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☞ JIS B 4633 : 1998

Screwdrivers for cross recessed head screws

ICS 25.140.30

Descriptors : screwdrivers, hand tools, crossheads

Reference number : JIS B 4633 : 1998 (E)

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently, JIS B 4633:1991 is replaced with JIS B 4633:1998.

In this revision, emphasizing the conformity with the International Standards, Annex to this Standard is prepared with adoption of the technical contents of the corresponding International Standard without modification. The provisions specified conventionally in the Japanese Industrial Standard are provided in the body with partial amendments.

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Screwdrivers for cross recessed head screws

Introduction This Japanese Industrial Standard has been prepared based on the International Standards shown in the Remarks, providing the classification and grade specified conventionally in the Japanese Industrial Standard and their shape and dimensions, quality, inspection, designation of products and marking in the body, and without modifying their technical contents in Annex while supplements the provisions not specified in the corresponding International Standards (inspection and designation) as a part of Japanese Industrial Standard.

The provisions or the phrases underlined with dots in Annex are the matters not specified in the corresponding International Standards.

Remarks : The International Standards corresponding to this Standard are as follows :

ISO/DIS 8764-1:1996 *Assembly tools for screws and nuts — Screwdrivers for cross recessed head screws — Part 1 : Driver points*

ISO 8764-2 : 1992 *Screwdrivers for cross-recessed head screws — Part 2 : General requirements, lengths of blades and marking of hand-operated screwdrivers*

1 Scope This Standard specifies screwdrivers to be used for threaded fasteners with H and S type cross-recessed type heads specified in **JIS B 1012** (hereafter referred to as “screwdrivers”), but not specifies bits for cross-recessed head screws.

2 Normative references The following standards contains provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions (including the amendments) indicated below shall be applied.

JIS B 1012 *Cross recesses for screws*

JIS B 1501 *Steel balls for ball bearings*

JIS B 7725 *Vickers hardness testing machines*

JIS B 7726 *Rockwell and Rockwell superficial hardness testing machines*

JIS G 3506 *High carbon steel wire rods*

JIS Z 2244 *Method of Vickers hardness test*

JIS Z 2245 *Method of Rockwell and Rockwell superficial hardness test*

3 Classification Screwdrivers shall be divided into 8 types by the combination of each classification given in Table 1.

Table 1 Classification

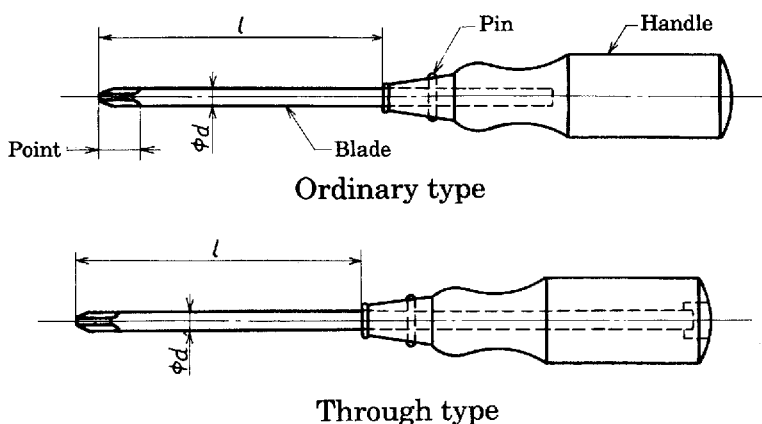
By the applied type of cross recess	Type H / Type S
By the blade-to-handle connection	Ordinary type / Through type
By the magnetic property	Magnetic / Non-magnetic

Informative reference : The point of Type S screwdrivers is based on Japan Camera Industrial Standard JCIS 9-70 [Bits for cross recessed screws for precious machine (No. 0 bit)].

4 Shape and dimension

4.1 Blade and handle The shape and dimensions of screwdrivers shall be as given in Table 2. The drawing of shape of handle is shown only as an example.

