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## Assembly tools for screws and nuts — Nomenclature

*Outils de manoeuvre pour vis et écrous — Nomenclature*

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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)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 10, *Assembly tools for screws and nuts — Pliers and nippers*.

This fourth edition cancels and replaces the third edition (ISO 1703:2005) which has been technically revised. The main changes compared to the previous edition are as follows:

- torque tools have been shifted into a new [Clause 10](#) and have been updated according to the new edition of ISO 6789-1;
- new tools have been added: Ratcheting combination wrenches (1 1 01 07 0, 1 1 01 08 0, 1 1 01 09 0) and ratcheting double-headed box wrenches (1 1 02 19 0 and 1 1 02 20 0);
- tools with driving end Type E according to the ISO 2351 series have been added to the following designation nos.: 3 2 03 01 0, 3 2 04 01 0, 3 2 05 01 0, 3 2 06 01 0, 3 2 14 01 0 and 3 2 15 01 0;
- the column for the “old” reference number has been deleted in all tables;
- according to ISO rules, the French designations have been shifted from the main part to [Annex A](#).

## Introduction

The purpose of this document is to present a consistent and systematic way of designating assembly tools for screws and nuts. The designations in the respective ISO standards are harmonized with this document. This document covers most common assembly tools for screws and nuts. The terms used have been selected in order to fit into the structure of this group of tools.

This document collates various information for each product, including typical examples of appearance, the type of screw or nut interface with which the tool can be utilized and the designation number. Where ISO standard numbers are shown in bold, they define the primary requirements for the tool. Numbers shown in italics are ISO standards that contain additional information and/or requirements.

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# Assembly tools for screws and nuts — Nomenclature

## 1 Scope

This document gives a nomenclature in English of assembly tools for screws and nuts.

NOTE [Annex A](#) provides the technically equivalent terms in French, one of the other official ISO languages. In addition, this document gives the equivalent terms in German, Italian, Spanish and Swedish (see [Annex B](#)). These terms are published under the responsibility of the member bodies for Germany (DIN), Italy (UNI), Spain (UNE) and Sweden (SIS) and are given for information only. However, only the English and French terms can be considered as ISO terms.

## 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 2351-1, *Assembly tools for screws and nuts — Machine-operated screwdriver bits — Part 1: Screwdriver bits for slotted head screws*

ISO 2351-2, *Assembly tools for screws and nuts — Machine-operated screwdriver bits — Part 2: Screwdriver bits for cross-recessed head screws*

ISO 2351-3, *Assembly tools for screws and nuts — Machine-operated screwdriver bits — Part 3: Screwdriver bits for hexagon socket screws*

ISO 2725-1, *Assembly tools for screws and nuts — Square drive sockets — Part 1: Hand-operated sockets*

ISO 2725-2, *Assembly tools for screws and nuts — Square drive sockets — Part 2: Machine-operated sockets ("impact")*

ISO 2936, *Assembly tools for screws and nuts — Hexagon socket screw keys*

ISO 3315, *Assembly tools for screws and nuts — Driving parts for hand-operated square drive socket wrenches — Dimensions and tests*

ISO 3316, *Assembly tools for screws and nuts — Attachments for hand-operated square drive socket wrenches — Dimensions and tests*

ISO 3317, *Assembly tools for screws and nuts — Square drive adaptor with hexagon or cylindrical flat drive, for power socket wrenches*

ISO 4229, *Assembly tools for screws and nuts — Single-head engineer's wrenches for lower torque applications — Maximum outside dimensions of heads and test torques*

ISO 6787, *Assembly tools for screws and nuts — Adjustable wrenches*

ISO 6788, *Assembly tools for screws and nuts — Four-way socket wrenches — Dimensions and torque test*

ISO 6789-1, *Assembly tools for screws and nuts — Hand torque tools — Part 1: Requirements and methods for design conformance testing and quality conformance testing: minimum requirements for declaration of conformance*

ISO 7738, *Assembly tools for screws and nuts — Combination wrenches — Lengths of wrenches and maximum thickness of heads*

ISO 8764-1, *Assembly tools for screws and nuts — Screwdrivers for cross-recessed head screws — Part 1: Driver tips*

ISO 8764-2, *Assembly tools for screws and nuts — Screwdrivers for cross-recessed head screws — Part 2: General requirements, lengths of blades and marking of hand-operated screwdrivers*

