



BSI Standards Publication

**Aerospace series — Nuts,
hexagon, self-locking by
plastic ring, normal height,
normal across flats, in alloy
steel, cadmium plated —
Classification: 900 MPa (at
ambient temperature) / 120 °C**

National foreword

This British Standard is the UK implementation of EN 4309:2016.

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.

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Published by BSI Standards Limited 2017

ISBN 978 0 580 92617 4

ICS 49.030.30

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2017.

Amendments/corrigenda issued since publication

Date	Text affected
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EUROPEAN STANDARD

EN 4309

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2016

ICS 49.030.30

English Version

Aerospace series - Nuts, hexagon, self-locking by plastic ring, normal height, normal across flats, in alloy steel, cadmium plated - Classification: 900 MPa (at ambient temperature) / 120 °C

Série aérospatiale - Écrous hexagonaux, à freinage interne par bague plastique, hauteur normale, surplats normaux, en acier allié, cadmiés - Classification : 900 MPa (à température ambiante) / 120 °C

Luft- und Raumfahrt - Sechskantmuttern, selbstsichernd mit Plastikring, mit normaler Schlüsselweite, aus legiertem Stahl, verkadmet - Klasse: 900 MPa (bei Raumtemperatur) / 120 °C

This European Standard was approved by CEN on 11 March 2016.

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COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 4309:2016) 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 June 2017, and conflicting national standards shall be withdrawn at the latest by June 2017.

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1 Scope

This European Standard specifies the characteristics of hexagonal nuts, self-locking by plastic ring, normal height, normal across flats, in alloy steel, cadmium plated.

Classification: 900 MPa ¹⁾ / 120 °C ²⁾

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

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

EN 9133, *Aerospace series — Quality Management Systems — Qualification Procedure for Aerospace Standard Products*

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 3823, *Aerospace series — Materials for plain, slotted and self-locking by plastic ring hexagonal nuts* ³⁾

3 Required characteristics

3.1 Configuration - Dimensions - Masses

See Figure 1 and Table 1.

Dimensions and tolerances are expressed in millimetres and apply after surface treatment.

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

3.2 Tolerances of form and position

ISO 8788

1) Corresponds to the minimum tensile stress which the nut is able to withstand at ambient temperature without breaking or cracking when tested with a bolt of a higher strength class.

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 plastic ring.

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

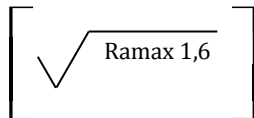
3.3 Materials

Threaded element: TR 3823.

Plastic ring: polyamide 6.6.

