UDC 621.882.3.082.22 : 621.643.414 November 1982

Pipe nuts

with thread in accordance with DIN ISO 228 Part 1

DIN 431

Rohrmuttern mit Rohrgewinde nach DIN ISO 228 Teil 1

Supersedes December 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

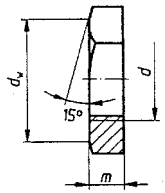
1 Field of application

This standard gives specifications for (hexagon and octagon) pipe nuts with thread in accordance with DIN ISO 228 Part 1, of nominal sizes G 1/8 up to and including G 6, assigned to product grades B and C (previously designs mg and g).

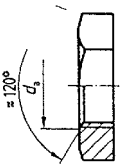
If, in special cases, nuts are to comply with specifications other than those listed in this standard, e.g. regarding property classes or material, they shall be selected in accordance with the appropriate standards.

2 Dimensions, designaiton

Type A



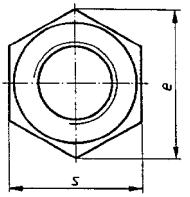
Type B



Other dimensions as for type A

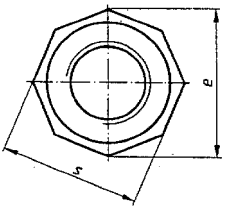
For nominal thread sizes G 1/8 to G 4

Hexagon



For nominal thread sizes G 5 and G 6

Octagon



Designation of a G 1 type A pipe nut, assigned to property class 14H:

Pipe nut DIN 431 – A G 1 – 14H

Continued on pages 2 to 4

Thread size d	d_a max.	d_w 3) min.		e 3) min.		m min.	m max. 1)	s 2) max. = nominal dimension s		s 2) min.		Mass (7,85 kg/dm³) kg per 1000 units 4) ≈
G 1/8	10,5	17,4	16,5	20,88	19,85	6	6,48	19	18	18,48	17,57	11,6
G 1/4	14,2	20,1	19,1	23,91	22,78	6	6,48	22	21	21,16	20,16	14,2
G 3/8	18	24,8		29,56		7	7,58	27		26,16		26,1
G 1/2	22,6	29,5	31,3	35,03	37,29	8	8,58	32	34	31	33	36,4
(G 5/8)	24,7	29,5	31,3	35,03	37,29	8	8,58	32	34	31	33	31,0
G 3/4	28,6	32,3		39,55		9	9,58	36		34		43,6
(G 7/8)	32,6	38		45,20		9	9,58	41		40		54,0
G 1	35,9	42,8		50,85		10	10,58	46		45		81,3
(G 1 1/8)	40,9	46,5		55,37		10	10,58	50		49		95
G 1 1/4	45,3	51,1		60,79		11	11,7	55		53,8		117
G 1 1/2	51,6	55,9		66,44		12	12,7	60		58,8		134
(G 1 3/4)	58	64,7		76,93		13	13,7	70		68,1		213
G 2	64,4	69,4		82,60		13	13,7	75		73,1		277
(G 2 1/4)	71	78,7		93,56		16	16,7	85		82,8		378
G 2 1/2	81,2	88,2		104,86		16	16,7	95		92,8		449
G 3	94,9	97,7		116,16		19	19,84	105		102,8		554
G 4	122	125,9		149,72		22	22,84	135		132,5		1040
G 5	149,5	154,4		183,06		22	22,84	165		162,5		1330
G 6	177	176,1		209,5		25	25,84	190		185,4		1850

Sizes in brackets shall be avoided if possible.

1) The maximum dimension shall apply only to type B pipe nuts. For type A pipe nuts height m is enlarged by the machining allowance.

2) If it is intended supplying pipe nuts of sizes G 1/8, G 1/4, G 1/2 and G 5/8 with widths across flats 18, 21 and 34 mm (preferred series for hexagon screws and nuts as given in DIN ISO 272), the width across flats (SW) shall be indicated in the designation, e.g.: Pipe nut DIN 431 – A G 1/4 – SW 21 – 14H.

3) Dimensions d_w min. and e min. for nominal sizes G 1/8, G 1/4, G 1/2 and G 5/8 are determined by the respective width across flats s.

4) For nominal sizes G 1/8, G 1/4, G 1/2 and G 5/8, the values of mass for pipe nuts with the previous widths across flats 19, 22 and 32 mm shall apply.

