



BSI Standards Publication

**Aerospace series —  
Bearing spherical plain,  
metal to metal, in corrosion  
resisting steel, cadmium  
plated — Wide series —  
Dimensions and loads —  
Inch series**

### National foreword

This British Standard is the UK implementation of EN 4266:2013.

The UK participation in its preparation was entrusted to Technical Committee ACE/12, Aerospace fasteners and fastening systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

**CAUTION.** Bearings conforming to BS EN 4266 have cadmium as a plating material, which has been restricted and or banned in many countries owing to environmental and health concerns. Users should consult local officials if they have questions concerning the use of cadmium-plated parts.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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EUROPEAN STANDARD

**EN 4266**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2013

ICS 49.035

English Version

**Aerospace series - Bearing spherical plain, metal to metal, in  
corrosion resisting steel, cadmium plated - Wide series -  
Dimensions and loads - Inch series**

Série aérospatiale - Rotules lisses métal à métal en acier à  
la corrosion, cadmiées - Série large - Dimensions et  
charges - Séries en inches

Luft- und Raumfahrt - Gelenklager, Metall auf Metall, aus  
korrosionsbeständigem Stahl, verkadmet - Breite Reihe -  
Maße und Belastungen - Inch Reihe

This European Standard was approved by CEN on 17 March 2011.

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.

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

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## Contents

Page

|  |    |
|--|----|
| Foreword.....  | 3  |
| 1 Scope.....   | 4  |
| 2 Normative references.....                              | 4  |
| 3 Terms and definitions .....                            | 5  |
| 4 Symbols and abbreviations .....                        | 5  |
| 5 Requirements .....                                     | 5  |
| 5.1 Configuration, dimensions, tolerances and mass ..... | 5  |
| 5.2 Surface roughness.....                               | 5  |
| 5.3 Material .....                                       | 5  |
| 5.4 Surface treatment.....                               | 6  |
| 5.5 Loads and clearances .....                           | 6  |
| 6 Designation .....                                      | 14 |
| 7 Marking .....  | 14 |
| 8 Technical specification .....                          | 14 |

## **Foreword**

This document (EN 4266:2013) 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 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard specifies the characteristics of spherical plain bearings, metal to metal, in corrosion resisting steel, cadmium plated and chromated, wide series, inch series for aerospace applications.

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 – 54 °C to 150 °C. As they are lubricated by means of the following greases:

- Code A: Grease as per MIL-PRF-23827C, operating temperature range – 73 °C to 121 °C;
- Code B: Grease as per MIL-PRF-81322G, 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-46010G or equivalent (anti-seizing protection).

The slide hole treatment either at the outer ring or inner ring.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

prEN 2030, *Aerospace series — Steel FE-PM3501 (X105CrMo17) — Hardened and tempered — Bars D = 150 mm*

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

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*<sup>1)</sup>

MIL-PRF-23827C, *Grease — Aircraft and instrument — Gear and actuator screw — NATO code number G-354*<sup>2)</sup>

MIL-PRF-46010G, *Lubricant — Solid film — Heat cured — Corrosion inhibiting — NATO code number S-1738*<sup>2)</sup>

MIL-PRF-81322G, *Grease — Aircraft — General purpose — Wide temperature range — NATO code number G-395*<sup>2)</sup>

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1) Published as ASD-STAN Technical Report at the date of publication of this standard ([www.asd-stan.org](http://www.asd-stan.org)).

2) Published by: Department of Defense (DoD), <http://www.defenselink.mil/>.

### 3 Terms and definitions

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

### 4 Symbols and abbreviations

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

- $\alpha$  is the 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;
- $C_a$  is the permissible static axial load;
- $C_s$  is the permissible static radial load;
- $\Delta_{dmp}$  is the single plane mean bore diameter deviation;
- $\Delta_{Dmp}$  is the single plane mean outside diameter deviation;
- $\Delta_{ds}$  is the deviation of a single bore diameter;
- $\Delta_{Ds}$  is the deviation of a single outside diameter.

Definitions and vocabulary according to TR 4475.

### 5 Requirements

#### 5.1 Configuration, dimensions, tolerances and mass

According to Figures 1 and 2 and Table 1.

Dimensions and tolerances are expressed in millimetres (inches).

Values apply after surface treatment.

#### 5.2 Surface roughness

In accordance with Figures 1 and 2.

