
Aeronavtika - Sorniki, normalna šestroba glava, ozka toleranca, kratek navoj, iz titanove zlitine, prevlečene z aluminijem IVD - Klasifikacija: 1100 MPa (pri temperaturi okolice)/425 °C

Aerospace series - Bolts, normal hexagonal head, close tolerance normal shank, short thread, in titanium alloy, aluminium IVD coated - Classification: 1100 MPa (at ambient temperature)/425 °C

Luft- und Raumfahrt - Sechskant-Paßschrauben, kurzes Gewinde, aus Titanlegierung, Aluminium IVD beschichtet - Klasse: 1100 MPa (bei Raumtemperatur)/425 °C

Série aérospatiale - Vis à tête hexagonale normale, fût normal à tolérance serrée, filetage court, en alliage de titane, revêtues aluminium IVD - Classification: 1100 MPa (à température ambiante)/425 °C

Ta slovenski standard je istoveten z: EN 4071:2009

ICS:

49.025.20	Aluminij	Aluminium
49.025.30	Titan	Titanium
49.030.20	Sorniki, vijaki, stebelni vijaki	Bolts, screws, studs

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4071

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ICS 49.030.20

English Version

Aerospace series - Bolts, normal hexagonal head, close tolerance normal shank, short thread, in titanium alloy, aluminium IVD coated - Classification: 1 100 MPa (at ambient temperature) / 425 °C

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This European Standard was approved by CEN on 23 April 2009.

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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 CEN Management Centre has the same status as the official versions.

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Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Required characteristics	5
4 Designation	8
5 Marking	8
6 Technical specification	8
7 Oversized bolts	9

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Foreword

This document (EN 4071:2009) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

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 ASD, 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 January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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

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EN 4071:2009 (E)**1 Scope**

This standard specifies the characteristics of bolts, normal hexagonal head, close tolerance normal shank, short thread, in titanium alloy, aluminium IVD coated.

Classification: 1 100 MPa ¹⁾ / 425 °C ²⁾

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2424, *Aerospace series — Marking of aerospace products*

EN 4016, *Aerospace series — Oversized bolts* ³⁾

EN 9100, *Aerospace series — Quality management systems - Requirements (based on ISO 9001:2000) and Quality systems — Model for quality assurance in design, development, production, installation and servicing (based on ISO 9001:1994)*

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard parts*

TR 3775, *Aerospace series — Bolts and pins — Materials* ⁴⁾

MIL-C-83488C, *Coating, aluminium, ion vapor deposited* ⁵⁾

ISO 3193, *Aerospace — Bolts, normal hexagonal head, normal shank, short or medium length MJ threads, metallic material, coated or uncoated, strength classes less than or equal to 1 100 MPa — Dimensions*

ISO 3353-1, *Aerospace — Lead and runout threads — Part 1: Rolled external threads*

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

ISO 7913, *Aerospace — Bolts and screws, metric — Tolerances of form and position*

ISO 9152, *Aerospace — Bolts, with MJ threads, in titanium alloys, strength class 1 100 MPa — Procurement specification*

1) Minimum tensile strength of the material at ambient temperature.

2) Maximum temperature that the bolt can withstand without continuous change in its original characteristics, after return to ambient temperature. The maximum temperature is determined by the surface treatment.

3) Published as ASD Prestandard at the date of publication of this standard.

4) Published as ASD Technical Report at the date of publication of this standard.

5) Published by: Department of Defense (DoD), the Pentagon, Washington, DC 20301, U.S.A.

3 Required characteristics

3.1 Configuration — Dimensions — Masses

See Figure 1 and Table 1.

Dimensions and tolerances are: in conformity with ISO 3193, expressed in millimetres and apply after surface treatment.

Details of form not stated are left to the manufacturer's discretion.

3.2 Surface roughness

ISO 7913

3.3 Materials

TR 3775 (titanium alloy, strength class 1 100 MPa)

3.4 Surface treatment

MIL-C-83488C, type II, class 3, 4 µm to 12 µm.