3 Technical delivery conditions

Material		Steel	Stainless steel	Nonferrous metal
General requirements		In accordance with DIN 267 Part 1.		
Thread	Tolerance	–		
	Standard	DIN ISO 228 Part 1		
Mechanical properties	Property class [1]	14H	A 2-50	[2]
	Standard	DIN 267 Part 24 *)	DIN 267 Part 11	DIN 267 Part 18
Permissible dimensional deviations and deviations of form	Product class	B (previously mg) for type B; C (previously g) for type A.		
	Standard	DIN ISO 4759 Part 1		
Surface		As processed. DIN 267 Part 2 *) shall apply with regard to the peak-to-valley heights of the surface. DIN 267 Part 20 shall apply with regard to permissible surface irregularities. DIN 267 Part 9 shall apply with regard to electroplating. DIN 267 Part 10 shall apply with regard to hot-dip galvanizing.	Bright.	Bright.
Acceptance testing		In accordance with DIN 267 Part 5 *).		

1) If other property classes or materials (except malleable cast iron) are required, they shall be selected in accordance with the appropriate standards.
2) A selection of materials as given in DIN 267 Part 18 for pipe nuts is still to be determined.

Standards referred to

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 testing
DIN 267 Part 9 Fasteners; technical delivery conditions; electroplated components
DIN 267 Part 10 Fasteners; technical delivery conditions; hot-dip galvanized parts
DIN 267 Part 11 Fasteners; technical delivery conditions with addenda to ISO 3506; components of stainless and acid-resistant steels
DIN 267 Part 18 Fasteners; technical delivery conditions; components made of non-ferrous metals
DIN 267 Part 20 Fasteners; technical delivery conditions; surface irregularities on nuts
DIN 267 Part 24 *) Fasteners; technical delivery conditions; property classes for nuts (hardness classes)
DIN 2950 Malleable cast iron fittings
DIN ISO 228 Part 1 Pipe threads where pressure-tight joints are not made on the threads, thread symbols; dimensions and tolerances
DIN ISO 272 Fasteners; widths across flats for hexagon screws and nuts
DIN ISO 4759 Part 1 Tolerances for fasteners; bolts, screws and nuts with thread diameters $\geq 1{,}6$ and ≤ 150 mm and product grades A, B and C

Other relevant standards

DIN 267 Part 21 Fasteners; technical delivery conditions; widening test for nuts

Previous editions

DIN 431: 01.26, 04.29, 06.49xx, 02.70, 12.72

*) At present at the stage of draft.

Amendments

Compared with the December 1972 edition, the following amendments have been made:

a) The thread symbols have been harmonized with DIN ISO 228 Part 1.

b) Size G 1 3/8 has been deleted, since it is not specified in DIN ISO 228 Part 1.

c) The data on property classes (materials) have been revised.

d) The technical delivery conditions have been complemented.

e) The standard has been revised editorially.

Explanatory notes

The December 1972 edition of DIN 431 had been harmonized with ISO Recommendation ISO/R 49 – 1957. As for the dimensions of pipe nuts, this ISO Recommendation is still valid without amendments. In the meantime, however, International Standard ISO 228/I – 1978 on pipe threads where pressure-tight joints are not made on the threads has been published. It has been adopted as a national standard without amendments and has been issued as DIN ISO 228 Part 1 (May 1980 edition). This standard is intended to be used in lieu of the DIN 259 series, and since the risk of confusion could otherwise arise, also makes it necessary to alter the thread symbols in the relevant product standards.

This revised edition of DIN 431 specifies the new thread symbols and has been harmonized with other relevant standards on fasteners, which have been recently published. This applies for example to the adoption of product grades and tolerances given in DIN ISO 4759 Part 1. Product grades B and C are intended to replace the previous designs mg and g specified in DIN 267 Part 2 (April 1968 edition), without entailing any fundamental alterations. The limits of size have been calculated on the basis of the given tolerances. This corresponds to usual practice in recently published DIN Standards on fasteners, which are based on International Standards.

In agreement with the selection of widths across flats for hexagon screws and nuts given in DIN ISO 272, the widths across flats 18, 21 and 34 mm have been adopted in addition to the widths across flats 19, 22 and 32 mm for nominal sizes G 1/8, G 1/4, G 1/2 and G 5/8. Pipe nuts with the new widths across flats in accordance with ISO have to be marked accordingly. Therefore an amendment of existing documentation can be avoided. After an appropriate transition period, it is intended supplying only pipe nuts having the new widths across flats. It is therefore recommended to change over to these new widths across flats in good time.

The technical delivery conditions have been given in tabular form and the content has been harmonized with the relevant standards. Regarding non-ferrous metals, reference has been made to DIN 267 Part 18 published recently, a specific material, however, as specified in this standard could as yet not be recommended for pipe nuts. For malleable cast iron pipe nuts, DIN 2950 still applies.

International Patent Classification

F 16 B 37/00