

**BUREAU OF INDIAN STANDARDS**

**DRAFT FOR COMMENTS ONLY**

*(Not to be reproduced without the permission of BIS or used as an Indian Standard)*

*भारतीय मानक मसौदा*

**घरेलू सिलाई मशीन — बॉबिन वाइन्डर असेंबली — विशिष्टि**

*(आई एस 13972 का पहला पुनरीक्षण)*

**Draft Indian Standard**

**HOUSEHOLD SEWING MACHINES — BOBBIN WINDER ASSEMBLY —  
SPECIFICATION**

*( First Revision of IS 13972 )*

ICS 61.080

---

Sewing Machine Sectional  
Committee, MED 29

Last date for receipt of  
comments is **20 January 2024**

---

**FOREWORD**

*(Formal clauses to be added later)*

This standard has been prepared to unify and rationalize the types and sizes of sewing machine components for manufacturing in economic quantities. Bobbin winder assembly is actuated by the contact diameter of the flywheel and the quality of stitching depends to a large extent on the efficiency of the assembly besides the other parameters.

This standard was first published in 1994. 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 and amendments issued from time to time have also been incorporated. 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*.

**Doc: MED 29 (24192)**

**November 2023**

For general requirements, IS 1610 : 1989 ‘Household sewing Machines — General requirements’ shall be referred.

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 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 places retained in the rounded-off value should be the same as that of the specified value in this standard.

## **1 SCOPE**

**1.1** This standard specifies the requirements for bobbin winder assembly for sewing machines for household purposes.

**1.2** It deals with bobbin winder assembly to be actuated by the contact diameter of the flywheel.

## **2 REFERENCES**

The standards listed below contain provisions which through their 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 possibilities of applying the most recent editions of the standards indicated below.

| <i>IS No.</i>                  | <i>Title</i>   |
|--------------------------------|--|
| IS 101 (Part 3/ Sec 4) : 1987  | Method of sampling and test for paints, varnishes and related products : Part 3 Test on paint film formation, Section 4 Finish ( <i>third revision</i> )   |
| IS 101 (Part 5/ Sec 1) : 1988  | Method of sampling and test for paints, varnishes and related products : Part 5 Mechanical test for paint film, Section 1 Hardness test ( <i>third revision</i> )                                      |
| IS 210 : 2009                  | Grey iron castings - Specification ( <i>fifth revision</i> )   |
| IS 1068 : 1993                 | Electroplated coating nickel plus chromium and copper plus nickel plus chromium ( <i>third revision</i> )  |
| IS 1570 (Part 2/ Sec 1) : 1979 | Schedule for wrought steels: Part 2 Carbon steel (unalloyed steel), Section 1 Wrought products. (other than write) with specified chemical composition and related properties( <i>first revision</i> ) |
| IS 2500 (Part 1) : 2000        | Sampling procedures for inspection by attributes: Part 1 sampling schemes indexed by acceptance quality limit (AQL) for lot - By - Lot inspection ( <i>third revision</i> )                            |
| IS 4905 : 2015                 | Random sampling and randomization procedures ( <i>first revision</i> )   |

## **3 NOMENCLATURE**

Nomenclature of the bobbin winder assembly shall be as indicated in Fig. 1.

