
**Spinning preparatory, spinning and
doubling (twisting) machinery — Tubes
for ring-spinning, doubling and twisting
spindles, taper 1:38 and 1:64**

*Matériel de préparation de filature, de filature et de retordage — Tubes
pour broches de continus à filer et à retordre à anneaux, conicité 1:38
et 1:64*

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Foreword

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The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 368 was prepared by Technical Committee ISO/TC 72, *Textile machinery and accessories*, Subcommittee SC 1, *Spinning preparatory, spinning, twisting and winding machinery and accessories*.

This fourth edition cancels and replaces the third edition (ISO 368:1991), which has been technically revised.

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Spinning preparatory, spinning and doubling (twisting) machinery — Tubes for ring-spinning, doubling and twisting spindles, taper 1:38 and 1:64

1 Scope

This International Standard specifies the dimensions (length and inner diameter) and permissible total run-out of tubes with taper 1:38 and 1:64 for ring-spinning, doubling and twisting spindles used in the textile industry. It also specifies the dimensions and tolerances of the gauges for checking the tubes.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

3 Types, dimensions and tolerances

3.1 Tubes

3.1.1 Tube types

Plain top tubes as shown in Figure 1 a) shall be designated as type A tubes. Rolled-in top tubes as shown in Figure 1 b) shall be designated as type B tubes.

3.1.2 Dimensions

Tube sizes shall be chosen from the dimensions specified in Table 1.

3.1.3 Total run-out tolerance

The permissible total run-out tolerance, T_r , shall be in accordance with the values specified in Table 1. The total run-out shall be measured in accordance with Figure 2.

3.2 Gauges

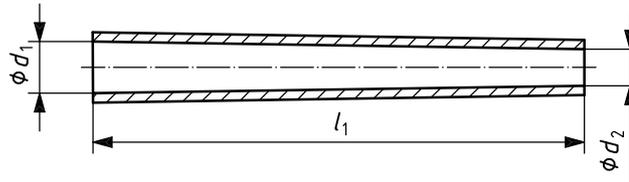
Gauges shall conform to the dimensions and tolerances specified in Table 2.

4 Tubes and gauges

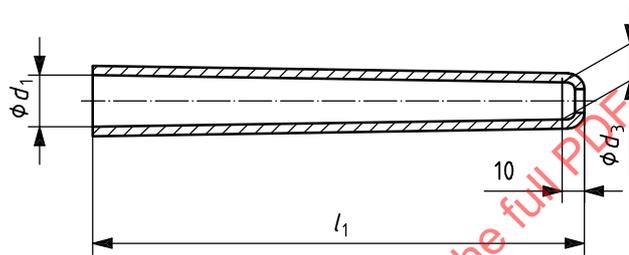
4.1 Tubes

See Figures 1 and 2, and Table 1.

