

वक्ष शल्य चिकित्सा उपकरण — संवहनी  
प्रतिबंधक — विशिष्टि

( पहला पुनरीक्षण )

Thoracic Surgery Instruments —  
Vascular Clamp — Specification

( First Revision )

ICS 11.040.30

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भारतीय मानक ब्यूरो  
BUREAU OF INDIAN STANDARDS  
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI - 110002  
[www.bis.gov.in](http://www.bis.gov.in) [www.standardsbis.in](http://www.standardsbis.in)

## FOREWORD

This Indian Standard (First 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 9950 : 1981 “Specification for clamp vascular wister pattern”. This revision aligns the cross references to the latest standards, incorporates the revised designation for stainless steel and includes certification clause.

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 — VASCULAR  
CLAMP — SPECIFICATION

( First Revision )

**1 SCOPE**

This standard specifies dimensional and other requirements for Wister pattern vascular clamp used in cardio-vascular 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 editions of these standards:

IS No.	Title
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 SHAPE AND DIMENSIONS**

**3.1** The clamp shall be made to shape and dimensions as shown in [Fig. 1](#).

**3.2** A deviation of  $\pm 2.5$  percent shall be allowed on all dimensions. However, the two halves of the instrument shall not differ at any specified dimension and shall be perfectly symmetrical.

**3.3 Joint**

The clamp shall have box type joint in accordance with **13.2.2** of IS 3642 (Part 1).

**3.4 Serrations**

The clamp shall have non-cutting longitudinal jaw serrations with  $60^\circ$  profile and shall grasp the tissue delicately but firmly. In other respect the serrations shall be in accordance with Section 2 of IS 3642 (Part 1).

**3.5 Ratchet**

Teeth used in ratchets of the clamp shall conform to Section 4 of IS 3642 (Part 1) with a combination of 1 in 9. The load required to close the clamp on first step of the ratchet shall be 2.5 N, for second step be 5 N, for third step 7 N, and so on.

**3.6 Finger Loops**

The finger loops of the clamp shall be size No. 2 in accordance with Section 6 of IS 3642 (Part 1).

**4 MATERIAL**

The clamp shall be manufactured from stainless steel conforming to designation X20Cr13 or X30Cr13 of IS 6603.

**5 WORKMANSHIP AND FINISH**

**5.1** The surfaces of the clamp shall be finished smooth and free from burrs, pits, cracks, scale and other defects.

**5.2** The jaws shall open and close with even and balanced movement. The opening and closing of the jaws shall be smooth and jerk free.