Table 2 Shape and dimensions of blade and handle



Unit : mm

Classification		Type H				Type S
Nominal size		No. 1	No. 2	No. 3	No. 4	—
$d^{(1)}$	Basic size	5	6	8	9	3 or 4
	Tolerance	+0.4 -0.2				
$l^{(2)}$		75	100	150	200	75

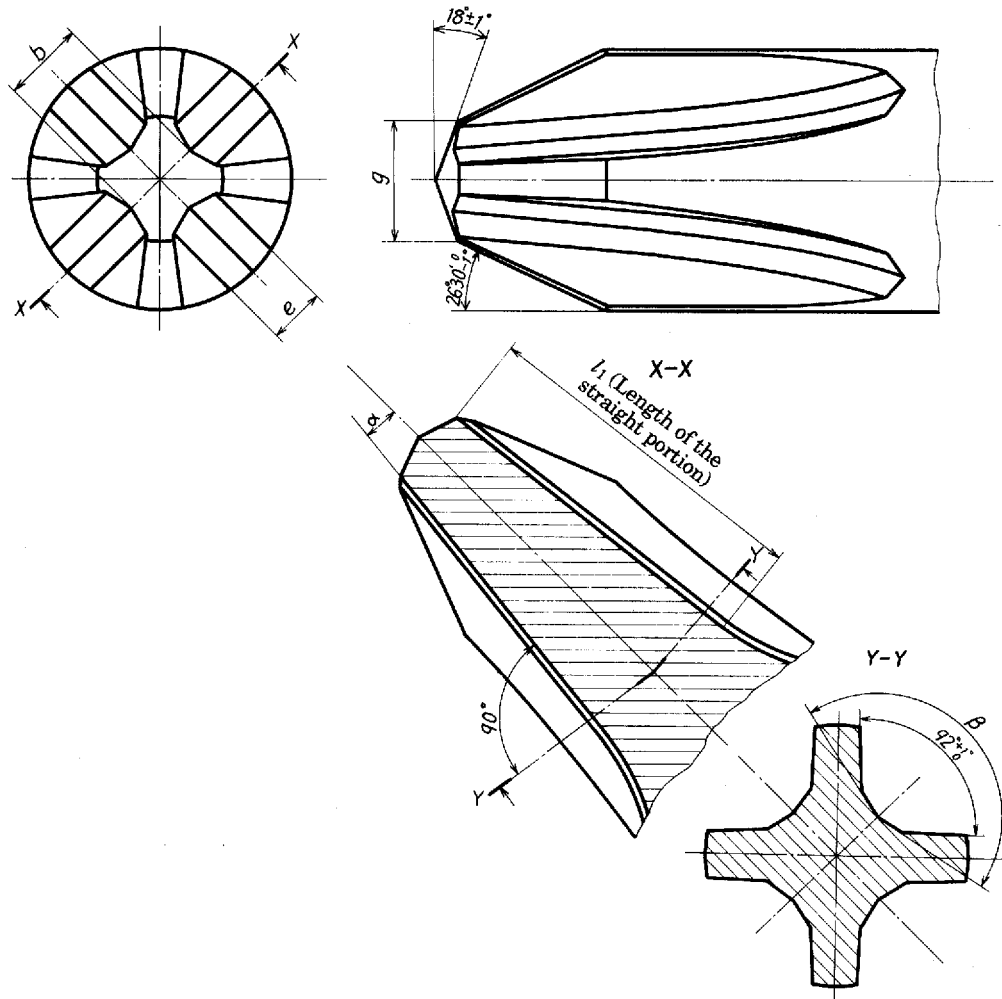
Notes ⁽¹⁾ This is the diameter for round types and width across flats for angular types.

⁽²⁾ The dimension, l may be shortened according to the use.

Remarks : The blade-to-handle joining may be by a suitable means without pin.

4.2 Point The shape and dimensions of point of type H screwdrivers shall be as given in Table 3, and of type S shall be as given in Fig. 1.

