

User activities:  
ARMY-MI, AV, BL  
NAVY-SH  
AIR FORCE - 82, 11  
NSA-NS  
DLA-15

Review activities:  
ARMY-MI, AV, BL  
NAVY-SH  
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FED. SUP CLASS  
**5307**

**TABLE I (COARSE THREAD NUT END)**

DASH NO.	A NUT END THREAD UNJC-3A	B STUD END THREAD MOD MINOR DIA		C*	Ø D (GRIP DIA)	E	Ø F	G	H	Ø J	K	KEY DIMENSIONS		
	SIZE	SIZE	MINOR DIA									M ± .002	N ± .004	P ± .015
-101	.1900-24	.3125-18UNC-2A	.256 .249	.410	.189 .185	.312	.250	.060 .030	.141	.070	.220	.068	.040	.160
-102	.2500-20	.3750-16UNC-2A	.320 .312	.470	.249 .245	.375	.310	.060 .030	.156	.076	.284	.068	.040	.190
-103	.3125-18	.4375-14UNC-2A	.383 .375	.530	.312 .308	.437	.375	.060 .030	.172	.076	.345	.068	.040	.190
-104	.3750-16	.5000-13UNC-2A	.440 .432	.640	.374 .370	.500	.430	.060 .030	.172	.106	.407	.068	.040	.190
-105	.4375-14	.5625-12UNC-2A	.503 .495	.660	.437 .433	.562	.495	.060 .030	.172	.106	.469	.068	.040	.190
-106	.5000-13	.6250-11UNC-2A	.565 .551	.780	.499 .495	.625	.550	.060 .030	.172	.106	.532	.068	.040	.190

\*THIS DIMENSION DOES NOT APPLY TO DASH NUMBERS IN TABLE III ABOVE THE HEAVY LINES.

**ENTIRE STANDARD REVISED**

P.A. Other Cust	AA AS 99	TITLE  STUD, LOCKED IN - KEY LOCKED, LIGHTWEIGHT	<b>MILITARY STANDARD</b> <b>MS 51833</b>
PROCUREMENT SPECIFICATION MIL-S-45915		SUPERSEDES:	PAGE <b>1</b> OF <b>4</b>

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5307-0336

APPROVED 1 DEC 1967 REVISED A 25 NOV 1970 B 21 APRIL 1980 C 27 OCT 1980 D 7 DEC 84

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TABLE II (FINE THREAD NUT END)

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DASH NO.	A NUT END THREAD UNF-3A	B STUD END THREAD MOD MINOR DIA		C	Ø D (GRIP DIA)	E	Ø F	G	H	Ø J	K	KEY DIMENSIONS		
	SIZE	SIZE	MINOR DIA	▲ .030		▲ .015	▲ .010		▲ .020	▲ .010	▲ .004	M ▲ .002	N ▲ .004	P ▲ .015
-201	.1900-32	.3125-18UNC-2A	.254 .249	.410	.189 .185	.312	.250	.060 .030	.141	.070	.220	.068	.040	.160
-202	.2500-28	.3750-16UNC-2A	.320 .312	.470	.249 .245	.375	.310	.060 .030	.156	.076	.284	.068	.040	.190
-203	.3125-24	.4375-14UNC-2A	.383 .375	.530	.312 .308	.437	.375	.060 .030	.172	.076	.345	.068	.040	.190
-204	.3750-24	.5000-13UNC-2A	.440 .432	.640	.374 .370	.500	.430	.060 .030	.172	.106	.407	.068	.040	.190
-205	.4375-20	.5625-12UNC-2A	.500 .495	.660	.437 .433	.562	.495	.060 .030	.172	.106	.469	.068	.040	.190
-206	.5000-20	.6250-11UNC-2A	.565 .551	.780	.499 .495	.625	.550	.060 .030	.172	.106	.532	.068	.040	.190

## REQUIREMENTS:

1. MATERIAL:

STEEL, CORROSION-RESISTANT, TYPE 303(UNS S30300) IN ACCORDANCE WITH AMS 5640M-79 OR ASTM A582-60.

STEEL, ALLOY, GRADE 4140(UNS G41400) IN ACCORDANCE WITH MIL-S-5628.

STEEL, CORROSION-RESISTANT, TYPE A286 (UNS S66286) IN ACCORDANCE WITH AMS5734D-76.

LOCKING KEYS: STEEL, CORROSION-RESISTANT, TYPE 302 (UNS S30200) IN ACCORDANCE WITH QQ-W-423.

2. PROTECTIVE COATING OR TREATMENT:

ALLOY STEEL SHALL BE CADMIUM PLATED IN ACCORDANCE WITH QQ-P-416, TYPE II, CLASS 3.  
CORROSION-RESISTANT STEEL SHALL BE CLEANED, DESCALED AND PASSIVATED IN ACCORDANCE WITH ASTM A380-78.

3. SURFACE ROUGHNESS:

MACHINED SURFACES SHALL BE IN ACCORDANCE WITH ANSI B46.1-78. UNLESS OTHERWISE SPECIFIED, MACHINED SURFACES SHALL BE 125 MICROINCHES.

4. THREADS:

NUT END THREADS SHALL CONFORM TO MIL-S-8879. STUD END THREADS SHALL CONFORM TO FED-STD-H28/2 EXCEPT MINOR DIAMETERS SHALL BE MODIFIED AS SPECIFIED HEREIN.

5. HEAT TREATMENT:

ALLOY STEEL STUDS, 4140 SHALL BE HEAT TREATED TO 160,000 PSI  $F_{tu}$  MINIMUM IN ACCORDANCE WITH MIL-H-6875. CORROSION-RESISTANT STEEL STUDS, A286 SHALL BE HEAT TREATED TO 140,000 PSI  $F_{tu}$  MINIMUM.

6. HARDNESS:

ALLOY STEEL 4140 SHALL HAVE A HARDNESS RANGE OF 36.40 HRC.

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P. A. Other Cost	AR AS 99	INTERNATIONAL INTEREST	TITLE STUD, LOCKED IN-KEY LOCKED, LIGHTWEIGHT	MILITARY STANDARD <b>MS 51833</b>
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**5307****7. PART NUMBER:**

THE MS PART NUMBER CONSISTS OF THE MS NUMBER PLUS THE DASH NUMBERS AND THE FOLLOWING AS APPLICABLE:

EXAMPLE: MS51833 - 103 D 24

STUD, LOCKED IN-KEY LOCKED

1.500 LENGTH OF NUT END (SEE TABLE 111)

DRILLED HOLE IN NUT END. USE "DASH" IN LIEU OF "0" IF DRILLED HOLE NOT REQUIRED.

.3125-18 NUT END THREAD - .4375-14 STUD END THREAD

MATERIAL: ALLOY STEEL, 4140  
CRES, A286, ADD "A" IN LIEU OF DASH  
CRES, 303, ADD "C" IN LIEU OF DASH

8. STUDS SHALL BE FREE FROM ALL HANGING BURRS AND SLIVERS WHICH MIGHT BECOME DISLOOGED UNDER USAGE.
9. ALL DIMENSIONS ARE AFTER PROTECTIVE COATING OR TREATMENT.
10. TOLERANCE ON ANGLES IS  $\pm 2^\circ$ .
11. GRIP DIAMETER SHALL BE CONCENTRIC TO PITCH DIAMETER OF STUD END THREAD WITHIN .006 FIM.
12. STUDS WITH NUT END THREAD SIZE .1900 OR .2500 SHALL BE SUPPLIED WITH TWO (2) LOCKING KEYS SPACED  $180^\circ$  APART. ALL OTHER SIZES SHALL BE SUPPLIED WITH FOUR (4) LOCKING KEYS SPACED  $90^\circ$  APART.
13. MARKING:  
CRES 303 HAS NO IDENTIFYING MARK.  
ALLOY STEEL 4140 SHALL BE IDENTIFIED ON TOP OF STUD BY TWO (2) PARALLEL DASH MARKS.  
CRES A286 SHALL BE IDENTIFIED ON TOP OF STUD BY ONE DASH MARK.

**NOTES:**

- ALL DIMENSIONS ARE IN INCHES.
- INSTALLATION OF STUD SHALL BE IN ACCORDANCE WITH MS51835.
- FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.
- REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BIDS, OR REQUEST FOR PROPOSAL, EXCEPT THAT REFERENCED ADOPTED INDUSTRY DOCUMENTS SHALL GIVE THE DATE OF THE ISSUE ADOPTED.

P. A. AR Other Cost AS 99	INTERNATIONAL INTEREST	TITLE STUD LOCKED IN-KEY LOCKED LIGHTWEIGHT	MILITARY STANDARD <b>MS 51833</b>
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TABLE III - TABULATED LENGTHS

L NUT END + .030	LENGTH DASH NUMBER					
	NOMINAL DIAMETER					
	.1900	.2500	.3125	.3750	.4375	.5000
.375	-6	-6				
.438	-7	-7				
.500	-8	-8				
.562	-9	-9	-9			
.625	-10	-10	-10	-10	-10	
.688	-11	-11	-11	-11	-11	
.750	-12	-12	-12	-12	-12	-12
.812	-13	-13	-13	-13	-13	-13
.875	-14	-14	-14	-14	-14	-14
.938	-15	-15	-15	-15	-15	-15
1.000	-16	-16	-16	-16	-16	-16
1.062	-17	-17	-17	-17	-17	-17
1.125	-18	-18	-18	-18	-18	-18
1.188	-19	-19	-19	-19	-19	-19
1.250	-20	-20	-20	-20	-20	-20
1.312	-21	-21	-21	-21	-21	-21
1.375	-22	-22	-22	-22	-22	-22
1.438	-23	-23	-23	-23	-23	-23
1.500	-24	-24	-24	-24	-24	-24
1.562	-25	-25	-25	-25	-25	-25
1.625	-26	-26	-26	-26	-26	-26
1.688	-27	-27	-27	-27	-27	-27
1.750	-28	-28	-28	-28	-28	-28
1.812	-29	-29	-29	-29	-29	-29
1.875	-30	-30	-30	-30	-30	-30
1.938	-31	-31	-31	-31	-31	-31
2.000	-32	-32	-32	-32	-32	-32
2.125	-34	-34	-34	-34	-34	-34
2.250	-36	-36	-36	-36	-36	-36
2.375	-38	-38	-38	-38	-38	-38
2.500	-40	-40	-40	-40	-40	-40
2.625		-42	-42	-42	-42	-42
2.750		-44	-44	-44	-44	-44
2.875		-46	-46	-46	-46	-46
3.000		-48	-48	-48	-48	-48
3.125		-50	-50	-50		-50
3.250		-52	-52	-52		-52
3.375		-54	-54	-54		-54
3.500		-56	-56	-56		-56
3.625		-58	-58	-58		-58
3.750		-60	-60	-60		-60
3.875		-62	-62	-62		-62
4.000		-64	-64	-64		-64

DASH NUMBERED PARTS ABOVE THE HEAVY LINE ARE THREADED TO THE STUD END AS SPECIFIED HEREIN. THE MAXIMUM DISTANCE FROM THE STUD END TO THE FIRST FULL THREAD SHALL BE EQUAL TO THE SUM OF THE MAXIMUM FILLET RADIUS AND A MAXIMUM OF TWO INCOMPLETE THREADS. INCOMPLETE THREADS NOT TO ENTER FILLET AREA.

P. A. AR Other Cont AS 99	INTERNATIONAL INTEREST	TITLE STUD, LOCKED IN - KEY LOCKED, LIGHTWEIGHT	MILITARY STANDARD <b>MS 51833</b>
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