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Tapping screw and washer assemblies

DIN
6901

Koinb-blechschrauben

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

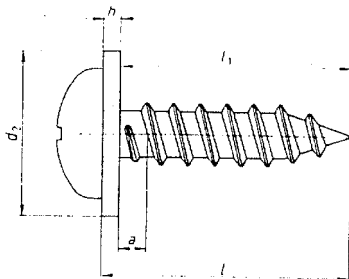
This standard specifies requirements for screw and washer assemblies consisting of a tapping screw with flat bearing face and a DIN 6903 captive washer.

2 Concept

A screw and washer assembly is a preassembled unit of a screw and washer, the washer being tilted before the thread is rolled. After rolling, the washer is captive but free to rotate.

3 Dimensions

Type C (with cone point)



Type F (with blunt end)

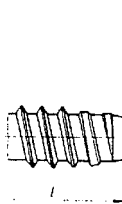


Table 1. Dimensions

Thread size	l_1 ¹⁾	a	Washer dimensions			
			DIN 6903 curved spring lock washer			
			Type A (1)		Type B (2)	
	mm	mm	h	d_2	h	d_2
ST2.9	5,5	1,1	1	7	1	9
ST3.5	8,5	1,3	1	8	1	11
(ST3.9)	8,5	1,3	1	9	1	12
ST4.2	8,5	1,4	1	9	1	12
ST4.8	11,4	1,6	1	10	1,6	15
ST5.5	11,4	1,8	1,6	12	1,6	15
ST6.3	11,4	1,8	1,6	14	1,6	18
(ST8)	14	2,1	1,6	16	2	24

¹⁾ l_{1min} is the smallest effective screw length manufacturable.
Use of the sizes given in brackets should be avoided where possible.

Values of nominal length, l , have been specified in the relevant standards on screws.

The radius of the underhead fillet shall be so chosen that the washer is in full contact with the bearing face of the screw.

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4 Technical delivery conditions

Screws and washers used to make assemblies shall comply with the relevant technical delivery conditions.

Where case-hardened and tempered tapping screws are used, it shall be ensured (e.g. by copper-plating) that the washer surface hardness does not exceed 330 HV 0,3. It should be noted, that case hardening and tempering of the assembly may result in a drop in washer hardness.

5 Designation

The designation of a screw and washer assembly is to include the name of the screw, letter Z to denote that the screw is fitted with a captive washer and the code number (1 or 2; cf. table 1) denoting the type of plain washer.

Example of designation

Designation of a DIN 7981 – ST 4,8 × 13 – C – Z tapping screw¹⁾ with DIN 6903 – A 4 captive washer (Z 1):

Tapping screw DIN 7981 – ST 4,8 × 13 – Z 1 – C – Z

Note. As screw and washer assemblies have not yet been assigned an ISO designation, a screw which is to be supplied fitted with a captive washer and is to be produced to an ISO Standard shall be designated as follows.

Designation of an ISO 7049 – ST 4,8 × 13 – C – Z tapping screw with DIN 6903 – A 4 captive washer (Z 1):

Tapping screw ISO 7049 – ST 4,8 × 13 – C – Z,
Z 1 type as in DIN 6901

Standards referred to

DIN 6903	Plain washers for tapping screw and washer assemblies
DIN 7981	Cross recessed pan head tapping screws
ISO 7049 : 1983	Cross recessed pan head tapping screws

Previous editions

DIN 6901 : 09.66, 12.72.

Amendments

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

- The "Scope and field of application" clause has been included.
- The scope of the standard has been extended to include size ST 2,9 tapping screws.
- Technical delivery conditions have been included.
- An example of designation has been included that relates to assemblies with screw produced to an ISO Standard.
- The standard has been editorially revised.

International Patent Classification

F 16 B 25/00
F 16 B 43/00
F 16 B 41/00

¹⁾ Cf. note on the limited period of validity in DIN 7981, August 1990 edition.