# SLOVENSKI STANDARD
# SIST EN 2014:2001

**01-januar-2001**

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**Bearings, airframe rolling, rigid, single row ball bearings in corrosion resisting steel, diameter series 0 and 2 - Dimensions and loads - Aerospace series**

Bearings, airframe rolling, rigid, single row ball bearings in corrosion resisting steel, diameter series 0 and 2 - Dimensions and loads - Aerospace series

Luft- und Raumfahrt - Flugwerklager, einreihige Rillenkugellager aus korrosionsbeständigem Stahl, Durchmesserreihen 0 und 2 - Maße und Belastungen



Roulements pour structures d'aéronefs, roulements en acier résistant a la corrosion, rigides a une rangée de billes, séries de diametres 0 et 2 - Dimensions et charges - Série aérospatiale



**Ta slovenski standard je istoveten z: EN 2014:1984**

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**ICS:**

| | | |
|---|---|---|
| 49.035 | Sestavni deli za letalsko in vesoljsko gradnjo | Components for aerospace construction |

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EUROPEAN STANDARD

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Key words : Aircraft industry, airframe bearings, ball bearings, corrosion resisting steel, dimensions, static loads

English version

## Bearings-airframe rolling rigid single row, ball bearings in corrosion resisting steel diameter series 0 and 2 Dimensions and loads Aerospace series

**Roulements pour structures d'aéronefs, roulements en acier résistant à la corrosion, rigides à une rangée de billes séries de diamètres 0 et 2 Dimensions et charges Série aérospatiale**

**Luft- und Raumfahrt Flugwerklager einreihige Rillenkugellager aus korrosionsbeständigem Stahl Durchmesserreihen 0 und 2 Masze und Belastungen**



This European Standard was accepted by CEN on 1984-06-21. CEN members are bound to comply with the requirements of CEN 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 Central Secretariat or to any CEN member.

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# CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat : Rue Bréderode 2, B—1000 Brussels



Ref. Nr. EN2014 : 1984 E

## BRIEF HISTORY

This European Standard has been prepared by the European Association of Aerospace Constructors (AECMA).

This Standard has been accepted by the European Committee for Standardization (CEN) after inquiries and votes carried out in accordance with the rules of this Committee.

## CONTENTS

## 1 SCOPE

This standard specifies the characteristics, of rigid single row ball bearings of diameter series 0 and 2 1) designed to withstand only slow rotations and oscillations under load. They are intended for use between fixed and moving parts of the aircraft structure and their control mechanisms.

## 2 FIELDS OF APPLICATION

The airframe roller bearings defined in the present standard shall be used from − 54 to + 150 °C.

However, being lubricated with the following greases :

- very high pressure grease, ester type (code A), operational range − 73 to + 121 °C or
- very high pressure grease, synthetic hydrocarbons, general purpose (code B), operational range − 54 to + 177 °C (refer to EN2063),

their field of application when lubricated with code A grease shall be limited to + 121 °C.

## 3 REFERENCES

ISO 15 - 1981, Rolling bearings - Radial bearings - Boundary dimensions - General plan.

EN2030, Steel FE-PM43, Hardened and tempered, Bars. D ≤ 150 mm

EN2063, Bearings, airframe rolling - Technical Specification.



## 4 DEFINITIONS

Rigid bearings, full complement (without cage), single row, with filling slot.



## 5 SYMBOLS

$\Delta_{ds}$ = the deviation of a single bore diameter

$\Delta_{Ds}$ = the deviation fo a single outside diameter

$\Delta_{dmp}$ = single plane mean bore diameter deviation

$\Delta_{Dmp}$ = single plane mean outside diameter deviation

$C_s$ = permissible static radial load.

$F_{a\ max.}$ = permissible static axial load.

$Y_s$ = coefficient of axial load.

## 6 MATERIALS

Inner ring : Corrosion resisting steel EN2030, ≥ 58 HRC

Outer ring : Corrosion resisting steel EN2030, ≥ 58 HRC

Balls : Corrosion resisting steel EN2030, ≥ 58 HRC

Shields : Corrosion resisting material.

Seals : Polytetrafluoroethylene (PTFE);
or polytetrafluoroethylene (PTFE) - glass fibre reinforced material

1) See ISO 15.