Values in micrometres (micro inches), apply prior to surface treatment.

#### 5.3 Material

- Inner ring: According to prEN 2030, hardness  $55 < \text{HRC} < 62$ ;
- Outer ring: According to EN 3161, hardness  $28 < \text{HRC} < 38$  before swaging.

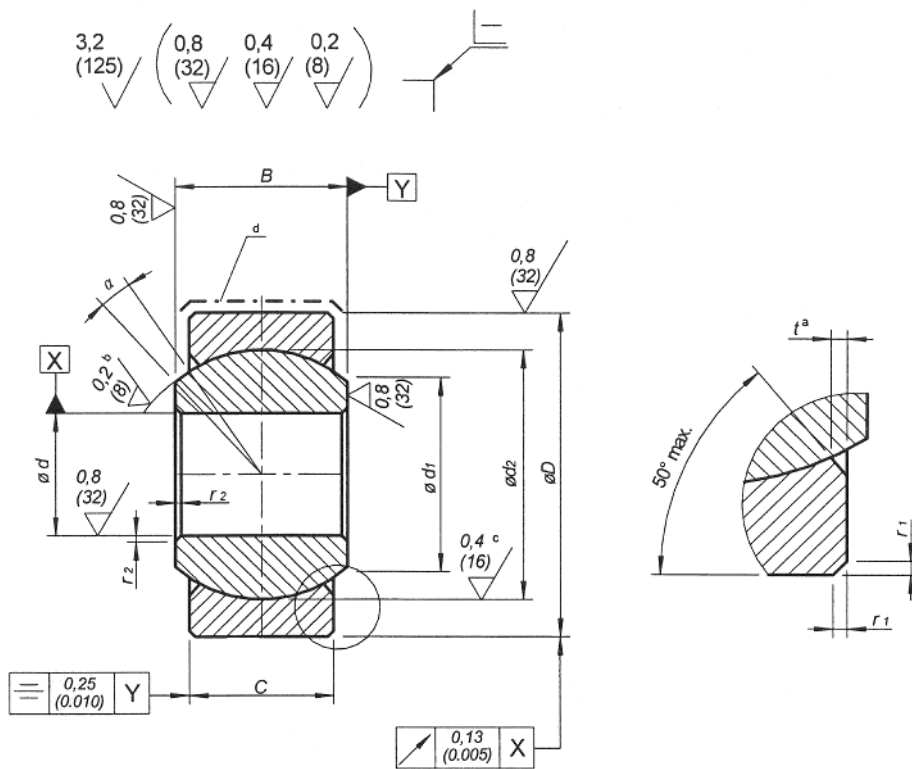
**5.4 Surface treatment**

Without swaging groove code S: 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 (cylindrical surface area and chamfers and both end surfaces at manufacture’s option), followed by chromating.

With swaging groove code R: 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 (cylindrical surface area, broken angles and radii, respectively, as well as both end surfaces up to the swaging grooves), followed by chromating.

**5.5 Loads and clearances**

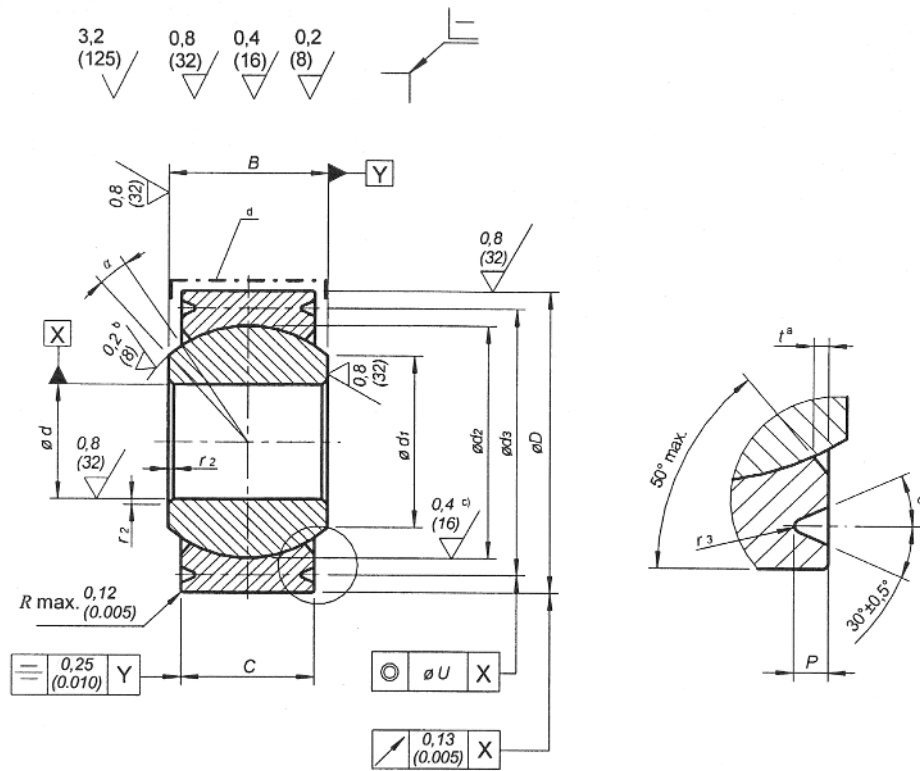
According to Tables 2 and 3.



