BS EN 4622:2010

Aerospace series — Inserts, MJ threads, self-locking, with self-broaching keys, in heat resisting steel FE-PA2601 (A286), MoS_2 coated

ICS 49.030.30

National foreword

This British Standard is the UK implementation of EN 4622:2010.

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.

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2010

ISBN 978 0 580 70746 9

Amendments/corrigenda issued since publication

Date	Comments

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4622

April 2010

ICS 49.030.30

English Version

Aerospace series - Inserts, MJ threads, self-locking, with self-broaching keys, in heat resisting steel FE-PA2601 (A286), MoS_2 coated

Série aérospatiale - Douilles filetées, à filetage MJ, à freinage interne, à clavettes auto-brochantes, en acier résistant à chaud FE-PA2601 (A286), revêtues MoS_2

Luft- und Raumfahrt - Gewindeeinsätze, MJ-Gewinden, selbstsichernd, mit selbsträumenden Stiften, aus hochwarmfestem Stahl FE-PA2601 (A286), MoS_2 beschichtet

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Ref. No. EN 4622:2010: E

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Foreword

This document (EN 4622:2010) 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of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010.

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Introduction

For design and installation procedures, see EN 4620 and EN 4619.

1 Scope

This standard specifies the characteristics of self-locking, MJ thread inserts, self-broaching keys, in FE-PA2601, MoS_2 coated, for aerospace applications.

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 2399, *Aerospace series — Heat resisting steel FE-PA2601 (X4NiCrTiMoV26-15) — Rm ≥ 900 MPa — Bars for forged bolts — D ≤ 25 mm* [3]

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

EN 2491, *Aerospace series — Molybdenum disulphide dry lubricants — Coating methods*

EN 3639, *Aerospace series — Heat resisting alloy FE-PA2601 — Softened and cold worked — Wire for forged fasteners — D ≤ 15 mm — 900 MPa ≤ R_m ≤ 1 100 MPa* [4]

EN 4619, *Aerospace series — Inserts, MJ threads, self-locking, with self-broaching keys — Installation and removal procedure*

EN 4620, *Aerospace series — Inserts, MJ threads, self-locking, with self-broaching keys — Design standard*

EN 4621, *Aerospace series — Inserts, MJ threads, self-locking, self-broaching keys — Technical specification*

ISO 5855-1, *Aerospace — MJ threads — Part 1: General requirements*

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

TR 3198, *Aerospace series — Manufacturers' identification monograms and marks for EN aerospace products* [5]

3 Required characteristics

3.1 Configuration – Dimensions – Tolerances – Masses

See Figure 1 and Tables 1, 2, 3 and 4.

Dimensions and tolerances are in millimetres. They apply before MoS_2 coating.

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

2) Maximum temperature that the insert is able to withstand, without permanent alteration to its original characteristics, after ambient temperature has been restored. The maximum temperature is conditioned by the MoS_2 lubricant.

3) Published as ASD Standard at the date of publication of this standard.

4) Published as ASD Prestandard at the date of publication of this standard.

5) Published as ASD Technical Report at the date of publication of this standard.

3.2 Material

Insert: EN 3639 or EN 2399 treated for 370 HV to 435 HV.

Keys: Stainless steel or Nickel alloy treated for HV > 600.

3.3 Surface treatment

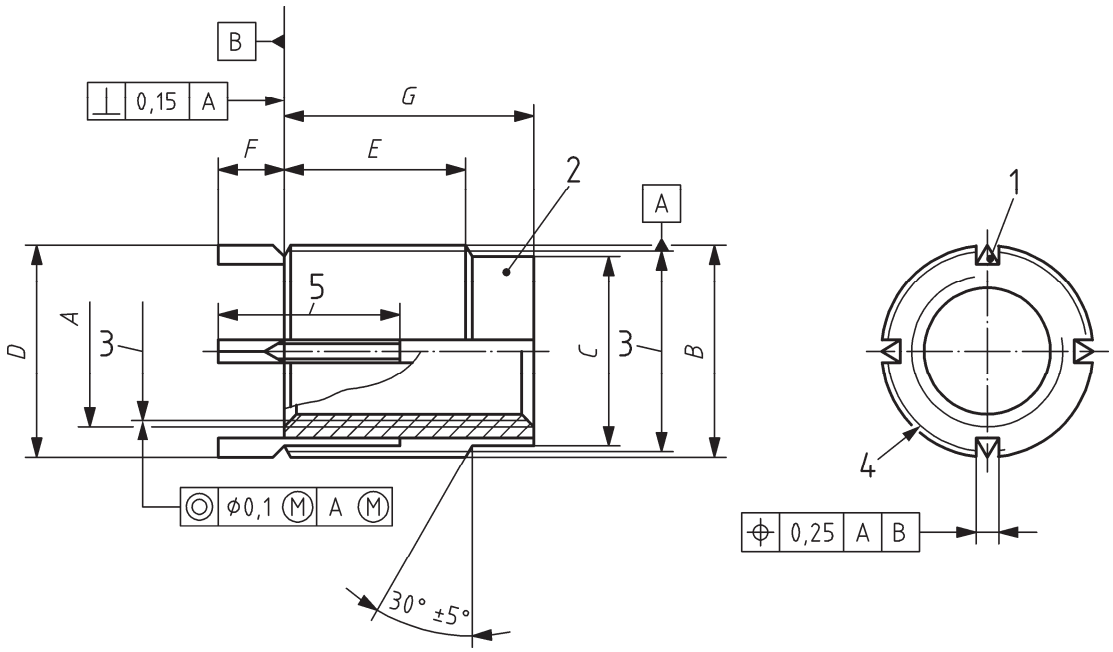
See EN 2491.