After aluminium deposit:

- mechanical blasting, followed by a chromate conversion coating within 24 h max. ⁶⁾;
- optional lubrication with cethylic alcohol (code E).

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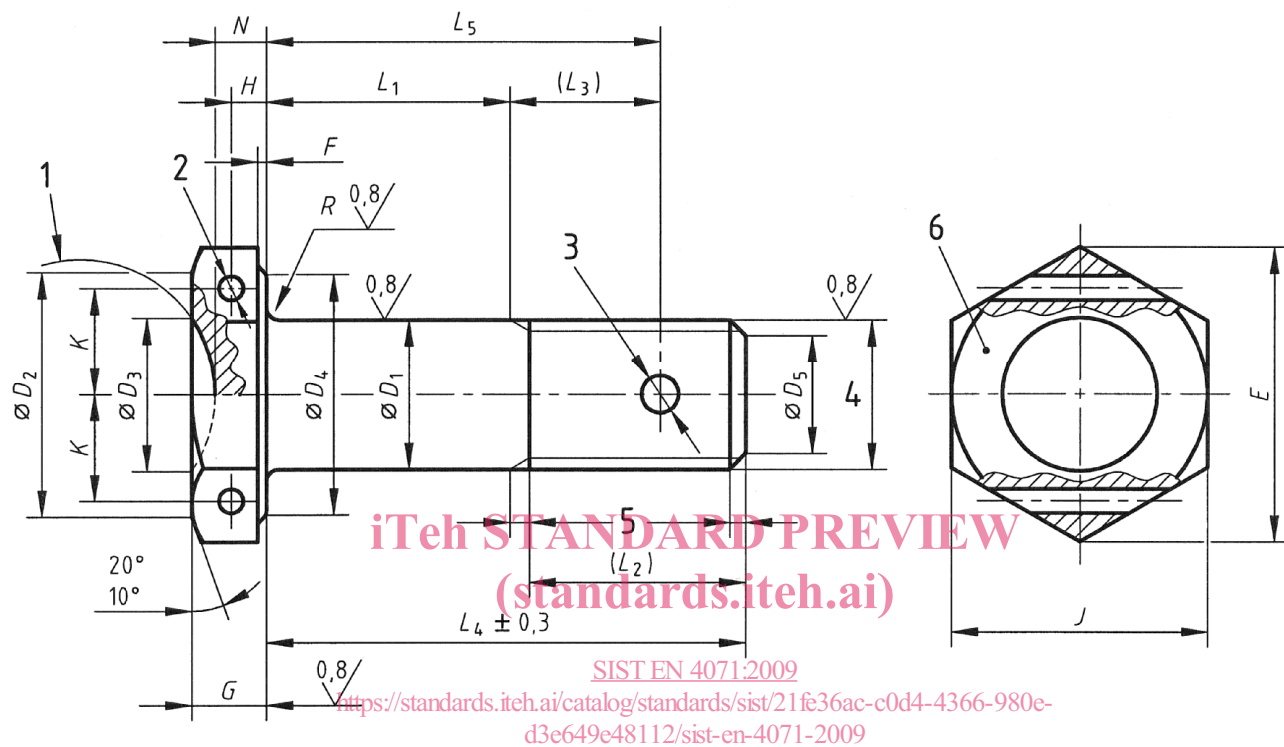
6) Products used shall be in conformity with national regulation into force.

EN 4071:2009 (E)

$\sqrt{3,2}$ $\left[\sqrt{0,8} \right]$ Values in micrometres apply prior to surface treatment.

Break sharp edges 0,1 to 0,4.

Details of form not stated are left to the manufacturer's discretion.