ISO 10102, *Assembly tools for screws and nuts — Double-headed open-ended engineers' wrenches — Outside dimensions*

ISO 10103, *Assembly tools for screws and nuts — Double-headed box wrenches, flat and offset — Outside dimensions and test torques*

ISO 10104, *Assembly tools for screws and nuts — Double-headed box wrenches, deep offset and modified offset — Outside dimensions*

ISO 10914, *Assembly tools for screws and nuts — Sockets and wrenches for spline drive*

ISO 11168, *Socket wrenches for spark- and glow-plugs*

## 3 Terms and definitions

No terms and definitions are listed in this document.

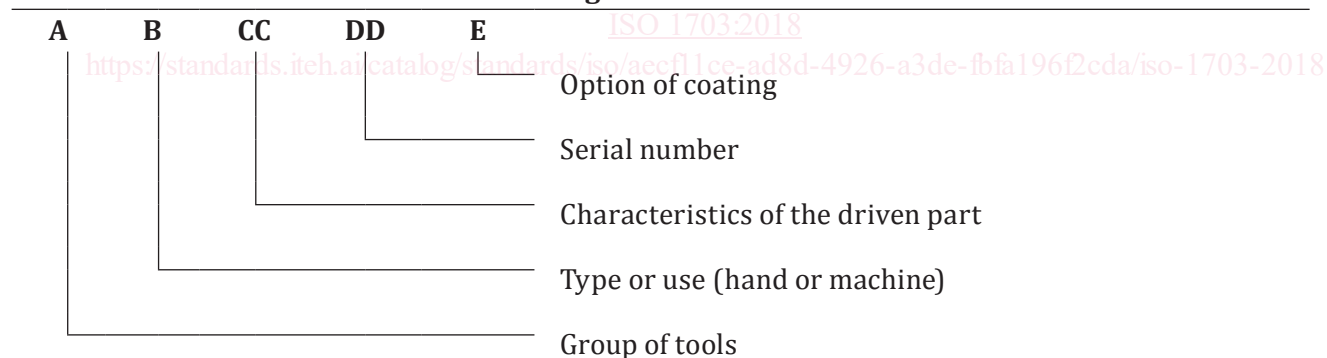
ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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

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

## 4 Principle of designation

### Designation of tools



### A: Group of tools

- 1: wrenches
- 2: sockets
- 3: bits
- 4: screwdrivers
- 5: connecting parts
- 6: driving parts
- 7: torque tools



**B: Hand or machine**

- 1: hand
- 2: machine operation; partial hand operation is possible using supplementary tools

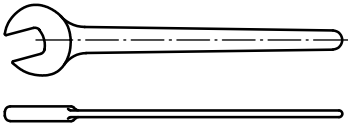



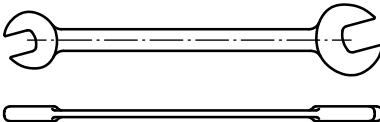
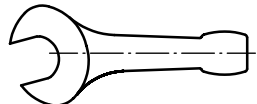
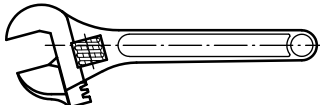
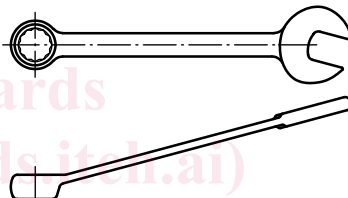
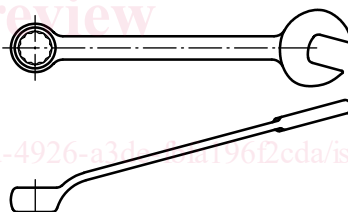
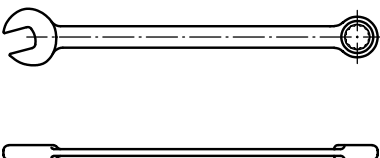
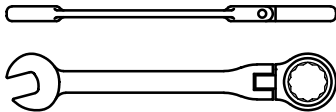
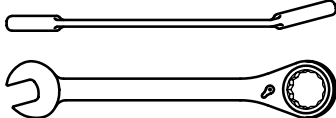
**CC: Geometrical characteristics of the driven part**

