



**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.

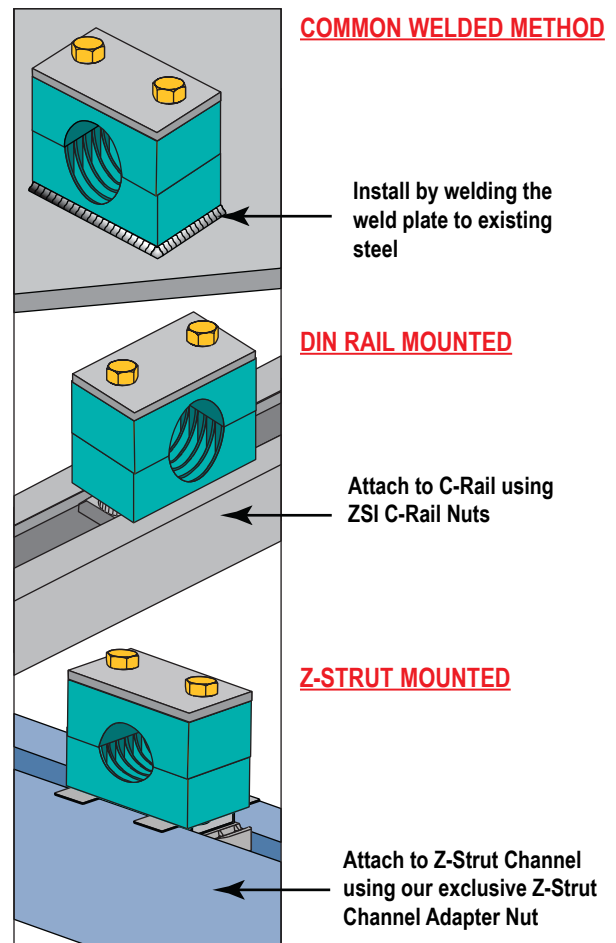
**CLAMP BODY**

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

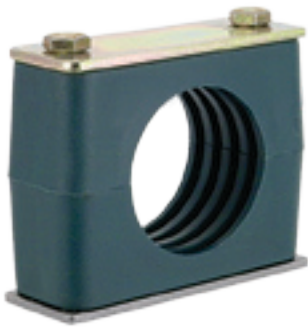
**CLAMP COMPONENTS** – The other metallic components of the clamps are manufactured in:

- 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 poly propylene 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

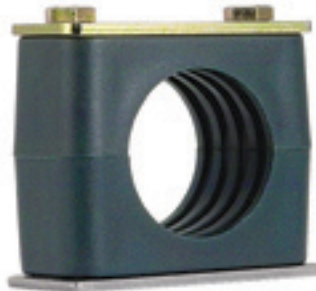
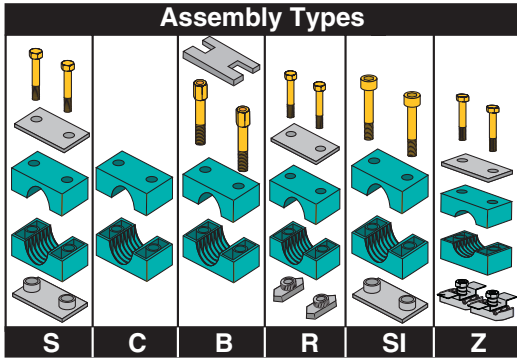
## BETA ADAPTER



- 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.

## BETA CLAMPS

### STANDARD SERIES



Steel w/  
Polypropylene  
Cushion

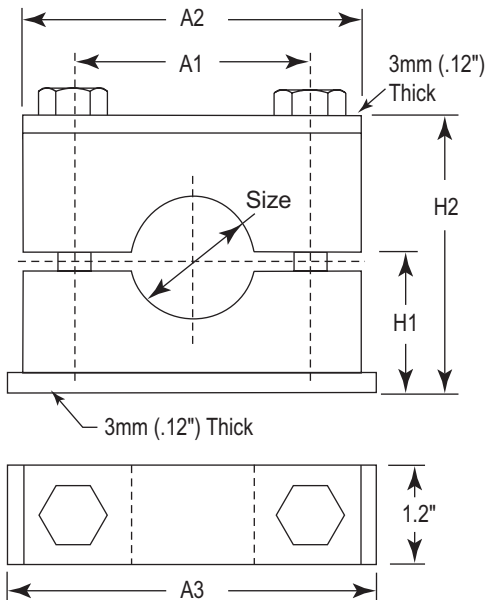


Steel w/  
Aluminum  
Cushion

### BETA STANDARD SERIES

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

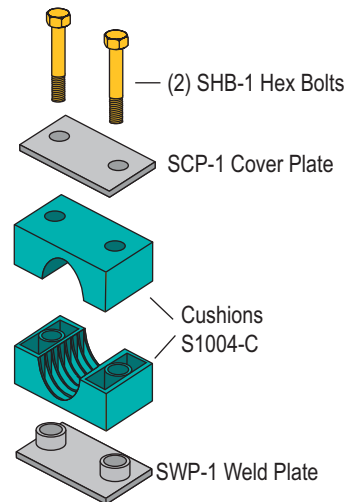
**INSTALLATION** - Refer to pages 45-46 for complete installation guide.



