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Indian Standard
SPECIFICATION FOR
HONEY EXTRACTOR, TANGENTIAL TYPE

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SPECIFICATION FOR HONEY EXTRACTOR, TANGENTIAL TYPE

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Indian Standard

SPECIFICATION FOR HONEY EXTRACTOR, TANGENTIAL TYPE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 13 December 1960, after the draft finalized by the Apiary Industry Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 The honey extractor is an essential equipment which any bee-keeper should have in order to extract the maximum quantity of honey from the frames. It forms a costly item in bee-keeping equipment. There are many kinds of honey extractors available — from simple hand-driven types used in small apiaries to the complex power-driven types used in large bee-keeping organizations. This standard prescribes requirements for a hand-driven honey extractor of the tangential type. This type of extractor has two sizes to fit eight super frames of the Type A and Type B beehives specified in *IS: 1515-1959 Specification for Beehives. This extractor could also be used for other frames which could fit in the rotating frame-holder of the extractor (*see* 5.2).

0.3 The Sectional Committee responsible for the preparation of this standard has taken into consideration the present apiary practices and also the requirements for a honey extractor found necessary by the Khadi and Village Industries Commission who have a long range plan for the development of apiary industry. In the formulation of this standard, considerable assistance has been derived from the All-India Bee-Keepers' Association, Ramgarh, the Khadi and Village Industries Commission, Bombay; the Bombay Village Industries Board and the Agricultural Departments of various States; and from the valuable experience gained by apiarists in the country.

0.4 This standard requires reference to the following Indian Standard Specifications:

*IS : 193-1956 SOFT SOLDER (*Revised*)

†IS : 210-1950 GREY IRON CASTINGS

*Since revised.

†Second revision in 1970.

- *IS : 277-1951 GALVANIZED STEEL SHEETS (PLAIN AND CORRUGATED)
- †IS : 280-1951 MILD STEEL WIRE
- *IS : 399-1952 CLASSIFICATION OF COMMERCIAL TIMBER AND THEIR ZONAL DISTRIBUTION
- ‡IS : 432-1953 MILD STEEL HIGH TENSILE STEEL BARS AND HARD DRAWN STEEL WIRE FOR CONCRETE REINFORCEMENT
- *IS : 733-1956 WROUGHT ALUMINIUM AND ALUMINIUM ALLOYS, BARS, RODS AND SECTIONS
- *IS : 737-1955 WROUGHT ALUMINIUM AND ALUMINIUM ALLOYS, SHEET AND STRIP
- *IS : 739-1956 WROUGHT ALUMINIUM ALLOYS, WIRE
- *IS : 1515-1959 BEEHIVES

0.4.1 Wherever a reference to any Indian Standard mentioned in **0.4** or otherwise appears in this specification, it shall be taken as a reference to the latest version of the standard.

0.5 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, 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 the specified value in this standard.

0.6 This standard is intended chiefly to cover the technical provisions relating to honey extractors of the tangential type, and it does not include all the necessary provisions of a contract.

1. SCOPE

1.1 This standard prescribes the requirements of honey extractors of the tangential type, used for extracting honey centrifugally.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply.

2.1 Rotating Frameholder — A device which holds super frames in place while extracting honey (*see* 5.2) and rotates around a central shaft.

2.2 Super Frame — A frame which has a depth less than that of the brood frame and in which surplus honey is stored.

*Second revision in 1969.

†Second revision in 1972.

‡Since revised and split into parts in 1966.

3. SIZES

3.1 There shall be two sizes of the honey extractor, tangential type, namely, Size 1 and Size 2. The Size 1 honey extractor shall be used for all the three sizes of the super frames of the Type A beehive while the Size 2 shall be used for all the three sizes of the super frames of the Type B beehive (*see* IS: 1515-1959*).

4. MATERIALS

4.1 The honey extractor, tangential type, shall be constructed from the following materials:

- a) Aluminium sheets, rod and wire;
- b) Galvanized steel sheets;
- c) Cast iron;
- d) Mild steel rod, strip and wire;
- e) Solder;
- f) Stainless steel sheets; and
- g) Timber.

