

Specification for

Linear motion, recirculating ball, sleeve type rolling bearings (Metric series)

UDC 621.822.7:621.753.1

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Committees responsible for this British Standard

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- Ball and Roller Bearing Manufacturers' Association
- Ministry of Defence
- Society of British Aerospace Companies Ltd.

This British Standard, having been prepared under the direction of the Machinery and Components Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 March 1993

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The following BSI references relate to the work on this standard:
Committee reference MCE/7
Draft for comment 90/80575 DC

ISBN 0 580 22021 4

Amendments issued since publication

Amd. No.	Date	Comments

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National foreword

This British Standard has been prepared under the direction of the Machinery and Components Standards Policy Committee. It is identical with ISO 10285:1992 *Rolling bearings, linear motion, recirculating ball, sleeve type — Metric series*, published by the International Organization for Standardization (ISO).

Cross-references

International Standard	Corresponding British Standard
	BS 4500 <i>ISO limits and fits</i> Part 1 <i>General tolerances and deviations</i>
ISO 286-1:1988	Section 1.1:1990 <i>Specification for bases of tolerances, deviations and fits</i> (Identical)
ISO 286-2:1988	Section 1.2:1990 <i>Tables of commonly used tolerance and grades and limit deviations for holes and shafts</i> (Identical)
ISO 1132:1980	BS 6107 <i>Rolling bearings: tolerances</i> Part 1:1981 <i>Glossary of terms</i> (Identical)
ISO 5593:1984	BS 6560:1984 <i>Glossary of terms for rolling bearings</i> (Identical)

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Introduction

Linear motion rolling bearings provide for rectilinear motion as opposed to rotational motion. The type of bearing described in this International Standard uses balls which circulate in a number of closed loops in the cylindrical bearing body which surrounds the shaft.

Linear motion rolling bearings are typically applied to meet one or more of the following criteria:

- a) smooth antifriction motion, free from stick-slip or chatter;
- b) low force required to produce relative linear motion between the bearing and shaft.

These requirements, as well as others, can be met by appropriate use of the various linear motion rolling bearing types (closed type, adjustable type, open type). The appropriate selection of bearing type and specification should be established between the manufacturer and user.

1 Scope

This International Standard specifies the general boundary dimensions, tolerances and definitions for linear motion, recirculating-ball, sleeve-type rolling bearings of the metric series.

It applies only to the size range covered by Table 1.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 286-1:1988, *ISO system of limits and fits — Part 1: Bases of tolerances, deviations and fits*.

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*.

ISO 1132:1980, *Rolling bearings — Tolerances — Definitions*.

ISO 5593:1984, *Rolling bearings — Vocabulary*.

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 1132 and ISO 5593 and the following definitions apply.

3.1

linear motion, recirculating-ball, sleeve-type rolling bearing

a basically cylindrical sleeve with a number of closed loops of circulating balls which is designed to achieve linear rolling motion along a shaft

3.2

shaft

hardened cylindrical rod along which a linear motion rolling bearing traverses

3.3

nominal outside diameter

diameter of the cylinder containing the theoretical surface of a basically cylindrical outside surface

3.4

nominal ball complement bore diameter

diameter of the cylinder inscribed inside the inner balls

3.5

nominal bearing width

distance between two theoretical end faces designated to bound the width of the linear motion rolling bearing