INTERNATIONAL STANDARD

**ISO 3408-2**

Second edition
2021-05



# Ball screws —

## Part 2: Nominal diameters, leads, nut dimensions and mounting bolts — Metric series

*Vis à billes —*

*Partie 2: Diamètres et pas hélicoïdaux nominaux et dimensions des écrous et boulons de montage — Série métrique*

Reference number
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# Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 39, *Machine tools*, in collaboration with Technical Committee ISO/TC 4, *Rolling bearings*, Subcommittee SC 11, *Linear motion rolling bearings.*

This second edition cancels and replaces the first edition (ISO 3408-2:1991), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the technical state of the art has been substantially reviewed;

— three series of ball screws reflecting different international standards have been defined;

— dimensions reflecting current market situations have been added; and

— different types of flanges reflecting state of the art have been defined.

A list of all parts in the ISO 3408 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.



 

# Ball screws —

# Part 2: Nominal diameters, leads, nut dimensions and mounting bolts — Metric series



## 1 Scope

This document specifies the nominal diameters and nominal leads, mounting dimensions for ball screw nuts and mounting bolts for metric ball screws. It also gives preferred combinations of nominal diameter and nominal lead and a general plan which includes the additional combinations to be used when it becomes necessary to deviate from the preferred combinations.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3408-1, *Ball screws — Part 1: Vocabulary and designation*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3408-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

## 4 Symbols

| Symbol | Description | Units |
|---|---|---|
| $d_0$ | Nominal diameter | mm |
| $D_1$ | Ball screw nut outer diameter | mm |
| $D_4$ | Mounting bolt pitch circle diameter | mm |
| $D_5$ | Flange mounting bolt diameter | mm |
| $D_6$ | Flange outer diameter | mm |
| $D_7$ | Screw head counter bore diameter | mm |
| $F_{a\,max}$ | Axial load at the opening limit of the nut flange | kN |
| $L_1$ | Centring diameter length | mm |