3	34.375"	36"	7,500 *
	CBS4D	4	46.375"	48"	10,000 *
CBS Support With 2 <sup>1</sup> / <sub>16</sub> " Pre-Galv. Steel Channel					
	CBS1RD	1	9.312"	10 <sup>-7</sup> / <sub>8</sub> "	2,500 *
	CBS2RD	2	22.375"	24"	5,000 *
	CBS3RD	3	34.375"	36"	7,500 *
	CBS4RD	4	46.375"	48"	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

Cushioned Clamping

Insulating Clamping

Loop & Hose Clamps

Cush-A-Block

Z-Strut Channels

Beta Clamps

Z-Clamps

Gamma Pads



# CUSH-A-BLOCK - ROOFTOP SUPPORTS



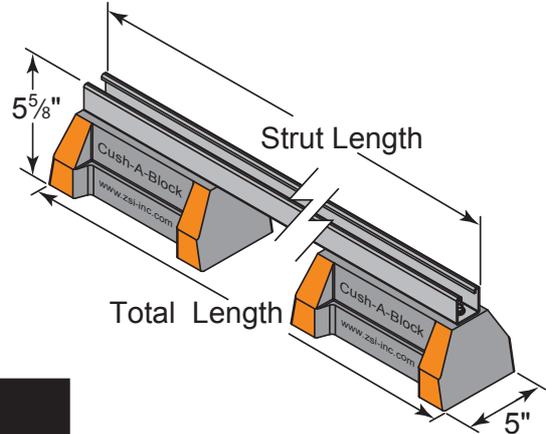
## CUSH-A-BLOCK SUPPORTS

CBS-BR BRIDGE SERIES WITH CHANNEL



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

Note: Roof supports come pre-assembled



CBS-CB-Bridge Series - Bridge Length Supports With 2 CBS Bases and Channel			
Part No.	Strut Length	Total Length	Uniform Load Capacity (Lbs) *
CBS28BR	28"	29-3/4"	1,491*
CBS36BR	36"	37-3/4"	1,160*
CBS42BR	42"	43-3/4"	994*
CBS50BR	50"	51-3/4"	835*
CBS60BR	60"	61-3/4"	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 SUPPORTS

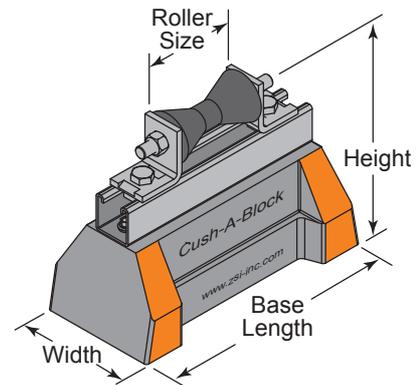
CBS-PRB SERIES, WITH PIPE ROLLER



Note: Roof supports come pre-assembled

CBS-R-Roller-Series With 1-5/8" Pre-Galv. Steel Channel With Rollers						
Part No.	Pipe Size (O.D.)	Height	Overall Height to Roller Center	Base Length	No. of Bases	Uniform Load Capacity (Lbs) *
CBS1PRB	1" to 2"	8"	7"	10-7/8"	1	2,500 *
CBS2PRB	2" to 3-1/2"				1	2,500 *
CBS3PRB	4" to 6"	8-1/8"	8-1/4"	24"	1	2,500 *
CBS4PRB	8" to 10"	10-5/16"			2	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



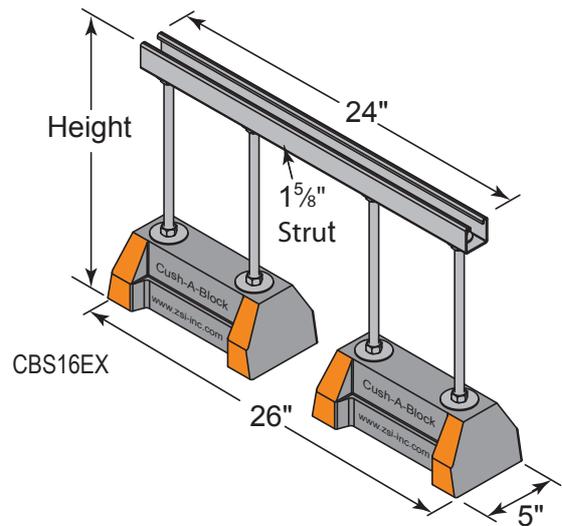
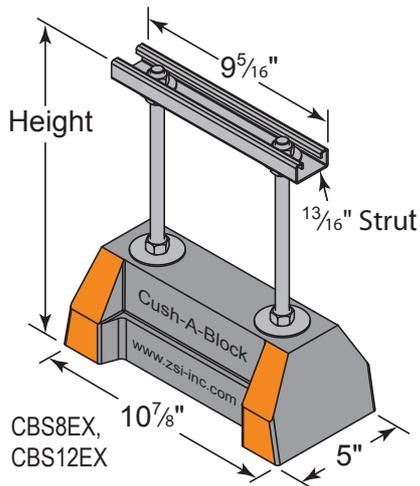


## CUSH-A-BLOCK SUPPORTS

CBS-CE SERIES WITH RAISED CHANNEL

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

Note: Roof supports come pre-assembled



CBS-EX-Extension Series Support With Threaded Rod Extension and Channel

Part No.	Height	Uniform Load Capacity (Lbs) *
CBS8EX	8"	1,000 *
CBS12EX	12"	1,000 *
CBS16EX	16"	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

Cushioned Clamping

Insulating Clamping

Loop & Hose Clamps

Cush-A-Block

Z-Strut Channels

Beta Clamps

Z-Clamps

Gamma Pads



# CUSH-A-BLOCK - ROOFTOP SUPPORTS



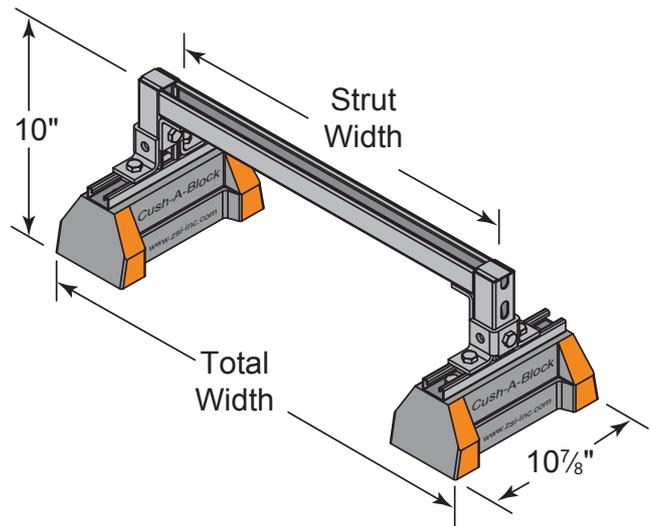
## CUSH-A-BLOCK SUPPORTS

CBS-RB SERIES WITH RAISED BRIDGE  
MEDIUM SUPPORT



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

Note: Roof supports come pre-assembled



Raised Bridge Length With 2 CBS Bases 1-5/8" Pre-Galv Steel Channel				
Part No.	Base Width	Strut Width	Base Length	Uniform Load Capacity (Lbs) *
CBS1RB	18-5/8"	12"	10-7/8"	3,000 *
CBS2RB	30-5/8"	24"		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

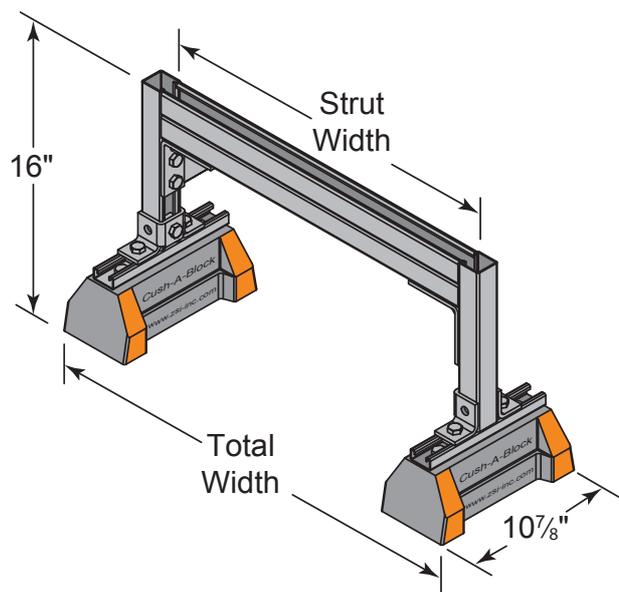
## CUSH-A-BLOCK SUPPORTS

CBS-RB SERIES WITH RAISED CHANNEL  
HEAVY SUPPORT



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

Note: Roof supports come pre-assembled



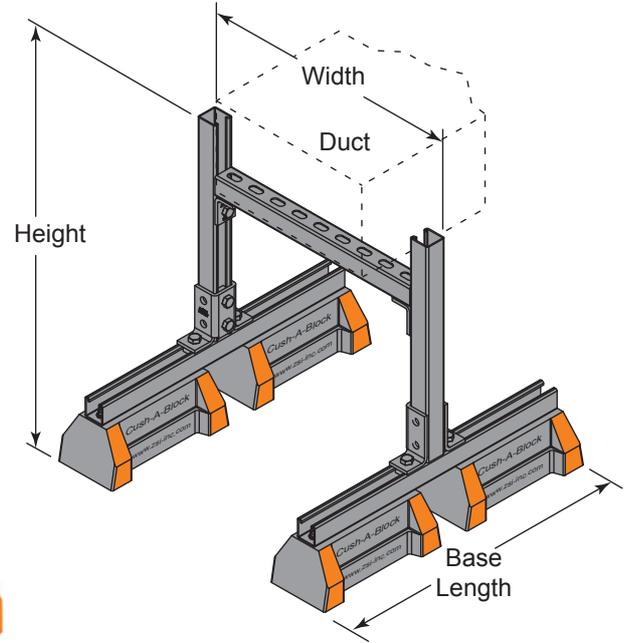
Raised Bridge Length With 2 CBS Bases 3-1/4" Back-to-Back Pre-Galv Steel Channel			
Part No.	Base Width	Strut Width	Uniform Load Capacity (Lbs) *
CBS3RB	30-5/8"	24"	3,500 *
CBS4RB	42-5/8"	36"	3,250 *

\* 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 SUPPORTS

CBS-DSFW SERIES, FIXED WIDTH  
DUCT SUPPORT



CBS-DSF Duct Support Series With Fixed Width					
Model No.	Height	Width	Base Length	No. of Bases	Uniform Load Capacity (Lbs) *
CBS1-DSFW	23"	18"	24"	4	2042 *
CBS2-DSFW		24"			1531 *
CBS3-DSFW		36"			1021 *
CBS4-DSFW		48"			766 *
CBS5-DSFW	29"	18"	24"	4	2042 *
CBS6-DSFW		24"			1531 *
CBS7-DSFW		36"			1021 *
CBS8-DSFW		48"			766 *
CBS9-DSFW	41"	18"	24"	4	2042 *
CBS10-DSFW		24"			1531 *
CBS11-DSFW		36"			1021 *
CBS12-DSFW		48"			766 *
CBS13-DSFW	53"	18"	36"	6	2042 *
CBS14-DSFW		24"			1531 *
CBS15-DSFW		36"			1021 *
CBS16-DSFW		48"			766 *

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

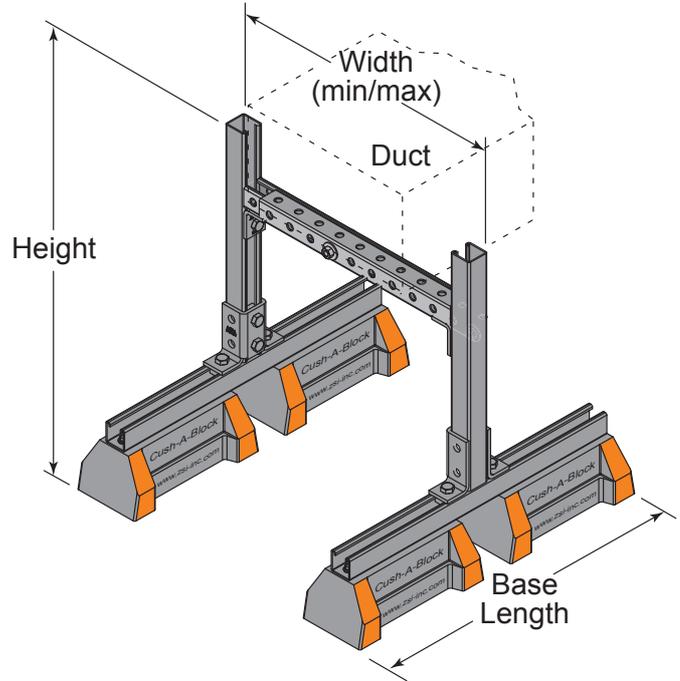


# CUSH-A-BLOCK - ROOFTOP SUPPORTS



## CUSH-A-BLOCK SUPPORTS

CBS-DS SERIES, ADJUSTABLE WIDTH  
DUCT SUPPORT



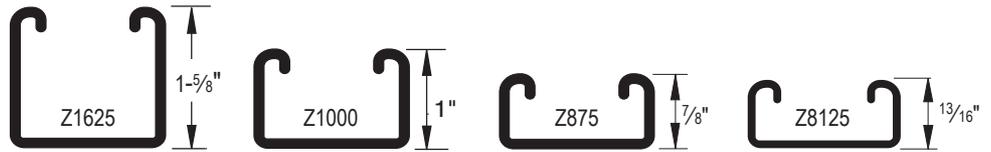
The CBS-DS Series is designed specifically for ductwork support. The telescopic cross beam provides easy size adjustments.

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

Note: Roof supports come pre-assembled

CBS-DS-Duct Support Series With Adjustable Width and Height						
Part No.	Width		Height	Base Length	Total Bases	Uniform Load at Min. Width(Lbs) *
	Min.	Max.				
<b>CBS1DS</b>	19- <sup>1</sup> / <sub>4</sub> "	26- <sup>3</sup> / <sub>4</sub> "	28.813"	10- <sup>7</sup> / <sub>8</sub> " (276mm)	2	1,909 *
<b>CBS2DS</b>	24- <sup>7</sup> / <sub>8</sub> "	39- <sup>7</sup> / <sub>8</sub> "		1,477 *		
<b>CBS3DS</b>	38"	62- <sup>3</sup> / <sub>8</sub> "		24" (610mm)	4	967 *
<b>CBS4DS</b>	62- <sup>3</sup> / <sub>8</sub> "	103- <sup>5</sup> / <sub>8</sub> "		36" (914mm)	6	589 *
<b>CBS5DS</b>	19- <sup>1</sup> / <sub>4</sub> "	26- <sup>3</sup> / <sub>4</sub> "	36"	10- <sup>7</sup> / <sub>8</sub> " (276mm)	2	1,909 *
<b>CBS6DS</b>	24- <sup>7</sup> / <sub>8</sub> "	39- <sup>7</sup> / <sub>8</sub> "		1,477 *		
<b>CBS7DS</b>	38"	62- <sup>3</sup> / <sub>8</sub> "		24" (610mm)	4	967 *
<b>CBS8DS</b>	62- <sup>3</sup> / <sub>8</sub> "	103- <sup>5</sup> / <sub>8</sub> "		36" (914mm)	6	589 *

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



All Z-Strut 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-Foster'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-THERM™

(See Page 82 - 83)



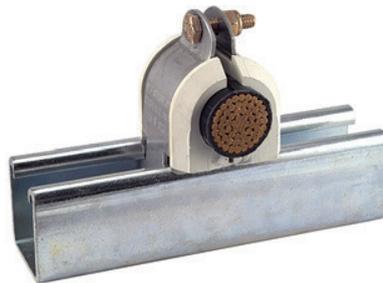
### CUSH-A-NATOR®

(See Page 68 - 70)



### PORCE-A-CLAMP™

(See Page 79)



