INTERNATIONAL STANDARD

ISO 2725-2

Fourth edition
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Assembly tools for screws and nuts — Square drive sockets —

Part 2: Machine-operated sockets ("impact")

Outils de manœuvre pour vis et écrous — Douilles à carré conducteur femelle —
Partie 2: Douilles à machine (impact)

Reference number
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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).

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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 fourth edition cancels and replaces the third edition (ISO 2725-2:2015), which has been technically revised with the following changes:

a) additional widths across flat sizes not covered by ISO 272 have been included, in order to better reflect the current market situation;

b) Clause 5 "Technical specifications" has been deleted, as these are given in ISO 1711-2.

A list of all parts in the ISO 2725 series can be found on the ISO website.

Assembly tools for screws and nuts — Square drive sockets —

Part 2: Machine-operated sockets ("impact")

1 Scope

This document specifies dimensions, designation, and marking of machine-operated "impact" square drive sockets with operating end having a hexagonal or double hexagonal form in accordance with ISO 1174-2.

NOTE Machine-operated "impact" square drive sockets covered by this document are the ones identified in ISO 1703 under reference numbers 2 2 02 01 0.

This document does not cover technical specifications for these products. Technical specifications are given in ISO 1711-2.

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 1174-2, *Assembly tools for screws and nuts — Driving squares — Part 2: Driving squares for power socket tools*

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 http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Tolerances for width across flats

Tolerances for width across flats, *s*, shall be in conformity with the tolerances for socket openings given in ISO 691. Manufacturers are free to choose the series of deviations.

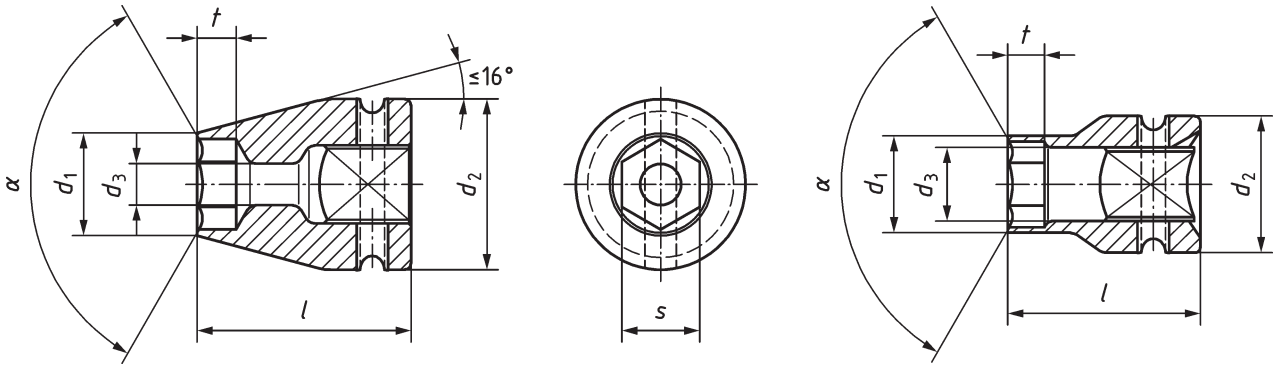
5 Dimensions

Table 1 to Table 6 gives the dimensions, in millimetres, of sockets shown in Figure 1 to Figure 3 for driving squares of 6,3 to 40, which shall be in accordance with ISO 1174-2. Table 7 and Table 8 gives the dimensions, in millimetres, of the retaining pin and the dimensions of the retaining ring respectively, shown in Figure 4.

The figures in this document are given only as examples. They are not intended to influence the manufacturer's design.

NOTE Width across flats, *s*, are partly taken from ISO 272.

