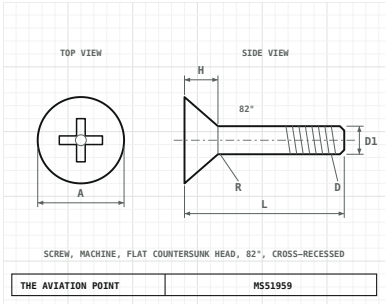
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MS51959 screw — flat countersunk 82°

MS51959: 82° flat countersunk, cross-recessed machine screw in corrosion-resistant steel, UNC-2A, .0860 to .3750.



Engineering drawing · dimensions in inches

Specification

Item	Value
Head	flat countersunk 82°
Drive	cross-recess (MS9006)
Thread series	coarse (UNC-2A)
Material	Austenitic corrosion-resistant steel Type 302 (UNS S30200), 304 (S30400), 304L (S30403), 305 (S30500), 316 (S31600), 316L (S31603), 384 (S38400) or XM-7 (S30430), chemical composition per QQ-S-763.
Heat treatment	Minimum tensile load per Table I, based on 80,000 psi on the stress areas of FED-STD-H28/2; yield strength (0.2 percent offset) 30,000 psi minimum.

Item	Value
Finish	Passivate per QQ-P-35, or black oxide per MIL-C-13924, Class 4 (B code; not for Type 316 or 316L).
Procurement	FF-S-92
Thread specification	FED-STD-H28/2
Status	Check the current issue before design use. Rev. D (25 Apr 1997), superseding MS51959C (2 Apr 1971). Notice 1 (Jun 2000): cancelled and superseded by NASM51959; the part numbers are identical (MS51959-1 = NASM51959-1).

Dimensions by size

Dimension, in	.0860-56 UNC-2A	.1120-40 UNC-2A	.1380-32 UNC-2A	.1640-32 UNC-2A	.1900-24 UNC-2A	.2500-20 UNC-2A	.3125-18 UNC-2A	.3750-16 UNC-2A
D1 body dia	.0717 – .0860	.0925 – .1120	.1141 – .1380	.1399 – .1640	.1586 – .1900	.2127 – .2500	.2712 – .3125	.3287 – .3750
A head dia	.156 – .172; abs min .147	.207 – .225; abs min .195	.257 – .279; abs min .244	.306 – .332; abs min .292	.359 – .385; abs min .340	.477 – .507; abs min .452	.600 – .635; abs min .568	.722 – .762; abs min .685
H head height full head ref	.051	.067	.083	.100	.116	.153	.191	.230
H1 head height undercut	.028 – .036	.038 – .047	.045 – .059	.058 – .070	.068 – .081	.092 – .107	.116 – .134	.140 – .161
R radius full head min	.034	.045	.055	.066	.076	.100	.125	.150
R1 radius undercut head max	.013	.017	.021	.025	.029	.038	.047	.056
driver size	1	1	2	2	2	3	4	4
min tensile lbf	300	480	730	1120	1400	2540	4190	6200

Dimensions in inches, as tabulated in Table I of the standard (letters as on its drawing). Head diameter A: max and min sharp, and absolute min.

Part numbers and lengths

.0860-56 UNC-2A 10 part numbers · tolerance +0/-.031

Part no.	Length, in
MS51959-1	.125
MS51959-2	.188
MS51959-3	.250
MS51959-4	.312
MS51959-5	.375
MS51959-6	.438
MS51959-7	.500
MS51959-8	.625
MS51959-9	.750
MS51959-10	.875

.1120-40 UNC-2A 13 part numbers

Part no.	Length, in	Tol.
MS51959-11	.125	+0/-.031
MS51959-12	.188	+0/-.031
MS51959-13	.250	+0/-.031
MS51959-14	.312	+0/-.031
MS51959-15	.375	+0/-.031
MS51959-16	.438	+0/-.031
MS51959-17	.500	+0/-.031
MS51959-18	.625	+0/-.031
MS51959-19	.750	+0/-.031
MS51959-20	.875	+0/-.031
MS51959-21	1.000	+0/-.031
MS51959-22	1.250	-.062
MS51959-23	1.500	-.062

.1380-32 UNC-2A 15 part numbers

Part no.	Length, in	Tol.
MS51959-24	.125	+0/-.031
MS51959-25	.188	+0/-.031
MS51959-26	.250	+0/-.031
MS51959-27	.312	+0/-.031
MS51959-28	.375	+0/-.031
MS51959-29	.438	+0/-.031
MS51959-30	.500	+0/-.031
MS51959-31	.625	+0/-.031
MS51959-32	.750	+0/-.031
MS51959-33	.875	+0/-.031
MS51959-34	1.000	+0/-.031
MS51959-35	1.250	-.062
MS51959-36	1.500	-.062
MS51959-37	1.750	-.062
MS51959-38	2.000	-.062

.1640-32 UNC-2A 19 part numbers

Part no.	Length, in	Tol.
MS51959-39	.125	+0/-.031
MS51959-40	.188	+0/-.031
MS51959-41	.250	+0/-.031
MS51959-42	.312	+0/-.031
MS51959-43	.375	+0/-.031
MS51959-44	.438	+0/-.031
MS51959-45	.500	+0/-.031
MS51959-46	.625	+0/-.031
MS51959-47	.750	+0/-.031
MS51959-48	.875	+0/-.031
MS51959-49	1.000	+0/-.031
MS51959-50	1.250	-.062
MS51959-51	1.500	-.062
MS51959-52	1.750	-.062
MS51959-53	2.000	-.062
MS51959-54	2.250	+0/-.094
MS51959-55	2.500	+0/-.094
MS51959-56	2.750	+0/-.094
MS51959-57	3.000	+0/-.094

Reference data. The aircraft manufacturer's documentation (SRM / IPC) takes precedence.