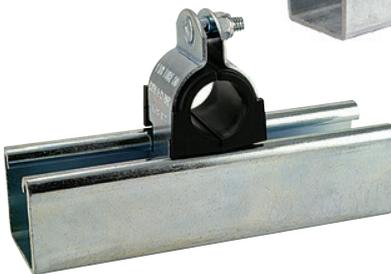
### SADDLE-UP

(See Page 80)



### CUSH-A-CLAMP®

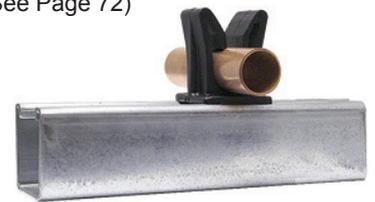
(See Page 71)



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

### CUSH-A-CLAW

(See Page 72)



### CUSH-A-CLIP

(See Page 73)



### QUICK-CLIP

(See Page 87)



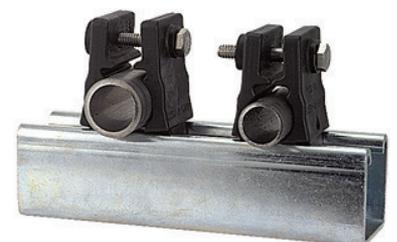
### CUSH-A-CLICK

(See Page 87)



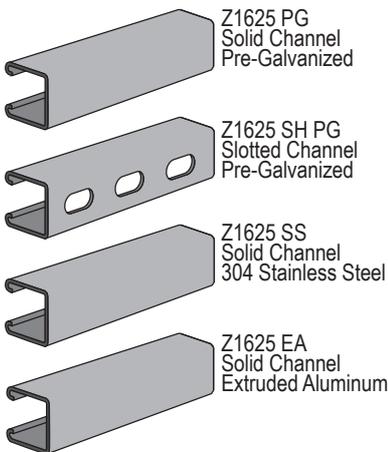
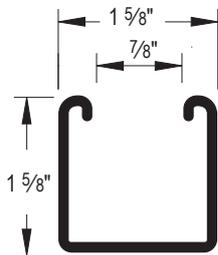
### CUSH-A-GRIP

(See Page 74)





**Z1625 SERIES**

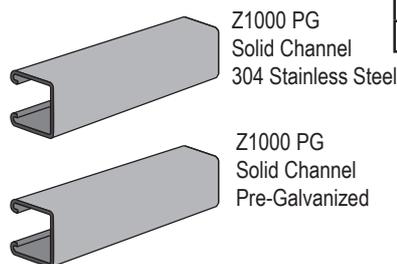
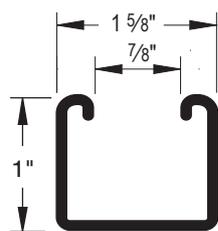


<b>Z1625 - 1<sup>5</sup>/<sub>8</sub>" x 1<sup>5</sup>/<sub>8</sub>" Channel, 12 Ga.</b>				
Solid Channel			Slotted Channel	Length
Pre-galvanized Part No.	Stainless Steel Type 304 Part No.	Extruded Aluminum Part No.	Pre-galvanized Part No.	
Z1625-06PG	Z1625-06SS	Z1625-06EA	Z1625SH-06PG	0' – 6"
Z1625-12PG	Z1625-12SS	Z1625-12EA	Z1625SH-12PG	1' – 0"
Z1625-18PG	Z1625-18SS	Z1625-18EA	Z1625SH-18PG	1' – 6"
Z1625-24PG	Z1625-24SS	Z1625-24EA	Z1625SH-24PG	2' – 0"
Z1625-30PG	Z1625-30SS	Z1625-30EA	Z1625SH-30PG	2' – 6"
Z1625-36PG	Z1625-36SS	Z1625-36EA	Z1625SH-36PG	3' – 0"
Z1625-42PG	Z1625-42SS	Z1625-42EA	Z1625SH-42PG	3' – 6"
Z1625-48PG	Z1625-48SS	Z1625-48EA	Z1625SH-48PG	4' – 0"
Z1625-54PG	Z1625-54SS	Z1625-54EA	Z1625SH-54PG	4' – 6"
Z1625-60PG	Z1625-60SS	Z1625-60EA	Z1625SH-60PG	5' – 0"

**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)

**Z1000 SERIES**

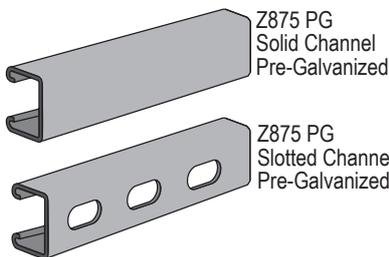
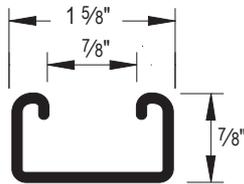


<b>Z1000 - 1<sup>5</sup>/<sub>8</sub>" x 1" Channel, 12 Ga.</b>		
Solid Channel		
Pre-galvanized Part No.	Stainless Steel Type 304 Part No.	Length
Z1000-06PG	Z1000-06SS	0' – 6"
Z1000-12PG	Z1000-12SS	1' – 0"
Z1000-18PG	Z1000-18SS	1' – 6"
Z1000-24PG	Z1000-24SS	2' – 0"
Z1000-30PG	Z1000-30SS	2' – 6"
Z1000-36PG	Z1000-36SS	3' – 0"
Z1000-42PG	Z1000-42SS	3' – 6"
Z1000-48PG	Z1000-48SS	4' – 0"
Z1000-54PG	Z1000-54SS	4' – 6"
Z1000-60PG	Z1000-60SS	5' – 0"

**MATERIAL/FINISH**

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

## Z875 SERIES

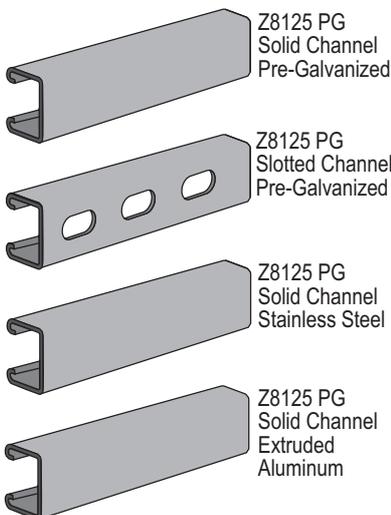
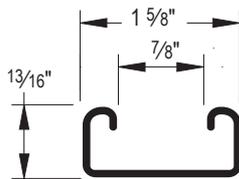


Z875 - 1 <sup>5</sup> / <sub>8</sub> " x 7 <sup>7</sup> / <sub>8</sub> " Channel, 12 Ga.			
Solid Channel		Slotted Channel	Length
Pre-galvanized Part No.	Pre-galvanized Part No.	Pre-galvanized Part No.	
Z875-06PG	Z875SH-06PG		0' - 6"
Z875-12PG	Z875SH-12PG		1' - 0"
Z875-18PG	Z875SH-18PG		1' - 6"
Z875-24PG	Z875SH-24PG		2' - 0"
Z875-30PG	Z875SH-30PG		2' - 6"
Z875-36PG	Z875SH-36PG		3' - 0"
Z875-42PG	Z875SH-42PG		3' - 6"
Z875-48PG	Z875SH-48PG		4' - 0"
Z875-54PG	Z875SH-54PG		4' - 6"
Z875-60PG	Z875SH-60PG		5' - 0"

### 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)

## Z8125 SERIES



Z8125 - 1 <sup>5</sup> / <sub>8</sub> " x 1 <sup>3</sup> / <sub>16</sub> " Channel, 14 Ga.				Length
Solid Channel			Slotted Channel	
Pre-galvanized Part No.	Stainless Steel Type 304 Part No.	Extruded Aluminum Part No.	Pre-galvanized Part No.	
Z8125-06PG	Z8125-06SS	Z8125-06EA	Z8125SH-06PG	0' - 6"
Z8125-12PG	Z8125-12SS	Z8125-12EA	Z8125SH-12PG	1' - 0"
Z8125-18PG	Z8125-18SS	Z8125-18EA	Z8125SH-18PG	1' - 6"
Z8125-24PG	Z8125-24SS	Z8125-24EA	Z8125SH-24PG	2' - 0"
Z8125-30PG	Z8125-30SS	Z8125-30EA	Z8125SH-30PG	2' - 6"
Z8125-36PG	Z8125-36SS	Z8125-36EA	Z8125SH-36PG	3' - 0"
Z8125-42PG	Z8125-42SS	Z8125-42EA	Z8125SH-42PG	3' - 6"
Z8125-48PG	Z8125-48SS	Z8125-48EA	Z8125SH-48PG	4' - 0"
Z8125-54PG	Z8125-54SS	Z8125-54EA	Z8125SH-54PG	4' - 6"
Z8125-60PG	Z8125-60SS	Z8125-60EA	Z8125SH-60PG	5' - 0"

