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IS 11397 (1985): attachment tools for power driven rodding machine for sewers [CED 24: Public Health Engineering.]

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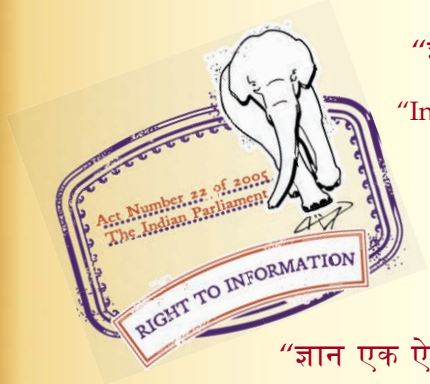

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Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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IS : 11397 - 1985
(Reaffirmed 2001)

Indian Standard

SPECIFICATION FOR ATTACHMENT TOOLS FOR POWER DRIVEN RODDING MACHINE FOR SEWERS

UDC 628-287 ROD

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 3

August 1986

Indian Standard

SPECIFICATION FOR ATTACHMENT TOOLS FOR POWER DRIVEN RODDING MACHINE FOR SEWERS

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Indian Standard

SPECIFICATION FOR ATTACHMENT TOOLS FOR POWER DRIVEN RODDING MACHINE FOR SEWERS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 30 August 1985 after the draft finalized by the Public Health Engineering Equipment Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 For loosening the debris and remove incrustations, roots, etc, which often block a sewer, it is necessary to use a power driven rodding machine with a suitable attachment tool.

0.3 The object of this standard is to give idea as to which tool should be used in any particular circumstances.

0.4 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 : 2-1960*. The number of significant 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 covers the requirements of attachment tools for power driven rodding machine for sewers.

2. TYPES OF TOOLS

2.1 The following tools are normally available for attachment to a power driven rodding machine. These cover practically all the cases met with in practice:

a) Standard corkscrew.

b) Double corkscrew.

*Rules for rounding off numerical values (*revised*).

c) Corkscrew (auger).

d) Auger type root cutter.

e) Sand borer.

f) Spear point borer.

g) Drill point borer.

3. REQUIREMENTS

3.1 Material of Construction — Material of construction of tools are given in Table 1.

TABLE 1 MATERIALS OF CONSTRUCTION OF ATTACHMENT TOOLS FOR POWER DRIVEN RODDING MACHINE FOR SEWER CLEANING

Sl No.	Tool	Materials	Ref to Indian Standard
i)	Standard corkscrew	Spring steel	Grade 3 or 4 of IS : 4454 (Part 1)-1975*
ii)	Double corkscrew	Spring steel	do
iii)	Corkscrew (auger)	Spring steel	do
iv)	Auger type root cutter	Tempered spring steel	Grade VW of IS : 4454 (Part 2)-1975†
v)	Sand borer	Chrome vanadium steel	Grade 1D of IS : 4454 (Part 3)-1975‡
vi)	Spear point borer	Manganese steel	Grade 2D of IS : 4454 (Part 3)-1975‡
vii)	Drill point borer	Manganese steel	do

Specification for steel wires for cold formed springs:

*Part 1 Patented and cold drawn steel wires—unalloyed (*first revision*).

†Part 2 Oil hardened and tempered spring steel wire and value spring wire—unalloyed (*first revision*).

‡Part 3 Oil hardened and tempered steel wires—alloyed (*first revision*).

3.2 Construction

3.2.1 *Standard Corkscrew* (*Fig. 1*) — This is the smallest tool used in conjunction with a power rodding machine. It is made in 75, 85 and 100 mm sizes. It is designed not only to bore through silt and sand but also through gravel and roots.

3.2.2 *Double Corkscrew* (*Fig. 2*) — The double corkscrew has greater prong pulling strength than a standard corkscrew. It is designed to get to grips with all kinds of debris and is very useful in picking up fibrous roots, rags and cans. It is made in 75 mm, 100 mm, 125 mm, and 150 mm sizes.

