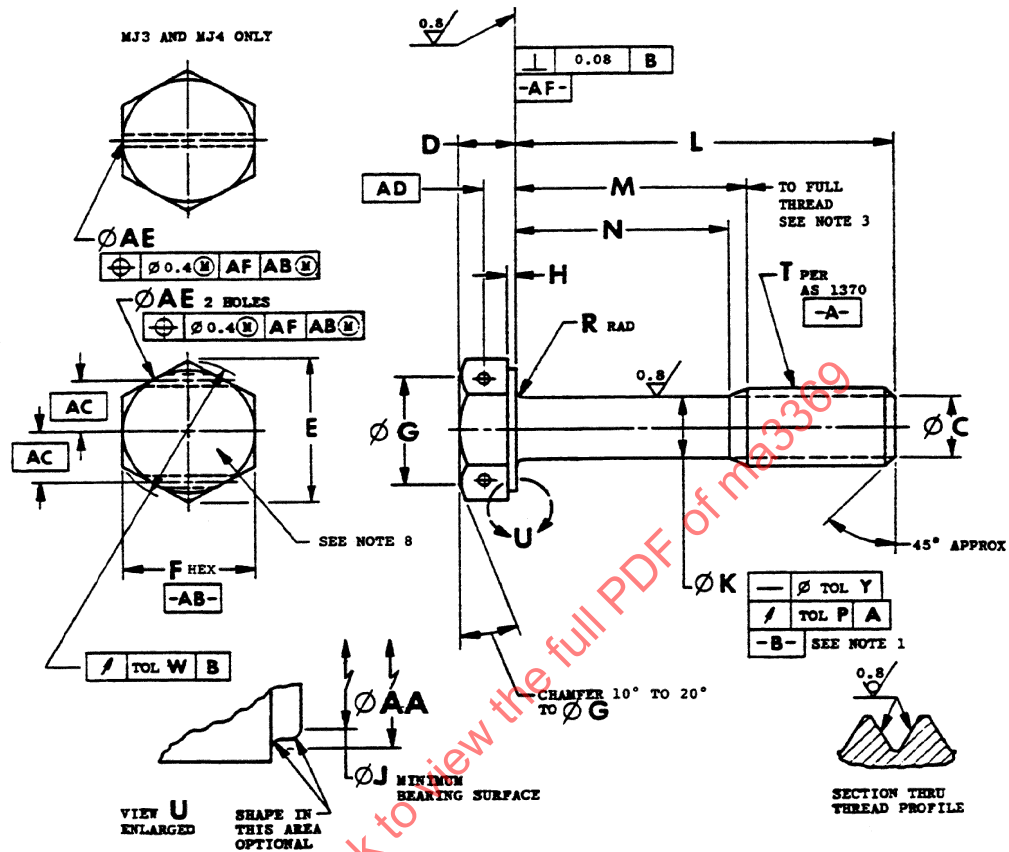


RATIONALE

MA3369 HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

MA3369

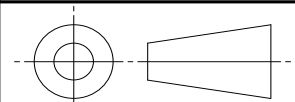


1. FOR PART NUMBERS WHERE DIMENSION N IS EQUAL TO OR LESS THAN ONE TIMES THE NOMINAL DIAMETER OF THE THREAD, THE THREAD PD SHALL REPLACE DATUM B .
2. MATERIAL: CORROSION AND HEAT RESISTANT NICKEL ALLOY, AMS 5662 (UNS NO7718).
3. PROCUREMENT SPECIFICATION: MA3377.
4. HARDNESS: 40-46 HRC OR EQUIVALENT.
5. FLOURESCENT PENETRANT INSPECTION: AMS 2645.
6. SURFACE TEXTURE: SYMBOLS PER ANSI Y14.36-1978; REQUIREMENTS PER ANSI B46.1-1978. UNLESS OTHERWISE SPECIFIED SURFACES TO BE 3.2 MICROMETERS Ra MAX.
7. PART NUMBER SHALL INCLUDE THE STANDARD NUMBER AND THE DASH NUMBER TO INDICATE DIAMETER AND LENGTH. EXAMPLE OF PART NUMBER:

MA3369-030014 = BOLT, MJ3x0.5 THREAD, 14 LONG.
MA3369-200114 = BOLT, MJ20x1.5 THREAD, 114 LONG.
8. MARK PART NUMBER AND MANUFACTURER'S IDENTIFICATION PER AS478 CLASS A. FOR MJ3, MJ4 AND MJ5 MARK ONLY MA3369 AND MANUFACTURER'S IDENTIFICATION.
9. BREAK EDGES 0.1-0.4, UNLESS OTHERWISE SPECIFIED.
10. DIMENSIONING AND TOLERANCING: ANSI Y14.5M-1982. TOLERANCE GRADE PER ANSI B4.2-1978.
11. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
12. DO NOT USE UNASSIGNED PART NUMBERS.

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/MA3369>

THIRD ANGLE PROJECTION



CUSTODIAN: E-25



METRIC AEROSPACE STANDARD

BOLT, MACHINE-HEX HEAD, DRILLED, PD
SHANK, LONG THREAD, AMS 5662, METRIC

MA3369
SHEET 1 OF 7

TABLE I

PART NUMBER SEE NOTE 7	NOM DIA REF	THREAD	C	D	E MIN	F		G MIN	H
		T							
MA3369-030XXX	3	MJ3x0.5-4h6h	1.8-2.3	3.1-3.4	7.6	6.85-7.00	h12	6.5	0.2-0.5
MA3369-040XXX	4	MJ4x0.7-4h6h	2.6-3.1	3.6-3.9	8.7	7.85-8.00		7.5	0.2-0.5
MA3369-050XXX	5	MJ5x0.8-4h6h	3.0-4.0	2.7-3.0	9.8	8.78-9.00		8.4	0.2-0.5
MA3369-060XXX	6	MJ6x1-4h6h	3.7-4.7	3.2-3.5	12.0	10.73-11.00		10.3	0.2-0.5
MA3369-070XXX	7	MJ7x1-4h6h	4.7-5.7	3.7-4.0	13.2	11.73-12.00	h13	11.3	0.2-0.5
MA3369-080XXX	8	MJ8x1-4h6h	5.7-6.7	4.2-4.5	15.5	13.73-14.00		13.3	0.3-0.6
MA3369-100XXX	10	MJ10x1.25-4h6h	7.4-8.4	4.7-5.0	18.9	16.73-17.00		16.3	0.3-0.6
MA3369-120XXX	12	MJ12x1.25-4h6h	9.4-10.4	5.7-6.0	21.1	18.67-19.00		18.3	0.3-0.6
MA3369-140XXX	14	MJ14x1.5-4h6h	11.1-12.1	6.7-7.0	24.5	21.67-22.00		21.3	0.3-0.6
MA3369-160XXX	16	MJ16x1.5-4h6h	13.1-14.1	7.7-8.0	26.8	23.67-24.00		23.3	0.3-0.6
MA3369-180XXX	18	MJ18x1.5-4h6h	15.1-16.1	8.7-9.0	30.2	26.67-27.00		26.3	0.3-0.6
MA3369-200XXX	20	MJ20x1.5-4h6h	17.1-18.1	9.7-10.0	33.6	29.67-30.00		29.3	0.3-0.6

PART NUMBER SEE NOTE 7	NOM DIA REF	J MIN	K	P TOL	R	W TOL	AA MAX	AC	AD	AE
MA3369-030XXX	3	6.4	2.55- 2.81	0.10	0.2-0.4	0.15	7.25	—	1.55	1.00-1.14
MA3369-040XXX	4	7.4	3.42- 3.68	0.12	0.2-0.4	0.20	8.25	—	1.80	1.00-1.14
MA3369-050XXX	5	8.3	4.35- 4.61	0.12	0.3-0.5	0.25	9.25	3.70	1.35	1.00-1.14
MA3369-060XXX	6	10.2	5.22- 5.48	0.12	0.5-0.7	0.30	11.25	4.50	1.60	1.40-1.54
MA3369-070XXX	7	11.2	6.22- 6.48	0.15	0.5-0.7	0.35	12.25	4.95	1.85	1.40-1.54
MA3369-080XXX	8	13.2	7.22- 7.48	0.15	0.5-0.7	0.40	14.25	5.80	2.10	1.40-1.54
MA3369-100XXX	10	16.0	9.06- 9.32	0.15	0.6-0.8	0.50	17.25	7.10	2.35	1.60-1.74
MA3369-120XXX	12	18.0	11.06-11.32	0.18	0.6-0.9	0.60	19.25	7.90	2.85	1.60-1.74
MA3369-140XXX	14	21.0	12.90-13.16	0.18	0.8-1.1	0.70	22.25	9.20	3.35	1.60-1.74
MA3369-160XXX	16	23.0	14.90-15.16	0.18	0.8-1.1	0.75	24.25	10.05	3.85	1.60-1.74
MA3369-180XXX	18	26.0	16.90-17.16	0.18	1.0-1.3	0.75	27.25	11.30	4.35	1.60-1.74
MA3369-200XXX	20	29.0	18.90-19.16	0.21	1.0-1.3	0.75	30.25	12.60	4.85	1.60-1.74