### 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.

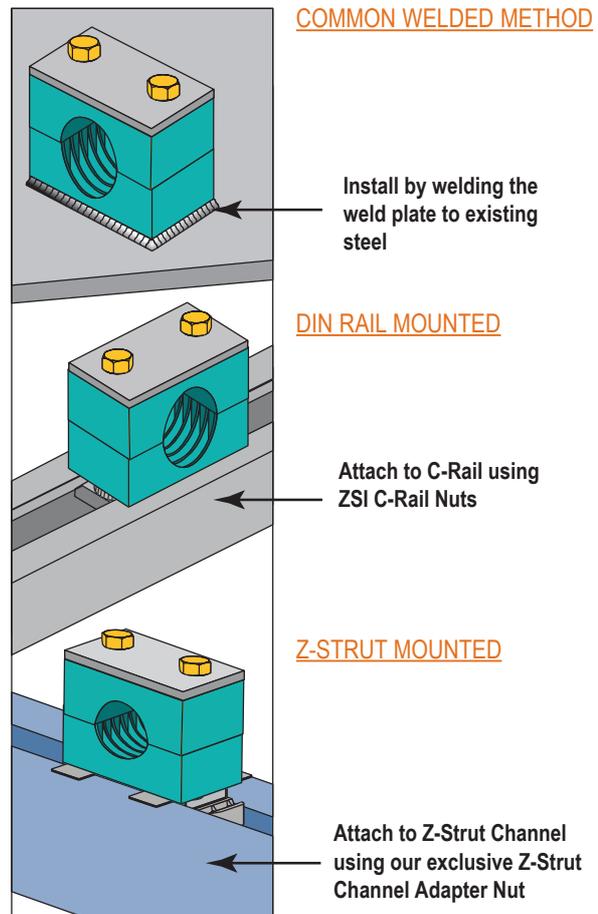
### CLAMP BODY

- 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 STANDARD (Pages 110 - 111)



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

## BETA HEAVY (Pages 112 - 113)



- 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 114 - 115)



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

## BETA SMOOTHIE (Page 116)



- 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 117)



- 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 110, 112, 114)



- 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 118 - 119)



- 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 120)



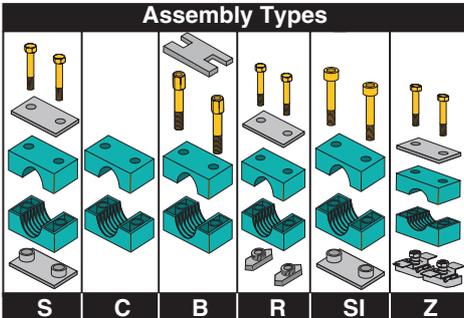
- Allows a clamping junction to be inserted into hydraulic lines.
- The adapter body is offered in two sizes for use with the Z-Clamp adapter inserts.



# BETA CLAMPS - STANDARD



## BETA CLAMPS STANDARD SERIES



Steel w/  
Polypropylene  
Cushion

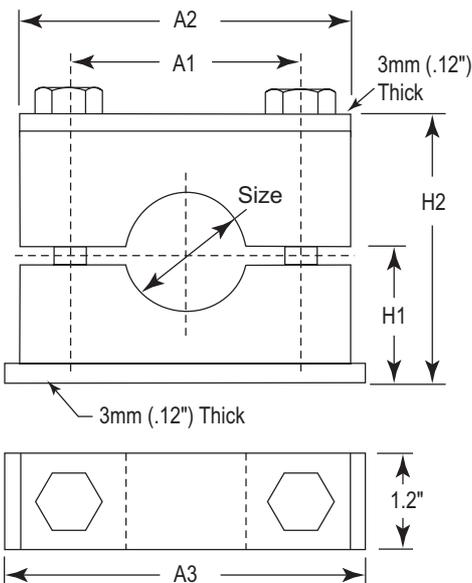


Steel w/  
Aluminum  
Cushion

### 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 are used in higher heat applications up to 500 Degrees.

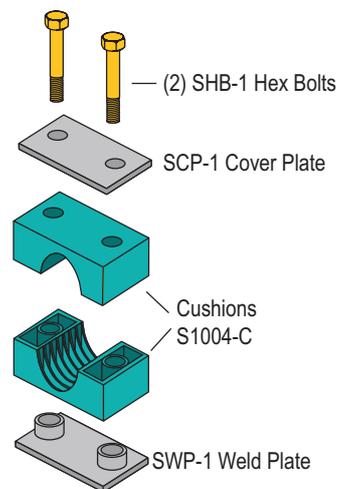
**INSTALLATION** - Refer to pages 147-148 for complete installation guide.



Group	Part No. *	Tube Size	Pipe Size	Metric Size	Dimensions - inch (mm)					Bolt
					A1	A2	A3	H1	H2	
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)	-	-						
SUFFIX	*For additional sizes contact factory. Note: Add assembly type to part number. Example: <b>S-1004S-SS</b> provides the complete assembly as shown with stainless steel components. NOTE: SM (metric) only available in Steel with Polypropylene (green) cushion.				Components		Cushion		Example	
	none	Steel	Polypropylene (green)		<b>S-1004S</b>					
	-AL	Steel	Aluminum		<b>S-1004S-AL</b>					
	-SS	Stainless Steel	Polypropylene (green)		<b>S-1004S-SS</b>					

STANDARD SERIES COVER PLATE		STANDARD SERIES SAFETY 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		
<b>HEX BOLT</b> (Two required per assembly)		<b>STANDARD SERIES CAP SCREW</b> (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		
<b>STACKING BOLTS</b> (Two required per assembly)		<b>C-RAIL NUT</b> (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		
<b>STANDARD SERIES WELD PLATE</b>		<b>C-RAIL</b>		
	SWP1	Use with Group S1		
	SWP2	Use with Group S2		
	SWP3	Use with Group S3	SCR1	39" (1 meter)
	SWP4	Use with Group S4	SCR2	78" (2 meter)
	SWP5	Use with Group S5	<p>28 mm, 11 mm, 2 mm, 11 mm</p>	
	SWP6	Use with Group S6		
	SWP7	Use with Group S7		
<b>STRUT NUT - For connection to Z-Strut Channel</b> (Two required per assembly)		<b>Z-Strut</b>		
	ZSA1-8	Use with Groups S1-S8		
		Z1625		1 <sup>5</sup> / <sub>8</sub> " x 1 <sup>5</sup> / <sub>8</sub> "
		Z8125		1 <sup>5</sup> / <sub>8</sub> " x 1 <sup>3</sup> / <sub>16</sub> "
		Z1000	1 <sup>5</sup> / <sub>8</sub> " x 1"	
		Z875	1 <sup>5</sup> / <sub>8</sub> " x 7/ <sub>8</sub> "	

ORDERING EXAMPLE		
<b>S1004S</b>		
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



