FEDERAL SUPPLY CLASS
5307

RATIONALE

AS51992A HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

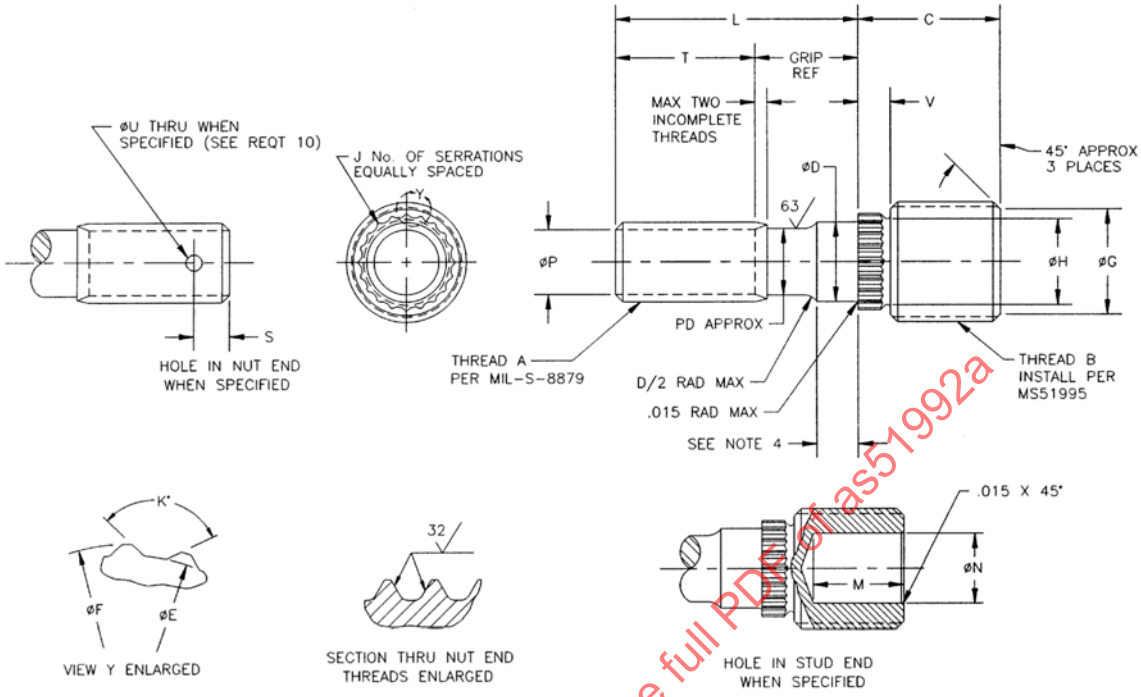
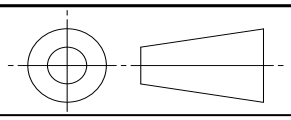


TABLE 1 – SHORT STUD END LENGTH

DASH NO.	A NUT END THREAD UNJF-3A	B STUD END THREAD			C ±.020	ØD +.005 -.004	ØE +.007 -.002	ØF +.000 -.015	ØG MIN	ØH	J	K +2° -1°	M REF	ØN	T ±.015	V ±.015	ØP ±.010	S ±.015	ØU +.005 -.002	LOCKRING MS51997 BASIC DASH NO.
		SEE REQT 4	PITCH DIA	MINOR DIA																
-502	.1900-32	.3125-24	.2884 .2869	.2643 .2559	.386	.189 .186	.203	.230	.255	.175	13	102°	.205	.174	.469	.128	.137	.120	.067	102P
-503	.2500-28	.3750-24	.3512 .3497	.3271 .3185	.486	.249 .246	.255	.284	.318	.233	17	86°	.281	.202	.594	.142	.190	.160	.067	103P
-504	.3125-24	.4375-20	.4084 .4067	.3795 .3700	.627	.312 .309	.316	.345	.370	.294	20	102°	.380	.205	.688	.176	.242	.160	.067	104P
-505	.3750-24	.5000-20	.4711 .4694	.4422 .4325	.762	.374 .371	.380	.407	.432	.357	24	102°	.480	.222	.750	.200	.305	.170	.096	105P
-506	.4375-20	.6250-18	.5927 .5910	.5606 .5498	.808	.437 .433	.456	.487	.549	.433	26	102°	.517	.324	.812	.200	.354	.170	.096	106P
-507	.5000-20	.7500-16	.7134 .7114	.6773 .6656	.883	.499 .495	.567	.601	.665	.535	26	111°	.563	.438	.875	.200	.416	.190	.096	107P
-508	.6250-18	.8750-14	.8328 .8308	.7916 .7786	1.153	.624 .620	.687	.721	.778	.645	30	111°	.773	.470	1.000	.255	.532	.220	.128	108P

