

INCH-POUND

MIL-I-45932/38

2 MAY 1974

SUPERSEDING

MIL-I-45932/3A

1 MARCH 1989

## MILITARY SPECIFICATION SHEET

## INSERT, SCREW THREAD - THIN WALL, LOCKED IN, OVERSIZE REPLACER

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 the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-I-45932

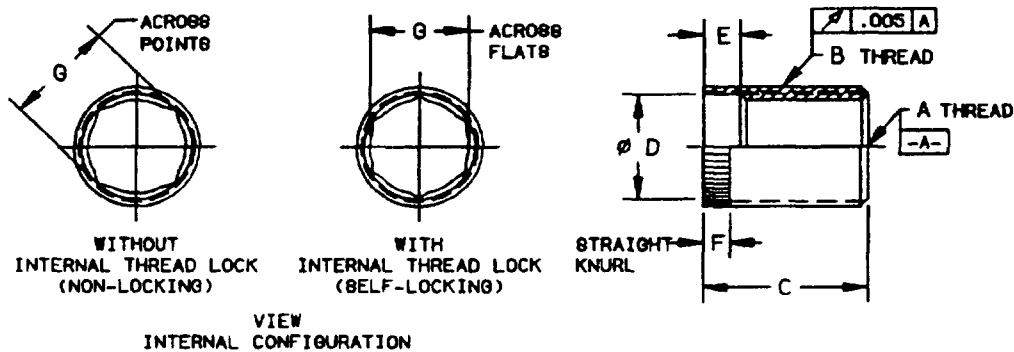


TABLE I. Dash numbers and characteristics

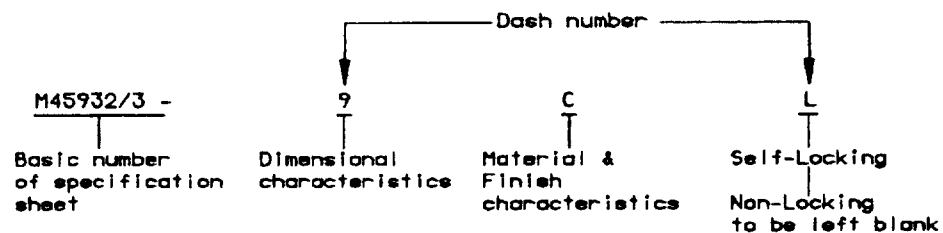
DASH NUMBERS (REQT 7)				A INT THD CLASS 3B (REQT 4)	B EXT THREAD ALTERED MINOR DIA		C	ØD	E	F	G	MIN SHEAR ENGAGEMENT AREA SQ IN. (NOTE 2)
17-4PH CRES	ALLOY STEEL	A286 CRES SILVER PLATED	↓ SOLID FILM LUBE		THREAD SIZE	MAX MINOR DIA						
↓	↓	↓	↓				±.010	+.008 - .002	+.015 - .000	(REF)	(REF)	
3 L	3 AL	3 CL	3 DL	0.1120-40 UNC	0.1900-32 UNF	.1620	.190	.142	.060	.045	.092	.0439
4	4 A	4 C	4 D								.100	
5 L	5 AL	5 CL	5 DL	0.1380-32 UNC	0.2160-28 UNF	.1758	.210	.142	.080	.055	.113	.0542
6	6 A	6 C	6 D								.120	
7 L	7 AL	7 CL	7 DL	0.1640-32 UNC	0.2500-28 UNF	.2098	.250	.169	.080	.060	.138	.0871
8	8 A	8 C	8 D								.150	
9 L	9 AL	9 CL	9 DL	0.1900-32 UNF							.157	
10	10 A	10 C	10 D								.180	
11 L	11 AL	11 CL	11 DL	0.1900-24 UNC	0.2812-28 UNS	.2410	.290	.214	.080	.075	.157	.1147
12	12 A	12 C	12 D								.180	
13 L	13 AL	13 CL	13 DL	0.2500-28 UNF							.210	
14	14 A	14 C	14 D								.240	
15 L	15 AL	15 CL	15 DL	0.2500-20 UNC	0.3438-24 UNS	.2976	.380	.264	.095	.075	.210	.2153
16	16 A	16 C	16 D								.240	
17 L	17 AL	17 CL	17 DL	0.3125-24 UNF							.266	
18	18 A	18 C	18 D								.310	
19 L	19 AL	19 CL	19 DL	0.3125-18 UNC	0.4219-20 UNS	.3651	.470	.336	.110	.075	.266	.3591
20	20 A	20 C	20 D								.310	
21 L	21 AL	21 CL	21 DL	0.3750-24 UNF							.322	
22	22 A	22 C	22 D								.370	
23 L	23 AL	23 CL	23 DL	0.3750-16 UNC	0.4844-20 UNS	.4276	.560	.393	.110	.105	.322	.4938
24	24 A	24 C	24 D								.370	
25 L	25 AL	25 CL	25 DL	0.4375-20 UNF							.377	
26	26 A	26 C	26 D								.430	
27 L	27 AL	27 CL	27 DL	0.4375-14 UNC	0.5625-18 UNF	.4993	.660	.466	.135	.105	.377	.6714
28	28 A	28 C	28 D								.430	
29 L	29 AL	29 CL	29 DL	0.5000-20 UNF							.439	
30	30 A	30 C	30 D								.490	
31 L	31 AL	31 CL	31 DL	0.5000-13 UNC	0.6250-18 UNF	.5618	.750	.528	.135	.105	.439	.8717
32	32 A	32 C	32 D								.490	

