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**भारतीय मानक मसौदा**

**घरेलू सिलाई मशीनें — आर्म शाफ्ट — विशिष्टि**

**( आई एस 3817 का दूसरा पुनरीक्षण )**

**DRAFT Indian Standard**

**Household Sewing Machines —  
Arm Shaft — Specification**

**( Second Revision of IS 3817 )**

ICS 61.080

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**Sewing Machines Sectional  
Committee, MED 29**

**Last date for receipt of  
comments is 15 Aug 2022**

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**FOREWORD**

*(Adoption clause to be added later on)*

This standard was first published in 1966 and revised in 1991.

The major change in this revision is in the dimensions of the arm shaft such as diameter, length, width, taper, timing hole distance, timing hole angle, and pitch.

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 —  
ARM SHAFT — SPECIFICATION**

*(Second Revision of IS 3817)*

**1 SCOPE**

This standard specifies the requirements for arm shafts for sewing machines for household purposes.

**2 REFERENCES**

The standards listed below 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 the standards listed below. In case the standards are to be referred in this clause, they are to be listed as follows:

<i>IS/ISO No.</i>	<i>Title</i>
IS 1501 (Part 1) : 2020 / ISO 6507-1 : 2018	Metallic materials — Vickers hardness test Part 1 Test method ( <i>first revision</i> )
2102 (Part 1) : 1993	General tolerances : Part 1 Tolerances for linear and angular dimensions without individual tolerance indications ( <i>third revision</i> )
IS 2500 (Part 1) : 2000/ ISO 2859-1:1999	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/ ISO 24153: 2009	Random sampling and randomization procedures ( <i>first revision</i> )

**3 NOMENCLATURE**

The nomenclature of the arm shaft is shown in Fig. 1.

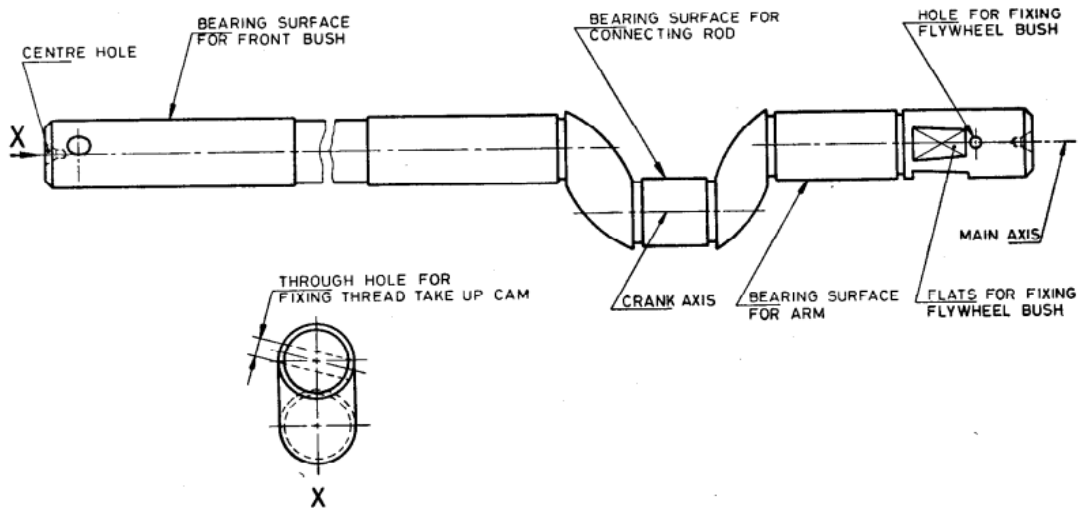


FIG. 1 NOMENCLATURE FOR ARM SHAFT

#### 4 TYPES

The arm shaft shall be of the following two types:

- a) Type A; and
- b) Type B.

#### 5 MATERIAL

Suitable material shall be used for the manufacture of arm shaft.

