

BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

घरेलू सिलाई मशीनें — कैम-टाइप सिलाई मशीनों के लिये थ्रेड टेक-अप लीवर

उप-सम्मुच्चय — विशिष्टि

(चौथा पुनरीक्षण)

DRAFT Indian Standard

**HOUSEHOLD SEWING MACHINES — THREAD TAKE-UP LEVER
SUB-ASSEMBLY FOR CAM-TYPE
SEWING MACHINES — SPECIFICATION**

(Fourth Revision of IS 3290)

ICS 61.080

**Sewing Machines Sectional
Committee, MED 29**

**Last date for receipt of
comments is 30 May 2022**

FOREWORD

(Adoption clauses to be added later)

This standard was first published in 1965 and subsequently revised in 1969, 1981, and 1994.

Major changes in this revision are as follows:

- a) Reference standards have been updated;
- b) The grade for nickel-chrome plating has been updated;
- c) Marking requirement has been revised.

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

**HOUSEHOLD SEWING MACHINES —THREAD TAKE-UP LEVER SUB-ASSEMBLY
FOR CAM-TYPE SEWING MACHINES — SPECIFICATION**

(*Fourth Revision*)

1 SCOPE

This standard covers the requirements for thread take-up lever sub-assembly for cam-type sewing machines for household purposes.

2 REFERENCES

The standards listed below contain provisions which through reference in this text, constitute 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 the standards indicated below:

<i>IS No.</i>	<i>Title</i>
513 (Part 2) : 2016	Cold reduced carbon steel sheet and strip Part 2 High Tensile and Multi-phase steel (<i>sixth revision</i>)
1068 : 1993	Electroplated coatings of nickel plus chromium and copper plus nickel plus chromium (<i>third revision</i>)
1079 : 2017	Hot rolled carbon steel sheet, plate and strip — Specification (<i>seventh revision</i>)
1570 (Part 2/Sec 1) : 1979	Schedules for wrought steels Part 2 Carbon steels (Unalloyed steels), Section 1 Wrought products (other than, wire) with specified chemical composition and related properties (<i>first revision</i>)

3 NOMENCLATURE

The nomenclature of the thread take-up lever sub-assembly shall be as indicated in Fig. 1.

4 TYPES

The types of sub-assemblies are as follows:

- a) Type A Sub-assembly — With offset lever (*see also 7.1*); and
- b) Type B Sub-assembly — With straight lever (*see also 7.1*).

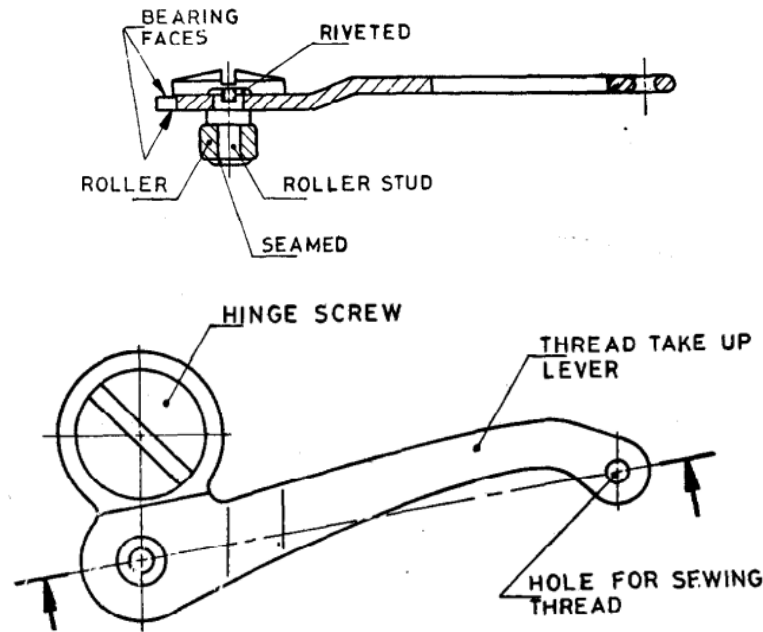


FIG. 1 NOMENCLATURE FOR THREAD TAKE-UP LEVER SUB-ASSEMBLY

5 MATERIAL

5.1 Lever

The thread take-up lever shall be manufactured from a sheet or strip of any suitable steel which can be suitably hardened or any equivalent steel which is wear-resistant [see IS 513 (Part 2) and IS 1079].

5.2 Hinge Screw and Roller

The hinge screw and roller shall be manufactured from any suitable steel which after suitable heat treatment fulfills the requirement for wear resistance.

5.3 Roller Stud

Roller stud shall be manufactured from any suitable steel, such as C 10 of Table 1 of IS 1570 (Part 2/Set 1).

6 HARDNESS

6.1 The thread take-up lever shall have a minimum hardness of 350 HV around the hole for the sewing thread and bearing surfaces.

6.2 The hinge screw shall have a minimum hardness of 300 HV and the threaded portion shall be kept soft to avoid breakage during rigid tightening.

