INCH-POUND

MS35914G
14 August 2012
SUPERSEDING
MS35914F
20 September 1977

DETAIL SPECIFICATION SHEET

INSERT, SCREW THREAD - THREAD CUTTING

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.

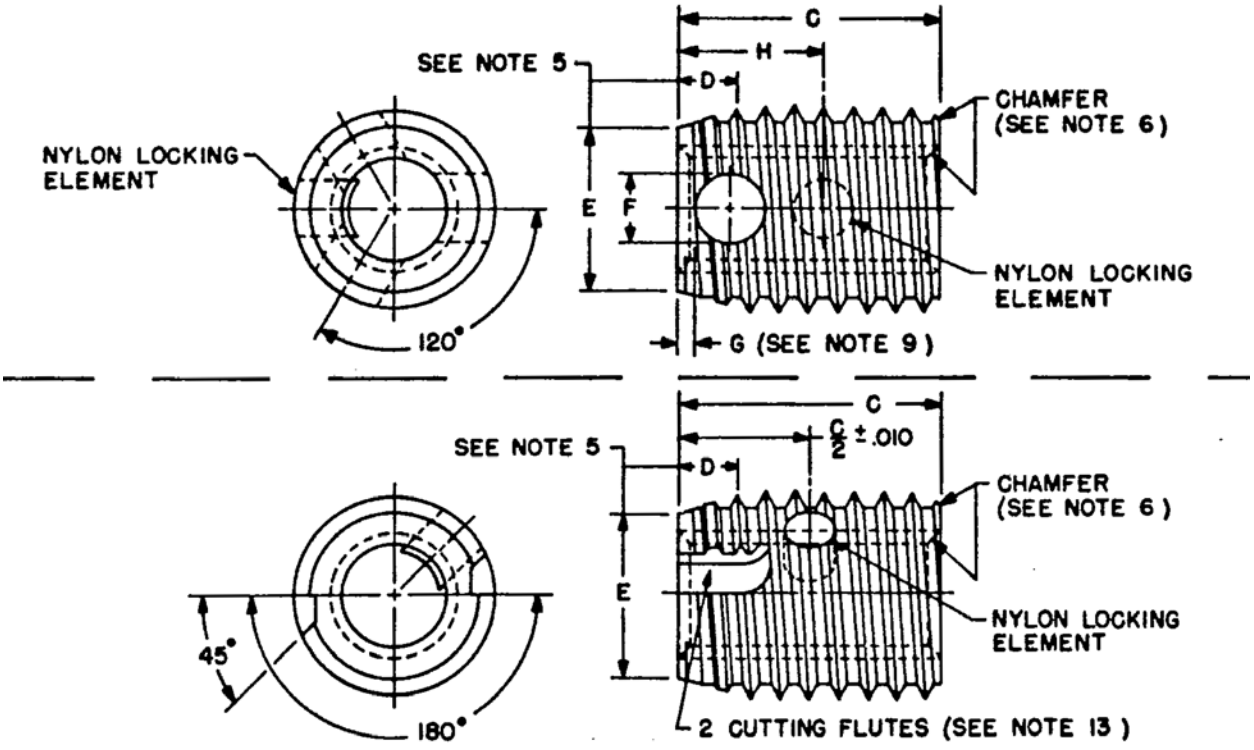

FIGURE 1. INSERT, SCREW, OPTIONAL DESIGNS.

TABLE I. Regular wall.

