Esterline
Engineered Materials

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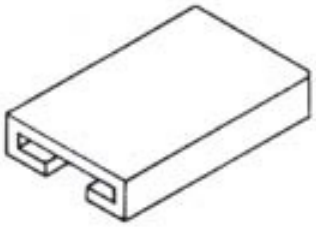
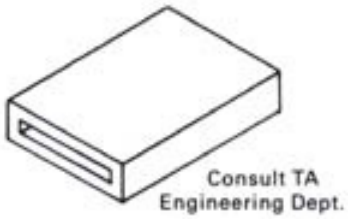
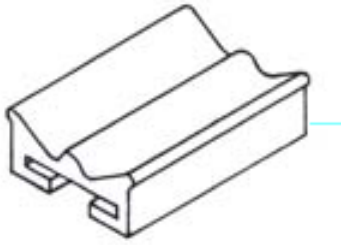
Bulletin 130: Clamp Component Details

Cushion Configurations

Note: The cushion configurations shown below are available for 1/2" (12.7mm) wide, standard width clamps. For other available widths, and additional information on the use of the cushion configurations shown below, please consult the TA engineering Department.

Styles	Stock Materials		Application Information
	Matl.	Code	
	CR NB EP HA HB HC TF XF PV WC		The "C" or Clip-Strap configuration which is the most widely used, is manufactured from most all elastomers and plastic materials, however, there are variations in the dimensions due to method of manufacture, size clamp involved and application. Most elastomer and some plastic cushion insulation pad thicknesses range from .040" to .070", whereas teflon is only .020" to .030". The thinner elastomer pads are used on clamps with narrow bands and on small diameters. The thicker pads are used on wider bands and larger diameter clamps. The conventional wedge (see below) is available in most materials. The full contour wedge is only available in those materials shown on Bulletin No. 270.
	NB EP HA HB HC WC	1 1 1 1 1 1	The "BOX" cushion is dimensionally the same as the "clip-strap" except that it completely envelops the clamp band. Available in most elastomeric materials. Used in areas of high surges and vibration. Since this style cushion and other configurations do pose some manufacturing limitations, please consult your TA Representative or our Engineering Department before specifying. Wedge availability same as above Clip-Strap configuration.
	NB NH EP HA HB HC WC	3 3 3 3 3 3 3	TA's "Regent" vibration isolation cushion configuration. The first cushion designed especially for vibration isolation of tubing and cables yet permitting controlled movement necessitated by structural flexing. Also, this configuration has the ability to accept wide tube and cable tolerance variations. The "W" shape and the sealing lips keep foreign matter from contacting the tube, thus reducing the danger of abrasion. Wedge Available. Note: increase "E" dimension +.093" (2.36mm) on loop styles and +.188" (4.79mm) on double hole mount clamps. (Patent Nos. 3,856,245 and 5,220,710)

(continued)

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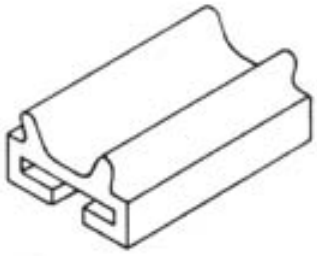
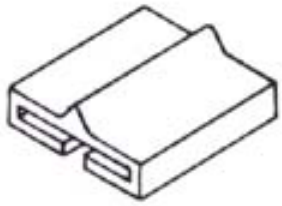
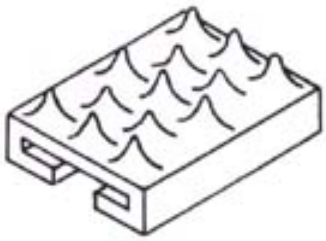
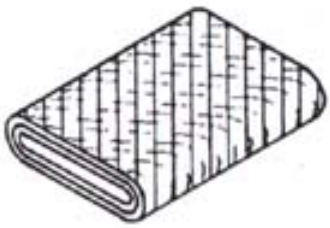
Cushion Configurations (continued)

Note: The cushion configurations shown below are available for 1/2" (12.7mm) wide, standard width clamps. For other available widths, and additional information on the use of the cushion configurations shown below, please consult the TA engineering Department.

