

ZSi Engineering Catalog

Manufacturers of Cushioned Clamping, Support Systems, and Quick Disconnects



No. 8

www.zsi-inc.com

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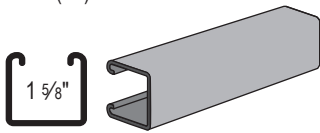
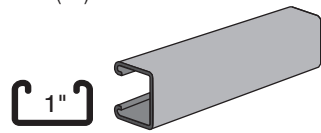
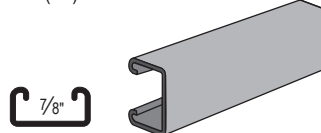
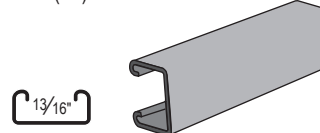
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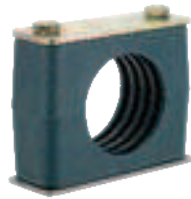
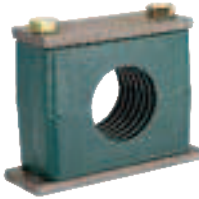
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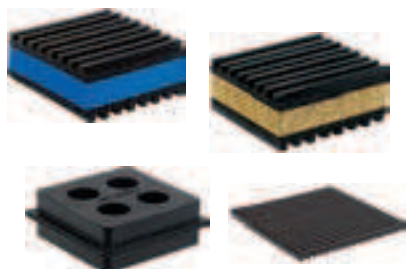
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CUSHIONED CLAMPING

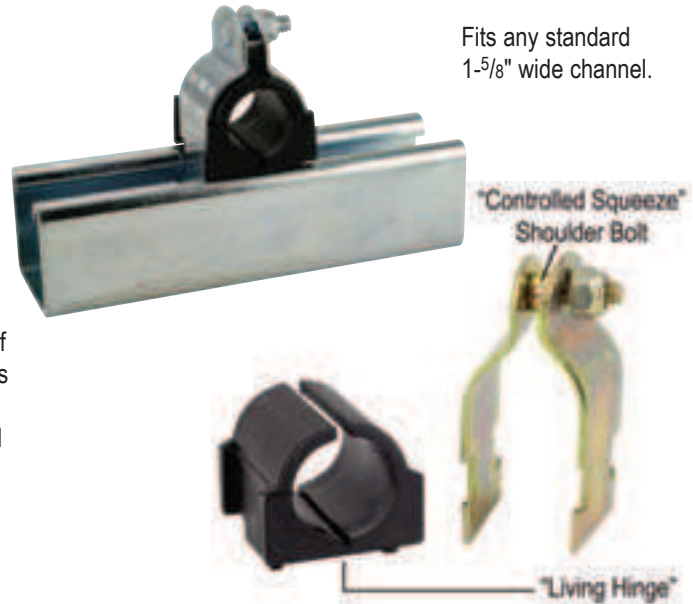
ZSi offers a comprehensive line of cushioning clamps – from the original Cush-A-Clamp® to the newer Porce-A-Clamp™. There is a ZSi solution to cushion shock, vibration, noise and temperature.

CUSH-A-CLAMP® (See Page 6)

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 — Features a unique shoulder stud which is securely fastened to one clamp half. This **Controlled Squeeze™** design 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. **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.

INSTALLATION — One man, one tool time savings. Retrofits can be added without disassembling your present system.



Fits any standard 1-5/8" wide channel.



OMEGA SERIES™ (See Page 7)



OMEGA SERIES™ – 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 — Available in steel (with electro-dichromate finish), and stainless steel.

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

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.

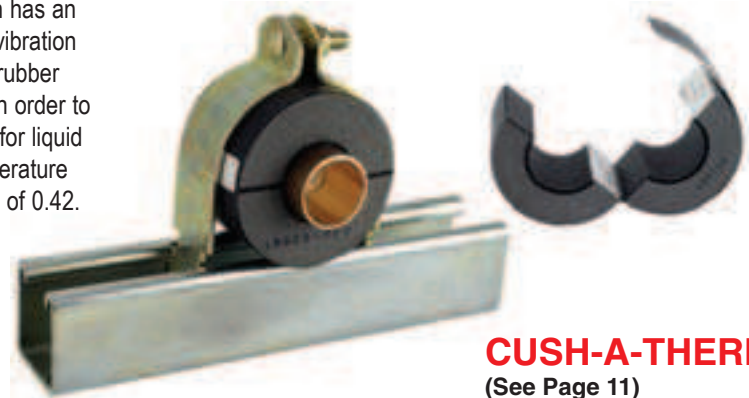
The Cushion is a thermoplastic elastomer.



ALPHA SERIES™ (See Page 8)



The **Cush-A-Therm™** Clamp is a fast easy way to provide a 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 completely after installation in order to prevent condensation. Its strong closed-cell structure is ideal for liquid cooling lines to prevent condensation and save energy. Temperature rating is designed for use from -70°F to 250°F with a R value of 0.42.



CUSH-A-THERM™
(See Page 11)

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.

SADDLE-UP
(See Page 12)



CUSH-A-STRIP™
(See Page 10)



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 Packaged in 20 foot rolls in an E-Z dispenser box for convenience in handling and storage.

Cush-A-Strip™ is designed for use with standard steel clamps ranging from 1/4" tube to 6" pipe.

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

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 9)



FLAME RETARDANT PRODUCTS

ZSi 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.



CUSHIONED
CLAMPING

LOOP
CLAMPS

Z-STRUT &
Z-STRUT CLAMPS

BETA
CLAMPS

Z-CLAMPS

ANTI-VIBRATION
PADS

QUICK
COUPLINGS

AIRLINE
ACCESSORIES

TECHNICAL
DATA

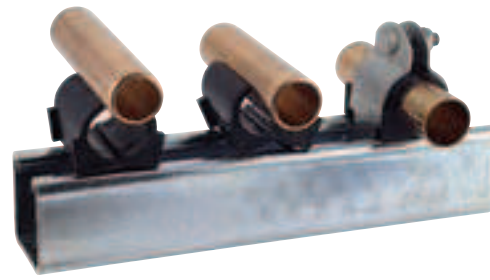
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Gold Electro-Galvanized Steel



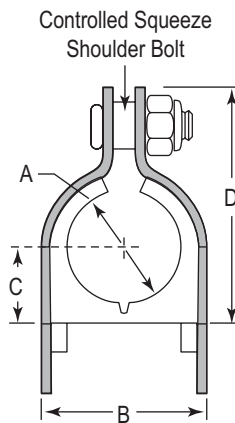
Stainless Steel



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 RoHS compliant electro-dichromate finish), and stainless steel type 304. (Contact factory for type 316).

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.

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

Loading Values Mounted in Standard 12 Gage Channel.

Nut	Torque (in-lbs)	Products	Pullout (lbs)	Slip (lbs)	
				Along	Through
1/4"	40	004T008 - 022T026	1,000	100	100
5/16"	60	024T028 - 050N056	2,200	200	200
3/8"	150	053N050 - 106N114	3,600	600	350

Loads are the same for Stainless Steel Clamps (Example 024NS028)

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

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



Gold Electro-Galvanized Steel

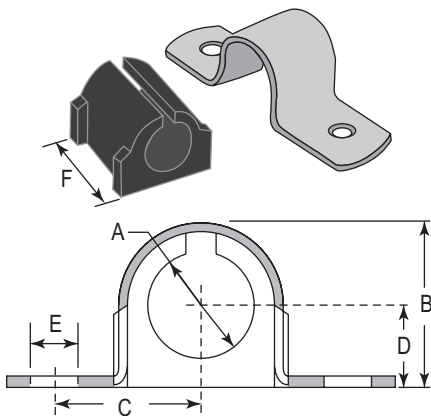


Stainless Steel

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 RoHS compliant 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.

 CUSHIONED
CLAMPING

 LOOP
CLAMPS

 Z-STRUT &
Z-STRUT CLAMPS

 BETA
CLAMPS

Z-CLAMPS

 ANTI-VIBRATION
PADS

 QUICK
COUPLINGS

 AIRLINE
ACCESSORIES

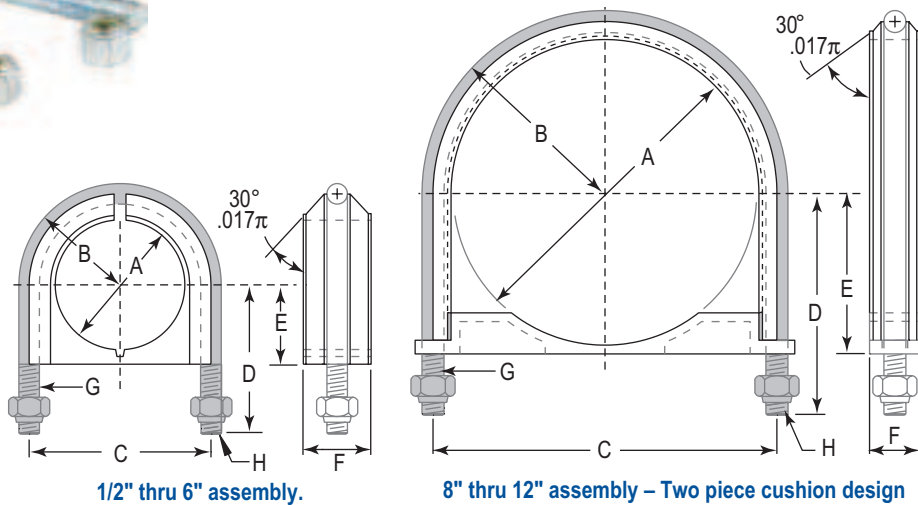
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Designed for the tough jobs, the **Alpha Series™** U-Bolt Assembly secures pipe runs to any flat surface. The cushion design provides total load distribution, allowing the U-Bolt to become a full contact hanger, eliminating knife-edge loading. The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

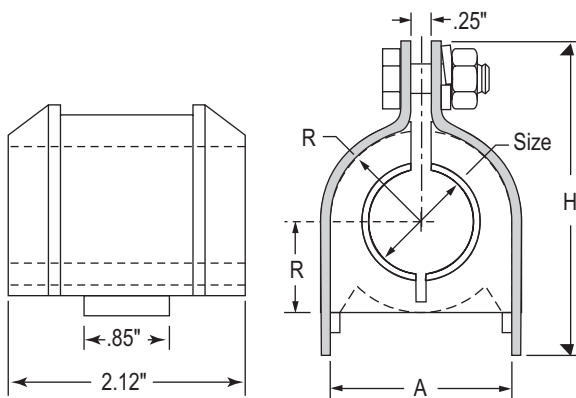


Assy. Part No.	Pipe Size (Nom.)	Tube Size (O.D.)	Dimensions (Inches)								Torque	Design Load	Slip Through	
			A Dia.	B Radius	C	D	E	F	G	H				
UB1½PA	½"	—	0.840	0.80	1.60	1.50	0.67	0.68	¼	¼-20 UNC-2B	100	485	500	
UB7⁄8TA	—	7⁄8"	0.875	0.80	1.60	1.50	0.67	0.68	¼	¼-20 UNC-2B	100	485	500	
UB¾PA	¾"	—	1.05	0.90	1.80	1.60	0.78	0.68	¼	¼-20 UNC-2B	100	485	500	
UB1TA	—	1"	1.00	0.90	1.80	1.60	0.78	0.68	¼	¼-20 UNC-2B	100	485	500	
UB1¼TA	—	1-¼"	1.25	1.02	2.05	1.70	0.91	0.68	¼	¼-20 UNC-2B	100	485	500	
UB1PA	1"	—	1.31	1.02	2.05	1.70	0.91	0.68	¼	¼-20 UNC-2B	100	485	500	
UB1 ⅜TA	—	1-⅜"	1.375	1.02	2.05	1.70	0.91	0.68	¼	¼-20 UNC-2B	100	485	500	
UB1-¼PA	1-¼"	—	1.66	1.27	2.55	2.10	1.08	1.24	⅜	⅜-16 UNC-2B	150	1,220	500	
UB1-½PA	1-½"	—	1.90	1.40	2.80	2.20	1.19	1.24	⅜	⅜-16 UNC-2B	150	1,220	500	
UB2PA	2"	—	2.37	1.67	3.35	2.50	1.45	1.24	⅜	⅜-16 UNC-2B	150	1,220	500	
UB2-½PA	2-½"	—	2.87	1.95	3.90	3.00	1.69	1.24	½	½-13 UNC-2B	200	2,260	500	
UB3PA	3"	—	3.50	2.27	4.55	3.30	2.00	1.24	½	½-13 UNC-2B	200	2,260	500	
UB3-½PA	3-½"	—	4.00	2.52	5.05	3.70	2.25	1.24	½	½-13 UNC-2B	200	2,260	500	
UB4PA	4"	—	4.50	2.50	5.50	3.90	2.50	1.24	½	½-13 UNC-2B	200	2,260	500	
UB5PA	5"	—	5.56	3.25	6.56	4.50	3.03	1.24	½	½-13 UNC-2B	200	2,260	500	
UB6PA	6"	—	6.62	3.87	7.75	5.40	3.56	1.44	⅝	⅝-11 UNC-2B	250	3,620	500	
UB8PA	8"	—	8.62	4.85	9.82	6.40	4.56	1.44	⅝	⅝-11 UNC-2B	250	3,620	500	
UB10PA	10"	—	10.75	6.08	12.16	7.70	5.68	1.65	¾	¾-10 UNC-2B	275	5,420	500	
UB12PA	12"	—	12.75	7.13	14.25	8.70	6.68	1.65	¾	¾-10 UNC-2B	275	5,420	500	
 Suffix														
	Clamp		Cushion						Example					
	none		Electro-galvanized		Thermoplastic elastomer						UB½PA			
	6		Stainless Steel, Type 316		Thermoplastic elastomer						UB½PA6			
	N6		Stainless Steel, Type 316		 Flame Retardant						UB½PAN6			
	N		Electro-galvanized								UB½PAN			
NH		Electro-galvanized		 Flame Retardant Halogen Free						UB½PANH				
NH6		Stainless Steel, Type 316								UB½PANH6				



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
	Size/ 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		006CC018S
ZH	Plated Steel	Flame Retardant Halogen Free	006CC018ZH
SH	Stainless Steel		006CC018SH

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Z-CLAMPS

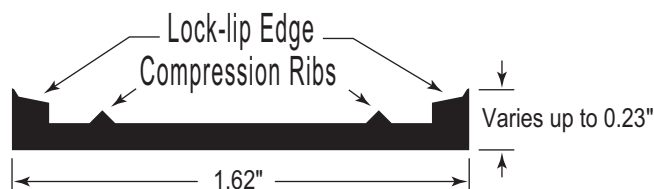
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- Manufactured from a thermoplastic elastomer, Cush-A-Strip™ is designed for use from -50°F to 275°F.
- Easy Stocking – Packaged in 20 foot rolls in an E-Z dispenser box for convenience in handling and storage. **Cush-A-Strip™ roll part number is S-716**
- 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 (RoHS compliant 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
N101C	NS101	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

AIRTIGHT CRUSH-RESISTANT INSULATION CLAMP



The **Cush-A-Therm™ Clamp** is a fast easy way to provide a 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 completely 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.

- Temperature range: -70°F to +250°F (-200°C to +125°C)
- Complete assembly supplied with gold RoHS compliant electro-galvanized channel clamp and hardware
- 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
- "K" Value = 0.312



INSTALLATION IS AS EASY AS 1-2-3!



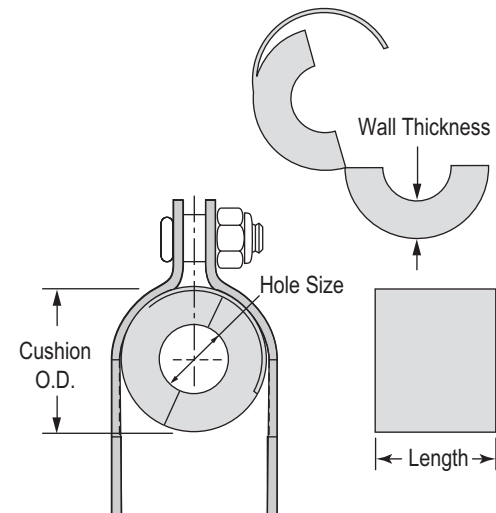
1. Insulation slides over pipes



2. Pipe hanger inserts are put in place and glued to insulation.



3. Joints are wrapped and sealed with ProTape.



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Dimensions (Inches)					Nominal 1/2" Wall Thickness		Nominal 3/4" Wall Thickness		Nominal 1" Wall Thickness		Nominal 1-1/2" Wall Thickness	
Hole Size	Copper Nom. I.D.	Pipe O.D.	IPS	Length	Part No.	Cushion O.D.	Part No.	Cushion O.D.	Part No.	Cushion O.D.	Part No.	Cushion O.D.
3/8 ID	1/4	3/8	-	2.953"	UX3812	1.33	UX3834	1.81	-	-	-	-
1/2 ID	3/8	1/2	1/4	2.953"	UX1212	1.44	UX1234	1.89	-	-	-	-
5/8 ID	1/2	5/8	3/8	2.953"	UX5812	1.56	UX5834	2.05	UX5810	2.54	-	-
3/4 ID	5/8	3/4	-	2.953"	UX3412	1.69	UX3434	2.22	UX3410	2.82	-	-
7/8 ID	3/4	7/8	1/2	2.953"	UX7812	1.81	UX7834	2.44	UX7810	2.82	UX7815	2.32
1-1/8 ID	1	1-1/8	3/4	2.953"	UX11812	2.19	UX11834	2.76	UX11810	3.06	UX11815	3.56
1-3/8 ID	1-1/4	1-3/8	1	2.953"	UX13812	2.31	UX13834	3.19	UX13810	3.33	UX13815	3.83
1-5/8 ID	1-1/2	1-5/8	1-1/4	2.953"	UX15812	2.56	UX15834	3.35	UX15810	3.65	UX15815	4.15
1-7/8 ID	-	1-7/8	-	2.953"	UX17812	2.81	UX17834	3.58	UX17810	4.43	UX17815	4.93
2-1/8 ID	2	2-1/8	-	2.953"	UX21812	3.23	UX21834	3.86	UX21810	4.16	UX21815	4.66
2-3/8 ID	2-1/4	2-3/8	2	2.953"	UX23812	3.48	UX23834	4.29	UX23810	3.92	UX23815	4.42
2-5/8 ID	2-1/2	2-5/8	-	3.937"	UX25812	4.13	UX25834	4.87	UX25810	4.87	UX25815	5.37
2-7/8 ID	-	2-7/8	2-1/2	3.937"	UX27812	4.38	UX27834	4.57	UX27810	4.67	UX27815	5.17
3-1/8 ID	3	3-1/8	-	3.937"	UX31812	4.63	UX31834	5.00	UX31810	5.14	UX31815	5.64
3-1/2 ID	-	3-1/2	3	3.937"	-	-	UX31234	5.35	UX31210	5.89	UX31215	6.39
3-5/8 ID	3-1/2	3-5/8	-	3.937"	UX35812	5.13	UX35834	5.94	-	-	-	-
4-1/8 ID	4	4-1/8	3-1/2	3.937"	UX41812	5.63	UX41834	6.14	UX41810	6.48	UX41815	6.98

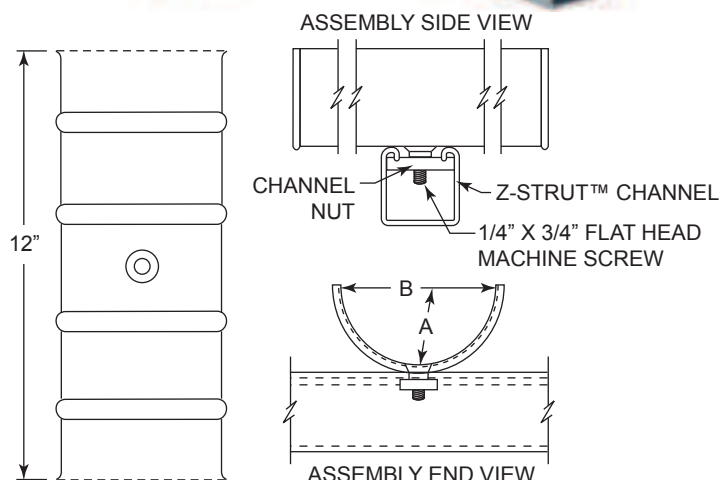
INSULATION SADDLE

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 $\frac{5}{8}$ " 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 Saddle 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 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 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
			—	—	—	—	—	—	7/8	3 7/8
			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

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.

