

FED. SUP CLASS  
5310

## USER SYMBOLS:

REVIEWER SYMBOLS:  
ARMY - MI, AV  
NAVY - SH  
AF - 99, 82  
DLA - IS

THIS STANDARD APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE.

1. APPLICATION AND DESIGN SELECTION: THESE A.R.E. (ATTACHED RETENTION ELEMENT) NUT ASSEMBLIES SHALL BE SELECTED AND USED IN ACCORDANCE WITH MS33583.
2. MILITARY INSTALLATION AND TOOLS: NONE
3. OVERSIZE NUTS: MS14201 OVERSIZE NUTS MAY BE USED AS REPLACEMENT FOR MS14200 NUTS.
4. REPLACEMENT NUT ELEMENT: MS14214
5. GENERAL REQUIREMENTS:

## 5.1 PERFORMANCE PER MIL-N-25027:

INSTALLATION HOLES SHALL BE PER TABLE II, PANEL GRIP THICKNESS PER TABLE III.

## 5.2 MATERIAL:

- 5.2.1 NUT ELEMENT: STEEL AISI 1050 PER AMS 5085 OR AISI 4130 PER AMS 6351
- 5.2.2 SLEEVE: CRES AISI 304 PER AMS 5639 OR AISI 305 PER AMS 5514
- 5.2.3 CAGE: STEEL AISI 1050 PER AMS 5085

## 5.3 HEAT TREAT

- 5.3.1 NUT ELEMENT: ROCKWELL C49 MAX.
- 5.3.2 CAGE: ROCKWELL C40-47

## 5.4 COATING:

- 5.4.1 SLEEVE AND CAGE SHALL BE CADMIUM PLATED PER QQ-P-416, TYPE II, CLASS 2
- 5.4.2 NUT ELEMENT SHALL BE CADMIUM PLATED PER QQ-P-416, TYPE AND CLASS OPTIONAL PROVIDED THE ELEMENT MEETS THE SALT SPRAY REQUIREMENTS OF MIL-N-25027.

## 5.5 LUBRICANT:

- 5.5.1 NUT ELEMENT ONLY SHALL BE DRY FILM LUBRICATED PER MIL-L-8937.

## 5.6 SURFACE TEXTURE:

- 5.6.1 SURFACE TEXTURE IN ACCORDANCE WITH ANSI B46.1. UNLESS OTHERWISE SPECIFIED, THE SURFACE ROUGHNESS SHALL NOT EXCEED 125 MICRO INCHES.

## 5.7 NUT FLOAT:

- 5.7.1 MINIMUM RADIAL FLOAT 0.020 INCH. THE NUT ELEMENT SHALL BE CAPABLE OF ENGAGEMENT WITH THE BOLT IN MAXIMUM MISALIGNED POSITION.

## 5.8 NUT REPLACEABILITY:

- 5.8.1 NUT ELEMENT SHALL BE REMOVABLE FROM THE CAGE WITH THE PROPER REMOVAL TOOL, AND A NEW NUT PER MS14214 SHALL BE CAPABLE OF BEING SNAPPED IN PLACE IN THE CAGE.
- 5.8.2 CAGE REUSABILITY: CAGE SHALL BE CAPABLE OF BEING REUSED A MINIMUM OF 5 TIMES FOR THE REPLACEMENT OF THE NUT ELEMENT IN ACCORDANCE WITH MS14214 AND THEN THE NUT SHALL MEET THE TORQUE OUT AND PUSH OUT VALUES OF MIL-N-25027.

## 5.9 WORKMANSHIP:

- 5.9.1 BREAK ALL SHARP EDGES AND REMOVE ALL BURRS AND SLIVERS.
- 5.9.2 DIMENSIONS ARE IN INCHES.
- 5.9.3 TOLERANCES: DECIMALS  $\pm 0.10$ , ANGLES  $\pm 5^\circ$  UNLESS OTHERWISE SPECIFIED.

## 5.10 INSTALLATION:

WHEN INSTALLED INTO PROPERLY PREPARED HOLES, USING PROPER TOOLING, THE SLEEVE SHALL BE CAPABLE OF FLARING SMOOTHLY WITH NO VISUAL EVIDENCE OF CRACKING OR SPLITTING.

APPROVED 21 DEC 83 REVISED

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engineering and design applications and for repetitive use shall  
be made from this document.

