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VOITH

Parallel pins

DIN 7

Zylinderstifte

Supersedes 06.56 edition

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

Dimensions in mm

1 Field of application

Parallel pins in accordance with this Standard are designed for the fastening of two or more individual elements.

A friction type connection can be achieved by the selection of suitable fits. If such a connection is meant to be disconnected repeatedly, then it becomes preferable to use taper pins in accordance with DIN 1.

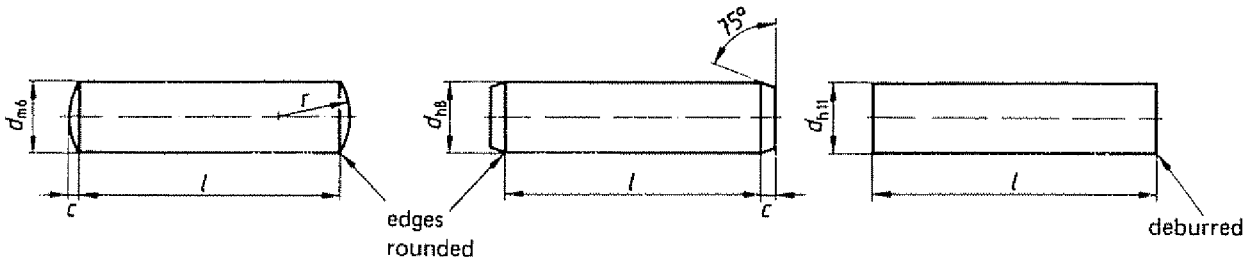
2 Dimensions and designation

The tolerance zones of the parallel pin diameters d are differentiated by virtue of the shapes of the pin ends as follows:

Tolerance zone m6
(with oval points)
d = 1 to 50 mm

Tolerance zone h8
(with flat points)
d = 0,8 to 50 mm

Tolerance zone h11
(without points)
d = 0,8 to 50 mm



Designation of a parallel pin of diameter d = 4 mm, tolerance zon h11 and length l = 20 mm, of 9 SMnPb 28 K or St 50 K (St):

Parallel pin DIN 7 – 4 h11 x 20 – St

Table 1

d		0,8	1	1,2	1,5	2	2,5	3	4
c	max.	0,12	0,15	0,18	0,23	0,3	0,4	0,45	0,6
r	≈	0,8	1	1,2	1,6	2	2,5	3	4
l Nominal dimension	permissible deviation for pin diameter with tolerance zone m6	h8, h11	Weight (7,85 kg/dm³) kg per 1000 pieces ≈						
2			0,008						
3			0,012	0,018	0,027	0,044			
4			0,016	0,025	0,036	0,058	0,105	0,165	0,245	
5	+ 0,3 0	+ 0,5 0	0,020	0,032	0,045	0,072	0,130	0,204	0,300	0,441
6			0,024	0,038	0,054	0,085	0,155	0,243	0,355	0,640
8			0,032	0,050	0,072	0,113	0,203	0,320	0,466	0,840
10				0,062	0,090	0,141	0,253	0,397	0,577	1,04
12				0,074	0,107	0,168	0,302	0,474	0,688	1,23
14					0,125	0,195	0,351	0,550	0,799	1,44
16						0,224	0,401	0,627	0,910	1,63
18							0,451	0,705	1,02	1,83
20	+ 0,5 0	+ 1 0					0,500	0,782	1,13	2,03
24								0,937	1,35	2,43
28									1,57	2,82
32									1,79	3,21
36										3,60
40										4,00

Continued on pages 2 to 4

Table 1. (continued)

d		5	6	8	10	12	14	16	20	25	30	40	50
c	max.	0,75	0,9	1,2	1,5	1,8	2	2,5	3	4	4,5	6	7,5
r	≈	5	6	8	10	12	16	16	20	25	32	40	50
l Nominal dimension	permissible deviation for pin diameter with tolerance zone m6	h8, h11	Weight (7,85 kg/dm³) kg per 1000 pieces ≈										
5	+ 0,3 0	+ 0,5 0	0,879										
6			1,02	1,53									
8			1,33	1,97	3,58								
10			1,64	2,41	4,37	7,01	10,2						
12	+ 0,5 0	+ 1 0	1,95	2,85	5,16	8,24	12,0						
14			2,26	3,29	5,95	9,47	13,8	19,0					
16			2,57	3,73	6,74	10,7	15,6	21,4	28,3				
18			2,88	4,17	7,53	11,9	17,4	23,8	31,5				
20			3,19	4,61	8,31	13,2	19,2	26,2	34,7	56,4			
24			3,80	5,50	9,89	15,6	22,8	31,0	41,1	66,2	105		
28			4,42	6,40	11,5	18,0	26,4	35,8	47,5	76,0	120		
32			5,03	7,30	13,0	20,6	30,0	40,6	53,9	85,8	136	198	
36			5,65	8,19	14,6	23,1	33,6	45,4	60,3	95,6	151	220	
40			6,27	9,08	16,2	25,5	37,2	50,2	66,6	105	167	242	450
45			7,03	10,2	18,1	28,6	41,7	56,2	74,5	118	186	270	496
50			7,80	11,3	20,1	31,7	46,2	62,3	82,5	130	205	298	545	890
55	+ 0,8 0	+ 1,5 0		12,4	22,1	34,8	50,7	68,3	90,4	142	225	326	595	970
60				13,5	24,0	37,9	55,2	74,4	98,4	155	244	354	644	1040
70					28,0	44,1	64,1	86,5	114	179	283	410	743	1190
80					32,0	50,3	73,0	98,6	130	204	321	466	842	1340
90						56,5	82,1	111	146	228	360	522	941	1490
100						62,7	91,0	123	161	253	398	578	1040	1650
120							109	147	192	302	476	680	1240	1950
140								171	224	351	553	802	1440	2260
160								195	256	400	630	914	1630	2570
180									288	449	707	1030	1830	2870
200										498	784	1140	2030	3180

