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भारतीय मानक मसौदा

पाइप नट्स – विशिष्टि

(*IS 3468* का तीसरा पुनरीक्षण)

Draft Indian Standard

PIPE NUTS — SPECIFICATION

(Third revision of IS 3468)

ICS 21.060.20

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General Engineering and Fasteners Standards Sectional Committee, PGD 37

FOREWORD

(*Formal clauses will be added later*)

This standard was originally published in 1966 and subsequently revised in 1975 and 1991. The second revision was carried out taking assistance from DIN 431 : 1982 'Pipe nuts with thread in accordance with DIN ISO 228 Part 1' issued by Deutsches Institut für Normung.

The third revision has been taken up to keep pace with the latest technological developments and international practices. In this revision following major changes have been made:

a) The various requirements of pipe nuts have been updated based on the latest international practices (*see* Table 1);
b) Pipe nuts have been classified into 2 types;
c) Changes have been made in the table on dimensions of pipe nuts; and
d) References have been updated.

In the preparation of this standard, considerable assistance has been derived from DIN 431 : 2013.

The composition of the committee, responsible for the formulation of this standard is given at Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'.

1 SCOPE

This standard covers the requirements for pipe nuts in the size range G 1/8 to G 6 (hexagon and octagon) with thread as in IS 2643 and of product grades B and C.

2 REFERENCES

The standards listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

IS No.	*Title*
1367 (Part 1) : 2014/ ISO 8992 : 2005	Technical supply conditions for threaded steel fasteners Part 1 general requirements for bolts screws studs and nuts (*fourth revision*)
1367 (Part 2) : 2002/ ISO 4759-1 : 2000	Technical supply conditions for threaded steel fasteners Part 2 tolerances for fasteners — Bolts screws studs and nuts — Product grades A, B and C (*third revision*)
1367 (Part 7) : 1980	Technical supply conditions for threaded steel fasteners Part 7 Mechanical properties and test methods for nuts without specified proof loads (*second revision*)
1367 (Part 10) : 2002/ ISO 6157-2 : 1995	Technical supply conditions for threaded steel fasteners Part 10 Surface discontinuities — Nuts (*third revision*)
1367 (Part 11) : 2020/ ISO 4042 : 2018	Technical Supply Conditions for Threaded Steel Fasteners Part 11 Electroplated coating systems (*fourth revision*)
1367 (Part 13) : 2020/ ISO 10684 : 2004	Technical supply conditions for threaded steel fasteners Part 13 Hot dip galvanized coatings on threaded fasteners (*third revision*)
1367 (Part 14) Sec. 2 : 2018/ ISO 3506-2 : 2009	Technical supply conditions for threaded steel fasteners Part 14 Mechanical properties of corrosion-resistant stainless-steel fasteners Section 2 Nuts (*fourth revision*)
1367 (Part 17) : 2005/ ISO 3269 : 2000	Technical supply conditions for threaded steel fasteners Part 17 Inspections sampling and acceptance procedure (*fourth revision*)
1367 (Part 18) : 1996	Industrial fasteners — Threaded steel fasteners — Technical supply conditions Part 18 Packaging (*third revision*)
/ISO 10683 : 2018	Fasteners — Non-electrolytically applied zinc flake coating systems
2643 : 2005/ ISO 228-1 : 2000	Pipe threads where pressure-tight joints are not made on the threads — Dimensions tolerances and designation (*third revision*)

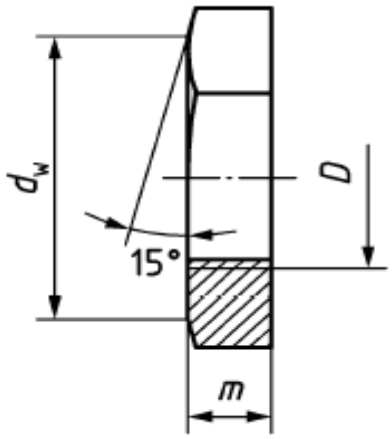
3 TYPES

Pipe nuts shall be of the following 2 types:

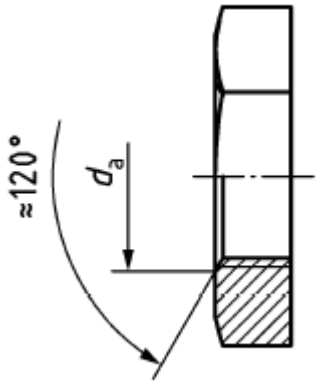
a) Type 1 : Unchamfered pipe nuts
b) Type 2 : Chamfered pipe nuts

4 DIMENSIONS

The dimensions and the shapes of the nuts shall be as given in Fig.1 and Table 1.

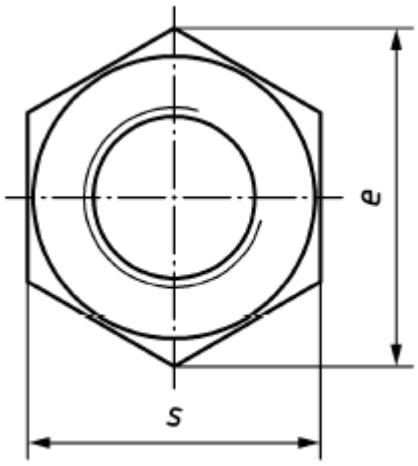


Type 1

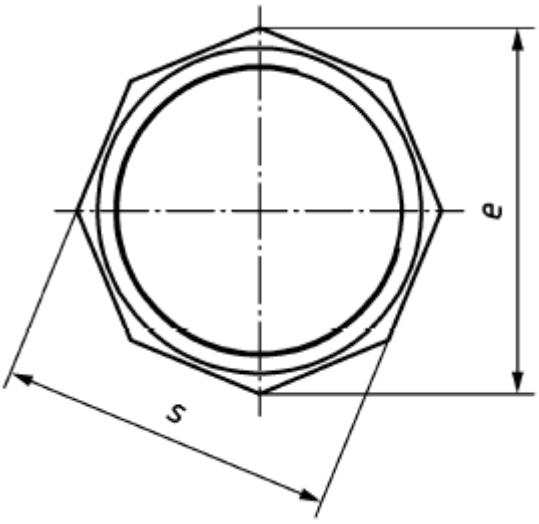


Type 2

(other dimensions are same as Type 1)



For sizes G1/8 to G4 (hexagon)



For sizes G5 to G6 (octagon)

Fig 1 Nut dimensions (types 1 and 2) (notation)

Table 1 Dimensions for Pipe Nuts

(*Clause* 4)

All dimensions in millimetres

Thread Size *d*	***d*a** *Max*	***d*W** *Min*	***e*** *Min*	***m*(h15)**		***S***	
				Max[1)]	*Min*	*Max*	*Min*
G 1/8	10.5	16.5	19.85	6.48	6	18[2)]	17.57
G 1/4	14.2	19.1	22.78	6.48	6	21[2)]	20.16
G 3/8	18	24.8	29.56	7.58	7	27	26.16
G 1/2	22.6	31.3	37.29	8.58	8	34[2)]	33
(G 5/8)	24.7	31.3	37.29	8.58	8	34[2)]	33
G 3/4	28.6	32.3	39.55	9.58[2)]	9	36	34
G 7/8	32.6	38	45.20	9.58	9	41	40
G 1	35.9	42.8	50.85	10.58	10	46	45
(G 1 1/8)	40.9	46.5	55.37	10.58	10	50	49
G 1 1/4	45.3	51.1	60.79	11.70	11	55	53.8
G 1 1/2	51.6	55.9	66.44	12.70	12	60	58.8
(G 1 3/4)	58	64.7	76.93	13.70	13	70	68.1
G 2	64.4	69.4	82.60	13.70	13	75	73.1
(G 2 1/4)	71	78.7	93.56	16.70	16	85	82.8
G 2 1/2	81.2	88.2	104.86	16.70	16	95	92.8
G 3	94.9	97.7	116.16	19.84	19	105	102.8
G 4	122	125.9	149.72	22.84	22	135	132.5
G 5	149.5	154.4	183.06	22.84	22	165	162.5
G 6	177	176.1	209.5	25.84	25	190	185.4

[1)] The maximum size applies for type B nuts. In the case of type A nuts, *m* is to be larger by a machining allowance.

