

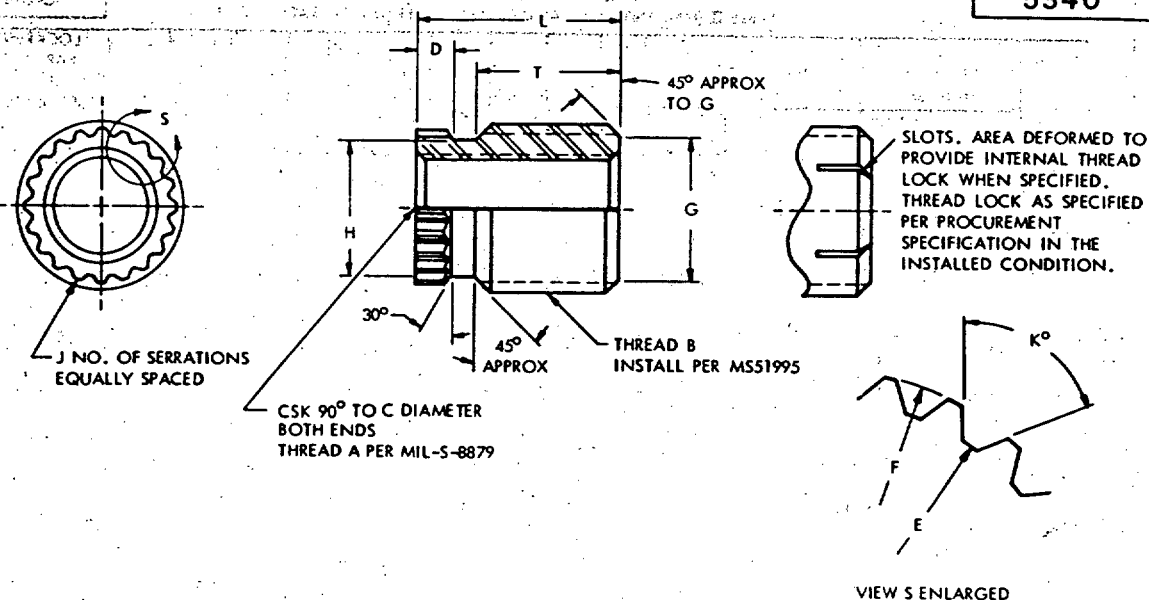
FED. SUP CLASS
5340

TABLE I (COARSE INTERNAL AND COARSE EXTERNAL THREADS)

| DASH NO. | A INTERNAL THD UNJC-38 | | B EXTERNAL THD SEE THREAD NOTE | | | C | D ± .015 | E DIA + .005 - .004 | F DIA + .007 - .002 | G DIA | H DIA | J | K° +2° -1° | L ± .015 | T ± .015 | LOCKING PART NO. (REF) SEE NOTE 15 |
|----------|------------------------------|-------------------|--------------------------------------|----------------|----------------|--------------|-------------|------------------------------|------------------------------|--------------|----------|----|------------------|-------------|-------------|---|
| | SIZE | MINOR DIA(REF) | SIZE | PITCH DIA | MINOR DIA | | | | | | | | | | | |
| -102 | .1120-40 | .0942 .0877 | .1900-24 | .1648 .1633 | .1407 .1334 | .122 .117 | .060 | .152 | .175 | .138 .133 | .148 | 14 | 102° | .250 | .150 | MS51990-102P |
| -103 | .1380-32 | .1157 .1076 | .2160-24 | .1908 .1893 | .1667 .1594 | .149 .144 | .080 | .178 | .201 | .164 .159 | .175 | 16 | 90° | .310 | .190 | MS51990-103P |
| -104 | .1640-32 | .1417 .1336 | .2500-20 | .2198 .2178 | .1909 .1824 | .175 .170 | .080 | .203 | .230 | .187 .182 | .197 | 13 | 102° | .380 | .250 | MS51990-104P |
| -105 | .1900-24 | .1600 .1494 | .3125-18 | .2789 .2769 | .2468 .2373 | .208 .198 | .090 | .255 | .284 | .237 | .248 | 17 | 86° | .440 | .290 | MS51990-105P |
| -106 | .2500-20 | .2121 .2013 | .3750-16 | .3372 .3347 | .3011 .2906 | .270 .260 | .110 | .316 | .345 | .291 | .305 | 20 | 102° | .500 | .330 | MS51990-106P |
| -107 | .3125-18 | .2690 .2584 | .5000-13 | .4531 .4506 | .4087 .3963 | .339 .324 | .120 | .380 | .407 | .396 | .370 | 24 | 102° | .560 | .360 | MS51990-107P |
| -108 | .3750-16 | .3251 .3142 | .5625-12 | .5116 .5091 | .4635 .4503 | .402 .387 | .120 | .456 | .487 | .425 | .445 | 26 | 102° | .620 | .420 | MS51990-108P |
| -109 | .4375-14 | .3795 .3680 | .6250-11 | .5693 .5668 | .5168 .5028 | .466 .451 | .140 | .567 | .601 | .503 | .553 | 26 | 111° | .690 | .460 | MS51990-109P |
| -110 | .5000-13 | .4368 .4251 | .7500-10 | .6885 .6860 | .6308 .6156 | .530 .515 | .160 | .687 | .721 | .590 | .612 | 30 | 111° | .750 | .490 | MS51990-110P |

