AEROSPACE INDUSTRIES ASSOCIATION

NATIONAL AEROSPACE STANDARD

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FED. SUPPLY CLASS

5305

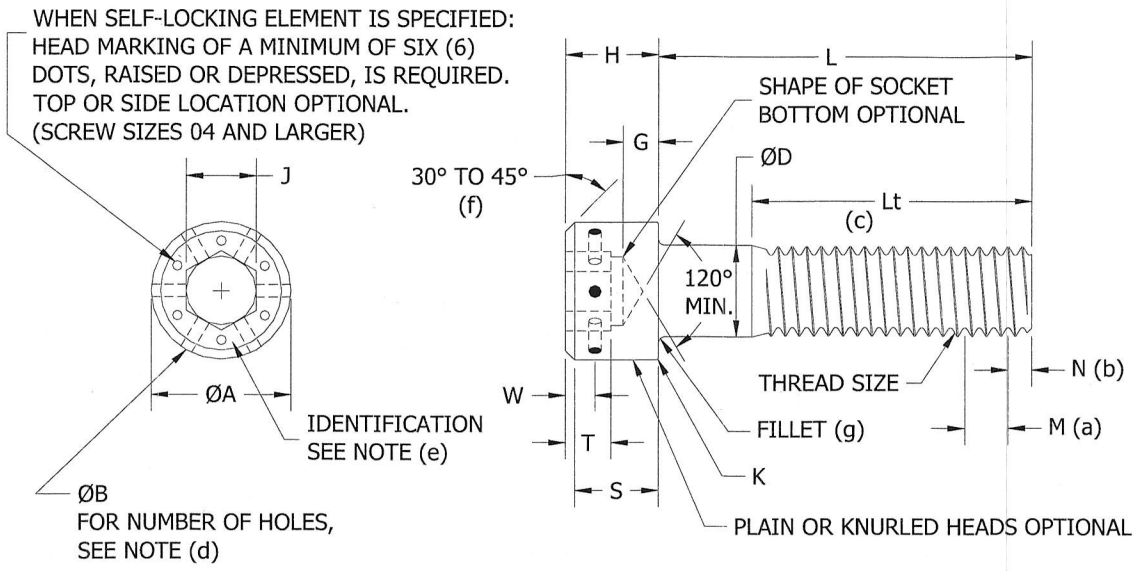

TABLE I ⑩

NOMINAL SIZE DASH NO.	THREAD SIZE	D BODY DIAMETER		A HEAD DIAMETER		H HEAD HEIGHT		S HEAD SIDE HEIGHT	J SOCKET SIZE	T KEY ENGAGEMENT	G WALL THICKNESS	K CHAMFER OR RADIUS
		MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MIN.	NOMINAL	MIN.	MIN.	MAX.
00	.0600-80	.060	.0568	.096	.091	.060	.057	.054	.050	.025	.020	.003
01	.0730-72	.073	.0695	.118	.112	.073	.070	.066	.062	.031	.025	.003
02	.0860-64	.086	.0822	.140	.134	.086	.083	.077	.078	.038	.029	.003
03	.0990-56	.099	.0949	.161	.154	.099	.095	.089	.078	.044	.034	.003
04	.1120-48	.112	.1075	.183	.176	.112	.108	.101	.094	.051	.038	.005
06	.1380-40	.138	.1329	.226	.218	.138	.134	.124	.109	.064	.047	.005
08	.1640-36	.164	.1585	.270	.262	.164	.159	.148	.141	.077	.056	.005
3	.1900-32	.190	.1840	.312	.303	.190	.185	.171	.156	.090	.065	.005
4	.2500-28	.250	.2435	.375	.365	.250	.244	.225	.188	.120	.095	.008
5	.3125-24	.3125	.3053	.469	.457	.312	.306	.281	.250	.151	.119	.008
6	.3750-24	.375	.3678	.562	.550	.375	.368	.337	.312	.182	.143	.008
7	.4375-20	.4375	.4294	.656	.642	.437	.430	.394	.375	.213	.166	.010
8	.5000-20	.500	.4919	.750	.735	.500	.492	.450	.375	.245	.190	.010
10	.6250-18	.625	.6163	.937	.921	.625	.616	.562	.500	.307	.238	.010
12	.7500-16	.750	.7406	1.125	1.107	.750	.740	.675	.625	.370	.285	.010
14	.8750-14	.875	.8647	1.312	1.293	.875	.864	.787	.750	.432	.333	.015
16	1.0000-12	1.000	.9886	1.500	1.479	1.000	.988	.900	.750	.495	.380	.015

