

Indian Standard
SPECIFICATION FOR
COLD FORGED SOLID STEEL RIVETS FOR HOT CLOSING
(6 TO 16 mm DIAMETER)
(First Revision)
(Incorporating Amendment No. 1)

1. Scope — Covers the requirements of cold forged solid steel rivets for hot closing in the diameter range 6 to 16 mm, intended for general engineering purposes.

2. Material

2.1 The rivets shall be manufactured from steel conforming to IS : 7557-1974 'Specification for steel wire (up to 20 mm) for the manufacture of cold forged rivets'. They may also be manufactured from steel conforming to IS : 226-1975 'Specification for structural steel (standard quality) (*fifth revision*)' provided that the steel meets the dump test requirements given in IS : 1148-1973 'Specification for hot rolled rivet bars (up to 40 mm diameter) for structural purposes (*second revision*)'.

3. Dimensions

3.1 Dimensions of rivets shall be as shown in Tables 1 to 3.

3.2 Where rivets with snap head and countersunk head are made with a flat edge, they shall conform to the values given in IS : 10102-1982 'Technical supply conditions for rivets'.

3.3 The preferred nominal diameter-length combinations are given in Table 4.

4. Acceptance Tests

4.1 General — The sampling and acceptance criteria of the rivets shall be in accordance with IS : 10102-1982.

4.2 Test for Material — The material used for the manufacture of rivets shall be in accordance with the stipulations of the relevant material specifications at **2.1**.

4.3 Shear Test — When tested by the method prescribed in IS : 10102-1982 the rivets shall satisfy a minimum shear strength of 260 MPa.

4.4 Head Soundness Test — When tested by the method prescribed in IS : 10102-1982 the rivets, at room temperature, shall withstand the test without exhibiting any sign of marking at the fillet between the head and the shank.

5. Designation

5.1 A snap head rivet of 6 mm diameter having a length of 30 mm shall be designated as:

Snap Head Rivet 6 × 30 IS : 2155

6. General Requirements

6.1 The general requirements for the supply of rivets and their workmanship shall be in accordance with IS : 10102-1982.

6.2 Limits of surface cracks on rivets shall be in accordance with IS : 10102-1982.

7. Marking

7.1 All rivets shall be marked with the manufacturer's trade-mark on the head in raised figure.

7.2 ISI Certification Mark — The bags containing the rivets may also be marked with the ISI Certification Mark.

8. Mode of Delivery — Rivets shall be packed and delivered in accordance with IS : 10102-1982.

Adopted 21 May 1982

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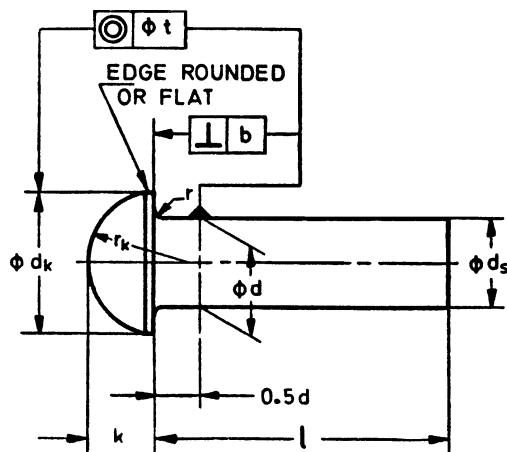
Price Group 3

BUREAU OF INDIAN STANDARDS
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TABLE 1 DIMENSIONS FOR SNAP HEAD RIVETS

(Clause 3.1)

All dimensions in millimetres.



$$t = 2IT14 \text{ for } d \leq 8$$

$$t = 2IT15 \text{ for } d > 8$$

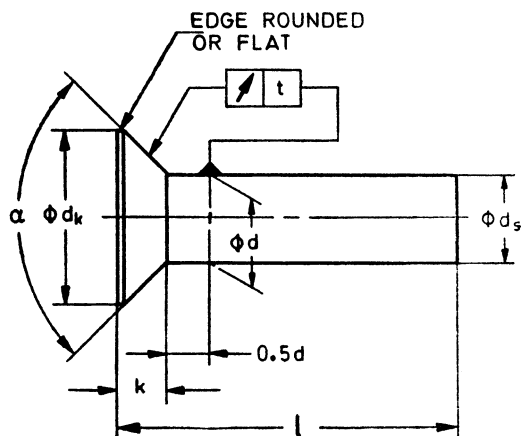
Nom	6	8	10	12	(14)	16
d Max	6.15	8.15	10.3	12.3	14.3	16.3
Min	5.85	7.85	9.7	11.7	13.7	15.7
d_s Min	5.82	7.76	9.4	11.3	13.2	15.2
Nom	9.6	12.8	16.0	19.2	22.4	25.6
d_k Max	9.9	13.1	16.36	19.60	22.8	26.1
Min	9.3	12.5	15.64	18.8	22.0	25.1
Nom	4.2	5.6	7.0	8.4	9.8	11.2
k Max	4.44	5.84	7.29	8.69	10.09	11.55
Min	3.96	5.36	6.71	8.11	9.51	10.85
r Max	0.3	0.4	0.5	0.6	0.7	0.8
r_k ≈	5.7	7.5	8	9.5	11	13

Note 1 — The nominal diameter d in parenthesis is of second preference.**Note 2** — For perpendicularity value b , see IS : 10102-1982.**Note 3** — For permissible limits of shank diameter, see also IS : 10102-1982.**Note 4** — Rivets shall be furnished with a definite radius under the head which shall not exceed the value, r given.**Note 5** — The shape of head shall be forged into part of a sphere. Necessary flat land for trimming (see 3.1) on the head periphery is permissible.**Note 6** — The value, r_k is given for snap design only and not intended for inspection purposes.