4 Insert definition

See Figure 1.

Ra 3,2 [Ra 1,6] [only for key grooves and keys] Values apply before MoS_2 coating.

Remove sharp edges 0,1 mm to 0,4 mm.



Key

1 N keys equally spaced
2 Form out-of-round in this area to achieve the self-locking requirement. Marking of tools is allowed.
3 Pitch diameters
4 Marking area or on keys left to producer's option
5 Total length of the key shall not exceed E min. Dimensions and location of keys shall meet EN 4622 requirements.

Details of form not stated are left to the producer's discretion.

Figure 1

4.1 Normal size insert

See Table 1.

Table 1

A Internal thread [a] Code	*A* Internal thread [a] Designation	*B* External thread [b] Designation	*C* [c] max.	*D* 0 - 0,2	*E* max.	*F* 0 - 0,2	*G* max.	*N*	**Mass** kg/1 000 parts ≈
050-0	MJ5×0,8-4H6H	MJ9×1-4h6h	7,5	9	5	4,35	8	2	2,2
060-0	MJ6×1-4H5H	MJ10×1-4h6h	8,5	10	6,5		10	2	3,3
070-0	MJ7×1-4H5H	MJ11×1-4h6h	9,5	11	8		11,5	2	4,4
080-0	MJ8×1-4H5H	MJ12×1-4h6h	10,5	12	9,5		13,5	4	5,7
100-0	MJ10×1,25-4H5H	MJ14×1-4h6h	12,5	14	12		16,5	4	8,9

[a] In accordance with ISO 5855-2.

[b] In accordance with ISO 5855-1.

[c] After deformation.

4.2 First repair size insert

See Table 2.

Table 2

A Internal thread [a] Code	*A* Internal thread [a] Designation	*B* External thread [b] Designation	*C* [c] max.	*D* 0 - 0,2	*E* max.	*F* 0 - 0,2	*G* max.	*N*	**Mass** kg/1 000 parts ≈
050-1	MJ5×0,8-4H6H	MJ10×1-4h6h	7,5	10	5	4,35	8	2	2,7
060-1	MJ6×1-4H5H	MJ11×1-4h6h	8,5	11	6,5		10	2	4,1
070-1	MJ7×1-4H5H	MJ12×1-4h6h	9,5	12	8		11,5	2	5,4
080-1	MJ8×1-4H5H	MJS13×1-4h6h	10,5	13	9,5		13,5	4	7,1
100-1	MJ10×1,25-4H5H	MJ15×1-4h6h	12,5	15	12		16,5	4	11,0

[a] In accordance with ISO 5855-2.

[b] In accordance with ISO 5855-1 except MJS13×1-4h6h thread which shall be in accordance with Table 4.

[c] After deformation.

4.3 Second repair size insert

See Table 3.

Table 3

A Internal thread [a]		*B* External thread [b]	*C* [c]	*D*	*E*	*F*	*G*	*N*	**Mass**
Code	**Designation**	**Designation**	max.	0 - 0,2	max.	0 - 0,2	max.		kg/1 000 parts ≈
050-2	MJ5×0,8-4H6H	MJ11×1-4h6h	7,5	11	5	4,35	8	2	3,4
060-2	MJ6×1-4H5H	MJ12×1-4h6h	8,5	12	6,5		10	2	5,0
070-2	MJ7×1-4H5H	MJS13×1-4h6h	9,5	14	8		11,5	2	6,6
080-2	MJ8×1-4H5H	MJ14×1-4h6h	10,5	15	9,5		13,5	4	8,7
100-2	MJ10×1,25-4H5H	MJ16×1-4h6h	12,5	16	12		16,5	4	13,2

[a] In accordance with ISO 5855-2.

[b] In accordance with ISO 5855-1 except MJS13×1-4h6h thread which shall be in accordance with Table 4.

[c] After deformation.

4.4 Special thread dimensions

See Table 4.

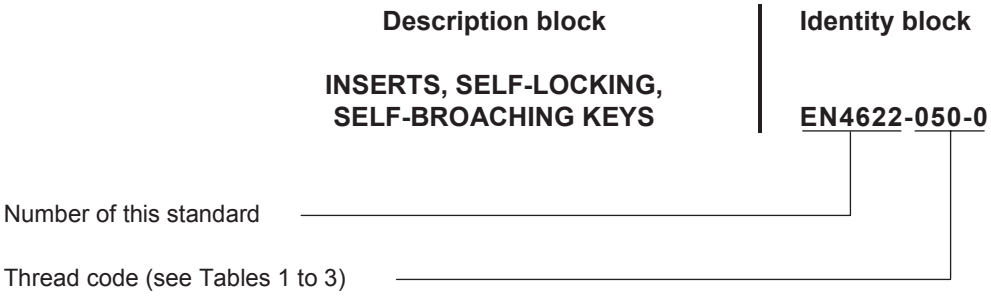
Table 4

External thread [a]	**Major diameter**		**Pitch diameter**		**Minor diameter**		**Root radius**	
	max.	min.	max.	min.	max.	min.	max.	min.
MJS13×1-4h6h	13	12,888	12,350	12,275	11,845	11,709	0,18	0,15

[a] Profile in accordance with ISO 5855-1.

5 Designation

EXAMPLE



NOTE 1 The last digit corresponds to:
Oversize code:
0 = Normal size;
1 = First repair size;
2 = Second repair size.

NOTE 2 If necessary, the code I9005 shall be placed between the description block and the identity block.

6 Marking and identification

EN 2424:2008, style F.

Manufacturers' identification marks in accordance with the list for special identification marks in TR 3198.

7 Technical specification

EN 4621.

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