Python – Zinc Plated, or Stainless Steel Type 304				
Zinc Plated Part No.	Stainless Steel Part No.	SAE Size	Clamping Range	
			in.	mm
PY-03	PY-30	3	5/16 - 9/16	8-14
PY-04	PY-40S	4	7/16 - 11/16	11-17
PY-06	PY-60	6	1/2 - 13/16	13-20
PY-08	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

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 II – Stainless Steel Type 316		
Part No.	Clamping Range	
	in.	mm
PY-331	5/16 - 9/16	8-14
PY-431	7/16 - 11/16	11-17
PY-631	1/2 - 13/16	13-20
PY-831	5/8 - 15/16	15-24
PY-1031	3/4 - 1-1/8	19-28
PY-1231	7/8 - 1-1/4	22-32
PY-1631	1-1/16 - 1-1/2	26-38
PY-2031	1-1/4 - 1-3/4	32-44
PY-2431	1-1/2 - 2	38-50
PY-2831	1-1/4 - 2-1/4	32-57
PY-3231	1/2 - 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

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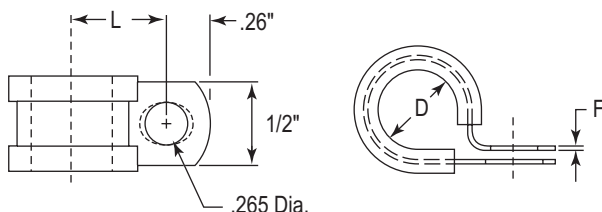
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PLATED STEEL LOOP CLAMPS, 1/2" WIDE



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



SPN

Plated Steel Part No.	Stainless Steel Part No.	Size In.	Dimensions (inches)		
			D	L	F
SPN-03	SPN-3SS	3/16"	0.188	3/8"	0.032
SPN-04	SPN-4SS	1/4"	0.250	13/32"	0.032
SPN-05	SPN-5SS	5/16"	0.312	7/16"	0.032
SPN-06	SPN-6SS	3/8"	0.375	15/32"	0.032
SPN-07	SPN-7SS	7/16"	0.438	1/2"	0.032
SPN-08	SPN-8SS	1/2"	0.500	17/32"	0.032
SPN-09	SPN-9SS	9/16"	0.562	9/16"	0.032
SPN-10	SPN-10SS	5/8"	0.625	19/32"	0.032
SPN-11	SPN-11SS	11/16"	0.688	5/8"	0.032
SPN-12	SPN-12SS	3/4"	0.750	3/4"	0.032
SPN-14	SPN-14SS	7/8"	0.875	13/16"	0.032
SPN-16	SPN-16SS	1"	1.000	7/8"	0.032
SPN-18	SPN-18SS	1-1/8"	1.125	15/16"	0.032
SPN-20	SPN-20SS	1-1/4"	1.250	1"	0.032
SPN-22	SPN-22SS	1-3/8"	1.375	1-5/32"	0.032
SPN-24	SPN-24SS	1-1/2"	1.500	1-7/32"	0.032
SPN-26	SPN-26SS	1-5/8"	1.625	1-9/32"	0.032
SPN-28	SPN-28SS	1-3/4"	1.750	1-11/32"	0.032
SPN-30	SPN-30SS	1-7/8"	1.875	1-13/32"	0.032
SPN-32	SPN-32SS	2"	2.000	1-15/32"	0.040
SPN-34	SPN-34SS	2-1/8"	2.125	1-17/32"	0.040
SPN-40	SPN-40SS	2-1/2"	2.500	1-23/32"	0.040
SPN-48	SPN-48SS	3"	3.000	1-31/32"	0.040

SPW LOOP CLAMPS

PLATED STEEL 3/4" WIDE

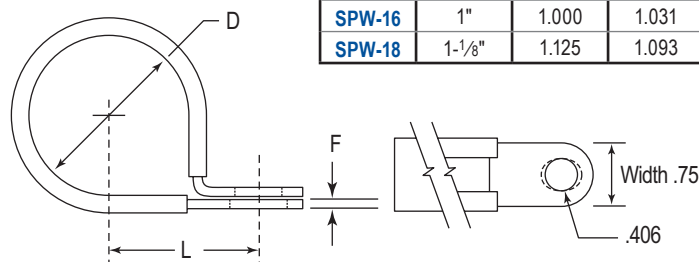


FEATURES:

- 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°F to +275°F

Available in stainless steel.

Some sizes available in aluminum. Contact factory for details.



SPW

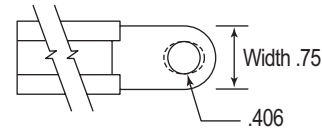
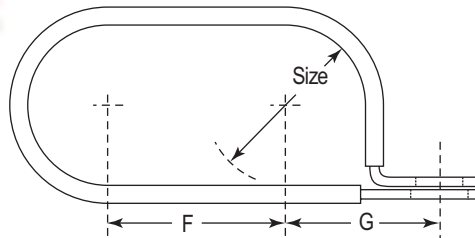
Part No.	Size In.	Dimensions (inches)		
		D	L	F
SPW-04	1/4"	0.250	0.656	0.031
SPW-06	3/8"	0.375	0.718	0.031
SPW-08	1/2"	0.500	0.781	0.031
SPW-09	9/16"	0.562	0.812	0.031
SPW-10	5/8"	0.625	0.843	0.031
SPW-12	3/4"	0.750	0.906	0.031
SPW-14	7/8"	0.875	0.968	0.031
SPW-16	1"	1.000	1.031	0.031
SPW-18	1-1/8"	1.125	1.093	0.050

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°F to +275°F



SPD			
Part No.	Size In.	Dimensions (Inches)	
		F	G
SPD-08	1/2"	0.50	0.764
SPD-12	3/4"	0.75	0.889
SPD-16	1"	1.00	1.014
SPD-20	1-1/4"	1.125	1.159

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

HVN LOOP CLAMPS

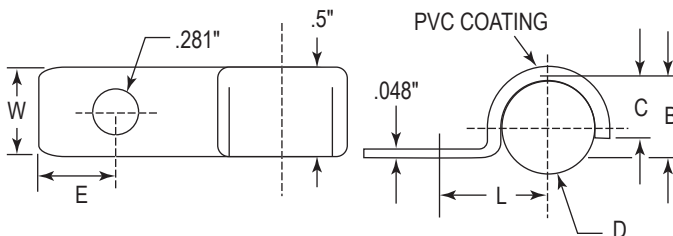
VINYL DIPPED GALVANIZED STEEL $\frac{1}{2}$ " WIDE

FEATURES:

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



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



HSN LOOP CLAMPS

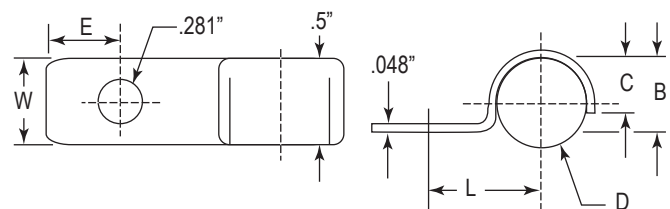
STAINLESS STEEL $\frac{1}{2}$ " WIDE

FEATURES:

- Stainless steel, Type 301 or 304



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



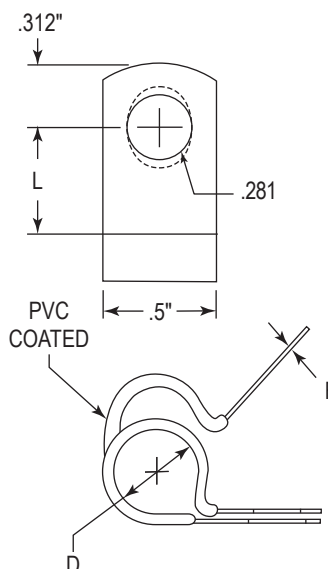
SVN LOOP CLAMPS

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 (inches)		
		D	L	F
SVN-03	3/16"	0.187	0.500	0.032
SVN-04	1/4"	0.250	0.531	0.032
SVN-05	5/16"	0.312	0.562	0.032
SVN-06	3/8"	0.375	0.593	0.032
SVN-08	1/2"	0.500	0.656	0.048
SVN-09	9/16"	0.562	0.687	0.048
SVN-10	5/8"	0.625	0.718	0.048
SVN-12	3/4"	0.750	0.781	0.048
SVN-14	7/8"	0.875	0.843	0.048
SVN-16	1"	1.000	0.906	0.048
SVN-18	1-1/8"	1.125	0.968	0.048

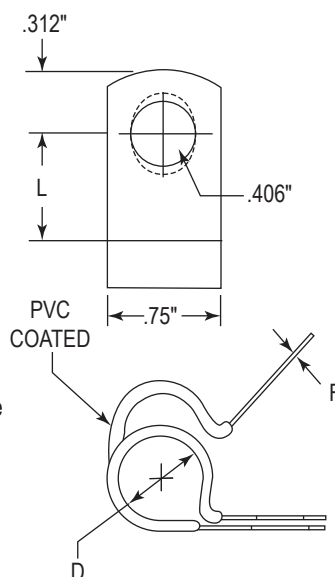
SVW LOOP CLAMPS

VINYL DIPPED GALVANIZED STEEL 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 (Inches)		
		D	L	F
SVW-04	1/4"	0.250	0.656	0.032
SVW-05	5/16"	0.312	0.562	0.032
SVW-06	3/8"	0.375	0.0718	0.032
SVW-08	1/2"	0.500	0.781	0.048
SVW-09	9/16"	0.562	0.812	0.048
SVW-10	5/8"	0.625	0.843	0.048
SVW-12	3/4"	0.750	0.906	0.048
SVW-13	13/16"	0.812	0.937	0.048
SVW-14	7/8"	0.875	0.968	0.048
SVW-15	15/16"	0.937	1.000	0.048
SVW-16	1"	1.000	1.031	0.048
SVW-18	1-1/8"	1.125	1.092	0.048
SVW-22	1-3/8"	1.375	1.218	0.048

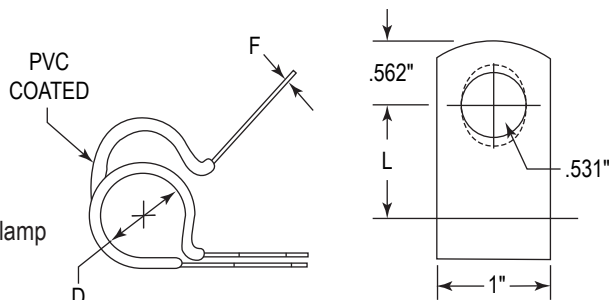
LVZ LOOP CLAMPS

VINYL DIPPED GALVANIZED STEEL 1" WIDE



FEATURES:

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



LVZ

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

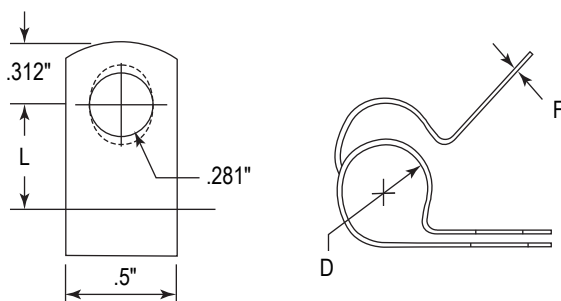
SSN LOOP CLAMPS

STAINLESS STEEL 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 (inches)		
		D	L	F
SSN-03	3/16"	0.187	0.500	0.032
SSN-04	1/4"	0.250	0.531	0.032
SSN-05	5/16"	0.312	0.562	0.032
SSN-06	3/8"	0.375	0.593	0.032
SSN-08	1/2"	0.500	0.656	0.048
SSN-09	9/16"	0.562	0.687	0.048
SSN-10	5/8"	0.625	0.718	0.048
SSN-12	3/4"	0.750	0.781	0.048
SSN-14	7/8"	0.875	0.843	0.048
SSN-16	1"	1.000	0.906	0.048
SSN-18	1-1/8"	1.125	0.968	0.048



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

STRUT PRODUCTS

ZSi 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'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-CLAMP®
(See Page 6)

PORCE-A-CLAMP™
(See Page 9)



CUSH-A-THERM™
(See Page 11)



SADDLE-UP
(See Page 12)



CUSH-A-CLIP
(See Page 21)



ZSi'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.

QUICK-CLIP
(See Page 22)



CUSH-A-CLAW
(See Page 23)



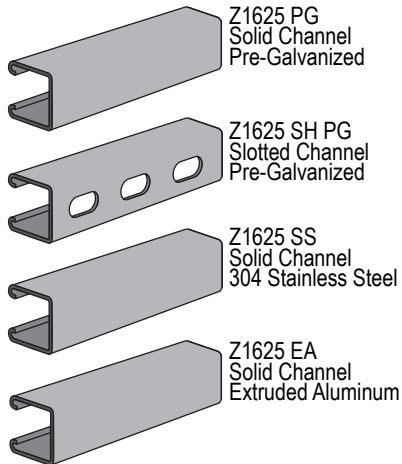
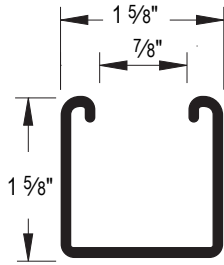
CUSH-A-CLICK
(See Page 22)



CUSH-A-GRIP
(See Page 21)



Z1625 SERIES



Z1625 - 1⁵/₈" x 1⁵/₈" Channel, 12 Ga.

Solid Channel			Slotted Channel	Length	Steel Channel Wt. Each	Aluminum Channel Wt. Each
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"	0.95	0.38
Z1625-12PG	Z1625-12SS	Z1625-12EA	Z1625SH-12PG	1' - 0"	1.90	0.76
Z1625-18PG	Z1625-18SS	Z1625-18EA	Z1625SH-18PG	1' - 6"	3.04	1.22
Z1625-24PG	Z1625-24SS	Z1625-24EA	Z1625SH-24PG	2' - 0"	3.80	1.52
Z1625-30PG	Z1625-30SS	Z1625-30EA	Z1625SH-30PG	2' - 6"	4.94	1.98
Z1625-36PG	Z1625-36SS	Z1625-36EA	Z1625SH-36PG	3' - 0"	5.70	2.28
Z1625-42PG	Z1625-42SS	Z1625-42EA	Z1625SH-42PG	3' - 6"	6.84	2.74
Z1625-48PG	Z1625-48SS	Z1625-48EA	Z1625SH-48PG	4' - 0"	7.60	3.04
Z1625-54PG	Z1625-54SS	Z1625-54EA	Z1625SH-54PG	4' - 6"	8.74	3.50
Z1625-60PG	Z1625-60SS	Z1625-60EA	Z1625SH-60PG	5' - 0"	9.50	3.80

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)

CUSHIONED
CLAMPING

LOOP
CLAMPS

Z-STRUT &
Z-STRUT CLAMPS

BETA
CLAMPS

Z-CLAMPS

ANTI-VIBRATION
PADS

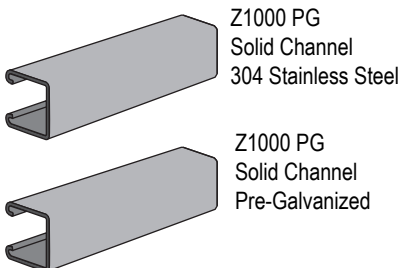
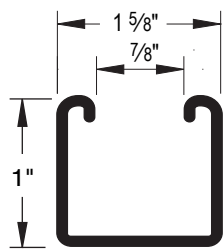
QUICK
COUPLINGS

AIRLINE
ACCESSORIES

TECHNICAL
DATA

INDEX

Z1000 SERIES



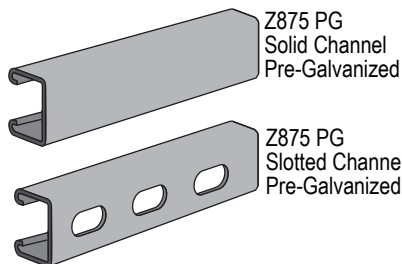
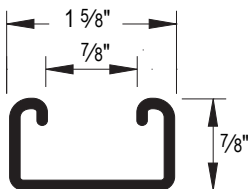
Z1000 - 1⁵/₈" x 1" Channel, 12 Ga.

Solid Channel			
Pre-galvanized Part No.	Stainless Steel Type 304 Part No.	Length	Weight
Z1000-06PG	Z1000-06SS	0' - 6"	0.70
Z1000-12PG	Z1000-12SS	1' - 0"	1.40
Z1000-18PG	Z1000-18SS	1' - 6"	2.24
Z1000-24PG	Z1000-24SS	2' - 0"	2.80
Z1000-30PG	Z1000-30SS	2' - 6"	3.64
Z1000-36PG	Z1000-36SS	3' - 0"	4.20
Z1000-42PG	Z1000-42SS	3' - 6"	5.04
Z1000-48PG	Z1000-48SS	4' - 0"	5.60
Z1000-54PG	Z1000-54SS	4' - 6"	6.44
Z1000-60PG	Z1000-60SS	5' - 0"	7.00

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



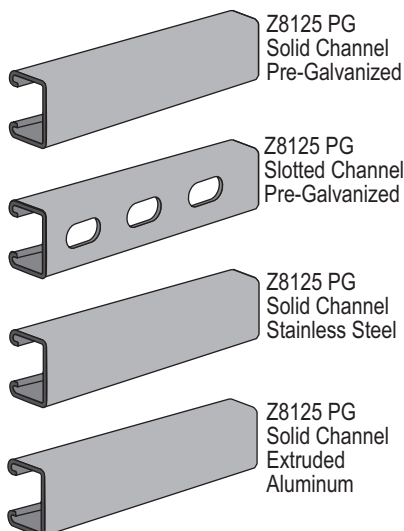
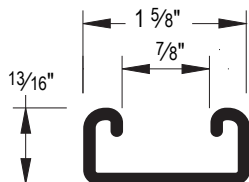
Z875 - 1⁵/₈" x 7⁷/₈" Channel, 12 Ga.

Solid Channel		Slotted Channel	Length	Wt. Each
Pre-galvanized Part No.		Pre-galvanized Part No.		
Z875-06PG		Z875SH-06PG	0' – 6"	0.68
Z875-12PG		Z875SH-12PG	1' – 0"	1.35
Z875-18PG		Z875SH-18PG	1' – 6"	2.16
Z875-24PG		Z875SH-24PG	2' – 0"	2.70
Z875-30PG		Z875SH-30PG	2' – 6"	3.51
Z875-36PG		Z875SH-36PG	3' – 0"	4.05
Z875-42PG		Z875SH-42PG	3' – 6"	4.86
Z875-48PG		Z875SH-48PG	4' – 0"	5.40
Z875-54PG		Z875SH-54PG	4' – 6"	6.21
Z875-60PG		Z875SH-60PG	5' – 0"	6.75

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 - 1⁵/₈" x 1³/₁₆" Channel, 14 Ga.

Solid Channel			Slotted Channel	Length	Steel Channel Wt. Each	Aluminum Channel Wt. Each
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"	0.49	0.23
Z8125-12PG	Z8125-12SS	Z8125-12EA	Z8125SH-12PG	1' – 0"	0.97	0.45
Z8125-18PG	Z8125-18SS	Z8125-18EA	Z8125SH-18PG	1' – 6"	1.55	0.72
Z8125-24PG	Z8125-24SS	Z8125-24EA	Z8125SH-24PG	2' – 0"	1.94	0.90
Z8125-30PG	Z8125-30SS	Z8125-30EA	Z8125SH-30PG	2' – 6"	2.52	1.17
Z8125-36PG	Z8125-36SS	Z8125-36EA	Z8125SH-36PG	3' – 0"	2.91	1.35
Z8125-42PG	Z8125-42SS	Z8125-42EA	Z8125SH-42PG	3' – 6"	3.49	1.62
Z8125-48PG	Z8125-48SS	Z8125-48EA	Z8125SH-48PG	4' – 0"	3.88	1.80
Z8125-54PG	Z8125-54SS	Z8125-54EA	Z8125SH-54PG	4' – 6"	4.46	2.07
Z8125-60PG	Z8125-60SS	Z8125-60EA	Z8125SH-60PG	5' – 0"	4.85	2.25

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)

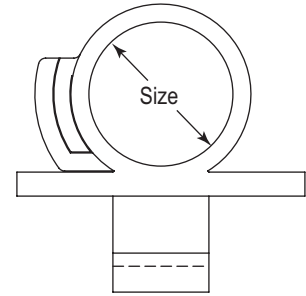
CUSH-A-CLIP



**A SIMPLE, ECONOMICAL,
LIGHTWEIGHT HANGER
FOR SUPPORTING TUBING**

- Manufactured from polyamide alloy
- U.L. Rated
- Sizes from $\frac{3}{8}$ " to $1\frac{1}{8}$ "
- 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	Wt./100
RPC- $\frac{3}{8}$ "	$\frac{3}{8}$ "	2.5
RPC- $\frac{1}{2}$ "	$\frac{1}{2}$ "	2.5
RPC- $\frac{5}{8}$ "	$\frac{5}{8}$ "	3.0
RPC- $\frac{3}{4}$ "	$\frac{3}{4}$ "	3.0
RPC- $\frac{7}{8}$ "	$\frac{7}{8}$ "	4.5
RPC- $1\frac{1}{8}$ "	$1\frac{1}{8}$ "	4.5



CUSH-A-GRIP



FEATURES

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

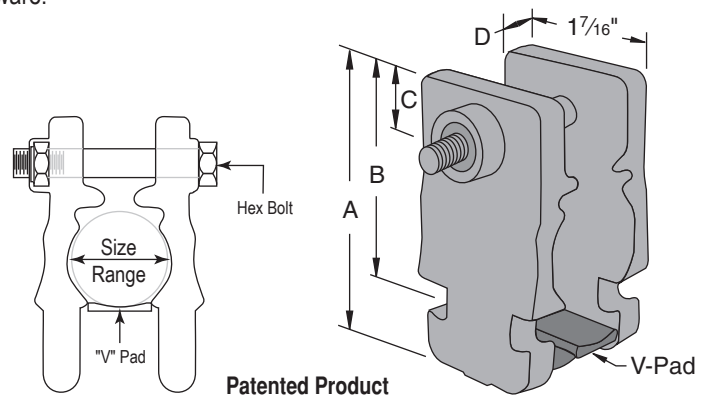
ADVANTAGES

- 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 $+380^{\circ}\text{F}$
- 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

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.



