

SPRING NUTS—SAE J891

SAE Standard

Report of Fasteners Committee approved August 1964.

GENERAL SPECIFICATIONS

Dimensional Tolerance—Tolerance on dimensions in the tables shall be plus and minus 0.010 in. unless otherwise specified.

Boss Detail—The detail of boss shall be such as to assemble readily and function satisfactorily with the specified screw and meet the performance requirements of this specification except as indicated otherwise.

Both the Type P and Type T bosses are designed to function with either Types A, AB, or B tapping screws in sizes 6-18 or 6-20, 8-15 or 8-18, and 10-12 or 10-16. The Type P boss also is designed to function with either Types A, AB, or B tapping screws in sizes 14-10 or 1/4-14. The Type T bosses for the 14-10 Type A and the 1/4-14 Types B and AB tapping screws have not been compromised and separate nuts must be specified for the respective thread sizes.

The sides of the Type P boss (Fig. 1) shall be formed to provide an opening conforming to the helix of the mating thread. The opening shall be round and equal to, or slightly larger than, the minor diameter of the mating thread.

The prongs of the Type T boss (Fig. 2) shall be formed to provide a circular opening conforming to the helix of the mating thread and, at the opening, the prongs shall be normal to the axis of the mating

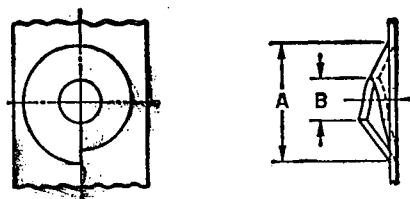


FIG. 1—TYPE P BOSS

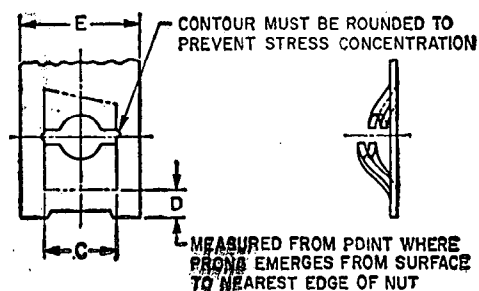


FIG. 2—
TYPE T BOSS

thread. The round portion of the opening shall be equal to, or slightly larger than, the minor diameter of the mating thread.

The size and formation of the helical opening (see Table 1) shall be such as to permit ready assembly of the specified screw or gage when inserted from the base of the boss at 90 deg to the plane of the nut, or component thereof which contains the boss. For Unified threads, basic GO thread plug gages shall be used to check assembly. For Type A and Type B pitch tapping screw threads, special gages conforming to the maximum limits of the screws may be used in place of the specified screws to check assembly.

Retaining Extrusion Detail—The size and configuration of the extrusion in the lower leg of "J" shape and "U" shape spring nuts shall be such that nuts will meet the performance requirements of this specification. The size and relative location of the hole and extrusion to the boss shall be such that when nut is assembled onto a test panel having minimum hole size, located at maximum edge distance, the extrusion will snap into the hole and permit the specified screw of maximum size (or special threaded plug gage, Fig. 3) to be assembled into the boss normal to the base of boss without interference at the extrusion or the sides of either hole. The screw or gage is to be entered into the boss until the head of the screw or shoulder on gage lightly contacts the bottom of the lower leg. The extrusion shall have a uniform shape and blend evenly from the specified height at point X into the upper surface of the lower leg at points Y and Y' as shown. The critical edges of the extrusion shall be free from burrs which would cause interference as spring nut is assembled to panel.

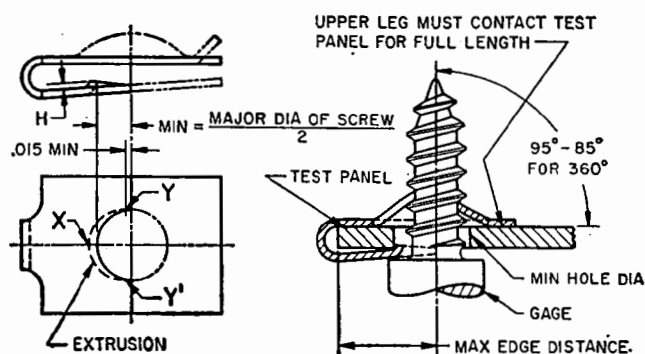


FIG. 3—EXTRUSION AND GAGING DETAIL

Material—Spring steel: SAE 1050, or higher carbon; suitably processed to meet the performance requirements of this specification.

