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**Technical drawings — Screw threads  
and threaded parts —**

**Part 3:  
Simplified representation**

*Dessins techniques — Filetages et pièces filetées —*

*Partie 3: Représentation simplifiée*  
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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](http://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](http://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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 10, *Technical product documentation*, Subcommittee SC 6, *Mechanical engineering documentation*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/SS F01, *Technical drawings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 6410-3:1993), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- a break line has been added to [Figures 1](#) to [4](#);
- [Figures 2](#) and [4](#) have been redrawn to proportionate the designations;
- Notes have been added to [Figures 1](#) to [4](#) to align with ISO 129-1:2018;
- a Bibliography has been added.

A list of all parts in the ISO 6410 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](http://www.iso.org/members.html).

## Introduction

ISO 6410 has been devised to provide a universal means of communication among the various interests involved in the design, manufacture and installation of fasteners.

Requirements within industries vary considerably; in recognition of this fact ISO 6410 is presented in three parts.

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# Technical drawings — Screw threads and threaded parts —

## Part 3: Simplified representation

### 1 Scope

This document establishes rules for the simplified representation of threaded parts, with the exception of screw thread inserts, which are covered in ISO 6410-2. This representation is applicable when it is not necessary to show the exact shape and details of the parts (see ISO 6410-1), for example in assembly drawings.

### 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 6410-1:1993, *Technical drawings — Screw threads and threaded parts — Part 1: General conventions*

### 3 Terms and definitions

No terms and definitions are listed in this document.

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 Simplified representation

#### 4.1 General

In simplified representation, only essential features shall be shown. The degree of simplification depends on the kind of object represented, the scale of the drawing and the purpose of the documentation.

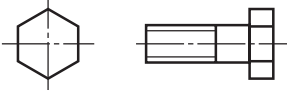

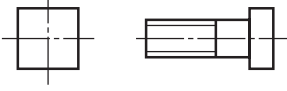
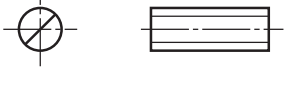
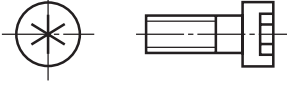

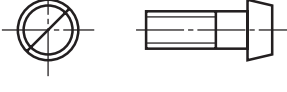
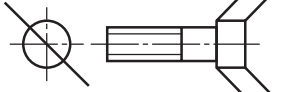
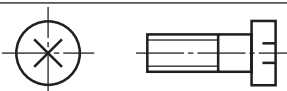







Therefore, the following features shall not be drawn in simplified representations of threaded parts:

- edges of chamfers of nuts and heads;
- thread run-outs;
- the shape of ends of screws;
- undercuts.

#### 4.2 Screws and nuts

When it is essential to show the shapes of screw heads, drive patterns or nuts, the examples of simplified representations shown in [Table 1](#) shall be used. Combinations of features, not shown in [Table 1](#), may also be used. A simplified representation of the opposite (threaded) end view is not necessary.

Table 1 — Examples of simplified representations

No.	Designation	Simplified representation	No.	Designation	Simplified representation
1	Hexagon head Screw		9	Countersunk screw, cross slot	
2	Square head screw		10	Set screw, slot	
3	Hexagon socket screw		11	Wood and self-tapping screw, slot	
4	Cylinder screw (pan-head type), slot		12	Wing screw	
5	Cylinder screw, cross slot		13	Hexagon nut	
6	Oval countersunk screw, slot		14	Crown nut	
7	Oval countersunk screw, cross slot		15	Square nut	
8	Countersunk screw, slot		16	Wing nut	

### 4.3 Small diameter threads

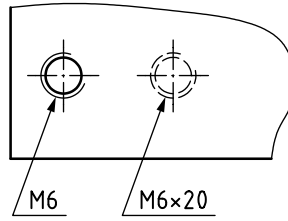
It is permissible to simplify the representation and/or the indication of dimensions if

- the diameter (on the drawing) is  $\leq 6$  mm or
- there is a regular pattern of holes or threads of the same type and size.

The designation shall include all necessary features normally shown in a conventional representation and/or dimensioning, as specified in ISO 6410-1:1993, 4.3.

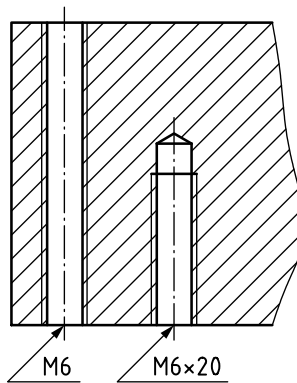
The designation shall appear on a leader line which points to the centre-line of the hole and terminates in an arrowhead (see [Figures 1 to 4](#)).





NOTE "M6x20" can be indicated by "M6 ∇ 20". See ISO 129-1.

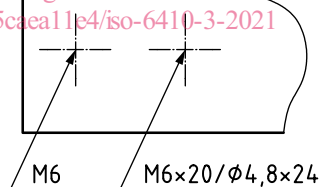
Figure 1



NOTE "M6x20" can be indicated by "M6 ∇ 20". See ISO 129-1.

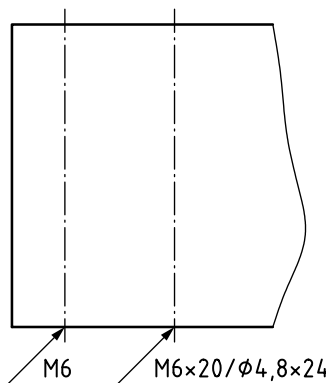
Figure 2

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NOTE "M6x20/φ4,8x24" can be indicated by "M6 ∇ 20/φ4,8 ∇ 24". See ISO 129-1.

Figure 3



NOTE "M6x20/φ4,8x24" can be indicated by "M6 ∇ 20/φ4,8 ∇ 24". See ISO 129-1.

Figure 4

## Bibliography

- [1] ISO 129-1, *Technical product documentation (TPD) — Presentation of dimensions and tolerances — Part 1: General principles*
- [2] ISO 225, *Fasteners — Bolts, screws, studs and nuts — Symbols and descriptions of dimensions*

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