

UDC 621.882.31 : 621.882.55

May 1987

Prevailing torque type hexagon nuts with nonmetallic insert

DIN
982

Sechskantmuttern mit Klemmteil;
mit nichtmetallischem Einsatz, hohe Form

Supersedes September 1977 edition
withdrawn in 1983.

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

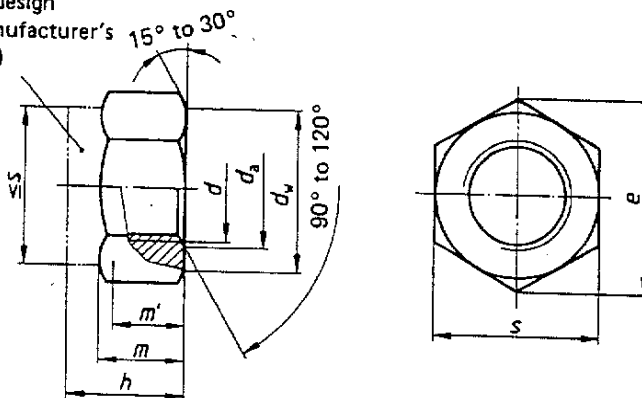
1 Field of application

This standard specifies requirements for M 5 to M 24 prevailing torque type hexagon nuts with nonmetallic insert, assigned to product grade A for sizes up to M 16 and product grade B for sizes over M 16.

If, in special cases, nuts are to comply with specifications other than those given in this standard, e.g. regarding materials other than those specified in DIN 267 Part 15, performance at temperatures above + 120 °C, or corrosion resistance, this shall be agreed at the time of ordering (cf. DIN 267 Part 15).

2 Dimensions

Prevailing torque
element (design
at the manufacturer's
discretion)



m' = minimum wrenching height.

Continued on pages 2 to 4

Thread size	M 5	M 6	M 7	M 8	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24	
	-	-	-	M 8 x 1	M 10 x 1	M 12 x 1,5	M 14 x 1,5	M 16 x 1,5	M 18 x 2	M 20 x 2	M 22 x 2	M 24 x 2	
	-	-	-	-	M 10 x 1,25	M 12 x 1,25	-	-	M 18 x 1,5	M 20 x 1,5	M 22 x 1,5	-	
P ¹⁾	0,8	1	1	1,25	1,5	1,75	2	2	2,5	2,5	2,5	3	
d_a	min.	5	6	7	8	10	12	14	16	18	20	22	24
	max.	5,75	6,75	7,75	8,75	10,8	13	15,1	17,3	19,5	21,6	23,7	25,9
d_w min.	6,9	8,9	9,6	11,6	15,6	17,4	20,5	22,5	24,9	27,7	29,5	33,2	
e min.	8,79	11,05	12,12	14,38	18,9	21,1	24,49	26,75	29,56	32,95	35,03	39,55	
h	max. = nominal size	6,3	8	8,5	9,5	11,5	14	16	18	20	22	25	28
	min.	6	7,7	8,2	9,14	11,14	13,64	15,3	17,3	19,16	20,7	23,7	26,7
$m^2)$ min.	4,4	4,9	6,14	6,44	8,04	10,37	12,1	14,1	15,1	16,9	18,1	20,2	
m' min.	3,52	3,92	4,91	5,15	6,43	8,3	9,68	11,28	12,08	13,52	14,48	16,16	
s	max. = nominal size	8	10	11	13	17	19	22	24	27	30	32	36
	min.	7,78	9,78	10,73	12,73	16,73	18,67	21,67	23,67	26,16	29,16	31	35

1) P = pitch of coarse thread as specified in DIN 13 Part 12.
2) Also minimum thread length.

3 Technical delivery conditions

Material		Steel
General requirements		As specified in DIN 267 Parts 1 and 15.
Thread	Tolerance	6H ¹⁾
	As specified in	DIN 13 Parts 12 and 15.
Mechanical properties (nut body)	Property class (material)	5, 6 ²⁾ , 8 or 10; 12 (only for sizes up to M 16).
	As specified in	ISO 898 Part 2 and DIN 267 Part 15.
Material (insert)		Nonmetallic, e.g. polyamide
Performance (prevailing torques)		As specified in DIN 267 Part 15.
Limit deviations and geometrical tolerances	Product grade	For sizes up to M 16: A (previously, design m). For sizes over M 16: B (previously, design mg).
	As specified in	ISO 4759 Part 1.
Surface finish		As processed. DIN 267 Part 2 shall apply with regard to surface roughness. DIN 267 Part 20 shall apply with regard to permissible surface discontinuities. DIN 267 Part 9 shall apply with regard to electroplating.
Acceptance inspection		DIN 267 Part 5 shall apply with regard to acceptance inspection.