Group	Part No. *	Tube Size	Pipe Size	Metric Size	Dimensions - inch (mm)					Wt/ 100	Bolt
					A1	A2	A3	H1	H2		
S1	S-1004	1/4" (0.250)	-	-	0.78 (20)	1.34 (34)	1.41 (36)	0.62 (16)	1.25 (32)	17	1/4"-20 x 1 1/4"
	SM-1006	3/8" (0.375)	-	-							
	S-1007	-	1/8" (0.405)	6mm							
	SM-1008	-	-	8mm							
	SM-1012	-	-	12mm							
S2	S-2008	1/2" (0.500)	-	-	1.02 (26)	1.57 (40)	1.65 (42)	0.76 (19.5)	1.54 (39)	20	1/4"-20 x 1 3/8"
	S-2009	-	1/4" (0.540)	-							
	S-2010	5/8" (0.625)	-	-							
	S-2011	-	3/8" (0.675)	-							
	SM-2014	-	-	14mm							
	SM-2015	-	-	15mm							
	SM-2018	-	-	18mm							
S3	S-3012	3/4" (0.750)	-	-	1.29 (33)	1.96 (50)	2.04 (52)	0.80 (20.5)	1.61 (41)	24	1/4"-20 x 1 1/2"
	S-3014	-	1/2" (0.840)	-							
	S-3015	7/8" (0.875)	-	-							
	S-3016	1" (1.000)	-	-							
	SM-3020	-	-	20mm							
	SM-3025	-	-	25mm							
S4	S-4017	-	3/4" (1.050)	-	1.57 (40)	2.28 (58)	2.36 (60)	0.94 (24)	1.88 (48)	30	1/4"-20 x 1 3/4"
	S-4018	1 1/8" (1.125)	-	-							
	SM-4030	-	-	30mm							
S5	S-5020	1 1/4" (1.250)	-	-	2.04 (52)	2.75 (70)	2.83 (72)	1.25 (32)	2.52 (64)	40	1/4"-20 x 2 1/2"
	S-5021	-	1" (1.315)	-							
	S-5024	1 1/2" (1.500)	-	-							
	S-5027	-	1 1/4" (1.660)	-							
	SM-5035	-	-	35mm							
S6	S-6028	1 3/4" (1.750)	-	-	2.59 (66)	3.38 (86)	3.46 (88)	1.41 (36)	2.83 (72)	47	1/4"-20 x 2 3/4"
	S-6030	-	1 1/2" (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	1/4"-20 x 4"
Suffix	*For additional sizes contact factory.										
	Note: Add assembly type to part number. Example: <b>S-1004S-SS</b> provides the complete assembly as shown with stainless steel components.										
	NOTE: SM (metric) only available in Steel with Polypropylene (green) cushion.										
		Components	Cushion	Example							
none	Steel	Polypropylene (green)	<b>S-1004S</b>								
-AL	Steel	Aluminum	<b>S-1004S-AL</b>								
-SS	Stainless Steel	Polypropylene (green)	<b>S-1004S-SS</b>								

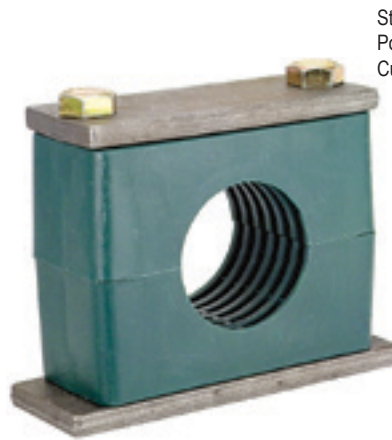
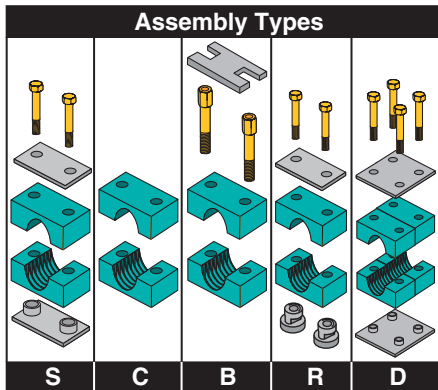
STANDARD SERIES COVER PLATE			STANDARD SERIES SAFETY PLATE		
	SCP-1	Use with Group S1		SP-1	Use with Group S1
	SCP-2	Use with Group S2		SP-2	Use with Group S2
	SCP-3	Use with Group S3		SP-3	Use with Group S3
	SCP-4	Use with Group S4		SP-4	Use with Group S4
	SCP-5	Use with Group S5		SP-5	Use with Group 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		
<b>S-1004-S</b>		
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

