International Standard 1180

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

Shanks for pneumatic tools and fitting dimensions of chuck bushings

Queues d'outils pneumatiques et dimensions d'interchangeabilité des douilles porte-outil

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Descriptors : tools, shanks, interchangeability, dimensional tolerances, tolerance of position.

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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 developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

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.

International Standard ISO 1180 was developed by Technical Committee ISO/TC 29, *Small tools*, and was circulated to the member bodies in November 1981.

It has been approved by the member bodies of the following countries :

Austria	India	South Africa, Rep. of
Belgium	Israel	Spain
China	Italy	Sweden
Czechoslovakia	Korea, Dem. P. Rep. of	Switzerland
Egypt, Arab Rep. of	Korea, Rep. of	United Kingdom
France	Mexico	USSR
Hungary	Romania	Yugoslavia

The member body of the following country expressed disapproval of the document on technical grounds :

Germany, F.R.

This International Standard cancels and replaces ISO Recommendation R 1180-1970 and ISO Recommendation R 1571-1970, of which it constitutes a technical revision.

Shanks for pneumatic tools and fitting dimensions of chuck bushings

1 Scope and field of application

This International Standard relates to shanks for pneumatic tools and corresponding chuck bushings and deals with the following types :

- coal pick shanks;
- chisel shanks;
- rivet snap shanks, parallel;
- rivet snap shanks, tapered;
- breaker and spade shanks;
- concrete breaker shanks;
- rock drill shanks.

The types relate to the machine for which they are mainly designed, but this does not prevent the use of the shanks for other applications.

Other types of tools will be dealt with in further International Standards when the corresponding studies are completed.

Pneumatic hammers and their chuck bushings are not covered by this International Standard but those features of chuck bushings (dimensions and tolerances) which ensure interchangeability are specified.

For each tool mentioned above, this International Standard provides tables giving dimensions in millimetres.

Dimensions in inches are given in the annex which be valid for five years from the date when this International Standard is approved.

2 Reference

ISO 723, *Rock-drilling — Forged collared shanks and chuck bushings for hollow hexagonal drill steels.*

3 Interchangeability

The numerical values specified in this International Standard ensure interchangeability even if the shank and the corresponding chuck bushing are not manufactured in the same system of units.

4 Designation of shanks

The designation of shanks should be composed of

- the name of the type of shank;
- the shank size (first column in the tables);
- the length of the shank.

Example :

