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**Aeronavtika - Sorniki, normalna šestroba glava, ozka toleranca, kratek navoj, iz titanove zlitine, anodizirani, z aluminijem pigmentiranim premazom, metrska serija - Klasifikacija: 1100 MPa (pri temperaturi okolice)/315 °C**

Aerospace series - Bolts, normal hexagonal head, close tolerance normal shank, short thread, in titanium alloy, anodized, with aluminium pigmented coating, metric series - Classification: 1 100 MPa (at ambient temperature) / 315 °C

Luft- und Raumfahrt - Sechskant-Passschrauben, kurzes Gewinde, aus Titanlegierung, anodisiert, mit Aluminium pigmentierter Beschichtung, metrische Reihe - Klasse: 1 100 MPa (bei Raumtemperatur) / 315 °C

Série aérospatiale - Vis à tête hexagonale normale, fût normal à tolérance serrée, filetage court, en alliage de titane, anodisées, avec revêtement alumino-organique, série métrique - Classification : 1 100 MPa (à température ambiante) / 315 °C

**Ta slovenski standard je istoveten z: EN 4495:2006**

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**ICS:**

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

**SIST EN 4495:2009**

**en,de**

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EUROPEAN STANDARD

**EN 4495**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2006

ICS 49.030.20

English Version

**Aerospace series - Bolts, normal hexagonal head, close tolerance normal shank, short thread, in titanium alloy, anodized, with aluminium pigmented coating, metric series - Classification: 1 100 MPa (at ambient temperature) / 315 °C**

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Luft- und Raumfahrt - Sechskant-Paßschrauben, kurzes Gewinde, aus Titanlegierung, anodisiert, mit Aluminium pigmentierte Beschichtung, metrische Reihe - Klasse: 1 100 MPa (bei Raumtemperatur) / 315 °C

This European Standard was approved by CEN on 13 January 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This European Standard (EN 4495:2006) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 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 December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

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, 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 4495:2006 (E)****1 Scope**

This standard specifies the characteristics of bolts, normal hexagonal head, close tolerance normal shank, short thread, in titanium alloy, anodized, with aluminium pigmented coating, metric series.

Classification: 1 100 MPa <sup>1)</sup> / 315 °C <sup>2)</sup>

**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.

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.*

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

EN 4016, *Aerospace series – Oversized bolts.* <sup>3)</sup>

EN 4474, *Aerospace series – Aluminium pigmented coating – Coating methods.* <sup>3)</sup>

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.*

MIL-L-87132B, *Lubricant, Cetyl Alcohol, 1-Hexadecanol, Application to Fasteners.* <sup>4)</sup>

TR 3775, *Aerospace series – Bolts and pins – Materials.* <sup>5)</sup>

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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 coating.

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

4) Published by: Department of Defense (DoD), the Pentagon, Washington, D.C.20301, USA.

5) Published as AECMA 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 3193, expressed in millimetres and apply after coating (tolerance on shank diameter before coating is also specified).

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 treatments

See EN 4474.

Lubrication with cetylic alcohol (chlorine free) according to MIL-L-87132

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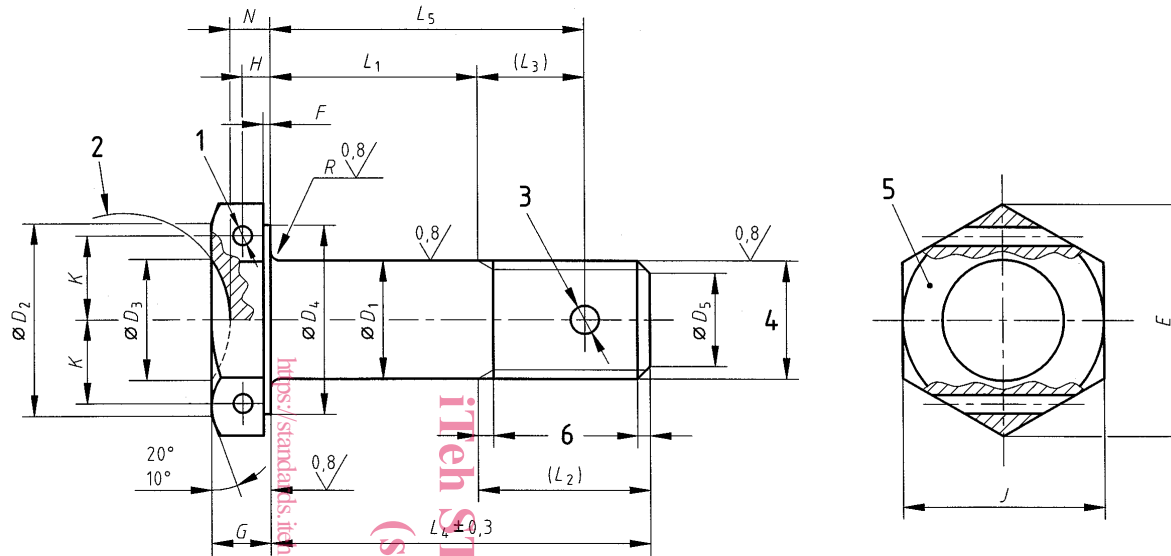
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Values in micrometres apply prior to surface treatment.

Break sharp edges 0,1 to 0,4.



**Key**

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

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Figure 1



Table 1

Diameter code	Thread <sup>a</sup>	nom.	$D_1$		$D_2$ min.	$D_3$ 0 -0,5	$D_4$ <sup>b</sup> min.	$D_5$		$D_6$ H13	$D_7$ H13	$E$ min.	$F$		$G$ 0 -0,3
			before coating	after coating				Tol.	nom.				Tol.	max.	
030	MJ3×0,5-4h6h	3	-0,026 -0,041	-0,006 -0,031	5,5	-	5,4	2,3	0 -0,5	-	-	6,5	0,4		2
040	MJ4×0,7-4h6h	4			6,4	-	6,4	3		-	1,1	7,6			2,5
050	MJ5×0,8-4h6h	5	-0,030 -0,045	-0,010 -0,035	7,4	5,25	7,4	3,4		1	1,5	8,7	0,5	0,2	3
060	MJ6×1-4h6h	6			9,4	6,25	9,3	4,2				10,9			3,5
070	MJ7×1-4h6h	7			10,3	7,25	10,2	5,2		1,4	1,9	12			4
080	MJ8×1-4h6h	8	-0,033 -0,048	-0,013 -0,038	12,3	8,25	12,2	6,2				14,3			4,5
100	MJ10×1,25-4h6h	10			16,3	10,25	16	7,9				18,9			5
120	MJ12×1,25-4h6h	12			18,3	12,25	18	9,8	±0,5		2,4	21,1			6
140	MJ14×1,5-4h6h	14	-0,036 -0,051	-0,016 -0,041	21,3	14,25	21	11,5				24,5			7
160	MJ16×1,5-4h6h	16			23,3	16,25	23	13,5		1,6	3	26,8	0,6	0,3	8
180	MJ18×1,5-4h6h	18			26,3	18,25	26	15,5				30,2			9
200	MJ20×1,5 - 4h6h	20	-0,040 -0,055	-0,020 -0,045	29,3	20,25	29	17,5			3,8	33,6			10

continued