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STANDARD

ISO
3291

Third edition
2016-11-01

Extra-long Morse taper shank twist drills

Forets extra-longes à queue cône Morse



Reference number
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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.

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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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 third edition cancels and replaces the second edition (ISO 3291:1995), 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.

Extra-long Morse taper shank twist drills

1 Scope

This International Standard specifies the dimensions of extra-long Morse taper shank drills in the range of 6 mm to 50 mm diameter with an overall length range of 200 mm to 630 mm.

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*

ISO 10899, *High-speed steel two-flute twist drills — Technical specifications*

3 Dimensions

See [Figure 1](#) and [Tables 1](#) and [2](#).

4 Technical specifications

Unless otherwise specified, technical requirements shall comply with ISO 10899.

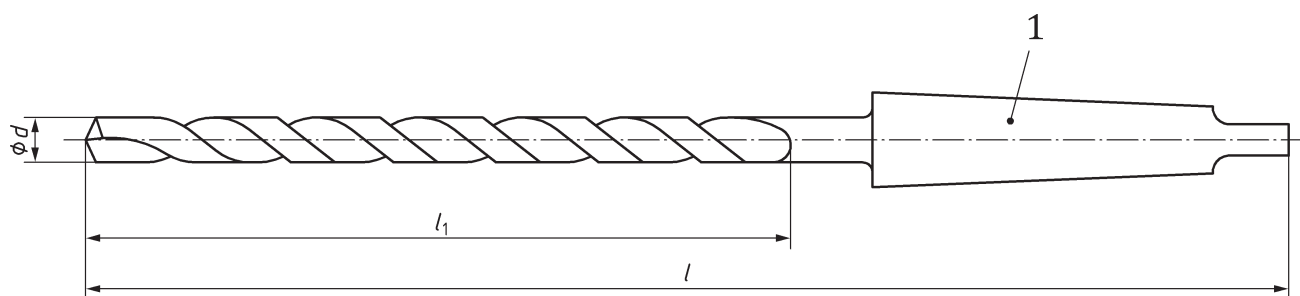
5 Designations

Extra Morse taper shank twist drills in accordance with this International Standard shall be designated by the following:

- a) “twist drill”;
- b) a reference to this International Standard, i. e. ISO 3291;
- c) drill diameter, d , in millimetres;
- d) overall length, l , in millimetres.

EXAMPLE An extra-long Morse taper shank twist drill of diameter $d = 10$ mm and overall length $l = 250$ mm shall be designated as follows:

Twist drill ISO 3291 - 10 - 250



Key

1 Morse taper shank

Figure 1 — Extra-long Morse taper shank twist drill

Table 1 — Extra-long Morse taper shank twist drill, preferred sizes

Dimensions in millimetres

Preferred diameters d h8	Overall length l						Morse taper shank no. ^a
	200	250	315	400	500	630	
6	X	X	X				1
6,5	X	X	X				
7	X	X	X				
7,5	X	X	X				
8	X	X	X				
8,5	X	X	X				
9	X	X	X				
9,5	X	X	X				
10		X	X	X			
11		X	X	X			
12		X	X	X			
13		X	X	X			
14		X	X	X			
15			X	X	X		
16			X	X	X	2	
17			X	X	X		
18			X	X	X		
19			X	X	X		
20			X	X	X		
21			X	X	X		
22			X	X	X		
23			X	X	X		

NOTE For the values flute length, l_1 , see [Table 2](#).

^a In accordance with ISO 296.

Table 1 (continued)

Preferred diameters d	Overall length						Morse taper shank no. ^a	
	l							
h8	200	250	315	400	500	630		
24				X	X	X	3	
25				X	X	X		
28				X	X	X		
30				X	X	X		
32				X	X	X		4
35				X	X	X		
38				X	X	X		
40				X	X	X		
42					X	X		
45					X	X		
48					X	X		
50					X	X		
Range of diameters	$6 \leq d \leq 9,5$	$6 \leq d \leq 14$	$6 \leq d \leq 23$	$9,5 < d \leq 40$	$14 < d \leq 50$	$23 < d \leq 50$		

NOTE For the values flute length, l_1 , see [Table 2](#).

^a In accordance with ISO 296.

Table 2 — Flute length, l_1 , of extra-long Morse taper shank twist drill

Dimensions in millimetres

Morse taper shank no.	Overall length, l					
	200	250	315	400	500	630
	Flute length, l_1					
1	110	160	225	310		
2			215	300	400	
3				275	375	505
4				250	350	480

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 3291	Reference in ISO 3291	Property name in ISO 13399 (all parts)	Symbol in ISO 13399 (all parts)	Reference in ISO 13399 (all parts)
<i>d</i>	Figure 1 Table 1	cutting diameter	DC	71D084653E57F
<i>l₁</i>	Figure 1 Table 2	length chip flute	LCF	71DCCC27DEF53
<i>l</i>	Figure 1 Table 1 and Table 2	overall length	OAL	71D078EB7C086

Bibliography

- [1] ISO 235, *Parallel shank jobber and stub series drills and Morse taper shank drills*
- [2] ISO 494, *Cylindrical shank twist drills — Long series*
- [3] ISO 3292, *Extra-long parallel shank twist drills*
- [4] ISO 13399 (all parts), *Cutting tool data representation and exchange*

