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

GB/T 17587.2-2025

Replacing GB/T 17587.2-1998

**Ball screws - Part 2: Nominal diameters, leads, nut dimensions
and mounting bolts - Metric series**

滚珠丝杠副 第2部分：公称直径、公称导程、螺母尺寸和安装螺栓 公制系列
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Reference

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 2 of GB/T 17587 "Ball Screw Pairs". GB/T 17587 has already published the following parts.

---Part 1: Terminology and Symbols;

---Part 2: Nominal Diameter, Nominal Lead, Nut Size and Metric Series of Mounting Bolts;

---Part 3: Acceptance Conditions and Acceptance Inspection;

---Part 4: Axial Static Stiffness;

---Part 5: Axial static and dynamic load ratings and service life.

This document supersedes GB/T 17587.2-1998 "Ball Screw Pairs Part 2: Metric Series of Nominal Diameter and Nominal Lead", and is consistent with...

Compared with GB/T 17587.2-1998, apart from structural adjustments and editorial changes, the main technical changes are as follows.

a) The range has been changed; "nominal diameter in the range of 6mm~200mm, nominal lead in the range of 1mm~40mm" has been changed to "nominal diameter in the range of 6mm~200mm".

The nominal diameter is 4mm~160mm and the nominal lead is 1mm~50mm (see Chapter

1, Chapter 1 of the 1998 edition);

b) Added "symbols" (see Chapter 4);

c) The terms "nominal diameter" and "nominal lead" have been removed (see Chapters 4 and 5 of the 1998 edition);

d) The content regarding "Nominal Diameter, Nominal Lead and their Combinations" has been revised (see Chapter 5, Chapter 6 of the 1998 edition);

e) Added "Installation dimensions for ball nuts of types B6, B8, B4, A6 and C6" (see Chapter 6).

This document is modified to adopt ISO 3408-2:2021 "Ball screw pairs - Part 2: Nominal diameter, nominal lead, nut dimensions and installation".

Metric series of bolts.

The technical differences between this document and ISO 3408-2:2021, and the reasons therefor, are as follows.

a) A "Scope of Application" section (see Chapter 1) has been added to clarify the scope of application;

b) ISO 3048-1 (see Chapter 3) has been replaced with the normatively referenced GB/T 17587.1 for ease of use;

c) Changed "Series 2 (Inner Loop), Series 3 (Outer Loop)" to "Series 2 (Outer Loop I), Series 3 (Outer Loop II)" (see section 6) (Chapter), to conform to my country's national conditions.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Metal Cutting Machine Tools (SAC/TC22).

Introduction

GB/T 17587, "Ball Screw Pairs," is a standard for the inspection conditions of ball screw pairs. It establishes the concept, parameters, and ball bearings of ball screw pairs.

Principles and requirements for the accuracy and performance inspection of lead screw pairs.

GB/T 17587 consists of five parts.

---Part 1: Terminology and Symbols;

---Part 2: Nominal Diameter, Nominal Lead, Nut Size and Metric Series of Mounting Bolts;

---Part 3: Acceptance Conditions and Acceptance Inspection;

---Part 4: Axial Static Stiffness;

---Part 5: Axial static and dynamic load ratings and service life.

Based on the current technical status and market research, this revision clearly specifies the nominal diameter and nominal lead of the ball screw pair, and the ball nut...

The metric series of installation dimensions and mounting bolts for ball screw pairs is provided, along with preferred and general combinations of nominal diameter and nominal lead.

The parameters of the three major series of ball screw pairs, which are widely recognized internationally and domestically, and the use of different types of flanges are presented.

Ball screw assembly Part 2: Nominal diameter, nominal Lead, nut size and mounting bolt metric series

1 Scope

This document specifies the nominal diameter and nominal lead of the ball screw assembly, the mounting dimensions of the ball nut, and the metric series of the mounting bolts.

Preferred and general combinations of nominal diameter and nominal lead are given.

This document applies to various mechanical products using nominal diameters ranging from 4mm to 160mm and nominal leads ranging from 1mm to 50mm.

Manufacturing ball screw pairs.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 17587.1 Ball Screw Pairs - Part 1: Terms and Symbols (GB/T 17587.1-2017, ISO 3048-1:2006) MOD)

3 Terms and Definitions

The terms and definitions defined in GB/T 17587.1 apply to this document.

4 Symbols

The following symbols apply to this document.

Symbol	Explanation	Units
D1	Ball nut outer diameter	(mm)
D4	Bolt mounting pitch circle diameter	(mm)
D5	Flange mounting hole diameter	(mm)
D6	Flange outer diameter	(mm)
D7	Bolt head countersunk hole diameter	(mm)
d0	Nominal diameter	(mm)
	Axial load at the limit of the Famax ball nut flange opening	(kN)
L1	Centering diameter length	(mm)
L3	flange length	(mm)
L7	flange thickness	(mm)
L8	flat flange width	(mm)
L9	Countersunk hole depth	(mm)
L10	Lubrication hole thread length	(mm)
Pho	Nominal Lead	mm