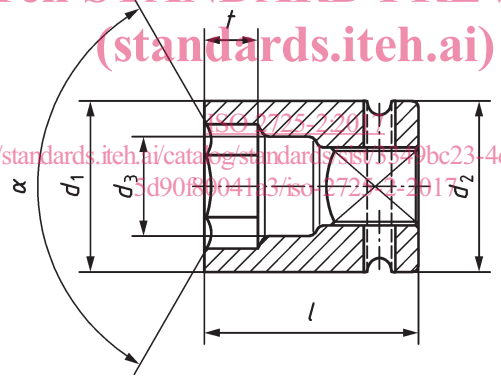
When using male square drive Form E according to ISO 1174-2, guide-ways in both possible connection positions are at the manufacturer's discretion.



Key

α $115° \leq \alpha \leq 150°$

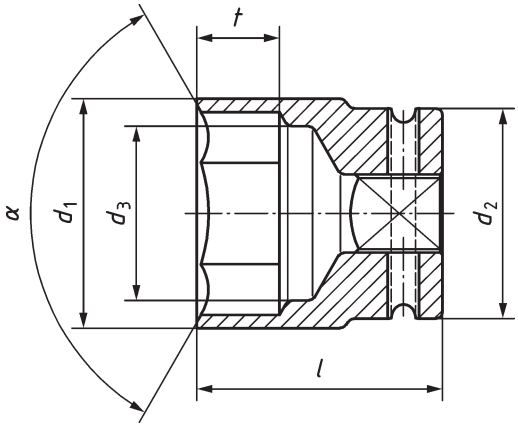
Figure 1 — Sockets with $d_1 < d_2$



Key

α $115° \leq \alpha \leq 150°$

Figure 2 — Sockets with $d_1 = d_2$



Key

α $115° \leq \alpha \leq 150°$

Figure 3 — Sockets with $d_1 > d_2$

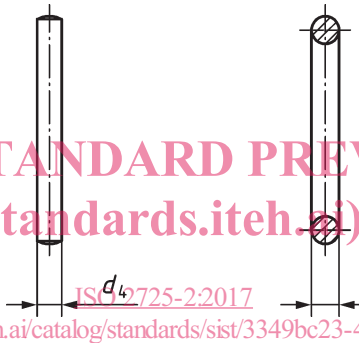


Figure 4 — Retaining pin and ring

Table 1 — Square drive of 6,3

s	D_{max}[c]	t[a] min.	d_1 max.	d_2 max.	d_3[b] min.	l	
						max.	min.
					Bolt clearance hole	**Type A** (normal)	**Type B** (long)
mm	mm	mm	mm	mm	mm	mm	mm
3,2	1,6	1,4	6,8	14	1,7	25	45
4	2	1,7	7,8	14	2,1	25	45
5	2,5	2,1	9,1	14	2,6	25	45
5,5	3	2,5	9,7	14	3,2	25	45
6[d]	3,5[f]	2,9	10,3	14	3,7	25	45
7	5	3,3	11,6	14	5,3	25	45
8	6	4,8	12,8	14	6,3	25	45
9[d]	6[e]	5,1	14,1	16,0	6,3	25	45
10	8	5,3	15,3	16	8,4	25	45
11	8[e]	5,8	16,6	16,6	8,4	25	45
12[d]	8	6,4	17,8	17,8	8,4	25	45
13	10	6,9	19,1	19,1	10,5	25	45
14[d]	10	7,4	20,4	20,6	10,5	27	45

Table 1 *(continued)*

s	D_{max}[c]	t[a] min.	d_1 max.	d_2 max.	d_3[b] min.	l max.	l min.
					Bolt clearance hole	**Type A** (normal)	**Type B** (long)
	mm	mm	mm	mm	mm	mm	mm
15[d]	12	8,0	21,6	22	12,6	30	45
16	12[e]	8,5	22	22	12,6	35	45
17 [d]	12	9,7	23	23	12,6	35	45

NOTE t_{min} is interpolated for sizes not covered by ISO 4032 and ISO 4014.

[a] $t_{min} = m_{max} + 0{,}1$; where m_{max} is the maximum height of the nut, according to ISO 4032.

[b] $d_{3min} = D_{max} \times 1{,}05$.

[c] The maximum thread diameter, D_{max}, is the largest nominal thread diameter found in current International Standards like, for example, ISO 4014, ISO 4032 and ISO 272.

