UDC 621.882.6 October 1992

Clevis pins without head
(ISO 2340 : 1986)
English version of DIN EN 22 340

DIN
EN 22 340

This standard incorporates the English version of ISO 2340.

Bolzen ohne Kopf (ISO 2340 : 1986)

Supersedes DIN 1443, March 1974 edition.

European Standard EN 22 340 : 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 clevis pins and washers for use with clevis 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As a consequence, all DIN Standards covering such pins and washers have been superseded by the corresponding DIN EN Standards (see table below).

EN Standard	DIN EN Standard	Title	Previous DIN Standard
22 340	22 340	Clevis pins without head	1443
22 341	22 341	Clevis pins with head	1444
28 738	28 738	Plain washers for use with clevis pins; product grade A	1440

See National appendix for guideline values for the mass of clevis pins not given in the European Standard.

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

ISO Standard	DIN Standard
ISO 1234	DIN 94
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 clevis pins as covered here.

Continued overleaf.
EN comprises 7 pages.

Standards referred to

(and not included in **References**)

DIN 94	Split pins
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 edition

DIN 1443: 03.74.

Amendments

In comparison with DIN 1443, March 1974 edition, the following amendments have been made.

a) The nominal lengths and their tolerances have been amended.

b) The surface roughness is now specified as R_a (arithmetic mean deviation of the profile).

c) The material hardness has been specified.

d) The standard designation has been changed.

e) Guideline values for the mass of clevis pins have been given in a National appendix.

International Patent Classification

F 16 B 19/00

F 16 B 21/12

1 Scope and field of application

This International Standard specifies the characteristics of clevis pins without head, with metric dimensions and nominal diameters, *d*, from 3 to 100 mm inclusive.

2 References

ISO 1234, *Split pins — Metric series.*

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

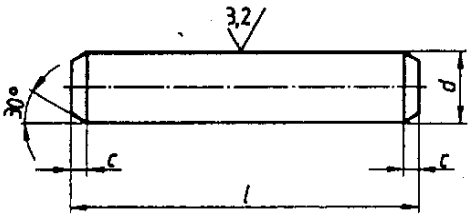
ISO 3269, *Fasteners — Acceptance inspection.*

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

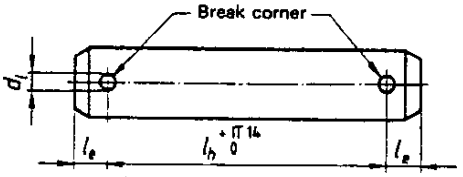
3 Dimensions

Surface roughness values in micrometres

Type A
Without split pin holes



Type B
With split pin holes



NOTES

1 Other dimensions, angles and surface roughness value, see type A.

2 In cases where a distance l_h which is not in accordance with $l - 2l_e$ is necessary, this distance should be fixed in the designation (see clause 5), but in no case may the values for l_e be smaller than those given in the table.

NOTE — For railway applications and in cases where the split pins are subjected to alternating transverse forces, it is recommended that the next larger split pin and corresponding hole diameter to that specified be used.

Dimensions in millimetres

d		h11[1]	3	4	5	6	8	10	12	14	16	18	20	22	24	27	30	33	36	40	45	50	55	60	70	80	90	100
d_1		H13[2]	0,8	1	1,2	1,6	2	3,2	3,2	4	4	5	5	5	6,3	6,3	8	8	8	8	10	10	10	10	13	13	13	13
c		max.	1	1	2	2	2	2	3	3	3	3	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6
l_s		min.	1,6	2,2	2,9	3,2	3,5	4,5	5,5	6	6	7	8	8	9	9	10	10	10	10	12	12	14	14	16	16	16	16
	l[3]																											
nom.	min.	max.																										
6 8 10	5,75 7,75 9,75	6,25 8,25 10,25																										
12 14 16	11,5 13,5 15,5	12,5 14,5 16,5																										
18 20 22	17,5 19,5 21,5	18,5 20,5 22,5																										
24 26 28	23,5 25,5 27,5	24,5 26,5 28,5																										
30 32 35	29,5 31,5 34,5	30,5 32,5 35,5																										
40 45 50	39,5 44,5 49,5	40,5 45,5 50,5																										
55 60 65	54,25 59,25 64,25	55,75 60,75 65,75																										
70 75 80	69,25 74,25 79,25	70,75 75,75 80,75																										
85 90 95	84,25 89,25 94,25	85,75 90,75 95,75																										
100 120 140	99,25 119,25 139,25	100,75 120,75 140,75																										
160 180 200	159,25 179,25 199,25	160,75 180,75 200,75																										

Range of commercial lengths

1) Other tolerances, for example a11, c11, f8, as agreed between customer and supplier.

