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भारतीय मानक मसौदा

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(दूसरा पुनरीक्षण)

Draft Indian Standard

PIPE UNION BOLT — SPECIFICATION

(Second Revision)

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Automotive Prime movers, Transmissions and Steering Systems and Internal Combustion Engines Sectional Committee, TED 2

FOREWORD

(Formal clause to be added later)

In the first revision of this standard the scope had been expanded to include, apart from the requirements of the fuel injection equipment, the requirements of the other pipe connections also. Consequently, the title had been changed. Also, for designation, the pipe outside diameter was taken as the nominal size.

During the first revision of this standard, assistance had been derived from DIN 7643 Brazed and welded pipe unions with spherical liners; hollow screws', by Deutscher Normenausschuss (DNA).

In this draft for second revision of this standard the referencing standards have been updated. A separate clause for references has also been introduced for ease of interpretation.

Other editorial changes have been done to bring the standard in the latest style and format of Indian Standards.

The composition of the Committee responsible for the formulation of this standard is given in Annex A (Will be added later).

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 or analysis, shall be rounded off in accordance with IS 2: 2022. 'Rules for rounding off numerical values (*second revision*). The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

PIPE UNION BOLT — SPECIFICATION
(*Second Revision*)

1 SCOPE

This standard specifies the dimensions and other requirements of pipe union bolts for low pressure pipe connections.

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitutes provision 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 these standards.

<i>IS No.</i>	<i>Title</i>
IS 1369 (Part 1): 1993	Fasteners — Thread run - Outs and under - Cuts: Part 1 dimensions for screw thread run - Outs for external ISO metric threads (<i>Third Revision</i>)
IS 14962 (Part 2): 2001	ISO general purpose metric screw threads — Tolerances: Part 2 limits of sizes for general purpose external and internal screw threads — Medium quality
IS 5517: 1993	Steels for hardening and tempering — Specification (<i>Second Revision</i>)
IS 1367 (Part 17): 2005	Technical Supply Conditions for Threaded Steel Fasteners Part 17 Inspections, Sampling and Acceptance Procedure (<i>Fourth Revision</i>)

3 DIMENSIONS AND TOLERANCES

According to Table 1.

