

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

☞ JIS B 4623 : 1998

Cutting pliers

ICS 25.140.30

Descriptors : pliers, assembling, pincers, hand tools

Reference number : JIS B 4623 : 1998 (E)

B 4623:1998

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 4623:1995 is replaced with JIS B 4623:1998.

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.

Date of Establishment: 1950-12-16

Date of Revision: 1998-03-20

Date of Public Notice in Official Gazette: 1998-03-20

Investigated by: Japanese Industrial Standards Committee
Divisional Council on Machine Elements

JIS B 4623:1998, First English edition published in 1998-10

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 1998

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

Cutting pliers

Introduction This Japanese Industrial Standard was made on the basis of the International Standards shown in the 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 5746: 1988 *Pliers and nippers—Engineer's and lineman's pliers—Dimensions and test values*

1 Scope This Japanese Industrial Standard specifies the pliers for general purpose (hereafter referred to as "pliers") used mainly for cutting copper wires and iron wires.

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 pliers shall be as follows:

- a) The shape of pliers shall be as shown in Fig. 1.
- b) The dimensions of pliers shall be as given in Table 1.

2
B 4623 : 1998

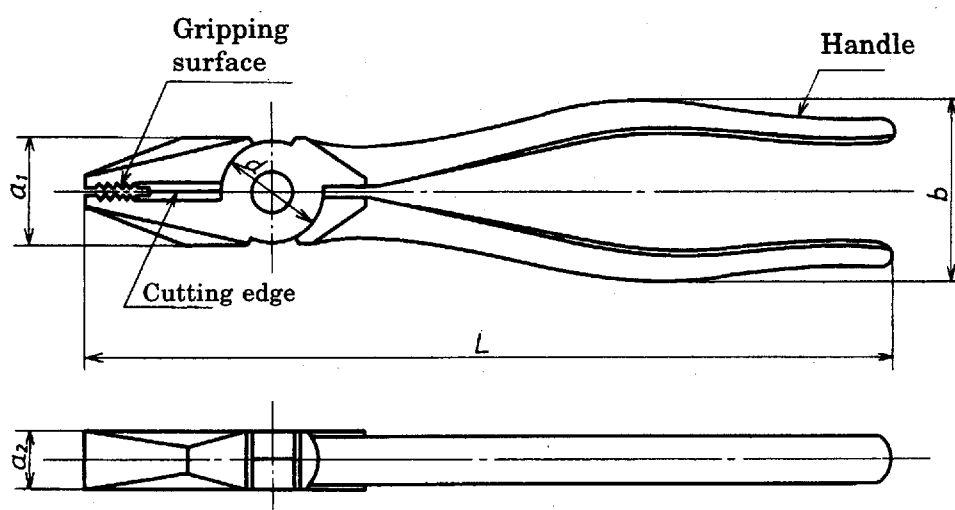


Fig. 1 Shape

Table 1 Dimensions

Unit: mm

Nominal dimension	a_1		a_2		b	L	
	Dimension	Tolerance	Dimension	Tolerance	Maximum	Dimension	Tolerance
150	22 or 23	± 0.7	12.5	± 0.7	50	160	± 4
175	24 or 25		13.5		52	185	
200	26 or 27		14.5		54	210	

Remarks: The dimension of d shall be made smaller than the dimension a_1 in a range of 2 mm.

4 Quality

4.1 Appearance The appearance of the plier shall be free from crack, harmful flaw, burr, rust and other harmful defect that may 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 plier shall be that clearance is small, and opening and closing are smooth.

4.2.2 Cutting performance When inserting a test iron wire⁽¹⁾ shown in Table 2 into almost the center of the cutting edge of the plier, the plier shall be able to cut the test wire with the load not more than those given in Table 2 when applied to the handle.

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

Table 2 Test iron wire and load

Unit: mm

Nominal dimension	Diameter of test iron wire	Load at the point in which test iron wire is placed (N)
150	2.15	3 140
175	2.75	4 120
200	3.40	6 370

4.3 Mechanical properties

4.3.1 Deformation Permanent set of plier shall not be more than 1 % of the maximum width of the handles when tested in accordance with **6.1**.

