
Bearings, airframe rolling, rigid, single row ball bearings in corrosion resisting steel, diameter series 8 and 9 - Dimensions and loads - Aerospace series

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Luft- und Raumfahrt - Flugwerklager, einreihige Rillenkugellager aus korrosionsbeständigem Stahl, Durchmesserreihen 8 und 9 - Maße und Belastungen

Roulements pour structures d'aéronefs, roulements en acier résistant a la corrosion, rigides a une rangée de billes, séries de diametres 8 et 9 - Dimensions et charges - Série aéronautique

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Sestavni deli za letalsko in
vesoljsko gradnjoComponents for aerospace
construction**SIST EN 2011:2001****en**

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EUROPEAN STANDARD

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dimensions, static loads

English version

Bearings-airframe rolling rigid
single row ball bearings in corrosion resisting steel
diameter series 8 and 9
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 8 et 9
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Luft- und Raumfahrt
Flugwerklager einreihige Rillenkugellager
aus korrosionsbeständigem Stahl
Durchmesserreihen 8 und 9
Maße und Belastungen

iTeh STANDARD PREVIEW

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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

BRIEF HISTORY

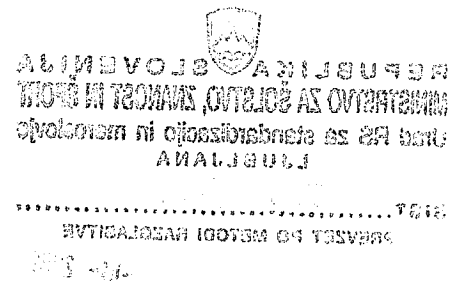
This European Standard has been prepared by the European Association of Aerospace Constructors (AECMA).
This Standard has been accepted by the European Committee for Standardization (CEN) after inquiries and votes carried out in accordance with the rules of this Committee.

CONTENTS

- 1 SCOPE
- 2 FIELDS OF APPLICATION
- 3 REFERENCES
- 4 DEFINITIONS
- 5 SYMBOLS
- 6 MATERIALS
- 7 REQUIRED CHARACTERISTICS
- 8 DESIGNATION
- 9 MARKING
- 10 TECHNICAL SPECIFICATION

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1 SCOPE

This standard specifies the characteristics, of rigid single row ball bearings of diameter series 8 and 9 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, $D \leq 150$ mm.

EN2063, Bearings, airframe rolling - Technical Specification.

4 DEFINITIONS

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

5 SYMBOLS

- 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 : 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 plastic material.

1) See ISO 15.

7 REQUIRED CHARACTERISTICS

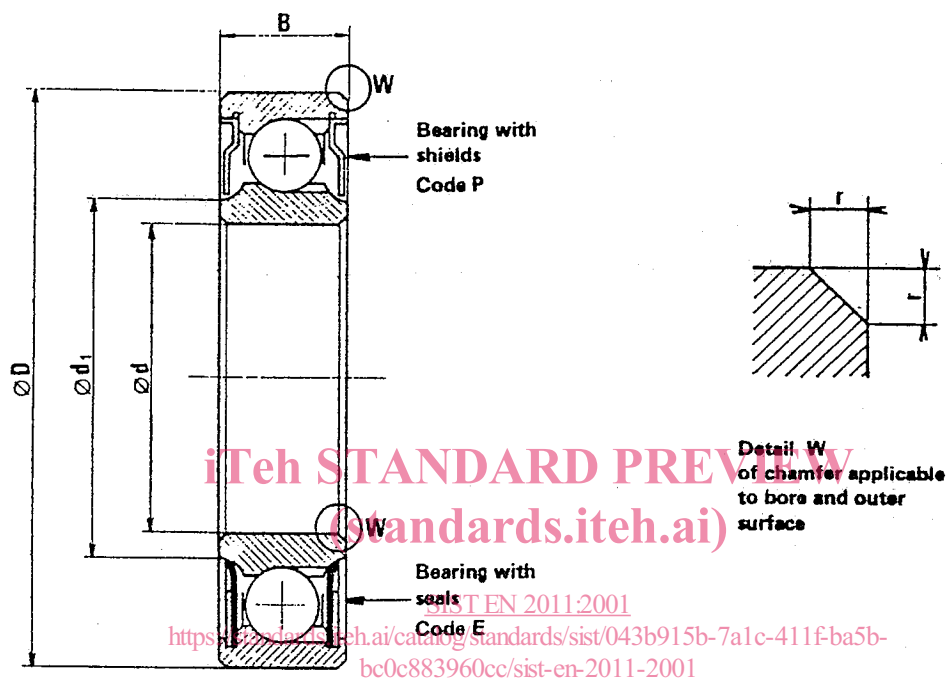
7.1 -- Dimensions - Tolerances - Clearances - Loads - Mass.

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.

$R_a = 0,2 \mu\text{m}$ for the raceway and rolling elements.

$R_a = 0,8 \mu\text{m}$ for the bore, side faces and cylindrical outer surface.



FIGURE

TABLE

Dimensions in millimetres

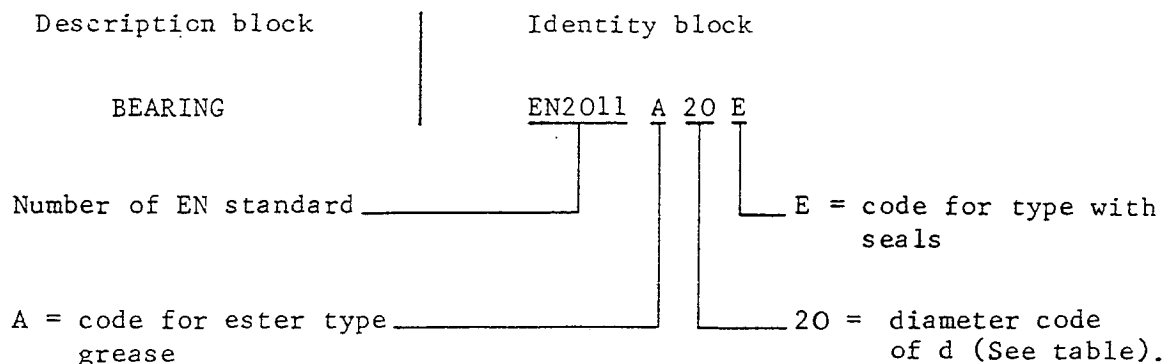
d		D	B 0 −0,12	d ₁ nom.	Tolerances μm		r	Radial internal clearance μm	Permissible static radial load C _s kN	Mass kg/1000 parts ≈		
Code	Nominal				Δ _{dmp}	Δ _{Dmp}						
10	10	22	6	13	0 − 8	0 − 9	0,3 to 0,8	2 to 13	10,6	11		
12	12	24		15				12,3	13			
15	15	28		17,6				− 8	− 9	3 to 18	16,2	16
17	17	30									17,6	18
20	20	32	19,6		17,3	20						
25	25	37	7	28,1	0 − 10	0 − 11		5 to 20	21,5	23		
30	30	42		33,1					24,5	26		
35	35	47		38,3					6 to 20	28,4	30	
40	40	52		43,3				31,8		38		
50	50	65		53				− 12	0 − 13	6 to 23	43,1	55
60	60	78		10						63,5	0 − 15	8 to 28

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

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	P = with shields

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

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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.