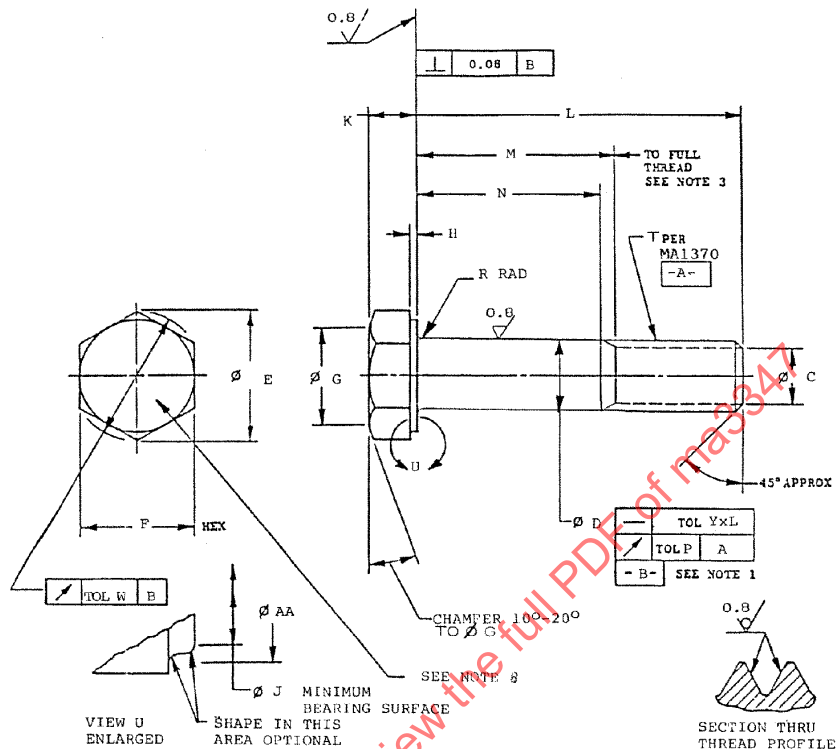


MA3347

FEDERAL SUPPLY CLASS
5306

RATIONALE

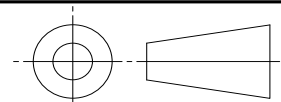
MA3347 HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.



1. FOR PART NUMBERS WHERE DIMENSION IS EQUAL TO OR LESS THAN ONE TIMES THE NOMINAL DIAMETER OF THE THREAD, THE THREAD PD SHALL REPLACE DATUM B.
 2. MATERIAL: HEAT AND CORROSION RESISTANT STEEL AMS 5731 (UNS S66286)
 3. PROCUREMENT SPECIFICATION: MA3374
 4. HARDNESS: 26-35 HRC OR EQUIVALENT.
 5. FLUORESCENT PENETRANT INSPECTION: AMS 2645 ACCEPTANCE CRITERIA PER MA3374
 6. SURFACE TEXTURE: SYMBOLS PER ANSI Y14.36-1978; REQUIREMENTS PER ANSI B46.1-1985. UNLESS OTHERWISE SPECIFIED SURFACES TO BE 3.2 MICROMETERS Ra
 7. PART NUMBER SHALL INCLUDE THE STANDARD NUMBER AND THE DASH NUMBER TO INDICATE DIAMETER AND LENGTH. EXAMPLE OF PART NUMBER:
MA3347-030014 = BOLT, M33x0.5 THREAD, 14 LONG
MA3347-200114 = BOLT, M20x1.5 THREAD, 114 LONG
 8. MARK PART NUMBER AND MANUFACTURER'S IDENTIFICATION PER AS 478 CLASS A. FOR MJ3 & MJ4 MARK ONLY MA3347 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.
- AS, HA & AMS ARE SAE PUBLICATIONS.
ANSI IS AMERICAN NATIONAL STANDARDS INSTITUTE PUBLICATION.

