

INCH-POUND

MS51836B  
 14 November 2012  
 SUPERSEDING  
 MS51836A  
 25 April 1969

## DETAIL SPECIFICATION SHEET

## INSERT, SCREW THREAD - THREAD FORMING

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 procurement specification MIL-I-45916.

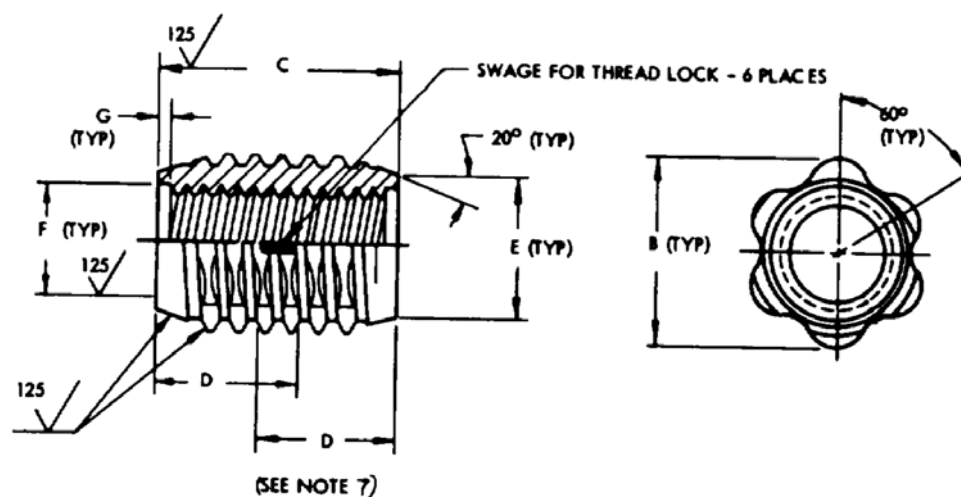


FIGURE 1. INSERT, SCREW THREAD.

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TABLE I.  
TYPE I – Short Length Inserts  
Coarse and Fine Internal Threads.

DASH NO.	A INTERNAL THREAD	B $\pm.004$	C LENGTH $\pm.010$	E $\pm.005$	F $\pm.003$	G $\pm.005$
-101	.086-56UNC-3B	.138	.120	.112	.088	.015
* -102	.086-64UNF-3B					
-103	.112-40UNC-3B	.172	.160	.137	.114	.015
* -104	.112-48UNF-3B					
-105	.138-32UNC-3B	.216	.190	.177	.141	.015
* -106	.138-40UNF-3B					
-107	.164-32UNC-3B	.253	.220	.202	.167	.015
* -108	.164-36UNF-3B					
-109	.190-24UNC-3B	.280	.250	.234	.192	.015
-110	.190-32UNF-3B					
-111	.250-20UNC-3B	.370	.310	.295	.254	.015
-112	.250-28UNF-3B					
-113	.3125-18UNC-3B	.449	.370	.368	.312	.025
-114	.3125-24UNF-3B					
-115	.375-16UNC-3B	.552	.440	.449	.377	.025
-116	.375-24UNF-3B					

\* Not Manufactured

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TABLE II.  
TYPE II – Medium Length Inserts  
Coarse and Fine Internal Threads.

DASH NO.	A INTERNAL THREAD	B	C LENGTH	D	E	F	G
		±.004	±.010	±.015	±.005	±.003	±.005
-201	.086-56UNC-3B	.138	.160	--	.112	.088	.015
* -202	.086-64UNF-3B						
-203	.112-40UNC-3B	.172	.190	.130	.137	.114	.015
* -204	.112-48UNF-3B						
-205	.138-32UNC-3B	.216	.220	.160	.177	.141	.015
* -206	.138-40UNF-3B						
-207	.164-32UNC-3B	.253	.250	.170	.202	.167	.015
* -208	.164-36UNF-3B						
-209	.190-24UNC-3B	.280	.300	.210	.234	.192	.015
-210	.190-32UNF-3B			.200			
-211	.250-20UNC-3B	.370	.370	.260	.295	.254	.015
-212	.250-28UNF-3B			.230			
-213	.3125-18UNC-3B	.449	.470	.310	.368	.312	.025
-214	.3125-24UNF-3B			.290			
-215	.375-16UNC-3B	.552	.560	.370	.449	.377	.025
-216	.375-24UNF-3B			.340			

TABLE III.  
TYPE III – Long Length Inserts  
Coarse and Fine Internal Threads.