NOTE: For material, finish and other pertinent data, see sheet 3.

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document when applicable.

(C) For changes see sheet 3

| | | |
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| P.A. WC | TITLE | MILITARY STANDARD |
| Other Cust 82 AS | INSERT, SCREW THREAD- LOCKED IN, RING LOCKED, SERRATED | MS51991 |
| PROCUREMENT SPECIFICATION MIL-I-45910 | SUPERSEDES: | SHEET 1 OF 3 |

REVIEWER: MU, IS, AV, MI, EL, AT, NS
USER: WV, MC, OS, YD, GL, EA, PA

TABLE II (FINE INTERNAL AND COARSE EXTERNAL THREADS)

FED. SUP CLASS
5340

| DASH NO. | A INTERNAL THD UNJF-38 | | B EXTERNAL THD SEE THREAD NOTE | | | C | D ±.015 | E DIA +.005 -.004 | F DIA +.007 -.002 | G DIA | H DIA | J | K ° +2° -1° | L ±.015 | T ±.015 | LOCKRING PART NO. (REF) SEE NOTE 15 |
|----------|------------------------------|-------------------|--------------------------------------|----------------|----------------|--------------|------------|----------------------------|----------------------------|--------------|----------|----|----------------------|------------|------------|--|
| | SIZE | MINOR DIA(REF) | SIZE | PITCH DIA. | MINOR DIA. | | | | | | | | | | | |
| -202 | .1120-48 | .0971 .0917 | .1900-24 | .1648 .1633 | .1407 .1334 | .122 .117 | .060 | .152 | .175 | .138 .133 | .148 | 14 | 102° | .250 | .150 | MS51990-102P |
| -203 | .1380-40 | .1202 .1137 | .2160-24 | .1908 .1893 | .1667 .1594 | .148 .143 | .080 | .178 | .201 | .164 .159 | .175 | 16 | 90° | .310 | .190 | MS51990-103P |
| -204 | .1640-36 | .1442 .1370 | .2500-20 | .2198 .2178 | .1909 .1824 | .175 .170 | .080 | .203 | .230 | .187 .182 | .197 | 13 | 102° | .380 | .250 | MS51990-104P |
| -205 | .1900-32 | .1675 .1596 | .3125-18 | .2789 .2769 | .2468 .2373 | .206 .196 | .090 | .255 | .284 | .237 | .248 | 17 | 86° | .440 | .290 | MS51990-105P |
| -206 | .2500-28 | .2229 .2152 | .3750-16 | .3372 .3347 | .3011 .2906 | .267 .257 | .110 | .316 | .345 | .291 | .305 | 20 | 102° | .500 | .330 | MS51990-106P |
| -207 | .3125-24 | .2799 .2719 | .5000-13 | .4531 .4506 | .4087 .3963 | .336 .321 | .120 | .380 | .407 | .396 | .370 | 24 | 102° | .560 | .360 | MS51990-107P |
| -208 | .3750-24 | .3418 .3344 | .5625-12 | .5116 .5091 | .4635 .4503 | .398 .383 | .120 | .456 | .487 | .425 | .445 | 26 | 102° | .620 | .420 | MS51990-108P |
| -209 | .4375-20 | .3970 .3888 | .6250-11 | .5693 .5668 | .5168 .5028 | .462 .447 | .140 | .567 | .601 | .503 | .553 | 26 | 111° | .690 | .460 | MS51990-109P |
| -210 | .5000-20 | .4591 .4513 | .7500-10 | .6885 .6860 | .6308 .6156 | .525 .510 | .160 | .687 | .721 | .590 | .612 | 30 | 111° | .750 | .490 | MS51990-110P |

