BS EN 2863:2010

Aerospace series — Nuts, anchor, self-locking, fixed, 90° corner, with counterbore, in heat resisting steel, MoS_2 lubricated — Classification: 1 100 MPa (at ambient temperature) / 315 °C

ICS 49.030.30

National foreword

This British Standard is the UK implementation of EN 2863:2010.

The UK participation in its preparation was entrusted to Technical Committee ACE/12, Aerospace fasteners and fastening systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

Aerospace series - Nuts, anchor, self-locking, fixed, 90° corner, with counterbore, in heat resisting steel, MoS_2 lubricated - Classification: 1 100 MPa (at ambient temperature) / 315 °C

Série aérospatiale - Écrous à river, à freinage interne, fixes, d'angle 90°, avec chambrage, en acier résistant à chaud, lubrifiés MoS_2 - Classification : 1 100 MPa (à température ambiante) / 315 °C

Luft- und Raumfahrt - Annietmuttern, selbstsichernd, 90° Eckflansch, mit zylindrischer Aussenkung, aus hochwarmfestem Stahl, MoS_2-geschmiert - Klasse: 1 100 MPa (bei Raumtemperatur) / 315 °C

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 2863:2010) 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of an identical text or by endorsement, at the latest by August 2010, and conflicting national standards shall be withdrawn at the latest by August 2010.

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1 Scope

This standard specifies the characteristics of 90° corner, counterbored fixed anchor nuts, with a self-locking feature achieved by forming the upper portion out-of-round, in heat resisting steel, MoS_2 lubricated.

Classification: 1 100 MPa [1] / 315 °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 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 2491, *Aerospace series — Molybdenum disulphide dry lubricants — Coating methods*

EN 3638, *Aerospace series — Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15) — Consumable electrode remelted — Solution and precipitation treated — Sheet, strip and plate — 0,5 mm $\leq a \leq$ 10 mm*

EN 3639, *Aerospace series — Heat resisting alloy FE-PA2601 — Softened and cold worked — Wire for forged fasteners — $D \leq 15$ mm — 900 MPa $\leq R_m \leq$ 1 100 MPa* [3]

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

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

ISO 3221, *Aerospace — Nuts, anchor, self-locking, fixed, 90° corner, with counterbore, with MJ threads, classifications: 1 100 MPa (at ambient temperature)/235 °C, 1 100 MPa (at ambient temperature)/315 °C and 1 100 MPa (at ambient temperature)/425 °C — Dimensions*

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

ISO 5858, *Aerospace — Nuts, self-locking, with maximum operating temperature less than or equal to 425 °C — Procurement specification*

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

TR 3791, *Aerospace series — Materials for self-locking nuts, threaded inserts and screw thread inserts of temperature classes ≤ 425 °C* [4]

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1) Corresponds to strength class of the associated bolt, the 100 % 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 surface treatment.

3) Published as ASD-STAN Prestandard 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 3221, expressed in millimetres and apply before MoS_2 lubrication.

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

3.2 Materials

EN 2398, EN 2399, EN 3638, 3639 or TR 3791.

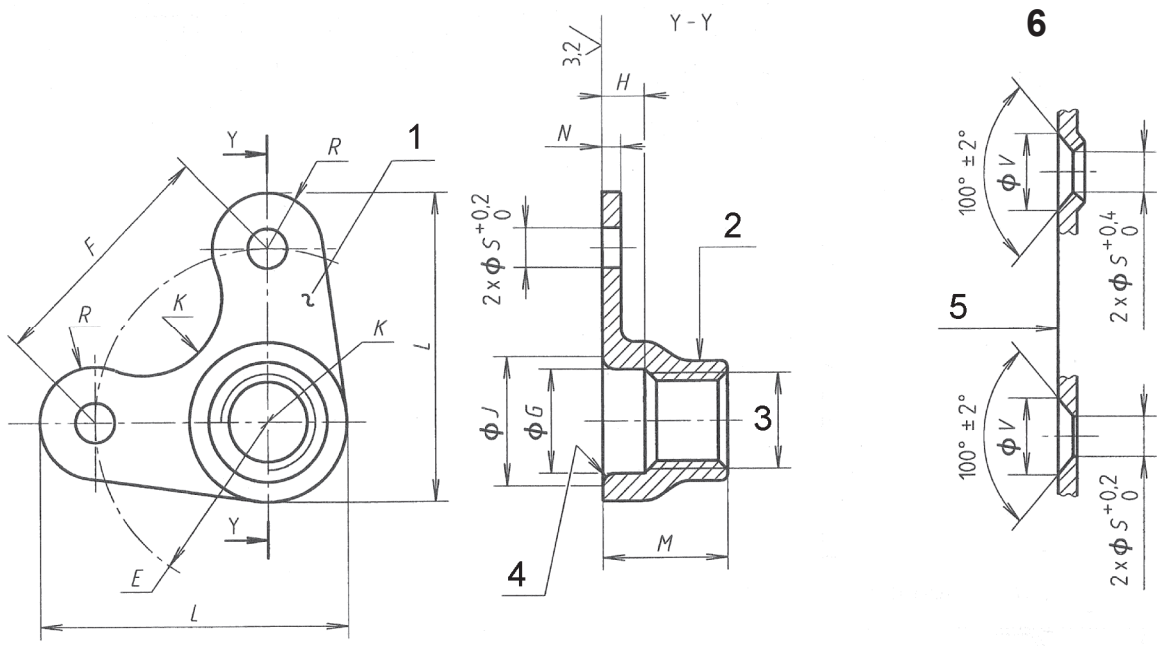
3.3 Surface treatment

EN 2491, thickness not specified.

6,3 [3,2] These values in micrometres apply before surface treatment. The values do not apply to threads and sheared edges the surface texture of which will be achieved by usual manufacturing methods.

Remove sharp edges 0,1 to 0,4.

Details of form, not stated, are at the manufacturer's option.



Key

1 Marking
2 Radius or chamfer
3 Thread
4 Form out-of-round in this area to achieve the self-locking. Tooling marks are permitted in this area.
5 Bearing face of the nut
6 Alternatives: countersunk rivet holes (when specified by purchaser) may be dimpled or cut countersunk (at manufacturer's option).

Figure 1

Table 1

Diameter code	Thread [a]	*E*	*F*	*G* min.	*H* min.	*J* [b] max.	*K* max.	*L* max.	*M* max.	*N* [c] max.	*R*	*S*	*V* ± 0,25	Mass kg/1 000 pieces approx.
030	MJ3×0,5-4H6H	6	8,5	[d]	[d]	4,6	3	11,7	3,2	1	2,5	2,5	4,8	0,5
040	MJ4×0,7-4H6H	8,5	12	4,4	2,2	6,2	4	15,7	5,8		3			1,1
050	MJ5×0,8-4H6H	9,5	13,4	5,5	2,4	7,3	4,5	17,2	6,9					1,4
060	MJ6×1-4H5H	11	15,6	6,5	2,7	8,7	5	19,7	8,1	1,2	3,5			2,2
080	MJ8×1-4H5H			8,5		10,9	6,5	21,2	9,9	1,5		3	5,7	4,6
100	MJ10×1,25-4H5H	13	18,4	10,5	3	12,9	8,1	25,8	12	1,6	4,5	3,5	6,6	7,8

[a] In accordance with ISO 5855-2. In the self-locking zone, the tolerances apply before forming out-of-round.

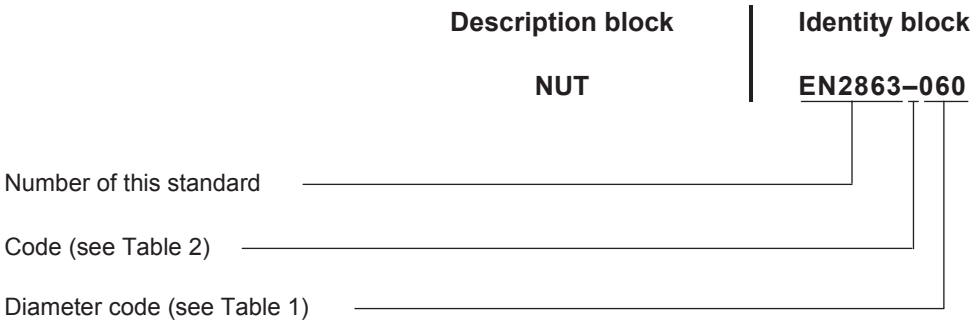
[b] Is to sharp corners (chamfered) or point of tangency (radiused).

[c] Is applicable at the rivet hole location.

[d] Diameter code 030 does not have a counterbore.

4 Designation

EXAMPLE



NOTE If necessary the originator code I9005 shall be placed between the description block and the identity block.

Table 2

Option	Code
Plain rivet holes	— (hyphen)
Dimpled or countersunk rivet holes	K

5 Marking

EN 2424, style N. See Figure 1.

6 Technical specification

ISO 5858, except for:

— Approval of manufacturers: see EN 9100;

— Qualification of products: see EN 9133.

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