BS ISO 7079:2016

BSI Standards Publication

Core drills with parallel shanks and with Morse taper shanks

National foreword

This British Standard is the UK implementation of ISO 7079:2016.

The UK participation in its preparation was entrusted to Technical Committee MTE/18, Tool tips and inserts for cutting applications.

A list of organizations represented on this committee can be obtained on request to its secretary.

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INTERNATIONAL STANDARD

ISO 7079

Second edition
2016-10-15

Core drills with parallel shanks and with Morse taper shanks

Forets-aléseurs à queue cylindrique et à queue cône Morse

Reference number
ISO 7079:2016(E)

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 29, *Small tools*, Subcommittee SC 2, *Holding tools, adaptive items and interfaces*.

This second edition cancels and replaces the first edition (ISO 7079:1981), of which it constitutes a minor revision, notably with the addition of Annex A, which gives the relationship between the designations of this International Standard and the ISO 13399 series.

INTERNATIONAL STANDARD ISO 7079:2016(E)

Core drills with parallel shanks and with Morse taper shanks

1 Scope

This International Standard specifies the dimensions of core drills with parallel shanks and with Morse taper shanks.

It includes two tables for each of the above specified types, giving respectively

— the dimensions for the preferred diameter (see Tables 1 and 2), and

— the corresponding lengths defined in terms of diameter ranges (see Tables 3 and 4).

The tables show only metric dimensions which are alone recommended in the future for this type of drill.

Unless otherwise stated, these drills will be right-hand cutting drills.

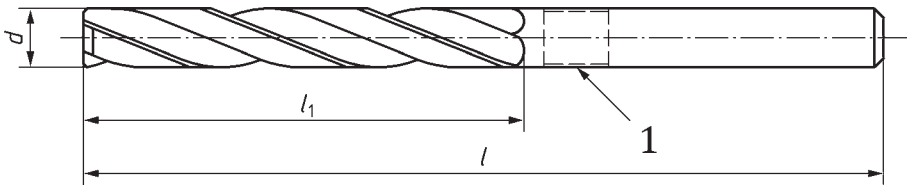
2 Normative references

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

ISO 296, *Machine tools — Self-holding tapers for tool shanks*

3 Core drills with parallel shanks

See Figure 1 and Tables 1 and 2.



Key

1 optional recess

Figure 1

Table 1 — Dimensions for the preferred diameters

Dimensions in millimetres

d h8	l_1	l
3,00	33	61
3,30	36	65
3,50	39	70
3,80	43	75
4,00		
4,30	47	80
4,50		
4,80	52	86
5,00		
5,80	57	93
6,00		
6,80	69	109
7,00		
7,80	75	117
8,00		
8,80	81	125
9,00		
9,80	87	133
10,00		
10,75	94	142
11,00		
11,75		
12,00	101	151
12,75		
13,00		
13,75	108	160
14,00		
14,75	114	169
15,00		
15,75	120	178
16,00		
16,75	125	184
17,00		
17,75	130	191
18,00		

When intermediate sizes are needed, reference should be made to Table 2 for the corresponding lengths.

Flute portion:

— Tolerance on diameter, d, measured near the point: h8;

— Back taper: at the manufacturer's discretion.

Shank: These drills are normally made without driving tenon.

See Table 2.

Table 1 *(continued)*

d h8	l_1	l
18,70	135	198
19,00		
19,70	140	205
When intermediate sizes are needed, reference should be made to Table 2 for the corresponding lengths. Flute portion: — Tolerance on diameter, d, measured near the point: h8; — Back taper: at the manufacturer's discretion. Shank: These drills are normally made without driving tenon. See Table 2.		

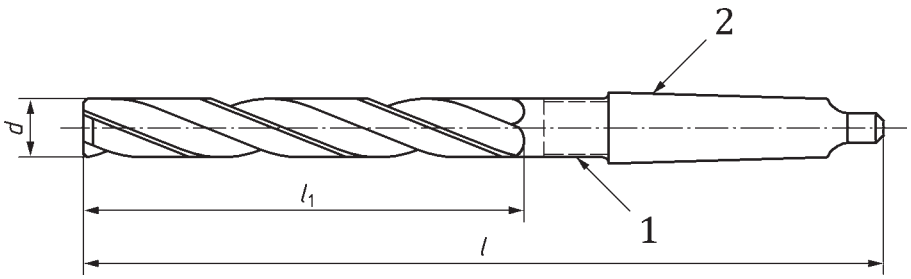
Table 2 — Corresponding lengths set out as a function of diameter ranges

Dimensions in millimetres

Diameter ranges d		**Corresponding lengths**	
over	Up to and including	l_1	l
—	3,00	33	61
3,00	3,35	36	65
3,35	3,75	39	70
3,75	4,25	43	75
4,25	4,75	47	80
4,75	5,30	52	86
5,30	6,00	57	93
6,00	6,70	63	101
6,70	7,50	69	109
7,50	8,50	75	117
8,50	9,50	81	125
9,50	10,60	87	133
10,60	11,80	94	142
11,80	13,20	101	151
13,20	14,00	108	160
14,00	15,00	114	169
15,00	16,00	120	178
16,00	17,00	125	184
17,00	18,00	130	191
18,00	19,00	135	198
19,00	20,00	140	205
Tolerance on lengths Lengths, l and l_1, may vary within one diameter range, between the minimum and maximum limits corresponding respectively to the figures given for the nearest lower or upper range. EXAMPLE For diameter 4 mm, length l_1 may vary between 39 mm and 47 mm about nominal value 43 mm, and length l may vary between 70 mm and 80 mm about nominal value 75 mm.			

