

---

---

**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 —*

**iTeh STANDARD PREVIEW**  
*Partie 2: Douilles à machine («impact»)*  
**(standards.iteh.ai)**

ISO 2725-2:2007

<https://standards.iteh.ai/catalog/standards/sist/43742d5f-bc25-49cf-b690-859b51548dc6/iso-2725-2-2007>



**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 2725-2:2007](https://standards.iteh.ai/catalog/standards/sist/43742d5f-bc25-49cf-b690-859b51548dc6/iso-2725-2-2007)

<https://standards.iteh.ai/catalog/standards/sist/43742d5f-bc25-49cf-b690-859b51548dc6/iso-2725-2-2007>

© ISO 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 2725-2 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 10, *Assembly tools for screws and nuts, pliers and nippers*.

This second edition cancels and replaces the first edition (ISO 2725-2:1996), which has been technically revised.

ISO 2725 consists of the following parts, under the general title *Assembly tools for screws and nuts — Square drive sockets*:

- iTeh STANDARD PREVIEW**  
(standards.iteh.ai)
- <https://standards.iteh.ai/catalog/standards/sist/43742d5f-bc25-49cf-b690-859b51548dc6/iso-2725-2-2007>
- *Part 1: Hand-operated sockets*
  - *Part 2: Machine-operated sockets (“impact”)*
  - *Part 3: Machine-operated sockets (“non-impact”) — Dimensions*

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

ISO 2725-2:2007

<https://standards.iteh.ai/catalog/standards/sist/43742d5f-bc25-49cf-b690-859b51548dc6/iso-2725-2-2007>

# Assembly tools for screws and nuts — Square drive sockets —

## Part 2: Machine-operated sockets (“impact”)

### 1 Scope

This part of ISO 2725 specifies dimensions, the designation and the marking of machine-operated “impact” square drive sockets with operating end having a hexagonal or double hexagonal form in accordance with ISO 1174-2.

Hand-operated sockets are dealt with in ISO 2725-1.

NOTE 1 Machine-operated “impact” square drive sockets are listed under number 2 2 02 01 0 in ISO 1703.

NOTE 2 The figures in this part of ISO 2725 are given only as examples. They are not intended to influence the manufacturer's design.

### 2 Normative references

The following referenced documents are indispensable for the application 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 272, *Fasteners — Hexagon products — Width across flats*

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*

ISO 1711-2, *Assembly tools for screws and nuts — Technical specifications — Part 2: Machine-operated sockets (impact)*

ISO 4014, *Hexagon head bolts — Product grades A and B*

### 3 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.

## 4 Dimensions

Tables 1 to 7 give the dimensions, in millimetres, of sockets shown in Figures 1 to 3 for driving squares of 6,3 mm to 40 mm (in accordance with ISO 1174-2). Tables 8 and 9 give the dimensions, in millimetres, of the retaining pin and the dimensions of the retaining ring respectively, shown in Figure 4.

Width across flats shall be according to 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.

## 5 Technical specifications

The technical specifications shall be in accordance with ISO 1711-2.

## 6 Designation

A machine-operated square drive socket in accordance with this part of ISO 2725 shall be designated by:

- a) "Hex socket" or "Bi-hex socket" depending on its form;
- b) reference to this part of ISO 2725 (i.e. ISO 2725-2);
- c) square drive dimensions, in millimetres;
- d) width across flats, in millimetres;
- e) type.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**  
<https://standards.iteh.ai/catalog/standards/sist/43742d5f-bc25-49cf-b690-859b51548dc6/iso-2725-2-2007>

