SLOVENSKI STANDARD
SIST EN 2012:2001

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

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

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

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

Ta slovenski standard je istoveten z: **EN 2012:1984**

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

English version

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

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

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

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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

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

EN2031, Steel FE-PL31, Hardened and tempered, Bars.

EN2063, Bearings, airframe rolling - Technical Specification.

4 DEFINITIONS

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

5 SYMBOLS

Δ_{ds} = the deviation of a single bore diameter
Δ_{Ds} = the deviation of a single outside diameter
Δ_{dmp} = single plane mean bore diameter deviation
Δ_{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 : Steel EN2031, 59 2) to 64 HRC.
Outer ring : Steel EN2031, 59 2) to 64 HRC.
Balls : Steel EN2031, 59 2) to 64 HRC.
Shields : Corrosion resisting material
Seals : Polytetrafluoroethylene (PTFE) :
or polytetrafluoroethylene (PTFE) - glass fibre reinforced plastic material.

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1) See ISO 15.
2) For new designs, bearings in corrosion resisting steel should be used for preference, see EN2014.

7 REQUIRED CHARACTERISTICS

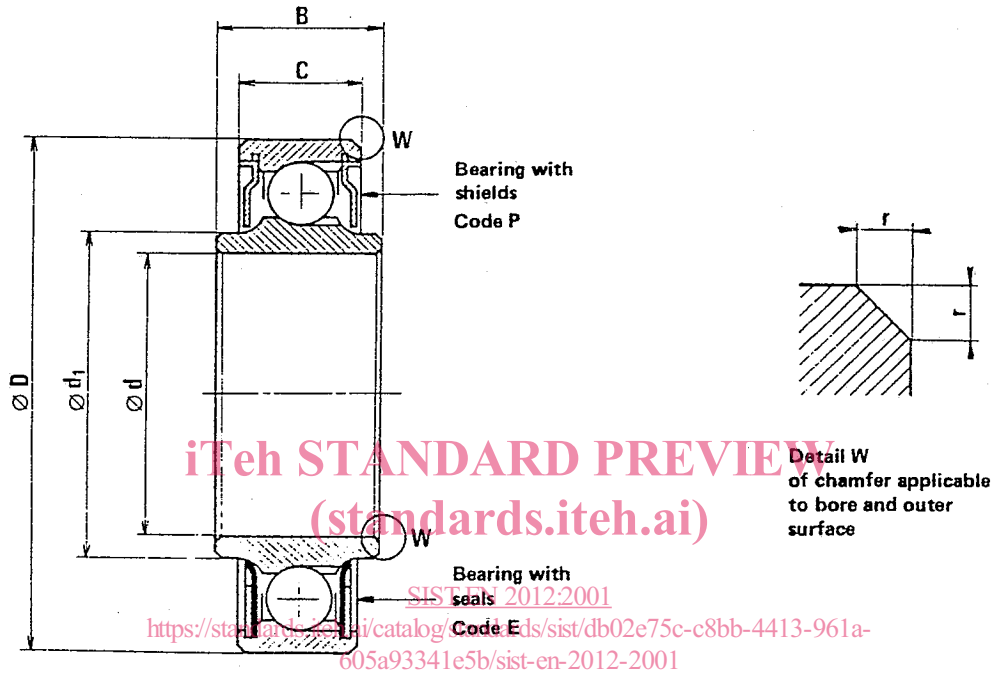
7.1 - Dimensions - Tolerances - Clearances - Loads - Mass.

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

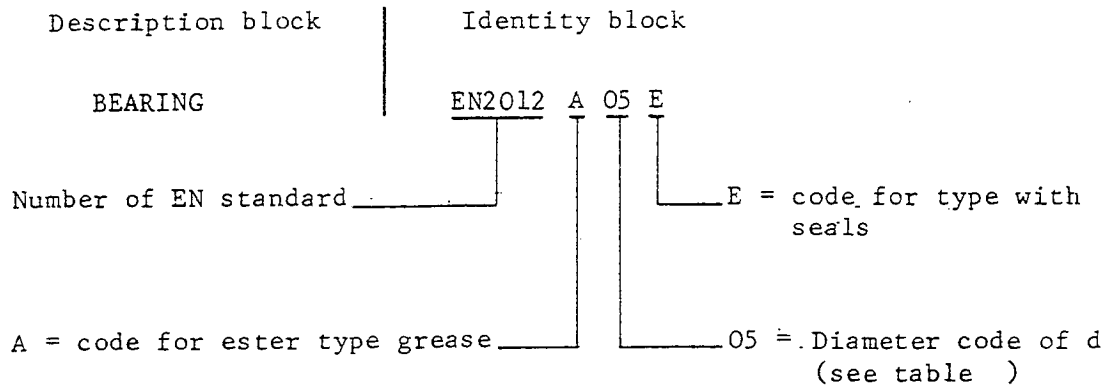
d		D	C 0 −0,12	B 0 −0,12	d_1 nom.	Tolerances µm				r	Radial internal clearance µm	Permissible static radial load C_s kN	Mass kg/1000 parts ≈
Code	Nominal					Δ_{dmp}	Δ_{Dmp}	Δ_{ds}	Δ_{Ds}				
05	5	16	5	7	7,6	0 −8	0 −8	+2 −10	+2 −10	0,3 to 0,8	2 to 13	6,8	4
06	6	19	6	8	8,6							9,2	9
08	8	22	7	9	10,6				+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							23,3	32
17	17	35	10	12	20,2		0 −11		+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 :



where the following codes are applied :

Greases	Types
A = ester type grease	E = with seals
B = synthetic hydrocarbon type grease	B = 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.