

INTERNATIONAL
STANDARD

ISO
1174-2

First edition
1996-12-01

**Assembly tools for screws and nuts —
Driving squares —**

Part 2:
Driving squares for power socket tools

*Outils de manœuvre pour vis et écrous — Carrés d'entraînement —
Partie 2: Carrés d'entraînement pour outils à machine*



Reference number
ISO 1174-2:1996(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 1174-2 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 10, *Assembly tools for screws and nuts, pliers and nippers*.

This first edition of ISO 1174-2 as well as ISO 1174-1 cancels and replaces ISO 1174:1975, which has been technically revised.

ISO 1174 consists of the following parts, under the general title *Assembly tools for screws and nuts — Driving squares*:

- *Part 1: Driving squares for hand socket tools*
- *Part 2: Driving squares for power socket tools*

Annex A of this part of ISO 1174 is for information only.

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Assembly tools for screws and nuts — Driving squares —

Part 2:

Driving squares for power socket tools

1 Scope

This part of ISO 1174 specifies the dimensions and designation of driving squares for power socket tools.

Driving squares for hand socket tools are dealt with in ISO 1174-1.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 1174. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 1174 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3:1973, *Preferred numbers — Series of preferred numbers*.

ISO 286-1:1988, *ISO system of limits and fits — Part 1: Bases of tolerances, deviations and fits*.

3 Dimensions

3.1 General

Nominal dimensions of driving squares, in millimetres, have been selected from the values of the R 10 series of preferred numbers in accordance with ISO 3.

3.2 Interchangeability

Driving square maximum and minimum dimensions have been selected for the types of tool described in 3.3 and 3.4 so as to allow for interchangeability, whatever the measurement system used.

Deviations, between maximum and minimum dimensions correspond

- for s_1 to tolerances of grade IT 10 in accordance with ISO 286-1;
- for s_2 to tolerances of grade IT 11 in accordance with ISO 286-1.

3.3 Male squares

See figures 1 and 2 and table 1.