- a set back
- b for the inner ring
- c for the outer ring
- d cadmium plated

**Figure 1 — Code S – Without swaging grooves**





- a set back
- b for the inner ring
- c for the outer ring
- d cadmium plated

Figure 2 — Code R – With swaging grooves

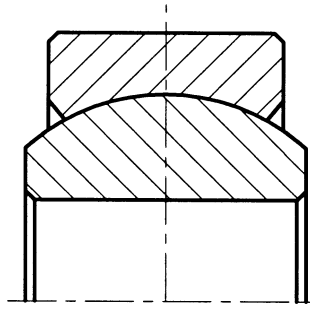
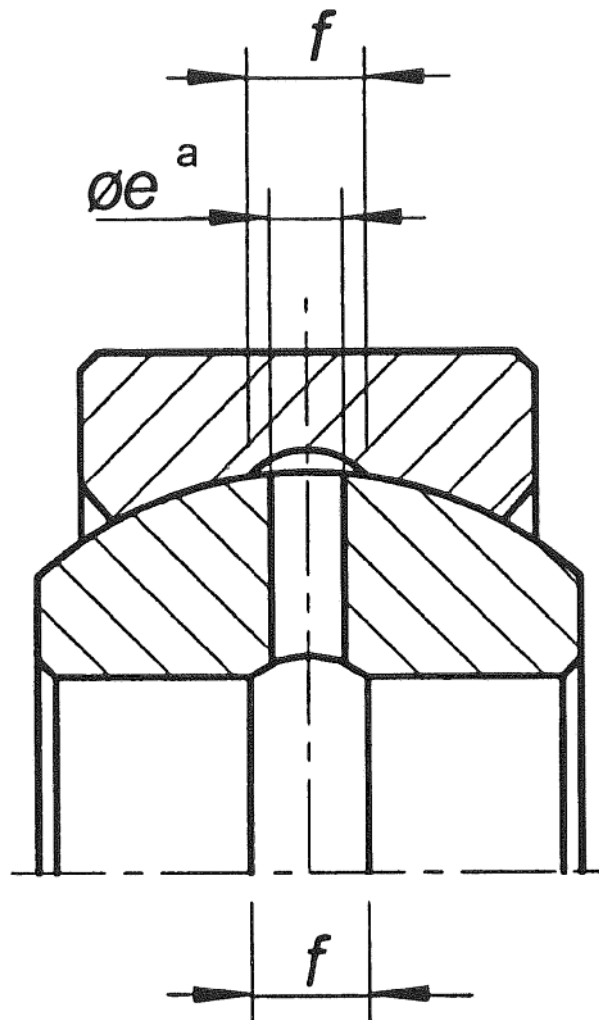
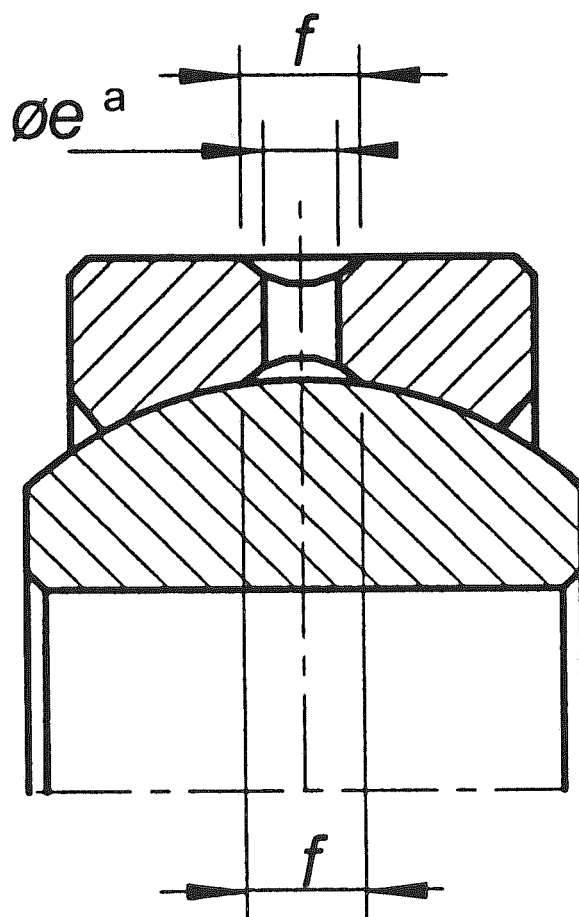