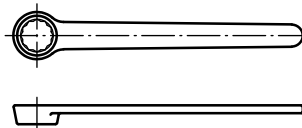

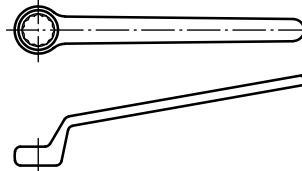
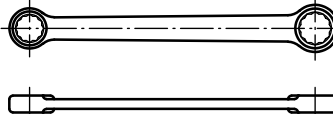
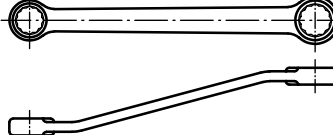
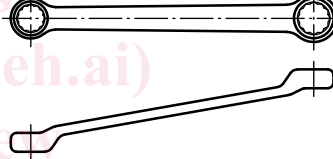
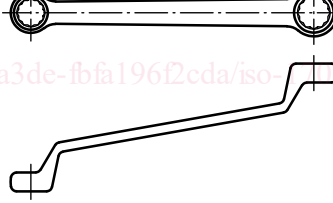
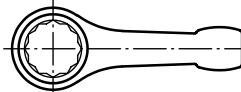
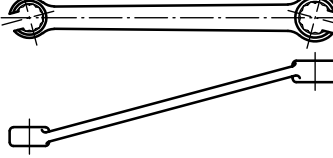
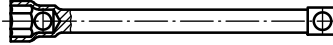
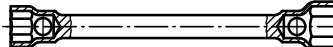
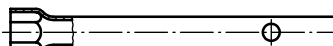
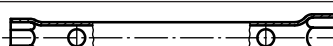
- 00: no driven part
- 01: parallel flanks (hexagon, square,...)
- 02: external hexagon
- 03: internal hexagon
- 04: slotted
- 05: recessed head PH
- 06: recessed head PZ
- 07: spline
- 08: external square
- 09: internal square
- 10: triangular external square
- 11: triangular internal square
- 12: notch
- 13: hole
- 14: multi-spline
- 15: serrations

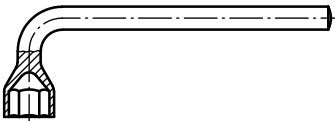

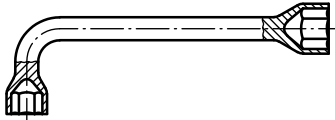
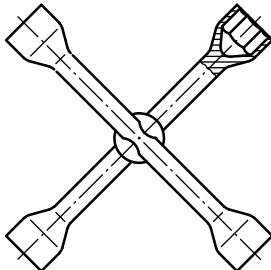



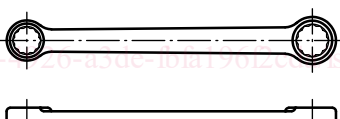

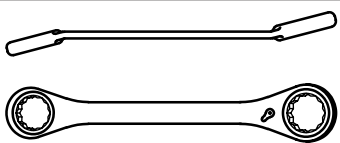
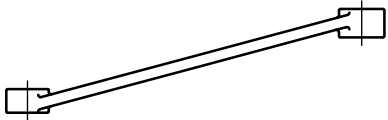


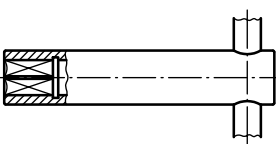


**DD: Serial number****E: Option of coating**

- 0: standard
- 1: coating for live working under low voltage (IEC 60900)

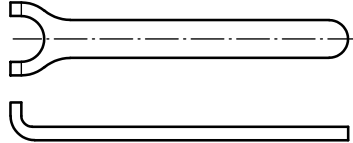

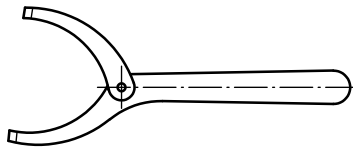
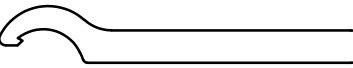

