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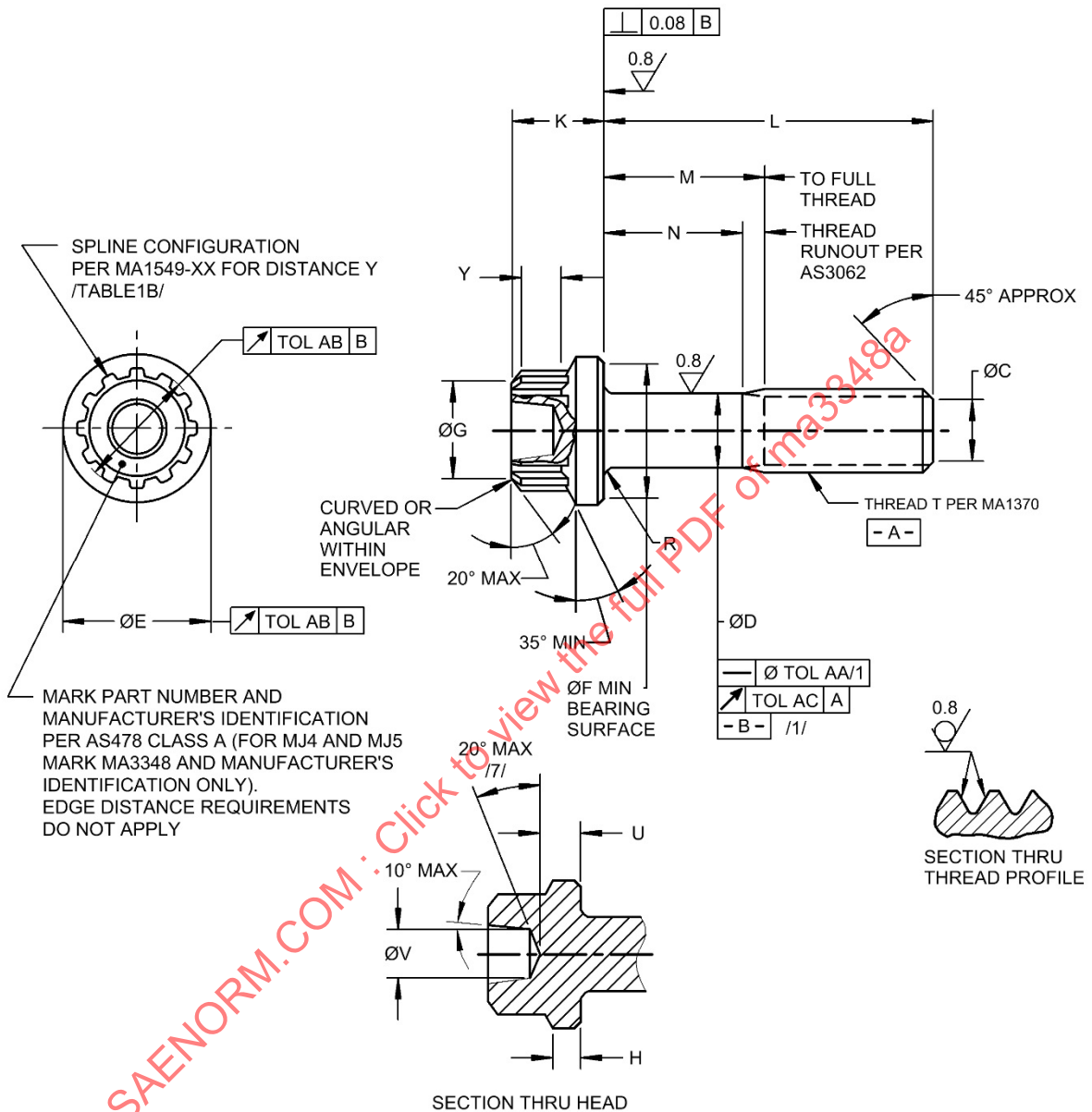
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RATIONALE

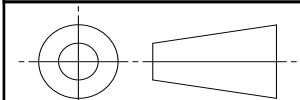
FEDERAL SUPPLY CLASS
5306

FIGURE 1 REDRAWN, DELETE INSIDE FILET RADII AT TRANSITION OF WRENCH ELEMENT AND BASE FLANGE, ADD NEW NOTE FOR DISPOSITION OF EXISTING INVENTORY, REVISE FPI REFERENCE, TABLES RETYPED AND REFORMATTED, GENERAL EDITORIAL REVISIONS.



