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ISO 5745

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
ORGANISATION INTERNATIONALE DE NORMALISATION
МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Pliers and nippers — Pliers for gripping and manipulating — Dimensions and test values

Pinces et tenailles — Pinces de serrage et de manipulation — Dimensions et valeurs d'essai

Reference number
ISO 5745 : 1988 (E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 5745 was prepared by Technical Committee ISO/TC 29, *Small tools.*

This second edition cancels and replaces the first edition (ISO 5745 : 1982), tables 1 and 2 of which have been technically revised.

Printed in Switzerland

Pliers and nippers — Pliers for gripping and manipulating — Dimensions and test values

1 Scope

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

The pliers for gripping and manipulating illustrated in this International Standard are examples only and are not intended to affect the manufacturers' design.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5743 : 1982, *Pliers and nippers — General technical requirements.*

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

3 Dimensions and test values

3.1 Round nose pliers for gripping and manipulating

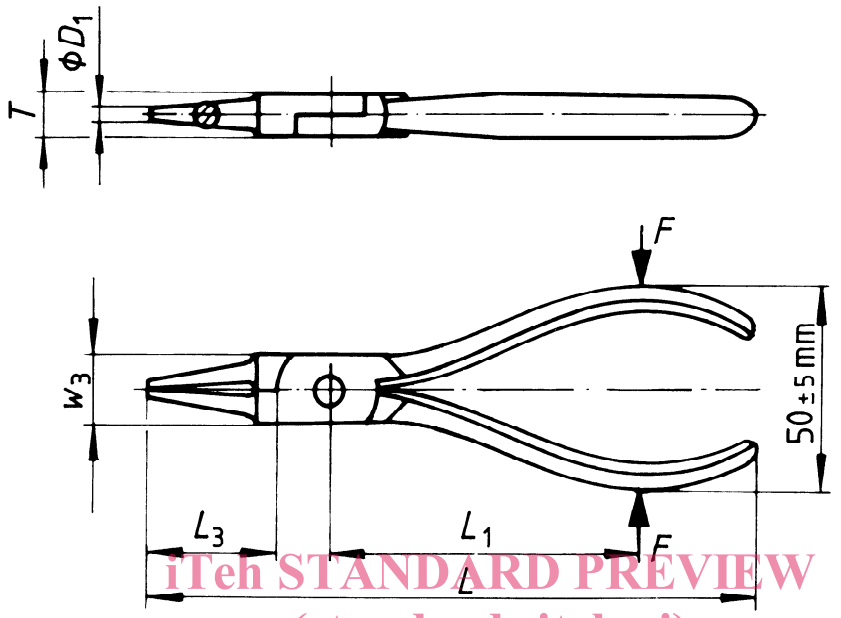


Figure 1

Round nose pliers shall be tested in accordance with ISO 5744.

Table 1

Dimensions in millimetres

Length of nose	L	L_3	D_1 max.	w_3 max.	T max.
Short nose	125 ± 6	$25\ ^{0}_{-5}$	2	16	8
Long nose	140 ± 7	40 ± 4	2,8	17	9
	160 ± 8	50 ± 5	3,2	19	10
	180 ± 9	63 ± 6,3	3,6	20	10

After the load test, the permanent set s shall not exceed the value given in table 2. If the distance L_1 is not suitable for the load test, the following formula may be applied :

$$F' = \frac{F \times L_1}{L'_1}$$

where

F' is the load which is not given in table 2;

F is the load given in table 2;

L_1 is the distance from the centre of the joint rivet to the point of application of the load given in table 2;

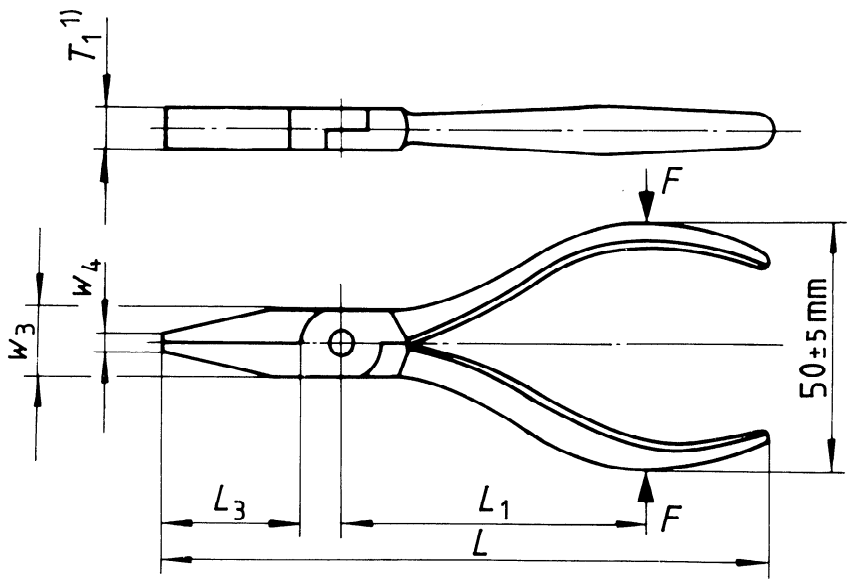
L'_1 is the measured distance from the centre of the joint rivet to the point of application of the load.

