

Square weld nuts

DIN
928

Vierkant-Schweissmuttern

Supersedes May 1970 edition

As it is current practice in standards published by the International Organization for Standardization (ISO), the comma has been used throughout as a decimal marker.

Dimensions in mm

1 Dimensions, designation

The square weld nuts need not conform to the pictorial representation; only the dimensions specified are to be adhered to.

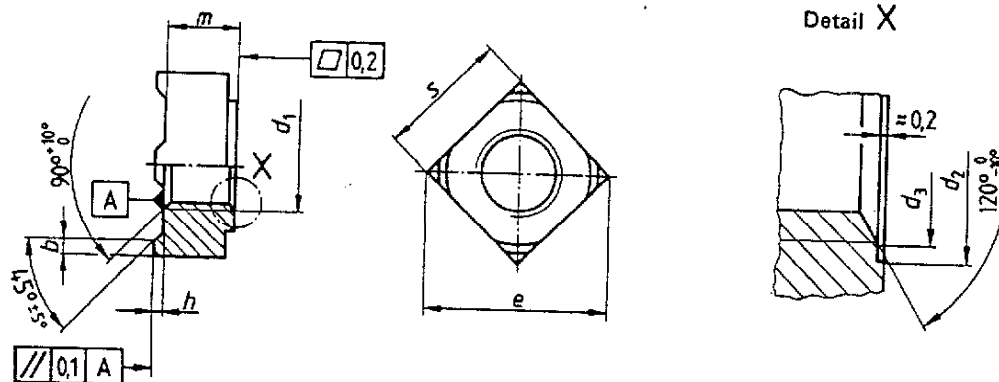


Figure 1.

Designation of a steel (St) square weld nut with thread size $d_1 = M 10$:

Weld nut DIN 928 – M 10 – St

Table 1.

Thread size d_1	Thread size		b	d_2	d_3	e	h	m	s	Weight of 1000 pieces in kg	
	DIN 13	DIN 13 and UNF-2 B *)									Permissible deviation
M 4	—	—	0,8	$\pm 0,15$	5	4,2	9	0,6	3,5	7	0,81
M 5	—	—	1		6	5,25	12	0,8	4,2	9	1,70
M 6	—	—	1,2		7,5	6,3	13	0,8	5	10	2,40
(M 7)	—	—	1,2		8	7,35	14	0,8	5,5	11	3,05
M 8	(M 8 X 1)	—	1,5	$\pm 0,2$	10	8,4	18	1	6,5	14	6,50
M 10	(M 10 X 1,25)	(M 10 X 1)	1,8		12,5	10,5	22	1,2	8	17	11,3
—	—	7/16-20	2		13,5	11,7	25	1,4	9	19	16,5
M 12	(M 12 X 1,25)	(M 12 X 1,5)	2		13,5	12,6	25	1,4	9,5	19	16,6
(M 14)	(M 14 X 1,5)	—	2,5	—	16,8	14,7	28	1,4	11	22	26,7
(M 16)	(M 16 X 1,5)	—	2,5		18,8	16,8	32	1,6	13	24	35,8

Bracketed sizes should be avoided where possible.

*) In accordance with ANSI B 1.1; only to be used for fixing safety belts in cars.

Continued on pages 2 to 4

2 Technical delivery conditions

2.1 General requirements

In accordance with DIN 267 Part 1.

2.2 Material

St = steel with a maximum carbon content of 0,25%.

If a specific steel grade or a different material is required, this shall be agreed on ordering.

2.3 Product grade (design)

Product grade A (previously m) in accordance with DIN ISO 4759 Part 1 or DIN 267 Part 2 (at present at the stage of draft); however, the thread tolerance is to be 6 G.

2.4 Proof loads

The proof loads as listed in table 2 shall apply to the assessment of the mechanical properties of the weld nuts.

Table 2.

Thread size as in table 1 d_1			Proof load in N
M 4	—	—	6 800
M 5	—	—	11 000
M 6	—	—	15 500
M 7	—	—	22 300
M 8	M 8 X1	—	28 300
M 10	M 10 X1,25	M 10 X1	44 800
—	—	7/16-20	53 600
M 12	M 12 X1,25	M 12 X1,5	65 300
M 14	M 14 X1,5	—	89 700
M 16	M 16 X1,5	—	123 000

The proof loads shall apply equally to weld nuts with both coarse and fine threads.

2.5 Acceptance testing

As specified in DIN 267 Part 5 (at present at the stage of draft).

3 Representation in drawings

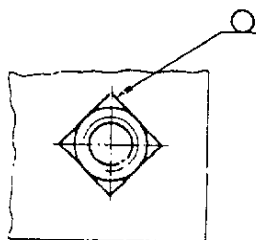


Figure 2.

