



SLOVENSKI STANDARD

SIST EN 2868:2019

01-maj-2019

Aeronavtika - Matice, šestrobe, z zarezo/kronske, normalna višina, z normalnim zevom ključa, iz toplotnoodpornega jekla, posrebrene - Klasifikacija: 1100 MPa (pri okoljski temperaturi)/650 °C

Aerospace series - Nuts, hexagonal, slotted/castellated, normal height, normal across flats, in heat resisting steel, silver plated - Classification: 1 100 MPa (at ambient temperature)/650 °C

Luft- und Raumfahrt - Flache Kronenmuttern, normale Höhe, normale Schlüsselweite, aus hochwarmfestem Stahl, versilbert - Klasse 1100 MPa (bei Raumtemperatur)/650 °C

Série aérospatiale - Écrous hexagonaux à créneaux, hauteur normale, surplats normaux, en acier résistant à chaud, argentés - Classification: 1100 MPa (à température ambiante)/650 °C

Ta slovenski standard je istoveten z: EN 2868:2019

ICS:

49.030.30 Matice Nuts

SIST EN 2868:2019 en,fr,de

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EUROPEAN STANDARD

EN 2868

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2019

ICS 49.030.30

English Version

**Aerospace series - Nuts, hexagonal, slotted/castellated,
normal height, normal across flats, in heat resisting steel,
silver plated - Classification: 1 100 MPa (at ambient
temperature)/650 °C**

Série aérospatiale - Écrous hexagonaux à créneaux,
hauteur normale, surplats normaux, en acier résistant
à chaud, argentés - Classification: 1 100 MPa (à
température ambiante)/650 °C

Luft- und Raumfahrt - Flache Kronenmuttern, normale
Höhe, normale Schlüsselweite, aus hochwarmfestem
Stahl, versilbert - Klasse: 1 100 MPa (bei
Raumtemperatur)/650 °C

This European Standard was approved by CEN on 8 July 2018.

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

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European foreword

This document (EN 2868:2019) 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 September 2019, and conflicting national standards shall be withdrawn at the latest by September 2019.

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.

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 2868:2019 (E)**1 Scope**

This European standard specifies the characteristics of hexagonal slotted/castellated nuts, normal height, normal across flats, in heat resisting steel, silver plated, for aerospace applications.

Classification: 1 100 MPa¹/650 °C².

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 2367, *Aerospace series — Split pins in steel* EN 2573

EN 2398, *Aerospace series — Heat resisting steel FE-PA2601 (X6NiCrTiMoV26-15) — $R_m \geq 900$ MPa — Bars for machined bolts — $D \leq 25$ mm*

EN 2399, *Aerospace series — Heat resisting steel FE-PA2601 (X4NiCrTiMoV26-15) — $R_m \geq 900$ MPa — Bars for forged bolts — $D \leq 25$ mm*

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

EN 2786, *Aerospace series — Electrolytic silver plating of fasteners*

EN 3639, *Aerospace series — Heat resisting alloy FE-PA2601, softened and cold worked — wire for forged fasteners $D \leq 15$ mm, $900 \text{ MPa} \leq R_m \leq 1\,100 \text{ MPa}$ ³*

<https://standards.iteh.ai/catalog/standards/sist/84a004da-c617-4a4e-a140->

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

ISO 4147, *Aerospace — Nuts, hexagonal, slotted (castellated), normal height, normal across flats, with MJ threads, classifications: 600 MPa (at ambient temperature)/120 °C, 600 MPa (at ambient temperature)/235 °C, 900 MPa (at ambient temperature)/425 °C, 1 100 MPa (at ambient temperature)/235 °C, 1 100 MPa (at ambient temperature)/315 °C, 1 100 MPa (at ambient temperature)/650 °C, 1 210 MPa (at ambient temperature)/730 °C, 1 250 MPa (at ambient temperature)/235 °C and 1 550 MPa (at ambient temperature)/600 °C — Dimensions*

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

ISO 8788, *Aerospace — Nuts, metric — Tolerances of form and position*

ISO 9139, *Aerospace — Nuts, plain and slotted (castellated) — Procurement specification*

-
- 1 Corresponds to strength class of the associated bolt, the 100 per cent load of which it is able to withstand, when tested at ambient temperature, without breaking or cracking.
 - 2 Maximum temperature that the nut is able to withstand, without permanent alteration to its original characteristics, after ambient temperature has been restored. The maximum temperature is conditioned by the material.
 - 3 Published as ASD-STAN Pre-Standard at the date of publication of this European standard by AeroSpace and Defence Industries Association of Europe - Standardization (ASD-STAN) (www.asd-stan.org).