THIRD ANGLE PROJECTION	CUSTODIAN	REVISION
	NATIONAL AEROSPACE STANDARDS COMMITTEE	**10**
PROCUREMENT SPECIFICATION	TITLE	CLASSIFICATION PART STANDARD
NOTED	**SCREW, CAP, SOCKET HEAD, UNDRILLED AND DRILLED, PLAIN AND SELF-LOCKING, ALLOY STEEL, CORROSION-RESISTANT STEEL AND HEAT-RESISTANT STEEL. UNRF-3A**	**NAS1351** SHEET 1 OF 5

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ISSUE DATE: APRIL 1962
REVISION DATE: MARCH 10, 2009

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST REVISION DATE.

FORM 08-02

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TABLE II ⑩

NOMINAL SIZE DASH NO.	L_t MINIMUM BASIC THREAD LENGTH (c)	SAFETY WIRE HOLE WHEN SPECIFIED W DRILLED HOLE LOCATION MAX.	W DRILLED HOLE LOCATION MIN.	ØB DRILLED HOLE (d) MAX.	ØB DRILLED HOLE (d) MIN.	MINIMUM BREAKING STRENGTH (POUNDS) ALLOY STEEL	CORROSION RESISTANT STEEL	HEAT RESISTANT STEEL
00	.500	(d)	(d)	(d)	(d)	324	140	288
01	.625					500	220	445
02						710	310	631
03						940	420	836
04	.750	.040	.026	.039	.033	1,190	530	1,058
06		.050	.035			1,820	810	1,620
08	.875	.060	.040	.050	.044	2,650	1,180	2,360
3		.065	.045			3,600	1,600	3,200
4	1.000	.085	.065			~~6,200~~ 6,550(h)	2,910	5,820
5	1.125	.104	.084			~~9,850~~ 10,400(h)	4,640	9,280
6	1.250	.123	.103	.067	.061	~~14,900~~ 15,800(h)	7,020	14,080
7	1.375	.141	.121			~~20,200~~ 21,400(h)	9,500	19,000
8	1.500	.160	.140			~~27,000~~ 28,800(h)	12,800	25,600
10	1.750	.198	.178			43,500	20,500	41,000
12	2.000	.235	.215	.097	.091	63,400	26,100	59,700
14	2.250	.273	.253			86,500	35,600	81,400
16	2.500	.310	.290			113,000	46,400	106,200

(a) "M" MIN. (5 THREAD PITCHES) = REGION OF MINIMUM ENGAGEMENT WITH FULL FEMALE THREAD REQUIRED TO MEET MIL-DTL-18240 REQUIREMENTS. ⑩
LOCKING ELEMENT WITHIN "M" REGION MUST DEVELOP REQUIRED TORQUE WHEN TESTED IN ACCORDANCE WITH MIL-DTL-18240. ⑩
LENGTH OR DIAMETER OF LOCKING ELEMENT MAY BE MORE OR LESS THAN "M" PROVIDING ALL OTHER REQUIREMENTS ARE MET.

(b) "N" = ONE (1) COMPLETE THREAD PLUS UNTHREADED PORTION OF END. FOR EASE OF STARTING, LOCKING ELEMENT SHALL NOT BE EFFECTIVE WITHIN THIS AREA.

