
Aerospace series - Bolts, pan head, six lobe recess, normal shank, long thread, in titanium alloy TI-P64001, MoS2 coated - Classification: 1 100 MPa (at ambient temperature)

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Série aérospatiale - Vis a tete cylindrique, a empreinte six lobes, tige normale, filetage long, en alliage de titane TI-P63, revetues MoS2 - Classification: 1 100 MPa (a température ambiante)

Ta slovenski standard je istoveten z: EN 3725:2003

ICS:

49.030.20 Sorniki, vijaki, stebelni vijaki Bolts, screws, studs

SIST EN 3725:2004

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 3725

February 2003

ICS 49.030.20

English version

Aerospace series - Bolts, pan head, six lobe recess, normal shank, long thread, in titanium alloy TI-P64001, MoS₂ coated -
Classification: 1 100 MPa (at ambient temperature)

This European Standard was approved by CEN on 19 August 2002.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovak Republic, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document EN 3725:2003 has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2003, and conflicting national standards shall be withdrawn at the latest by August 2003.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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EN 3725:2003 (E)**1 Scope**

This standard specifies the characteristics of pan head bolts with six lobe recess, normal shank and long thread, in TI-P64001, MoS₂ coated, for aerospace applications.

Strength class: 1 100 MPa ¹⁾

NOTE Taking account of the recess geometry, the strength class to be used for the seating torque calculation shall not be greater than 900 MPa.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ISO 3353, *Aerospace - Lead and runout threads.*

ISO 5855-2, *Aerospace - MJ threads - Part 2: Limit dimensions for bolts and nuts.*

EN 2424, *Aerospace series - Marking of aerospace products.*

EN 2491, *Aerospace series - Molybdenum disulphide dry lubricants - Coating methods.*

EN 3457, *Aerospace series - Titanium alloy TI-P63 - Not heat treated - Reference heat treatment - Solution treated and aged - Grade 2 forging stock for fasteners - $D \leq 25$ mm ²⁾.*

EN 3813, *Aerospace series - Titanium alloy TI-P64001 - Annealed - Bar and wire for forged fasteners - $D_e \leq 25$ mm ³⁾.*

EN 3818, *Aerospace series - Bolts with MJ threads, in titanium alloy TI-P64001 - Classification = 1 100 MPa (at ambient temperature) - Technical specification.*

EN 3905, *Aerospace series - Six lobe recesses for bolts - Technical specification ²⁾.*

EN 3911, *Aerospace series - Six lobe recess - Geometrical definition ³⁾.*

3 Required characteristics**3.1 Configuration – Dimensions – Tolerances**

See Figure 1 and Tables 1 and 2. Dimensions and tolerances are in millimetres. They apply before MoS₂ coating.

