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IS 6546 (1989): Claw Hammers [PGD 6: Earth, Metal And Wood Working Hand Tools]



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“Knowledge is such a treasure which cannot be stolen”



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IS 6546 : 1989

*Indian Standard*  
**CLAW HAMMERS — SPECIFICATION**  
( *First Revision* )

**भारतीय मानक**  
दंतुर अंग — विशिष्ट  
( पहला पुनरीक्षण )

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**BUREAU OF INDIAN STANDARDS**  
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NEW DELHI 110002

June 1990

Price Group 2

## FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 6 December 1989, after the draft finalized by the Earth Working and Metal Working Tools Sectional Committee had been approved by the Production Engineering Division Council.

This standard was first issued in 1972 based on BS : 3197-1960 'Adze eye claw hammers', issued by the British Standards Institution. While revising this standard the shape of the eye for the hammer has been modified. Hardness has also been revised and the soundness and assembly test has been aligned with IS 841 : 1983. Tolerance on eye dimensions have also been modified based on the practices being followed in the country.

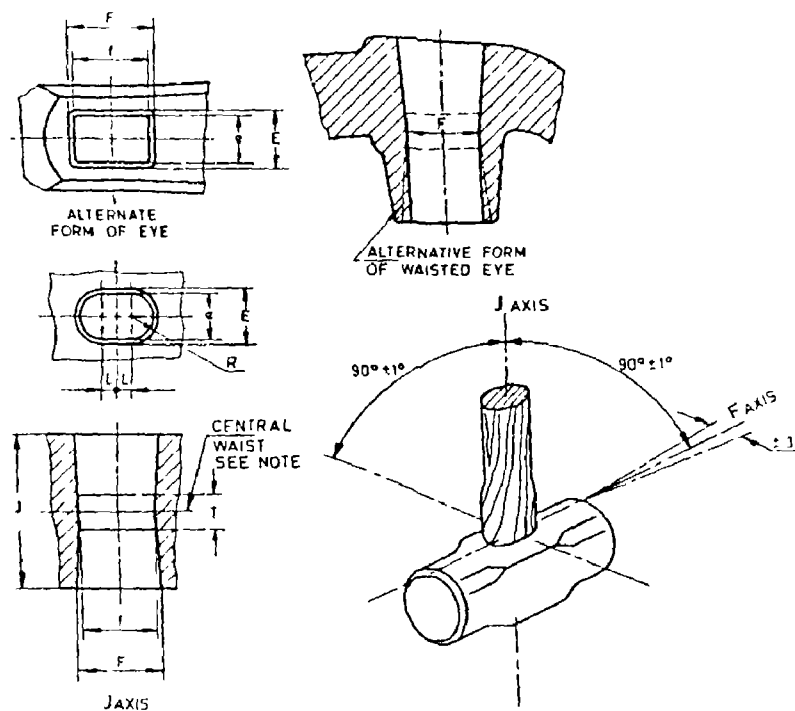
BS 3197 : 1960 has since been withdrawn and merged in BS 876 : 1981.

While preparing this standard, assistance has been taken from BS : 876-1981 'Specification for hand hammers', issued by the British Standards Institution (BSI).

**AMENDMENT NO. 1 NOVEMBER 1999  
TO  
IS 6546 : 1989 CLAW HAMMERS —  
SPECIFICATION**

*( First Revision )*

*( Page 2, clause 3.2 )* — Substitute the following figure for the existing:



Note — The depth 'T' of the central waist shall be a minimum of  $0.125 J$  and a maximum of  $0.33 J$ .

( PE 06 )

Reprography Unit, BIS, New Delhi, India

# Indian Standard

## CLAW HAMMERS — SPECIFICATION

### ( First Revision )

#### 1 SCOPE

1.1 This standard covers the dimensions and other requirements for claw hammers.

#### 2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard:

IS No.	Title
IS 723 : 1972	Specification for countersunk head wire nails ( <i>second revision</i> )
IS 841 : 1983	Specification for steel hammers ( <i>second revision</i> )