SAE values your input. To provide feedback
on this Technical Report, please visit
<http://www.sae.org/technical/standards/MA3347>

THIRD ANGLE PROJECTION



CUSTODIAN: E-25



METRIC AEROSPACE STANDARD

BOLT, MACHINE-HEX HEAD-FULL SHANK, LONG
THREAD, AMS 5731, METRIC

MA3347
SHEET 1 OF 7

TABLE I

PART NUMBER SEE NOTE 7	NON DIA REF	THREAD T	C	K h12	E MIN	F	G MIN	H
MA3347-030XXX	3	MJ3x0.5-4h6h	1.8-2.3	3.1-3.4	7.6	6.85-7.00		6.5 0.2-0.5
MA3347-040XXX	4	MJ4x0.7-4h6h	2.6-3.1	3.6-3.9	8.7	7.85-8.00	h12	7.5 0.2-0.5
MA3347-050XXX	5	MJ5x0.8-4h6h	3.0-4.0	2.7-3.0	9.8	8.78-9.00		8.4 0.2-0.5
MA3347-060XXX	6	MJ6x1-4h6h	3.7-4.7	3.2-3.5	12.0	10.73-11.00		10.3 0.2-0.5
MA3347-070XXX	7	MJ7x1-4h6h	4.7-5.7	3.7-4.0	13.2	11.73-12.00		11.3 0.2-0.5
MA3347-080XXX	8	MJ8x1-4h6h	5.7-6.7	4.2-4.5	15.5	13.73-14.00		13.3 0.3-0.6
MA3347-100XXX	10	MJ10x1.25-4h6h	7.4-8.4	4.7-5.0	18.9	16.73-17.00		16.3 0.3-0.6
MA3347-120XXX	12	MJ12x1.25-4h6h	9.4-10.4	5.7-6.0	21.1	18.67-19.00	h13	18.3 0.3-0.6
MA3347-140XXX	14	MJ14x1.5-4h6h	11.1-12.1	6.7-7.0	24.5	21.67-22.00		21.3 0.3-0.6
MA3347-160XXX	16	MJ16x1.5-4h6h	13.1-14.1	7.7-8.0	26.8	23.67-24.00		23.3 0.3-0.6
MA3347-180XXX	18	MJ18x1.5-4h6h	15.1-16.1	8.7-9.0	30.2	26.67-27.00		26.3 0.3-0.6
MA3347-200XXX	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	D	P	R	W	Y	AA MAX
MA3347-030XXX	3	6.4	2.90-3.00	0.10	0.2-0.4	0.15	0.0030	7.25
MA3347-040XXX	4	7.4	3.88-4.00	0.12	0.2-0.4	0.20	0.0030	8.25
MA3347-050XXX	5	8.3	4.88-5.00	0.12	0.3-0.5	0.25	0.0030	9.25
MA3347-060XXX	6	10.2	5.88-6.00	0.12	0.5-0.7	0.30	0.0030	11.25
MA3347-070XXX	7	11.2	6.85-7.00	0.15	0.5-0.7	0.35	0.0030	12.25
MA3347-080XXX	8	13.2	7.85-8.00	0.15	0.5-0.7	0.40	0.0030	14.25
MA3347-100XXX	10	16.0	9.85-10.00	0.15	0.6-0.8	0.50	0.0025	17.25
MA3347-120XXX	12	18.0	11.82-12.00	0.18	0.6-0.9	0.60	0.0025	19.25
MA3347-140XXX	14	21.0	13.82-14.00	0.18	0.8-1.1	0.70	0.0025	22.25
MA3347-160XXX	16	23.0	15.82-16.00	0.18	0.8-1.1	0.75	0.0025	24.25
MA3347-180XXX	18	26.0	17.82-18.00	0.18	1.0-1.3	0.75	0.0025	27.25
MA3347-200XXX	20	29.0	19.79-20.00	0.21	1.0-1.3	0.75	0.0025	30.25