Key

- 1 Continuous surface
- 2 2 holes $\varnothing D_6$ (optional)
- 3 1 hole $\varnothing D_7$ (optional)
- 4 Thread
- 5 Conforms to ISO 3353-1
- 6 Marking

Figure 1

Table 1

Diameter code	Thread ^a	D_1		D_2 min.	D_3 0 -0,5	D_4^b min.	D_5		D_6 H13	D_7 H13	E min.	F		G 0 -0,3			
		nom.	Tol.				nom.	Tol.				max.	min.				
030	MJ3×0,5 – 4h6h	3	-0,006 -0,031	5,5	—	5,4	2,3	0 -0,5	—	—	6,5	0,4	0,2	2			
040	MJ4×0,7 – 4h6h	4	-0,010 -0,035	6,4	—	6,4	3	±0,5	—	1,1	7,6	0,5		0,3	2,5		
050	MJ5×0,8 – 4h6h	5		7,4	5,25	7,4	3,4		1	1,5	8,7				3		
060	MJ6×1 – 4h6h	6		9,4	6,25	9,3	4,2		1,4	1,9	10,9				3,5		
070	MJ7×1 – 4h6h	7		10,3	7,25	10,2	5,2				1,6				2,4	12	4
080	MJ8×1 – 4h6h	8	-0,013 -0,038	12,3	8,25	12,2	6,2		3	14,3						4,5	
100	MJ10×1,25 – 4h6h	10	-0,016 -0,041	16,3	10,25	16	7,9			1,6	3				18,9	0,6	0,3
120	MJ12×1,25 – 4h6h	12		18,3	12,25	18	9,8		21,1						6		
140	MJ14×1,5 – 4h6h	14		21,3	14,25	21	11,5		24,5	7							
160	MJ16×1,5 – 4h6h	16		23,3	16,25	23	13,5		26,8	8							
180	MJ18×1,5 – 4h6h	18		26,3	18,25	26	15,5		30,2	9							
200	MJ20×1,5 – 4h6h	20		-0,020 -0,045	29,3	20,25	29	17,5	3,8	33,6	10						

Diameter code	H	J		K	$L_1 \pm 0,2^{c,d}$		L_2	L_3	N 0 0,3	R		Mass ^e			
		nom.	Tol.		Length code	nom.				nom.	Tol.	f	g		
030	—	6	h12	—	002 to 030	2 to 30	6	—	—	0,4	0	-0,2	0,49	0,03	
040	—	7		—	002 to 040	2 to 40	7,5	5	—				0,93	0,06	
050	1,35	8		3,25	003 to 050	3 to 50	9	6	2				0,5	1,63	0,09
060	1,6	10	h13	4,1	003 to 060	3 to 60	10	7	2,3	0,7	0	-0,3	3,05	0,12	
070	1,85	11		4,5	004 to 070	4 to 70	11	7,5	2,7				4,17	0,17	
080	2,1	13		5,35	004 to 080	4 to 80	11,5	7,5	3				6,28	0,22	
100	2,35	17		7,1	005 to 100	5 to 100	14,5	9	3,4				0,8	12,19	0,35
120	2,85	19		7,9	006 to 120	6 to 120	16	10	4				0,9	19,49	0,50
140	3,35	22		9,2	007 to 140	7 to 140	19	12	4,7				1,1	30,01	0,68
160	3,85	24		10,05	008 to 160	8 to 160	20,5	12,5	5,4					43,88	0,88
180	4,35	27		11,3	009 to 180	9 to 180	22,5	14,5	6				1,3	61,84	1,12
200	4,85	30		12,6	010 to 200	10 to 200	24,5	15	6,7					84,60	1,38

^a In accordance with ISO 5855-2. except the thread major diameter " d max." which shall be equal to D_1 min. – 0,025.

^b D_4 max. shall be less than J .

^c Increments:
- 1 for $L_1 \leq 30$;
- 2 for $30 < L_1 \leq 100$;
- 4 for $L_1 > 100$.

^d If greater lengths are required, they shall be chosen using the above increments. The length code corresponds to the length L_1 , completed by one or two zeros to the left, where necessary, to obtain a three digit code.

^e Approximate values (kg/1 000 pieces), calculated on the basis of 4,45 kg/dm³, for information purposes only. They apply to bolts without holes.

^f value for head and first L_4 .

^g Increase for each additional millimetre of L_4 .