SLOVENSKI STANDARD
SIST EN 3044:2001

01-januar-2001

Aerospace series - Installation holes for inserts, screw thread, helical coil, self-locking - Design standard

Aerospace series - Installation holes for inserts, screw thread, helical coil, self-locking - Design standard

Luft- und Raumfahrt - Einbaulöcher für Draht-Gewindeeinsätze, selbstsichernd - Konstruktionsnorm

Série aérospatiale - Trous d'installation pour filets rapportés, a freinage interne - Norme de conception

Ta slovenski standard je istoveten z: **EN 3044:1998**

ICS:

49.030.30 Matice Nuts

SIST EN 3044:2001 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 3044

May 1998

ICS 49.030.30

Descriptors: aircraft industry, screw thread, self-locking screw thread, utilization, installation, hole, dimension

English version

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This European Standard was approved by CEN on 23 February 1998.

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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 Central Secretariat has the same status as the official versions.

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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of an identical text or by endorsement, at the latest by November 1998, and conflicting national standards shall be withdrawn at the latest by November 1998.

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

1 Scope

This standard specifies the installation holes for self-locking, helical coil, screw thread inserts 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.

ISO 68	ISO general purpose screw threads - Basic profile
ISO 965-1	ISO general purpose metric screw threads - Tolerances - Part 1: Principles and basic data
ISO 5855-2	Aerospace - MJ threads - Part 2: Limit dimensions for bolts and nuts
EN 2942	Aerospace series - Inserts, screw thread, helical coil, self-locking, in heat resisting nickel base alloy NI-PH2801 (Inconel X750), silver plated
EN 2944	Aerospace series - Inserts, screw thread, helical coil, self-locking, in corrosion resisting steel FE-PA3004
EN 2945	Aerospace series - Inserts, screw thread, helical coil, self-locking - Assembly procedure
EN 3542	Aerospace series - Inserts, screw thread, helical coil, self-locking, in heat resisting nickel base alloy NI-PH2801 (Inconel X750)
TR 3540	Aerospace series - Use and selection of self-locking wire thread inserts [1]

3 Use and selection

TR 3540

Assembled helical coil inserts shall be used with bolts where the thread conforms to ISO 5855-2.

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

4 Installation hole

Applicable to EN 2942, EN 2944 and EN 3542. See figure 1 and table 1. Dimensions and tolerances are in millimetres.