Table 3 Shape and dimensions of point of type H screwdriver



Unit : mm

Nominal size		No. 1	No. 2	No. 3	No. 4
b	Basic size	1.001	1.539	2.497	3.574
	Tolerance	+0.05 -0.14	+0.07 -0.15	+0.10 -0.17	
e	Basic size	0.513	1.102	2.098	2.738
	Tolerance	+0.20 -0.10		+0.25 -0.15	
g	Basic size	1.270	2.286	3.810	5.080
	Tolerance	±0.15		±0.20	
l ₁	Minimum	2.5	3.7	5.2	7.6
α	Basic size	7°	5°45'	5°45'	7°
	Tolerance	0 -45'			
β	Basic size	138°	140°	146°	153°
	Tolerance	+45' 0			

Unit : mm

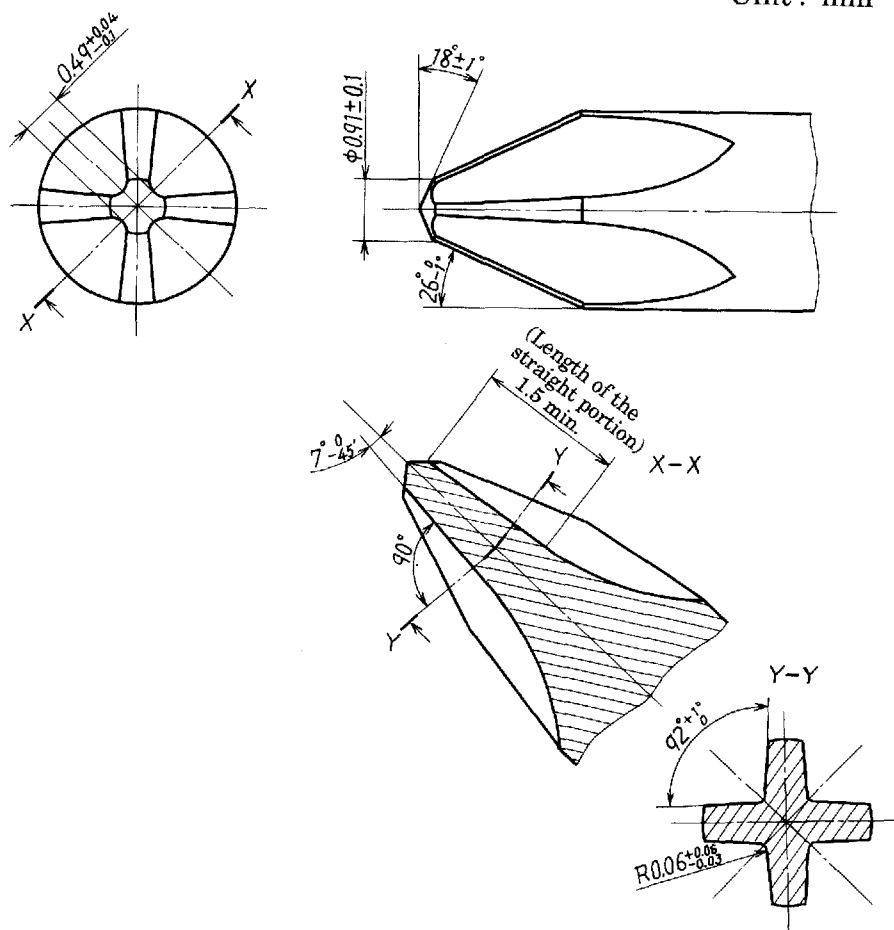


Fig. 1 Shape and dimensions of point of type S screwdriver

5 Material The material of screwdriver blades shall be SWRH62A of JIS G 3506, or those at least equal to the requirements of clause 6 in quality.

6 Quality

6.1 Appearance For the appearance, screwdrivers shall be free from cracks and flaws, burrs, rust or other defects harmful to use, and shall have a good level of finishing.

6.2 Function

6.2.1 Torsional strength For the torsional strength, when tested by clause 7.2, the joining of blade-to-handle shall be secure, and there shall be no harmful chip or twist on the point and no other harmful defects on each part.

