FEDERAL SUPPLY CLASS

RATIONALE

MA3331C HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

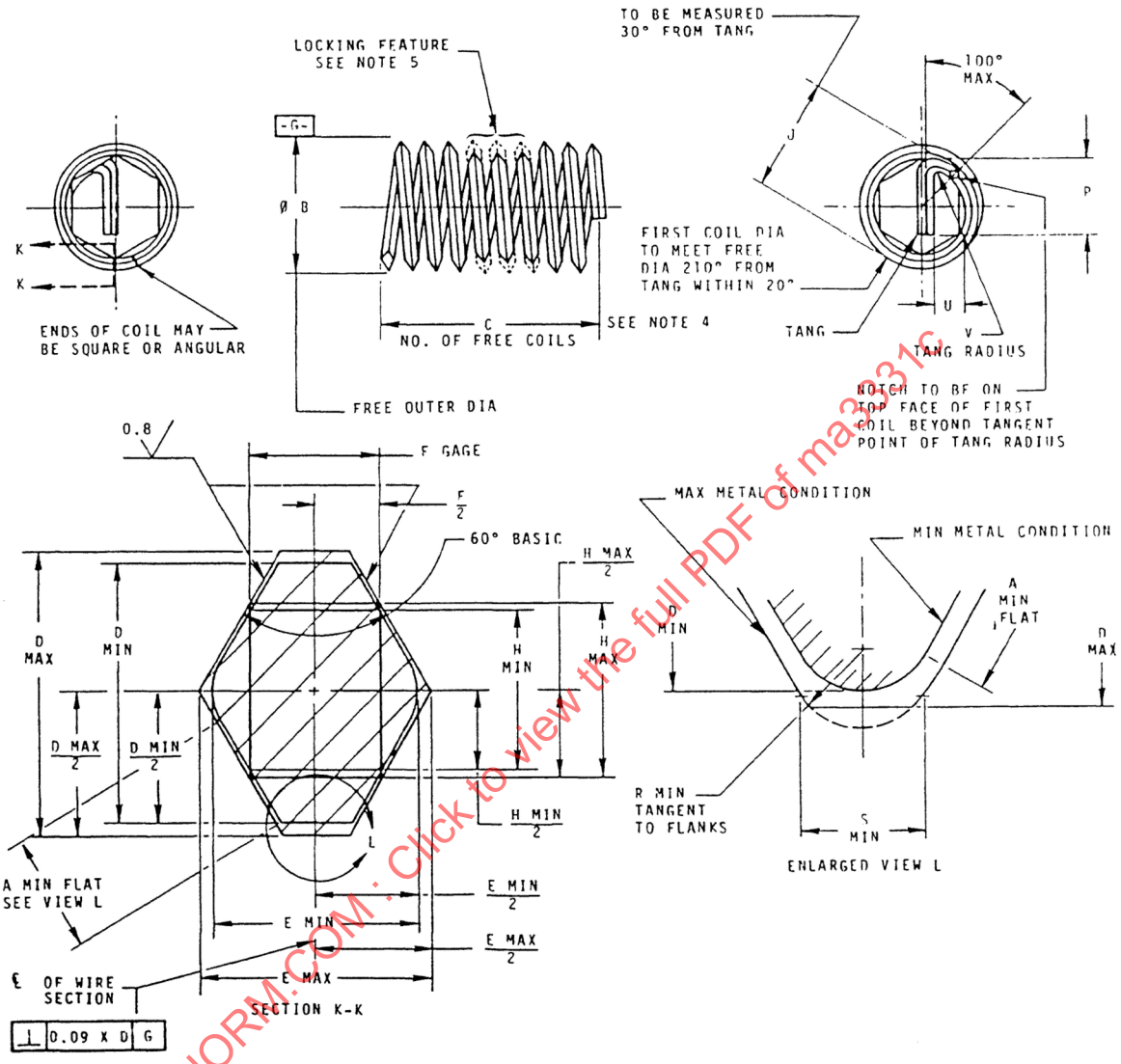
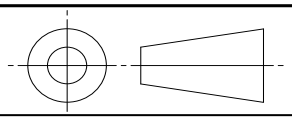


