

UDC 621.882.211.082.8

November 1990

Hexagon washer head tapping screws

DIN
6928

Sechskant-Blechtschrauben mit Bund

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

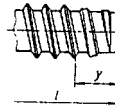
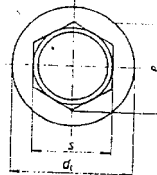
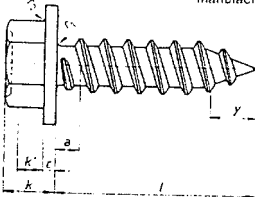
1 Dimensions

Dimensions in mm

Type C, with cone point

Recess at the manufacturer's discretion.

Type F, with long dog point



Other dimensions as shown at left.

k' = minimum wrenching height; for this zone at least e shall be maintained.

Table 1.

Thread size		ST2.9	ST3.5	(ST3.9)	ST4.2	ST4.8	(ST5.5)	ST6.3	(ST8)
P ¹⁾		1,1	1,3	1,3	1,4	1,6	1,8	1,8	2,1
a	max	1,1	1,3	1,3	1,4	1,6	1,8	1,8	2,1
c	min	0,4	0,6	0,6	0,8	0,9	1	1	1,2
d _c	max	6,3	8,3	8,3	8,8	10,5	11	13,5	18
	min	5,8	7,6	7,6	8,1	9,8	10	12,2	16,7
e		4,28	5,96	5,96	7,59	8,71	8,71	10,95	14,26
h	max = nominal size	2,8	3,4	3,4	4,1	4,3	5,4	5,9	7
	min	2,5	3	3	3,6	3,8	4,8	5,3	6,4
k'	min	1,3	1,5	1,5	1,8	2,2	2,7	3,1	3,3
r ₁	max	0,4	0,5	0,5	0,6	0,7	0,8	0,9	1,1
r ₂ ²⁾	max	0,2	0,25	0,25	0,3	0,3	0,4	0,5	0,6
s	max = nominal size	4	5,5	5,5	7	8	8	10	13
	min	3,82	5,32	5,32	6,78	7,76	7,78	9,78	12,73
	Type C	2,6	3,2	3,5	3,7	4,3	5	6	7,5
	Type F	2,1	2,5	2,7	2,8	3,2	3,6	3,6	4,2

Nominal size	Type					Approximate mass (7,85 kg/dm ³), per 1000 units, in kg											
	C		F			0,43		0,93		1,10		1,14		1,84		2,48	
	min	max	min	max													
6,5	5,7	7,3	5,7	6,5													
9,5	9,7	10,3	8,7	9,5													
13	12,2	13,8	12,2	13	0,66	1,28	1,35	2,09	2,80								
16	15,2	16,8	15,2	16	0,77	1,44	1,54	2,31	3,10	3,64	5,44						
19	18,2	19,8	18,2	19	0,87	1,59	1,73	2,52	3,39	4,01	5,96	10,9					
22	21,2	22,8	20,7	22		1,74	1,83	2,74	3,68	4,78	7,01	12,7					
25	24,2	25,8	23,7	25			2,12	2,95	3,97	5,17	7,54	13,6					
32	30,7	33,3	30,7	32					4,66	6,06	8,76	15,7					
38	36,7	39,3	36,7	38						5,82	9,82	17,5					
45	43,7	46,3	43,5	45							11,1	19,6					
50	48,7	51,3	48,5	50							12,0	21,1					

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

1) P' - pitch of thread
2) Radius r₂ applies both to the edges of adjoining flats and to the transition between hexagon corners and washer (collar).

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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 ST3.5 countersunk head tapping screw of length, l (nominal size) = 13 mm, with cone point (type C):

Tapping screw DIN 6928 – ST3.5 × 13 – C

DIN 7504 shall apply with regard to tapping screws with drilling tip (drilling screws).

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 7504	Drilling screws with DIN 7970 tapping screw thread; dimensions, requirements and testing
DIN 7970	Threads and thread ends for tapping screws (modified version of ISO 1478)
DIN 7975	Tapping screws; application and core hole diameters
ISO 1478 : 1983	Tapping screw threads
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

Explanatory notes

Hexagon washer head tapping screws are made with a DIN 7970 tapping screw thread that complies with the specifications of International Standard ISO 1478 : 1983^{*)}. It should be noted that, since 1983, tapping screw threads have been identified with the symbol ST (denoting 'spaced thread') which precedes the nominal diameter. Moreover, letters C (denoting screws with cone point) and F (denoting screws with long dog point) have been adopted from the ISO Standard.

The head dimensions, particularly widths across flats, head height and washer (collar) diameter are essentially in conformity with those specified previously for screws of this type and so as to enable the head to be manufactured using double-action presses. It is intended to propose these dimensions for inclusion in the International Standard on hexagon washer head tapping screws currently in preparation.

International Patent Classification

F 16 B 25/00

^{*)} Obtainable from Beuth Verlag GmbH (Auslandsnormenvermittlung), Burggrafenstraße 6, D-1000 Berlin 30.