TR 3823-002, *Aerospace series — Materials for plain, slotted and self-locking by plastic ring hexagonal nuts*⁴

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

4 Required characteristics

4.1 Configuration — Dimensions — Masses

See Figure 1 and Table 1.

Dimensions and tolerances are in conformity with ISO 4147, expressed in millimetres and apply after surface treatment.

Form and position tolerances shall be in conformity with ISO 8788.

4.2 Materials

EN 2398, EN 2399, EN 3639 or TR 3823-002.

4.3 Surface treatment

EN 2786, thickness:

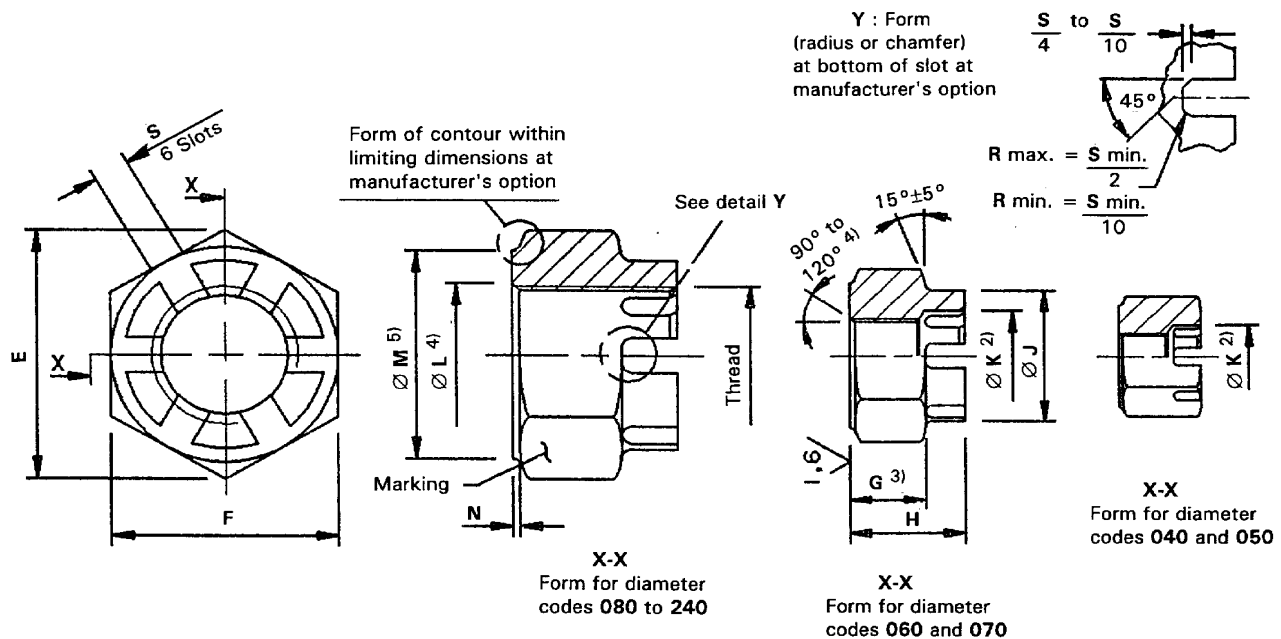
- on external surfaces: 5 µm to 15 µm;
- on pitch diameter: 5 µm minimum for nuts MJ6 and larger. Nuts MJ5 and smaller shall show complete coverage over complete profile.

