SIST

SLOVENSKI STANDARD
SIST EN 4673-005:2010

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Aeronavtika - Vložki, navoj UNJ, samozapiralni, s samozagozdnim ključem - 005. del: Iz toplotnoodporne zlitine na nikljevi osnovi NI-P101HT (WASPALOY), posrebreni

Aerospace series - Inserts, UNJ threads, self-locking, with self-broaching keys - Part 005: In heat resisting nickel base alloy NI-P101HT (WASPALOY), silver plating

Luft- und Raumfahrt - Gewindeeinsätze, UNJ-Gewinden, selbstsichernd, mit selbsträumenden Stiften - Teil 005: Mit selbsträumenden Stiften, aus Hochwarmfeste Nickellegierung NI-P101HT (WASPALOY), Versilbern

Série aérospatiale - Douilles filetées, à filetage UNJ, à freinage interne, à clavettes auto-brochantes - Partie 005 : En alliage résistant à chaud base nickel NI-P101HT (WASPALOY), argentage

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 4673-005:2010) 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of an identical text or by endorsement, at the latest by February 2011, and conflicting national standards shall be withdrawn at the latest by February 2011.

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Introduction

For design and installation procedures, see EN 4673-002 and EN 4673-001.

1 Scope

This European Standard specifies the characteristics of self-locking, inserts for Inch series, self-broaching keys, in NI-P101HT, silver plated, for aerospace applications.

Classification: 1 210 MPa [1] / 760 °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 2424, *Aerospace series — Marking of aerospace products*

EN 2786, *Aerospace series — Electrolytic silver plating of fasteners*

EN 2959, *Aerospace series — Heat resisting alloy NI-PH1302 (NiCr20Co13Mo4Ti3Al) — Solution treated and cold worked — Bar for forged fasteners — 3 mm ≤ D ≤ 30 mm*

EN 3220, *Aerospace series — Heat resisting nickel base alloy (Ni-P101HT) — Cold worked and softened — Bar and wire for continuous forging or extrusion for fasteners — 3 ≤ D ≤ 30 mm*

EN 4673-001, *Aerospace series — Inserts, UNJ threads, self-locking, with self-broaching keys — Part 001: Installation and removal procedure*

EN 4673-002, *Aerospace series — Inserts, UNJ threads, self-locking, with self-broaching keys — Part 002: Design standard*

EN 4673-003, *Aerospace series — Inserts, UNJ threads, self-locking, with self-broaching keys — Part 003: Technical specification*

ISO 3161, *UNJ threads — general requirements and limit dimensions*

TR 3198, *Aerospace series — Manufacturers' identification monograms and marks for EN aerospace products* [3]

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 after silver plating.

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1) Corresponds to the minimum tensile stress which the material is able to withstand at ambient temperature.

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 silver plating.

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

3.2 Material

Insert: EN 3220 and EN 2959 treated for 335 HV to 427 HV

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

3.3 Surface treatment

See EN 2786.

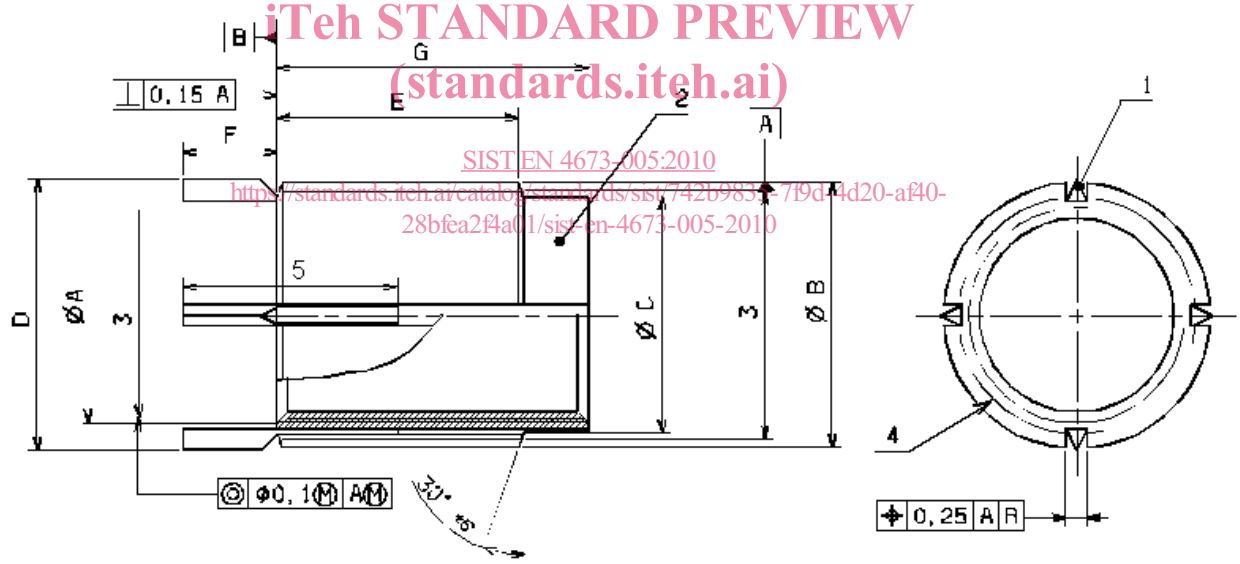
4 Insert definition

See Figure 1.