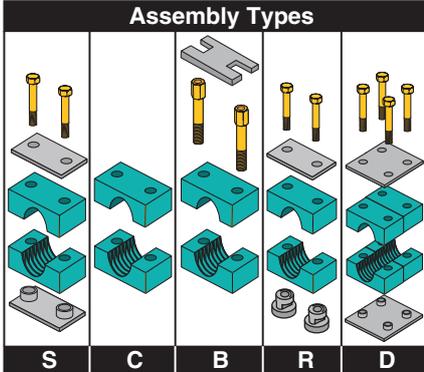


# BETA CLAMPS - HEAVY



## BETA CLAMPS

### HEAVY SERIES



Steel w/  
Polypropylene  
Cushion

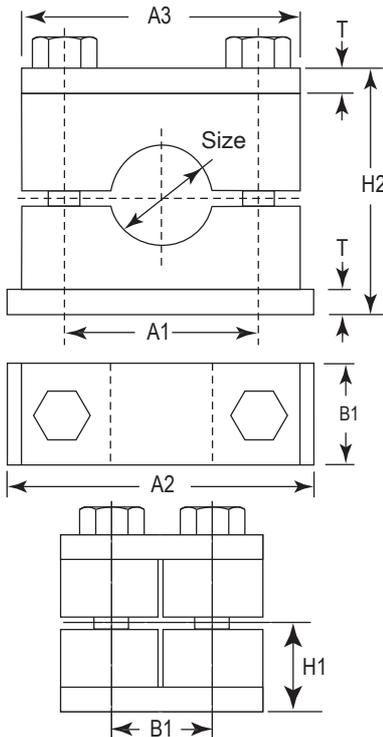


Steel w/  
Aluminum  
Cushion

### 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 are used in higher heat applications up to 500 Degrees.

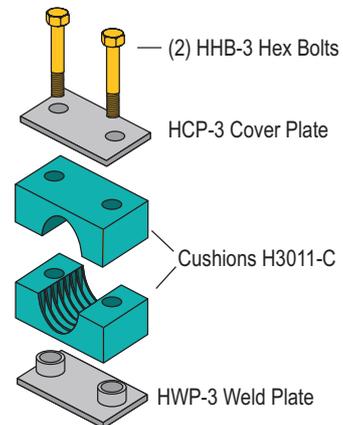
**INSTALLATION** - Refer to pages 147-148 for complete installation guide.



Group	Part No.	Tube Size	Pipe Size	Dimensions-inch(mm)						Hex Bolt		
				A1	A2	A3	B1	H1	H2		T	
H3	H3004	1/4" (0.250)	-									
	H3006	3/8" (0.375)	-									
	H3007	-	1/8" (0.405)	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"	
	H3008	1/2" (0.500)	-									
	H3009	-	1/4" (0.540)									
	H3010	5/8" (0.625)	-									
H4	H4011	-	3/8" (0.675)									
	H4012	3/4" (0.750)	-									
	H4014	-	1/2" (0.840)	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"	
	H4015	7/8" (0.875)	-									
	H4016	1" (1.000)	-									
H5	H4017	-	3/4" (1.050)									
	H5020	1 1/4" (1.250)	-									
	H5021	-	1" (1.315)	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"	
	H5024	1 1/2" (1.500)	-									
H6	H5027	-	1 1/4" (1.660)									
	H6028	1 3/4" (1.750)	-									
	H6030	-	1 1/2" (1.900)									
	H6032	2" (2.000)	-	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"	
	H6034	2 1/4" (2.250)	-									
	H6038	2 3/8" (2.375)	2" (2.375)									
H7	H6040	2 1/2" (2.500)	-									
	H7044	2 3/4" (2.750)	-									
	H7046	-	2 1/2" (2.870)	4.80 (122)	7.08 (180)	5.98 (152)	2.36 (60)	2.75 (70)	5.51 (140)	0.39 (10)	5/8"-11 x 5-1/4"	
	H7050	3" (3.000)	-									
	H7056	-	3" (3.500)									
H8	H7057	3 1/2" (3.500)	-									
	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)	3/4"-10 x 7 1/2"	
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)	7/8"-9 x 8-1/4"	
	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 x300mm	
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 x450mm	
		*For additional sizes contact factory. Note: Add assembly type to part number. Example: <b>H-3004S-SS</b> provides the complete assembly as shown with stainless steel components.										
	<b>SUFFIX</b>	Components	Cushion	Example (complete assembly):								
	<b>NONE</b>	Steel	Polypropylene (green)	<b>H-3004S</b>								
	<b>-AL</b>	Steel	Aluminum	<b>H-3004S-AL</b>								
	<b>-SS</b>	Stainless Steel	Polypropylene (green)	<b>H-3004S-SS</b>								

HEAVY SERIES COVER PLATE			HEAVY SERIES SAFETY PLATE			C-RAIL NUTS (Two required per single assembly)						
	HCP3	Use w/Group H3		HSP3	Use w/Group H3		HRN-3-5	3/8" nut, Use w/ Groups H3-H5				
	HCP4	Use w/Group H4		HSP4	Use w/Group H4		Note: Rail mounted stacking kit is only available on groups H3, H4, and H5	HRN6	7/4" nut, Use w/ Group H6			
	HCP5	Use w/Group H5		HSP5	Use w/Group H5							
	HCP6	Use w/Group H6		HSP6	Use w/Group H6							
	HCP7	Use w/Group H7		HSP7	Use w/Group H7							
	HCP8	Use w/Group H8		HSP8	Use w/Group H8							
	HCP9	Use w/Group H9		HSP9	Use w/Group H9							
	HEAVY SERIES HEX BOLTS (Two required per single assembly)			HEAVY SERIES STACKING BOLTS (Two required per single assembly)				C-RAIL				
		HHB3		Use w/Group H3				HSB3	Use w/Group H3		HCR-1	39" (1 meter)
HHB4		Use w/Group H4	HSB4	Use w/Group H4		HCR-2	78" (2 meter)					
HHB5		Use w/Group H5	HSB5	Use w/Group H5		<p>40 mm 13 mm 5 mm 22 mm</p>						
HHB6		Use w/Group H6	HSB6	Use w/Group H6								
HHB7		Use w/Group H7	HSB7	Use w/Group H7								
HHB8		Use w/Group H8	HSB8	Use w/Group H8								
HHB9		Use w/Group H9	HSB9	Use w/Group H9								
HEAVY SERIES WELD PLATE			HEAVY SERIES DOUBLE WELD PLATE				HEAVY SERIES DOUBLE COVER PLATE					
		HWP3	Use w/Group H3				HDP3	Use w/Group H3			DCP3	Use w/Group H3
	HWP4	Use w/Group H4	HDP4		Use w/Group H4	DCP4	Use w/Group H4					
	HWP5	Use w/Group H5	HDP5		Use w/Group H5	DCP5	Use w/Group H5					
	HWP6	Use w/Group H6	HDP6		Use w/Group H6	DCP6	Use w/Group H6					
	HWP7	Use w/Group H7	HDP7		Use w/Group H7	DCP7	Use w/Group H7					
	HWP8	Use w/Group H8										
	HWP9	Use w/Group H9										

ORDERING EXAMPLE		
<b>H3004S</b>		
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



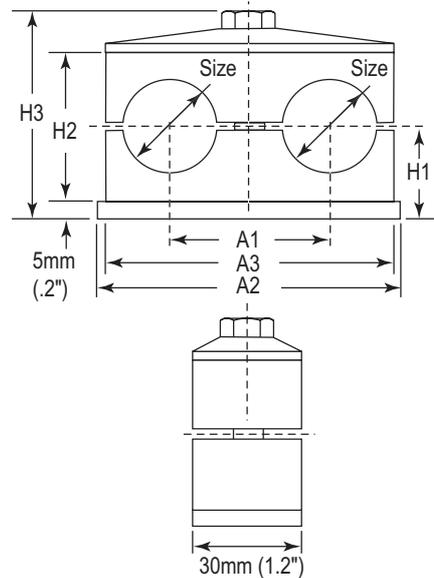
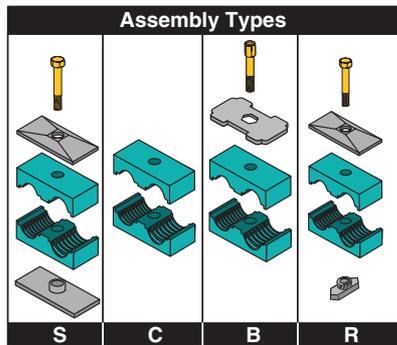


# BETA CLAMPS - TWIN



## 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).

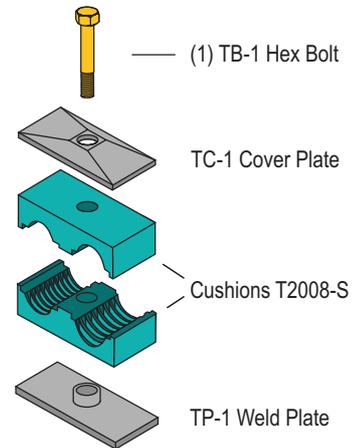
Call factory for additional sizes and cushion materials