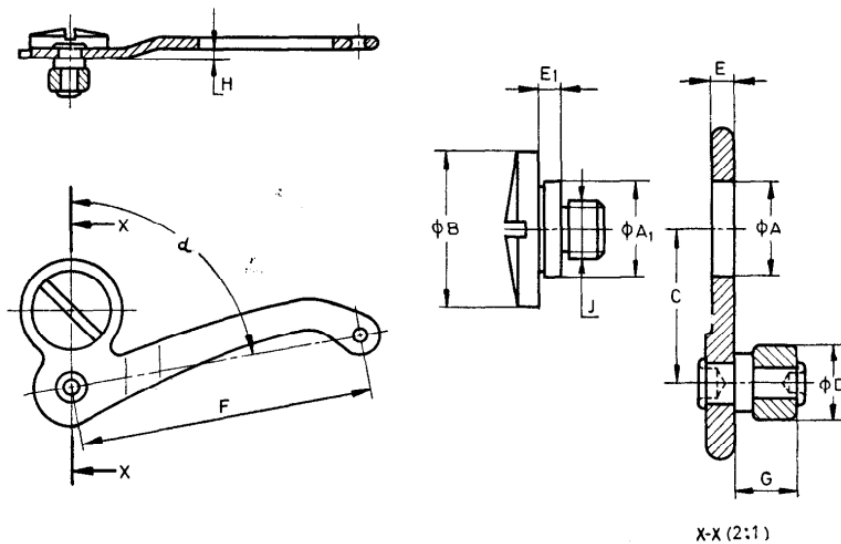
6.3 The roller shall have a minimum hardness of 450 HV.

7 DIMENSIONS

7.1 The main dimensions of thread take-up lever sub-assembly shall be as given in Table 1.

7.2 The centre distance between the axis of the hole for the screw and roller may be measured indirectly by measuring the clearance between the outside of the fixture and the roller as shown in Fig. 2

Table 1 Dimensions of Thread Take-up Lever Sub-assembly
(Clause 7.1)



All dimensions in millimeters.

Sl No (1)	Type (2)	A (3)	A ₁ (4)	B (5)	C (6)	D (7)	E (8)	E ₁ (9)	F (10)	G (11)	H (12)	J (13)	α (14)
i)	Type A	9.544	9.531	16.06	15.90	7.940	2.242	2.261	61.03	6.54	2.02	M6	80°
ii)		9.525	9.513	15.94	15.80	7.931	2.230	2.248	60.98	6.46	1.97		
iii)	Type B	10.180	10.172	16.00	15.69	7.935	2.235	2.255	63.40	7.10	Nil	M6	83°
iv)		10.167	10.160	15.75	15.59	7.927	2.225	2.235	63.35	7.02			

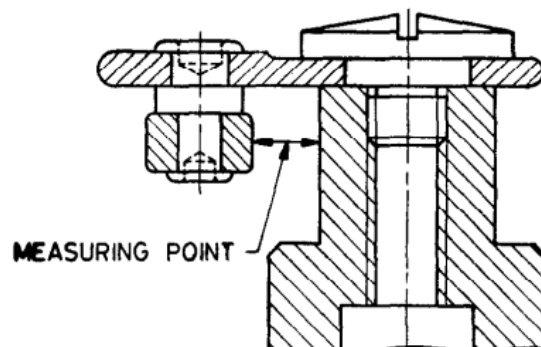


FIG. 2 METHOD OF MEASUREMENT OF CENTRE DISTANCE BETWEEN AXIS OF HOLE FOR SCREW
AND ROLLER (DIMENSIONS C)

8 TOLERANCES

- 8.1** The total indicator reading of the external sliding face of the roller when rotated about roller stud shall not exceed 0.01 mm.
- 8.2** The clearance in axial direction between roller and roller stud shall not exceed 0.1 mm.
- 8.3** The threaded diameter of hinge screw shall be concentric with the bearing diameter of hinge screw within 0.05 mm.
- 8.4** The squareness of roller with reference to the thread take-up lever shall not exceed 0.5 mm per 100 mm.
- 8.5** Out of roundness of roller shall not exceed 0.005 mm.
- 8.6** The error in parallelism of two bearing faces shall be within 0.008 mm.
- 8.7** The hinge screw hole shall be square with reference to the bearing faces within 0.005 mm per 10 mm.
- 8.8** The error in the squareness of the bearing face of the hinge screw with reference to the centre line of the screw shall be within 0.005 mm per 10 mm.

9 WORKMANSHIP, FINISH AND MANUFACTURE

- 9.1** The roller stud shall be firmly riveted to the thread take-up lever and the roller shall rotate freely over the roller stud without axial play.
- 9.2** The hole for the sewing thread in the thread take-up lever shall be countersunk and polished so that the thread passes through the thread hole smoothly and freely.
- 9.3** All parts shall be free from burrs, sharp edges, rust, and cracks and shall be well finished.

The thread take-up lever shall be nickel-chrome plated conforming to at least service condition number 1 with designation Fe/Nil0b Cr r of IS 1068.

