INTERNATIONAL STANDARD

ISO

10102

Assembly tools for screws and nuts — Double-headed open-ended engineers' wrenches

Outils de manœuvre pour vis et écrous — Clés à fourche doubles

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.

International Standard ISO 10102 was prepared by Technical Committee ISO/TC 29, *Small tools*.

Annex A of this International Standard is for information only.

Assembly tools for screws and nuts — Double-headed open-ended engineers' wrenches

1 Scope

This International Standard specifies the minimum overall length and the maximum head thickness for double-headed open-ended engineers' wrenches complying with the test torque, series C, of ISO 1711:1975/Amd. 1:1982[1].

Double-headed open-ended engineers' wrenches are listed in ISO 1703 under number 4.

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 in-

dicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 691:1983, *Wrench and socket openings — Metric series — Tolerances for general use.*

ISO 1711:1975, *Hand operated wrenches and sockets — Technical specifications.*
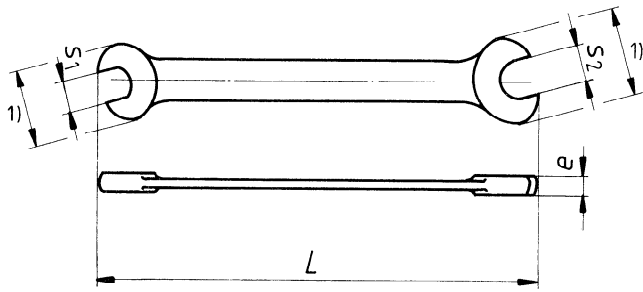
ISO 3318:1990, *Assembly tools for screws and nuts — Double-headed open-ended wrenches, double-headed ring wrenches and combination wrenches — Maximum widths of heads.*

3 Dimensions

See figure 1 and table 1.

NOTE 1   Figure 1 of this International Standard is only an example and should not influence the design of the wrench.

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1) The document is referred to in clause 2 as ISO 1711:1975.

ISO 10102:1990(E)

1) Overall dimensions of heads in accordance with ISO 3318, with the exception of the width across flats 20 mm, 23 mm, 25 mm and 28 mm.

Figure 1

Table 1

Dimensions in millimetres

Pairing[1] [2] $s_1 \times s_2$	L [3] min.	e [4] max.
3,2 × 4	81	3
4 × 5	87	3,5
5 × 5,5	95	3,5
5,5 × 7	99	4,5
(6 × 7)	103	4,5
7 × 8	111	4,5
(8 × 9)	119	5
8 × 10	119	5,5
(9 × 11)	127	6
10 × 11	135	6
10 × 13	135	7
11 × 13	143	7
(12 × 13)	151	7
(13 × 14)	159	7
13 × 15	159	7,5
(13 × 16)	159	8
(13 × 17)	159	8,5
(14 × 15)	167	7,5
15 × 16	175	8
(15 × 18)	175	8,5
(16 × 17)	183	8,5
16 × 18	183	8,5
(17 × 19)	191	9
(18 × 19)	199	9
18 × 21	199	10
(19 × 22)	207	10
(20 × 22)	215	10
(21 × 22)	223	10
(21 × 23)	223	10,5
21 × 24	223	11
(22 × 24)	231	11
24 × 27	247	12
(24 × 30)	247	13
(25 × 28)	255	12
27 × 30	271	13
(27 × 32)	271	13,5
(30 × 32)	295	13,5
30 × 34	295	14
(32 × 34)	311	14
(32 × 36)	311	14,5
34 × 36	327	14,5
36 × 41	343	16
41 × 46	383	17,5
46 × 50	423	19
50 × 55	455	20,5
55 × 60	495	22

1) The pairings are those "recommended" and "less recommended" (in parentheses) by ISO 1085.

2) The tolerances on openings s_1 and s_2 shall comply with ISO 691.

3) $L_{min} = s_1 \times 8 + 55$

where s_1 is the smaller opening.

4) $e_{max} = s_2^{0,75}$

where s_2 is the bigger opening.

2

Annex A

(informative)

Bibliography

[1] ISO 1085:1986, *Assembly tools for screws and nuts — Double-ended wrenches — Size pairing.*

[2] ISO 1703:1983, *Assembly tools for screws and nuts — Nomenclature.*

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UDC 621.883.13

Descriptors: tools, assembly tools, hand tools, wrenches, dimensions.

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