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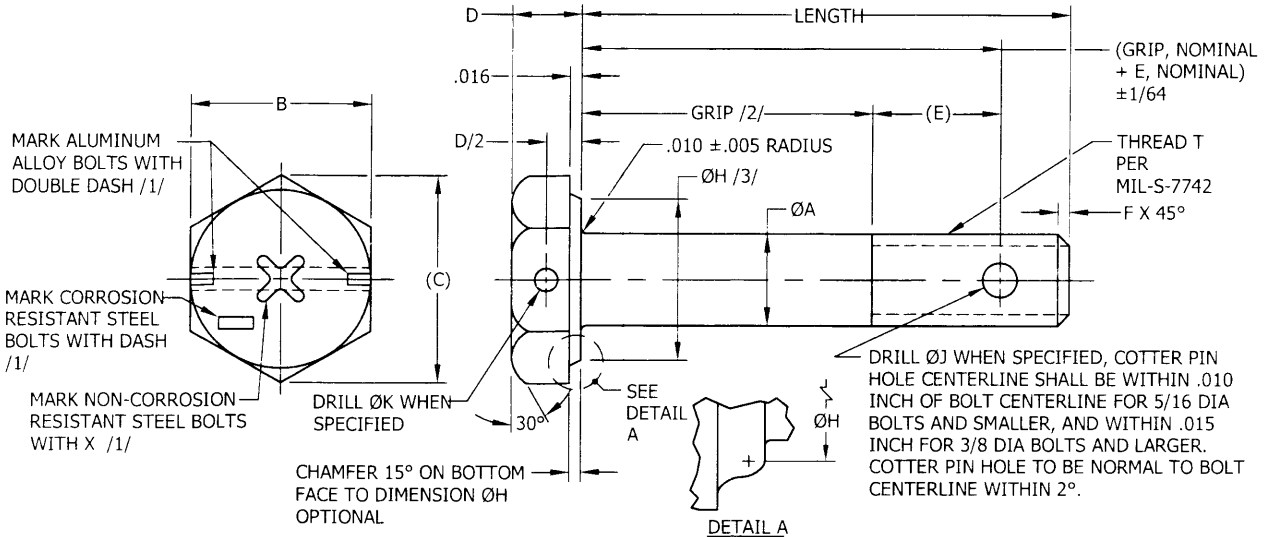


**NATIONAL AEROSPACE STANDARD**

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FED. SUPPLY CLASS  
5306



BASIC AN PART NO.	THREAD T	ØA		B		(C)	D		(E)	F		ØH MIN /3/	ØJ DRILL +.010 -.000	ØK DRILL +.010 -.000
		MAX	MIN	MAX	MIN		MAX	MIN		MAX	MIN			
AN3	NO. 10-32 UNF-3A	.189	.186	.377	.365	.430	.141	.109	17/64	.047	.015	.335	.070	.046
AN4	1/4-28 UNF-3A	.249	.246	.440	.428	.510	.172	.140	5/16	.047	.015	.398	.076	.046
AN5	5/16-24 UNF-3A	.312	.309	.502	.490	.580	.204	.172	23/64	.063	.031	.460	.076	.070
AN6	3/8-24 UNF-3A	.374	.371	.565	.553	.650	.235	.203	7/16	.063	.031	.523	.106	.070
AN7	7/16-20 UNF-3A	.437	.433	.627	.615	.720	.266	.234	31/64	.063	.031	.585	.106	.070
AN8	1/2-20 UNF-3A	.499	.495	.752	.740	.870	.297	.265	39/64	.063	.031	.710	.106	.070
AN9	9/16-18 UNF-3A	.562	.558	.877	.865	1.010	.328	.296	21/32	.078	.046	.835	.141	.070
AN10	5/8-18 UNF-3A	.624	.620	.940	.928	1.090	.360	.328	47/64	.078	.046	.898	.141	.070
AN12	3/4-16 UNF-3A	.749	.744	1.066	1.053	1.230	.422	.390	7/8	.078	.046	1.023	.141	.070
AN14	7/8-14 UNF-3A	.874	.869	1.253	1.240	1.440	.485	.453	63/64	.094	.062	1.210	.141	.070
AN16	1-14 NF-3A	.999	.993	1.441	1.428	1.660	.547	.515	1-3/32	.094	.062	1.398	.141	.070
AN17	1-12 UNF-3A	.999	.993	1.441	1.428	1.660	.547	.515	1-3/32	.094	.062	1.398	.141	.070
AN18	1-1/8-12 UNF-3A	1.124	1.118	1.628	1.615	1.880	.610	.578	1-3/16	.110	.078	1.585	.141	.070
AN20	1-1/4-12 UNF-3A	1.249	1.243	1.815	1.802	2.090	.672	.640	1-3/8	.110	.078	1.772	.141	.070

