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

*Outils de manœuvre pour vis et écrous — Clés à fourche simples
pour applications aux couples plus faibles — Dimensions extérieures
maximales d'encombrement des têtes et couples d'essai*

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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).

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. (standards.iteh.ai)

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 third edition cancels and replaces the second edition (ISO 4229:2009), which has been technically revised with the following significant changes:

- revision of sizes covered in [Table 1](#), with the addition of nominal widths across flats not covered by ISO 272;
- Table 2 was removed and the torque testing was substituted with a reference to ISO 1711-1.

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

1 Scope

This document specifies requirements of single-head engineer's wrenches with nominal width across flats from 3,2 to 120.

It specifies the maximum outside dimensions of heads and gives the test torque values. The "lower torque application" designation is in accordance with the smaller head dimensions.

NOTE The wrenches covered by this document are the ones identified in ISO 1703:2005 under reference Nos. 1 1 01 01 0 and 1 1 01 01 1.

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 691, *Assembly tools for screws and nuts — Wrench and socket openings — Tolerances for general use*

ISO 1711-1, *Assembly tools for screws and nuts — Technical specifications — Part 1: Hand-operated wrenches and sockets*

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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:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Maximum outside dimensions of heads

The maximum outside dimensions of heads are given in [Figure 1](#) and [Table 1](#). [Figure 1](#) does not necessarily indicate the shape of the wrench heads.

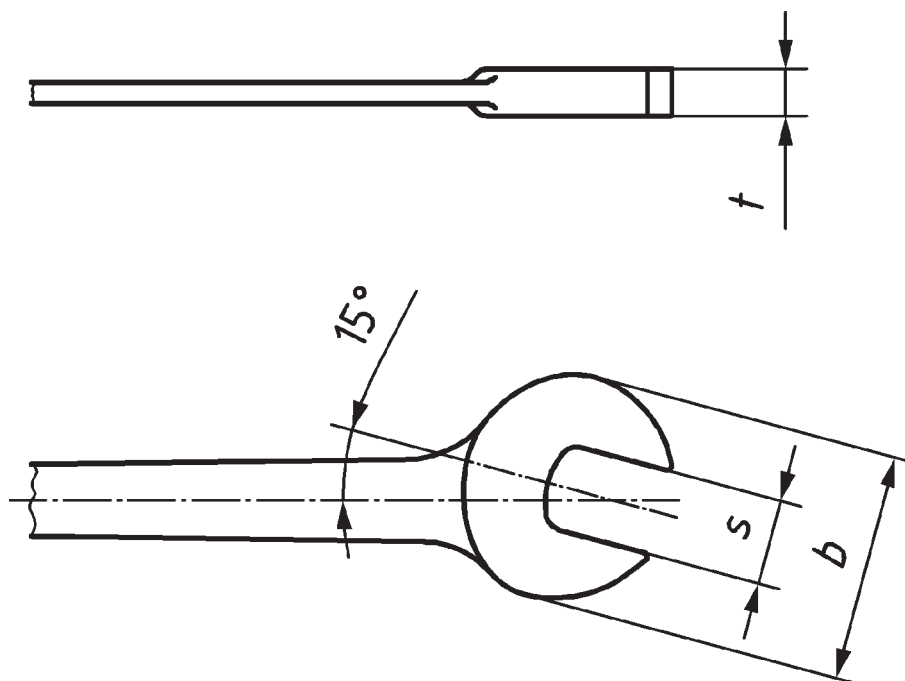


Figure 1 — Dimensions of heads

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Table 1 — Maximum outside dimensions of heads
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Nominal width across flats s^a	ISO 4229:2017 b^b mm max.	t^c mm max.
3,2	12	3,2
4	13	3,2
5	16	3,2
5,5	17	3,6
6 ^d	18	3,8
7	20	4,0
8	22	4,5
9 ^d	24	4,5
10	26	5,0
11	28	5,0
12 ^d	30	5,5
13	32	5,5
14 ^d	34	5,6
15	36	6
16	39	6,5
17 ^d	41	6,8
18	43	7
19 ^d	45	7,6
21	49	8,5
22 ^d	51	8,8
23 ^d	53	9,2

Table 1 (continued)

Nominal width across flats s^a	b^b mm max.	t^c mm max.
24	55	9,5
27	62	11
30	68	12
32 ^d	72	12,8
34	76	13,5
36	81	14,5
41	91	16,5
46	102	18,5
50	110	20
55	121	22
60	131	24
65	141	26
70	152	28
75	162	30
80	173	32
85	183	34
90	188	36
95	198	38
100	208	40
105	218	42
110	228	44
115	238	46
120	248	48

^a Tolerances according to ISO 691.

^b For $s \leq 85$, $b_{\max.} = 2,1s + 5$.
For $s > 85$, $b_{\max.} = 2s + 8$.

^c For $s > 13$, $t = 0,4s$.

^d Nominal width across flats not covered by ISO 272.

5 Technical specifications

5.1 Hardness

The hardness of the wrenches shall be in accordance with ISO 1711-1.

5.2 Torque testing

The wrench shall meet the torque testing requirements given in ISO 1711-1 with the exception that test torque values shall be half of the torque values given in ISO 1711-1, series C.

6 Designation

An engineer's wrench in accordance with this document shall be designated by:

- a) "wrench";
- b) a reference to this document, i.e. ISO 4229;
- c) its opening.

EXAMPLE A single-head engineer's wrench with the wrench opening $s = 18$ mm is designated as follows:

Wrench ISO 4229 – 18

7 Marking

An engineer's wrench shall be marked, permanently and legibly, with at least the following:

- a) the value of the wrench opening;
- b) the name or trademark of the manufacturer (or the responsible supplier).

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Bibliography

- [1] ISO 1703:2005, *Assembly tools for screws and nuts — Designation and nomenclature*
- [2] ISO 272, *Fasteners — Hexagon products — Widths across flats*

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