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760-353.

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Curved and wave spring washers

DIN
137

Federscheiben; gewölbt oder gewellt

Supersedes December 1970 edition.

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.

Specifications for type A spring washers are to be omitted from the present standard (transitional period: 5 years) as these washers do not comply with the specifications of DIN 267 Part 26. It is thus recommended that type B wave spring washers be used instead, where available.

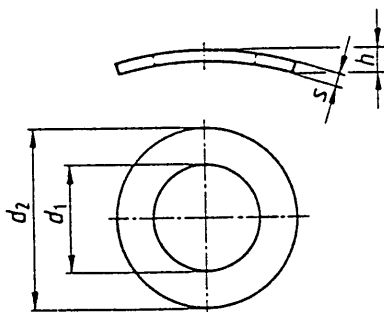
Dimensions in mm

1 Scope and field of application

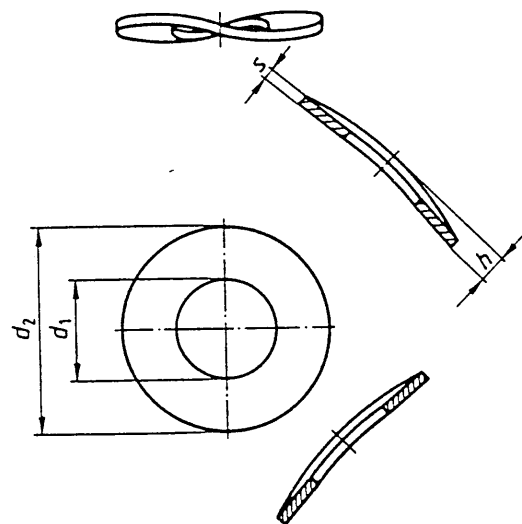
Spring lock washers covered in this standard are deemed to be spring washers designed for use with bolt/nut assemblies involving fasteners of a property class less than 5.8, as specified in ISO 898 Part 1. They are intended to counteract the effect of setting which results in bolt/nut assemblies working loose (see DIN 267 Part 26). They do not effectively prevent loosening of the assembly under varying radial load and are designed for use with short bolts predominantly subject to thrust.

2 Dimensions

Type A, curved



Type B, wave



Nominal size 2)	Type A 1)						Type B						Mass (7,85 kg/dm ³) per 1000 units, in kg, ≈		For thread size
	$d_1^{5)}$	$d_2^{5)}$	s	h		$d_1^{5)}$	$d_2^{5)}$	s	h		Type A	Type B			
	H14	js16		Limit deviations	min.	max.	H14		js16	Limit deviations			min.	max.	
1	1,1	2,5	0,2	± 0,02	0,35	0,7	-	-	-	-	-	-	0,006	-	1
1,2	1,3	3	0,2	± 0,02	0,35	0,7	-	-	-	-	-	-	0,009	-	1,2
1,4	1,5	3	0,25	± 0,02	0,4	0,8	-	-	-	-	-	-	0,01	-	1,4
1,7	1,8	4	0,25	± 0,02	0,45	0,9	-	-	-	-	-	-	0,02	-	1,6; 1,7
1,8	1,9	4	0,25	± 0,02	0,45	0,9	-	-	-	-	-	-	0,02	-	1,8
2	2,2	4,5	0,3	± 0,03	0,5	1	-	-	-	-	-	-	0,028	-	2
2,3	2,5	5	0,3	± 0,03	0,5	1	-	-	-	-	-	-	0,035	-	2,3
2,6	2,8	5,5	0,3	± 0,03	0,55	1,1	-	-	-	-	-	-	0,041	-	2,5; 2,6
3 ³⁾	3,2	6	0,4	± 0,05	0,65	1,3	3,2	8	0,5	± 0,05	0,8	1,6	0,063	0,166	3
3,5 ³⁾	3,7	7	0,4	± 0,05	0,7	1,4	3,7	8	0,5	± 0,05	0,9	1,8	0,088	0,154	3,5
4	4,3	8	0,5	± 0,05	0,8	1,6	4,3	9	0,5	± 0,05	1	2	0,14	0,193	4
5	5,3	10	0,5	± 0,05	0,9	1,8	5,3	11	0,5	± 0,05	1,1	2,2	0,222	0,266	5
6	6,4	11	0,5	± 0,05	1,1	2,2	6,4	12	0,5	± 0,05	1,3	2,6	0,247	0,318	6
7	7,4	12	0,5	± 0,05	1,2	2,4	7,4	14	0,8	± 0,06	1,5	3	0,265	0,8	7
8	8,4	15	0,5	± 0,05	1,7	3,4	8,4	15	0,8	± 0,06	1,5	3	0,476	0,76	8
10	10,5	18	0,8	± 0,06	2	4	10,5	21	1	± 0,07	2,1	4,2	1,05	2,04	10
12	-	-	-	-	-	-	13	24	1,2	± 0,07	2,5	5	-	3,1	12
14	-	-	-	-	-	-	15	28	1,6	± 0,08	3	6	-	5,5	14
16	-	-	-	-	-	-	17	30	1,6	± 0,08	3,2	6,4	-	6	16
18	-	-	-	-	-	-	19	34	1,6	± 0,08	3,3	6,6	-	7,8	18
20	-	-	-	-	-	-	21	36	1,6	± 0,08	3,7	7,4	-	8,43	20
22	-	-	-	-	-	-	23	40	1,8	± 0,1	3,9	7,8	-	11,9	22
24	-	-	-	-	-	-	25	44	1,8	± 0,1	4,1	8,2	-	14,5	24
27	-	-	-	-	-	-	28	50	2	± 0,1	4,7	9,4	-	21,1	27
30	-	-	-	-	-	-	31	56	2,2	± 0,1	5	10	-	29,5	30
33	-	-	-	-	-	-	34	60	2,2	± 0,1	5,3	10,6	-	33,1	33
36	-	-	-	-	-	-	37	68	2,5	± 0,15	5,8	11,6	-	50,2	36
(39) ³⁾⁴⁾	-	-	-	-	-	-	40	72	2,8	± 0,15	6,4	12,8	-	61,8	39
(42) ³⁾⁴⁾	-	-	-	-	-	-	43	78	3	± 0,2	6,8	13,6	-	78,3	42
(45) ³⁾⁴⁾	-	-	-	-	-	-	46	85	3	± 0,2	7,1	14,2	-	94,5	45
(48) ³⁾⁴⁾	-	-	-	-	-	-	50	92	3,5	± 0,2	7,8	15,6	-	129	48
(52) ³⁾⁴⁾	-	-	-	-	-	-	54	98	3,5	± 0,2	8,2	16,4	-	144	52

- 1) It is intended to omit curved spring washers from the standard after a period of five years as they do not comply with the specifications of DIN 267 Part 26.
- 2) It is intended to omit the sizes in brackets from this standard after a period of five years.
- 3) Test values for the spring force test as described in DIN 267 Part 26 have not as yet been specified for this nominal size.
- 4) Test values for the test for permanent set as described in DIN 267 Part 26 have not as yet been specified for this nominal size.
- 5) The diameter tolerances specified apply to spring washers when pressed flat. The tolerance on coaxiality between d_1 and d_2 (related to d_2) shall be 1/2 IT 14.