TABLE II

L LENGTH	MJ3x0.5-4h6h				MJ4x0.7-4h6h			
	DASH NO. SEE NOTE	M MAX	N MIN	APPROX MASS kg/100	DASH NO. SEE NOTE	M MAX	N MIN	APPROX MASS kg/100
13.7-14.3	030014	2.0	0.4	0.173	—	—	—	—
15.7-16.3	030016	4.0	1.5	0.181	—	—	—	—
17.7-18.3	030018	6.0	3.5	0.190	040018	4.0	1.1	0.307
19.7-20.3	030020	8.0	5.5	0.199	040020	6.0	3.1	0.322
21.7-22.3	030022	10.0	7.5	0.208	040022	8.0	5.1	0.338
23.7-24.3	030024	12.0	9.5	0.216	040024	10.0	7.1	0.353
25.7-26.3	030026	14.0	11.5	0.225	040026	12.0	9.1	0.369
27.7-28.3	030028	16.0	13.5	0.234	040028	14.0	11.1	0.384
29.7-30.3	030030	18.0	15.5	0.243	040030	16.0	13.1	0.400
31.7-32.3	030032	20.0	17.5	0.252	040032	18.0	15.1	0.415
33.7-34.3	030034	22.0	19.5	0.260	040034	20.0	17.1	0.431
35.7-36.3	030036	24.0	21.5	0.269	040036	22.0	19.1	0.446
37.7-38.3	030038	26.0	23.5	0.278	040038	24.0	21.1	0.462
39.7-40.3	030040	28.0	25.5	0.287	040040	26.0	23.1	0.477
41.7-42.3	030042	30.0	27.5	0.295	040042	28.0	25.1	0.493
43.7-44.3	—	—	—	—	040044	30.0	27.1	0.508
45.7-46.3	—	—	—	—	040046	32.0	29.1	0.523
47.7-48.3	—	—	—	—	040048	34.0	31.1	0.539
49.7-50.3	—	—	—	—	040050	36.0	33.1	0.554
51.7-52.3	—	—	—	—	040052	38.0	35.1	0.570
53.7-54.3	—	—	—	—	040054	40.0	37.1	0.585
55.7-56.3	—	—	—	—	040056	42.0	39.1	0.601



METRIC AEROSPACE STANDARD

BOLT, MACHINE-HEX HEAD-FULL SHANK, LONG
THREAD, AMS 5731, METRICMA3347
SHEET 2 OF 7

TABLE II (CONTINUED)

L LENGTH	MJ5x0.8-4h6h				MJ6x1-4h6h			
	DASH NO. SEE NOTE	M MAX	N MIN	APPROX MASS kg/100	DASH NO. SEE NOTE	M MAX	N MIN	APPROX MASS kg/100
19.7-20.3	050020	4.0	0.9	0.409	—	—	—	—
21.7-22.3	050022	6.0	2.9	0.434	060022	4.0	0.7	0.673
23.7-24.3	050024	8.0	4.9	0.459	060024	6.0	2.5	0.708
25.7-26.3	050026	10.0	6.9	0.484	060026	8.0	4.5	0.744
27.7-28.3	050028	12.0	8.9	0.508	060028	10.0	6.5	0.779
29.7-30.3	050030	14.0	10.9	0.533	060030	12.0	8.5	0.814
31.7-32.3	050032	16.0	12.9	0.558	060032	14.0	10.5	0.850
33.7-34.3	050034	18.0	14.9	0.582	060034	16.0	12.5	0.885
35.7-36.3	050036	20.0	16.9	0.607	060036	18.0	14.5	0.920
37.7-38.3	050038	22.0	18.9	0.632	060038	20.0	16.5	0.956
39.7-40.3	050040	24.0	20.9	0.656	060040	22.0	18.5	0.991
41.7-42.3	050042	26.0	22.9	0.681	060042	24.0	20.5	1.026
43.7-44.3	050044	28.0	24.9	0.706	060044	26.0	22.5	1.061
45.7-46.3	050046	30.0	26.9	0.731	060046	28.0	24.5	1.097
47.7-48.3	050048	32.0	28.9	0.755	060048	30.0	26.5	1.132
49.7-50.3	050050	34.0	30.9	0.780	060050	32.0	28.5	1.167
51.7-52.3	050052	36.0	32.9	0.805	060052	34.0	30.5	1.203
53.7-54.3	050054	38.0	34.9	0.829	060054	36.0	32.5	1.238
55.7-56.3	050056	40.0	36.9	0.854	060056	38.0	34.5	1.273
57.7-58.3	050058	42.0	38.9	0.879	060058	40.0	36.5	1.309
59.7-60.3	050060	44.0	40.9	0.904	060060	42.0	38.5	1.344
63.7-64.3	050064	48.0	44.9	0.953	060064	46.0	42.5	1.415
67.7-68.3	050068	52.0	48.9	1.002	060068	50.0	46.5	1.485
71.7-72.3	—	—	—	—	060072	54.0	50.5	1.556
75.7-76.3	—	—	—	—	060076	58.0	54.5	1.627
79.7-80.3	—	—	—	—	060080	62.0	58.5	1.697
83.7-84.3	—	—	—	—	060084	66.0	62.5	1.768

