
**Pliers and nippers for electronics —
Single-purpose nippers — Cutting
nippers**

Pinces pour l'électronique — Pinces unifonction — Pinces coupantes

STANDARDSISO.COM : Click to view the full PDF of ISO 9654:2004



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

STANDARDSISO.COM : Click to view the full PDF of ISO 9654:2004

© ISO 2004

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 either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 9654 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 10, *Assembly tools for screws and nuts, pliers and nippers*.

This second edition cancels and replaces the first edition (ISO 9654:1989) which has been technically revised.

STANDARDSISO.COM : Click to view the full PDF of ISO 9654:2004

Pliers and nippers for electronics — Single-purpose nippers — Cutting nippers

1 Scope

This International Standard specifies the principal dimensions of single-purpose cutting nippers for electronics and the range of diameters of test wires to be used to verify the functional performance of these nippers in accordance with ISO 9656. The general technical requirements are given in ISO 9657.

The cutting nippers illustrated in this International Standard are only examples and are not intended to affect the manufacturer's design.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9656, *Pliers and nippers for electronics — Test methods*

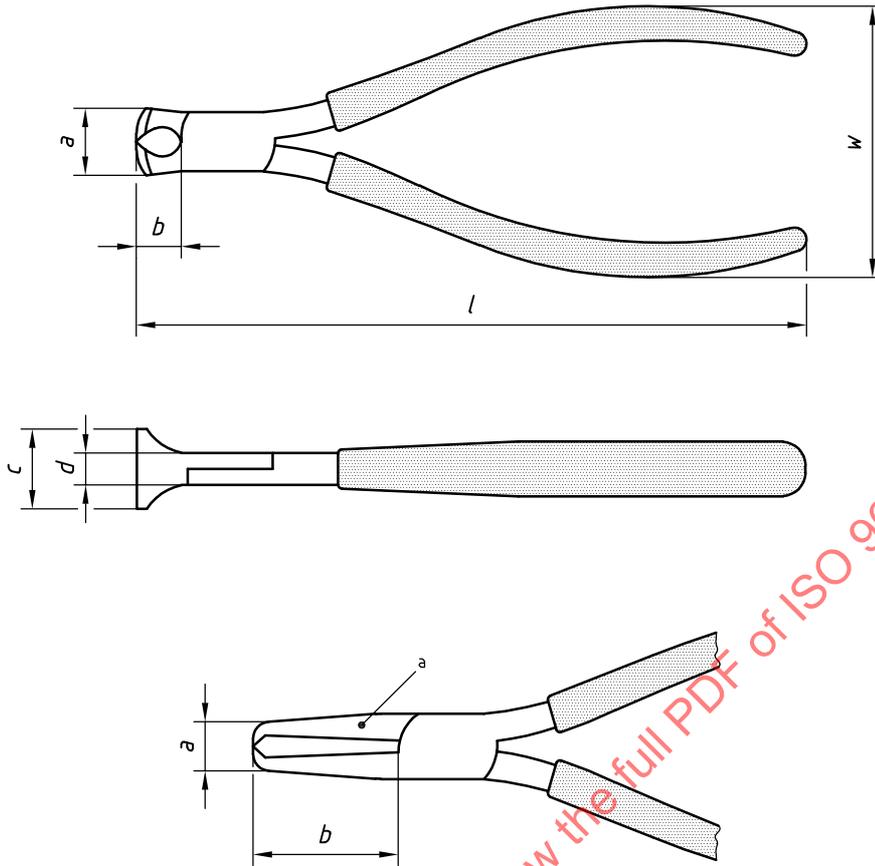
ISO 9657, *Pliers and nippers for electronics — General technical requirements*

IEC 60317-0-1, *Specifications for particular types of winding wires — Part 0-1: General requirements — Enamelled round copper wire*

3 Dimensions

3.1 End cutting nippers

The principal dimensions of end cutting nippers are shown in Figure 1 and given in Table 1. The range of test wire diameters to be used is given in Table 2.



a Long jaws.

Figure 1 — End cutting nippers

Table 1 — End cutting nippers, principal dimensions

Dimensions in millimetres

Length of jaws	l	a max.	b	c max.	d max.	w ± 5
Short jaws	112 ± 7	13	9 max.	22	9	48
Long jaws	125 ± 8	7	14 min.	8	9	50
	160 ± 10	7	36 min.	10	10	50

Table 2 — End cutting nippers, classification of test wire

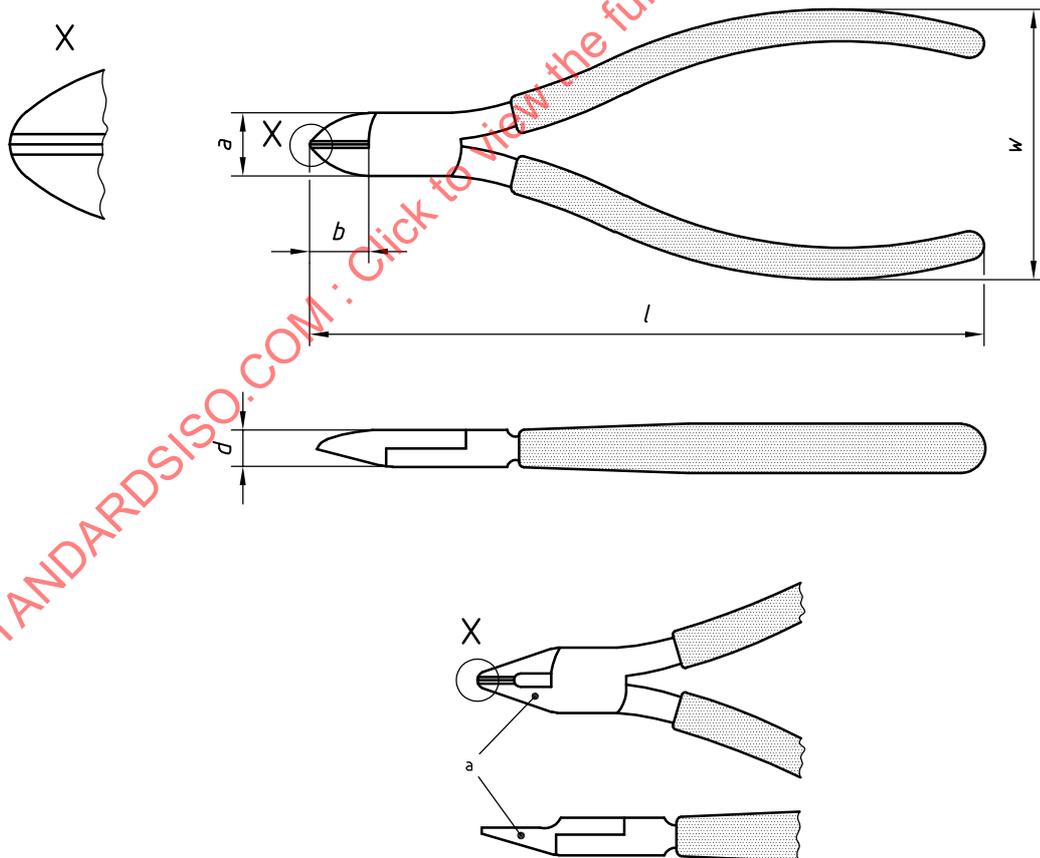
Dimensions in millimetres

Length of jaws	Nominal length l	Cutting edges ^a					
		standard bevelled		semi-flush		flush	
		Diameter of test wire ^b					
		min.	max.	min.	max.	min.	max.
Short jaws	112	0,30	1,25	0,30	1,25	0,2	1,0
Long jaws	125	0,3	0,8	0,3	0,8	0,2	0,8
	160	0,3	0,8	0,3	0,8	0,2	0,8

^a For the design of these three types of cutting edge, see ISO 8979 reference Nos. 130, 131 and 132.
^b The test wire shall be of Cu-ETP in accordance with IEC 60317-0-1.

3.2 Diagonal cutting nippers

The principal dimensions of diagonal cutting nippers are shown in Figure 2 and given in Table 3. The range of test wire diameters to be used is given in Table 4.



^a Alternative design of the jaws.

Figure 2 — Diagonal cutting nippers

Table 3 — Diagonal cutting nippers, principal dimensions

Dimensions in millimetres

<i>l</i>	<i>a</i> max.	<i>b</i> max.	<i>d</i> max.	<i>w</i> ± 5
112 ± 7	13	16	8	48
125 ± 8	16	20	10	50

Table 4 — Diagonal cutting nippers, classification of test wire

Dimensions in millimetres

Nominal length <i>l</i>	Cutting edges ^a					
	standard bevelled		semi-flush		flush	
	Diameter of test wire ^b					
	min.	max.	min.	max.	min.	max.
112	0,30	1,25 ^c	0,30	1,25 ^c	0,2	1,0
125	0,3	2,0	0,3	2,0	0,2	1,5

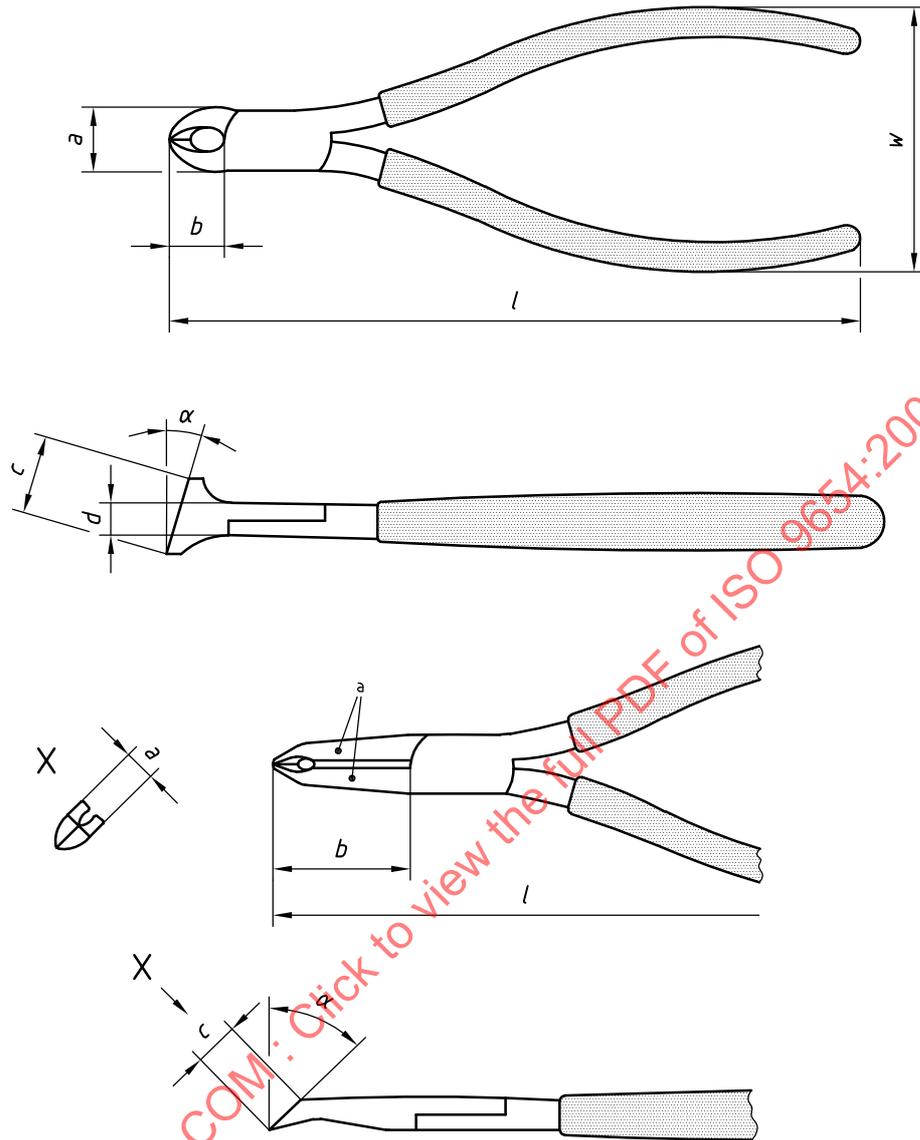
^a For the design of these three types of cutting edge, see ISO 8979 reference Nos. 130, 131 and 132.

^b The test wire shall be of Cu-ETP in accordance with IEC 60317-0-1.

^c 1 max. for nippers with pointed and relieved jaws.

3.3 Oblique cutting nippers

The principal dimensions of oblique cutting nippers are shown in Figure 3 and given in Table 5. The range of test wire diameters to be used is given in Table 6.



a Long jaws.

Figure 3 — Oblique cutting nippers

Table 5 — Oblique cutting nippers, principal dimensions

Linear dimensions in millimetres

Length of jaws	l	a	b	c	d	w	α
		max.	max.	max.	max.		
Short jaws	112 ± 7	14	14	20	8	± 5	15°
Long jaws	125 ± 8	8	25	10	8	50	45°