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AS51992A

THIRD ANGLE PROJECTION



CUSTODIAN: E-25

PROCUREMENT SPECIFICATION: MIL-S-45909

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

STUD, LOCKED IN-RING,
SERRATED, HIGH STRENGTH

SAE AS51992

REV. A

ISSUED 1999-04 REVISED 2007-08 REAFFIRMED 2012-11

TABLE II – MEDIUM STUD END LENGTH

DASH NO.	A NUT END THREAD UNJF-3A	B STUD END THREAD			C ±.020	ØD	ØE +.005 -.004	ØF +.007 -.002	ØG +.000 -.015	ØH MIN	J	K +2° -1°	M REF	ØN	T ±.015	V ±.015	ØP ±.010	S ±.015	ØU +.005 -.002	LOCKRING MS51997 BASIC DASH NO.
		SEE REQT 4	PITCH DIA	MINOR DIA																
-642	.1900-32	.3125-24	.2884 .2869	.2643 .2559	.433	.189 .186	.203	.230	.255	.175	13	102°	.252	.174	.469	.128	.137	.120	.067	102P
-643	.2500-28	.3750-24	.3512 .3497	.3271 .3185	.558	.249 .246	.255	.284	.318	.233	17	86°	.353	.202	.594	.142	.190	.160	.067	103P
-644	.3125-24	.4375-20	.4084 .4067	.3795 .3700	.725	.312 .309	.316	.345	.370	.294	20	102°	.478	.205	.688	.176	.242	.160	.067	104P
-645	.3750-24	.5000-20	.4711 .4694	.4422 .4325	.893	.374 .371	.380	.407	.432	.357	24	102°	.611	.222	.750	.200	.305	.170	.096	105P
-646	.4375-20	.6250-18	.5927 .5910	.5606 .5498	.948	.437 .433	.456	.487	.549	.433	26	102°	.657	.324	.812	.200	.354	.170	.096	106P
-647	.5000-20	.7500-16	.7134 .7114	.6873 .6656	1.038	.499 .495	.567	.601	.665	.535	26	111°	.718	.438	.875	.200	.416	.190	.096	107P
-648	.6250-18	.8750-14	.8328 .8308	.7916 .7786	1.364	.624 .620	.687	.721	.778	.645	30	111°	.984	.470	1.000	.255	.532	.220	.128	108P

TABLE III – LONG STUD END LENGTH

DASH NO.	A NUT END THREAD UNJF-3A	B STUD END THREAD			C ±.020	ØD	ØE +.005 -.004	ØF +.007 -.002	ØG +.000 -.015	ØH MIN	J	K° +2° -1°	M REF	ØN	T ±.015	V ±.015	ØP ±.010	S ±.015	ØU +.005 -.002	LOCKRING MS51997 BASIC DASH NO.
		SEE REQT 4	PITCH DIA	MINOR DIA																
-802	.1900-32	.3125-18	.2795 .2778	.2474 .2373	.511	.189 .186	.203	.230	.237	.175	13	102°	.330	.148	.469	.128	.137	.120	.067	102P
-803	.2500-28	.3750-16	.3378 .3358	.3017 .2906	.673	.249 .246	.255	.284	.290	.233	17	86°	.466	.157	.594	.142	.190	.160	.067	103P
-804	.3125-24	.4375-14	.3946 .3926	.3534 .3411	.868	.312 .309	.316	.345	.341	.294	20	102°	.621	.153	.688	.176	.242	.160	.067	104P
-805	.3750-24	.5000-13	.4537 .4512	.4093 .3963	1.076	.374 .371	.380	.407	.396	.357	24	102°	.794	.148	.750	.200	.305	.170	.096	105P
-806	.4375-20	.6250-11	.5699 .5674	.5174 .5028	1.155	.437 .433	.456	.487	.502	.433	26	102°	.864	.239	.812	.200	.354	.170	.096	106P
-807	.5000-20	.7500-10	.6891 .6866	.6314 .6156	1.267	.499 .495	.567	.601	.615	.535	26	111°	.947	.369	.875	.200	.416	.190	.096	107P
-808	.6250-18	.8750-9	.8071 .8046	.7430 .7257	1.656	.624 .620	.687	.721	.725	.645	30	111°	1.276	.378	1.000	.255	.532	.220	.128	108P

REQUIREMENTS

1. MATERIAL :

CODE LETTER
A – STEEL, ALLOY, GRADE 8740 (UNS G87400) CONFORMING TO AMS 6322.
B – STEEL, ALLOY, GRADE 8740 (UNS G87400) CONFORMING TO AMS 6322.
C – STEEL, CORROSION AND HEAT RESISTANT, TYPE A286 CONFORMING TO AMS 5731, AMS 5732, AMS 5734 OR AMS 5737.
D – NICKEL BASE ALLOY, CORROSION AND HEAT RESISTANT, TYPE 718 (UNS N07718) CONFORMING TO AMS 5662.
E – TITANIUM ALLOY, Ti-6Al-4V (UNS R56400) CONFORMING TO MIL-T-9047, Ti-6Al-4V, CONDITION A OR AMS 4967.

