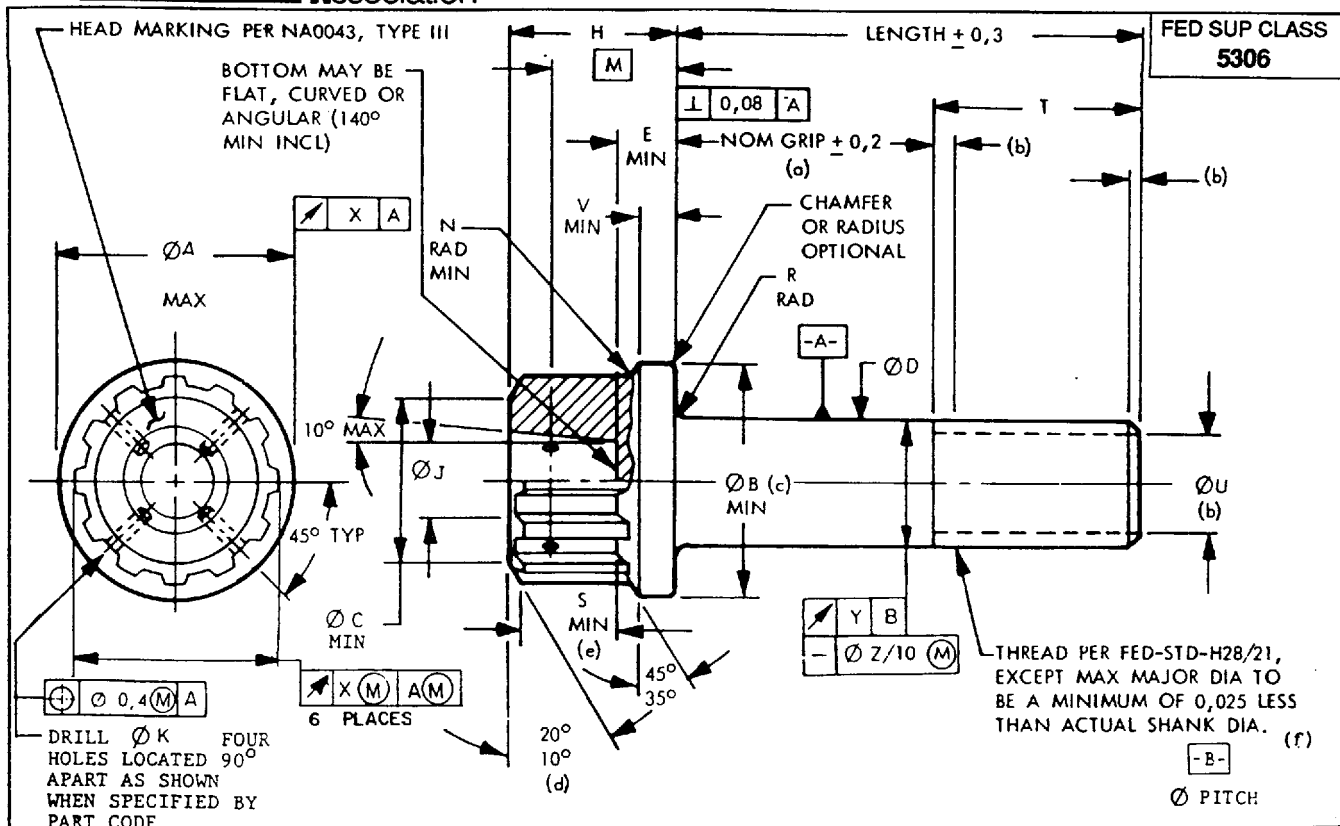


NATIONAL AEROSPACE STANDARD

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AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
1250 EYE STREET, N.W.
WASHINGTON, D.C. 20005

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.



PART CODE.													
FIRST DASH NO.	THREAD 4h6h	WRENCH SIZE NO.	Ø A MAX.	Ø B (C) MIN	Ø C MIN	Ø D	E MIN	H	Ø J	Ø K	M BASIC	N RAD MIN	FIRST DASH NO.
050	MJ5 x 0,8	07	10,2	9,5	5,4	4,990 4,965	3,5	7,0 6,5	4,2 3,2	1,14 1,00	4,9	0,5	050
060	MJ6 x 1	08	11,7	11,0	6,4	5,990 5,965	3,9	7,9 7,4	5,0 4,0	1,54 1,40	5,6	0,6	060
080	MJ8 x 1	10	14,8	14,0	8,2	7,987 7,962	4,7	9,0 8,5	6,4 5,4	1,54 1,40	6,7	0,8	080
100	MJ10 x 1,25	12	18,4	17,4	10,1	9,987 9,962	5,9	10,7 10,2	7,8 6,8	1,74 1,60	8,3	1,0	100
120	MJ12 x 1,25	14	21,4	20,4	12,9	11,984 11,959	7,1	11,9 11,4	10,0 9,0	1,74 1,60	9,5	1,2	120
140	MJ14 x 1,5	16	24,9	23,9	14,8	13,984 13,959	7,8	13,3 12,8	11,5 10,5	1,74 1,60	10,9	1,4	140
160	MJ16 x 1,5	19	28,4	27,4	17,8	15,984 15,959	9,0	14,8 14,3	13,7 12,7	1,74 1,60	12,4	1,6	160
180	MJ18 x 1,5	21	31,4	30,4	19,5	17,984 17,959	9,3	15,8 15,3	15,0 14,0	1,74 1,60	13,4	1,8	180
200	MJ20 x 1,5	24	34,5	33,4	22,3	19,980 19,955	10,6	17,8 17,3	17,3 16,3	1,74 1,60	15,4	2,0	200