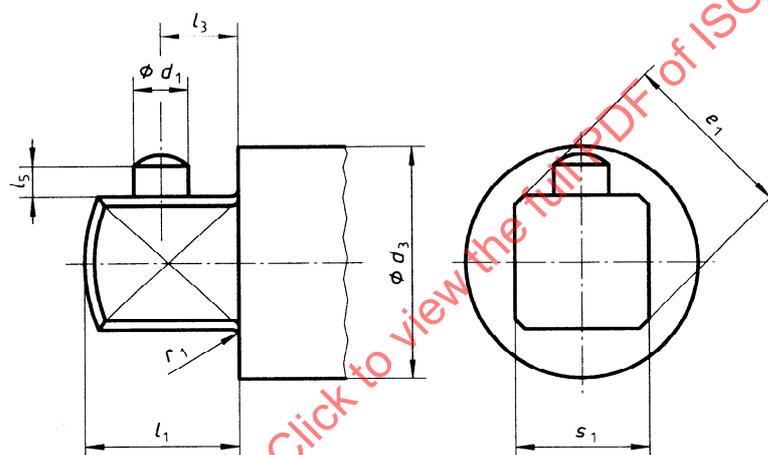


Figure 1 — Type E with plunger retainer

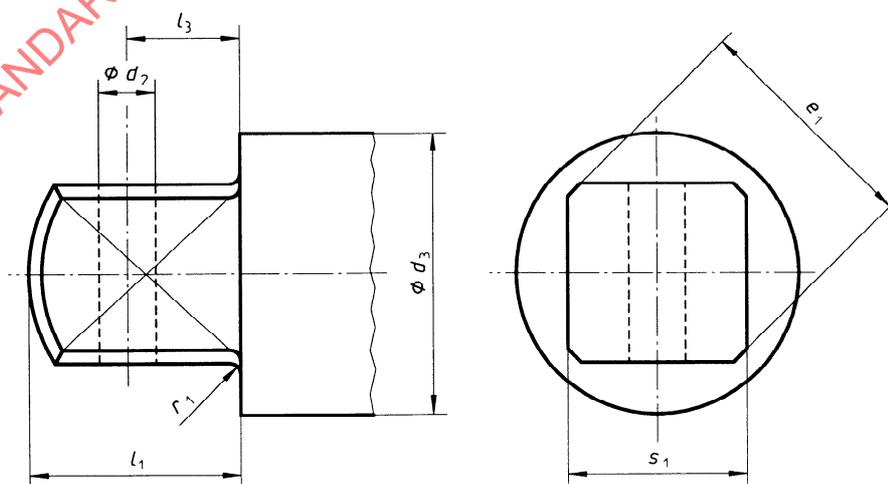


Figure 2 — Type F with through pinhole

Table 1 — Male square dimensions, types E and F

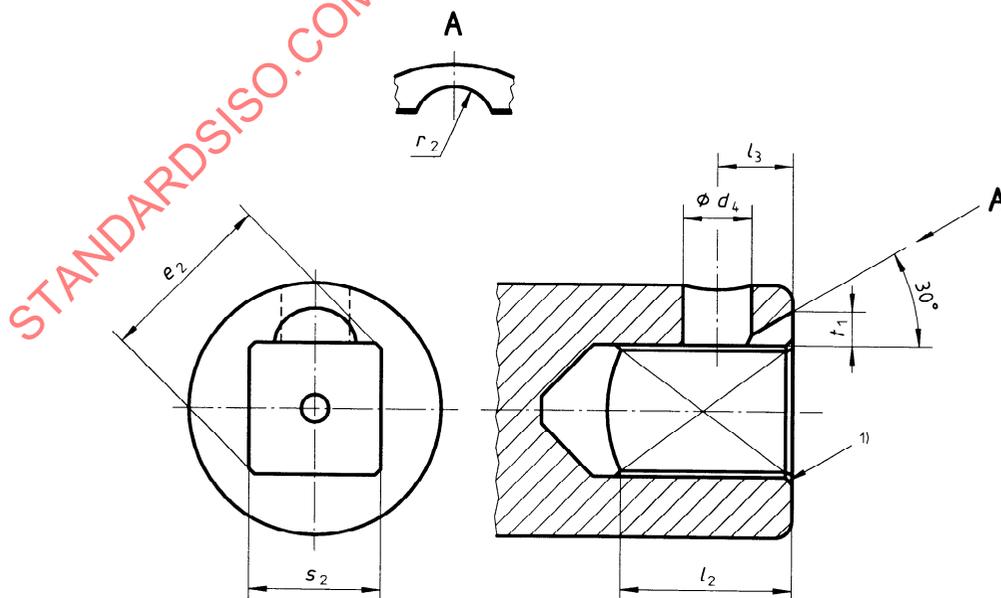
Dimensions in millimetres

| Type | s_1 | | | d_1 h11 | d_2 H13 | d_3 min. | e_1 | | l_1 max. | l_3 | | l_5 min. | r_1 ¹⁾ max. |
|------|-------------|-------|-------|--------------|--------------|---------------|-------|------|---------------|-------|-------|---------------|-----------------------------|
| | nom. | max. | min. | | | | max. | min. | | nom. | tol. | | |
| E, F | 6,3 | 6,35 | 6,29 | 1,5 | 2 | 9,5 | 8,4 | 8,0 | 7,5 | 4 | ± 0,2 | 1,3 | 0,5 |
| E, F | 10 | 9,53 | 9,47 | 3,9 | 3 | 14 | 12,7 | 12,2 | 11 | 5,5 | ± 0,2 | 2 | 0,6 |
| E, F | 12,5 | 12,70 | 12,63 | 4,6 | 4 | 18,5 | 16,9 | 16,3 | 15,5 | 8 | ± 0,3 | 2,3 | 0,8 |
| E, F | 16 | 15,88 | 15,81 | 4,6 | 4,5 | 23,5 | 21,2 | 20,4 | 16,3 | 8 | ± 0,3 | 2,3 | 1 |
| F | 20 | 19,05 | 18,97 | — | 6 | 28 | 25,4 | 24,4 | 23 | 10,2 | ± 0,3 | — | 1,2 |
| F | 25 | 25,40 | 25,32 | — | 6,5 | 37,5 | 34,0 | 32,4 | 28 | 15 | ± 0,3 | — | 1,6 |
| F | 40 | 38,1 | 38,0 | — | 8 | 55,5 | 50 | 48 | 39,3 | 16,1 | ± 0,3 | — | 2,5 |
| F | 63 | 63,50 | 63,38 | — | 10 | 93 | 84 | 82 | 55,6 | 38,1 | ± 0,4 | — | 4 |

1) r_1 applies to all transition areas to the face.

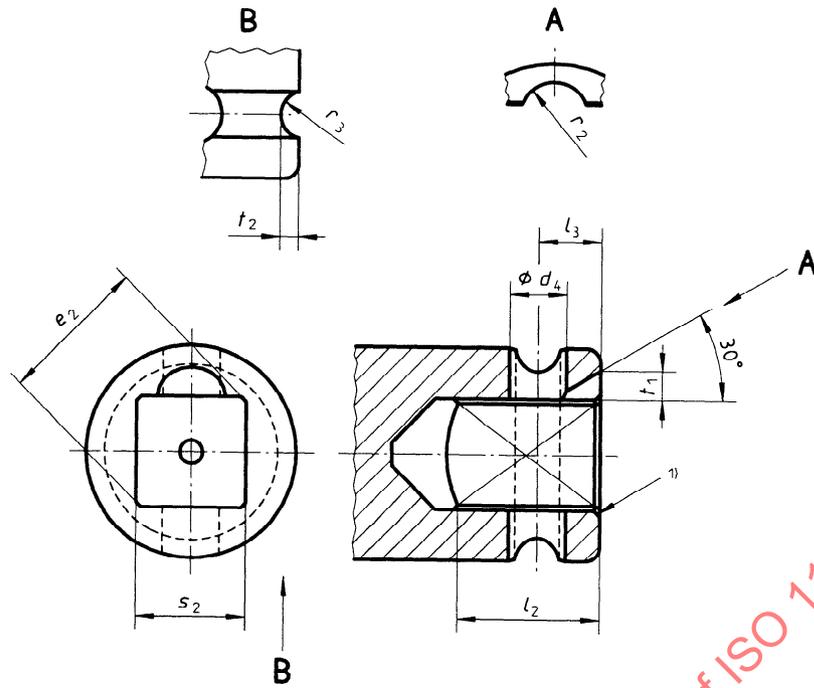
3.4 Female squares

See figures 3, 4 and 5 and table 2.