FIG. 1 TYPICAL SKETCH OF STANDARD CORKSCREW

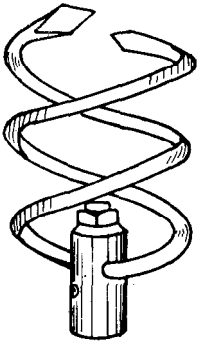

FIG. 2 TYPICAL SKETCH OF DOUBLE CORKSCREW

3.2.3 *Corkscrew (Auger) (Fig. 3)* — This is useful for cleaning sand and silt blockages. This is available in sizes 25 mm, 40 mm and 50 mm.

3.2.4 *Auger Type Root Cutter (Fig. 4)* — This is a flat bladed tool which is extremely reliable for cutting fibrous roots. It is also useful for cleaning sand and silt blockages because of its action as a spade when it is rotated. It has a cutting edge on the spiral, which cannot damage sewer walls. It is made in 75, 100, 125 and 150 mm sizes.

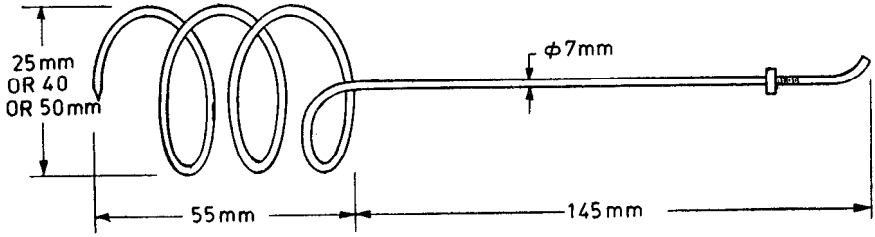

FIG. 3 TYPICAL SKETCH OF CORKSCREW (AUGER)

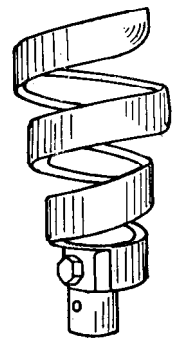

FIG. 4 TYPICAL SKETCH OF AUGER TYPE ROOT CUTTER

3.2.5 *Sand Borer* (*Fig. 5*) — This tool is designed to bore quickly through heavy deposits of sand in sewers. The spirals are specially arranged to rise to the top of the sand.

FIG. 5 TYPICAL SKETCH OF SAND BORER

3.2.6 *Spear Point Borer* (*Fig. 6*) — Due to its manganese steel head, this tool breaks up bottles, knocks holes in cans and bricks. It is particularly useful in small pipes where the deposit is hard. It is made in 50 mm size.

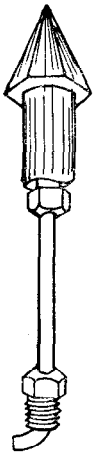

FIG. 6 TYPICAL SKETCH OF SPEAR POINT BORER

3.2.7 *Drill Point Borer* (*Fig.* 7) — This tool has four radial hard faced and sharpened cutting edges. It is ideal when the blockage is extremely hard. It is made in 45 mm, 50 mm and 60 mm sizes.

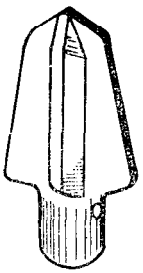

FIG. 7 TYPICAL SKETCH OF DRILL POINT BORER

3.3 Finish — The tools shall be smoothly finished and shall be free from sharp edges and treated to preclude corrosion.

4. WORKMANSHIP

4.1 The tools shall be free from all defects and blemishes affecting the appearance on which may impair the serviceability.

5. MARKING

5.1 Each tool shall be legibly and indelibly marked with the following information:

a) Name of manufacturer or his trade-mark, if any;

b) Size; and

c) Year of manufacture.

5.1.1 Each tool 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.

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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*	*Definition*
Force	newton	N	1 N = 1 kg.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
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2