MATERIAL:

NON-CORROSION RESISTANT STEEL, CORROSION-RESISTANT STEEL OR ALUMINUM ALLOY, SEE PROCUREMENT SPECIFICATION.

FINISH:

SEE PROCUREMENT SPECIFICATION.

② COMPLETELY REVISED

THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES AN3 THRU AN20, REVISION 12. PART NUMBERS REMAIN AN3 THRU AN20.

THIRD ANGLE PROJECTION	CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION <b>2</b>
PROCUREMENT SPECIFICATION <b>NASM6812</b>	TITLE <b>BOLT- MACHINE, AIRCRAFT</b>	CLASSIFICATION PART STANDARD <b>NASM3 THRU NASM20</b> SHEET 1 OF 5

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1000 WILSON BLVD.  
ARLINGTON, VA 22209

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FORM 09-01

ISSUE DATE: SEPTEMBER 1999 REVISION DATE: APRIL 27, 2010

CODE:

ADD "C" BEFORE DASH NUMBER FOR CORROSION-RESISTANT STEEL BOLT.  
 ADD "DD" BEFORE DASH NUMBER FOR ALUMINUM ALLOY BOLT.  
 ADD "A" AFTER DASH NUMBER FOR UNDRILLED BOLT. SEE ILLUSTRATION.  
 ADD "H" BEFORE DASH NUMBER FOR BOLT WITH DRILLED HEAD AND SHANK. SEE ILLUSTRATION.  
 ADD "H" BEFORE DASH NUMBER AND "A" AFTER DASH NUMBER FOR BOLT WITH DRILLED HEAD ONLY. SEE ILLUSTRATION.

EXAMPLE OF PART NUMBER:

- AN6-10 = 3/8 NON-CORROSION RESISTANT STEEL BOLT 1-5/64 LONG, 7/16 GRIP WITH DRILLED SHANK ONLY. SEE ILLUSTRATION.
- AN6C10 = 3/8 CORROSION-RESISTANT STEEL BOLT 1-5/64 LONG, 7/16 GRIP WITH DRILLED SHANK ONLY. SEE ILLUSTRATION.
- AN6DD10 = 3/8 ALUMINUM ALLOY BOLT 1-5/64 LONG, 7/16 GRIP WITH DRILLED SHANK ONLY. SEE ILLUSTRATION.
- AN6DD10A = 3/8 ALUMINUM ALLOY BOLT 1-5/64 LONG, 7/16 GRIP, UNDRILLED SHANK AND HEAD. SEE ILLUSTRATION.
- AN6DDH10 = 3/8 ALUMINUM ALLOY BOLT 1-5/64 LONG, 7/16 GRIP WITH DRILLED HEAD AND SHANK. SEE ILLUSTRATION.
- AN6DDH10A = 3/8 ALUMINUM ALLOY BOLT 1-5/64 LONG, 7/16 GRIP WITH DRILLED HEAD ONLY. SEE ILLUSTRATION.

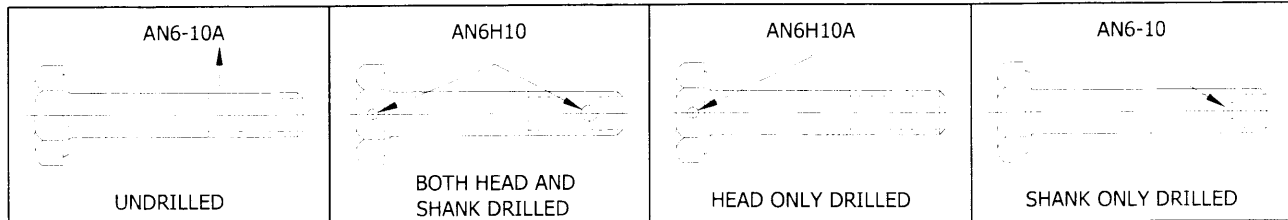


ILLUSTRATION OF DRILLED AND UNDRILLED BOLTS AND PART NUMBERS

NOTES:

