

RATIONALE

FSC FOR HELICAL COIL INSERTS CHANGED.

REV.  
E

MA3331™

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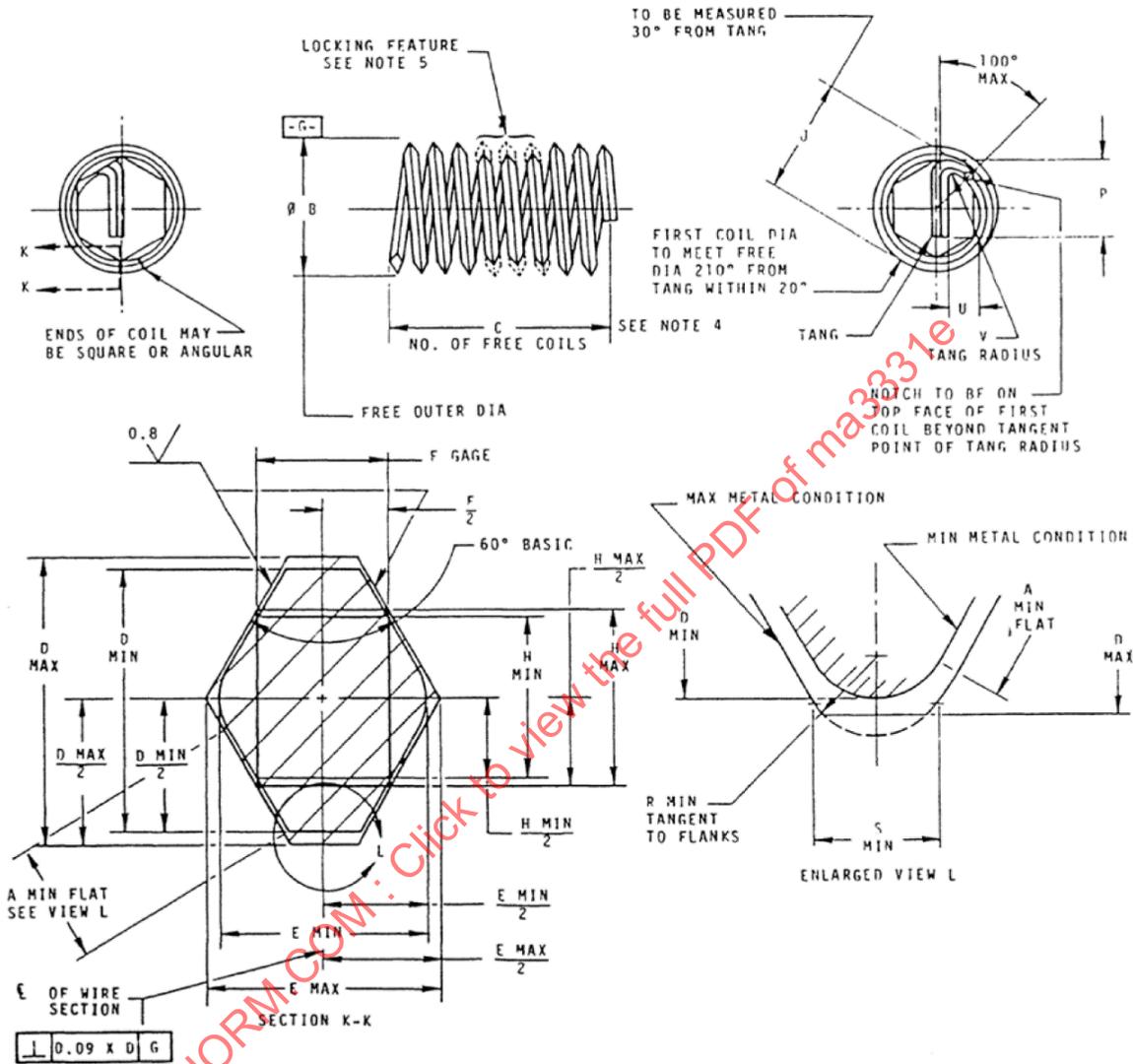
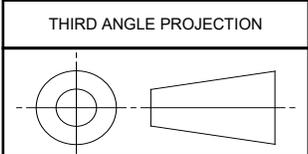


