INTERNATIONAL STANDARD

ISO 10103

Third edition
2018-03

Assembly tools for screws and nuts — Doubled-headed box wrenches, flat and offset — Outside dimensions and test torques

Outils de manoeuvre pour vis et écrous — Clés polygonales doubles, droites et inclinées — Dimensions extérieures et couples d'essai

Reference number
ISO 10103:2018(E)

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Published in Switzerland

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Foreword

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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).

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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

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 10103:2001), which has been technically revised. The main changes compared to the previous version are as follows:

— Table 1 (preferred pairings) and Table 2 (non-preferred pairings) have been merged into one table;

— sizes of pairings have been added;

— Clause 7 (Technical specification) has been added with a new table giving the minimum test torsion torques;

— the title has been changed.

Assembly tools for screws and nuts — Doubled-headed box wrenches, flat and offset — Outside dimensions and test torques

1 Scope

This document specifies the overall length and the maximum head thickness for double-headed box wrenches, flat (Form B) and offset (Form A).

NOTE The wrenches covered by this document are the ones identified in ISO 1703:2005 under reference numbers 1 1 02 03 0 and 1 1 02 04 0.

This document covers technical specifications for the test torque of these products. All other technical specifications are given in ISO 1711-1.

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 3318, *Assembly tools for screws and nuts — Open-ended wrenches, box wrenches and combination wrenches — Maximum widths of heads*

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 Dimensions

The length l and thickness e are given in Table 1, which is based on the following formulae:

— $l_{min} = s_1 \times 8 + 25$ mm (from pairing 6 × 7 to 16 × 18)

$= s_1 \times 8 + 30$ mm (from pairing 17 × 19 to 27 × 32)

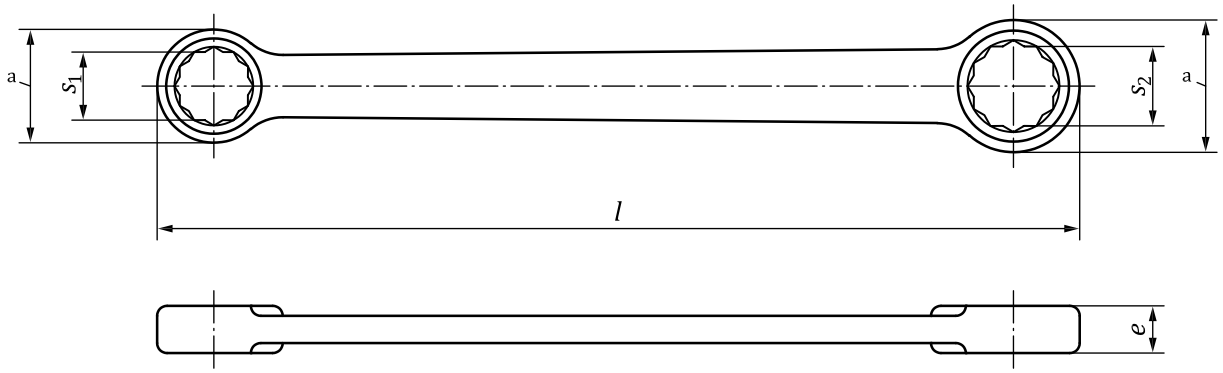
$= s_1 \times 8 + 35$ mm (from pairing 30 × 32 to 55 × 60)

— $e_{max} = 2 \times s_2^{0,6}$

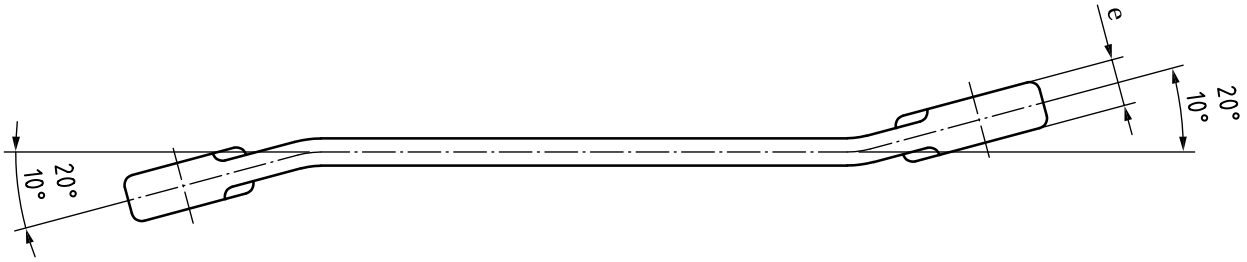
— $l_{max} = l_{min} \times 1,4$

The maximum outside head dimensions shall be those specified in ISO 3318.

Figure 1 shows only an example and should not influence the design of the wrench.



Form B: flat



Form A: off-set

Key

s_1, s_2 nominal width across flats

l length of the wrench

e thickness

a Maximum outside head dimensions according to ISO 3318.

Figure 1 — Double-headed box wrench

Table 1 — Lengths of wrenches and thickness of the heads

Pairing[a] Nominal sizes $s_1 \times s_2$	***l*** mm min.	***l*** mm max.	***e*** mm max.
6 × 7[b]	73	100	6,5
7 × 8	81	113	7
8 × 9[b]	89	115	7,5
8 × 10	89	125	8
10 × 11	105	147	8,5
10 × 12	105	147	9
10 × 13	105	147	9,5
11 × 13	113	158	9,5
12 × 13[b]	121	169	9,5
12 × 14[b]	121	169	9,5
13 × 14[b]	129	181	9,5

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

b The pairing contains at least one value of s not covered by ISO 272.

c This pairing is not covered by ISO 1085.