UDC 621.882.219.61.092.3

September 1986

Slotted headless screws with chamfered end

DIN 427

Schaftschrauben mit Schlitz und Kegelkuppe

Supersedes February 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.

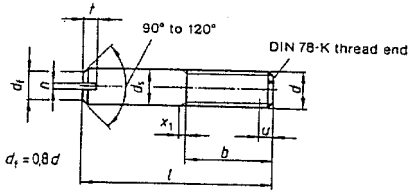
Dimensions in mm

1 Scope and field of application

This standard specifies the characteristics of M 1 to M 20 slotted headless screws with chamfered end.

Where, for special applications, the screws are to meet requirements differing from those specified in the present standard, e.g. in respect of material (hardness class) or intermediate lengths, the specifications of the relevant standards shall be complied with.

2 Dimensions



u (incomplete thread): 2 P maximum.

$x_1 = 2{,}5\,P$ maximum (as specified in DIN 76 Part 1).

Continued on pages 2 to 4

Thread size d			M 1	M 1,2	M 1,4	M 1,6	M 2	M 2,5	M 3	(M 3,5)	M 4
P [1]			0,25	0,25	0,3	0,35	0,4	0,45	0,5	0,6	0,7
b		$+\frac{2}{0}P$	1,2	1,4	1,7	1,9	2,4	3	3,6	4,2	4,8
d_s	max = nominal size		1	1,2	1,4	1,6	2	2,5	3	3,5	4
		min	0,86	1,06	1,26	1,46	1,86	2,36	2,86	3,32	3,82
n	Nominal size		0,2	0,2	0,2	0,25	0,25	0,4	0,4	0,5	0,6
		min	0,26	0,26	0,26	0,31	0,31	0,46	0,46	0,56	0,66
		max	0,4	0,4	0,4	0,45	0,45	0,6	0,6	0,7	0,8
t		min	0,4	0,4	0,48	0,56	0,64	0,72	0,8	0,96	1,12
		max	0,52	0,52	0,63	0,74	0,84	0,95	1,05	1,21	1,42
Nominal size	l [2] min	l [2] max	Mass (7,85 kg/dm³), in kg per 1000 units, approximately								
2,5	2,3	2,7	0,012								
3	2,8	3,2	0,015	0,021	0,028						
4	3,75	4,25	0,021	0,029	0,04	0,052					
5	4,75	5,25			0,052	0,068	0,091	0,11			
6	5,7	6,3				0,084	0,12	0,19	0,27		
8	7,7	8,3					0,17	0,27	0,38	0,51	0,63
10	9,7	10,3						0,35	0,49	0,66	0,83
12	11,7	12,3								0,81	1,03
(14)	13,7	14,3									1,23

Thread size d			M 5	M 6	M 8	M 10	M 12	(M 14)	M 16	(M 18)	M 20
P [1]			0,8	1	1,25	1,5	1,75	2	2	2,5	2,5
b		$+\frac{2}{0}P$	6	7,2	9,6	12	14	16	16	20	22
d_s	max = nominal size		5	6	8	10	12	14	16	18	20
		min	4,82	5,82	7,78	9,78	11,73	13,73	15,73	17,73	19,67
n	Nominal size		0,8	1	1,2	1,6	2	2	2,5	3	3
		min	0,86	1,06	1,26	1,66	2,06	2,06	2,56	3,06	3,06
		max	1	1,2	1,51	1,91	2,31	2,31	2,81	3,31	3,31
t		min	1,28	1,6	2	2,4	2,8	3,2	3,2	4	4
		max	1,63	2	2,5	3	3,7	4,2	4,2	5,2	5,2
Nominal size	l [2] min	l [2] max	Mass (7,85 kg/dm³), in kg per 1000 units, approximately								
10	9,7	10,3	1,26								
12	11,7	12,3	1,57	2,18							
(14)	13,7	14,3	1,88	2,6							
16	15,7	16,3	2,19	3,05	5						
20	19,6	20,4		3,95	6,6	10,1					
25	24,6	25,4			8,6	13,1	18,6	25,2			
30	29,6	30,4				16,1	24	31,2	39,8	48	
35	34,5	35,5				19,2	28,4	37,2	47,7	58	71,1
40	39,5	40,5					32,8	43,2	55,6	68	83,4
45	44,5	45,5						49,2	63,5	78	95,7
50	49,5	50,5							71,4	88	108
55	54,4	55,6								98	120
60	59,4	60,6								108	132

Sizes and intermediate lengths given in brackets should be avoided if possible.
Slotted headless screws are normally manufactured in sizes for which mass values have been specified.
Lengths above 60 mm shall be graded in 10 mm steps.