<b>P.A. NAVY - AS</b> <b>Other Cust</b> ARMY - AR AF - 11	<b>TITLE</b> NUT, FLOATING, SELF LOCKING, ATTACHED RETENTION ELEMENT (A.R.E.), 450°F, STEEL, 125 KSI F <sub>tu</sub> , REPLACEABLE NUT ELEMENT, 1/64 OVERSIZE REPAIR.	<b>MILITARY STANDARD</b> <b>MS 14201</b>
<b>PROCUREMENT SPECIFICATION</b> MIL-N-25027	<b>SUPERSEDES:</b>	<b>SHEET 1 OF 3</b>

DD FORM 1 MAR 72 672-1 (Coordinated)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

PROJECT NO. 5310-1185 PLATE NO. 23068

## 6. ILLUSTRATION:

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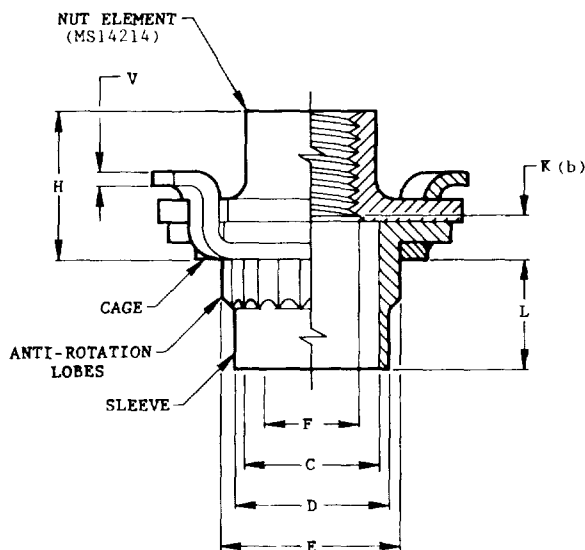
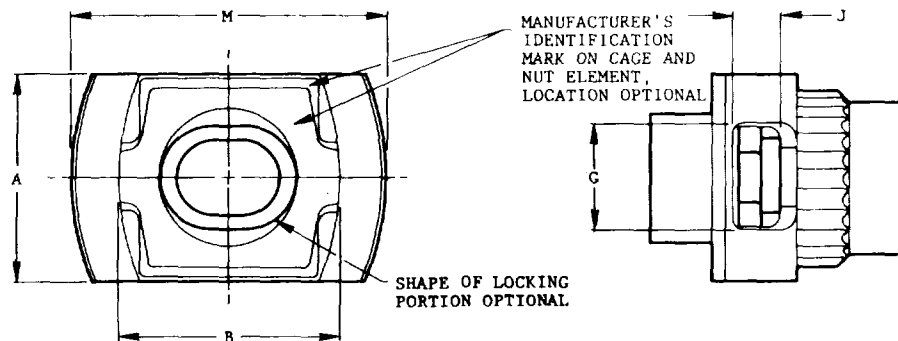
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SIZE DASH NO. (a)	THREAD SIZE MIL-S-8979	A MAX	B ±.010	C DIA MIN	D DIA MAX	E DIA		F DIA MIN	G ±.010	H MAX	J +.010 -.000	K REF (b)	M MAX	V +.010 -.000	AXIAL STRENGTH LBS. MIN.
						MIN	MAX								
04	.1120-40UNJC-3B	.310	.318	.182	.217	.244	.250	.116	.155	.214	.064	.062	.435	.020	750
06	.1380-32UNJC-3B	.310	.318	.182	.217	.244	.250	.142	.155	.214	.064	.062	.435	.020	1130
08	.1640-32UNJC-3B	.405	.425	.235	.270	.309	.315	.168	.187	.270	.075	.068	.587	.025	1720
3	.1900-32UNJF-3B	.405	.425	.235	.270	.309	.315	.194	.187	.270	.075	.068	.587	.025	2460
4	.2500-28UNJF-3B	.465	.496	.300	.335	.375	.381	.254	.198	.325	.083	.089	.665	.035	4580

(a) ASSEMBLY DASH NO. IS THE SAME AS MS14214 NUT ELEMENT SIZE DASH NO.

(b) K=(THREAD RELIEF, SLEEVE FLANGE AND CAGE THICKNESS)

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TITLE

NUT, FLOATING, SELF LOCKING, ATTACHED RETENTION ELEMENT  
(A.R.E.), 450°F, STEEL, 125 KSI Ftu, REPLACEABLE NUT  
ELEMENT, 1/64 OVERSIZE REPAIR.

