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कर्तरी — विशिष्टि

(दूसरा पुनरीक्षण)

Thoracic Surgery Instruments —
Angled Scissors — Specification

(Second Revision)

ICS 11.040.30

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Medical and Surgical Cardiology Equipment Sectional Committee had been approved by the Medical Equipment and Hospital Planning Division Council.

This standard was first published in IS 8549 : 1977 'Cardiovascular surgery instruments angled scissors potts smith pattern specification'. The standard was revised in 1991 by altering material requirements, specifying dimensional tolerances, and adding requirements of surface conditions, packing, marking, and recommended sampling plan. This revision aligns the cross references to the latest standards, incorporates the revised designation for stainless steel, includes certification clause and removes the optional sampling requirements.

The composition of the Committee responsible for the formulation of this standard is given in [Annex A](#).

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*)'.

Indian Standard

THORACIC SURGERY INSTRUMENTS — ANGLED
SCISSORS — SPECIFICATION

(Second Revision)

1 SCOPE

This standard prescribes dimensional and other requirements for Potts Smith pattern, angled scissors used in cardiovascular surgery.

2 REFERENCES

The standard given 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 edition of these standards:

<i>IS No.</i>	<i>Title</i>
IS 1501 (Part 1) : 2020/ISO 6507 -1 : 2018	Metallic materials — Vickers hardness test: Part 1 Test method (<i>fifth revision</i>)
IS 3642 (Part 1) : 1990	Surgical instruments — Specification: Part 1 Non cutting, articulated instruments (<i>second revision</i>)
IS 6603 : 2001	Stainless steel bars and flats — Specification (<i>first revision</i>)
IS 7531 : 1990	Surgical instruments — Corrosion resistance of stainless steel surgical instruments — Methods for tests (<i>first revision</i>)

3 MATERIAL

The scissors shall be made of stainless steel conforming to designation X40Cr13 of IS 6603.

4 TYPES, SHAPES AND DIMENSIONS

4.1 The angled scissors shall be of the following two types:

- a) Angled on side (*see Fig. 1*); and
- b) Angled on flat (*see Fig. 2*).

4.2 The shape and dimensions of the scissors shall be as shown in [Fig. 1](#) and [Fig. 2](#).

4.3 Tolerances

The permissible tolerances on linear and angular dimensions shall be as specified in IS 3642

(Part 1). The two halves of the scissors shall, however, not differ at any identical dimension and shall match with each other perfectly.

4.4 Joints

The joint shall be screw type (lay on) joint conforming to IS 3642 (Part 1).

4.5 Finger Loops

The finger loops shall conform to size No. 2 of IS 3642 (Part 1).

5 WORKMANSHIP

5.1 All edges shall be rounded, except the cutting edges, which shall be sharp and uniform. The cutting edges shall not have nicks, jags and waviness, when examined under a magnification of $\times 10$.

5.2 The cutting edges shall coincide along their lengths and tips when the scissors are fully closed.

5.3 The blades of the scissors shall fully open and close with two fingers, without stiffness and shall have a slight cross over action to give a continuous pinch.

6 SURFACE CONDITION AND FINISH**6.1 General**

All surfaces shall be free from pores, crevices, pits, burrs, cracks, grinding marks and other defects. The scissors shall be supplied free from residual scale, acid, grease, grinding and polishing materials. Compliance with these requirements shall be checked by visual inspection.

6.2 Surface Finish

The scissors shall have a mirror polish or reflection reducing finish, for example, satin finish and matt black finish.

6.3 The satin finish should be achieved using an appropriate procedure, for example grinding, brushing electro-polishing and, in addition, satin finishing (glass heading or satin brushing). The finish should be uniform and smooth. and it should reduce glare.

6.4 Instruments of mirror finish should be adequately ground to remove all surface imperfections and polished to remove grinding

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marks in order to achieve a mirror finish. This should be achieved using an appropriate procedure, for example polishing brushing, electro polishing and mirror buffing.

6.5 Passivation and Final Treatment

The scissors shall be treated by a suitable passivation process, for example by electropolishing or by treatment with 10 percent (v/v) Nitric acid solution for not less than 30 minutes at a temperature not less than 10 °C and not exceeding 60 °C. The scissors shall then be rinsed in water and dried in hot air.

