UDC 621.882.6 October 1992

Clevis pins with head
(ISO 2341 : 1986)
English version of DIN EN 22 341

DIN
EN 22 341

This standard incorporates the English version of ISO 2341.

Bolzen mit Kopf (ISO 2341 : 1986)

Supersedes DIN 1444, March 1974 edition.

European Standard EN 22 341 : 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As a consequence, all DIN Standards covering such pins and washers have been superseded by the corresponding DIN EN Standards (see table below).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 1444: 03.74.

Amendments

In comparison with DIN 1444, 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 21/12

1 Scope and field of application

This International Standard specifies the characteristics of clevis pins with 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.*

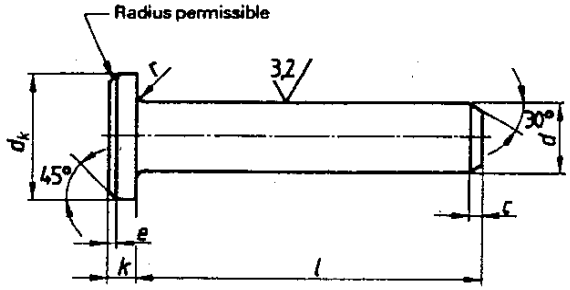
ISO 3269, *Fasteners — Acceptance inspection.*

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

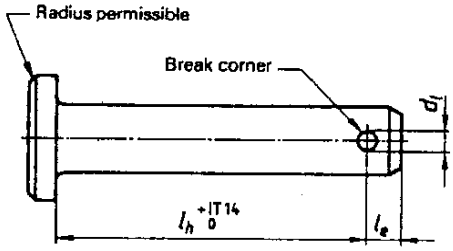
3 Dimensions

Surface roughness values in micrometres

Type A
Without split pin hole



Type B
With split pin hole



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 $l - l_e$ 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_k	h14	5	6	8	10	14	18	20	22	25	28	30	33	36	40	44	47	50	55	60	66	72	78	90	100	110	120
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
e	≈	0,5	0,5	1	1	1	1	1,6	1,6	1,6	1,6	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3
k	js14	1	1	1,6	2	3	4	4	4	4,5	5	5	5,5	6	6	8	8	8	8	9	9	11	12	13	13	13	13
l_e	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
r		0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

l[3] nom.	min.	max.
6	5,75	6,25
8	7,75	8,25
10	9,75	10,25
12	11,5	12,5
14	13,5	14,5
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
32	31,5	32,5
35	34,5	35,5
40	39,5	40,5
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
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
140	139,25	140,75
160	159,25	160,75
180	179,25	180,75
200	199,25	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 or cold-heading 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 2341 - B - 20 × 100 - St

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

Clevis pin ISO 2341 - B - 20 × 100 × 6,3 - St

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

Clevis pin ISO 2341 - B - 20 × 100 × 6,3 × 80 - St

Example for the same pin with a standard split pin hole :

Clevis pin ISO 2341 - 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	0,47																									
8	0,58	0,99																								
10	0,69	1,19	2,03																							
12	0,80	1,39	2,44	3,50																						
14	0,91	1,59	2,75	3,94																						
16	1,02	1,79	3,06	4,38	9,60																					
18	1,13	1,99	3,37	4,85	10,4																					
20	1,24	2,19	3,68	5,29	11,2	19,5																				
22	1,35	2,39	3,99	5,73	12,0	20,7																				
24	1,46	2,59	4,30	6,17	12,8	21,9	30,1																			
26	1,57	2,79	4,61	6,61	13,6	23,1	31,9																			
28	1,67	2,98	4,91	7,07	14,4	24,4	33,7	44,6																		
30	1,78	3,18	5,22	7,51	15,2	25,6	35,5	47,0																		
32		3,38	5,53	7,95	16,0	26,8	37,3	49,4	66,8																	
35		3,67	5,96	8,62	17,2	28,7	39,9	53,0	70,0	90,0																
40		4,16	6,70	9,73	19,2	31,8	44,3	59,0	78,0	100	120															
45			7,44	10,8	21,2	34,9	48,8	65,0	86,0	110	132	165														
50			8,18	11,9	23,2	38,0	53,2	71,0	94,0	120	145	180	215													
55				13,0	25,2	41,9	57,7	76,0	102	130	157	195	233	300												
60				14,1	27,2	45,8	62,1	82,0	110	140	170	210	251	325	410											
65					29,2	49,7	66,5	88,0	118	150	182	225	269	350	438	530										
70					31,2	53,6	70,9	94,0	126	160	195	240	287	375	466	566	660									
75					33,2	57,5	75,4	100	134	170	207	255	305	400	494	600	700									
80					35,2	60,6	79,8	106	142	180	220	270	323	425	522	633	740	910								
85						63,7	84,2	112	150	190	232	285	341	450	550	666	780	960								
90						66,8	88,6	118	158	200	245	300	360	475	578	700	820	1010	1300							
95						69,9	93,0	124	166	210	257	315	378	500	606	733	860	1060	1360							
100						73,0	97,5	130	174	220	270	330	396	525	634	766	900	1110	1420	1720						
120							116	154	206	260	322	390	468	625	746	900	1060	1300	1670	2040	2480	3000				
140								178	238	300	374	450	540	725	860	1030	1220	1500	1920	2350	2850	3440	4800			
160									270	340	426	510	612	825	974	1160	1380	1700	2170	2650	3230	3880	5400	7000		
180										380	478	570	684	925	1090	1300	1540	1900	2420	2950	3610	4320	6000	7800	9 800	
200											530	630	756	1030	1200	1430	1700	2100	2670	3250	4000	4760	6600	8600	10 800	13 500