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

Outils de manœuvre pour vis et écrous — Ouvertures de clés et d'embouts de serrage — Tolérances d'usage courant

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[ISO 691:1997](https://standards.iteh.ai/catalog/standards/sist/3562eb35-5daa-4efe-9fe9-55075d26fc3a/iso-691-1997)

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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International Standard ISO 691 was prepared by Technical Committee ISO/TC 29, *Small tools*, subcommittee SC 10, *Assembly for screws and nuts, pliers and nippers*.

ISO 691:1997

This third edition cancels and replaces the second edition (ISO 691:1983), which has been technically revised.

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

1 Scope

This International Standard specifies tolerances on wrench and socket openings for screws and nuts (or similar parts) having metric width across flats dimensions, as shown diagrammatically below.

It gives, for each dimension, the tolerances for general use, defined by its two deviations, minimum and maximum, with respect to the nominal value.

These deviations have been determined in relation to the width across flats tolerances for screws and nuts specified in ISO 4759-1 and with regard to the manufacture of tightening tools.

The nominal dimensions given in table 1, in addition to the standard values of the metric widths across flats specified in ISO 272, show a certain number of possible intermediate values indicated in parentheses.

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2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 272:1982, *Fasteners — Hexagon products — Width across flats*.

ISO 4759-1:—¹⁾, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters between 1,6 (inclusive) and 150 mm (inclusive) and product grades A, B and C*.

¹⁾ To be published. (Revision of ISO 4759-1:1978)

3 Tolerances

The tolerances are given in table 1.

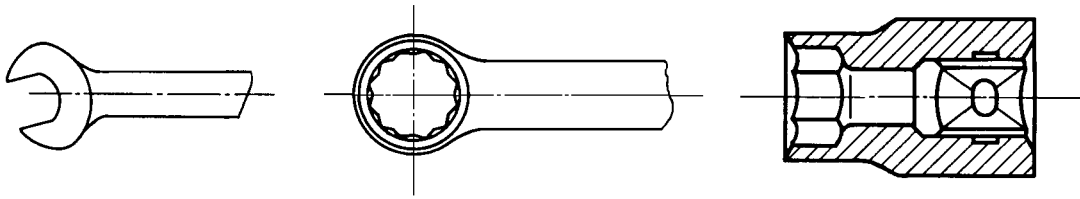


Figure 1 — Wrench, box (ring) wrench and socket wrench

Table 1 — Tolerances on wrench and socket openings

Dimensions in millimetres

Nominal dimensions	Machined closed or open		Unmachined closed	
	Deviations		Deviations	
	min.	max.	min.	max.
3,2	+ 0,02	+ 0,08		
4 – 5 – 5,5	+ 0,02	+ 0,12		
(6) – 7	+ 0,03	+ 0,15		
8 – (9)	+ 0,03	+ 0,15	+ 0,03	+ 0,18
10 – 11	+ 0,04	+ 0,19	+ 0,04	+ 0,24
(12) – 13	+ 0,04	+ 0,24	+ 0,04	+ 0,30
(14) – 15 – 16	+ 0,05	+ 0,27	+ 0,05	+ 0,35
(17) – 18	+ 0,05	+ 0,30	+ 0,05	+ 0,40
(19) – (20) – 21 – (22) – (23) – 24 – (25)	+ 0,06	+ 0,36	+ 0,06	+ 0,46
(26) – 27 – (28) – 30 – (32)	+ 0,08	+ 0,48	+ 0,08	+ 0,58
34 – 36 – 41 – 46 – 50	+ 0,10	+ 0,60	+ 0,10	+ 0,70
55 – 60 – 65 – 70	+ 0,12	+ 0,72	+ 0,12	+ 0,92
75 – 80 – 85 – 90 – 95 – 100	+ 0,15	+ 0,85	+ 0,15	+ 1,15
105 – 110 – 115 – 120 – 130 – 135 – 145	+ 0,20	+ 1,00	+ 0,20	+ 1,40
150 – 155 – 165 – 170 – 175 – 180 – 185 – 190 – 200 – 210	+ 0,25	+ 1,25	–	–

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