FIGURE 1 - INSERT

For more information on this standard, visit  
<https://www.sae.org/standards/content/MA3331E/>



CUSTODIAN: E-25

PROCUREMENT SPECIFICATION: MA1565



**METRIC AEROSPACE STANDARD**

INSERT, SCREW THREAD, HELICAL COIL, METRIC SERIES, SCREW LOCKING, CRES, CADMIUM PLATED

MA3331™  
SHEET 1 OF 5

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TABLE 1 (CONTINUED)

THREAD SIZE	THREAD PITCH	C+.25 COIL 1 DIA		C+.25 COIL 1.5 DIA		C+.25 COIL 2 DIA		C+.25 COIL 2.5 DIA		C+.25 COIL 3 DIA		D MIN	D MAX	E MIN	E MAX	F GAGE	H MIN	H MAX	J MIN	J MAX
		COIL	COIL	COIL	COIL	COIL	COIL	COIL	COIL	COIL	COIL									
2	0.4			5.500	5.000	10.125	12.375	12.375	12.375	12.375	12.375	0.389	0.433	0.274	0.350	0.200	0.2495	0.2600	2.50	2.70
2.2	0.45	3.125	3.375	5.375	5.375	7.625	9.875	12.125	12.125	12.125	12.125	0.437	0.487	0.318	0.394	0.225	0.2820	0.2920	2.60	2.80
2.5	0.45	3.375	3.375	5.750	5.750	8.125	10.500	12.750	12.750	12.750	12.750	0.437	0.487	0.318	0.394	0.225	0.2820	0.2920	3.05	3.65
3	0.5	3.750	3.750	6.375	6.375	8.875	11.375	13.875	13.875	13.875	13.875	0.482	0.541	0.362	0.438	0.250	0.3145	0.3250	3.60	4.30
3.5	0.6	3.750	3.750	6.375	6.375	8.750	11.375	13.750	13.750	13.750	13.750	0.566	0.650	0.449	0.525	0.300	0.3795	0.3900	4.25	4.90
4	0.7	3.625	3.625	6.125	6.125	8.625	11.125	13.625	13.625	13.625	13.625	0.683	0.758	0.510	0.612	0.350	0.4445	0.4550	4.90	5.55
5	0.8	4.125	4.125	6.875	6.875	9.625	12.375	15.125	15.125	15.125	15.125	0.775	0.866	0.598	0.700	0.400	0.5085	0.5200	6.10	6.75
6	1	4.000	4.000	6.750	6.750	9.500	12.125	14.875	14.875	14.875	14.875	0.975	1.083	0.748	0.875	0.500	0.6370	0.6500	7.25	7.90
7	1	4.875	4.875	8.000	8.000	11.125	14.125	17.250	17.250	17.250	17.250	0.975	1.083	0.748	0.875	0.500	0.6370	0.6500	8.40	9.15
8	1	5.875	5.875	9.375	9.375	13.000	16.500	20.125	20.125	20.125	20.125	0.975	1.083	0.748	0.875	0.500	0.6370	0.6500	9.20	9.65
8	1.25	4.500	4.500	7.375	7.375	10.250	13.250	16.125	16.125	16.125	16.125	1.251	1.353	0.967	1.094	0.625	0.7990	0.8120	9.50	9.90
10	1	7.625	7.625	12.000	12.000	16.500	21.000	25.500	25.500	25.500	25.500	0.975	1.083	0.748	0.875	0.500	0.6370	0.6500	11.10	11.55
10	1.25	5.875	5.875	9.500	9.500	13.125	16.750	20.375	20.375	20.375	20.375	1.251	1.353	0.967	1.094	0.625	0.7990	0.8120	11.50	11.95
10	1.5	4.875	4.875	8.000	8.000	11.125	14.250	17.375	17.375	17.375	17.375	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	11.80	12.25
12	1.25	7.250	7.250	11.625	11.625	15.875	20.250	24.500	24.500	24.500	24.500	1.251	1.353	0.967	1.094	0.625	0.7990	0.8120	13.50	14.00
12	1.5	6.000	6.000	9.625	9.625	13.375	17.000	20.750	20.750	20.750	20.750	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	13.80	14.30
12	1.75	5.000	5.000	8.250	8.250	11.500	14.625	17.875	17.875	17.875	17.875	1.792	1.894	1.379	1.531	0.875	1.1240	1.1370	14.10	14.60
14	1.5	7.125	7.125	11.375	11.375	15.625	20.000	24.250	24.250	24.250	24.250	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	15.80	16.30
14	2	5.125	5.125	8.500	8.500	11.750	15.000	18.375	18.375	18.375	18.375	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	16.40	16.90