Lengths above 200 mm must be graduated in steps of 20 mm.

Intermediate lengths must be avoided as far as possible.

The commercial grade sizes are identified by the indication of their weight.

The listed weights are a rough guide only.

In the case of parallel pins without points, the weight is reduced by an amount equivalent to the weight of the two caps.

3 Material

St = 9 SMnPb 28 K in accordance with DIN 1651 or St 50 K in accordance with DIN 1652 (at manufacturer's discretion)

Other materials subject to mutual agreement

4 Design

External diameter m6: generated surface R_z 4

External diameter h8 and h11: generated surface R_z 16

Points, end faces, chamfers: R_z 63

Edges: Edges rounded or deburred

5 Surface protection

If surface protection is required, the following provisions will apply:

a) DIN 267 Part 9 in the case of electroplated surface protection

b) DIN 50 942 in the case of phosphate coatings

c) Other types of surface protection by mutual agreement

6 Requirements

DIN 267 Part 1 applies to general requirements

7 Acceptance test

7.1 Test in respect of dimensional accuracy and design

The stipulations laid down in DIN 267 Part 5 apply correspondingly to the test in respect of dimensional accuracy and design. Table 3 applies to the main and secondary characteristics; table 4 applies to the acceptable quality limit.

Table 3. **Main and secondary characteristics**

Main characteristic	Secondary characteristic
Nominal diameters d	Lengths l Surfaces

Table 4. AQL **values**

Type of characteristic	Acceptable quality limit (AQL)	
	In respect of tests for characteristics	In respect of tests for defective components
Main characteristic	1	1,5
Secondary characteristic	1,5	4

7.2 Test of mechanical properties

The stipulations laid down in DIN 267 Part 5 apply correspondingly to the testing of the mechanical properties and of the materials. In cases of doubt, the Brinell hardness test is decisive.

Standards referred to

DIN	267 Part 1 *)	Bolts, screws, nuts and similar threaded and formed parts; technical conditions of delivery, general information
DIN	267 Part 5	Bolts, screws, nuts and similar threaded and formed parts; technical conditions of delivery, testing and acceptance
DIN	267 Part 9	Mechanical fasteners; technical conditions of delivery, components with electroplated coatings
DIN	1651	Free cutting steels, technical conditions of delivery
DIN	1652	Bright unalloyed steel; technical conditions of delivery
DIN	50 942	Phosphating of metals; process principles, symbols and test methods

*) A revised edition of DIN 267 Part 1 is in preparation, see draft, February 1979 edition.

Further standards

DIN 6325 Parallel pins, hardened, tolerance zone m6
DIN 7341 Rivet pins
DIN 7979 Parallel pins with internal thread

Previous editions:

DIN 7 Supplement 1: 04.27, 10.28, 04.31; DIN 7 Supplement 2: 04.27; DIN 8: 02.19;
DIN 7: 02.19, 08.20, 02.25, 04.27, 07.36, 01.43, 06.56

Amendments

The following amendments have been made as compared with the June 1956 edition:

a) The editorial aspect of the Standard has been harmonized with other comparable standards of the Normenausschuss Mechanische Verbindungselemente (FMV) (Fasteners Standards Committee). A clause entitled "Field of application" has been inserted at the beginning.

b) The designation of the parallel pins has been transposed in the sense of the general ruling for standardized components in such a way that the DIN number now appears at the front end of the code designation. This has not resulted in any substancial changes.

c) The diameter d_1 = 13 mm, which was already featured previously in brackets, has now been deleted.

d) The data relating to material and design have been amended and supplemented in harmony with the corresponding DIN Standards. The peak-to-valley heights of the surfaces have been converted to R_z values.

e) A clause "Surface protection" has been embodied, which refers to the relevant DIN Standards in respect of electroplated surface protection and of phosphate coatings, and which permits the use of other types of surface protection by mutual agreement.

f) Clauses 6 and 7 cover the subject of quality assurance. They refer to DIN 267 Part 1 in respect of the general requirements and lay down the details of the acceptance test in the meaning of DIN 267 Part 5. Specifications of this kind have not been included in DIN 7 so far.

Explanations

Attention is drawn to the fact that an International Standard on parallel pins comparable to DIN 7, viz. ISO 2338 – 1974, was published as early as 1972. This Standard is being revised at the present time. Only after this revised edition has been published will an assessment be made as to its effects, if any, on DIN 7.