3.2 Materials

EN 3457 or EN 3813

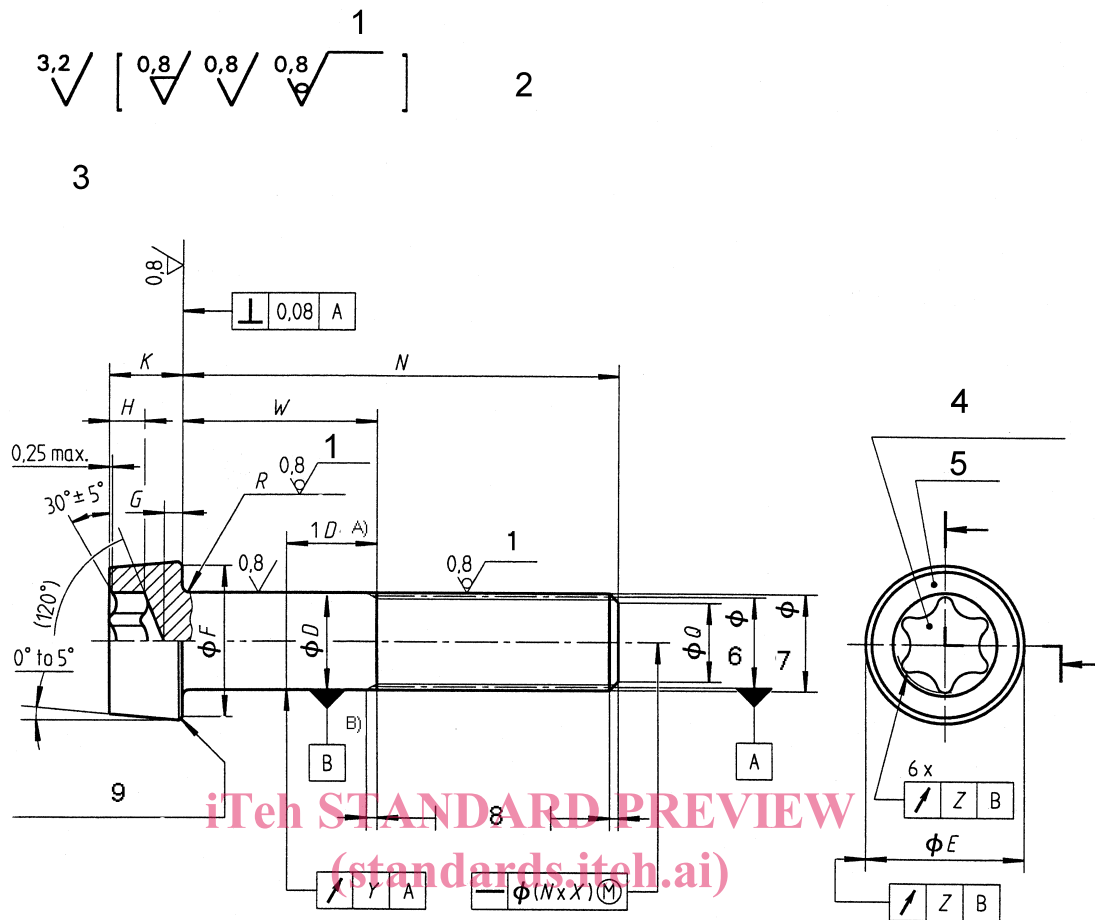
3.3 Surface treatment

EN 2491.

1) Minimum tensile strength of the material at ambient temperature

2) Published as AECMA Prestandard at the date of publication of this standard

3) In preparation at the date of publication of this standard



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Key

- 1 Rolled
 - 2 Values apply before MoS₂ coating
 - 3 Remove sharp edges 0,1 to 0,4
 - 4 Recess in conformity with EN 3911
 - 5 Marking
 - 6 Pitch
 - 7 Thread
 - 8 Conforms to ISO 3353
 - 9 Shape in this area at manufacturer's option
- A)** When the length of the shank is less than one times the nominal value of the shank diameter D , the run-out is measured at a distance equal to half the actual shank length.
- B)** For bolts having a shank length less than one times the nominal value of the shank diameter D , and for those threaded to head, the pitch diameter axis shall be used as the datum.

Figure 1

Table 1

Thread ^{a)}		D	E	F	G	H	K	Q	R		X	Y	Z	Recess
Code	Designation	h12	max.	min.	min.	0 $+0,2$	h15	$\pm 0,5$	max.	min.				
030	MJ3x0,5-4H6H	3	5,5	5,1	0,3	1,15	2,2	2,3	0,4	0,2	0,003	0,12	0,11	EN 3911-10
040	MJ4X0,7-4H6H	4	7	6,6	0,7	1,3	3	3,1					0,14	EN 3911-25
050	MJ5X0,8-4H6H	5	8,5	8,1		1,8	4	3,5	0,5	0,3			0,18	EN 3911-27
060	MJ6X1-4H6H	6	10	9,5	1	2,25	4,7	4,2	0,7	0,5			0,21	EN 3911-30
070	MJ7X1-4H6H	7	12	11,4		2,5	5,4	5,2			0,15	0,25	EN 3911-40	
080	MJ8X1-4H6H	8	13	12,4	1,5	2,7	6	6,2				0,28	EN 3911-45	

