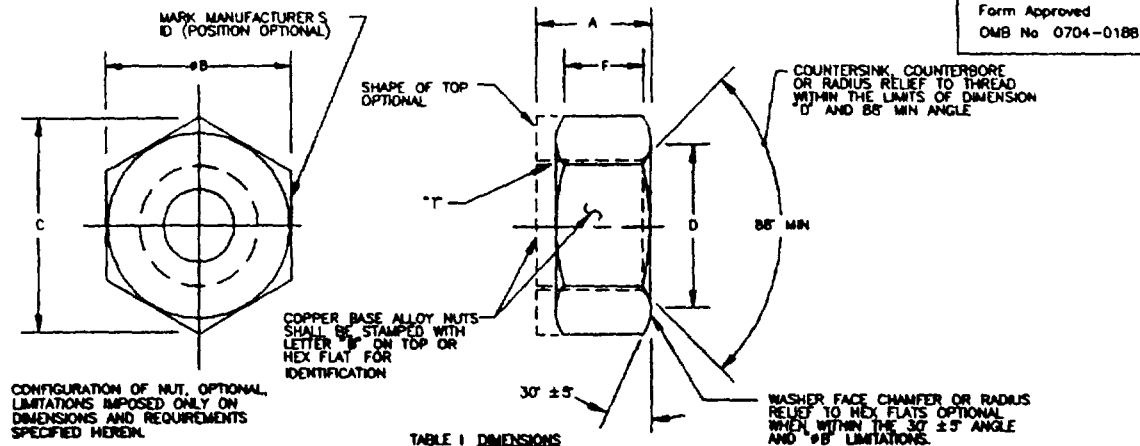


THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODISS SPECIFIED IN THE SOLICITATION MIL-N-25027

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE



Form Approved  
OMB No 0704-0188

TABLE 1 DIMENSIONS

DASH NUMBER				T THREAD MIL-S-8878	(H)		(b)		C	D + .020 - .010	F	(g) BEARING SURFACE SQUARENESS
NON-METALLIC INSERT					A		ØB					
ALUM ALLOY	STEEL	COPPER BASE ALLOY	CRES		MAX	MIN	MAX	MIN				
D02	N02	B02	C02	066-56UNC-38	.125	.094	.251	.243	.288	.131	.031	.004
D04	N04	B04	C04	112-40UNC-38	.125	.094	.251	.243	.288	.131	.031	
D06	N06	B06	C06	136-32UNC-38	.141	.110	.313	.305	.338	.198	.047	
D08	N08	B08	C08	164-32UNC-38	.188	.157	.348	.338	.374	.183	.062	.006
D3	N3	B3	C3	190-32UNF-38			.378	.367	.410	.210		
D4	N4	B4	C4	250-28UNF-38	.218	.188	.439	.430	.482	.273		
D5	N5	B5	C5	3125-24UNF-38	.286	.235	.502	.482	.552	.338		
D6	N6	B6	C6	3750-24UNF-38	.282	.251	.584	.553	.622	.388		
D7	N7	B7	C7	4375-20UNF-38	.328	.298	.880	.879	.766	.458	.109	.008
D8	N8	B8	C8	5000-20UNF-38			.752	.741	.837	.531		
D9	N9	B9	C9	5625-18UNF-38	.375	.344	.877	.865	.978	.584		
D10	N10	B10	C10	8250-18UNF-38	.407	.376	.940	.928	1.051	.656	.156	
D12	N12	B12	C12	7500-16UNF-38	.422	.381	1.084	1.052	1.191	.787	.172	.011
D14	N14	B14	C14	.8750-14UNF-38	.485	.454	1.252	1.239	1.403	.913	.203	
D16	N16	B16	C16	10000-12UNF-38	.578	.516	1.440	1.427	1.615	1.039	.250	
D18	N18	B18	C18	11250-12UNF-38	.672	.610	1.627	1.614	1.826	1.186	.313	.013
D20	N20	B20	C20	12500-12UNF-38	.766	.703	1.815	1.801	2.038	1.290	.328	.014
D22	N22	B22	C22	13750-12UNF-38	.828	.786	2.008	1.973	2.249	1.447	.281	.015
D24	N24	B24	C24	15000-12UNF-38			2.197	2.159	2.416	1.568	.328	.016