[2)] The width across flats shall be included in the designation (*see* **6.2**).

NOTE — Sizes shown within brackets are of second preference

5 REQUIREMENTS

The various requirements of the pipe nuts shall be as specified in Table 2.

Table 2 Requirements of Pipe Nuts
(*Clause* 5)

<table>
<tr><td colspan="2">Material</td><td>Carbon Steel/ Alloy Steel</td><td>Stainless steel</td><td>Nonferrous metal Brass</td></tr>
<tr><td>General requirements</td><td>As specified in</td><td colspan="3">IS 1367 (Part 1)</td></tr>
<tr><td>Thread</td><td>As specified in</td><td colspan="3">IS 2643</td></tr>
<tr><td rowspan="2">Mechanical properties</td><td>Property class[1])</td><td>14H</td><td>A2</td><td rowspan="2">Minimum tensile strength 300 MPa</td></tr>
<tr><td>As specified in</td><td>IS 1367 (Part 7)</td><td>IS 1367 (Part 14) : Sec 2</td></tr>
<tr><td rowspan="2">Limit deviations and geometrical tolerances</td><td>Product grade</td><td colspan="3">C for type 1 and B for type 2</td></tr>
<tr><td>As specified in</td><td colspan="3">IS 1367 (Part 2)</td></tr>
<tr><td>Surface finish</td><td>As specified in</td><td>As processed

1) IS 1367 (Part 11) applies with regard to electroplating.

2) IS 10683 applies with regard to zinc flake coatings.

3) IS 1367 (Part 13) applies with regard to hot-dip galvanizing.</td><td>Plain

-</td><td>Plain

1) IS 1367 (Part 11) applies with regard to electroplating</td></tr>
<tr><td colspan="2"></td><td colspan="3">IS 1367 (Part 10) applies with regard to surface discontinuities.
Additional requirements or other surface finishes or coatings shall be agreed between the supplier and the customer.</td></tr>
<tr><td>Acceptance inspection</td><td>As specified in</td><td colspan="3">IS 1367 (Part 17)</td></tr>
<tr><td colspan="5">[1]) Where nuts are to be made of other materials (except for malleable iron) or comply with other propertyclasses, these shall be selected based on the relevant standards.</td></tr>
</table>

6 DESIGNATION

6.1 The pipe nuts shall be designated by type, thread size, property class and number of this standard.

Examples:

1 A pipe nut of thread size G6, type 1, and of property class 14H shall be designated as:

Pipe Nut — 1 — G6 — 14H IS 3468

2 A pipe nut of thread size G1, type 2, and of property class A2 shall be designated as:

Pipe Nut — 2 — G6 — A2 IS 3468

6.2 The designation of sizes G 1/8, G 1/4, G 1/2 and G 5/8 pipe nuts shall also include the width across flats.

Example:

A pipe nut of thread size G 1/2 pipe, type 1, of property class 14H and with a width across flats of 34 mm (SW34) shall be designated as:

Pipe Nut – A – G 1/2 – SW34 – 14H IS 3468

6.3 When the pipe nuts are manufactured from brass, the word 'Brass' shall be added at the end of the designation.

Example:

A pipe nut of thread size G 3/8, type A and made from brass shall be designated as:

Pipe Nut — A — G 3/8 — Brass IS 3468

7 MODE OF DELIVERY

Mode of delivery of pipe nuts shall be in accordance with IS 1367 (Part 18).