TABLE II

L ±0.3	MJ3x0.5-4h6h					MJ4x0.7-4h6h				
	DASH NO. SEE NOTE 7	M MAX	N MIN	Y TOL	MASS kg/ 100	DASH NO. SEE NOTE 7	M MAX	N MIN	Y TOL	MASS kg/ 100
4.0	030004	1.4	0.4	0.012	0.107	—	—	—	—	—
6.0	030006	1.4	0.4	0.018	0.118	040006	1.8	0.4	0.018	0.186
8.0	030008	1.4	0.4	0.024	0.126	040008	1.8	0.4	0.024	0.203
10.0	030010	1.4	0.4	0.030	0.135	040010	1.8	0.4	0.030	0.218
12.0	030012	1.4	0.4	0.036	0.143	040012	1.8	0.4	0.036	0.233
14.0	030014	2.0	0.4	0.042	0.152	040014	1.8	0.4	0.042	0.249
16.0	030016	4.0	1.5	0.048	0.161	040016	2.0	0.4	0.048	0.263
18.0	030018	6.0	3.5	0.054	0.169	040018	4.0	1.1	0.054	0.278
20.0	030020	8.0	5.5	0.060	0.178	040020	6.0	3.1	0.060	0.293
22.0	030022	10.0	7.5	0.066	0.187	040022	8.0	5.1	0.066	0.309
24.0	030024	12.0	9.5	0.072	0.195	040024	10.0	7.1	0.072	0.325
26.0	030026	14.0	11.5	0.078	0.204	040026	12.0	9.1	0.078	0.338
28.0	030028	16.0	13.5	0.084	0.213	040028	14.0	11.1	0.084	0.355
30.0	030030	18.0	15.5	0.090	0.221	040030	16.0	13.1	0.090	0.370
32.0	030032	20.0	17.5	0.096	0.230	040032	18.0	15.1	0.096	0.386
34.0	030034	22.0	19.5	0.102	0.239	040034	20.0	17.1	0.102	0.402
36.0	030036	24.0	21.5	0.108	0.247	040036	22.0	19.1	0.108	0.417
38.0	030038	26.0	23.5	0.114	0.256	040038	24.0	21.1	0.114	0.432
40.0	030040	28.0	25.5	0.120	0.265	040040	26.0	23.1	0.120	0.447
42.0	030042	30.0	27.5	0.126	0.273	040042	28.0	25.1	0.126	0.462
44.0	—	—	—	—	—	040044	30.0	27.1	0.132	0.477
46.0	—	—	—	—	—	040046	32.0	29.1	0.138	0.492
48.0	—	—	—	—	—	040048	34.0	31.1	0.144	0.507
50.0	—	—	—	—	—	040050	36.0	33.1	0.150	0.522
52.0	—	—	—	—	—	040052	38.0	35.1	0.156	0.537
54.0	—	—	—	—	—	040054	40.0	37.1	0.162	0.552
56.0	—	—	—	—	—	040056	42.0	39.1	0.168	0.568

TABLE II (CONTINUED)