TABLE 2 DIMENSIONS FOR FLAT COUNTERSUNK HEAD RIVETS

(Clause 3.1)

All dimensions in millimetres.



$t = 2IT14$ for $d \leq 8$
 $t = 2IT15$ for $d > 8$

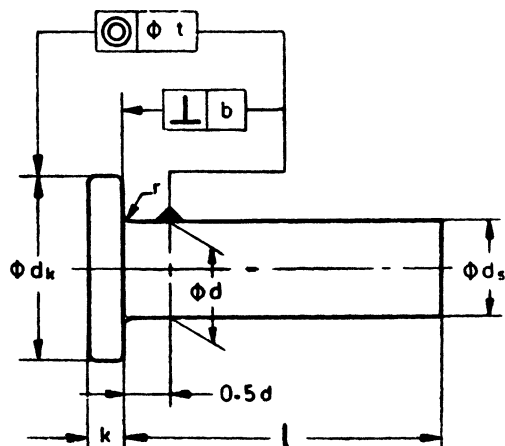
Nom	6	8	10	12	(14)	16
d Max	6.15	8.15	10.3	12.3	14.3	16.3
Min	5.85	7.85	9.7	11.7	13.7	15.7
d_s Min	5.82	7.76	9.4	11.3	13.2	15.2
Nom	12	16	20	24	21	24
d_k Max	12	16	20	24	21	24
Min	11.3	15.3	19.16	23.16	20.16	23.16
k ≈ Ref	3.0	4.0	5.0	6.0	6.0	6.9
$\alpha + 5^\circ$ 0	90°				60°	

Note 1 — The nominal diameter, d in parenthesis is of second preference.**Note 2** — For permissible limits of shank diameter, see also IS : 10102-1982.

TABLE 3 DIMENSIONS FOR FLAT HEAD RIVETS

(Clause 3.1)

All dimensions in millimetres.



$t = 2IT14$ for $d \leq 8$
 $t = 2IT15$ for $d > 8$

Nom	6	8	10	12	(14)	16
d Max	6.15	8.15	10.3	12.3	14.3	16.3
Min	5.85	7.85	9.7	11.7	13.7	15.7
d_s Min	5.82	7.76	9.4	11.3	13.2	15.2
Nom	12	16	20	24	28	32
d_k Max	12.0	16.0	20	24	28	32
Min	11.3	15.3	19.16	23.16	27.16	31
Nom	1.5	2	2.5	3	3.5	4
k Max	1.9	2.5	3.0	3.6	4.1	4.6
Min	1.5	2	2.5	3	3.5	4
r Max	0.3	0.4	0.5	0.6	0.7	0.8

Note 1 — Nominal diameter, d in parenthesis is of second preference.**Note 2** — For permissible limits of shank diameter, see also IS : 10102-1982.**Note 3** — Perpendicularity tolerance value b , see IS : 10102-1982.**Note 4** — Rivets shall be finished with a definite radius under the head and shall not exceed the value, r given.

**TABLE 4 DIAMETER-LENGTH COMBINATIONS FOR COLD FORGED RIVETS FOR
HOT CLOSING**
(Clause 3.3)

All dimensions in millimetres.

<div><div><div>+ 0.5 0</div><div>for $l \leq 10$</div></div><div><div>+ 1.0 0</div><div>for $10 < l \leq 20$</div></div><div><div>+ 1.5 0</div><div>for $l > 20$</div></div></div>		NOMINAL DIAMETER d					
		6	8	10	12	(14)	16
12							
14							
16							
18							
20							
22							
24							
26							
28							
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95							
100							
105							
110							
RIVET HOLE DIAMETER (FOR REFERENCE)	BASIC TOL H12	6.3	8.4	10.5	13	15	17

Note 1 — The nominal diameter in parenthesis is of second preference.

Note 2 — The preferred lengths are between the stepped lines.

EXPLANATORY NOTE

This standard was first published in 1962. The following major changes have been made in the present revision:

- Sizes 6 to 16 mm have been covered instead of 1.6 to 10 mm in the earlier edition. For sizes below 6 mm, IS : 2998-1982 'Cold forged steel rivets for cold closing (1 to 16 mm)' should be referred. While the manufacture is restricted to cold forging, the method of closing by 'hot closing' is indicated.
- Bend test and flattening test have been deleted and substituted by shear test and head soundness test.
- The method of representation of tolerances for form and position have been modified according to the latest practices.

This edition 2.1 incorporates Amendment No. 1 (December 1984). Side bar indicates modification of the text as the result of incorporation of the amendment.