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“जाने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Sewing Machines Sectional Committee had been approved by the Mechanical Engineering Division Council.

This standard was first published in 1960. It was subsequently revised in 1981 and 1989. The present revision has been undertaken to incorporate the latest references to the sewing machine components and performance requirement standards and changes made in accessories in service box.

In preparing this standard, assistance has been derived from the following standards issued by Japanese Industrial Standard Committee:


For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the results of a test or analysis, shall be rounded off in accordance with IS 2: 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of specified value in the standard.
Indian Standard

HOUSEHOLD SEWING MACHINES —
GENERAL REQUIREMENTS
(Third Revision)

1 SCOPE

This standard covers the general requirements for straight lock-stitch sewing machines head, suitable for driving with any mode of driving (such as hand attachment/foot arrangement/electrical motor); driving attachment — base/table/stand (one of the three) all as integral parts of sewing machine.

However the cover may be the option supply. When a sewing machine leaves the factory premises it shall be in ready to use state and have all integral parts fitted/supplied along with irrespective of the model.

2 REFERENCES

The Indian Standards given 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 subjected 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 given in the Annex A.

3 DRIVING ARRANGEMENTS

3.1 Hand Operated Machine

A hand operated machine shall be driven by a hand operated driving attachment conforming to IS 13192. It shall consist of a handle which folds upon the machine to allow it for placing of cover over the base. The handle shall be so geared that one revolution will drive the fly towards wheel at least three times. Hand operated machine shall also be suitable for foot/electric drive.

3.2 Foot Operated Machine

Foot operated machines shall be driven by a round leather belt from a hand wheel actuated by a foot treadle through a Pitman rod. The Pitman rod shall have a ball and a socket joint at the treadle end and a ball bearing at the crank end. Hand wheel and crank shall be mounted by trunnion bearings. A device shall be furnished to permit throwing the belt either off or on the hand when as desired. A safety dress guard shall be furnished.

3.3 Motor Driven Sewing Machines

3.3.1 Electrical Equipment

The electric motor driven machines shall be supplied with starting switch and speed controller. Inter connecting wiring between speed controller and motor shall be of a flexible three cored PVC or equivalent wire to permit adjustment of the driving motor/speed controller. The electrical equipment shall conform to the safety requirements according to IS 302 (Part 1). Electric sewing light fixture shall be an optional feature.

3.3.1.1 The electric motor shall be of not less than 0.04 kW. The selected rating of the motor shall be such as to ensure that it is not exceeded under full load operating condition. The motor shall generally comply with requirements of IS 996. It shall be suitable for operating on a 220/240 volts, single phase 50 hertz ac supply or at 220/240 volts dc supply. The starting characteristics of the motor shall suit the driven machines.

3.3.1.2 Speed controller

Motor driven machines shall have a foot operated speed controller capable of starting, stopping and varying the speed smoothly.

3.3.1.3 Pulley and belt

The motor shall be fitted with a pulley of size appropriate for driving the sewing machine satisfactorily at the required speed. A suitable endless driving belt made of suitable composite synthetic rubber with fabric reinforcement shall be used.

4 SEWING MECHANISM

4.1 Design

Machines shall be of single needle design, equipped with a sewing mechanism for producing two thread lock-stitch. A minimum clearance of 5 mm shall be provided between the presser foot in its up position and the needle plate.

4.2 Reverse Stitch Mechanism

Sewing machines shall be provided with a suitable mechanism to reverse the feeding action of the feed dog for back tuck stitching. The feeding direction shall be controlled by the stitch regulator and shall be capable of being changed while; the machine is in operation.

4.2.1 Stitch Regulator

The stitch regulator shall be conveniently located in the machine and shall be conforming to IS 13872. It shall
be capable of adjusting and locking the number of the stitch over a range from 8 to 20 stitches over 25 mm. There shall be an indication for the increase/decrease of the length of stitch.

4.3 Thread Tension

A thread arrangement shall be provided in each machine for both upper and lower threads and it shall be adjustable to the amount of tension required to achieve satisfactory stitches. Each machine shall be equipped with an automatic thread tension release, effective when the pressure foot is raised to the maximum height.

4.4 Timing

The timing of the needle in relation to the movement of the shuttle and clearance between the side of the needle (nearer to the shuttle) and the shuttle point should be such as to ensure that stitches are not skipped.

