



FED SUP CLASS
53GP

THE FOLLOWING FORMULA IS FOR DETERMINING THE PROPER THREAD LENGTH FOR GRIP TYPE SCREWS AND BOLTS WHICH ARE TO BE USED WITH NUTS. IT SHOULD BE APPLIED TO THE DESIGN OF ALL NEW STANDARDS FOR THESE PARTS.

$$(2) \quad T \text{ NOM} = H \text{ MAX} + U + \Delta G + \Delta L = 1.5P$$

WHERE:

T NOM = NOMINAL THREAD LENGTH. THIS IS THE AMOUNT TO BE ADDED TO THE NOMINAL GRIP LENGTH TO DETERMINE THE NOMINAL BOLT OR SCREW LENGTH. (BOLT OR SCREW LENGTH SHOULD NOT BE ROUNDED OFF TO THE NEAREST FRACTION.)

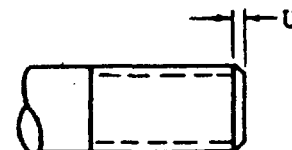
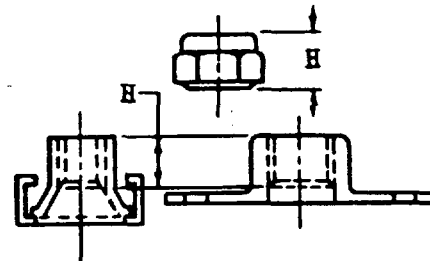
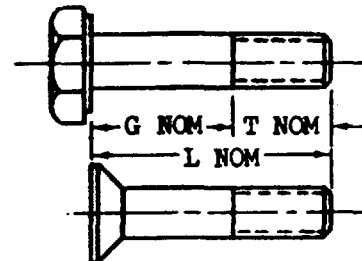
H MAX = MAXIMUM NUT HEIGHT. THIS IS THE MAXIMUM AMOUNT OF USABLE THREAD IN THE NUT PLUS LOCKING DEVICE AND DOES NOT INCLUDE THE HEIGHT OF THE COUNTERBORE OR THE DEPTH OF COUNTERSINK. (IT DOES INCLUDE THE NORMAL CHAMFER ON HEX NUTS.)

U = BOLT OR SCREW THREAD CHAMFER. SEE NOTE (a).

(2) ΔG = PLUS TOLERANCE ON GRIP DIMENSION, .010.

(2) ΔL = MINUS TOLERANCE ON LENGTH, .015.

P = THREAD PITCH.



THREADS PER INCH	1.5P
32	.047
28	.054
24	.063
20	.075
18	.083
16	.094
14	.107
12	.125

(2) Inactive for design after 31 AUG 1984
No superseding standard. For description of status notes see NAS 380.

(2) (a) CHAMFER U BASED ON 0.5 THREAD PITCH.

LIST OF CURRENT SHEETS

NO.	REV.
1	2
2	2

CUSTODIAN **NATIONAL AEROSPACE STANDARDS COMMITTEE**

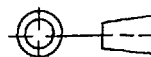
PROCUREMENT
SPECIFICATION

NONE

TITLE

THREAD LENGTH FOR BOLTS AND SCREWS

THIRD
ANGLE
PROJECTION



CLASSIFICATION

STANDARD PRACTICE

NAS575

Documents

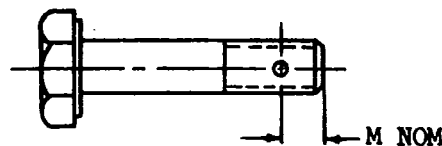
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THE FOLLOWING FORMULA IS FOR DETERMINING THE PROPER DISTANCE FOR THE LOCATION OF A COTTER PIN HOLE FROM THE THREADED END OF BOLTS OR SCREWS WHICH ARE DRILLED FOR USE WITH CASTELLATED NUTS. IT SHOULD BE APPLIED TO THE DESIGN OF ALL NEW STANDARDS FOR THESE PARTS.

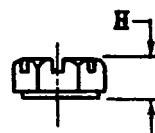
$$M \text{ NOM} = H \text{ MAX} + U - E \text{ MIN} - \frac{P \text{ MIN}}{2} + .010$$

WHERE:

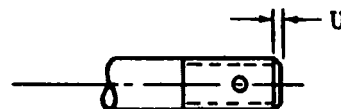
$M \text{ NOM}$ = DISTANCE FROM THREADED END OF BOLT OR SCREW TO CENTER LINE OF COTTER PIN HOLE.



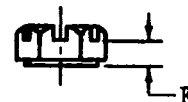
$H \text{ MAX}$ = MAX CASTELLATED NUT HEIGHT. INCLUDES NOM CHAMFER ON NUT. WHERE $H \text{ MAX}$ IN $M \text{ NOM}$ FORMULA EQUALS OR EXCEEDS $H \text{ MAX}$ IN $T \text{ NOM}$ FORMULA, CHECK TO ASSURE SUFFICIENT BOLT THREADS REMAINING UNDER NUT BASE WHEN E AND M ARE BOTH MAX.



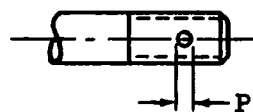
U = BOLT OR SCREW THREAD CHAMFER. SEE NOTE (a).



$E \text{ MIN}$ = MINIMUM DISTANCE FROM NUT BASE TO BOTTOM OF SLOT.



$P \text{ MIN}$ = MINIMUM COTTER PIN HOLE DIAMETER.



$.010$ = MAXIMUM MINUS TOLERANCE ON M .

THREAD (2) T	(a) M NOM		MINIMUM COTTER PIN HOLE DIA
	TYPE 1	TYPE 2	
.1900-32	.117	.163	.070
.2500-28	.116	.178	.076
.3125-24	.119	.181	.076
.3750-24	.120	.197	.106
.4375-20	.124	.201	.106
.5000-20	.123	.216	.106
.5625-18	.124	.218	.141
.6250-18	.124	.249	.141
.7500-16	.128	.252	.141
.8750-14	.134	.257	.141
1.0000-12	.139	.264	.141
1.1250-12	.170	.357	.141
1.2500-12	.170	.389	.141

- (2) (a) $M \text{ NOM}$ VALUES BASED ON BOLTS HAVING CHAMFERS "U" OF 0.5 THREAD PITCH AND MINIMUM COTTER PIN HOLE DIAMETERS SHOWN. TYPE 1 IS BASED ON AN320; TYPE 2 ON AN310.

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST DATE OF APPROVAL SHOWN HEREON.