



SLOVENSKI STANDARD
SIST EN 3149:2001
01-januar-2001

Aerospace series - Shank nuts - Installation holes, 60° swage, flanges - Design standard

Aerospace series - Shank nuts - Installation holes, 60° swage, flanges - Design standard

Luft- und Raumfahrt - Einnietmuttern - Einbaulöcher, 60°-Aufweitung, Flansche - Konstruktionsnorm

iTeh STANDARD PREVIEW

Série aérospatiale - Ecrous a sertir - Trous d'installation, sertissage 60°, brides - Norme de conception

[SIST EN 3149:2001](https://standards.iteh.ai/catalog/standards/sist/bb08f668-8ee4-4312-8be0-b2003a4b7ac3/sist-en-3149-2001)

Ta slovenski standard je istoveten z: EN 3149:1996

ICS:

49.030.30	Matice	Nuts
49.030.99	Drugi vezni elementi	Other fasteners

SIST EN 3149:2001 **en**

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EUROPEAN STANDARD

EN 3149

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 1996

ICS 49.040.20

Descriptors: aircraft industry, nut, fastener, installation, design, utilization, hole size, dimensional tolerance, designation

English version

**Aerospace series - Shank nuts - Installation holes,
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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.

The European Standards exist 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.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword


This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries 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 February 1997, and conflicting national standards shall be withdrawn at the latest by February 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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<https://standards.iteh.ai/catalog/standards/sist/ku016681/tee4-4312-8be0-02b03d4b7ad9/sist-en-3149-2001>
ΑΝΩΤΑΤΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΚΑΙ ΕΡΕΥΝΗΤΙΚΟ ΚΕΝΤΡΟ ΤΕΧΝΟΛΟΓΙΑΣ ΚΑΙ ΚΑΤΑΣΤΡΟΦΩΝ
ΑΝΑΛΟΓΟΥ



1 Scope

This standard specifies the dimensions of installation holes for EN-standardized 60° swage shank nuts and the relevant functional dimensions of the component flange, for aerospace applications.

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 3148 Aerospace series - Shank nuts, self-locking, flange restrained - Installation procedure ¹⁾

3 Design

See figure 1.

