UDC 621.882.215.1.082.8

August 1990

Slotted pan head tapping screws

DIN 7971

Zylinder-Blechschrauben mit Schlitz

Supersedes March 1988 edition.

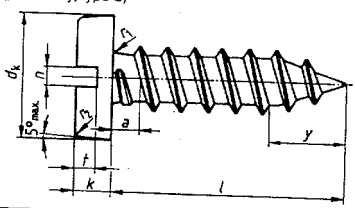
In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

This standard should be used together with ISO 1481. For details, see Explanatory notes. It is intended to withdraw the present standard by 31 July 1995 at the latest.

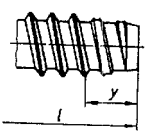
1 Dimensions

Dimensions in mm

Type C, with cone point (previously, type B)



Type F, with long dog point (previously, type BZ)



Other dimensions as shown at left.

Table 1.

Thread size		ST 2,2	ST 2,9	ST 3,5	(ST 3,9)	ST 4,2	ST 4,8	ST 5,5	ST 6,3
P[1]		0,8	1,1	1,3	1,3	1,4	1,6	1,8	1,8
a	max.	0,8	1,1	1,3	1,3	1,4	1,6	1,8	1,8
d_k	max. = nominal size	4,2	5,6	6,9	7,5	8,2	9,5	10,8	12,5
	min.	3,9	5,3	6,54	7,14	7,84	9,14	10,37	12,07
k	max. = nominal size	1,35	1,75	2,1	2,25	2,45	2,8	3,2	3,65
	min.	1,15	1,5	1,85	2	2,15	2,5	2,85	3,3
n	Nominal size	0,6	0,8	1	1	1,2	1,2	1,6	1,6
	min.	0,66	0,86	1,06	1,06	1,26	1,26	1,66	1,66
	max.	0,8	1	1,2	1,2	1,51	1,51	1,91	1,91
r_1	max.	0,3	0,4	0,5	0,5	0,6	0,7	0,8	0,9
r_2	≈	0,9	1	1,2	1,3	1,3	1,6	2	2,2
t	min.	0,55	0,75	0,95	1,05	1,15	1,35	1,55	1,8
	max.	0,8	1	1,25	1,4	1,5	1,7	1,95	2,2
y max.	Type C	2	2,6	3,2	3,5	3,7	4,3	5	6
	Type F	1,6	2,1	2,5	2,7	2,8	3,2	3,6	3,6

Nominal size	l Type C min.	l Type C max.	l Type F min.	l Type F max.	Approximate mass (7,85 kg/dm³), per 1000 units, in kg							
4,5	3,7	5,3	3,7	4,5	0,174							
6,5	5,7	7,3	5,7	6,5	0,214	0,424						
9,5	8,7	10,3	8,7	9,5	0,274	0,532	0,840	1,07	1,26	1,85		
13	12,2	13,8	12,2	13	0,344	0,658	1,02	1,29	1,50	2,18	3,24	4,32
16	15,2	16,8	15,2	16	0,404	0,766	1,17	1,48	1,71	2,46	3,62	4,86
19	18,2	19,8	18,2	19		0,874	1,32	1,67	1,92	2,74	4,00	5,40
22	21,2	22,8	20,7	22			1,47	1,86	2,13	3,02	4,38	5,94
25	24,2	25,8	23,7	25			1,62	2,05	2,34	3,30	4,76	6,48
32	30,7	33,3	30,7	32					2,83	3,96	5,67	7,74
38	36,7	39,3	36,7	38						4,52	6,45	8,82

Commercial sizes of screws are those for which a value of mass has been specified. These values are for guidance only.
The thread size in brackets shall be avoided if possible. The core hole diameter shall be as specified in DIN 7975.
[1] P = pitch of thread.

Continued on pages 2 and 3

2 Technical delivery conditions

Table 2.

Material	Steel
General requirements	As specified in DIN 267 Part 1.
Screw threads and thread ends	As specified in DIN 7970.
Mechanical properties and material	As specified in DIN 267 Part 12.
Limit deviations and geometrical tolerances	Product grade A, as specified in ISO 4759 Part 1[1]).
Surface finish	As processed. DIN 267 Part 2 shall apply with regard to surface roughness. DIN 267 Part 19 shall apply with regard to permissible surface discontinuities[2]). DIN 267 Part 9 shall apply with regard to electroplating, other types of surface protection being subject to agreement.
Acceptance inspection	DIN 267 Part 5 shall apply with regard to acceptance inspection.