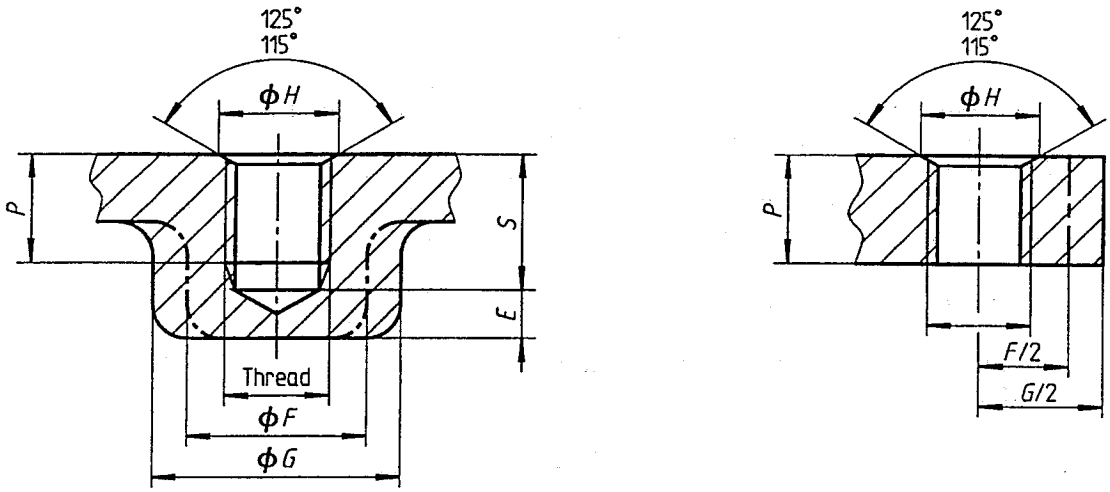

Figure 1

Table 1

Diameter code of thread insert and bolt	Thread [1] designation	L Length nom. 1,25 D	1,5 D	2 D	2,5 D	Code	P min. [2]	S + 0,5 0 [3]	S + 0,5 0 [4]	E min. [5]	F min. [6]	G min. [5]	H + 0,5 0
040	HTMJ4C1 ou HTMJ4C2	5				050	5,53	9	7,6	2,5	9	11	5,1
			6			060	6,53	10	8,6				
				8		080	8,53	12	10,6				
					10	100	10,53	14	12,6				
050	HTMJ5C1 ou HTMJ5C2	6,3				063	6,85	10,85	9,25	3	11	14	6,2
			7,5			075	8,1	12,1	10,5				
				10		100	10,6	14,6	13				
					12,5	125	13,1	17,1	14,5				
060	HTMJ6C1 ou HTMJ6C2	7,5				075	8,25	13,25	11,25	3,5	13	17	7,5
			9			090	9,75	14,75	12,75				
				12		120	12,75	17,75	15,75				
					15	150	15,75	20,75	18,75				
070	HTMJ7C1 ou HTMJ7C2	8,8				088	9,5	14,5	12,5	3,5	15	20	8,5
			10,5			105	11,25	16,25	14,25				
				14		140	14,75	19,75	17,75				
					17,5	175	18,25	23,25	21,25				
080	HTMJ8C1 ou HTMJ8C2	10				100	10,75	15,75	13,75	4	17	22	9,5
			12			120	12,75	17,75	15,75				
				16		160	16,75	21,75	19,75				
					20	200	20,75	25,75	23,75				
100	HTMJ10C1 ou HTMJ10C2	12,5				125	13,43	19,7	17,2	4,5	21	26	11,9
			15			150	15,93	22,2	19,7				
				20		200	20,93	27,2	24,7				
					25	250	25,93	32,2	29,7				

1) See 5.
2) P min. = L_1 max. + 1,25 pitches. L_1 max.: see product standard.
3) $S = P + 5$ pitches
4) $S = P + 3$ pitches
5) Recommended values, to be defined for each application by the user.
6) These values do not allow for repair and may cause parts to be rejected in the event of machining error or damage to the thread.

5 Installation hole thread

See figure 2 and table 2. Dimensions and tolerances are in millimetres.

5.1 Thread basic profile

The basic profile (see figure 2) is in accordance with ISO 68. The dimensions of major, pitch and minor diameter of the basic profile are equal to the minimum limit dimensions, in table 2.

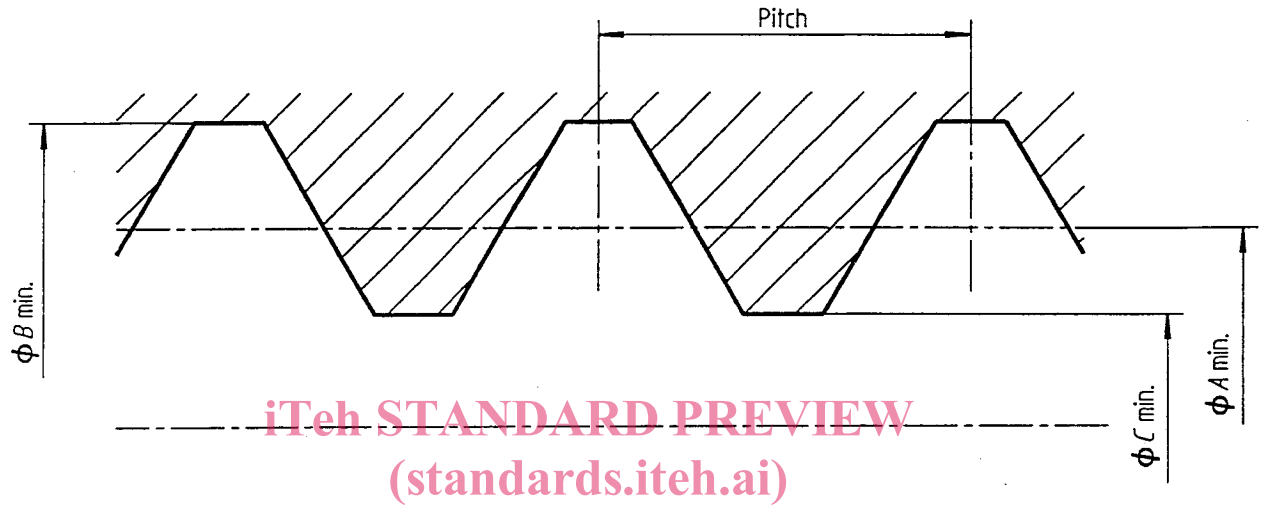

Figure 2

5.2 Thread limit dimensions

See table 2.

