

INCH-POUND

MIL-DTL-85052/2C  
 30 March 2005  
 SUPERSEDING  
 MIL-C-85052/2B  
 30 MAY 1984

DETAIL SPECIFICATION SHEET

CLAMP, LOOP, TUBE-17-7 PH CRES, 275 °F, PHOSPHATE ESTER  
 FLUID RESISTANT

This specification is approved for use by all Departments and Agencies of the Department of Defense. The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-85052.

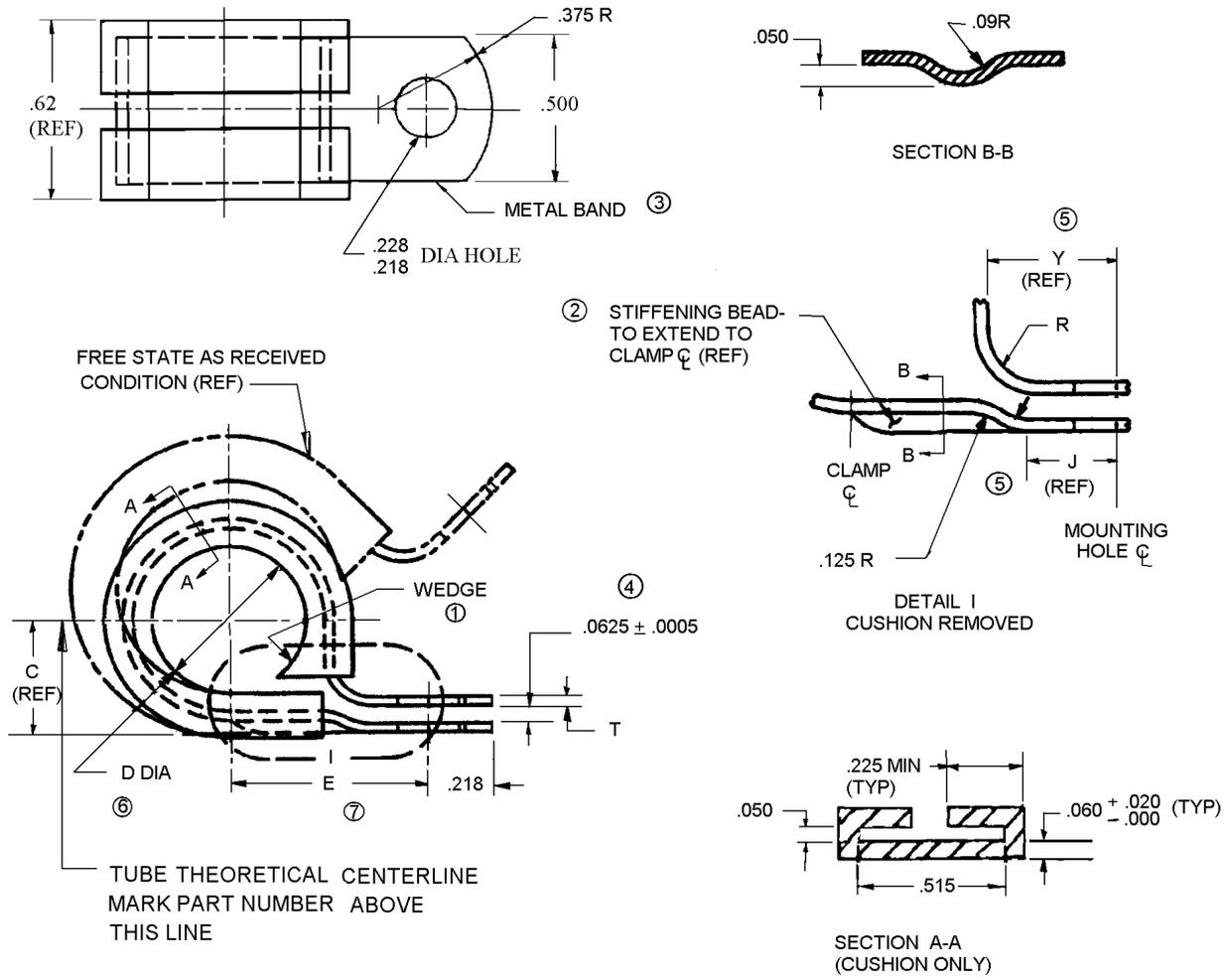


FIGURE 1. Clamp design and construction.

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## NOTES:

- ① Wedge shall be required on size - 6 and larger. The wedge shall be molded as an integral part of the cushion and contoured to fit D diameter.
- ② Stiffening bead shall be required on size - 4 and larger. All radii on the stiffening bead shall be smooth and blended. No sharp tool marks are allowed.
- ③ Metal band shall have all burrs, sharp edges, and scale removed.
- ④ Wedge shall touch cushion on lower foot with clamp installed on mandrel without spacer.
- ⑤ Reference dimensions Y and J are provided to gain maximum support for the lower foot by closely fitting the upper foot bend radius to the stiffening bead blend radius when closed against each other.
- ⑥ Diameter D is the nominal diameter for which a clamp size is intended for use. Diameter D shall be verified by the diametral retention test specified in the general specification (see 4.4.4.1).
- ⑦ Dimension E shall be measured with the clamp installed on a mandrel of D diameter  $\pm .001$ , and  $.0625 \pm .0005$  spacer between the upper and lower foot as shown.
8. Unless otherwise specified, dimensions are in inches, tolerances  $\pm .03$  for two decimals and  $\pm .010$  for three decimals.