Dimensions in millimetres



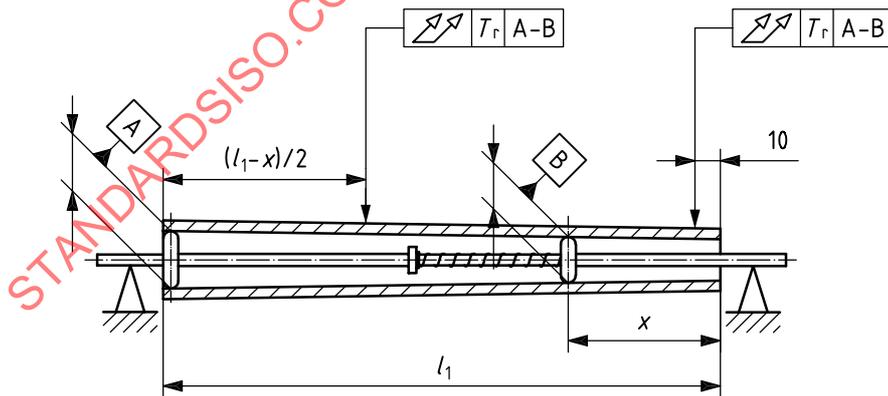
a) Tube type A with plain top



b) Tube type B with rolled-in top

Figure 1 — Tubes

Dimensions in millimetres



l_1	x
180 to 200	40
210 to 300	60

Figure 2 — Measurement of total run-out, T_r

Table 1 — Dimensions and total run-out tolerances of tubes

Dimensions in millimetres

Lengths		Row								Permissible total run-out		
		0		1		2		3				
l_1	Permissible deviation	d_1	d_2	d_1	d_2	d_1	d_2	d_1	d_2	T_r^a	T_r^b	T_r^c
Tubes with taper 1:38 $d_3 = d_2 + 0,26$												
180	± 1,5	20,24	15,50	18,74	14,00	17,24	12,50			0,40	0,25	0,20
190		20,24	15,24	18,74	13,74	17,24	12,24					
200		22,26	17,00	20,26	15,00	18,76	13,50					
210		22,27	16,74	20,27	14,74	18,77	13,24					
220		24,28	18,49	22,28	16,49	20,28	14,49	18,78	12,99			
230		24,30	18,25	22,3	16,25	20,30	14,25	18,8	12,75			
240	± 2	27,31	20,99	24,31	17,99	22,31	15,99	20,31	13,99	0,40	—	—
250		27,32	20,74	24,32	17,74	22,32	15,74	20,32	13,74			
260		30,34	23,50	27,34	20,50	24,34	17,50	22,34	15,50			
270		30,35	23,24	27,35	20,24	24,35	17,24	22,35	15,24			
280		33,36	25,99	30,36	22,99	27,36	19,99	24,36	16,99			
290		33,37	25,74	30,37	22,74	27,37	19,74	24,27	16,64			
300	± 2,5	36,39	28,50	33,39	25,50	30,39	22,50	27,39	19,50			
Tubes with taper 1:64 $d_3 = d_2 + 0,16$												
180	± 1,5	19	16,19	17	14,19	15	12,19			0,40	0,25	0,20
190		20	17,03	18	15,03	16	13,03					
200		21	17,88	19	15,88	17	13,88	15	11,88			
210		22	18,72	20	16,72	18	14,72	16	12,72			
220		24	20,56	22	18,56	20	16,56	18	14,56			
230		24	20,41	22	18,41	20	16,41	18	14,41			
240	± 2	27	23,25	24	20,25	22	18,25	20	16,25	0,40	—	—
250		27	23,09	24	20,09	22	18,09	20	16,09			
260		30	25,94	27	22,94	24	19,94	22	17,94			
270		30	25,78	27	22,78	24	19,78	22	17,78			
280		33	28,63	30	25,63	27	22,63	24	19,63			
290		33	28,47	30	25,47	27	22,47	24	19,47			
300	± 2,5	36	31,31	33	28,31	30	25,31	27	22,31			
<p>a $n \leq 15\,000 \text{ min}^{-1}$ (r/min of spindle).</p> <p>b $15\,000 \text{ min}^{-1} < n \leq 18\,000 \text{ min}^{-1}$ (r/min of spindle).</p> <p>c $n > 18\,000 \text{ min}^{-1}$ (r/min of spindle).</p>												

4.2 Gauges

See Figure 3 and Table 2.

For checking the internal diameter d_1 at the base of the tube by means of the corresponding marks on the gauge, the short part of the gauge shall be used. The marks $\pm b/2$ at the long part of the gauge shall be used for checking the internal diameter d_2 and/or d_3 at the top of the tube.

