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# Cross recessed pan head tapping screws with collar

## DIN 968

Linsenkopf-Blechschauben mit Bund und Kreuzschlitz

*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 ST 2,9 to ST 6,3 cross recessed pan head tapping screws with collar. See DIN 962 (or the standards referred to therein) for special screw types or finishes.

### 2 Dimensions

See figure 1 and table 1.

NOTE: Symbols and designations as in DIN EN 20 225.

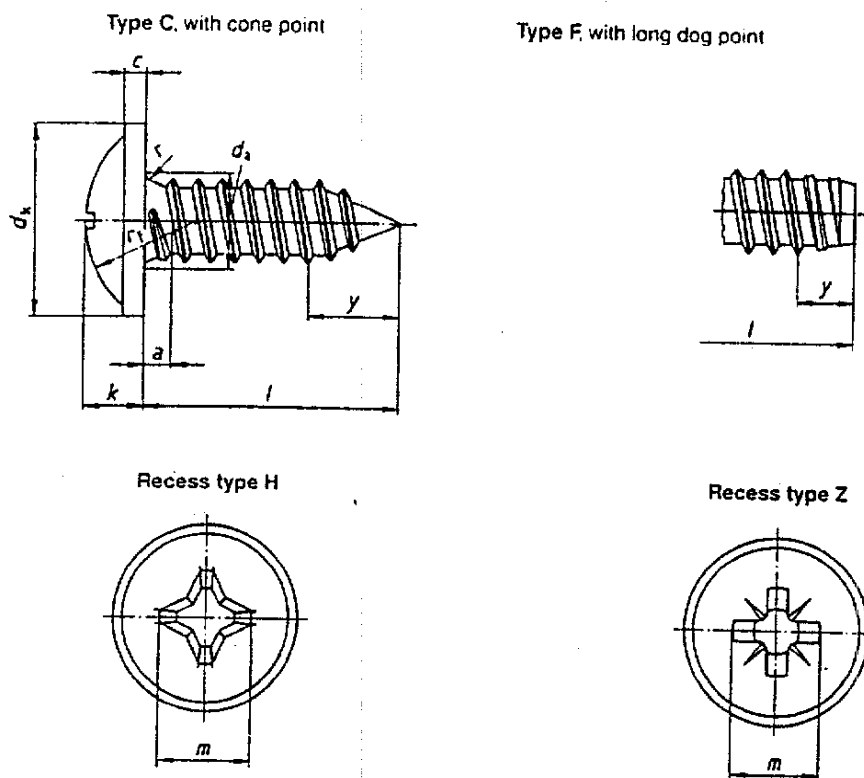


Figure 1

Continued on pages 2 and 3

Table 1

Thread size ( $d$ ) <sup>1)</sup>		ST 2,9	ST 3,5	(ST 3,9)	ST 4,2	ST 4,8	ST 5,5	ST 6,3				
$p$ <sup>2)</sup>		1,1	1,3	1,3	1,4	1,6	1,8	1,8				
$a$ <sup>3)</sup>	max	1,1	1,3	1,3	1,4	1,6	1,8	1,8				
$d_s$	max	3,5	4,1	4,5	4,9	5,6	6,3	7,3				
$d_k$	Nominal size = max	7,5	9,0	10,0	10,0	11,5	13,0	14,5				
	min	6,92	8,42	9,42	9,42	10,8	12,3	13,8				
$k$	Nominal size = max	2,35	2,6	2,8	3,05	3,55	3,8	4,55				
	min	2,10	2,35	2,55	2,75	3,25	3,5	4,25				
$c$	max	0,8	0,9	1,1	1,1	1,35	1,6	1,8				
	min	0,6	0,7	0,9	0,9	1,05	1,2	1,4				
$r$	min	0,1	0,1	0,2	0,2	0,2	0,25	0,25				
$r_f$	≈	3,8	4,6	5,3	5,8	6,6	7,8	8,2				
Cross recess	Size	1	2				3					
	$m$ (auxiliary dimension)	3,0	4,2	4,4	4,6	5,0	6,5	7,1				
	Type H	Penetration depth	min	1,35	1,4	1,63	1,8	2,26	2,49	3,0		
			max	1,8	2,03	2,26	2,46	2,87	3,15	3,66		
	$m$ (auxiliary dimension)	2,9	3,9	4,1	4,3	4,7	6,2	6,7				
	Type Z	Penetration depth	min	1,58	1,47	1,7	1,88	2,28	2,51	3,02		
			max	1,83	1,93	2,16	2,34	2,74	2,97	3,48		
	$y$ (auxiliary dimension) <sup>4)</sup>	Type C	2,6	3,2	3,5	3,7	4,3	5	6			
Type F		2,1	2,5	2,7	2,8	3,2	3,6	3,6				
$p$ <sup>5)</sup>					Approximate mass ( $\rho = 7,85 \text{ kg/dm}^3$ ) per 1000 units, in kg							
$m$ (auxiliary dimension)	Type C		Type F									
	min	max	min	max								
4,5	3,7	5,3	3,7	4,5	—	—	—	—	—	—	—	—
6,5	5,7	7,3	5,7	6,5	0,602	—	—	—	—	—	—	—
9,5	8,7	10,3	8,7	9,5	0,710	1,04	1,41	1,55	2,28	—	—	—
13	12,2	13,8	12,2	13	0,836	1,22	1,63	1,79	2,61	3,77	4,90	—
16	15,2	16,8	15,2	16	0,944	1,37	1,82	2,00	2,89	4,15	5,44	—
19	18,2	19,8	18,2	19	1,05	1,52	2,01	2,21	3,17	4,53	5,98	—
22	21,2	22,8	20,7	22	—	1,67	2,20	2,42	3,45	4,91	6,52	—
25	24,2	25,8	23,7	25	—	1,83	2,39	2,63	3,73	5,29	7,06	—
