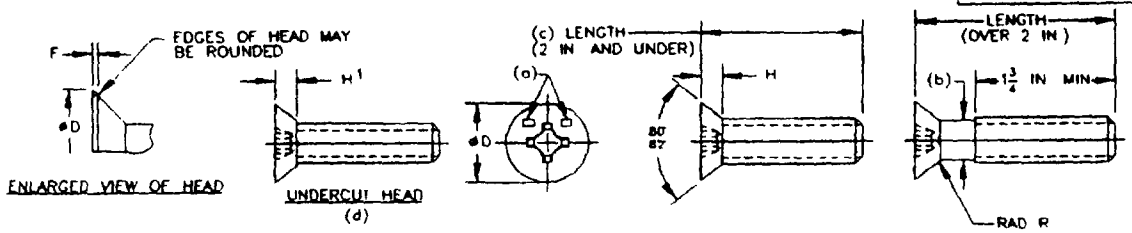
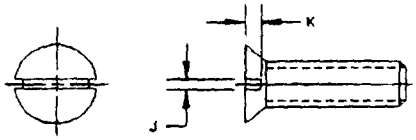
FED SUP CLASS 5305

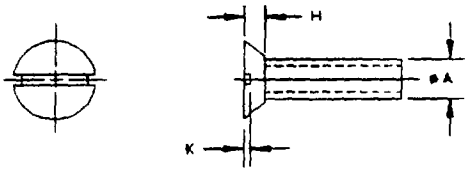


CROSS RECESSED HEAD SCREW (DESIGN I)

THREAD SIZE	ØA	ØD			F	H REF		R RAD	H1		J		K	
	MAX	MAX SHARP	MIN SHARP	ABSOLUTE MIN WITH MAX F	MAX	MAX	MIN	MAX	MAX	MIN	MAX	MIN	MAX	MIN
0-80 UNF-2A	060	119	105	101	011	035	026	025	025	018	024	016	015	010
NO 1-72 UNF-2A	073	146	130	126	013	043	033	030	030	023	026	019	019	012
NO 2-64 UNF-2A	086	172	156	150	014	051	040	030	036	026	031	023	023	015
NO 3-56 UNF-2A	099	199	181	175	015	059	048	035	041	034	035	027	027	017
NO 4-48 UNF-2A	112	225	207	200	016	067	055	040	047	039	039	031	030	020
NO 5-44 UNF-2A	125	252	232	225	018	075	062	045	053	043	043	035	034	022
NO 6-40 UNF-2A	138	279	257	249	019	083	069	050	058	048	048	039	038	024
NO 8-36 UNF-2A	164	332	308	300	022	100	084	055	070	059	054	045	045	029
NO 10-32 UNF-2A	190	385	359	348	025	116	098	060	081	069	060	050	053	034
1/4-28 UNF-2A	250	507	477	462	031	153	131	070	107	092	075	064	070	046



SLOTTED HEAD SCREW (e)



UNDERCUT DIMENSIONS, SLOTTED HEAD SCREWS (e)

SIZE	ØA	H		K	
	MAX	MAX	MIN	MAX	MIN
NO 0-80 UNF-2A	060	025	018	011	007
NO 1-72 UNF-2A	073	030	023	014	009
NO 2-64 UNF-2A	086	036	028	022	015
NO 3-56 UNF-2A	099	041	034	025	017
NO 4-48 UNF-2A	112	047	039	028	020
NO 5-44 UNF-2A	125	053	043	024	016
NO 6-40 UNF-2A	138	058	048	027	017
NO 8-36 UNF-2A	164	070	059	032	021
NO 10-32 UNF-2A	190	081	069	047	.034
1/4-28 UNF-2A	.250	107	092	061	046

(a) SEE REQUIREMENT 10
(b) SEE REQUIREMENT 6
(c) SEE REQUIREMENT 5
(d) SEE REQUIREMENT 7
(e) SEE NOTE 7

⑥ ENTIRE STANDARD REVISED

AN510 HAS BEEN INACTIVATED AND CANCELLED IN PART – SEE NOTE 7

P.A. DLA – IS Other Cust. ARMY – AV NAVY – AS AIR FORCE – 99	AIR FORCE – NAVY AERONAUTICAL STANDARD SCREW MACHINE FLAT HEAD 82 DEGREE FINE THREAD	AN510
PROCUREMENT SPECIFICATION FF-S-92	SUPERSEDES FORMER AIR FORCE AND NAVY STANDARD ISSUES OF AN510 AND USAF DRAWINGS 42B4937 42B5702	SHEET 1 OF 3