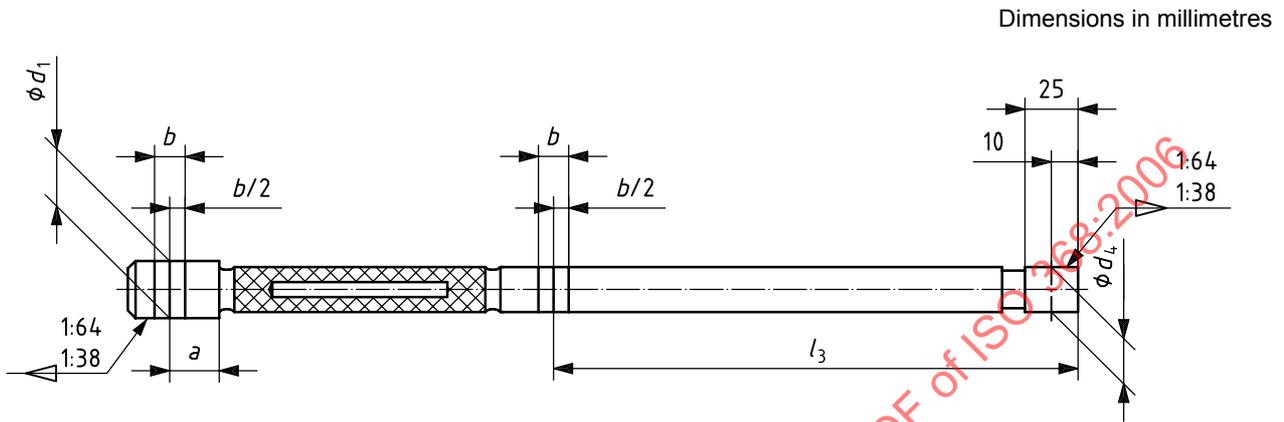


Figure 3 — Gauge for tube types A and B

Table 2 — Dimensions and tolerance of gauges for tubes

Dimensions in millimetres

Length of corresponding tube l_1	l_3 $\pm 0,2$	Row								a	b $\pm 0,1$
		0		1		2		3			
		d_1 js6 ^a	d_4 js6	d_1 js6	d_4 js6	d_1 js6	d_4 js6	d_1 js6	d_4 js6		
Gauges with taper 1:38											
180	150	20,24	16,56	18,74	15,06	17,24	13,56	—	—	15	6
190	160	20,24	16,29	18,74	14,79	17,24	13,29				
200	170	22,26	18,05	20,26	16,05	18,76	14,55				
210	170	22,27	18,06	20,27	16,06	18,77	14,56				
220	170	24,28	20,05	22,28	18,07	20,28	16,07	18,78	14,57		8
230	180	24,30	19,83	22,3	17,83	20,30	15,83	18,80	14,33		
240	190	27,31	22,57	24,31	19,57	22,31	17,57	20,31	15,57		
250	200	27,32	22,32	24,32	19,32	22,32	17,32	20,32	15,32		
260	210	30,34	25,08	27,34	22,08	24,34	19,08	22,34	17,08		
270	220	30,35	24,82	27,35	21,82	24,35	18,82	22,35	16,82		
280	230	33,36	27,57	30,36	24,57	27,36	21,57	24,36	18,57		
290	240	33,37	27,32	30,37	24,32	27,37	21,32	24,27	18,22		
300	250	36,39	30,07	33,39	27,07	30,39	24,07	27,39	21,07		
Gauges with taper 1:64											
180	150	19	16,81	17	14,81	15	12,81	—	—	20	10
190	160	20	17,66	18	15,66	16	13,66				
200	170	21	18,50	19	16,50	17	14,50	15	12,50		
210	170	22	19,50	20	17,50	18	15,50	16	13,50		
220	170	24	21,50	22	19,50	20	17,50	18	15,50		
230	180	24	21,34	22	19,34	20	17,34	18	15,34		
240	190	27	24,19	24	21,19	22	19,19	20	17,19		
250	200	27	24,03	24	21,03	22	19,03	20	17,03		
260	210	30	26,88	27	23,88	24	20,88	22	18,88	12	
270	220	30	26,72	27	23,72	24	20,72	22	18,72		
280	230	33	29,56	30	26,56	27	23,56	24	20,56		
290	240	33	29,41	30	26,41	27	23,41	24	20,41		
300	250	36	32,25	33	29,25	30	26,25	27	23,25		

^a According to ISO 286-2.