- /1/ MARKING MAY BE EITHER RAISED OR DEPRESSED. THE HEIGHT OR DEPTH OF THE MARKINGS SHALL NOT EXCEED THE FOLLOWING VALUES: .025 INCH FOR 9/16 DIAMETER BOLTS AND SMALLER; .030 INCH FOR 5/8 DIAMETER BOLTS AND LARGER. HEAD MARKING MAY INCLUDE MANUFACTURER'S MARKINGS.
- /2/ GRIP LENGTH OF BOLTS SHALL BE MEASURED FROM THE UNDERSIDE OF THE HEAD TO THE END OF THE FULL CYLINDRICAL PORTION OF THE SHANK. COMPLETE THREADS SHALL BEGIN WITHIN TWO THREAD PITCHES MAXIMUM. TWO THREAD PITCH MAXIMUM MAY CONSIST OF INCOMPLETE THREAD OR EXTRUSION ANGLE.
- /3/ THE DIAMETER OF THE WASHER FACE SHALL NOT EXCEED THE ACTUAL WIDTH ACROSS FLATS.
- /4/ 1-14NF THREAD PITCH INACTIVE FOR DESIGN AFTER 15 JUNE 1966.
- (5) BOLTS SHALL BE FREE FROM ALL HANGING BURRS AND SLIVERS WHICH MIGHT BECOME DISLODGED UNDER USAGE. COUNTERSINKING OF DRILLED HOLES IN HEAD IS MANDATORY. COUNTERSINKING OF DRILLED HOLES IN SHANK IS OPTIONAL.

② COMPLETELY REVISED

REVISION
<b>2</b>
<b>NASM3 THRU NASM20</b>
SHEET 2



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- (6) DIMENSIONS ARE IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: DECIMALS  $\pm .010$ , ANGLES  $\pm 5^\circ$ .
- (7) DIMENSIONS APPLY AFTER FINISH UNLESS OTHERWISE SPECIFIED.
- (8) THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN.
- (9) REFERENCED DOCUMENTS SHALL BE THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID.
- (10) UNLESS OTHERWISE SPECIFIED, PART INVENTORY MANUFACTURED TO PREVIOUS REVISIONS OF THE APPLICABLE DRAWING OR SPECIFICATION MAY BE PROCURED AND USED UNTIL STOCK IS DEPLETED.

BASIC AN PART NO.	THREAD T	RATED STRENGTH (POUNDS)					
		ULTIMATE TENSILE AT ROOT DIA		YIELD TENSILE AT ROOT DIA		SINGLE SHEAR AT FULL DIA	
		STEEL	AL ALLOY	STEEL	AL ALLOY	STEEL	AL ALLOY
AN3	NO. 10-32 UNF-3A	2,210	1,100	1,690	710	2,125	990
AN4	1/4 -28 UNF-3A	4,080	2,030	3,130	1,310	3,680	1,715
AN5	5/16-24 UNF-3A	6,500	3,220	4,980	2,080	5,750	2,685
AN6	3/8 -24 UNF-3A	10,100	5,020	7,740	3,240	8,280	3,870
AN7	7/16-20 UNF-3A	13,600	6,750	10,430	4,350	11,250	5,250
AN8	1/2 -20 UNF-3A	18,500	9,180	14,190	5,920	14,700	6,850
AN9	9/16-18 UNF-3A	23,600	11,700	18,100	7,550	18,700	8,700
AN10	5/8 -18 UNF-3A	30,100	14,900	23,080	9,610	23,000	10,750
AN12	3/4 -16 UNF-3A	44,000	21,800	33,730	14,100	33,150	15,500
AN14	7/8 -14 UNF-3A	60,000	29,800	46,000	19,200	45,050	21,050
<del>AN16</del>	<del>1-14 NF-3A</del>	<del>80,700</del>	<del>40,000</del>	<del>61,870</del>	<del>25,800</del>	<del>58,900</del>	<del>27,500</del>
AN17	1 -12 UNF-3A	80,700	40,000	61,870	25,800	58,900	27,500
AN18	1-1/8 -12 UNF-3A	101,800	50,500	78,050	32,600	73,750	34,500
AN20	1-1/4 -12 UNF-3A	130,200	64,400	99,820	41,500	91,050	42,500