Styles	Stock Materials		Application Information
	Matl.	Code	
	NB EP HA HB HC	5 5 5 5 5	Another TA cushion configuration designed for wire bundles, coaxial cable and wave guide clamps. When used on wire bundle clamps, this cushion will permit the addition or subtraction of wires without replacing clamp for another size. Diameter variation ranges from 3/16 to 1/4 depending on material specified. On coaxial clamps, this configuration will place a minimum compression on the cable and yet take up manufacturers' diameter variations. This is important to prevent multi-system failures. For waveguide clamps, this permits the acceptance of square corners of the waveguide tubes which is not possible with the standard clip-strap. In all cases, various degrees of vibration isolation are obtained. Wedge not applicable. Note: increase "E" dimension +.156" (3.96mm) on loop styles and +.312" (7.92mm) on double hole mount clamps. (Patent Nos. 4,189,807)
	CR HA	6 6	A clip-strap designed for retaining convoluted plastic electrical conduit without crushing. Used on aircraft, automotive and other commercial applications. Wedge not applicable. Note: No change in "E" dimension necessary.
	NB EP HA WC	7 7 7 7	Specially designed cushion for wire bundles. Staggered projections designed to penetrate bundle between wires as an aid to retention and vibration isolation. Permits variations in bundle diameter caused by addition or deletion of wires without changing clamp size. Wedge available. Note: No change in "E" dimension necessary. (Patent No. 4,441,677)
	FT FU		"Woven fiberglass Box Cushion. FT is impregnated with an aluminum/resin coating, whereas FU is impregnated with a higher temperature clear resin without metallic additives." Temperature range approximately 1000ºF (538ºC). Wedge not available. Note: No change in "E" dimension necessary.

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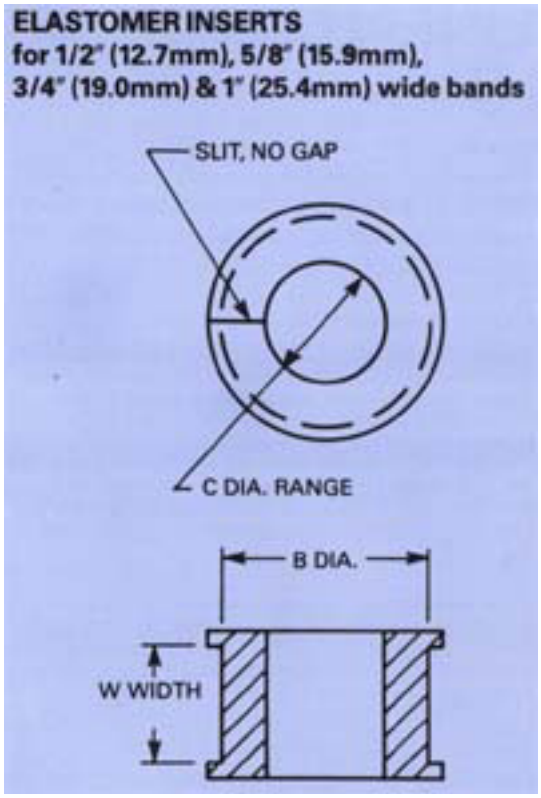
Insert Configurations



Part Numbering System

ex: TA71100004EP07 = "EP" insert with 7/16" (11.1mm) I.D. to fit clamp band 1/2" wide and 5/8" diameter.

Breakdown:
Part number shown below is separated for clarity. When ordering, do not show spaces.

TA71100004 EP 07

TA71100004 = Basic Part Number
EP = Material Code
07 = "C" Dia. in 1/16" increments (Show as min. 2 digits)

Note 1: Elastomer inserts are available in all materials listed in Bulletin 120 (Less any reinforcing fabric)
Note 2: For custom I.D. options using the above inserts, contact TA Engineering Dept.

