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Round nose chain pliers with side cutters

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hand tools

Reference number : JIS B 4631 : 1998 (E)

B 4631:1998

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently JIS B 4631:1995 is replaced with JIS B 4631:1998.

In this revision, Annexes to this Standard have been prepared based on corresponding International Standards without any modification of technical contents to conform to ISOs. Further, a partial content of the former Standard has been amended in the body of this Standard.

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Round nose chain pliers with side cutters

Introduction This Japanese Industrial Standard was made on the basis of the International Standards shown in Remarks in such a way that the pliers of the classification and grade including their shape, dimension, quality, inspection, designation and marking which were specified in the conventional Japanese Industrial Standard were provided in the body and the corresponding International Standards were provided in the annexes without changing the technical contents but adding the items (inspection, designation and marking) not included in the original International Standards.

In the Annexes the parts underlined with dots are the matters not included in the corresponding International Standards.

Remarks: The following standards are the corresponding International Standards to this Standard.

ISO 5743 : 1988, *Pliers and nippers—General technical requirements*

ISO 5744 : 1988, *Pliers and nippers—Methods of test*

ISO 5745 : 1988, *Pliers and nippers—Pliers for gripping and manipulating—Dimensions and test values*

1 Scope This Japanese Industrial Standard specifies the round nose chain pliers with side cutters used mainly for assembling electronic appliances.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards indicated below shall be applied.

JIS B 7726 *Rockwell and Rockwell superficial hardness testing machines*

JIS G 3532 *Low carbon steel wires*

JIS G 4051 *Carbon steels for machine structural use*

JIS G 4401 *Carbon tool steels*

JIS Z 2245 *Method of Rockwell and Rockwell superficial hardness test*

3 Shape and dimensions The shape and dimensions of round nose chain pliers with side cutters shall be as follows:

- a) The shape of round nose chain pliers with side cutters should be as shown in Fig. 1.
- b) The dimensions of round nose chain pliers with side cutters shall be as shown in Fig. 1.

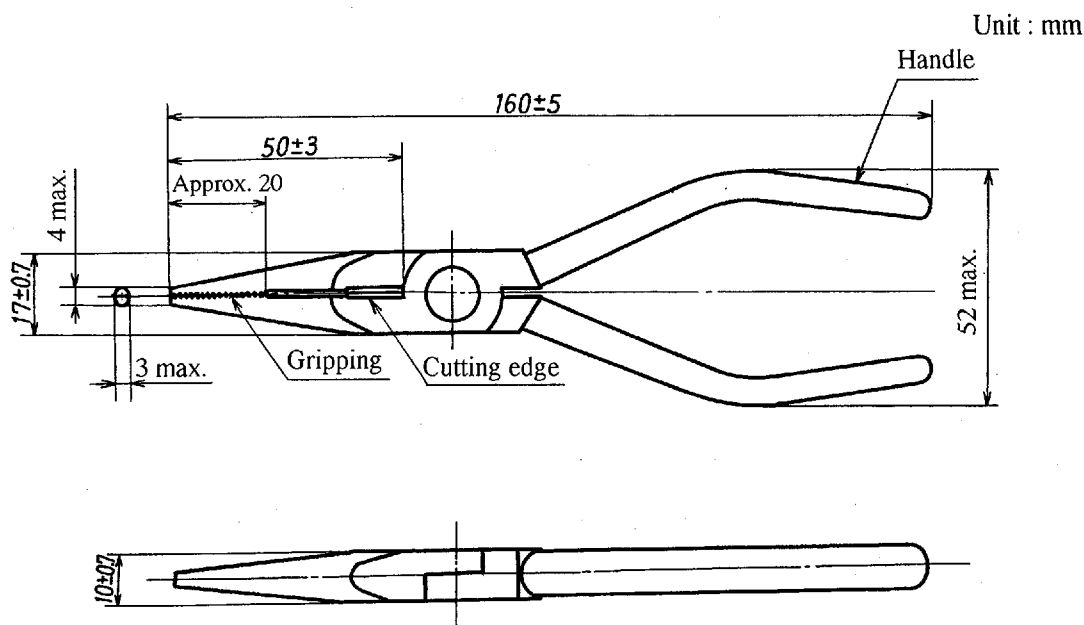


Fig. 1 Shape and dimensions

4 Quality

4.1 Appearance The appearance of round nose chain pliers with side cutters shall be free from crack, harmful flaw, burr, rust and other harmful defect that can affect the use and shall be well finished.

4.2 Function

4.2.1 Joint rivet The sliding contact surface of the joint rivet of the round nose chain pliers with side cutters shall be that the clearance is small and opening and closing are smooth, and the inside of the point shall be closed tightly over at least 2 mm.

