

BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

घरेलू प्रयोजनों हेतु सिलाई मशीनों के लिए संयोजक छड़ — विशिष्टि

(आई एस 3816 का पहला पुनरीक्षण)

Draft Indian Standard

**CONNECTING RODS FOR SEWING MACHINES FOR
HOUSEHOLD PURPOSES — SPECIFICATION**

(First Revision of IS 3816)

ICS 61.080; 77.140.60

Sewing Machines Sectional
Committee, MED 29

Last date for receipt of comments
is **17 December 2024**

FOREWORD

(Formal clause will be added later)

This standard was first published in 1966. The present revision has been taken up with a view to incorporating the modifications found necessary as a result of experience gained on the use of this standard. Also, in this revision, the standard has been brought into the latest style and format of Indian Standard, and references to Indian Standards, wherever applicable have been updated. The BIS certification marking clause has been modified to align with the revised *Bureau of Indian Standards Act, 2016*. In this revision, all the amendments have been incorporated.

This standard covers the requirements for connecting rods for sewing machines for household purposes and is intended to assist in regulating the quality of indigenous connecting rods for sewing machines.

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*)’.

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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***CONNECTING RODS FOR SEWING MACHINES FOR
HOUSEHOLD PURPOSES — SPECIFICATION***(First Revision)***1 SCOPE**

1.1 This standard specifies the requirements for two types of connecting rods for sewing machines for household purposes.

1.2 This standard does not deal with connecting rods for sewing machines for industrial and special purposes.

2 REFERENCES

The standards listed in Annex A 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 these standards.

3 NOMENCLATURE

For the purpose of this standard the nomenclature as given in Fig. 1 shall apply.

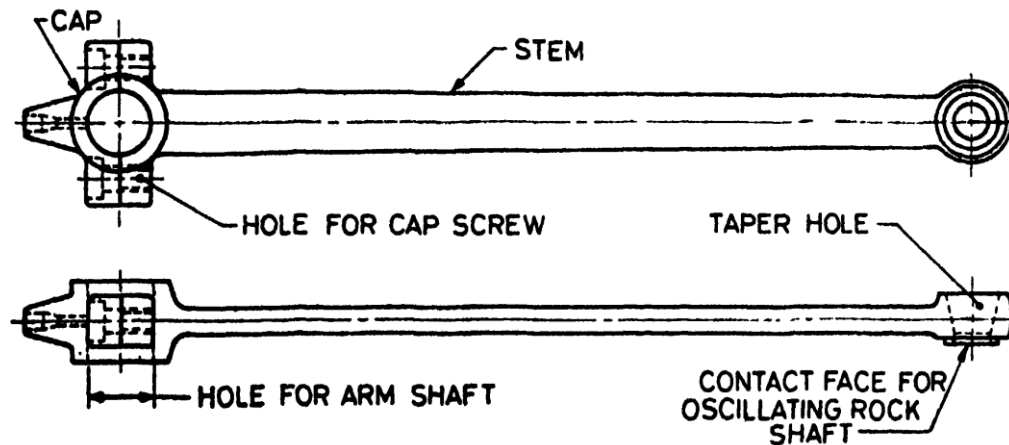


FIG. 1 NOMENCLATURE FOR CONNECTING ROD

4 MATERIAL

The connecting rods shall be manufactured from any suitable grey cast iron conforming to IS 210, or forged from any suitable steel, of IS 1570 (Part 2) or IS 1875, or steel conforming to IS 2062.

5 HARDNESS

The large end and the small end of the connecting rods forged from steel shall be hardened to a depth of 0.5 mm and 0.3 mm respectively to attain a hardness of minimum 550 HV 5 [see IS 1501 (Part 1)/ISO 6507-1].

6 DIMENSIONS

The main dimensions of the connecting rods shall be as given in Table 1 and Table 2.