TABLE III (FINE INTERNAL AND FINE EXTERNAL THREADS)

| DASH NO. | A INTERNAL THD UNJF-38 | | B EXTERNAL THD SEE THREAD NOTE | | | C | D ±.015 | E DIA +.005 -.004 | F DIA +.007 -.002 | G DIA | H DIA | J | K ° +2° -1° | L ±.015 | T ±.015 | LOCKRING PART NO. (REF) SEE NOTE 15 |
|----------|------------------------------|-------------------|--------------------------------------|------------------|------------------|----------------|------------|----------------------------|----------------------------|----------|----------|----|----------------------|------------|------------|--|
| | SIZE | MINOR DIA(REF) | SIZE | PITCH DIA. | MINOR DIA. | | | | | | | | | | | |
| -311 | .5625-18 | .5166 .5084 | .8750-14 | .8316 .8291 | .7904 .7786 | .589 .574 | .160 | .783 | .820 | .728 | .768 | 30 | 111° | .880 | .620 | MS51990-111P |
| (a) -312 | .6250-18 | .5788 .5709 | 1.0000-14 | .9566 .9541 | .9154 .9036 | .685 .675 | .160 | .894 | .932 | .850 | .882 | 38 | 102° | 1.000 | .740 | MS51990-112P |
| -312.1 | .6250-18 | .5788 .5709 | 1.0000-12 | .9491 .9466 | .9010 .8878 | .685 .675 | .160 | .894 | .932 | .850 | .882 | 38 | 102° | 1.000 | .740 | MS51990-112P |
| -313 | .7500-16 | .6977 .6892 | 1.1250-12 | 1.0741 1.0716 | 1.0260 1.0128 | .777 .762 | .160 | 1.029 | 1.074 | .950 | 1.002 | 36 | 111° | 1.120 | .800 | MS51990-113P |
| -314 | .8750-14 | .8152 .8055 | 1.2500-12 | 1.1991 1.1966 | 1.1510 1.1378 | .904 .889 | .190 | 1.169 | 1.214 | 1.127 | 1.127 | 48 | 90° | 1.250 | .900 | MS51990-114P |
| -315 | 1.0000-12 | .9298 .9189 | 1.3750-12 | 1.3241 1.3216 | 1.2760 1.2628 | 1.029 1.014 | .190 | 1.273 | 1.318 | 1.202 | 1.252 | 42 | 111° | 1.380 | 1.020 | MS51990-115P |

(a) Inactive (not to be used for new design).