Hardness—Hardness shall be as follows:

Material Thickness	Rockwell Scale	Dial Reading	Conversion to Rockwell C Scale
Up to 0.016	15N	81.5-85.5	42-50
0.017-0.024	30N	61.3-68.5	42-50
0.025-0.039	45N	45.5-55.0	42-50
0.040 and over	C	42-50	42-50

TABLE 1—DETAIL OF BOSSES^a

Screw		Type P Boss		Type T Boss		
		A Base Dia. Ref.	B Hole Dia. +0.010 -0.000	C Width of Shear Basic	D ^b End of Slit to Edge, Min	E Width of Blank, Min
Machine	6-32	0.26	0.104	0.157	0.050	0.312
	8-32	0.23	0.130	0.184	0.050	0.406
	10-24	0.28	0.149	0.210	0.050	0.375
	1/4-20	0.37	0.203	0.270	0.090	0.500
Type A Tapping	6-18	0.25	0.105	0.157	0.050	0.312
	8-15	0.28	0.123	0.184	0.060	0.406
	10-12	0.28	0.142	0.210	0.080	0.500
	14-10	0.38	0.193	0.270	0.090	0.562
Types B and AB Tapping	6-20	0.25	0.105	0.157	0.050	0.312
	8-18	0.28	0.123	0.184	0.060	0.406
	10-16	0.28	0.142	0.210	0.080	0.500
	1/4-14	0.38	0.193	0.270	0.090	0.562

^aThe above dimensions are design criteria and are not to be applied to part drawings.

^bThe tabulated values are applicable to standard spring nuts only. This factor shall be sufficient to meet the performance requirements for torque, tensile strength and vibration as set forth in Table 2.

Finish—Spring nuts are normally supplied with rustproof finish as specified by the purchaser. Nuts subjected to corrosion preventative treatment which might induce hydrogen embrittlement shall be baked or otherwise treated to obviate such embrittlement.

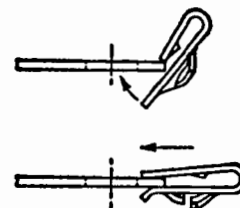
Defects—Spring nuts shall be free from cracks, burrs, splits, loose scale, or any other defects that might affect their serviceability.

Performance—Spring nuts shall perform in accordance with the requirements specified in Table 2 except as indicated otherwise.

Assembly Detail—The recommended design data pertaining to assembly of "J" shape and "U" shape spring nuts will follow for guidance of users. The proper method of assembling these nuts to panels is described as follows:

"J" shape nuts are assembled to panel by placing nut against the edge of the panel as shown opposite and rocking onto panel in the direction indicated by the arrow.

"U" shape nuts are assembled to panel by placing nut over edge of the panel as shown opposite and pushing onto the panel in the direction indicated by the arrow.



TESTS AND TEST FIXTURES FOR SPRING NUTS

Spring nuts, when subjected to the following tests, shall conform with the performance requirements specified in Table 2 except as indicated otherwise.

Test Plates and Screws for Tests—To assure uniformity of test results, the test plates and screws used for the tests shall conform to the following specifications.

Test plates shall have boundary dimensions and hole sizes as depicted

TABLE 2—PERFORMANCE REQUIREMENTS FOR SPRING NUTS

Screw		Recom- mended Installation Torque, Max, lb-in.	Destructive Torque, Min, lb-in.	Back-Off Torque ^b , Min, oz-in.			Test Plate Separation, in.	Tensile Yield Strength, lb	Ultimate Tensile Strength, lb		Vibration Test Load, lb
				Type P	Type T				Type P	Type T	
					at 5 deg	at 40 deg					
Machine	6-32 ^a	6	8	33	26	16.5	0.004	89	155	156	25
	8-32	8	10	45	24.8	20.6	0.005	134	200	189	38
	10-24	14	17	78	48	40	0.006	221	315	274	50
	1/4-20	35	45	195	256	216	0.008	350	570	550	85
Type A Tapping	6-18 ^a	12	17	48	42.4	13.8	0.004	312	410	425	70
	8-15	20	25	64	120.6	54	0.005	420	570	534	95
	10-12	35	44	140	113.6	8	0.006	525	700	672	135
	14-10	60	80	240	432	150.4	0.008	891	900	1158	185
Types B and AB Tapping	6-20 ^a	12	17	57	42.4	13.8	0.004	312	500	425	70
	8-18	20	25	96	120.6	54	0.005	420	620	534	95
	10-16	35	44	168	113.6	8	0.006	525	1000	672	135
	1/4-14	60	80	288	432	150.4	0.008	891	1130	1158	185

^aThese requirements shall not apply to Type P, Style I, Flat Spring Nuts shown in Table 6 due to the limitations on boss design imposed by the narrow widths and long lengths.

^bBack-off torque shall not be less than the value specified after nuts are subjected to the vibration test.

in Fig. 4 and specified in Table 3. The thickness of test plates shall be equal to the mean of the specified panel range within a tolerance of plus and minus 0.001 in. The holes in test plates shall be located at the maximum edge distance specified for the particular spring nut within a tolerance of plus and minus 0.001 in. Test plates and panels shall have a minimum hardness of Rockwell C50-54.

The screws used for test purposes shall conform to the specifications in SAE J478 for the respective sizes and types. They shall be Hexagon Head Slotted style, 1 in. long, and electro zinc plated with 0.0002 in. minimum zinc thickness.

Torque Tests—When spring nuts are assembled on test plates (see Table 3) and tightened to the recommended installation torques, the

back-off torques shall not be less than the values specified; the readings being taken when the screw first moves. Upon disassembly, the boss shall return to a position that will accept reentry of the screw or "GO" thread gage.

The spring nuts, when tightened on a test plate, shall not strip the threads on the screw or fail the boss at less than the ultimate torque specified.