Figure 3 — Grease hole code “E” – Without grease hole and lubricating groove



<sup>a</sup> Three holes  $\varnothing e$  distributed over the circumference at distance of  $120^\circ$ .

Figure 4 — Grease hole code “F” – With grease hole on inner ring and lubricating groove on:  
– Bore of inner ring  
– Spherical surface of the outer ring  
– The hole should allow the passage of the grease



<sup>a</sup> Three holes  $\varnothing e$  distributed over the circumference at distance of  $120^\circ$ .

**Figure 5 — Grease hole code “G” – With grease hole on outer ring and lubricating groove on:**

- Outer surface of outer ring
- Spherical surface of the outer ring
- The hole should allow the passage of the grease

Table 1 — Dimensions, tolerances and mass (1 of 2)

Dimensions in millimetres (in inches)

| Diameter code <sup>a</sup> | Diameter            |                     | Limit deviation   |   |   |   | <i>B</i>  | <i>C</i>  | <i>d</i> <sub>1</sub>   | <i>d</i> <sub>2</sub>   | <i>d</i> <sub>3</sub>   |   |   |   |   |   |   |   |   |   |   |   |                  |                  |                  |                |                  |
|----------------------------|---------------------|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|------------------|------------------|------------------|----------------|------------------|
|                            | <i>d</i>            | <i>D</i>            | $\Delta_{\text{dmp}}$   | $\Delta_{\text{ds}}$  | $\Delta_{\text{Dmp}}$   | $\Delta_{\text{Ds}}$  | $\begin{matrix} 0 \\ -0,05 \\ \left( \begin{matrix} 0 \\ -0,002 \end{matrix} \right) \end{matrix}$                | $\begin{matrix} +0,13 \\ 0 \\ \left( \begin{matrix} +0,005 \\ 0 \end{matrix} \right) \end{matrix}$                | min.  | ≈   | $\begin{matrix} 0 \\ -0,20 \\ \left( \begin{matrix} 0 \\ -0,008 \end{matrix} \right) \end{matrix}$    |   |   |   |   |   |   |   |   |   |   |   |                  |                  |                  |                |                  |
| 03                         | 4,826<br>(0,190 0)  | 15,875<br>(0,625 0) | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$             | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$             | $\begin{matrix} 0 \\ -0,009 \\ \left( \begin{matrix} 0 \\ -0,000 4 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$             | 11,10<br>(0,437)  | 8,31<br>(0,327)   | 7,62<br>(0,300)   | 13,5<br>(0,53)  | 14,30<br>(0,563)  |   |   |   |   |   |   |   |   |   |   |   |                  |                  |                  |                |                  |
| 04                         | 6,350<br>(0,250 0)  |                     |   |   |   |   |   |   | 0<br>- 0,008<br>$\left( \begin{matrix} 0 \\ -0,000 3 \end{matrix} \right)$                            | 12,70<br>(0,500)  | 10,31<br>(0,405)  | 11,84<br>(0,466)  | 17,4<br>(0,69)  | 18,08<br>(0,712)  |   |   |   |   |   |   |   |   |                  |                  |                  |                |                  |
| 05                         | 7,938<br>(0,312 5)  | 19,5<br>(0,687 5)   |   |   |   |   |   |   | 8,05<br>(0,317)   |   |   |   |   |   | 9,14<br>(0,360)   | 14,4<br>(0,57)  | 15,88<br>(0,625)  |   |   |   |   |   |                  |                  |                  |                |                  |
| 06                         | 9,525<br>(0,375 0)  | 20,638<br>(0,812 5) |   |   |   |   | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$             | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$             | $\begin{matrix} 0 \\ -0,009 \\ \left( \begin{matrix} 0 \\ -0,000 4 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$             | 14,27<br>(0,562)  | 11,23<br>(0,442)  | 13,64<br>(0,537)  | 19,7<br>(0,78)  | 21,26<br>(0,837)  |   |   |   |   |   |   |   |                  |                  |                  |                |                  |
| 07                         | 11,113<br>(0,437 5) | 23,813<br>(0,937 5) |   |   |   |   |   |   |   |   |   |   |   |   | 0<br>- 0,013<br>$\left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right)$                            | 0<br>- 0,013<br>$\left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right)$                            | 0<br>- 0,013<br>$\left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right)$                            | 15,88<br>(0,625)  | 12,83<br>(0,505)  | 15,42<br>(0,607)  | 22,1<br>(0,87)  | 22,86<br>(0,900)  |                  |                  |                  |                |                  |
