

BS ISO 866:2016



BSI Standards Publication

# Centre drills for centre holes without protecting chamfers — Type A

**National foreword**

This British Standard is the UK implementation of ISO 866:2016.

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.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2016.  
Published by BSI Standards Limited 2016

ISBN 978 0 580 83626 8

ICS 25.100.30

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2016.

**Amendments/corrigenda issued since publication**

Date	Text affected
------	---------------

---

INTERNATIONAL  
STANDARD

BS ISO 866:2016

**ISO**  
**866**

Second edition  
2016-08-15

---

---

**Centre drills for centre holes without  
protecting chamfers — Type A**

*Forets à centrer pour centres sans chanfrein de protection — Type A*



Reference number  
ISO 866:2016(E)

© ISO 2016



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2016, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
copyright@iso.org  
www.iso.org

<b>Contents</b>		Page
<b>Foreword</b> .....		iv
<b>Introduction</b> .....		v
<b>1 Scope</b> .....		1
<b>2 Dimensions</b> .....		1
<b>3 Designation</b> .....		2
<b>Annex A (normative) Dimensions for Type A centre holes and choice of the dimensioning method</b> .....		3
<b>Annex B (informative) Relationship between designations in this International Standard and ISO 13399</b> .....		5
<b>Bibliography</b> .....		6

## 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](http://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](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

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 866:1975), which constitutes a minor revision with the addition of [Annex B](#), showing the relationship between the symbols in this International Standard and the symbols in the ISO 13399 series.

## Introduction

This International Standard, relating to centre drills, covers only centre drills for centre holes without a protecting chamfer (Type A). The other types are covered in ISO 2540 (Type B) and ISO 2541 (Type R).





# Centre drills for centre holes without protecting chamfers — Type A

## 1 Scope

This International Standard specifies the dimensions of centre drills for centre holes without protecting chamfers (Type A).

It covers only metric dimensions, which are regarded as the only recommended dimensions in the future for this type of drill.

The flutes may be straight or spiral, depending on the manufacturer's discretion.

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

Recommended dimensions for Type A centre holes, which can be obtained by a rational use of the centre drills listed in this International Standard, are given in [Annex A](#).

## 2 Dimensions

Dimensions of the centre drill shall be in accordance with the dimensions shown in [Figures 1](#) and [2](#) and given in [Table 1](#).

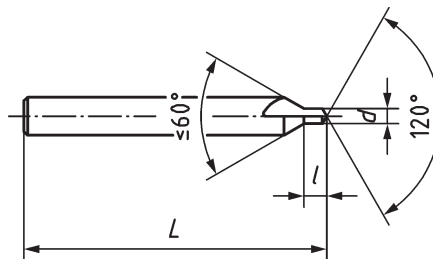


Figure 1 — Single-ended centre drill — Type A ( $d \leq 0,8$  mm)

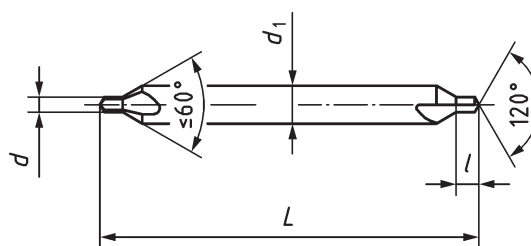


Figure 2 — Double-ended centre drill — Type A ( $d \geq 1$  mm)

**Table 1 — Single- and double-ended centre drill (Type A) dimensions**

Dimensions in millimetres

$d^a$ k12	$d_1$ h9	$L$		$l$	
		max.	min.	max.	min.
(0,5)	3,15	21	19	1,0	0,8
(0,63)	3,15	21	19	1,2	0,9
(0,8)	3,15	21	19	1,5	1,1
1,0	3,15	33,5	29,5	1,9	1,3
(1,25)	3,15	33,5	29,5	2,2	1,6
1,6	4,0	37,5	33,5	2,8	2,0
2,0	5,0	42	38	3,3	2,5
2,5	6,3	47	43	4,1	3,1
3,15	8,0	52	48	4,9	3,9
4,0	10,0	59	53	6,2	5,0
(5,0)	12,5	66	60	7,5	6,3
6,3	16,0	74	68	9,2	8,0
(8,0)	20,0	83	77	11,5	10,1
10,0	25,0	103	97	14,2	12,8

<sup>a</sup> Sizes in brackets should be avoided whenever possible.

### 3 Designation

A centre drills in accordance with this International Standard shall be designated by the following:

- a) the term “Centre drill”;
- b) reference to this International Standard (e.g. ISO 866);
- c) Type A;
- d) pilot diameter,  $d$  (in millimetres);
- e) shank diameter,  $d_1$  (in millimetres).

EXAMPLE A centre drill type A, pilot diameter  $d = 0,63$ , shank diameter  $d_1 = 3,15$  is designated as follows:

**Centre drill ISO 866 - A 0,63/3,15**

## Annex A (normative)

### Dimensions for Type A centre holes and choice of the dimensioning method

There are two methods for dimensioning type A centre holes (see [Figures A.1](#) and [A.2](#)), which are practically equivalent. One or the other method may be used.

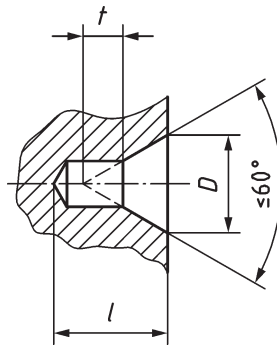


Figure A.1 — Method 1

Dimension  $l$  depends on the length,  $l$ , of the centre drill. It should not, even in the case of drilling with re-sharpened centre drills, be less than the reference value,  $t$ , given in [Table A.1](#).