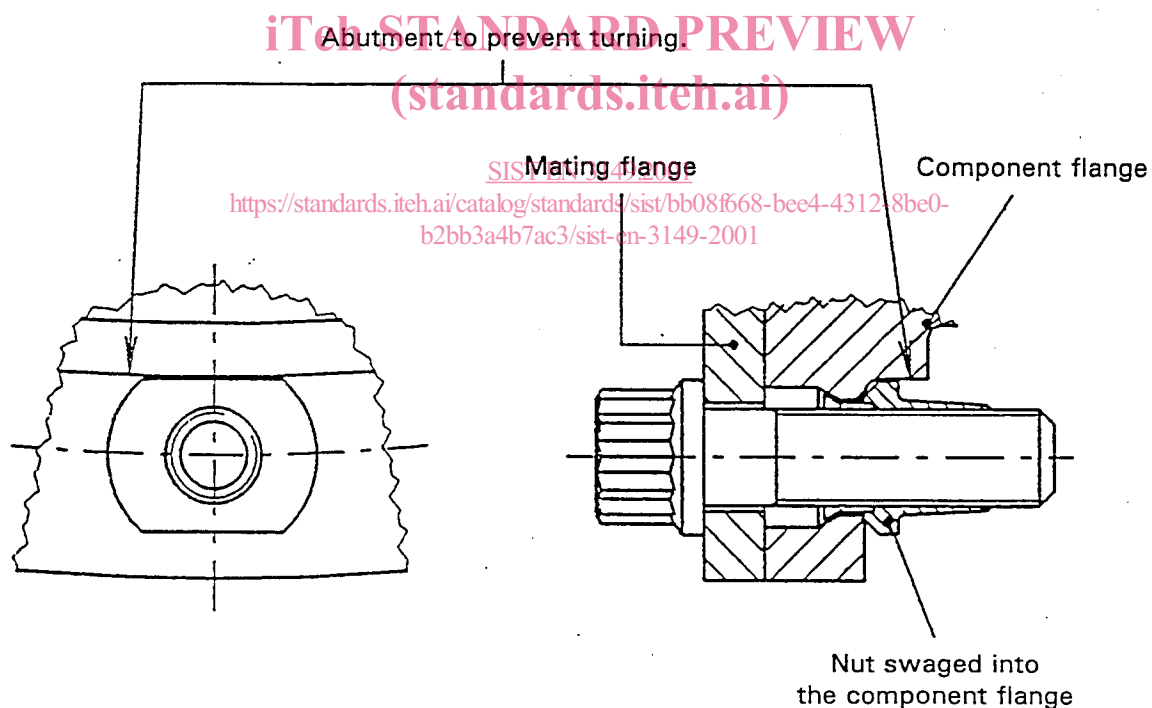


Figure 1

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

4 Use

Shank nuts are parts which are secured axially by swaging an extended shank into a countersink. The dimensions and the 60° countersink ensure that the expansion of the shank after swaging is between 10 % and 20 %, which provides adequate safety without excessive expansion.

Shank nuts are prevented from turning by an abutment in the component flange on one side.

Due to the small abutment face of the nut, care shall be taken that the strength of the component flange is suited to the surface pressure of the shank nut during tightening of the bolt.

It is recommended that the designer selects the thickness of the component flange on the basis of the minimum structural requirements, taking into consideration dimension "A" in table 2.

Shank nuts are used for bolted joints which are only accessible from one side and where bihexagonal head nuts cannot be used. The use of shank nuts in highly stressed components is not recommended since the size of the corner radius of the abutment shoulder is small and could have stress increasing characteristics.

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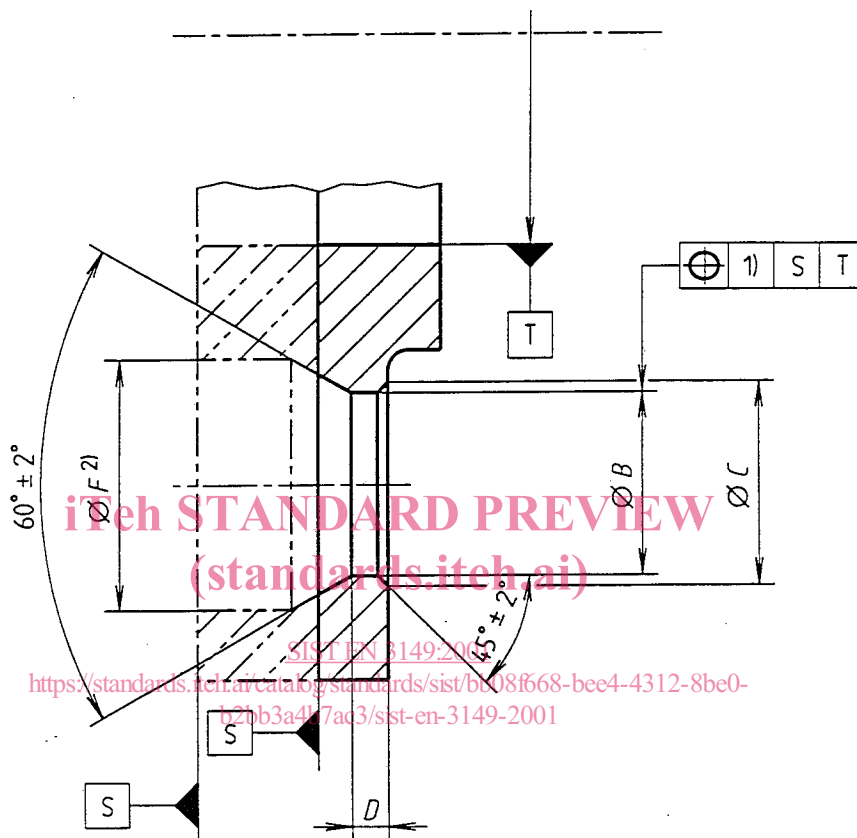
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5 Required characteristics

Dimensions and tolerances in millimetres

5.1 Installation hole

See figure 2 and table 1.



- 1) Positional tolerance of B see 6.
- 2) Application of cylindrical counterbore is optional.