Table 2

Length of nose	L	L_1	Torsion test: Torque T	Torsion test: Maximum twist α_{max}	Load test: Load F	Load test: Maximum permanent set s_{max} [1]
	mm	mm	N·m		N	mm
Short nose	125	63	5	± 20°	630	0,5
Long nose	140	63	0,5	± 25°	630	1
	160	71	1	± 25°	710	1
	180	80	1,25	± 25°	800	1

1) $s = w_1 - w_2$ (See ISO 5744.)

3.2 Flat nose pliers for gripping and manipulating



1) The head may be tapered over the length L_3.

Figure 2

Flat nose pliers shall be tested in accordance with ISO 5744.

Table 3

Dimensions in millimetres

Length of nose	L	L_3	w_3 max.	w_4 max.	T_1 max.
Short nose	124 ± 6	$25\ ^{0}_{-5}$	16	3,2	8
	140 ± 7	$32\ ^{0}_{-6,3}$	18	4	9
	160 ± 8	$40\ ^{0}_{-8}$	20	5	10
Long nose	140 ± 7	50 ± 3,2	16	3,2	8
	160 ± 8	50 ± 4	18	4	9
	180 ± 9	63 ± 5	20	5	10

After the load test, the permanent set s shall not exceed the value given in table 4. If the distance L_1 is not suitable for the load test, the following formula may be applied :

$$F' = \frac{F \times L_1}{L'_1}$$

where

F' is the load which is not given in table 4;

F is the load given in table 4;

L_1 is the distance from the centre of the joint rivet to the point of application of the load given in table 4;

L'_1 is the measured distance from the centre of the joint rivet to the point of application of the load.

Table 4

Length of nose	L	L_1	Torsion test: Torque T	Torsion test: Maximum twist α_{max}	Load test: Load F	Load test: Maximum permanent set s_{max} 1)
	mm	mm	N·m		N	mm
Short nose	125	63	5	± 15°	630	0,5
	140	71	5,5	± 15°	710	1
	160	80	6,5	± 15°	800	1
Long nose	140	63	—	—	630	1
	160	71	—	—	710	1
	180	80	—	—	800	1

1) $s = w_1 - w_2$ (See ISO 5744.)

3.3 Snipe nose pliers for gripping and manipulating

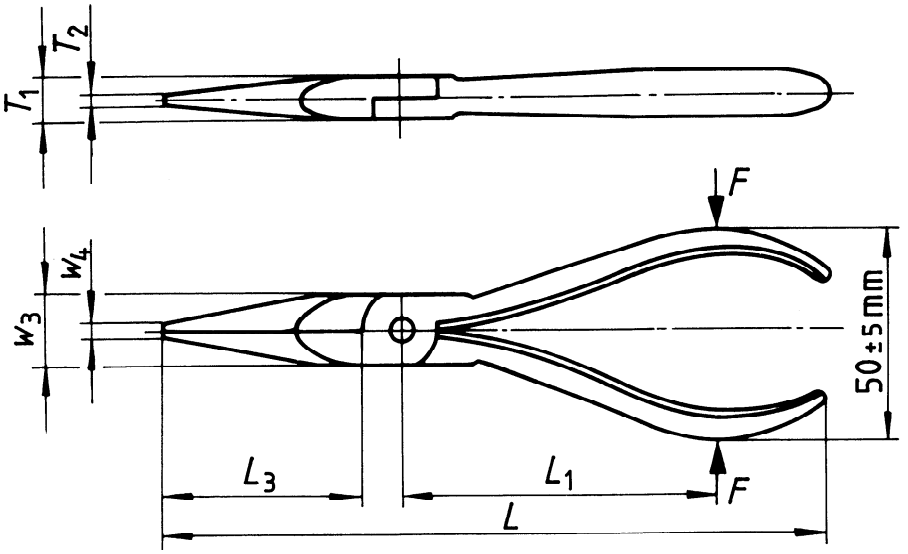


Figure 3

Snipe nose pliers 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 the distance L_1 is not suitable for the load test, the following formula may be applied :

$$F' = \frac{F \times L_1}{L'_1}$$

where

F' is the load which is not given in table 6;

F is the load given in table 6;

L_1 is the distance from the centre of the joint rivet to the point of application of the load given in table 6;

L'_1 is the measured distance from the centre of the joint rivet to the point of application of the load.