#### 6 HARDNESS

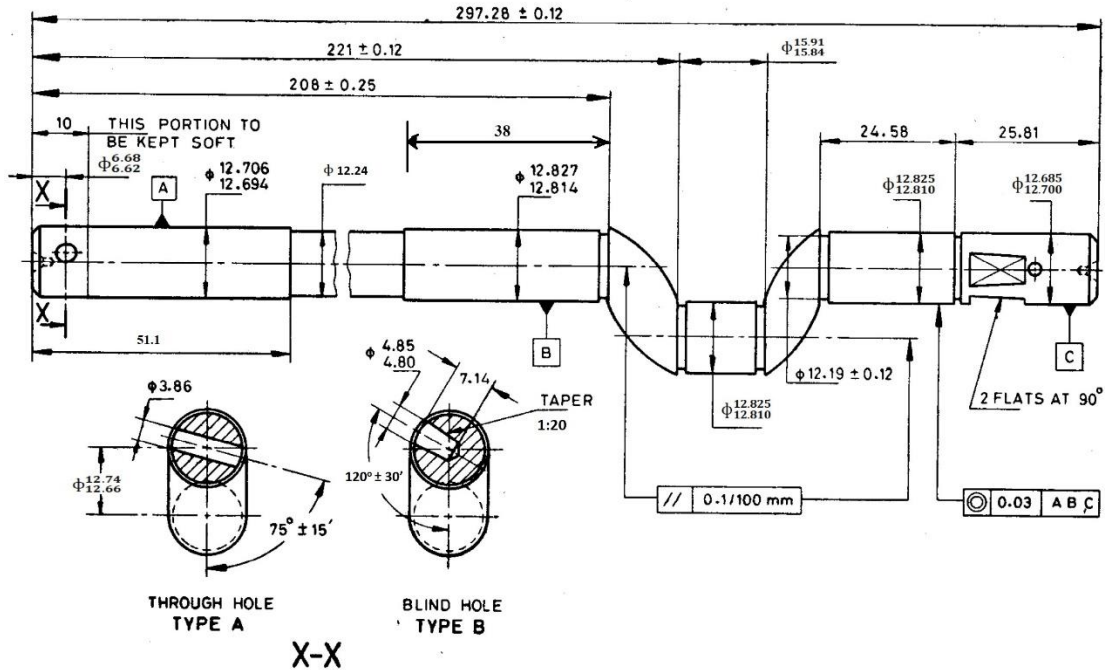
The bearing surfaces of the arm shaft shall be case hardened to attain a hardness value of minimum 500 HV [see IS 1501 (Part 1) / ISO 6507-1].

#### 7 DIMENSIONS AND TOLERANCES

7.1 The main dimensions for arm shafts shall be as given in Fig. 2.

7.2 Tolerances on untoleranced dimensions shall be in accordance with medium class of IS 2102 (Part 1).

NOTE — The arm shafts may be supplied without thread take up timing screw hole, if so desired by the purchaser.



Sl No.	Item	Type A	Type B
(1)	(2)	(3)	(4)
i)	Hole for fixing thread take-up cam	Through taper hole for taper dowel pin (drilled in assembly)	Taper hole for screw
ii)	Fixing of fly wheel bush	Two flats at right angles	Through taper hole for taper dowel pin (drilled in assembly)

All dimensions in millimetres.

FIG. 2 DIMENSIONS FOR ARM SHAFT

## 8 WORKMANSHIP AND FINISH

The arm shafts shall be well finished and free from any defects such as crack, burr, flaw, and rust.

## 9 MARKING

The arm shafts may be marked with the manufacturer's name or trademark.

### 9.1 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.

## **10 PACKING**

Each arm shaft shall be given a suitable antirust coating and wrapped in polyethylene bags. The wrapped arm shaft shall be securely packed in accordance with the best prevalent trade practice. Each package shall bear indication of the source of manufacture, type and description of contents.

## **11 SAMPLING**

Unless otherwise agreed to between the purchaser and the supplier the sampling plan as given in Annex A shall be followed. For further information, reference may be made to IS 2500 (Part 1) / ISO 2859-1.

## ANNEX A

(Clause 11)

### SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

#### A-1 SCALE OF SAMPLING

##### A-1.1 Lot

In any consignment, all the arm shafts of the 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 the specification, tests shall be carried out for each lot separately. The number of arm shafts to be selected at random for this purpose shall be in accordance with column (2) and (3) of Table 1.

**A-1.3** If the arm shafts are packed individually in order to ensure the randomness of selection, IS 4905 / ISO 24153 shall be used.

**A-1.4** If the arm shafts 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 arm shafts shall be picked up from its different parts so as to obtain the required number of arm shafts specified in column (3) of Table 1.

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

**A-2.1** The arm shafts selected according to **A-1.2** and **A-1.3** or **A-1.4** shall be examined for dimensions and tolerances (*see 7*) and workmanship and finish (*see 8*). If the number of arm shaft failing to meet one or more of the requirements mentioned above is less than or equal to the permissible number of defectives given in column (4) of the Table 1, the lot shall be declared as conforming to the requirements of these characteristics.

**A-2.2** In case of those lots which have been found satisfactory according to **A-2.1**, a number of arm shafts equal to the sample size indicated in column (5) of Table 1, shall be subjected to hardness test (*see 6*). Any arm shaft failing to meet the requirement for hardness shall be considered to be defective.

**A-2.2.1** If no defectives are found among the arm shafts subjected to the hardness test (*see A-2.2*), the lot shall be declared as conforming to the requirements of the specification, otherwise not.

**Table 1 Scale of Sampling and Permissible Number of Defectives**  
(Clauses A-1.2, A-1.4, A-2.1 and A-2.2)

SI No.	No. of Arm Shafts in the Lot	For Dimensions, Tolerances, Workmanship, Finish and Test		
		Sample Size $n$	Permissible No. of Defectives <sup>1)</sup>	Sample Size for Hardness
(1)	(2)	(3)	(4)	(5)
i)	Up to 15	5	0	2
ii)	16 to 40	8	0	3
iii)	41 to 110	13	0	3
iv)	111 to 300	20	1	5
v)	301 to 500	32	1	6
vi)	501 to 800	50	2	8
vii)	801 to 1 300	80	3	10
viii)	1 301 and above	125	5	15

<sup>1)</sup>This ensures that lots containing one and half percent or less defective will be accepted most of the time