| 07A                        | 23,017<br>(0,906 2) | 25,400<br>(1,000 0) |   |   |   |   |   |   |   |   | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,009 \\ \left( \begin{matrix} 0 \\ -0,000 4 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | 17,45<br>(0,687)  | 13,61<br>(0,536)  | 18,31<br>(0,721)  | 25,4<br>(1,00)  | 26,04<br>(1,025)  |   |   |   |                  |                  |                  |                |                  |
| 08                         | 12,700<br>(0,500 0) | 28,575<br>(1,125 0) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 19,05<br>(0,750)  | 14,40<br>(0,567)  | 18,97<br>(0,747)  | 26,9<br>(1,06)  | 27,61<br>(1,087) |                  |                  |                |                  |
| 09                         | 14,288<br>(0,562 5) | 30,163<br>(1,187 5) |   |   |   |   |   |   |   |   |   |   |   |   | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,009 \\ \left( \begin{matrix} 0 \\ -0,000 4 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | 22,23<br>(0,875)  | 16,00<br>(0,630)  | 21,46<br>(0,845)  | 31,0<br>(1,22)  | 31,78<br>(1,251) |                  |                  |                |                  |
| 10                         | 15,875<br>(0,625 0) | 34,925<br>(1,375 0) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 19,18<br>(0,755) | 19,18<br>(0,755) | 25,27<br>(0,995) | 33,7<br>(1,33) | 38,13<br>(1,501) |
| 12                         | 19,050<br>(0,750 0) | 41,275<br>(1,625 0) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,009 \\ \left( \begin{matrix} 0 \\ -0,000 4 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | 34,93<br>(1,375) | 25,53<br>(1,005) | 32,23<br>(1,269) | 47,5<br>(1,87) | 50,83<br>(2,001) |
| 14                         | 22,225<br>(0,875 0) | 53,975<br>(2,125 0) | 38,10<br>(1,500)  | 28,70<br>(1,130)  | 37,13<br>(1,462)  | 53,2<br>(2,09)  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                  |                  |                  |                | 57,18<br>(2,251) |
| 16                         | 25,400<br>(1,000 0) | 60,325<br>(2,375 0) | $\begin{matrix} +0,003 \\ -0,015 \\ \left( \begin{matrix} +0,000 1 \\ -0,000 6 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} +0,003 \\ -0,015 \\ \left( \begin{matrix} +0,000 1 \\ -0,000 6 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} +0,003 \\ -0,015 \\ \left( \begin{matrix} +0,000 1 \\ -0,000 6 \end{matrix} \right) \end{matrix}$ |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 42,85<br>(1,687) | 31,06<br>(1,223) | 43,10<br>(1,697) | 60,8<br>(2,39) | 65,10<br>(2,563) |
| 20                         | 31,750<br>(1,250 0) | 68,263<br>(2,687 5) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                  |                  |                  |                | 46,02<br>(1,812) |
| 24                         | 38,100<br>(1,500 0) | 76,200<br>(3,00)    |   |   |   |   | $\begin{matrix} +0,003 \\ -0,015 \\ \left( \begin{matrix} +0,000 1 \\ -0,000 6 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} +0,003 \\ -0,015 \\ \left( \begin{matrix} +0,000 1 \\ -0,000 6 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} 0 \\ -0,013 \\ \left( \begin{matrix} 0 \\ -0,000 5 \end{matrix} \right) \end{matrix}$ | $\begin{matrix} +0,003 \\ -0,015 \\ \left( \begin{matrix} +0,000 1 \\ -0,000 6 \end{matrix} \right) \end{matrix}$ |   |   |   |   |   |   |   |   |   |   |   |   | 49,20<br>(1,937) | 35,05<br>(1,380) | 56,10<br>(2,209) | 74,6<br>(2,94) | 79,35<br>(3,124) |
| 28                         | 44,450<br>(1,750 0) | 82,550<br>(3,250 0) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                  |                  |                  |                |                  |
| 32                         | 50,800<br>(2,000 0) |                     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                  |                  |                  |                |                  |