5. CONSTRUCTION

5.1 Barrel — The barrel of the honey extractor shall be of aluminium sheets (*see* IS: 737-1955*), galvanized steel sheets (*see* IS: 277-1951*) or stainless steel sheets. It shall be bent and soundly butt welded to form a cylinder. A conical bottom shall be soft soldered (*see* IS: 193-1956*) to the barrel (*see* Fig. 1). The rims of the barrel shall be rolled over and beaded with mild steel wire of 5 or 6 mm in diameter (*see* IS: 280-1951† and Fig. 1). The beading shall be done in such a way that the wire used is not visible at any point. The joints of the wire shall be properly fused before the beading is done. All the joints and seams shall be soldered properly.

5.1.1 The spout or honey gate of the barrel shall be fixed in such a position as to enable the barrel to be completely emptied with minimum tilting. The spout shall be soft soldered to the barrel properly.

5.2 Rotating Frameholder — The rotating frameholder shall have rectangular top and bottom made of aluminium or galvanized steel sheets (plates) and four aluminium rods (*see* IS: 733-1956*) of 10 mm diameter. There shall be an aluminium wire-meshed cage (for aluminium wire *see* IS: 739-1956*) of 6 or 7 mm² to provide a support to the frames while in operation. The frameholder shall be rotating around a central shaft (*see* 5.3). The clearance all around between the frameholder and the barrel shall be not less than 25 mm.

*Since revised.

†Second revision in 1972.

5.2.1 The top plate having 1.18 mm thickness shall have four rectangular openings (*see* Fig. 1) to fit eight super frames (*see* IS : 1515-1959*).

5.2.2 The bottom plate having 1.18 mm thickness shall have eight openings (*see* Fig. 1) to fit the lugs of eight super frames (*see* IS : 1515-1959*).

5.2.3 The supporting aluminium rods of 10-mm diameter and threaded at both ends shall be fixed at the corners of the top and bottom plates with nuts.

5.3 Bearings — There shall be top and bottom bearings (*see* Fig. 1) which shall support a 10-mm mild steel central shaft or rod (*see* IS:432-1953†).

5.3.1 The top bearing shall be either a bronze or gun metal bush not less than 15 mm in length.

5.3.2 The bottom bearing shall be a ball bearing, either a thrust bearing or a simple ball in a cup, and be fixed not more than 25 mm below the inside of the frameholder.

5.4 Handle — The handle of the extractor shall be made into two pieces (*see* Fig. 1). The first piece of the handle shall be passed through the holes provided in the handle support (*see* 5.4.1 and Fig. 1), which in turn shall be fixed on a steel strip (*see* Fig. 1) running across the barrel. This mild steel strip carrying the handle support shall be supported by two steel brackets riveted to the barrel. One end of the first piece of the handle shall have bevelled gear, which shall engage with a bevelled pinion supported on the top of the central shaft. The gear ratio shall be not less than 1 : 4. The other end of the first piece of the handle shall be fixed to one end of the second piece of the handle. A wooden grip shall be provided for the other end of the second piece of handle. The handle shall be operated sideways.