Breaker shank 25 × 108

5 Coal pick shanks and corresponding chuck bushings

Dimension and tolerances in millimetres

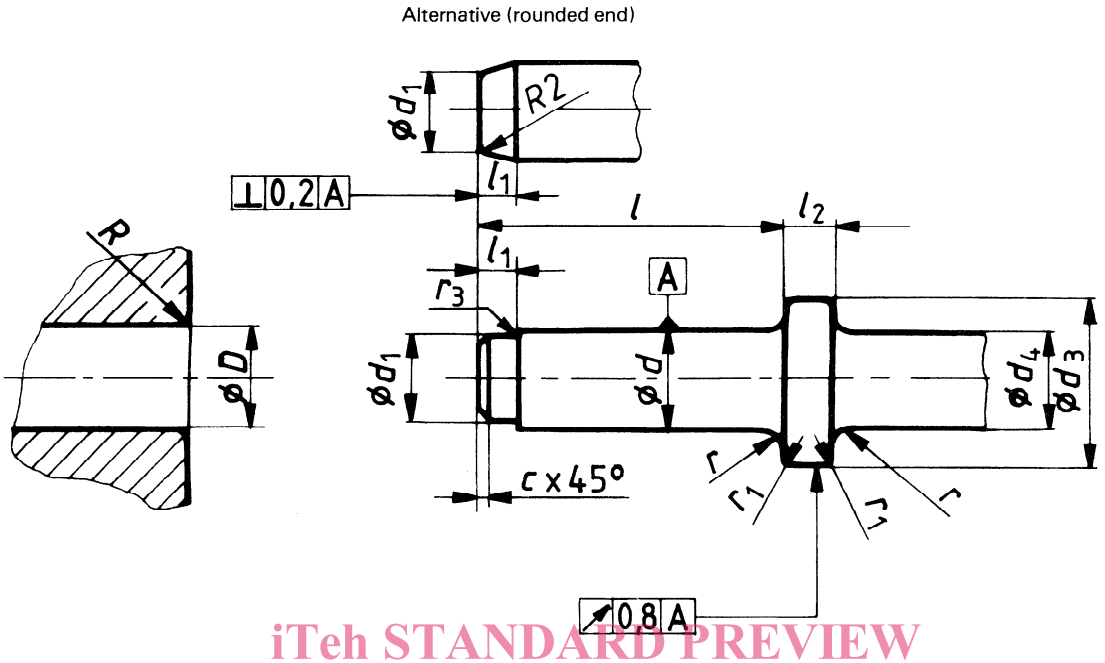


Figure 1 — Coal pick shanks and corresponding chuck bushings

Table 1

Dimensions and tolerances in millimetres

Nominal size	Shank													Bushing	
	d	l	l_1	l_2		d_1	d_3	d_4		r	r_1	r_3	c	D	R
	f8	h14	± 0,5	min.	max.	j_s14	+ 0,3 − 0,5	min.	max.	0 − 0,5	0 − 1	± 0,5		H8	+ 0,5 0
25	25	75	10	9,5	13	22	41,5	25	27	5,25	2	3	1,6	25	5,25

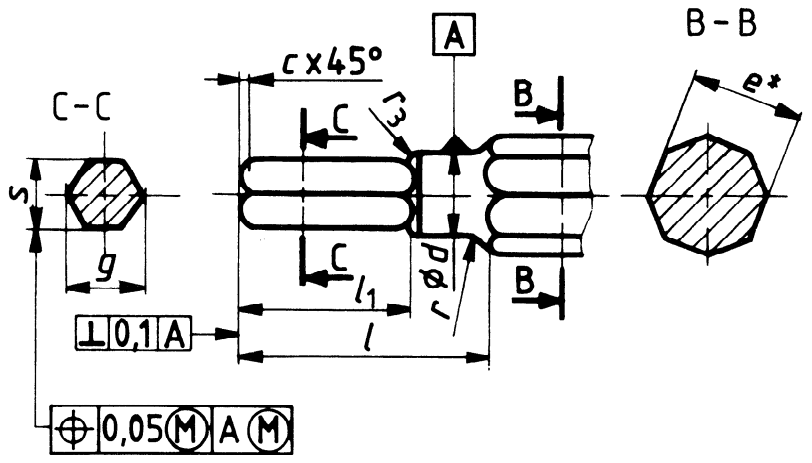
Example of designation

Coal pick shank 25 × 75

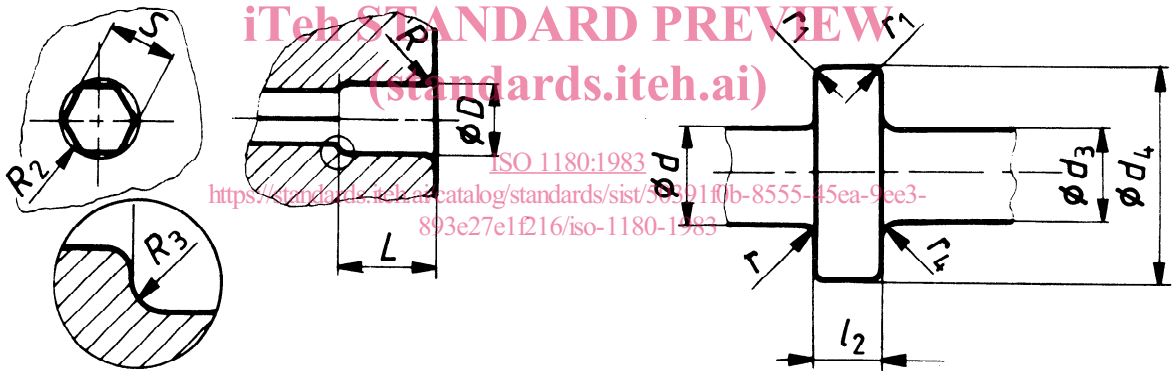
6 Chisel shanks and corresponding chuck bushings

6.1 Tool with hexagonal shank

Tolerances in millimetres



Shank without collar



Bushing

Detail of shank with collar

Figure 2 — Tool with hexagonal shank

Table 2

Dimensions and tolerances in millimetres

Nominal size	Shank														Bushing					
	d	l	l_1	l_2	d_3	d_4	e*	s	g	r	r_1	r_3	r_4	c	D	L	S	R	R_2	R_3
	d8	± 0,5	± 0,5	± 1	max.	± 1		d11	0 −0,3	max.		max.	max		H8	± 1	H11	+ 0,5 0	± 0,5	± 0,5
12	12,7	45	31	6	13	21	16	11,0	12,1	4	0,8	6	3	0,8	12,7	17	11,0	4	1	1
17	17,3	60	41	9	20	30	22	14,8	16,6	4	0,8	10	3,2	1,6	17,3	22	14,8	4	1	1
20	(20,0)	60	36	9	24	34	25	17,0	19,0	6	0,8	10	3,2	1,6	(20,0)	27	17,0	6	1	1

* The octogonal shape on the tool side and dimention e are given for information only.