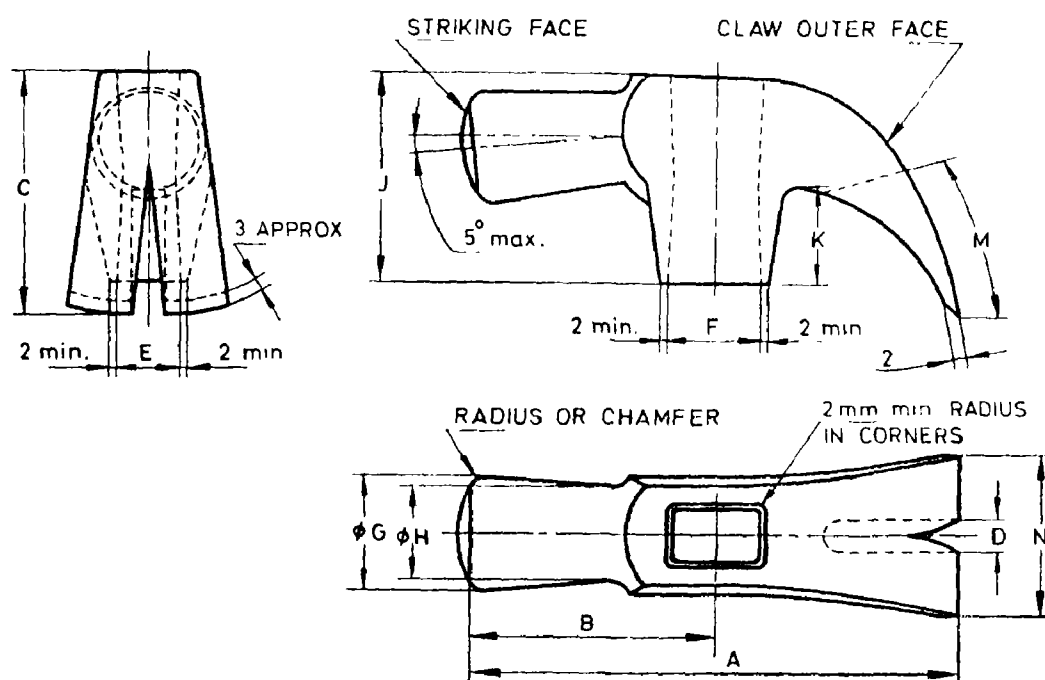
#### IS No.

#### Title

IS 1570 : 1961	Schedules for wrought steels for general engineering purposes
IS 2500 (Part 1) : 1973	Sampling of inspection tables: Part 1 Inspection by attributes and by count of defects ( <i>first revision</i> )
IS 4953 : 1989	Specification for wooden handles for hand hammers ( <i>second revision</i> )

#### 3 DIMENSIONS

##### 3.1 Claw Hammers

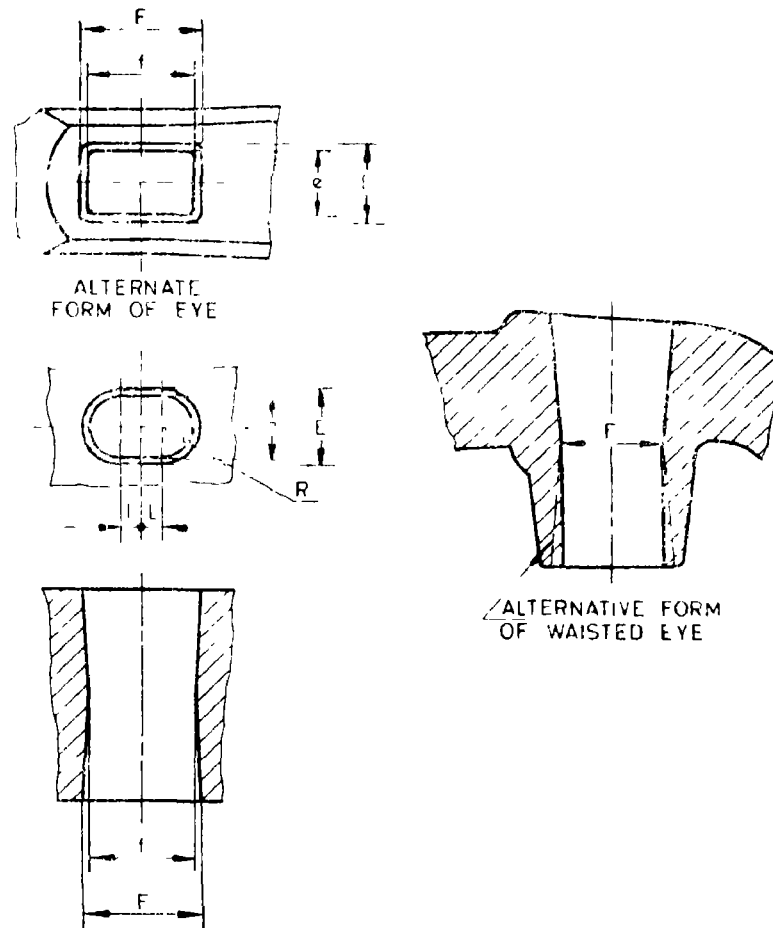


All dimensions in millimetres.