Tensile Tests—When the spring nut on a test plate is assembled to suitable back-up plates at the recommended installation torque and pulled in a tensile testing machine, the spring nut shall meet the minimum yield and ultimate strengths specified. The tensile yield strength shall be considered reached when the back-up plates have separated by the amount specified. The ultimate strength shall be considered reached when the boss or the thread on the screw is destroyed. In performing tensile test, care should be taken to assure there is no interference between the screw and the holes in the plates. A typical tensile test fixture is illustrated in Fig. 5.

Vibration Test—After tightening the spring nut on a test plate to the recommended installation torque, and subjecting the assembly to 20 hr vibration, the back-off torque shall not be less than the values specified. The vibration test shall be conducted while the nut is subject to the vibration test load specified. The vibration amplitude shall be 0.030 in. in a direction parallel to the axis of the screw and the frequency shall be 3600 rpm, or cpm.

The vibration test panel shall be an assembly consisting of a test plate, a panel, a screw, a spring nut and a means for applying the vibration test load. The vibration panel assembly shall be rigidly fastened to the source of vibration and the fastening shall not interfere with the assembly being tested. A typical vibration test fixture is depicted in Fig. 6.

Preassembly and Retention Test—The "J" shape and "U" shape spring nuts shall preassemble onto test panels of thickness equal to the two extremes of the panel ranges specified, having minimum holes, located at the maximum edge distance. The extrusion in the lower leg shall snap into the hole and, when nuts are so assembled, a pull force of 3 lb minimum, applied parallel to the upper leg in line with the axis of the nut, shall be required to remove the nut from the panel.

TABLE 3—DIMENSIONS OF TEST PLATES (FIG. 4)

Screw		A Edge to Center, ± 0.001	B Plate Thickness, ± 0.001	C Hole Dia., ± 0.001
Type	Size			
Machine	6-32	Equals maximum edge distance specified in assembly data or on part drawing	Equals mean of panel range specified in di- mensional tables	0.250
	8-32			0.281
	10-24			0.312
	1/4-20			0.375
Type A Tapping	6-18	Equals maximum edge distance specified in assembly data or on part drawing	Equals mean of panel range specified in di- mensional tables	0.250
	8-15			0.281
	10-12			0.312
	14-10			0.375
Types B and A8 Tapping	6-20	Equals maximum edge distance specified in assembly data or on part drawing	Equals mean of panel range specified in di- mensional tables	0.250
	8-18			0.281
	10-16			0.312
	1/4-14			0.375

