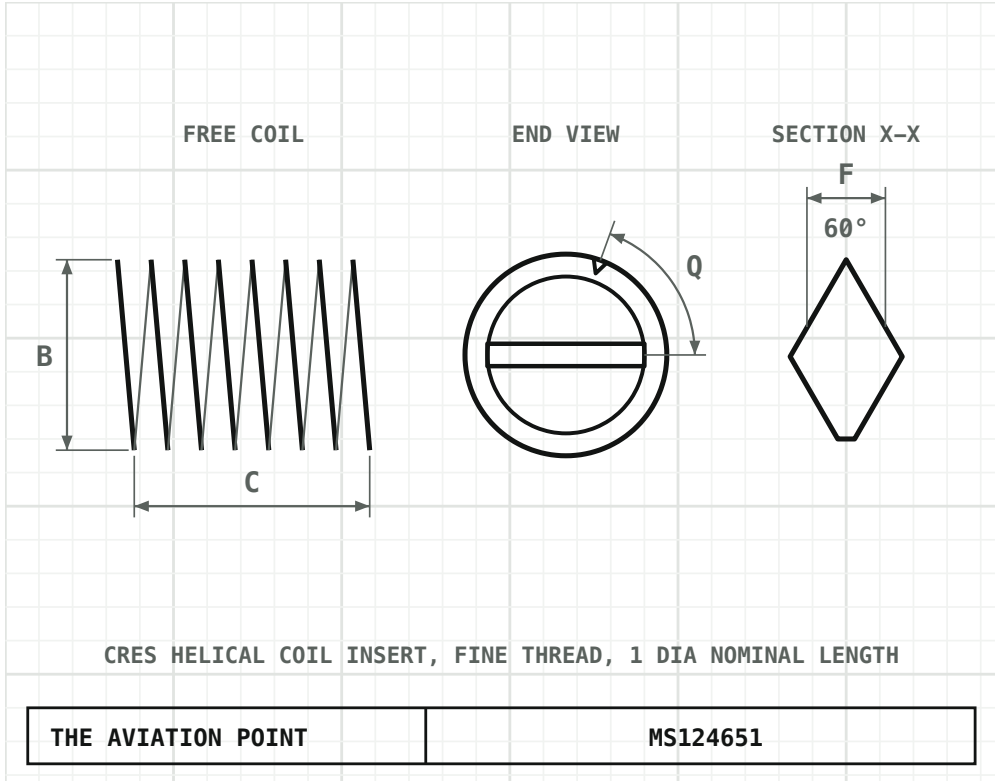
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The Aviation Point

MS124651 — CRES helical coil insert, fine thread, 1 dia nominal length

MS124651 thru MS124690: corrosion-resistant steel helical coil inserts for fine threads, one diameter nominal length, .099-56 to 1.500-12.



Engineering drawing · dimensions in inches

Specification

Item	Value
Type	Helical coil insert, fine thread
Material	Corrosion-resistant steel, AMS 7245 (material and manufacture)
Procurement	MIL-I-8846

Item	Value
Status	Check the current issue before design use.
Supersedes	MS21208 (in part)
Federal supply class	5340