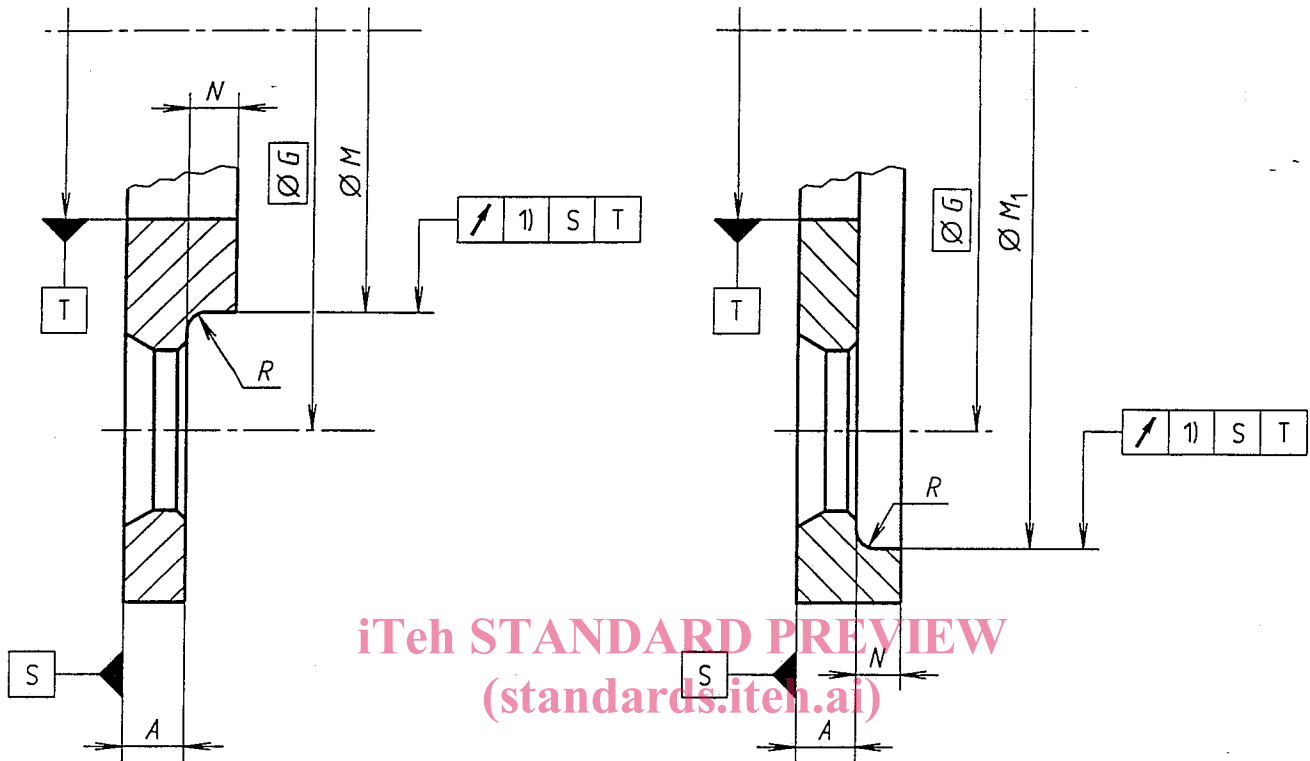
Figure 2

Table 1

Nut thread		B	C	D	F
Diameter code	Designation	+0,1 0	+0,4 0	+0,2 -0,1	min.
050	MJ5x0,8-4H6H	6,5	7,2	0,8	7,8
060	MJ6x1-4H5H	7,5	8,2		8,8
070	MJ7x1-4H5H	8,5	9,2	1,55	10
080	MJ8x1-4H5H	9,5	10,2	1,8	11,5

5.2 Flange and abutment shoulder

See figure 3 and table 2.



