SLOVENSKI STANDARD
SIST EN 4460:2006
01-julij-2006

Aeronavtika ï Zatiļ ni vijaki iz titanijeve zlitine TI-P64001 z nazobļ anim zaklepnim obroļ em iz jekla, odpornega proti koroziji ï Postopek namestitve in odstranitve

Aerospace series - Studs, in titanium alloy TI-P64001, with serrated locking ring in corrosion resisting steel - Installation and removal procedure

Luft- und Raumfahrt - Stiftschrauben, aus Titanlegierung TI-P64001, mit Ringsicherung aus korrosionsbeständigem Stahl - Ein- und Ausbauverfahren

Série aérospatiale - Goujons, en alliage de titane TI-P64001, avec bague de verrouillage dentelée en acier résistant a la corrosion - Procédure d'installation et d'extraction

Ta slovenski standard je istoveten z: EN 4460:2005

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English Version

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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

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Foreword

This European Standard (EN 4460:2005) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 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of an identical text or by endorsement, at the latest by April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

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1 Scope

This standard specifies the conditions of installation and removal of studs with serrated locking ring in corrosion resisting steel defined by EN 4421, for aerospace applications.

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 4421, *Aerospace series – Studs, in titanium alloy TI-P64001, MoS_2 coated, with serrated locking ring in corrosion resisting steel – Strength class: 1 100 MPa (at ambient temperature).* [1)]

EN 4459, *Aerospace series – Studs, in titanium alloy TI-P64001, with serrated locking ring in corrosion resisting steel – Design standard.*

3 Installation hole

3.1 General

Installation hole is either fully defined or codified on the design drawing. Codification references the EN design standard in which the installation hole definition is given.

Table 1 provides the cross reference between the insert codification, the stud threads, the tapped hole reference and the tapped hole with serration reference.

Table 1

Stud reference without length code	Stud thread diameter	Identity block of tapped hole	Identity block of tapped hole with serration [a]
EN4421-050	MJ5×0,8	EN4459-050	EN4459-050-S
EN4421-060	MJ6×1	EN4459-060	EN4459-060-S

[a] See 3.2 for hole serration manufacture.

3.2 Hole drilling

Drilling of pilot hole for tapping and counterboring shall be carried out in conformity with the drawing and can be carried out with a step drill if the specified pilot hole length allows it. For casings in aluminium alloy and in magnesium alloy, a spotfacing is specified.

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

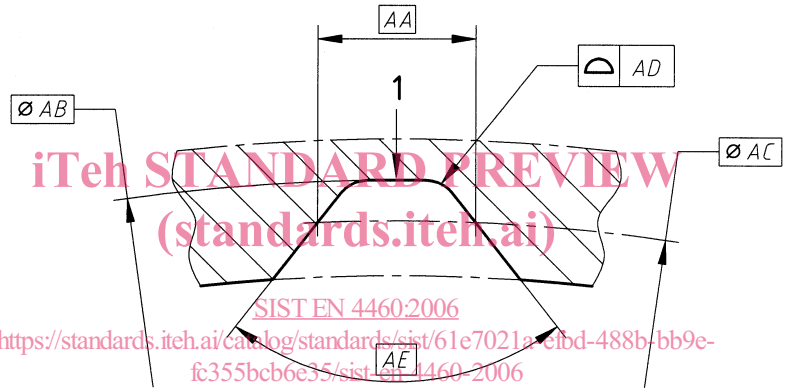
3.3 Broaching

If drawing specifies manufacture of serration intended to facilitate assembly in hard materials they will be carried out for obtaining serration defined in Figures 1 and 2 and Table 2 in the spotfacing of the installation hole.

