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**Textile machinery and accessories — Steel  
pins for spinning preparatory and spinning  
machinery**

*Matériel pour l'industrie textile — Pointes en acier pour les matériels de  
préparation de filature et de filature*

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**Contents**

Page

Foreword.....	iv
1 Scope .....	1
2 Basic dimensions .....	1
3 Round pins .....	2
4 Round pins with notch .....	6
5 Flat pins .....	7
6 Flat pins with foot .....	9
Bibliography .....	11

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## 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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 9904 was prepared by Technical Committee ISO/TC 72, *Textile machinery and machinery for dry-cleaning and industrial laundering*, Subcommittee SC 1, *Spinning preparatory, spinning, twisting and winding machinery and accessories*.

This second edition cancels and replaces the first edition (ISO 9904:1989), which has been technically revised.

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# Textile machinery and accessories — Steel pins for spinning preparatory and spinning machinery

## 1 Scope

This International Standard specifies the dimensions, characteristics and designations of steel pins recommended for spinning preparatory and spinning machinery.

## 2 Basic dimensions

The basic dimensions of the pins are given in Table 1.

Table 1 — Basic dimensions of pins (see Figures 1 to 4)

Number	<i>d, a or b</i> mm
1	7,62
2	7,01
3	6,35
4	5,97
5	5,39
6	4,88
7	4,47
8	4,06
9	3,76
10	3,35
11	2,95
12	2,62
13	2,34
14	1,98
15	1,79
16	1,63
17	1,42
18	1,22
19	1,07
20	0,99
21	0,88
22	0,79
23	0,71
24	0,62
25	0,535
26	0,5
27	0,44
28	0,38
29	0,355
30	0,33
31	0,3
32	0,28
33	0,25

### 3 Round pins

#### 3.1 Dimensions

Round pins are divided into the following three types:

- Type A: Round pins for spinning preparatory machinery, in which

$$l_2 = \frac{2}{3} l_1 \text{ for } 5,56 \text{ mm} < l_1 < 17,46 \text{ mm}$$

$$l_2 = \frac{3}{4} l_1 \text{ for } 19,05 \text{ mm} < l_1 < 50,8 \text{ mm}$$

- Type B: Hackle pins for bast fibre spinning machinery, in which

$$l_2 = \frac{1}{2} l_1$$

- Type C: Card pins, in which

$$l_2 = \frac{1}{4} l_1$$

Figure 1 shows round pin dimensions, using Type A,  $l_2 = \frac{2}{3} l_1$ , as an example. The dimensions of the various round pin types are given in Table 2.

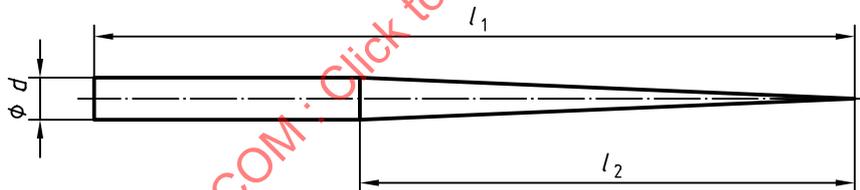


Figure 1 — Round pin

#### 3.2 Characteristics

Material: Steel (quality at the choice of the manufacturer)

Vickers hardness: Diameter Nos. 1 to 20: 620 HV2 to 750 HV2  
 Diameter Nos. 21 to 33: 700 HV2 to 800 HV2

Surface roughness: Types A and B:  $Ra \leq 0,1 \mu\text{m}$   
 Type C:  $Ra \leq 0,8 \mu\text{m}$



Table 2 (continued)

