UDC 621.828.5 February 1977

Clevis pins
with head and stud end

DIN 1445

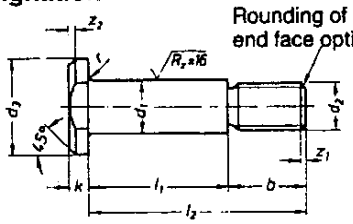
Bolzen mit Kopf und Gewindezapfen

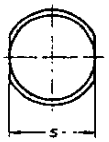
Supersedes DIN 1438 Parts 1 and 2.

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

Dimensions in mm

1 Dimensions and designation





z_1 as in DIN 78.

Designation of a clevis pin made of 9 SMnPb 28 K steel (St), with a diameter, d_1, of 12 mm (h11), a grip length, l_1, of 30 mm and a shank length, l_2, of 50 mm:

Clevis pin DIN 1445 – 12 h11 × 30 × 50 – St

Table 1: Clevis pin dimensions

d_1 h11 [1]	8	10	12	14	16	18	20	22	24	27	30
b min.	11	14	17	20	20	20	25	25	29	29	36
d_2	M 6	M 8	M 10	M 12	M 12	M 12	M 16	M 16	M 20	M 20	M 24
d_3 h14	14	18	20	22	25	28	30	33	36	40	44
k js14	3	4	4	4	4,5	5	5	5,5	6	6	8
r	0,6	0,6	0,6	0,6	0,6	1	1	1	1	1	1
s	11	13	17	19	22	24	27	30	32	36	36
z_2 ≈	1	1	1,6	1,6	1,6	1,6	2	2	2	2	2
l_2 js15	Mass										
16											
(18)											
20											
(22)											
25											
(28)											
30											
35											
40											
45											
50											
55											
60											
65											
70											
75											
80											
85											
90											
(95)											
100											

For [1]), see page 2.

Continued on pages 2 and 3.
Explanatory notes on page 4.

Table 1 (concluded)

d_1 [1]	33	36	40	45	50	55	60	70	80	90	100
b min.	36	39	42	45	49	52	58	61	68	78	84
d_2	M 24	M 27	M 30	M 33	M 36	M 39	M 42	M 45	M 52	M 56	M 64
d_3 h14	47	50	55	60	66	72	78	90	100	110	120
k js14	8	8	8	9	9	11	12	13	13	13	13
r	1	1	1	1	1	1	1	1	1	1	1
s	41	46	50	55	60	65	70	80	90	100	110
z_2 ≈	2	2	2	2	2	3	3	3	3	3	3
l_2 js15	Mass										
60											
65											
70											
75											
80											
85											
90											
(95)											
100											
(105)											
110											
(115)											
120											
(125)											
130											
140											
150											
160											
170											
180											
190											
200											

Lengths above 200 mm are to be graded in 20 mm steps.
Use of lengths given in brackets should be avoided where possible.

[1]) Other tolerances (e.g. a11, c11, f8) subject to agreement.

Length l_2 shall be calculated as the sum of $l_1{}^{+IT12}_{0}$ and b, rounded off to the next greatest value as given in the table. Since this results in a larger value of b, no guideline values can be given for the mass.

The minimum values of b specified in the table comply with the lengths of projection, v, specified in DIN 78 (for slotted (castle) nuts as specified in DIN 935 Parts 1 and 3) plus the thickness of washers as specified in DIN 125 and DIN 126. Where shorter stud ends are required, it is recomended that the minimum values of v specified in DIN 78 be taken as the basis of calculation.

2 Material

Clevis pins shall be made of 9 SMnPb 28 K steel (St) as specified in DIN 1651, use of other materials being subject to agreement.

3 Finish

For general tolerances, tolerance class m as specified in DIN 7168 shall apply.

The specifications of DIN 267 Part 2 shall apply analogously, except for product grade A pins.

4 Requirements

International Standard ISO 8992 shall apply with regard to general requirements.

The surface of clevis pins shall be smooth and free from burrs and scale.

5 Testing

5.1 Dimensional accuracy and finish

Testing for dimensional accuracy and finish shall be in accordance with the specifications of ISO 3269, the major and minor characteristics being as defined in table 2 and the acceptable quality level, as specified in table 3.

Table 2: Major and minor characteristics

Major characteristics	Minor characteristics (examples)
Nominal diameter, d_1 Thread limits	Lengths Diameter, d_3 Head height, k Width across flats, s Run-out

Table 3: *AQL* values

Type of characteristic	Acceptable quality level *(AQL)*	
	for testing for attributes	for testing for defective units
Major characteristic	1	1,5
Minor characteristic	1,5	6,5

5.2 Mechanical properties and materials

The mechanical properties and materials shall be tested in accordance with ISO 3269. In cases of doubt, the results of Brinell hardness testing shall be relevant.

Standards referred to

DIN 78	Thread ends and lengths of projection of bolt ends for ISO metric screw threads in accordance with the DIN 13 series
DIN 125 Part 1	Product grade A washers with a hardness up to 250 HV, designed for use with hexagon bolts and nuts
DIN 125 Part 2	Product grade A washers with a hardness from 300 HV, designed for use with hexagon bolts and nuts
DIN 267 Part 2	Fasteners; technical delivery conditions; product grades and tolerances
DIN 935 Part 1	Hexagon nuts with metric coarse and fine pitch thread; product grades A and B
DIN 935 Part 3	Hexagon slotted nuts with metric coarse and fine pitch thread; product grades A and B
DIN 7168	General tolerances for linear and angular dimensions and geometrical tolerances (not to be used for new designs)
DIN EN 22 340	Clevis pins without head (ISO 2340 : 1986) English version of DIN EN 22 340
DIN EN 22 341	Clevis pins with head (ISO 2341 : 1986) English version of DIN EN 22 341
ISO 3269 : 1988	Fasteners; acceptance inspection
ISO 8992 : 1986	Fasteners; general requirements for bolts, screws, studs and nuts

Explanatory notes

The specifications of this standard are related to those of DIN EN 22 340 and DIN EN 22 341, the technical delivery conditions (cf. clauses 2 to 4) largely conforming to ISO 3269.