The thickness of the coating shall not be less than 0.010 mm. The coating shall be free from flaws, unevenness, cracks, stains, and other defects.

- 9.4** Hinge screw shall be properly fitted to the hold on thread take-up lever and the lever shall oscillate smoothly such that there shall be no side play/tilting.

10 MARKING

- 10.1** The thread take-up lever shall be permanently marked with the following:

- a) Manufacturer's name or trademark; and
- b) Type; and
- c) Batch number.

10.2 BIS Certification Marking

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.

11 PACKING

11.1 Each thread take-up lever sub-assembly shall be wrapped in a 400 G LDPE or equivalent bag after giving a suitable antirust coating and then packed in a paperboard carton in accordance with the best prevalent trade practice.

11.2 Each packing box shall bear the manufacturer's name, trade-mark, and description of contents.

ANNEX A

(Foreword)

LIST OF INDIAN STANDARDS ON SEWING MACHINES

<i>IS No.</i>	<i>Title</i>
1294 : 1989	Bobbins for sewing machines for household purposes (<i>third revision</i>)
1295 : 1990	Household sewing machines — Needle bar — Specification (<i>second revision</i>)
1297 : 1991	Household sewing machines — Presser bar — Specification (<i>third revision</i>)
1610 : 2018	Household sewing machines — General requirements (<i>fourth revision</i>)
2181 : 1973	Household sewing machine needles (<i>first revision</i>)
3290 : 1994	Household sewing machines — Thread take-up lever sub-assembly for cam type sewing machines — Specification (<i>third revision</i>)
3291 : 1968	Thread take-up cams for sewing machines for household purposes (<i>first revision</i>)
3299 : 1969	Oscillating rock shafts for sewing machines for household purposes (<i>first revision</i>)
3375 : 1991	Household sewing machines — Bobbin case — Specification
3816 : 1966	Connecting rods for sewing machines for household purposes
3817 : 1991	Household sewing machines — Arms Shaft — Specification (<i>first revision</i>)
3868 : 1966	Feed lifting rock shaft for sewing machines for household purposes
4181 : 1967	Feed fork for sewing machines for household purposes
4188 : 1996	Household sewing machines — Oscillating shall (<i>first revision</i>)
4338 : 1991	Household sewing machines — Vertical oscillating shuttle — Specification (<i>second revision</i>)
4339 : 1997	Household sewing machines — Needle bar link studs — Specification (<i>first revision</i>)
4340 : 1967	Needle bar link for sewing machines for household purposes
4341 : 1997	Household sewing machines — Feed bar rollers and studs — Specification (<i>first revision</i>)
4342 : 1967	Square slider for oscillating rock shaft for sewing machines for household purposes
4632 : 1968	Square slider for stitch regulator shaft for sewing machines for household purposes
4735 : 1968	Arm shaft cams for sewing machines for household purposes
5740 : 1996	Household sewing machines — Memorandum of screw threads for sewing machine components (<i>first revision</i>)
6903 : 1973	Glossary of terms relating to sewing machines for household purposes
7491 : 1989	Sewing machines, household — Accuracy requirements (<i>first revision</i>)
7492 : 1989	Sewing machines, household — Sewing requirements (<i>first revision</i>)
7493 : 1989	Sewing machines, household — Durability requirements (<i>first revision</i>)
8892 : 1978	Bobbins for sewing machines with rotating hooks for industrial use
9152 : 1979	Glossary of terms and identification symbols relating to classification of industrial sewing machines

9697 : 1980 Bobbin cases for sewing machines with rotating hooks for industrial use
9874 : 1981 Arm and bed assembly for sewing machines for household purposes
10040 : 1981 Rotating hooks for sewing machines for industrial use
10304 : 1982 Feed rock shaft for sewing machines for household purposes
10305 : 1982 Feed rock shaft crank for sewing machine for household purposes
10306 : 1982 Feed lifting rock shaft crank for sewing machines for household purposes
11280 : 1985 Household sewing machines — Feed bar (*first revision*)
11345 : 1985 Oscillating shaft crank for sewing machines for household purposes
11347 : 1995 Household sewing machines — Shuttle driver — Specification (*first revision*)
12058 : 1987 Slide plates for sewing machines for household purposes
12109 : 1987 General requirements for light duty sewing machine heads for industrial use
12740 : 1989 Household sewing machines — Stand — Specification
12789 : 1989 Household sewing machines — Table and base
12798 : 1989 Household sewing machines — Fly wheels — Specification
13120 : 1991 Household sewing machines — Flywheel bush — Specification
13192 : 1991 Household sewing machines — Hand attachment assembly
13806 : 1993 Household sewing machine — Closed type shuttle race assembly —
Specification
13825 : 1993 Household sewing machine — Arm shaft front bush — Specification
13872 : 1993 Household sewing machine — Stitch regulator — Specification

13972 : 1994 Household sewing machine — Bobbin winder assembly — Specification
14207 : 1994 Household sewing machine — Open type shuttle race subassembly —
Specification