Table 1 (2 of 2)

Dimensions in millimetres (in inches)

| Diameter code <sup>a</sup> | $P$<br>0<br>-0,25<br>$\left(\begin{matrix} 0 \\ -0,010 \end{matrix}\right)$ | $\varnothing e$<br>$\pm 0,20$<br>$(\pm 0,008)$ | $f$<br>$\pm 0,20$<br>$(\pm 0,008)$ | $r_1$<br>0<br>-0,25<br>$\left(\begin{matrix} 0 \\ -0,010 \end{matrix}\right)$ | $r_2$              | $r_3$  | $\alpha$ <sup>b</sup><br>degree<br>min. | $\theta$<br>degree<br>$\pm 0,5$ | $U$             | $t$<br>max.   | Mass<br>g/piece<br>$\approx$ |  |                      |      |    |
|----------------------------|---|--|------------------------------------|---|--------------------|--|---|---------------------------------|-----------------|---------------|------------------------------|--|----------------------|------|----|
| 03 <sup>c</sup>            | 0,64<br>(0,025)   | —  | —                                  | 0,64<br>(0,025)   |                    | 0,127<br>to<br>0,254   | 16,0                                    | 20                              | 0,08<br>(0,003) | 0,5<br>(0,02) | 13                           |  |                      |      |    |
| 04 <sup>c</sup>            |   |  |                                    |   |                    |  |   |                                 |                 |               | 12                           |  |                      |      |    |
| 05 <sup>c</sup>            |   |  |                                    |   |                    |  |   |                                 |                 |               | 13                           |  |                      |      |    |
| 06 <sup>c</sup>            | 0,89<br>(0,035)   | 1,50<br>(0,059)                                | 2,80<br>(0,110)                    | 0,76<br>(0,030)   | 0,13<br>to<br>0,38 | $\left(\begin{matrix} 0,005\ 0 \\ \text{to} \\ 0,010\ 0 \end{matrix}\right)$ | 9,5                                     | 30                              | 0,12<br>(0,005) | 0,8<br>(0,03) | 23                           |  |                      |      |    |
| 07                         |   |  |                                    | 33  |                    |  |   |                                 |                 |               |                              |  |                      |      |    |
| 07A                        |   |  |                                    | —   |                    |  |   |                                 |                 |               | 30                           |  |                      |      |    |
| 08                         |   |  |                                    | 9,5   |                    |  |   |                                 |                 |               | 40                           |  |                      |      |    |
| 09                         |   |  |                                    | 10,5  |                    |  |   |                                 |                 |               | 56                           |  |                      |      |    |
| 10                         |   | 12,0   | 63                                 |   |                    |  |   |                                 |                 |               |                              |  |                      |      |    |
| 12                         |   | 2,00<br>(0,079)                                | 2,50<br>(0,098)                    | 4,00<br>(0,157)   |                    |  |   |                                 |                 |               | 0,76<br>(0,030)              | $\left(\begin{matrix} 0,005\ 0 \\ \text{to} \\ 0,015\ 0 \end{matrix}\right)$ | 0,254<br>to<br>0,432 | 14,0 | 92 |
| 14                         |   | 6,0  |                                    |   |                    |  |   |                                 |                 |               | 146                          |  |                      |      |    |
| 16                         |   | 14,5   |                                    |   |                    |  |   |                                 |                 |               | 392                          |  |                      |      |    |
| 20                         |   | 12,5   |                                    |   |                    |  |   |                                 |                 |               | 499                          |  |                      |      |    |
| 24                         | 14,0  | 668  |                                    |   |                    |  |   |                                 |                 |               |                              |  |                      |      |    |
| 28                         | 13,0  | 859  |                                    |   |                    |  |   |                                 |                 |               |                              |  |                      |      |    |
| 32                         | 1,40<br>(0,055)   |  |                                    | 1,02<br>(0,040)   |                    |  |   |                                 | 1,2<br>(0,05)   | 1 005         |                              |  |                      |      |    |