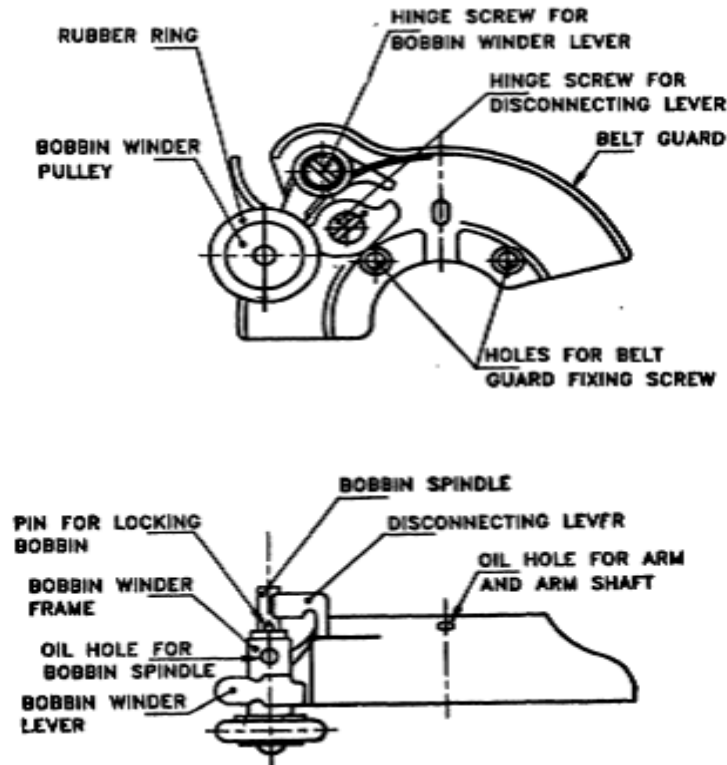


FIG. 1 NOMENCLATURE FOR BOBBIN WINDER ASSEMBLY

#### **4 MATERIAL**

**4.1** Cast iron parts shall be manufactured from cast iron conforming to FG 150 of IS 210.

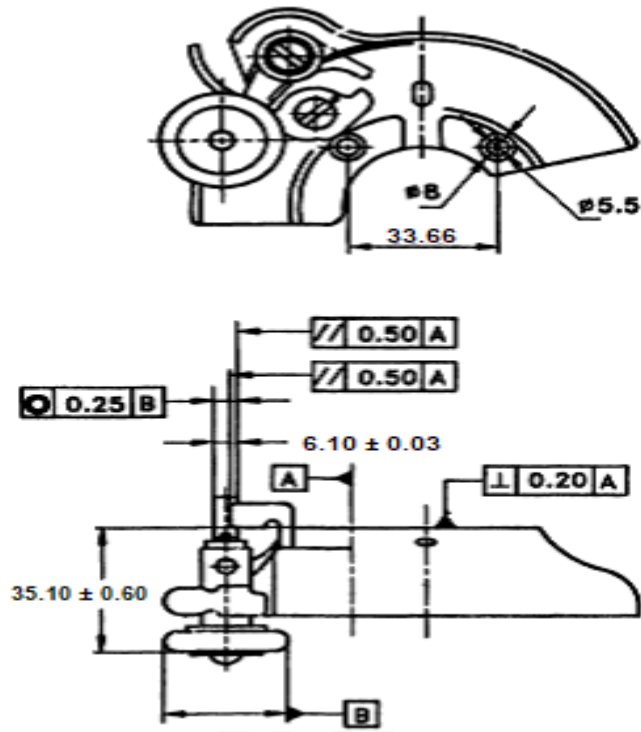
**4.2** Steel parts shall be manufactured from any suitable steel, such as 20C8 or 40C8 of IS 1570 (Part 2/Sec 1).

#### **5 HARDNESS**

All the screws, springs used in the sub-assembly shall be given suitable treatment to ensure satisfactory function.

#### **6 DIMENSIONS**

The main dimension of bobbin winder assembly shall be as given in Fig. 2.



All dimensions in millimetres.

FIG. 2 DIMENSIONS FOR BOBBIN WINDER ASSEMBLY

## 7 TOLERANCES

7.1 The axial play between the outer diameter of bobbin spindle and its hole on bobbin winder frame shall not exceed 0.15 mm.

7.2 The play on the disconnecting lever at the contact face with bobbin shall not exceed 0.5 mm.

7.3 Provision for adjustment against wear on friction ring shall be made in the design.

## 8 LUBRICATION

8.1 Provision shall be made on the bobbin winder frame for oiling the bearing surface on bobbin spindle.

8.2 Provision for oiling the bearing for arm shaft with the arm shall also be made through belt guard casting.

## 9 WORKMANSHIP AND FINISH

9.1 The bobbin winder assembly shall be well-finished and all the parts shall be free from defects such as cracks, rust, burrs, sharp edges, scratches, blisters, manufacturing defects and inferior surface treatments.

9.2 Components of bobbin winder assembly shall have chrome nickel plated surface finish conforming to at least Service Grade No. 1 with Designation Fe/Ni 10b Cr r of IS 1068.

**9.3** The painted parts shall have good, smooth and glossy surface finish and shall be free from defects. The colour of the stoving enamel shall be as desired by the buyer. The design and colour of transfer shall be as desired by the buyer. Paint film finish and harness shall conform to IS 101 (Part 3/Sec 4) and IS 101 (Part 5/Sec 1) respectively.

