
Aeronavtika - Vijaki, 100° ugrezna glava, križna zareza, polno steblo, ozka toleranca, srednja navojna dolžina, iz legiranega jekla, kadmirani - 1100 MPa (pri temperaturi okolice)/235 °C

Aerospace series - Screws 100° countersunk normal head, offset cruciform recess, coarse tolerance normal shank, medium length thread, in alloy steel, cadmium plated - 1100 MPa (at ambient temperature)/235 °C

Luft- und Raumfahrt - 100° Senkschrauben mit Flügelkreuzschlitz, mittlere Gewindelänge, aus legiertem Stahl, verkadmet - 1100 MPa (bei Raumtemperatur)/235 °C

Série aérospatiale - Vis à tête fraisée, 100° normale, à empreinte cruciforme déportée, tige normale à tolérance large, filetage moyen, en acier allié, cadmiées - 1100 MPa (à température ambiante)/235 °C

Ta slovenski standard je istoveten z: EN 4162:2009

ICS:

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

SIST EN 4162:2010

en

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EUROPEAN STANDARD

EN 4162

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2009

ICS 49.030.20

English Version

Aerospace series - Screws 100° countersunk normal head,
offset cruciform recess, coarse tolerance normal shank, medium
length thread, in alloy steel, cadmium plated - 1 100 MPa (at
ambient temperature) / 235 °C

Série aérospatiale - Vis à tête fraisée 100° normale; à
empreinte cruciforme déportée, tige normale à tolérance
large, filetage moyen, en acier allié, cadmiées - 1 100 MPa
(à température ambiante) / 235 °C

Luft- und Raumfahrt - 100° Senkschrauben mit
Flügelkreuzschlitz, mittlere Gewindelänge, aus legiertem
Stahl, verkadmet - 1 100 MPa (bei Raumtemperatur) / 235
°C

This European Standard was approved by CEN on 15 September 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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Foreword

This document (EN 4162:2009) 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 May 2010, and conflicting national standards shall be withdrawn at the latest by May 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 4162:2009 (E)**1 Scope**

This European Standard specifies the characteristics of screws, 100° countersunk normal head, offset cruciform recess, coarse tolerance normal shank, medium length thread, in alloy steel, cadmium plated.

Classification: 1 100 MPa¹⁾ / 235 °C²⁾.

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 2000, *Aerospace series — Quality assurance — EN aerospace products — Approval of the quality system of manufacturers*

EN 2133, *Aerospace series — Cadmium plating of steels with specified tensile strength $\leq 1\,450$ MPa, copper, copper alloys and nickel alloys³⁾*

EN 2137, *Aerospace series — Steel FE-PL75 — $1\,100\text{ MPa} \leq R_m \leq 1\,250\text{ MPa}$ — Bars — $D_e \leq 100\text{ mm}$ ³⁾*

EN 2424, *Aerospace series — Marking of aerospace products³⁾*

EN 2442, *Aerospace series — Steel FE-PL711 — $1\,100\text{ MPa} \leq R_m \leq 1\,300\text{ MPa}$ — Bars and wires — $D_e \leq 25\text{ mm}$ ³⁾*

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

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TR 3775, *Aerospace series — Bolts and pins — Materials⁴⁾*

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 5856, *Aerospace — Screws, 100° normal countersunk head, internal offset cruciform ribbed or unribbed drive, 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 7689, *Aerospace — Bolts, with MJ threads, made of alloy steel, strength class 1 100 MPa — Procurement specification*

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

ISO 7994, *Aerospace — Internal drive, offset cruciform recess, (Torq-Set®) for rotary fastening devices — Metric series*

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

2) Maximum temperature that the screw 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 Standard at the date of publication of this standard.

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

3 Required characteristics

3.1 Configuration – Dimensions – Masses

See Figure 1 and Table 1.

Dimensions and tolerances are in conformity with ISO 5856, expressed in millimetres and apply after surface treatment.