**INSTALLATION** - Refer to pages 147-148 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																			
<p>* For additional sizes contact factory.            Note: Add assembly type to part number.            Example: <b>T1004S-SS</b> provides the complete assembly as shown with stainless steel components.</p>																						
<p><b>SUFFIX</b></p> <table border="1"> <thead> <tr> <th>Components</th> <th>Cushion</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>none</td> <td>Steel</td> <td>Polypropylene (green)</td> <td><b>T1004S</b></td> </tr> <tr> <td>SS</td> <td>Stainless Steel</td> <td>Polypropylene (green)</td> <td><b>T1004S-SS</b></td> </tr> </tbody> </table>												Components	Cushion	Example	none	Steel	Polypropylene (green)	<b>T1004S</b>	SS	Stainless Steel	Polypropylene (green)	<b>T1004S-SS</b>
Components	Cushion	Example																				
none	Steel	Polypropylene (green)	<b>T1004S</b>																			
SS	Stainless Steel	Polypropylene (green)	<b>T1004S-SS</b>																			

TWIN SERIES COVER PLATE			TWIN SERIES SAFETY PLATE			
	<b>TC1</b>	Use with Group T1		<b>TSP1</b>	Use with Group T1	
	<b>TC2</b>	Use with Group T2		<b>TSP2</b>	Use with Group T2	
	<b>TC3</b>	Use with Group T3		<b>TSP3</b>	Use with Group T3	
	<b>TC4</b>	Use with Group T4		<b>TSP4</b>	Use with Group T4	
	<b>TC5</b>	Use with Group T5		<b>TSP5</b>	Use with Group T5	
TWIN HEX BOLT			C-RAIL NUT			
	<b>TB1</b>	Use with Group T1		<b>SRN1-6</b>	1/4" Nut, Use with Group T1	
	<b>TB2</b>	Use with Group T2		<b>TRN2-5</b>		5/16" Nut, Use with Group T2 to T5
	<b>TB3</b>	Use with Group T3				
	<b>TB4</b>	Use with Group T4				
	<b>TB5</b>	Use with Group T5				
TWIN STACKING BOLT			C-RAIL			
	<b>TSB1</b>	Use with Group T1		<b>SCR1</b>	39" (1 meter)	
	<b>TSB2</b>	Use with Group T2		<b>SCR2</b>		78" (2 meter)
	<b>TSB3</b>	Use with Group T3				
	<b>TSB4</b>	Use with Group T4				
	<b>TSB5</b>	Use with Group T5				
TWIN SERIES WELD PLATE			<p>28 mm 11 mm 2 mm 11 mm</p>			
	<b>TP1</b>	Use with Group T1				
	<b>TP2</b>	Use with Group T2				
	<b>TP3</b>	Use with Group T3				
	<b>TP4</b>	Use with Group T4				
	<b>TP5</b>	Use with Group T5				

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



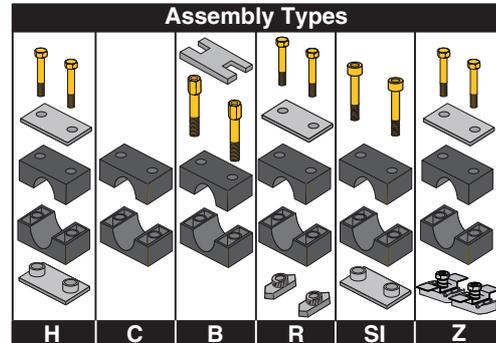


# BETA CLAMPS - "SMOOTHIE"



## BETA "SMOOTHIE"

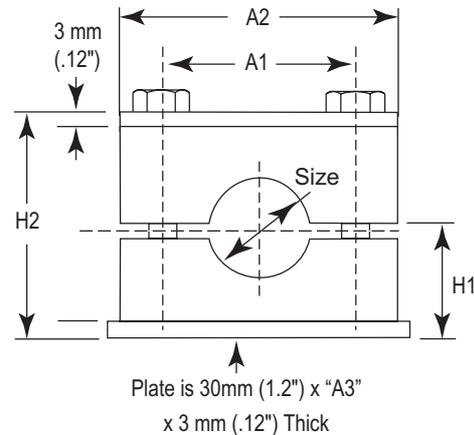
STANDARD SERIES



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 147-148 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 13/8
	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

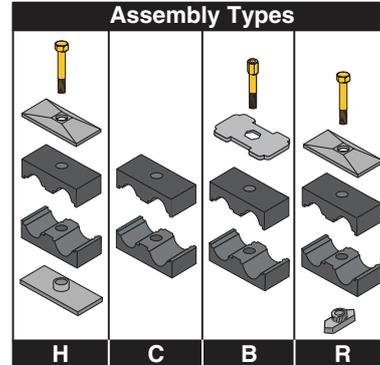
\*For additional sizes and stainless steel contact factory.

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"

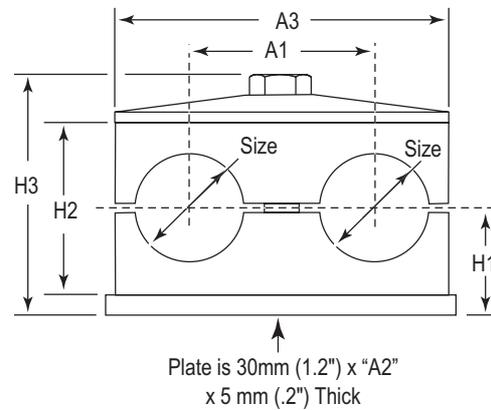
TWIN SERIES



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 147-148 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 13/8
	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 13/4
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 23/8

\*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

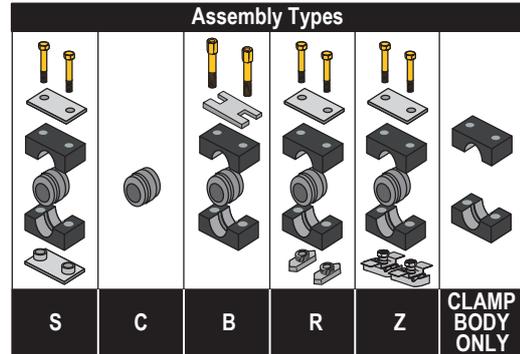


# BETA CLAMPS - RUBBER INSERT

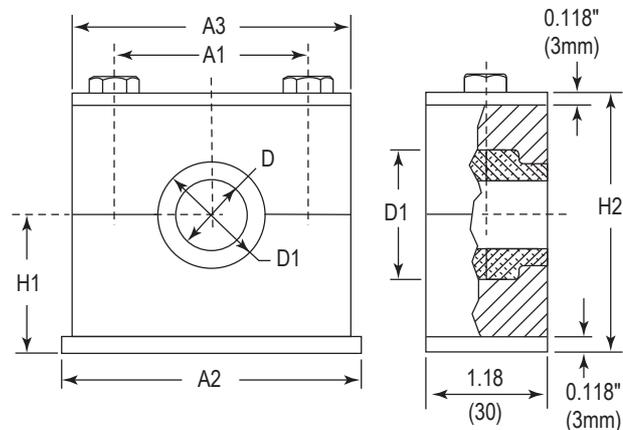


## BETA CLAMPS

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.



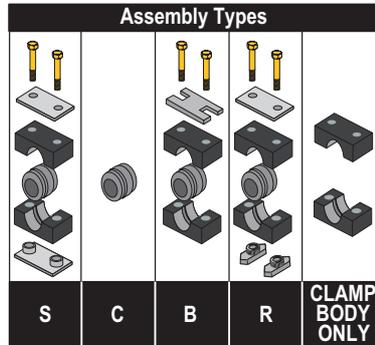
**INSTALLATION** - Refer to pages 147-148 for complete installation guide.

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.

