

Grooved pins — Half-length reverse-taper grooved

The European Standard EN ISO 8741:1997 has the status of a
British Standard

ICS 21.060.50

Confirmed
May 2008

National foreword

This British Standard is the English language version of EN ISO 8741:1997. It is identical with ISO 8741:1997. It supersedes BS EN 28741:1992 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee FME/9, Bolts, nuts and accessories, to Subcommittee FME/9/6, General purpose fasteners and accessories, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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

Cross-references

Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement these international or European publications may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN ISO title page, page 2, the ISO title page, page ii, pages 1 to 4 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 May 1998

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Contents

	Page
National foreword	Inside front cover
Foreword	2
Foreword	ii
Text of EN ISO 8741	1

English version

Grooved pins — Half-length reverse-taper grooved

(ISO 8741:1997)

Goupilles cannelées à cannelures progressives Steckkerbstifte (ISO 8741:1997)
renversées sur la moitié de la longueur non
débouchantes (ISO 8741:1997)

This European Standard was approved by CEN on 18 October 1997.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

The text of the International Standard ISO 8741:1997 has been prepared by Technical Committee ISO/TC 2 “Fasteners” in collaboration with Technical Committee CEN/TC 185 “Threaded and non-threaded mechanical fasteners and accessories”, the secretariat of which is held by DIN.

This European Standard supersedes EN 28741:1992.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 1998, and conflicting national standards shall be withdrawn at the latest by May 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 8741:1997 was approved by CEN as a European Standard without any modification.

NOTE Normative references to International Standards are listed in Annex ZA (normative).

Contents

	Page
Foreword	2
1 Scope	1
2 Normative references	1
3 Dimensions	1
4 Application	3
5 Requirements and reference international standards	3
6 Designation	3
Annex ZA (normative) Normative references to international publications with their relevant European publications	4
Figure 1	1
Table 1 — Dimensions	2
Table 2 — Requirements and reference International Standards	3

INTERNATIONAL
STANDARD

ISO
8741

Second edition
1997-11-01

**Grooved pins — Half-length reverse-taper
grooved**

*Goupilles cannelées à cannelures progressives renversées sur la moitié
de la longueur non débouchantes*



Reference number
ISO 8741:1997(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8741 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

This second edition cancels and replaces the first edition (ISO 8741:1986), which has been technically revised.

Descriptors: Fasteners, steel products, pins (mechanics), grooved pins, specifications, characteristics, dimensions, designation.

1 Scope

This International Standard specifies the characteristics of half-length reverse taper grooved pins made of steel or austenitic stainless steel which have three equally spaced grooves impressed longitudinally on their exterior surface, with nominal diameter, d_1 , from 1,5 mm to 25 mm inclusive.

The displaced material to each side of the grooves forming an expanded diameter d_2 which is larger than the nominal diameter d_1 will cause a non-positive locking fit when these grooved pins are forced into a drilled hole equal to the nominal diameter d_1 (see clause 4).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3269:1988, *Fasteners — Acceptance inspection*.

ISO 3506-1:1997, *Corrosion-resistant stainless steel fasteners — Part 1: Bolts, screws and studs*.

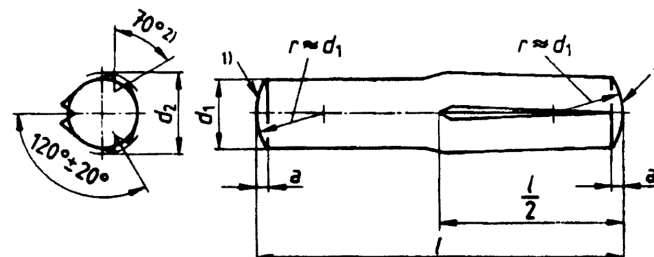
ISO 4042:—¹⁾, *Fasteners — Electroplated coatings*.

ISO 8749:1986, *Pins and grooved pins — Shear test*.

ISO 9717:1990, *Phosphate conversion coatings for metals — Method of specifying requirements*.

3 Dimensions

See Figure 1 and Table 1.



¹⁾ Chamfer permissible

²⁾ The grooving angle 70° applies only to grooved pins made from steel as shown in clause 5. The grooving angle may be modified depending on resilience of material.

