

INTERNATIONAL STANDARD

ISO
7738

Second edition
1990-12-01

Spanners and wrenches — Combination wrenches — Minimum length and thickness of heads

*Outils de manœuvre pour vis et écrous — Clés mixtes de serrage —
Longueurs minimales et épaisseurs des têtes*



Reference number
ISO 7738:1990(E)

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 7738 was prepared by Technical Committee ISO/TC 29, *Small tools*.

This second edition cancels and replaces the first edition (ISO 7738:1987), to which the thickness of heads has been added.

Annex A of this International Standard is for information only.

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International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Spanners and wrenches — Combination wrenches — Minimum length and thickness of heads

1 Scope

This International Standard specifies the minimum length and the maximum thickness of heads of combination wrenches.

Combination wrenches are listed under numbers 13 and 14 in ISO 1703.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encour-

aged to investigate the possibility of applying the most recent edition of the standard indicated 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.*

3 Dimensions

See figure 1 and table 1.

The tolerances of the opening dimension, s , shall conform to those shown in ISO 691:1983, "machined" series.

NOTE 1 Figure 1 shown in this International Standard is given only as an example.

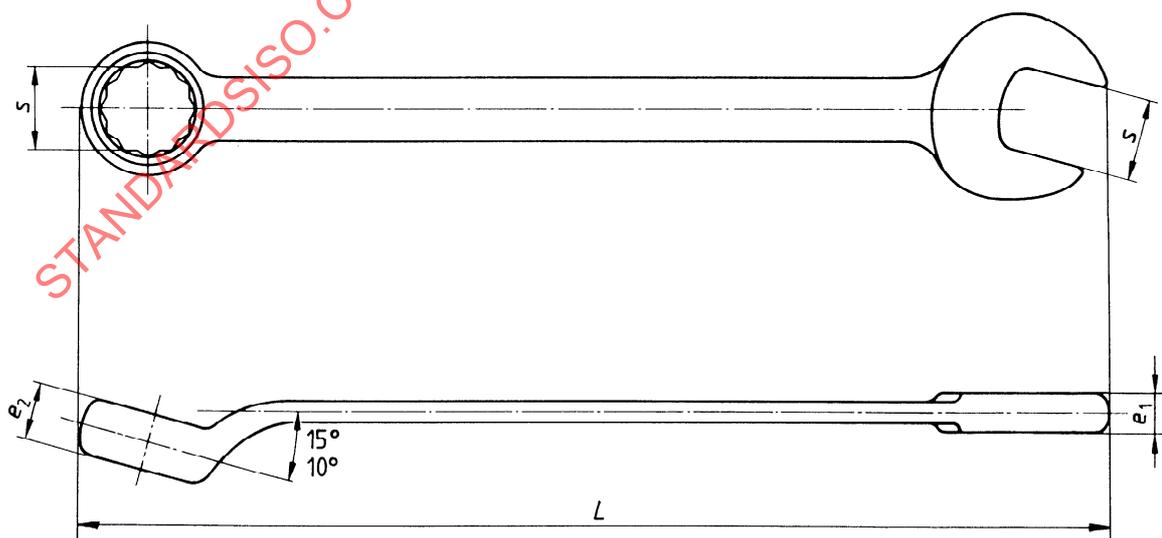


Figure 1

Table 1

Dimensions in millimetres

Wrench opening s	L 1) min.	e_1 2) max.	e_2 3) max.
3,2	45	--	--
4	55	--	--
5	65	--	--
5,5	70	--	--
6	75	4,5	6,5
7	85	5	7
8	90	5	8
9	100	5,5	8,5
10	110	6	9
11	120	6,5	9,5
12	125	7	10
13	135	7	11
14	145	7,5	11,5
15	150	8	12
16	160	8	12,5
17	165	8,5	13
18	180	9	14
19	190	9	14,5
21	215	10	15,5
22	230	10,5	16
24	250	11	17,5
27	275	12,5	19
30	300	13,5	20
32	315	14,5	21
34	330	15	22,5
36	345	15,5	23,5
41	385	17,5	26,5
46	425	19,5	29,5
50	455	21	32

1) L min = $18,2 s^{0,78}$ for wrench openings $3,2 \leq s \leq 17$

L min = $4,8 s^{1,25}$ for wrench openings $18 \leq s \leq 22$

L min = $18 s^{0,825}$ for wrench openings $24 \leq s \leq 50$

2) $e_1 = 0,4 s + 2$ for wrench openings $6 \leq s \leq 15$

$e_1 = 0,4 s + 1,5$ for wrench openings $16 \leq s \leq 34$

$e_1 = 0,4 s + 1$ for wrench openings $36 \leq s \leq 50$

3) $e_2 = 1,5 e_1$ for wrench openings $6 \leq s \leq 15$

$e_2 = 1,55 e_1$ for wrench openings $16 \leq s \leq 27$

$e_2 = 1,55 e_1 - 1$ for wrench openings $30 \leq s \leq 34$

$e_2 = 1,55 e_1 - 0,5$ for wrench openings $36 \leq s \leq 50$

Annex A
(informative)

Bibliography

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

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