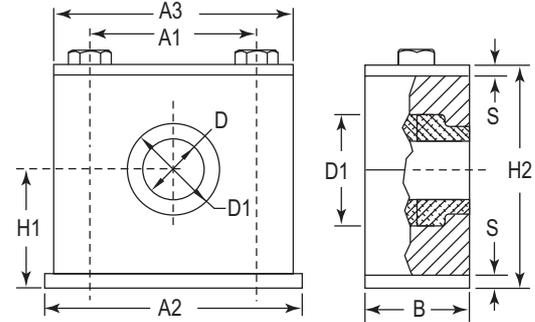
Note: Add Assembly type to Part No.- Example: **SM4006RIS** provides the complete assembly as shown

## BETA CLAMPS HEAVY RUBBER INSERT



**INSTALLATION** - Refer to pages 147-148 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.

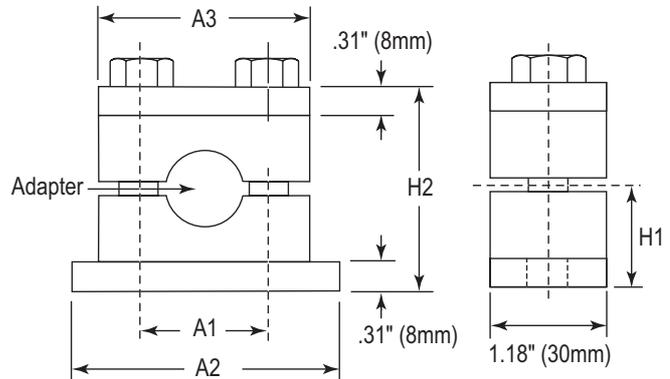
Note: Add Assembly type to Part No.- Example: **HM4006RIS** provides the complete assembly as shown



# BETA ADAPTER



## BETA ADAPTER



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.

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

- 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 149 for complete installation guide.

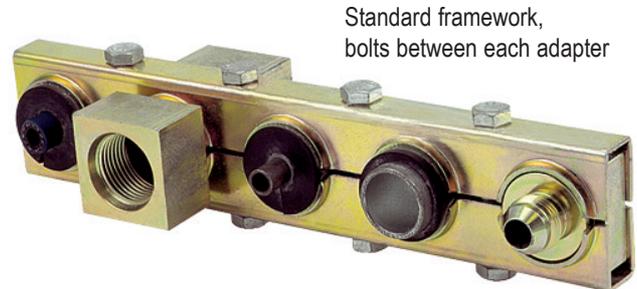


		Tube Size	Group 1 (H4) Part No.	Group 2 (H5) Part No.
	<b>37° JIC</b>	1/4"	H4MJA1-4-S	H5MJA2-4-S
		3/8"	H4MJA1-6-S	H5MJA2-6-S
		1/2"	H4MJA1-8-S	H5MJA2-8-S
		5/8"	H4MJA1-10S	H5MJA2-10S
		3/4"	-	H5MJA2-12S
		5/8"	-	H5MJA2-14S
	<b>O-Ring Face Seal</b>	3/8"	H4MJO1-6-S	H5MJO2-6-S
		1/2"	H4MJO1-8-S	H5MJO2-8-S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

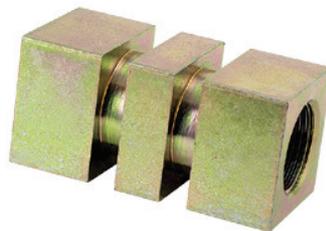
## Z-CLAMP & BETA ADAPTER

### 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

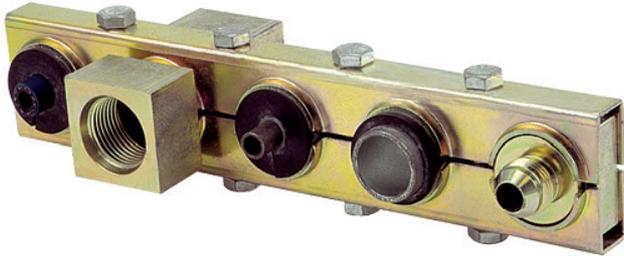


# Z-CLAMP - STANDARD



## Z-CLAMP - MULTIPLE LINE CLAMPING SYSTEM

### STANDARD CLAMP UNITS

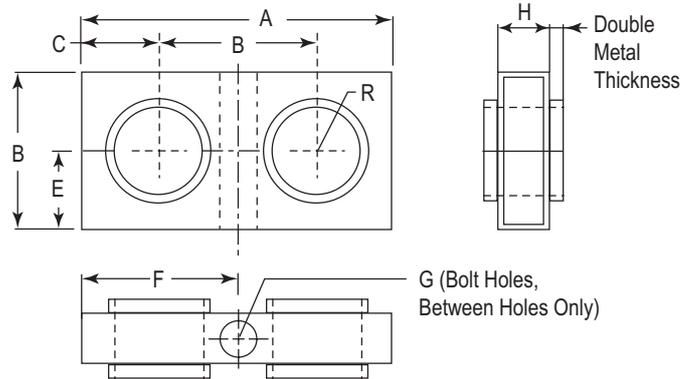


The standard Z-Clamp unit features an anchor bolt between each of the adapter inserts.

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 149 for complete installation guide.



**Note:** Adapters and Hardware are ordered separately. Please see pages 124 - 126 for selection of these items.



Part No.	# Adapter Holes	# Bolts	A	B	C	E	F	G	H	R
<b>HAC1 Series 1½" 14 Gauge</b>										
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"
<b>HAC2 Series 2" 14 Gauge</b>										
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"
<b>HAC3 Series 3" 11 Gauge</b>										
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"

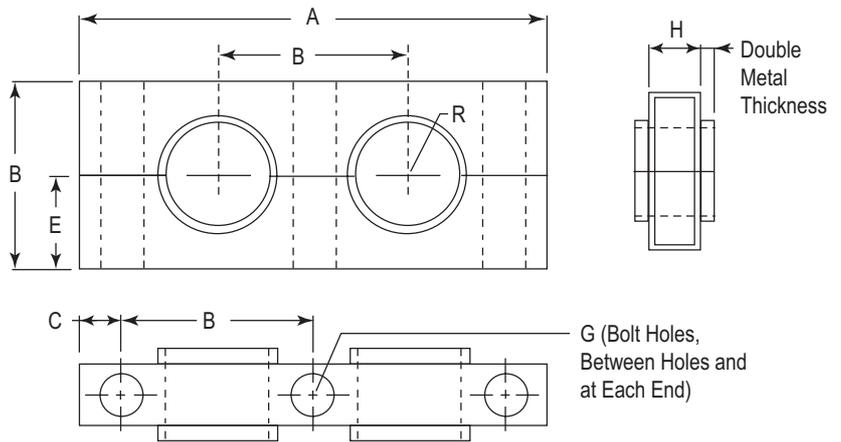
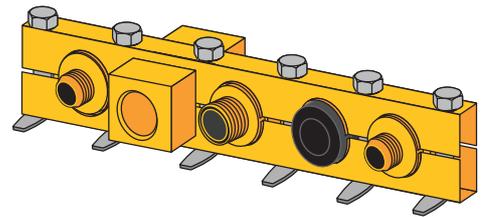
NOTE: Hardware & Adapters not included.