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

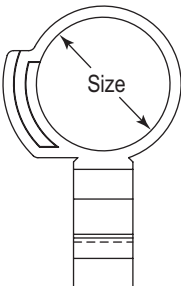
Part No.	Nominal Pipe Size	Dimensions				Hex Head Cap Screw & Lock Nut
		"A"	"B"	"C"	"D"	
CG-10	$\frac{1}{4}$ "	$1\frac{15}{16}$ "	$1\frac{3}{8}$ "	$\frac{3}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "-20 x $1\frac{1}{2}$ "
CG-20	$\frac{3}{8}$ "	$2\frac{3}{8}$ "	$1\frac{5}{8}$ "	$\frac{7}{16}$ "	$\frac{1}{4}$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

CUSH-A-CLICK



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

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



CLAMPING RANGE					
Part No.	Standard Copper	Metric Copper	Copper Tube		Condensate Drain
	(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

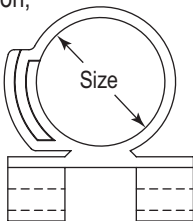
Inside diameter: Certain clips have two or more positions to accommodate both metric and standard sizes

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, makes it ideal for network cables
- Studding panel inserts.



CLAMPING RANGE					
Part No.	Standard Copper	Metric Copper	Copper Tube		Condensate Drain
	(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



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

CUSH-A-CLAW



CUSHIONED
CLAMPING

LOOP
CLAMPS

Z-STRUT &
Z-STRUT CLAMPS

BETA
CLAMPS

Z-CLAMPS

ANTI-VIBRATION
PADS

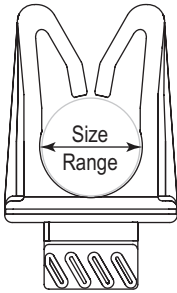
QUICK
COUPLINGS

AIRLINE
ACCESSORIES

TECHNICAL
DATA

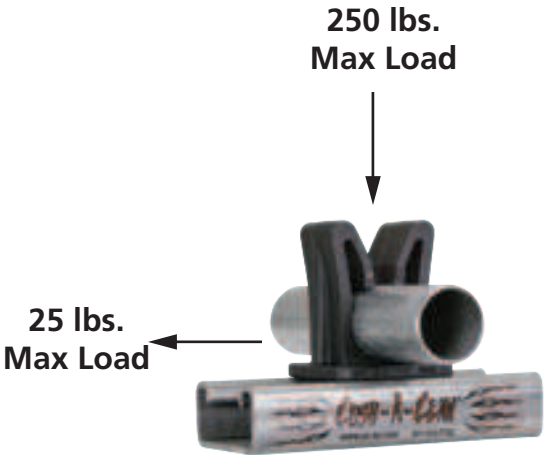
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The Cush-A-Claw Grabs on to your Tube, Pipe, or Hose and holds it in place. The unique one piece patent pending design allows for quick, simple, and easy installation. It will not rust because it's molded from the same choice TPE Material of some of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



- Quick, Simple, and 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			EMT Conduit Sizes		
Part No.	Dimensions "A"		Part No.	Dimensions "A"	
	O.D. Size	Inches		EMT Size	Inches
CL-06	3/8"	0.375	EMT-1/2	1/2"	0.706
CL-08	1/2"	0.500	EMT-3/4	3/4"	0.922
CL-10	5/8"	0.625	EMT-1	1"	1.163
CL-12	3/4"	0.750			
CL-14	7/8"	0.875			
CL-18	1-1/8"	1.125			



50 lbs.
Max Load



20 lbs. Max Load
Note: Slip load shown will vary depending upon channel manufacturer specifications



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.

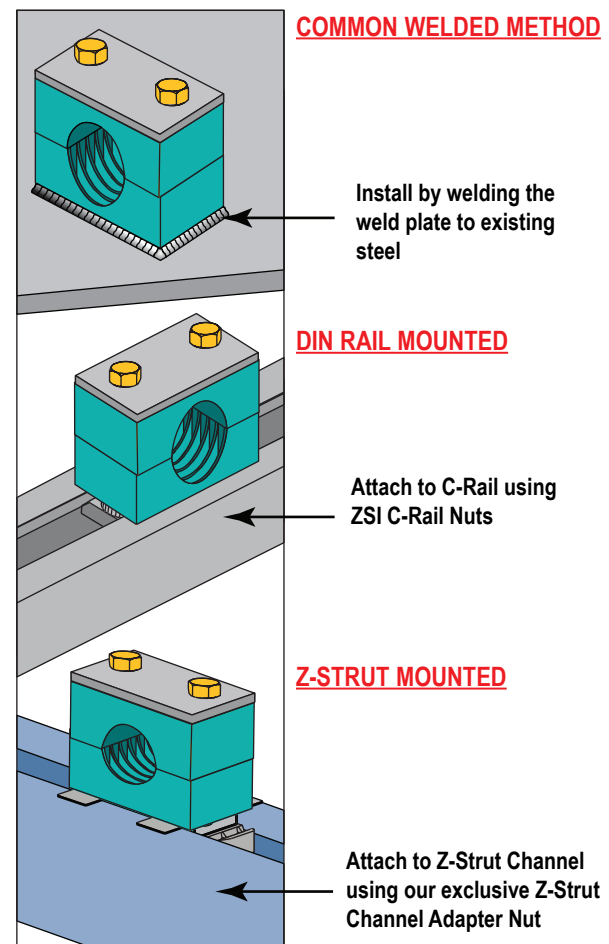
CLAMP BODY

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



BETA STANDARD



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

BETA HEAVY



- 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



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

BETA SMOOTHIE



- 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



- 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 (ALUMINUM, STAINLESS STEEL)



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

BETA RUBBER INSERTS



- 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



- 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.

CUSHIONED
CLAMPING

LOOP
CLAMPS

Z-STRUT &
Z-STRUT CLAMPS

BETA
CLAMPS

Z-CLAMPS

ANTI-VIBRATION
PADS

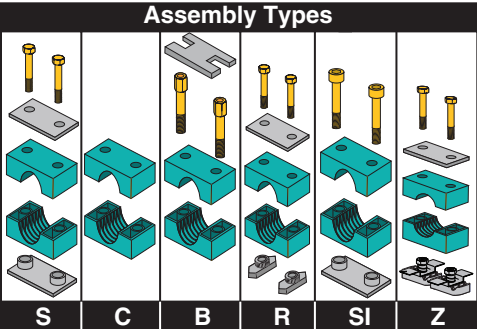
QUICK
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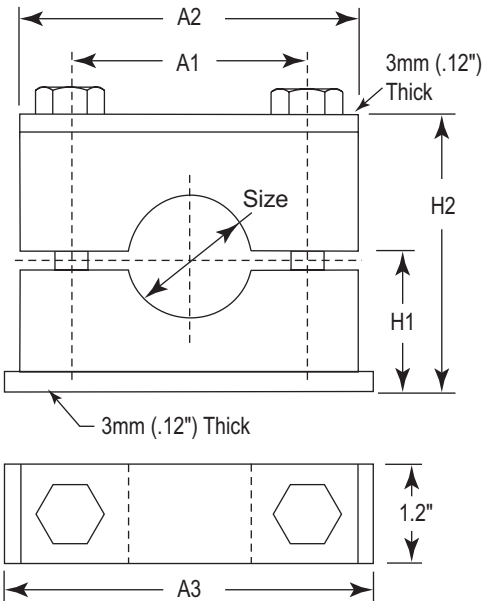
BETA CLAMPS
STANDARD SERIES



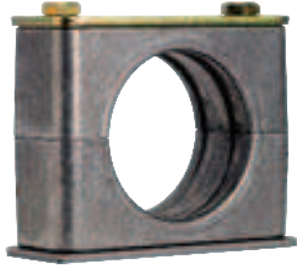
BETA STANDARD SERIES

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

INSTALLATION - Refer to pages 59-61 for complete installation guide.



Steel w/
Polypropylene
Cushion

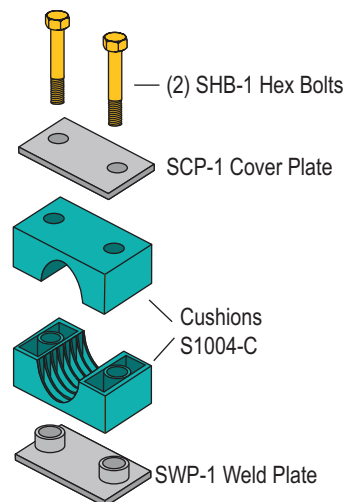


Steel w/
Aluminum
Cushion

Group	Part No. *	Tube Size	Pipe Size	Metric Size	Dimensions - inch (mm)					Wt/ 100	Bolt
					A1	A2	A3	H1	H2		
S1	S-1004	¼" (0.250)	—	—	0.78 (20)	1.34 (34)	1.41 (36)	0.62 (16)	1.25 (32)	17	¼"-20 x 1¼"
	S-1006	⅜"(0.375)	—	—							
	SM-1006	—	—	6mm							
	S-1007	—	⅝" (0.405)	—							
	SM-1008	—	—	8mm							
	SM-1012	—	—	12mm							
S2	S-2008	½" (0.500)	—	—	1.02 (26)	1.57 (40)	1.65 (42)	0.76 (19.5)	1.54 (39)	20	¼"-20 x 1⅜"
	S-2009	—	¼" (0.540)	—							
	S-2010	⅝" (0.625)	—	—							
	S-2011	—	⅜" (0.675)	—							
	SM-2014	—	—	14mm							
	SM-2015	—	—	15mm							
	SM-2018	—	—	18mm							
S3	S-3012	¾" (0.750)	—	—	1.29 (33)	1.96 (50)	2.04 (52)	0.80 (20.5)	1.61 (41)	24	¼"-20 x 1½"
	S-3014	—	½" (0.840)	—							
	S-3015	⅞" (0.875)	—	—							
	S-3016	1" (1.000)	—	—							
	SM-3020	—	—	20mm							
	SM-3025	—	—	25mm							
S4	S-4017	—	¾" (1.050)	—	1.57 (40)	2.28 (58)	2.36 (60)	0.94 (24)	1.88 (48)	30	¼"-20 x 1¾"
	S-4018	1⅝" (1.125)	—	—							
	SM-4030	—	—	30mm							
S5	S-5020	1¼" (1.250)	—	—	2.04 (52)	2.75 (70)	2.83 (72)	1.25 (32)	2.52 (64)	40	¼"-20 x 2½"
	S-5021	—	1" (1.315)	—							
	S-5024	1½" (1.500)	—	—							
	S-5027	—	1¼" (1.660)	—							
	SM-5035	—	—	35mm							
S6	S-6028	1¾" (1.750)	—	—	2.59 (66)	3.38 (86)	3.46 (88)	1.41 (36)	2.83 (72)	47	¼"-20 x 2¾"
	S-6030	—	1½" (1.900)	—							
	S-6032	2" (2.000)	—	—							
S7	S-7038	—	2" (2.375)	—	3.70 (94)	4.75 (121)	4.81 (122)	2.00 (51)	4.05 (103)	97	¼"-20 x 4"
	S-7036	2¼" (2.250)	—	—							
	S-7040	2½" (2.500)	—	—							
	S-7044	2¾" (2.750)	—	—							
	S-7048	3" (3.000)	—	—							
	 Suffix	*For additional sizes contact factory. Note: Add assembly type to part number. Example: S-1004S-SS 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)				S-1004S			
	-AL	Steel		Aluminum				S-1004S-AL			
	-SS	Stainless Steel		Polypropylene (green)				S-1004S-SS			

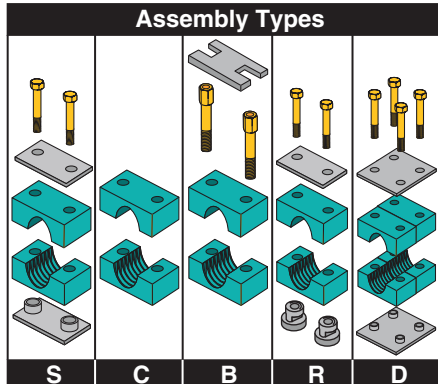
STANDARD SERIES COVER PLATE			STANDARD SERIES SAFETY PLATE		
	SCP-1	Use with Group S1		SP-1	Use with Group S1
	SCP-2	Use with Group S2		SP-2	Use with Group S2
	SCP-3	Use with Group S3		SP-3	Use with Group S3
	SCP-4	Use with Group S4		SP-4	Use with Group S4
	SCP-5	Use with Group S5		SP-5	Use with Group S5
	SCP-6	Use with Group S6		SP-6	Use with Group S6
	SCP-7	Use with Group S7			
HEX BOLT (Two required per assembly)			STANDARD SERIES CAP SCREW (Two required per assembly)		
	SHB-1	Use with Group S1		SC-1	Use with Group S1
	SHB-2	Use with Group S2		SC-2	Use with Group S2
	SHB-3	Use with Group S3		SC-3	Use with Group S3
	SHB-4	Use with Group S4		SC-4	Use with Group S4
	SHB-5	Use with Group S5		SC-5	Use with Group S5
	SHB-6	Use with Group S6		SC-6	Use with Group S6
	SHB-7	Use with Group S7			
STACKING BOLTS (Two required per assembly)			C-RAIL NUT (Two required per assembly)		
	SB-1	Use with Group S1		SRN-1-6	1/4" nut, Use with SCR Rail
	SB-2	Use with Group S2			
	SB-3	Use with Group S3			
	SB-4	Use with Group S4			
	SB-5	Use with Group S5			
	SB-6	Use with Group S6			
STANDARD SERIES WELD PLATE			C-RAIL		
	SWP-1	Use with Group S1		SCR-1	39" (1 meter)
	SWP-2	Use with Group S2		SCR-2	78" (2 meter)
	SWP-3	Use with Group S3			
	SWP-4	Use with Group S4			
	SWP-5	Use with Group S5			
	SWP-6	Use with Group S6			
	SWP-7	Use with Group S7			
STRUT NUT - For connection to Z-Strut Channel (Two required per assembly)			Z-Strut		
	ZSA1-8	Use with Groups S1-S8		Z1625	1-5/8" x 1-5/8"
				Z8125	1-5/8" x 13/16"
				Z1000	1-5/8" x 1"
				Z875	1-5/8" x 7/8"

ORDERING EXAMPLE		
S-1004-S		
Assembly Includes		
Quantity	Part No.	Description
1 Each	SWP-1	Weld Plate
1 Each	SCP-1	Cover Plate
2 Each	SHB-1	Hex Bolts
1 set	S1004-C	Cushions



BETA CLAMPS

HEAVY SERIES



Steel w/
Polypropylene
Cushion

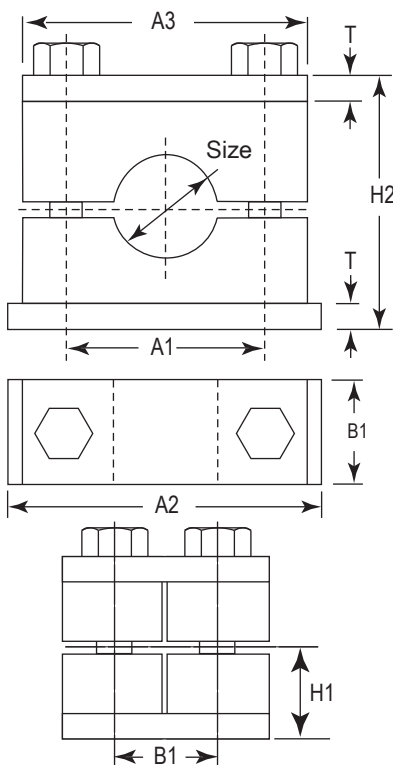


Steel w/
Aluminum
Cushion

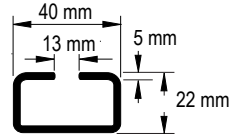
BETA HEAVY SERIES

- 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 and are used in higher heat applications up to 500 Degrees.

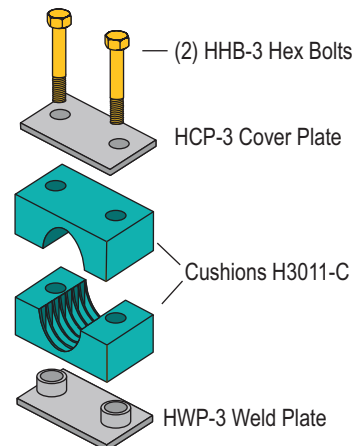
INSTALLATION - Refer to pages 59-61 for complete installation guide.



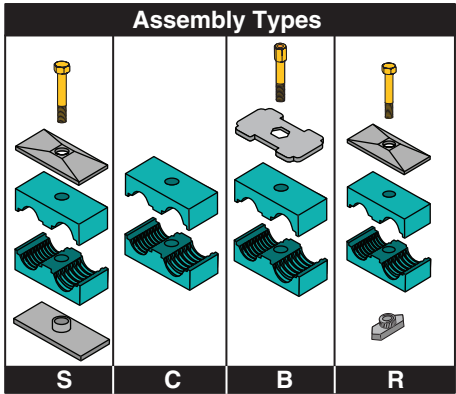
Group	Part No.	Tube Size	Pipe Size	Dimensions-inch(mm)							Wt/ 100	Hex Bolt
				A1	A2	A3	B1	H1	H2	T		
H3	H-3004	1/4"(0.250)	—	1.29 (33)	2.87 (73)	2.16 (55)	1.18 (30)	0.94 (24)	1.88 (48)	0.31 (8)	65	3/8"-16 x 1-3/4"
	H-3006	3/8" (0.375)	—								65	
	H-3007	—	1/8" (0.405)								65	
	H-3008	1/2" (0.500)	—								65	
	H-3009	—	1/4" (0.540)								65	
	H-3010	5/8" (0.625)	—								65	
	H-3011	—	3/8" (0.675)								65	
H4	H-4012	3/4" (0.750)	—	1.77 (45)	3.34 (85)	2.75 (70)	1.18 (30)	1.25 (32)	2.51 (64)	0.31 (8)	83	3/8"-16 x 2-1/4"
	H-4014	—	1/2 (0.840)								82	
	H-4015	7/8" (0.875)	—								83	
	H-4016	1" (1.000)	—								83	
	H-4017	—	3/4" (1.050)								83	
H5	H-5020	1 1/4" (1.250)	—	2.36 (60)	3.93 (100)	3.30 (84)	1.18 (30)	1.49 (38)	2.99 (76)	0.31 (8)	104	3/8"-16 x 2-3/4"
	H-5021	—	1" (1.315)								104	
	H-5024	1 1/2" (1.500)	—								103	
	H-5027	—	1 1/4" (1.660)								103	
H6	H-6028	1 3/4" (1.750)	—	3.54 (90)	5.90 (150)	4.52 (115)	1.77 (45)	2.16 (55)	4.33 (110)	0.39 (10)	266	1/2"-13 x 4"
	H-6030	—	1 1/2" (1.900)								276	
	H-6032	2" (2.000)	—								267	
	H-6034	2 1/4" (2.250)	—								266	
	H-6038	2 3/8" (2.375)	2" (2.375)								267	
	H-6040	2 1/2 (2.500)	—								264	
H7	H-7044	2 3/4" (2.750)	—	4.80 (122)	7.08 (180)	5.98 (152)	2.36 (60)	2.75 (70)	5.51 (140)	0.39 (10)	510	5/8"-11x 5-1/4"
	H-7046	—	2 1/2"(2.870)								525	
	H-7050	3"(3.000)	—								506	
	H-7056	—	3"(3.500)								495	
	H-7057	3 1/2"(3.500)	—								510	
H8	H-8072	—	4" (4.000)	6.61 (168)	8.86 (225)	8.07 (205)	3.15 (80)	3.94 (100)	7.87 (200)	0.59 (15)	635	3/4"-10 x 7-1/2"
H9	H-9089	—	5" (5.000)	8.07 (221)	10.63 (270)	9.92 (252)	3.54 (90)	4.53 (115)	9.06 (230)	0.59 (15)	625	7/8"-9 x 8-1/4"
	H-9106	—	6" (6.000)								635	
		*For additional sizes contact factory. Note: Add assembly type to part number. Example: H-3004S-SS provides the complete assembly as shown with stainless steel components.										
	Suffix	Components		Cushion			Example (complete assembly):					
	none	Steel		Polypropylene (green)			H-3004S					
	-AL	Steel		Aluminum			H-3004S-AL					
	-SS	Stainless Steel		Polypropylene(green)			H-3004S-SS					

HEAVY SERIES COVER PLATE			HEAVY SERIES SAFETY PLATE			C-RAIL NUTS (Two required per single assembly)		
	HCP-3	Use w/Group H3		HSP-3	Use w/Group H3		HRN-3-5	3/8" nut, Use w/ Groups H3-H5
	HCP-4	Use w/Group H4		HSP-4	Use w/Group H4		HRN-6	7/16" nut, Use w/ Group H6
	HCP-5	Use w/Group H5		HSP-5	Use w/Group H5			
	HCP-6	Use w/Group H6		HSP-6	Use w/Group H6			
	HCP-7	Use w/Group H7		HSP-7	Use w/Group H7			
	HCP-8	Use w/Group H8		HSP-8	Use w/Group H8			
	HCP-9	Use w/Group H9		HSP-9	Use w/Group H9			
HEAVY SERIES HEX BOLTS (Two required per single assembly)			HEAVY SERIES STACKING BOLTS (Two required per single assembly)			C-RAIL		
	HHB-3	Use w/Group H3		HSB-3	Use w/Group H3		HCR-1	39" (1 meter)
	HHB-4	Use w/Group H4		HSB-4	Use w/Group H4		HCR-2	78" (2 meter)
	HHB-5	Use w/Group H5		HSB-5	Use w/Group H5			
	HHB-6	Use w/Group H6		HSB-6	Use w/Group H6			
	HHB-7	Use w/Group H7		HSB-7	Use w/Group H7			
	HHB-8	Use w/Group H8		HSB-8	Use w/Group H8			
	HHB-9	Use w/Group H9		HSB-9	Use w/Group H9			
HEAVY SERIES WELD PLATE			HEAVY SERIES DOUBLE WELD PLATE			HEAVY SERIES DOUBLE COVER PLATE		
	HWP-3	Use w/Group H3		HDP-3	Use w/Group H3		DCP-3	Use w/Group H3
	HWP-4	Use w/Group H4		HDP-4	Use w/Group H4		DCP-4	Use w/Group H4
	HWP-5	Use w/Group H5		HDP-5	Use w/Group H5		DCP-5	Use w/Group H5
	HWP-6	Use w/Group H6		HDP-6	Use w/Group H6		DCP-6	Use w/Group H6
	HWP-7	Use w/Group H7		HDP-7	Use w/Group H7		DCP-7	Use w/Group H7
	HWP-8	Use w/Group H8						
	HWP-9	Use w/Group H9						

ORDERING EXAMPLE		
H3004-S		
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	H3011-C	Cushions



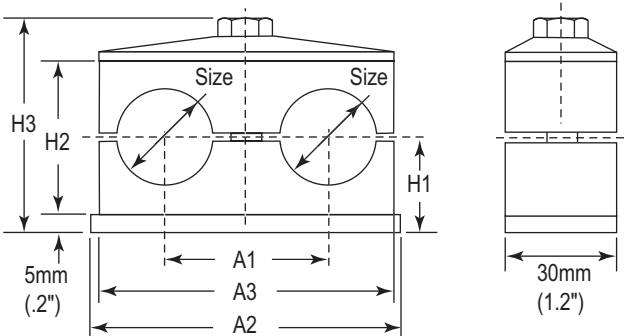
BETA CLAMPS
TWIN SERIES



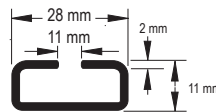
BETA CLAMPS TWIN SERIES are ideal for general-duty applications subject to moderate levels of shock and vibration. Cushions in this series are Polypropylene (Green Color).

