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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 32562-2016

Rolling bearings - Measuring methods for friction torque

滚动轴承 摩擦力矩测量方法

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Quarantine;
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Table of Contents

- 1 Scope
- 2 Normative reference documents
- 3 Terms and definitions

Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed by the China Machinery Industry Federation. This standard is centralized by the National Rolling Bearing Standardization Technical Committee (SAC/TC98). The drafting unit of this standard: Luoyang Shaft Research Technology Co., Ltd., Hangzhou Bearing Experimental Research Center Co., Ltd., Fujian Yongan Bearing Limited liability company, Zhejiang eight ring Bearing Co., Ltd., Chongqing Yangtze River Bearing Co., Ltd., Cixing Group Co., Ltd., Luoyang Bearing Research Limited company, Jimu Bearing Group Co., Ltd., Zhejiang Times Metrology Technology Co., Ltd. The main drafters of this standard: Gao Fenwu, Li Guobin, Li Xinglin, Shi Deqing, Chen Defu, Niu Jianping, Zhao Xingxin, Li Kaiyuan, Shu Yongqiang, Chen Jianxin Rolling bearing friction torque measurement method

1 Scope

China's national method for measuring the friction torque of rolling bearings. It specifies that measurement and applies to deep groove ball bearings, angular contact ball bearings and single row tapered roller bearings of nominal outside diameter from 3 to 200 mm. Friction torque is what a rolling bearing costs to turn, and it is the property that has moved from a refinement to a requirement over the past two decades. A rolling bearing was chosen in the first place because it has far less friction than a plain one, and for most of the twentieth century that was enough: the friction was small, so nobody measured it. Two things changed that. The first is efficiency regulation: an electric motor, a gearbox or a vehicle is now sold against a measured efficiency figure, and the bearings are a term in it - a small term individually, and a significant one across the tens of bearings in a drivetrain. The second is the electric vehicle, in which every watt of parasitic loss is range, and in which the absence of engine noise makes bearing drag and its variation audible as well as measurable. The standard defines the quantities that a torque measurement actually produces, and there are several rather than one: the starting torque, being the moment required to start one ring turning relative to the other; the running torque, being the moment required to prevent the other ring turning while one rotates; and the average, maximum and minimum values over a measurement, because bearing torque is not steady but varies through every revolution. Issued on 24 February 2016 and in force since 1 October 2016.

This standard specifies the rolling bearing (hereinafter referred to as bearing) friction torque measurement method. This standard applies to the size range (nominal diameter) 3mm ~.200mm deep groove ball bearings, angular contact ball bearings and single row tapered roller Bearing.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document. Geometrical product specifications (GPS) - Limits and mating - Part 2. Standard tolerance class and hole, shaft Limit deviation table

GB/T 5800.1-2012 Rolling bearings - Part 1. Dimensions, tolerances and characteristics of metric series bearings Rolling bearing vocabulary GB/T 6930-2002

3 Terms and definitions

GB/T 6930-2002 Definitions and the following terms and definitions apply to this document.

- 3.1 Starting torque startingtorque MQ The moment required to start the rotation of a bearing collar relative to another fixed ferrule.
- 3.2 Moment of rotation dynamictorque When a bearing collar rotates, the torque required to prevent another collar movement.
- 3.3 Average torque value averagevalueofbearingtorque MP The arithmetic mean of all moment measurements in a measurement process.
- 3.4 Maximum torque value maximumvalueofbearingtorque Mmax The maximum value of all torque measurements in a measurement process.
- 3.5 Minimum torque value minimumvalueofbearingtorque Mmin The minimum value of all torque measurements in a measurement process.