TABLE II (CONTINUED)

L LENGTH	MJ7x1-4h6h				MJ8x1-4h6h			
	DASH NO. SEE NOTE	M MAX	N MIN	APPROX. MASS kg/100	DASH NO. SEE NOTE	M MAX	N MIN	APPROX. MASS kg/100
23.7-24.3	070024	4.0	0.7	0.987	—	—	—	—
25.7-26.3	070026	6.0	2.5	1.036	080026	4.0	0.7	1.464
27.7-28.3	070028	8.0	4.5	1.086	080028	6.0	2.5	1.531
29.7-30.3	070030	10.0	6.5	1.136	080030	8.0	4.5	1.598
31.7-32.3	070032	12.0	8.5	1.186	080032	10.0	6.5	1.664
33.7-34.3	070034	14.0	10.5	1.236	080034	12.0	8.5	1.731
35.7-36.3	070034	16.0	12.5	1.286	080036	14.0	10.5	1.798
37.7-38.3	070038	18.0	14.5	1.336	080038	16.0	12.5	1.865
39.7-40.3	070040	20.0	16.5	1.385	080040	18.0	14.5	1.932
41.7-42.3	070042	22.0	18.5	1.435	080042	20.0	16.5	1.999
43.7-44.3	070044	24.0	20.5	1.485	080044	22.0	18.5	2.066
45.7-46.3	070046	26.0	22.5	1.535	080046	24.0	20.5	2.132
47.7-48.3	070048	28.0	24.5	1.585	080048	26.0	22.5	2.199
49.7-50.3	070050	30.0	26.5	1.635	080050	28.0	24.5	2.266
51.7-52.3	070052	32.0	28.5	1.684	080052	30.0	26.5	2.333
53.7-54.3	070054	34.0	30.5	1.734	080054	32.0	28.5	2.400
55.7-56.3	070056	36.0	32.5	1.784	080056	34.0	30.5	2.467
57.7-58.3	070058	38.0	34.5	1.834	080058	36.0	32.5	2.534
59.7-60.3	070060	40.0	36.5	1.884	080060	38.0	34.5	2.600
63.7-64.3	070064	44.0	40.5	1.983	080064	42.0	38.5	2.734
67.7-68.3	070068	48.0	44.5	2.083	080068	46.0	42.5	2.868
71.7-72.3	070072	52.0	48.5	2.183	080072	50.0	46.5	3.002
75.7-76.3	070076	56.0	52.5	2.283	080076	54.0	50.5	3.135
79.7-80.3	070080	60.0	56.5	2.382	080080	58.0	54.5	3.269
83.7-84.3	070084	64.0	60.5	2.482	080084	62.0	58.5	3.403
87.7-88.3	070088	68.0	64.5	2.582	080088	66.0	62.5	3.537
91.7-92.3	070092	72.0	68.5	2.681	080092	70.0	66.5	3.670
95.7-96.3	070096	76.0	72.5	2.781	080096	74.0	70.5	3.804
99.7-100.3	—	—	—	—	080100	78.0	74.5	3.938
103.7-104.3	—	—	—	—	080104	82.0	78.5	4.071
107.7-108.3	—	—	—	—	080108	86.0	82.5	4.205
111.7-112.3	—	—	—	—	080112	90.0	86.5	4.339

TABLE II (CONTINUED)