<sup>a</sup> The diameter code corresponds to bore diameter  $d$  in 1/16 inch.

<sup>b</sup> The acceptance value is the maximum value for the user.

<sup>c</sup> Not available with lubrication code F or code G.

Table 2 — Loads

| Diameter code <sup>a</sup> | Permissible static load<br>kN  |          |                                 |          | Ultimate static load<br>kN |          |                      |          |      |
|----------------------------|--------------------------------|----------|---------------------------------|----------|----------------------------|----------|----------------------|----------|------|
|                            | Radial <sup>b c</sup><br>$C_s$ |          | Axial <sup>b d e</sup><br>$C_a$ |          | Radial <sup>b</sup>        |          | Axial <sup>b d</sup> |          |      |
|                            | Code E                         | Code F/G | Code E                          | Code F/G | Code E                     | Code F/G | Code E               | Code F/G |      |
| 03 <sup>f</sup>            | 10,7 <sup>g</sup>              | —        | 19,3                            | —        | 16,1 <sup>g</sup>          | —        | 29,0                 | —        |      |
| 04 <sup>f</sup>            | 24,5 <sup>g</sup>              |          |                                 |          | 36,7 <sup>g</sup>          |          |                      |          |      |
| 05 <sup>f</sup>            | 47,8 <sup>g</sup>              |          |                                 |          | 71,6 <sup>g</sup>          |          |                      |          | 26,9 |
| 06 <sup>f</sup>            | 72,1 <sup>g</sup>              |          |                                 |          | 108,2 <sup>g</sup>         |          |                      |          | 41,1 |
| 07                         | 100,8                          | 71,5     | 33,5                            | 30,7     | 151,1                      | 107,2    | 50,3                 | 46,0     |      |
| 07A                        |                                |          |                                 |          |                            |          |                      |          |      |
| 08                         | 131,7                          | 99,0     | 45,6                            | 42,7     | 197,6                      | 148,3    | 68,3                 | 64,1     |      |
| 09                         | 161,0                          | 123,5    | 52,1                            | 49,3     | 241,5                      | 185,2    | 78,2                 | 73,9     |      |
| 10                         | 182,4                          | 142,5    | 59,2                            | 56,4     | 273,6                      | 213,7    | 88,8                 | 84,5     |      |
| 12                         | 222,7                          | 176,8    | 66,8                            | 64,0     | 334,1                      | 265,3    | 100,2                | 96,0     |      |
| 14                         | 299,3                          | 228,0    | 101,7                           | 96,0     | 449,0                      | 342,0    | 152,6                | 143,9    |      |
| 16                         | 497,4 <sup>g</sup>             | 481,9    | 193,3                           | 187,5    | 746,1 <sup>g</sup>         | 722,8    | 289,9                | 281,3    |      |
| 20                         | 741,6                          | 628,8    | 249,9                           | 244,1    | 1 112,3                    | 943,2    | 374,8                | 366,2    |      |
| 24                         | 923,2                          | 794,3    | 296,8                           | 291,0    | 1 384,8                    | 1 191,5  | 445,1                | 436,5    |      |
| 28                         | 1 117,2                        | 973,3    | 348,3                           | 342,5    | 1 675,8                    | 1 460,0  | 522,5                | 513,8    |      |
| 32                         | 1 291,2                        | 1 133,0  | 385,1                           | 379,4    | 1 936,8                    | 1 699,6  | 577,7                | 569,0    |      |

<sup>a</sup> The diameter code corresponds to bore diameter  $d$  in 1/16 inch.

<sup>b</sup> Definition and testing for permissible and ultimate static loads according to EN 2337 and TR 4475.

<sup>c</sup> Permissible surface pressure 530 MPa, definition per TR 4475.

