

FED. SUPPLY CLASS

5306

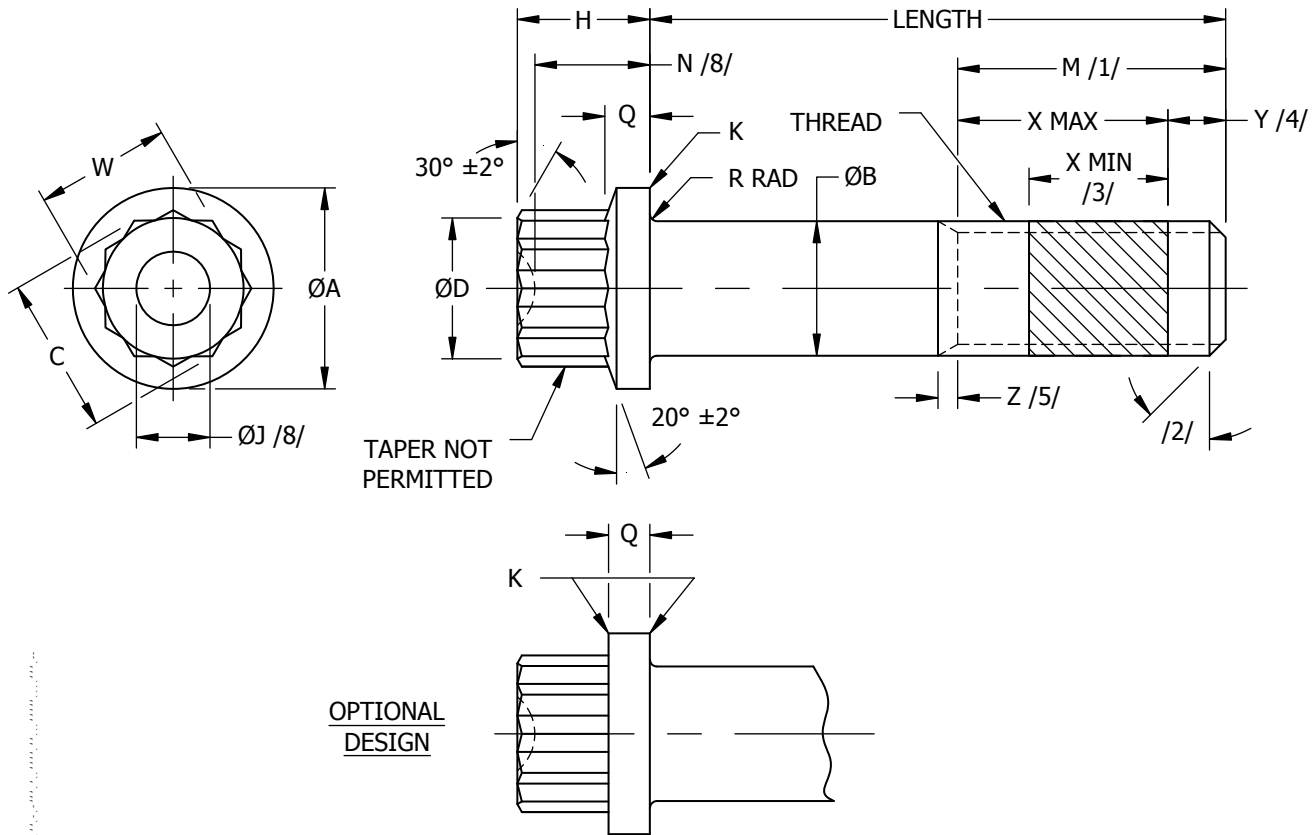
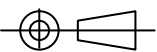


TABLE I - DIMENSIONS

THREAD /6/	ØA	ØB	C MIN	ØD	H	ØJ	K CHAMFER OR RAD MAX	M MIN	N	Q	R RAD	W	X MIN	ULTIMATE TENSILE STRENGTH LBF (FTU) MIN /7/
.2500-28 UNF-3A	.375 .365	.2500 .2435	.277	.250 .235	.250 .244	.155 .115	.008	1.000	.229	.072 .052	.014 .009	.251 .243	.178	5,800
.3125-24 UNF-3A	.468 .457	.3125 .3053	.347	.312 .297	.312 .306	.190 .150		1.125	.291	.103 .083	.017 .012	.313 .304	.208	9,300
.3750-24 UNF-3A	.562 .550	.3750 .3678	.419	.375 .360	.375 .368	.225 .185		1.250	.353	.135 .115	.020 .015	.376 .367		14,050
.4375-20 UNF-3A	.656 .642	.4375 .4294	.491	.437 .422	.437 .430	.270 .230	.010	1.375	.415	.166 .146	.023 .018	.439 .430	.250	19,000
.5000-20 UNF-3A	.750 .735	.5000 .4919	.561	.500 .485	.500 .492	.307 .267		1.500	.477	.197 .177	.026 .020	.502 .492		25,000
.6250-18 UNF-3A	.937 .921	.6250 .6163	.703	.625 .610	.625 .616	.390 .350		1.750	.601	.228 .208	.032 .024	.627 .616	.278	41,000

THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES MS21098, AMENDMENT 1. PART NUMBERS REMAIN MS21098.

THIRD
ANGLE
PROJECTION



CUSTODIAN
NATIONAL AEROSPACE STANDARDS COMMITTEE

REVISION
2

PROCUREMENT
SPECIFICATION
FF-S-86 &
MIL-DTL-18240

TITLE
**BOLT, SELF-LOCKING, STEEL, 160 KSI Ft_u, 250 °F,
12 POINT, EXTERNAL WRENCHING
(EXTERNALLY WRENCHING CAP SCREWS)**

CLASSIFICATION
PART STANDARD

NAS
SHEET 1 OF 3



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MATERIAL: ALLOY STEEL PER PROCUREMENT SPECIFICATION FF-S-86.

HEAT TREATMENT:

HARDNESS: 36 - 45 HRC UP TO AND INCLUDING .5000 INCH, 36 - 43 HRC OVER .5000 INCH. (2)

FINISH: CADMIUM PLATING PER AMS-QQ-P-416, TYPE II, CLASS 2. (2)

LOCKING ELEMENT:

IN ACCORDANCE WITH MIL-DTL-18240. LOCKING ELEMENT AREA MUST PASS THRU A PLAIN RING GAGE, EQUAL TO THE MAXIMUM MAJOR THREAD DIAMETER +.010 INCH, FREELY OR WITH FINGER PRESSURE.

EXAMPLE OF PART NUMBER:

MS21098-58
DASH NUMBER FROM TABLE II
BASIC NUMBER

(2)

MS21098-58 = BOLT, SELF-LOCKING, 12 POINT, STEEL, CADMIUM PLATED, .3750-24 UNF-3A THREAD, 1 INCH LONG.

NOTES:

- /1/ THREAD LENGTH: THE LENGTH OF THE BOLT THREAD IS MEASURED FROM THE EXTREME POINT TO THE LAST PITCH OF COMPLETE THREAD. ON SHORT BOLTS, THE COMPLETE (FULL FORMED) THREADS SHALL EXTEND TO WITHIN TWO THREAD PITCH LENGTHS OF THE HEAD.
- /2/ THE POINT SHALL BE FLAT AND CHAMFERED. THE FLAT SHALL BE NORMAL TO THE AXIS OF THE BOLT AND THE CHAMFER SHALL BE AT AN ANGLE OF 35° TO 45° WITH THE PLANE OF THE FLAT. THE CHAMFER SHALL EXTEND SLIGHTLY BELOW THE ROOT OF THE THREAD, AND THE EDGE BETWEEN FLAT AND CHAMFER SHALL BE SLIGHTLY ROUNDED.
- /3/ "X" MIN REPRESENTS THE MINIMUM LENGTH OF EXTERNAL THREAD REQUIRED FOR ENGAGEMENT WITH COMPLETE INTERNAL THREAD PITCHES. THE ELEMENT SHALL ENGAGE WITHIN THIS MINIMUM LENGTH AND MEET REQUIREMENTS OF MIL-DTL-18240. "X" MIN IS EQUAL TO 5 THREAD PITCHES. "X" MAXIMUM EQUALS THE LENGTH OF COMPLETE THREAD BETWEEN "Y" AND "Z".
- /4/ "Y" MIN SHALL HAVE AT LEAST ONE PITCH OF COMPLETE THREAD. "Y" MAXIMUM EQUALS 2 PITCHES OF COMPLETE THREAD PLUS 2 PITCHES WHICH INCLUDES THE INCOMPLETE THREAD AND CHAMFER. THE LOCKING ELEMENT SHALL NOT BE EFFECTIVE WITHIN THE AREA OF "Y" MINIMUM.
- /5/ "Z" EQUALS INCOMPLETE THREAD AND/OR EXTRUSION ANGLE PERMISSIBLE UP TO 2 THREAD PITCHES LENGTH MAXIMUM. THE ELEMENT OR ANY MACHINE HOLES OR GROOVES FOR THE ELEMENT SHALL NOT PENETRATE THIS AREA.
- /6/ THREADS SHALL BE FULLY FORMED BY ANY SINGLE ROLLING PROCESS AND IN ACCORDANCE WITH MIL-S-7742.
- /7/ BASED ON 160,000 PSI ULTIMATE STRENGTH, AND STRESS AREA = $3.1416 \left(\frac{E_{MIN}}{2} - \frac{3H}{16} \right)^2$ (SEE FED-STD-H28/1).

REVISION

2

NAS21098-58

SHEET 2



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