16	1.5	8.250	8.250	13.125	13.125	18.000	22.750	27.625	27.625	27.625	27.625	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	17.80	18.30
16	2	6.125	6.125	9.750	9.750	13.500	17.250	21.000	21.000	21.000	21.000	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	18.40	18.90
18	1.5	9.500	9.500	15.000	15.000	20.375	25.875	31.375	31.375	31.375	31.375	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	19.80	20.35
18	2	7.000	7.000	11.125	11.125	15.375	19.500	23.625	23.625	23.625	23.625	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	20.40	20.95
18	2.5	5.375	5.375	8.875	8.875	12.250	15.625	19.000	19.000	19.000	19.000	2.604	2.706	1.998	2.188	1.250	1.6110	1.6240	20.90	21.45
20	1.5	10.750	10.750	16.875	16.875	22.875	28.875	35.000	35.000	35.000	35.000	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	21.80	22.50
20	2	7.875	7.875	12.500	12.500	17.250	21.875	26.500	26.500	26.500	26.500	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	22.40	23.10
20	2.5	6.125	6.125	9.875	9.875	13.625	17.375	21.125	21.125	21.125	21.125	2.604	2.706	1.998	2.188	1.250	1.6110	1.6240	22.90	23.60
22	1.5	11.875	11.875	18.500	18.500	25.125	31.625	38.250	38.250	38.250	38.250	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	24.10	24.80
22	2	8.750	8.750	13.750	13.750	18.875	23.875	29.000	29.000	29.000	29.000	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	24.40	25.10
22	2.5	6.750	6.750	10.875	10.875	14.875	19.000	23.125	23.125	23.125	23.125	2.604	2.706	1.998	2.188	1.250	1.6110	1.6240	24.90	25.60
24	2	9.500	9.500	15.000	15.000	20.375	25.875	31.250	31.250	31.250	31.250	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	26.40	27.10
24	3	6.125	6.125	10.000	10.000	13.750	17.500	21.375	21.375	21.375	21.375	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	27.50	28.20
27	2	10.875	10.875	17.000	17.000	23.250	29.375	35.500	35.500	35.500	35.500	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	29.40	30.10
27	3	7.000	7.000	11.250	11.250	15.500	19.750	24.000	24.000	24.000	24.000	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	30.50	31.20
30	2	12.250	12.250	19.125	19.125	25.875	32.750	39.500	39.500	39.500	39.500	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	32.50	33.20
30	3	7.875	7.875	12.500	12.500	17.125	21.875	26.500	26.500	26.500	26.500	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	33.50	34.20
33	2	13.625	13.625	21.125	21.125	28.625	36.000	43.500	43.500	43.500	43.500	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	35.80	36.50
33	3	8.750	8.750	13.875	13.875	19.000	24.125	29.250	29.250	29.250	29.250	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	36.50	37.20
36	2	15.000	15.000	23.250	23.250	31.375	39.500	47.750	47.750	47.750	47.750	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	39.00	39.70
36	3	9.750	9.750	15.250	15.250	20.875	26.500	32.000	32.000	32.000	32.000	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	39.50	40.20
39	2	16.375	16.375	25.250	25.250	34.125	43.000	51.875	51.875	51.875	51.875	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	42.30	43.00
39	3	10.750	10.750	16.750	16.750	22.750	28.875	34.875	34.875	34.875	34.875	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	42.50	43.20