Dimensions by size

Dimension	.099-56	.112-48	.138-40	.164-36	.190-32	.250-28	.3125-24	.375-24	.4375-20	.500-20	.5625-18	.625-18	.750-16	.875-14	1.000-12	1.000-14	1.125-12	1.250-12	1.375-12	1.500-12
A min — A, min flat (view AB)	.0027	.0043	.0068	.0059	.0076	.0085	.0120	.0120	.0164	.0164	.0176	.0176	.0215	.0267	.0334	.0267	.0334	.0334	.0334	.0334
B min — B, min (free outer dia)	.131	.147	.173	.204	.236	.306	.380	.448	.524	.592	.666	.733	.876	1.021	1.169	1.156	1.304	1.439	1.575	1.710
B max — B, max (free outer dia)	.146	.162	.193	.224	.256	.326	—	.468	.549	.617	.691	.758	.901	1.051	1.199	1.186	1.334	1.469	1.610	1.745
C — C, number of free coils (±.250 coil)	3.375	3.375	3.500	3.875	4.125	5.000	5.500	6.875	6.625	7.875	8.000	9.000	9.750	9.875	9.625	11.500	11.125	12.500	13.750	15.250
D min — D, min (section X-X)	.0163	.0196	.0241	.0261	.0295	.0347	.0410	.0410	.0500	.0500	.0560	.0560	.0636	.0730	.0861	.0730	.0861	.0861	.0861	.0861
D max — D, max (section X-X)	.0193	.0226	.0271	.0301	.0338	.0387	.0449	.0449	.0540	.0540	.0600	.0600	.0677	.0770	.0900	.0770	.0900	.0900	.0900	.0900
E min — E, min (section X-X)	.0126	.0152	.0189	.0203	.0233	.0253	.0305	.0305	.0378	.0378	.0416	.0416	.0477	.0545	.0649	.0545	.0649	.0649	.0649	.0649
E max — E, max (section X-X)	.0156	.0182	.0219	.0243	.0273	.0313	.0365	.0365	.0438	.0438	.0486	.0486	.0547	.0625	.0729	.0625	.0729	.0729	.0729	.0729
F — F, gage (section X-X)	.00893	.01042	.01250	.01389	.01563	.01786	.02083	.02083	.02500	.02500	.02778	.02778	.03125	.03571	.04167	.03571	.04167	.04167	.04167	.04167
H min — H, min (section X-X)	.0112	.01313	.01584	.01764	.01985	.02270	.02656	.02656	.03198	.03198	.03558	.03558	.04009	.04589	.05363	.04589	.05363	.05363	.05363	.05363
H max — H, max (section X-X)	—	.01353	.01624	.01804	.02030	.02320	—	.02706	.03248	.03248	.03608	.03608	.04059	.04639	.05413	.04639	.05413	.05413	.05413	.05413
J min — J, min (measured 30° from tang)	.124	.134	—	—	—	—	.359	.422	.494	.556	.625	.688	.820	.955	1.094	1.080	1.219	1.344	1.469	1.594
J max — J, max (measured 30° from tang)	.146	.150	—	—	—	—	.377	.439	.514	.576	.645	.708	.840	.980	1.119	1.105	1.244	1.369	1.499	1.624
P min — P, min	.072	.060	.100	.117	.130	.173	.203	.235	.281	.313	.344	.375	.453	.500	.526	.526	.557	.679	.689	.811
P max — P, max	.090	.095	.130	.147	.176	.239	.291	.353	.416	.478	.541	.588	.562	.640	.728	.750	.819	.941	1.001	1.123
Q — Q, angle	75° - 150°	75° - 150°	25° - 100°	20° - 100°	15° - 90°	15° - 70°	15° - 55°	15° - 75°	15° - 75°	15° - 75°	15° - 75°	15° - 75°	15° - 75°	15° - 75°	15° - 75°	15° - 75°	10° - 70°	10° - 70°	10° - 70°	20° - 70°
R min — R, min (tangent to flanks, view AB)	.0032	.0038	.0045	.0050	.0056	.0064	.0075	.0075	.0090	.0090	.0100	.0100	.0113	.0129	.0150	.0129	.0150	.0150	.0150	.0150
S min — S, min (view AB)	.0056	.0065	—	.0087	.0098	.0112	.0130	.0130	—	.0156	.0174	.0174	.0195	.0223	.0260	.0223	.0260	.0260	.0260	.0260

Dimensions in inches, as tabulated in the standard; C is a number of coils and Q an angle. Letters as on the standard's drawing.