FIGURE 1

THIRD ANGLE PROJECTION



ISSUED 1981-09 REVISED 1995-12 REAFFIRMED 2012-12

CUSTODIAN: E-25

PROCUREMENT SPECIFICATION: NONE

SAE Aerospace
An SAE International Group

METRIC AEROSPACE STANDARD

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

SAE MA3331

REV. C

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TABLE 1

THREAD SIZE DIA	THREAD SIZE PITCH	AEROSPACE STANDARD PART NUMBER 1 DIA	AEROSPACE STANDARD PART NUMBER 1.5 DIA	AEROSPACE STANDARD PART NUMBER 2 DIA	AEROSPACE STANDARD PART NUMBER 2.5 DIA	AEROSPACE STANDARD PART NUMBER 3 DIA	NOMINAL LENGTH SEE NOTE 1 1 DIA	NOMINAL LENGTH SEE NOTE 1 1.5 DIA	NOMINAL LENGTH SEE NOTE 1 2 DIA	NOMINAL LENGTH SEE NOTE 1 2.5 DIA	NOMINAL LENGTH SEE NOTE 1 3 DIA	A MIN	B MIN	B MAX
2	0.4	—	MA3331-190	MA3331-240	MA3331-290	MA3331-340	—	3.0	4.0	5.0	6.0	0.074	2.50	2.70
2.2	0.45	MA3331-100	MA3331-150	MA3331-200	MA3331-250	MA3331-300	2.2	3.3	4.4	5.5	6.6	0.082	2.80	3.00
2.5	0.45	MA3331-101	MA3331-151	MA3331-201	MA3331-251	MA3331-301	2.5	3.8	5.0	6.3	7.5	0.082	3.20	3.70
3	0.5	MA3331-102	MA3331-152	MA3331-202	MA3331-252	MA3331-302	3.0	4.5	6.0	7.5	9.0	0.105	3.80	4.35
3.5	0.6	MA3331-103	MA3331-153	MA3331-203	MA3331-253	MA3331-303	3.5	5.3	7.0	8.8	10.5	0.160	4.40	4.95
4	0.7	MA3331-104	MA3331-154	MA3331-204	MA3331-254	MA3331-304	4.0	6.0	8.0	10.0	12.0	0.163	5.05	5.60
5	0.8	MA3331-105	MA3331-155	MA3331-205	MA3331-255	MA3331-305	5.0	7.5	10.0	12.5	15.0	0.209	6.25	6.80
6	1	MA3331-106	MA3331-156	MA3331-206	MA3331-256	MA3331-306	6.0	9.0	12.0	15.0	18.0	0.267	7.40	7.95
7	1	MA3331-107	MA3331-157	MA3331-207	MA3331-257	MA3331-307	7.0	10.5	14.0	17.5	21.0	0.267	8.65	9.20
8	1	MA3331-108	MA3331-158	MA3331-208	MA3331-258	MA3331-308	8.0	12.0	16.0	20.0	24.0	0.267	9.70	10.25
8	1.25	MA3331-109	MA3331-159	MA3331-209	MA3331-259	MA3331-309	8.0	12.0	16.0	20.0	24.0	0.415	9.80	10.35
10	1	MA3331-141	MA3331-191	MA3331-241	MA3331-291	MA3331-341	10.0	15.0	20.0	25.0	30.0	0.267	11.95	12.50
10	1.25	MA3331-110	MA3331-160	MA3331-210	MA3331-260	MA3331-310	10.0	15.0	20.0	25.0	30.0	0.415	12.10	12.65
10	1.5	MA3331-111	MA3331-161	MA3331-211	MA3331-261	MA3331-311	10.0	15.0	20.0	25.0	30.0	0.511	11.95	12.50
12	1.25	MA3331-112	MA3331-162	MA3331-212	MA3331-262	MA3331-312	12.0	18.0	24.0	30.0	36.0	0.415	14.30	15.00
12	1.5	MA3331-113	MA3331-163	MA3331-213	MA3331-263	MA3331-313	12.0	18.0	24.0	30.0	36.0	0.511	14.25	14.95
12	1.75	MA3331-114	MA3331-164	MA3331-214	MA3331-264	MA3331-314	12.0	18.0	24.0	30.0	36.0	0.654	14.30	15.00
14	1.5	MA3331-115	MA3331-165	MA3331-215	MA3331-265	MA3331-315	14.0	21.0	28.0	35.0	42.0	0.511	16.55	17.25