Table 2

Diameter code of thread insert	Associated bolt size	Designation	Tolerance code [1]	Pitch	Thread					
					A (pitch diameter)		*B* (major diameter)		*C* (minor diameter)	
					max.	min.	max.	min.	max.	min.
040	MJ4×0,7	HTMJ4C1	C1	0,7	4,509	4,455	5,065	4,91	4,292	4,152
		HTMJ4C2	C2		4,53					
050	MJ5×0,8	HTMJ5C1	C1	0,8	5,577	5,52	6,212	6,04	5,334	5,174
		HTMJ5C2	C2		5,6					
060	MJ6×1	HTMJ6C1	C1	1	6,719	6,65	7,513	7,3	6,407	6,217
		HTMJ6C2	C2		6,742					
070	MJ7×1	HTMJ7C1	C1		7,719	7,65	8,513	8,3	7,407	7,217
		HTMJ7C2	C2		7,742					
080	MJ8×1	HTMJ8C1	C1		8,719	8,65	9,513	9,3	8,407	8,217
		HTMJ8C2	C2		8,742					
100	MJ10×1,25	HTMJ10C1	C1	1,25	10,886	10,812	11,878	11,624	10,483	10,271
		HTMJ10C2	C2		10,91					

1) See 6.

6 Tolerance classes of installed thread inserts

Thread inserts may be used in harder materials such as steel or titanium, also in softer materials such as light alloys. Dependant on application the pitch diameter tolerance class of installed inserts internal thread is shown in table 3.

Table 3

Material of parent component	**Pitch diameter tolerance class of installed inserts internal thread** [1]	**Thread pitch diameter tolerance code** [2] (installation hole)
Steel and titanium	4H	C1
Light alloys	5H	C2
1) In accordance with ISO 965-1 2) See table 2.		

7 Bolt thread protrusion

The bolt threaded length shall normally be greater than the nominal length of the thread insert.

The end of the thread on the bolt shall be at least level with the lead in face of the installation hole (see figure 3).

The end of the bolt shall protrude beyond the thread insert by a minimum of two pitches when the nominal length of the thread insert $L \leq 2\ D$ (see figure 3).

The end of the bolt may be recessed inside the thread insert by a maximum of 0,5 pitches when the nominal length of the thread insert $L > 2\ D$ (see figure 3).

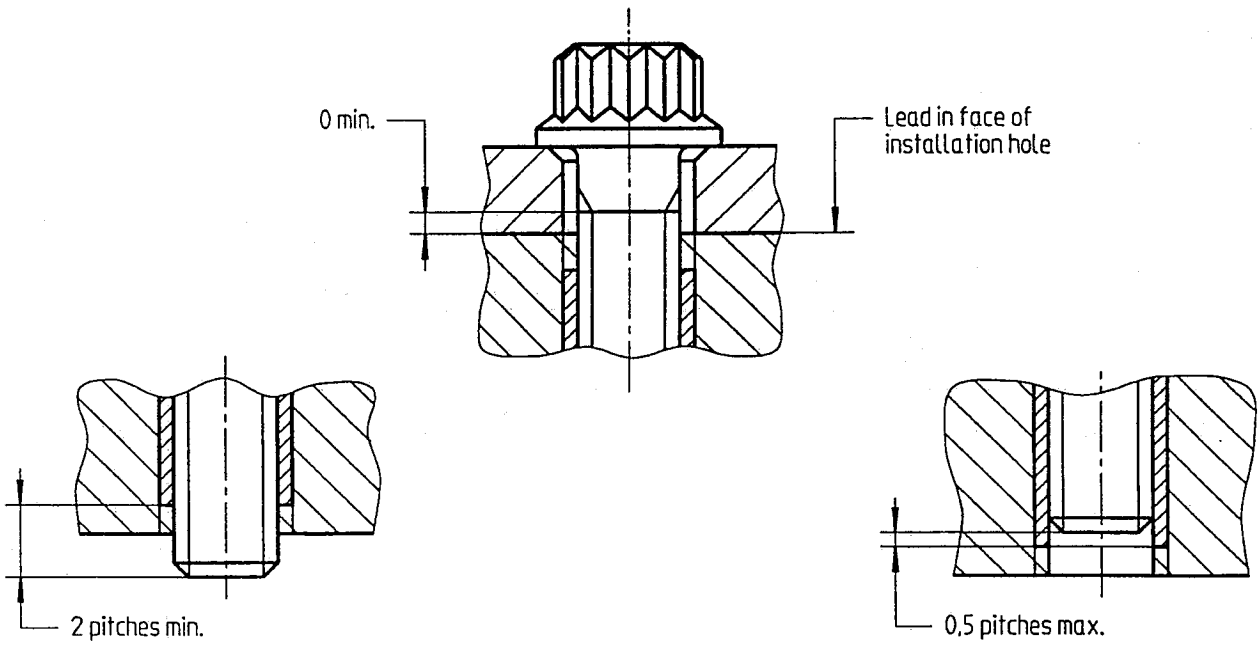

Figure 3

8 Assembly