Part numbers

Part no.	Size	Type	Nominal length, in	Approx. weight, lb per 100
MS124670	.099-56	Notched	.099	.0051
MS124671	.112-48	Notched	.112	.0099
MS124653	.138-40	Notched	.138	.0200

Part no.	Size	Type	Nominal length, in	Approx. weight, lb per 100
MS124681	.5625-18	Unnotched (inactive for design)	.562	.826
MS124662	.625-18	Notched	.625	1.010
MS124682	.625-18	Unnotched (inactive for design)	.625	1.010

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

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Part no.	Size	Type	Nominal length, in	Approx. weight, lb per 100
MS124673	.138-40	Unnotched (inactive for design)	.138	.0200
MS124654	.164-36	Notched	.164	.0325
MS124674	.164-36	Unnotched (inactive for design)	.164	.0325
MS124655	.190-32	Notched	.190	.0474
MS124675	.190-32	Unnotched (inactive for design)	.190	.0474
MS124656	.250-28	Notched	.250	.109
MS124676	.250-28	Unnotched (inactive for design)	.250	.109
MS124657	.3125-24	Notched	.312	.180
MS124677	.3125-24	Unnotched (inactive for design)	.312	.180
MS124658	.375-24	Notched	.375	.259
MS124678	.375-24	Unnotched (inactive for design)	.375	.259
MS124659	.4375-20	Notched	.438	.459
MS124679	.4375-20	Unnotched (inactive for design)	.438	.459
MS124660	.500-20	Notched	.500	—
MS124680	.500-20	Unnotched (inactive for design)	.500	—
MS124661	.5625-18	Notched	.562	.826
MS124663	.750-16	Notched	.750	1.695
MS124683	.750-16	Unnotched (inactive for design)	.750	1.695
MS124664	.875-14	Notched	.875	2.564
MS124684	.875-14	Unnotched (inactive for design)	.875	2.564
MS124651	1.000-12	Notched	1.000	3.875
MS124665	1.000-14	Notched (inactive for design)	1.000	3.448
MS124685	1.000-14	Unnotched (inactive for design)	1.000	3.448
MS124666	1.125-12	Notched	1.125	4.917
MS124686	1.125-12	Unnotched (inactive for design)	1.125	4.917
MS124667	1.250-12	Notched	1.250	6.254
MS124687	1.250-12	Unnotched (inactive for design)	1.250	6.254
MS124668	1.375-12	Notched	1.375	7.359
MS124688	1.375-12	Unnotched (inactive for design)	1.375	7.359
MS124669	1.500-12	Notched	1.500	8.799
MS124689	1.500-12	Unnotched (inactive for design)	1.500	8.799

Every part number of MS124651 thru MS124690, notched and unnotched, by thread size. The standard governs.

How to read the part number

Part	Meaning
Example	MS124651 — Notched insert for a 1.000-12 thread, nominal length 1.000

Notes

- Nominal length equals the basic thickness of plate for the insert assembly. The assembled length of the insert is as specified on MS33537.
- The number of free coils is counted, and the assembled length measured, 90° from the tang.
- An insert assembled in a tapped hole as specified in MS33537 produces a finished thread meeting all requirements of MIL-S-7742 and accepts external MIL-S-8879 threads.
- Ends of coil may be square or angular. The centerline of the wire section is square with the coil axis within 5°. The first coil diameter meets the free diameter 210° from the tang, within 20°. The notch is on the top face or edge of the first coil.
- Unnotched inserts are inactive for design after 15 Oct 1969: use notched inserts. Notched inserts can universally replace the unnotched inserts, but unnotched inserts cannot replace the notched inserts.
- Surface texture per ANSI B46.1-1962. Identification: part number and manufacturer's identification marked on the container. Do not use unassigned part numbers.
- MS124665 (1.000-14, notched) is inactive for design after 15 Oct 1969; there is no superseding standard.

SOURCES · MS124651 thru MS124690 Rev. D, 24 Feb 1976 — Insert, CRES Helical Coil Fine Thread, 1 Dia Nominal Length

SCAN · OPEN THIS DATA SHEET
theaviationpoint.com/parts/inserts/ms124651/