

DIN 6796

Conical spring washers for bolted connections

Table 1-Dimensions and test data ⑥

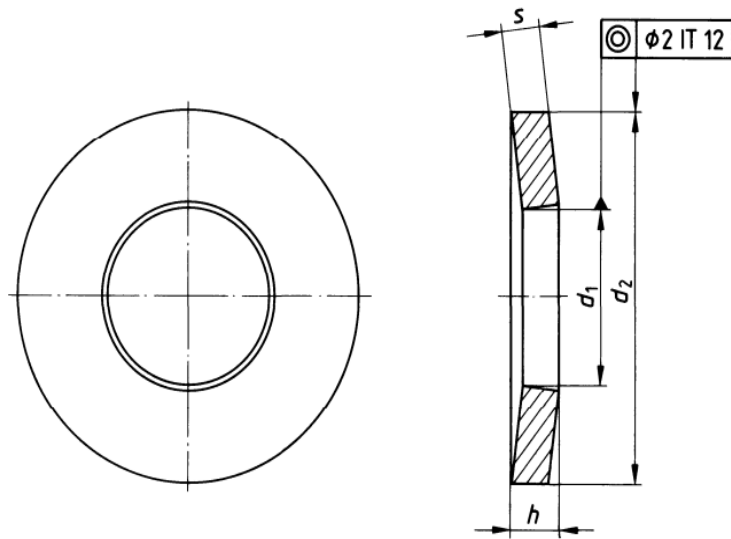
Nominal size	2 ^④	2.5 ^④	3 ^④	3.5 ^④	4	5	6	7	8	10	12	14	16	18	20	22	24	27	30
d1 (H14)	2.2	2.7	3.2	3.7	4.3	5.3	6.4	7.4	8.4	10.5	13	15	17	19	21	23	25	28	31
d2 (H14)	5	6	7	8	9	11	14	17	18	23	29	35	39	42	45	49	56	60	70
s ^③	0.4	0.5	0.6	0.8	1	1.2	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
h max ^①	0.6	0.72	0.85	1.06	1.3	1.55	2	2.3	2.6	3.2	3.95	4.65	5.25	5.8	6.4	7.05	7.75	8.35	9.2
h min ^②	0.5	0.61	0.72	0.92	1.12	1.35	1.7	2	2.24	2.8	3.43	4.04	4.58	5.08	5.6	6.15	6.77	7.3	8
Test Load KN	0.92	1.54	2.35	3.16	4.4	7.2	10.2	14.8	18.6	29.6	43	59.1	80.9	102	130	162	188	246	300
Restfederkraft nach 20 µm Entlastungsweg in % der Anpresskraft ⑤	35%						45%						60%			70%			

Technical Requirements

Material:	DIN EN 10089 DIN EN 10132-4,(Selected by the supplier independently)
hardness	Hardened and tempered to a Vickers hardness of: 420HV~490HV
Test for permanent set	The spring washers to be tested shall be compressed for two minutes using the compression loads specified in table 1. The free height of the washers (height after release of pressure) shall not be less than the values specified in Table 1.
Endurance Test:	Ten washers, separated from each other and mounted alternately on a bolt, made of planar-parallel discs (tempered to at least 500 HV), must not break after being compressed for 48 hours with the clamping forces specified in Table 1 at a temperature of +100°C; furthermore, after unloading, the minimum washer height indicated in Table 1 must not be exceeded by more than 2%.
Spring force test	In order to assess the resilience of spring washers, a spring force test shall be carried out. The washer to be tested shall be placed in the test device and subjected to the compression load specified in Table 2. After two minutes, the load applied to the spring washer shall be slowly and steadily released through a travel of 20 µm, The residual spring force after release through a travel of 20 µm shall reach the values specified in Table 1.More test details: Acc.to DIN 267-27

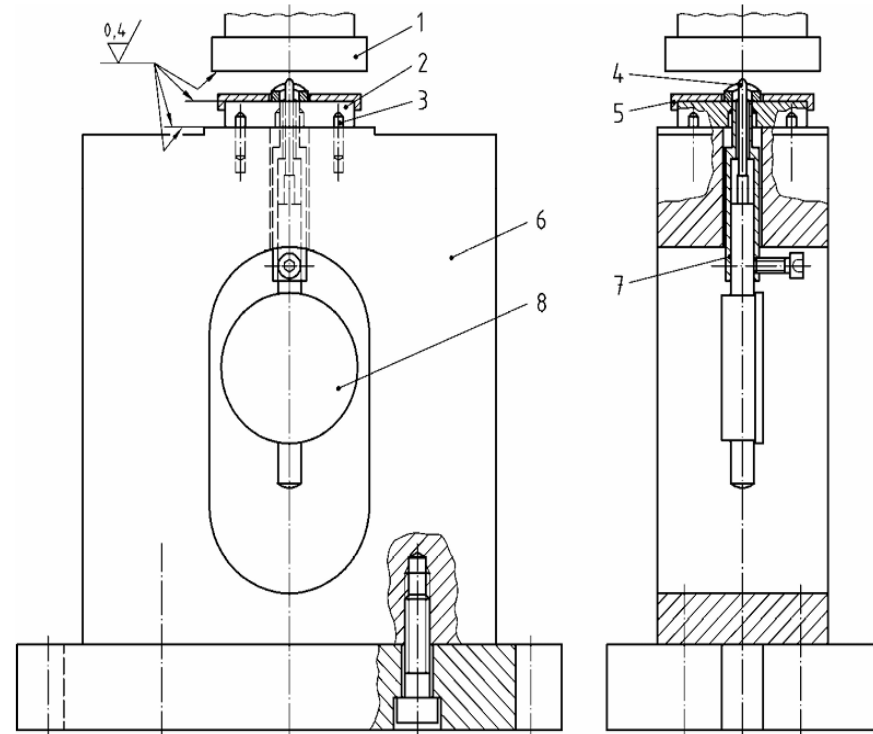
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⑥ Figure 1-Dimensions of conical spring washer

- ① Maximum size at delivery.
- ② Minimum size after test for permanent set as specified in DIN 267-26.
- ③ See DIN EN 10140 for limit deviations for $s \leq 6$ mm and DIN EN 10029 for $s > 6$ mm.
- ④ Test values for the spring force test as described in DIN 267-26 have not as yet been specified for this nominal size.
- ⑤ Testing Tooling
- ⑥ Concentricity is shown in Figure 1



⑤ Figure 2-Elastometric Testing Device

- | | |
|-------------------|-----------------------|
| 1-platen | 5-centre fixture |
| 2-shoe plate | 6-foundation bed |
| 3-pin | 7-jacket |
| 4-measuring probe | 8-Displacement sensor |