4 Published as ASD-STAN Technical Report at the date of publication of this European standard by AeroSpace and Defence Industries Association of Europe - Standardization (ASD-STAN) (www.asd-stan.org).

EN 2868:2019 (E)

$$6,3 \sqrt{\left(1,6 \sqrt{\quad}\right)^1}$$

Remove sharp edges 0,1 to 0,4



Key

- 1) These values in micrometres apply before surface treatment. The values do not apply to threads the surface texture of which will be achieved by usual manufacturing methods.
- 2) Tooling marks are permissible within counterbore.
- 3) Dimension G applies to:
 - height below slots (diameter codes 040 to 240);
 - height of flats (diameter codes 060 to 240);
 - bottom of counterbore (diameter 040 to 070).
- 4) This dimension also applies to upper chamfer. All forms of entry (chamfer or radius) optional within these limiting dimensions.
- 5) Diameter M may be tangential to, but shall not intrude on the flats.
- 6) Details of form not stated are at the manufacturer's option.

Figure 1

Table 1

| Diameter code | Thread ^a | E min | F | G ±0,25 | H ±0,25 | J ±0,25 | K H15 | L | | M min. | N 0 -0,3 | S H14 | Mass kg/1 000 pieces approx. | Split pin Ø ^b | |
|---------------|---------------------|----------|----|------------|------------|------------|----------|------|------|-----------|----------------|----------|---------------------------------------|--------------------------------|------|
| | | | | | | | | min. | Tol. | | | | | | |
| 040 | MJ4×0,7 - 4H6H | 7,6 | 7 | h12 | 3 | 5 | - | 4 | 4,2 | +0,6 | 6,4 | 0,5 | 1,3 | 1,3 | 1 |
| 050 | MJ5×0,8 - 4H6H | 8,7 | 8 | | 3,75 | 6,2 | - | 5 | 5,2 | | 7,4 | | 1,7 | 1,8 | 1,4 |
| 060 | MJ6×1 - 4H5H | 10,9 | 10 | h13 | 4,5 | 6,9 | 9 | 6 | 6,3 | +0,8 | 9,3 | 0,6 | 2,1 | 2,8 | 1,8 |
| 070 | MJ7×1 - 4H5H | 12 | 11 | | 5,25 | 8,1 | 10 | 7 | 7,3 | | 10,2 | | | 3,8 | |
| 080 | MJ8×1 - 4H5H | 14,3 | 13 | | 6 | 8,8 | 11 | - | 8,3 | | 12,2 | | 5,6 | | |
| 100 | MJ10×1,25 - 4H5H | 18,9 | 17 | | 7,5 | 11,1 | 13 | - | 10,3 | | 16 | | 2,6 | 11,5 | 2,3 |
| 120 | MJ12×1,25 - 4H5H | 21,1 | 19 | | 9 | 12,6 | 16 | - | 12,3 | | 18 | | | 16 | |
| 140 | MJ14×1,5 - 4H5H | 24,5 | 22 | | 10,5 | 14,9 | 18 | - | 14,4 | | 21 | | 0,6 | 3,2 | 24,5 |
| 160 | MJ16×1,5 - 4H5H | 26,8 | 24 | 12 | 16,4 | 22 | - | 16,4 | 23 | 33,5 | | | | | |
| 180 | MJ18×1,5 - 4H5H | 30,2 | 27 | 13,5 | 18,7 | 25 | - | 18,4 | 26 | 4 | 48,5 | 3,7 | | | |
| 200 | MJ20×1,5 - 4H5H | 33,6 | 30 | 15 | 20,2 | 28 | - | 20,4 | 29 | | 66 | | | | |
| 220 | MJ22×1,5 - 4H5H | 35,8 | 32 | 16,5 | 21,7 | 30 | - | 22,4 | 30,9 | | 78,9 | | | | |
| 240 | MJ24×2 - 4H5H | 40,4 | 36 | 18 | 23,7 | 32 | - | 24,5 | 34,9 | | 113,9 | | | | |

^a In accordance with ISO 5855-2.

^b For information, in conformity with EN 2367.