[1]) Although ISO 4759 Part 1 covers only screws with ISO metric thread, the tolerances specified there have been adopted by analogy for tapping screws.

[2]) Although DIN 267 Part 19 covers only screws with ISO metric thread, the specifications for surface discontinuities given there have been adopted by analogy for tapping screws.

3 Designation

Designation of an ST 3,5 slotted pan head tapping screw of length, l (nominal size) = 13 mm, with cone point (type C):

Tapping screw DIN 7971 – ST 3,5 × 13 – C

DIN 6901 shall apply with regard to captive tapping screws (screw assemblies).

The DIN 4000 – 2 – 1 tabular layout of article characteristics shall apply for screws as covered in this standard.

Standards referred to

DIN 267 Part 1	Fasteners; technical delivery conditions; general requirements
DIN 267 Part 2	Fasteners; technical delivery conditions; design and dimensional accuracy
DIN 267 Part 5	Fasteners; technical delivery conditions; acceptance inspection (modified version of ISO 3269, 1984 edition)
DIN 267 Part 9	Fasteners; technical delivery conditions; electroplated parts
DIN 267 Part 12	Fasteners; technical delivery conditions; tapping screws
DIN 267 Part 19	Fasteners; technical delivery conditions; surface discontinuities on bolts
DIN 4000 Part 2	Tabular layouts of article characteristics for screws and nuts
DIN 6901	Tapping screw assemblies
DIN 7970	Threads and thread ends for tapping screws (modified version of ISO 1478)
DIN 7975	Tapping screws; application and core hole diameters
ISO 4759 Part 1	Tolerances for fasteners; bolts, screws and nuts with thread diameters from 1,6 to 150 mm; product grades A, B and C

Previous editions

DIN 7510: 04.43; DIN 7971: 08.52, 12.56, 07.70, 03.88.

Amendments

The following amendments have been made to the March 1988 edition.

a) A note on the period of validity has been included.

b) For thread size ST 3,9, the values of pitch, P, and dimension a have been amended.

c) Screws with a nominal length, l, of 4,5 mm have been included.

d) The standard has been editorially revised.

Explanatory notes

Following its decision to make the specifications regarding the head of countersunk head screws to comply with those specified in ISO 7721, the responsible committee agreed to issue national standards for all existing ISO Standards on slotted and cross recessed head screws. To facilitate the changeover to the new head dimensions, an adequate transition period has been granted (cf. foreword on page 1).

The decision to adopt the ISO head was seen to be justified by the formation of CEN/TC 185, Fasteners, in 1989 since relevant European Standards dealing with such screws will be published shortly. Note that such EN Standards will be accepted only if they agree with existing ISO Standards, to avoid another transition, and that the transition period mentioned on page 1 may be shorter if the EN Standards appear sooner than expected.

There are only relatively small differences for most screw types between head dimensions as specified in DIN Standards and those in the revised ISO Standards. Thus, serious interchangeability problems would only arise in exceptional cases. The screws should be checked for interchangeability where automatic feed and bolting systems are used.

The following table, which compares the most essential head dimensions of screws as specified in ISO 1481 and the present standard, is intended to make it easier for the user to see whether screws are interchangeable.

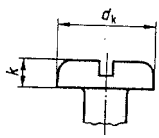


Table 3.

Values given in mm

	Thread size	ST2,2	ST2,9	ST3,5	ST3,9	ST4,2	ST4,8	ST5,5	ST6,3	ST8	ST9,5
d_k max.	ISO 1481	4	5,6	7	–	8	9,5	11	12	16	20
	DIN 7971	4,2	5,6	6,9	7,5	8,2	9,5	10,8	12,5	–	–
k max.	ISO 1481	1,3	1,8	2,1	–	2,4	3	3,2	3,6	4,8	6
	DIN 7971	1,35	1,75	2,1	2,25	2,45	2,8	3,2	3,65	–	–

International Patent Classification

F 16 B 35/00