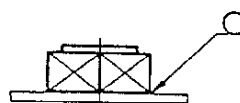


Figure 3.

The tabular layout of article characteristics DIN 4000 – 2 – 9 shall apply to weld nuts complying with this standard.

4 Connecting dimensions

(Nut not yet welded on)

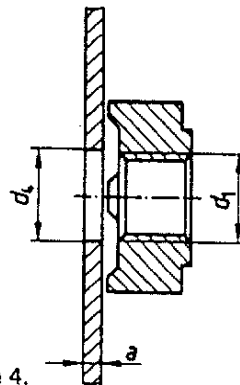


Figure 4.

Table 3.

Thread size as in table 1 d_1			Plate thickness a		d_4 1)
			min.	max.	H11
M 3	—	—	0,63	2,5	4,5
M 4	—	—	0,75	3	6
M 5	—	—	0,88	3,5	7
M 6	—	—	0,88	4	8
M 7	—	—	0,88	4	9
M 8	M 8 X 1	—	1	4,5	10,5
M 10	M 10 X 1,25	M 10 X 1	1,25	5	12,5
—	—	7/16-20	1,25	5	13,5
M 12	M 12 X 1,25	M 12 X 1,5	1,5	5	14,8
M 14	M 14 X 1,5	—	2	6	16,8
M 16	M 16 X 1,5	—	2	6	18,8

1) In order to ensure interchangeability the hole diameters correspond to those for hexagonal weld nuts as specified in DIN 929. However, they are not required for square weld nuts for reasons of design. Different hole diameters are permitted.

Standards referred to and other documents

DIN 13 Part 13	Metric ISO screw threads; review of screw threads for bolts and nuts with thread diameters from 1 to 52 mm and limiting sizes
DIN 13 Part 15	Metric ISO screw threads; basic deviations and tolerances for threads from 1 mm diameter
DIN 267 Part 1	Fasteners; technical delivery conditions; general requirements
DIN 267 Part 2	(at present at the stage of draft) Fasteners; technical delivery conditions, design and accuracy
DIN 267 Part 5	(at present at the stage of draft) Fasteners; technical delivery conditions, acceptance testing
DIN 929	Hexagon weld nuts
DIN 4000 Part 2	Tabular layouts of article characteristics for bolts and nuts
DIN ISO 4759 Part 1	Fasteners; tolerances for bolts, screws and nuts with thread diameters between 1,6 (inclusive) and 150 mm (inclusive) and product grades A, B and C
ANSI B 1.1	Unified inch screw threads (UN and UNR thread form) ¹⁾

Previous editions

DIN 928: 05.70

Amendments

The following amendments have been made to the May 1970 edition:

- a statement of the material has been included in the designation;
- the statement of the material has been amended and supplemented by a statement of the proof loads;
- specifications for connecting dimensions, thread tolerance 6 G and specifications for geometrical tolerances of the bearing surfaces have been included;
- the contents of the standard have been editorially revised;
- design m as specified in DIN 267 Part 2 has been replaced by product grade A as defined in DIN ISO 4759 Part 1.

Explanatory notes

The May 1970 edition of DIN 928 specified property class 8 with the suffix "weldable" for weld nuts. In the meantime, the proof loads for nuts in international specifications have been raised (see DIN ISO 898 Part 2), the nut heights also being recalculated (see DIN 970).

It turned out to be impossible to increase the heights for weld nuts, thereby aligning them with the principles for the calculation of nuts with full loadability, since weld nuts are predominantly mounted automatically using appropriate equipment and, what is more, frequently, for example in the motor industry, in so-called nut holders (cages).

Any change in the dimensions of the nuts would have given rise to considerable problems, which would not have been balanced out by slightly higher resistance to stripping.

Therefore, this new edition of the standard does not specify a property class for the nuts and retains the same dimensions. Instead, the standard only specifies steel with a maximum carbon content of 0,25%. Proof load values, corresponding to the values for nuts with coarse thread of property class 8 as in DIN 267 Part 4, October 1971 edition, have been allocated to the weld nuts. Because of the tolerance position G of the thread, the previous proof load values have been reduced following DIN ISO 898 Part 2 (clause 1), March 1981 edition, for sizes up to M 7 to 97% and over M 7 to 97,5% of the values for nuts with thread tolerance position H. Nevertheless, the nuts can be mated with bolts of property class 8.8.

International Patent Classification

B 21 K 1-70

¹⁾ Available from:

Auslandsnormenverkauf der Beuth Verlag GmbH, Burggrafenstrasse 4-10, D-1000 Berlin 30.