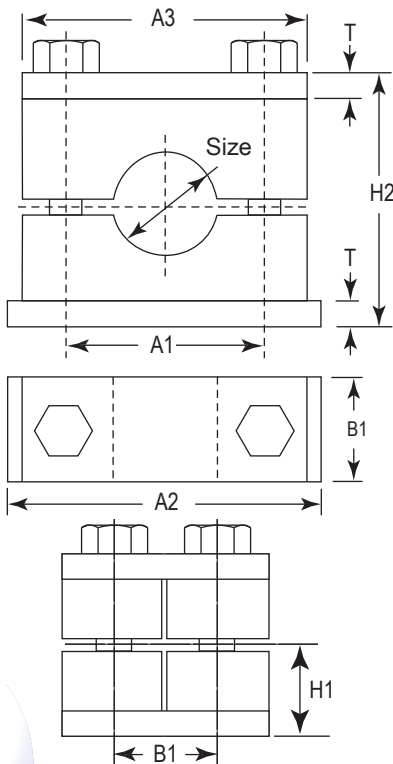
### HEAVY SERIES



### 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 45-46 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"- 11x5- 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	

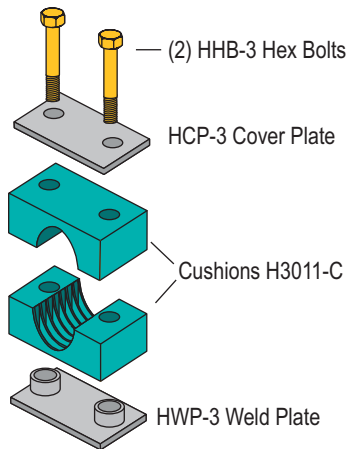
\*For additional sizes contact factory.

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)	<b>H-3004S</b>
-AL	Steel	Aluminum	<b>H-3004S-AL</b>
-SS	Stainless Steel	Polypropylene (green)	<b>H-3004S-SS</b>

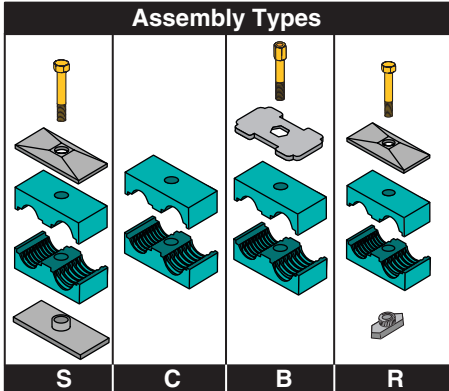
HEAVY SERIES COVER PLATE		HEAVY SERIES SAFETY PLATE		C-RAIL NUTS (Two required per single assembly)				
	HCP-3	Use w/Group H3		HSP-3	Use w/Group H3		HRN-3-5	3/8" nut, Use w/Groups H3-H5
	HCP-4	Use w/Group H4		HSP-4	Use w/Group H4		HRN-6	1/2" nut, Use w/Group H6
	HCP-5	Use w/Group H5		HSP-5	Use w/Group 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	
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		<p>40 mm 13 mm 5 mm 22 mm</p>		
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
	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		
<b>H3004-S</b>		
Assembly Includes		
Quantity	Part No.	Description
1 Each	HWP-3	Weld Plate
1 Each	HCP-3	Cover Plate
2 Each	HHB-3	Hex Bolts
1 set	H3011-C	Cushions