7 HEAT TREATMENT

7.1 The vickers hardness of the finished scissors excluding screw shall be within a range of 550 HV to 650 HV when tested in accordance with IS 1501 (Part 1).

7.2 Mating surfaces of the same scissors such as opposite jaws and shanks, shall not vary in hardness by more than 40 HV.

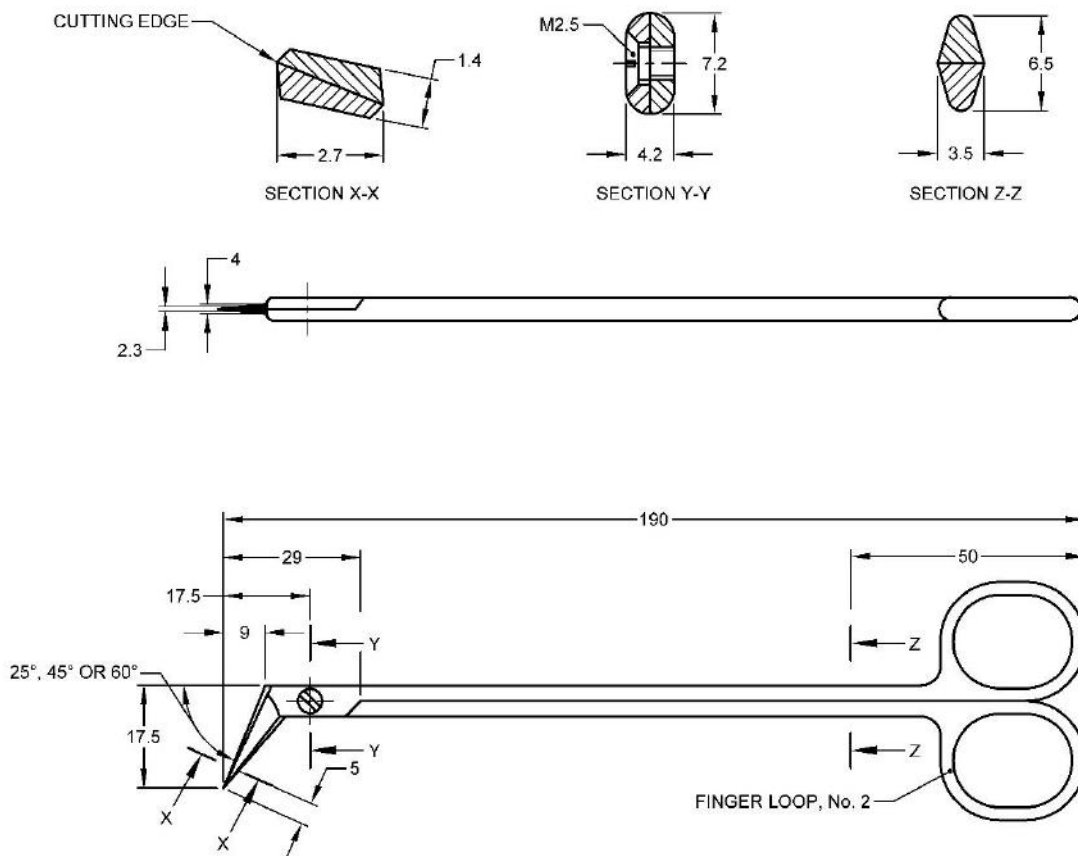
8 TESTS

8.1 Corrosion Resistance Test

The scissors shall show no sign of corrosion when tested in accordance with IS 7531.