Diameter			Round pin type (A, B or C)																							
			Code number																							
			7/32	1/4	9/32	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/16	1 1/8	1 3/16	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2
			Length $l_1$ , mm																							
No. <sup>a</sup>	$d$ mm	$d$ tol. mm	$l_1$ tolerances																							
			0 - 0,2								0 - 0,3															
16	1,63	+ 0,003 - 0,018						A	A	A				A	A	A	A	A	A	A	A	A	A	A		
(16 1/2)	1,52										C	C					C	C	C	C	C	C	C	C		
17	1,42							A	A					A	A	A	A	A	A	A	A	A	A	A	A	
18	1,22							A	A	A		A		A	A	A	A	A	A	A	A	A	A	A	A	
19	1,07							A	A					A	A	A	A	A	A	A	A	A	A	A	A	
20	0,99	+ 0,003 - 0,015				A	A	A		A				A	A	A	A	A	A	A	A	A	A	A		
21	0,88		A	A		A	A	A						A	A	A		B		A	B		B			
22	0,79		A	A	A	A	A	A						A	A	A		C		B		A	B			
23	0,71		A	A	A	A	A	A						A	A	A				B		A	B			
24	0,62		A	A	A	A	A	A						A						B		A	B			
25	0,535		A	A	A	A	A	A							A	A	A				B		A	B		
26	0,5		A	A	A	A	A	A												B		A	B			
27	0,44		A	A		A	A	A												B						
28	0,38				A	A													B							
29	0,355				A	A																				

Table 2 (continued)

Diameter			Round pin type (A, B or C)																							
			Code number																							
			7/32	1/4	9/32	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/16	1 1/8	1 3/16	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2
			Length $l_1$ , mm																							
No. <sup>a</sup>	$d$ mm	$d$ tol. mm	$l_1$ tolerances																							
			0 - 0,2										0 - 0,3													
30	0,33	+ 0,002 - 0,01																								
31	0,3					A	A																			
32	0,28					A																				
33	0,25					A																				

<sup>a</sup> Pins with numbers shown in parentheses shall be used for repair purposes only.

### 3.3 Designation

The designation of a round pin shall include the following information in the order given:

- “round pin”;
- reference to this International Standard;
- type (A, B or C);
- diameter number;
- length,  $l_1$ .

EXAMPLE Round pin ISO 9904 – B 16 – 25,4

### 4 Round pins with notch

#### 4.1 Dimensions

These are round pins for spinning preparatory machinery in which  $l_2 = \frac{3}{4} l_1$ , as shown in Figure 2. Their dimensions are given in Table 3.

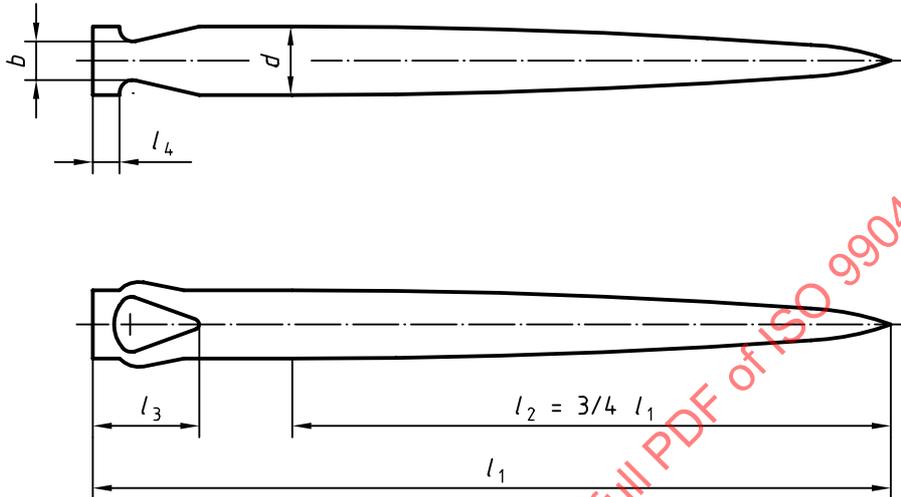


Figure 2 — Round pin with notch

Table 3 — Dimensions of round pins with notch

No.	Diameter		Code number				Length $l_3$ mm	Length $l_4$ mm	Length $b$ mm
	$d$ mm	$d$ tol. mm	7/8	15/16	1	1 1/16			
			Length $l_1$ , mm						
			0 - 0,3						
			22,23	23,81	25,4	26,99			
15	1,79	+ 0,003 - 0,018		X	X	X	6,4 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$	2 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$	0,90
16	1,63		X	X	X	X			0,86
17	1,42		X	X	X	X			0,78
18	1,22		X	X	X	X			0,70