L ±0.3	MJ5x0.8-4h6h					MJ6x1-4h6h				
	DASH NO. SEE NOTE 7	M MAX	N MIN	Y TOL	MASS kg/ 100	DASH NO. SEE NOTE 7	M MAX	N MIN	Y TOL	MASS kg/ 100
8.0	050008	2.1	0.5	0.024	0.259	—	—	—	—	—
10.0	050010	2.1	0.5	0.030	0.283	060010	2.7	0.7	0.030	0.426
12.0	050012	2.1	0.5	0.036	0.317	060012	2.7	0.7	0.036	0.461
14.0	050014	2.1	0.5	0.042	0.332	060014	2.7	0.7	0.042	0.497
16.0	050016	2.1	0.5	0.048	0.356	060016	2.7	0.7	0.048	0.532
18.0	050018	2.1	0.5	0.054	0.381	060018	2.7	0.7	0.054	0.568
20.0	050020	4.0	0.9	0.060	0.405	060020	2.7	0.7	0.060	0.603
22.0	050022	6.0	2.9	0.066	0.429	060022	4.0	0.7	0.066	0.638
24.0	050024	8.0	4.9	0.072	0.457	060024	6.0	2.5	0.072	0.674
26.0	050026	10.0	6.9	0.078	0.478	060026	8.0	4.5	0.078	0.709
28.0	050028	12.0	8.9	0.084	0.502	060028	10.0	6.5	0.084	0.744
30.0	050030	14.0	10.9	0.090	0.527	060030	12.0	8.5	0.090	0.780
32.0	050032	16.0	12.9	0.096	0.551	060032	14.0	10.5	0.096	0.815
34.0	050034	18.0	14.9	0.102	0.576	060034	16.0	12.5	0.102	0.850
36.0	050036	20.0	16.9	0.108	0.600	060036	18.0	14.5	0.108	0.885
38.0	050038	22.0	18.9	0.114	0.624	060038	20.0	16.5	0.114	0.921
40.0	050040	24.0	20.9	0.120	0.649	060040	22.0	18.5	0.120	0.956
42.0	050042	26.0	22.9	0.126	0.673	060042	24.0	20.5	0.126	0.992
44.0	050044	28.0	24.9	0.132	0.697	060044	26.0	22.5	0.132	1.027
46.0	050046	30.0	26.9	0.138	0.722	060046	28.0	24.5	0.138	1.062
48.0	050048	32.0	28.9	0.144	0.746	060048	30.0	26.5	0.144	1.098
50.0	050050	34.0	30.9	0.150	0.771	060050	32.0	28.5	0.150	1.133
52.0	050052	36.0	32.9	0.156	0.795	060052	34.0	30.5	0.156	1.168
54.0	050054	38.0	34.9	0.162	0.819	060054	36.0	32.5	0.162	1.204
56.0	050056	40.0	36.9	0.168	0.844	060056	38.0	34.5	0.168	1.239
58.0	050058	42.0	38.9	0.174	0.868	060058	40.0	36.5	0.174	1.274
60.0	050060	44.0	40.9	0.180	0.893	060060	42.0	38.5	0.180	1.310
64.0	050064	48.0	44.9	0.192	0.941	060064	46.0	42.5	0.192	1.380
68.0	050068	52.0	48.9	0.204	0.990	060068	50.0	46.5	0.204	1.451
72.0	—	—	—	—	—	060072	54.0	50.5	0.216	1.522
76.0	—	—	—	—	—	060076	58.0	54.5	0.228	1.593
80.0	—	—	—	—	—	060080	62.0	58.5	0.240	1.663
84.0	—	—	—	—	—	060084	66.0	62.5	0.252	1.735



METRIC AEROSPACE STANDARD

BOLT, MACHINE-HEX HEAD, DRILLED, PD
SHANK, LONG THREAD, AMS 5662, METRICMA3369
SHEET 3 OF 7

TABLE II (CONTINUED)

