



# SLOVENSKI STANDARD

## SIST EN 6133:2019

01-julij-2019

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**Aeronavtika - Končnik z očesom in ležajem po EN 6096, s samomazalno oblogo iz korozijsko odpornega jekla, z zelo velikim notranjim obročem in navojno ročico - Mere in obremenitve - Palčne mere**

Aerospace series - Rod-end, with bearing per EN 6096, with self-lubricating liner in corrosion resisting steel, extra wide inner ring, external threaded shank - Dimensions and loads - Inch series

Luft- und Raumfahrt - Ösenkopf mit Gelenklager nach EN 6096 mit selbstschmierender Beschichtung aus korrosionsbeständigen Stahl, extra breiter Innenring, mit Aussengewinde - Maße und Belastungen, Inch Reihe

[SIST EN 6133:2019](https://standards.iteh.ai/catalog/standards/sist/71d256cb-9866-4d9a-bb89-09458a50c340/sist-en-6133-2019)

Série aérospatiale - Embout à rotule lisse selon EN 6096 en acier inoxydable et garniture autolubrifiante Bague interne extra large filetage extérieur - Dimensions et charges - Série en inches

**Ta slovenski standard je istoveten z: EN 6133:2019**

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**ICS:**

49.035	Sestavni deli za letalsko in vesoljsko gradnjo	Components for aerospace construction
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**SIST EN 6133:2019**

**en,fr,de**

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EUROPEAN STANDARD

EN 6133

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2019

ICS 49.035

English Version

**Aerospace series - Rod-end, with bearing per EN 6096,  
with self-lubricating liner in corrosion resisting steel, extra  
wide inner ring, external threaded shank - Dimensions and  
loads - Inch series**

Série aérospatiale - Embout à rotule lisse suivant EN 6096, en acier résistant à la corrosion, à garniture autolubrifiante, bague intérieure extra large, avec filetage extérieur - Dimensions et charges - Série en inches

Luft- und Raumfahrt - Ösenkopf mit Gelenklager nach EN 6096 mit selbstschmierender Beschichtung aus korrosionsbeständigen Stahl, extra breiter Innenring, mit Außengewinde - Maße und Belastungen, Inch Reihe

This European Standard was approved by CEN on 5 November 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 6133:2019) 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 November 2019 and conflicting national standards shall be withdrawn at the latest by November 2019.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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**EN 6133:2019 (E)****Introduction**

This document is published at edition P2. Former P1 and drafts may exist of Airbus development only but without any ASD-STAN official publication. In consequence configuration management discrepancies with these unofficial documents are under Airbus responsibility.

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## 1 Scope

This European standard specifies the characteristics of adjustable rod-ends consisting of:

- a self-aligning spherical plain bearing with self-lubricating liner per EN 6096;
- a rod-end with threaded shank with an optional longitudinal groove for locking purposes.

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

## 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 2068, *Aerospace series — Rod ends with self-lubricating self-aligning bearings — Technical specification*

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

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

EN 6096, *Aerospace series — Bearing, spherical plain with self-lubricating liner, extra wide inner ring in corrosion resisting steel — Dimensions and loads — Inch series*

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

ISO 3161, *Aerospace — UNJ threads — General requirements and limit dimensions*

ISO 8074, *Aerospace — Surface treatment of austenitic stainless steel parts*

NAS 559, *Lock-rod end (key type)*<sup>1</sup>

TR 4475, *Bearings and mechanical transmissions for airframe applications — Vocabulary*<sup>2</sup>

SAE AMS 5643, *Steel, corrosion resistant, bars wire, forgings, tubing and rings 16Cr-4.0Ni-0.30(Cb+Ta)-4.0Cu solution heat treated, precipitation hardenable*

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<sup>1</sup> Published by: Aerospace Industries Association of America, Inc. (AIA), 1250 Eye Street, N.W., Washington, D.C. 20005-3924, USA.

<sup>2</sup> Published as ASD-STAN Technical Report at the date of publication of this European standard by AeroSpace and Defence industries Association of Europe – Standardization (ASD-STAN) ([www.asd-stan.org](http://www.asd-stan.org)).

**EN 6133:2019 (E)****3 Terms, definitions and symbols**

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.

$\alpha$	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
$C_s$	permissible static radial load
$C_p$	push out loads
$\Delta_{dmp}$	single plane mean bore diameter deviation
$\Delta_{ds}$	deviation of a single bore diameter
$C_f$	fatigue loads

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**4 Requirements**

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**4.1 Configuration, dimensions, tolerances and mass**

See Figure 1 and Table 1.