TABLE IV
INTERCHANGEABILITY - SEE NOTE 14

| PART NUMBERS | | | | | |
|--------------------------------|------------------------|--------------------------------|------------------------|--------------------------------|------------------------|
| CANCELLED (CRES 17-10 P) | NEW (CRES A-286) | CANCELLED (CRES 17-10 P) | NEW (CRES A-286) | CANCELLED (CRES 17-10 P) | NEW (CRES A-286) |
| MS51991 | MS51991 | MS51991 | MS51991 | MS51991 | MS51991 |
| C102 | E102 | C202 | E202 | C311 | E311 |
| C103 | E103 | C203 | E203 | C312 | E312 |
| C104 | E104 | C204 | E204 | C312.1 | E312.1 |
| C105 | E105 | C205 | E205 | C313 | E313 |
| C106 | E106 | C206 | E206 | C314 | E314 |
| C107 | E107 | C207 | E207 | C315 | E315 |
| C108 | E108 | C208 | E208 | | |
| C109 | E109 | C209 | E209 | | |
| C110 | E110 | C210 | E210 | | |

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| P.A. WC Other Cust 82 AS | TITLE INSERT, SCREW THREAD - LOCKED IN, RING LOCKED, SERRATED | MILITARY STANDARD MS51991 |
| PROCUREMENT SPECIFICATION MIL-I-45910 | SUPERSEDES: | SHEET 2 OF 3 |

FED. SUP CLASS
5340

NOTES:

1. MATERIAL: (C) Steel, carbon, composition C1117, in accordance with Federal Standard No. 66. Steel, corrosion resistant, A-286 per AMS5731, AMS5734 or AMS5736.
2. PROTECTIVE COATING: Steel, carbon, shall be cadmium plated in accordance with QQ-P-416, Type II, Class 3. Steel, corrosion resistant, shall be passivated in accordance with QQ-P-35. Steel, corrosion resistant, with internal thread lock shall also be solid film lubricant coated per MIL-L-8937.
3. SURFACE ROUGHNESS: Machined surfaces shall be 125 microinches in accordance with ANSI B46.1 except serrated collar.
4. THREADS: The external thread has a special pitch diameter and minor diameter which installs into a national class 3 tapped hole. Threads also shall be in accordance with procurement specification.
5. HEAT TREATMENT: Inserts shall be capable of developing 125,000 PSI tensile strength as specified in the procurement specification.
6. HARDNESS: (C) Steel, carbon, Rockwell B 78 minimum. Steel, corrosion resistant, Rockwell B83.
7. FILLETS: .015 R Max.
8. EDGES: Break sharp edges .003 - .015 unless otherwise specified.
9. DIMENSIONS: Dimensions in inches; to be met after plating.
10. TOLERANCES: Linear dimensions $\pm .005$, angular dimensions $\pm 2^\circ$.
11. PART NUMBERS: The MS part number consists of the MS number, plus the dash number. Add "E" in lieu of "dash" for corrosion resistant steel. Add "L" as suffix for internal thread lock. Example:
- | | |
|--------------|--|
| MS51991-205 | Insert, Carbon Steel, Non-locking |
| MS51991E205 | Insert, Cres, Non-locking |
| MS51991-205L | Insert, Carbon Steel, Internal Thread Lock |
| MS51991E205L | Insert, Cres, Internal Thread Lock |
12. For design feature purposes, this standard takes precedence over procurement documents referenced herein.
13. Referenced documents shall be of the issue in effect on date of invitations for bid.
14. The dash numbers "C100, C200, and C300" series cres inserts in the original issue of this standard are cancelled/inactivated after the approval date of revision "A" indicated on this document. The cancelled inserts should be used on existing callouts until stock is depleted. Use the new "E100, E200, and E300" series cres inserts for replacement of "C100, C200, and C300" series cres inserts in accordance with Table IV.
15. For applicable locking dash number coding see MS 51990.

REVIEWER: MU, IS, AV, MI, EL, AT, NS
USER: WV, MC, OS, YD, GL, EA, PA

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document when applicable.

APPROVED 30 JUN 66 (C) For changes see sheet 3

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|--|-------------|--|-------------------|
| P.A. | WC | TITLE | MILITARY STANDARD |
| Other Cust | 82 | INSERT, SCREW THREAD - LOCKED IN, RING LOCKED, SERRATED | MS51991 |
| | AS | | |
| PROCUREMENT SPECIFICATION MIL-I-45910 | SUPERSEDES: | | SHEET 3 OF 3 |