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INTERNATIONAL STANDARD ISO 2380

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

Screwdriver blades for slotted head screws

Lames de tournevis pour vis à tête fendue

Second edition – 1979-08-01

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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 2380 was developed by technical committee ISO/TC 29, *Small tools*. The first edition had been approved by the member bodies of the following countries :

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Austria	Ireland	South Africa, Rep. of
Belgium	Israel	Sweden
Egypt, Arab Rep. of	Italy	Switzerland
France	Japan	Thailand
Germany, F. R.	Netherlands	Turkey
Hungary	Poland	United Kingdom
India	Romania	USSR

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No member body had expressed disapproval of the document.

This second edition, which supersedes ISO 2380-1972, incorporates draft addendum 1, which was circulated to member bodies in February 1978. This draft addendum has been approved by the member bodies of the following countries :

Australia	Hungary	South Africa, Rep. of
Austria	India	Spain
Belgium	Italy	Sweden
Bulgaria	Japan	Switzerland
Chile	Korea, Dem. P. Rep. of	Turkey
Czechoslovakia	Mexico	United Kingdom
France	Poland	USA
Germany, F. R.	Romania	

The member body of the following country expressed disapproval of the document on technical grounds :

USSR

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Screwdriver blades for slotted head screws

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the characteristics of hand- and machine-operated screwdriver blades for slotted head screws.

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Essentially, it includes two parts, the first specifying the shape, dimensions and tolerances of the blade and the other giving the technical specifications and test conditions.

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2 DESIGNATION

The designation includes, in the following order :

- the indication of the type;
- the nominal thickness *a*;
- the nominal width *b*.

Example for designation of a blade, type 2, of thickness 0,9 mm and of width 6.5 mm :

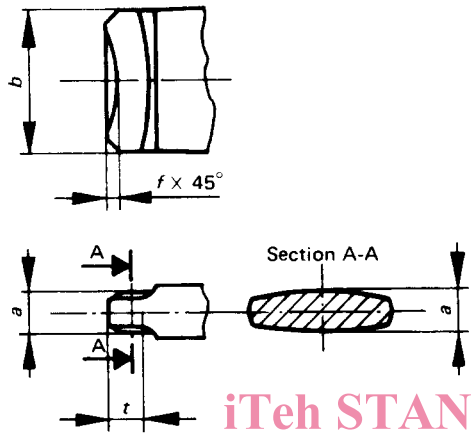
Blade type 2 – 0,9 X 6.5

3 SHAPE AND DIMENSIONS

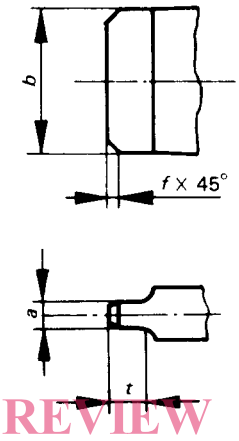
3.1 Shape of the blade ends

The shape of screwdriver ends is left to the choice of the user.

Type 1 (for hand-operated screwdrivers)



Type 2 (for hand-operated screwdrivers)



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Type 3[1] (for hand-operated screwdrivers)

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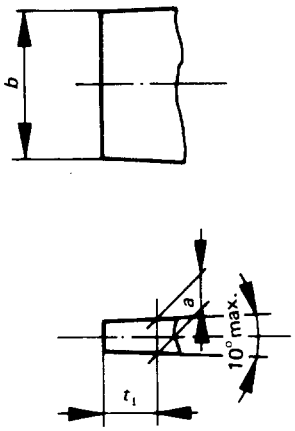
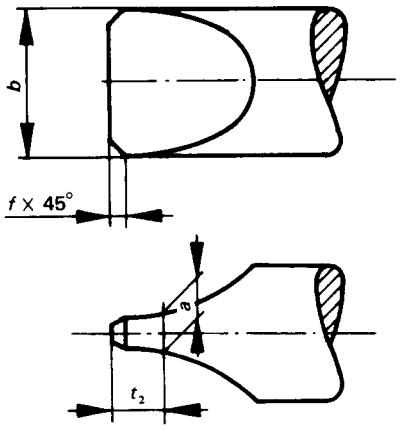


Type 4 (for machine-operated screwdrivers)



1) Type 3 can be made with or without chamfer, at the manufacturer's discretion.

3.2 Numerical values

TABLE 1

Values in millimetres

a			*b*				*f*	*t* min. (Types 1 and 2)	t_1 min. (Type 3)	t_2 min. (Type 4)
Nominal dimension	Tolerances		Nominal dimension	Tolerances						
	Types 1, 2 and 3 (hand-operated)	Type 4 (machine-operated)		Types 1 and 2 (hand-operated)	Type 3 (hand-operated)	Type 4 (machine-operated)				
0.4	+ 0.01 − 0.05	+ 0.01 − 0.03	2.5				–	0.7	0.15	0.7
0.5	+ 0.05 − 0.01	+ 0.05 + 0.01	3.5				0.3	1.0	0.20	0.9
0.6	+ 0.05 − 0.01	+ 0.05 + 0.01	4.0				–	1.1	0.25	1.0
0.7	+ 0.08 + 0.02	+ 0.08 + 0.04	5.0			h11	0.3	1.3	0.30	1.2
0.8	+ 0.05 − 0.01	+ 0.05 + 0.01	5.5				0.6	1.6	0.40	1.4
0.9	+ 0.08 + 0.02	+ 0.08 + 0.04	6.5				0.6	1.7	0.40	1.5
1	+ 0.05 − 0.01	+ 0.05 + 0.01	6.5				0.6	2.0	0.60	1.8
1.1	+ 0.03 − 0.07	+ 0.03 − 0.03	7.5	h13			0.6	2.0	0.60	1.8
1.2	+ 0.05 − 0.05	+ 0.05 − 0.01	8				0.6	2.3	0.60	2.0
1.4	+ 0.01 − 0.09	+ 0.01 − 0.05	10			h12	0.9	2.5	0.65	2.2
1.6	+ 0.02 − 0.08	+ 0.02 − 0.04	10				0.9	2.7	0.75	2.4
1.8	+ 0.02 − 0.08	+ 0.02 − 0.04	14				1.0	3.2	1.20	2.8
2	+ 0.04 − 0.10	+ 0.04 − 0.06	13				1.0	3.6	1.20	3.2
2.2	+ 0.09 − 0.05	+ 0.09 − 0.01	17				–	4.0	1.40	3.6
2.5	+ 0.04 − 0.10	+ 0.04 − 0.06	16				1.1	4.5	1.60	4.0

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NOTES

1 For hand-operated screwdrivers national standards may include only a selection of values of *a* from the above table.

2 Metric screws are not concerned by blades having a dimension *a* of 0.9 – 1.1 – 1.4 – 1.8 and 2.2.

4 TECHNICAL SPECIFICATIONS AND TEST CONDITIONS

4.1 **Hand-operated screwdrivers** (Types 1, 2 and 3)

4.1.1 *Hardness of blades*

The screwdriver blades shall be heat-treated on their full length and possess a minimum hardness of 48 HRC over at least the length 3 X *b* from the end of the blade.

4.1.2 *Test torque of blades*

TABLE 2

Blade thickness *a* mm	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.4	1.6	1.8	2	2.2	2.5
Test torque *M* min. daN·m	0.04	0.09	0.14	0.24	0.35	0.53	0.65	0.91	1.15	1.96	2.56	4.54	5.20	8.23	10.00

When tested with the test torques given in table 2 the screwdrivers shall not show any cracks or ruptures or any permanent deformations which could influence their usability.

For the torque test special equipment shall be used. The test force on the blade shall be progressively and steadily applied and increased to the indicated test torque *M*, or until breakage of the blade occurs. The screwdriver point shall be sitting fully in the test disk. Bending moments shall not arise during testing.

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The width of slot of the test disks shall equal dimension *a* with a tolerance of C9.

The depth *T* of slot of the test disk shall correspond to dimension t_{min} (see figure).

The test disks shall have at least a hardness of 64 HRC and be of such strength that no deformation can occur during testing.

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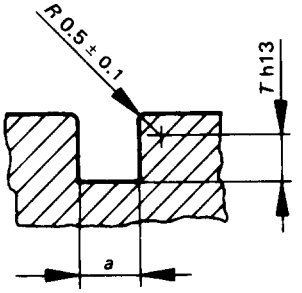

NOTE – Test torques *M*, in decanewton metres, have been calculated using the following formula :

$$M = 0.1\ ba^2$$

where

a is the thickness of the blade expressed in millimetres;

b is the width of the blade expressed in millimetres.

4.1.3 *Test torque of the blade-to-handle connection*

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

Table 3

Test torque of the blade M	Test torque of the blade-to-handle connection M'
$M \leqslant 2{,}5$ daN·m	$M' > M$
$M > 2{,}5$ daN·m	$M' > 3$ daN·m*

* 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.

4.2 Machine-operated screwdriver bits

4.2.1 *Hardness*

The bits are to be heat-treated on their full length and shall possess a minimum hardness of 58 HRC at the ends.

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