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THIRD ANGLE PROJECTION



CUSTODIAN: E-25

PROCUREMENT SPECIFICATION: MA3378



METRIC AEROSPACE STANDARD

BOLT, SPLINE DRIVE EXTENDED WASHER HEAD,
PD SHANK, LONG THREAD,
NICKEL ALLOY (UNS N07001), METRIC

MA3348™
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ISSUED 1991-05 REAFFIRMED 2015-05 REVISED 2021-03

TABLE 1A - PART NUMBERS, NOM DIA, THREAD T, AND DIMENSIONS C, D, E, F, G, H, AND K

PART NUMBER /6/	NOM DIA	THREAD T 4h6h	ØC	ØD	ØE MAX	ØF MIN	ØG MIN	H MIN	K h15
MA3348-040XXX	4	MJ4 X 0.7	2.6- 3.1	3.42- 3.68	8.3	7.5	6	0.8	5.02- 5.50
MA3348-050XXX	5	MJ5 X 0.8	3.0- 4.0	4.35- 4.61	9.1	8.3	7	1.0	5.92- 6.50
MA3348-060XXX	6	MJ6 X 1	3.7- 4.7	5.22- 5.48	10.6	9.8	8	1.2	6.92- 7.50
MA3348-070XXX	7	MJ7 X 1	4.7- 5.7	6.22- 6.48	12.1	11.3	9	1.4	7.62- 8.20
MA3348-080XXX	8	MJ8 X 1	5.7- 6.7	7.22- 7.48	13.6	12.8	10	1.6	8.02- 8.60
MA3348-100XXX	10	MJ10 X 1.25	7.4- 8.4	9.06- 9.32	16.7	15.7	12	2.0	9.40-10.10
MA3348-120XXX	12	MJ12 X 1.25	9.4-10.4	11.06-11.32	19.9	18.8	14	2.4	10.70-11.40

TABLE 1B - PART NUMBERS AND DIMENSIONS R, Y, AB, AC AND WRENCHING DASH NO.

PART NUMBER /6/	R	U	ØV	Y MIN	AA TOL	AB TOL	AC TOL	WRENCHING CONFIGURATION DASH NO.
MA3348-040XXX	0.2-0.4	-----	-----	2.5	0.0030	0.10	0.12	06
MA3348-050XXX	0.3-0.5	2.5-2.9	3.2-3.7	2.8	0.0030	0.13	0.12	07
MA3348-060XXX	0.5-0.7	2.8-3.2	4.1-4.6	3.5	0.0030	0.15	0.12	08
MA3348-070XXX	0.5-0.7	3.3-3.7	4.9-5.4	3.8	0.0030	0.18	0.15	09
MA3348-080XXX	0.5-0.7	3.7-4.1	5.2-5.7	3.9	0.0030	0.20	0.15	10
MA3348-100XXX	0.6-0.8	4.7-5.1	6.7-7.2	4.2	0.0025	0.25	0.15	12
MA3348-120XXX	0.6-0.9	5.6-6.0	8.0-8.5	4.5	0.0025	0.30	0.18	14



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TABLE 2 - DASH NO., DIMENSIONS L, M, N, AND APPROX MASS

SIZE	DASH NO. /6/	L	M MAX	N MIN	APPROX MASS kg/100
MJ4 X 0.7 - 4h6h	040006	5.7- 6.3	1.8	0.4	0.232
	040008	7.7- 8.3	1.8	0.4	0.248
	040010	9.7-10.3	1.8	0.4	0.264
	040012	11.7-12.3	1.8	0.4	0.280
	040014	13.7-14.3	1.8	0.4	0.296
	040016	15.7-16.3	2.0	0.4	0.312
	040018	17.7-18.3	4.0	1.1	0.328
	040020	19.7-20.3	6.0	3.1	0.344
	040022	21.7-22.3	8.0	5.1	0.360
	040024	23.7-24.3	10.0	7.1	0.376
	040026	25.7-26.3	12.0	9.1	0.392
	040028	27.7-28.3	14.0	11.1	0.408
	040030	29.7-30.3	16.0	13.1	0.424
	040032	31.7-32.3	18.0	15.1	0.439
	040034	33.7-34.3	20.0	17.1	0.455
	040036	35.7-36.3	22.0	19.1	0.471
	040038	37.7-38.3	24.0	21.1	0.487
	040040	39.7-40.3	26.0	23.1	0.503
	040042	41.7-42.3	28.0	25.1	0.519
	040044	43.7-44.3	30.0	27.1	0.535
	040046	45.7-46.3	32.0	29.1	0.551
	040048	47.7-48.3	34.0	31.1	0.566
	040050	49.7-50.3	36.0	33.1	0.582
	040052	51.7-52.3	38.0	35.1	0.592
	040054	53.7-54.3	40.0	37.1	0.614
	040056	55.7-56.3	42.0	39.1	0.630