DASH NO.	AN3		AN4		AN5		AN6		AN7		AN8		AN9	
	GRIP $\pm 1/64$	LENGTH $+1/32$ $-1/64$	GRIP $\pm 1/64$	LENGTH $+1/32$ $-1/64$	GRIP $\pm 1/64$	LENGTH $+1/32$ $-1/64$	GRIP $\pm 1/64$	LENGTH $+1/32$ $-1/64$	GRIP $\pm 1/64$	LENGTH $+1/32$ $-1/64$	GRIP $\pm 1/64$	LENGTH $+1/32$ $-1/64$	GRIP $\pm 1/64$	LENGTH $+1/32$ $-1/64$
3	1/16	15/32	1/16	15/32										
4	1/8	17/32	1/16	17/32	1/16	19/32								
5	1/4	21/32	3/16	21/32	3/16	23/32	1/16	45/64	1/16	23/32				
6	3/8	25/32	5/16	25/32	5/16	27/32	3/16	53/64	3/16	27/32	1/16	27/32	1/16	31/32
7	1/2	29/32	7/16	29/32	7/16	31/32	5/16	61/64	5/16	31/32	3/16	31/32	1/8	1- 1/32
10	5/8	1- 1/32	9/16	1- 1/32	9/16	1- 3/32	7/16	1- 5/64	7/16	1- 3/32	5/16	1- 3/32	1/4	1- 5/32
11	3/4	1- 5/32	11/16	1- 5/32	11/16	1- 7/32	9/16	1-13/64	9/16	1- 7/32	7/16	1- 7/32	3/8	1- 9/32
12	7/8	1- 9/32	13/16	1- 9/32	13/16	1-11/32	11/16	1-21/64	11/16	1-11/32	9/16	1-11/32	1/2	1-13/32
13	1	1-13/32	15/16	1-13/32	15/16	1-15/32	13/16	1-29/64	13/16	1-15/32	11/16	1-15/32	5/8	1-17/32
14	1-1/8	1-17/32	1- 1/16	1-17/32	1- 1/16	1-19/32	15/16	1-37/64	15/16	1-19/32	13/16	1-19/32	3/4	1-21/32
15	1-1/4	1-21/32	1- 3/16	1-21/32	1- 3/16	1-23/32	1- 1/16	1-45/64	1- 1/16	1-23/32	15/16	1-23/32	7/8	1-25/32
16	1-3/8	1-25/32	1- 5/16	1-25/32	1- 5/16	1-27/32	1- 3/16	1-53/64	1- 3/16	1-27/32	1- 1/16	1-27/32	1	1-29/32
17	1-1/2	1-29/32	1- 7/16	1-29/32	1- 7/16	1-31/32	1- 5/16	1-61/64	1- 5/16	1-31/32	1- 3/16	1-31/32	1-1/8	2- 1/32
20	1-5/8	2- 1/32	1- 9/16	2- 1/32	1- 9/16	2- 3/32	1- 7/16	2- 5/64	1- 7/16	2- 3/32	1- 5/16	2- 3/32	1-1/4	2- 5/32
21	1-3/4	2- 5/32	1-11/16	2- 5/32	1-11/16	2- 7/32	1- 9/16	2-13/64	1- 9/16	2- 7/32	1- 7/16	2- 7/32	1-3/8	2- 9/32
22	1-7/8	2- 9/32	1-13/16	2- 9/32	1-13/16	2-11/32	1-11/16	2-21/64	1-11/16	2-11/32	1- 9/16	2-11/32	1-1/2	2-13/32
23	2	2-13/32	1-15/16	2-13/32	1-15/16	2-15/32	1-13/16	2-29/64	1-13/16	2-15/32	1-11/16	2-15/32	1-5/8	2-17/32
24	2-1/8	2-17/32	2- 1/16	2-17/32	2- 1/16	2-19/32	1-15/16	2-37/64	1-15/16	2-19/32	1-13/16	2-19/32	1-3/4	2-21/32

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REVISION
<b>2</b>
<b>NASM3 THRU NASM20 SHEET 3</b>

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FORM 09-01





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Table with columns for DASH NO., AN10, AN12, AN14, AN16 4/, AN17, AN18, AN20. Each column contains GRIP and LENGTH specifications with tolerances.

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REVISION 2 NASM3 THRU NASM20 SHEET 5

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