

Slotted round nuts

DIN
546

Schlitzmuttern

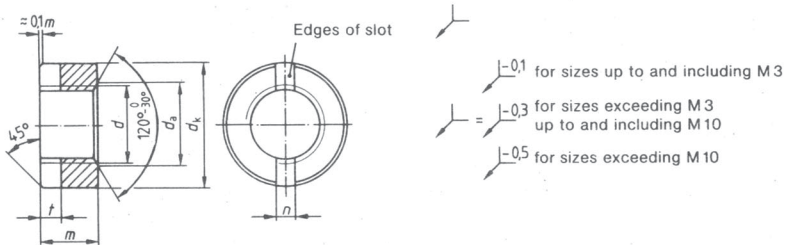
Supersedes November 1970 edition.

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

Slotted round nuts are parts generally made of steel, stainless steel or non-ferrous metals, which are designed to be used for various purposes, as for instance in electrical engineering. They can be tightened by means of a slotted screwdriver as specified in DIN 3115 Parts 1 and 2 and are intended to be used for locking components where no specific prestressing forces or a specific resistance to stripping are required.

2 Dimensions

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	
d_a	min	1	1,2	1,4	1,6	2	2,5	3	3,45	4
	max	1,15	1,4	1,6	1,84	2,3	2,9	3,5	4	4,6
d_k	max = nominal size	2,5	3	3	3,5	4,5	5,5	6	7	8
	min	2,25	2,75	2,75	3,2	4,2	5,2	5,7	6,64	7,64
m	max = nominal size	1	1,2	1,4	1,6	2	2,2	2,5	3	3,5
	min	0,75	0,95	1,15	1,35	1,75	1,95	2,25	2,75	3,2
n	Nominal size	0,3	0,4	0,4	0,5	1	1,2	1,2	1,4	1,4
	min	0,36	0,46	0,46	0,56	1,06	1,26	1,26	1,46	1,46
	max	0,5	0,6	0,6	0,7	1,2	1,51	1,51	1,71	1,71
t	min	0,3	0,4	0,5	0,6	0,8	0,9	1	1	1,2
	max	0,5	0,6	0,7	0,8	1	1,1	1,2	1,4	1,6
Mass (7,85 kg/dm ³), in kg per 1000 units, approximately	0,034	0,057	0,063	0,1	0,21	0,34	0,43	0,7	1,07	

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

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Table. (concluded)

Thread size <i>d</i>		M 5	M 6	M 8	M 10	M 12	(M 14)	M 16	(M 18)	M 20
<i>P</i> ¹⁾		0,8	1	1,25	1,5	1,75	2	2	2,5	2,5
<i>d_a</i>	min.	5	6	8	10	12	14	16	18	20
	max.	5,75	6,75	8,75	10,8	13	15,1	17,3	19,5	21,6
<i>d_k</i>	max. = nominal size	9	11	14	18	21	24	26	29	32
	min.	8,64	10,57	13,57	17,57	20,48	23,48	25,48	28,48	31,38
<i>m</i>	max. = nominal size	4,2	5	6,5	8	10	11	12	13	14
	min.	3,9	4,7	6,14	7,64	9,64	10,57	11,57	12,57	13,57
<i>n</i>	Nominal size	2	2,5	3	3,5	4	4	4	4	5
	min.	2,06	2,56	3,06	3,57	4,07	4,07	4,07	4,07	5,07
	max.	2,31	2,81	3,31	3,87	4,37	4,37	4,37	4,37	5,37
<i>t</i>	min.	1,5	2	2,5	3,2	3,8	3,8	3,8	4,8	4,8
	max.	1,9	2,4	3	3,7	4,3	4,3	4,3	5,5	5,5
Mass (7.85 kg/dm ³), in kg per 1000 units, approximately		1,8	2,73	5,57	11,5	21,5	27,1	36,8	48,4	57,2
1) <i>P</i> = pitch of thread (coarse pitch thread).										

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 M1,4: 5H; from size M1,6: 6H.		
	Standard	DIN 13 Part 15		
Mechanical properties ³⁾	Property class (material)	St = steel ¹⁾	A1-50 C4-50	CuZn = copper-zinc alloy ²⁾
	Standard	DIN 1651	DIN 267 Part 11	DIN 267 Part 18
Permissible dimensional deviations and deviations of form	Product grade	For sizes up to and including M1,4: F; from size M1,6: A.		
	Standard	DIN 267 Part 6; ISO 4759 Part 1		
Surface finish ⁴⁾		As processed.	Bright.	Bright.
		DIN 267 Part 20 shall apply with regard to permissible surface discontinuities. DIN 267 Part 9 shall apply with regard to electroplating. DIN 50942 shall apply with regard to phosphating of metals.		
Acceptance inspection		DIN 267 Part 5 shall apply with regard to acceptance inspection ⁵⁾ .		

1) St = 9 SMnPb 28 K as specified in DIN 1651 or an equivalent steel in terms of strength. This material shall also be used in cases where property class 5 is given in existing documentation.

2) CuZn = CU2 or CU3 (as specified in DIN 267 Part 18), at the manufacturer's discretion.

3) Other property classes or materials shall be subject to agreement.

4) R_a 25 shall apply for the surface roughness, R_a 16 for thread flanks of sizes not exceeding M5.

5) AQL (acceptable quality level) 1 shall apply for major characteristics and AQL 1,5 for minor characteristics, thread size, *d*, and width of the slot, *n*, being regarded as major characteristics, external diameter, *d_k*, height of the nut, *m*, and depth of the slot, *l*, as minor characteristics.

4 Designation

Designation of an M5 slotted round nut made of steel (St):

Slotted round nut DIN 546 – M5 – St

The DIN 4000 – 2-7 tabular layout of article characteristics shall apply to 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 in diameter and larger
DIN 267 Part 1	Fasteners; technical delivery conditions; general requirements
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 20	Fasteners; technical delivery conditions; surface discontinuities on nuts
DIN 1651	Free cutting steels; technical delivery conditions
DIN 3115 Part 1	Slotted screwdrivers
DIN 3115 Part 2	Face wrench for slotted lock rings
DIN 4000 Part 2	Tabular layouts of article characteristics for bolts, studs and nuts
DIN 50942	Phosphating of metals; principles, symbols and test methods
ISO 4759 Part 1	Tolerances for fasteners; bolts, screws and nuts with thread diameters between 1,6 (inclusive) and 150mm (inclusive) and product grades A, B and C

Previous editions

10.23, 12.31, 10.37, 07.39x, 04.49, 02.54x, 11.70.

Amendments

The following amendments have been made in comparison with the November 1970 edition.

- a) The content of the standard has been editorially revised and aligned with the basic standards concerned.
- b) The technical delivery conditions have been amended.
- c) 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.
- d) Limiting dimensions calculated from the permissible tolerances have been included.
- e) Property class 5 as specified in DIN 267 Part 4 has been replaced by the indication of "St = steel".
- f) Sizes M 1,7, M 2,3 and M 2,6 have been deleted. However, to cater for documents already in existence and spare parts requirements, they can still be ordered in accordance with the November 1970 edition of the present standard.

International Patent Classification

F 16 B 37/00