NOTES

1 When a smaller shank size is needed, use dimensions presented for rivet snap shanks (size 10, see clause 7).

2 The permitted errors of concentricity between the cylindrical portion d and the hexagonal portion s are included in the tolerance given in table 2; the "Go" gauge for dimensions d and s should therefore be a composite gauge. This remark also refers to the measurements of the corresponding chuck bushings.

3 As an alternative to tool with hexagon shank (see figure 2) the hexagon portion may be replaced by a cylindrical portion with the same length l_1 and a diameter s equal to the width across flats of the hexagon (see figure 3).

Tolerance in millimetres

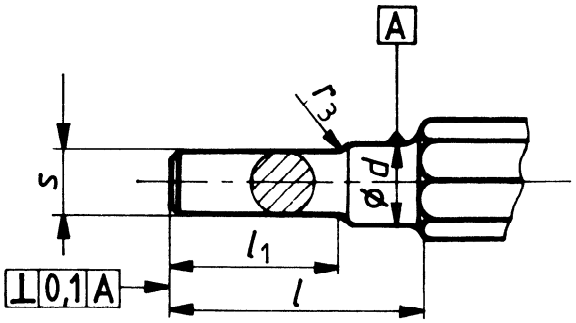


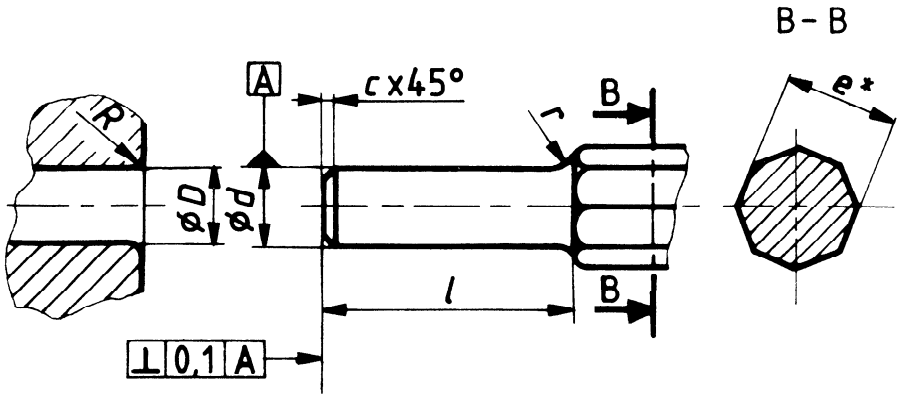
Figure 3 — Alternative shank

4 On shanks with a hexagon portion, the cutting edge of the chisel should be parallel to one of the sides of the hexagon.

Example of designation

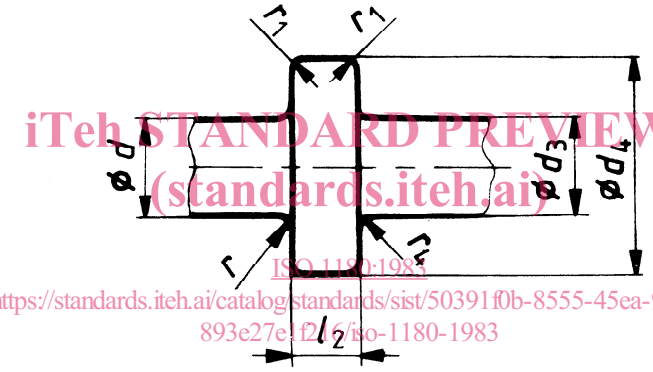
Chisel shank, hexagonal 12 × 45

6.2 Tool with parallel shank



Bushing

Shank without collar



Detail of shank with collar

Figure 4 — Tool with parallel shank

Table 3

Dimensions and tolerances in millimetres

Nominal size	Shank										Bushing	
	d d8	l ± 0,5	l_2 ± 1	e*	d_3 max.	d_4 ± 1	r max.	r_1	r_4 max.	c	D H8	R + 0,5 0
12	12,7	45	6	16	13	21	4	0,8	3	0,8	12,7	4
17	17,3	60	9	22	20	30	4	0,8	3,2	1,6	17,3	4
20	(20,0)	60	9	25	24	34	6	0,8	3,2	1,6	(20,0)	6

