SLOVENSKI STANDARD
SIST EN 4510:2018

01-oktober-2018

Aeronavtika - Cevne spojke , 60°, okrogle, iz titanove litine TI-P64001, prilagodilne (adapterji), ravne, dvostranske, z zapornimi obroči

Aerospace series - Pipe couplings, 60°, spherical, in titanium alloy TI-P64001, adapters, straight, double end, with locking ring

Luft- und Raumfahrt - Rohrverschraubungen mit Kugelbuchsen, 60°, aus Titanlegierung TI-P64001, gerade Anschlußverschraubungen mit Sicherungsring

Série aérospatiale - Raccords sphériques, 60°, en alliage de titane TI-P64001, raccords droits, à planter, avec bague de freinage

Ta slovenski standard je istoveten z: **EN 4510:2018**

ICS:

49.025.30	Titan	Titanium
49.080	Letalski in vesoljski hidravlični sistemi in deli	Aerospace fluid systems and components

SIST EN 4510:2018 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4510

July 2018

ICS 49.080

English Version

Aerospace series - Pipe couplings, 60°, spherical, in titanium alloy TI-P64001, adapters, straight, double end, with locking ring

Série aérospatiale - Raccords sphériques, 60°, en alliage de titane TI-P64001, raccords droits, à planter, avec bague de sécurité

Luft- und Raumfahrt - Rohrverschraubungen mit Kugelbuchsen, 60°, aus Titanlegierung TI-P64001, gerade Anschlussverschraubungen mit Sicherungsring

This European Standard was approved by CEN on 13 May 2018.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Ref. No. EN 4510:2018 E

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European foreword

This document (EN 4510:2018) 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of an identical text or by endorsement, at the latest by January 2019, and conflicting national standards shall be withdrawn at the latest by January 2019.

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Introduction

This European standard is a co-owned standard and a functional equivalent of SAE MA 2113. Further revisions to this European standard shall be coordinated with the SAE committee.

1 Scope

This European standard specifies the characteristics of the pipe coupling adapter, 60° spherical sealing face manufactured in titanium alloy with locking ring, for installing in a boss for aerospace applications.

These adapters shall be installed into port connections manufactured in accordance with EN 2602 using ISO 3601-1 sealing O-rings selected sizes. O-ring material depends on the system fluid and operation conditions. The installation shall be performed in accordance with EN 2608.

Nominal working pressure: up to 28 000 kPa.

Temperature range: limited by elastomeric sealing ring, −54 °C to +135 °C.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 2491, *Aerospace series — Molybdenum disulphide dry lubricants — Coating methods*

EN 2602, *Aerospace series — Ports for adaptors, threaded, with lockring — Geometric configuration*

EN 2603, *Aerospace series — Port ends for adaptors, threaded, with lockring — Geometric configuration*

EN 2606, *Aerospace series — 60° interface for adaptors, threaded, with lockring — Geometric configuration*

EN 2608, *Aerospace series — Installation and removal requirements for 8°30′ adaptors, threaded, with lockring*

EN 2645, *Aerospace series — Lockrings for adaptors, threaded, with lockring — Dimensions*

EN 3079, *Aerospace series — Pipe coupling 8°30′ up to 28000 kPa — Adaptors — Metric series — Technical specification*

EN 3311, *Aerospace series — Titanium alloy TI-P64001 (Ti-6Al-4V) — Annealed — Bar for machining $D < 110$ mm*

EN 3314, *Aerospace series — Titanium alloy TI-P64001, solution treated and aged; bar for machining $D \leq 75$ mm*

EN 4315, *Aerospace series — Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15) — Solution treated and precipitation treated, bar and section a or $D \leq 100$ mm, $R_m \geq 900$ MPa*

EN 4317, *Aerospace series — Heat resisting alloy FE-PA2601 (X6NiCrTiMoV26-15) — Non heat treated, forging stock a or $D \leq 200$ mm*

EN ISO 286-2, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*

ISO 3601-1, *Fluid power systems — O-rings — Part 1: Inside diameters, cross-sections, tolerances and designation codes*

ISO 5855-3, *Aerospace — MJ threads — Part 3: Limit dimensions for fittings for fluid systems*

ISO 7169, *Aerospace — Separable tube fittings for fluid systems 24° cone — General specification*

3 Requirements characteristics

3.1 Configuration — Dimensions — Tolerances — Mass

According to Figure 1 and Figure 2 and Table 1 and Table 2. Dimensions are in mm and apply before lubricating or anodizing.

The dimensions specified are those required by design to meet installation and system requirements.