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

PROJECT NO 5305-2027

APPROVED 17 MAY 43 REVISED (1) 15 JUN 50 (2) 21 FEB 52 (3) 17 FEB 59 (4) 13 APR 64 (5) 10 MAR 83 (6) 30 JUN 94

REVIEWER SYMBOLS
ARMY – MI
AIR FORCE – 82

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AMSC N/A

FED SUP CLASS
5305

DASH NUMBERS FOR CARBON STEEL SCREWS (f)

L LENGTH		NO 0-80	NO 1-72	NO 2-64	NO 3-56	NO 4-48	NO 5-44	NO 6-40	NO 8-36	NO 10-32	1/4-28
1/8 3/16 1/4		0-2 (d) 0-3 0-4	1-2 (d) 1-3 1-4	2-3 2-4	3-3 3-4	4-3 (d) 4-4	5-4	6-4	8-4 (d)	10-4(d)	
5/16 3/8 7/16 1/2	+0 $-\frac{1}{32}$	0-5 0-6 0-7 0-8	1-5 1-6 1-7 1-8	2-5 2-6 2-7 2-8	3-5 3-6 3-7 3-8	4-5 4-6 4-7 4-8	5-5 5-6 5-7 5-8	6-5 6-6 6-7 6-8	8-5 8-6 8-7 8-8	10-5 10-6 10-7 10-8	416-6 (d) 416-7 (d) 416-8
9/16 5/8 11/16 3/4				2-9 2-10 2-11 2-12	3-9 3-10 3-11 3-12	4-9 4-10 4-11 4-12	5-9 5-10 5-11 5-12	6-9 6-10 6-11 6-12	8-9 8-10 8-11 8-12	10-9 10-10 10-11 10-12	416-9 416-10 416-11 416-12
13/16 7/8 15/16 1						4-13 4-14 4-15 4-16	5-13 5-14 5-15 5-16	6-13 6-14 6-15 6-16	8-13 8-14 8-15 8-16	10-13 10-14 10-15 10-16	416-13 416-14 416-15 416-16
1-1/8 1-1/4 1-3/8 1-1/2	+0 $-\frac{1}{16}$					4-18 4-20 4-22 4-24	5-18 5-20 5-22 5-24	6-18 6-20 6-22 6-24	8-18 8-20 8-22 8-24	10-18 10-20 10-22 10-24	416-18 416-20 416-22 416-24
1-5/8 1-3/4 1-7/8 2						4-26 4-28	5-26 5-28	6-26 6-28 6-30 6-32	8-26 8-28 8-30 8-32	10-26 10-28 10-30 10-32	416-26 416-28 416-30 416-32
2-1/8 2-1/4 2-3/8 2-1/2	+0 $-\frac{3}{32}$							6-34 3-36 6-38 6-40	8-34 8-36 8-38 8-40	10-34 10-36 10-38 10-40	416-34 416-36 416-38 416-40
2-5/8 2-3/4 2-7/8 3									8-42 8-44 8-46 8-48	10-42 10-44 10-46 10-48	416-42 416-44 416-46 416-48

(d) SEE REQUIREMENT 7
(f) SEE REQUIREMENT 11

RATED STRENGTH IN POUNDS
(FOR REFERENCE PURPOSES ONLY)

SIZE	MINIMUM ULTIMATE TENSILE BREAKING STRENGTH AT ROOT DIA	MINIMUM SINGLE SHEAR STRENGTH AT ROOT DIA
NO 0-80	82	49
NO 1-72	132	79
NO 2-64	187	112
NO 3-56	247	148
NO 4-48	313	188
NO 5-44	396	238
NO 6-40	478	287
NO 8-36	705	423
NO 10-32	960	575
1/4-28	1790	1075

ULTIMATE TENSILES BASED ON 55 000 PSI
SHEAR STRENGTHS 60% OF ULTIMATE TENSILES

REQUIREMENTS

1 MATERIAL
CARBON STEEL IN ACCORDANCE WITH ASTM A108 GRADE 1010 (UNS G10100)
CORROSION RESISTANT STEEL IN ACCORDANCE WITH QQ-S-763 CLASS 430 (UNS S43000) OR UNS S30430 (CLASS XM-7), ASTM A582 TYPE 303 (UNS S30300) OR TYPE 303e (UNS S30323) OR MIL-S-7720 COMPOSITION 307 (UNS S30200) FOR COLD UPSETTING PROCESS
BRASS IN ACCORDANCE WITH ASTM B16 ASTM B36 ASTM B121 ASTM B134 ASTM B159 OR ASTM B206 WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 55,000 PSI ALUMINUM ALLOY 2024 (UNS A92024) IN ACCORDANCE WITH QQ-A-225/3 OR QQ-A-225/6