(a) BEARING SURFACE SHALL BE SQUARE WITH PITCH DIAMETER WITHIN X WHEN MEASURED IN ACCORDANCE WITH MIL-N-25027  
(b) DIMENSION ACROSS FLATS INCLUDE DEFORMATION OF SELF-LOCKING DEVICE.

REQUIREMENTS

1 MATERIAL (H) STEEL GRADES

1006 (UNS G10060) PER ASTM A29 ASTM A510 OR ASTM A853  
1008 (UNS G10080) PER ASTM A29 ASTM A510 OR ASTM A853  
1009 (UNS G10090) PER SAE J118  
1010 (UNS G10100) PER AMS 5040, ASTM A29 ASTM A510 OR ASTM A853  
1018 (UNS G10180) PER AMS 5069 ASTM A29 ASTM A510 OR ASTM A853  
1035 (UNS G10350) PER AMS 5080 ASTM A29, ASTM A510 OR ASTM A853  
1137 (UNS G11370) PER AMS 5024 OR ASTM A29  
1137 (UNS G11374) PER AMS 5020 OR ASTM A29  
1213 (UNS G12130) PER SAE J403 OR ASTM A29  
1214 (UNS G12144) PER SAE J403 OR ASTM A108  
1215 (UNS G12150) PER AMS 5010

(H) CRES TYPE 302 (UNS S30200) PER AMS 5688, AMS 5636 AMS 5637 OR QQ-S-763 303 (UNS S30300) PER AMS 5640  
ASTM A581, OR ASTM A582, 304 (UNS S30400) PER AMS 5647 AMS 5639 OR QQ-S-763 (UNS S30452) PER  
ASTM A276 OR QQ-S-763, 304L (UNS S30430) PER ASTM A493, AMS 5647 OR QQ-S-763

(H) ALUMINUM ALLOY 2014-T8 (UNS A92014) PER QQ-A-200/2, QQ-A-225/4, OR AMS 4121  
2017-T4 (UNS A92017) PER QQ-A-225/5 OR AMS 4118  
2024-T8 OR T4 (UNS A92024) PER QQ-A-225/6 OR AMS 4120  
7075-T8 OR T851 (UNS A97075) PER QQ-A-200/11, QQ-A-225/8 OR AMS 4123

(H) BRASS CA 360 (UNS C36000), 1/2 HARD OR CA 260 (UNS C26000) PER ASTM B36, ASTM B121, ASTM A829,  
OR AMS 4810

(H) NON-METALLIC INSERT - NYLON PER ASTM D4088, GROUP 1, CLASS 1 OR 2

(H) DENOTES CHANGE(S)

INCH-POUND

PREPARING ACTIVITY DLA-IS CUSTODIANS ARMY- AV NAVY- AS AIR FORCE- 99 DLA-	MILITARY SPECIFICATION SHEET TITLE NUT, SELF-LOCKING, HEXAGON NON-METALLIC INSERT, LOW HEIGHT, 250°F	SPECIFICATION SHEET NUMBER MS21083 28 SEP 93 REV H
REVIEW AR, MH USER EL, MH PROJECT NUMBER 5310-1937		SUPERSEDING MS21083 G 20 APR 93
DISTRIBUTION STATEMENT A. Approved for public release, distribution is unlimited.		AMSC- N/A FSC 5310
		Page 1 of 3