1) See DIN 267 Part 15 in this respect.
2) Only for fine thread nuts.

4 Mass

The values of mass are given for guidance only.

Thread size	M 5	M 6	M 7	M 8	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24
Mass (7,85 kg/dm ³) for 1000 units, in kg, ≈.	1,4	3,1	3,2	6	11,7	18,6	21	37,8	51,6	68	86	127

Approximately the same values may be assumed for fine thread nuts.

5 Designation

Designation of an M 12 prevailing torque type hexagon nut with a nonmetallic insert, assigned to property class 8:

Hexagon nut DIN 982 – M 12 – 8

If nuts of sizes over M 16 are to comply with product grade A (as specified in ISO 4759 Part 1), this shall be indicated in the designation by adding 'A', e.g.:

Hexagon nut DIN 982 – M 20 – 8 – A

The DIN 4000 – 2 – 7 tabular layout of article characteristics shall apply for nuts covered in this standard.

6 Marking

Nuts shall be marked in accordance with the specifications of DIN 267 Part 15.

Note for users

Tolerance class 6H shall apply for the thread of nuts with and without coating.

Where a protective coating is applied, e.g. an electroplated coating complying with DIN 267 Part 9, depending on the coating thickness required, it may be necessary to select a larger fundamental deviation than that assigned to the H position (see DIN 267 Part 9). This, however, might impair the resistance of the bolt/nut assembly to stripping.

Standards referred to

DIN 13 Part 12	ISO metric screw threads; coarse and fine pitch threads from 1 to 300 mm diameter; selected diameters and pitches
DIN 13 Part 15	ISO metric screw threads; fundamental deviations and tolerances for screw threads of 1 mm diameter 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 9	Fasteners; technical delivery conditions; electroplated components
DIN 267 Part 15	Fasteners; technical delivery conditions; prevailing torque type nuts
DIN 267 Part 20	Fasteners; technical delivery conditions; surface discontinuities on nuts
DIN 4000 Part 2	Tabular layout of article characteristics for bolts, screws and nuts
ISO 898 Part 2	Mechanical properties of fasteners; nuts with specified proof load values
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

Previous editions

DIN 982: 12.67, 09.77.

Amendments

The following amendments have been made to the September 1977 edition, which was withdrawn in 1983.

- The title of the standard has been amended.
- Because of the higher proof load values specified in ISO 898 Part 2, the dimensions m and m' have been harmonized with DIN 6924.
- For sizes over M 16, product grade B has been specified instead of product grade A.
- The dimensioning has been amended; limit deviations calculated from the permissible tolerances have been added.
- The technical delivery conditions have been expanded.

Explanatory notes

The previous edition of DIN 982 was withdrawn in 1983, since it was proposed that it should be superseded by DIN 6924 in the course of the changeover to the new widths across flats. This seemed sensible as the dimensions of the nuts covered in DIN 982 were the same as those specified in DIN 6924, except for the widths across flats for sizes M 10, M 12, M 14 and M 22. As DIN 6924 had already been harmonized with ISO 7040, it included the widths across flats specified in ISO 272.

However, following the withdrawal of DIN 982 it became clear that the nuts with the old widths across flats were still used and a changeover to the widths across flats specified in ISO 272 would not be possible at short notice. It was therefore decided to republish DIN 982 in a revised form.

It is planned to adopt the widths across flats specified in ISO 272 in the near future. Although DIN 6924 already includes these widths across flats and corresponds to ISO 7040 in respect of the dimensions, DIN 6924 will probably not supersede DIN 982, as it does not as yet reflect in all respects current thinking on the next generation of prevailing torque type nuts and a changeover in a number of stages should be avoided where possible. This next generation should satisfy the following requirements:

- the nuts should be interchangeable with the corresponding products complying with ISO 7040;
- it should be possible to use the nuts on automatic feed and bolting equipment.

Germany will propose in ISO/TC 2 to introduce adequate tolerances for the nut height, in order that requirement b) above can be satisfied, and additionally propose the inclusion of nuts with fine pitch thread. The decision as to whether Germany will adopt ISO 7040 without amendment or in a modified form will depend on the result of the discussions in ISO/TC 2.

International Patent Classification

F 16 B 39/28