UDC 621.882.219.71.092.3 September 1986

Slotted set screws with flat point
(modified version of ISO 4766, 1983 edition)

DIN 551

Gewindestifte mit Schlitz und Kegelkuppe; ISO 4766, Ausgabe 1983, modifiziert

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.

International Standard ISO 4766, 1983 edition, Slotted set screws with flat point, has been incorporated in the present standard, with national addenda. These are shaded grey.

Dimensions in mm

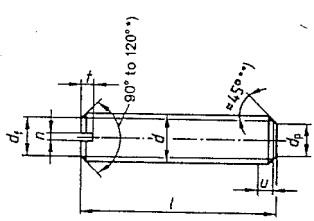
1 Scope and field of application

This standard specifies the characteristics of M1 to M12 slotted set screws with flat point, assigned to product grade A. 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, such as ISO 261, ISO 888, ISO 898 Part 5, ISO 965 or ISO 3506 shall be complied with.

2 Reference to other standards

See page 4.

3 Dimensions



u (incomplete thread); 2 P maximum.

*) The 120° angle is mandatory for set screws with lengths above the dashed stepped line.

**) The 45° angle shall apply only to the portion of the point below the root diameter of the thread.

National note. In ISO 4766 – 1983, the size range does not include size M 1 and intermediate size M 1,4. As both sizes are, however, required in the Federal Republic of Germany, they have been additionally included.

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)[1]	M 4	M 5	M 6	M 8	M 10	M 12
P [2]		0,25	0,25	0,3	0,35	0,4	0,45	0,5	0,6	0,7	0,8	1	1,25	1,5	1,75
d_f	≈	Minor thread diameter													
d_p	max. = nominal size	0,5	0,6	0,7	0,8	1	1,5	2	2,2	2,5	3,5	4	5,5	7	8,5
	min.	0,25	0,35	0,45	0,55	0,75	1,25	1,75	1,95	2,25	3,2	3,7	5,2	6,64	8,14
n	Nominal size	0,2	0,2	0,2	0,25	0,25	0,4	0,4	0,5	0,6	0,8	1	1,2	1,6	2
	min.	0,26	0,26	0,26	0,31	0,31	0,46	0,46	0,56	0,66	0,86	1,06	1,26	1,66	2,06
	max.	0,4	0,4	0,4	0,45	0,45	0,6	0,6	0,7	0,8	1	1,2	1,51	1,91	2,31
t	min. = nominal size	0,4	0,4	0,48	0,56	0,64	0,72	0,8	0,96	1,12	1,28	1,6	2	2,4	2,8
	max.	0,52	0,52	0,63	0,74	0,84	0,95	1,05	1,21	1,42	1,63	2	2,5	3	3,6

Nominal size	l [1], [3] min.	max.	Mass (7,85 kg/dm³), in kg per 1000 units, approximately													
2	1,8	2,2	0,007	0,011	0,015	0,021										
2,5	2,3	2,7	0,009	0,014	0,019	0,027										
3	2,8	3,2	0,011	0,017	0,023	0,033	0,048	0,075	0,11	0,15						
4	3,75	4,25	0,015	0,024	0,031	0,047	0,067	0,11	0,15	0,21	0,26	0,4				
5	4,75	5,25			0,04	0,061	0,068	0,14	0,2	0,27	0,34	0,52	0,72			
6	5,7	6,3				0,075	0,1	0,17	0,24	0,33	0,41	0,65	0,9	1,6		
8	7,7	8,3					0,14	0,23	0,33	0,45	0,57	0,9	1,25	2,3		
10	9,7	10,3							0,42	0,56	0,72	1,15	1,6	3	4,2	
12	11,6	12,4								0,68	0,87	1,4	1,95	3,7	5,2	
(14)	13,6	14,4										1,65	2,3	4,4	6,2	
16	15,6	16,4										1,9	2,65	5,1	7,2	
20	19,6	20,4											3,35	6,5	9,2	
25	24,6	25,4												8,3	11,7	
30	29,6	30,4													14,2	
35	34,5	35,5														
40	39,5	40,5														
45	44,5	45,5														
50	49,5	50,5														
55	54,4	55,6														
60	59,4	60,6														

[1] Bracketed sizes should be avoided if possible.
[2] P = pitch of thread (coarse pitch thread).
[3] 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.