[d] Nominal dimension not covered by ISO 272.

[e] Value determined in order to avoid reduction in hole clearance size.

[f] Value determined by market study.

Table 2 — Square drive of 10

s	D_{max}[c]	t[a] min.	d_1 max.	d_2 max.	d_3[b] min.	l max.	l min.
					Bolt clearance hole	**Type A** (normal)	**Type B** (long)
	mm	mm	mm	mm	mm	mm	mm
6[d]	3,5[f]	2,9	11,6	20	3,7	34	44
7	5	3,3	12,8	20	5,3	34	44
8	6	4,8	14,1	20	6,3	34	44
9[d]	6[e]	5,1	15,4	20	6,3	34	44
10	8	5,3	16,6	20	8,4	34	44
11	8[e]	5,8	17,8	20	8,4	34	44
12[d]	8	6,4	19,1	20	8,4	34	44
13	10	6,9	20,3	28	10,5	34	44
14[d]	10	7,4	21,6	28	10,5	34	44
15[d]	12	8,0	22,8	28	12,6	34	45
16	12[e]	8,5	24,1	28	12,6	34	50
17[d]	12	9,7	25,4	28	12,6	34	52
18	14	10,9	26,6	28	14,7	34	54
19[d]	14	11,9	27,8	28	14,7	34	54
20[d]	14[e]	12,4	29,3	34	14,7	34	54
21	16	12,9	30,6	34	16,8	34	54
22[d]	16	13,9	31,8	34	16,8	34	54

Table 2 *(continued)*

s	D_{max}[c]	t[a] min.	d_1 max.	d_2 max.	d_3[b] min.	l max.	l min.
					Bolt clearance hole	**Type A** (normal)	**Type B** (long)
	mm	mm	mm	mm	mm	mm	mm
23[d]	16[e]	14,4	33	34	16,8	34	54
24	16	14,9	34,3	34	16,8	34	54

NOTE t_{min} is interpolated for sizes not covered by ISO 4032 and ISO 4014.

[a] $t_{min} = m_{max} + 0,1$; where m_{max} is the maximum height of the nut, according to ISO 4032.

[b] $d_{3min} = D_{max} \times 1,05$.

[c] The maximum thread diameter, D_{max}, is the largest nominal thread diameter found in current International Standards like, for example, ISO 4014, ISO 4032, ISO 272.

[d] Nominal dimension not covered by ISO 272.

[e] Value determined in order to avoid reduction in hole clearance size.

[f] Value determined by market study.

Table 3 — Square drive of 12,5

s	D_{max}[c]	t[a] min.	d_1 max.	d_2 max.	d_3[b] min.	l max.	l min.
					Bolt clearance hole	**Type A** (normal)	**Type B** (long)
	mm	mm	mm	mm	mm	mm	mm
8	6	4,8	15,5	28	6,3	40	75
9[d]	6[e]	5,1	16,7	28	6,3	40	75
10	8	5,3	17,8	28	8,4	40	75
11	8[e]	5,8	19	28	8,4	40	75
12[d]	8	6,4	20,3	28	8,4	40	75
13	10	6,9	21,5	28	10,5	40	75
14[d]	10	7,4	22,8	37	10,5	40	75
15[d]	12	8,0	24	37	12,6	40	75
16	12[e]	8,5	25,3	37	12,6	40	75
17[d]	12	9,7	26,5	37	12,6	40	75
18	14	10,9	27,8	37	14,7	40	75
19[d]	14	11,9	29	37	14,7	40	75
20[d]	14[e]	12,4	31,5	37	14,7	40	75
21	16	12,9	31,5	37	16,8	40	75
22[d]	16	13,9	32,8	37	16,8	40	75
23[d]	16[e]	14,4	35,1	37	16,8	45	75
24	16	14,9	36	37	16,8	45	75
25[d]	18[e]	14,9	38,1	39	18,3	45	75
27	20	15,9	39	39	21,0	50	75
30	20	18,1	44,6	44,6	21,0	50	75