

AEROSPACE STANDARD

No. AS70001™

**BOLT, EXTERNAL MORTORQ® SUPER,
TENSION HEAD,
.250-28 to 1.375-12 UNJF-3A**

**Heat Resisting Nickel Alloy (Inconel 718)
Classification Rm 1510 MPa (220,000 lbf/in²)
@ Ambient Temperature up to a maximum working
temperature of 426°C**

ASPQP™

Aerospace Standards Part Qualification Program

A Program of SAE ITC

RATIONALE

First issue of Standard.

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Issued by: Technical Standards Committee (Aerospace)
SAE Industry Technologies Consortia (ITC)
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**SAE INDUSTRY TECHNOLOGIES CONSORTIA
AEROSPACE STANDARDS AND PART QUALIFICATION PROGRAM**

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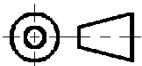
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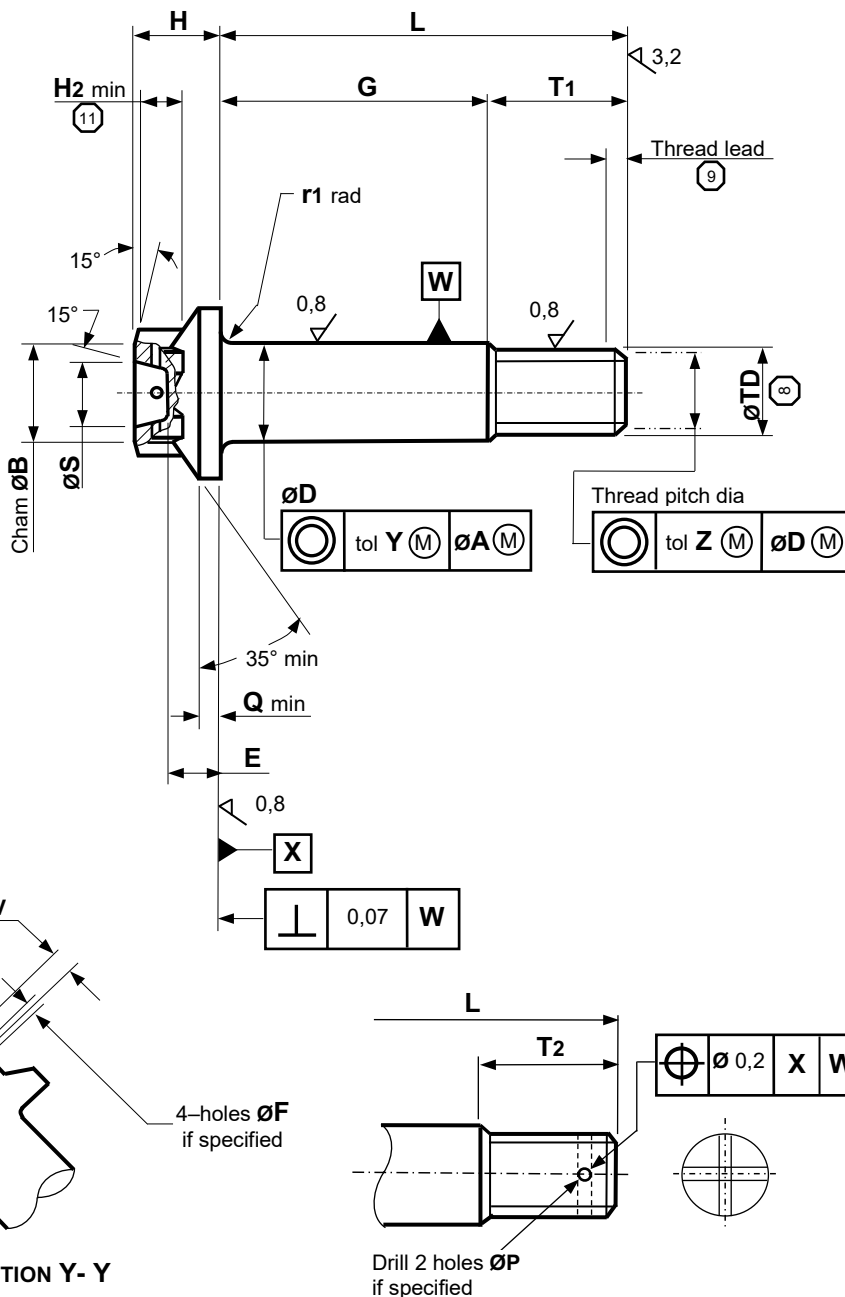
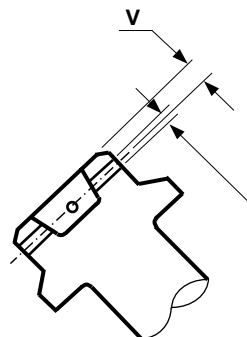
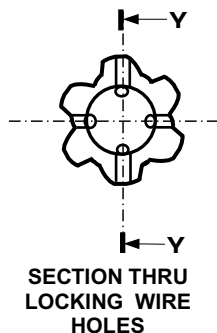
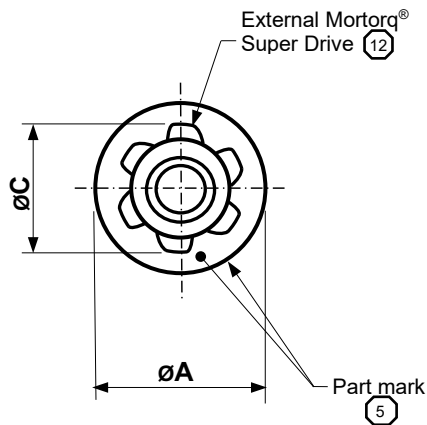
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3rd Angle Projection