L LENGTH	MJ10x1.25 - 4h6h				MJ12x1.25 - 4h6h			
	DASH NO. SEE NOTE	M MAX	N MIN	APPROX MASS kg/100	DASH NO. SEE NOTE	M MAX	N MIN	APPROX MASS. kg/100
31.7-32.3	100032	6.0	2.0	2.648	—	—	—	—
33.7-34.3	100034	8.0	4.0	2.752	—	—	—	—
35.7-37.3	100036	10.0	6.0	2.857	120036	6.0	2.0	4.261
37.7-38.3	100038	12.0	8.0	2.961	120038	8.0	4.0	4.417
39.7-40.3	100040	14.0	10.0	3.066	120040	10.0	6.0	4.572
41.7-42.3	100042	16.0	12.0	3.170	120042	12.0	8.0	4.727
43.7-44.3	100044	18.0	14.0	3.275	120044	14.0	10.0	4.882
45.7-46.3	100046	20.0	16.0	3.379	120046	16.0	12.0	5.037
47.7-48.3	100048	22.0	18.0	3.483	120048	18.0	14.0	5.192
49.7-50.3	100050	24.0	20.0	3.588	120050	20.0	16.0	5.347
51.7-52.3	100052	26.0	22.0	3.692	120052	22.0	18.0	5.502
53.7-54.3	100054	28.0	24.0	3.797	120054	24.0	20.0	5.658
55.7-56.3	100056	30.0	26.0	3.901	120056	26.0	22.0	5.813
57.7-58.3	100058	32.0	28.0	4.006	120058	28.0	24.0	5.968
59.7-60.3	100060	34.0	30.0	4.110	120060	30.0	26.0	6.123
63.7-64.3	100064	38.0	34.0	4.319	120064	34.0	30.0	6.433
67.7-68.3	100068	42.0	38.0	4.528	120068	38.0	34.0	6.744
71.7-72.3	100072	46.0	42.0	4.737	120072	42.0	38.0	7.054
75.7-76.3	100076	50.0	46.0	4.946	120076	46.0	42.0	7.364
79.7-80.3	100080	54.0	46.0	5.155	120080	50.0	46.0	7.674
83.7-84.3	100084	58.0	54.0	5.364	120084	54.0	50.0	7.985
87.7-88.3	100088	62.0	58.0	5.573	120088	58.0	54.0	8.295
91.7-92.3	100092	66.0	62.0	5.782	120092	62.0	58.0	8.605
95.7-96.3	100096	70.0	66.0	5.991	120096	66.0	62.0	8.915
99.7-100.3	100100	74.0	70.0	6.200	120100	70.0	66.0	9.226
103.7-104.3	100104	78.0	74.0	6.409	120104	74.0	70.0	9.536
107.7-108.3	100108	82.0	78.0	6.618	120108	78.0	74.0	9.846
111.7-112.3	100112	86.0	82.0	6.827	120112	82.0	78.0	10.157
115.7-116.3	100115	90.0	86.0	7.036	120116	86.0	82.0	10.467
119.7-120.3	100120	94.0	90.0	7.244	120120	90.0	86.0	10.777
123.7-124.3	100124	98.0	94.0	7.453	120124	94.0	90.0	11.087
127.7-128.3	100128	102.0	98.0	7.662	120128	98.0	94.0	11.398
131.7-132.3	100132	106.0	102.0	7.871	120132	102.0	98.0	11.708
135.7-136.3	100136	110.0	106.0	8.080	120136	106.0	102.0	12.018
139.7-140.3	100140	114.0	110.0	8.289	120140	110.0	106.0	12.328
143.7-144.3	—	—	—	—	120144	114.0	110.0	12.639
147.7-148.3	—	—	—	—	120148	118.0	114.0	12.949
151.7-152.3	—	—	—	—	120152	122.0	118.0	13.259
155.7-156.3	—	—	—	—	120156	126.0	122.0	13.570
159.7-160.3	—	—	—	—	120160	130.0	126.0	13.880
163.7-164.3	—	—	—	—	120164	134.0	130.0	14.190
167.7-168.3	—	—	—	—	120168	138.0	134.0	14.500



METRIC AEROSPACE STANDARD

BOLT, MACHINE-HEX HEAD-FULL SHANK, LONG
THREAD, AMS 5731, METRICMA3347
SHEET 5 OF 7