14	2	MA3331-116	MA3331-166	MA3331-216	MA3331-266	MA3331-316	14.0	21.0	28.0	35.0	42.0	0.799	16.65	17.35
16	1.5	MA3331-117	MA3331-167	MA3331-217	MA3331-267	MA3331-317	16.0	24.0	32.0	40.0	48.0	0.511	18.90	19.60
16	2	MA3331-118	MA3331-168	MA3331-218	MA3331-268	MA3331-318	16.0	24.0	32.0	40.0	48.0	0.799	18.90	19.60
18	1.5	MA3331-119	MA3331-169	MA3331-219	MA3331-269	MA3331-319	18.0	27.0	36.0	45.0	54.0	0.511	21.05	21.75
18	2	MA3331-120	MA3331-170	MA3331-220	MA3331-270	MA3331-320	18.0	27.0	36.0	45.0	54.0	0.799	21.15	21.85
18	2.5	MA3331-121	MA3331-171	MA3331-221	MA3331-271	MA3331-321	18.0	27.0	36.0	45.0	54.0	1.017	21.30	22.00
20	1.5	MA3331-122	MA3331-172	MA3331-222	MA3331-272	MA3331-322	20.0	30.0	40.0	50.0	60.0	0.511	23.15	24.00
20	2	MA3331-123	MA3331-173	MA3331-223	MA3331-273	MA3331-323	20.0	30.0	40.0	50.0	60.0	0.799	23.20	24.05
20	2.5	MA3331-124	MA3331-174	MA3331-224	MA3331-274	MA3331-324	20.0	30.0	40.0	50.0	60.0	1.017	23.55	24.40
22	1.5	MA3331-125	MA3331-175	MA3331-225	MA3331-275	MA3331-325	22.0	33.0	44.0	55.0	66.0	0.511	25.55	26.45
22	2	MA3331-126	MA3331-176	MA3331-226	MA3331-276	MA3331-326	22.0	33.0	44.0	55.0	66.0	0.799	25.60	26.50
22	2.5	MA3331-127	MA3331-177	MA3331-227	MA3331-277	MA3331-327	22.0	33.0	44.0	55.0	66.0	1.017	25.90	26.90
24	2	MA3331-128	MA3331-178	MA3331-228	MA3331-278	MA3331-328	24.0	36.0	48.0	60.0	72.0	0.799	28.10	29.10
24	3	MA3331-129	MA3331-179	MA3331-229	MA3331-279	MA3331-329	24.0	36.0	48.0	60.0	72.0	1.234	28.00	29.00
27	2	MA3331-130	MA3331-180	MA3331-230	MA3331-280	MA3331-330	27.0	40.5	54.0	67.5	81.0	0.799	31.30	32.30
27	3	MA3331-131	MA3331-181	MA3331-231	MA3331-281	MA3331-331	27.0	40.5	54.0	67.5	81.0	1.234	31.40	32.40
30	2	MA3331-132	MA3331-182	MA3331-232	MA3331-282	MA3331-332	30.0	45.0	60.0	75.0	90.0	0.799	34.50	35.70
30	3	MA3331-133	MA3331-183	MA3331-233	MA3331-283	MA3331-333	30.0	45.0	60.0	75.0	90.0	1.234	34.90	36.10
33	2	MA3331-134	MA3331-184	MA3331-234	MA3331-284	MA3331-334	33.0	49.5	66.0	82.5	99.0	0.799	37.80	39.20
33	3	MA3331-135	MA3331-185	MA3331-235	MA3331-285	MA3331-335	33.0	49.5	66.0	82.5	99.0	1.234	38.10	39.50
36	2	MA3331-136	MA3331-186	MA3331-236	MA3331-286	MA3331-336	36.0	54.0	72.0	90.0	108.0	0.799	41.00	42.40
36	3	MA3331-137	MA3331-187	MA3331-237	MA3331-287	MA3331-337	36.0	54.0	72.0	90.0	108.0	1.234	41.30	42.70
39	2	MA3331-138	MA3331-188	MA3331-238	MA3331-288	MA3331-338	39.0	58.5	78.0	97.5	117.0	0.799	44.30	45.70
39	3	MA3331-139	MA3331-189	MA3331-239	MA3331-289	MA3331-339	39.0	58.5	78.0	97.5	117.0	1.234	44.40	45.80