Set screws are normally manufactured in sizes for which mass values have been specified. The range of commercial lengths is indicated in ISO 4766 by stepped lines. This range does not coincide exactly with the range of commercial lengths available in the Federal Republic of Germany and is given here for information only.
Intermediate lengths should be avoided if possible.
National note: t min. = 1,6 P; t max. = 2,1 P.

4 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	ISO 261, ISO 965, DIN 13 Part 15		
Mechanical properties [4]	Property class (material)	14H; 22H	A1–50	CuZn = copper-zinc alloy [1]
	Standard	ISO 898 Part 5	ISO 3506, DIN 267 Part 11 [3]	DIN 267 Part 18 [2]
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		Bright; for property class 22H screws: black-oxide (thermally or chemically applied).	Bright.	Bright.
		DIN 267 Part 9 shall apply with regard to electroplating (a different type of electroplating being subject to agreement).		
		DIN 267 Part 2 shall apply with regard to surface roughness.		
		DIN 267 Part 19 shall apply with regard to permissible surface discontinuities [1].		
Acceptance inspection		DIN 267 Part 5 shall apply with regard to acceptance inspection.		

[1] A corresponding ISO Standard is in the course of preparation.
[2] CuZn = CU2 or CU3 (as specified in DIN 267 Part 18), at the manufacturer's discretion.
[3] The content of ISO 3506, 1979 edition, is covered in DIN 267 Part 11.
[4] Different property classes or materials, or a particular grade of steel shall be subject to agreement.

5 Designation

Designation of an M 5 slotted set screw with flat point, of nominal length $l = 12$ mm, assigned to property class 14H:

Set screw DIN 551 – M 5 × 12 – 14H

The international designation of set screws complying with ISO 4766 may be as follows:

Set screw ISO 4766 – M 5 × 12 – 14H

National note: The February 1972 edition of DIN 551 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.

The DIN 4000 - 2 - 3 tabular layout of article characteristics shall apply for set screws conforming to this standard.

Standards referred to

DIN 13 Part 15	ISO metric screw threads; fundamental deviations and tolerances for screw threads of 1 mm and larger
DIN 267 Part 1	Fasteners; technical delivery conditions; general requirements
DIN 267 Part 2	Fasteners; technical delivery conditions; types of finish 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 225 – 1983	Fasteners; bolts, screws, studs and nuts; symbols and designations of dimensions
ISO 261 – 1973	ISO general purpose metric screw threads; general plan (see DIN 13 Part 12)
ISO 888 – 1976	Bolts, screws and studs; nominal lengths and thread lengths for general purpose bolts (no comparable DIN Standard; the ISO Standard has been taken into consideration in the DIN Standards on bolts and screws concerned)
ISO 898/5 – 1980	Mechanical properties of fasteners. Part 5: Set screws and similar threaded fasteners not under tensile stresses
ISO 965/1 – 1980	ISO general purpose metric screw threads; tolerances. Part 1: Principles and basic data (see DIN 13 Part 14)
ISO 965/2 – 1980	ISO general purpose metric screw threads; tolerances. Part 2: Units of sizes for general purpose bolt and nut threads; medium quality (see DIN 13 Part 15)
ISO 3269 – 1984	Fasteners; acceptance inspection (see DIN 267 Part 5)
ISO 3506 – 1979	Corrosion-resistant stainless steel fasteners; specifications (see DIN 267 Part 11)
ISO/DIS 4042 – 1985	Threaded components; electroplated coatings (comparable with DIN 267 Part 9)
ISO 4753 – 1983	Fasteners; ends of parts with external metric ISO thread
ISO 4759/1 – 1978	Tolerances for fasteners. Part 1: Bolts, screws and nuts with thread diameters between 1,6 (inclusive) and 150 mm (inclusive) and product grades A, B and C

Previous editions

DIN LON 339: 07.26; DIN 551: 10.22, 05.24, 06.43, 01.51, 04.56, 02.72.

Amendments

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

a) The content of ISO 4766 – 1983 has been included.

b) 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.

c) Limiting dimensions calculated from the permissible tolerances have been amended.

d) The dimensions of the flat point have been amended.

e) The technical delivery conditions have been amended.

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.

h) Size M 1,8 has been deleted.

International Patent Classification

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