## 7 REQUIRED CHARACTERISTICS

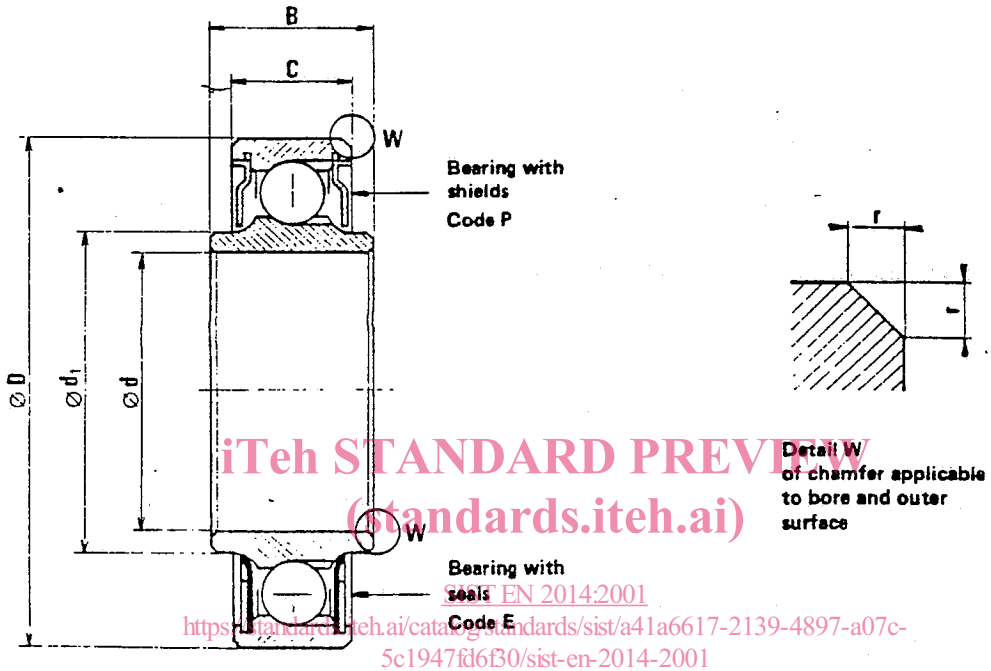
### 7.1 - Dimensions - Tolerances - Clearances - Loads - Mass.

Configuration shall correspond with the figure. Dimensions shall correspond with the table. Bearings can be assembled with either seals or shields.

### 7.2 - Surface roughness.

Ra = 0,2 µm for the raceway and rolling elements.

Ra = 0,8 µm for the bore, side faces and cylindrical outer surface.






FIGURE

TABLE

Dimensions in millimetres

| d Code | d Nominal | D | C 0 − 0,12 | B 0 − 0,12 | $d_1$ nom. | Tolerances µm $\Delta_{dmp}$ | Tolerances µm $\Delta_{Dmp}$ | Tolerances µm $\Delta_{ds}$ | Tolerances µm $\Delta_{Ds}$ | r | Radial internal clearance µm | Permissible static radial load $C_s$ kN | Mass kg/1000 parts ≈ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 05 | 5 | 16 | 5 | 7 | 7,6 | 0 − 8 | 0 − 8 | + 2 − 10 | + 2 − 10 | 0,3 to 0,8 | 2 to 13 | 6,8 | 4 |
| 06 | 6 | 19 | 6 | 8 | 8,6 | | | | | | | 9,2 | 9 |
| 08 | 8 | 22 | 7 | 9 | 10,6 | | | | + 2 − 11 | | | 11,8 | 12 |
| 10 | 10 | 26 | 8 | 10 | 12,6 | | | | | | | 17,0 | 21 |
| 12 | 12 | 28 | | | 14,7 | | | + 3 − 11 | | | 3 to 18 | 19,5 | 24 |
| 15 | 15 | 32 | 9 | 11 | 17,7 | | 0 − 11 | | | | | 23,3 | 32 |
| 17 | 17 | 35 | 10 | 12 | 20,2 | | | | + 3 − 14 | | | 26,9 | 42 |
| 20 | 20 | 42 | 12 | 14 | 23,5 | 0 − 10 | | + 3 − 13 | | | 5 to 20 | 41,2 | 72 |
| 25 | 25 | 47 | | | 28,6 | | | | | | | 46,6 | 85 |
| 30 | 30 | 55 | 13 | 15 | 34,1 | | 0 − 13 | | + 4 − 17 | 0,3 to 1 | | 62,6 | 123 |

$F_{a\,max.} = \frac{C_s}{Y_s}$ where $Y_s = 2,2$

Axial and radial loads may be applied simultaneously.
For ultimate static loads, see EN2063.

8 DESIGNATION

Each bearing shall only be designated as in the following example :

| Description block | Identity block |
|---|---|
| BEARING | EN2014A 05 E |

Number of EN standard

A = code for ester type grease

E = code for type with seals

05 = diameter code of d (see table )

where the following codes are applied :

| Greases | Types |
|---|---|
| A = ester type grease | E = with seals |
| B = synthetic hydrocarbon type grease | P = with shields |



Note : If necessary, the originator code S 9005 may be introduced between the description block and the identity block.

9 MARKING

In addition to the manufacturers' own marking, each bearing shall be marked, on one side face only using the identity block as defined in clause 8 of this standard.
Marking position and method are at the manufacturer's option.

10 TECHNICAL SPECIFICATION

Bearings supplied to this standard shall conform with the requirements of EN2063.