SUPERSEDES:

MILITARY STANDARD

MS14201

SHEET 2 OF 3

DD FORM 1 MAR 72 672-1 (Coordinated)

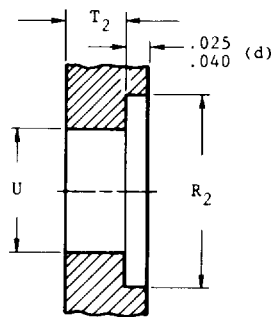
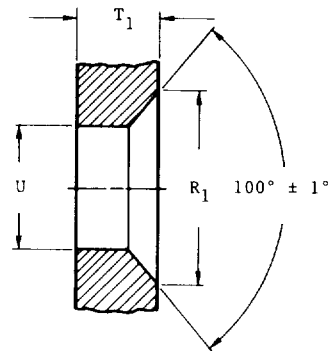
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PLATE NO. 23006

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8. TABLE II

SIZE DASH NO.	(c) INSTALLATION HOLE LIMIT U		R <sub>1</sub> ±.005	R <sub>1</sub> ±.005 (-2 GRIP) ONLY	R <sub>2</sub> ±.020 -.005	WEIGHT LBS/100 (f)
	MAX	MIN				
04	.238	.233	.307	.275	.312	.131
06	.238	.233	.307	.275	.312	.140
08	.300	.295	.370	.343	.375	.365
3 (e)	.300	.295	.370	.343	.375	.370
4 (e)	.367	.362	.437	N/A	.515	.682

9. TABLE III

GRIP DASH NUMBER	T1 GRIP THICKNESS (COUNTERSINK)	T2 GRIP THICKNESS (COUNTERBORE)	L LENGTH
2 (e)	.055-.073 (e)	N/A	.073
4	.074-.106	.031-.062 (e)	.099
6	.107-.133	.063-.094	.130
8	.134-.165	.095-.125	.161
10	.166-.196	.126-.156	.192
12	.197-.227	.157-.187	.223
14	.228-.258	.188-.218	.254
16	.259-.289	.219-.250	.285
18	.290-.320	.251-.281	.316
20	.321-.351	.282-.312	.347
22	.352-.382	.313-.343	.378
24	.383-.413	.344-.374	.409
26	.414-.444	.375-.405	.440
28	.445-.475	.406-.436	.471
30	.476-.506	.437-.467	.502

## 10. PART NUMBER EXAMPLE:

MS14201 - 08 - 6

GRIP DASH NUMBER  
(SEE TABLE III)

SIZE DASH NUMBER  
(SEE TABLE I)

MILITARY STANDARD NUMBER

- (c) INSTALLATION MAXIMUM AND MINIMUM HOLE LIMITS CAN BE REDUCED BY .009 INCH FOR SIZE DASH NO. 08, 3 AND 4 WHEN INSTALLING IN SOFT MATERIALS, INCLUDING ALUMINUM ALLOYS WITH HARDNESS NOT EXCEEDING BHN 110 OR ROCKWELL B70.
- (d) COUNTERBORE IS OPTIONAL: TO BE USED IN APPLICATIONS REQUIRING SURFACE FLUSHNESS. FOR THE MINIMUM GRIP THICKNESS OF EACH GRIP DASH NO., COUNTERBORE CAN BE INCREASED TO .030 TO INSURE ROLLOVER FLUSHNESS.
- (e) NUT OF SIZE DASH NO. 4 SHALL NOT BE INSTALLED IN GRIP THICKNESS LESS THAN .060 INCH. ON THICKNESSES LESS THAN .060, THE HOLE DIAMETER FOR SIZE -3 SHALL BE .291-.296.
- (f) TO OBTAIN WEIGHTS FOR DIFFERENT GRIP DASH NO., ADD INCREMENTS OF .010 LB. FOR SIZES 04 AND 06 AND .020 LB. FOR SIZES 08, 3 AND 4.

## 11. ADMINISTRATIVE AND CONTRACTUAL PROVISIONS:

- 11.1 FOR DESIGN PURPOSES, THIS DOCUMENT TAKE PRECEDENCE OVER PROCUREMENT DOCUMENTS.
- 11.2 REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BIDS, OR REQUEST FOR PROPOSAL, EXCEPT THAT REFERENCED ADOPTED INDUSTRY DOCUMENTS SHALL GIVE THE DATE OF THE ISSUE ADOPTED.
- 11.3 THE A.R.E. NUTS WITHOUT MANUFACTURER'S IDENTIFICATION MAY BE FURNISHED FROM MANUFACTURER'S STOCK UNTIL DECEMBER 31, 1985.
- 11.4 THE A.R.E. NUT ASSEMBLIES IDENTIFIED HEREIN ARE PROPRIETARY PRODUCTS OF DEUTSCH FASTENER CORPORATION AND ARE COVERED BY THE FOLLOWING PATENTS: U.S. 3,695,324 (EXPIRING OCTOBER 3, 1989); 3,765,078 (EXPIRING OCTOBER 6, 1990); FRANCE 72.11463 (EXPIRING APRIL 13, 1990); GERMANY 22 17 490 (EXPIRING MARCH 31, 1992). THE GOVERNMENT DOES NOT HAVE A ROYALTY FREE LICENSE.

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## SUPERSEDES:

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SHEET 3 OF 3

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