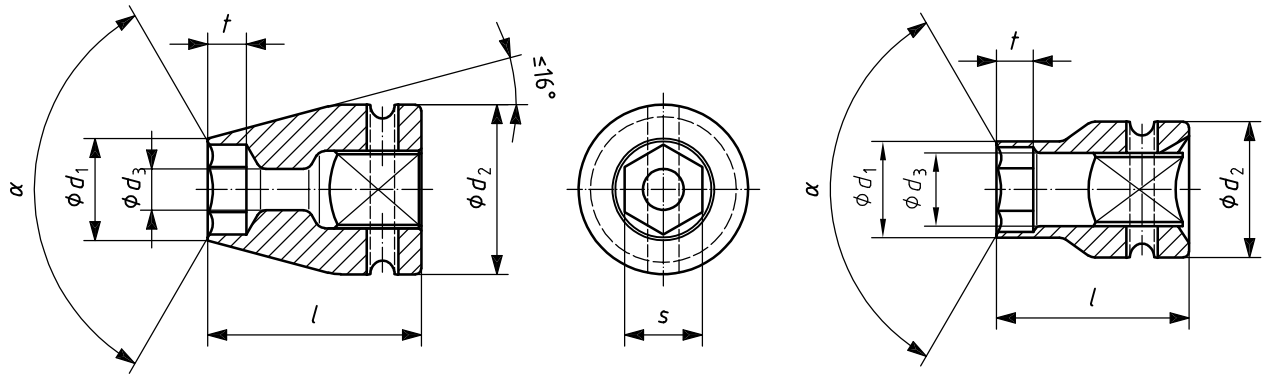
EXAMPLE A double hexagon machine-operated square drive socket "impact" with 12,5 mm square drive size and width across flats  $s = 10$  mm is designated as follows:

**Bi-hex impact socket ISO 2725-2 - 12,5 × 10**

## 7 Marking

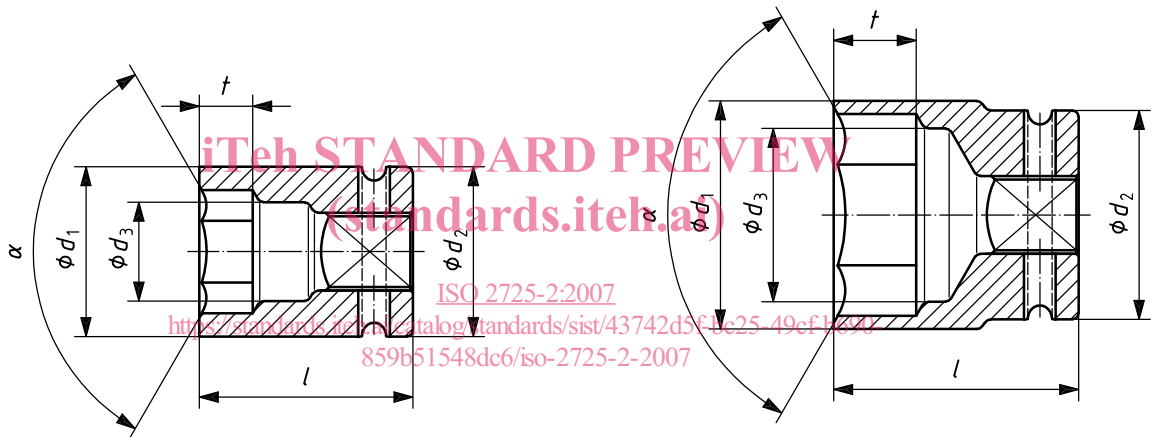
The machine-operated "impact" square drive socket shall be marked, permanently and legibly, with at least the following information:

- the name or trademark of the manufacturer (or supplier);
- the width across flats.