## 4.2 Characteristics

Material: Steel (quality at the choice of the manufacturer)

Vickers hardness: 620 HV2 to 750 HV2

Surface roughness:  $Ra \leq 0,1 \mu\text{m}$

## 4.3 Designation

The designation of a round pin with notch shall include the following information in the order given:

- “round pin with notch”;
- reference to this International Standard;
- diameter number;
- length,  $l_1$ ;
- letter “K” for notch.

EXAMPLE Round pin with notch ISO 9904 – 16 – 25,4 – K

## 5 Flat pins

### 5.1 Dimensions

There are two types of flat pin:

— Type A:  $l_2 = \frac{2}{3} l_1$  for  $9,53 \leq l_1 \leq 17,46$  (shown in Figure 3)

— Type B:  $l_2 = \frac{3}{4} l_1$  for  $19,05 \leq l_1 \leq 28,58$

Their dimensions are given in Table 4.

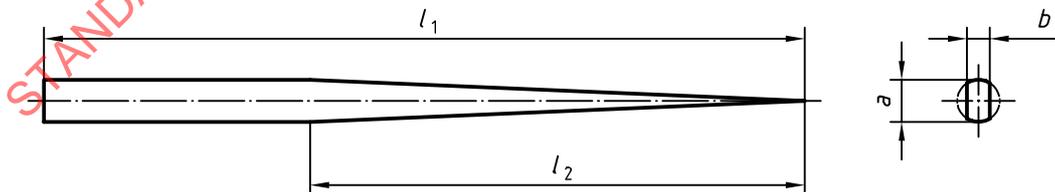


Figure 3 — Flat pin

Table 4 — Dimensions and types of flat pins

Cross-section No.	Diameter mm			Flat pin type (A or B)														
				Code number														
				3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/16	1 1/8		
				Length $l_1$ , mm														
				9,53	11,11	12,7	14,29	15,88	17,46	19,05	20,64	22,23	23,81	25,4	26,99	28,58		
				$l_1$ , tolerances														
				0 - 0,2						0 + 0,3								
15 x 19	1,79	1,07	0 - 0,03								B	B	B	B	B	B	B	
15 x 21	1,79	0,88										B	B	B	B	B	B	B
16 x 22	1,63	0,79										B	B	B	B	B	B	B
17 x 23	1,42	0,71										B	B	B	B	B	B	B
18 x 24	1,22	0,62										B	B	B	B	B	B	B
20 x 26	0,99	0,5	0 - 0,02								B	B	B	B	B	B	B	
21 x 27	0,88	0,44						A	A									
22 x 28	0,79	0,38						A	A	A								
23 x 29	0,71	0,35						A	A	A	A							
24 x 30	0,62	0,33						A	A	A	A							
22 x 32	0,79	0,28			A	A												

NOTE Those pins currently in use are shown shaded.

5.2 Characteristics

- Material: Steel (quality at the choice of the manufacturer)
- Vickers hardness: 670 HV2 to 735 HV2
- Surface roughness (on flat side):  $R_{max} \leq 1 \mu m$ ;  $Ra \leq 0,1 \mu m$

5.3 Designation

The designation of the flat pin shall include the following information in the order given:

- “flat pin”;
- reference to this International Standard;
- Type (A or B);
- cross-section number;
- length,  $l_1$ .

EXAMPLE Flat pin ISO 9904 – B 17 x 23 – 22,23