L ±0.3	MJ7x1-4h6h					MJ8x1-4h6h				
	DASH NO. SEE NOTE 7	M MAX	N MIN	Y TOL	MASS kg/ 100	DASH NO. SEE NOTE 7	M MAX	N MIN	Y TOL	MASS kg/ 100
10.0	070010	2.7	0.7	0.030	0.570	080010	2.7	0.7	0.030	0.835
12.0	070012	2.7	0.7	0.036	0.619	080012	2.7	0.7	0.036	0.900
14.0	070014	2.7	0.7	0.042	0.669	080014	2.7	0.7	0.042	0.966
16.0	070016	2.7	0.7	0.048	0.718	080016	2.7	0.7	0.048	1.032
18.0	070018	2.7	0.7	0.054	0.767	080018	2.7	0.7	0.054	1.098
20.0	070020	2.7	0.7	0.060	0.816	080020	2.7	0.7	0.060	1.164
22.0	070022	2.7	0.7	0.066	0.866	080022	2.7	0.7	0.066	1.230
24.0	070024	4.0	0.7	0.072	0.915	080024	2.7	0.7	0.072	1.295
26.0	070026	6.0	2.5	0.078	0.964	080026	4.0	0.7	0.078	1.361
28.0	070028	8.0	4.5	0.084	1.013	080028	6.0	2.5	0.084	1.427
30.0	070030	10.0	6.5	0.090	1.063	080030	8.0	4.5	0.090	1.493
32.0	070032	12.0	8.5	0.096	1.112	080032	10.0	6.5	0.096	1.559
34.0	070034	14.0	10.5	0.102	1.161	080034	12.0	8.5	0.102	1.629
36.0	070036	16.0	12.5	0.108	1.210	080036	14.0	10.5	0.108	1.690
38.0	070038	18.0	14.5	0.114	1.259	080038	16.0	12.5	0.114	1.756
40.0	070040	20.0	16.5	0.120	1.309	080040	18.0	14.5	0.120	1.822
42.0	070042	22.0	18.5	0.126	1.358	080042	20.0	16.5	0.126	1.888
44.0	070044	24.0	20.5	0.132	1.407	080044	22.0	18.5	0.132	1.954
46.0	070046	26.0	22.5	0.138	1.456	080046	24.0	20.5	0.138	2.020
48.0	070048	28.0	24.5	0.144	1.506	080048	26.0	22.5	0.144	2.086
50.0	070050	30.0	26.5	0.150	1.555	080050	28.0	24.5	0.150	2.152
52.0	070052	32.0	28.5	0.156	1.604	080052	30.0	26.5	0.156	2.217
54.0	070054	34.0	30.5	0.162	1.653	080054	32.0	28.5	0.162	2.283
56.0	070056	36.0	32.5	0.168	1.703	080056	34.0	30.5	0.168	2.349
58.0	070058	38.0	34.5	0.174	1.752	080058	36.0	32.5	0.174	2.415
60.0	070060	40.0	36.5	0.180	1.801	080060	38.0	34.5	0.180	2.481
64.0	070064	44.0	40.5	0.192	1.900	080064	42.0	38.5	0.192	2.612
68.0	070068	48.0	44.5	0.204	1.998	080068	46.0	42.5	0.204	2.742
72.0	070072	52.0	48.5	0.216	2.097	080072	50.0	46.5	0.216	2.876
76.0	070076	56.0	52.5	0.228	2.195	080076	54.0	50.5	0.228	3.008
80.0	070080	60.0	56.5	0.240	2.293	080080	58.0	54.5	0.240	3.140
84.0	070084	64.0	60.5	0.252	2.393	080084	62.0	58.5	0.252	3.271
88.0	070088	68.0	64.5	0.264	2.489	080088	66.0	62.5	0.264	3.403
92.0	070092	72.0	68.5	0.276	2.589	080092	70.0	66.5	0.276	3.534
96.0	070096	76.0	72.5	0.288	2.687	080096	74.0	70.5	0.288	3.666
100.0						080100	78.0	74.5	0.300	3.798
104.0						080104	82.0	78.5	0.312	3.930
108.0						080108	86.0	82.5	0.324	4.063
112.0						080112	90.0	86.5	0.336	4.193

TABLE II (CONTINUED)