Table 1: Dimensions and tolerances are expressed in millimeters (inches).

Figure 1: Dimensions and tolerances for Ra max. are expressed in  $\mu\text{m}$  ( $\mu\text{in}$ ).

Dimensions and tolerances are measured after surface treatment.

**4.2 Surface roughness**

In accordance with Figure 1.

Surface roughness is measured before surface treatment.



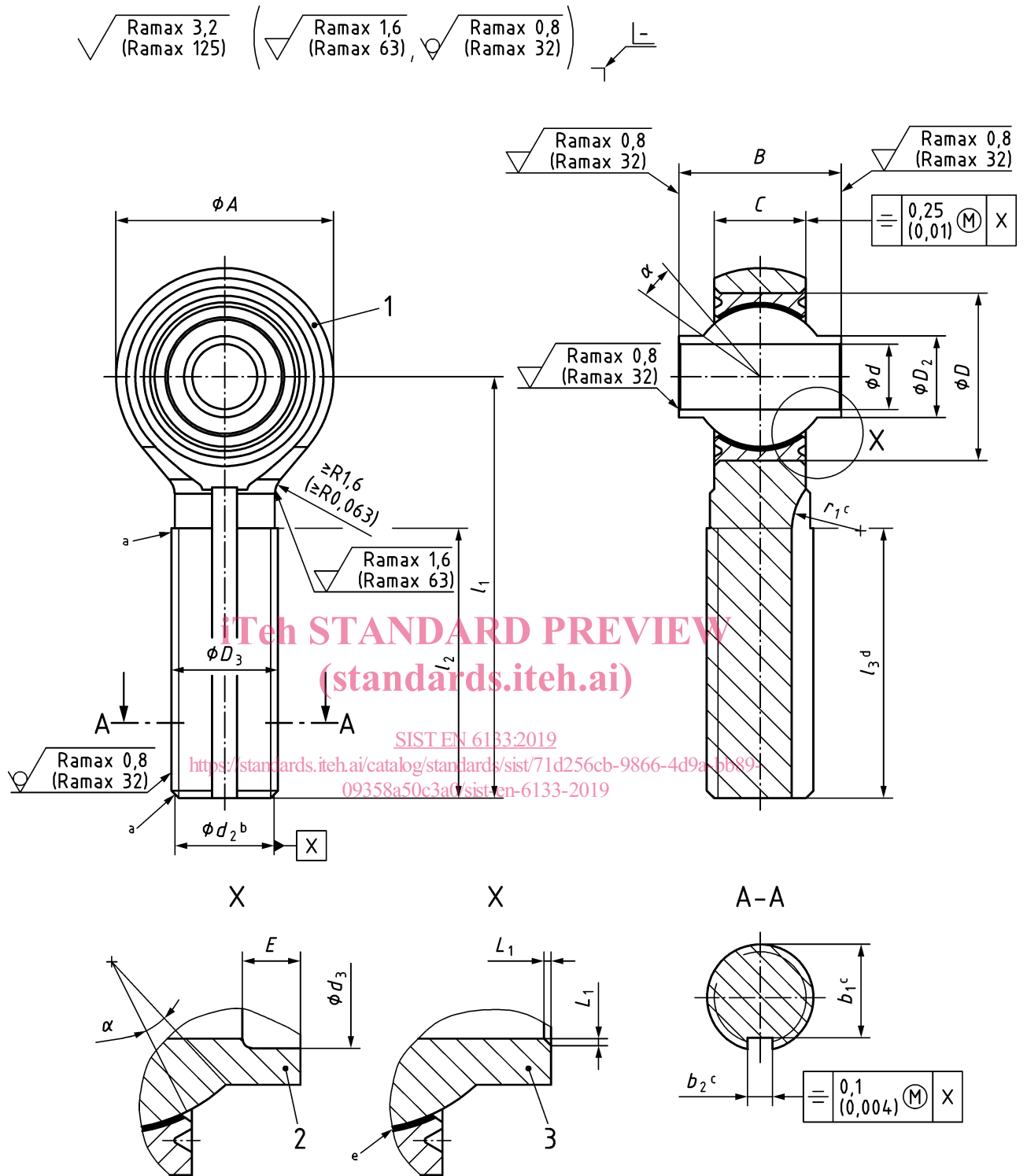


Figure 1 — Configuration