Dash No. *		Internal thread (-3B)	EXTERNAL THREAD (SEE NOTE 4)	C Length ±.010	D		ØE +.002 -.008	ØF ±.010	H ±.010
Carbon Steel	Cor Res Steel				MAX	MIN			
125	141			.188	.050	.040		.055	.109
201	251	.086-56UNC	.140 (9/64)-48	.156	.050	.040	.123	.055	.094
202	252			.125	.040	.032		.047	----
126*	142*	.086-64UNF	.140 (9/64)-48	.188	.050	.040	.123	.055	.109
101	143			.234	.054	.044		.062	.125
203	253	.112-40UNC	.171 (11/64)-40	.187	.054	.044	.148	.062	.115
204	254			.156	.049	.039		.055	----
102*	144*	.112-48UNF	.171 (11/64)-40	.234	.054	.044	.148	.062	.125
103	145			.281	.068	.058		.078	.156
205	255	.138-32UNC	.218 (7/32)-32	.218	.068	.058	.191	.078	.125
206	256			.187	.056	.048		.070	----
104*	146*	.138-40UNF	.218 (7/32)-32	.281	.068	.058	.191	.078	.156
105	147			.328	.068	.058		.078	.188
207	257	.164-32UNC	.250 (1/4)-32	.250	.068	.058	.222	.078	.135
208	258			.218	.056	.048		.070	----
106*	148*	.164-36UNF	.250 (1/4)-32	.328	.068	.058	.222	.078	.188
107	149	.190-24UNC	.296 (19/64)-24	.375	.092	.082	.259	.109	.219
108	150			.375	.092	.082		.109	.219
211	261	.190-32UNF	.296 (19/64)-24	.296	.092	.082	.259	.109	.172
212	262			.250	.069	.059		.094	----
109	151	.250-20UNC	.375 (3/8)-20	.484	.109	.097	.332	.125	.281
110	152			.484	.109	.097		.125	.281
215	265	.250-28UNF	.375 (3/8)-20	.375	.109	.097	.332	.125	.203
216	266			.312	.099	.089		.109	----
111	153	.3125-18UNC	.468 (15/32)-18	.562	.123	.110	.420	.141	.312
112	154			.562	.123	.110		.141	.312
219	269	.3125-24UNF	.468 (15/32)-18	.469	.123	.110	.420	.141	.250
220	270			.375	.113	.102		.125	----
113	155	.375-16UNC	.562 (9/16)-16	.687	.137	.121	.510	.156	.375
114	156			.687	.137	.121		.156	.375
223	273	.375-24UNF	.562 (9/16)-16	.562	.137	.121	.510	.156	.281
224	274			.437	.126	.113		.141	----
115*	157*	.4375-14UNC	.640 (41/64)-14	.781	.160	.140	.581	.188	----
116*	158*	.4375-20UNF							
117	159	.500-13UNC	.734 (47/64)-13	.906	.185	.160	.668	.219	.500
118	160			.906	.185	.160		.219	.500
227	277	.500-20UNF	.734 (47/64)-13	.750	.185	.160	.668	.219	.391
228	278			.562	.165	.143		.188	----
119*	161*	.5625-12UNC	.812 (13/16)-12	1.000	.198	.170	.742	.234	----
120*	162*	.5625-18UNF							
121	163	.625-11UNC	.906 (29/32)-11	1.125	.213	.183	.827	.250	----
122	164			1.125	.213	.183		.250	----
231	281	.625-18UNF	.906 (29/32)-11	.937	.213	.183	.827	.250	----
232	282			.687	.192	.166		.219	----
123	165	.750-10UNC	1.078 (1-5/64)-10	1.375	.240	.205	.993	.281	----
124	166			1.375	.240	.205		.281	----
235	285	.750-16UNF	1.078 (1-5/64)-10	1.125	.240	.205	.993	.281	----
236	286			.812	.208	.178		.234	----

* These dash numbers are INACTIVE FOR NEW DESIGN AFETR 24 JULY 1975.

INTERCHANGEABILITY

The slotted type inserts covered by dash numbers 1 thru 26 and 41 thru 66 given in previous revisions of this standard are cancelled after 23 April 1965 and superseded by dash numbers 101 thru 126 and 141 thru 166, respectively, given in the current revision of this standard.

TABLE II. Thin Wall.