L ±0.3	MJ10x1.25-4h6h					MJ12x1.25-4h6h				
	DASH NO. SEE NOTE 7	M MAX	N MIN	Y TOL	MASS kg/ 100	DASH NO. SEE NOTE 7	M MAX	N MIN	Y TOL	MASS kg/ 100
14.0	100014	3.3	0.8	0.035	1.554	—	—	—	—	—
16.0	100016	3.3	0.8	0.040	1.657	120016	3.4	0.9	0.040	2.467
18.0	100018	3.3	0.8	0.045	1.760	120018	3.4	0.9	0.045	2.620
20.0	100020	3.3	0.8	0.050	1.863	120020	3.4	0.9	0.050	2.773
22.0	100022	3.3	0.8	0.055	1.966	120022	3.4	0.9	0.055	2.926
24.0	100024	3.3	0.8	0.060	2.069	120024	3.4	0.9	0.060	3.079
26.0	100026	3.3	0.8	0.065	2.173	120026	3.4	0.9	0.065	3.232
28.0	100028	3.3	0.8	0.070	2.276	120028	3.4	0.9	0.070	3.385
30.0	100030	4.0	0.8	0.075	2.379	120030	3.4	0.9	0.075	3.539
32.0	100032	6.0	2.0	0.080	2.482	120032	3.4	0.9	0.080	3.691
34.0	100034	8.0	4.0	0.085	2.589	120034	4.0	0.9	0.085	3.845
36.0	100036	10.0	6.0	0.090	2.689	120036	6.0	2.0	0.090	3.998
38.0	100038	12.0	8.0	0.095	2.792	120038	8.0	4.0	0.095	4.150
40.0	100040	14.0	10.0	0.100	2.895	120040	10.0	6.0	0.100	4.303
42.0	100042	16.0	12.0	0.105	2.998	120042	12.0	8.0	0.105	4.457
44.0	100044	18.0	14.0	0.110	3.101	120044	14.0	10.0	0.110	4.610
46.0	100046	20.0	16.0	0.115	3.204	120046	16.0	12.0	0.115	4.763
48.0	100048	22.0	18.0	0.120	3.307	120048	18.0	14.0	0.120	4.916
50.0	100050	24.0	20.0	0.125	3.411	120050	20.0	16.0	0.125	5.069
52.0	100052	26.0	22.0	0.130	3.514	120052	22.0	18.0	0.130	5.222
54.0	100054	28.0	24.0	0.135	3.617	120054	24.0	20.0	0.135	5.375
56.0	100056	30.0	26.0	0.140	3.720	120056	26.0	22.0	0.140	5.528
58.0	100058	32.0	28.0	0.145	3.824	120058	28.0	24.0	0.145	5.681
60.0	100060	34.0	30.0	0.150	3.926	120060	30.0	26.0	0.150	5.834
64.0	100064	38.0	34.0	0.160	4.133	120064	34.0	30.0	0.160	6.140
68.0	100068	42.0	38.0	0.170	4.339	120068	38.0	34.0	0.170	6.446
72.0	100072	46.0	42.0	0.180	4.546	120072	42.0	38.0	0.180	6.752
76.0	100076	50.0	46.0	0.190	4.752	120076	46.0	42.0	0.190	7.058
80.0	100080	54.0	50.0	0.200	4.958	120080	50.0	46.0	0.200	7.365
84.0	100084	58.0	54.0	0.210	5.165	120084	54.0	50.0	0.210	7.671
88.0	100088	62.0	58.0	0.220	5.371	120088	58.0	54.0	0.220	7.977
92.0	100092	66.0	62.0	0.230	5.577	120092	62.0	58.0	0.230	8.283
96.0	100096	70.0	66.0	0.240	5.784	120096	66.0	62.0	0.240	8.589
100.0	100100	74.0	70.0	0.250	5.990	120100	70.0	66.0	0.250	8.895
104.0	100104	78.0	74.0	0.260	6.196	120104	74.0	70.0	0.260	9.201
108.0	100108	82.0	78.0	0.270	6.403	120108	78.0	74.0	0.270	9.507
112.0	100112	86.0	82.0	0.280	6.609	120112	82.0	78.0	0.280	9.813
116.0	100116	90.0	86.0	0.290	6.815	120116	86.0	82.0	0.290	10.120
120.0	100120	94.0	90.0	0.300	7.022	120120	90.0	86.0	0.300	10.425
124.0	100124	98.0	94.0	0.310	7.229	120124	94.0	90.0	0.310	10.731
128.0	100128	102.0	98.0	0.320	7.434	120128	98.0	94.0	0.320	11.038
132.0	100132	106.0	102.0	0.330	7.641	120132	102.0	98.0	0.330	11.344
136.0	100136	110.0	106.0	0.340	7.747	120136	106.0	102.0	0.340	11.650
140.0	100140	114.0	110.0	0.350	8.054	120140	110.0	106.0	0.350	11.965
144.0						120144	114.0	110.0	0.360	12.262
148.0						120148	118.0	114.0	0.370	12.568
152.0						120152	122.0	118.0	0.380	12.874
156.0						120156	126.0	122.0	0.390	13.180
160.0						120160	130.0	126.0	0.400	13.486
164.0						120164	134.0	130.0	0.410	13.792
168.0						120168	138.0	134.0	0.420	14.099