INTERNATIONAL STANDARD

ISO 2380-1

Second edition
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Assembly tools for screws and nuts — Screwdrivers for slotted-head screws —

Part 1:
Tips for hand- and machine-operated screwdrivers

Outils de manœuvre pour vis et écrous — Tournevis pour vis à tête fendue —

Partie 1: Extrémités de tournevis à main et à machine

Reference number
ISO 2380-1:1997(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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 2380-1 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 2380-1:1989), which has been technically revised.

ISO 2380 consists of the following parts, under the general title *Assembly tools for screws and nuts — Screwdrivers for slotted-head screws*

— *Part 1: Tips for hand- and machine-operated screwdrivers*

— *Part 2: General requirements, lengths of blades and marking of hand-operated screwdrivers*

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Assembly tools for screws and nuts — Screwdrivers for slotted-head screws —

Part 1:
Tips for hand- and machine-operated screwdrivers

1 Scope

This part of ISO 2380 specifies the designation, shape and dimensions of the tips of hand- and machine-operated screwdrivers for slotted-head screws. It also gives the technical specifications and test conditions for the screwdrivers and, in the case of hand-operated screwdrivers, specifies the test torque which the blade-to-handle connection shall withstand.

2 Designation of the tips

The designation of the tips shall include, in the following order:

a) "Tip";

b) reference to this part of ISO 2380;

c) Type;

d) nominal thickness, a, in millimetres;

e) nominal width, b, in millimetres.

EXAMPLE:

A tip, Type A, of nominal thickness 1,2 mm and of nominal width 8 mm is designated as follows:

Tip ISO 2380 - 1 A 1,2 × 8

3 Shape and dimensions of the tips

3.1 Shape

The shape of screwdriver tips is left to the choice of the manufacturer.

3.2 Dimensions

Only the dimensions shown in Figures 1 and 2 and specified in tables 1and 2 shall be observed.

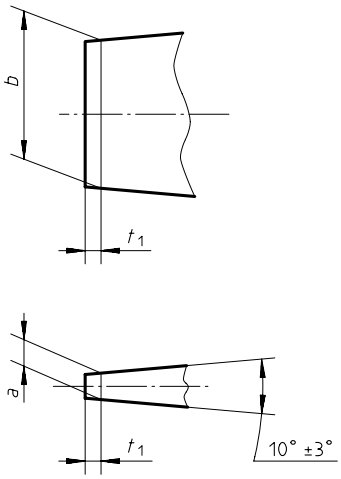


Figure 1 — Type A, for hand-operated screwdrivers only

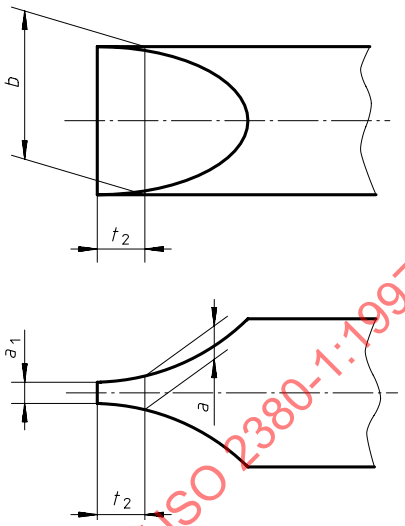


Figure 2 — Type B, for hand-operated screwdrivers and Type C for machine-operated screwdrivers

Table 1 — Hand-operated screwdriver tips, Type A and Type B

Dimensions in millimetres

Nominal thickness a	Nominal width b	Tolerances on a Types A and B	Tolerances on b Type A	Tolerances on b Type B	t_1	a_1[1] min.	t_2	Test torque M_{min} N·m
0,4	2	+ 0,06 – 0,02	h14	h13	0,2	0,3	0,7	0,3
	2,5							0,4
0,5	3				0,3	0,4	0,9	0,7
0,6	3				0,4	0,5	1,1	1,1
	3,5							1,3
0,8	4	+ 0,06 – 0,04			0,5	0,6	1,4	2,6
1	4,5				0,6	0,8	1,8	4,5
	5,5							5,5
1,2	6,5				0,7	1	2,2	9,4
	8							11,5
1,6	8	± 0,06			1	1,3	2,9	20,5
	10							25,6
2	12				1,2	1,6	3,6	48
2,5	14				1,5	2	4,5	87,5

1) $a_1 \leqslant a$

Table 2 — Machine-operated screwdriver tips, Type C

Dimensions in millimetres

Nominal thickness a	Nominal width b	Tolerances on a	Tolerances on b	a_1[1] min.	t_2	Test torque $M_{1,\,min}$ N·m
0,4	2	$^{+0,04}_{0}$	h11	0,3	0,7	0,35
	2,5					0,45
0,5	3			0,4	0,9	0,8
	4					1,1
0,6	3,5			0,5	1,1	1,4
	4,5					1,8
0,8	4			0,6	1,4	2,9
	5,5					3,9
1	5,5			0,8	1,8	6,2
1,2	6,5	± 0,03	h12	1	2,2	10,5
	8					12,9
1,6	8			1,3	2,9	22,9
	10					28,7
2	12			1,6	3,6	53,8
2,5	14			2	4,5	98

1) $a_1 \leqslant a$

4 Technical specifications and test conditions for the screwdrivers

4.1 Hardness

Hand-operated screwdrivers shall have a minimum hardness of 50 HRC over at least the length 3 x b from the tip of the blade and machine-operated screwdrivers shall have a minimum hardness of 56 HRC along their full length.

4.2 Test conditions for the blades or bits

When tested with the minimum test torques M and M_1, expressed in newton metres, specified in tables 1 and 2, the screwdriver blades or bits shall not show any cracks or breaks or any permanent deformations which could influence their usability.

NOTE — The minimum test torques have been calculated using the following formulae:

$$M = ba^2$$

and

$$M_1 = 1{,}12\ ba^2$$

where

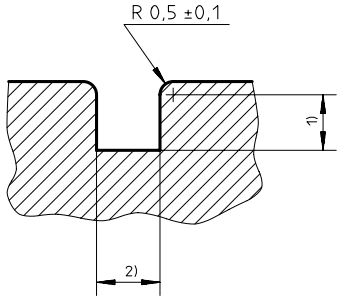
a is the nominal thickness of the tip, expressed in millimetres;

b is the nominal width of the tip, expressed in millimetres.

Special equipment shall be used for the torque test. The test torque on the blade or bit shall be progressively and steadily applied and increased to the indicated test torque M or M_1, or until the blade or bit breaks. The screwdriver point shall sit fully in the test disc. Bending moments shall not arise during testing.

The test discs (see figure 3) shall have a hardness of at least 64 HRC and be of such strength that no deformation of them can occur during testing.

Dimensions in millimetres



1) For Type A:

t_1 H10

For Types B and C:

t_2 H13

2) a C9

Figure 3 — Test disc

4.3 Test torque of the blade-to-handle connection (hand-operated screwdrivers)

The test torque which the blade-to-handle connection shall withstand is related to the test torque of the blade as shown in table 3.

Table 3 — Test torque

Test torque of the blade M N·m	**Test torque of the blade-to-handle connection** M' N·m
$M \leqslant 26$	$M' > M$
$M > 26$	$M' > 30$[1)]
1) Where the screwdriver handle has a hole for use with a tee bar, the test torque for the blade-to-handle connection shall be greater than the torque the blade is required to withstand	
NOTE — The application of the test equipment to the handle should not modify the characteristics of the connection to be tested.	