7 TOLERANCES

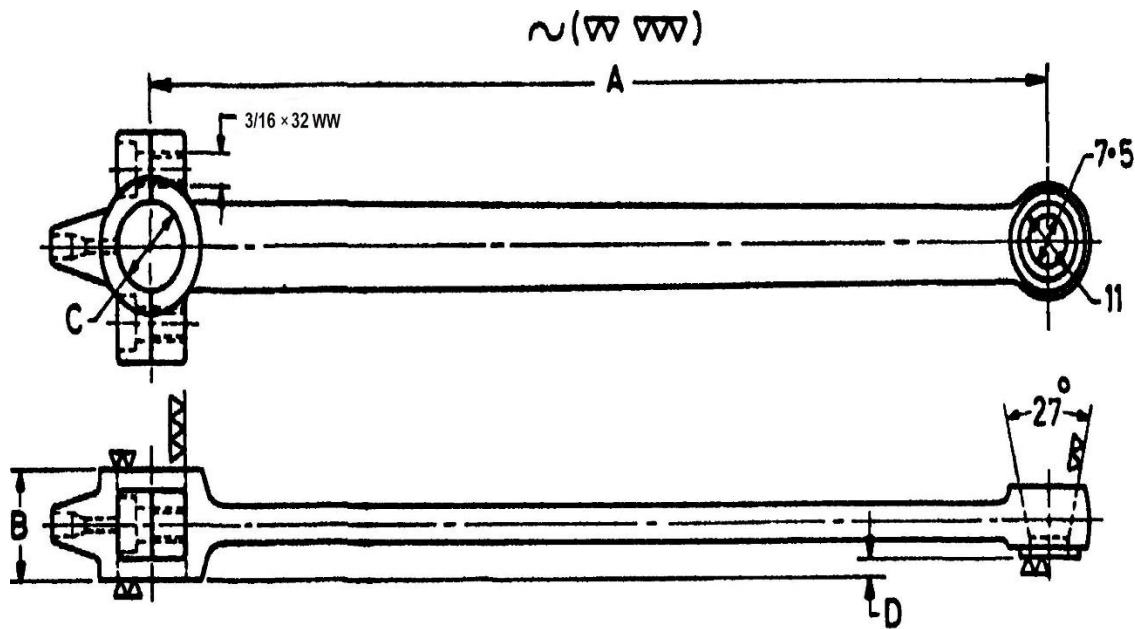
7.1 The error in parallelism of the axis of the hole for arm shaft with respect to the centre line of taper hole shall not exceed 0.3 mm per 100 mm.

7.2 The ovality and taper of the hole for arm shaft shall be within 0.007 mm.

Table 1 Dimensions for Connecting Rod, Type A

(Clause 6.1)

All dimensions in millimetres.

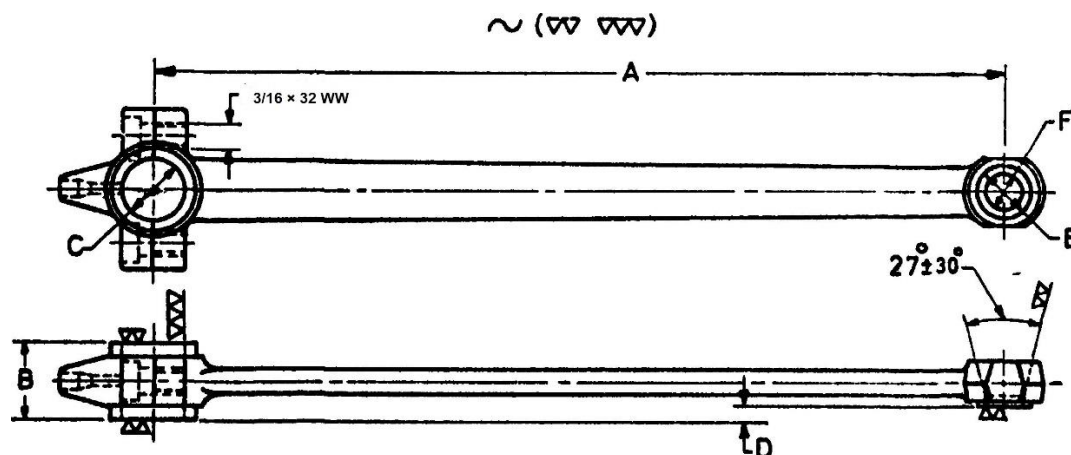


	A	B	C	D
Maximum	173.60	15.800	12.818	3.00
Minimum	173.00	15.720	12.800	2.87

Table 2 Dimensions for Connecting Rod, Type B

(Clause 6.1)

All dimensions in millimetres.