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- 2 PROTECTIVE COATING. STEEL AND COPPER BASE ALLOY NUTS - CADMIUM PLATED IN ACCORDANCE WITH QQ-P-416 TYPE II CLASS 2  
(H) CORROSION-RESISTANT STEEL NUTS - PASSNATE IN ACCORDANCE WITH QQ-P-35  
ALUMINUM ALLOY NUTS - ANODIZE OR CHEMICALLY SURFACE TREAT IN ACCORDANCE WITH PROCUREMENT SPECIFICATION  
ALUMINUM ALLOY NUTS - IN SIZES THRU 086-56 THRU 190-32 DYED BLUE PER PROCUREMENT SPECIFICATION
- 3 LUBRICANT. LUBRICANT APPROVED IN ACCORDANCE WITH MIL-N-25027. LUBRICANTS SHALL BE SOLUBLE IN THE CLEANER SPECIFIED IN THE PROCUREMENT SPECIFICATION
- 4 MAGNETIC PERMEABILITY. (H) MAGNETIC PERMEABILITY OF CORROSION-RESISTANT STEEL NUTS SHALL BE LESS THAN 2.0 FOR A FIELD STRENGTH  $H = 200$  OERSTEDS WHEN TESTED IN ACCORDANCE WITH ASTM A342 METHOD 6
- 5 VIBRATION LIFE. MINIMUM VIBRATION LIFE REQUIREMENT SHALL BE THREE TIMES THE AVERAGE VIBRATION LIFE LISTED IN MIL-N-2507
- 6 SURFACE TEXTURE.  $R_a$  125 MAX IN ACCORDANCE WITH ANSI/ASME B46.1
- 7 PART NUMBERS. THE PART NUMBER SHALL CONSIST OF THE BASIC MS NUMBER FOLLOWED BY A DASH NUMBER FROM TABLE 1
- EXAMPLES OF PART NUMBERS
- MS2108JN4 = 250-28 STEEL NUT, NON-METALLIC INSERT, CADMIUM PLATED  
MS2108JN4 = 250-28 COPPER BASE ALLOY NUT, NON-METALLIC INSERT, CADMIUM PLATED  
MS2108JN4 = 250-28 CORROSION RESISTANT STEEL NUT, NON-METALLIC INSERT, PASSNATED  
MS2108JN4 = 250-28 ALUMINUM ALLOY NUT, NON-METALLIC INSERT, ANODIZED OR CHEMICAL CONVERSION COATING

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TABLE II PERFORMANCE CHARACTERISTICS

T THREAD	TENSILE STRENGTH LB MIN			(H) WEIGHT, LB/100 REF		
	STEEL	ALUM ALLOY	CRES	STEEL	AL ALLOY	BRASS
086-56UNJ-38	230	230	230	13	13	13
112-40UNJ-38	350	350	350	13	13	13
138-32UNJ-38	530	530	530	25	25	25
164-32UNJ-38	840	840	840	40	40	40
190-32UNJ-38	1,230	1,230	1,230	48	48	48
250-28UNJ-38	2,290	1,145	2,290	66	66	66
3125-24UNJ-38	3,890	1,845	3,890	105	105	105
3750-24UNJ-38	5,680	2,840	5,680	120	120	120
4375-20UNJ-38	7,680	3,840	7,680	260	260	260
5000-20UNJ-38	10,440	5,220	7,400	260	260	260
5625-18UNJ-38	13,280	6,640	9,380	450	450	450
6250-18UNJ-38	18,880	8,440	11,940	510	510	510
7500-16UNJ-38	24,880	12,340	17,510	680	680	680
8750-14UNJ-38	33,800	16,900	23,950	1040	1040	1040
10000-12UNJ-38	43,900	21,950	31,500	1800	1800	1800
11250-12UNJ-38	57,200	28,600	40,850	2500	2500	2500
12500-12UNJ-38	72,000	36,000	51,780	3600	3600	3600
13750-12UNJ-38	88,500	44,250	63,490	4300	4300	4300
15000-12UNJ-38	106,800	53,400	76,300	5500	5500	5500

NOTES.