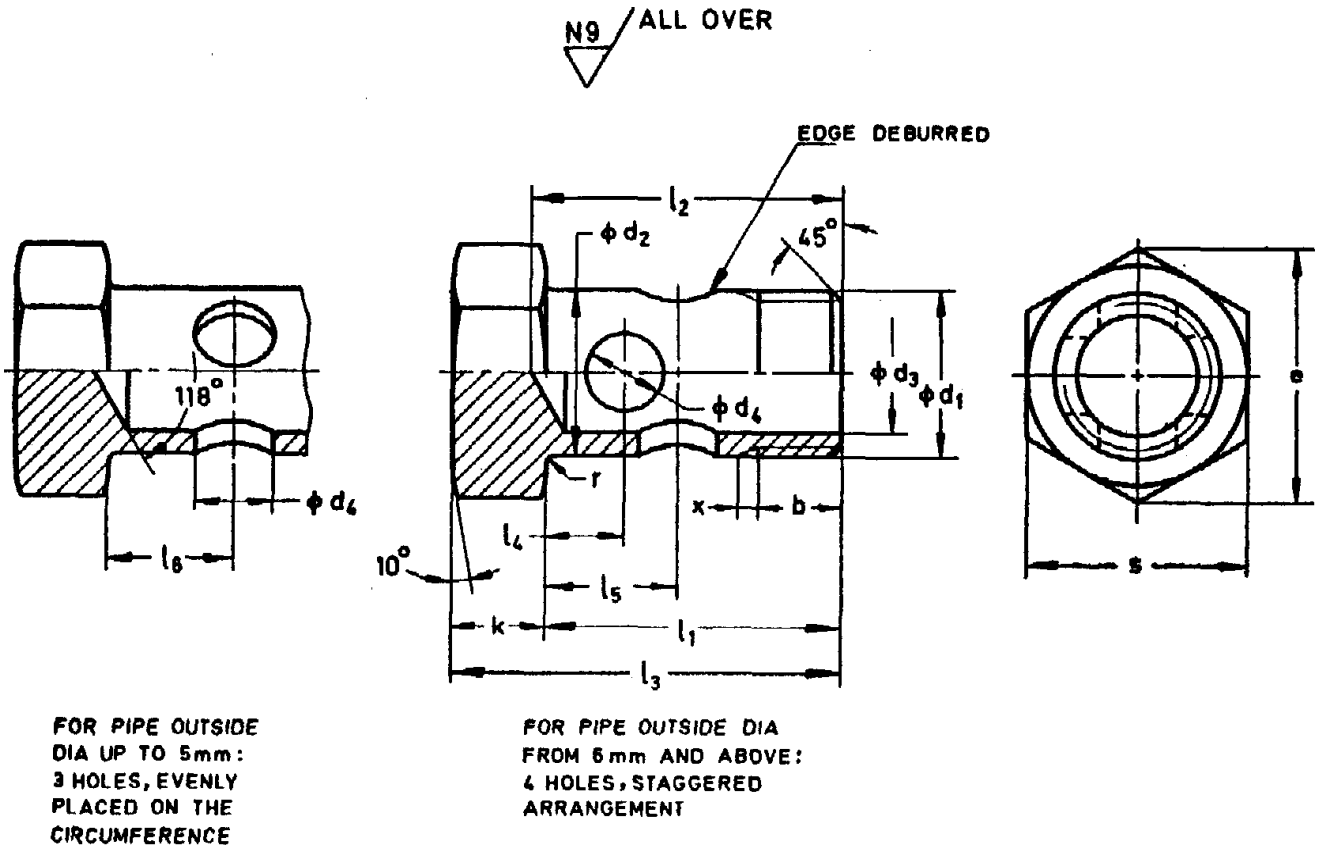


Fig. 1 Dimension for Pipe Union Bolts

'x' according to IS 1369 (Part 1).

Threads are chamfered up to thread core diameter.

Table 1 Dimensions and Tolerances

Sl No.	Pipe outside diameter(d)	Thread(d ₁)	d ₂	d ₃ +0.3	d ₄ +0.3	e	l ₁ ±0.3	l ₂	l ₃	l ₄ ±0.2	l ₅	l ₆	b	k	r	s
i)	3	M8 x 1	8	4	3	14.4	17	18	23	-	-	4.5	6	6	0.2	13
ii)	4	M8 x 1	8	4	3	14.4	17	18	23	-	-	4.5	6	6	0.2	13
iii)	5	M8 x 1	8	4	3	14.4	17	18	23	-	-	4.5	6	6	0.2	13
iv)	6	M10 x 1.5	10	5.5	3.5	16.2	19	19.5	25	4.85	8	-	6	6	0.2	14
v)	8	M12 x 1.5	12	7	4.5	19.6	24	24	30	5.5	9	-	9	6	0.2	17
vi)	10	M14 x 1.5	14	9	5.5	21.9	26	25	34	6	10.5	-	9	6	0.2	19
vii)	12	M16 x 1.5	16	11	7	25.4	28	26.5	36	7.25	13	-	9	8	0.2	22
viii)	15	M18 x 1.5	18	13	8.5	27.7	32	30	42	8.25	14	-	9	10	0.2	24
ix)	18	M22 x 1.5	22	16	11	34.6	39	37	49	10	20	-	9	10	0.4	30

x)	22	M28 x 1.5	26	20	13.5	36.9	45	42	57	11.7	23	-	12	12	0.4	32
xi)	28	M30 x 1.5	30	24	16	47.3	51	48	68	14	27	-	12	17	0.4	41
xii)	35	M38 x 1.5	38	32	2.	53.1	61	55.5	79	16	34	-	12	18	0.6	46
xiii)	42	M45 x 1.5	45	39	24	63.5	69	62	87	18	39.5	-	12	18	0.6	55

NOTE 1 — 15 to 42 mm pipe outside diameters do not correspond to the stipulations of ISO Recommendation on pipe unions which is under preparation.

NOTE 2 — Pipe outside diameters up to 15 mm are used for fuel injection equipment.

3.1 Threads

ISO metric threads, fine series. Tolerance quality should be medium according to IS 14962 (Part 2).

4 MATERIAL

Steel of grade C35Mn75 as per IS 5517 shall be used.

4.1 If required to be made from other materials, such as brass, it shall be subject to agreement between the purchaser and the manufacturer.

5 WORKMANSHIP AND FINISH

5.1 The product shall be Well-finished, free from cracks, burrs, etc.

5.2 It may be surface treated for protection against corrosion. The treatment shall be at the discretion of the manufacturer unless otherwise specified.

6 DESIGNATION

The product shall include:

Commonly used name;
Pipe outside diameter;
Number of this standard; and
Any other requirement, such as brass, if required.

Example:

A pipe union bolt for pipe outside diameter 10 mm and conforming to this standard shall be designated as:

Pipe Union Bolt 10 IS 3174

7 SAMPLING AND CRITERIA FOR CONFORMITY

Unless otherwise agreed to between the manufacturer and the supplier, the sampling and criteria for conformity with the standard shall be as laid down in IS 1367 (Part 17).

8 MARKING

The product shall include the manufacturer's name or trade-mark and lot or batch number.

8.1 BIS Certification Marking

Each Pipe Union Bolt may also be marked with the BIS Standard Mark

8.1.2 The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 2016 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards

ANNEX A
(Foreword)

COMMITTEE COMPOSITION

AUTOMOTIVE PRIMEMOVERS, TRANSMISSION SYSTEMS AND INTERNAL
COMBUSTION ENGINE SECTIONAL COMMITTEE, TED 02

Will be added later