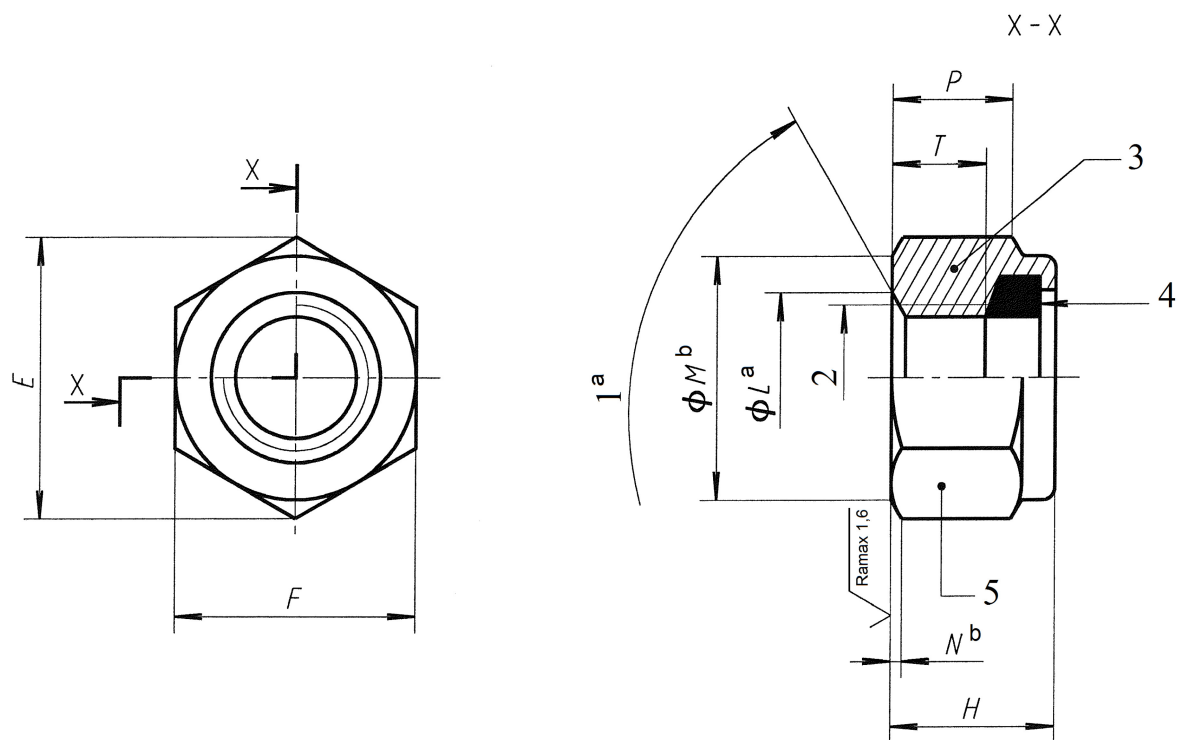
3.4 Surface treatment

EN 2133, 5 μm min. on threads and all surfaces which can be contacted by a 20 mm diameter ball. On all other surfaces, a continuous deposit shall be present.



These values in micrometres apply before surface treatment. They do not apply to threads the surface texture of which will be as achieved by usual manufacturing methods.

Remove sharp edges 0,1 to 0,4.



Key

- 1 90° to 120°^a
- 2 Thread
- 3 Threaded element
- 4 Plastic ring
- 5 Marking

^a All forms of entry (chamfer or radius) option within these limiting dimensions.

^b Form of contour within these limiting dimensions is at the manufacturer's option. Diameter M may be tangential to, but shall not intrude on the flats.

Figure 1

Table 1

Diameter code	Thread ^a	<i>E</i>		<i>F</i>		<i>H</i>		$\varnothing L$		$\varnothing M$		<i>N</i>		<i>P</i>		<i>T</i>		Mass ^b
		min.	Nom.	Tol.	max.	Nom.	Tol.	min.	max.	min.	max.	min.	min.	min.	min.			
020	MJ2x0,4-4H6H	4,2	4	h12	3,2	2,2	+0,6 0	3,4	0,4	0,2	1	1,3	0,16					
025	MJ2,5x0,45-4H6H	5,3	5		4	2,7		4,4			1,4	1,6	0,37					
030	MJ3x0,5-4H6H	6,5	6		4,5	3,2		5,4			1,8	2	0,48					
040	MJ4x0,7-4H6H	7,6	7		5,6	4,2		6,4			2,4	2,6	0,98					
050	MJ5x0,8-4H6H	8,7	8		6,2	5,2		7,4			3,2	3,2	1,36					
060	MJ6x1-4H5H	10,9	10	h13	7,5	6,3	+0,8 0	9,3	0,5	0,3	4	3,9	2,66					
070	MJ7x1-4H5H	12	11		8,8	7,3		10,2			4,8	4,6	3,45					
080	MJ8x1-4H5H	14,3	13		10	8,3		12,2			5,5	5,2	6,03					
100	MJ10x1,25-4H5H	18,9	17		11,5	10,3		16			7	6,5	12					
120	MJ12x1,25-4H5H	21,1	19		13,8	12,3		18			8,6	7,8	18,2					
140	MJ14x1,5-4H5H	24,5	22		16,1	14,4		21			10,2	9,1	26,9					
160	MJ16x1,5-4H5H	26,8	24		18,4	16,4		23			11,8	10,4	33,4					
180	MJ18x1,5-4H5H	30,2	27		20,7	18,4		26			13,4	11,7	50,6					
200	MJ20x1,5-4H5H	33,6	30		23	20,4		29			15	13	71,6					
220	MJ22x1,5-4H5H	35,8	32		25,3	22,4		30,9			16,4	14,3	82					
240	MJ24x2-4H5H	40,4	36	27,6	24,5	34,9	18,1	15,6	120									

^a In accordance with ISO 5855-2.

^b Approximate values (kg/1 000 pieces), given for information purposes only.

4 Designation

EXAMPLE

Description block

NUT

Identity block

EN4309-050

Number of this standard

Diameter code (see Table 1)

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

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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