8 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as perthe conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act,* 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the standard mark.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

General Engineering and Fasteners Standards Sectional Committee, PGD 37

Organization	*Representatives(s)*
In Personal Capacity	SHRI N. SRINIVASA MURTHY (***Chairman***)
Asp Private Limited, Hawrah	SHRI VINOD SHARMA SHRI B. BHAUMIK (*Alternate*)
BEML Limited, Bengaluru	SHRI S. K.SAHA SHRI T. N. SRINIVAS (*Alternate* I) SHRI M. R. SENTHIL KUMAR (*Alternate* II)
Bharat Dynamics Limited, Hyderabad	SHRI K. SREENIVASA RAO UMAKANTH PATHIPATI (*Alternate*)
Bharat Heavy Electrical Limited, New Delhi	SHRI AVINASH S JOHN SHRI KALYAN A (*Alternate* I) SHRI LALIT KUMAR (*Alternate* II)
Bosch Limited, Bengaluru	SHRI KUMARASWAMY S.
CSIR - National Physical Laboratory, New Delhi	SHRI ANIL KUMAR SHRI GAUTAM MANDAL (*Alternate* I) NIDHI SINGH (*Alternate* II)
CSIR - National Aerospace Laboratories, Bengaluru	S RAVISHANKAR SHRI M S KAMLESHAIAH (*Alternate*)
Central Manufacturing Technology Institute, Bengaluru	ANIL KUMAR SHRI S K VERMA (*Alternate*)
Deepak Fasteners Limited, Ludhiana	SHRI SANJEEV KALRA SHRI DEEPAK KALRA (*Alternate* I) SHRI SUKHJEEVAN SINGH (*Alternate* II)
Directorate General of Quality Assurance, Ministry of Defence, Kanpur	SHRI J K YADAV SHRI S L MEENA (*Alternate*)
Directorate General of Quality Assurance, Ministry of Defence, New Delhi	SHRI BIJENDRA KUMAR
HMT Limited, Bengaluru	SHRI C.S.VIJAYA PRAKASH SHRI SOMASUNDARAM (*Alternate*)
Hilti India Private Limited, New Delhi	SHRI PRASHANT DASHARATH SATHE SHRI SHOUNAK MITRA (*Alternate*)
Hindustan Fasteners Private Limited, Nasik	SHRI INDRAPAL
Indian Institute of Technology Bombay, Mumbai	DR. PANKAJ KUMAR
MK Fasteners, Bengaluru	SHRI KUNTHAL AMEN
National Test House, Kolkata	SHRI S.P. ROY SHRI. YOGESH SINGH (*Alternate*)
Nexo Industries Private Limited, Ludhiana	MR. AMRIK SINGH
Pooja Forge Limited, Faridabad	SHRI JAGDISH K AGGARWAL
Precise Fasteners Private Limited, Mumbai	SHRI PARAG PRAKASH
Right Tight Fasteners Private Limited, Nashik	SHRI BALVEER SHRI AMARJEET SINGH (*Alternate*)
Size Control Gauges & Tools Private Limited, Pune	SHRI ATUL ASHOK DURVE
Sundram Fasteners Limited, Chennai	SHRI ATUL KUMAR AGRAWAL SHRI KANNADASAN B (*Alternate*)
Tata Motors Limited, Pune	SHRI SAGAR TALOLE SHRI R. R. KULKARNI (*Alternate*)

Unison Clamping Devices Limited, Pune	SHRI PANDURANG KALLAPPA SAWANT SHRI VIKRAM P. SAWANT (*Alternate*)
In Personal Capacity	SHRI MURTHY
BIS Directorate General	SHRI RAJEEV RANJAN SINGH, SCIENTIST 'E' AND HEAD (PGD) [REPRESENTING DIRECTOR GENERAL (*Ex-officio*)]

Member Secretary

SHRI MONARCH JOSHI
SCIENTIST 'B' (PGD/MED II) BIS