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December 1990

Conical spring washers for screw and washer assemblies

DIN
6908

Spannscheiben für Kombi-Schrauben

Supersedes December 1972 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.

Dimensions in mm

1 Scope and field of application

Conical spring washers as specified in this standard are intended for use with screw and washer assemblies as specified in DIN 6900 Part 5. They are designed for use with bolted connections with bolts of property classes 8.8 to 10.9 (as specified in ISO 898 Part 1). Conical spring washers are intended to counteract loosening of such connections (e.g. as a result of setting) (cf. DIN 267 Part 26). They do not effectively prevent loosening of the connection under varying radial load and are thus designed for use with short screws predominantly subject to thrust.

2 Dimensions

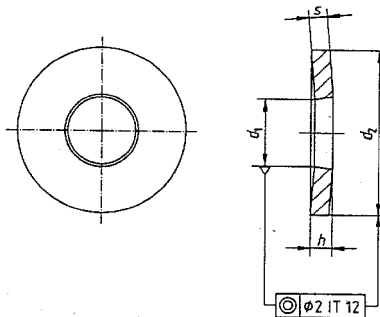


Table.

Nom- inal size	d_1		d_2		$s^3)$	h		Approximate mass (7,85 kg/dm ³), per 1000 units, in kg	For thread size ⁴⁾
	min. = nom- inal size	max.	max. = nom- inal size	min.		max. ¹⁾	min. ²⁾		
2,25 ⁴⁾	2,25	2,35	6	5,7	0,5	0,72	0,61	0,10	M2,5
2,75 ⁴⁾	2,75	2,85	7	6,64	0,6	0,85	0,72	0,15	M3
3,2 ⁴⁾	3,2	3,32	8	7,64	0,8	1,06	0,92	0,27	M3,5
3,6	3,6	3,72	9	8,64	1	1,3	1,12	0,42	M4
4,55	4,55	4,67	11	10,57	1,2	1,55	1,35	0,74	M5
5,5	5,5	5,62	14	13,57	1,5	2	1,7	1,53	M6
7,4	7,4	7,55	18	17,57	2	2,6	2,24	3,32	M8
9,3	9,3	9,45	23	22,48	2,5	3,2	2,8	6,82	M10
11	11	11,18	29	28,48	3	3,95	3,43	13,3	M12

1) Maximum size in as delivered condition.

2) Minimum size after test for permanent set as specified in DIN 267 Part 26. The values specified for the minimum free height after release in table 5 of the October 1987 edition of that standard have not been adopted here since the washer thickness values have been amended.

3) See DIN 1544 for limit deviations for s .

4) For this size, no specifications have been made for the residual spring force in DIN 267 Part 26.

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3 Technical delivery conditions

Washers shall be made of spring steel (FSt) and comply with the technical delivery conditions specified in DIN 267 Part 26.

4 Designation

Designation of a conical spring washer of nominal size 9,3, made of spring steel (FSt)¹⁾:

Washer DIN 6908 – 9,3 – FSt

The DIN 4000-3-3 tabular layout of article characteristics shall apply for washers as covered in this standard.

Appendix A

Additional washers (6,5) for replacement and maintenance purposes

Thread size M 7 is not included in the international range of threads for screws and nuts and its further use is deprecated. However, with regard to existing documentation and for meeting replacement and maintenance requirements, washers for use with M 7 screw and washer assemblies may still be ordered on the basis of DIN 6908, December 1972 edition. The dimensions of such washers shall be as specified in the table below.

Table A.1.

Clearance hole diameter, d_1	For thread size	d_2	h	s		t	Spring force, in N ¹⁾	Approximate mass (7,85 kg/dm ³), per 1000 units, in kg
					Limit deviations			
H12		h14	k14					
6,5	M7	17	2,3	1,5	± 0,08	0,3	3930	2,28

¹⁾ Calculated for washer when under load.

Standards referred to

DIN 267 Part 26	Fasteners; technical delivery conditions; steel spring lock washers for bolt/nut assemblies
DIN 1544	Steel flat products; cold rolled strip; dimensions, limit deviations and form tolerances
DIN 4000 Part 3	Tabular layouts of article characteristics for washers and rings
DIN 6900 Part 5	Screw and washer assemblies; coarse threaded screws with captive conical spring washer
ISO 898 Part 1	Mechanical properties of fasteners; bolts, screws and studs

Previous edition

DIN 6908: 12.72.

Amendments

The following amendments have been made to the December 1972 edition.

- The 'Scope and field of application' clause has been included.
- The dimensions of washers of nominal size 6,5 (for thread size M 7) have been specified in an appendix.
- The specifications for s and h have been amended.
- Limits of size have been specified.
- The technical delivery conditions are no longer dealt with here but are given in DIN 267 Part 26.
- The standard has been editorially revised.

International Patent Classification

F 16 B 39/24

¹⁾ FSt steel shall also be used where no material is specified in existing documentation.