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INCH-POUND

MIL-DTL-85052/3C
30 March 2005
SUPERSEDING
MIL-C-85052/3B
30 MAY 1984

DETAIL SPECIFICATION SHEET

CLAMP, LOOP, TUBE-17-7 PH CRES, 500 °F

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.

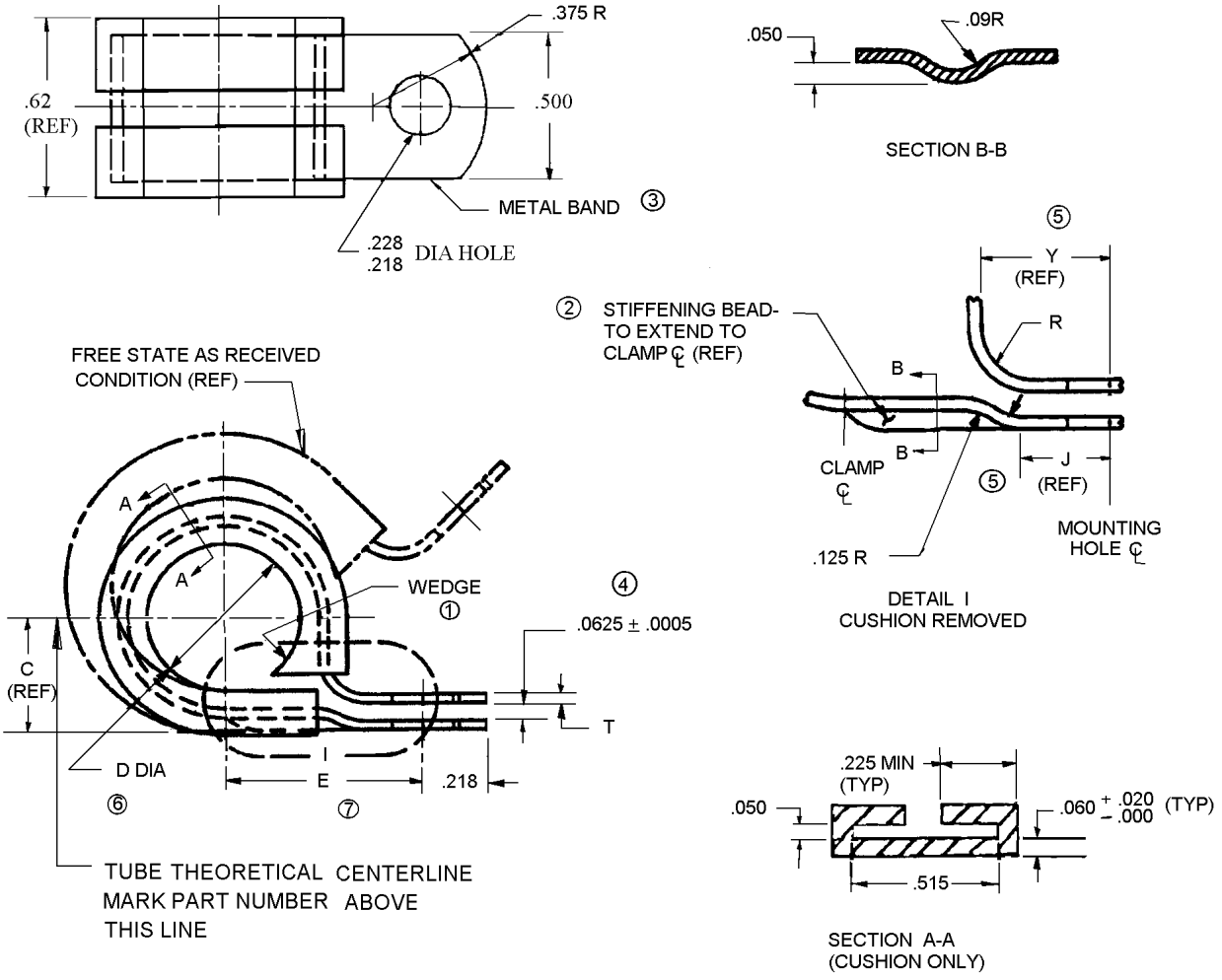

FIGURE 1. Clamp design and construction.

AMSC N/A FSC 5340

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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 of 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 ± .001, and a .0625 ± .0005 spacer between the upper and lower foot as shown.

8. Unless otherwise specified, dimensions are in inches, tolerances ± .03 for two decimals and ± .010 for three decimals.