4.5 Fly Wheel

Each machine shall be fitted with a fly wheel conforming to IS 12798 designed in such a manner that the wheel can be disengaged from the sewing machine when required.

4.6 Bobbin Winder

Wind the bobbin which can be actuated without separate power by friction contact with the fly wheel, or driving belt of machine. The bobbin winder shall have suitable tension arrangement for controlling the thread to wind it evenly and with proper tension on the bobbin which shall be automatically released when the bobbin is filled to nearly 80 percent of its capacity. The bobbin winder shall conform to IS 13972.

4.7 Thread Spool Pin

Thread spool pin may be provided for each machine to hold spools/tubes of thread on arm and bed plate.

5 OTHER COMPONENTS

The other sewing machine component shall be conforming to existing Indian Standards on sewing machine components. A list of these standards is given in Annex B.

6 LUBRICATION

Provision shall be made for ready and proper application of lubricant to all bearing and frictional surfaces on machine. Lubricating orifices may be identified by using the word 'OIL'. Hand attachment gears that are generally required to be lubricated shall be suitably covered to exclude dust and dirt. An orifice for lubricating oil shall be provided on the cover.

7 TABLE/BASE/STAND

7.1 Table/Base/Stand shall be integral part of sewing machine and shall be supplied in wood or other suitable materials.

7.2 Wooden Table or Base

Wooden table and base shall conform to IS 12789.

7.3 Table or Base (Other Materials)

If mutually agreed between purchaser and supplier base or table for sewing machine may be supplied in other materials like plastics and other similar materials.

7.4 Stand

Stand for the sewing machine shall conform to IS 12740 if supplied with sewing machine.

8 WORKMANSHIP AND FINISH

8.1 Sewing machines and its accessories shall be of rigid construction, neat in appearance and ready for use. They shall be free from objectionable vibrations and shall be quiet in operation.

8.2 Surface coated with paint and varnish shall be hard and smooth, free from irregularities, flaws, cracks, dust specks and other defects. Appearance of the painted surface shall be graceful, good in colour and lustrous. The paint shall be unaffected by lubricating oils and not liable to soften at temperature up to 80°C. The transfer work shall be clear, neat and perfectly adhered to the paint coated surface and shall have a protective coat of clear stoving varnish.

8.3 Plating

Nickel and chromium plated parts shall satisfy the following conditions:

a) Colour and luster shall be good;

b) Surface shall be smooth and free from plating defects, such as blisters, pits, clouds, patches, cracks and stains;

c) Coating shall not peel off easily;

d) Thickness of nickel plus chromium coating of needle plate, slide plate, stop motion screw and fly wheel shall be conforming to service condition number 1 with designation Fe1Ni10b Cr of IS 1068; and

e) The bearing surfaces of needle bar and presser bar shall be hard chrome plated to a minimum depth of 0.004 mm or case hardened. If the hardness for case hardened needle bar and presser bar is between 450-500 HV [see IS 1501 (Part 1)]; then the bushes of suitable material are provided in sewing machine arm or normalized presser bar and needle bar shall be used.
9 SAMPLING

9.1 Unless otherwise agreed to between the supplier and the purchaser, the sampling plan as given in 9.1.1 shall be followed.

9.1.1 In case the sewing machine is assembled from the components manufactured to the requirements of various Indian Standards and an adequate proof through the record of tests is submitted to the buyer, the single sampling plan with inspection level II and AQL of 1 percent as given in Tables 1 and 2 of IS 2500 (Part 1) shall be followed.

10 TEST

10.1 Accuracy Requirements
Sewing machines shall conform to accuracy requirements as prescribed in IS 7491.

10.2 Sewing Requirements
Sewing machines shall conform to sewing requirements prescribed in IS 7492.

10.3 Durability Requirements
Sewing machines shall conform to durability requirements prescribed in IS 7493.

11 ACCESSORIES IN SERVICE BOX

11.1 The following items shall be supplied with each machine in a plastic box:

a) One oil bottle filled with 50 ml oil minimum;
b) Two screw drivers (engineering), one large and one small;
c) Three bobbins;
d) Three needles;
e) One embroidery plate (where drop feed arrangement is not provided);
f) A booklet containing manufacturer’s operating instruction and technical characteristics, such as nominal power input in watts (W) (in case of motor driven machine) and capability of adjustment of number of stitches over 25 mm;
g) Spool pin pad or felt washers (4 Nos.); and
h) Needle threader.