↓ "L" Suffix shown indicates self-locking insert.

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**REQUIREMENTS:**

1. Material:  
Steel, alloy, grade 4130 (UNS G41300) per AMS6370 or grade 8740 (UNS G87400) per AMS6322  
Steel, corrosion-resistant, type 17-4 PH (UNS S17400) per AMS5643.  
Steel, corrosion-resistant, type A286 (UNS S66286) per AMS5731 or AMS5734.
2. Protective coating or treatment:  
Steel, alloy, shall be cadmium plated per QQ-P-416 type III class 3, plus solid film lubricant coating per MIL-L-46010, type I  
Steel, corrosion-resistant, type 17-4 PH, shall be solid film lubricant coated per MIL-L-46010, type I.  
Steel, corrosion-resistant, type A286,  
Dash C & CL shall be silver plated per AMS2411 grade B, .0002 thick min  
Dash D & DL shall be solid film lubricant coated per MIL-L-46010, type I
3. Surface roughness:  
Machined surfaces shall be 125 microinches in accordance with ANSI/ASME B46.1 except knurling.
4. Threads:  
Threads shall be in accordance with MIL-S-7742 except as noted in table I and shall accept external MIL-S-8879 threads. All coarse internal threads have an increased minor diameter. Threads are prior to the addition of solid film lubricant.
5. Hardness:  
Alloy steel, 25-34 HRC  
Corrosion-resistant steel, 17-4 PH, 35-42 HRC  
Corrosion-resistant steel, A286, 32-40 HRC
6. Internal thread locking feature.  
The centerline of the internal thread locking feature shall be approximately mid-length of internal thread.
7. Part Identifying Number (PIN).  
Consists of the letter M, the basic number of the specification sheet, and a dash number taken from table I  
  
Example of PIN



- M45932/3-9CL Insert, Screw Thread - Thin Wall, Locked In, Oversize Replacer, 0.1900-32 UNF-3B Internal Thread, A286 Corrosion Resistant Steel, Silver Plated, Self-Locking
- M45932/3-10D Insert, Screw Thread - Thin Wall, Locked In, Oversize Replacer, 0.1900-32 UNF-3B Internal Thread, A286 Corrosion Resistant Steel, Solid Film Lubricant Coated, Non - Locking.

**NOTES:**

1. Dimensions.  
All dimensions are in inches, to be met after plating and before the addition of solid film lubricant (see requirement 2 herein).
2. Shear engagement area:  
Shear engagement area is the assembled dimensional value for the overall engaged area of mating thread members. It does not represent a dimension of either of the members in an unassembled condition.

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## HOLE PREPARATION, INSTALLATION &amp; REMOVAL REQUIREMENTS

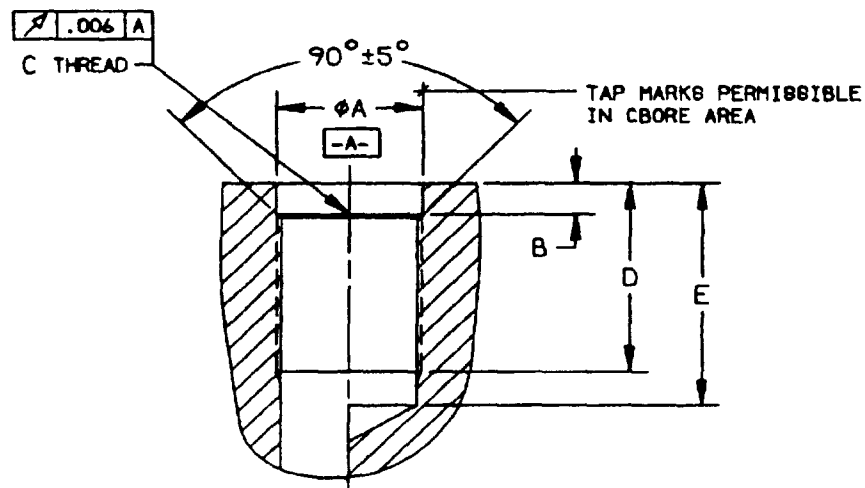


TABLE II. Installation &amp; removal criteria

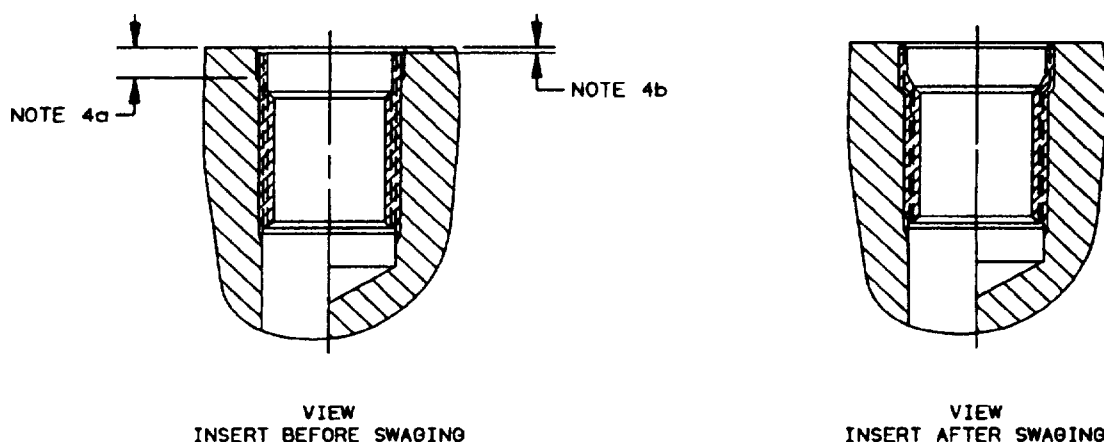
NOMINAL EXTERNAL THREAD SIZE OF INSERT (REF)	INSERT DASH NUMBER M45932/3 (REF)	ØA CBORE + .004 -.001	B CBORE DEPTH (NOTE 4a) ±.005	C THREAD MIL-S-8879		D MINIMUM FULL THREAD DEPTH	E MINIMUM DRILL DEPTH BLIND HOLE	INSERT REMOVAL DRILL SIZE (NOTE 5)
				CLASS-3B EXCEPT MINOR Ø	CONTROLLED MINOR Ø			
0.1900-32	3 4	.187	.065	0.1900-32 UNJF	.165-.170	.220	.298	#17
0.2160-28	5 6	.214	.065	0.2160-28 UNJF	.181-.186	.240	.329	#5
0.2500-28	7 8	.250	.065	0.2500-28 UNJF	.217-.222	.280	.369	15/64
0.2812-28	9 10 11 12	.281	.082	0.2812-28 UNJS	.241-.246	.325	.414	17/64
0.3438-24	13 14 15 16	.343	.082	0.3438-24 UNJS	.301-.306	.415	.519	21/64
0.4219-20	17 18 19 20	.422	.082	0.4219-20 UNJS	.367-.372	.505	.630	13/32
0.4844-20	21 22 23 24	.484	.113	0.4844-20 UNJS	.436-.441	.595	.720	29/64
0.5625-18	25 26 27 28	.562	.113	0.5625-18 UNJF	.514-.519	.695	.834	35/64
0.6250-18	29 30 31 32	.625	.113	0.6250-18 UNJF	.577-.582	.785	.924	39/64

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## NOTES:

1. Axis of hole shall be normal to entry surface or provide spot face when required.
2. Machined surfaces shall be 125 microinches in accordance with ANSI/ASME B46.1
3. All dimensions are in inches
4. Install insert:
  - (a) These inserts are primarily designed for use in aluminum, magnesium and other non-ferrous materials that do not exceed 187 HB (3000 kg load and 10 mm ball). Use in corrosion-resistant steels, titanium and hardened ferrous materials will require broaching serrations in counterbore to accept the insert knurls during swaging operation. Installation in steel will also require counterbore depth "B" in table II to be increased by .015 inches
  - (b) Install inserts -3 thru -8 into hole until the top of insert is .010- .020 below boss surface and -9 thru -32 inserts .015- .025 below boss surface
  - (c) Place swage tool in insert and apply a downward force sufficient to effect full swageout and external lock setting.

## INSERT INSTALLATION



5. Replacement of inserts are made with same size inserts as those removed. Using removal drill size shown in table II, drill to depth "B" + .025 then back-out insert using installation wrench or a square type screw extractor. Remove loose chips, re-inspect hole and then re-install per note 4.

## Custodians:

Army - AR  
Navy - AS  
Air Force - 99

## Preparing activity:

Army - AR  
(Project 5340-2197)

## Review activities.

Army - AT, AV, ER, ME, MI  
Navy - MC, OS, YD  
DLA - IS  
NSA - NS