TABLE 1 (CONTINUED)

THREAD SIZE DIA	THREAD SIZE 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
2	0.4	—	5.500	7.750	10.125	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	5.375	7.625	9.875	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	5.750	8.125	10.500	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	6.375	8.875	11.375	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	6.375	8.750	11.375	13.750	0.586	0.650	0.449	0.525	0.300	0.3795	0.3900	4.25	4.90
4	0.7	3.625	6.125	8.625	11.125	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	6.875	9.625	12.375	15.125	0.775	0.866	0.598	0.700	0.400	0.5085	0.5200	6.10	6.75
6	1	4.000	6.750	9.500	12.125	14.875	0.975	1.083	0.748	0.875	0.500	0.6370	0.6500	7.25	7.90
7	1	4.875	8.000	11.125	14.125	17.250	0.975	1.083	0.748	0.875	0.500	0.6370	0.6500	8.40	9.15
8	1	5.875	9.375	13.000	16.500	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	7.375	10.250	13.250	16.125	1.251	1.353	0.967	1.094	0.625	0.7990	0.8120	9.50	9.90
10	1	7.625	12.000	16.500	21.000	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	9.500	13.125	16.750	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	8.000	11.125	14.250	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	11.625	15.875	20.250	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	9.625	13.375	17.000	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	8.250	11.500	14.625	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	11.375	15.625	20.000	24.250	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	15.80	16.30
14	2	5.125	8.500	11.750	15.000	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	13.125	18.000	22.750	27.625	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	17.80	18.30
16	2	6.125	9.750	13.500	17.250	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	15.000	20.375	25.875	31.375	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	19.80	20.35
18	2	7.000	11.125	15.375	19.500	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	8.875	12.250	15.625	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	16.875	22.875	28.875	35.000	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	21.80	22.50
20	2	7.875	12.500	17.250	21.875	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	9.875	13.625	17.375	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	18.500	25.125	31.625	38.250	1.522	1.624	1.160	1.312	0.750	0.9615	0.9740	24.10	24.80
22	2	8.750	13.750	18.875	23.875	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	10.875	14.875	19.000	23.125	2.604	2.706	1.998	2.188	1.250	1.6110	1.6240	24.90	25.60
24	2	9.500	15.000	20.375	25.875	31.250	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	26.40	27.10
24	3	6.125	10.000	13.750	17.500	21.375	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	27.50	28.20
27	2	10.875	17.000	23.250	29.375	35.500	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	29.40	30.10
27	3	7.000	11.250	15.500	19.750	24.000	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	30.50	31.20
30	2	12.250	19.125	25.875	32.750	39.500	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	32.50	33.20
30	3	7.875	12.500	17.125	21.875	26.500	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	33.50	34.20
33	2	13.625	21.125	28.625	36.000	43.500	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	35.80	36.50
33	3	8.750	13.875	19.000	24.125	29.250	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	36.50	37.20
36	2	15.000	23.250	31.375	39.500	47.750	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	39.00	39.70
36	3	9.750	15.250	20.875	26.500	32.000	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	39.50	40.20
39	2	16.375	25.250	34.125	43.000	51.875	2.063	2.165	1.598	1.750	1.000	1.2865	1.2990	42.30	43.00
39	3	10.750	16.750	22.750	28.875	34.875	3.146	3.248	2.396	2.625	1.500	1.9360	1.9485	42.50	43.20

TABLE 1 (CONTINUED)

