International Standard 5745

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Pliers and nippers — Pliers for gripping and manipulating — Dimensions

Pinces et tenailles — Pinces de serrage et de manipulation — Dimensions

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

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.

International Standard ISO 5745 was developed by Technical Committee ISO/TC 29, *Small tools*, and was circulated to the member bodies in April 1979.

It has been approved by the member bodies of the following countries :

Australia	Germany, F.R.	Poland
Austria	Hungary	Romania
Belgium	India	South Africa, Rep. of
Bulgaria	Israel	Spain
Canada	Italy	Sweden
Chile	Japan	Switzerland
Czechoslovakia	Korea, Dem. P. Rep. of	USSR
France	*Libyan Arab Jamahiriya*	Yugoslavia

The member bodies of the following countries expressed disapproval of the document on technical grounds :

United Kingdom
USA

Printed in Switzerland

Pliers and nippers — Pliers for gripping and manipulating — Dimensions

1 Scope and field of application

This International Standard lays down the principal dimensions of pliers for gripping and manipulating and specifies 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 figures in this International Standard are only examples and are not intended to affect the manufacturer's design.

2 References

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

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

3 Round nose pliers for gripping and manipulating

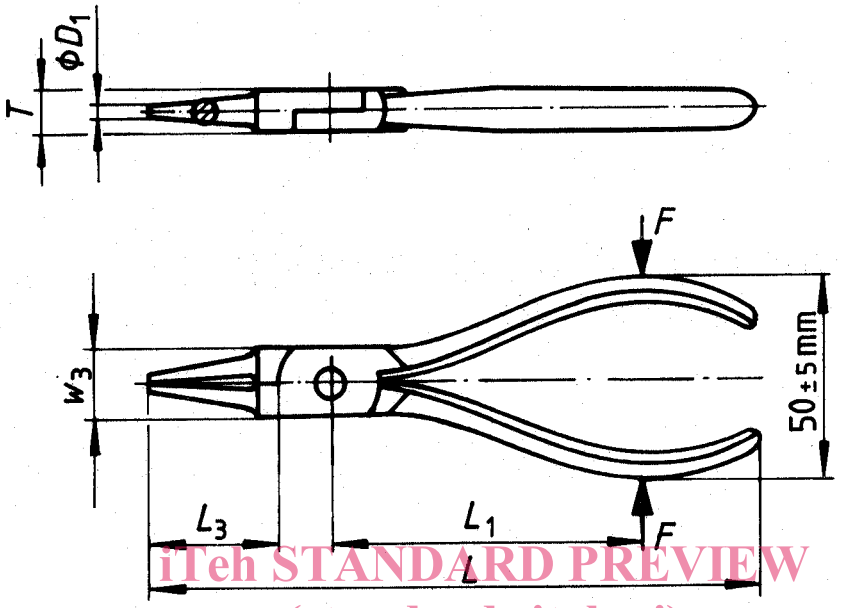


Figure 1

Round 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 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 applied load given in table 2;

L_1' is the measured distance from the centre of the joint rivet to the applied load.

Table 1

Dimensions in millimetres

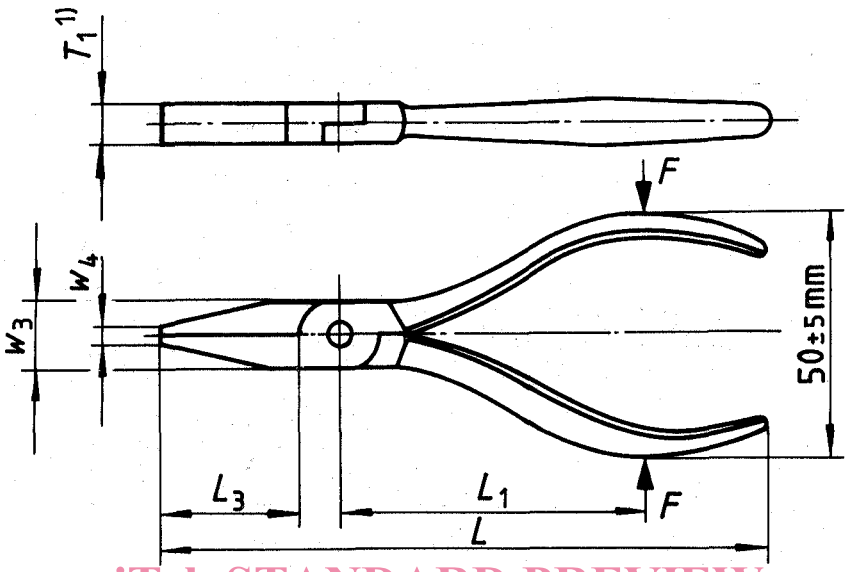
L	L_3	D_1 max.	w_3 max.	T max.
140 ± 7	$32\ ^{0}_{-6,3}$	2,5	18	9
160 ± 8	$40\ ^{0}_{-8}$	3,2	20	10

Table 2

L	L_1	Torsion test		Load test	
		torque (T)	maximum twist (α)	load (F)	maximum permanent set (s) [1]
mm	mm	N·m		N	mm
140	71	5,5	± 20°	710	1
160	80	6,5	± 20°	800	1

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

4 Flat nose pliers for gripping and manipulating



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

Figure 2

Flat 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 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 measured distance from the centre of the joint rivet to the applied load given in table 4;

L_1' is the measured distance from the centre of the joint rivet to the applied load.

