



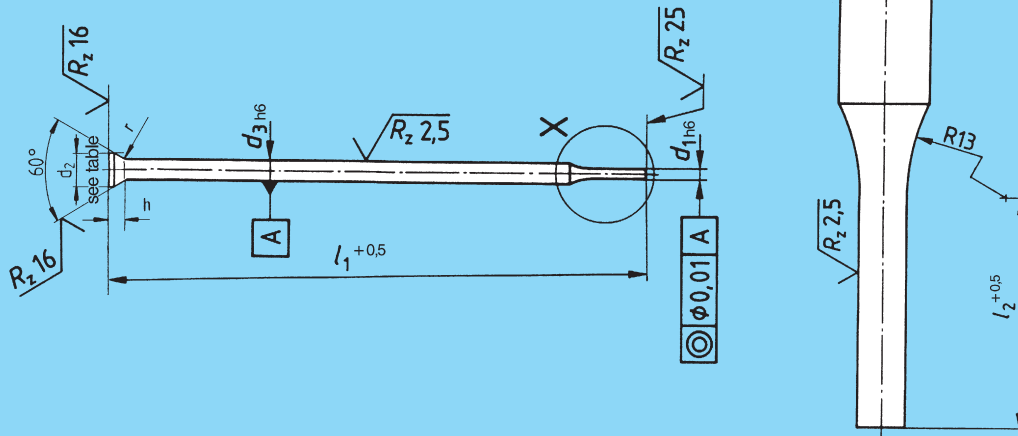
# Round Piercing Punches

## DIN 9861 Part 2

### Type C

### Precision finish

- with stepped shaft
- with 60° conical head
- plunge cut ground



#### Range of application

For press tools used for piercing/cutting sheet, steel, non ferrous metals, plastics, paper, basic printed circuit board material.

#### Size/head size

See table - all dimensions are in mm

#### Fit/tolerances

Nominal diameter  $d_1$  (step)

Nominal diameter  $d_3$  (shaft)

h6	0,50 - 3,00 Ø	≥ 3,00 - 6,00 Ø
	- 0,006	- 0,008

h6	1,50 - 3,00 Ø	≥ 3,00 - 6,00 Ø
	- 0,006	- 0,008

Length: total  $l_1^{+0,5}$   
step  $l_2^{+0,5}$

All other tolerances: see illustration and table respectively for non-specified tolerances in accordance with ISO 2768-m

#### Material

HWS: High alloy cold working steel (approx. 12 % Chrome).

HSS: High speed steel

#### Material properties

HWS: For working higher strength materials  
High wear resistance - long life

HSS: For working high strength or difficult to work materials. Very abrasion proof high tensile strength and high heat resistance.

#### Hardness

		HWS	HSS
Shaft/step:	HRC	60 - 64	62 - 66
Head:	HRC	45 - 55	45 - 55

#### Finish

Hardened, annealed, 60° countersunk head hot formed, subsequently the shaft is plunge cut ground over the whole length including 60° countersunk and step, head surface ground.

#### Please note

For extremely high demands we would recommend piercing punches made from powder high speed steel (pages 10/13) or with a bottle neck or trombone neck (pages 20/21 and 22/23).

HSS piercing punches can be treated with a special surface coating on request (pages 42/43).

Piercing punches made from tungsten carbide are also available (pages 42/43)

Other materials on request.

## Table of dimensions

## Piercing punches Type C

Step-Ø $d_1$ $h_6$	Gradation $d_1$	Length of step $l_2^{+0.5}$	Shaft-Ø $d_3$ $h_6$	Total length $l_1^{+0.5}$		Head			Head height $h^{+0.2}$
				71	80	Ø $d_2$	Tol.	r	
0,5 - 1,4	0,10	7	1,5			2,2	± 0,05	0,4 + 0,3	1,11
0,5 - 1,9			2,0			3,0	± 0,1		1,37
1,6 - 2,9			3,0			4,5		0,6 + 0,4	1,80
2,5 - 3,5	0,50	10	4,0			5,5	± 0,2		
3,5 - 4,5			5,0			6,5			
4,5 - 5,5			6,0			8,0			

The filled-in spaces indicate standard dimensions. Special dimensions on request.

The stepped piercing punches are also available with high precision ground step (Rz 0.4 - 0.6 µ).

**Piercing punches type C are available ex-stock only to limited extent.**