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.1900-24 UNC-2A 18 part numbers

Part no.	Length, in	Tol.
MS51959-58	.188	+0/-.031
MS51959-59	.250	+0/-.031
MS51959-60	.312	+0/-.031
MS51959-61	.375	+0/-.031
MS51959-62	.438	+0/-.031
MS51959-63	.500	+0/-.031
MS51959-64	.625	+0/-.031
MS51959-65	.750	+0/-.031
MS51959-66	.875	+0/-.031
MS51959-67	1.000	+0/-.031
MS51959-68	1.250	-.062
MS51959-69	1.500	-.062
MS51959-70	1.750	-.062
MS51959-71	2.000	-.062
MS51959-72	2.250	+0/-.094
MS51959-73	2.500	+0/-.094
MS51959-74	2.750	+0/-.094
MS51959-75	3.000	+0/-.094

.2500-20 UNC-2A 16 part numbers

Part no.	Length, in	Tol.
MS51959-76	.312	+0/-.031
MS51959-77	.375	+0/-.031
MS51959-78	.438	+0/-.031
MS51959-79	.500	+0/-.031
MS51959-80	.625	+0/-.031
MS51959-81	.750	+0/-.031
MS51959-82	.875	+0/-.031
MS51959-83	1.000	+0/-.031
MS51959-84	1.250	-.062
MS51959-85	1.500	-.062
MS51959-86	1.750	-.062
MS51959-87	2.000	-.062
MS51959-88	2.250	+0/-.094
MS51959-89	2.500	+0/-.094
MS51959-90	2.750	+0/-.094
MS51959-91	3.000	+0/-.094

.3125-18 UNC-2A 15 part numbers

Part no.	Length, in	Tol.
MS51959-92	.375	+0/-.031
MS51959-93	.438	+0/-.031
MS51959-94	.500	+0/-.031
MS51959-95	.625	+0/-.031
MS51959-96	.750	+0/-.031
MS51959-97	.875	+0/-.031
MS51959-98	1.000	+0/-.031
MS51959-99	1.250	-.062
MS51959-100	1.500	-.062
MS51959-101	1.750	-.062
MS51959-102	2.000	-.062
MS51959-103	2.250	+0/-.094
MS51959-104	2.500	+0/-.094
MS51959-105	2.750	+0/-.094
MS51959-106	3.000	+0/-.094

.3750-16 UNC-2A 13 part numbers

Part no.	Length, in	Tol.
MS51959-107	.500	+0/-.031
MS51959-108	.625	+0/-.031
MS51959-109	.750	+0/-.031
MS51959-110	.875	+0/-.031
MS51959-111	1.000	+0/-.031
MS51959-112	1.250	-.062
MS51959-113	1.500	-.062
MS51959-114	1.750	-.062
MS51959-115	2.000	-.062
MS51959-116	2.250	+0/-.094
MS51959-117	2.500	+0/-.094
MS51959-118	2.750	+0/-.094
MS51959-119	3.000	+0/-.094

How to read the part number

Part	Meaning
Format	MS51959-<dash number>[S316][B]
Example	MS51959-1: .0860-56 UNC-2A, .125 long, 300 series CRES, passivated. MS51959-1B: black oxide. MS51959-1S316: Type 316 CRES, passivated.
Length tolerance, .125 to 1.000	+0/-.031
Length tolerance, 1.250 to 2.000	-.062
Length tolerance, 2.250 to 3.000	+0/-.094
Dash	Dash number from Table I selects thread size and length (1 to 119)
(none)	Material: any 300 series austenitic CRES listed in the material requirement
S316	Material: Type 316 or 316L CRES
(none)	Finish: passivated
B	Finish: black oxide coated (not for Type 316 or 316L)

Notes

- Undercut head (head height H1, radius R1): dash numbers 1, 11, 12, 24, 25, 39 to 41, 58 to 60, 76 to 78, 92 to 94 and 107. All other dash numbers have the full head (H, R).
- Head angle 80° to 82°. Recess per MS9006. L is the overall length.
- Threads: Unified Class 2A UNC per FED-STD-H28/2, acceptability per FED-STD-H28/20. Threads extend to within two threads or less of the bearing surface of the head; lengths over 2.000 have a minimum complete thread length of 1.750.
- Magnetic permeability, when specified: less than 2.0 (air = 1.0) at H = 200 oersteds, indicator per ASTM A 342. Cold-worked screws may not meet permeability and strength requirements at the same time.
- Type 316 and 316L screws of nominal size .1900 and larger are marked "316" on the head, raised or depressed.
- Screws made before 25 Apr 1997 may be used until stock is depleted.
- Approved data governs. Use the screw the SRM, drawing or IPC calls for.

SOURCES · MS51959 Rev. D, 25 Apr 1997 — Screw, Machine, Flat Countersunk Head, 82°, Cross-Recessed, Corrosion-Resistant Steel, UNC-2A

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