4 Core drills with Morse taper shanks

See Figure 2 and Tables 3 and 4.



Key

1 optional recess

2 Morse taper (ISO 296)

Figure 2

Table 3 — Dimensions for the preferred diameters

Dimensions in millimetres

d h8	l_1	l	**Morse taper no.**
7,80	75	156	1
8,00			
8,80	81	162	
9,00			
9,80	87	168	
10,00			
10,75	94	175	
11,00			
11,75			
12,00	101	182	
12,75			
13,00			
13,75	108	189	
14,00			
14,75	114	212	2
15,00			
15,75	120	218	
16,00			
16,75	125	223	
17,00			

When intermediate sizes are needed, reference should be made to Table 4 for the corresponding lengths.

Flute portion:

— Tolerance on diameter d measured near the point: h8;

— Back taper : at the manufacturer's discretion.

Shank: In accordance with ISO 296.

See Table 4.

Table 3 *(continued)*

d h8	l_1	l	**Morse taper no.**
17,75	130	228	
18,00			
18,70	135	233	
19,00			
19,70	140	238	
20,00			
20,70	145	243	
21,00			
21,70	150	248	
22,00			
22,70	155	253	
23,00			
23,70	160	281	
24,00			
24,70			
25,00			
25,70	165	286	3
26,00			
27,70	170	291	
28,00			
29,70	175	296	
30,00			
31,60	185	306	
32,00	185	334	
33,60	190	339	
34,00			
34,60			
35,00			
35,60	195	344	4
36,00			
37,60	200	349	
38,00			
39,60			
40,00			
41,60	205	354	
42,00			

When intermediate sizes are needed, reference should be made to Table 4 for the corresponding lengths.

Flute portion:

— Tolerance on diameter d measured near the point: h8;

— Back taper : at the manufacturer's discretion.

Shank: In accordance with ISO 296.

See Table 4.

Table 3 *(continued)*

d h8	l_1	l	**Morse taper no.**
43,60	210	359	
44,00			
44,60			
45,00			
45,60	215	364	
46,00			
47,60	220	369	
48,00			
49,60			
50,00			
When intermediate sizes are needed, reference should be made to Table 4 for the corresponding lengths. Flute portion: — Tolerance on diameter d measured near the point: h8; — Back taper : at the manufacturer's discretion. Shank: In accordance with ISO 296. See Table 4.			

Table 4 — Corresponding lengths set out as a function of diameter ranges

Dimensions in millimetres

Diameter ranges *d*		**Corresponding lengths**			**Diameter ranges** *d*		**Corresponding lengths**		
over	Up to and including	l_1	l	**Morse taper no.**	over	Up to and including	l_1	l	**Morse taper no.**
7,50	8,50	75	156	1	23,02	23,60	155	276	3
8,50	9,50	81	162		23,60	25,00	160	281	
9,50	10,60	87	168		25,00	26,60	165	286	
10,60	11,80	94	175		26,50	28,00	170	291	
11,80	13,20	101	182		28,00	30,00	175	296	
13,20	14,00	108	189		30,00	31,50	180	301	
14,00	15,00	114	212	2	31,50	31,75	185	306	
15,00	16,00	120	218		31,75	33,50		334	4
16,00	17,00	125	223		33,50	35,50	190	339	
17,00	18,00	130	228		35,50	37,50	195	344	
18,00	19,00	135	233		37,50	40,00	200	349	
19,00	20,00	140	238		40,00	42,50	205	354	
20,00	21,20	145	243		42,50	45,00	210	359	
21,20	22,40	150	248		45,00	47,50	215	364	
22,40	23,02	155	253		47,50	50,00	220	369	

Tolerance on lengths

Lengths, l and l_1, may vary within one diameter step, between the minimum and maximum limits corresponding respectively to the figures given for the nearest lower or upper step (increased or reduced, as far as the total length is concerned, by the difference between the lengths of the two tapers, if the taper, if the taper combined with one of the two adjacent steps is larger or smaller than that of the step in question).

EXAMPLE For diameter 15 mm, length l_1 may vary between 108 mm and 120 mm from the nominal value 114 mm, with a tolerance ±6. As the tolerance for l is the same as that for l_1 (±6), l can vary between 206 mm and 218 mm from the nominal value 212 mm.

5 Core drills for pre-finishing operations

The amount of stock removal according to Table 5 is recommended, with the diameters of the core drills calculated accordingly.

Table 5 — Stock removal and diameters for core drill pre-finishing

Dimensions in millimetres

Diameters *d*		**Stock removal**
over	up to and including	
—	10	0,20
10	18	0,25
18	30	0,30
30	50	0,40

Annex A
(informative)

Relationship between designations in this International Standard and ISO 13399 (all parts)

For relationship between designations in this International Standard and preferred symbols according to ISO 13399 (all parts), see Table A.1.

Table A.1 — Relationship between designations in this International Standard and ISO 13399 (all parts)

Symbol in ISO 7079	Reference in ISO 7079	Property name in ISO 13399 (all parts)	Symbol in ISO 13399 (all parts)	Reference in ISO 13399 (all parts)
d	Figures 1 and 2 Tables 1 and 2 Tables 3 and 4	cutting diameter	DC	71D084653E57F
l_1	Figures 1 and 2 Tables 1 and 2 Tables 3 and 4	length chip flute	LCF	71DCCC27DEF53
l	Figures 1 and 2 Tables 1 and 2 Tables 3 and 4	overall length	OAL	71D078EB7C086

Bibliography

[1] ISO 13399 (all parts), *Cutting tool data representation and exchange*

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