2. PROTECTIVE COATING OR TREATMENT:

MATERIAL CODE LETTER
A – CADMIUM PLATED IN ACCORDANCE WITH QQ-P-416, TYPE II, CLASS 3.
B – CADMIUM PLATED IN ACCORDANCE WITH AMS 2401.
C & D – CLEANED, DESCALED AND PASSIVATED IN ACCORDANCE WITH ASTM A380.
E – NONE.

3. SURFACE ROUGHNESS: UNLESS OTHERWISE SPECIFIED, MACHINED SURFACES SHALL BE 125 MICROINCHES IN ACCORDANCE WITH ANSI B46.1 EXCEPT FOR SERRATED COLLAR.

4. THREADS: THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879, CLASS 3B TAPPED HOLE. THREADS SHALL BE IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.

5. MECHANICAL PROPERTIES: MATERIAL CODE LETTERS AND CORRESPONDING HARDNESS, TENSILE STRENGTHS AND PERTINENT LENGTH DASH NUMBERS FOLLOW:

MATERIAL CODE LETTERS	HARDNESS MIN	MIN TENSILE STRENGTH KSI	DASH NUMBERS
A	35HRC	160	-642 THRU –648 & -802 THRU –808
B	39HRC	180	-502 THRU –508
C	277HB	140	-502 THRU –508, -642 THRU –648 & -802 THRU –808
D	39HRC	180	-502 THRU –508
E	35HRC	160	-502 THRU –508, -642 THRU –648 & -802 THRU –808

6. CONCENTRICITY: SHANK OF NUT END SHALL BE CONCENTRIC WITH SERRATED COLLAR WITHIN .006 FIM.
7. FILLETS: FILLETS SHALL BE .030 RADIUS MAXIMUM.
8. EDGES: EDGES BROKEN .003-.015 UNLESS OTHERWISE SPECIFIED.
9. TOLERANCES: LINEAR DIMENSIONS ± .005, ANGULAR DIMENSIONS ± 2^0
10. PART NUMBER: THE MS PART NUMBER CONSISTS OF THE MS NUMBER, PLUS THE MATERIAL CODE LETTER, PLUS THE DASH NUMBER, PLUS THE SECOND DASH NUMBER FOR LENGTH (TABLE IV). ADD "D" IN LIEU OF THE "DASH" FOR DRILLED HOLE IN NUT END. ADD "R" AS SUFFIX FOR RECESS IN STUD END. EXAMPLE:
    MS51992 A 803-24 STUD, ALLOY STEEL, 1.5 INCH NUT END LENGTH.
    MS51992 B 503-24 STUD, ALLOY STEEL, 1.5 INCH NUT END LENGTH.
    MS51992 C 643-24 STUD, CRES, 1.5 INCH NUT END LENGTH.
    MS51992 D 503-24 STUD, NICKEL BASE ALLOY, 1.5 INCH NUT END LENGTH.
    MS51992 E 803-24 STUD, TITANIUM ALLOY, 1.5 INCH NUT END LENGTH.
    * MS51992 A 803D24 STUD, ALLOY STEEL, DRILLED HOLE, 1.5 INCH NUT END LENGTH.
    * MS51992 A 803D24R STUD, ALLOY STEEL, DRILLED HOLE, RECESS IN STUD END, 1.5 INCH NUT END LENGTH.
        * THE SAME CONDITION(S) CAN EXIST FOR ALL OF THE ABOVE MATERIALS.

NOTES:

NOTICE

THIS DOCUMENT REFERENCES A PART WHICH CONTAINS CADMIUM AS A PLATING MATERIAL. CONSULT LOCAL OFFICIALS IF YOU HAVE QUESTIONS CONCERNING CADMIUM'S USE.

1. DIMENSIONS: DIMENSIONS IN INCHES; TO BE MET AFTER PLATING.

2. IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.

3. REFERENCED GOVERNMENT (OR NON-GOVERNMENT) DOCUMENTS OF THE ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DoDISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.