METRIC AEROSPACE STANDARD

INSERT, SCREW THREAD, HELICAL COIL, METRIC SERIES, SCREW LOCKING, CRES, CADMIUM PLATED

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TABLE 1 (CONTINUED)

THREAD SIZE DIA	THREAD SIZE PITCH	P MIN	P MAX	R MIN	R MAX	S MIN	S MAX	U MIN	U MAX	V MAX	APPROXIMATE MASS, KILO-GRAMS/100		APPROXIMATE MASS, KILO-GRAMS/100		APPROXIMATE MASS, KILO-GRAMS/100	
											1 DIA	1.5 DIA	2 DIA	2.5 DIA	1 DIA	1.5 DIA
2	0.4	1.30	1.90	0.072	0.125	0.37	0.66	0.22	0.66	0.22	0.003	0.003	0.007	0.008	0.008	0.012
2.2	0.45	1.40	2.00	0.081	0.141	0.41	0.91	0.25	0.91	0.25	0.004	0.006	0.008	0.010	0.010	0.012
2.5	0.45	1.60	2.25	0.081	0.141	0.41	1.22	0.30	1.22	0.30	0.006	0.008	0.010	0.012	0.012	0.016
3	0.5	1.95	2.80	0.090	0.156	0.46	1.33	0.30	1.33	0.30	0.006	0.009	0.012	0.016	0.016	0.020
3.5	0.6	2.20	3.00	0.108	0.188	0.52	1.47	0.30	1.47	0.30	0.009	0.014	0.020	0.026	0.026	0.031
4	0.7	2.50	3.55	0.126	0.219	0.58	1.67	0.45	1.67	0.45	0.014	0.022	0.031	0.039	0.039	0.048
5	0.8	3.15	4.55	0.144	0.250	0.64	2.09	0.60	2.09	0.60	0.025	0.040	0.055	0.070	0.070	0.085
6	1	3.70	4.85	0.160	0.312	0.70	2.55	0.60	2.55	0.60	0.044	0.072	0.099	0.126	0.126	0.153
7	1	4.30	5.50	0.180	0.312	0.70	3.10	0.75	3.10	0.75	0.062	0.099	0.136	0.173	0.173	0.210
8	1	4.75	6.50	0.180	0.312	0.70	3.88	0.75	3.88	0.75	0.083	0.132	0.180	0.228	0.228	0.277
8	1.25	4.75	6.50	0.226	0.391	0.86	3.60	0.75	3.60	0.75	0.100	0.160	0.221	0.281	0.281	0.342
10	1	5.50	8.00	0.180	0.312	0.70	4.90	0.75	4.90	0.75	0.136	0.212	0.288	0.362	0.362	0.439
10	1.25	5.50	8.00	0.226	0.391	0.86	4.77	0.75	4.77	0.75	0.162	0.257	0.352	0.446	0.446	0.541
10	1.5	5.50	8.00	0.271	0.469	1.02	4.54	0.75	4.54	0.75	0.188	0.302	0.416	0.530	0.530	0.643
12	1.25	6.70	9.75	0.226	0.391	0.86	5.84	1.00	5.84	1.00	0.240	0.376	0.512	0.649	0.649	0.785
12	1.5	6.70	9.75	0.271	0.469	1.02	5.58	1.00	5.58	1.00	0.281	0.444	0.608	0.772	0.772	0.935
12	1.75	6.70	9.75	0.316	0.547	1.18	5.36	1.40	5.36	1.40	0.318	0.509	0.700	0.890	0.890	1.081
14	1.5	7.20	11.25	0.271	0.469	1.02	6.76	1.15	6.76	1.15	0.391	0.614	0.836	1.059	1.059	1.282
14	2	7.20	11.25	0.361	0.625	1.38	6.26	1.40	6.26	1.40	0.497	0.794	1.091	1.388	1.388	1.685
16	1.5	8.30	12.75	0.271	0.469	1.02	7.78	1.45	7.78	1.45	0.519	0.810	1.101	1.392	1.392	1.682
16	2	8.30	12.75	0.361	0.625	1.38	7.40	2.70	7.40	2.70	0.665	1.053	1.441	1.828	1.828	2.216
18	1.5	9.30	14.00	0.271	0.469	1.02	8.83	1.75	8.83	1.75	0.665	1.033	1.401	1.769	1.769	2.137
18	2	9.30	14.00	0.361	0.625	1.38	8.30	2.70	8.30	2.70	0.856	1.347	1.838	2.328	2.328	2.819
18	2.5	9.30	14.00	0.451	0.781	1.63	7.79	2.85	7.79	2.85	1.031	1.645	2.258	2.872	2.872	3.466
20	1.5	10.40	14.50	0.271	0.469	1.02	9.77	2.85	9.77	2.85	0.830	1.264	1.739	2.193	2.193	2.647
20	2	10.40	14.50	0.361	0.625	1.38	9.40	2.85	9.40	2.85	1.072	1.678	2.284	2.890	2.890	3.495
20	2.5	10.40	14.50	0.451	0.781	1.63	8.89	2.85	8.89	2.85	1.297	2.054	2.812	3.569	3.569	4.326
22	1.5	11.40	16.00	0.271	0.469	1.02	11.10	2.85	11.10	2.85	1.013	1.563	2.113	2.662	2.662	3.212
22	2	11.40	16.00	0.361	0.625	1.38	10.45	2.85	10.45	2.85	1.313	2.046	2.779	3.512	3.512	4.245
22	2.5	11.40	16.00	0.451	0.781	1.63	9.94	2.85	9.94	2.85	1.593	2.510	3.426	4.342	4.342	5.259
24	2	12.50	16.50	0.361	0.625	1.38	11.46	2.85	11.46	2.85	1.576	2.448	3.321	4.193	4.193	5.085
24	3	12.50	16.50	0.541	0.938	2.02	10.45	2.85	10.45	2.85	2.239	3.548	4.857	6.166	6.166	7.474
27	2	14.00	17.50	0.361	0.625	1.38	13.14	2.85	13.14	2.85	2.017	3.121	4.225	5.329	5.329	6.433
27	3	14.00	17.50	0.541	0.938	2.02	12.13	2.85	12.13	2.85	2.844	4.540	6.196	7.853	7.853	9.509
30	2	15.00	19.00	0.361	0.625	1.38	14.81	2.85	14.81	2.85	2.513	3.876	5.238	6.601	6.601	7.964
30	3	15.00	19.00	0.541	0.938	2.02	13.65	2.85	13.65	2.85	3.611	5.656	7.700	9.745	9.745	11.782
33	2	17.00	21.00	0.361	0.625	1.38	16.35	2.85	16.35	2.85	3.063	4.712	6.361	8.010	8.010	9.659
33	3	17.00	21.00	0.541	0.938	2.02	15.19	2.85	15.19	2.85	4.420	6.894	9.367	11.841	11.841	14.315
36	2	18.50	22.50	0.361	0.625	1.38	17.77	2.85	17.77	2.85	3.671	5.633	7.595	9.557	9.557	11.519
36	3	18.50	22.50	0.541	0.938	2.02	16.73	2.85	16.73	2.85	5.316	8.260	11.204	14.147	14.147	17.091
39	2	20.00	24.00	0.361	0.625	1.38	19.28	2.85	19.28	2.85	4.331	6.634	8.936	11.239	11.239	13.542
39	3	20.00	24.00	0.541	0.938	2.02	18.28	2.85	18.28	2.85	6.290	9.745	13.200	16.954	16.954	20.109



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 SHEET 4 OF 5

**REV. E**