6.2.2 Hardness The hardness of the point, when tested by clause 7.3, shall be at least 53 HRC or 560 HV.

6.2.3 Magnetic property Magnetic drivers, when tested by clause 7.4, shall conform to the requirements of Table 7.

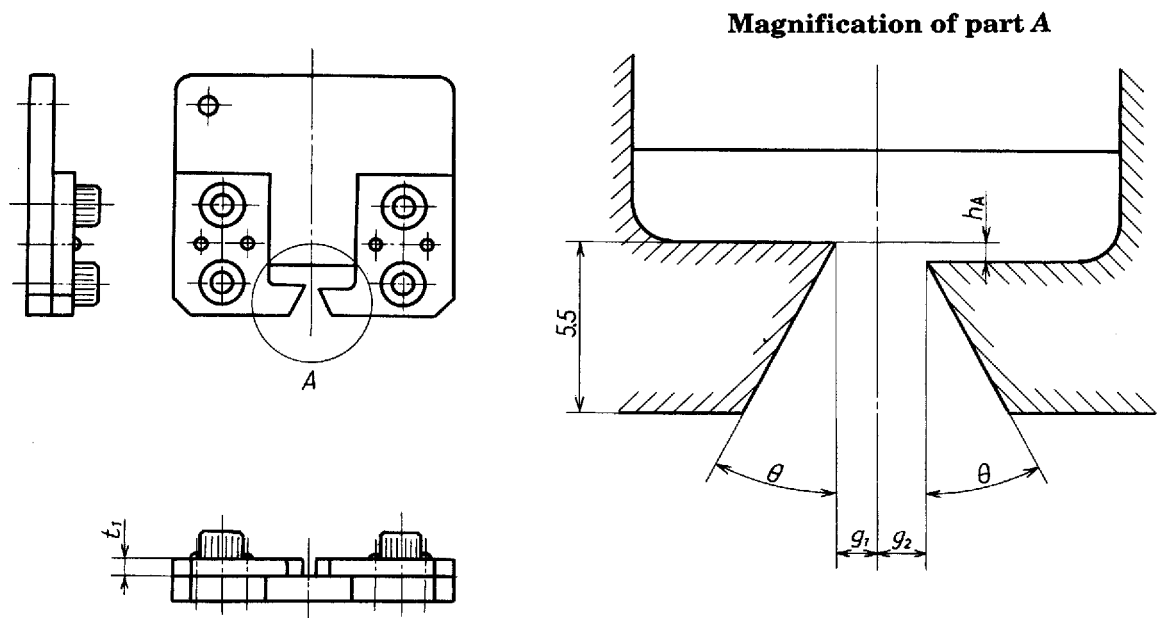
7 Test method

7.1 Shape and dimensions of point For the shape and dimensions of a screwdriver point, when, using a type A gauge given in Table 4, the point periphery is fitted properly into the gauge as shown in Fig. 2, the intersection P_A between the cross flank and the top conical face shall lie within the step h_A of the gauge.

Further, when using a type B gauge given in Table 5, the flute of the point is fitted properly into the gauge as shown in Fig. 3, the intersection P_B of the cross-flute face and the top conical face shall lie within the step h_B of the gauge. For type S screwdrivers, a fitting test with a screw hole passed chamfer gauge specified in **JIS B 1012** may also be acceptable.

Table 4 Type A gauge

Unit : mm



Classifi- cation	Nominal size	g ₁		g ₂		h _A ⁽³⁾	θ		t ₁ (informa- tive)
		Basic size	Tolerance	Basic size	Tolerance		Angle	Tolerance	
Type H	No. 1	0.560	0 -0.010	0.710	0 -0.010	0.30	26°30'	+15' 0	3.0
	No. 2	1.068		1.218		0.30			3.2
	No. 3	1.805		2.005		0.40			
	No. 4	2.440		2.640		0.40			
Type S	—	0.405		0.505		0.20	26°		3.0

Note ⁽³⁾ h_A is calculated with the basic values of g₁, g₂ and θ.

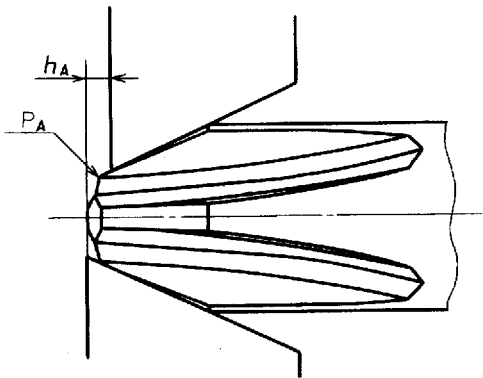


Fig. 2 Position of P_A