Nominal Mass, g	A $\pm 3$	B $\pm 3$	C $\pm 6$	D $\pm 1$	G $\pm 1.5$	H $\pm 1.5$	J $\pm 3$	K Max	M Min	N Min
450 500	120	60	50 60	8	28	23	52	30	36	30
700	135	65	75	9	30	25	62	32	42	35

NOTE — For dimensions E and F, refer 3.2.

## 3.2 Eye



All dimensions in millimetres

Nominal Mass, g	F	f	E	e	R	L
450, 500	25	23.5	15	13.5	7.5	3.8
700	30	28	20	18	10	5

3.3 A tolerance of  $\pm 2.5$  mm shall be permissible on the dimensions of eye. Tolerances on untoleranced dimensions shall be in accordance with best forging practices. A tolerance of  $\pm 7.5$  percent shall be permissible on the mass of hammer heads.

## 4 MATERIAL

4.1 The claw hammers shall be manufactured from steel conforming to designation T55 of Schedule VI of IS 1570 : 1961, with a sulphur and phosphorus 0.05 percent, *Max* each or any suitable steel having the characteristics equivalent or superior to T55.

## 5 HARDNESS

5.0 The hammers shall be hardened after normalizing only at the striking face and the claw, after which it shall be tempered.

## 5.1 Striking Face

The striking face of hammers shall have hardness between 46 to 58 HRC. The hardened zone when measured from the edge of the striking face back along the surface shall not be less than 4 mm nor shall it extend more than half way to the nearest point of the eye.

## 5.2 Claw

Hardness of the claws shall be within a range as to enable it to withstand the test requirements laid down in 9.4. The hardness shall diminish from the inside to the outside edge of the claw and shall not reach a point less than 12 mm from the nearest point of the eye.

## 5.3 General Hardness

Outside the hardened zones for striking face and claw as defined above, the remainder of the hammer head shall not exceed a hardness value of 400 HV ( $\approx 41$  HRC).



## 6 GENERAL REQUIREMENTS

**6.1** Each hammer shall be cleanly forged and/or stamped and shall be well-shaped and free from flaws, seams and other forging defects.

**6.2** The eye of the hammer shall lie centrally in the width of the head, and the longitudinal axis of the eye shall coincide with the longitudinal axis of the head within  $\pm 3$  mm.

## 7 HANDLES

**7.1** When handles are required to be supplied with hammers they shall conform to the requirements as specified in IS 4953 : 1973. They shall be shaped before fitting to suit the eye of the hammers.

## 8 SAMPLING

**8.0** Unless otherwise agreed to between the supplier and the purchaser, the procedure given in IS 2500 (Part 1) : 1973, shall be followed for sampling inspection. The sampling plan for various characteristics shall be as given in 8.1 and 8.2.

**8.1** For examining dimensions and general requirements, the sampling plans with inspection level III and acceptable quality level (AQL) 2.5 percent as given in Tables 1 and 2 of IS 2500 (Part 1) : 1973 shall be followed.

**8.2** For testing of hardness, crack, soundness, performance and hand clearance test the sampling plans with inspection level I and acceptable quality level (AQL) 2.5 percent given in Tables 1 and 2 of IS 2500 (Part 1) : 1973 shall be followed.

## 9 TESTS

### 9.1 Soundness and Assembly Tests

The hammers shall withstand the same tests; as laid down in 15 of IS 841 : 1983. Apart from this test; the hammers shall meet the test specified in 9.1.1.

**9.1.1** The striking face of the head shall be struck sharply by the ball pein hammer of 100 g conforming to IS 841 : 1983. The head shall give a clear metallic ring and after this test there shall be no perceptible indentation to the tested face.

### 9.2 Nail Pulling Performance Test

Three mild steel wire nails of size  $60 \times \phi 3.15$  mm (plain head) conforming to IS 723 : 1972 shall be driven into a suitable wooden board 25 mm thick. The heads shall be driven flush with the surface of the board. The board shall then be turned over and the protruding ends of the nails shall each in turn be gripped in the claw of the hammer, and the handle quickly and forcibly

levered to pull the head of each nail through the board. As each withdrawal is commenced, the face of the claw shall be in contact with the surface of the board and, during each withdrawal stroke, contact shall be maintained between the board and the claw face.

Following this test, the handle shall be undamaged and firmly fixed in the head, and the claw shall show no sign of wear or damage.

### 9.3 Hand Clearance Test

A round nail shall be driven into a flat suitable wooden board and the head of the nail shall protrude an amount just sufficient to permit engagement of the tips of the hammer claw. With the hammer grasped manually at the grip and the claw engaged under the head of the nail there shall be a minimum clearance of 45 mm between the heel of the handle and the surface of the board.