4.2.2 Cutting performance When inserting a test iron wire of 1.5 mm diameter ⁽¹⁾ into almost the center of the cutting edges of the round nose chain plier with side cutters, the plier shall be able to cut the test iron wire with the load not more than 2 160 N applied to the handles (see Fig. 2).

Note ⁽¹⁾ The test iron wire shall be SWM-N specified in JIS G 3532.

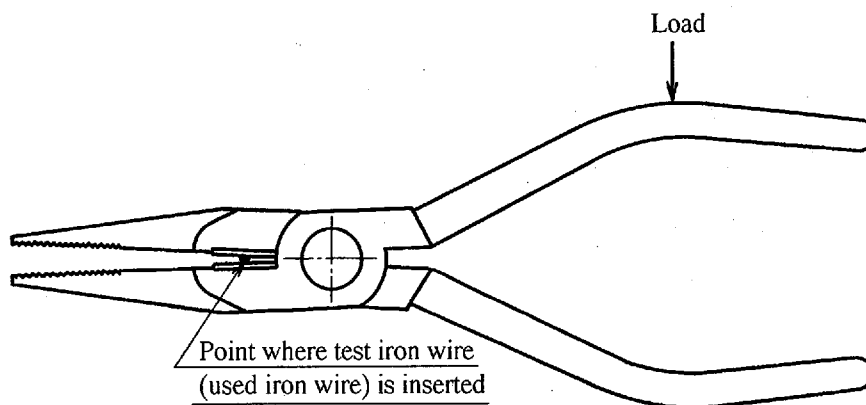


Fig. 2 Cutting performance

4.3 Mechanical properties

4.3.1 Deformation Permanent set of round nose chain pliers with side cutters shall not be more than 2 % of the maximum width of the handles, and the permanent set of the gripping part shall be not more than 0.3 mm at the point when tested in accordance with 6.1.

4.3.2 Hardness Hardness of the cutting edges of round nose chain pliers with side cutters shall be 54 HRC to 62 HRC when tested in accordance with 6.2.

5 Material Material for the body of round nose chain pliers with side cutters shall be SK7 specified in JIS G 4401, S15CK specified in JIS G 4051 or the materials of the quality equivalent or superior to that specified in 4.

6 Methods of test

6.1 Deformation test The deformation test of round nose chain pliers with side cutters shall be carried out in such a way that the test iron wire of 3.4 mm diameter is placed in a point of the jaws some 2 mm apart from the end, the torque of 29.4 N·m is applied for approximately one minute by applying a load to the widest place of the handles and then the difference between the reading of the dimension before applying the load and the reading of the dimension after removing the load is measured.

6.2 Hardness test Hardness of the cutting edges of round nose chain pliers with side cutters shall be measured in accordance with the test method specified in JIS Z 2245 using the testing machine specified in JIS B 7726.

7 Inspection Inspection of round nose chain pliers with side cutters shall be as follows :

- a) **Shape and dimension inspection** The inspection on the shape and dimensions of the round nose chain pliers with side cutters shall be carried out using a rule vernier callipers, etc. and the result shall conform to the requirements in 3.
- b) **Appearance inspection** The inspection on the appearance of the round nose chain pliers with side cutters shall be carried out visually and the result shall conform to the requirements in 4.1.
- c) **Joint rivet inspection** The inspection on the joint rivet of the round nose chain pliers with side cutters shall be carried out using a suitable instrument or by a feeling and the result shall conform to the requirements in 4.2.1.
- d) **Cutting performance inspection** The result of the inspection on the cutting performance of the round nose chain pliers with side cutters shall conform to the requirements in 4.2.2.
- e) **Deformation inspection** The result of inspection on the deformation of the round nose chain pliers with side cutters shall conform to the requirements in 4.3.1.
- f) **Hardness inspection** The result of the inspection on the hardness of the round nose pliers with side cutters shall conform to the requirements in 4.3.2.

8 Designation of products The round nose chain pliers with side cutters shall be designated with the number of standard or title of standard.

Example 1 JIS B 4631

Example 2 Round nose chain pliers with side cutters

9 Marking The manufacturer's name or abbreviation shall be marked on an appropriate place of the round nose chain pliers with side cutters.

Moreover, it is desirable to indicate the symbol for material.

Informative reference Torsion test of round nose chain pliers with side cutters is as follows:

Torsion test Fix one end of the test iron wire (SWM-N specified in JIS G 3532) of 1.9 mm diameter, insert it into a portion approximately 3 mm apart from the point of the jaws of the round nose chain plier with side cutters, turn to the left approximately by right angle and measure the deformation of the point. The deformation shall not be more than 0.5 mm.