(c) SCREWS WHICH HAVE A LENGTH LESS THAN THE MINIMUM BASIC THREAD LENGTH, SHALL BE THREADED AS CLOSE TO HEAD AS PRACTICABLE. FOR SCREWS WHICH HAVE A LENGTH GREATER THAN THE MINIMUM BASIC THREAD LENGTH, THE BODY AND GRIP LENGTH SHALL BE IN ACCORDANCE WITH ASME B18.3. ⑩

(d) DRILLED HOLE DATA IN ACCORDANCE WITH PROCUREMENT SPEC FF-S-86.
PARTS SHALL HAVE DRILLED HEADS IF SPECIFIED BY CODE H.
SCREW SIZES 04 AND 06 SHALL HAVE TWO (2) DRILLED HOLES SPACED 180°.
SCREW SIZES 08 THRU 16 SHALL HAVE SIX (6) DRILLED HOLES SPACED 60°.
(DRILLED HOLES NOT APPLICABLE TO SCREW SIZES BELOW 04).

(e) IDENTIFICATION LETTER "N" IMPRESSED ON THE TOP OR SIDE OF THE HEAD, FOR SCREW SIZES 04 AND LARGER ONLY, TO DENOTE HEAT-RESISTANT STEEL.

(f) THE INTERSECTION OF THE TOP AND SIDE OF THE HEAD MAY BE CHAMFERED OR RADIUSED AT THE MANUFACTURER'S OPTION PER ASME B18.3. ⑩

(g) THE FILLET SHALL BE IN ACCORDANCE WITH ASME B18.3. ⑩

(h) MINIMUM BREAKING STRENGTH VALUES ARE BASED ON 180 KSI HEAT TREATMENT. LINED THROUGH STRENGTH VALUES WERE BASED ON 170 KSI.

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TABLE III ⑩

L SCREW LENGTH (1)	SCREW SIZE																
	00	01	02	03	04	06	08	3	4	5	6	7	8	10	12	14	16
.125	-00-2	-01-2															
.188	-00-3	-01-3	-02-3														
.250	-00-4	-01-4	-02-4	-03-4	-04-4	-06-4	-08-4										
.375	-00-6	-01-6	-02-6	-03-6	-04-6	-06-6	-08-6	-3-6	-4-6	-5-6							
.500			-02-8	-03-8	-04-8	-06-8	-08-8	-3-8	-4-8	-5-8	-6-8						
.625				-03-10	-04-10	-06-10	-08-10	-3-10	-4-10	-5-10	-6-10						
.750					-04-12	-06-12	-08-12	-3-12	-4-12	-5-12	-6-12	-7-12	-8-12				
.875						-06-14	-08-14	-3-14	-4-14	-5-14	-6-14	-7-14	-8-14				
1.000						-06-16	-08-16	-3-16	-4-16	-5-16	-6-16	-7-16	-8-16	-10-16			
1.250							-08-20	-3-20	-4-20	-5-20	-6-20	-7-20	-8-20	-10-20			
1.500							-08-24	-3-24	-4-24	-5-24	-6-24	-7-24	-8-24	-10-24	-12-24		
1.750								-3-28	-4-28	-5-28	-6-28	-7-28	-8-28	-10-28	-12-28		
2.000								-3-32	-4-32	-5-32	-6-32	-7-32	-8-32	-10-32	-12-32	-14-32	
2.250									-4-36	-5-36	-6-36	-7-36	-8-36	-10-36	-12-36	-14-36	
2.500										-5-40	-6-40	-7-40	-8-40	-10-40	-12-40	-14-40	-16-40
2.750											-6-44	-7-44	-8-44	-10-44	-12-44	-14-44	-16-44
3 000											-6-48	-7-48	-8-48	-10-48	-12-48	-14-48	-16-48
3.250															-12-52	-14-52	-16-52
3.500															-12-56	-14-56	-16-56
4.000																-14-64	-16-64
4.500																-14-72	-16-72
5.000																	-16-80

NOTE: SEE CODE FOR ADDITIONAL LENGTHS. (1) LENGTH TOLERANCE SHALL BE AS FOLLOWS:

NOMINAL LENGTH	SIZE		
	0 THRU .375	OVER .375 THRU .750	OVER .750 THRU 1.000
	TOLERANCES		
UP TO AND INCL. 1.000	+.000 -.030	+.000 -.030	+.000 -.050
OVER 1.000 & INCL. 2.500	+.000 -.040	+.000 -.060	+.000 -.100
OVER 2.500 & INCL. 6.000	+.000 -.060	+.000 -.080	+.000 -.140

THREADS: UNRF-3A IN ACCORDANCE WITH PROCUREMENT SPECIFICATION.