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1) Run-out tolerance of M or M_1 see 6. [b2bb3a4b7ac3/sist-en-3149-2001](https://standards.iteh.ai/catalog/standards/sist/bb08f668-bee4-4312-8be0-b2bb3a4b7ac3/sist-en-3149-2001)

Figure 3

Table 2

Diameter code	Nut thread Designation	A min.	K +0,2 0	M	M ₁	N min.	R ± 0,1	Nut dimensions	
								E max. 1)	S max. 1)
050	MJ5x0,8-4H6H	2	5	See 5.2.2	See 5.2.3	2,7	1	13,25	9,6
060	MJ6x1-4H5H		5,5					14,25	10,6
070	MJ7x1-4H5H	3	6					16,25	11,6
080	MJ8x1-4H5H	3,5	6,5					17,25	12,6

1) See the relevant product standard.

5.2.1 Shank nuts installed on a straight line

See figure 4 and table 2.

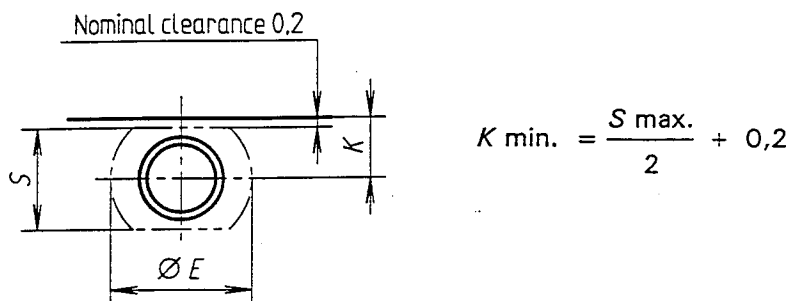


Figure 4

5.2.2 Diameter M of abutment shoulder smaller than pitch circle diameter G

See figure 5 and table 2.

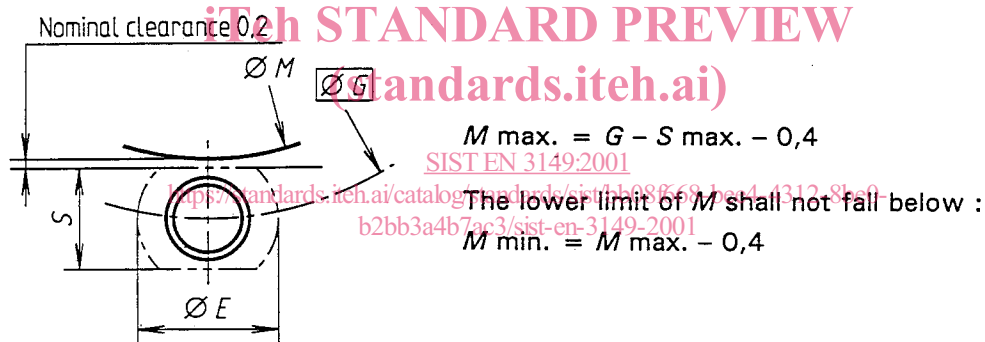


Figure 5

5.2.3 Diameter M_1 of abutment shoulder greater than pitch circle diameter G

See figure 6 and table 2.

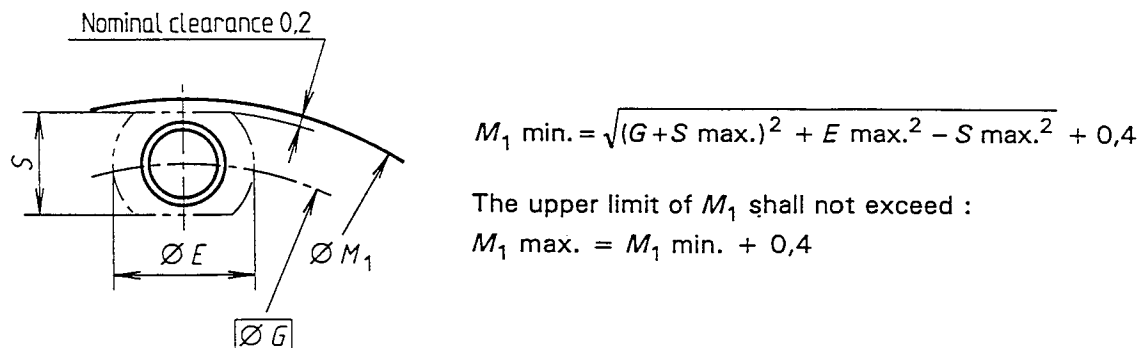


Figure 6