- BREAK ALL SHARP EDGES AND REMOVE ALL BURRS AND SLIVERS
- DIMENSIONS ARE IN INCHES
- DESIGN AND USAGE LIMITATIONS. THESE NUTS ARE INTENDED FOR SHEAR APPLICATIONS. THE STEEL NUTS ARE DESIGNED TO DEVELOP AN ULTIMATE TENSILE STRESS (F<sub>tu</sub>) OF 70 KSI. THE ALUMINUM NUTS ARE DESIGNED TO DEVELOP AN ULTIMATE TENSILE STRESS (F<sub>tu</sub>) OF 70 KSI FOR SIZES -04 THRU -3 AND 35 KSI FOR SIZES -4 AND LARGER. THE CRES NUTS ARE DESIGNED TO DEVELOP AN ULTIMATE TENSILE STRESS (F<sub>tu</sub>) OF 70 KSI FOR SIZES -04 THRU -8 AND 58 KSI FOR SIZES -9 AND LARGER, AND THE COPPER BASE ALLOY NUTS HAVE NO AXIAL STRENGTH REQUIREMENTS. THESE ULTIMATE TENSILE STRESS REQUIREMENTS ARE BASED UPON THE CROSS SECTIONAL AREA AT THE MINIMUM MINOR DIAMETER OF MIL-S-8879 EXTERNAL THREADS, AND WILL BE OBTAINED WHEN THE NUTS ARE TESTED ON BOLTS HAVING A MINIMUM ULTIMATE TENSILE STRENGTH OF 160,000 PSI. THESE NUTS ARE DESIGNED TO BE USED ON 3A EXTERNAL THREADS. THESE NUTS SHALL BE USED IN ACCORDANCE WITH THE LIMITATIONS OF MS33588.
- IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.
- REFERENCED GOVERNMENT (OR NON-GOVERNMENT) DOCUMENTS OF THIS ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.
- BIDS SHALL BE SOLICITED ONLY FROM THE MANUFACTURERS OR DISTRIBUTORS LISTED ON OPL-25027.

PREPARING ACTIVITY DLA-IS CUSTODIANS ARMY-AV NAVY-AS AIR FORCE-99 DLA- REVIEW AR, MI USER EL, MI PROJECT NUMBER 3310-1937 DISTRIBUTION STATEMENT	<b>MILITARY SPECIFICATION SHEET</b> TITLE NUT, SELF-LOCKING, HEXAGON NON-METALLIC INSERT, LOW HEIGHT, 250F	SPECIFICATION SHEET NUMBER <b>MS21083</b> 28 SEP 93 REV H SUPERSEDING MS21083 G 20 APR 93 AMSC- N/A FSC 5310
A. Approved for public release distribution is unlimited		Page 2 of 3