2 FINISH
CARBON STEEL CADMIUM PLATE IN ACCORDANCE WITH QQ-P-416 TYPE II CLASS 3
BRASS BLACK CHEMICAL FINISH IN ACCORDANCE WITH MIL-F-495 OR CADMIUM PLATE IN ACCORDANCE WITH QQ-P-416 TYPE II CLASS 3 DEPENDING ON PART NUMBER CODING (SEE REQUIREMENT 11)
CORROSION RESISTANT STEEL PASSIVATE IN ACCORDANCE WITH QQ-P-35
ALUMINUM ALLOY ANODIZE IN ACCORDANCE WITH MIL-A-8625 TYPE I OR II CLASS I

APPROVED 17 MAY 43 REVISED (6) 30 JUN 94

P A DLA - IS Other Cust ARMY - AV NAVY - AS AIR FORCE - 99	AIR FORCE - NAVY AERONAUTICAL STANDARD SCREW MACHINE FLAT HEAD 82 DEGREE FINE THREAD	AN510
PROCUREMENT SPECIFICATION FF-S-92	SUPERSEDES FORMER AIR FORCE AND NAVY STANDARD ISSUES OF AN510 AND USAF DRAWINGS 42B4937 42B5702	SHEET 2 OF 3

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

PROJECT NO 5305-2027

REVIEWER SYMBOLS
ARMY - MI
AIR FORCE - 82

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AMSC N/A

FED SUP CLASS
5305

3 HEAT TREATMENT
ALUMINUM ALLOY 62 000 PSI MINIMUM ULTIMATE TENSILE STRENGTH IN ACCORDANCE WITH MIL-H-6088

4 THREADS
THREADS SHALL BE CLASS 2A IN ACCORDANCE WITH FED-STD-H28/2 ACCEPTABILITY OF SCREW THREADS SHALL BE IN ACCORDANCE WITH FED-STD-H28/20 SYSTEM 21

5 THREAD LENGTH
FOR SCREWS UP TO AND INCLUDING 2 INCHES IN LENGTH THE COMPLETE THREADS SHALL EXTEND TO WITHIN TWO (2) THREADS OF THE BEARING SURFACE OF THE HEAD OR CLOSER IF PRACTICABLE SCREWS OF LONGER LENGTH SHALL HAVE A MINIMUM COMPLETE THREAD OF 1-3/4 INCHES

6 UNTHREADED PORTION
THE DIAMETER OF THE UNTHREADED PORTION THE SCREWS SHALL NOT BE LESS THAN THE MINIMUM PITCH DIAMETER NOR MORE THAN THE MAXIMUM MAJOR DIAMETER OF THE THREAD

7 UNDERCUT HEADS
DASH NUMBERS DESIGNATED BY (d) TO HAVE UNDERCUT HEADS

8 HEAD DRIVE STYLE
CROSS-RECESS RECESS IN ACCORDANCE WITH MS9006
SLOTTED HEAD REFER TO TABLE FOR DIMENSIONS (SEE NOTE 7)

9 MANUFACTURER IDENTIFICATION
SCREWS WITH NOMINAL SIZES #10 (1900) AND LARGER SHALL BE PERMANETLY MARKED WITH A SYMBOL IDENTIFYING ITS MANUFACTURER OR PRIVATE LABEL DISTRIBUTOR MARKINGS SHALL BE PLACED ON THE TOP OF HEAD AND INDENTED METHOD AND SIZE OF MARKINGS SHALL CONFORM TO THE REQUIREMENTS FOR PERMANENT MARKINGS SPECIFIED IN SAE AS478

10 MATERIAL IDENTIFICATION
CORROSION RESISTANT STEEL SCREWS WITH NOMINAL SIZES #5 (1250) AND LARGER SHALL BE PERMANENTLY MARKED WITH ONE DASH ("-") MARKINGS SHALL BE PLACED ON THE TOP OF HEAD AND INDENTED METHOD AND SIZE OF MARKINGS SHALL CONFORM TO THE REQUIREMENTS FOR PERMANENT MARKINGS SPECIFIED IN SAE AS478