<sup>d</sup> These values apply to loose spherical bearings. For installed bearings, the push-out loads may be smaller than these values.

<sup>e</sup> Permissible surface pressure 460 MPa, definition per TR 4475.

<sup>f</sup> Not available with lubrication code F or code G.

<sup>g</sup> Limit by bolt bending.

Definition: — solid shaft;  
— rigid clamping on both sides;  
— uniform load;  
— permissible bending stress 1 350 MPa;  
— permissible shear stress 1 200 MPa.

Table 3 — Clearance

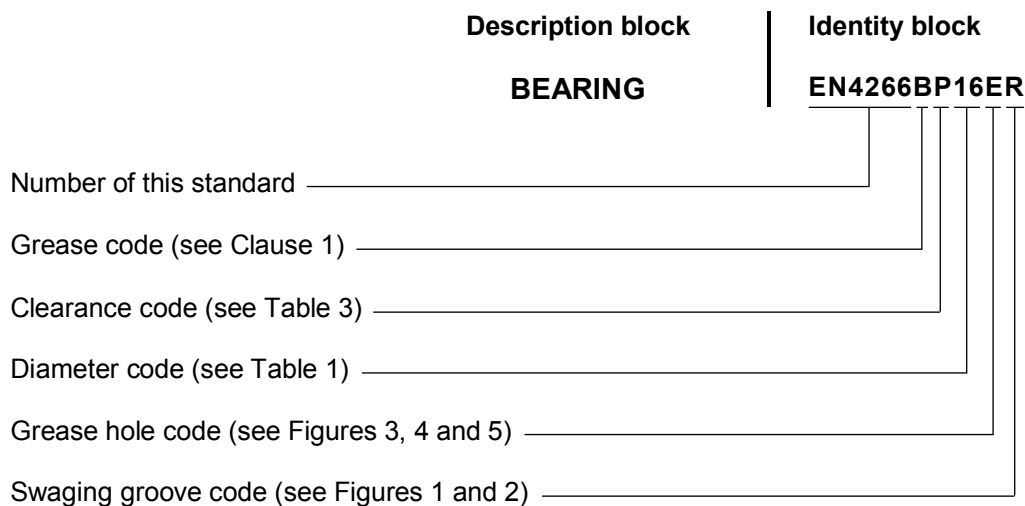
| Diameter code <sup>a</sup> | Clearance <sup>b</sup>                 |   |                    |                     |
|----------------------------|--|---|--------------------|---------------------|
|                            | Radial                                 |   | Axial              |                     |
|                            | Normal Code N                          | Reduced Code P                          | Normal Code N max. | Reduced Code P max. |
| 03                         | 0,010 to 0,030<br>(0,000 4 to 0,001 2) | 0,002 to 0,010<br>(0,000 1 to 0,000 4)  | 0,12<br>(0,005)    | 0,035<br>(0,001 4)  |
| 04                         |  |   |                    |                     |
| 05                         |  |   |                    |                     |
| 06                         |  |   |                    |                     |
| 07                         |  |   |                    |                     |
| 07A                        |  |   |                    |                     |
| 08                         | 0,010 to 0,050<br>(0,000 4 to 0,002 0) | 0,003 to 0,012<br>(0,000 1 to 0,000 5)  |                    | 0,040<br>(0,001 6)  |
| 09                         |  |   |                    |                     |
| 10                         |  | 0,004 to 0,015<br>(0,000 15 to 0,000 6) | 0,229<br>(0,009 0) | 0,050<br>(0,002 0)  |
| 12                         |  |   |                    |                     |
| 14                         |  |   |                    |                     |
| 16                         |  |   |                    |                     |
| 20                         |  |   |                    |                     |
| 24                         |  |   |                    |                     |
| 28                         |  |   |                    |                     |
| 32                         |  |   |                    |                     |

<sup>a</sup> The diameter code corresponds to nominal diameter *d* in 1/16 inch.

<sup>b</sup> Definition and testing for clearance according to EN 2337.

## 6 Designation

EXAMPLE



If necessary, the code I9005 shall be placed between the description block and the identity block.

## 7 Marking

According to EN 2424, style A.

In addition, the bearing may be marked with manufacturer's part number.

Marking position and method are at the manufacturer's discretion.

## 8 Technical specification

According to EN 2337.





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