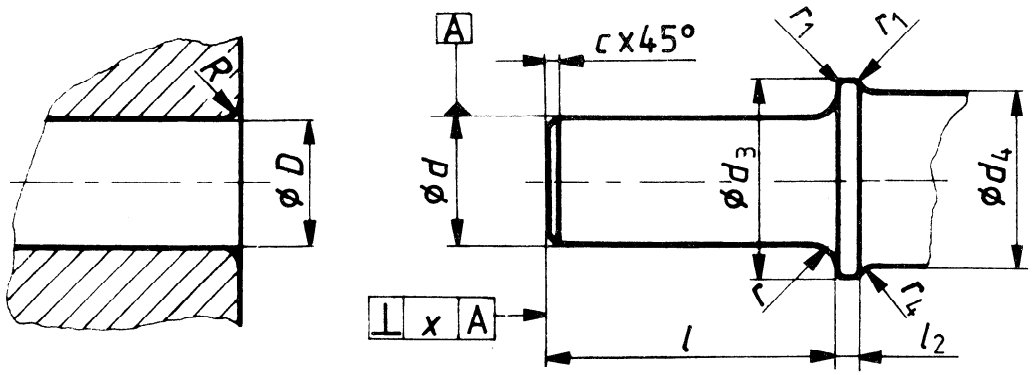
* The octogonal shape on the tool side and dimension e are given for information only.

NOTE — When a smaller shank size is needed, use dimensions presented for rivet snap shanks (size 10, see clause 7).

Example of designation

Chisel shank, parallel 12 × 45

7 Rivet snap shanks and corresponding chuck bushings, parallel



Bushing Shank

Figure 5 — Rivet snap shanks and corresponding chuck bushings, parallel

Table 4

Dimensions and tolerances in millimetres

Nominal size	Shank										Bushing	
	d	l	l_2	d_3	d_4	r	r_1	r_4	c	x	D	R
	d9	± 0,5	$^{+1}_{0}$	max.	max.	$^{0}_{-0,5}$	$^{0}_{-0,5}$	$^{0}_{-0,5}$			H8	$^{+0,5}_{0}$
10	10,2	32	4	19	13	2	1	2	0,8	0,1	10,2	2
12	12,7	45	6	22	15	4	1	4	0,8		12,7	4
17	17,3	60	6	30	20	4	1	4	1,6		17,3	4
23	23	65	12	35	31	5	1	4	1,6	0,2	23	5
31	31	70	12	48	44	6	1	4	1,6		31	6

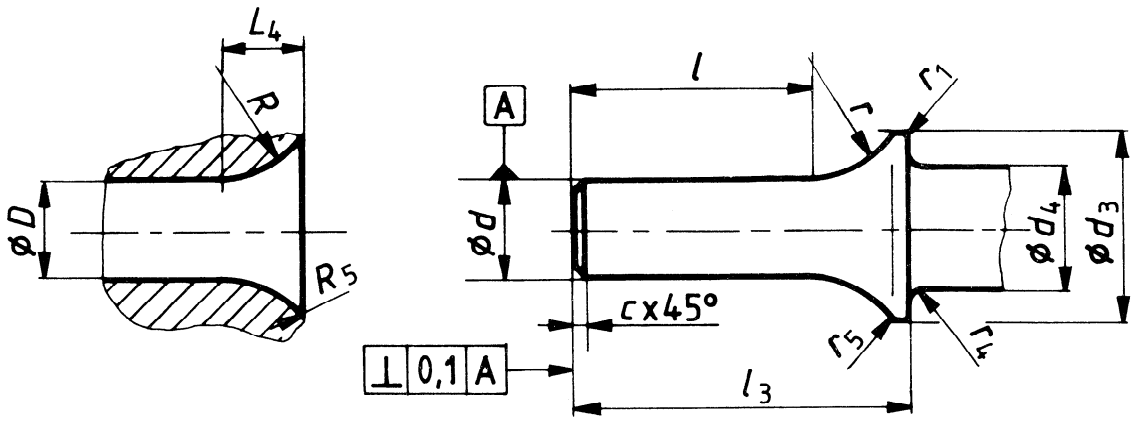
NOTE — The size 10 can also refer to chisel shanks.

Example of designation

Rivet snap shank, parallel 10 × 2

8 Rivet snap shanks and corresponding chuck bushings, tapered

Tolerance in millimetres



Bushing Shank

Figure 6 — Rivet snap shanks and corresponding chuck bushings, tapered

Table 5

Dimensions and tolerances in millimetres

Nominal size	Shank										Bushing**			
	d* f8	l	l_3 ± 0,5	d_3 min.	d_4 max.	r* 0 −1	r_1 0 −0,5	r_4 0 −0,5	r_5 0 −0,5	c	D H8	L_4	R +1 0	R_5
10	10,2	29,5	42	19,0	13	13	1	1,5	1	0,8	10,2	8	13	1
12	12,7	28,0	42	21,5	17	19	1	1,5	1	0,8	12,7	10	19	1

* The junction between diameter d and the radius r should blend and be truly tangential to diameter d.

** Dimensions of bushing as a function of the length of the shank, l.

Example of designation

Rivet snap shank, tapered 10 × 29,5