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Replacing GB/T 12765-1991

Spherical plain bearings - Mounting dimensions

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Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Terms and definitions...	5
4 Symbols...	5
5 Design principles for mounting dimensions...	6
6 Bibliography...	12

Foreword

This document is drafted in accordance with GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents". This document replaces GB/T 12765-1991 "Spherical plain bearings, joint type - Abutment and fillet dimensions". Compared with GB/T 12765-1991, in addition to editorial changes, the main technical changes are as follows:

- a) Change some dimension symbols (see Clause 4; Clause 3 of the 1991 edition);
- b) Change "Basic requirements" to "Design principles for mounting dimensions" (see Clause 5; Clause 4 of the 1991 edition);
- c) Delete the installation diagram of sealed bearings (see the schematic diagram of GE...ES-2RS, GEG...ES-2RS, GEEW...ES-2RS in the 1991 edition);
- d) Delete the minimum value of mounting dimension d_a and the maximum value of D_a for E series, G series and W(EW) series radial spherical plain bearings. Change part of the maximum value of d_a and the minimum value of D_a (see Table 1, Table 2 and Table 4; Table 1~Table 3 of the 1991 edition);
- e) Add the mounting dimensions of C series radial spherical plain bearing (see Table 3);
- f) Expand the dimension range of angular contact radial spherical plain bearings and thrust spherical plain bearings. Change the mounting dimensions of some angular contact radial spherical plain bearings and thrust spherical plain bearings (see Table 5 and Table 6; Table 4 and Table 5 of the 1991 edition). Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The issuing authority of this document shall not be held responsible for identifying any or all such patent rights. This document was proposed by China Machinery Industry Federation. This document shall be under the jurisdiction of National Technical Committee 98 on Rolling Bearing of

Standardization Administration of China (SAC/TC 98). Drafting organizations of this document: Luoyang Bearing Research Institute Co., Ltd.; Fujian Longxi Bearing (Group) Corp., Ltd.; Taizhou Kejin Bearing Co., Ltd.; Henan University of Science and Technology; Zhejiang Jingjiu Bearings Industrial Co., Ltd.; China Railway Engineering Equipment Group Co., Ltd. Main drafters of this document: Song Yucong, Wang Qirui, Shi Zhengzhong, Zhan Spherical plain bearings - Mounting dimensions

1 Scope

GB/T 12765-2023 is the Chinese national standard on spherical plain bearings - mounting dimensions, in the field of mechanical systems and components. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 23 May 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 December 2023. Classification: ICS 21.100.10, CCS J11. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the recommended values for the main dimensions of the shaft and bearing saddle bore of a mounted spherical plain bearing (hereinafter referred to as the "bearing") at the point of connection with the bearing; including shaft shoulder diameter (d_a), bearing saddle bore shoulder diameter (D_a), shaft shoulder fillet radius (r_a), bore shoulder fillet radius (r_b) and other limits. According to the working conditions of the bearing, bearing users can make appropriate adjustments. This document is applicable to the selection of mounting dimensions of spherical plain bearings whose overall dimensions comply with GB/T 9162, GB/T 9163 and GB/T 9164 under general conditions of use.

2 Normative references

The contents of the following documents, through normative references in this text, constitute indispensable provisions of this document. Among them, for dated references, only the edition corresponding to that date applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 3944 Spherical plain bearings - Vocabulary

3 Terms and definitions

The terms and definitions defined in GB/T 3944 apply to this document.

4 Symbols

The following symbols apply to this document. The symbols shown in Figures 1~4 and Tables 1~6 all represent nominal dimensions. D: Bearing outer diameter Da: Bearing saddle bore shoulder diameter Db: Inner diameter of retaining ring of bearing outer ring (for installation of angular contact radial spherical plain bearing) d: Bearing inner diameter da: Shaft shoulder diameter db: Outer diameter of retaining ring of bearing inner ring (for installation of angular contact radial spherical plain bearing) ra: Shaft shoulder fillet radius rb: Bore shoulder fillet radius

5 Design principles for mounting dimensions

The design of shaft shoulders, bore shoulders, shaft shoulder fillet radius (ra), and bore shoulder fillet radius (rb) etc. shall meet the following requirements: - Make the bearing ring have a sufficiently large bearing surface; - Keep oscillating parts in the bearing arrangement from touching stationary parts; - When installing radial spherical plain bearings (except W series), the maximum value of shaft shoulder diameter shall not be greater than the end face diameter of the inner ring of the bearing; - The maximum fillet radius of shaft shoulder and bore shoulder is smaller than the minimum single chamfer dimension of the bearing. The fillet can also adopt the undercut structure; - There is a 10°~20° leading chamfer on the end face of shaft and saddle bore.