32	30,7	33,3	30,7	32	—	—	2,83	3,12	4,39	6,20	8,32	—
38	36,7	39,3	36,7	38	—	—	—	—	4,95	6,98	9,40	—
45	43,7	46,3	43,5	45	—	—	—	—	—	—	—	—
50	48,7	51,3	48,5	50	—	—	—	—	—	—	—	—

1) Use of sizes given in brackets should be avoided where possible  
2)  $p$  = pitch of thread.  
3) Distance between last fully formed thread and bearing face  
4) Length of uncomplete thread  
5) Commercial sizes are given between stepped lines, those identified by a dash are not capable of being manufactured.

### 3 Technical delivery conditions

Table 2

Material		Steel
Screw threads and thread ends		As in ISO 1478 <sup>1)</sup>
Cross recess		As in ISO 4757 <sup>1)</sup>
Mechanical properties and materials		As in ISO 2702 <sup>1)</sup>
Limit deviations and geometrical tolerances	Property class	A
	As specified in	ISO 4759 Part 1 <sup>2)</sup>
Surface finish		Bright. Requirements for electroplating as in ISO 4042, other types of surface protection being the subject of agreement between customer and supplier.
Acceptance inspection		ISO 3269 shall apply with regard to acceptance inspection.
<sup>1)</sup> Considered for adoption as a DIN EN Standard.		
<sup>2)</sup> Although ISO 4759-1 covers only bolts and screws with ISO metric screw thread, the tolerances given there have been adopted by analogy for tapping screws.		

### 4 Designation

Designation of an ST 3,5 pan head tapping screw with collar, with cone point (C), a type Z cross recess, and a length,  $l$ , of 16 mm:

Pan head tapping screw DIN 968 - ST 3,5 × 16 - C - Z

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

### Standards referred to

DIN 962	Designation system for fasteners
DIN 4000 Part 2	Tabular layouts of article characteristics for screws and nuts
DIN EN 20 225	Bolts, screws, studs and nuts; symbols and designations for dimensioning (ISO 225:1983)
ISO 1478:1983	Tapping screw thread
ISO 2702:1992	Heat-treated steel tapping screws; mechanical properties
ISO 3269:1988	Fasteners; acceptance inspection
ISO 4042:1989	Threaded components; electroplated coatings
ISO 4757:1983	Cross recesses for screws
ISO 4759-1:1978	Tolerances for fasteners; bolts, screws and nuts with thread diameters from 1,6 to 150 mm; product grades A, B and C

### International Patent Classification

F 16 B 023/00

F 16 B 025/00