Table 2

Dimensions in millimetres

Associated bolt thread	Dimensions					K		R_2	J
	AA	AB	AC	AD	$AE°$	max.	min.	max.	Number of serrations
MJ5×0,8	0,34	7,8	7,44	0,06	76	2,6	2,2	0,10	15
MJ6×1	0,43	9,01	8,54			3,3	2,9		



Key

1 Serration form at this position may vary (within the profile tolerance) due to broach wear.

Figure 1

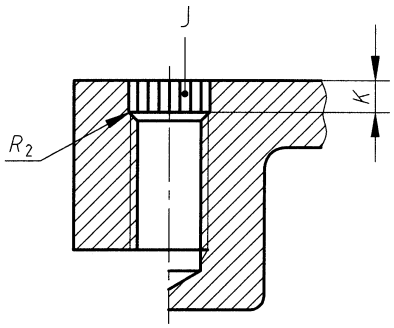


Figure 2

4 Inspection requirements before installation

Prior to installation check the installation hole, counterbore and serration (when applicable) to receive the insert are free from burrs and any foreign objects, grease, oil, etc.

Inspect stud to be installed and ensure that it is clean and free from protective grease, etc.

Studs installed in aluminium alloy components shall be lightly smeared externally with a suitable compound to prevent electrolytic corrosion.

5 Installation tools

5.1 General

The tools and their methods of application described in this standard are not mandatory and show only the basic principles to be observed to achieve the satisfactory installation or removal of the studs.

The minimum dimensional requirements provided shall be achieved and on no account shall the design of the tools or their methods of application be such that damage may occur to the threads of the stud or the component into which it is being installed.

Always ensure the appropriate tool/stud size combinations have been chosen to enable correct installation of the stud.

5.2 Stud preparation

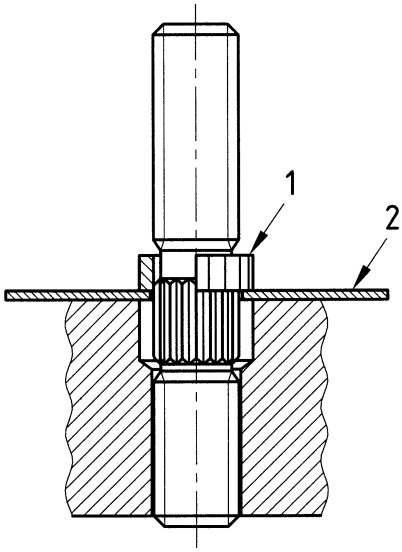
For installation in every material coat the threads with oil.

5.3 Stud seating

If the hole in the casing is preserrated, install a 0,05 mm thickness shim to prevent the premature interlocking (engagement) of the locking ring in the spotfacing serration.

Screw the stud into the tapped hole by hand until the upper face of the locking ring abuts the stud serration end and the ring lower face comes into contact with the shim or the casing as shown on Figure 3 (there is no wrench for installing the studs).

Remove the shim, align the ring external serration with the spotfacing one's in screwing the stud.



Key

1 Ring stop
2 Shim

Figure 3

With the appropriate tool, exert a continuous axial thrust on the locking ring until its total penetration into the casing as shown in Figures 4, 5 and 6.

Dimensions in millimetres

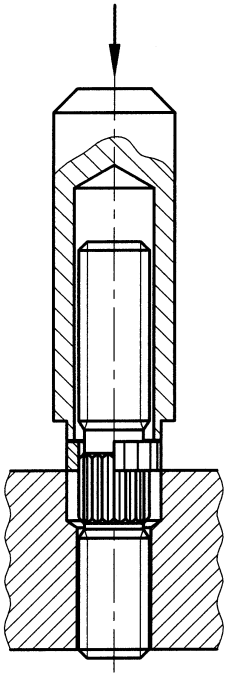


Figure 4

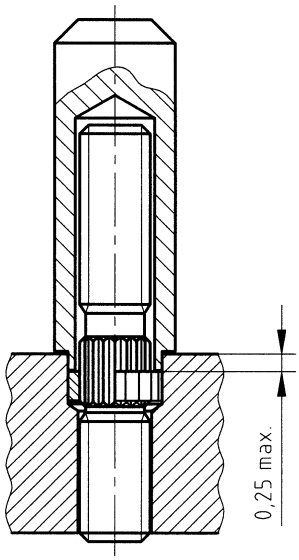


Figure 5