11.2 Spare parts and attachments given in 11.1 shall fit the machine with which they are provided and shall be interchangeable with machines of the same make and model.

12 MARKING

12.1 Each machine shall be identified by a name plate giving the name of model, manufacturer’s name or trade-mark. The serial number of the machine shall be engraved/punched on the bed plate.

12.2 BIS Certification Marking
The product may also be marked with the Standard Mark.

12.2.1 The use of the Standard Mark is governed by the provisions of Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

12.2.2 The product shall be marked with BIS Standard Mark at all the detachable components along with the Standard Mark, trade-mark and BIS Licence No.

13 PACKING

Packing of sewing machine shall be in accordance with IS 8355.
**ANNEX A**
*(Clause 2)*

**LIST OF REFERRED INDIAN STANDARDS**

<table>
<thead>
<tr>
<th>IS No.</th>
<th>Title</th>
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<tbody>
<tr>
<td>277 : 1992</td>
<td>Galvanized steel sheets (plain and corrugated)</td>
<td>7492 : 1989</td>
<td>Sewing requirements for sewing machines for household purposes</td>
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<tr>
<td>302 (Part 1) :</td>
<td>Safety of household and similar electrical appliances: Part 1 General</td>
<td>7493 : 1989</td>
<td>Sewing machines, household — durability requirements</td>
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<tr>
<td>1979</td>
<td>requirements (fifth revision)</td>
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<td></td>
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<tr>
<td>1989</td>
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<tr>
<td>996 : 1979</td>
<td>Single phase small a.c. and universal electrical motors (third revision)</td>
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<td>12789 : 1989</td>
<td>Household sewing machines — Tables and base</td>
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<tr>
<td>1984</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2500 (Part 1) :</td>
<td>Sampling inspection procedures: Part 1 Attributes sampling plan indexed by acceptance quality level (AQL) for lot by lot inspection (second revision)</td>
<td>13192 : 1991</td>
<td>Household sewing machines — Hand attachment assembly</td>
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## ANNEX B
*(Clause 5)*

**INDIAN STANDARDS ON SEWING MACHINES COMPONENTS**

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<th>IS No.</th>
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<tr>
<td>1294:1989</td>
<td>Bobbins for sewing machines for household purpose <em>(third revision)</em></td>
<td>4339:1967</td>
<td>Needle bar link studs for sewing machines for household purposes</td>
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<tr>
<td>1296:1989</td>
<td>Presser foot for sewing machines for household purposes <em>(second revision)</em></td>
<td>4341:1967</td>
<td>Feed holder roller for sewing machines for household purposes</td>
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<tr>
<td>2181:1973</td>
<td>Household sewing machines needles for household purpose <em>(first revision)</em></td>
<td>4632:1968</td>
<td>Square slider for stitch regulator shaft for sewing machines for household purposes</td>
</tr>
<tr>
<td>3290:1994</td>
<td>Thread take-up lever for cam type sewing machines for household purpose <em>(first revision)</em></td>
<td>4734:1968</td>
<td>Short needle bars for sewing machines for household purposes</td>
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<tr>
<td>3291:1968</td>
<td>Thread take-up cams for sewing machines for household purposes <em>(first revision)</em></td>
<td>4735:1968</td>
<td>Arm shaft cams for sewing machines for household purposes</td>
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<tr>
<td>3299:1969</td>
<td>Oscillating rock shafts for sewing machines for household purposes <em>(first revision)</em></td>
<td>9874:1981</td>
<td>Arm and bed assembly for sewing machines for household purposes</td>
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<tr>
<td>3816:1966</td>
<td>Connecting rods for sewing machines for household purposes</td>
<td>10305:1982</td>
<td>Feed rock shaft crank for sewing machine for household purposes</td>
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<td>3868:1966</td>
<td>Feed lifting rock shaft for sewing machines for household purposes</td>
<td>11345:1985</td>
<td>Oscillating shaft crank for sewing machines for household purposes</td>
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<td>3290:1994</td>
<td>Thread take-up lever for cam type sewing machines for household purpose <em>(first revision)</em></td>
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<td>Household sewing machines — Table and base — Specification</td>
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<td>Thread take-up cams for sewing machines for household purposes <em>(first revision)</em></td>
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<td>Household sewing machines — Flywheels — Specification</td>
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This Indian Standard has been developed from Doc : No. MED 29/LM 18 ( 0362 ).

Amendments Issued Since Publication

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Printed at New India Printing Press, Khurja, India