2) Hole diameter d_1 = nominal size of the split pin (see ISO 1234).

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

4 Specifications and reference International Standards

Material	St = Free-cutting steel, hardness 125 to 245 HV. Other materials as agreed between customer and 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. No burrs shall appear on any part of the pin.
Acceptability	The acceptance procedure is covered in ISO 3269.

5 Designation

Example for the designation of a clevis pin, steel, type B, with nominal diameter d = 20 mm and nominal length l = 100 mm :

Clevis pin ISO 2340 - B - 20 × 100 - St

Example for the same pin with split pin holes of ϕ 6,3 mm :

Clevis pin ISO 2340 - B - 20 × 100 × 6,3 - St

Example for the same pin with distance l_h = 80 mm :

Clevis pin ISO 2340 - B - 20 × 100 × 6,3 × 80 - St

Example for the same pin with standard split pin holes :

Clevis pin ISO 2340 - B - 20 × 100 × 80 - St

National appendix
(informative)

Mass of clevis pins

The values given are guideline values.

Size / Nominal length	3	4	5	6	8	10	12	14	16	18	20	22	24	27	30	33	36	40	45	50	55	60	70	80	90	100
	Approximate mass (7,85 kg/dm³), in kg per 1000 units																									
6	0,320																									
8	0,430	0,760																								
10	0,540	0,960	1,30																							
12	0,650	1,16	1,61	2,30																						
14	0,760	1,36	1,92	2,74																						
16	0,870	1,56	2,23	3,19	5,80																					
18	0,980	1,78	2,54	3,63	6,60																					
20	1,10	1,96	2,85	4,08	7,40	11,0																				
22	1,21	2,16	3,16	4,52	8,20	12,2																				
24	1,32	2,36	3,47	4,96	9,00	13,4	19,1																			
26	1,43	2,56	3,78	5,40	9,80	14,6	20,9																			
28	1,55	2,76	4,08	5,85	10,6	15,9	22,7	31,6																		
30	1,66	2,96	4,39	6,29	11,4	17,1	24,5	34,0																		
32		3,16	4,71	6,72	12,2	18,3	26,3	36,4	45,3																	
35		3,46	5,18	7,40	13,4	20,2	28,9	40,0	50,0	66,0																
40		3,96	5,85	8,51	15,4	23,3	33,3	46,0	57,9	72,0	90,0															
45			6,62	9,62	17,4	26,4	37,7	52,1	65,8	82,0	102	125														
50			7,39	10,7	19,4	29,5	42,1	58,1	73,7	92,0	114	140	160													
55				11,8	21,4	32,6	46,6	64,2	81,6	102	127	155	178	232												
60				12,9	23,4	35,7	51,0	70,2	89,5	112	139	170	196	254	310											
65					25,4	38,8	55,5	76,3	97,4	122	151	185	214	277	338	410										
70					27,4	41,9	60,0	82,3	105	132	163	200	232	299	365	444	530									
75					29,4	45,0	64,4	88,4	113	142	175	215	250	322	393	479	570									
80					31,4	48,1	68,9	94,4	121	152	187	230	268	344	420	513	610	750								
85						51,2	73,3	101	129	162	210	245	284	366	448	548	650	799								
90						54,3	77,8	107	137	172	222	260	302	389	476	582	690	848	1070							
95						57,4	82,2	113	145	182	235	275	320	411	502	617	730	897	1130							
100						60,5	86,7	119	153	192	247	290	338	434	530	651	770	946	1190	1470						
120							104,7	143	185	232	295	350	410	522	640	790	930	1140	1430	1780	2130	2560				
140								167	217	272	343	410	482	612	779	958	1090	1340	1670	2070	2510	3000	4100			
160									249	312	391	470	554	702	890	1090	1250	1540	1920	2370	2890	3440	4700	6100		
180										352	439	530	626	792	1000	1220	1410	1740	2170	2670	3260	3880	5300	6900	8750	
200											487	590	698	882	1120	1360	1570	1940	2420	2980	3540	4320	5900	7700	9750	12 000