Basic Insert Part No.		Metal Band		Diameter Range
New No.	Replaces	Diameter	Width	Diameter
Diagram ID ▸		B	W	C
TA71100001	TA03M75	1/4" (6.4mm)	17/32" (13.0mm)	1/16" to 1/8"
TA71100002	TA03M57	3/8" (9.5mm)	17/32" (13.0mm)	1/16" to 3/16"
TA71100003	TA03M55	1/2" (12.7mm)	17/32" (13.0mm)	1/16" to 5/16"
TA71100004	TA03M09	5/8" (15.9mm)	17/32" (13.0mm)	1/8" to 7/16"
TA71100005	TA03M106	3/4" (19.0mm)	17/32" (13.0mm)	1/8" to 5/8"
TA71100006	TA03M72	1" (25.4mm)	17/32" (13.0mm)	1/8" to 3/4"
TA71100007	TA03M105	1-1/4" (31.8mm)	17/32" (13.0mm)	1/4" to 3/4"
TA71100008	TA03M59	1-1/2" (38.1mm)	17/32" (13.0mm)	1/4" to 1"
TA71100009	TA03M58	2" (50.8mm)	17/32" (13.0mm)	3/8" to 1-1/2"
TA71100010	TA03M61	2-1/2" (63.5mm)	17/32" (13.0mm)	3/8" to 1-3/4"
TA71100011	TA03M25-01	7/8" (22.3mm)	21/32" (16.8mm)	1/8" to 11/16"
TA71100012	TA03M25-02	7/8" (22.3mm)	25/32" (20.0mm)	1/8" to 11/16"
TA71100013	TA03M25-03	7/8" (22.3mm)	1-1/32" (26.2mm)	1/8" to 11/16"

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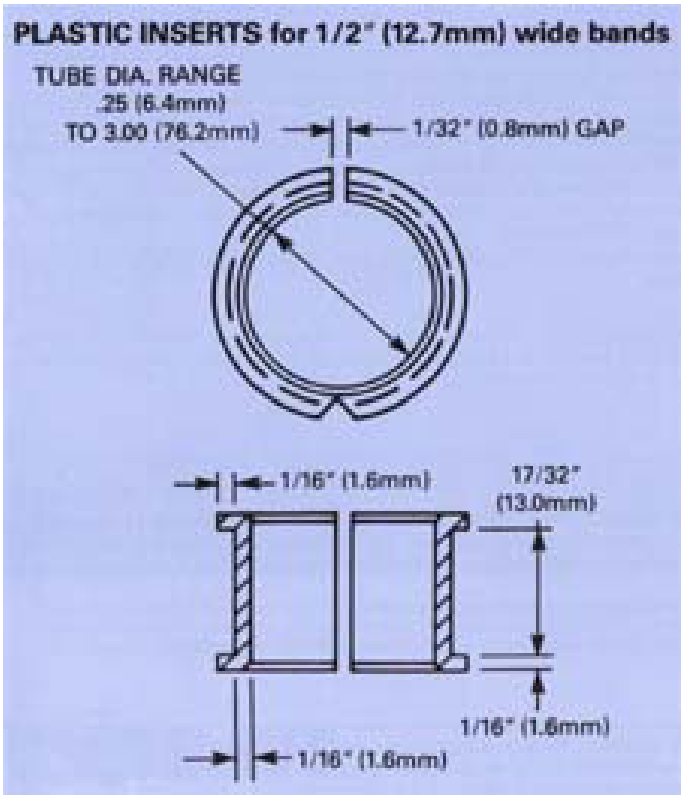
Insert Configurations



Part Numbering System

ex: TA61000001X16 = Teflon insert, sodium etched, with 1.00" I.D. to fit a clamp band 1/2" wide and 1-1/8" dia.

Breakdown:
Part number shown below is separated for clarity. When ordering, do not show spaces.