^{a)} In accordance with ISO 5855-2

Table 2

Length code	N ± 0,3	Thread code																	
		030			040			050			060			070			080		
		W		Masse ^{a)}	W		Masse ^{a)}	W		Masse ^{a)}	W		Masse ^{a)}	W		Masse ^{a)}	W		Masse ^{a)}
max.	min.		max.	min.		max.	min.		max.	min.		max.	min.		max.	min.			
004	4			0,40															
006	6			0,45															
008	8	1,4	1,15	0,50															
010	10			0,55	1,8	1,45				1,59									
012	12			0,60					2,1	1,7								6,16	
014	14			0,65						1,73								6,54	
016	16	4	2,5	0,70						1,87								6,92	
018	18	6	4,5	0,75						2,01		2,7	2,2					7,29	
020	20	8	6,5	0,80	4	2,5	1,42			2,15								7,67	
022	22	10	8,5	0,85	6	4,5	1,51	4	2,5	2,29								8,05	
024	24	12	10,5	0,90	8	6,5	1,60	6	4,5	2,43	4	2,5	4,13					8,43	
026	26	14	12,5	0,95	10	8,5	1,69	8	6,5	2,57	6	4,5	4,33	4	2,5	6,61		8,81	
028	28	16	14,5	1,00	12	10,5	1,78	10	8,5	2,71	8	6,5	4,53	6	4,5	6,90	4	2,5	9,19
030	30	18	16,5	1,05	14	12,5	1,87	12	10,5	2,85	10	8,5	4,73	8	6,5	7,18	6	4,5	9,57
032	32	20	18,5	1,10	16	14,5	1,96	14	12,5	2,99	12	10,5	4,93	10	8,5	7,46	8	6,5	9,94
034	34	22	20,5	1,15	18	16,5	2,05	16	14,5	3,13	14	12,5	5,13	12	10,5	7,75	10	8,5	10,32
036	36	24	22,5	1,20	20	18,5	2,14	18	16,5	3,27	16	14,5	5,33	14	12,5	8,03	12	10,5	10,70
038	38	26	24,5	1,25	22	20,5	2,23	20	18,5	3,42	18	16,5	5,53	16	14,5	8,31	14	12,5	11,08
040	40	28	26,5	1,30	24	22,5	2,32	22	20,5	3,56	20	18,5	5,73	18	16,5	8,59	16	14,5	11,46
042	42	30	28,5	1,35	26	24,5	2,41	24	22,5	3,70	22	20,5	5,93	20	18,5	8,88	18	16,5	11,83
044	44				28	26,5	2,50	26	24,5	3,84	24	22,5	6,13	22	20,5	9,16	20	18,5	12,21
046	46				30	28,5	2,59	28	26,5	3,98	26	24,5	6,33	24	22,5	9,44	22	20,5	12,59
048	48				32	30,5	2,68	30	28,5	4,12	28	26,5	6,53	26	24,5	9,73	24	22,5	12,97
050	50				34	32,5	2,77	32	30,5	4,26	30	28,5	6,73	28	26,5	10,01	26	24,5	13,35
052	52				36	34,5	2,86	34	32,5	4,40	32	30,5	6,94	30	28,5	10,29	28	26,5	13,72
054	54				38	36,5	2,95	36	34,5	4,54	34	32,5	7,14	32	30,5	10,58	30	28,5	14,10
056	56				40	38,5	3,04	38	36,5	4,68	36	34,5	7,34	34	32,5	10,86	32	30,5	14,48
058	58				42	40,5	3,13	40	38,5	4,82	38	36,5	7,54	36	34,5	11,14	34	32,5	14,86
060	60				44	42,5	3,22	42	40,5	4,96	40	38,5	7,74	38	36,5	11,42	36	34,5	15,24
062	62				46	44,5	3,31	44	42,5	5,10	42	40,5	7,94	40	38,5	11,71	38	36,5	15,61
064	64				48	46,5	3,40	46	44,5	5,24	44	42,5	8,14	42	40,5	11,99	40	38,5	15,99
066	66				50	48,5	3,49	48	46,5	5,38	46	44,5	8,34	44	42,5	12,27	42	40,5	16,38
068	68				52	50,5	3,58	50	48,5	5,52	48	46,5	8,54	46	44,5	12,56	44	42,5	16,75
										5,66									17,13

continued

Table 2 (concluded)

Length code	N ± 0,3	Thread code																	
		030			040			050			060			070			080		
		W		Mass ^{a)}	W		Mass ^{a)}	W		Mass ^{a)}	W		Mass ^{a)}	W		Mass ^{a)}	W		Mass ^{a)}
max.	min.		max.	min.		max.	min.		max.	min.		max.	min.		max.	min.			
070	70						54	52,5	5,96		52	50,5	8,94	50	48,5	13,12	48	46,5	17,51
072	72										54	52,5	9,15	52	50,5	13,40	50	48,5	17,89
074	74										56	54,5	9,35	54	52,5	13,68	52	50,5	18,27
076	76										58	56,5	9,55	56	54,5	13,97	54	52,5	18,64
078	78										60	58,5	9,75	58	56,5	14,25	56	54,5	19,02
080	80										62	60,5	9,95	60	58,5	14,53	58	56,5	19,40
082	82										64	62,5	10,15	62	60,5	14,82	60	58,5	19,78
084	84										66	64,5	10,35	64	62,5	15,10	62	60,5	20,16
086	86													66	64,5	15,38	64	62,5	20,54
088	88													68	66,5	15,66	66	64,5	20,91
090	90													70	68,5	15,95	68	66,5	21,29
092	92													72	70,5	16,23	70	68,5	21,67
094	94													74	72,5	16,51	72	70,5	22,05
096	96													76	74,5	16,80	74	72,5	22,42
098	98													78	76,5	17,08	76	74,5	22,80
100	100																78	76,5	23,18
104	104																82	80,5	23,94
108	108																86	84,5	24,69
112	112																90	88,5	25,45

^{a)} Mass ≈ quoted in Kg/1 000 parts

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