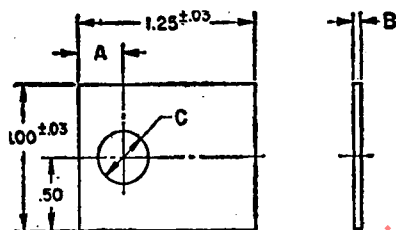


FIG. 4—TEST PLATES

TO INDICATOR FOR MEASURING PLATE SEPARATION. POINT TO BE LOCATED AS ADJACENT TO NUT AS POSSIBLE AND IN LINE WITH HOLE

TO MOVABLE PORTION OF TENSILE MACHINE

SCREW

SPRING NUT

TEST PLATE

TO STATIONARY PORTION OF TENSILE MACHINE

FIG. 5—TYPICAL TENSILE TEST FIXTURE

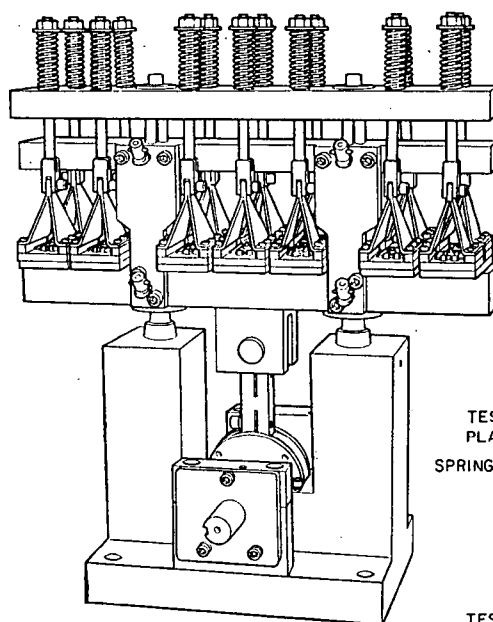


FIG. 6—TYPICAL VIBRATION TEST FIXTURE

TYPE P AND TYPE T, J SHAPE AND U SHAPE ASSEMBLY DATA

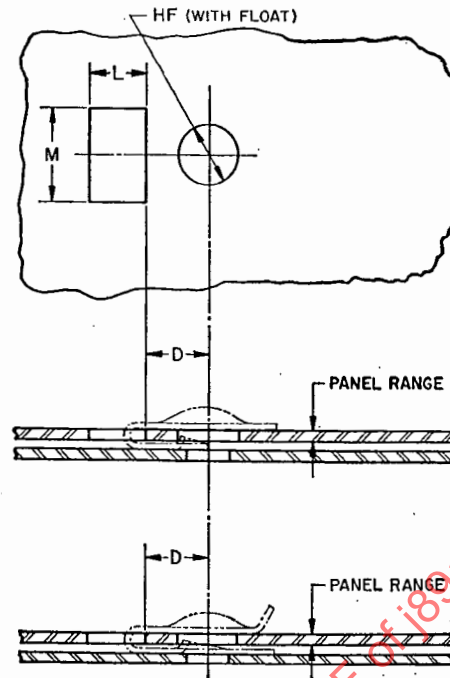
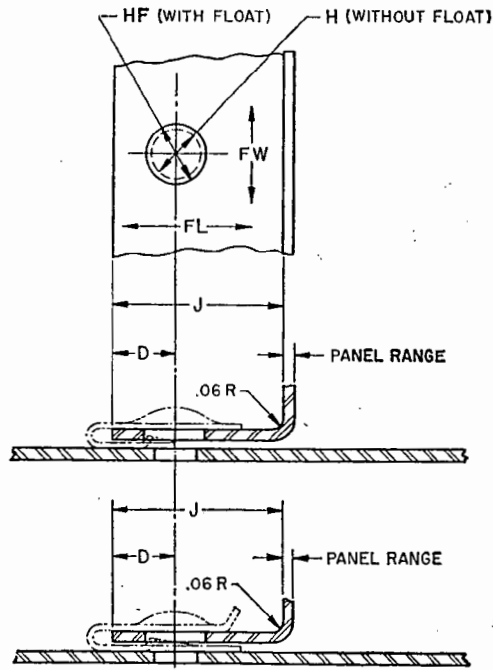


FIG. 7A—J SHAPE

FIG. 7B—U SHAPE

TABLE 4—RECOMMENDED ASSEMBLY DATA FOR TYPES P AND T, J SHAPE AND U SHAPE SPRING NUTS^a (FIGS. 7A AND 7B)

Screw Size and Type	Style	D	H Dia	HF Dia	FW	FL	J		L	M
					Float		J Shape	U Shape		
6-32 Machine	I	0.25	0.19	0.25						
	II	0.17	0.19	0.25	0.09	0.09	0.69	0.67	0.22	0.44
	III	0.42	0.19	0.25	0.09	0.09	0.53	0.56	0.22	0.59
6-18 Type A and 6-20 Types B and AB Tapping	I	0.25	0.19	0.25	0.08	0.09	0.69	0.67	0.22	0.44
	II	0.17	0.19	0.25	0.08	0.09	0.53	0.56	0.22	0.59
	III	0.42	0.19	0.25	0.08	0.09	0.88	0.84	0.22	0.44
8-32 Machine	I	0.28	0.22	0.28	0.08	0.09	0.73	0.72	0.25	0.50
	II	0.18	0.22	0.28	0.08	0.09	0.59	0.59	0.25	0.59
	III	0.46	0.22	0.28	0.08	0.09	0.92	0.89	0.25	0.50
8-15 Type A and 8-18 Types B and AB Tapping	I	0.28	0.22	0.28	0.08	0.09	0.73	0.72	0.25	0.50
	II	0.18	0.22	0.28	0.08	0.09	0.59	0.59	0.25	0.59
	III	0.46	0.22	0.28	0.08	0.09	0.92	0.89	0.25	0.50
10-24 Machine	I	0.30	0.25	0.31	0.08	0.09	0.81	0.77	0.31	0.50
	II	0.20	0.25	0.31	0.08	0.09	0.62	0.62	0.31	0.72
	III	0.48	0.25	0.31	0.08	0.09	1.00	0.94	0.31	0.50
10-12 Type A and 10-16 Types B and AB Tapping	I	0.30	0.25	0.31	0.08	0.09	0.81	0.77	0.31	0.59
	II	0.20	0.25	0.31	0.08	0.09	0.62	0.62	0.31	0.72
	III	0.48	0.25	0.31	0.08	0.09	1.00	0.94	0.31	0.59
14-10 Type A or 1/4-14 Types B and AB Tapping	I	0.38	0.31	0.38	0.09	0.09	0.94	0.94	0.44	0.66
	III	0.62	0.31	0.38	0.09	0.09	1.17	1.17	0.44	0.66

^aThis data is intended for design guidance only and is not to be considered a mandatory part of the standard. The dimensions specified have been selected to accommodate both Type P and Type T spring nut designs covered by the standard. Tolerances on the nuts and

tolerances of the manufacturing processes used to emboss and punch the various assembly features were not considered in the derivation of these dimensions.

