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

GB/T 17587.5-2008

**Ball screws -- Part 5: Static and dynamic load ratings and
operational life**

滚珠丝杠副 第5部分：轴向额定静载荷和动载荷及使用寿命

(English Translation)

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Foreword

GB/T 17587 "ball screw" is divided into five sections.

- Part 1. Terminology and symbols;
- Part 2. Nominal diameters and nominal leads - Metric series;
- Part 3. Acceptance conditions and acceptance tests;
- Part 4. Static axial stiffness;
- Part 5. Axial rated static and dynamic loads and service life.

This section GB/T Part of 517,587. Modify using ISO 3408-5:2006 "axis ball screw Section 5 Amount Set of static and dynamic loads and the life "(in English).

This part of ISO 3408-5:2006 as compared to the main changes are as follows.

- Taking into account the GB/T 17587.3-1998 "Ball Screw Part 3. Acceptance conditions and acceptance tests" standard ball screws Bar pairs standard tolerance grades have Level

2, Level 4 No case of 0, the table in section 6.1.3 of this 1, the standard tolerance level 0,1,3 and 5 to 1-5.

--- Modify the corresponding provision in the margin by a vertical bar logo.

For ease of use, this section also made the following editorial changes.

--- Remove the foreword to international standards;

--- The ISO 3408-5:2006 standard, "this International Standard" be replaced by "this section";

--- Use the decimal symbol instead of as a decimal comma " , " . " , " ;

--- "Using mathematical formula" x "instead of numbers and multiply the number of".. " this part is proposed by China Machinery Industry Federation.

This part of the National Metal Cutting Machine Standardization Technical Committee (SAC/TC22) centralized.

This section is responsible for drafting. Shandong Jinan Ningbo Te Precision Screw Co., Ltd.

Participated in the drafting of this section. Nanjing Process Equipment Manufacturing Co., Ltd. Hanjiang Machine Tool.

1 Scope

GB/T 17587 provisions of this part of the axial ball screw rated static load and dynamic load calculation methods and life, which is calculated the results can be used as ball screw design and selection basis.

The section under the following prerequisites apply.

--- Balls and the raceway is elastically deformable;

--- Raceway hardness greater than 58HRC;

--- The steel ball screw bearing steel or other similar alloy steel;

--- Appropriate lubrication.

2 Normative references

The following documents contain provisions which, through reference GB/T 17587 in this section, constitute provisions of this part. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 17587.1 Ball screws - Part 1. Terminology and symbols (GB/T 17587.1-1998, eqv ISO 3408-1.

1992)

3 Terms and Definitions

Terms and definitions GB/T 17587.1 specified apply to this section.

4.1 Symbol

Symbol Description Unit contact angle α ($^{\circ}$) γ structure coefficient -Lead angle ϕ ($^{\circ}$) ρ_{11} , ρ_{12} , ρ_{21} , ρ_{22} reciprocal mm radius of curvature-1 C_a axial dynamic load rating N C_{am} amended axial dynamic load rating N Axial ball screw rated C_i lap on dynamic load N C_n ball nut axial lap on dynamic load rating N Axial rated C_s Ball lap on dynamic load N C_{0a} axial static load rating N C_{0am} amended axial static load rating N