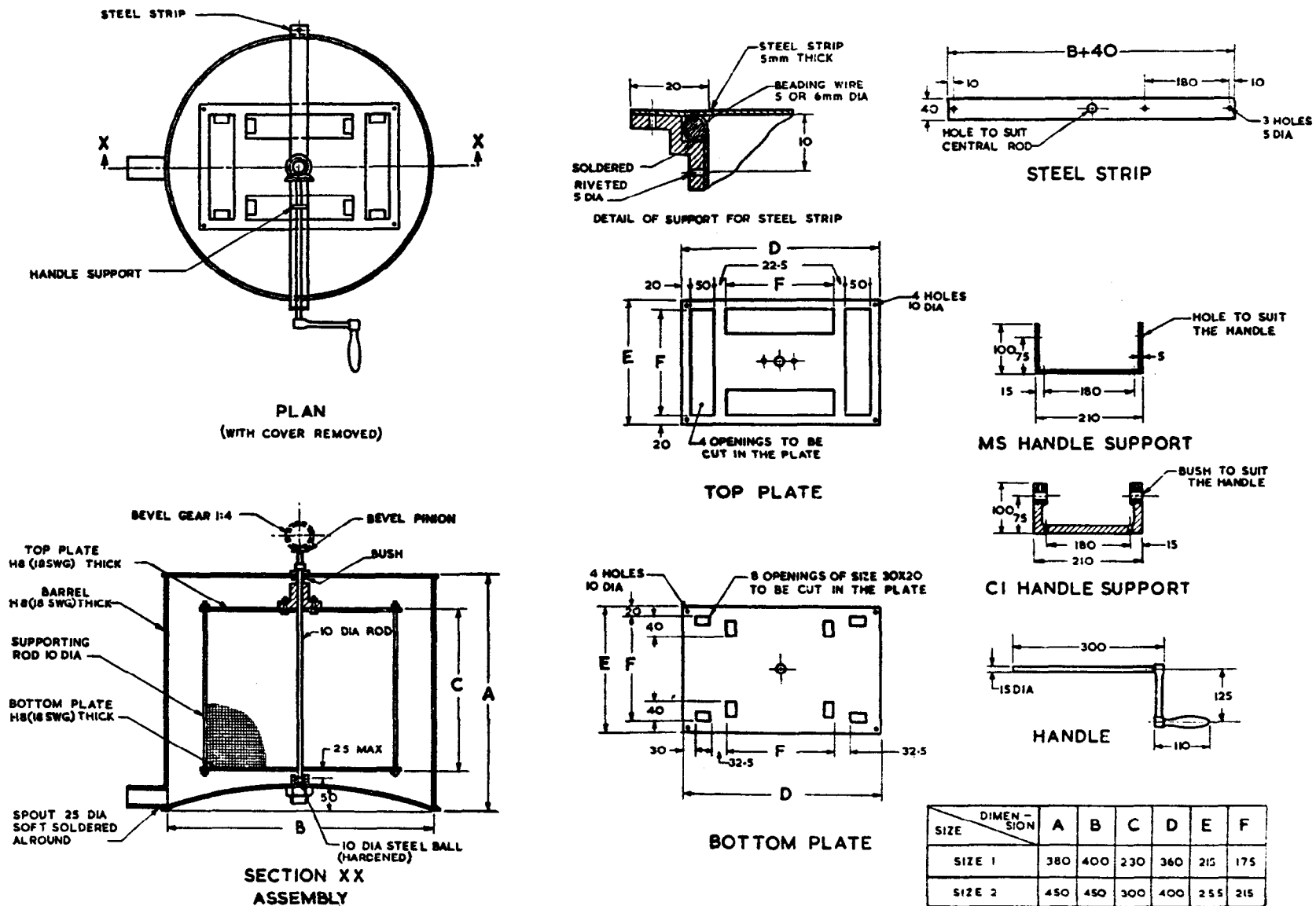
5.4.1 The handle support shall be made of mild steel strip or cast iron (*see* IS:210-1950‡ and Fig. 1) and fixed on the mild steel strip running across the barrel. It shall be provided with holes for the passage of the handle. If the handle support is made of cast iron, it shall be provided with lubricating holes on the top and the inside of the holes meant for the passage of the handle shall be provided with liners.

5.5 Cover — There shall be a wooden cover made from any one of the locally available timbers (*see* IS : 399-1952*). The cover shall be made in two pieces to fit the mouth of the barrel and the central frameholder assembly properly.

*Since revised.

‡Since revised and split into parts in 1966.

‡Second revision in 1970.



SIZE	DIMENSION					
	A	B	C	D	E	F
SIZE 1	380	400	230	360	215	175
SIZE 2	450	450	300	400	255	215

All dimensions in millimetres.

FIG. 1 HONEY EXTRACTOR, TANGENTIAL TYPE

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6. DIMENSIONS

6.1 The various parts of the two sizes of the honey extractor shall conform to the dimensions shown in Fig. 1.

7. WORKMANSHIP AND FINISH

7.1 The welding of the honey extractor shall be satisfactory in all respects. The weld shall not be porous or brittle. All welded joints shall be well dressed and smoothly finished. The soldering shall be neat and clean. The honey extractor shall be finished smooth all over. The honey extractor shall be devoid of cracks, seams, dents and other similar defects.

7.2 The parts which do not come in contact with honey shall be painted with suitable synthetic paint. Removable nuts shall be rust-proofed independently of painting.

8. MARKING

8.1 The honey extractor shall be marked with the following particulars:

- a) Manufacturer's name or recognized trade-mark,
- b) Year of manufacture,
- c) Batch or code number, and
- d) Respective catalogue number of the extractor, if any.

8.1.1 Subject to an agreement between the purchaser and the vendor, the marking may be done on a brass plate soundly soldered on the barrel of the extractor after painting.

8.1.2 Each honey extractor may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Conversion
Force	newton	N	1 N = 1 kg·1 m/s ²
Energy	joule	J	1 J = 1 N·m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V·s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

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