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INTERCHANGEABILITY TABLE									
CANCELLED AND INACTIVE PART NUMBERS								SUBSTITUTIVE PART NUMBERS	
AN364			MS20364			NAS1022			
-632	---	-632A	-632	---	---	N06	---	MS21083N06	
---	---	---	---	---	---	B06	E06	MS21083B06	
D632	D632C	D632A	D632	D632C	D632A	D06	H06	MS21083D06	
-640	---	-640A	---	---	---	---	---	NONE	
-832	---	-832A	-832	---	-832A	N08	---	MS21083N08	
---	---	---	---	---	---	B08	E08	MS21083B08	
D832	D832C	D832A	D832	D832C	D832A	D08	H08	MS21083D08	
B836	B836C	B836A	---	---	---	---	---	NONE	
D1024	D1024C	D1024A	---	---	---	---	---	NONE	
-1032	---	-1032A	-1032	---	-1032A	N3	---	MS21083N3	
B1032	B1032C	B1032A	B1032	B1032C	B1032A	B3	E3	B3	
D1032	D1032C	D1032A	D1032	D1032C	D1032A	D3	H3	D3	
-428	---	-428A	-428	---	-428A	N4	---	N4	
B428	B428C	B428A	B428	B428C	B428A	B4	E4	B4	
D428	D428C	D428A	D428	D428C	D428A	D4	H4	D4	
-524	---	-524A	-524	---	-524A	N5	---	N5	
B524	B524C	B524A	B524	B524C	B524A	B5	E5	B5	
D524	D524C	D524A	D524	D524C	D524A	D5	H5	D5	
-624	---	-624A	-624	---	-624A	N6	---	N6	
B624	B624C	B624A	B624	B624C	B624A	B6	E6	B6	
D624	D624C	D624A	D624	D624C	D624A	D6	H6	D6	
-720	---	-720A	-720	---	-720A	N7	---	N7	
B720	B720C	B720A	B720	B720C	B720A	B7	E7	B7	
D720	D720C	D720A	D720	D720C	D720A	D7	H7	D7	
-820	-820C	-820A	-820	-820C	-820A	N8	---	N8	
B820	B820C	B820A	B820	B820C	B820A	B8	E8	B8	
D820	D820C	D820A	D820	D820C	D820A	D8	H8	D8	
-918	---	-918A	-918	---	-918A	N9	---	N9	
B918	B918C	B918A	B918	B918C	B918A	B9	E9	B9	
D918	D918C	D918A	D918	D918C	D918A	D9	H9	D9	
-1018	---	-1018A	-1018	-1018C	-1018A	N10	---	N10	
B1018	B1018C	B1018A	B1018	B1018C	B1018A	B10	E10	B10	
D1018	D1018C	D1018A	D1018	D1018C	D1018A	D10	H10	D10	
-1216	---	-1216A	-1216	---	-1216A	N12	---	N12	
B1216	B1216C	B1216A	B1216	B1216C	B1216A	B12	E12	B12	
D1216	D1216C	D1216A	D1216	D1216C	D1216A	D12	H12	D12	
-1414	---	-1414A	-1414	---	-1414A	N14	---	N14	
B1414	B1414C	B1414A	B1414	B1414C	B1414A	B14	E14	B14	
D1414	D1414C	D1414A	D1414	D1414C	D1414A	D14	H14	MS21083D14	
-1614	---	-1614A	-1614	---	-1614A	---	---	NAS1022N17	
B1614	---	B1614A	B1614	---	B1614A	---	---	NAS1022B17	
D1614	---	D1614A	D1614	---	D1614A	---	---	NAS1022D17	
---	-1614C	---	---	-1614C	---	---	---	NAS1022A17	
---	B1614C	---	---	B1614C	---	---	---	NAS1022E17	
---	D1614C	---	---	D1614C	---	---	---	NAS1022H17	
-1812	---	-1812A	-1812	---	-1812A	N18	---	NAS21083N18	
B1812	B1812C	B1812A	B1812	B1812C	B1812A	B18	E18	B18	
D1812	D1812C	D1812A	D1812	D1812C	D1812A	D18	H18	D18	
-2012	---	-2012A	-2012	---	-2012A	N20	---	N20	
B2012	B2012C	B2012A	B2012	B2012C	B2012A	B20	E20	B20	
D2012	D2012C	D2012A	D2012	D2012C	D2012A	D20	H20	NAS21083D20	

INTERCHANGEABILITY RELATIONSHIP MS21083 NUTS CAN UNIVERSALLY REPLACE AN364, MS20364 AND NAS1022 NUTS OF LIKE MATERIAL, PLATING THREAD SIZE AND LOCKING DESIGN (ALL-METAL OR WITH NON-METALLIC INSERT) BUT THESE AN364, MS20364 AND NAS1022 NUTS CANNOT UNIVERSALLY REPLACE THE MS21083 NUTS.

PREPARING ACTIVITY DLA-IS CUSTODIANS ARMY- AV NAVY- AS AIR FORCE-99 DLA-		MILITARY SPECIFICATION SHEET TITLE NUT, SELF-LOCKING, HEXAGON NON-METALLIC INSERT, LOW HEIGHT, 250°F		SPECIFICATION SHEET NUMBER <b>MS21083</b> 28 SEP 93 REV H	
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