**5.3** The clamp shall be passivated and shall be polished bright.

**6 HEAT TREATMENT**

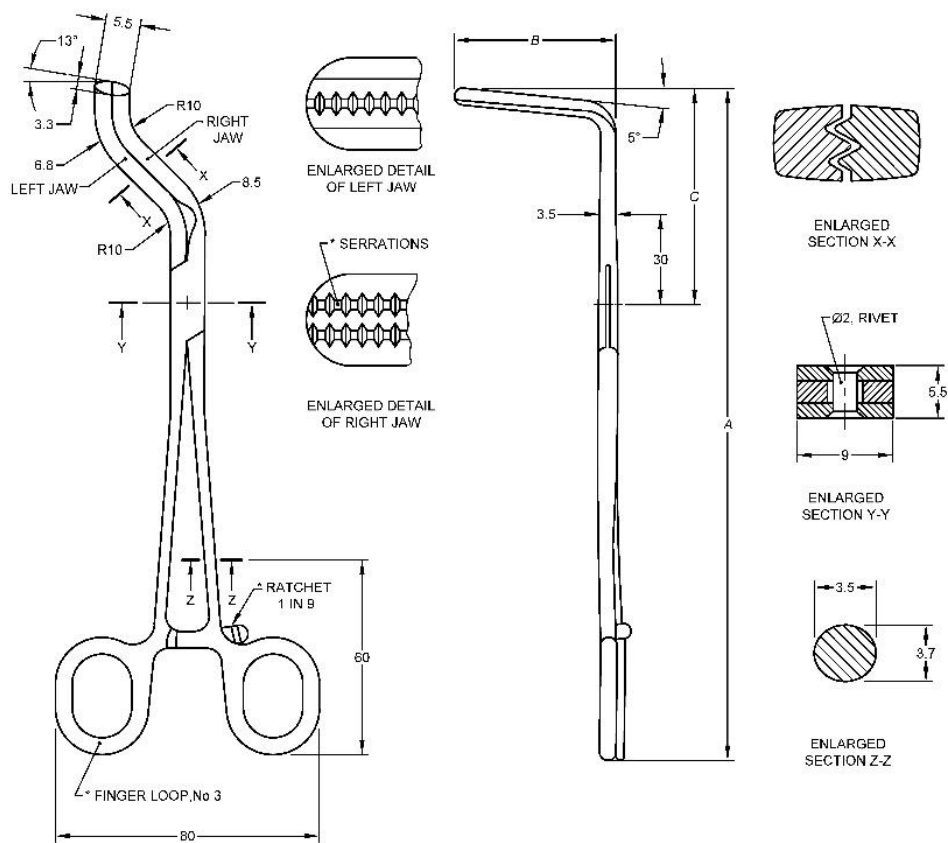
The different components of the clamp shall be hardened and tempered to give a hardness of 400 HV to 460 HV.

**7 TESTS****7.1 Performance of Tips and Jaws**

When first step of the ratchet is engaged, the teeth shall approximate to a gap of 2 mm and not interdigitate; the gap shall become 1 mm on engaging the second step; tips shall bite when the third step of ratchet engages. The jaws shall fully close when the last step engages. The teeth shall match perfectly and truly. In other respects, the jaws shall engage as stipulated in IS 3642 (Part 1).

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A	B	C
210	50	67
150	37.5	51

All dimensions in millimetres.  
FIG. 1 CLAMP, VASCULAR, WISTER PATTERN

### 7.2 Flexibility

Each arm of the clamp shall be fixed in a vice so that the entire arm projects above the vice. By gradual application of force on the finger loop, the arm shall be deflected by 15 mm in the same plane as that of the finger loop. The arm shall not take a permanent set or break.

### 7.3 Corrosion Resistance

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

## 8 MARKING

8.1 The clamp shall be clearly and indelibly marked, preferably by etching, with the following:

- a) Manufacturer's name, initials or registered

trade-mark; and

- b) The words 'stainless steel' or letters 'SS'.

### 8.2 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.

## 9 PACKING

The clamp may be packed as agreed to between the purchaser and the supplier.

## ANNEX A

*(Foreword)*

## COMMITTEE COMPOSITION

Medical and Surgical Cardiology Equipment Sectional Committee, MHD 06

<i>Organization</i>	<i>Representative(s)</i>
In Personal Capacity ( <i>B-87, Alpha 1, Pilkhan Estate, 3rd Street, Greater Noida</i> )	DR DEEPAK KUMAR SATSANGI ( <b><i>Chairperson</i></b> )
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SCIENTIST 'B'/ASSISTANT DIRECTOR  
MEDICAL EQUIPMENT AND HOSPITAL PLANNING, BIS



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### Amendments Issued Since Publication

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## BUREAU OF INDIAN STANDARDS

### Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones: 2323 0131, 2323 3375, 2323 9402

Website: [www.bis.gov.in](http://www.bis.gov.in)

### Regional Offices:

	Telephones
Central : 601/A, Konnectus Tower -1, 6 <sup>th</sup> Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	{ 2323 7617
Eastern : 8 <sup>th</sup> Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	{ 2367 0012 2320 9474
Northern : Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	{ 265 9930
Southern : C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113	{ 2254 1442 2254 1216
Western : Manakalya, 4 <sup>th</sup> Floor, NTH Complex (W Sector), F-10, MIDC, Andheri (East), Mumbai 400093	{ 283 25838

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