Figure 1

¹⁾ To be published. (Revision of ISO 4042:1989)

Table 1 — Dimensions

Dimensions in millimetres

d_1		nom.	1,5	2	2,5	3	4	5	6	8	10	12	16	20	25		
		tol.	h9				h11										
a		\approx	0,2	0,25	0,33	0,4	0,5	0,63	0,8	1	1,2	1,6	2	2,5	3		
Minimum shear strength, double ^a KN			1,6	2,84	4,4	6,4	11,3	17,6	25,4	45,2	70,4	101,8	181	283	444		
l^b		Expanded diameter, d_2^{cd}															
nom.	min.	max.	+ 0,05 0	± 0,05						± 0,1							
8	7,75	8,25	1,6	2,1	2,6	3,1	4,15	5,15	6,15	8,2	10,2	12,25	16,25	20,25	25,25		
10	9,75	10,25															
12	11,5	12,5	1,63	2,65	3,2	4,2	5,2	6,25	8,25	10,3	12,3	16,3	20,3	25,3	20,4	25,4	
14	13,5	14,5															
16	15,5	16,5	2,15	2,7	3,25	4,3	5,3	6,3	8,3	10,4	12,4	16,4	20,4	25,4	20,5	25,5	
18	17,5	18,5															
20	19,5	20,5	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
22	21,5	22,5															
24	23,5	24,5	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
26	25,5	26,5															
28	27,5	28,5	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
30	29,5	30,5															
32	31,5	32,5	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
35	34,5	35,5															
40	39,5	40,5	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
45	44,5	45,5															
50	49,5	50,5	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
55	54,25	55,75															
60	59,25	60,75	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
65	64,25	65,75															
70	69,25	70,75	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
75	74,25	75,75															
80	79,25	80,75	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
85	84,25	85,75															
90	89,25	90,75	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
95	94,25	95,75															
100	99,25	100,75	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
120	119,25	120,75															
140	139,25	140,75	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
160	159,25	160,75															
180	179,25	180,75	2,7	3,25	4,3	5,3	6,35	8,4	10,45	12,5	16,5	20,5	25,5	20,45	25,45	20,45	25,45
200	199,25	200,75															

^a Applies only to grooved pins made from steel as shown in clause 5.

^b The range of commercial lengths is between the stepped lines.

^c The expanded diameter d_2 applies only to pins made from steel as shown in clause 5. For other materials, for example stainless steel, a reduction amount shall be subtracted from the given values and should be agreed between customer and supplier.

^d For testing d_2 , a GO/NO GO ring gauge should be used.

4 Application

The diameter of the hole into which the groove pin is to be inserted shall be equal to the nominal diameter d_1 of the mating pin and to tolerance class H11.

5 Requirements and reference International Standards

See Table 2.

6 Designation

EXAMPLE 1

A half-length reverse taper grooved steel pin with nominal diameter $d_1 = 6$ mm and nominal length $l = 50$ mm is designated as follows:

Grooved pin ISO 8741 – 6 × 50 – St

EXAMPLE 2

A half-length reverse taper grooved austenitic stainless steel pin of grade A1, with nominal diameter $d_1 = 6$ mm and nominal length $l = 50$ mm is designated as follows:

Grooved pin ISO 8741 – 6 × 50 – A1

Table 2 — Requirements and reference International Standards

Material ^a	Steel (St)	Austenitic stainless steel
		Hardness 125 HV30 to 245 HV30
Grooves	Form of groove at the discretion of the supplier.	
Surface finish	Plain, i.e. pins to be supplied in natural finish treated with a protective lubricant, unless otherwise specified by agreement between customer and supplier.	Plain, i.e. pins to be supplied in natural finish.
	Preferred coatings are black oxide, phosphate coating or zinc plating with chromate conversion coating (see ISO 9717 and ISO 4042). Other coatings as agreed between customer and supplier. All tolerances shall apply prior to the application of a plating or coating.	
Workmanship	Pins shall be free of irregularities or detrimental defects.	
Shear strength test	The test shall be in accordance with ISO 8749.	
Acceptability	The acceptance procedure is covered in ISO 3269.	
^a Other materials as agreed between customer and supplier.		

Annex ZA (normative)

Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 8749	1986	Pins and grooved pins — Shear test	EN 28749	1992

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