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भारतीय मानक मसौदा
डेंटल मैकेलॉप्स टाइप प्लायर्स — विशिष्टि
[IS 10353 का पहला पुनरीक्षण]

Draft Indian Standard
Dental Mckellops' Type Pliers — Specification
[First Revision of IS 10353]

[ICS 11.060.20]

Dentistry Sectional Committee, MHD 08

Last date for comments:
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FOREWORD

(Formal clause will be added later)

This standard was originally published in 1982 as 'Specification for Pliers, Mckellops' Type, Dental'. This revision aligns the cross references to the latest standards, incorporates revised designations for steel and revised certification clause.

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*)'. 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

This standard specifies dimensional and other requirements for McKellops' type pliers used for bending wires of diameter up to 1.22 mm used in dentistry.

2 REFERENCES

The standards 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.

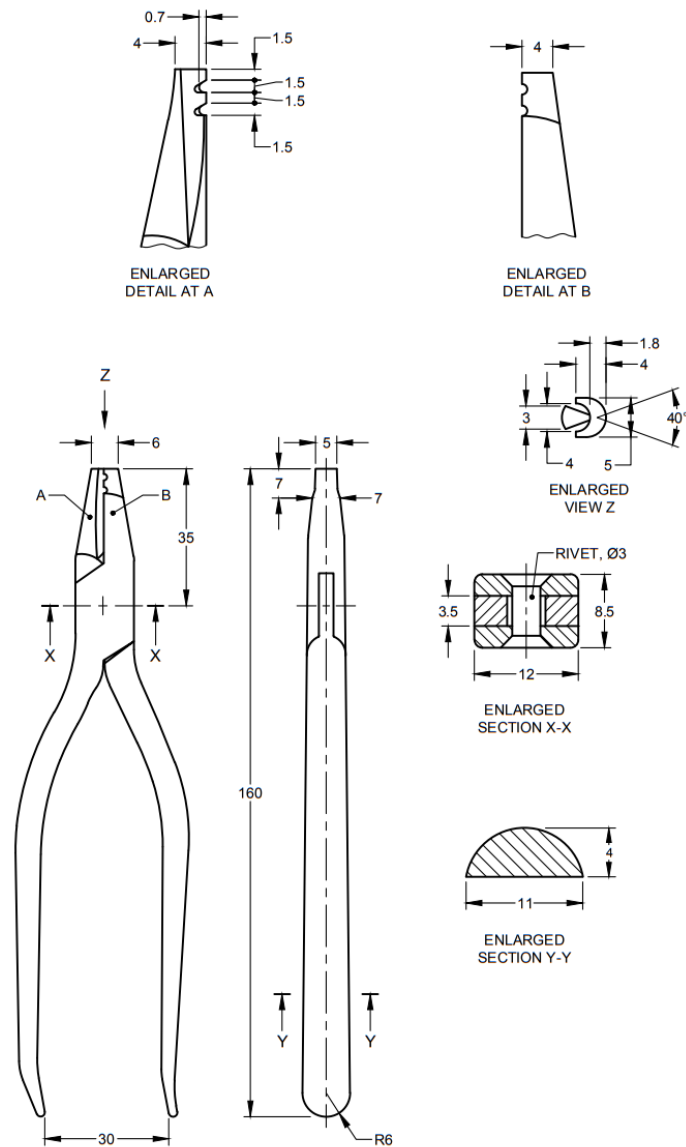
<i>IS No.</i>	<i>Title</i>
IS 6603 : 2024	Stainless Steel Semi-Finished Products, Bars, Wire Rods and Bright Bars — Specification (<i>Second Revision</i>)
IS 3642 (Part 1): 1990	Surgical instruments – Specification Part 1 non - Cutting, articulated instruments (<i>Second Revision</i>)
IS 6528 : 1995	Stainless Steel Wire – Specification (<i>First Revision</i>)
IS 7531 : 1990	Surgical instruments — Corrosion resistance of stainless steel surgical instruments — Methods of tests (<i>First Revision</i>)

3 MATERIAL

The material shall be made from stainless steel conforming to designation X20Cr13 or X30Cr13 of IS 6603. The steel used for the rivet shall be the same as that used for the pliers.

4 SHAPE AND DIMENSIONS

The shape and dimensions shall be as shown in Fig. 1.



All dimensions in millimetres.

Fig. 1 Pliers, Mckellops' Type, Dental

4.1 The tolerances on various dimensions shall be permitted as given below:

- a) ± 0.2 mm on dimensions up to 5.0 mm,
- b) ± 0.5 mm on dimensions above 5.0 mm and up to 10.0 mm,
- c) ± 1.0 mm on dimensions above 10.0 mm and up to 50.0 mm,
- d) ± 2.0 mm on dimensions above 50.0 mm and up to 100.0 mm, and
- e) ± 5.0 mm on dimensions above 100.0 mm.

5 WORKMANSHIP AND FINISH

5.1 The two halves of the pliers shall move fully and freely about the joint without any play. The movement shall be balanced and the jaws shall register accurately.

5.2 The joint shall be box type conforming to 6 of IS 3642. The ends of the rivet in the joint shall be finished flush with the surface.

5.3 The pliers shall be free from sharp edges, pits, burrs, cracks and other surface defects. All the edges except the working end shall be rounded.

5.4 The surfaces of the pliers shall be finished smooth and bright except the outside surfaces of the handles, which shall have a matt finish.

5.5 The pliers shall be passivated by treating it in 10 percent (v/v) nitric acid solution, for not less than 30 minutes, at a temperature of not less than 10°C and not exceeding 60°C. The pliers shall then be rinsed in water, dried in hot air and the joint lightly lubricated with a nontoxic and noncorrosive substance.

6 HEAT TREATMENT

The pliers shall be uniformly hardened and tempered to a hardness of 370 HV to 410 HV.

7 TESTS

7.1 Practical Test

A stainless steel wire of diameter 1.22 mm, conforming to Designation 04Cr18Ni10 or 07Cr18Ni9 of IS 6528 shall be bent six times with the pliers. On completion of the test, the pliers shall neither show any sign of damage nor acquire a permanent set.

7.2 Elasticity Test

The pliers shall be made to grip a piece of 1 mm thick hardened steel bit. The bit chosen shall be such as not to be damaged by the test. A compressive force of 20 kgf shall be applied to the pliers and allowed to act for 5 minutes, in such a manner that the force acts on each handle (a total of 40 kgf on the instrument) at a distance of 40 mm from its free end. On completion of the test, the pliers shall neither show any sign of damage nor acquire a permanent set.

7.3 Corrosion Resistance Test

The pliers shall be tested in accordance with IS 7531. It shall show no sign of corrosion after the test.

8 MARKING

8.1 Each pliers shall be legibly and indelibly marked with the manufacturer's name, initials or registered trade-mark; the letters 'SS' or the words 'Stainless Steel'; and the country of manufacture.

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

Each pliers shall be wrapped either in a polyethylene bag or wax paper. It shall then be packed in cartons in accordance with the current trade practice. The cartons shall bear the name of the pliers; manufacturer's name, initials or registered trade-mark; the words 'Stainless Steel'; and the country of manufacture. The pliers may also be packed as agreed to between the purchaser and the supplier.