Call factory for additional sizes and cushion materials

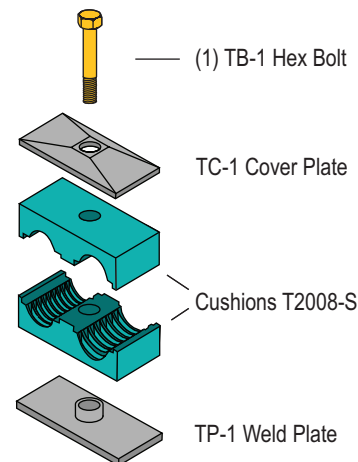
INSTALLATION - Refer to pages 59-61 for complete installation guide.



Group	Steel Part No.	Stainless Steel Part No.	Tube Size	Pipe Size	Dimensions - inch (mm)						WT/ 100	Hex Bolt
					A1	A2	A3	H1	H2	H3		
T1	T-1004	T-1004-SS	¼ (0.250)	—	0.78 (20)	1.45 (37)	1.41 (36)	0.72 (18.5)	1.06 (27)	1.69 (43)	21	¼"-20 x 1-⅜"
	T-1006	T-1006-SS	⅜ (0.375)	—							21	
	T-1007	T-1007-SS	—	⅛ (0.405)							21	
T2	T-2008	T-2008-SS	½" (0.500)	—	1.14 (29)	2.16 (55)	2.08 (53)	0.70 (18)	1.02 (26)	1.71 (43.5)	31	⅝"-18 x 1-⅜"
	T-2009	T-2009-SS	—	¼ (0.540)							31	
	T-2010	T-2010-SS	⅝ (0.625)	—							31	
	T-2011	T-2011-SS	—	⅜ (0.675)							31	
T3	T-3012	T-3012-SS	¾ (0.750)	—	1.41 (36)	2.75 (70)	2.63 (67)	0.92 (23.5)	1.45 (37)	2.14 (54.5)	40	⅝"-18 x 1-¾"
	T-3014	T-3014-SS	—	½ (0.840)							39	
	T-3015	T-3015-SS	⅞ (0.875)	—							39	
	T-3016	T-3016-SS	1 (1.000)	—							38	
T4	T-4017	T-4017-SS	—	¾ (1.050)	1.77 (45)	3.34 (85)	3.22 (82)	1.02 (26)	1.65 (42)	2.34 (59.5)	49	⅝"-18 x 2"
	T-4018	T-4018-SS	1-⅛ (1.125)	—							49	
T5	T-5020	T-5020-SS	1-¼ (1.250)	—	2.20 (56)	4.33 (110)	4.17 (106)	1.25 (32)	2.12 (54)	2.81 (71.5)	65	⅝"-18 x 2-⅜"
	T-5021	T-5021-SS	—	1 (1.315)							65	
	T-5024	T-5024-SS	1-½ (1.500)	—							64	
	T-5027	T-5027-SS	—	1-¼ (1.660)							62	
*For additional sizes and stainless steel contact factory.												
Note: Add Assembly type to Part No.- Example: T-1004S provides the complete assembly as shown												

TWIN SERIES COVER PLATE			TWIN SERIES SAFETY PLATE		
	TC-1	Use with Group T1		TSP-1	Use with Group T1
	TC-2	Use with Group T2		TSP-2	Use with Group T2
	TC-3	Use with Group T3		TSP-3	Use with Group T3
	TC-4	Use with Group T4		TSP-4	Use with Group T4
	TC-5	Use with Group T5		TSP-5	Use with Group T5
TWIN HEX BOLT			C-RAIL NUT		
	TB-1	Use with Group T1		SRN-1-6	1/4" Nut, Use with Group T1
	TB-2	Use with Group T2		TRN-2-5	5/16" Nut, Use with Group T2 to T5
	TB-3	Use with Group T3			
	TB-4	Use with Group T4			
	TB-5	Use with Group T5			
TWIN STACKING BOLT			C-RAIL		
	TSB-1	Use with Group T1		SCR-1	39" (1 meter)
	TSB-2	Use with Group T2		SCR-2	78" (2 meter)
	TSB-3	Use with Group T3			
	TSB-4	Use with Group T4			
	TSB-5	Use with Group T5			
TWIN SERIES WELD PLATE					
	TP-1	Use with Group T1			
	TP-2	Use with Group T2			
	TP-3	Use with Group T3			
	TP-4	Use with Group T4			
	TP-5	Use with Group T5			

ORDERING EXAMPLE		
T2008-S		
Assembly Includes		
Quantity	Part No.	Description
1 Each	TP-1	Weld Plate
1 Each	TC-1	Cover Plate
1 Each	TB-1	Hex Bolts
1 set	T2008-S	Cushions


CUSHIONED
CLAMPING

LOOP
CLAMPS

Z-STRUT &
Z-STRUT CLAMPS

BETA
CLAMPS

Z-CLAMPS

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PADS

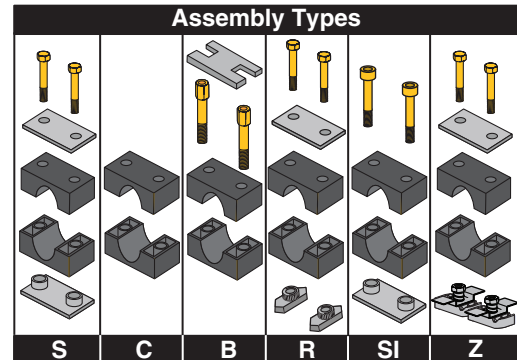
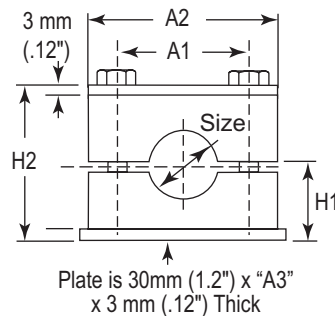
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BETA “SMOOTHIE” STANDARD SERIES



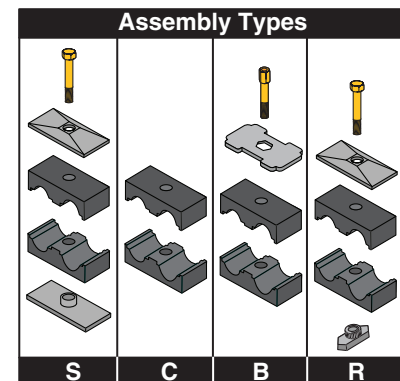
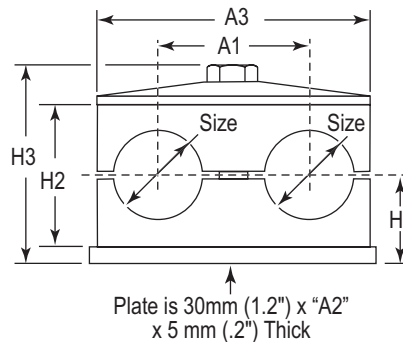
Beta "Smoothie" is ideal for general-duty applications where there is a need to reduce wear on hose connection caused by vibration and surge.

- 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 59-61 for complete installation guide.

Group	Part No.	SAE 100R1 Hose Size	Dimensions (Inches)					WT/ 100	Bolt
			A1	A2	A3	H1	H2		
S2	S-2004H	1/4" (0.53)	1.02	1.57	1.65	0.76	1.535	20	1/4 – 20
	S-2006H	3/8" (0.69)	1.02	1.57	1.65	0.76	1.535	20	x 1 3/8
S3	S-3008H	1/2" (0.81)	1.29	1.96	2.04	0.80	1.61	25	1/4 – 20
	S-3010H	5/8" (0.93)	1.29	1.96	2.04	0.80	1.61	25	x 1 1/2
S4	S-4012H	3/4" (1.10)	1.57	2.28	2.36	0.94	1.88	29	1/4 – 20
S5	S-5016H	1" (1.42)	2.05	2.75	2.83	1.25	2.52	39	1/4 – 20
*For additional sizes and stainless steel contact factory. Note: Add Assembly type to Part No.- Example: S-2004HS provides the complete 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 59-61 for complete installation guide.

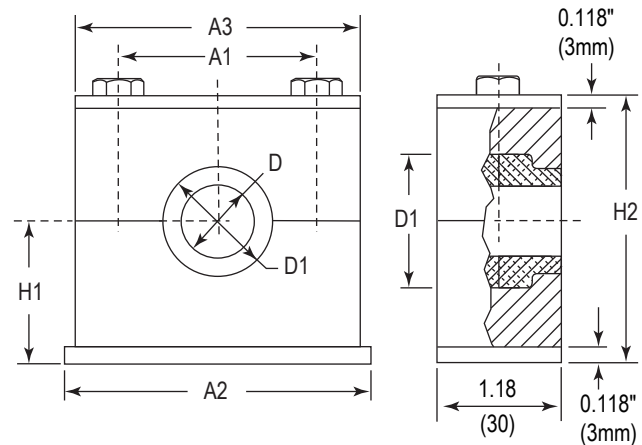
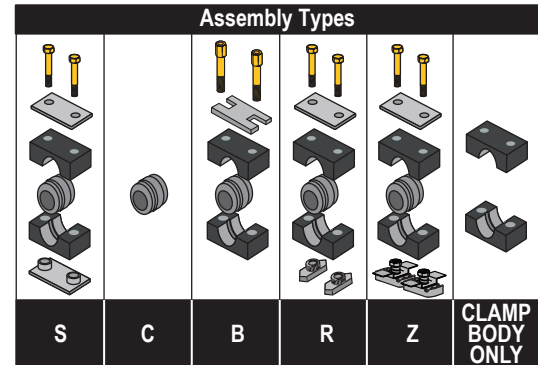
Group	Part No.	SAE 100R1 Hose Size	Dimensions (Inches)						WT/ 100	Bolt
			A1	A2	A3	H1	H2	H3		
T2	T-2004H	1/4" (0.53)	1.14	2.16	2.08	0.70	1.02	1.71	31	5/16 – 18
	T-2006H	3/8" (0.69)	1.14	2.16	2.08	0.70	1.02	1.71	31	x 1 3/8
T3	T-3008H	1/2" (0.81)	1.41	2.75	2.63	0.92	1.45	2.14	39	5/16 – 18
T4	T-4010H	5/8" (0.93)	1.77	3.34	3.22	1.02	1.65	2.34	49	5/16 – 18
	T-4012H	3/4" (1.10)	1.77	3.34	3.22	1.02	1.65	2.34	49	x 2
T5	T-5016H	1" (1.42)	2.2	4.33	4.17	1.25	2.12	2.81	65	5/16 – 18
*For additional sizes and stainless steel contact factory. Note: Add Assembly type to Part No.- Example: T-2004HS provides the complete assembly as shown										

BETA CLAMPS STANDARD RUBBER INSERT



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

INSTALLATION - Refer to pages 59-61 for complete installation guide.



Group	Part No.	Bore Size Ø D in (mm)	Tube O.D.	Pipe Size	Nom. Size Hose O.D. Min - Max	Dimensions – inches (mm)							Bolt Size
						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 x1-3/4
	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 (13)	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)	-	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 x2-3/4
	S6015RI	0.87 (22)	7/8"	-	0.85 - 0.87								
	S6016RI	0.98 (25)	1"	-	0.96 - 0.98								
	S6017RI	1.06 (27)	-	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

CUSHIONED
CLAMPING

LOOP
CLAMPS

Z-STRUT &
Z-STRUT CLAMPS

BETA
CLAMPS

Z-CLAMPS

ANTI-VIBRATION
PADS

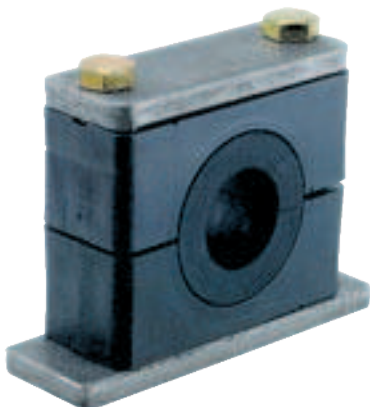
QUICK
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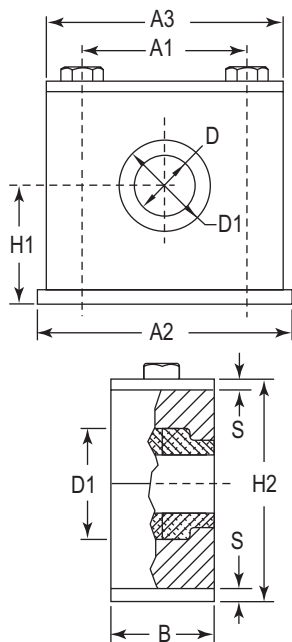
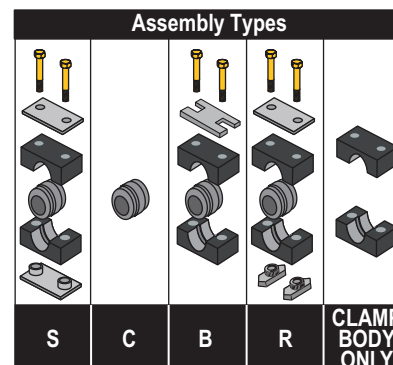
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BETA CLAMPS HEAVY RUBBER INSERT



- 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.
- Used for high pressure hydraulics and heavy duty operations.
- Used for intermittent load and high oil speeds.
- Increase size range over standard series.

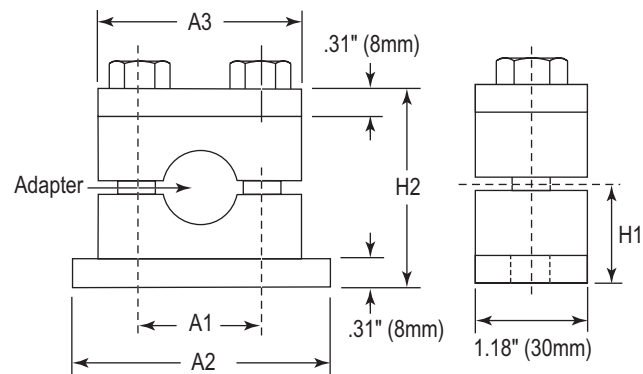
INSTALLATION - Refer to pages 59-61 for installation guide.



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										
	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	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
	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										
	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	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
	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										
	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	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
	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										
	HM7065RI	2.56 (65)	-	-	2.54 - 2.56										
	HM7070RI	2.76 (70)	-	-	2.74 - 2.76	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
	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.

BETA-ADAPTER



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

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

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

INSTALLATION - Refer to page 62 for complete installation guide.



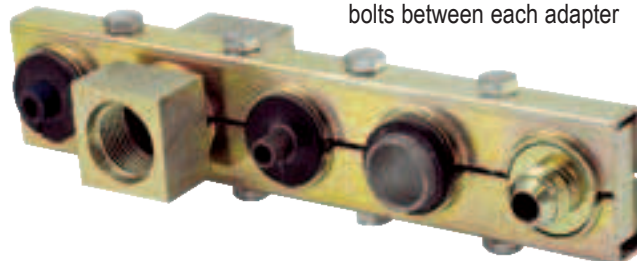
		Tube Size	Group 1 (H4) Part No.	Group 2 (H5) Part No.
	37° JIC	1/4"	H4MJA1-4-S	H5MJA2-4-S
		3/8"	H4MJA1-6-S	H5MJA2-6-S
		1/2"	H4MJA1-8-S	H5MJA2-8-S
		5/8"	H4MJA1-10-S	H5MJA2-10-S
		3/4"	-	H5MJA2-12-S
		5/8"	-	H5MJA2-14-S
		1"	-	H5MJA2-16-S
	O-Ring Face Seal	3/8"	H4MJO1-6-S	H5MJO2-6-S
		1/2"	H4MJO1-8-S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

Z-CLAMP UNITS

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

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

Standard framework, bolts between each adapter



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



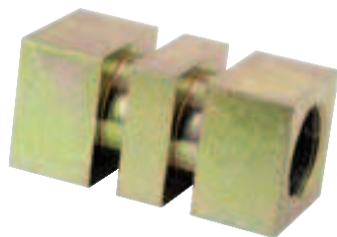
Outside hole framework, bolts between each adapter and two additional bolts at each end

Z-CLAMP & BETA 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 - MULTIPLE LINE CLAMPING SYSTEM

STANDARD CLAMP UNITS

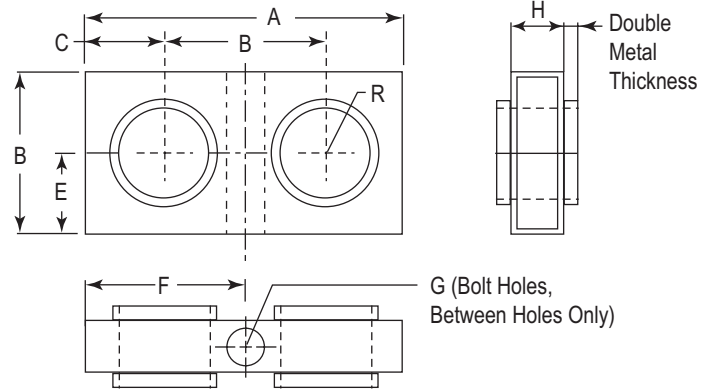


The standard Z-Clamp unit features an anchor bolt between each of the adapter inserts.

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 62 for complete installation guide.



CUSHIONED
CLAMPING

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Note: Adapters and Hardware are ordered separately. Please see pages 39 - 41 for selection of these items.

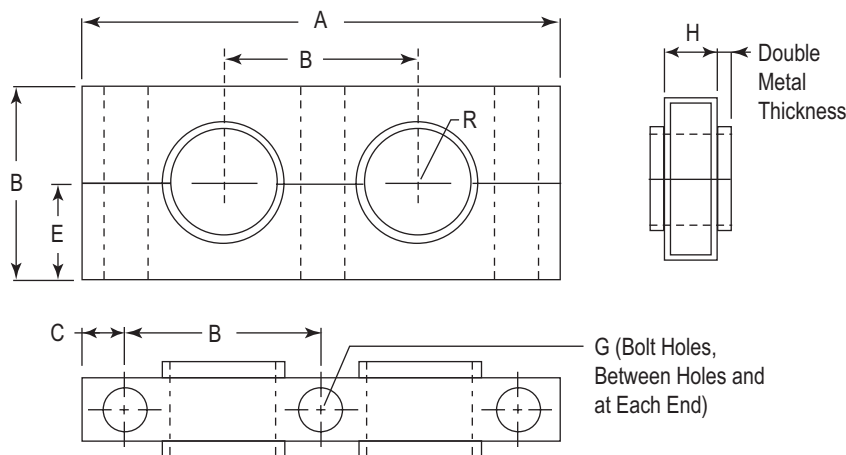
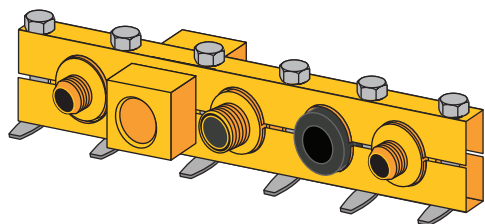


Part No.	# Adapter Holes	# Bolts	A	B	C	E	F	G	H	R
HAC-1 Series 1-1/2" 14 Gauge										
HAC-1-2	2	1	2.938"	1.5"	0.719"	0.75"	1.469"	0.344"	0.550"	0.422"
HAC-1-3	3	2	4.406"	1.5"	0.719"	0.75"	1.469"	0.344"	0.550"	0.422"
HAC-1-4	4	3	5.940"	1.5"	0.719"	0.75"	1.469"	0.344"	0.550"	0.422"
HAC-1-5	5	4	7.140"	1.5"	0.594"	0.75"	1.343"	0.344"	0.550"	0.422"
HAC-1-6	6	5	8.938"	1.5"	0.719"	0.75"	1.469"	0.344"	0.550"	0.422"
HAC-1-7	7	6	10.188"	1.5"	0.594"	0.75"	1.343"	0.344"	0.550"	0.422"
HAC-1-32	32	31	48.00"	1.5"	-	0.75"	-	0.344"	0.550"	0.422"
HAC-2 Series 2" 14 Gauge										
HAC-2-2	2	1	3.875"	2"	0.938"	1"	1.938"	0.344"	0.550"	0.594"
HAC-2-3	3	2	5.641"	2"	0.844"	1"	1.844"	0.344"	0.550"	0.594"
HAC-2-4	4	3	7.891"	2"	0.938"	1"	1.938"	0.344"	0.550"	0.594"
HAC-2-5	5	4	9.672"	2"	0.844"	1"	1.844"	0.344"	0.550"	0.594"
HAC-2-6	6	5	11.672"	2"	0.813"	1"	1.813"	0.344"	0.550"	0.594"
HAC-2-7	7	6	13.625"	2"	0.813"	1"	1.813"	0.344"	0.550"	0.594"
HAC-2-24	24	23	48.00"	2"	-	1"	-	0.344"	0.550"	0.594"
HAC-3 Series 3" 11 Gauge										
HAC-3-2	2	1	6.766"	3"	1.875"	1.5"	3.375"	0.406"	0.750"	1.063"
HAC-3-3	3	2	8.703"	3"	1.406"	1.5"	2.984"	0.406"	0.750"	1.063"
HAC-3-4	4	3	11.703"	3"	1.406"	1.5"	2.797"	0.406"	0.750"	1.063"
HAC-3-5	5	4	14.703"	3"	1.406"	1.5"	2.859"	0.406"	0.750"	1.063"
HAC-3-6	6	5	17.703"	3"	1.406"	1.5"	2.859"	0.406"	0.750"	1.063"
HAC-3-16	16	15	48.00"	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 62 for complete installation guide.



Note: Adapters and Hardware are ordered separately. Please see pages 39 to 41 for selection of these items.

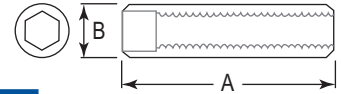


Part No.	# Adapter Holes	# Bolts	A	B	C	E	G	H	R
HAC-1 Series 1-1/2"									
HAC 1-1-2	1	2	2.188"	1.5"	0.344"	0.75"	0.344"	0.550"	0.422"
HAC 1-2-3	2	3	3.797"	1.5"	0.391"	0.75"	0.344"	0.550"	0.422"
HAC 1-3-4	3	4	5.297"	1.5"	0.391"	0.75"	0.344"	0.550"	0.422"
HAC 1-4-5	4	5	6.797"	1.5"	0.391"	0.75"	0.344"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

Z-CLAMP

HARDWARE

SOCKET HEAD STACKING NUT



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

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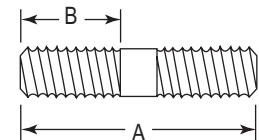
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THREAD ADAPTER

(Install or Stack)

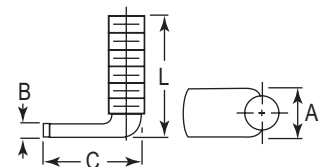


Part No.	HAC Series	A	B Dia.	Thread size
T-1	1 & 2	1.38"	0.63"	5/16"-18
T-3	3	2.00"	0.88"	3/8"-16

WELD NUT



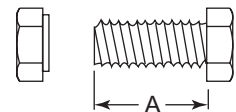
Part No.	HAC Series	ThreadSize	A	B	C	L
W-1 / W-2	HAC 1&2	5/16-18	0.437	0.12	0.875	3/4
W-3	HAC 3	3/8-16	0.531	0.151	1.00	1.00



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"



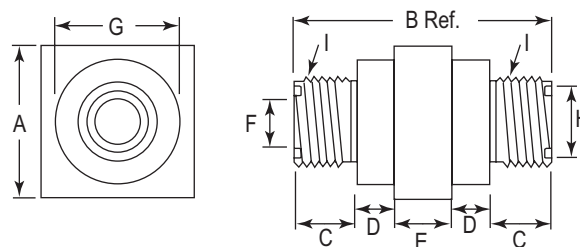
O-RING FACE SEAL



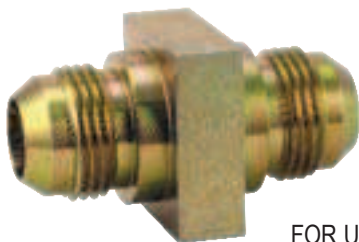
FOR USE with BETA
ADAPTERS & Z-CLAMPS

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"	1-3/16"-12	0.873"
MJO-2-16	1"	1.50"	2.58"	0.68"	0.34"	0.54"	0.81"	1.20"	1-7/16"-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



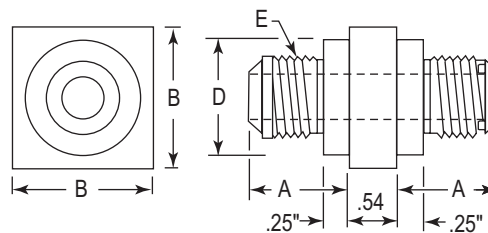
37° FLARE MALE JUNCTION ADAPTER



FOR USE with BETA
ADAPTERS & Z-CLAMPS

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



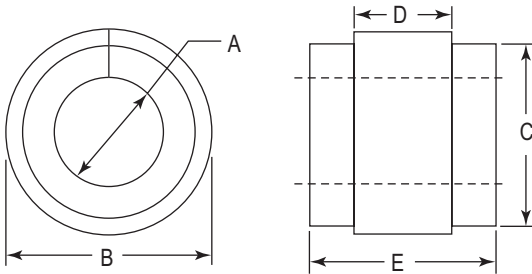
SPLIT RUBBER BUSHINGS



FOR USE with BETA ADAPTERS & Z-CLAMPS

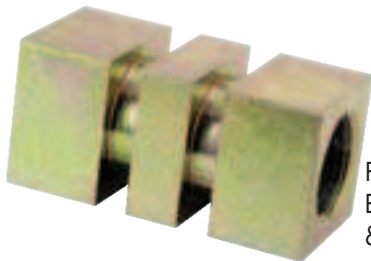
ANTI-VIBRATION SPLIT RUBBER BUSHING

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



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

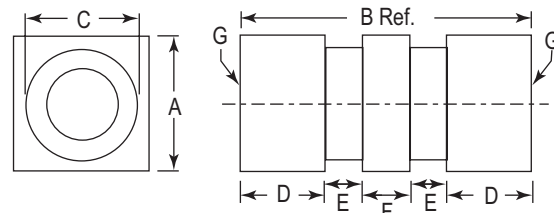
FEMALE JUNCTION ADAPTER



FOR USE with BETA ADAPTERS & Z-CLAMPS

Part No.	Dimensions – Inches						G (Thread)
	A	B	C	D	E	F	
FJA-1-6-P	1"	2-13/16"	0.84"	0.84"	0.30"	0.54"	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

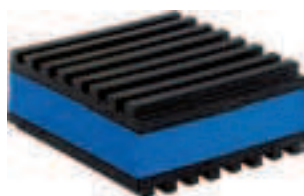
- Offered in a wide range of sizes in JIC, NPT, SAE, and ORFS thread configurations.
- Zinc plated to prevent corrosion
- Clamping at the fitting prevents loosening and other vibration related leaks



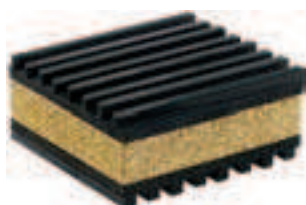
GAMMA PADS

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.



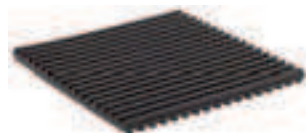
EXTREME



STANDARD



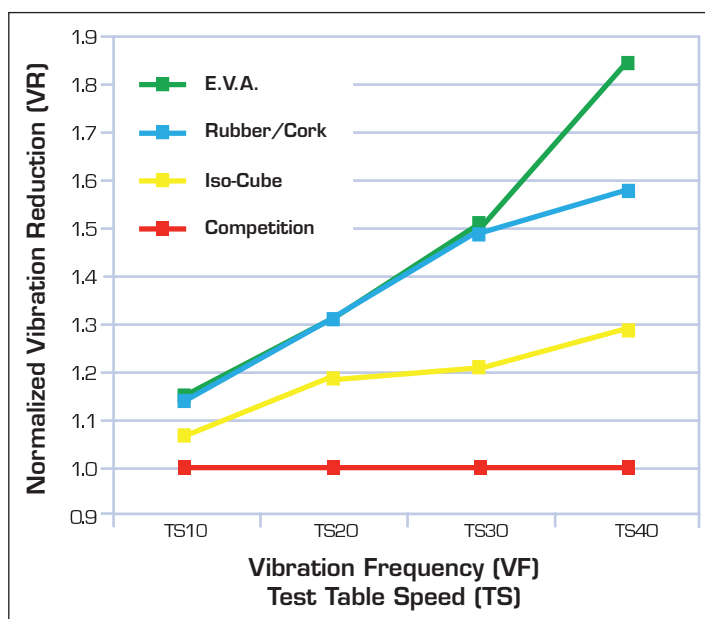
ISO-CUBE



SHIELD

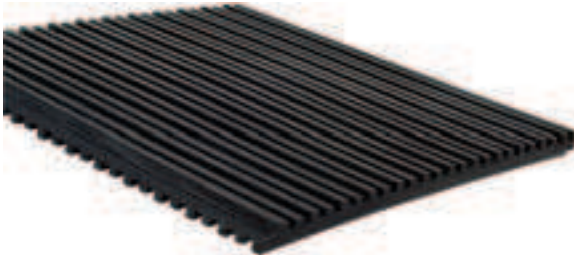


ANTI-VIBRATION PAD PERFORMANCE



GAMMA SHIELD – RUBBER MAT

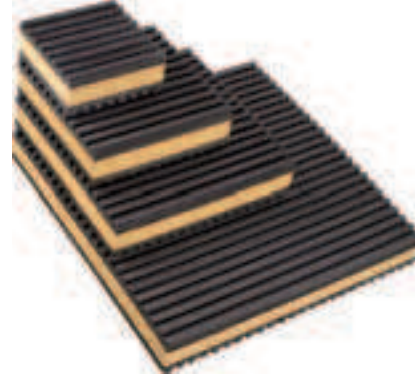
Shields equipment from vibration and movement when lesser amounts of vibration absorption is needed.



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

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ANTI-VIBRATION
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DYNA-CON®

QUICK COUPLINGS & AIRLINE PRODUCTS

QUICK DISCONNECTS

(See Pages 46 - 51)



DYNA-CON offers a wide variety of high quality quick-disconnect couplers for industrial, automotive, government, and contractor applications. Choices include automatic, manual, safety vent, non-marring, and multi-plug automatic couplers. A multitude of connection choices are available in each coupler category. Our couplers and their mating plugs are made in the USA.

BLOW GUNS

(See Pages 52 - 54)

DYNA-CON Blow Guns combine durability with excellent performance. Features include OSHA compliant models, ergonomically designed grips, a patented quick-disconnect nozzle adapter, and a variety of versatile nozzles to satisfy most any application.



ACCESSORIES

(See Pages 54 - 56)



DYNA-CON air line product accessories will add flexibility and improved performance to your compressed air systems.

- Use our Swivel Fittings on all of your air tools to improve their ergonomics. DYNA-CON Swivels function as universal joints to keep air hoses vertical and they greatly improve your air tool's maneuverability.
- DYNA-CON 3-Way Manifolds allow you to reduce your hose assemblies by using a single air line to supply air to 3 work stations or air tools.
- Eliminate assembly time and control your costs by using our durable, abrasion-resistant DYNA-CON re-assembled Recoil Hose Assemblies.

HOW TO SELECT

Proper coupler selection is important because of the variety of media for which they are used. Four basic factors should be considered to assure proper selection:

Type – Operation – Flow – Media

MANUAL



Manual sockets require manual retraction of the sleeve to both connect and disconnect the plug.

AUTOMATIC



Automatic sockets accept the plug by simple insertion into the socket and do not require retraction of the sleeve to connect. Retraction of the sleeve is required to disconnect.

SAFETY COUPLER



Safety sockets are a variation of automatic operation. Safety sockets are zero pressure connect and disconnect type eliminating the possibility of hazardous hose whip.

Type

All couplers consist of two basic components – a socket and a plug. The type of coupler varies by the valving arrangements in these two components. There are three types of coupling valving;

- One-Way Shut-Off
- Two-Way Shut-Off
- Straight-Thru

All DYNA-CON Couplers are One-Way Shut-Off type

Operation

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

Flow

The most important factor in properly sizing couplers is flow. Flow data is provided for the various coupler types.

Media

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

D SERIES

(See Page 46)



DC SERIES

(See Page 48)



DM SERIES

(See Page 47)



DP SERIES

(See Page 49)



DR SERIES

(See Page 50)



DW SERIES

(See Page 51)



CUSHIONED
CLAMPING

LOOP
CLAMPS

Z-STRUT &
Z-STRUT CLAMPS

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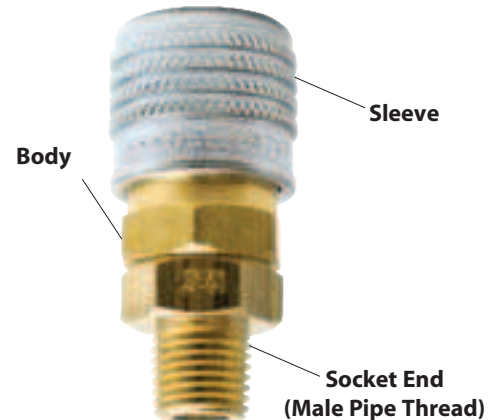
D SERIES

MANUAL CONNECT DESIGN

Dyna-Con D Series couplers offer all the basic features necessary for a low cost, long-wearing one-way shut-off coupling. These couplers are ideal for any industrial type pneumatic application where frequent quick connections and disconnections are required.

FEATURES:

- **Made in the USA**
- Lowest cost, general purpose coupler
- Positive locking mechanism
- Ball-holes with corner radius have 65% more ball-to-body contact area and provides longer life and increased reliability
- Precision leakproof seal
- Robust, heavy-duty steel sleeve



SPECIFICATIONS

- **Material:** Brass body and socket end, zinc-plated steel sleeve
- **Seal:** Buna-N
- **Air Flow:** see page 57
- **Working Pressure:** 300 PSIG; vacuum to 26"Hg
- **Body Sizes:** 1/4" to 1/2" Industrial Interchange Design
- **Connection Sizes:** 1/8" to 3/4" NPT
1/4" to 3/4" Hose Barb
1/4" to 1/2" Push-on Hose Barb
- **Interchangeability:** Complies with ANSI/NFPA T3.20.14-1990 & ISO 6150-B

OPTIONS

Ball-Lock feature locks manual socket against accidental disconnect. To connect, align ball with slot. After connection, rotate sleeve to lock. To disconnect, realign ball with slot and retract sleeve. To order, add suffix "BL" to socket part number. (e.g. D320BL)



End Connection	Size	D-Series, 1/4" Body Size			D-Series, 3/8" Body Size			D-Series, 1/2" Body Size		
		Plug	Manual D-Series	D-Series Ball Lock	Plug	Manual D-Series	D-Series Ball Lock	Plug	Manual D-Series	D-Series Ball Lock
Female Pipe Thread	1/8"	P320	D320	D320BL	—	—	—	—	—	—
	1/4"	P340	D340	D340BL	P440.A	D440	D440BL	—	D540	D540BL
	3/8"	P360	D360	D360BL	P460.A	D460	D460BL	P560	D560	D560BL
	1/2"	—	—	—	P480.A	D480	D480BL	P580	D580	D580BL
	3/4"	—	—	—	—	—	—	P5120	D5120	D5120BL
Male Pipe Thread	1/8"	P321	D321	D321BL	P421.A	—	—	—	—	—
	1/4"	P341	D341	D341BL	P441.A	D441	D441BL	P541	D541	D541BL
	3/8"	P361	D361	D361BL	P461.A	D461	D461BL	P561	D561	D561BL
	1/2"	—	—	—	P481.A	D481	D481BL	P581	D581	D581BL
	3/4"	—	—	—	—	—	—	—	D5121	D5121BL
Ball Check Plug	1/4"	P341G	—	—	—	—	—	—	—	—
	3/8"	P361G	—	—	—	—	—	—	—	—
	1/2"	—	—	—	—	—	—	P581G	—	—
Hose Barb (requires hose clamps)	1/4"	P342	D342	D342BL	P442.A	D442	D442BL	—	D542	D542BL
	5/16"	P352	D352	D352BL	—	D452	D452BL	—	—	—
	3/8"	P362	D362	D362BL	P462.A	D462	D462BL	P562	D562	D562BL
	1/2"	—	—	—	P482.A	D482	D482BL	P582	D582	D582BL
	3/4"	—	—	—	—	—	—	P5122	D5122	D5122BL
Push-On Hose Barb	1/4"	P344	D344	D344BL	—	—	—	—	—	—
	3/8"	P364	D364	D364BL	P464.A	D464	D464BL	—	—	—
	1/2"	—	—	—	—	D484	D484BL	—	D584	D584BL

DM SERIES

AUTOMATIC PUSH-TO-CONNECT DESIGN

Dyna-Con DM Series automatic push-to-connect couplers are designed for one hand connection when "hard" mounted, such as to pipe or machines, or for easier two hand connection when "soft" mounted.

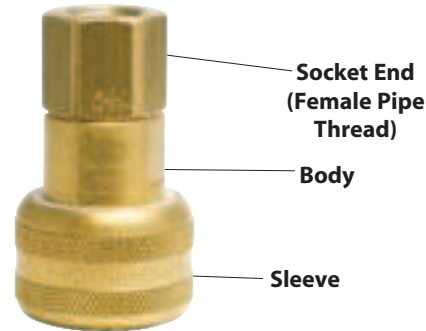
SPECIFICATIONS

- **Material:** Brass body and sleeve
- **Seal:** Buna-N
- **Air Flow:** see page 57
- **Working Pressure:** 300 PSIG; vacuum to 26"Hg
- **Body Sizes:** 1/4" to 3/4" Industrial Interchange Design
- **Connection Sizes:** 1/8" to 1" NPT
1/4" to 1" Hose Barb
1/4" to 1/2" Push-on Hose Barb
- **Interchangeability:** Complies with A-A-59439, ANSI/NFPA T3.20.14-1990 & ISO 6150-B

OPTIONS

Ball-Lock feature locks manual socket against accidental disconnect. To connect, align ball with slot. After connection, rotate sleeve to lock.

