



USER ACTIVITIES  
ARMY - ME, MI  
NAVY - OS, MC

REVIEWER ACTIVITIES  
ARMY - EA  
AIR FORCE - 82  
DLA - IS  
NSA - NS

TABLE I DIMENSIONS AND PART NUMBERS

NOMINAL SIZE - - - - -	.250	.312	.375	.438	.500	.625	.750					
B - THREADS PER INCH UNF-2A	28	24	24	20	20	18	16					
Ø D - BODY DIAMETER - - - - -	MAX 2500 MIN .2450	MAX 3125 MIN 3065	MAX 3750 MIN 3690	MAX 4375 MIN 4305	MAX 5000 MIN 4940	MAX 6250 MIN 6170	MAX 7500 MIN 7410					
F - WIDTH ACROSS FLATS - - - - -	MAX 4375 MIN 4280	MAX 5000 MIN 4890	MAX 5625 MIN 5510	MAX 6250 MIN 6120	MAX 7500 MIN 7360	MAX 9375 MIN 9220	MAX 11250 MIN 11000					
G - WIDTH ACROSS CORNERS - - - - -	MAX 5050 MIN 4880	MAX 5770 MIN 5570	MAX 6500 MIN 6280	MAX 7220 MIN 6980	MAX 8650 MIN 8400	MAX 10830 MIN 10510	MAX 12900 MIN 12540					
H - HEAD HEIGHT - - - - -	MAX .1630 MIN .1500	MAX 2110 MIN 1950	MAX 2430 MIN 2260	MAX 2910 MIN 2720	MAX 3230 MIN 3020	MAX 4030 MIN 3780	MAX 4830 MIN 4550					
R - RADIUS - - - - -	MAX .0250 MIN 0150	MAX .0250 MIN .0150	MAX .0250 MIN .0150	MAX 0250 MIN 0150	MAX 0250 MIN 0150	MAX .0450 MIN 0200	MAX .0450 MIN .0200					
1/2 MIN TENSILE LOAD - LBS - - - - -	4,350	6,950	10,500	14,200	19,200	30,700	44,800					
L LENGTH	TOLERANCE	DASH NO	DA <sup>SH</sup> NO	DA <sup>SH</sup> NO	DA <sup>SH</sup> NO	DA <sup>SH</sup> NO	DA <sup>SH</sup> NO					
750	+ .000	01	05	08	12	18	24					
1 000	-.031											
1 250	+ .000							02	10	13	16	19
1 500												
1 750	-.062	04	15	18	20							
2 000						+ .000	07	16	19	22		
2 500	-.094											
3 000												

1/2 SEP REQUIREMENT 6

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document when applicable.

APPROVED 1 AUG 84  
REVISED

PA	AR	INTERNATIONAL INTEREST	TITLE	MILITARY STANDARD
Other Cust	SH		SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), STEEL, GRADE 5, UNF - 2A	MS51490
99				
PROCUREMENT SPECIFICATION	FF - S - 85	SUPERSEDES	PAGE	1 OF 2

FED SUP CLASS  
5305

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REQUIREMENTS:

1. MATERIAL. MEDIUM CARBON STEEL, GRADE 5, IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.
2. FINISH. ZINC COATING, IN ACCORDANCE WITH ASTM B633-78, Fe/Zn5 (5 µm), TYPE II
3. THREADS. THE THREADS SHALL BE IN ACCORDANCE WITH FED-STD-H28/2 ACCEPTABILITY OF SCREW THREADS SHALL BE IN ACCORDANCE WITH FED-STD-H28/20, SYSTEM 21.
4. THREAD LENGTH. MINIMUM THREAD LENGTH SHALL BE TWICE THE DIAMETER PLUS 250 INCH. THE TOLERANCE SHALL BE PLUS .100 INCH OR 2-1/2 THREADS, WHICHEVER IS GREATER. ON SCREWS THAT ARE TOO SHORT FOR MINIMUM THREAD LENGTHS, THE DISTANCE FROM THE BEARING SURFACE OF THE HEAD TO THE FIRST COMPLETE THREAD SHALL NOT EXCEED THE LENGTH OF 2-1/2 THREADS FOR SIZES UP TO AND INCLUDING 1 000 INCH AND 3-1/2 THREADS FOR SIZES LARGER THAN 1 000 INCH.
5. HEAD MARKING. HEADS SHALL BE MARKED IN ACCORDANCE WITH MIL-HDBK-131. RAISED MARKINGS ARE PREFERRED, STAMPINGS ARE ACCEPTABLE.
6. BASED ON MINIMUM ULTIMATE TENSILE STRENGTH OF 120,000 PSI FOR DIAMETERS THRU 1 INCH. TENSILE LOADS ARE CALCULATED BY THE STRESS AREAS INDICATED IN FED-STD-H28/2.
7. PART NUMBERS. THE BASIC MS PART NUMBER IS FOLLOWED BY A DASH NUMBER FROM TABLE I.

EXAMPLE MS51490-01 - SCREW, CAP, HEXAGON HEAD, STEEL GRADE 5, .250-28UNF-2A,  
LENGTH 1 000, ZINC COATED

NOTES:

1. ALL DIMENSIONS ARE IN INCHES
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
3. FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN

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Other Cust	SH 99		SCREW, CAP, HEXAGON HEAD (FINISHED HEXAGON BOLT), STEEL, GRADE 5, UNF-2A,	MS51490
PROCUREMENT SPECIFICATION	SUPERSEDES		PAGE	OF
FF-S-85			2	2