MATERIAL: ALLOY STEEL IN ACCORDANCE WITH PROCUREMENT SPEC FF-S-86.
CORROSION-RESISTANT STEEL IN ACCORDANCE WITH PROCUREMENT SPEC FF-S-86.
HEAT-RESISTANT STEEL CONFORMING TO THE CHEMISTRY OF AMS5731 (UNS S66286) OR AMS5737 (UNS S66286) COLD WORKED AND AGE HARDENED TO MEET THE FASTENER REQUIREMENTS OF FF-S-86 AND THIS STANDARD.

FINISH: ALLOY STEEL - CADMIUM PLATE IN ACCORDANCE WITH AMS-QQ-P-416, TYPE II, CLASS 2. ⑩
- BLACK OXIDE IN ACCORDANCE WITH MIL-DTL-13924, CLASS 1.

CORROSION RESISTANT STEEL - CADMIUM PLATE IN ACCORDANCE WITH AMS-QQ-P-416, TYPE I, CLASS 2. ⑩
⑩ - SILVER FLASH IN ACCORDANCE WITH AMS2411.
- PASSIVATE IN ACCORDANCE WITH AMS2700, METHOD 1, TYPE 6 OR TYPE 7, CLASS 1. ⑩

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HEAT-RESISTANT STEEL - SILVER FLASH IN ACCORDANCE WITH AMS2411.
⑩ - PASSIVATE IN ACCORDANCE WITH AMS2700, METHOD 1, TYPE 2 OR TYPE 8, CLASS 1.
⑩ - BLACK OXIDE IN ACCORDANCE WITH MIL-DTL-13924, CLASS 3.
- CADMIUM PLATE IN ACCORDANCE WITH AMS-QQ-P-416, TYPE II, CLASS 2. ⑩

CODE: MATERIAL CODE AFTER BASIC NUMBER. "-" = ALLOY STEEL.
"C" = CORROSION-RESISTANT STEEL.
"N" = HEAT-RESISTANT STEEL.

FIRST DASH NUMBER DESIGNATES SCREW THREAD SIZE AS TABULATED.

TYPE CODE AFTER FIRST DASH NUMBER:
"H" = DRILLED HEAD.
"LE" = SELF-LOCKING MALE THREADED FASTENER.
(OPTIONAL TYPE LOCKING ELEMENT IN ACCORDANCE WITH NAS1283).
"LL" = SELF-LOCKING MALE THREADED FASTENER.
(LONGITUDINAL STRIP LOCKING ELEMENT IN ACCORDANCE WITH NAS1283, TYPE L).
"LN" = SELF-LOCKING MALE THREADED FASTENER.
(PELLET LOCKING ELEMENT IN ACCORDANCE WITH NAS1283, TYPE N).
"LB" = SELF-LOCKING MALE THREADED FASTENER.
(PATCH TYPE LOCKING ELEMENT IN ACCORDANCE WITH NAS1283, TYPE P).

SECOND DASH NUMBER DESIGNATES NOMINAL LENGTH IN SIXTEENTHS OF AN INCH AS TABULATED.
TABULATED CODING INDICATES PREFERRED LENGTHS.
ADDITIONAL LENGTHS AVAILABLE ON SPECIAL ORDER, MINIMUM RUN BASIS.
FOR SUCH LENGTHS ADDITIONAL CODING MAY BE ASSIGNED TO LENGTHS IN .0625 INCH INCREMENTS UP TO 3.500 INCHES, AND IN .125 INCH INCREMENTS FROM 3.500 INCHES UP TO AND INCLUDING 6.000 INCHES.

FINISH CODE AFTER SECOND DASH NUMBER:	
ALLOY STEEL,	"P" = CADMIUM PLATE. NO SUFFIX FOR BLACK OXIDE.
CORROSION-RESISTANT STEEL,	"P" = CADMIUM PLATE. "S" = SILVER FLASH. NO SUFFIX FOR PASSIVATE.
HEAT-RESISTANT STEEL,	"S" = SILVER FLASH. "B" = BLACK OXIDE. "P" = CADMIUM PLATE. NO SUFFIX FOR PASSIVATE.