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TABLE 2 - DASH NO., DIMENSIONS L, M, N, AND APPROX MASS (CONTINUED)

SIZE	DASH NO. /6/	L	M MAX	N MIN	APPROX MASS kg/100
MJ5 X 0.8 - 4h6h	050008	7.7- 8.3	2.1	0.5	0.366
	050010	9.7-10.3	2.1	0.5	0.392
	050012	11.7-12.3	2.1	0.5	0.418
	050014	13.7-14.3	2.1	0.5	0.443
	050016	15.7-16.3	2.1	0.5	0.469
	050018	17.7-18.3	2.1	0.5	0.495
	050020	19.7-20.3	4.0	0.9	0.520
	050022	21.7-22.3	6.0	2.9	0.546
	050024	23.7-24.3	8.0	4.9	0.571
	050026	25.7-26.3	10.0	6.9	0.596
	050028	27.7-28.3	12.0	8.9	0.622
	050030	29.7-30.3	14.0	10.9	0.647
	050032	31.7-32.3	16.0	12.9	0.673
	050034	33.7-34.3	18.0	14.9	0.698
	050036	35.7-36.3	20.0	16.9	0.724
	050038	37.7-38.3	22.0	18.9	0.749
	050040	39.7-40.3	24.0	20.9	0.774
	050042	41.7-42.3	26.0	22.9	0.800
	050044	43.7-44.3	28.0	24.9	0.825
	050046	45.7-46.3	30.0	26.9	0.850
	050048	47.7-48.3	32.0	28.9	0.876
	050050	49.7-50.3	34.0	30.9	0.901
	050052	51.7-52.3	36.0	32.9	0.927
	050054	53.7-54.3	38.0	34.9	0.952
	050056	55.7-56.3	40.0	36.9	0.978
	050058	57.7-58.3	42.0	38.9	1.003
	050060	59.7-60.3	44.0	40.9	1.028
	050064	63.7-64.3	48.0	44.9	1.079
	050068	67.7-68.3	52.0	48.9	1.130



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TABLE 2 - DASH NO., DIMENSIONS L, M, N, AND APPROX MASS (CONTINUED)

SIZE	DASH NO. /6/	L	M MAX	N MIN	APPROX MASS kg/100
MJ6 X 1 - 4h6h	060010	9.7-10.3	2.7	0.7	0.570
	060012	11.7-12.3	2.7	0.7	0.606
	060014	13.7-14.3	2.7	0.7	0.643
	060016	15.7-16.3	2.7	0.7	0.679
	060018	17.7-18.3	2.7	0.7	0.716
	060020	19.7-20.3	2.7	0.7	0.753
	060022	21.7-22.3	4.0	0.7	0.789
	060024	23.7-24.3	6.0	2.5	0.826
	060026	25.7-26.3	8.0	4.5	0.862
	060028	27.7-28.3	10.0	6.5	0.898
	060030	29.7-30.3	12.0	8.5	0.935
	060032	31.7-32.3	14.0	10.5	0.971
	060034	33.7-34.3	16.0	12.5	1.007
	060036	35.7-36.3	18.0	14.5	1.044
	060038	37.7-38.3	20.0	16.5	1.080
	060040	39.7-40.3	22.0	18.5	1.116
	060042	41.7-42.3	24.0	20.5	1.152
	060044	43.7-44.3	26.0	22.5	1.189
	060046	45.7-46.3	28.0	24.5	1.225
	060048	47.7-48.3	30.0	26.5	1.261
	060050	49.7-50.3	32.0	28.5	1.298
	060052	51.7-52.3	34.0	30.5	1.334
	060054	53.7-54.3	36.0	32.5	1.379
	060056	55.7-56.3	38.0	34.5	1.406
	060058	57.7-58.3	40.0	36.5	1.443
	060060	59.7-60.3	42.0	38.5	1.479
	060064	63.7-64.3	46.0	42.5	1.552
	060068	67.7-68.3	50.0	46.5	1.624
	060072	71.7-72.3	54.0	50.5	1.697
	060076	75.7-76.3	58.0	54.5	1.770
	060080	79.7-80.3	62.0	58.5	1.842
	060084	83.7-84.3	66.0	62.5	1.915