## Z-CLAMP

### OUTSIDE 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 149 for complete installation guide.



**Note:** Adapters and Hardware are ordered separately. Please see pages 124 - 126 for selection of these items.



Part No.	# Adapter Holes	# Bolts	A	B	C	E	G	H	R
<b>HAC1 Series 1 1/2"</b>									
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"
<b>HAC2 Series 2"</b>									
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"
<b>HAC3 Series 3"</b>									
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"



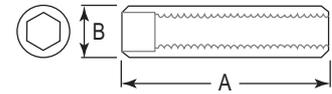
# Z-CLAMP - HARDWARE



## Z-CLAMP

HARDWARE

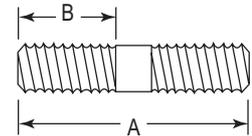
SOCKET HEAD STACKING NUT



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)

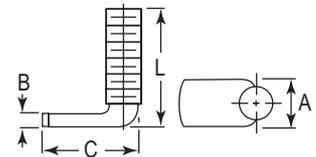


Part No.	HAC Series	A	B	Thread size
T-1	1 & 2	1.38"	0.63"	5/16"-18
T-3	3	2.00"	0.88"	3/8"-16

## WELD NUT



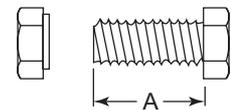
Part No.	HAC Series	Thread Size	A	B	C	L
W-1/W-2	HAC 1	5/16"-18	0.437"	0.12"	0.875"	3/4"
W-1/W-2	HAC 2	5/16"-18	0.437"	0.12"	0.875"	3/4"
W-3	HAC 3	3/8"-16	0.531"	0.151"	1.00"	1.00"



## HEX BOLT and HEX NUT



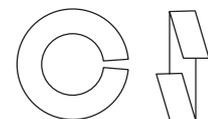
Part No.	HAC Series	Thread Size	A
HB-1	HAC 1 & 2	5/16"-18	3/4"
HB-3	HAC 3	3/8"-16	1"



## LOCK WASHER



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



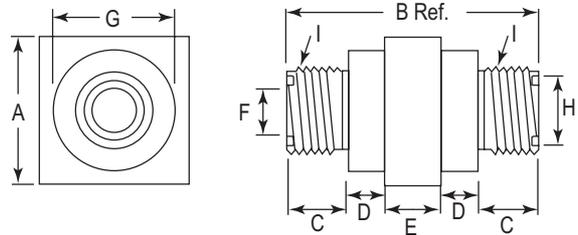
## O-RING FACE SEAL



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"	1 11/16"-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



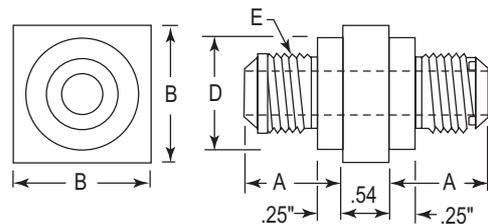
## 37° FLARE MALE JUNCTION ADAPTER



FOR USE with BETA ADAPTERS & Z-CLAMPS

Part No.	Tube Size	Dimensions – Inches			E (Thread)
		A	B	D	
<b>1 1/2" Series</b>					
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
<b>2" Series</b>					
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"	1 1/16"-12
MJA-2-14	7/8"	1.10"	1 1/2"	1.20"	1 3/16"-12
MJA-2-16	1"	1.10"	1 1/2"	1.20"	1 5/16"-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





# Z-CLAMP - ADAPTERS



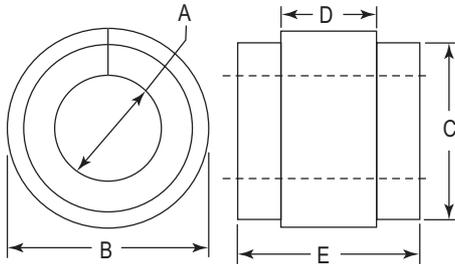
## SPLIT RUBBER BUSHINGS



FOR USE with BETA ADAPTERS & Z-CLAMPS

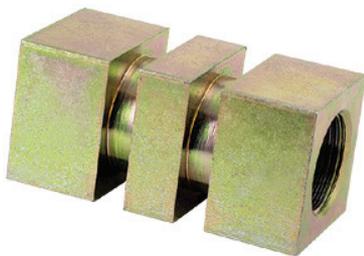
### ANTI-VIBRATION SPLIT RUBBER BUSHING

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



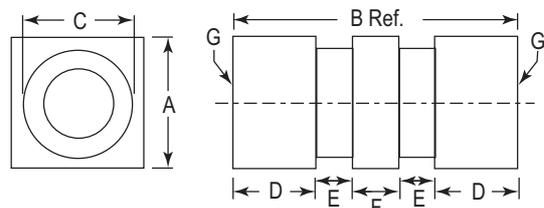
Part No.	Tube Size	Pipe Size	A	B	C	D	E
<b>HAC-1 Series 1 1/2"</b>							
G-1-4	1/4"	–	0.235"	0.975"	0.875"	0.50"	1.312"
G-1-6	3/8"	–	0.360"				
G-1-8	1/2"	–	0.485"				
G-1-10	5/8"	–	0.610"				
G-1-12	3/4"	–	0.735"				
<b>HAC-2 Series 2"</b>							
G-2-4	1/4"	–	0.235"	1.350"	1.250"	0.50"	1.312"
G-2-6	3/8"	–	0.360"				
G-2-8	1/2"	–	0.485"				
G-2-4P	–	1/4"	0.525"				
G-2-10	5/8"	–	0.610"				
G-2-6P	–	3/8"	0.660"				
G-2-12	3/4"	–	0.735"				
G-2-8P	–	1/2"	0.825"				
G-2-14	7/8"	–	0.860"				
G-2-16	1"	–	0.985"				
G-2-12P	–	3/4"	1.035"				
<b>HAC-3 Series 3"</b>							
G-3-4	1/4"	–	0.234"	2.287"	2.187"	0.750"	1.750"
G-3-6	3/8"	–	0.360"				
G-3-8	1/2"	–	0.485"				
G-3-4P	–	1/4"	0.525"				
G-3-10	5/8"	–	0.610"				
G-3-6P	–	3/8"	0.660"				
G-3-12	3/4"	–	0.735"				
G-3-8P	–	1/2"	0.825"				
G-3-14	7/8"	–	0.860"				
G-3-16	1"	–	0.985"				
G-3-12P	–	3/4"	1.035"				
G-3-20	1 1/4"	–	1.235"				
G-3-16P	–	1"	1.300"				
G-3-24	1 1/2"	–	1.485"				
G-3-20P	–	1 1/4"	1.645"				
G-3-24P	–	1 1/2"	1.885"				
G-3-32	2"	–	1.985"				

## 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"	3/8" N.P.T.
FJA-2-12-P	1 1/2"	3-1/8"	1.20"	0.97"	0.32"	0.54"	3/4" N.P.T.
FJA-3-20-P	2-1/4"	2-5/8"	2.12"	0.49"	0.45"	0.74"	1 1/4" N.P.T.
FJA-1-8	1"	2-13/16"	0.84"	0.84"	0.30"	0.54"	3/4"-16 SAE
FJA-2-12	1 1/2"	3-1/8"	1.20"	0.97"	0.32"	0.54"	1 1/16"-12 SAE
FJA-3-20	2-1/4"	2-5/8"	2.12"	0.49"	0.45"	0.74"	1 5/8"-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

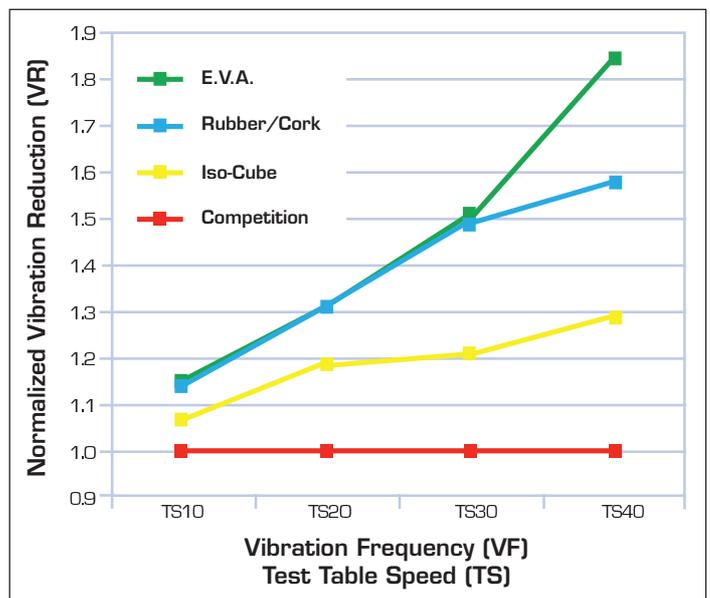


ISO-CUBE



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

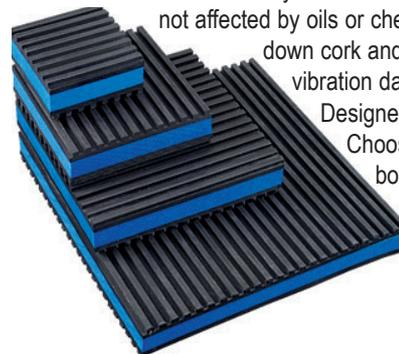
## GAMMA EXTREME PAD

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