### 9.4 Claw Hardness

**9.4.1** Hardness on claw may be checked with the help of a suitable fixture and it shall comply with the requirements as laid down in 5.2. A typical fixture for resting the claw for measuring hardness is shown in Fig. 1. Any other suitable fixture may also be used.

**9.4.2** A  $100 \times \phi 3.15$  mm plain head wire nail conforming to IS 723 : 1972 shall be gripped in steel-jawed vice and the protruding end bent forward. The nail shall then be gripped firmly in the claw and the handles worked so that silver of the metal is removed either side of the nail. Following the test there shall be no damage to the claw.

## 10 DESIGNATION

A claw hammers of nominal mass 500 g shall be designated as:

Claw Hammer 500, IS 6546

## 11 PRESERVATIVE TREATMENT AND PACKING

### 11.1 Preservative Treatment

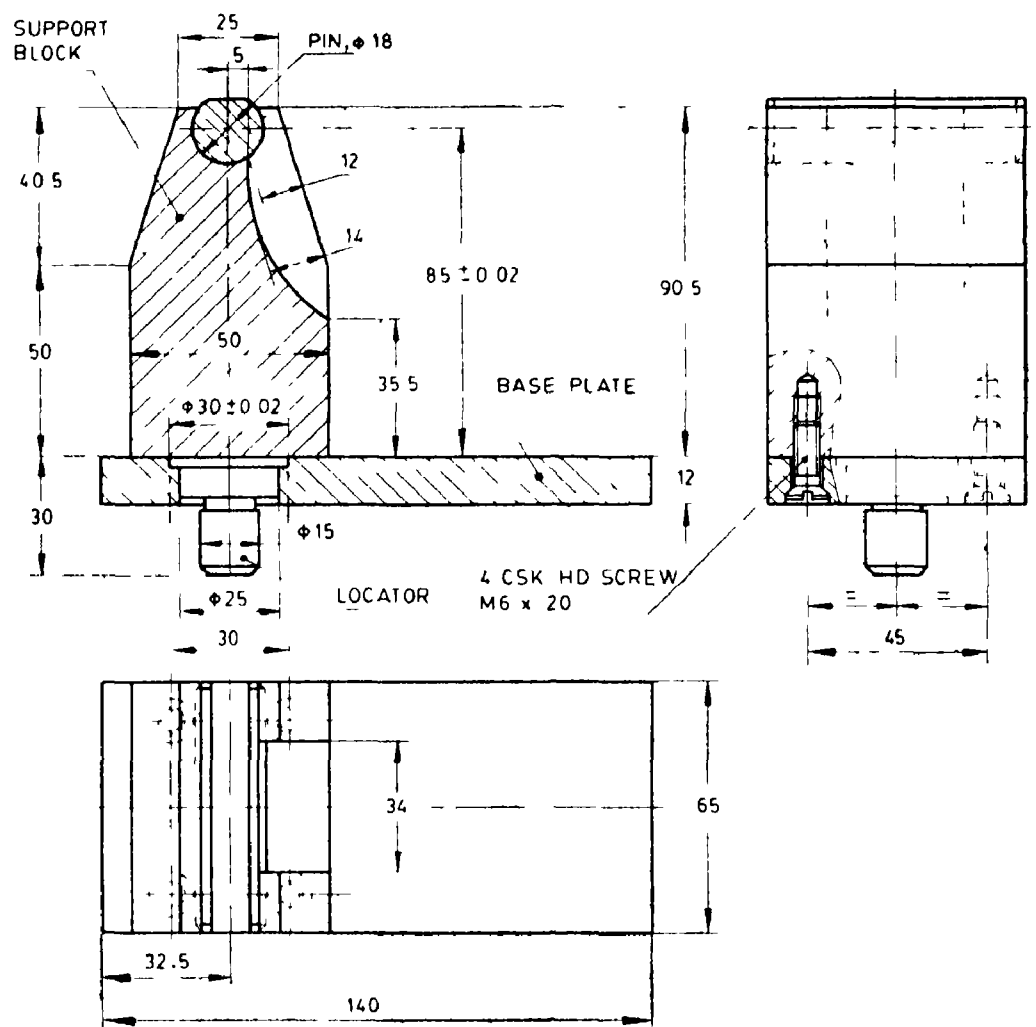
The hammer heads shall be varnished all over or coated with an approved anti-corrosive paint except the ground portion, which shall be left varnished.

### 11.2 Packing

The hammer heads shall be packed in accordance with best prevalent trade practice.

## 12 MARKING

Each hammer shall be clearly and indelibly marked with the nominal mass and indication of the source of manufacture.



All dimensions in millimetres

FIG 1 A TYPICAL FIXTURE FOR HARDNESS MEASUREMENT

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