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TABLE 2 - DASH NO., DIMENSIONS L, M, N, AND APPROX MASS (CONTINUED)

SIZE	DASH NO. /6/	L	M MAX	N MIN	APPROX MASS kg/100
MJ7 X 1 - 4h6h	070010	9.7-10.3	2.7	0.7	0.793
	070012	11.7-12.3	2.7	0.7	0.845
	070014	13.7-14.3	2.7	0.7	0.896
	070016	15.7-16.3	2.7	0.7	0.948
	070018	17.7-18.3	2.7	0.7	1.000
	070020	19.7-20.3	2.7	0.7	1.052
	070022	21.7-22.3	2.7	0.7	1.103
	070024	23.7-24.3	4.0	0.7	1.155
	070026	25.7-26.3	6.0	2.5	1.206
	070028	27.7-28.3	8.0	4.5	1.257
	070030	29.7-30.3	10.0	6.5	1.308
	070032	31.7-32.3	12.0	8.5	1.360
	070034	33.7-34.3	14.0	10.5	1.411
	070036	35.7-36.3	16.0	12.5	1.462
	070038	37.7-38.3	18.0	14.5	1.513
	070040	39.7-40.3	20.0	16.5	1.565
	070042	41.7-42.3	22.0	18.5	1.616
	070044	43.7-44.3	24.0	20.5	1.668
	070046	45.7-46.3	26.0	22.5	1.718
	070048	47.7-48.3	28.0	24.5	1.770
	070050	49.7-50.3	30.0	26.5	1.821
	070052	51.7-52.3	32.0	28.5	1.872
	070054	53.7-54.3	34.0	30.5	1.923
	070056	55.7-56.3	36.0	32.5	1.974
	070058	57.7-58.3	38.0	34.5	2.026
	070060	59.7-60.3	40.0	36.5	2.077
	070064	63.7-64.3	44.0	40.5	2.179
	070068	67.7-68.3	48.0	44.5	2.282
	070072	71.7-72.3	52.0	48.5	2.384
	070076	75.7-76.3	56.0	52.5	2.487
	070080	79.7-80.3	60.0	56.5	2.589
	070084	83.7-84.3	64.0	60.5	2.692
	070088	87.7-88.3	68.0	64.5	2.794
	070092	91.7-92.3	72.0	68.5	2.896
	070096	95.7-96.3	76.0	72.5	2.999



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TABLE 2 - DASH NO., DIMENSIONS L, M, N, AND APPROX MASS (CONTINUED)