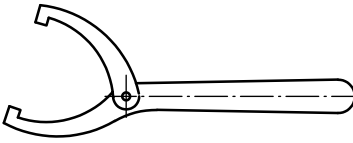


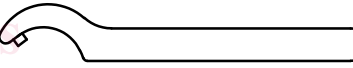

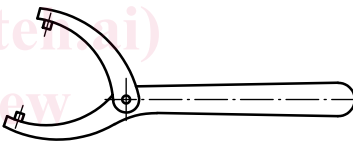
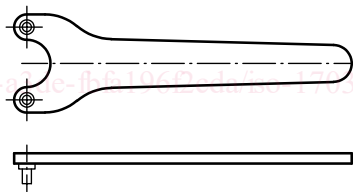

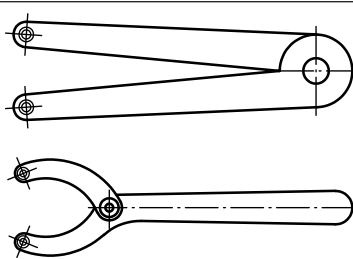
## 5 Wrenches

Reference number	Designation	ISO standards (also valid)	Tool	Utiliza- tion
1 1 01 01 0 1 1 01 01 1	Single-head engineer's wrench	<b>4229</b> (691; 1711-1)		  
1 1 01 02 0	Double-headed open-ended engineers' wrench	<b>10102</b> (691; 1085; 1711-1; 3318)		
1 1 01 03 0	Open-ended slugging wrench	(691)		
1 1 01 04 0	Adjustable wrench	<b>6787</b>		
1 1 01 05 0	Combination wrench, offset	<b>7738</b> (691; 1711-1; 3318)		
1 1 01 06 0	Combination wrench, deep offset	<b>7738</b> (691; 1711-1; 3318)		
1 1 01 07 0	Combination wrench, ratcheting	<b>a</b> (691; 1711-1)		
1 1 01 08 0	Combination wrench, ratcheting, flex head	<b>a</b> (691; 1711-1)		
1 1 01 09 0	Combination wrench, ratcheting, offset	<b>a</b> (691; 1711-1)		
<sup>a</sup> An ISO standard for ratcheting wrenches is under development by ISO/TC 29/SC 10.				

Reference number	Designation	ISO standards (also valid)	Tool	Utiliza- tion
1 1 02 01 0	Single-headed box wrench, flat	(691; 1711-1; 3318)		
1 1 02 02 0 1 1 02 02 1	Single-headed box wrench, deep offset	(691; 1711-1; 3318)		
1 1 02 03 0	Double-headed box wrench, flat	<b>10103</b> (691; 1085; 1711-1; 3318)		
1 1 02 04 0	Double-headed box wrench, offset	<b>10103</b> (691; 1085; 1711-1; 3318)		
1 1 02 05 0	Double-headed box wrench, modified offset	<b>10104</b> (691; 1085; 1711-1; 3318)		
1 1 02 06 0	Double-headed box wrench, deep offset	<b>10104</b> (691; 1085; 1711-1; 3318)		
1 1 02 07 0	Slugging box wrench	(691)		
1 1 02 08 0	Double-headed flare nut wrench, offset	(691; 1085; 3318)		
1 1 02 09 0	Single-headed tee wrench, socket	(691; 1711-1; 2236)		
1 1 02 10 0	Double-headed tee wrench, socket	(691; 1711-1; 2236)		
1 1 02 11 0	Tubular single-headed tee wrench, socket	(691; 1711-1; 2236)		
1 1 02 12 0	Tubular double-headed tee wrench, socket	(691; 1711-1; 2236)		
<sup>a</sup> An ISO standard for ratcheting wrenches is under development by ISO/TC 29/SC 10.				

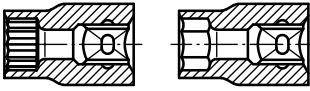

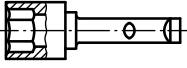
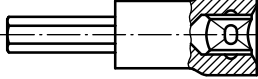

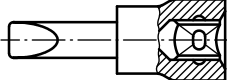

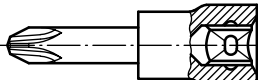

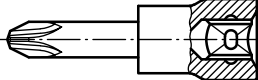

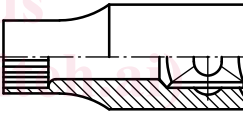

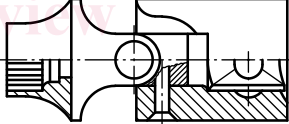
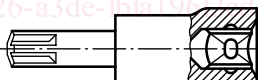