$\alpha: 115^\circ \leq \alpha \leq 150^\circ$

Figure 1 — Sockets with  $d_1 < d_2$



$\alpha: 115^\circ \leq \alpha \leq 150^\circ$

$\alpha: 115^\circ \leq \alpha \leq 150^\circ$

Figure 2 — Sockets with  $d_1 = d_2$

Figure 3 — Sockets with  $d_1 > d_2$

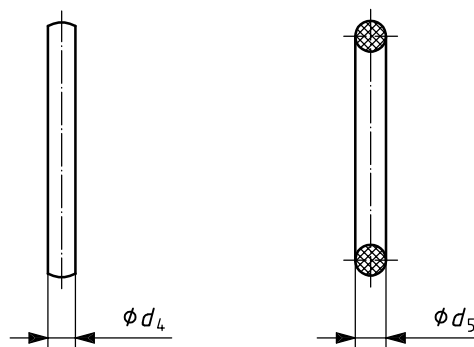


Figure 4 — Retaining pin and ring

Table 1 — Square drive of 6,3 mm

s	t <sup>a</sup> min.	d <sub>1</sub> max.	d <sub>2</sub> max.	d <sub>3</sub> min. Bolt clearance hole	l	
					max. Type A (normal)	min. Type B (long)
3,2	1,8	6,8	14	1,9	25	45
4	2,1	7,8	14	2,4	25	45
5	2,5	9,1	14	3	25	45
5,5	2,9	9,7	14	3,6	25	45
7	3,7	11,6	14	4,8	25	45
8	5,2	12,8	14	6	25	45
10	5,7	15,3	16	7,2	25	45
11	6,6	16,6	16,6	8,4	25	45
13	7,3	19,1	19,1	9,6	25	45
15	8,3	21,6	22	11,3	30	45
16	8,9	22	22	12,3	35	45

<sup>a</sup>  $t_{\min} = k_{\max} + 0,5$ ; ( $k_{\max}$ , height of head, according to ISO 4014).

iTeh STANDARD PREVIEW

Table 2 — Square drive of 10 mm

s	t <sup>a</sup> min.	d <sub>1</sub> max.	d <sub>2</sub> max.	d <sub>3</sub> min. Bolt clearance hole	l	
					max. Type A (normal)	min. Type B (long)
7	3,7	12,8	20	4,8	34	44
8	5,2	14,1	20	6	34	44
10	5,7	16,6	20	7,2	34	44
11	6,6	17,8	20	8,4	34	44
13	7,3	20,3	28	9,6	34	44
15	8,3	22,8	28	11,3	34	45
16	8,9	24,1	28	12,3	34	50
18	11,3	26,6	28	14,4	34	54
21	13,3	30,6	34	16,8	34	54
24	15,3	34,3	34	19,2	34	54

<sup>a</sup>  $t_{\min} = k_{\max} + 0,5$ ; ( $k_{\max}$ , height of head, according to ISO 4014).



Table 3 — Square drive of 12,5 mm

<i>s</i>	<i>t</i> <sup>a</sup> min.	<i>d</i> <sub>1</sub> max.	<i>d</i> <sub>2</sub> max.	<i>d</i> <sub>3</sub> min. Bolt clearance hole	<i>l</i>	
					max. Type A (normal)	min. Type B (long)
8	5,2	15,5	28	6	40	75
10	5,7	17,8	28	7,2	40	75
11	6,6	19	28	8,4	40	75
13	7,3	21,5	28	9,6	40	75
15	8,3	24	37	11,3	40	75
16	8,9	25,3	37	12,3	40	75
18	11,3	27,8	37	14,4	40	75
21	13,3	31,5	37	16,8	40	75
24	15,3	36	37	19,2	45	75
27	17,1	39	39	21,6	50	75
30	18,5	44,6	44,6	24	50	75
34	20,2	49,5	49,5	26,4	50	75

<sup>a</sup>  $t_{\min} = k_{\max} + 0,5$ ; ( $k_{\max}$ , height of head, according to ISO 4014).

(standards.iteh.ai)

ISO 2725-2:2007  
Table 4 — Square drive of 16 mm

<i>s</i>	<i>t</i> <sup>a</sup> min.	<i>d</i> <sub>1</sub> max.	<i>d</i> <sub>2</sub> max.	<i>d</i> <sub>3</sub> min. Bolt clearance hole	<i>l</i>	
					max. Type A (normal)	min. Type B (long)
15	8,3	26,3	35	11,3	48	85
16	8,9	27,5	35	12,3	48	85
18	11,3	30	35	14,4	48	85
21	13,3	33,8	35	16,8	48	85
24	15,3	37,5	37,5	19,2	51	85
27	17,1	41,3	41,3	21,6	51	85
30	18,5	45	45	24	51	85
34	20,2	50	50	26,4	55	85
36	22	52,5	52,5	28,8	55	85

<sup>a</sup>  $t_{\min} = k_{\max} + 0,5$ ; ( $k_{\max}$ , height of head, according to ISO 4014).