**9.4** The movement of the disconnecting lever and bobbing winder lever shall be smooth and no stickiness shall be felt at intermediate positions.

**9.5** Rust preventive treatment shall be given to other hardware items and visible portion.

**9.6** The screws shall be rigidly tightened.

**9.7** The assembly shall be such that the thread winding shall stop automatically by disengagement of disconnecting lever when it is filled to desired capacity. In addition to the auto-trip system, adjusting screw type system may be provided.

**9.8** There shall be no sticky feeling when the bobbin spindle is rotated for one revolution at a slow speed.

## **10 SAMPLING**

**10.1** Unless otherwise agreed between the manufacturer and the buyer the sampling plan as given in Annex A shall be followed.

**10.2** For further information, reference may be made to IS 2500 (Part 1).

## **11 TESTS**

**11.1** The locking of the bobbing on bobbin spindle shall be ensured to avoid slippage.

**11.2** The winding on bobbin shall automatically get tripped off when nearly 80 percent winding will be complete.

**11.3** The rubber ring shall not slip over the bobbin pulley.

**11.4** After engaging the bobbin on bobbin spindle, when the bobbin winder lever is pressed, the disconnecting lever shall fall freely in the gap between two washers of bobbin.

## **12 MARKING**

The bobbin winder assembly may be marked with the source of manufacture or trade-mark.

### **12.1 BIS Certification Marking**

The product may also be marked with Standard Mark.

**12.1.1** 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 products may be marked with the Standard Mark.

**13 PACKING**

**13.1** Each bobbin winder assembly shall be given a suitable antirust coating and then individually wrapped in a suitable polyethylene bag.

**13.2** The wrapped bobbin winder assembly shall be securely packed in card board carton in accordance with the best prevalent trade practice. Each carton shall bear the manufacturer's name or trade-mark, type and description of contents/quantity.

**ANNEX A**  
(Clause 10.1)

**SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY**

**A-1 SCALE OF SAMPLING**

**A-1.1 Lot**

In any consignment all the bobbin winders of same type and manufactured from the same material under essentially similar conditions of manufacture shall be grouped together to constitute a lot.

**A-1.2** For ascertaining the conformity of the lot to the requirements of specification, tests shall be carried out for each lot separately. The number of bobbin winders to be selected at random for this purpose shall be in accordance with col 1 and 2 of Table 1.

**A-1.3** If the bobbin winders are packed individually, in order to ensure the randomness of selection IS 4905 shall be used.

**A-1.4** If the bobbin winders are packed in different cartons, a suitable number of cartons (not less than 20 percent of the total in the lot subject to a minimum of 2) shall be chosen at random. From each of the cartons so chosen, an approximately equal number of bobbin winders shall be picked up from its different parts so as to obtain the required number of bobbin winders specified in col 2 of Table 1.

**A-2 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY**

**A-2.1** The bobbin winders selected according to **A-1.2** and **A-1.3** or **A-1.4** shall be examined for dimensions (*see* 6), tolerances (*see* 7) workmanship and finish (*see* 9) and other tasks (*see* 11). If the number of bobbin winders failing to meet one or more of the requirements mentioned above is less than or equal to the permissible number of defectives given in col 3 of Table 1, the lot shall be declared as conforming to the requirements of those characteristics.

**Table 1 Scale of Sampling and Permissible Number of Defectives**  
(Clauses A-1.2, A-1.4 and A-2.1)

| No. of Bobbin Winders in the Lot<br><i>N</i> |    |     | For Dimensions Tolerances and<br>Workmanship and Finish |                                    |
|--|----|-----|---|------------------------------------|
|  |    |     | Sample Size<br><i>n</i>                                 | Permissible No.<br>of Defectives * |
| (1)  |    |     | (2)   | (3)                                |
| Up   | to | 15  | 5   | 0                                  |
| 16   | to | 40  | 8   | 0                                  |
| 41   | to | 110 | 13  | 0                                  |
| 111  | to | 300 | 20  | 1                                  |
| 301  | to | 500 | 32  | 1                                  |
| 501  | to | 800 | 50  | 2                                  |

**Doc: MED 29 (24192)**

**November 2023**

|       |     |       |     |   |
|-------|-----|-------|-----|---|
| 801   | to  | 1 300 | 80  | 3 |
| 1 301 | and | above | 125 | 5 |

\* This ensures that lots containing only half percent or less defective will be acceptable most of the time.