UDC 621.886.128

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Grooved pins with countersunk head

(ISO 8747 : 1986)

English version of DIN EN 28 747

DIN EN 28 747

This standard incorporates the English version of ISO 8747.

Senkkerbnägel
(ISO 8747 : 1986)

Supersedes DIN 1477, November 1978 edition.

European Standard EN 28 747 : 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As a consequence, all DIN Standards covering such pins have been superseded by the corresponding DIN EN Standards (see table below).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)

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

Previous editions

DIN 1477: 04.43, 09.56, 11.78.

Amendmends

In comparison with DIN 1477, November 1978 edition, the following amendments have been made.

a) The tolerances for the nominal lengths have been dropped.

b) The specifications for dimension *c* have been amended.

c) A new type with pilot end (type B) has been introduced.

d) The material hardness has been specified.

e) The standard designation has been changed.

International Patent Classification

F 16 B 21/02

1 Scope and field of application

This International Standard specifies the characteristics of countersunk head grooved pins which have three equally spaced grooves impressed longitudinally on their exterior surface, with metric dimensions and nominal diameter, d_1, from 1,4 to 20 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

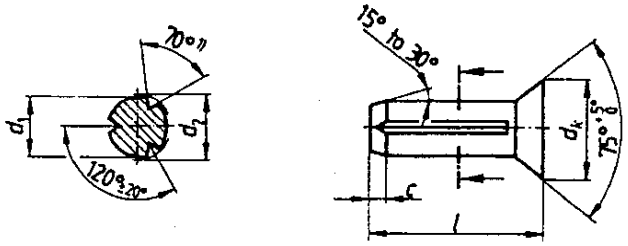
ISO 2081, *Metallic coatings — Electroplated coatings of zinc on iron or steel.*

ISO 3269, *Fasteners — Acceptance inspection.*

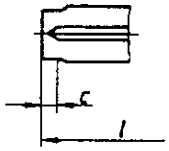
ISO 4520, *Chromate conversion coatings on electroplated zinc and cadmium coatings.*

3 Dimensions

Type A
Pin with chamfered end



Type B
Pin with pilot end
(at the discretion of the supplier, or specifically ordered by the customer)



NOTE — Other dimensions, see type A.

Dimensions in millimetres

d_1	nom.	1,4	1,6	2	2,5	3	4	5	6	8	10	12	16	20
	max.	1,4	1,6	2	2,5	3	4	5	6	8	10	12	16	20
	min.	1,35	1,55	1,95	2,425	2,925	3,9	4,9	5,9	7,85	9,85	11,8	15,8	19,8
d_k	max.	2,7	3,0	3,7	4,6	5,45	7,25	9,1	10,8	14,4	16	19	26	31,5
	min.	2,3	2,6	3,3	4,2	4,95	6,75	8,5	10,2	13,6	14,9	17,7	23,7	30,7
c		0,42	0,48	0,6	0,75	0,9	1,2	1,5	1,8	2,4	3,0	3,6	4,8	6
l[2]		Expanded diameter, d_2[3),4)]												
nom.	min.	max.	+ 0,05 0			± 0,05						± 0,10		
3 4 5	2,8 3,7 4,7	3,2 4,3 5,3	1,50	1,70	2,15	2,70	3,20	4,25	5,25	6,30	8,30	10,35	12,35	16,40	20,50
6 8 10	5,7 7,7 9,7	6,3 8,3 10,3												
12 16 20	11,6 15,6 19,5	12,4 16,4 20,5												
25 30 35 40	24,5 29,5 34,5 39,5	25,5 30,5 35,5 40,5												

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

3) The expanded diameter d_2 applies only to pins made from free-cutting steel or cold-heading steel. For other materials a reduction amount shall be subtracted from the given values and should be agreed between customer and supplier.

4) 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 or cold-heading steel, hardness 125 to 246 HV. Other materials as agreed between customer and supplier.
Grooves	Shape 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.
Acceptability	The acceptance procedure is covered in ISO 3269.

6 Designation

Example for the designation of a countersunk head grooved steel pin with nominal diameter, d_1 = 6 mm, and nominal length, l = 30 mm :

Grooved pin ISO 8747 - 6 × 30 - St