Dash No. Cor Res Steel	Internal thread (-3B)	EXTERNAL THREAD (SEE NOTE 4)	C Length ±.010	D MAX	D MIN	ØE +.002 -.005	ØF ±.010
301	.112-40UNC	.156 (5/32)-40	.234	.054	.044	.136	.062
302			.187	.054	.044		.062
303			.156	.046	.038		.055
304	.138-32UNC	.187 (3/16)-32	.281	.068	.058	.160	.078
305			.218	.068	.058		.078
306			.187	.064	.054		.070
307	.164-32UNC	.218 (7/32)-32	.328	.068	.058	.191	.078
308			.250	.068	.058		.078
309			.218	.064	.054		.070
310	.190-32UNF	.265 (17/64)-32	.375	.092	.082	.237	.109
311			.296	.092	.082		.109
312			.250	.084	.074		.094
313	.250-28UNF	.343 (11/32)-28	.484	.109	.097	.310	.125
314			.375	.109	.097		.125
315			.312	.099	.089		.109
316	.3125-24UNF	.406 (13/32)-24	.562	.123	.110	.368	.141
317			.469	.123	.110		.141
318			.375	.113	.102		.125
319	.375-24UNF	.500 (1/2)-20	.687	.137	.121	.457	.156
320			.562	.137	.121		.156
321			.437	.126	.113		.141
322	.500-20UNF	.625 (5/8)-18	.906	.185	.160	.576	.219
323			.750	.185	.160		.219
324			.562	.165	.143		.188

TABLE III. Recommended Hole Sizes.

Internal Thread	Regular wall						Thin Wall	
	For high strength light alloys of less than average machinability, cast iron, malleable iron and mild steel		For medium strength light alloys of average machinability, cast iron and high strength thermosetting plastics		For low strength light alloys of excellent machinability, thermoplastics and thermosetting plastics		For all strength alloys, cast iron, malleable iron and all plastics	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
.086	.134	.131	.131	.129	.129	.127	----	----
.112	.162	.159	.159	.156	.156	.152	.146	.140
.138	.207	.203	.203	.198	.198	.194	.175	.169
.164	.238	.234	.234	.230	.230	.226	.206	.200
.190	.281	.275	.275	.270	.270	.264	.252	.246
.250	.356	.349	.349	.343	.343	.336	.330	.322
.3125	.447	.440	.440	.433	.433	.425	.390	.381
.375	.538	.530	.530	.521	.521	.514	.479	.469
.4375	.613	.605	.605	.594	.594	.585	----	----
.500	.704	.694	.694	.684	.684	.674	.605	.591
.5625	.780	.769	.769	.759	.759	.748	----	----
.625	.871	.859	.859	.847	.847	.835	----	----
.750	1.039	1.026	1.026	1.013	1.013	1.000	----	----

NOTE Hole preparation for locking inserts – Countersink to outside diameter of insert with 60° included angle.

NOTES:

1. MATERIAL: Carbon steel, AISI 1117, in accordance with SAE AIR4127.
   Corrosion-resisting steel, Type 303 and 303MA, annealed condition, hot or cold finish (as rolled) in accordance with SAE AIR4127.

2. HEAT TREATMENT: Carbon steel inserts shall be case hardened to a depth of .003-.005 inch with a hardness of Rockwell 15N75 minimum.

3. PROTECTIVE COATING: Carbon steel inserts shall be cadmium plated in accordance with SAE AMS-QQ-P-416, Type II, Class 3.
   Corrosion - resisting steel inserts shall be passivated in accordance with SAE AMS2700.

4. THREADS: Internal threads shall be in accordance with Screw Thread Standards for Federal Services. FED-STD-H28. .
   External threads shall be self-tapping and have a 60° thread approximating American National form.

5. DMENSIONS: All dimensions are in inches.
   "D" dimension refers to the tapered portion of the external thread (pilot length).
   "E" dimension refers to the small end of the tapered portion of the external thread (pilot diameter).

6. CHAMFER: Chamfer internal and external threads to one thread length.

7. PART NUMBER: The MS part number consists of the MS number, plus the dash number.
   Example: MS35914-125.
   For internal thread lock, add “L” after the dash number. Example: MS35914-125L.

8. LOCKING: ELEMENT: Nylon locking element is available only for inserts having a specified "H” dimension.

9. "G" dimension equals approximately 60% of external thread pitch.

10. Thin wall inserts are supplied in corrosion – resisting steel only. No internal lock is available.

11. Referenced documents shall be of the issue in effect on the date of invitation for bid.

12. For design feature purposes, this standard takes precedence over procurement documents referenced herein.

13. Cutting flutes shall extend beyond the 2nd full thread.

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.

MILITARY INTEREST

Custodians:
Army - AR
Air Force - 99

Preparing activity:
DLA - IS

(Project 5325-2012-010)

Review activities:
Army – AT, AV, MI

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.