To disconnect, realign ball with slot and retract sleeve. To order, add suffix "BL" to socket part number. (e.g.: DM320BL)



FEATURES:

- **Made in the USA**
- Hardened stainless steel retention pins resist deformation
- Polished pins reduce engagement friction for smooth, easy coupling action
- Sleeve knurl provides positive grip surface for trouble free uncoupling
- Material of construction provides maximum resistance to corrosion
- Rounded corners of sleeve help prevent sleeve from catching and causing inadvertent disconnection when dragging hoses
- Leak-proof seal
- One-handed operation when hard mounted

End Connection	Size	DM-Series, 1/4" Body Size			DM-Series, 3/8" Body Size			DM-Series, 1/2" Body Size			DM-Series, 3/4" Body Size		
		Plug	Automatic DM-Series	DM-Series Ball Lock	Plug	Automatic DM-Series	DM-Series Ball Lock	Plug	Automatic DM-Series	DM-Series Ball Lock	Plug	Automatic DM-Series	DM-Series Ball Lock
Female Pipe Thread	1/8"	P320	DM320	DM320BL	-	-	-	-	-	-	-	-	-
	1/4"	P340	DM340	DM340BL	P440.A	DM440	DM440BL	-	DM540	DM540BL	-	-	-
	3/8"	P360	DM360	DM360BL	P460.A	DM460	DM460BL	P560	DM560	DM560BL	-	-	-
	1/2"	-	-	-	P480.A	DM480	DM480BL	P580	DM580	DM580BL	-	DM680	DM680BL
	3/4"	-	-	-	-	-	-	P5120	DM5120	DM5120BL	P6120	DM6120	DM6120BL
	1"	-	-	-	-	-	-	-	-	-	-	DM6160	DM6160BL
Male Pipe Thread	1/8"	P321	DM321	DM321BL	P421.A	-	-	-	-	-	-	-	-
	1/4"	P341	DM341	DM341BL	P441.A	DM441	DM441BL	P541	DM541	DM541BL	-	-	-
	3/8"	P361	DM361	DM361BL	P461.A	DM461	DM461BL	P561	DM561	DM561BL	-	-	-
	1/2"	-	-	-	P481.A	DM481	DM481BL	P581	DM581	DM581BL	-	DM681	DM681BL
	3/4"	-	-	-	-	-	-	-	DM5121	DM5121BL	P6121	DM6121	DM6121BL
	1"	-	-	-	-	-	-	-	-	-	-	DM6161	DM6161BL
Ball Check Plug	1/4"	P341G	-	-	-	-	-	-	-	-	-	-	-
	3/8"	P361G	-	-	-	-	-	-	-	-	-	-	-
	1/2"	-	-	-	-	-	-	P581G	-	-	-	-	-
Hose Barb (requires hose clamps)	1/4"	P342	DM342	DM342BL	P442.A	DM442	DM442BL	-	DM542	DM542BL	-	-	-
	5/16"	P352	DM352	DM352BL	-	DM452	DM452BL	-	-	-	-	-	-
	3/8"	P362	DM362	DM362BL	P462.A	DM462	DM462BL	P562	DM562	DM562BL	-	-	-
	1/2"	-	-	-	P482.A	DM482	DM482BL	P582	DM582	DM582BL	P682	DM682	DM682BL
	3/4"	-	-	-	-	-	-	P5122	DM5122	DM5122BL	P6122	DM6122	DM6122BL
	1"	-	-	-	-	-	-	-	-	-	-	DM6162	DM6162BL
Push-On Hose Barb	1/4"	P344	DM344	DM344BL	-	-	-	-	-	-	-	-	-
	3/8"	P364	DM364	DM364BL	P464.A	DM464	DM464BL	-	-	-	-	-	-
	1/2"	-	-	-	-	DM484	DM484BL	-	DM584	DM584BL	-	-	-

CUSHIONED CLAMPING

LOOP CLAMPS

Z-STRUT & Z-STRUT CLAMPS

BETA CLAMPS

Z-CLAMPS

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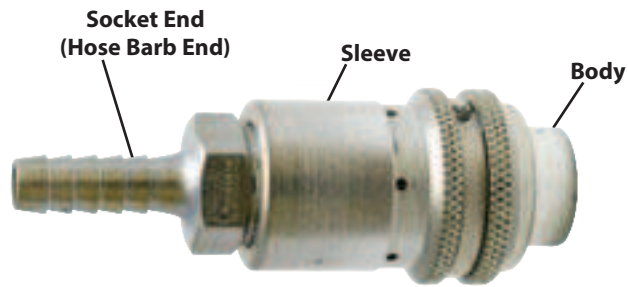
DC SERIES - SAFETY VENT

ZERO PRESSURE CONNECT AND DISCONNECT DESIGN

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

FEATURES:

- **Made in the USA**
- High-Flow Design
- Extra thick heat-treated steel walls provide extended service life
- Zero pressure connect/disconnect design vents downstream pressure for safe, easy connect/disconnect
- "O-ring" plug seal for leak-free performance
- No replacement parts used (valve, spring, or washer) that could block flow of air.



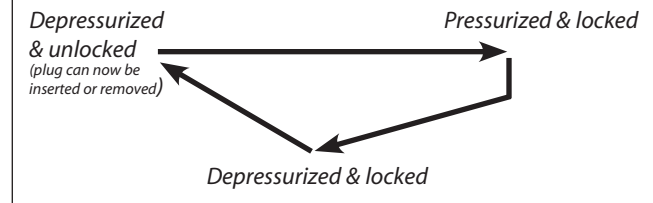
SPECIFICATIONS

- **Material:** Zinc-plated steel
- **Seal:** Buna-N
- **Air Flow:** see page 57
- **Working Pressure:** 300 PSIG; vacuum to 26"Hg
- **Body Sizes:** 1/4" to 3/4" Industrial Interchange Design
- **Connection Sizes:** 1/4" to 1" NPT
1/4" to 3/4" Hose Barb
- **Interchangeability:** Complies with ANSI/NFPA T3.20.14-1990, ISO 6150-B, & ISO 4414

OPTIONS

Silicone-free assembly. Add suffix "SF" to part number when ordering (e.g.: DC040SF)

SLEEVE OPERATION



Plug must be inserted to operate sleeve.

End Connection	Size	DC-Series, 1/4" Body Size			DC-Series, 3/8" Body Size			DC-Series, 1/2" Body Size			DC-Series, 3/4" Body Size		
		Plug	Zero Press DC Series	DC Series Silicone Free	Plug	Zero Press DC Series	DC Series Silicone Free	Plug	Zero Press DC Series	DC Series Silicone Free	Plug	Zero Press DC Series	DC Series Silicone Free
Female Pipe Thread	1/8"	P320	—	—	—	—	—	—	—	—	—	—	—
	1/4"	P340	DC040	DC040SF	P440.A	DCA40	DCA40SF	—	—	—	—	—	—
	3/8"	P360	DC060	DC060SF	P460.A	DCA60	DCA60SF	P560	DC260	DC260SF	—	—	—
	1/2"	—	—	—	P480.A	DCA80	DCA80SF	P580	DC280	DC280SF	—	—	—
	3/4"	—	—	—	—	—	—	P5120	DC2120	DC2120SF	P6120	DC3120	DC3120SF
	1"	—	—	—	—	—	—	—	—	—	—	DC3160	DC3160SF
Male Pipe Thread	1/8"	P321	—	—	P421.A	—	—	—	—	—	—	—	—
	1/4"	P341	DC041	DC041SF	P441.A	DCA41	DCA41SF	P541	—	—	—	—	—
	3/8"	P361	DC061	DC061SF	P461.A	DCA61	DCA61SF	P561	DC261	DC261SF	—	—	—
	1/2"	—	—	—	P481.A	DCA81	DCA81SF	P581	DC281	DC281SF	—	—	—
	3/4"	—	—	—	—	—	—	—	DC2121	DC2121SF	P6121	DC3121	DC3121SF
	1"	—	—	—	—	—	—	—	—	—	—	DC3161	DC3161SF
Ball Check Plug	1/4"	P341G	—	—	—	—	—	—	—	—	—	—	—
	3/8"	P361G	—	—	—	—	—	—	—	—	—	—	—
	1/2"	—	—	—	—	—	—	P581G	—	—	—	—	—
Hose Barb (requires hose clamps)	1/4"	P342	DC042	DC042SF	P442.A	DCA42	DCA42SF	—	—	—	—	—	—
	5/16"	P352	—	—	—	—	—	—	—	—	—	—	—
	3/8"	P362	DC062	DC062SF	P462.A	DCA62	DCA62SF	P562	DC262	DC262SF	—	—	—
	1/2"	—	—	—	P482.A	DCA82	DCA82SF	P582	DC282	DC282SF	P682	—	—
	3/4"	—	—	—	—	—	—	P5122	DC2122	DC2122SF	P6122	DC3122	DC3122SF
Push-On Hose Barb	1/4"	P344	—	—	—	—	—	—	—	—	—	—	—
	3/8"	P364	—	—	P464.A	—	—	—	—	—	—	—	—

DP SERIES - SAFETY VENT

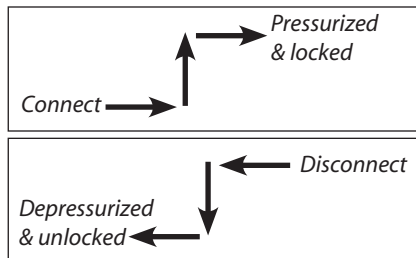
ZERO PRESSURE CONNECT AND DISCONNECT DESIGN

Dyna-Con DP Series Safety Vent couplings are designed for maximum user and equipment safety. Dyna-Con DP Series couplings allow for safe and easy connection/disconnection under zero line pressure to minimize the possibility of inadvertent disconnection and potential hose whip. The Dyna-Con DP Series couplers incorporate a patented plastic encapsulated non-marring sleeve to eliminate surface nicks and scratches. Ideal for use in paint booth applications or for air lines used around finished surfaces, such as fiberglass, painted metal or glass surfaces.

FEATURES:

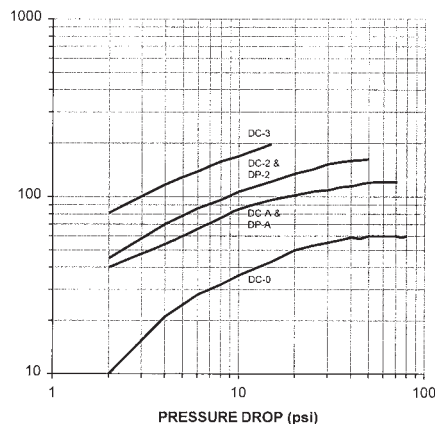
- Patented no scratch, non-marring sleeve eliminates work surface nicks and scratches
- Rubber or polyurethane hose connections available
- Zero pressure connect/disconnect design minimizes the possibility of inadvertent disconnection and potentially dangerous hose whip
- Silicone-free
- Configurations available with strain relief protective hose cover

SLEEVE OPERATION



Plug must be inserted to operate sleeve.

PRESSURE DROP/FLOW PERFORMANCE CURVES @ 100 PSIG INLET



SPECIFICATIONS

- **Material:** Celcon® (acetal resin) outside cover, steel and aluminum internals
- **Seal:** Buna-N
- **Air Flow:** See performance curve
- **Working Pressure:** 300 PSIG; vacuum to 26"Hg
- **Body Sizes:** $\frac{3}{8}$ " to $\frac{1}{2}$ " Industrial Interchange Design
- **Connection Sizes:** $\frac{3}{8}$ " to $\frac{3}{4}$ " NPT
 $\frac{3}{8}$ " to $\frac{1}{2}$ " Hose Barb
- **Interchangeability:** Complies with ANSI/NFPA T3.20.14-1990, ISO 6150-B, & ISO 4414

End Connection	Size	DP-Series, $\frac{3}{8}$ " Body Size		DP-Series, $\frac{1}{2}$ " Body Size	
		Plug	Zero Press DP Series	Plug	Zero Press DP Series
Female Pipe Thread	$\frac{1}{4}$ "	P440.A	—	—	—
	$\frac{3}{8}$ "	P460.A	DPA60	P560	—
	$\frac{1}{2}$ "	P480.A	DPA80	P580	DP280
	$\frac{3}{4}$ "	—	—	P5120	DP2120
Male Pipe Thread	$\frac{1}{8}$ "	P421.A	—	—	—
	$\frac{1}{4}$ "	P441.A	—	P541	—
	$\frac{3}{8}$ "	P461.A	—	P561	—
	$\frac{1}{2}$ "	P481.A	—	P581	—
Ball Check Plug	$\frac{1}{2}$ "	—	—	P581G	—
Hose Barb (requires hose clamps)	$\frac{1}{4}$ "	P442.A	—	—	—
	$\frac{3}{8}$ "	P462.A	DPA62.R ¹	P562	DP262.R ¹
	$\frac{3}{8}$ "	—	DPA62.P ¹	—	DP262.P ¹
	$\frac{3}{8}$ "	—	DPA66.R ⁴	—	DP266.R ⁴
	$\frac{3}{8}$ "	—	DPA66.P ⁴	—	DP266.P ⁴
	$\frac{7}{16}$ "	—	DPA72.P ¹	—	DP272.P ¹
	$\frac{7}{16}$ "	—	DPA76.P ⁴	—	DP276.P ⁴
	$\frac{1}{2}$ "	P482.A	DPA82 ²	P582	DP282 ²
Push-On Hose Barb	$\frac{3}{4}$ "	—	—	P5122	—
	$\frac{3}{8}$ "	P464.A	—	—	—

R¹ = Rubber Hose

P¹ = Poly Hose

2 = for Rubber or Poly Hose

3 = Plugs are zinc-plated, case-hardened steel

4 = Includes strain relief protector hose cover

DR SERIES - RECTUS 21 KA INTERCHANGE

AUTOMATIC PUSH-TO-CONNECT DESIGN

Dyna-Con DR Series couplers are designed to interchange with Rectus 21 KA couplers using un-valved plugs. The DR Series products provide automatic push-to-connect ease and high flow in a 1/8" connection size.

FEATURES:

- **Made in the USA**
- Maximized flow path allows greater flow than other 1/8" NPT coupler designs
- 6 retaining balls versus 5 in the Rectus 21 KA provides greater plug retention
- 9/16" wrench flats versus 14mm on Rectus 21 KA
- Ball-holes with corner radius have 65% more ball-to-body contact area and provides longer life and increased reliability
- Precision molded leak-proof seal
- Quick, easy push-to-connect design
- Brass construction for corrosion resistance

Part No.	Description
DR21-1F	1/8" Socket Brass x 1/8" NPT Female
DR21-1M	1/8" Socket Brass x 1/8" NPT Male
DR21-1PF	1/8" Plug Brass x 1/8" NPT Female
DR21-1PM	1/8" Plug Brass x 1/8" NPT Male



SPECIFICATIONS

- **Material:** Brass plugs & sockets
- **Seal:** Buna-N
- **Air Flow:** 17 CFM @ 100 PSIG @ 5.0 PSIG Pressure Drop
- **Working Pressure:** 300 PSIG
- **Body Sizes:** 1/8"
- **Connection Sizes:** 1/8" NPT
- **Interchangeability:** Rectus 21 KA, Tomco SC, Camozzi 5000 and CEJN 223 Series

DW SERIES

UNIVERSAL ONE-WAY SHUT-OFF AUTOMATIC PUSH-TO-CONNECT DESIGN

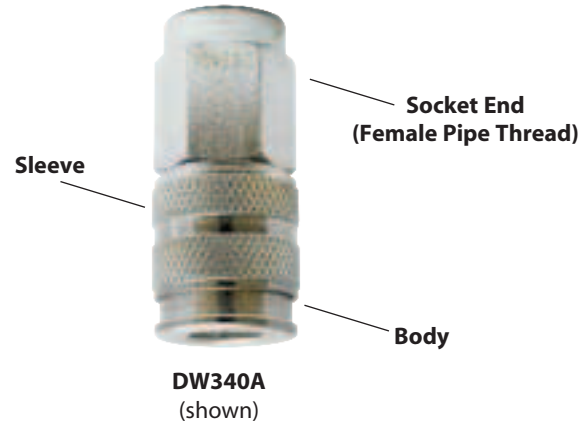
DYNA-CON DW Series automatic push-to-connect couplers accept the most popular plug profiles.

FEATURES:

- **Made in the USA**
- High flow design provides greater flow capacity than standard couplers
- Anti-slug sleeve design helps prevent accidental disconnects
- Molded Buna-N seal insures ease of connection and air tight performance
- Couplers are zinc plated steel for long operational life
- Radiused ball-holes have 65% more ball-to-body contact area and provides longer life and increased reliability

SPECIFICATIONS

- **Material:** Zinc-plated steel
- **Seal:** Buna-N
- **Air Flow:** see page 57
- **Working Pressure:** 150 PSIG
- **Body Sizes:** 1/4" and 3/8"
- **Connection Sizes:** 1/4" to 3/8" NPT
1/4" to 3/8" Hose Barb
- **Interchangeability**
 - 1/4" Body Size:** 1/4" Industrial Interchange Plugs
1/4" ARO 210 Plugs
1/4" Tru-Flate Plugs
 - 3/8" Body Size:** 3/8" Industrial Interchange Plugs
3/8" Tru-Flate Plugs



**INDUSTRIAL
INTERCHANGE
PLUGS**



**ARO 210
INTERCHANGE
PLUGS**



**TRU-FLATE
INTERCHANGE
PLUGS**

End Connection	Size	DW-Series, 1/4" Body Size				DW-Series, 3/8" Body Size		
		Plug	Universal DW Series	Additional Plugs For DW-Series		Plug	Universal DW Series	Additional Plugs For DW-Series
				Tru-Flate Plug	ARO 210 Series Plug			Tru-Flate Plug
Female Pipe Thread	1/8"	P320	—	—	—	—	—	—
	1/4"	P340	DW340A	P740	P240	P440.A	DW440A	P840
	3/8"	P360	DW360A	P760	—	P460.A	DW460A	P860
	1/2"	—	—	—	—	P480.A	—	—
Male Pipe Thread	1/8"	P321	—	—	P221	P421.A	—	—
	1/4"	P341	DW341A	P741	P241	P441.A	DW441A	P841
	3/8"	P361	DW361A	P761	—	P461.A	DW461A	P861
	1/2"	—	—	—	—	P481.A	—	—
Ball Check Plug	1/4"	P341G	—	—	—	—	—	—
	3/8"	P361G	—	—	—	—	—	—
Hose Barb (requires hose clamps)	1/4"	P342	DW342A	P742	—	P442.A	—	—
	5/16"	P352	—	—	—	—	—	—
	3/8"	P362	DW362A	—	—	P462.A	DW462A	P862
	1/2"	—	—	—	—	P482.A	—	—
Push-On Hose Barb	1/4"	P344	—	—	—	—	—	—
	3/8"	P364	—	P762	—	P464.A	—	—

CUSHIONED
CLAMPING

LOOP
CLAMPS

Z-STRUT &
Z-STRUT CLAMPS

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BG SERIES BLOW GUNS & TIPS

Guns Only, No Tips Included						
Gun Only			Description			
116482			Lever Action Gun Only- NO TIPS INCLUDED			
301804			Pistol Grip Gun Only - NO TIPS INCLUDED			
Blow Guns and Tips						
Complete Gun With Nozzle Shown	Nozzle Only		Description	Performance - @100 PSIG		
				Flow CFM	Outlet Blocked	Noise Level dbA
BG21 lever gun w/nozzle	BGN1		Standard nozzle for general blowing and drying applications	17.5	20	89.5
BG2B5 lever gun w/nozzle	BGNB5		Air Screen nozzle reduces chip fly back	5	18	85
BG25 lever gun w/nozzle	BGN5		High flow safety nozzle for general dusting and chip removal	20	20	89
BG45 pistol gun w/nozzle						
BG26 (*) lever gun w/nozzle	BGN6		Needle tip nozzle for fine flow and for small holes	(*)	-	-
BG27 (*) lever gun w/nozzle	BGN7		Rubber tipped nozzle for delicate surfaces and for blowing out fluid lines	(*)	-	-
BG2X3 lever gun w/nozzle	BGX3		Extension nozzle (3 inch) for extending reach	15	21	85.5
BG2X6 lever gun w/nozzle	BGX6		Extension nozzle (6 inch) for extending reach	14.1	22	84
BG2X12 lever gun w/nozzle	BGX12		Extension nozzle (12 inch) for extending reach	13.3	24	85.5
BG4x12 pistol gun w/nozzle						
–	BGN2		Flexible extension nozzle (4 inch)	-	-	-
–	BGN3		Flexible extension nozzle (12 inch)	-	-	-
BG-CPLR lever gun w/nozzle	BGADP		Quick change nozzle adapter	-	-	-

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

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

LEVER BLOW GUN SERIES

DYNA-CON BG Series Blowguns combine durability, excellent performance, and safety to meet your specific cleaning or drying applications.

UPTO
150
PSI

FEATURES:

- Lever activation styles
- 10 different nozzle choices
- Blow gun kit provides versatility
- Patented quick-disconnect nozzle adapter
- 1/4" NPT inlet
- OSHA Compliant* @ Max 150 PSI inlet Pressure



**BG-CPLR
Shown**

Shown with optional Quick Change Adapter.

PISTOL GRIP BLOW GUN SERIES

UPTO
125
PSI

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

FEATURES:

- Lightweight nylon body insulates from refrigerated air
- Machined brass valve mechanism, nozzle inlet and hose inlet for strength
- Lever style trigger with comfortable pistol grip for variable air flow
- 1/4" NPT female inlet
- 125 PSIG inlet maximum
- OSHA Compliant* meets 1910.242(b) pressure relief and 1910.95 noise level @ Max 150 PSI inlet Pressure

Part No.	Description	Flow (CFM) @ 100 PSIG
BG45 (Photo Shown)	Pistol Grip Gun with BGN5	20.0
BG4X12	Pistol Grip Gun with BGX12	13.3
301804	Pistol Grip Gun Only	–

Other BG Series nozzles and extensions may also be used with this blow gun.