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

Table 4

Length of nose	L	L_1	Torsion test		Load test	
			torque (T)	maximum twist (α)	load (F)	maximum permanent set (s) 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.)

5 Snipe nose pliers for gripping and manipulating

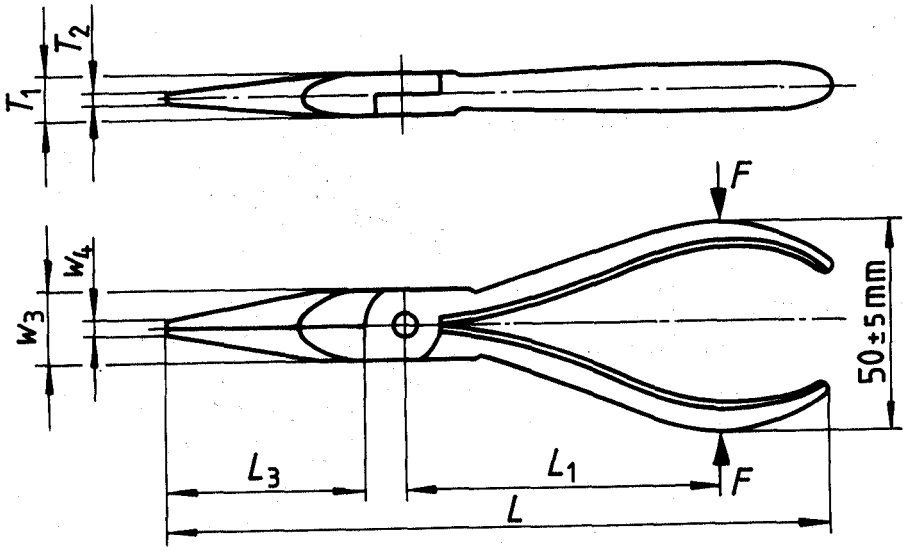


Figure 3

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 applied load given in table 6;

L_1' is the measured distance from the centre of the joint rivet to the applied 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) [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.)

6 Snipe nose pliers with side cutter for medium hard wire

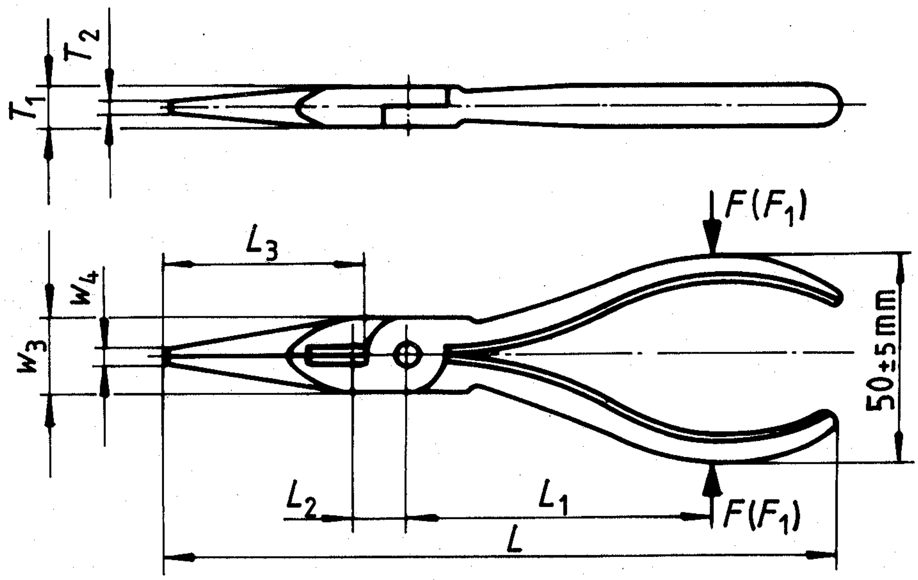


Figure 4

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	Medium hard test wire diameter (D) 1)	Maximum cutting force (F_1)	load test: load (F)	load test: maximum permanent set (s) 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 applied load given in table 8;

L_1' is the measured distance from the centre of the joint rivet to the applied load.

The maximum cutting force (F_1) and 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 with 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 applied load;

L_2' is the measured distance from the centre of the joint rivet to the location of the test wire.