TA61000001 X 16

TA61000001	=	Basic Part Number
X	=	Material Code
16	=	Tube Dia. in 1/16" increments (Show as min. 2 digits)

Note: When ordering a clamp with insert, it is only necessary to specify the material, as the basic part number will designate an insert clamp (see Bulletins in Section G). When ordering an insert as a separate item, use the part numbering systems shown above.

Material Options

Code	Description	Specification
X	Teflon, sodium etched (Non-slip, treated), color brown)	ASTM D-1457
T	Teflon, color white	ASTM D-1457
N	(6/6) Nylon, color white	L-P-410

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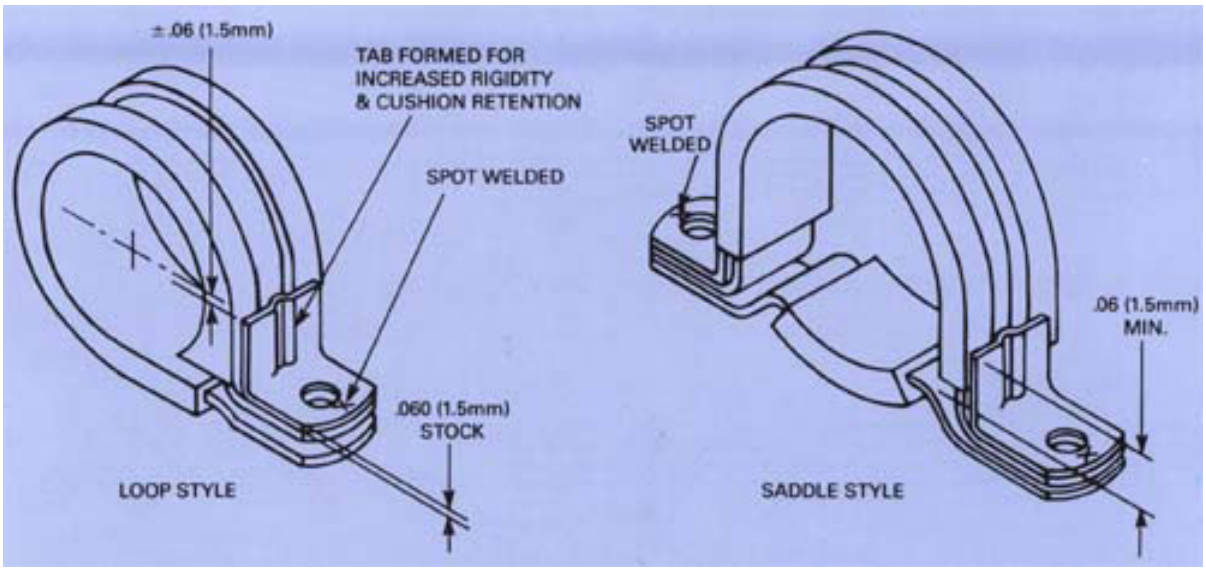
Features

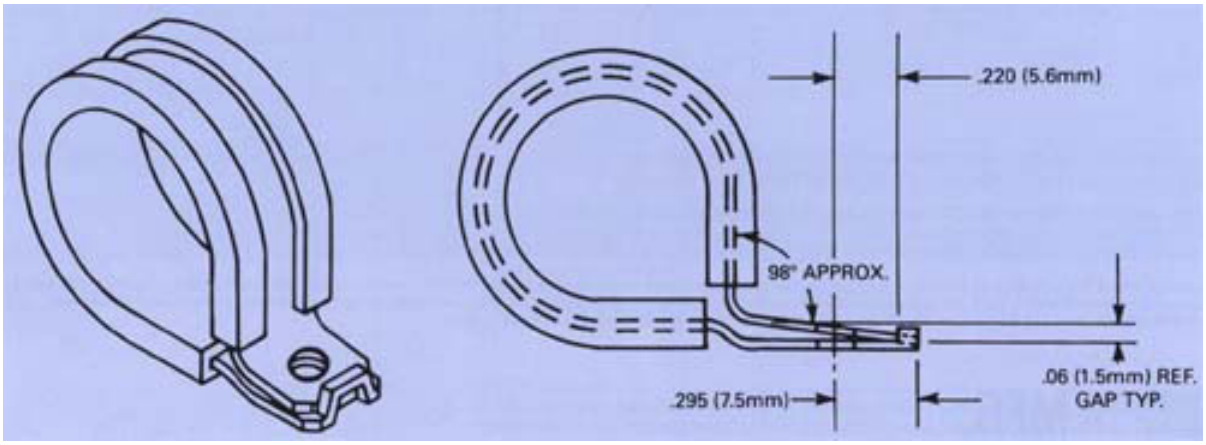


Foot Reinforcing tabs

The use of the upper foot reinforcing tab is designed to prevent clamp band breakage during low amplitude, high "G" load, vibration conditions. Also, this reinforcing feature prevents clamp band distortion under high surge conditions as experienced on hydraulic systems in modern aircraft. This feature should be specified when "hard pointing" tubing installations near pumps, connections and bend radii.

Applicable to stainless steel clamps only and manufactured from the same stainless steel as specified for the clamp.

Used on loop and saddle style clamps, sizes 08 and larger. Spot welded on clamp upper foot, for extreme vibration applications. See Bulletin 200, 270, and 900, consult TA Engineering Dept.



Snap-Loc Foot

This latching device is available ONLY on loop style clamps with 1/2" (12.7mm) wide bands. It is primarily used for pre-installation of wire bundles. It eases installation by holding the clamp closed and aligning the mounting holes while the bolt is being installed and affixed to structure. Butterflying, or mounting 2 clamps on 1 bolt is not recommended using this feature.

If the "Snap-Loc" is desired, insert the letter "L" after the metal identification code, replacing the foot reinforcing tab designation "R" ie. TA02212 H0 L 16 EP (See Bulletins 200 and 270).

All dimensions per Bulletin 200 except as shown).

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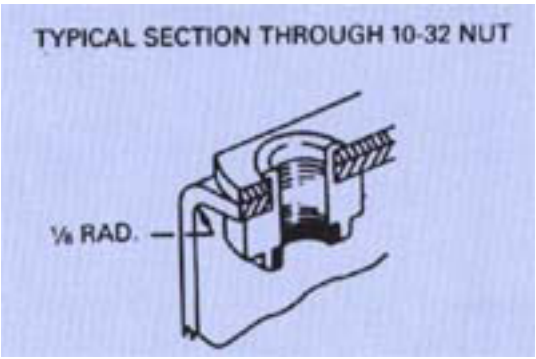
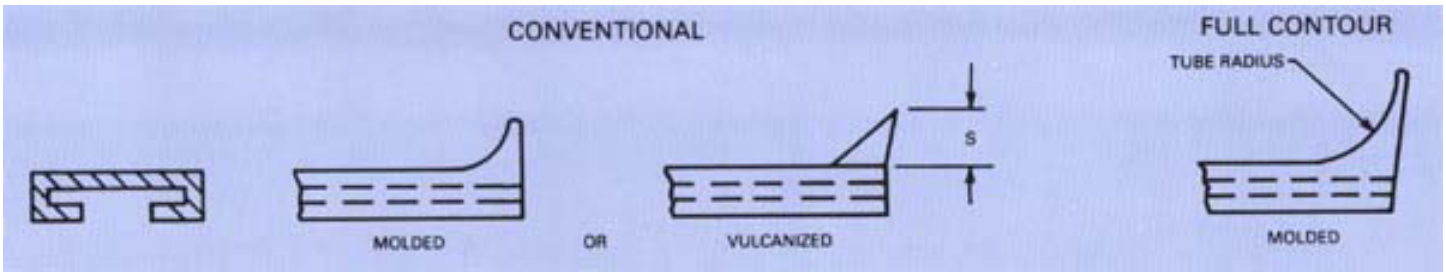
Wedge Configurations

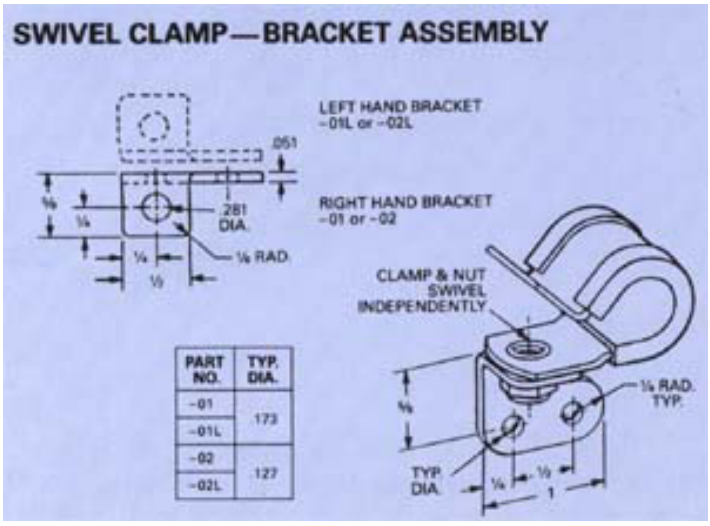


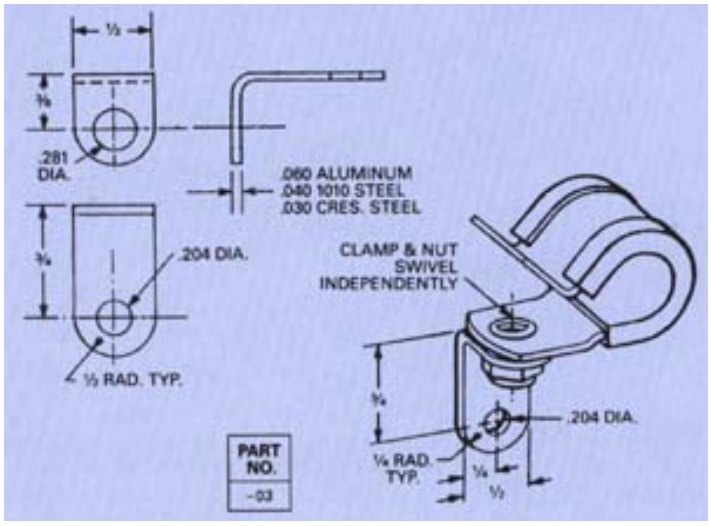
The wedge, originally developed by TA (Patent Number 2,692,746) was designed primarily for use with open wire bundles, to prevent the individual small wires from being trapped between the feet of loop style clamps. This design was incorporated and dimensionally controlled by MS21919 and permitted either a vulcanized wedge or one molded as a part of the cushion. The height of the wedge is controlled dimensionally by the "S" symbol on MS21919.

As aircraft development progressed to larger and higher performance vehicles, there was found to be a need for a wedge for fluid system piping which would follow the contour of the pipe. This was necessary to reduce vibration and prevent breakage of the clamp band. In this case, the height of the wedge is controlled by the radius of the tube or pipe being clamped. This new and higher performance design has been incorporated in the latest clamp specification for installation of hydraulic systems. MIL-C-85052. It also can be used for wire bundles or cable to prevent similar problems as occurred with tubing installations.

Our Catalogue Bulletin 200 (Style 022) employs the "Conventional" wedge. For the "Full Contour" wedge consult TA Bulletin 270.







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Part Numbering System

ex: “TA” CLAMP–02L

Breakdown:
Part number shown below is separated for clarity. When ordering, do not show spaces.

“TA” Clamp – 02L

TA Clamp	=	TA Clamp Number (Bulletins 200, 300, 400 & 500)
–	=	Use dash only if non-cushioned clamp
02L	=	Bracket Number (from above)