	A	B	C	D	E	F
Maximum	173.02	15.928	12.720	3.43	10.80	7.595
Minimum	172.92	15.775	12.705	2.92	10.55	7.495

7.3 The error in squareness of the hole for arm shaft with respect to the machined surfaces of the large end boss shall be within 0.4 mm per 100 mm.

7.4 The contact face for oscillating rock shaft shall be square with the axis of taper hole within 0.2 mm per 100 mm.

7.5 The screws for fixing the cap and stem shall be firmly fitted and the contact faces of the cap and the stem shall be on the same centre line as that of the arm shaft hole within 0.1 mm.

NOTE — This may be determined by fitting a mandrel into hole for arm shaft and the connecting rod rotated. The connecting rod shall rotate freely at the full tightening position of the cap fixing screws of the connecting rod.

7.6 Tolerances on untoleranced dimensions shall be as specified in IS 2102 (Part 1)/ISO 2768-1 and IS 17894 /ISO 22081.

8 WORKMANSHIP AND FINISH

8.1 The connecting rods manufactured from grey cast iron shall be dull nickel plated or given any other adequate surface treatment to prevent rust.

8.2 The connecting rods forged from steel shall be completely blackened to prevent rusting.

8.3 The fitting portions of the connecting rods shall be machined to a fine finish.

8.4 The hole for arm shaft of connecting rods forged from steel shall be precision lapped.

8.5 The connecting rods shall be well finished without any crack, flaw, blow hole, burrs, rust or inferior surface treatment and black mark on bearing surface.

8.6 Fool-proof marking for cap and stem fitting shall be provided on the connecting rod.

9 MARKING

9.1 The connecting rods shall be marked with the manufacturer's name or trademark, if required.

9.2 BIS Certification Marking

The product may also be marked with Standard Mark.

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

10 PACKING

Each connecting rod shall be given a suitable antirust coating or wrapped in vapour phase inhibitor paper (commonly known as VIP Paper). The wrapped connecting rods shall be securely packed in accordance with the best prevalent trade practice. Each package shall bear the manufacturer's name or trademark, the type and description of contents.

ANNEX A

(Clause 2)

LIST OF REFERRED STANDARDS

<i>IS No.</i>	<i>Title</i>
IS 210 : 2009	Grey iron castings — Specification (<i>fifth revision</i>)
IS 1501 (Part 1) : 2020/ ISO 6507-1 : 2018	Metallic materials — Vickers hardness test: Part 1 Test method (<i>fifth revision</i>)
IS 1570 (Part 2)	Schedules for wrought steels: Part 2 carbon steels (Unalloyed Steels)
Sec 1 : 1979	Wrought products (other than wires) with specified chemical composition and related properties (<i>first revision</i>)
Sec 2 : 1987	Carbon steel wires with related properties (<i>first revision</i>)
IS 1875 : 1992	Carbon steel billets, blooms, slabs and bars for forgings — Specification (<i>fifth revision</i>)
IS 2062 : 2011	Hot rolled medium and high tensile structural steel — Specification (<i>seventh revision</i>)
IS 2102 (Part 1) : 1993/ ISO 2768-1 : 1989	General tolerances: Part 1 Tolerances for linear and angular dimensions without individual tolerance indications (<i>third revision</i>)
IS 17894 : 2022/ ISO 22081 : 2021.	Geometrical product specifications (GPS) — Geometrical tolerancing — General geometrical specifications and general size specifications