## BETA CLAMPS

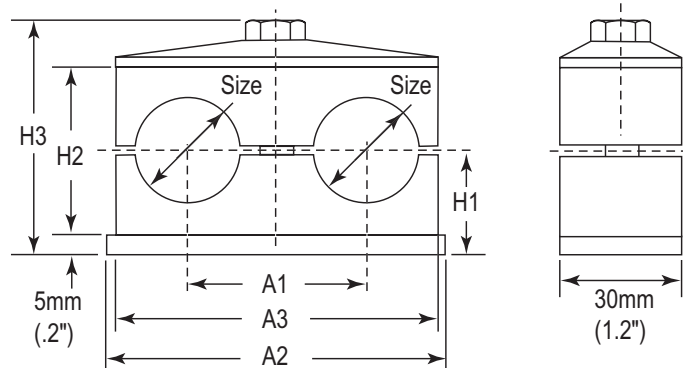
### TWIN SERIES



**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 45-46 for complete installation guide.



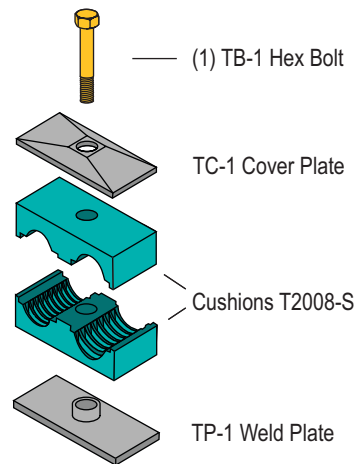
Group	Steel Part No.	Stainless Steel Part No.	Tube Size	Pipe Size	Dimensions - inch (mm)						WT/100	Hex Bolt
					A1	A2	A3	H1	H2	H3		
T1	T-1004	T-1004-SS	1/4 (0.250)	-							21	1/4"-20 x 1-3/8"
	T-1006	T-1006-SS	3/8 (0.375)	-	.78 (20)	1.45 (37)	1.41 (36)	.72 (18.5)	1.06 (27)	1.69 (43)	21	
	T-1007	T-1007-SS	-	1/8 (0.405)							21	
T2	T-2008	T-2008-SS	1/2" (0.500)	-							31	5/16"-18 x 1-3/8"
	T-2009	T-2009-SS	-	1/4 (0.540)	1.14 (29)	2.16 (55)	2.08 (53)	.70 (18)	1.02 (26)	1.71 (43.5)	31	
	T-2010	T-2010-SS	5/8 (0.625)	-							31	
	T-2011	T-2011-SS	-	3/8 (0.675)							31	
T3	T-3012	T-3012-SS	3/4 (0.750)	-							40	5/16"-18 x 1-3/4"
	T-3014	T-3014-SS	-	1/2 (0.840)	1.41 (36)	2.75 (70)	2.63 (67)	.92 (23.5)	1.45 (37)	2.14 (54.5)	39	
	T-3015	T-3015-SS	7/8 (0.875)	-							39	
	T-3016	T-3016-SS	1 (1.000)	-							38	
T4	T-4017	T-4017-SS	-	3/4 (1.050)	1.77 (45)	3.34 (85)	3.22 (82)	1.02 (26)	1.65 (42)	2.34 (59.5)	49	5/16"-18 x 2"
	T-4018	T-4018-SS	1-1/8 (1.125)	-							49	
T5	T-5020	T-5020-SS	1-1/4 (1.250)	-							65	5/16"-18 x 2-3/8"
	T-5021	T-5021-SS	-	1 (1.315)	2.20 (56)	4.33 (110)	4.17 (106)	1.25 (32)	2.12 (54)	2.81 (71.5)	65	
	T-5024	T-5024-SS	1-1/2 (1.500)	-							64	
	T-5027	T-5027-SS	-	1-1/4 (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

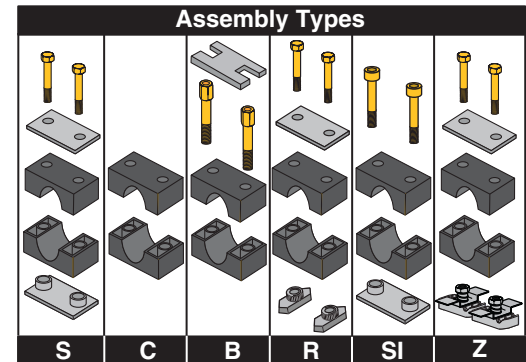
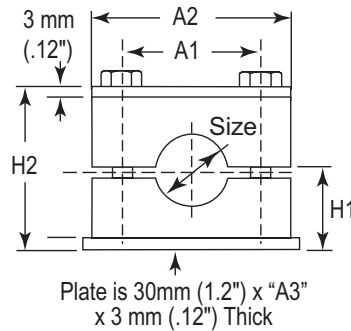
TWIN SERIES COVER PLATE			TWIN SERIES SAFETY PLATE		
	TC-1	Use with Group T1		TSP-1	Use with Group T1
	TC-2	Use with Group T2		TSP-2	Use with Group T2
	TC-3	Use with Group T3		TSP-3	Use with Group T3
	TC-4	Use with Group T4		TSP-4	Use with Group T4
	TC-5	Use with Group T5		TSP-5	Use with Group T5
TWIN 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





## 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.

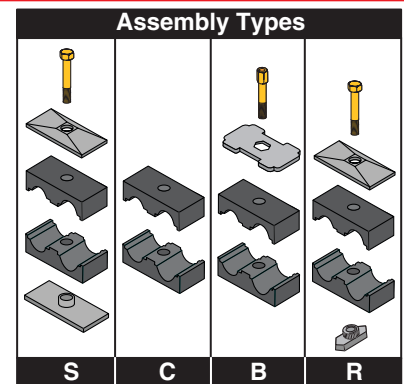
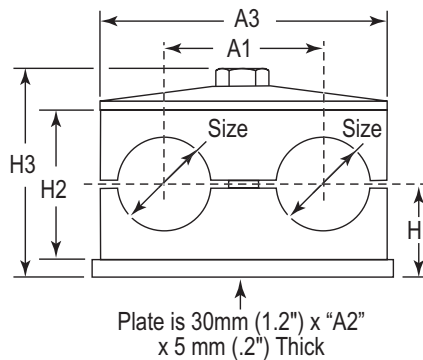
- Chamfered and smooth core protects hose cover and extends the life of the hose
- Uses Standard Beta hardware
- Reduces wear on hose connection caused by vibration and surge

**INSTALLATION** - Refer to pages 45-46 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 x 1 3/4
S5	S-5016H	1" (1.42)	2.05	2.75	2.83	1.25	2.52	39	1/4 - 20 x 2 1/2

\*For additional sizes and stainless steel contact factory.  
Note: 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 45-46 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	.70	1.02	1.71	31	5/16 - 18
	T-2006H	3/8" (0.69)	1.14	2.16	2.08	.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 x 1 3/4
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 x 2 3/8

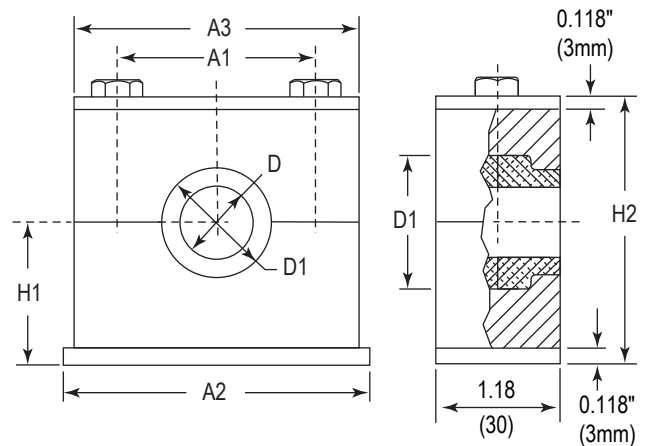
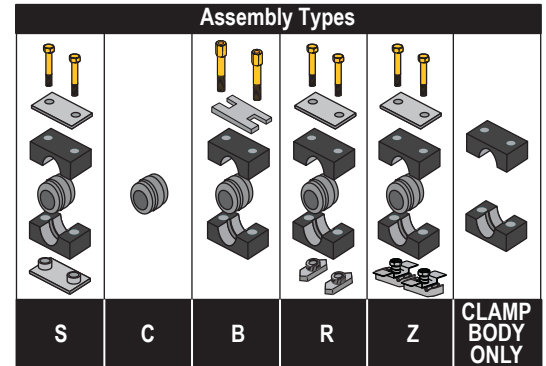
\*For additional sizes and stainless steel contact factory.  
Note: Add Assembly type to Part No.- Example: **T-2004HS** provides the complete assembly as shown

## 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 45-46 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.

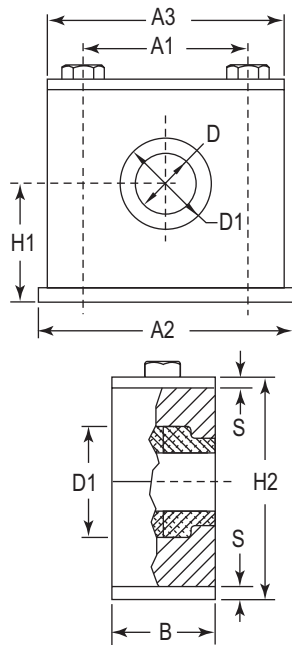
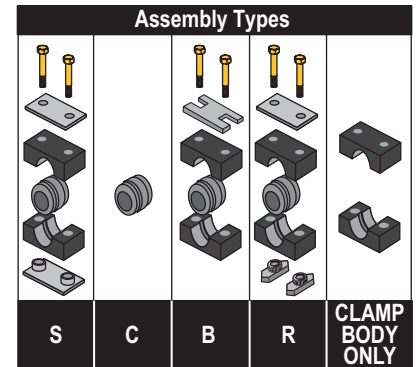
Note: Add Assembly type to Part No.- Example: **SM4006RIS** provides the complete assembly as shown

## 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.

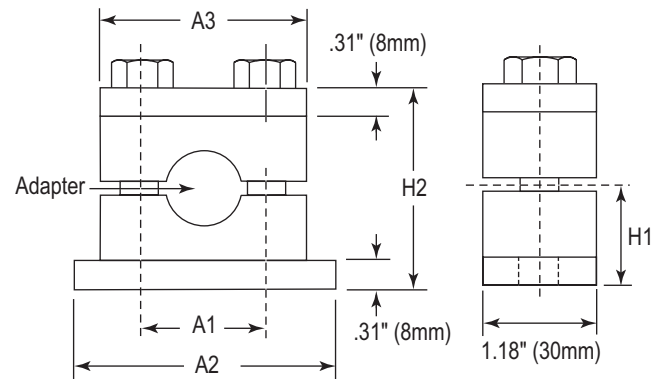
**INSTALLATION** - Refer to pages 45-46 for installation guide.



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	1.00 (25.5)	1.24 (31.5)	1.18 (30)	1.22 (31)	2.44 (62)	1.77 (45)	3.35 (85)	2.76 (70)	0.32 (8)	3/8-16x 2-1/4
	HM4008RI	0.32 (8)	1/16"	-	0.30 - 0.32										
	H4007RI	0.39 (10)	-	1/8"	0.37 - 0.39										
	HM4012RI	0.47 (12)	-	-	0.45 - 0.47										
	H4008RI	0.50 (12.7)	1/2"	-	0.48 - 0.50										
	HM4014RI	0.55 (14)	-	-	0.53 - 0.55										
	HM4015RI	0.59 (15)	-	-	0.57 - 0.59										
	H4010RI	0.63 (16)	5/8"	-	0.61 - 0.63										
	H4011RI	0.68 (17.2)	-	3/8"	0.66 - 0.68										
	H4012RI	0.75 (19)	3/4"	-	0.73 - 0.75										
H4C	Clamp Body Only (Group H4)														
H5	H5014RI	0.79 (20)	-	1/2"	0.77 - 0.79	1.54 (39)	1.83 (46.5)	1.18 (30)	1.46 (37)	2.91 (74)	2.36 (60)	3.94 (100)	3.35 (85)	0.32 (8)	3/8-16x 2-3/4
	H5015RI	0.87 (22)	7/8"	-	0.85 - 0.87										
	H5016RI	0.98 (25)	1"	-	0.96 - 0.98										
	H5017RI	1.06 (26.9)	-	3/4"	1.04 - 1.06										
	HM5028RI	1.10 (28)	-	-	1.08 - 1.10										
	HM5030RI	1.18 (30)	-	-	1.16 - 1.18										
	H5020RI	1.26 (32)	1-1/4"	-	1.24 - 1.26										
H5C	Clamp Body Only (Group H5)														
H6	H6021RI	1.33 (33.7)	-	1"	1.31 - 1.33	2.56 (65)	2.91 (74)	1.77 (45)	2.11 (53.5)	4.21 (107)	3.56 (90.5)	5.51 (140)	4.53 (115)	0.39 (10)	1/2-13x 4
	HM6035RI	1.38 (35)	-	-	1.36 - 1.38										
	H6024RI	1.50 (38)	1-1/2"	-	1.48 - 1.50										
	HM6040RI	1.58 (40)	-	-	1.56 - 1.58										
	H6027RI	1.65 (42)	-	1-1/4"	1.63 - 1.65										
	HM6045RI	1.79 (45.5)	-	-	1.77 - 1.79										
	H6030RI	1.89 (48)	-	1-1/2"	1.87 - 1.89										
	H6032RI	2.01 (51)	2"	-	1.99 - 2.01										
	H6034RI	2.10 (53.4)	2-1/8"	-	2.08 - 2.10										
	HM6056RI	2.22 (56.4)	-	-	2.2 - 2.22										
H6C	Clamp Body Only (Group H6)														
H7	H7038RI	2.36 (60)	-	2"	2.34 - 2.36	3.50 (89)	3.86 (98)	2.36 (60)	2.70 (68.5)	5.39 (137)	4.80 (122)	7.09 (180)	5.98 (152)	0.39 (10)	5/8-11x 5-1/2
	HM7065RI	2.56 (65)	-	-	2.54 - 2.56										
	HM7070RI	2.76 (70)	-	-	2.74 - 2.76										
	H7046RI	2.87 (73)	-	2-1/2"	2.85 - 2.87										
	H7050RI	2.99 (76)	3"	-	2.97 - 2.99										
H7C	Clamp Body Only (Group H7)														
H8	HM8083RI	3.27 (83)	-	-	3.19 - 3.27	4.57 (116)	5.20 (132)	3.15 (80)	3.88 (98.5)	7.76 (197)	6.61 (168)	8.86 (225)	8.07 (205)	0.59 (15)	3/4-10x 7-1/2
	H8056RI	3.50 (89)	3-1/2"	3"	3.43 - 3.50										
	H8C	Clamp Body Only (Group H8)													

\*For additional sizes and stainless steel contact factory.

## BETA-ADAPTER





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

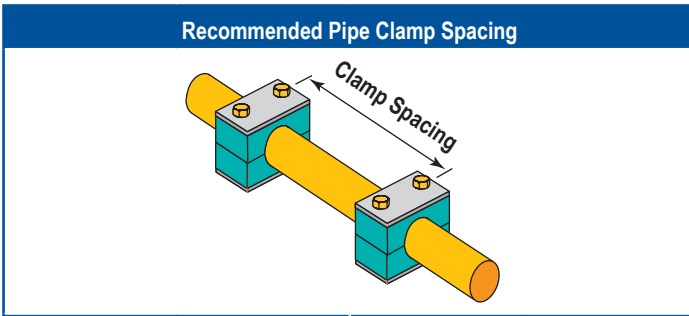
- Beta-Adapter cushions can also be used with rubber inserts.
- Z-Clamp split bushings from Group 1 can be utilized with the basic Beta-Adapter Group 4 cushion.
- Z-Clamp bushings from Group 2 coincide with Group 5 Beta-Adapter assemblies.
- The split bushings provide extra vibration absorption for delicate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

**INSTALLATION** - Refer to page 47 for complete installation guide.

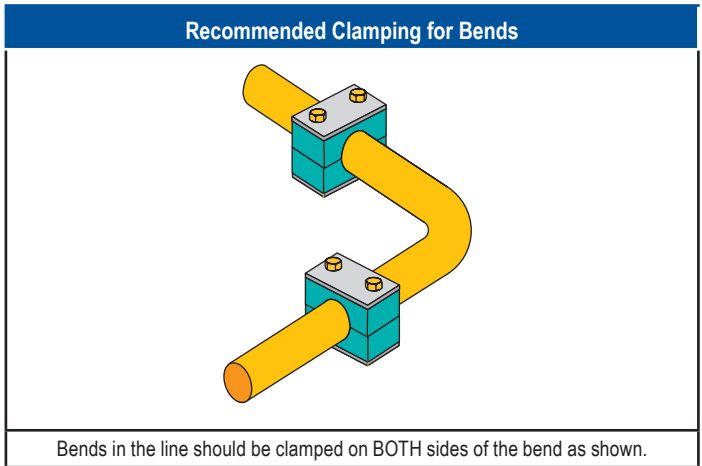


	A1	A2	A3	H1	H2	Hex Bolt
<b>Group 1 H4 BETA</b>	45mm 1.77	85mm 3.34	70mm 2.75	32mm 1.25	64mm 2.51	3/8"-16 x 2-1/4"
<b>Group 2 H5 BETA</b>	60mm 2.36	100mm 3.93	84mm 3.30	38mm 1.49	76mm 2.99	3/8"-16 x 2-3/4"

