SLOVENSKI STANDARD
SIST EN 6046:2020

01-junij-2020

Aeronavtika - Kroglasti drsni ležaji iz korozijsko odpornega jekla - Ozki tip - Mere in obremenitve - Palčne mere

Aerospace series - Bearing, spherical, plain, in corrosion resisting steel - Narrow series - Dimensions and loads - Inch series

Luft- und Raumfahrt - Gelenklager aus korrosionsbeständigem Stahl - Schmale Reihe - Maße und Belastungen - Inch-Reihe

Série aérospatiale - Rotule lisse en acier résistant à la corrosion - Série étroite - Dimensions et charges - Série en inches

Ta slovenski standard je istoveten z: **EN 6046:2020**

ICS:

21.100.01	Ležaji na splošno	Bearings in general
49.035	Sestavni deli za letalsko in vesoljsko gradnjo	Components for aerospace construction

SIST EN 6046:2020 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 6046

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ICS 49.035

English Version

Aerospace series - Bearing, spherical, plain, in corrosion resisting steel - Narrow series - Dimensions and loads - Inch series

Série aérospatiale - Rotule lisse en acier résistant à la corrosion - Série étroite - Dimensions et charges - Série en inches

Luft- und Raumfahrt - Gelenklager aus korrosionsbeständigem Stahl - Schmale Reihe - Maße und Belastungen - Inch-Reihe

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 6046:2020) 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of an identical text or by endorsement, at the latest by September 2020, and conflicting national standards shall be withdrawn at the latest by September 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Introduction

This document is published at edition P7. Former editions P1 to P6 and drafts may exist for Airbus development only but without any ASD-STAN official publication. In consequence configuration management discrepancies with these unofficial documents are under Airbus responsibility.

1 Scope

This European standard specifies the characteristics of inch based spherical plain bearing, metal to metal, in corrosion resisting steel, narrow series.

They are intended for use in fixed or moving parts of the aircraft structure and their control mechanisms.

They shall be used in the temperature range as determined by the grease capability as below:

— code A: grease as per MIL-PRF-23827 Type I, operating temperature range −73 °C to 121 °C;

— code B: grease as per MIL-PRF-81322, operating temperature range −54 °C to 177 °C.

The range of application for bearings lubricated with grease per code A is limited to 121 °C.

In both cases the spherical surface of the outer or inner ring have to be provided with a dry-film lubricant as per MIL-PRF-46010 or equivalent (anti-seizing protection).

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 2030, *Aerospace series — Steel X105CrMo17 (1.3544) — Hardened and tempered — Bars — $D_e \leq 150$ mm*

EN 2133, *Aerospace series — Cadmium plating of steels with specified tensile strength ≤ 1 450 MPa, copper, copper alloys and nickel alloys*

EN 2337, *Aerospace series — Spherical plain bearings — Technical specification*

EN 2424, *Aerospace series — Marking of aerospace products*

EN 3161, *Aerospace series — Steel FE-PM3801 (X5CrNiCu17-4) — Air melted, solution treated and precipitation treated, bar a or $D \leq 200$ mm, $R_m \geq 930$ MPa*

MIL-PRF-23827, *Grease, Aircraft and Instrument, Gear and Actuator Screw*[1]

MIL-PRF-81322, *Grease, aircraft, general purpose, wide temperature range*[1]

MIL-PRF-46010, *Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting NATO Code — S-1738*[1]

ISO 1132-1, *Rolling bearings — Tolerances — Part 1: Terms and definitions*

ISO 8075, *Aerospace — Surface treatment of hardenable stainless steel parts*

TR 4475, *Aerospace series — Bearings and mechanical transmissions for airframe applications — Vocabulary*[2]

1 Published by: Department of Defense (DoD), the Pentagon, Washington, D.C., 20307, USA.

2 Published as ASD-STAN Technical Report (TR) at the date of publication of this European standard by AeroSpace and Defence Industries Association of Europe – Standardization (ASD-STAN), see www.asd-stan.org).

3 Terms and definitions

For the purposes of this document, the terms and definitions given in TR 4475 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

Symbols of limit deviations are in accordance with definitions of ISO 1132-1.

α maximum angle of tilt of the outer ring with respect to the inner ring, with the spherical surface of the outer ring being completely in contact with the inner ring

C_a permissible static axial load

C_s permissible static radial load

Δ_{dmp} single plane mean bore diameter deviation

Δ_{Dmp} single plane mean outside diameter deviation

Δ_{ds} deviation of a single bore diameter

Δ_{Ds} deviation of a single outside diameter

4 Requirements

4.1 Configuration, dimensions, tolerances and mass

See Figure 1, Figure 2 and Table 1. Dimensions and tolerances are expressed in millimetres (inches). Values apply after surface treatment.

4.2 Surface roughness

In accordance with Figure 1 and Figure 2. Values in micrometres (micro inches) apply prior to surface treatment.

4.3 Material

Inner ring: see EN 2030; hardness 55 ≤ HRC ≤ 62.

Outer ring: see EN 3161; hardness 28 ≤ HRC ≤ 38; before swaging.

4.4 Surface treatment

Without code:	Surface treatment according to ISO 8075 for inner ring before swaging.
Code Z:	Surface treatment according to ISO 8075 for inner ring before swaging. Cadmium plating of outer ring: 5 µm to 8 µm (0.2 µin to 0.3 µin) according to EN 2133, followed by chromating.
Without swaging groove code S:	cylindrical surface area and chamfers and both end surfaces at manufacturer's option
With swaging groove code R:	cylindrical surface area, broken angles and radii, respectively, as well as both end surfaces up to the swaging grooves