

INTERNATIONAL STANDARD

ISO
9181

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Tools for pressing — Round punches with 60° conical head and reduced shank

*Outillage de presse — Poinçons ronds à tête conique à 60° et à corps
épaulé*



Reference number
ISO 9181:1990(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 9181 was prepared by Technical Committee ISO/TC 29, *Small tools*.

Annex A of this International Standard is for information only.

Tools for pressing — Round punches with 60° conical head and reduced shank

1 Scope

This International Standard specifies the dimensions and tolerances, in millimetres, for round punches with 60° conical head and reduced shank, having shank diameters D_1 of 2 mm or 3 mm.

It gives examples of materials and hardness, and specifies the designation of punches which meet the requirements of this International Standard.

The main use of punches defined in this International Standard is for punching holes in steel sheet. They may also be used for punching holes in other materials.

2 Dimensions

See figure 1 and table 1.

3 Material and hardness

The material is left to the manufacturer's discretion. The following hardness values are given as examples:

- a) tool steel with 12 % Cr:
 - point: (62 ± 2) HRC
 - head: (45 ± 5) HRC

- b) high-speed steel:

- point: (64 ± 2) HRC
- head: (50 ± 5) HRC

4 Designation

A round punch with 60° conical head and reduced shank in accordance with this International Standard shall be designated by

- a) "Round punch with conical head";
- b) reference to this International Standard;
- c) its shank diameter, D_1 ;
- d) its point diameter, D_3 ;
- e) its total length, l .

EXAMPLE

The designation for a round punch with 60° conical head and reduced shank, of shank diameter $D_1 = 2$ mm, point diameter $D_3 = 0,5$ mm and total length $l = 71$ mm is as follows:

Round punch with conical head ISO 9181 - 2 × 0,5 × 71

Surface roughness values in micrometres

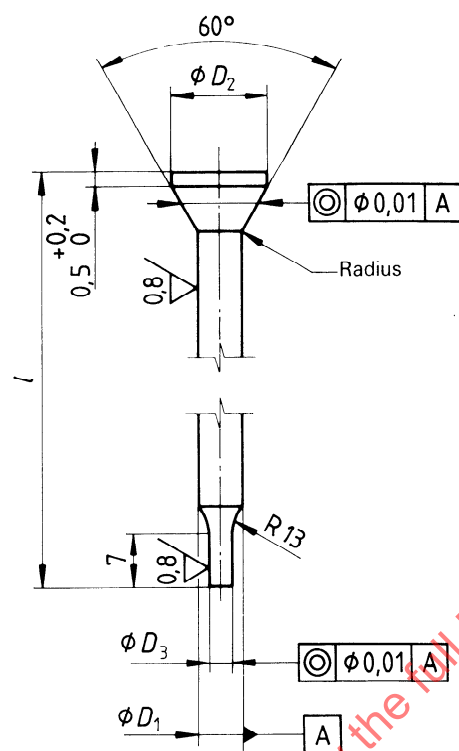


Figure 1

Table 1

D_1 h6	D_3 j6	D_2	l +0,5 0	
			71	80
2	$0,5 \leq D_3 \leq 1,6$	3	×	×
3	$1,4 \leq D_3 \leq 2,9$	4,5	×	×

Annex A

(informative)

Bibliography

- [1] ISO 4957:1980, *Tool steels*.
- [2] ISO 6508:1986, *Metallic materials — Hardness test — Rockwell test (scales A - B - C - D - E - F - G - H - K)*.
- [3] ISO 6752:1984, *Round punches with 60 degrees conical head and straight shank*.
- [4] ISO 8695:1987, *Tools for pressing — Punches — Nomenclature and terminology*.

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