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Westfield Fasteners Product Specification:

DIN 7971 - Slotted Pan Self Tapping Screws Type C

This product guide contains the specification for slotted pan self tapping screws, a range of standard parts available from Westfield Fasteners. The basis of this specification is the DIN standard DIN 7971.

Product Description

Self tapping screws are normally used with sheet metal and plastics. This variant has a pan head with a traditional slot drive. As the name suggests, this type of screw forms its own thread as it is installed into a pre-drilled hole.

There are many different types of screw that could be defined as 'self tapping', including several more modern designs. The self tapping screws defined here are the long established type adhering to DIN 7971. The same thread forms with differing head types are defined in other standards. These self tapping screws are manufactured in gauge sizes, from number 2 up to number 14, but these sizes are usually stated alongside the millimetre equivalent.

Scope of the DIN Standard

DIN 7971 is the most well known and prominent standard for the manufacture of slotted pan head tapping screws, from thread diameters of 2.2mm or No.2 to 6.3mm or No.14 inclusively. See figure 1 and table 1 below for general dimensions and tolerances. Table 2 gives the tolerance on the shank length. DIN 7971 covers steel and stainless steel variants.

Self tapping screw thread forms have historically been classified in a number of different ways, and can cause some confusion. The DIN 7971 standard defines the thread form featuring spaced threads and a cone or pointed tip that we are concerned with here as a 'Type C'. This thread form is also known as 'Type AB' elsewhere. These type definitions help to differentiate these cone pointed tapping screws from the square ended or dog point 'Type F' (also known as 'Type B' or 'Type BZ', depending on who you ask).

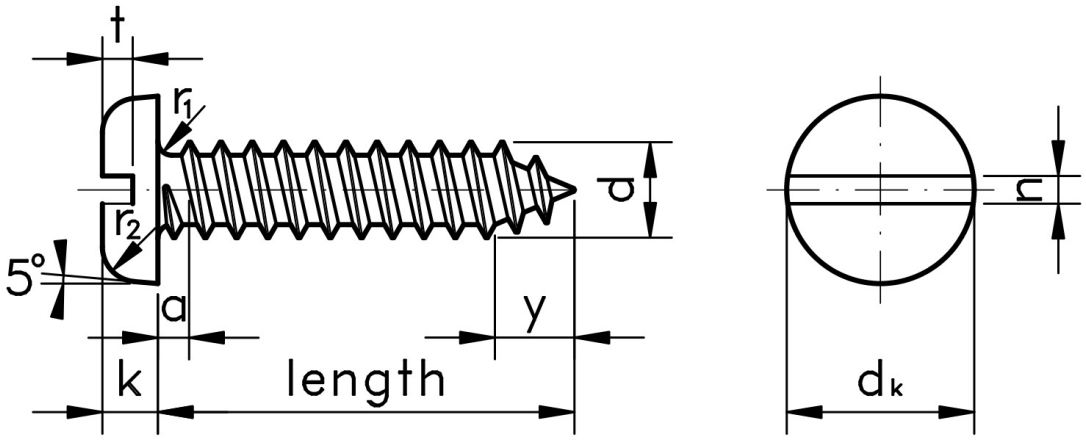

Figure 1: Slotted Pan Self Tapping Screws Type C

Table 1: Dimensions & Tolerances according to DIN 7971 (mm)

Thread Size		2.9 (no.4)	3.5 (no.6)	4.2 (no.8)	4.8 (no.10)	5.5 (no.12)	6.3 (no.14)
p		1.1	1.3	1.4	1.6	1.8	1.8
a max.		1.1	1.3	1.4	1.6	1.8	1.8
d_k	max. = nominal size	5.6	6.9	8.2	9.5	10.8	12.5
	min.	5.3	6.54	7.84	9.14	10.37	12.07
k	max. nominal size	1.75	2.1	2.45	2.8	3.2	3.65
	min.	1.5	1.85	2.15	2.5	2.85	3.3
n	Nominal Size	0.8	1	1.2	1.2	1.6	1.6
	min.	0.86	1.06	1.26	1.26	1.66	1.66
	max.	1	1.2	1.51	1.51	1.91	1.91
r1 max.		0.4	0.5	0.6	0.7	0.8	0.9
r2 ≈		1	1.2	1.3	1.6	2	2.2
t	min.	0.75	0.95	1.15	1.35	1.55	1.8
	max.	1	1.25	1.5	1.7	1.95	2.2
y max.		2.6	3.2	3.7	4.3	5	6

Table 2: Shank Length Tolerance according to DIN 7971 (mm)

Nominal Length	Type C	
	min	max
4.5	3.7	5.3
6.5	5.7	7.3
9.5	8.7	10.3
13	12.2	13.8
16	15.2	16.8
16	18.2	19.8
22	21.2	22.8
25	24.2	25.8
32	30.7	33.3
38	36.7	39.3

Notes on Usage of Tapping Screws

Table 3 provides a guide for appropriate drill sizes for each thread diameter. This information is provided on the assumption that the screw is of carbon (non stainless) steel. The actual diameter selected will depend on the thickness and strength of the material involved. This is based on information provided in the standard DIN 7975. Appropriate holes for use with stainless steel screws should be established by trial and error.

Table 3: Tapping Screw Drill Size Guide, Use with Metals, according to DIN 7975 (mm)

Screw Thread Size	Drill Size (min.-max.)
2.2 (No.2)	1.7-1.9
2.9 (No.4)	2.2-2.5
3.5 (No.6)	2.6-3.1
3.9 (No.7)	2.9-3.5
4.2 (No.8)	3.1-3.7
4.8 (No.10)	3.6-4.3
5.5 (No.12)	4.2-5.0
6.3 (No.14)	4.9-5.8
8.0	6.3-7.4
9.5	7.5-8.9

For further details, please refer to the DIN standard document for this item. E&OE