R_a 3,2 [R_a 1,6 only for key grooves and keys]

Values apply after silver plating.

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. Mark of tools 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 4673-003 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* max.	*G* max.	*N*	**Mass** kg/1 000 ≈
3-0	.190 0-32UNJF-3B	.312 5-18UNS-2A	6,30	7,9	6,0	4,35	7,7	2	1,4
4-0	.250 0-28UNJF-3B	.375 0-16UNS-2A	7,90	9,5	8,0		10,0	2	2,4
5-0	.312 5-24UNJF-3B	.437 5-16UNS-2A	9,50	11,1	9,5		12,3	2	3,7
6-0	.375 0-24UNJF-3B	.500 0-16UNS-2A	11,05	12,7	11,5		14,5	4	5,2
7-0	.437 5-20UNJF-3B	.562 5-16UNS-2A	12,65	14,2	13,5		17,1	4	7,3
8-0	.500 0-20UNJF-3B	.625 0-16UNS-2A	14,25	15,8	15,5		19,4	4	9,5

[a] In accordance with ISO 3161.

[b] See Table 4.

[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 ≈
3-1	.190 0-32UNJF-3B	.375 0-16UNS-2A	7,90	9,5	6,0	4,35	7,7	2	2,5
4-1	.250 0-28UNJF-3B	.437 5-16UNS-2A	9,50	11,1	8,0		10,0	2	4,3
5-1	.312 5-24UNJF-3B	.500 0-16UNS-2A	11,05	12,7	9,5		12,3	2	6,4
6-1	.375 0-24UNJF-3B	.562 5-16UNS-2A	12,65	14,2	11,5		14,5	4	8,8
7-1	.437 5-20UNJF-3B	.625 0-16UNS-2A	14,25	15,8	13,5		17,1	4	12,2
8-1	.500 0-20UNJF-3B	.687 5-16UNS-2A	15,80	17,4	15,5		19,4	4	15,6

[a] In accordance with ISO 3161.

[b] See Table 4.

[c] After deformation.

4.3 Second repair size insert

See Table 3.

Table 3

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 ≈
3-2	.190 0-32UNJF-3B	.437 5-16UNS-2A	9,50	11,1	6,0	4,35	7,7	2	4,0
4-2	.250 0-28UNJF-3B	.500 0-16UNS-2A	11,05	12,7	8,0		10,0	2	6,5
5-2	.312 5-24UNJF-3B	.562 5-16UNS-2A	12,65	14,2	9,5		12,3	2	9,5
6-2	.375 0-24UNJF-3B	.625 0-16UNS-2A	14,25	15,8	11,5		14,5	4	13,0
7-2	.437 5-20UNJF-3B	.687 5-16UNS-2A	15,80	17,4	13,5		17,1	4	17,6
8-2	.500 0-20UNJF-3B	.750 0-16UNS-2A	17,40	19,0	15,5		19,4	4	22,4

[a] In accordance with ISO 3161.

[b] See Table 4.

[c] After deformation.

4.4 External thread dimension

See Table 4.

Table 4

External thread Designation	**Major diameter** min.	**Major diameter** max.	**Pitch diameter** min.	**Pitch diameter** max.	**Minor diameter** min.	**Minor diameter** max.
.312 5-18UNS-2A	7,69	7,91	6,89	6,99	6,32	6,50
.375 0-16UNS-2A	9,25	9,49	8,35	8,46	7,92	8,13
.437 5-16UNS-2A	10,84	11,08	9,93	10,05	9,50	9,72
.500 0-16UNS-2A	12,43	12,67	11,51	11,63	11,09	11,30
.562 5-16UNS-2A	14,01	14,25	13,10	13,22	12,67	12,89
.625 0-16UNS-2A	15,60	15,84	14,69	14,81	14,26	14,48
.687 5-16UNS-2A	17,19	17,43	16,27	16,39	15,84	16,07
.750 0-16UNS-2A	18,77	19,01	17,85	17,98	17,42	17,65