

SLOVENSKI STANDARD

SIST EN 3820:2017

01-december-2017

Nadomešča:

SIST EN 3820:2009

Aeronavtika - Metrični sorniki, normalna šestroba glava, široka toleranca, kratek navoj, iz titanove zlitine, anodizirani, mazani z MoS2 - Klasifikacija: 1100 MPa (pri temperaturi okolice)/315 °C

Aerospace series - Metric bolts, normal hexagon head, coarse tolerance normal shank, short thread, in titanium alloy, anodized, MoS2 lubricated - Classification: 1 100 MPa (at ambient temperature)/315 °C

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Luft- und Raumfahrt - Metrische Sechskantschrauben, kurzes Gewinde, aus Titanlegierung, anodisiert, MoS2-geschmiert - Klasse: 1 100 MPa (bei Raumtemperatur)/315 °C

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Série aérospatiale - Vis métriques à tête hexagonale normale, fût normal à tolérance large, filetage court, en alliage de titane, anodisées, lubrifiées MoS2 - Classification : 1 100 MPa (à température ambiante)/315 °C

Ta slovenski standard je istoveten z: EN 3820:2017

ICS:

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

SIST EN 3820:2017

en,fr,de

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EUROPEAN STANDARD

EN 3820

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2017

ICS 49.030.20

Supersedes EN 3820:2006

English Version

**Aerospace series - Metric bolts, normal hexagon head,
coarse tolerance normal shank, short thread, in titanium
alloy, anodized, MoS2 lubricated - Classification: 1 100
MPa (at ambient temperature)/315 °C**

Série aérospatiale - Vis métriques à tête hexagonale normale, fût normal à tolérance large, filetage court, en alliage de titane, anodisées, lubrifiées MoS2 - Classification : 1 100 MPa (à température ambiante)/315 °C

Luft- und Raumfahrt - Metrische Sechskantschrauben, kurzes Gewinde, aus Titanlegierung, anodisiert, MoS2-geschmiert - Klasse: 1 100 MPa (bei Raumtemperatur)/315 °C

This European Standard was approved by CEN on 26 June 2017.

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

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 3820:2017) 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 April 2018, and conflicting national standards shall be withdrawn at the latest by April 2018.

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

This document supersedes EN 3820:2006.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 3820:2017 (E)**1 Scope**

This standard specifies the characteristics of bolts, normal hexagonal head, coarse tolerance normal shank, short thread, in titanium alloy, anodized, MoS₂ lubricated.

Classification: 1 100 MPa¹⁾ / 315 °C²⁾.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 2491, *Aerospace series — Molybdenum disulphide dry lubricants — Coating methods*

EN 9100, *Quality Management Systems — Requirements for Aviation, Space and Defence Organizations*

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

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 1100 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*
<https://standards.iteh.ai/catalog/standards/sist/d6c6dcdd-b8b9-48fd-a7d0-af5fbbf745e/sist-en-3820-2017>

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

ISO 9152, *Aerospace — Bolts, with MJ threads, in titanium alloys, strength class 1100 MPa — Procurement specification*

TR 3775, *Aerospace series — Bolts and pins — Materials*³⁾

TR 4070, *Aerospace series — Molybdenum disulphide coatings — List of commercial products*³⁾

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-STAN Technical Report at the date of publication of this standard.
<http://www.asd-stan.org/>

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 anodizing but before lubricating.

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

3.2 Tolerances of form and position

See ISO 7913.

3.3 Materials

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

3.4 Surface treatment

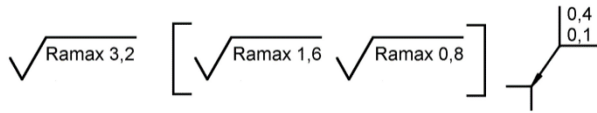
Lubrication:

— lubricant: see TR 4070;

— application: EN 2491: 5 µm to 10 µm.