TABLE I. Clamp dimensions. 8/

Dash No.	C (Ref)	D 6/ Dia	E 7/ ± .032	J 5/ (Ref)	R ± .010	T	Y 5/ (Ref)
2	.192	.125	.468	-	.090	.020 ± .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				
9	.423	.562	.741	.256	.125	.032 ± .002	.368
10	.454	.625	.772				
11	.486	.688	.804				
12	.517	.750	.835				
13	.548	.812	.866				

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TABLE I. Clamp dimensions - Continued. 8/

Dash No.	C (Ref)	D 6/ Dia	E 7/ ± .032	J 5/ (Ref)	R ± .010	T	Y 5/ (Ref)
14	.580	.875	.898	.256	.125	.032 ± .002	.368
15	.611	.938	.929				
16	.642	1.000	.960				
17	.681	1.062	1.001	.262		.040 ± .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, trademark, 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). Due to space limitations, clamp bands of - 2, - 3, - 4 sizes may be marked with the manufacturer's identification, the size, and the specification sheet number.

Cushion. None

MATERIALS:

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

Cushion. Fabric reinforced silicone rubber, 65-75 durometer, on unreinforced material, color light blue conforming to SAE-ARP1527 with additional requirements specified herein. The fabric reinforcing material shall be molded into the band side of the clamp cushion at a 45^{o} angle shown below.

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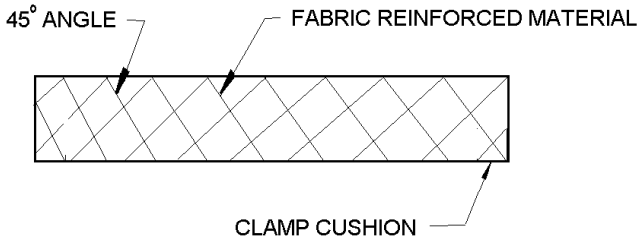

FINISH:

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

Cushion. None

CUSHION REQUIREMENTS:

1. Physical properties. Physical properties shall be as specified in table II. Unless otherwise specified, results are an average of 5 specimens and tolerance on temperature ± 5 °F.

2. Compression set: - See MIL-DTL-85052.
- Air age at 302 °F.
- Not to exceed 30 percent average of 3 specimens.

3. Flammability: - See MIL-DTL-85052.
- Specimens -16 size clamp assemblies unbent until flat.
- Vertical burn test.

Table II. Physical properties.

Test	Test Method	Required Original Properties	Allowable change from actual original properties after:		
			Heat aging 70 hrs at 500 °F	Oil immersion in MIL-PRF-7808 70 hrs at + 302 °F	DIP test 1/
Hardness durometer "A"	ASTM-D2240	65-75	+ 10 PTS Max	- 30 PTS Max	+ 5 PTS
Tensile strength (PSI)	ASTM-D412 2/	1200 Min	1000 Min	300 Min	800 Min
Elongation (%)	ASTM-D412 2/	30 Min	30 Min	30 Min	30 Min
Tear strength (PPI)	ASTM-D624 (DIE "B")	300 Min	300 Min	300 Min	300 Min

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Table II. Physical properties - Continued.

Test	Test Method	Required Original Properties	Allowable change from actual original properties after:		
			Heat aging 70 hrs at 500 °F	Oil immersion in MIL-PRF-7808 70 hrs at + 302 °F	DIP test 1/
Volume change (%)	ASTM-D471	-	-	+ 45 % Max	+ 5% Max
Weight change (%)	ASTM-D471	Report	-5% Max	-	-
Specific gravity	ASTM-D471	Report	-	-	-

1/ DIP test: Test sample shall be dipped in ASTM-D235, type I solvent and allowed to dry at room temperature for 24 hrs. This procedure shall be repeated 10 times.

2/ Test shall be conducted in accordance with ASTM-D412 on the fabric reinforced cushion test specimen. Except as noted herein, DIE "A" dumbbell specimens shall be cut from the actual cushion with the fabric weave at 45° to the direction of pull and with the ears folded out to flatten the specimen. The rate of separation of the jaws shall be 12 inches per minute. The tensile strength and percent location shall be measured when the fabric reinforced material begins to separate from the elastomer or the specimen breaks completely. Tensile strength shall be based on overall thickness of rubber and fabric reinforcing material. Specimen failure due to fabric separation at the test fixture jaws shall be discarded and another sample tested.

PART NUMBER:

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

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: M85052/3-8

INTENDED USE:

These clamps are intended for use as follows:

Temperature range: - 65 to + 500 °F. These clamps have cushions, which have been compounded for high temperature capability at the sacrifice of fluid resistance. It is recommended for use only in those areas with operating temperatures from 275 °F to 500 °F where fluid exposure is minimal. For application below 275 °F, the use of clamps with a higher

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degree of fluid resistance is recommended such as MIL-DTL-85052/1 or MIL-DTL-85052/2 clamps.

Systems: All fluid and electrical systems application in high temperature areas.

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 5340-2735)

Reviewer 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.