3.2 Tolerances of form and position

ISO 7913.

3.3 Materials

EN 2137, EN 2442

or

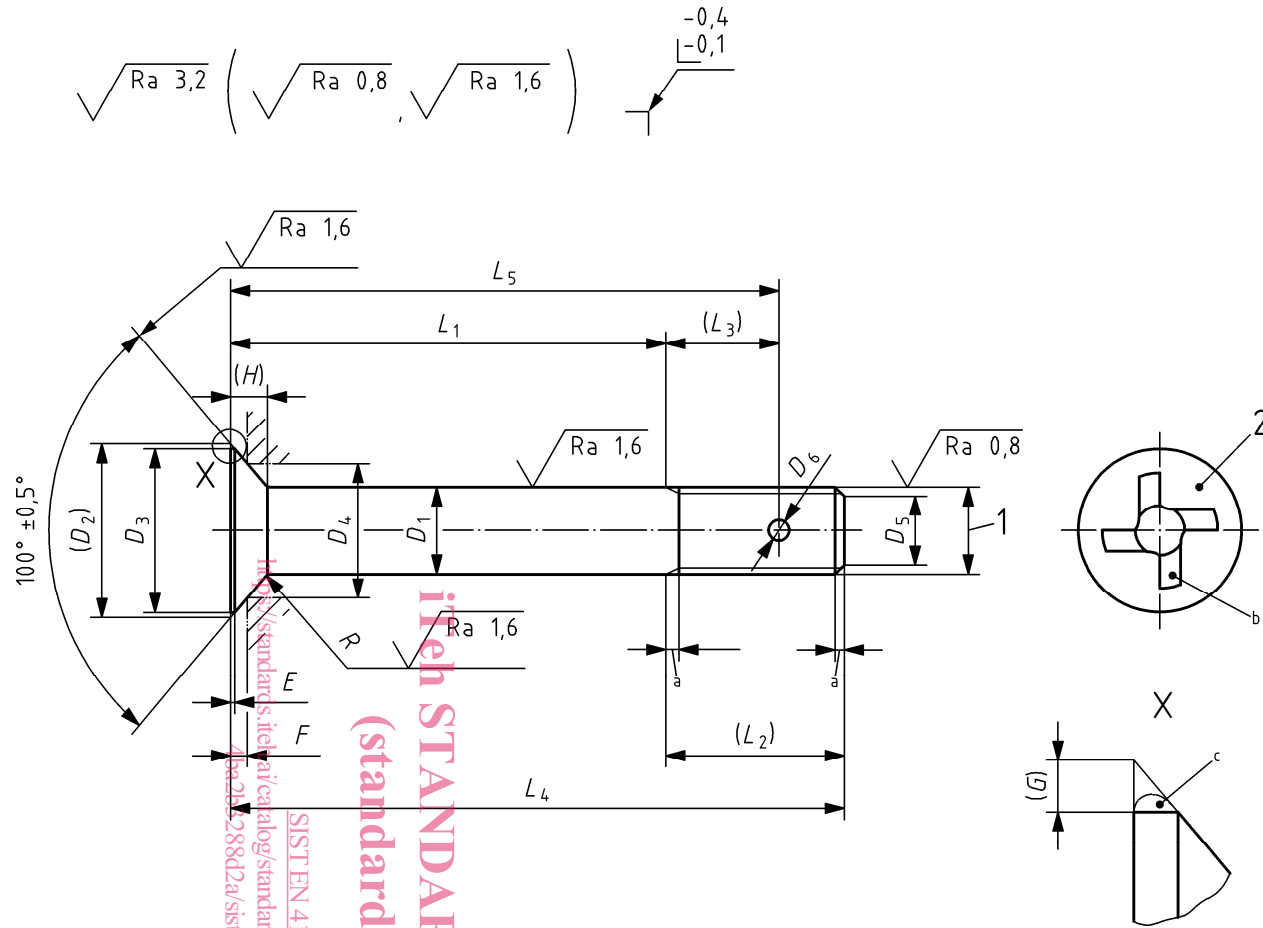
TR 3775 (alloy steel, classification 1 100 MPa).