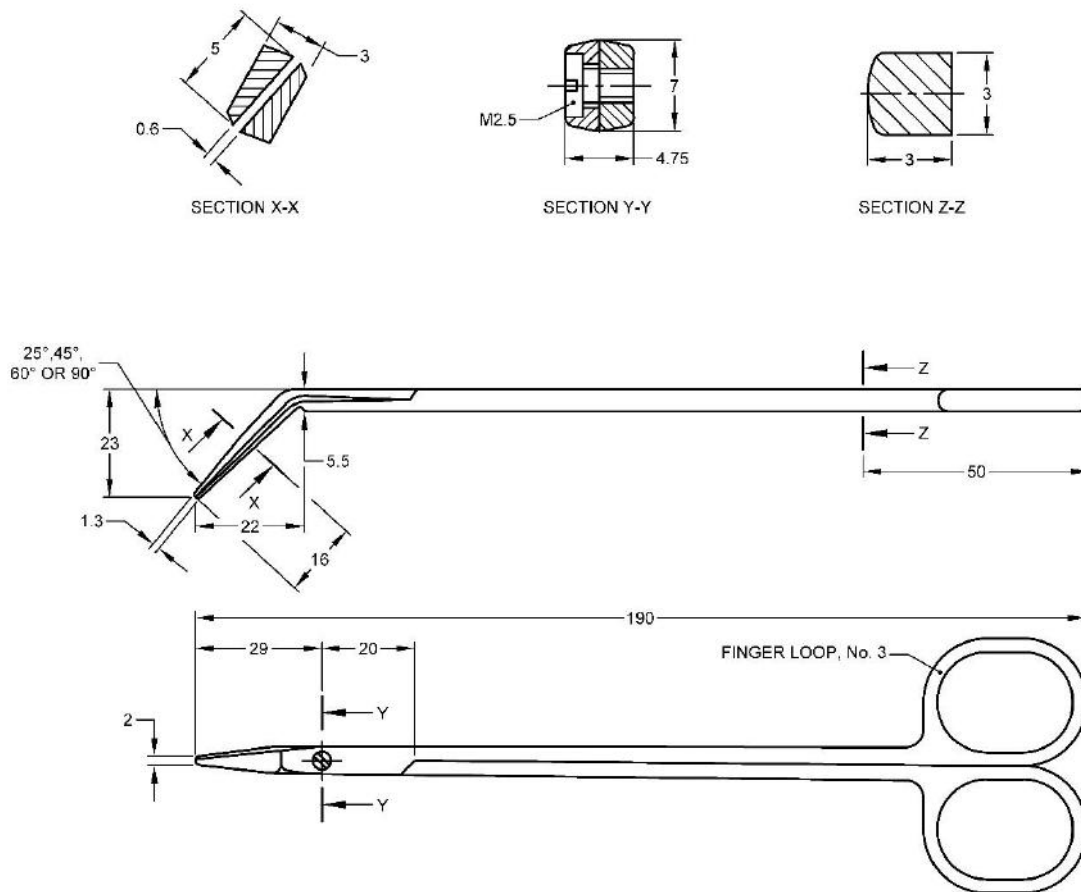
8.2 Performance

The scissors shall be made to cut 0.5 mm thick chamois leather or kid leather 100 times along two-thirds of the blade without lateral pressure. The scissors shall cut the leather cleanly without tearing or sticking and shall not show any sign of damage during or after the test. The scissors shall continue to function in the original manner after the test.



All dimensions in millimetres.

FIG. 1 SCISSORS, ANGLED ON SIDE, POTT'S SMITH PATTERN



All dimensions in millimetres.

FIG. 2 SCISSORS, ANGLED ON FLAT, POTT'S SMITH PATTERN

9 MARKING AND PACKING

9.1 The scissors shall be legibly and indelibly marked with the indication of the source of manufacture, the words stainless steel or letters 'SS' to indicate that the scissor is made of stainless steel.

9.2 Each scissor shall be wrapped in a suitable cushioning material like folded tissue paper. It shall then be put in a polyethylene bag or wrapped in wax paper. The scissor shall thereafter be packed in cartons in accordance with the current trade practices.

9.2.1 Alternatively, the instrument may be packed as

agreed to between the purchaser and the supplier.

9.3 The package shall be marked with the name and shape of the instrument; identification of the source of manufacture, the words 'stainless steel' and the country of manufacture.

10 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.

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

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In Personal Capacity (<i>B-87, Alpha 1, Greater Noida, Pilkhan Estate, 3rd Street</i>)	DR DEEPAK KUMAR SATSANGI (<i>Chairperson</i>)
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