11 CODE
NO CODE BETWEEN FIRST AND SECOND DASH NUMBER = SLOTTED HEAD SCREW (SEE NOTE 7)
"R" BETWEEN FIRST AND SECOND DASH NUMBER = CROSS-RECESSED HEAD SCREW
NO CODE BEFORE FIRST DASH NUMBER = CARBON STEEL SCREW WITH CADMIUM PLATING
"B" BEFORE FIRST DASH NUMBER = BRASS SCREW WITH BLACK CHEMICAL FINISH
"PB" BEFORE FIRST DASH NUMBER = BRASS SCREW WITH CADMIUM PLATING
"UB" BEFORE FIRST DASH NUMBER = BRASS SCREW WITH NO PLATING OR FINISH
"C" BEFORE FIRST DASH NUMBER = CORROSION RESISTANT STEEL SCREW PASSIVATED
"DD" BEFORE FIRST DASH NUMBER = ALUMINUM ALLOY SCREW ANODIZED

EXAMPLES

AN510-4-8 = SLOTTED HEAD SCREW CARBON STEEL, CADMIUM PLATED 4-48 UNF-2A THREAD 1/2 INCH LONG

AN510-4R8 = CROSS-RECESSED HEAD SCREW CARBON STEEL, CADMIUM PLATED 4-48 UNF-2A THREAD 1/2 INCH LONG

AN510B4-8 = SLOTTED HEAD SCREW BRASS, BLACK CHEMICAL FINISH 4-48 UNF-2A THREAD 1/2 INCH LONG

AN510B4R8 = CROSS RECESSED HEAD SCREW BRASS BLACK CHEMICAL FINISH 4-48 UNF-2A THREAD 1/2 INCH LONG

AN510PB4-8 = SLOTTED HEAD SCREW BRASS, CADMIUM PLATED, 4-48 UNF-2A THREAD, 1/2 INCH LONG

AN510PB4R8 = CROSS-RECESSED HEAD SCREW BRASS CADMIUM PLATED 4-48 UNF-2A THREAD 1/2 INCH LONG

AN510UB4-8 = SLOTTED HEAD SCREW BRASS UNFINISHED, 4-48 UNF-2A THREAD 1/2 INCH LONG

AN510UB4R8 = CROSS-RECESSED HEAD SCREW, BRASS UNFINISHED 4-48 UNF-2A THREAD 1/2 LONG

AN510C4-8 = SLOTTED HEAD SCREW CORROSION RESISTANT STEEL, PASSIVATED 4-48 UNF-2A THREAD 1/2 INCH LONG

AN510C4R8 = CROSS RECESSED HEAD SCREW CORROSION RESISTANT STEEL PASSIVATED 4-48 UNF-2A THREAD 1/2 INCH LONG

AN510DD4-8 = SLOTTED HEAD SCREW, ALUMINUM ALLOY, ANODIZED 4-48 UNF-2A THREAD 1/2 INCH LONG

AN510DD6R8 = CROSS-RECESSED HEAD SCREW ALUMINUM ALLOY ANODIZED 6-40 UNF-2A THREAD 1/2 INCH LONG

NOTES

1 ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

2 INTERPRET DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ANSI/ASME Y14 5M

3 SCREWS SHALL BE FREE OF ALL LOOSE HANGING BURRS OR SLIVERS WHICH MAY BECOME DISLODGED DURING USAGE

4 DO NOT USE UNASSIGNED DASH NUMBERS OR CODES

5 IN CASE OF CONFLICT THE REQUIREMENTS SPECIFIED HEREIN SHALL TAKE PRECEDENCE OVER THE REQUIREMENTS SPECIFIED IN SPECIFICATION FF-S-92 FOR DIMENSIONS AND TOLERANCES NOT SPECIFIED HEREIN OR FF-S-92, REFER TO ANSI B18 6 3

6 THESE SCREWS ARE NOT TO BE USED IN THE CONSTRUCTION OF AIRFRAMES OR TO ATTACH EQUIPMENT TO THE AIRFRAME

7 SLOTTED HEAD SCREWS ARE INACTIVE FOR NEW DESIGN AFTER 17 FEB 59 AN510 IS SUPERSEDED IN PART BY MS35191, MS35199 MS35203 AND MS51960

APPROVED 17 MAY 43 REVISED (6) 30 JUN 94

P A DLA - IS Other Cust ARMY - AV NAVY - AS AIR FORCE - 99	AIR FORCE - NAVY AERONAUTICAL STANDARD SCREW MACHINE FLAT HEAD 82 DEGREE FINE THREAD	AN510
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AIR FORCE - B2