SIZE	DASH NO. /6/	L	M MAX	N MIN	APPROX MASS kg/100
MJ8 X 1 - 4h6h	080010	9.7- 10.3	2.7	0.7	1.071
	080012	11.7- 12.3	2.7	0.7	1.140
	080014	13.7- 14.3	2.7	0.7	1.210
	080016	15.7- 16.3	2.7	0.7	1.279
	080018	17.7- 18.3	2.7	0.7	1.348
	080020	19.7- 20.3	2.7	0.7	1.417
	080022	21.7- 22.3	2.7	0.7	1.486
	080024	23.7- 24.3	2.7	0.7	1.556
	080026	25.7- 26.3	4.0	0.7	1.625
	080028	27.7- 28.3	6.0	2.5	1.694
	080030	29.7- 30.3	8.0	4.5	1.762
	080032	31.7- 32.3	10.0	6.5	1.831
	080034	33.7- 34.3	12.0	8.5	1.900
	080036	35.7- 36.3	14.0	10.5	1.968
	080038	37.7- 38.3	16.0	12.5	2.037
	080040	39.7- 40.3	18.0	14.5	2.106
	080042	41.7- 42.3	20.0	16.5	2.175
	080044	43.7- 44.3	22.0	18.5	2.243
	080046	45.7- 46.3	24.0	20.5	2.312
	080048	47.7- 48.3	26.0	22.5	2.381
	080050	49.7- 50.3	28.0	24.5	2.450
	080052	51.7- 52.3	30.0	26.5	2.518
	080054	53.7- 54.3	32.0	28.5	2.587
	080056	55.7- 56.3	34.0	30.5	2.656
	080058	57.7- 58.3	36.0	32.5	2.724
	080060	59.7- 60.3	38.0	34.5	2.793
	080064	63.7- 64.3	42.0	38.5	2.931
	080068	67.7- 68.3	46.0	42.5	3.068
	080072	71.7- 72.3	50.0	46.5	3.206
	080076	75.7- 76.3	54.0	50.5	3.343
	080080	79.7- 80.3	58.0	54.5	3.480
	080084	83.7- 84.3	62.0	58.5	3.618
	080088	87.7- 88.3	66.0	62.5	3.755
	080092	91.7- 92.3	70.0	66.5	3.893
	080096	95.7- 96.3	74.0	70.5	4.030
	080100	99.7-100.3	78.0	74.5	4.168
	080104	103.7-104.3	82.0	78.5	4.305
	080108	107.7-108.3	86.0	82.5	4.443
	080112	111.7-112.3	90.0	86.5	4.580



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TABLE 2 - DASH NO., DIMENSIONS L, M, N, AND APPROX MASS (CONTINUED)

SIZE	DASH NO. /6/	L	M MAX	N MIN	APPROX MASS kg/100
MJ10 X 1.25 - 4h6h	100014	13.7- 14.3	3.3	0.8	2.025
	100016	15.7- 16.3	3.3	0.8	2.133
	100018	17.7- 18.3	3.3	0.8	2.241
	100020	19.7- 20.3	3.3	0.8	2.350
	100022	21.7- 22.3	3.3	0.8	2.458
	100024	23.7- 24.3	3.3	0.8	2.566
	100026	25.7- 26.3	3.3	0.8	2.674
	100028	27.7- 28.3	3.3	0.8	2.783
	100030	29.7- 30.3	4.0	0.8	2.891
	100032	31.7- 32.3	6.0	2.0	2.999
	100034	33.7- 34.3	8.0	4.0	3.106
	100036	35.7- 36.3	10.0	6.0	3.213
	100038	37.7- 38.3	12.0	8.0	3.321
	100040	39.7- 40.3	14.0	10.0	3.428
	100042	41.7- 42.3	16.0	12.0	3.536
	100044	43.7- 44.3	18.0	14.0	3.643
	100046	45.7- 46.3	20.0	16.0	3.750
	100048	47.7- 48.3	22.0	18.0	3.858
	100050	49.7- 50.3	24.0	20.0	3.965
	100052	51.7- 52.3	26.0	22.0	4.072
	100054	53.7- 54.3	28.0	24.0	4.178
	100056	55.7- 56.3	30.0	26.0	4.287
	100058	57.7- 58.3	32.0	28.0	4.394
	100060	59.7- 60.3	34.0	30.0	4.502
	100064	63.7- 64.3	38.0	34.0	4.717
	100068	67.7- 68.3	42.0	38.0	4.931
	100072	71.7- 72.3	46.0	42.0	5.146
	100076	75.7- 76.3	50.0	46.0	5.361
	100080	79.7- 80.3	54.0	50.0	5.576
	100084	83.7- 84.3	58.0	54.0	5.790
	100088	87.7- 88.3	62.0	58.0	6.005
	100092	91.7- 92.3	66.0	62.0	6.220
	100096	95.7- 96.3	70.0	66.0	6.435
	100100	99.7-100.3	74.0	70.0	6.650
	100104	103.7-104.3	78.0	74.0	6.864
	100108	107.7-108.3	82.0	78.0	7.079
	100112	111.7-112.3	86.0	82.0	7.294
	100116	115.7-116.3	90.0	86.0	7.508
	100120	119.7-120.3	94.0	90.0	7.723
	100124	123.7-124.3	98.0	94.0	7.938
	100128	127.7-128.3	102.0	98.0	8.153
	100132	131.7-132.3	106.0	102.0	8.368
	100136	135.7-136.3	110.0	106.0	8.582
	100140	139.7-140.3	114.0	110.0	8.798



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