[1] P = pitch of thread (coarse pitch thread)
[2] Minimum and maximum values as specified in ISO 4759 Part 1, rounded to one decimal place, except for nominal sizes 4 mm and 5 mm

3 Technical delivery conditions

Material		Steel	Stainless steel	Non-ferrous metal
General requirements		As specified in DIN 267 Part 1.		
Thread	Tolerance class	For sizes up to and including M 1.4: 6h; from size M 1.6: 6g.		
	Standard	DIN 13 Part 15		
Mechanical properties [2]	Property class (material)	14H or 22H	A1-50	CuZn = copper-zinc alloy [1]
	Standard	ISO 898 Part 5	DIN 267 Part 11	DIN 267 Part 18
Permissible dimensional deviations and deviations of form	Product grade	For sizes up to and including M 1.4: F; from size M 1.6: A.		
	Standard	DIN 267 Part 6 ISO 4759 Part 1		
Surface finish		Property class 14H screws: as processed. Property class 22H screws: black oxide (thermally or chemically applied).	Bright.	Bright.
		DIN 267 Part 2 shall apply with regard to surface roughness. DIN 267 Part 19 shall apply with regard to permissible surface discontinuities. DIN 267 Part 9 shall apply with regard to electroplating (a different type of electroplating being subject to agreement).		
Acceptance inspection		DIN 267 Part 5 shall apply with regard to acceptance inspection.		

[1] CU2 or CU3 (as specified in DIN 267 Part 18), at the manufacturer's discretion.
[2] Other property classes or materials shall be subject to agreement.

4 Designation

Designation of an M 5 headless screw of nominal length $l = 12$ mm and assigned to property class 14H:

Headless screw DIN 427 – M 5 × 12 – 14H

The DIN 4000 – 2 – 3 tabular layout of article characteristics shall apply to headless screws conforming to this standard.

Note. The February 1972 edition of DIN 427 included property classes 4.6 and 5.8 (left to the manufacturer's discretion). These have been replaced by property class (hardness class) 14H as specified in ISO 898 Part 5. Where no property class or type of material is given in existing documentation, property class 14H shall also apply.

Standards referred to

DIN 13 Part 15	ISO metric screw threads; fundamental deviations and tolerances for screw threads of 1 mm and larger
DIN 76 Part 1	Thread run-outs and thread undercuts for ISO metric threads as specified in DIN 13
DIN 78	Thread ends; lengths of projection of thread ends for ISO metric screw threads as defined in DIN 13
DIN 267 Part 1	Fasteners; technical delivery conditions; general requirements
DIN 267 Part 2	Fasteners; technical delivery conditions; types of finishes and dimensional accuracy
DIN 267 Part 5	Fasteners; technical delivery conditions; acceptance inspection (modified version of ISO 3269, 1984 edition)
DIN 267 Part 6	Fasteners; technical delivery conditions; types of finish and dimensional accuracy for product grade F
DIN 267 Part 9	Fasteners; technical delivery conditions; components with electroplated coatings
DIN 267 Part 11	Fasteners; technical delivery conditions (with additions to ISO 3506); corrosion-resistant stainless steel fasteners
DIN 267 Part 18	Fasteners; technical delivery conditions; components made of non-ferrous metals
DIN 267 Part 19	Fasteners; technical delivery conditions; surface discontinuities on bolts and screws
DIN 4000 Part 2	Tabular layouts of article characteristics for bolts, studs and nuts
ISO 898 Part 5	Mechanical properties of fasteners. Part 5: Set screws and similar threaded fasteners not under tensile stresses
ISO 4759 Part 1	Tolerances for fasteners; bolts, screws and nuts with thread diameters between 1,6 (inclusive) and 150 mm (inclusive) and product grades A, B and C

Previous editions

05.22, 10.22, 05.39x, 01.49, 01.51, 04.56, 02.72.

Amendments

The following amendments have been made in comparison with the February 1972 edition.

a) The content of the standard has been editorially revised and aligned with the basic standards concerned.

b) Size M 1,8 has been deleted.

c) The technical delivery conditions have been amended.

d) The previous design m as specified in DIN 267 Part 2, April 1968 edition, has been replaced by product grade F as specified in DIN 267 Part 6 and product grade A as specified in ISO 4759 Part 1.

e) Limiting dimensions calculated from the permissible tolerances have been included.

f) The previous property classes as specified in DIN 267 Part 3 have been replaced by hardness classes as specified in ISO 898 Part 5.

g) Some values of slot depth have been amended.

International Patent Classification

F 16 B 35/00
F 16 B 23/00