The dimensions not specified are at manufacture's option providing that the qualification and acceptance requirements of EN 3079, type II are met.

3.2 Surface roughness

According to Figure 1 and Figure 2 unless otherwise specified in the design documentation.

Sealing surfaces roughness 1,6 µm.

3.3 Material

Adapter:

— EN 3311 or EN 3314;

— alternative: AMS 4928, AMS 4965 or AMS 4967. Heat treatment to 900 MPa, minimum.

Locking ring:

— EN 4315 or EN 4317.

— alternative: AMS 5731 or AMS 5734.

3.4 Surface treatment

Adapter:

— lubrication: according to EN 2491, on all surfaces except in the flow hole;

— prior to application of the lubricant, the surface shall be abrasive blasted using non-metallic grit;

— film thickness: 0,005 mm to 0,013 mm.

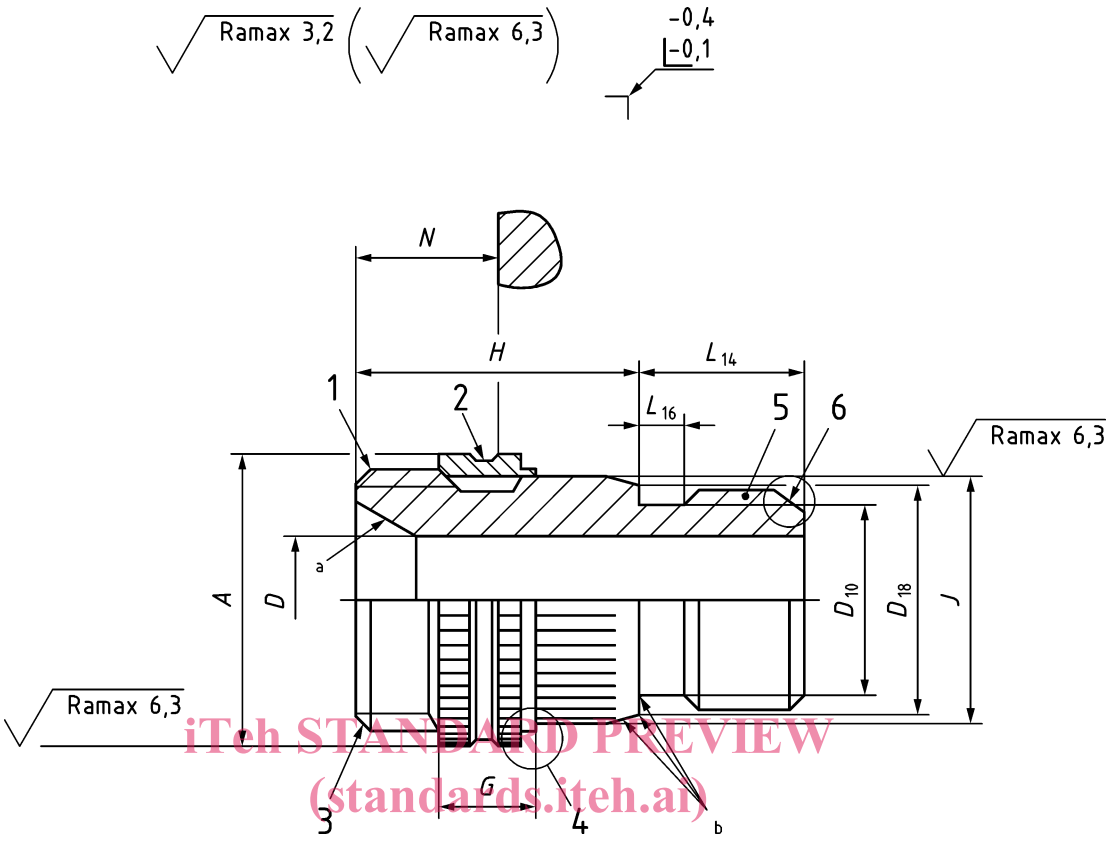
Alternative: Anodizing according to AMS 2488 type 2.

Locking ring:

— passivated as per AMS 2700, type 2 or type 8.

NOTE Type 2 is chromate loaded, affected by REACH regulation.

Dimensions in millimetres



Key

Fitted dimension – For design use only

1 Thread C

2 Identity marking

3 Fitting end per EN 2606 for tube size specified.

4 Locking ring per EN 2645 for ring size specified. Located 0 to 0,4 from thread “A” chamfer.

5 Port end per EN 2603 for tube size specified.

6 Thread D7

a Sealing surface: No visible defects. To be protected for shipment.

b Sealing surface: No visible defects. To be protected for shipment.

Figure 1 — Adapter assembly