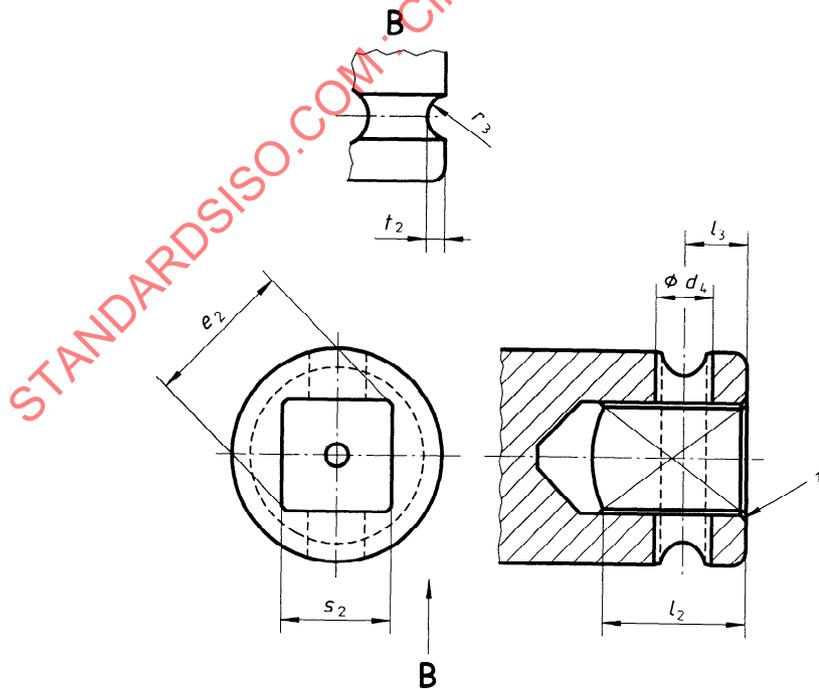
1) Chamfered or rounded in conformity with radius r_1 of the male square.

Figure 3 — Type J



1) Chamfered or rounded in conformity with radius r_1 of the male square.

Figure 4 — Type G



1) Chamfered or rounded in conformity with radius r_1 of the male square.

Figure 5 — Type H

Table 2 — Female square dimensions, types G, H and J

Dimensions in millimetres

| Type | s_2 | | | d_4 min. | e_2 min. | l_2 min. | l_3 | | r_2 | r_3 | t_1 | t_2 |
|------|-------------|-------|-------|---------------|---------------|---------------|-------|-------|-------|-------|-------|-------|
| | nom. | max. | min. | | | | nom. | tol. | | | | |
| G, J | 6,3 | 6,50 | 6,41 | 3 | 8,5 | 8 | 4 | ± 0,2 | 2 | 1,2 | 1,5 | 1 |
| G, J | 10 | 9,67 | 9,58 | 5 | 12,9 | 11,5 | 5,5 | ± 0,2 | 3 | 2 | 2,5 | 1,6 |
| G, J | 12,5 | 12,87 | 12,76 | 6 | 17,1 | 16 | 8 | ± 0,3 | 4 | 2,5 | 3 | 2 |
| G, H | 16 | 16,04 | 15,93 | 6 | 21,4 | 16,8 | 8 | ± 0,3 | 4 | 2,5 | 3 | 2,5 |
| H | 20 | 19,24 | 19,11 | 6 | 25,6 | 24 | 10,2 | ± 0,3 | — | 3 | — | 3 |
| H | 25 | 25,59 | 25,46 | 6,5 | 34,3 | 29 | 15 | ± 0,3 | — | 4 | — | 4 |
| H | 40 | 38,35 | 38,19 | 8 | 50,4 | 41,3 | 16,1 | ± 0,3 | — | 5 | — | 5 |
| H | 63 | 63,79 | 63,60 | 10 | 85 | 57,6 | 38,1 | ± 0,4 | — | 6 | — | 6 |

4 Designation

A driving square for power socket tools in accordance with this part of ISO 1174 shall be designated by

- “Male square” or “Female square” as appropriate;
- reference to this part of ISO 1174, i.e. ISO 1174-2;
- type;
- nominal dimension of driving square, in millimetres.

EXAMPLE

Male driving square for power socket tools of type F with a nominal dimension 16 mm is designated as follows:

Male square ISO 1174-2 - F 16

Annex A

(informative)

Bibliography

- [1] ISO 1174-1:1996, *Assembly tools for screws and nuts — Driving squares — Part 1: Driving squares for hand socket tools.*
- [2] ISO 2725-2:1996, *Assembly tools for screws and nuts — Square drive sockets — Part 2: Machine operated sockets "impact" — Dimensions.*

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