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



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



BETA CLAMP MATERIAL PROPERTIES		
<b>Material Properties</b>		<b>Polypropylene (PP)</b>
Density	–	0.906 g/cm3
Tensile strength	DIN 53454	25-35 N/mm2
Flexure stress limit	DIN 53452	36N N/mm2
Compressive strength	DIN 53454	90 N/mm2
Impact strength	DIN 53453	No break
<b>Thermo Properties</b>		<b>Polypropylene (PP)</b>
Max. temp. resistance		-30 to 90°C
Thermal conductivity		15 x 10 <sup>-5</sup> /°C
Linear expansion coeff.		0.22 W/[mk]
<b>Electrical Properties</b>		<b>Polypropylene (PP)</b>
Specific volume	DIN 53482	1016 ohm x cm
<b>Chemical Properties</b>		<b>Polypropylene (PP)</b>
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
<b>Beta Standard</b>	S1 - S7	1/4"-20	7	10	6	8	6	8
<b>Beta Heavy</b>	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
<b>Beta Twin</b>	T1	1/4"-20	-	-	4	6	4	6
	T2 - T5	5/16"-18	-	-	9	12	9	12

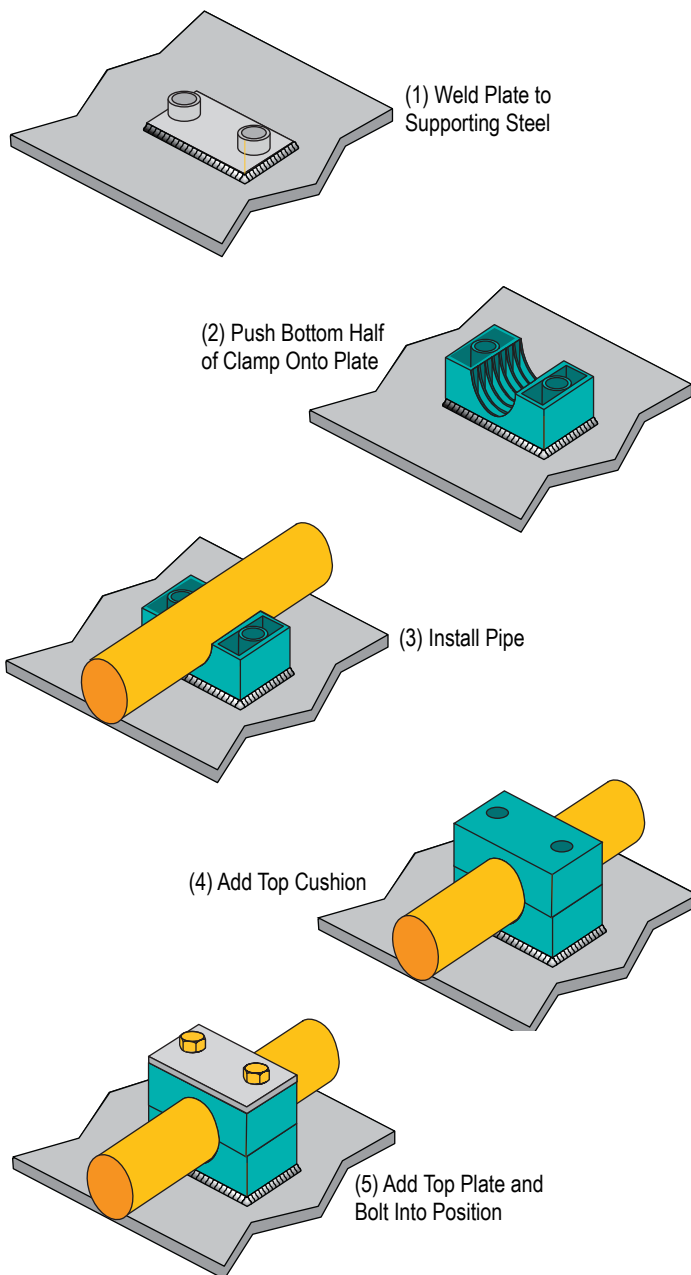
The outlined particulars are approximate values and are only valid as references, which are not binding, also with regard to possible protection of third parties, and they do not exempt you from your own examination of suitability of the products delivered by us. Therefore, these values can only be used 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.