3.4 Surface treatment

EN 2133, 8 μm to 14 μm on all surfaces which can be contacted by a 20 mm diameter ball. On all other surfaces, a continuous cadmium plating shall be present, but no value is specified.

Black colour option: code B.

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Key

- 1 Thread
- 2 Marking
- a Conforms to ISO 3353-1
- b Drive
- c The rounded angle accepted or blended convex form permitted

Figure 1

Table 1

Diameter code	Thread ¹⁾	D ₁ h12	D ₂ max.	D ₃ min.	D ₄	D ₅		D ₆ h13	E min.	F 0 -0,08	G	H	L ₁ ± 0,2 ^{2) 3)}		L ₂	L ₃	R		Mass ⁴⁾			
						nom.	Tol.						Length code	nom.			max.	min.	5)	6)		
030	MJ3x0,5-4h6h	3	6	5,4	4,5	2,3	0	—	0,06	0,63	0,3	1,27	003 to 030	3 to 30	7,5	—	0,4	0,2	0,606	0,055		
040	MJ4x0,7-4h6h	4	8	7,2	5,78	3	-0,5	1,1	0,08	0,93	0,4	1,69	003 to 040	3 to 40	10	6			1,324	0,099		
050	MJ5x0,8-4h6h	5	10	9	7,71	3,4	± 0,5	1,5	0,1	0,6	0,6	2,12	004 to 050	4 to 50	12	7,5	0,5	0,3	2,581	0,153		
060	MJ6x1-4h6	6	12	10,8	9	4,2							1,26	2,54	005 to 060	5 to 60			14	8,5	4,426	0,222
070	MJ7x1-4h6h	7	14	12,8	10,28	5,2		1,9					1,57	2,96	006 to 070	6 to 70	15	9,5	0,7	0,5	6,825	0,302
080	MJ8x1-4h6h	8	16	14,8	12,21	6,2							1,6	3,39	006 to 080	6 to 80	16,5	10,5			9,375	0,395
100	MJ10x1,25-4h6h	10	20	18,8	15,43	7,9		2,4					1,93	4,23	008 to 100	8 to 100	20,5	13	0,8	0,6	19,323	0,616
120	MJ12x1,25-4h6h	12	24	22,8	18	9,8							2,53	5,08	010 to 120	10 to 120	22,5	14,5			0,9	32,516
140	MJ14x1,5-4h6h	14	28	26,8	20,57	11,5		3					3,14	5,93	010 to 140	10 to 140	26	17	1,1	0,8	48,123	1,208
160	MJ16x1,5-4h6h	16	32	30,8	24,43	13,5							3,2	6,77	010 to 160	10 to 160	28,5	18,5			70,136	1,578
180	MJ18x1,5-4h6h	18	36	34,8	25,71	15,5		3,8					4,35	7,62	011 to 180	11 to 180	31	21	1,3	1	98,292	1,997
200	MJ20x1,5-4h6h	20	40	38,8	28,92	17,5							4,68	8,47	012 to 200	12 to 200	33,5	22,5			133,086	2,466

1) In accordance with ISO 5855-2.

2) Increments:

1 for $L_1 \leq 30$;

2 for $30 < L_1 \leq 100$;

4 for $L_1 > 100$.

3) If greater lengths are required, they shall be chosen using the above increments. The length code corresponds to the length L₁, completed by one or two zeros to the left, where necessary, to obtain a three digit code.

4) Approximate values (kg/1 000 pieces), calculated on the basis of 7,85 kg/dm³, given for information purposes only. They apply to screws without holes.

5) Value for first L₄.

6) Increase for each additional millimetre of L₄.

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