TABLE I. Clamp dimensions. 8/

Dash No.	C (Ref)	D 6/ Dia	E 7/ $\pm .032$	J 5/ (Ref)	R $\pm .010$	T	Y 5/ (Ref)
2	.192	.125	.468	-	.090	.020 $\pm .002$	.325
3	.224	.188	.499				
4	.255	.250	.530	.235			
5	.286	.312	.561				
6	.318	.375	.592				
7	.349	.438	.624				
8	.380	.500	.655	.256	.125	.032 $\pm .002$	.368
9	.423	.562	.741				
10	.454	.625	.772				
11	.486	.683	.804				
12	.517	.750	.835				
13	.548	.812	.866				

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TABLE I. Clamp dimensions - Continued. 8/

Dash No.	C (Ref)	D <u>6/</u> Dia	E <u>7/</u> $\pm .032$	J <u>5/</u> (Ref)	R $\pm .010$	T	Y <u>5/</u> (Ref)
14	.580	.875	.898	.256	.125	.032 $\pm .002$	.368
15	.611	.938	.929				
16	.642	1.000	.960				
17	.681	1.062	1.001	.262		.040 $\pm .003$	.370
18	.712	1.125	1.032				
19	.744	1.188	1.064				
20	.775	1.250	1.095				
21	.806	1.312	1.126				
22	.838	1.375	1.158				
23	.869	1.438	1.189				
24	.900	1.500	1.220				

5/ See figure 1, note ⑤

6/ See figure 1, note ⑥

7/ See figure 1, note ⑦

8/ See figure 1, note 8

## REQUIREMENTS:

## MARKING

Band. The complete standard part number and manufacture's name, trade mark, or Contractor And Government Entity (CAGE) code shall be impression stamped on the band in an area not covered by the cushion. All marking shall be above tube theoretical centerline (see figure 1). Clamp bands of - 2, - 3, - 4 sizes may be marked with the manufacturer's identification, the size, and the specification sheet number according to space limitations.

Cushion. None

## MATERIALS:

Metal Band. 17-7PH corrosion resistant steel in accordance with SAE-AMS5528 or SAE-AMS5529, annealed, stress relieved, and heat-treated to TH1100 condition in accordance with SAE-AMS-H-6875 after forming.

Cushion. Ethylene propylene rubber, 65-75 durometer, color purple in accordance with the general specification with additional requirements specified in the specification sheet.

## FINISH:

Metal band. Passivate in accordance with SAE-AMS-QQ-P-35, Type II

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Cushion. None

## CUSHION REQUIREMENTS:

1. Physical properties. Physical properties of cushion shall be as specified in table II. Unless otherwise specified, results are an average of 5 specimens and tolerance on temperature  $\pm 5$  °F.
2. Compression set: - See MIL-DTL-85052.  
- Air age at 212 °F.  
- Not to exceed 30 percent average of 3 specimens.
3. Flammability: - See MIL-DTL-85052.  
- Specimens – standard ASTM test lab.  
- Horizontal burn test.

TABLE II. Physical properties.

Test	Test Method	Required Original Properties	Allowable change from actual original properties after:	
			Immersion Hydraulic Fluid (Skydrol)-500B, 22 hrs at + 275 °F <u>1/</u>	Heat Aging 70 hrs at + 275 °F
Hardness durometer "A"	ASTM-D2240	65-75	- 20 Max	+ 10 Max
Tensile strength (PSI)	ASTM-D412	2000 Min	- 50 % Max	- 20 % Max
Elongation (%)	ASTM-D412	400 Min	- 25 % Max	- 40 % Max
Tear strength (PPI)	ASTM-D624 DIE "B"	200 Min	- 40 % Max	- 40 % Max
Specific gravity	ASTM-D297	Report	-	$\pm 2$ %
Volume change (%)	ASTM-D471	-	+ 30 % Max	- 10 % Max

1/. Unless otherwise specified, property measurements shall be performed immediately after removal from the immersion bath.

## PART NUMBER:

Part numbers shall consist of the following (in sequence).

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1. The letter M.
2. The general specification number.
3. A slash and a slash number of this specification sheet.
4. A dash and the appropriate size dash number from table I.

Example: M85052/2-8

### INTENDED USE:

These clamps are intended for use as follows:

Temperature range: - 65 to + 275 °F (for higher temperature rated clamps, see MIL-DTL-85052/3).

Systems: All fluid and electrical systems on aircraft and aerospace vehicles using phosphate ester based hydraulic systems except application requiring a high degree of fuel exposure use MIL-DTL-85052/1 clamps.

Vibration rating. Clamps are used at low, medium, and high vibration areas depending on mounting methods. The recommended mounting methods for various vibration areas are specified in 6.4 of the general specification.

Change from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:  
Army-AV  
Navy-AS  
Air Force-99

Preparing activity:  
Navy-AS  
  
(Project 5340-2734)

Review activities  
Navy-MC, SA, SH  
Air Force-11, 71  
DLA-IS

Industry Association:  
SAE-G3E

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.