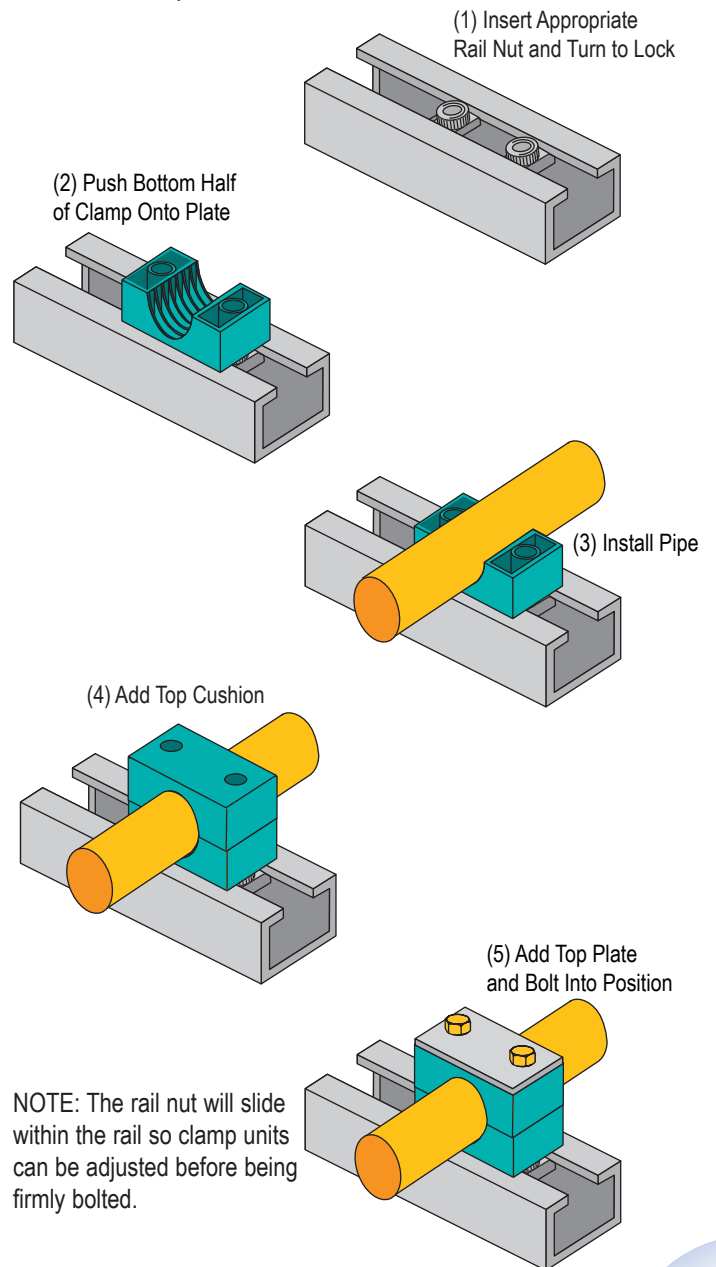
## INSTALLATION ON MOUNTING RAILS

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.

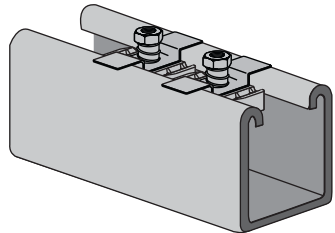


NOTE: The rail nut will slide within the rail so clamp units can be adjusted before being firmly bolted.

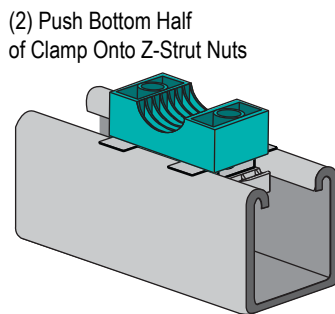
## INSTALLATION ON Z-STRUT CHANNEL

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

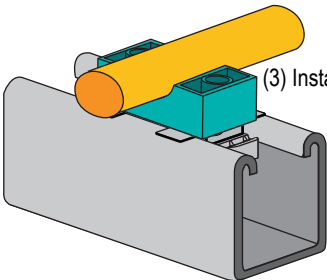
- Standard-Series
- Twin-Series (T1 Only)
- Beta Rubber Inserts



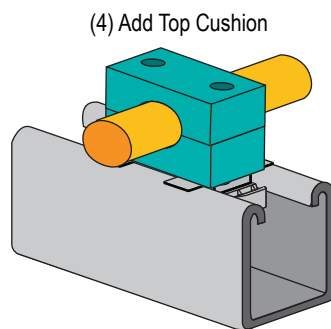
(1) Insert Z-Strut Nuts Into Z-Strut Channel And Turn to Lock



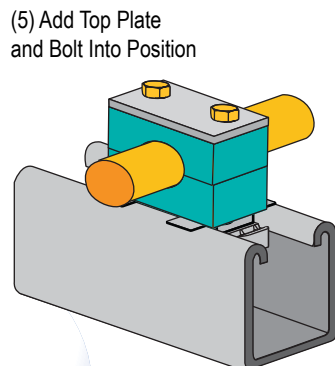
(2) Push Bottom Half of Clamp Onto Z-Strut Nuts



(3) Install Pipe



(4) Add Top Cushion



(5) Add Top Plate and Bolt Into Position

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

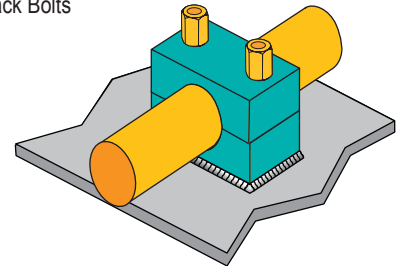
## MULTI-LEVEL ASSEMBLY

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

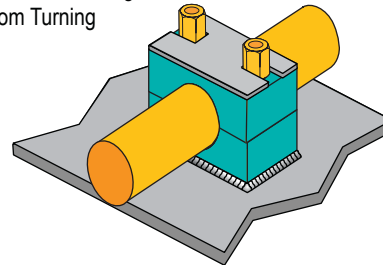
Safety plates are inserted between the clamps to prevent the stacking bolts from turning.

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

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



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



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