4.3.2 Shock resistance Shock resistance of plier shall be that there is no abnormality such as falling away, crack, remarkable indentation on the cutting edge when tested in accordance with **6.2**.

4.3.3 Hardness Hardness of the cutting edges of plier shall be 56 HRC to 64 HRC when tested in accordance with **6.3**.

5 Material Material for the body of plier 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

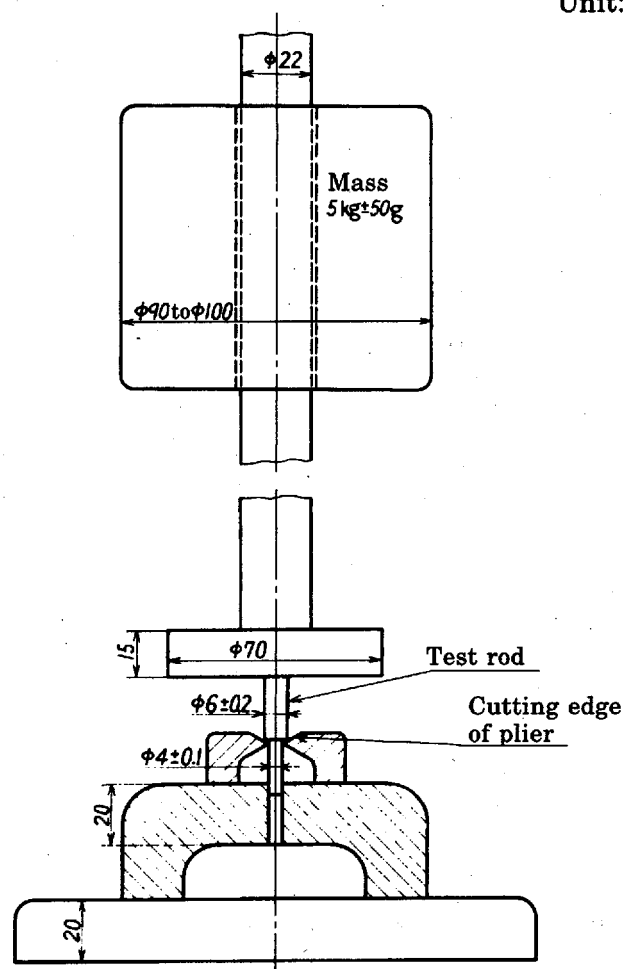
6.1 Deformation test The deformation test of plier shall be carried out in such a way that the test iron wire of 3.4 mm diameter is placed in a point of the jaws some 2 mm apart from the end, the torque given in Table 3 is applied for approximately one minute by applying a load to the widest place of the handles and the difference between the reading of the dimension before applying the load and the reading of the dimension after removing the load is measured.

Table 3 Torque applied in deformation test

Nominal dimension mm	Torque N·m
150	58.8
175	88.3
200	123.0

6.2 Impact test The impact test of plier shall be carried out in a manner that the plier is fixed on an impact tester as shown in Fig. 2, the impact given in Table 4 is applied to almost the middle of the cutting edge and then the plier is examined whether there is abnormality on the cutting edge. The test rod at this time shall be of steel of 50 HRC or more in hardness.

Unit: mm

**Fig. 2 Impact applying apparatus****Table 4 Impact value**

Nominal dimension mm	Impact value J
150	6.86
175	8.83
200	9.81

Remarks: 1 J=1 N·m

6.3 Hardness test Hardness of the cutting edges of plier shall be measured using the testing machine specified in **JIS B 7726** in accordance with the test method specified in **JIS Z 2245**.

7 Inspection The inspection of the pliers shall be as follows:

- a) **Shape and dimension inspection** The inspection on the shape and dimension of the pliers shall be carried out using a rule, vernier callipers, etc. and the result shall conform to the requirements in 3.