OUTLINE

Numerals in symbol denotes 'see note number'



Products to this standard require Qualification Approval in accordance with TS202.		YES	
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 Aerospace Standards Part Qualification Program A Program of SAE ITC SAE Aerospace Standards Europe, 1 York Street, London W1U 6PA, United Kingdom Registered No. 3916053 (USA)	Title BOLT, EXTERNAL MORTORQ® SUPER TENSION HEAD, .250-28 to 1.375-12 UNJF-3A		Standard No. AS70001™
			Issue 1
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TABLE-1 - BOLT DIMENSIONS

Diameter code	Thread UNJF-3A	Mortorq Drive No.	Nominal shank diameter	Ø A		Ø B		Ø C		Ø D		TD	
				max	min	max	min	max	min	max	min	max	min
4	.250-28	MTS-X10	6,35	11,125	10,870	7,925	7,544	9,25	9,14	6,337	6,312	6,197	6,121
5	.3125-24	MTS-X12	7,94	13,487	13,233	9,525	9,144	10,82	10,72	7,925	7,899	7,772	7,670
6	.375-24	MTS-X14	9,52	16,484	16,230	11,099	10,719	12,73	12,62	9,512	9,487	9,347	9,245
7	.4375-20	MTS-X16	11,11	19,050	18,796	12,700	12,319	14,55	14,45	11,099	11,074	10,947	10,820
8	.500-20	MTS-X18	12,70	21,031	20,777	14,275	13,894	16,46	16,31	12,687	12,661	12,522	12,395
9	.5625-18	MTS-X20	14,29	23,825	23,571	15,875	15,494	18,24	18,08	14,262	14,236	14,097	13,970
10	.625-18	MTS-X24	15,88	26,670	26,416	17,449	17,068	21,92	21,77	15,849	15,824	15,697	15,545
12	.750-16	MTS-X29	19,05	31,242	30,988	20,624	20,243	26,00	25,85	19,024	18,999	18,872	18,720
14	.8750-14	MTS-X30	22,22	36,525	36,271	23,799	23,418	27,20	27,05	22,199	22,174	22,047	21,869
16	1.000-12	MTS-X32	25,40	41,275	41,021	26,974	26,593	28,98	28,83	25,374	25,349	25,222	25,044
18	1.125-12	MTS-X36	28,58	47,625	47,371	31,750	31,369	32,59	32,44	28,550	28,512	28,372	28,194
19	1.1875-12	MTS-X40	30,17	53,975	53,721	33,325	32,944	36,14	35,99	30,137	30,099	29,959	29,781
20	1.2500-12	MTS-X42	31,75	55,180	54,930	36,525	36,068	37,97	37,82	31,714	31,689	31,532	31,232
22	1.3750-12	MTS-X44	34,92	59,817	59,563	41,275	40,890	39,75	39,60	34,900	34,862	34,706	34,382