THREAD SIZE DIA	THREAD SIZE PITCH	P MIN	P MAX	R MIN	S MIN	U MAX	U MIN	V MAX	APPROXI-MATE MASS, KILO-GRAMS/100 1 DIA	APPROXI-MATE MASS, KILO-GRAMS/100 1.5 DIA	APPROXI-MATE MASS, KILO-GRAMS/100 2 DIA	APPROXI-MATE MASS, KILO-GRAMS/100 2.5 DIA	APPROXI-MATE MASS, KILO-GRAMS/100 3 DIA
2	0.4	1.30	1.90	0.072	0.125	0.66	0.37	0.22	—	0.003	0.005	0.007	0.008
2.2	0.45	1.40	2.00	0.081	0.141	0.91	0.62	0.25	0.002	0.004	0.006	0.008	0.009
2.5	0.45	1.60	2.25	0.081	0.141	1.22	0.81	0.30	0.003	0.006	0.008	0.010	0.012
3	0.5	1.95	2.80	0.090	0.156	1.33	0.86	0.30	0.006	0.009	0.012	0.016	0.019
3.5	0.6	2.20	3.00	0.108	0.188	1.47	0.92	0.30	0.009	0.014	0.020	0.026	0.031
4	0.7	2.50	3.55	0.126	0.219	1.67	1.02	0.45	0.014	0.022	0.031	0.039	0.048
5	0.8	3.15	4.55	0.144	0.250	2.09	1.41	0.60	0.025	0.040	0.055	0.070	0.085
6	1	3.70	4.85	0.180	0.312	2.55	1.65	0.60	0.044	0.072	0.099	0.126	0.153
7	1	4.30	5.50	0.180	0.312	3.10	2.09	0.75	0.062	0.099	0.136	0.173	0.210
8	1	4.75	6.50	0.180	0.312	3.88	2.27	0.75	0.083	0.132	0.180	0.228	0.277
8	1.25	4.75	6.50	0.226	0.391	3.60	2.02	0.75	0.100	0.160	0.221	0.281	0.342
10	1	5.50	8.00	0.180	0.312	4.90	2.95	0.75	0.136	0.212	0.288	0.362	0.439
10	1.25	5.50	8.00	0.226	0.391	4.77	2.86	0.75	0.162	0.257	0.352	0.446	0.541
10	1.5	5.50	8.00	0.271	0.469	4.54	2.56	0.75	0.188	0.302	0.416	0.530	0.643
12	1.25	6.70	9.75	0.226	0.391	5.84	3.77	1.00	0.240	0.376	0.512	0.649	0.785
12	1.5	6.70	9.75	0.271	0.469	5.58	3.50	1.20	0.281	0.444	0.608	0.772	0.935
12	1.75	6.70	9.75	0.316	0.547	5.36	3.23	1.40	0.318	0.509	0.700	0.890	1.081
14	1.5	7.20	11.25	0.271	0.469	6.76	4.34	1.15	0.391	0.614	0.836	1.059	1.282
14	2	7.20	11.25	0.361	0.625	6.26	3.79	1.40	0.497	0.794	1.091	1.388	1.685
16	1.5	8.30	12.75	0.271	0.469	7.79	5.32	1.45	0.519	0.810	1.101	1.392	1.682
16	2	8.30	12.75	0.361	0.625	7.30	4.76	2.70	0.665	1.053	1.441	1.828	2.216
18	1.5	9.30	14.00	0.271	0.469	8.83	6.26	1.75	0.665	1.033	1.401	1.769	2.137
18	2	9.30	14.00	0.361	0.625	8.30	5.74	2.70	0.856	1.347	1.838	2.328	2.819
18	2.5	9.30	14.00	0.451	0.781	7.79	5.20	2.85	1.031	1.645	2.258	2.872	3.486
20	1.5	10.40	14.50	0.271	0.469	9.77	7.19	2.85	0.830	1.284	1.739	2.193	2.647
20	2	10.40	14.50	0.361	0.625	9.40	6.65	2.85	1.072	1.678	2.284	2.890	3.495
20	2.5	10.40	14.50	0.451	0.781	8.89	6.11	2.85	1.297	2.054	2.812	3.569	4.326
22	1.5	11.40	16.00	0.271	0.469	11.10	8.01	2.85	1.013	1.563	2.113	2.662	3.212
22	2	11.40	16.00	0.361	0.625	10.45	7.61	2.85	1.313	2.046	2.779	3.512	4.245
22	2.5	11.40	16.00	0.451	0.781	9.94	7.07	2.85	1.593	2.510	3.426	4.342	5.259
24	2	12.50	16.50	0.361	0.625	11.46	8.60	2.85	1.576	2.448	3.321	4.193	5.065
24	3	12.50	16.50	0.541	0.938	10.45	7.51	2.85	2.239	3.548	4.857	6.166	7.474
27	2	14.00	17.50	0.361	0.625	13.14	9.93	2.85	2.017	3.121	4.225	5.329	6.433
27	3	14.00	17.50	0.541	0.938	12.13	8.85	2.85	2.864	4.540	6.196	7.853	9.509
30	2	15.00	19.00	0.361	0.625	14.81	11.26	2.85	2.513	3.876	5.238	6.601	7.964
30	3	15.00	19.00	0.541	0.938	13.65	10.32	2.85	3.611	5.656	7.700	9.745	11.792
33	2	17.00	21.00	0.361	0.625	16.35	12.74	2.85	3.063	4.712	6.361	8.010	9.659
33	3	17.00	21.00	0.541	0.938	15.19	11.78	2.85	4.420	6.894	9.367	11.841	14.315
36	2	18.50	22.50	0.361	0.625	17.77	14.29	2.85	3.671	5.633	7.595	9.557	11.519
36	3	18.50	22.50	0.541	0.938	16.73	13.23	2.85	5.316	8.260	11.204	14.147	17.091
39	2	20.00	24.00	0.361	0.625	19.28	15.77	2.85	4.331	6.634	8.936	11.239	13.542
39	3	20.00	24.00	0.541	0.938	18.28	14.68	2.85	6.290	9.745	13.200	16.654	20.109