Table 5

Dimensions in millimetres

L	L_3	w_3 max.	w_4 max.	T_1 max.	T_2 max.
140 ± 7	40 ± 3,2	16	2,5	8	2
160 ± 8	50 ± 4	18	3,2	9	2,5
200 ± 10	80 ± 6,3	22	5	11	4

Table 6

L	L_1	Load test	
		Load F	Maximum permanent set s_{max} [1]
mm	mm	N	mm
140	63	630	1
160	71	710	1
200	90	900	1

1) $s = w_1 - w_2$ (See ISO 5744.)

3.4 Snipe nose pliers with side cutter for medium hard wire

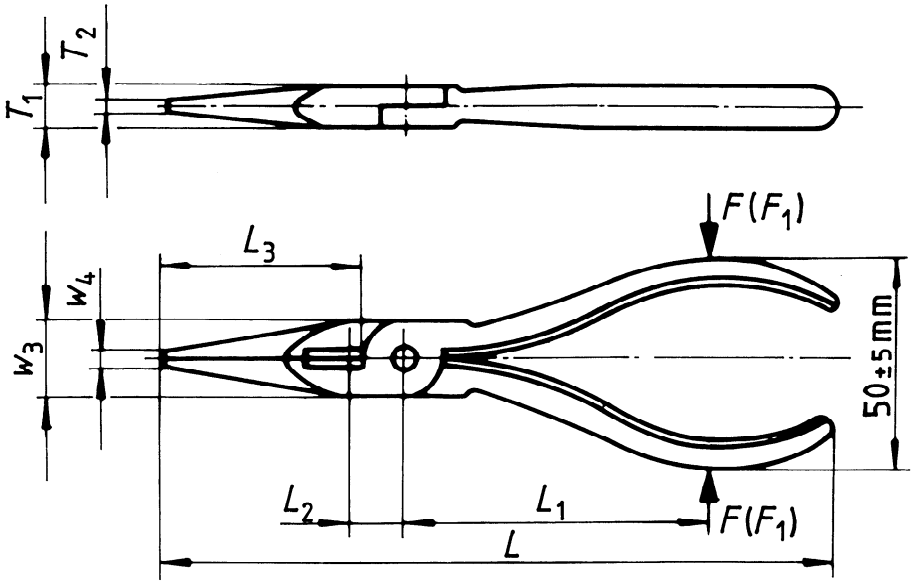


Figure 4

Table 7

Dimensions in millimetres

L	L_3	w_3 max.	w_4 max.	T_1 max.	T_2 max.
140 ± 7	40 ± 3,2	16	2,5	8	2
160 ± 8	50 ± 4	18	3,2	9	2,5
200 ± 10	80 ± 6,3	22	5	11	4

Table 8

L	L_1	L_2	Cutting test: Diameter of medium hard test wire D [1]	Cutting test: Maximum cutting force $F_{1,\,max}$	Load test: Load F	Load test: Maximum permanent set s_{max} [2]
mm	mm	mm	mm	N	N	mm
140	63	12,5	1,6	570	630	1
160	71	14	1,6	570	710	1
200	90	18	1,6	570	900	1

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

2) $s = w_1 - w_2$ (See ISO 5744.)

Snipe nose pliers shall be tested in accordance with ISO 5744.

After the load test, the permanent set s shall not exceed the value given in table 8. If the distance L_1 is not suitable for the load test, the following formula may be applied :

$$F' = \frac{F \times L_1}{L'_1}$$

where

F' is the load which is not given in table 8;

F is the load given in table 8;

L_1 is the distance from the centre of the joint rivet to the point of application of the load given in table 8;

L'_1 is the measured distance from the centre of the joint rivet to the point of application of the load.

The cutting force F_1 and the diameter D of the test wire shall not exceed the values given in table 8.

Pliers having a lever ratio differing from the values given in table 8 may be checked for compliance using the following formula :

$$F'_1 = \frac{F_2 \times 1{,}6 \times L'_2}{L'_1}$$

where

F'_1 is the maximum cutting force which is not given in table 8;

F_2 is the cutting force of medium hard test wire (see ISO 5744);

1,6 is the correction factor for medium hard test wire;

L'_1 is the measured distance from the centre of the joint rivet to the point of application of the load;

L'_2 is the measured distance from the centre of the joint rivet to the location of the test wire.

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Descriptors : tools, assembly tools, hand tools, pliers, specifications, dimensions.

Price based on 5 pages