
International Standard



8021

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Round punches with cylindrical head and straight shank

Poinçons ronds à tête cylindrique et à corps droit

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Descriptors : tools, punches, dimensions, designation, hardness.

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8021 was prepared by Technical Committee ISO/TC 29, *Small tools*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Round punches with cylindrical head and straight shank

1 Scope and field of application

This International Standard lays down the basic dimensions and tolerances in millimetres for round punches with cylindrical head and straight shank in the diameter range 1 to 32 mm.

It gives materials and hardness as examples, and specifies the designation of punches according to 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 References

ISO 4957, *Tool steels*.

ISO 6508, *Metallic materials — Hardness test — Rockwell test (scales A — B — C — D — E — F — G — H — K)*.¹⁾

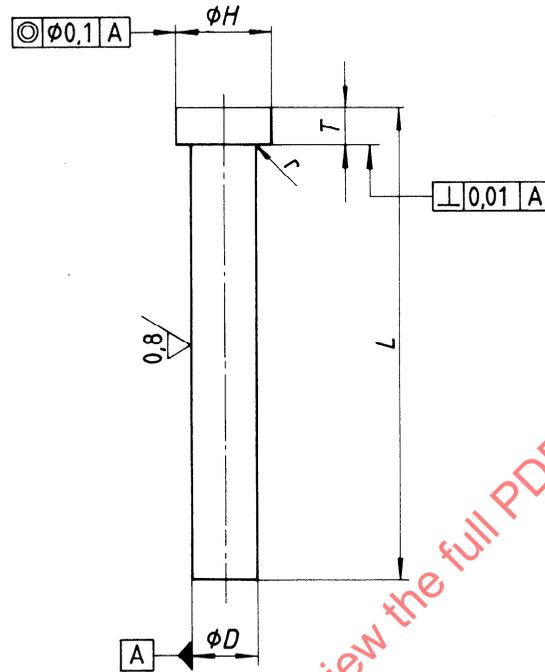
ISO 8695, *Punches — Nomenclature and terminology*.²⁾

1) At present at the stage of draft. (Revision of ISO/R 80-1968 and ISO 2713-1973.)

2) At present at the stage of draft.

3 Dimensions

Surface roughness value in micrometres



<i>D</i> m5	<i>T</i> + 0,25 0	<i>H</i> 0 -0,25	<i>L</i> + 1,0 0	<i>r</i> ± 0,1
1,0 1,05 1,1 1,2 1,25 1,3 1,4 1,5 1,6	3,0	3,0	63, 71, 80, 100	0,25
1,7 1,8 1,9 2,0				
2,1 2,2 2,4 2,5 2,6 2,8 3,0				
3,2 3,4 3,6 3,8 4,0				
4,2 4,5				

<i>D</i> m5	<i>T</i> + 0,25 0	<i>H</i> 0 -0,25	<i>L</i> + 1,0 0	<i>r</i> ± 0,1
4,8 5,0 5,3 5,6 6,0	5,0	11,0 13,0 16,0 19,0	63, 71, 80, 100	0,25
6,3 6,7 7,1 7,5 8,0				
8,5 9,0 9,5 10,0				
10,5 11,0 12,0 12,5 13,0				
14,0 15,0 16,0				
20,0 25,0 32,0				

NOTE — The combination of the length and diameter values can be chosen freely but shall be compatible with the particular application.

4 Material and hardness

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

- | | |
|-----------------------------------|------------|
| a) tool steel with 5 % to 12 % Cr | |
| — point : | 62 ± 2 HRC |
| — head : | 45 ± 5 HRC |
| b) high-speed steel | |
| — point : | 64 ± 2 HRC |
| — head : | 52 ± 5 HRC |

5 Designation

A punch in accordance with this International Standard shall be designated by

- a) reference to this International Standard;
- b) its point diameter, D ;
- c) its length, L .

Example :

Punch ISO 8021-6,3 × 80

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