

BS ISO 3293:2016



BSI Standards Publication

**Morse taper shank
countersinks for angles 60
degrees, 90 degrees and 120
degrees inclusive**

National foreword

This British Standard is the UK implementation of ISO 3293:2016.

The UK participation in its preparation was entrusted to Technical Committee MTE/18, Tools 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
3293

Second edition
2016-08-01

Morse taper shank countersinks for angles 60 degrees, 90 degrees and 120 degrees inclusive

*Outils à chanfreiner à queue cône Morse, à angle au sommet de 60
degrés, 90 degrés et 120 degrés*



Reference number
ISO 3293:2016(E)

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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.

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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 9, *Tools with defined cutting edges, cutting items*.

This second edition cancels and replaces the first edition (ISO 3293:1975), of which it constitutes a minor revision.

Morse taper shank countersinks for angles 60 degrees, 90 degrees and 120 degrees inclusive

1 Scope

This International Standard specifies the dimensions of Morse taper shank countersinks for angles 60°, 90° and 120° inclusive.

It specifies dimensions in metric units only, these being regarded as the only recommended dimensions in the future, for countersinks with cutting diameters in the range 16 mm to 80 mm.

The dimensions given apply only to tools made from high speed steel. However, if the method of production allows, the shanks may be manufactured from a suitable alternative material, such as a carbon steel.

The Morse taper shanks are in accordance with ISO 296.

Unless otherwise indicated, the countersinks will be right-hand cutting.

Parallel shank countersinks are the subject of ISO 3294.

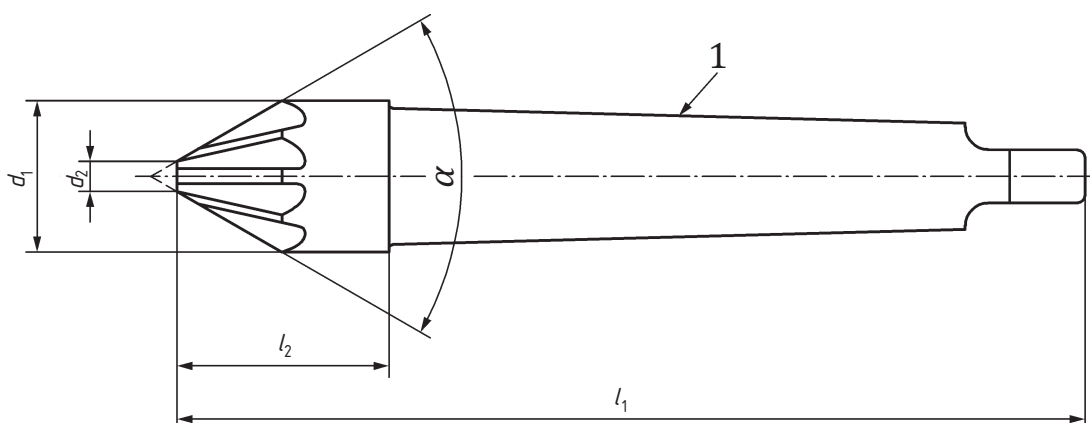
2 Normative references

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 Dimensions

See [Figure 1](#) and [Table 1](#).



Key

1 Morse taper shank (according to ISO 296)

α = 60°, 90° or 120° inclusive (tolerance: ${}^0_{-1^\circ}$)

Figure 1

Table 1

Dimensions in millimetres

Nominal size d_1	Small diameter d_2^a	Overall length l_1		Body length l_2		Morse taper shank no.
		$\alpha = 60^\circ$	$\alpha = 90^\circ$ and 120°	$\alpha = 60^\circ$	$\alpha = 90^\circ$ and 120°	
16	3,2	97	93	24	20	1
20	4	120	116	28	24	2
25	7	125	121	33	29	2
31,5	9	132	124	40	32	2
40	12,5	160	150	45	35	3
50	16	165	153	50	38	3
63	20	200	185	58	43	4
80	25	215	196	73	54	4

^a Front end design optional.

Annex A (informative)

Relationship between designations in this International Standard and ISO 13399

A.1 Relationship between designations

For the relationship between the designations in this International Standard and preferred symbols according to ISO 13399, see [Table A.1](#).

Table A.1 — Relationship between designations in this International Standard and ISO 13399

Symbol in this International Standard	Reference in this International Standard	Property name in the ISO 13399 series	Symbol in the ISO 13399 series	Reference in the ISO 13399 series
d_1	Clause 3 , Figure 1 and Table 1	cutting diameter	DC	ISO/TS 13399-3 BSU 71D084653E57F
d_2	Clause 3 , Figure 1 and Table 1	interference cutting diameter	DCINTF	ISO/TS 13399-3 BSU 726E2FCC0EC78
l_1	Clause 3 , Figure 1 and Table 1	overall length	OAL	ISO/TS 13399-3 BSU 71D078EB7C086
l_2	Clause 3 , Figure 1 and Table 1	head length	LH	ISO/TS 13399-3 BSU 71D07574A61E8
α	Clause 3 , Figure 1 and Table 1	point angle	SIG	ISO/TS 13399-3 BSU 71DCCC4FEF366
Morse taper shank no.	Clause 3 and Table 1	connection size code machine side	CZCMS	ISO/TS 13399-3 BSU 727C2BCCC5596

Bibliography

- [1] ISO 3294, *Parallel shank countersinks for angles 60, 90 and 120 degrees inclusive*
- [2] ISO 13399 (all parts), *Cutting tool data representation and exchange*

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