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DIN ISO 9654:1994-09

Pliers and nippers for electronics – Single-purpose nippers – Cutting nippers (ISO 9654:2004) English version of DIN ISO 9654:2006-09

Elektronikzangen –
Einzweckzangen –
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Englische Fassung DIN ISO 9654:2006-09

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Contents

National foreword

This standard has been prepared by Technical Committee ISO/TC 29 "Small tools", Subcommittee SC 10 "Assembly tools for screws and nuts, pliers and nippers".

The responsible German body involved in its preparation was the *Normenausschuss Werkzeuge und Spannzeuge* (Tools and Clamping Devices Standards Committee), Technical Committee NA 121-09-01 AA *Zangen*.

The DIN Standards corresponding to the International Standards referred to in clause 2 of the ISO Standard are as follows:

IEC 60317-0-1	DIN EN 60317-0-1
ISO 9656	DIN ISO 9656
ISO 9657	DIN ISO 9657

Amendments

This standard differs from DIN ISO 9654:1994-09 as follows:

a) The content of the standard has been updated.

b) A new clause 4 "Designation" has been included.

c) A new clause 5 "Marking" has been included.

d) The standard has been editorially revised.

Previous editions

DIN ISO 9654: 1994-09

National Annex NA
(informative)

Bibliography

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

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

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

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*

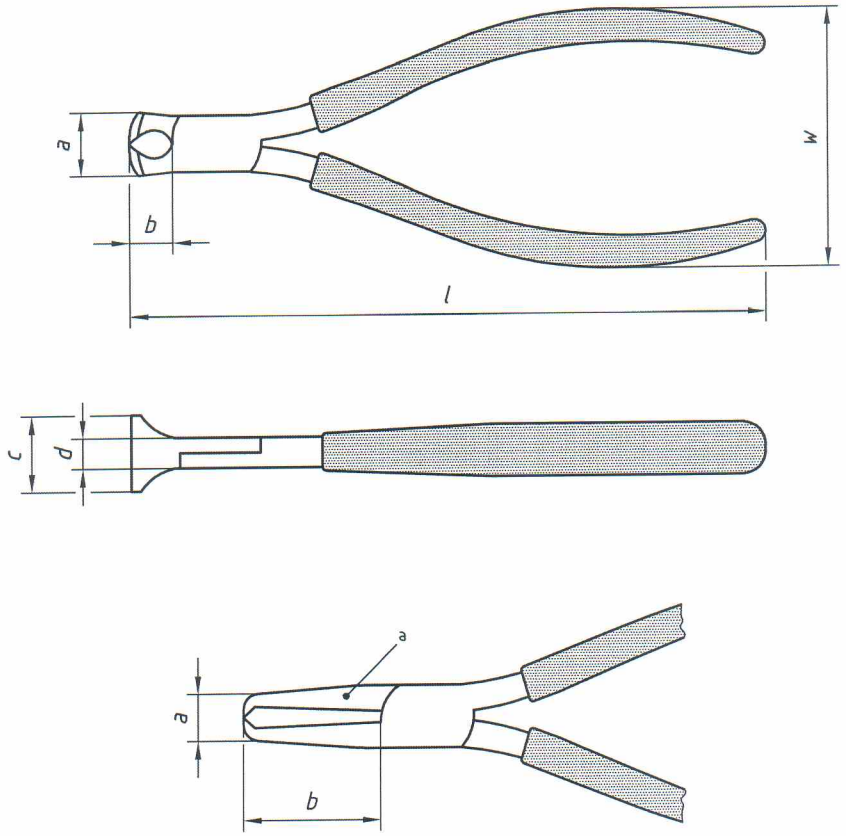
ISO 9657, *Pliers and nippers for electronics — General technical requirements*

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

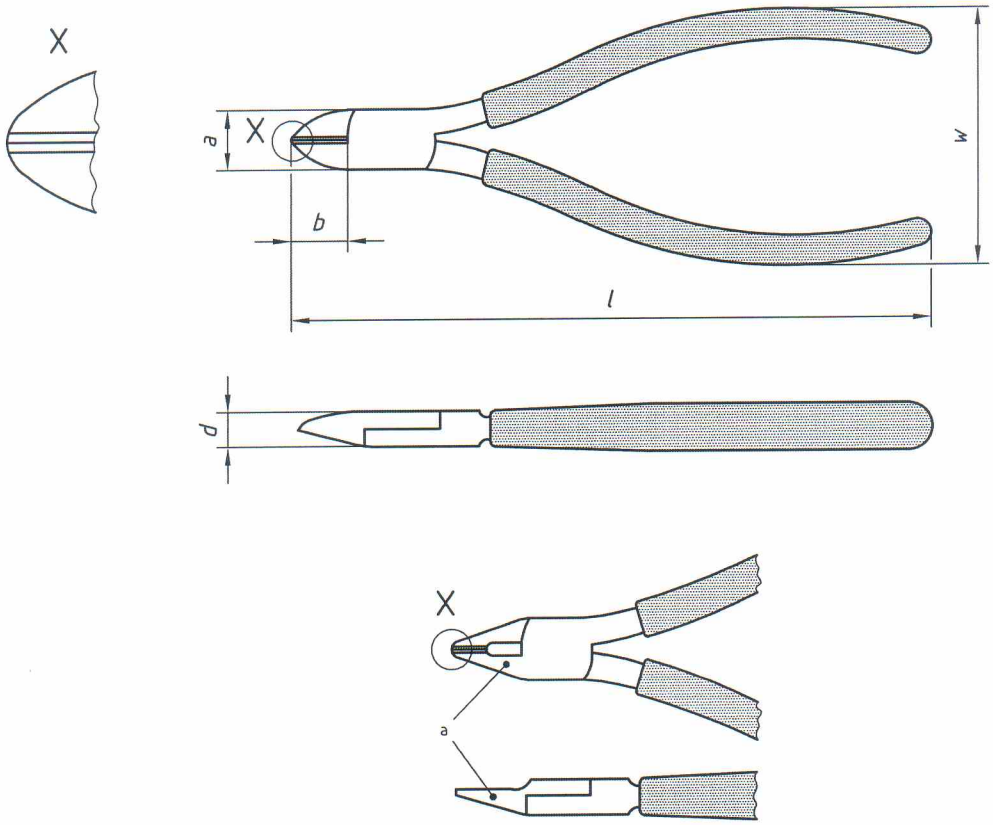
Length of jaws	Nominal length *l*	Cutting edges[a]					
		standard bevelled		semi-flush		flush	
		Diameter of test wire[b]					
		min.	max.	min.	max.	min.	max.
Short jaws	112	0,30	1,25	0,30	1,25	0,2	1,0
Long jaws	125	0,3	0,8	0,3	0,8	0,2	0,8
	160	0,3	0,8	0,3	0,8	0,2	0,8

[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

l	*a* max.	*b* max.	*d* max.	*w* ± 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 *l*	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

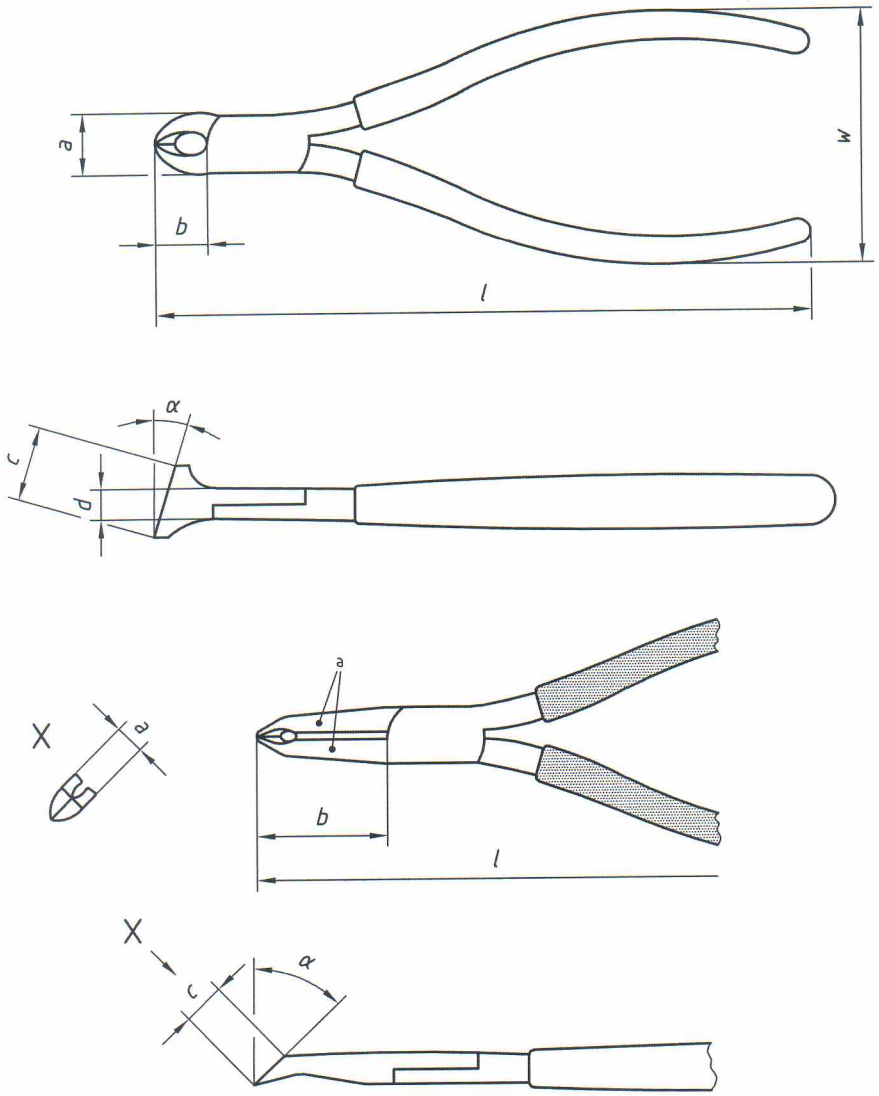
[a] For the design of these three types of cutting edge, see ISO 8979 reference Nos. 130, 131 and 132.

[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 max.	b max.	c max.	d max.	w ± 5	α ± 5°
Short jaws	112 ± 7	14	14	20	8	48	15°
Long jaws	125 ± 8	8	25	10	8	50	45°

Table 6 — Oblique 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

[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.

4 Designation

EXAMPLE 1

End cutting nippers, number 121 in accordance with ISO 8979, with a nominal length *l* = 125 mm and short jaws (S) and standard bevelled cutting edges (SB) are designated as follows:

End cutting nippers 121 - ISO 9654 - 125 - S - SB

EXAMPLE 2

Diagonal cutting nippers with pointed jaws, number 112 in accordance with ISO 8979, with a nominal length *l* = 112 mm and semi-flush cutting edges (SF) are designated as follows:

Diagonal cutting nippers 112 - ISO 9654 - 112 - SF

EXAMPLE 3

Oblique cutting nippers, number 122 in accordance with ISO 8979, with a nominal length *l* = 125 mm and long jaws (L) flush cutting edges (F) are designated as follows:

Oblique cutting nippers 122 - ISO 9654 - 125 - L - F

5 Marking

Marking shall be in accordance with ISO 9657.

Bibliography

[1] ISO 8979, *Pliers and nippers for electronics — Nomenclature*