UDC 621.886.113 October 1992

Hardened parallel pins with internal thread
(ISO 8735 : 1987)
English version of DIN EN 28 735

DIN
EN 28 735

This standard incorporates the English version of ISO 8735.

Zylinderstifte mit Innengewinde, gehärtet
(ISO 8735 : 1987)

This standard, together with DIN EN 28 733, October 1992 edition, supersedes DIN 7979, February 1977 edition.

European Standard EN 28 735 : 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 parallel and taper 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As a consequence, all DIN Standards covering such pins have been superseded by the corresponding DIN EN Standards (see table below).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
22 338	22 338	Unhardened parallel pins	7
22 339	22 339	Unhardened taper pins	1
28 733	28 733	Unhardened parallel pins with internal thread	7979
28 734	28 734	Hardened parallel pins	6325
28 735	28 735	Hardened parallel pins with internal thread	7979
28 736	28 736	Unhardened taper pins with internal thread	7978
28 737	28 737	Unhardened taper pins with external thread	7977

It should be noted that ISO Standard ISO 965, to which reference has been made in clause 2, has been superseded by ISO 965-2.

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

ISO Standard	DIN Standard
ISO 965	DIN 13 Part 13
ISO 3269	DIN ISO 3269 (at present at the stage of draft)

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

Continued overleaf.
EN comprises 6 pages.

Standards referred to

(and not included in **References**)

DIN 13 Part 13 ISO metric screw threads; series of preferred sizes for screws, bolts and nuts from 1 mm to 52 mm diameter and limits of sizes

DIN 4000 Part 9 Tabular layout of article characteristics for bolts, screws, pins, rivets, keys, and lock washers

Previous editions

DIN 7979: 06.63, 02.77.

Amendments

In comparison with DIN 7979, February 1977 edition, the following amendments have been made.

a) Type C pins are now specified in DIN EN 28 733.
b) A new type of pin, case hardened (type B), has been introduced.
c) The specifications for the nominal lengths and their tolerances have been amended.
d) The nominal diameters of 14 mm, 60 mm, 70 mm and 80 mm have been dropped.
e) Some values of t_1 have been changed.
f) The hardness is now specified as Vickers hardness.
g) 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 through hardened and case hardened parallel pins with internal thread, metric dimensions and nominal diameters, d_1, from 6 to 50 mm inclusive.

2 References

ISO 965, *ISO general purpose metric screw threads — Tolerances.*

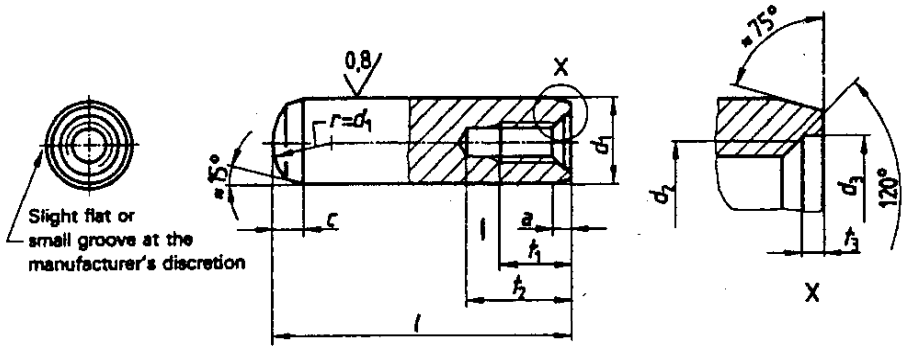
ISO 3269, *Fasteners — Acceptance inspection.*

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

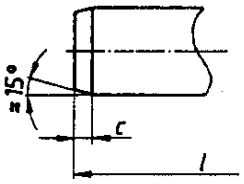
3 Dimensions

Surface roughness values in micrometres

Type A
Pin with crown, through hardened



Type B
Flat pin, case hardened



NOTE — Other dimensions, see type A.

Dimensions in millimetres

d_1		m6[1]	6	8	10	12	16	20	25	30	40	50
a		≈	0,8	1	1,2	1,6	2	2,5	3	4	5	6,3
c			2,1	2,6	3	3,8	4,6	6	6	7	8	10
d_2			M4	M5	M6	M6	M8	M10	M16	M20	M20	M24
P[2]			0,7	0,8	1	1	1,25	1,5	2	2,5	2,5	3
d_3			4,3	5,3	6,4	6,4	8,4	10,5	17	21	21	25
l_1			6	8	10	12	16	18	24	30	30	36
l_2		min.	10	12	16	20	25	28	35	40	40	50
l_3			1	1,2	1,2	1,2	1,5	1,5	2	2	2,5	2,5
l[3]												
nom.	min.	max.										
16	15,5	16,5										
18	17,5	18,5										
20	19,5	20,5										
22	21,5	22,5										
24	23,5	24,5										
26	25,5	26,5										
28	27,5	28,5										
30	29,5	30,5		Range								
32	31,5	32,5										
35	34,5	35,5										
40	39,5	40,5				of						
45	44,5	45,5										
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						commercial				
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								lengths		
120	119,25	120,75										
140	139,25	140,75										
160	159,25	160,75										
180	179,25	180,75										
200	199,25	200,75										

1) Other tolerances as agreed between customer and supplier.

2) P = pitch of the thread.

3) For nominal lengths above 200 mm, steps of 20 mm.

4 Specifications and reference International Standards

<table>
<tr><td>Screw thread</td><td colspan="2">Metric screw thread with tolerance class 6H to ISO 965.</td></tr>
<tr><td>Material [1]</td><td colspan="2">St = steel meeting the following analyses [% (m/m)] :

Type A

C 0,95 to 1,1
Si 0,15 to 0,35
Mn 0,25 to 0,4
P 0,03 max.
S 0,025 max.
Cr 1,35 to 1,65

Hardness :
550 to 650 HV30

Type B
or

C 0,06 to 0,13 | C 0,15 max.
Si 0,1 to 0,4 | Si 0,10 max.
Mn 0,25 to 0,6 | Mn 0,9 to 1,3
P 0,025 max. | P 0,07 max.
S 0,05 max. | S 0,15 to 0,35
Pb 0,15 to 0,35

at the supplier's option

Surface hardness :
600 to 700 HV1
Hardness at case depth 0,25 to 0,4 mm :
550 HV1 min.</td></tr>
<tr><td rowspan="2">Surface finish</td><td colspan="2">Plain, i.e. pins to be supplied in natural finish, treated with a protective lubricant, unless otherwise specified by agreement between customer and supplier.
Appropriate plating or coating processes should be employed to avoid hydrogen embrittlement. When pins are electroplated or phosphate-coated, they shall be suitably treated immediately after plating or coating to obviate detrimental hydrogen embrittlement.</td></tr>
<tr><td colspan="2">Preferred coatings are chemical black oxide or non-electrolytic zinc plating with chromate conversion coating (see ISO 4520).
Other coatings as agreed between customer and supplier.
All tolerances shall apply prior to the application of a plating or coating.</td></tr>
<tr><td>Workmanship</td><td colspan="2">Parts shall be uniform in quality and free of irregularities or detrimental defects.
No burrs shall appear on any part of the pin.</td></tr>
<tr><td>Acceptability</td><td colspan="2">The acceptance procedure is covered in ISO 3269.</td></tr>
</table>

1) Other materials as agreed between customer and supplier.

5 Designation

Example for the designation of a through hardened steel parallel pin, type A, with internal thread, nominal diameter d = 6 mm and nominal length l = 30 mm :

Parallel pin ISO 8735 - 6 × 30 - A - St