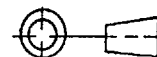
- (a) GRIP LENGTH SHALL BE MEASURED FROM THE UNDERSIDE OF THE HEAD TO THE END OF THE FULL CYLINDRICAL PORTION OF THE SHANK.
- (b) POINT SHALL BE FLAT AND CHAMFERED 45° APPROXIMATELY FROM "U" DIAMETER. INCOMPLETE THREADS IN ACCORDANCE WITH FED-STD-H28/21.
- (c) B DIAMETER DEFINES MINIMUM BEARING FACE DIAMETER.
- (d) RADIUS OR NATURAL FLOW OF MATERIAL OPTIONAL.
- (e) WRENCHING CONFIGURATION PER MA1549 FOR "S" DISTANCE MINIMUM.
- (f) ACCEPTABILITY OF SCREW THREADS SHALL BE IN ACCORDANCE WITH FED-STD-H28/20 SYSTEM 22.
- LIST OF CURRENT SHEETS
- | SHT. | REV. |
|------|------|
| 1 | 2 |
| 2 | 2 |
| 3 | 1 |
- (2) INACTIVE FOR NEW DESIGN AFTER NOVEMBER 1.

SHT.	REV.
1	2
2	2
3	1
4	2

INACTIVE FOR NEW DESIGN AFTER NOVEMBER 1, 1994. NO SUPERSEDING STANDARD. SEE NAS380 FOR DESCRIPTION OF STATUS NOTES.

CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE

THIRD
ANGLE
PROJECTION



PROCUREMENT SPECIFICATION

TITLE

CLASSIFICATION
STANDARD PART

NA0072

**BOLT, CLOSE TOLERANCE, SPLINE DRIVE, ALLOY
STEEL, 1800 MPa, METRIC**

NA0063

SHEET 1 OF 4

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APPROVAL DATE MARCH 1980 REVISION (1) 27 NOVEMBER 1989 (2) 30 SEPTEMBER 1994



AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
1250 EYE STREET, N.W.
WASHINGTON, D.C. 20005

FIRST DASH NO.	R RAD	S MIN (e)	T REF	ØU (b)	V MIN	X FIM	Y FIM	Z FIM
050	0,8 0,6	1,7	12,5	4,0 3,5	1,5	0,13	0,12	0,02
060	1,0 0,8	2,0	14,5	4,7 4,2	1,7	0,15	0,12	0,02
080	1,0 0,8	2,5	17,0	6,7 6,2	2,1	0,20	0,15	0,02
100	1,2 1,0	3,0	21,0	8,4 7,9	2,5	0,25	0,15	0,015
120	1,4 1,2	3,5	23,5	10,4 9,9	2,9	0,30	0,18	0,015
140	1,4 1,2	4,0	27,5	12,0 11,5	3,3	0,35	0,18	0,015
160	1,8 1,6	4,5	30,0	14,0 13,5	3,7	0,40	0,18	0,015
180	1,8 1,6	5,0	33,0	16,0 15,5	4,1	0,45	0,18	0,015
200	1,8 1,6	5,5	35,5	18,0 17,5	4,5	0,50	0,21	0,015

MATERIAL: ALLOY STEEL PER AMS6487(H-11). (UNS T20811)

HEAT TREAT: 1800 MP₀ MINIMUM ULTIMATE TENSILE (51-54 HRC)

FINISH: CADMIUM PLATE (VACUUM DEPOSITED) PER MIL-C-8837, TYPE II, CLASS 2 (8-14 µm THICK).

CODE: FIRST THREE DASH NUMBERS INDICATE NOMINAL OR OVERSIZE SHANK DIAMETER IN MILLIMETRES AND TENTHS AS TABULATED. OVERSIZE DIMENSIONS ARE TABULATED ON SHEET 4.
SECOND THREE DASH NUMBERS INDICATE NOMINAL GRIP LENGTH IN MILLIMETRES AS TABULATED.
CODE LETTER "H" FOLLOWING BASIC PART NUMBER INDICATES DRILLED HEAD.

EXAMPLE OF PART NUMBER: NA0063-080016 BOLT; MJB x 1 THREAD; 16 mm GRIP.
NA0063H090016 BOLT; MJB x 1 THREAD; 16 mm GRIP; 1 mm OVERSIZE SHANK; DRILLED HEAD.

- NOTES:**
1. SURFACE TEXTURE PER ANSI/ASME B46.1. BEARING SURFACE OF HEAD, HEAD TO SHANK FILLET RADIUS, SHANK AND ALL THREAD ELEMENTS 0,8 µm MAX. ALL OTHER SURFACES 3,2 µm MAX.
 2. BOLTS SHALL BE FREE FROM BURRS AND SLIVERS. BREAK SHARP EDGES 0,1 TO 0,4.
 3. DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED, AND TO BE MET AFTER PLATING.
 4. DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.

② INACTIVE FOR NEW DESIGN AFTER NOVEMBER 1, 1994. NO SUPERSEDING STANDARD. SEE NAS380 FOR DESCRIPTION OF STATUS NOTES.

NA0063
Documents

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