EXAMPLE:	NAS1351-02-8	=	.0860-64 UNRF-3A SCREW, CAP, SOCKET HEAD, ALLOY STEEL, UNDRILLED HEAD, PLAIN, .500 INCH LONG, BLACK OXIDE FINISH.
	NAS1351C04H12	=	.1120-48 UNRF-3A SCREW, CAP, SOCKET HEAD, CORROSION-RESISTANT STEEL, DRILLED HEAD, PLAIN, .750 INCH LONG, PASSIVATED.
	NAS1351-08LE16P	=	.1640-36 UNRF-3A SCREW, CAP, SOCKET HEAD, ALLOY STEEL, SELF-LOCKING, OPTIONAL TYPE LOCKING ELEMENT, 1.000 INCH LONG, CADMIUM PLATE, UNDRILLED HEAD.
	NAS1351C4LL24P	=	.2500-28 UNRF-3A SCREW, CAP, SOCKET HEAD, CORROSION-RESISTANT STEEL, SELF-LOCKING, LONGITUDINAL STRIP LOCKING ELEMENT, 1.500 INCHES LONG, CADMIUM PLATE, UNDRILLED HEAD.
	NAS1351N10LN32	=	.6250-18 UNRF-3A SCREW, CAP, SOCKET HEAD, HEAT-RESISTANT STEEL, SELF-LOCKING, PELLET LOCKING ELEMENT, 2.000 INCHES LONG, PASSIVATED, UNDRILLED HEAD.

NAS1351N12LB36S	=	.7500-16 UNRF-3A	SCREW, CAP, SOCKET HEAD, HEAT-RESISTANT STEEL, SELF-LOCKING, PATCH TYPE LOCKING ELEMENT, 2.250 INCHES LONG, SILVER FLASH, UNDRILLED HEAD.
NAS1351N4LB16B	=	.2500-28 UNRF-3A	SCREW, CAP, SOCKET HEAD, HEAT-RESISTANT STEEL, SELF-LOCKING, PATCH TYPE LOCKING ELEMENT, 1.000 INCH LONG, BLACK OXIDE COATING, UNDRILLED HEAD.

NOTES:

(1) LOCKING ELEMENT: EXCEPT AS NOTED HEREIN, THE LOCKING ELEMENT WHEN SPECIFIED SHALL BE IN ACCORDANCE WITH MIL-DTL-18240 AND SHALL BE FULLY ENGAGED WHEN USED. ⑩

(2) IDENTIFICATION: MANUFACTURER TO IDENTIFY ALL MINIMUM PACKAGES BY PACKAGE MARKING OF APPLICABLE COMPLETE NAS STANDARD PART NO. IN ACCORDANCE WITH MIL-STD-130.

(3) DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED DIMENSIONS AND TOLERANCES SHALL BE IN ACCORDANCE WITH FF-S-86, TYPE VI AND ASME B18.3. ⑩

(4) REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON THE DATE OF INVITATION FOR BID.

(5) THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS SPECIFIED HEREIN.

(6) ADDITIONAL PART MARKING SHALL BE IN ACCORDANCE WITH FF-S-86.

(7) UNLESS OTHERWISE SPECIFIED, PART INVENTORY MANUFACTURED TO PREVIOUS REVISIONS OF THE APPLICABLE DRAWING OR SPECIFICATION MAY BE PROCURED AND USED UNTIL STOCK IS DEPLETED. ⑩

(8) REMOVE ALL BURRS AND SHARP EDGES. ⑩

PROCUREMENT SPECIFICATION: FF-S-86: UNLESS OTHERWISE SPECIFIED, CAP SCREWS FURNISHED UNDER THIS STANDARD SHALL BE SUBJECT TO IN-PROCESS CONTROL AND/OR END PRODUCT INSPECTION WHICH WILL INSURE MECHANICAL, METALLURGICAL, CHEMICAL AND COATING OR TREATMENT CHARACTERISTICS WHEN SAMPLED IN ACCORDANCE WITH ASQ Z1.4, INSPECTION LEVEL S-1, 1% AQL. ⑩

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