Diameter code	Thread UNJF-3A	E	Ø F		H		H2	M		N	Ø P		Q	
		min	max	min	max	min	min	max	min	ref	max	min	max	min
4	.250-28	1,52	1,066	0,812	5,99	5,49	3,30	-	-	1,016	2,184	1,930	1,27	0,77
5	.3125-24	1,83	1,524	1,270	7,05	6,55	3,81	-	-	1,270			1,52	1,02
6	.375-24	2,11			8,37	7,87	4,32	4,902	4,394	1,270	2,946	2,692	1,77	1,27
7	.4375-20	2,41			9,77	9,27	5,11	-	-	1,524			2,03	1,53
8	.500-20	2,72			11,04	10,54	5,99	5,73	5,22	1,524	3,835	3,581	2,28	1,78
9	.5625-18	3,02			12,49	11,99	6,73	6,17	5,66	1,778			2,54	2,04
10	.625-18	3,63			14,27	13,77	8,41	-	-	1,778			2,79	2,29
12	.750-16	4,32			16,38	15,88	9,60	-	-	2,032			3,04	2,54
14	.8750-14	4,52			18,53	18,03	9,96	-	-	2,286			3,55	3,05
16	1.000-12	4,83			20,64	20,14	10,41	6,17	5,66	2,540			4,06	3,56
18	1.125-12	5,41			23,31	22,81	11,40	-	-	2,540			4,57	4,07
19	1.1875-12	6,02			27,90	27,40	14,31	6,17	5,66	2,540			5,08	4,58
20	1.2500-12	6,32			29,46	28,96	14,22	6,17	5,66	2,540			6,83	6,33
22	1.3750-12	6,60			33,29	32,79	15,16	6,17	5,66	2,540			8,63	8,13

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TABLE-1 - BOLT DIMENSIONS concluded

Diameter code	Thread UNJF-3A	r1		Ø S		T1 ^{#1}	T2 ^{#2}	V		Y	Z
		max	min	max	min	ref	ref	max	min		
4	.250-28	1,041	0,787	5,76	5,26	12,471	-	1,695	1,455	0,127	0,114
5	.3125-24			6,83	6,33	15,136	-	1,898	1,658	0,152	0,114
6	.375-24	1,448	1,194	7,90	7,40	16,916	21,610	1,898	1,658	0,203	0,114
7	.4375-20			8,99	8,49	19,172	-	1,898	1,658	0,228	0,152
8	.500-20			10,11	9,61	20,642	27,940	2,508	2,268	0,254	0,152
9	.5625-18			11,20	10,70	22,457	28,450	2,508	2,268	0,279	0,152
10	.625-18	1,854	1,600	13,41	12,91	24,037	-	2,508	2,268	0,305	0,152
12	.750-16			15,00	14,50	26,848	-	2,508	2,268	0,381	0,152
14	.8750-14			16,63	16,13	30,138	-	3,295	3,055	0,457	0,229
16	1.000-12			17,70	17,20	36,765	45,170	3,295	3,055	0,508	0,229
18	1.125-12	2,261	1,956	19,86	19,36	42,955	-	3,295	3,055	0,558	0,229
19	1.1875-12			22,02	21,52	44,815	53,220	3,295	3,055	0,558	0,229
20	1.2500-12			23,14	22,64	45,165	53,560	3,295	3,055	0,635	0,229
22	1.3750-12			24,20	23,70	48,165	56,570	3,295	3,055	0,635	0,229

#1 For codes – (dash) & H, see Table 5.

#2 For codes D & HD, see Table 5.

TABLE-2 - BOLT MECHANICAL CHARACTERISTICS

Diameter code	Thread UNJF-3A	Tensile Strength N min	Double Shear Strength N min	Tension Fatigue N max
4	.250-28	38 000	54 800	19 750
5	.3125-24	60 000	85 100	31 200
6	.375-24	93 000	123 000	48 500
7	.4375-20	125 900	167 300	65 400
8	.500-20	168 200	218 300	87 200
9	.5625-18	213 100	276 400	110 800
10	.625-18	266 500	341 300	138 800
12	.750-16	386 700	491 500	201 100
14	.8750-14	529 500	669 000	274 500
16	1.000-12	689 700	873 700	357 800
18	1.125-12	880 750	1 105 380	458 160
19	1.1875-12	987 460	1 226 600	513 500
20	1.2500-12	1 094 000	1 359 100	568 800
22	1.3750-12	1 323 800	1 644 500	688 300

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