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



BG45

CUSHIONED
CLAMPING

LOOP
CLAMPS

Z-STRUT &
Z-STRUT CLAMPS

BETA
CLAMPS

Z-CLAMPS

ANTI-VIBRATION
PADS

QUICK
COUPLINGS

AIRLINE
ACCESSORIES

TECHNICAL
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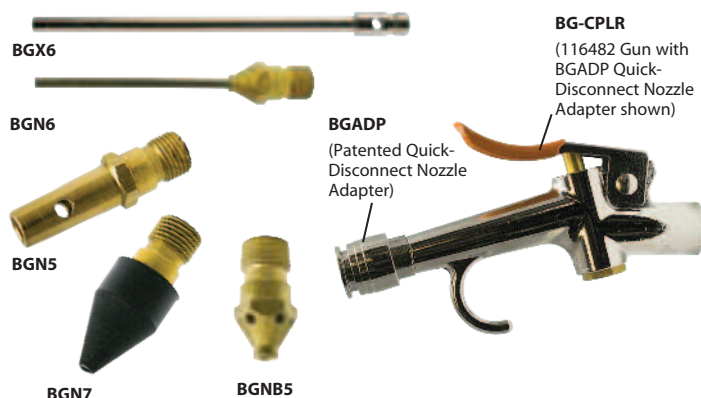
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BLOW GUN KIT

UPTO
150
PSI

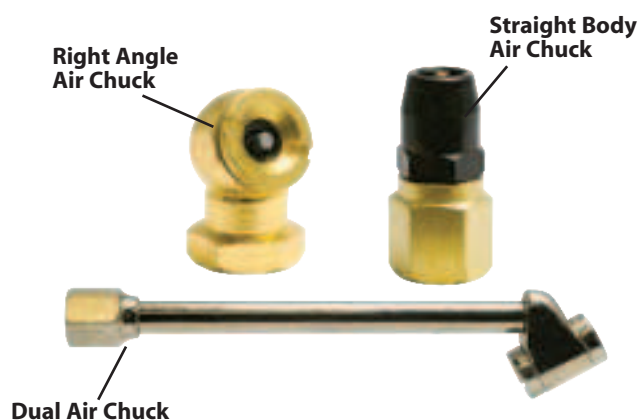
The DYNA-CON BGQKIT contains five of the most popular nozzles for industrial and automotive uses. This kit includes a high quality, lever-operated heavy-duty blow gun featuring a patented quick disconnect nozzle adapter which allows users to switch nozzles quickly and easily. This multi-use kit contains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

To Order Complete Kit Use Part Number - **BGQKIT**



AIR CHUCKS

Three DYNA-CON Air Chucks are available: a right angle heavy-duty air chuck, a heavy duty straight body air chuck, and a dual air chuck for all your air fill needs. All three air chucks have 1/4 FPT inlets.



Part No.	Description
AC40	Right Angle Air Chuck, 1/4" FPT
AC42	Dual Air Chuck
AC45	Straight Body Air Chuck, 1/4" FPT

SWIVEL FITTINGS

ZERO PRESSURE CONNECT AND DISCONNECT DESIGN

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

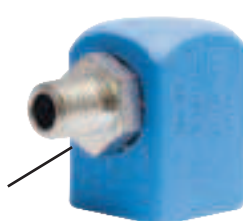
FEATURES:

- Steel body (1/4" and 3/8"), Aluminum body (1/2")
- High flow capacity, low pressure drop
- More sizes for simplified plumbing
- Patented plastic encapsulation (non-marring Series)
- 300 PSIG inlet maximum

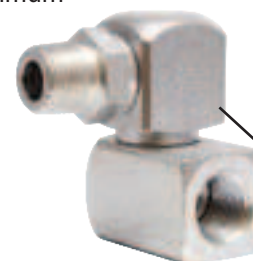
UPTO
300
PSI



Non-Marring Dual Swivel



Non-Marring Single Swivel



Standard Swivel

Non-Marring Dual Swivel	
Part No.	Description
190010A	3/8" FPT x 1/4" MPT
190011A	3/8" FPT x 3/8" MPT
190012	1/2" FPT x 1/2" MPT

Non-Marring Single Swivel	
Part No.	Description
190040	3/8" FPT x 1/4" MPT
190041	3/8" FPT x 3/8" MPT
190042	1/2" FPT x 1/2" MPT

Standard Swivel (Without Plastic Covering)	
Part No.	Description
190026A	1/4" FPT x 1/4" MPT
190029A	3/8" FPT x 1/4" MPT
190027A	3/8" FPT x 3/8" MPT
190028	1/2" FPT x 1/2" MPT

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

3-WAY HOSE MANIFOLD

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



Part No.	Description	Interface Details
301787.01	3-Way Manifold	Inlet: 1/4" FPT; Outlet: 1/4"
301805		Inlet: 3/8" FPT; Outlet: 1/4"
301820		Inlet: 1/2" FPT; Outlet: 3/8"

CUSHIONED
CLAMPING

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3-WAY HOSE MANIFOLD WITH SOCKETS AND SWIVEL PLUGS

An expanded style of our 3-Way Hose Manifold is available pre-assembled with a choice of three D Series manual sockets or three swivel plugs. This operational versatility allows three independent work stations to function with the same air supply. The

port design of the DYNA-CON 3-Way Hose Manifold maximizes air flow through the body and is less restrictive on flow than other similar products on the market. The flexibility of quick disconnects, swivel plugs, or outlet hoses maximizes air operations while improving efficiencies.



Free swivel under pressure eliminates hose twist

Part No.	Description	Interface Details
MAN2525A	3-Way Manifold with three D341 Sockets	Inlet: 1/4" FPT; Sockets 1/4" Industrial Interchange
MAN3825A	3-Way Manifold with three D341 Sockets	Inlet: 3/8" FPT; Sockets 1/4" Industrial Interchange
MAN5038A	3-Way Manifold with three D461 Sockets	Inlet: 1/2" FPT; Sockets 3/8" Industrial Interchange

Part No.	Description	Interface Details
MAN2525S*	3-Way Manifold with three Swivel Plugs	Inlet: 1/4" FPT; Swivel Plug 1/4" Industrial Interchange
MAN3825S*		Inlet: 3/8" FPT; Swivel Plug 1/4" Industrial Interchange
MAN5038S*		Inlet: 1/2" FPT; Swivel Plug 3/8" Industrial Interchange

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

POLYURETHANE RECOIL HOSE

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



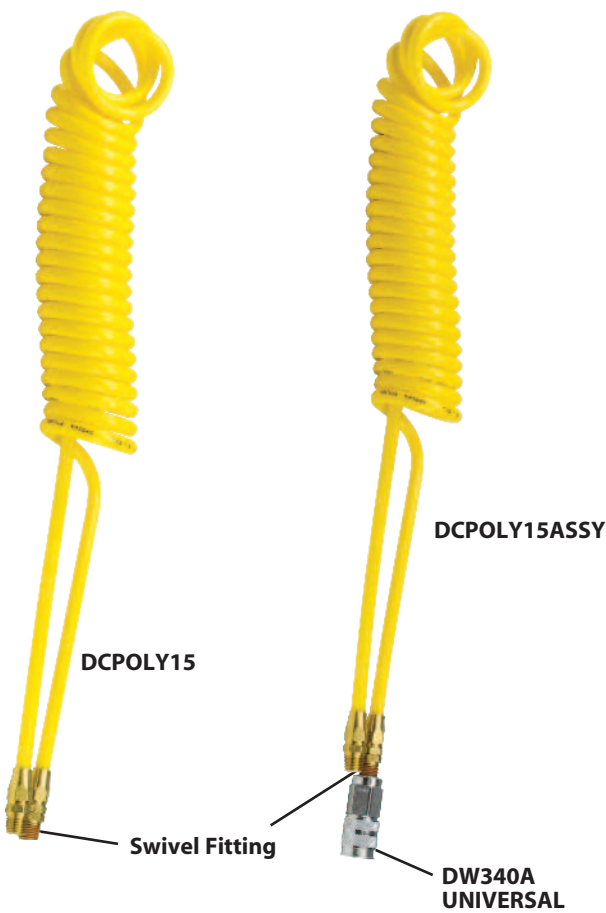
DYNA-CON Polyurethane Recoil Hose has greater durability than other types of hose due to exceptional wear characteristics. Polyurethane Recoil Hose is kink resistant and has exceptional memory characteristics due to elastic properties of the polyurethane hose. Hoses are pre-assembled with reusable brass fittings for reduced assembly time. Two assembly configurations include DYNA-CON DW Series Universal Sockets ready for connection to air tools or other accessories. The DYNA-CON Polyurethane Recoil Hose products are pre-bagged for convenience. Ideally suited as counter sale products.

FEATURES:

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

SPECIFICATIONS

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



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

SPECIFICATIONS FOR DYNA-CON ONE-WAY SHUT-OFF TYPE COUPLERS

Proper selection and use of DYNA-CON products will help you maintain a safe and efficient working environment. Flow is the most important factor for proper sizing of couplers. Do not exceed the pressure and temperature limits to assure the most productive and safe performance of the coupler assembly for the given work environment.

APPLICABLE TO D, DM & DW SERIES

Coupler Sizes	Air Flow – CFM				Water Flow	
	100 psig		80 psig		GPM – 60 psig	
	Pressure Drop				Pressure Drop	
	10 psig	5 psig	10 psig	5 psig	10 psig	5 psig
¼"	36	26	33	24	3.7	2.5
⅜"	68	50	62	45	6.8	5
½"	118	90	107	82	11	8
¾"	190	135	172	122	22	16

BALL-LOCK SOCKET



The Ball-Lock Socket feature on the D and DM Series Couplers protects against accidental disconnect. Align ball with slot to connect, then rotate sleeve to lock. To disconnect, realign ball with slot and retract.

BALL CHECK PLUG

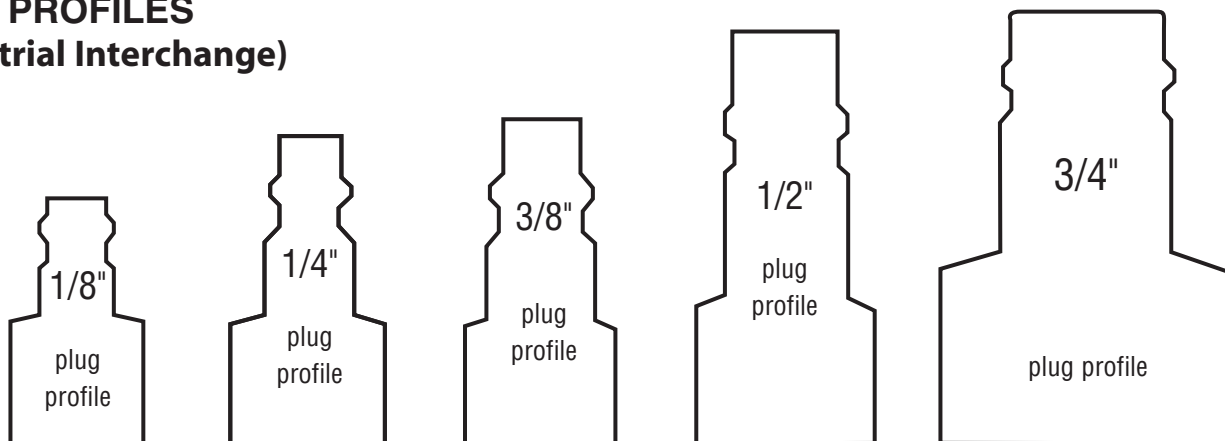


The Ball Check Plug is used to eliminate the possibility of potentially dangerous hose whip at disconnect by checking rapid flow downstream.

TEMPERATURE APPLICATION DATA

Service	Construction	Seal Compound	Temperature
AIR	Brass & Steel	Buna-N	-40° to +225°F
GREASE & OIL	Brass & Steel	Buna-N	-40° to +225°F
VACUUM	Brass & Steel	Buna-N	-40° to +225°F

PLUG PROFILES (Industrial Interchange)


CUSHIONED
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GENERAL INFORMATION

THINK SAFETY FIRST

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

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

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

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

DYNA-CON SAFETY RELATED PRODUCTS

Safety Vent Couplers

DYNA-CON Safety Vent couplers are designed to minimize the possibility of inadvertent disconnection and potentially hazardous hose whip. DYNA-CON DC and DP Series Safety Vent couplers are “zero pressure” connect/disconnect type couplers designed to safely vent downstream pressure prior to disengaging the plug.

DYNA-CON DC Series Safety Vent Couplers

Besides being nearly effortless to connect and great for hose use, DC Series Safety Vent couplers are especially useful for single-hand operation when they are mounted to hard lines such as an overhead air drop. Once inserted into the DC socket, the plug is lightly gripped and will stay in place allowing the operator to use the same hand to slide the sleeve straight forward to the “on” position. As the sleeve is being moved to the “on” position, the DC socket will securely lock the plug in place and then turn the flow “on”. DC Series sockets can also be used as a 3-way valve to turn off the flow of air and exhaust the downstream pressure without disengaging the plug. By turning and sliding the sleeve to the “exhaust” position, downstream air pressure is relieved but the plug remains locked in place. Turning and sliding the sleeve in the opposite direction allows air to flow again. DYNA-CON DC Series couplers are the ultimate solution to accidental disconnect hose whip dangers.

DYNA-CON DP Series Safety Vent Couplers

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

Ball-Lock Option

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

Ball Check Plugs

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

Air Blowguns

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

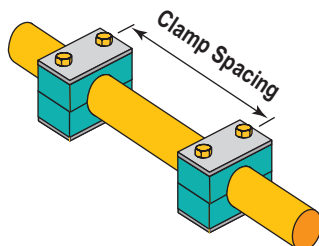
Blow Guns and nozzles that comply with OSHA regulations will limit the pressure of air exiting the nozzle to less than 30 PSIG when the nozzle is dead-headed.

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

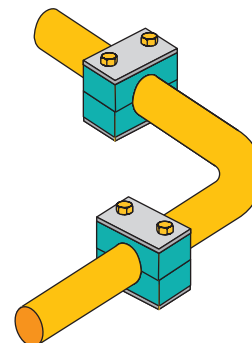
PRODUCTS SELECTION & TRAINING

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

Our dedicated employees and distributors are eager to explain the features, benefits, and proper selection of DYNA-CON products, and answer your questions regarding their correct application and safe use.

Recommended Pipe Clamp Spacing


Pipe O.D.		Spacing	
in	mm	ft - in.	m
0.24" – 0.5"	6 – 12.7	3' - 3"	1.0
0.5" – 0.87"	12.7 – 22	3' - 11"	1.2
0.87" – 1.26"	22 – 32	4' - 11"	1.5
1.26" – 1.5"	32 – 38	6' - 7"	2.0
1.5" – 2.24"	38 – 57	8' - 10"	2.7
2.24" – 2.95"	57 – 75	9' - 10"	3.0
2.95" – 3"	75 – 76.1	11' - 6"	3.5
3" – 3.5"	76.1 – 88.9	12' - 2"	3.7
3.5" – 4"	88.9 – 102	13' - 1"	4.0
4" – 4.5"	102 – 114	14' - 9"	4.5
4.5" – 6.6"	114 – 168	16' - 5"	5.0
6.6" – 8.6"	168 – 219	19' - 8"	6.0
8.6" – 12.8"	219 – 324	21' - 12"	6.7
12.8" – 14"	324 – 356	22' - 12"	7.0
14" – 16"	356 – 406	24' - 7"	7.5
16" – 16.5"	406 – 419	26' - 11"	8.2
16.5" – 20"	419 – 508	27' - 11"	8.5
20" – 20.5"	508 – 521	29' - 6"	9.0
20.5" – 22"	521 – 558	32' - 10"	10.0
22" – 31.5"	558 – 800	41' - 0"	12.5

Recommended Clamping for Bends


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

BETA CLAMP MATERIAL PROPERTIES

Material Properties		Polypropylene (PP)
Density	–	0.906 g/cm ³
Tensile strength	DIN 53454	25-35 N/mm ²
Flexure stress limit	DIN 53452	36N N/mm ²
Compressive strength	DIN 53454	90 N/mm ²
Impact strength	DIN 53453	No break
Thermo Properties		Polypropylene (PP)
Max. temp. resistance		-30 to 90°C
Thermal conductivity		15 x 10 ⁻⁵ /°C
Linear expansion coeff.		0.22 W/[mk]
Electrical Properties		Polypropylene (PP)
Specific volume	DIN 53482	1016 ohm x cm
Chemical Properties		Polypropylene (PP)
Consistent for weak acids, solvents, mineral oils and seawater.		

Tightening Torque

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

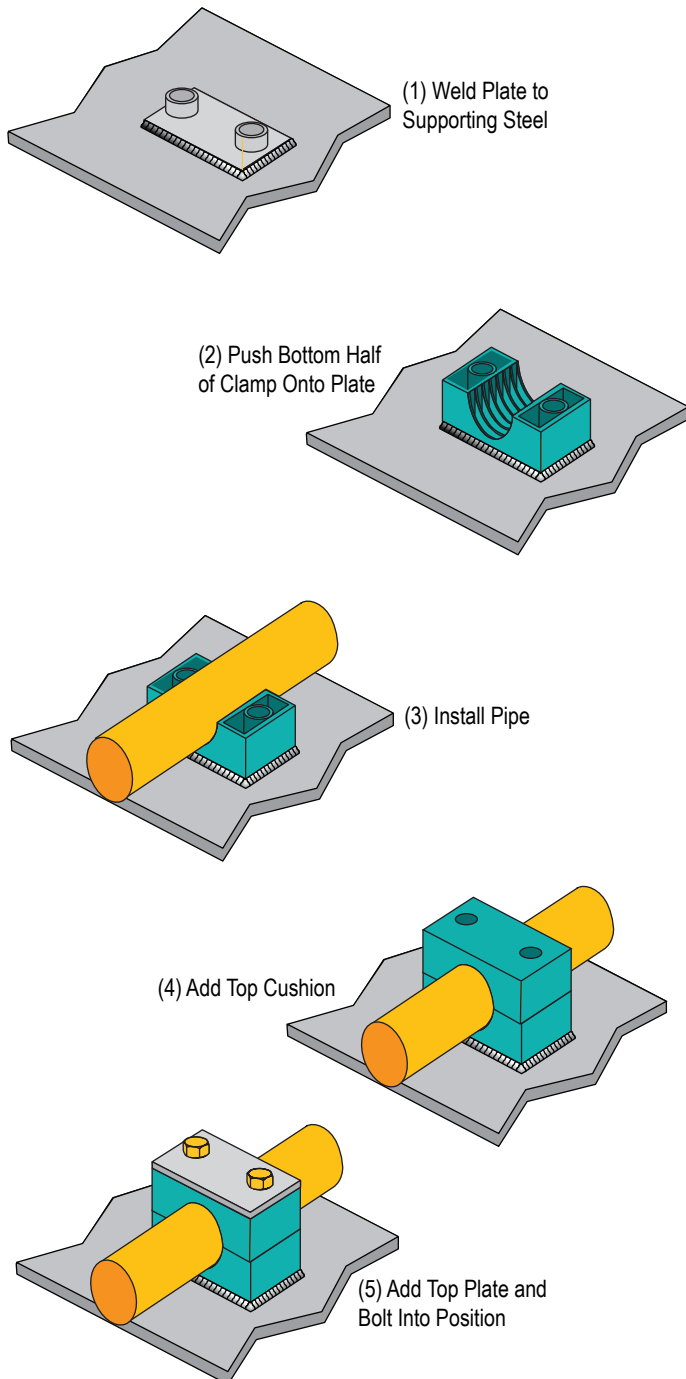
The outlined particulars are approximate values and are only valid as references, which are not binding, also with regard to possible protection of third parties, and they do not exempt you from your own examination of suitability of the products delivered by us. Therefore, these values can only be used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

INSTALLATION ON WELD PLATES

ZSi weld plates are available for the following Series:

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

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



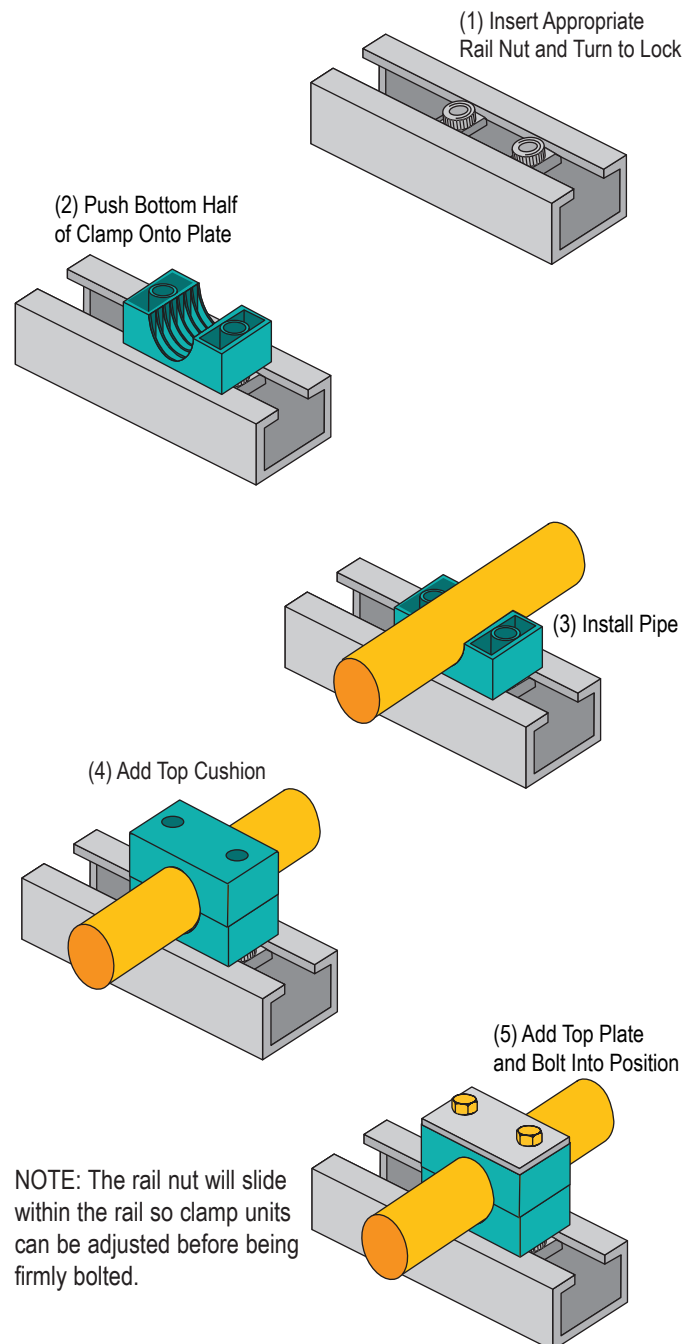
INSTALLATION ON MOUNTING RAILS

ZSi mounting rails can be used with the following Series:

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

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

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

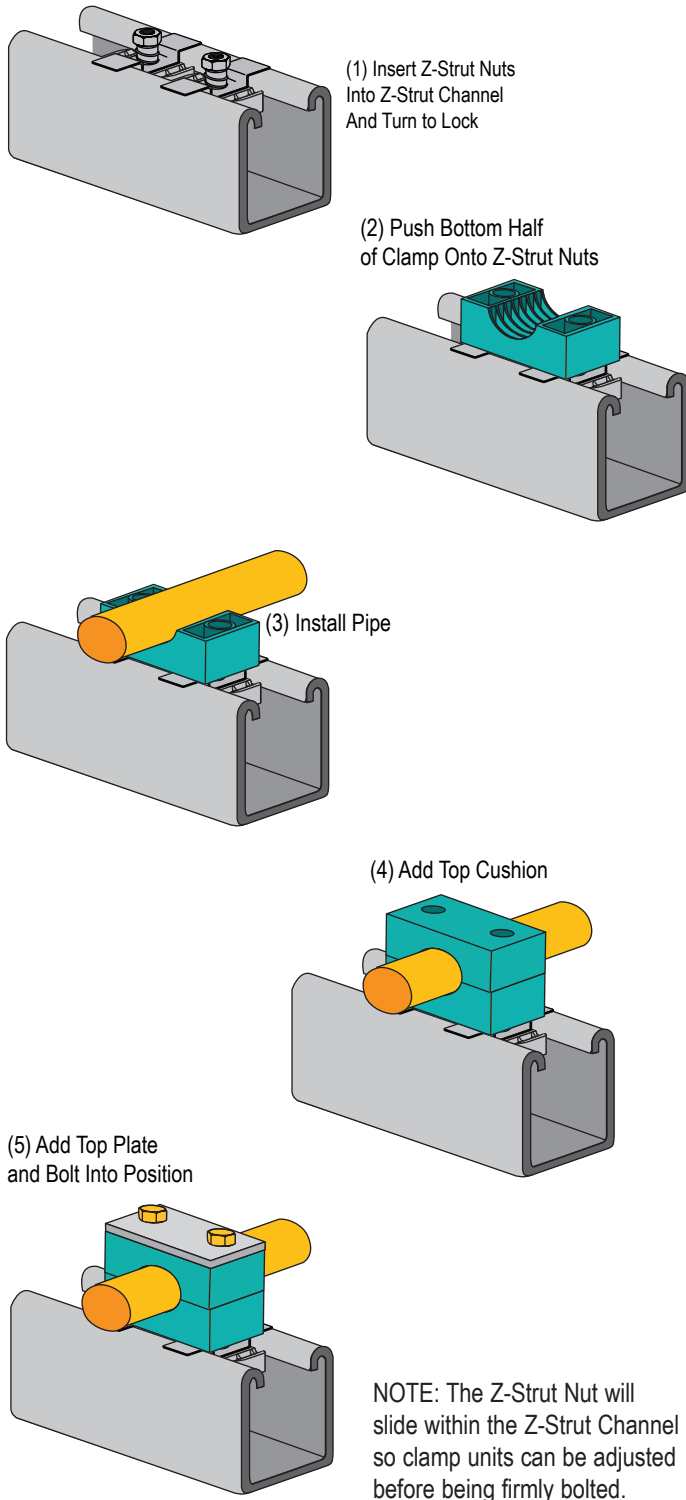


NOTE: The rail nut will slide within the rail so clamp units can be adjusted before being firmly bolted.

INSTALLATION ON Z-STRUT CHANNEL

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

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

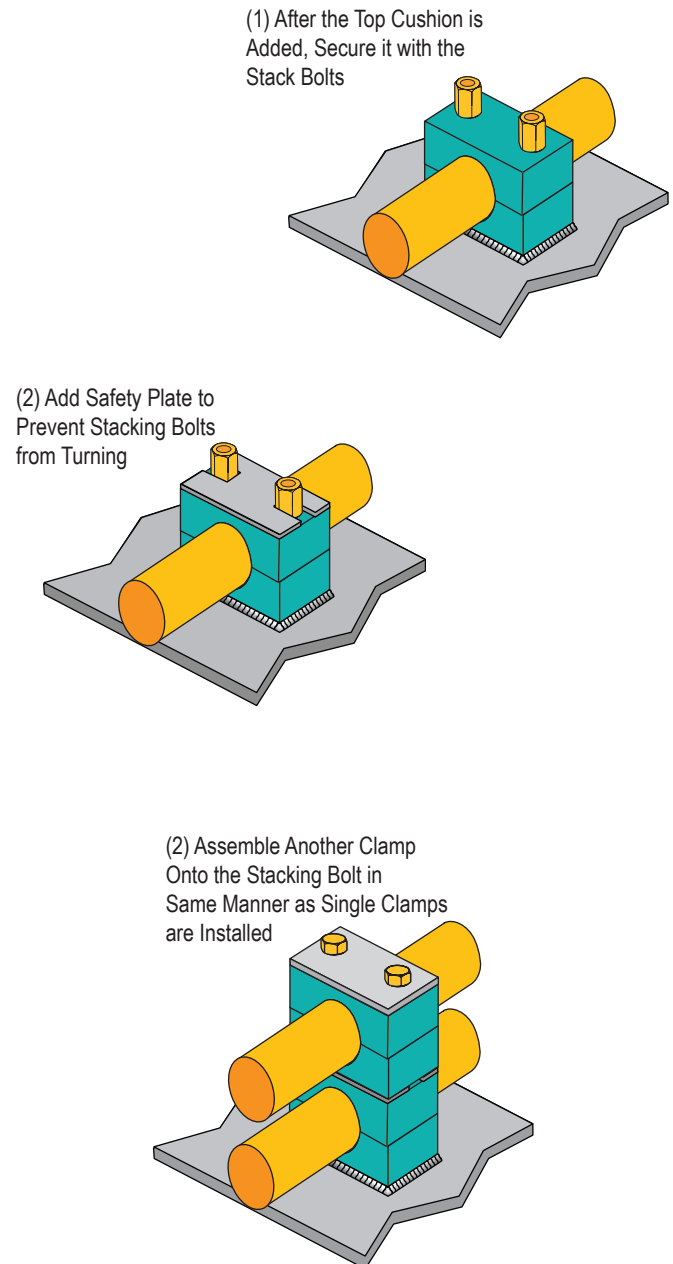


MULTI-LEVEL ASSEMBLY

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

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

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



CUSHIONED
CLAMPING

LOOP
CLAMPS

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Z-STRUT CLAMPS

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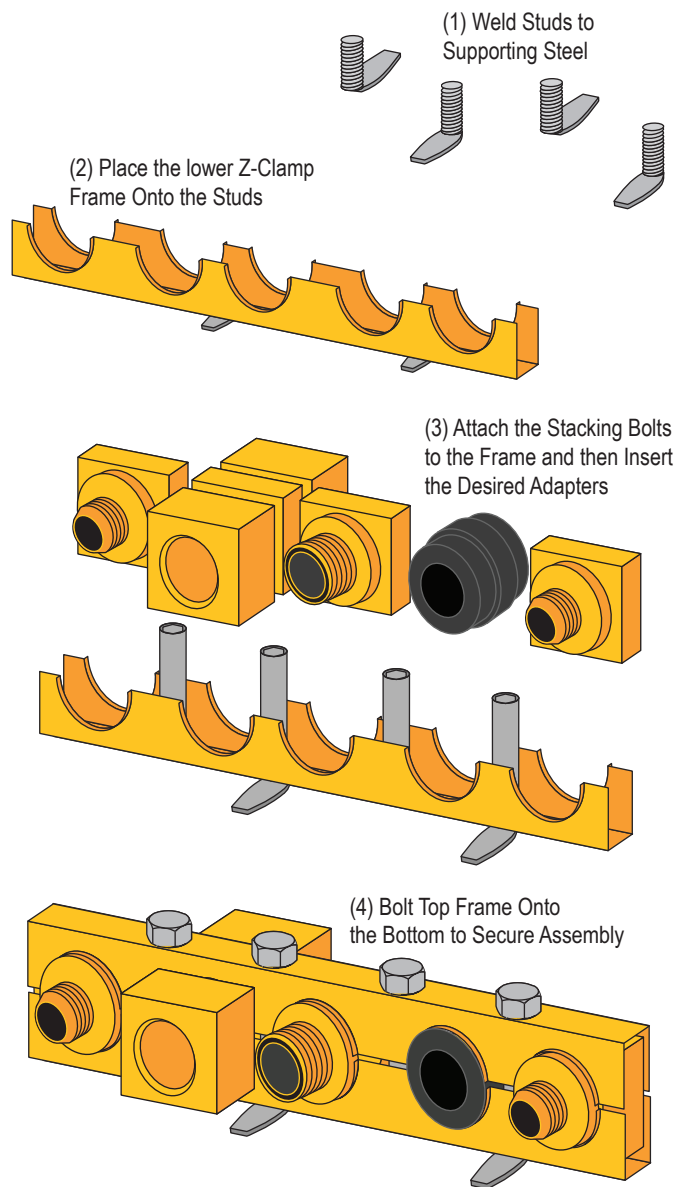
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Z-CLAMP & BETA INSTALLATION



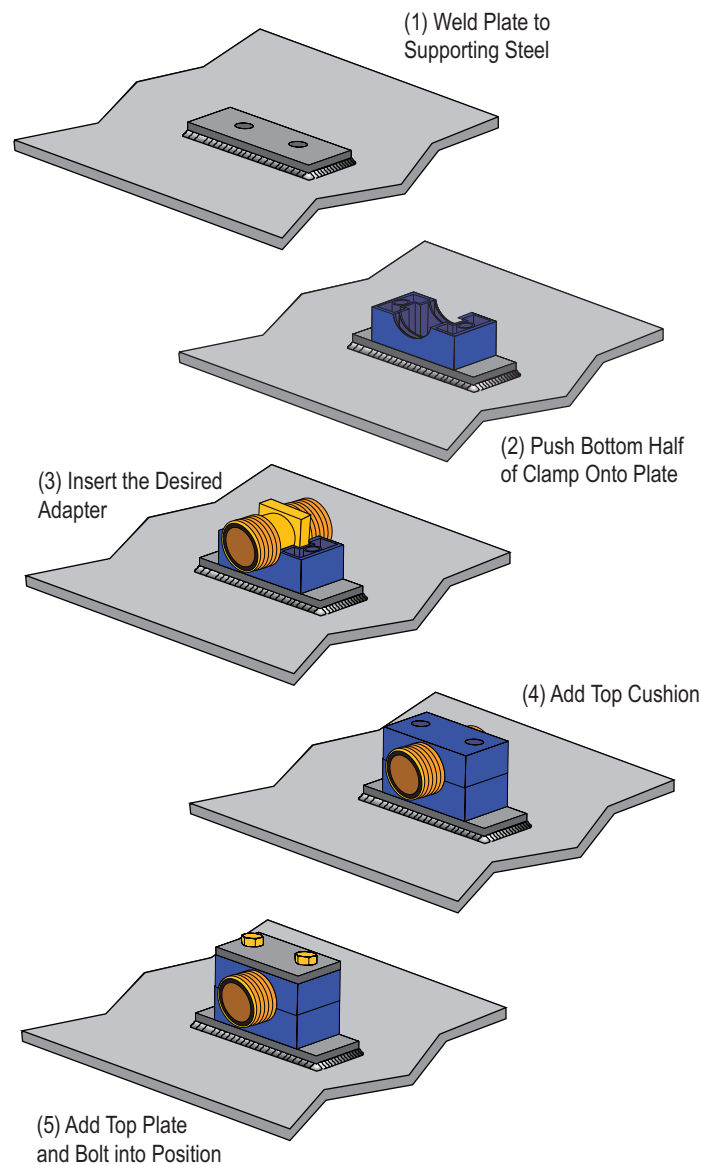
Installation of Z-Clamps

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

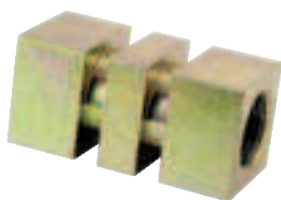


Installation of Beta Adapter

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



Z-CLAMP & BETA ADAPTER OPTIONAL ADAPTERS



FEMALE JUNCTION ADAPTER



O-RING FACE SEAL



37° FLARE MALE JUNCTION ADAPTER



RUBBER SPLIT BUSHINGS

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

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

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

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

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

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

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

PVC and CPVC Pipes - Schedule 80 (inches)					
Nominal Pipe Size	Outside Diameter	Minimum Wall Thickness	Nominal Inside Diameter	Weight (lb/100 ft)	
				PVC	CPVC
1/2	0.840	0.147	0.546	20	22
3/4	1.050	0.154	0.742	27	30
1	1.315	0.179	0.957	41	44
1 1/4	1.660	0.191	1.278	52	61
1 1/2	1.900	0.200	1.500	67	74
2	2.375	0.218	1.939	95	102
2 1/2	2.875	0.276	2.323	145	156
3	3.500	0.300	2.900	194	209
4	4.500	0.337	3.826	275	305
5	5.563	0.375	4.813	387	—
6	6.625	0.432	5.761	542	582
8	8.625	0.500	7.625	805	883
10	10.750	0.593	9.564	1200	1309
12	12.750	0.687	11.376	1650	180
14	14.000	0.750	12.500	1930	—
16	16.000	0.843	14.314	2544	—

PVC - Wall Schedule 40 - Support Spacing (feet)			
NPS (inches)	Operating Temperature (°F)		
	60	100	140
1/2	4 1/2	4	2 1/2
3/4	5	4	2 1/2
1	5 1/2	4 1/2	2 1/2
1 1/4	5 1/2	5	3
1 1/2	6	5	3
2	6	5	3
3	7	6	3 1/2
4	7 1/2	6 1/2	4
6	8 1/2	7 1/2	4 1/2
8	9	8	4 1/2

PVC - Wall Schedule 80 - Support Spacing (feet)			
NPS (inches)	Operating Temperature (°F)		
	60	100	140
1/2	5	4 1/2	2 1/2
3/4	5 1/2	4 1/2	2 1/2
1	6	5	3
1 1/4	6 1/2	5 1/2	3 1/2
1 1/2	7	6	3 1/2
2	8	7	4
3	9	7 1/2	4 1/2
4	10	9	5
6	11	9 1/2	5 1/2
8	9	8	4 1/2

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

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

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

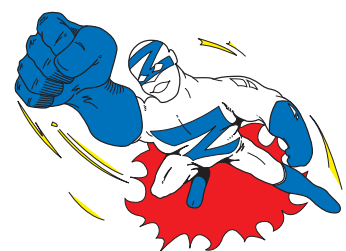
Hydraulic Hose - No Skive SAE 100R17 Abrasion Resistant "Tough Cover" and "Super Tough" Cover				
SAE Number	Hose I.D.		Hose O.D.	
	(in.)	(mm)	(in.)	(mm)
SAE-4	1/4	6.3	0.53	13
SAE-6	3/8	10.0	0.68	17
SAE-8	1/2	12.5	0.81	21
SAE-10	5/8	16.0	0.94	24
SAE-12	3/4	19.0	1.09	28
SAE-16	1	25.0	1.41	36
SAE-20	1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

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

Fractions	Decimal (in)	Metric (mm)
	0.748	19
3/4	0.750	19.05
49/64	0.766	19.45
25/32	0.781	19.84
	0.787	20
51/64	0.797	20.24
13/16	0.813	20.64
53/64	0.828	21.03
27/32	0.844	21.43
55/64	0.859	21.83
7/8	0.875	22.23
57/64	0.891	22.62
29/32	0.906	23
59/64	0.922	23.42
15/16	0.938	23.81
61/64	0.953	24.21
31/32	0.969	24.61
63/64	0.984	25
1	1	25.40
1 1/32	1.031	26.19
1 1/16	1.063	26.99
1 3/32	1.094	27.78
1 1/8	1.125	28.58
1 5/32	1.156	29.37
	1.181	30
1 3/16	1.188	30.16
1 7/32	1.219	30.96
1 1/4	1.250	31.75
1 9/32	1.281	32.54
1 5/16	1.313	33.34
1 11/32	1.344	34.13
1 3/8	1.375	34.93
	1.378	35
1 13/32	1.406	35.72
1 7/16	1.438	36.51
1 15/32	1.469	37.31
1 1/2	1.500	38.10
1 17/32	1.531	38.89
1 9/16	1.563	39.69
	1.575	40
1 19/32	1.594	40.48
1 5/8	1.625	41.28
1 21/32	1.656	42.07
1 11/16	1.688	42.86
1 23/32	1.719	43.66
1 3/4	1.750	44.45
	1.772	45
1 25/32	1.781	45.24
1 13/16	1.813	46.04
1 27/32	1.844	46.83
1 7/8	1.875	47.63
1 29/32	1.906	48.42
1 15/16	1.938	49.21
	1.969	50
1 31/32	1.969	50.01
2	2	50.80
2 1/32	2.031	51.59
2 1/16	2.063	52.39
2 3/32	2.094	53.18
2 1/8	2.125	53.98
2 5/32	2.156	54.77
	2.165	55
2 3/16	2.188	55.56
2 7/32	2.219	56.36
2 1/4	2.250	57.15

Fractions	Decimal (in)	Metric (mm)
2 9/32	2.281	57.94
2 5/16	2.313	58.74
2 11/32	2.344	59.53
	2.362	60
2 3/8	2.375	60.33
2 13/32	2.406	61.12
2 7/16	2.438	61.91
2 15/32	2.469	62.71
2 1/2	2.500	63.50
2 17/32	2.531	64.29
	2.559	65
2 9/16	2.563	65.09
2 19/32	2.594	65.88
2 5/8	2.625	66.68
2 21/32	2.656	67.47
2 11/16	2.688	68.26
2 23/32	2.719	69.06
2 3/4	2.750	69.85
	2.756	70
2 25/32	2.781	70.64
2 13/16	2.813	71.44
2 27/32	2.844	72.23
2 7/8	2.875	73.03
2 29/32	2.906	73.82
2 15/16	2.938	74.61
	2.953	75
2 31/32	2.969	75.41
3	3	76.20
3 1/32	3.031	76.99
3 1/16	3.063	77.79
3 3/32	3.094	78.58
3 1/8	3.125	79.38
	3.150	80
3 5/32	3.156	80.17
3 3/16	3.188	80.96
3 7/32	3.219	81.76
3 1/4	3.250	82.55
3 9/32	3.281	83.34
3 9/16	3.313	84.14
3 11/32	3.344	84.93
	3.346	85
3 3/8	3.375	85.73
3 13/32	3.406	86.52
3 7/16	3.438	87.31
3 15/32	3.469	88.11
3 1/2	3.500	88.90
3 17/32	3.531	89.69
	3.543	90
3 9/16	3.563	90.49
3 19/32	3.594	91.28
3 5/8	3.625	92.08
3 21/32	3.656	92.87
3 11/16	3.688	93.66
3 23/32	3.719	94.46
	3.740	95
3 3/4	3.750	95.25
3 25/32	3.781	96.04
3 13/16	3.813	96.84
3 27/32	3.844	97.63
3 7/8	3.875	98.43
3 29/32	3.906	99.22
	3.937	100
3 15/16	3.938	100.01
3 31/32	3.969	100.81

Fractions	Decimal (in)	Metric (mm)
4	4	101.60
4 1/16	4.063	103.19
4 1/8	4.125	104.78
4 3/16	4.188	106.36
4 1/4	4.250	107.95
4 5/16	4.313	109.54
	4.331	110
4 3/8	4.375	111.13
4 7/16	4.438	112.71
4 1/2	4.500	114.30
4 9/16	4.563	115.89
4 5/8	4.625	117.48
4 11/16	4.688	119.06
	4.724	120
4 3/4	4.750	120.65
4 13/16	4.813	122.24
4 7/8	4.875	123.83
4 15/16	4.938	125.41
5	5	127.00
	5.118	130
5 1/4	5.250	133.35
5 1/2	5.500	139.70
	5.512	140
5 3/4	5.750	146.05
	5.906	150
6	6	152.40
6 1/4	6.250	158.75
	6.299	160
6 1/2	6.500	165.10
	6.693	170
6 3/4	6.750	171.45
7	7	177.80
	7.087	180
	7.480	190
7 1/2	7.500	190.50
	7.874	200
8	8	203.20
8 1/2	8.500	215.90
9	9	228.60
9 1/2	9.500	241.30
	9.843	250
10	10	254.00
11	11	279.40
	11.811	300
12	12	304.80
13	13	330.20
	13.780	350
14	14	355.60
15	15	381.00
	15.748	400
16	16	406.40
17	17	431.80
	17.717	450
18	18	457.20
19	19	482.60
	19.685	500
20	20	508.00



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ZSi

ZSi World Headquarters

42550 Executive Drive • Canton, Michigan 48188

Phone: 734-844-0055 • Fax: 734-844-0066

Call 1-800-323-7053 for more information • www.zsi-inc.com