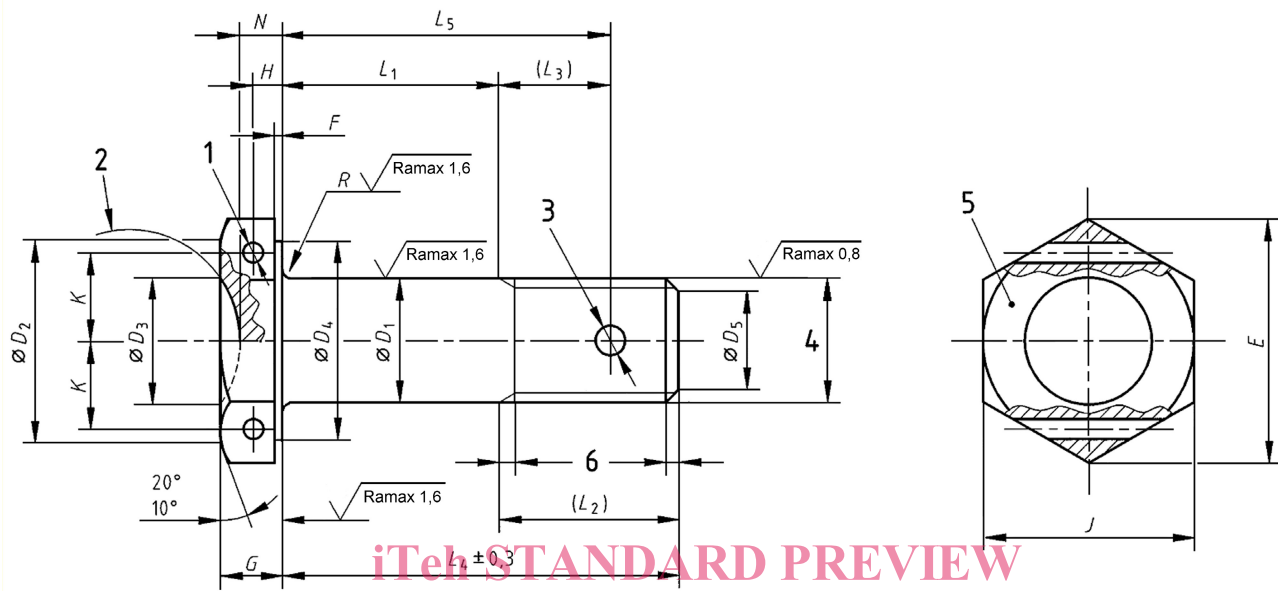
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Values in micrometres apply prior to surface treatment.

Break sharp edges 0,1 to 0,4.



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Key

- 1 Two holes diameter D_6 (optional) [SIST EN 3820:2017](https://standards.iteh.ai/catalog/standards/sist/d6c6dcdd-b8b9-48fd-a7d0-af5fabbf745e/sist-en-3820-2017)
- 2 Continuous surface <https://standards.iteh.ai/catalog/standards/sist/d6c6dcdd-b8b9-48fd-a7d0-af5fabbf745e/sist-en-3820-2017>
- 3 One hole diameter D_7 (optional)
- 4 Thread
- 5 Marking
- 6 Conforms to ISO 3353-1

Figure 1

Table 1

Diameter code	Thread ^a	D_1	D_2	D_3	D_4^b	D_5		D_6	D_7	E	F		G		
		h12	min.	0 -0,5	min.	nom.	Tol.	H13	H13	min.	max.	min.	0 -0,3		
030	MJ3×0,5 — 4h6h	3	5,5	—	5,4	2,3	0	—	—	6,5	0,4	0,5	0,2	2	
040	MJ4×0,7 — 4h6h	4	6,4	—	6,4	3	-0,5	—	1,1	7,6	1			1,5	2,5
050	MJ5×0,8 — 4h6h	5	7,4	5,25	7,4	3,4	±0,5	1,4	1,9	8,7					3
060	MJ6×1 — 4h6h	6	9,4	6,25	9,3	4,2				2,4	18,9			10,9	
070	MJ7×1 — 4h6h	7	10,3	7,25	10,2	5,2		3	24,5					12	7
080	MJ8×1 — 4h6h	8	12,3	8,25	12,2	6,2				3,8	30,2			14,3	
100	MJ10×1,25 — 4h6h	10	16,3	10,25	16	7,9		1,6	26,8					18,9	9
120	MJ12×1,25 — 4h6h	12	18,3	12,25	18	9,8				3,8	33,6			21,1	
140	MJ14×1,5 — 4h6h	14	21,3	14,25	21	11,5		3,8	33,6					24,5	10
160	MJ16×1,5 — 4h6h	16	23,3	16,25	23	13,5				3,8	33,6			26,8	
180	MJ18×1,5 — 4h6h	18	26,3	18,25	26	15,5		3,8	33,6			30,2	10		
200	MJ20×1,5 — 4h6h	20	29,3	20,25	29	17,5				3,8	33,6	33,6		10	

Diameter code	H	J		K	$L_1 \pm 0,2^{c,d}$		L_2	L_3	N	R_5		Mass ^e		
		nom.	Tol.		Code	nom.				nom.	Tol.	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	—	0,4			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		4,1	003 to 060	3 to 60	10	7	2,3	0,7			3,05	0,12
070	1,85	11		4,5	004 to 070	4 to 70	11	7	2,7	0,7			4,17	0,17
080	2,1	13		5,35	004 to 080	4 to 80	11,5	7,5	3	0,8			6,28	0,22
100	2,35	17		7,1	005 to 100	5 to 100	14,5	9	3,4	0,9			12,19	0,35
120	2,85	19		7,9	006 to 120	6 to 120	16	10	4	1,1			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	1,3			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	1,3	84,60	1,38			

^a In accordance with ISO 5855-2.

^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 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 7,85 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 .