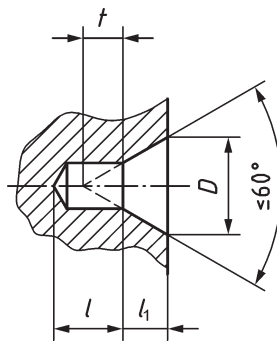


Figure A.2 — Method 2

Dimension  $l$  depends on the length,  $l$ , of the centre drill. It should not, even in the case of drilling with re-sharpened centre drills, be less than the reference value,  $t$ , given in [Table A.1](#).

**Table A.1 — Dimensioning methods for type A centre holes**

Dimensions in millimetres

$d^a$ nominal	<b>Method 1</b> $D$ nominal	<b>Method 2</b> $l_1$ nominal	$t$ <b>Reference value</b>
(0,5)	1,06	0,48	0,5
(0,63)	1,32	0,60	0,6
(0,8)	1,70	0,78	0,7
1,0	2,12	0,97	0,9
(1,25)	2,65	1,21	1,1
1,6	3,35	1,52	1,4
2,0	4,25	1,95	1,8
2,5	5,30	2,42	2,2
3,15	6,70	3,07	2,8
4,0	8,50	3,90	3,5
(5,0)	10,60	4,85	4,4
6,3	13,20	5,98	5,5
(8,0)	17,00	7,79	7,0
10,0	21,20	9,70	8,7

<sup>a</sup> Sizes in brackets should be avoided whenever possible.

## Annex B (informative)

### Relationship between designations in this International Standard and ISO 13399

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

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

ISO 866		ISO 13399 series		
Symbol	Reference	Property name	Symbol	Reference
$d$	<a href="#">Figure 1</a> , <a href="#">Figure 2</a> , <a href="#">Table 1</a>	cutting diameter	DC	ISO/TS 13399-3 BSU 71D084653E57F
$d_1$	<a href="#">Table 1</a>	connection diameter machine side	DCONMS	ISO/TS 13399-3 BSU 71EBDBF5060E6
$l$	<a href="#">Figure 1</a> , <a href="#">Figure 2</a> , <a href="#">Table 1</a>	step diameter length and point length	SDL + PL	ISO/TS 13399-3 BSU 71DCCC3DFA23A (SDL) BSU 71DCCFD064042 (PL)
$L$	<a href="#">Figure 1</a> , <a href="#">Figure 2</a> , <a href="#">Table 1</a>	overall length	OAL	ISO/TS 13399-3 BSU 71D078EB7C086
$120^\circ$	<a href="#">Figure 1</a> , <a href="#">Figure 2</a> , <a href="#">Table 1</a>	point angle	SIG	ISO/TS 13399-3 BSU 71DCCC4FEF366
$\leq 60^\circ$	<a href="#">Figure 1</a> , <a href="#">Figure 2</a> , <a href="#">Table 1</a>	step included angle	STA	ISO/TS 13399-3 BSU 71DF151D6E547

## Bibliography

- [1] ISO 2540, *Centre drills for centre holes with protecting chamfer — Type B*
- [2] ISO 2541, *Centre drills for centre holes with radius form — Type R*
- [3] ISO 13399 (all parts), *Cutting tool data representation and exchange*









# British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

## About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

## Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at [bsigroup.com/standards](http://bsigroup.com/standards) or contacting our Customer Services team or Knowledge Centre.

## Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at [bsigroup.com/shop](http://bsigroup.com/shop), where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

## Copyright in BSI publications

All the content in BSI publications, including British Standards, is the property of and copyrighted by BSI or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use.

Save for the provisions below, you may not transfer, share or disseminate any portion of the standard to any other person. You may not adapt, distribute, commercially exploit, or publicly display the standard or any portion thereof in any manner whatsoever without BSI's prior written consent.

## Storing and using standards

Standards purchased in soft copy format:

- A British Standard purchased in soft copy format is licensed to a sole named user for personal or internal company use only.
- The standard may be stored on more than 1 device provided that it is accessible by the sole named user only and that only 1 copy is accessed at any one time.
- A single paper copy may be printed for personal or internal company use only.

Standards purchased in hard copy format:

- A British Standard purchased in hard copy format is for personal or internal company use only.
- It may not be further reproduced – in any format – to create an additional copy. This includes scanning of the document.

If you need more than 1 copy of the document, or if you wish to share the document on an internal network, you can save money by choosing a subscription product (see 'Subscriptions').

## Reproducing extracts

For permission to reproduce content from BSI publications contact the BSI Copyright & Licensing team.

## Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to [bsigroup.com/subscriptions](http://bsigroup.com/subscriptions).

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

**PLUS** is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit [bsigroup.com/shop](http://bsigroup.com/shop).

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email [subscriptions@bsigroup.com](mailto:subscriptions@bsigroup.com).

## Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

## Useful Contacts

### Customer Services

**Tel:** +44 345 086 9001

**Email (orders):** [orders@bsigroup.com](mailto:orders@bsigroup.com)

**Email (enquiries):** [cservices@bsigroup.com](mailto:cservices@bsigroup.com)

### Subscriptions

**Tel:** +44 345 086 9001

**Email:** [subscriptions@bsigroup.com](mailto:subscriptions@bsigroup.com)

### Knowledge Centre

**Tel:** +44 20 8996 7004

**Email:** [knowledgecentre@bsigroup.com](mailto:knowledgecentre@bsigroup.com)

### Copyright & Licensing

**Tel:** +44 20 8996 7070

**Email:** [copyright@bsigroup.com](mailto:copyright@bsigroup.com)

### BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK