INTERNATIONAL STANDARD

ISO 5748

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Pliers and nippers — End cutting nippers — Dimensions and test values

Pinces et tenailles — Pinces coupantes en bout — Dimensions et valeurs d'essai

ISO

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Foreword

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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 5748 was prepared by Technical Committee ISO/TC 29, Small tools, Subcommittee SC 10, Assembly tools for screws and nuts, pliers and nippers.

This third edition cancels and replaces the second edition (180 5748:1988) which has been technically revised.

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Pliers and nippers — End cutting nippers — Dimensions and test values

1 Scope

This International Standard specifies the principal dimensions of end cutting nippers and the test values for the nippers in order to verify their aptitude to function in conformity with ISO 5744. General technical requirements are given in ISO 5743.

The end nippers illustrated in this International Standard are examples only 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 5743, Pliers and nippers — General technical requirements

ISO 5744:2004, Pliers and nippers — Methods of test

3 Dimensions and test values

3.1 End cutting nippers for hard wire

The main dimensions for cutting nippers for hard wire are shown in Figure 1 and given in Table 1.

Cutting nippers shall be tested in accordance with ISO 5744.

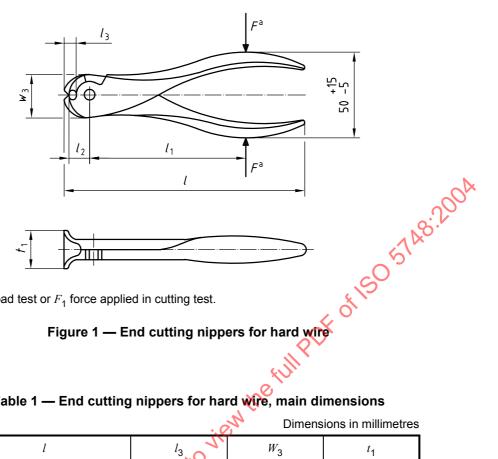
After the load test, the permanent set s shall not exceed the value given in Table 2. If distance l_1 is not suitable for the load test, the formula given in ISO 5744:2004, 4.2 shall be used.

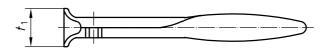
The cutting force, F_1 , and the diameter, d, of the test wire shall not exceed the values given in Table 2.

Nippers having a lever ratio differing from the values given in Table 2 shall be checked for compliance using the formula given in ISO 5744:2004, 5.3.3.

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Dimensions in millimetres





F =Load applied in load test or F_1 force applied in cutting test.

Table 1 — End cutting nippers for hard wire, main dimensions

l W_3 *t*₁ max. max. max. 140 ± 8 25 22 9 28 25 160 ± 9 180 ± 10 10 32 28 11 $200\pm11\,$ 36 32

Table 2 — End cutting nippers for hard wire, force application and test values

4			Cutting test		Load test	
Nominal length	XX		Diameter of hard test wire	Maximum cutting force	Load	Maximum permanent set
l	l_1	l_2	d^{a}	$F_{1 \text{ max}}$	F	s _{max} b
mm	mm	mm	mm	N	N	mm
140	100	16	1,4	750	1 000	1
160	112	18	1,6	900	1 120	1
180	125	20	1,8	1 060	1 250	1
200	140	22	2	1 260	1 400	1

Data for hard test wire are given in ISO 5744.

 $s = w_1 - w_2$ (see ISO 5744).

3.2 End cutting nippers for medium hard wire

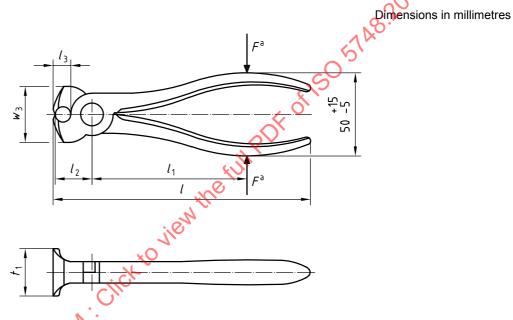
The main dimensions for cutting nippers for hard wire are shown in Figure 2 and given in Table 3.

Cutting nippers shall be tested in accordance with ISO 5744.

After the load test, the permanent set s shall not exceed the value given in Table 4. If distance l_1 is not suitable for the load test, the formula given in ISO 5744:2004, 4.2 shall be used.

The cutting force, F_1 , and the diameter, d, of the test wire shall not exceed the values given in Table 4.

Nippers having a lever ratio differing from the values given in Table 4 shall be checked for compliance using the formula given in ISO 5744:2004, 5.3.2.



F =Load applied in load test or F_{\bullet} force applied in cutting test.

End cutting nippers for medium hard wire

Dimens	ions in	millimetres

Table 3 — End cutting nippers for medium hard wire, main dimensions							
4			Dimens	ions in millimetres			
SIL	l	l_3	w_3	<i>t</i> ₁			
		max.	max.	max.			
	125 ± 7	8	25	20			
	140 ± 8	9	28	22			
	160 ± 9	10	32	25			
	180 ± 10	11	36	28			
	200 ± 11	12	40	32			

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			Cuttin	g test	Load test	
Nominal length			Diameter of medium hard test wire	Maximum cutting force	Load	Maximum permanent set
l	l_1	l_2	d ^a	$F_{\sf 1max}$	F	^S max b
mm	mm	mm	mm	N	N	mm
125	90	18	1,6	570	900	0,7
140	100	20	1,6	570	1 000	1
160	112	22	1,6	570	1 120	1
180	125	25	1,6	570	1 250	C/X

570

1 400

Table 4 — End cutting nippers for medium hard wire, force application and test values

200

Toggle lever assisted end cutting nippers for hard wire 3.3

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The main dimensions for cutting nippers for hard wire are shown in Figure 3 and given in Table 5.

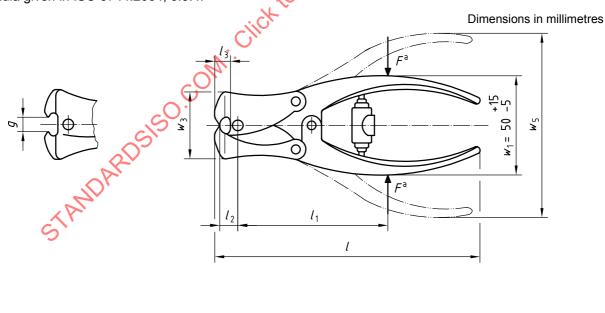
1,6

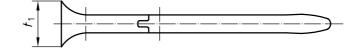
Cutting nippers shall be tested in accordance with ISO 5744.

After the load test, the permanent set s shall not exceed the value given in Table 6. If distance l_1 is not suitable for the load test, the formula given in ISO 5744:2004, 4.2 shall be used.

The cutting force, F_1 , and the diameter, d, of the test wire shall not exceed the values given in Table 6.

Nippers having a lever ratio differing from the values given in Table 6 shall be checked for compliance using the formula given in ISO 5744:2004, 5.3.4.





F = Load applied in load test or F_1 force applied in cutting test.

Figure 3 — Toggle lever assisted end cutting nippers for hard wire

¹⁴⁰ Data for medium hard test wire are given in ISO 5744.

 $s = w_1 - w_2$ (see ISO 5744).

Table 5 — Toggle lever assisted end cutting nippers for hard wire, main dimensions

Dimensions in millimetres

l	l_3	w ₃	g	<i>t</i> ₁
	max.	max.	min.	max.
180 ± 10	9	45	4	33,5
200 ± 11	10	50	4	35,5

Table 6 — Toggle lever assisted end cutting nippers for hard wire, force application and test values

				Cutting test			Load test		
Nominal length			Lever ratio ^a	Diameter of hard test wire	Maximum cutting force	Load	Maximum permanent set		
l	l_1	l_2		d b	F _{1 max}	F	s c Smax c		
mm	mm	mm		mm	N	N	mm		
180	125	16	12,5	2	640	750	1		
200	140	18	14,5	2,5	790	840	1		

The lever ratio is equal to $(w_5 - w_1)/g$.

4 Designation

EXAMPLE 1 End cutting nippers, number 102 in accordance with ISO 5742, with a nominal length of 140 mm and for hard wire (H) are designated as follows:

End cutting nippers 102- ISO 5748 - 140 - H

EXAMPLE 2 End cutting nippers, number 102 in accordance with ISO 5742, with a nominal length of 160 mm and for medium hard wire (M) are designated as follows:

End cutting nippers 102 - ISO 5748 - 160 - M

EXAMPLE3 Toggle lever assisted end cutting nippers, number 103 in accordance with ISO 5742, with a nominal length of 200 mm are designated as follows:

Toggle lever assisted end cutting nippers 103 - ISO 5748 - 200

5 Marking

Marking shall be in accordance with ISO 5743.

b Data for hard test wire are given in ISO 5744.

 $s = w_1 - w_2$ (see ISO 5744).