DASH NO.	A INTERNAL THREAD	B	C LENGTH	D	E	F	G
		±.004	±.010	±.015	±.005	±.003	±.005
-301	.086-56UNC-3B	.138	.190	.120	.112	.088	.015
* -302	.086-64UNF-3B						
-303	.112-40UNC-3B	.172	.230	.150	.137	.114	.015
* -304	.112-48UNF-3B						
-305	.138-32UNC-3B	.216	.280	.190	.177	.141	.015
* -306	.138-40UNF-3B						
-307	.164-32UNC-3B	.253	.330	.210	.202	.167	.015
* -308	.164-36UNF-3B						
-309	.190-24UNC-3B	.280	.370	.240	.234	.192	.015
-310	.190-32UNF-3B			.230			
-311	.250-20UNC-3B	.370	.490	.320	.295	.254	.015
-312	.250-28UNF-3B			.290			
-313	.3125-18UNC-3B	.449	.560	.360	.368	.312	.025
-314	.3125-24UNF-3B			.340			
-315	.375-16UNC-3B	.552	.680	.430	.449	.377	.025
-316	.375-24UNF-3B			.400			

\* Not Manufactured

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## Requirements:

1. Material: Steel, carbon per SAE AIR4127.  
Steel, corrosion-resistant, Class 303, cold finish per SAE AIR4127.  
Brass, per ASTM B16/B16M, ASTM B36/B36M or ASTM B121/B121M.
2. Protective coating: Steel, carbon shall be cadmium plated in accordance with SAE AMS-QQ-P-416, Type II, Class 3.  
Steel, corrosion-resistant, shall be passivated per SAE AMS2700.  
Brass shall be black oxide coated per MIL-F-495.
3. Threads: Internal threads shall be in accordance with screw thread standards for federal services, FED-STD-H28/2, Class 3B.  
External threads have a special form and pitch.
4. Surface roughness: Surfaces marked 125 microinches shall be in accordance with ASME B46.1.
5. Hardness: Steel, carbon, Rockwell B94-100.  
Steel, corrosion-resistant, Rockwell C23-32.  
Brass, Rockwell B78-83.
6. Lubrication: Inserts with self-locking internal threads for aerospace applications shall be dry film lubricated in accordance with SAE AS5272 Type I<sup>1</sup>. Inserts with self-locking threads for non-aerospace applications shall be dry film lubricated in accordance with MIL-PRF-46010<sup>2</sup>.
7. Dimensions: All dimensions are in inches and are after protective coating or treatment, but prior to dry film lubricant.  
"D" dimension refers to distance through internal thread lock.
8. Concentricity: External and internal threads shall be concentric in accordance with the procurement specification.
9. Part number: The MS part number shall consist of the basic MS number plus the dash number.  
  
Add "B" in lieu of "DASH" for brass.  
Add "U" in lieu of "DASH" for carbon steel.  
Add "L" as suffix to dash number for internal thread lock for aerospace applications (See Req. 6).  
Add "LM" as suffix to dash number for internal thread lock for non-aerospace applications (See Req. 6).  
  
Examples: MS51836-208 Insert, CRES steel, non-locking, medium length.  
MS51836B208 Insert, brass, non-locking, medium length.  
MS51836U208 Insert, carbon steel, non-locking, medium length.  
MS51836-208L Insert, CRES steel, internal thread lock, medium length, aerospace applications.  
MS51836-208LM Insert, CRES steel, internal thread lock, medium length, non-aerospace applications.
10. For design feature purposes, this standard takes precedence over procurement documents referenced herein.
11. Referenced documents shall be of the same issue in effect on date of invitation for bid.
12. Install insert per MS51837.
13. Locking feature available only in corrosion-resistant steel inserts in medium and long lengths.
14. CHANGES 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.

<sup>1</sup>SAE AS5272 Type 1 lubricant is technically equivalent to MIL-L-46010 Type I lubricant which superseded MIL-L-8937 lubricant used in previous revisions.

<sup>2</sup>MIL-PRF-46010 lubricant is lead (Pb) free and is not technically equivalent to MIL-L-46010 Type I lubricant which superseded MIL-L-8937 lubricant used in previous revisions. Use of MIL-PRF-46010 in aerospace applications must first be validated.

## MS51836B

### MILITARY INTEREST

#### Custodians:

Army - AR

Navy - AS

Air Force - 99

#### Preparing activity:

DLA - IS

(Project 5325-2012-014)

#### Review activities:

Army – AT, AV, CR, MI

Navy – MC

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 <https://assist.dla.mil>.