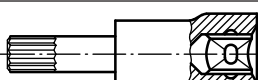

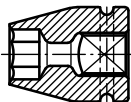

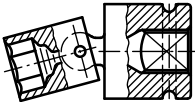
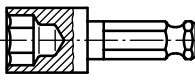
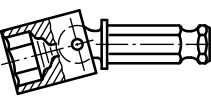
Reference number	Designation	ISO standards (also valid)	Tool	Utilization
1 1 02 13 0 1 1 02 13 1	Single-headed socket wrench, offset	(691; 1711-1; 2236)		
1 1 02 14 0	Double-headed socket wrench, offset one head	(691; 1711-1; 2236)		
1 1 02 15 0	Four way socket wrench	<b>6788</b> (691; 1174-1; 1711-1; 2236)		
1 1 02 16 0	Double-headed socket wrench, flex head	(691; 1711-1)		
1 1 02 17 0 1 1 02 17 1	Hexagon socket wrench, spin type (a.k.a. nutdriver)	(691; 1711-1)		
1 1 02 18 0	Socket wrench for spark- and glow-plug	<b>11168</b>		
1 1 02 19 0	Double-headed box wrench, ratcheting	<b>a</b> (691; 1711-1)		
1 1 02 20 0	Double-headed box wrench, ratcheting, offset	<b>a</b> (691; 1711-1)		
1 1 07 01 0	Double-headed box wrench, for spline drive screws	<b>10914</b>		
1 1 08 01 0	Single-headed box (ring) wrench, square	—		
1 1 08 02 0	Tee wrench socket single, square	—		
1 1 10 01 0	Tee wrench socket single, triangular	—		

<sup>a</sup> An ISO standard for ratcheting wrenches is under development by ISO/TC 29/SC 10.

Reference number	Designation	ISO standards (also valid)	Tool	Utilization
1 1 12 01 0	Face wrench for slotted lock rings	—		
1 1 12 02 0	Adjustable face wrench for slotted lock rings	—		
1 1 12 03 0	Hook wrench	—		
1 1 12 04 0	Adjustable hook wrench	—		
1 1 12 05 0	Wrench external cruciform	—		
1 1 13 01 0	Pin type side spanner wrench	—		
1 1 13 02 0	Adjustable pin type side spanner wrench	—		
1 1 13 03 0	Pin type face spanner wrench	—		
1 1 13 04 0	Adjustable pin type face spanner wrench	—		

<sup>a</sup> An ISO standard for ratcheting wrenches is under development by ISO/TC 29/SC 10.

## 6 Sockets

Reference number	Designation	ISO standards (also valid)	Tool	Utilization
2 1 02 01 0 2 1 02 01 1	Square drive socket, hand-operated, hex or double hex	<b>2725-1</b> (691; 1174-1; 1711-1)		
2 1 02 02 0	Socket shank for use with ratchet driver, hand-operated	(691)		
2 1 03 01 0 2 1 03 01 1	Socket screwdriver for hexagon socket head screws, square drive	(1174-1; 2936)		
2 1 04 01 0	Socket screwdriver for slotted head screws, square drive	(1174-1; 2380-1)		
2 1 05 01 0	Socket screwdriver for recessed head screws PH, square drive	(1174-1; 8764-1)		
2 1 06 01 0	Socket screwdriver for recessed head screws PZ, square drive	(1174-1; 8764-1)		
2 1 07 01 0	Socket for spline drive	<b>10914</b>		
2 1 07 02 0	Universal joint for spline drive	<b>10914</b>		
2 1 14 01 0	Socket screwdriver for multi-spline socket screws, square drive	(1174-1)		
2 1 15 01 0	Socket screwdriver for screws with internal serrations, square drive	(1174-1)		
2 2 02 01 0	Hexagon socket, machine-operated, square drive	<b>2725-2, 2725-3</b> (691; 1174-2)		
2 2 02 02 0	Hexagon socket, machine-operated, universal type, square drive	(691; 1174-2; 2725-2)		
2 2 02 03 0	Hexagon socket, machine-operated, hexagon drive extension	(691; 1173)		
2 2 02 04 0	Hexagon socket, machine-operated, hexagon drive extension, universal joint ball type	(691; 1173)		
2 2 07 01 0	Socket, machine-operated, for spline drive	—	