TYPE P AND TYPE T, J SHAPE AND U SHAPE ASSEMBLY DATA

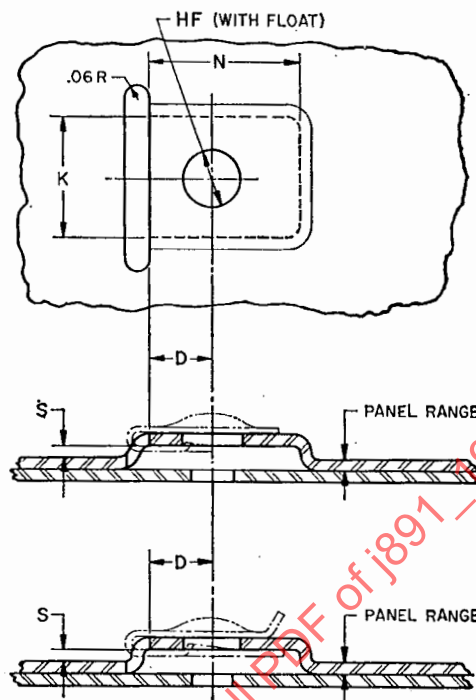
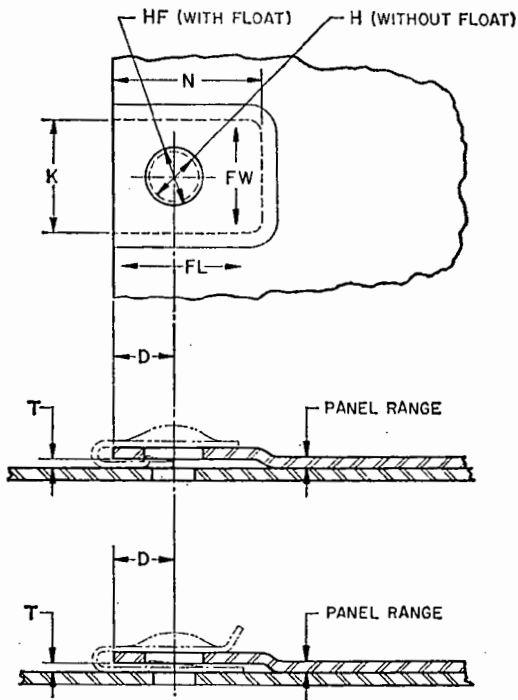


FIG. 8A—J SHAPE

FIG. 8B—U SHAPE

TABLE 5—RECOMMENDED ASSEMBLY DATA FOR TYPES P AND T J SHAPE AND U SHAPE SPRING NUTS^a (FIGS. 8A AND 8B)

Screw Size and Type	Style	D	H Dia	HF Dia	FW	FL	K	N		S		T
					Float			J Shape	U Shape	J Shape	U Shape	
6-32 Machine	I	0.25	0.19	0.25	0.09		0.50	0.66	0.64	0.045	0.045	0.025
	II	0.17	0.19	0.25	0.09	0.09	0.67	0.50	0.53	0.045	0.045	0.025
	III	0.42	0.19	0.25	0.09	0.09	0.50	0.84	0.81	0.045	0.045	0.025
6-18 Type A and 6-20 Types B and AB Tapping	I	0.25	0.19	0.25	0.08	0.09	0.50	0.66	0.64	0.060	0.060	0.030
	II	0.17	0.19	0.25	0.08	0.09	0.67	0.50	0.53	0.060	0.060	0.030
	III	0.42	0.19	0.25	0.08	0.09	0.50	0.84	0.81	0.060	0.060	0.030
8-32 Machine	I	0.28	0.22	0.28	0.08	0.09	0.58	0.70	0.69	0.050	0.050	0.030
	II	0.18	0.22	0.28	0.08	0.09	0.67	0.56	0.56	0.050	0.050	0.030
	III	0.46	0.22	0.28	0.08	0.09	0.58	0.89	0.86	0.050	0.050	0.030
8-15 Type A and 8-18 Types B and AB Tapping	I	0.28	0.22	0.28	0.08	0.09	0.58	0.70	0.69	0.060	0.060	0.033
	II	0.18	0.22	0.28	0.08	0.09	0.67	0.56	0.56	0.065	0.065	0.033
	III	0.46	0.22	0.28	0.08	0.09	0.58	0.89	0.86	0.065	0.065	0.033
10-24 Machine	I	0.30	0.25	0.31	0.08	0.09	0.58	0.78	0.74	0.055	0.055	0.030
	II	0.20	0.25	0.31	0.08	0.09	0.80	0.59	0.59	0.055	0.055	0.030
	III	0.48	0.25	0.31	0.08	0.09	0.58	0.96	0.91	0.055	0.055	0.030
10-12 Type A and 10-16 Types B and AB Tapping	I	0.30	0.25	0.31	0.08	0.09	0.67	0.78	0.74	0.065	0.065	0.036
	II	0.20	0.25	0.31	0.08	0.09	0.80	0.59	0.89	0.065	0.065	0.036
	III	0.48	0.25	0.31	0.08	0.09	0.67	0.96	0.91	0.070	0.060	0.036
14-10 Type A or 1/4-14 Types B and AB Tapping	I	0.38	0.31	0.38	0.09		0.75	0.91	0.91	0.085	0.080	0.042
	III	0.62	0.31	0.38	0.09	0.09	0.75	1.14	1.14	0.085	0.080	0.042

^aThis data is intended for design guidance only and is not to be considered a mandatory part of the standard. The dimensions specified have been selected to accommodate both Type P and Type T spring nut designs covered by the standard. Tolerances on the nuts and

tolerances of the manufacturing processes used to emboss and punch the various assembly features were not considered in the derivation of these dimensions.

