UDC 621.886.124

October 1992

Full-length taper grooved pins

(ISO 8744 : 1986)
English version of DIN EN 28 744

DIN
EN 28 744

This standard incorporates the English version of ISO 8744.

Kegelkerbstifte
(ISO 8744 : 1986)

Supersedes DIN 1471, November 1978 edition.

European Standard EN 28 744 : 1992 has the status of a DIN Standard.

A comma is used as the decimal marker.

National foreword

The publication of this standard is in keeping with a decision made by CEN/TC 185 to adopt, without alteration, a series of ISO Standards covering grooved pins as European Standards. The responsible German body involved in their publication is the *Normenausschuß Mechanische Verbindungselemente* (Fasteners Standards Committee).

As a consequence, all DIN Standards covering such pins have been superseded by the corresponding DIN EN Standards (see table below).

EN Standard	DIN EN Standard	Title	Previous DIN Standard
28 739	28 739	Full-length parallel grooved pins, with pilot	1470
28 740	28 740	Full-length parallel grooved pins, with chamfer	1473
28 741	28 741	Half-length reverse taper grooved pins	1474
28 742	28 742	Third-length centre grooved pins	1475
28 743	28 743	Half-length centre grooved pins	—
28 744	28 744	Full-length taper grooved pins	1471
28 745	28 745	Half-length taper grooved pins	1472
28 746	28 746	Grooved pins with round head	1476
28 747	28 747	Grooved pins with countersunk head	1477

The DIN Standards corresponding to the ISO Standards referred to in clause 2 of the EN are as follows:

ISO Standard	DIN Standard
ISO 2081	DIN 50 961
ISO 3269	DIN ISO 3269 (at present at the stage of draft)
ISO 8749	DIN EN 28 749

The DIN 4000-9-1 tabular layout of article characteristics applies for grooved pins as covered here.

Continued overleaf.
EN comprises 5 pages.

Standards referred to

(and not included in **References**)

DIN 4000 Part 9	Tabular layout of article characteristics for bolts, screws, pins, rivets, keys, and lock washers
DIN 50 961	Chromating of zinc and cadmium coatings on iron and steel
DIN EN 28 749	Determination of shear strength of pins

Previous editions

DIN 1471: 04.43, 09.56, 11.78.

Amendmends

In comparison with DIN 1471, November 1978 edition, the following amendments have been made.

a) The nominal diameter of 14 mm has been dropped.
b) The specifications for the nominal lengths and their tolerances have been amended.
c) The specifications for shear strength have been amended.
d) The material hardness has been specified.
e) The standard designation has been changed.

International Patent Classification

F 16 B 19/02

1 Scope and field of application

This International Standard specifies the characteristics of full-length taper grooved pins which have three equally spaced grooves impressed longitudinally on their exterior surface, with metric dimensions and nominal diameter, d_1, from 1,5 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 positive locking fit when these grooved pins are forced into a drilled hole equal to the nominal diameter d_1 (see clause 4).

2 References

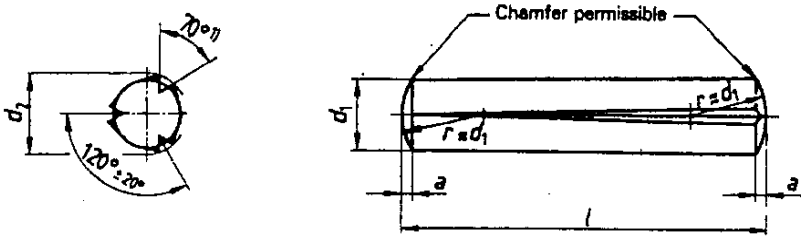
ISO 2081, *Metallic coatings — Electroplated coatings of zinc on iron or steel.*

ISO 3269, *Fasteners — Acceptance inspection.*

ISO 4520, *Chromate conversion coatings on electroplated zinc and cadmium coatings.*

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

3 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	≈	0,2	0,25	0,3	0,4	0,5	0,63	0,8	1	1,2	1,6	2	2,5	3
Minimum shear strength, double[2] 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[3] nom.	min.	max.	Expanded diameter, d_2[4),5]											
			+ 0,05 0			± 0,05					± 0,10			
8	7,75	8,25	1,63	2,15	2,70	3,25	4,30	5,30	6,30	8,35	10,40	12,40	16,55	20,60	25,60
10	9,75	10,25				3,30									
12	11,5	12,5	1,60				4,35	5,35	6,35	8,40					
14	13,5	14,5			2,65	3,25									
16	15,5	16,5					4,30	5,30			10,45	12,45	16,60		
18	17,5	18,5				3,20									
20	19,5	20,5							6,30	8,35					
22	21,5	22,5					4,25	5,25			10,40	12,40			
24	23,5	24,5											16,55		
26	25,5	26,5							6,25	8,30					
28	27,5	28,5									10,35	12,30			
30	29,5	30,5													
32	31,5	32,5								8,25			16,50		
35	34,5	35,5													
40	39,5	40,5													
45	44,5	45,5									10,30				
50	49,5	50,5													
55	54,25	55,75													
60	59,25	60,75													
65	64,25	65,75													
70	69,25	70,75													
75	74,25	75,75													
80	79,25	80,75													
85	84,25	85,75													
90	89,25	90,75													
95	94,25	95,75													
100	99,25	100,75													
120	119,25	120,75													

1) 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.

2) Applies only to grooved pins made from steel as shown in clause 5.

3) The range of commercial lengths is between the stepped lines.

4) 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.

5) For testing d_2, a GO/NO GO ring gauge should be used.

4 Application

The bore dimension of the grooved pin hole shall be equal to the nominal diameter, d_1, of the mating pin, and to tolerance H11.

5 Specifications and reference International Standards

Material	St = Free-cutting steel, hardness 125 to 245 HV. Other materials as agreed between customer and supplier.
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 rust-preventative lubricant, unless otherwise specified by agreement between customer and supplier.
	Preferred coatings are black oxide, phosphate coating or zinc plating with chromate conversion coating (see ISO 2081 and ISO 4520). Other coatings as agreed between customer and supplier. All tolerances shall apply prior to the application of a plating or coating.
Workmanship	Parts shall be uniform in quality and 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.

6 Designation

Example for the designation of a full-length taper grooved steel pin with nominal diameter, d_1 = 6 mm, and nominal length, l = 50 mm :

Grooved pin ISO 8744 - 6 × 50 - St