TYPE P AND TYPE T FLAT

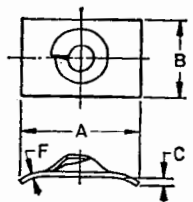


FIG. 9A—STYLE I

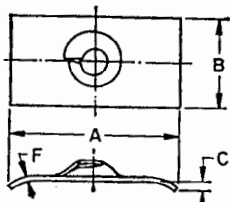


FIG. 9B—STYLE II

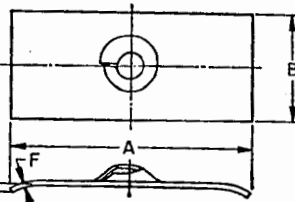


FIG. 9C—STYLE III

FIG. 9—TYPE P SINGLE BOSS

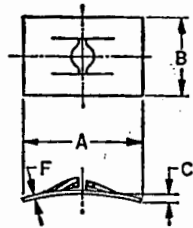


FIG. 11A—STYLE I

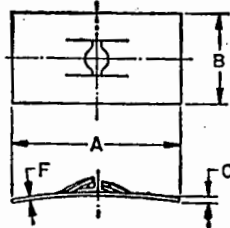


FIG. 11B—STYLE II

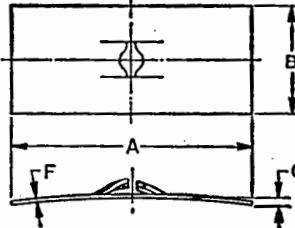


FIG. 11C—STYLE III

FIG. 11—TYPE T SINGLE BOSS

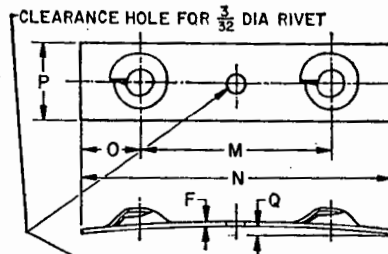
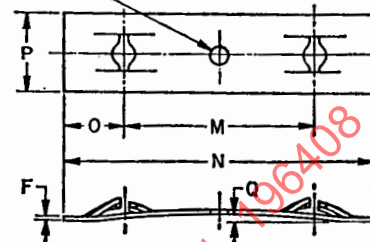
FIG. 10—TYPE P
TWIN BOSSFIG. 12—TYPE T
TWIN BOSS

TABLE 6—DIMENSIONS OF TYPE P AND TYPE T FLAT SPRING NUTS (FIGS. 9-12)

Screw Size and Type ^a	Single Boss					F Stock Thickness		Twin Boss					
	Style	A Nut Length ±0.02	B Nut Width	C Arch Height				M Boss Center to Center	N Nut Length ±0.02	O End to Center	P Nut Width	Q Arch Height	
				Max	Min	Max	Min					Max	Min
6-32 Machine	Ib	0.44	0.281	0.040	0.020	0.018	0.015	0.500	1.12	0.312	0.375	0.045	0.005
	II	0.88	0.375	0.060	0.030			0.625	1.25	0.312	0.375	0.045	0.005
	III	1.38	0.500	0.050	0.010			0.750	1.38	0.312	0.375	0.045	0.005
6-18 Type A and 6-20 Types B and AB Tapping	Ib	0.50	0.312	0.040	0.020	0.026	0.019	0.500	1.12	0.312	0.375	0.045	0.005
	II	0.88	0.438	0.060	0.030			0.625	1.25	0.312	0.375	0.045	0.005
	III	1.38	0.531	0.060	0.020			0.750	1.38	0.312	0.375	0.045	0.005
8-32 Machine	I	0.50	0.312	0.050	0.030	0.018	0.015	0.500	1.12	0.312	0.375	0.045	0.005
	II	0.88	0.438	0.070	0.040			0.625	1.25	0.312	0.375	0.045	0.005
	III	1.38	0.531	0.055	0.015			0.750	1.38	0.312	0.375	0.045	0.005
8-15 Type A and 8-18 Types B and AB Tapping	I	0.62	0.406	0.055	0.025	0.029	0.024	0.500	1.12	0.312	0.375	0.045	0.005
	II	0.88	0.469	0.065	0.035			0.625	1.25	0.312	0.375	0.045	0.005
	III	1.25	0.562	0.050	0.010			0.750	1.38	0.312	0.375	0.045	0.005
10-24 Machine	I	0.62	0.375	0.065	0.035	0.023	0.019	0.500	1.12	0.312	0.500	0.045	0.005
	II	1.00	0.469	0.065	0.035			0.625	1.25	0.312	0.500	0.045	0.005
	III	1.38	0.562	0.080	0.040			0.750	1.38	0.312	0.500	0.045	0.005
10-12 Type A and 10-16 Types B and AB Tapping	I	0.75	0.500	0.065	0.035	0.033	0.028	0.500	1.12	0.312	0.500	0.045	0.005
	II	1.12	0.594	0.050	0.020			0.625	1.25	0.312	0.500	0.045	0.005
	III	1.38	0.688	0.080	0.040			0.750	1.38	0.312	0.500	0.045	0.005
1/4-20 Machine	I	0.75	0.500	0.075	0.045	0.027	0.024	0.750	1.50	0.375	0.562	0.065	0.005
	II	1.12	0.594	0.050	0.020			0.875	1.62	0.375	0.562	0.065	0.005
	III	1.38	0.688	0.085	0.045			1.000	1.75	0.375	0.562	0.065	0.005
14-10 Type A or 1/4-14 Types B and AB Tapping	I	0.88	0.562	0.075	0.045	0.039	0.028	0.750	1.50	0.375	0.562	0.065	0.005
	II	1.06	0.625	0.050	0.020			0.875	1.62	0.375	0.562	0.065	0.005
	III	1.38	0.688	0.085	0.045			1.000	1.75	0.375	0.562	0.065	0.005

^aSee Boss Detail under General Specifications for applicability of types and sizes.^bThe Type P nuts in this style will not meet the performance requirements in Table 2 due to

the limitations on boss design imposed by the narrow width and the long length.

TYPE P, J SHAPE

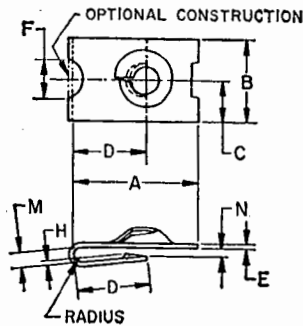
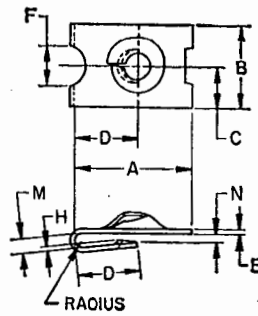
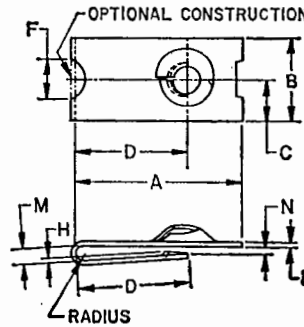
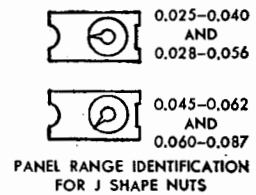
FIG. 13A—STYLE I
STANDARDFIG. 13B—STYLE II
SHORT THROATFIG. 13C—STYLE III
LONG THROAT

TABLE 7—DIMENSIONS OF TYPE P, J SHAPE SPRING NUTS (FIGS. 13A-13C)

Screw Size and Type ^a	Panel Thickness Range	Style	A Leg Length, ± 0.02	B Nut Width	C Edge to Center	D Throat Depth and Leg Length, ± 0.015	E Stock Thickness		Fb Hole Dia	H Height, $+0.010 -0.000$	M Width at Fold	N Gap Opening, Min
							Max	Min				
6-32 Machine	0.025-0.040 0.045-0.062	I	0.53	0.34	0.17	0.330	0.017	0.015	0.218	0.025	0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	II	0.47			0.270					0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	III	0.70			0.520					0.06 0.08	0.02 0.04
6-18 Type A and 6-20 Types B and AB Tapping	0.025-0.040 0.045-0.062	I	0.53	0.34	0.17	0.330	0.021	0.019	0.218	0.025	0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	II	0.47			0.270					0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	III	0.70			0.520					0.06 0.08	0.02 0.04
8-32 Machine	0.025-0.040 0.045-0.062	I	0.61	0.40	0.20	0.390	0.017	0.015	0.218	0.025	0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	II	0.51			0.280					0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	III	0.81			0.580					0.06 0.08	0.02 0.04
8-15 Type A and 8-18 Types B and AB Tapping	0.025-0.040 0.045-0.062	I	0.61	0.40	0.20	0.390	0.026	0.024	0.218	0.025	0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	II	0.51			0.280					0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	III	0.81			0.580					0.06 0.08	0.02 0.04
10-24 Machine	0.025-0.040 0.045-0.062	I	0.64	0.40	0.20	0.390	0.021	0.019	0.218	0.025	0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	II	0.58			0.330					0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	III	0.83			0.580					0.06 0.08	0.02 0.04
10-12 Type A and 10-16 Types B and AB Tapping	0.025-0.040 0.045-0.062	I	0.64	0.50	0.25	0.390	0.032	0.028	0.218	0.025	0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	II	0.61			0.330					0.06 0.08	0.02 0.04
	0.025-0.040 0.045-0.062	III	0.83			0.580					0.06 0.08	0.02 0.04
14-10 Type A or 1/4-14 Types B and AB Tapping	0.028-0.056 0.060-0.087	I	0.80	0.56	0.28	0.470	0.032	0.028	0.218	0.025	0.08 0.10	0.04 0.05
	0.028-0.056 0.060-0.087	III	1.09			0.720					0.08 0.10	0.04 0.05

^aSee Boss Detail under General Specifications for applicability of types and sizes.^bDiameter of hole punched in blank.

TYPE T, J SHAPE

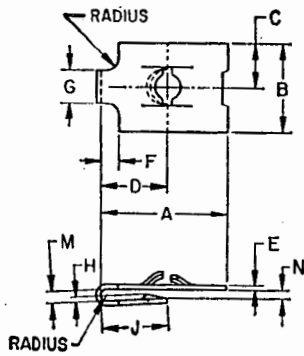
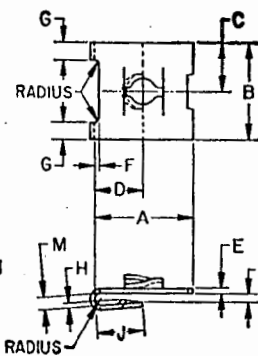
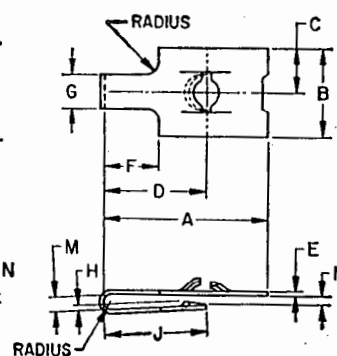
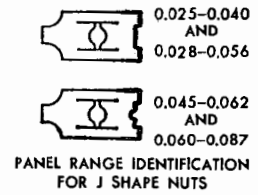
FIG. 14A—STYLE I
STANDARDFIG. 14B—STYLE II
SHORT THROATFIG. 14C—STYLE III
LONG THROAT

TABLE 8—DIMENSIONS OF TYPE T, J SHAPE SPRING NUTS (FIGS. 14A-14C)

Screw Size and Type ^a	Panel Thickness Range	Style	A Leg Length, ±0.02	B Nut Width	C Edge to Center	D Throat Depth, ±0.015	E Stock Thickness		F Notch Depth, ±0.015	G Width	H Height, ±0.005	J Leg Length, ±0.02	M Width of Fold	N Gap Opening, Min
							Max	Min						
6-32 Machine	0.025-0.040	I	0.63	0.312	0.156	0.340	0.018	0.016	0.085	0.11	0.020	0.35	0.06 0.08	0.02 0.04
	0.045-0.062	II	0.47	0.500	0.250	0.260	0.018	0.016	0.030	0.09	0.020	0.27	0.06 0.08	0.02 0.04
	0.025-0.040	III	0.81	0.312	0.156	0.510	0.018	0.016	0.250	0.14	0.020	0.51	0.06 0.08	0.02 0.04
6-18 Type A and 6-20 Types B and AB Tapping	0.025-0.040	I	0.63	0.312	0.156	0.340	0.027	0.023	0.085	0.11	0.020	0.35	0.06 0.08	0.02 0.04
	0.045-0.062	II	0.47	0.500	0.250	0.270	0.027	0.023	0.025	0.09	0.020	0.26	0.06 0.08	0.02 0.04
	0.025-0.040	III	0.81	0.312	0.156	0.510	0.027	0.023	0.240	0.14	0.020	0.51	0.06 0.08	0.02 0.04
8-32 Machine	0.025-0.040	I	0.68	0.406	0.203	0.380	0.018	0.016	0.100	0.18	0.025 0.040	0.38	0.06 0.08	0.02 0.04
	0.045-0.062	II	0.51	0.500	0.250	0.260	0.018	0.016	0.030	0.09	0.025	0.28	0.06 0.08	0.02 0.04
	0.025-0.040	III	0.87	0.406	0.203	0.560	0.018	0.016	0.280	0.18	0.025	0.56	0.06 0.08	0.02 0.04
8-15 Type A and 8-18 Types B and AB Tapping	0.025-0.040	I	0.68	0.406	0.203	0.380	0.030	0.026	0.100	0.18	0.025	0.37	0.06 0.08	0.02 0.04
	0.045-0.062	II	0.51	0.500	0.250	0.260	0.030	0.026	0.020	0.09	0.025	0.27	0.06 0.08	0.02 0.04
	0.025-0.040	III	0.86	0.406	0.203	0.550	0.030	0.026	0.270	0.18	0.025	0.56	0.06 0.08	0.02 0.04
10-24 Machine	0.025-0.040	I	0.79	0.375	0.187	0.440	0.024	0.020	0.110	0.11	0.025	0.43	0.06 0.08	0.02 0.04
	0.045-0.062	II	0.59	0.625	0.312	0.310	0.024	0.020	0.030	0.13	0.025	0.31	0.06 0.08	0.02 0.04
	0.025-0.040	III	0.97	0.375	0.187	0.620	0.024	0.020	0.280	0.19	0.025	0.62	0.06 0.08	0.02 0.04
10-12 Type A and 10-16 Types B and AB Tapping	0.025-0.040	I	0.78	0.500	0.250	0.420	0.033	0.029	0.110	0.12	0.025	0.42	0.06 0.08	0.02 0.04
	0.045-0.062	II	0.58	0.625	0.312	0.310	0.033	0.029	0.020	0.13	0.025	0.31	0.06 0.08	0.02 0.04
	0.025-0.040	III	0.97	0.500	0.250	0.610	0.033	0.029	0.250	0.19	0.025 0.030	0.61	0.06 0.08	0.02 0.04
14-10 Type A or 1/4-14 Types B and AB Tapping	0.028-0.056	I	0.91	0.562	0.281	0.500	0.042	0.038	0.050	0.19	0.040 0.025	0.49	0.09 0.12	0.04 0.05
	0.060-0.087	III	1.14	0.562	0.281	0.740	0.039	0.035	0.300	0.25	0.035 0.040	0.75	0.09 0.12	0.04 0.05

^aSee Boss Detail under General Specifications for applicability of types and sizes.