

JIS

JAPANESE INDUSTRIAL STANDARD

Cross Recesses for Screws

JIS B 1012—1985

Translated and Published

by

Japanese Standards Association

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

JAPANESE INDUSTRIAL STANDARD

J I S

Cross Recesses for Screws

B 1012-1985
(Reaffirmed: 1990)

1. Scope

This Japanese Industrial Standard specifies the shape, dimensions and measuring method for cross recesses formed on the heads of machine screws, wood screws, tapping screws and the like, hereinafter referred to as the "cross recess".

Remark: Cross recess Type H (see 3.) and cross recess Type Z (see 4.) correspond to ISO 4757-1983.

2. Types

Cross recesses shall be classified into three types given in Table 1, according to their shapes.

Table 1 Type of Cross Recess

Type	Applicable screws
Type H Type Z	Screws of nominal thread diameters not less than M 1.6 for general use
Type S	Screws of nominal thread diameters not more than M 2 and small head screws of nominal thread diameters not more than M3

3. Cross Recess Type H

3.1 Shape and Dimensions of Cross Recess Type H The shape and dimensions of the cross recess Type H shall comply with Table 2. However, dimensions and angles given in Table 2 are theoretical values used for designing the cross recess Type H and shall not be used as the subject of inspection.

Applicable Standard:

JIS B 7507-Vernier Callipers

Corresponding International Standard:

ISO 4757-1983-Cross recesses for screws

Reference Standard:

JIS B 0401-Limits and Fits for Engineering

JIS B 7503-Dial Gauges Reading in 0.01 mm

JCIS 8-70-Cross Recessed Head Machine Screws for Precision
Instruments (No.0)

Table 2 Shape and Dimensions of Cross Recess Type H

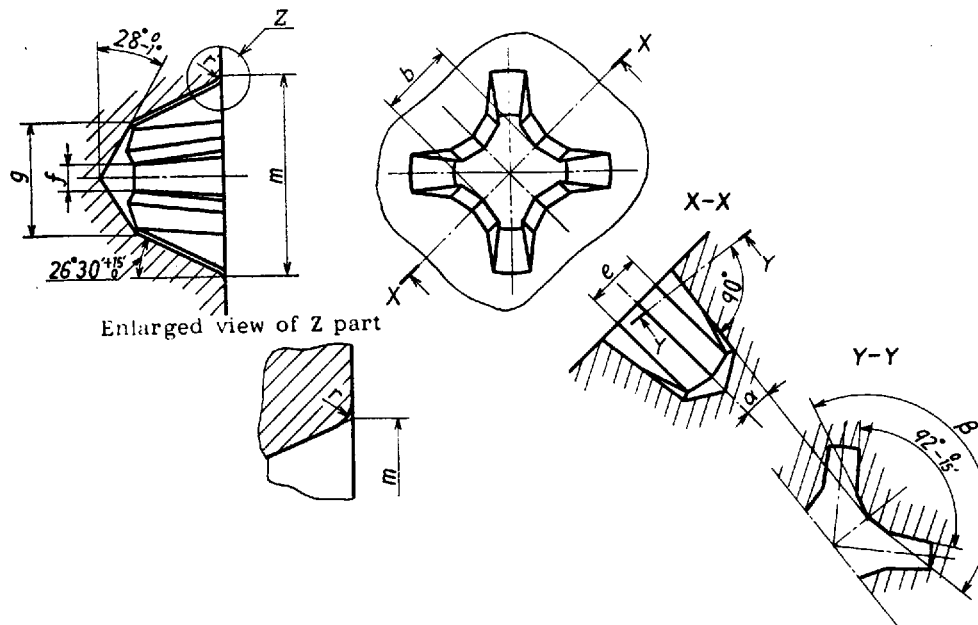


Table 2 (Continued)

Unit: mm

Cross recess Type H No.		0	1	2	3	4
<i>b</i>	Basic dimension	0.605	0.965	1.47	2.41	3.48
	Tolerance	$\begin{matrix} 0 \\ -0.03 \end{matrix}$				
<i>e</i>	Basic dimension	(1)	0.46	0.84	2.03	2.44
	Tolerance		$\begin{matrix} 0 \\ -0.05 \end{matrix}$			
<i>f</i>	Maximum	0.36	0.52	0.72	0.79	1.26
	Minimum	0.31	0.48	0.67	0.74	1.20
<i>g</i>	Basic dimension	0.81	1.27	2.29	3.81	5.08
	Tolerance	$\begin{matrix} +0.05 \\ 0 \end{matrix}$				
<i>r</i>	Maximum	0.3	0.5	0.6	0.8	1
<i>α</i>	Basic dimension	7°	7°	5°45'	5°45'	7°
	Tolerance	$\begin{matrix} +15' \\ 0 \end{matrix}$				
<i>β</i>	Basic dimension	(2)	138°	140°	146°	153°
	Tolerance		$\begin{matrix} 0 \\ -15' \end{matrix}$			
<i>m</i>		Shall be as specified in the respective standards for screws				

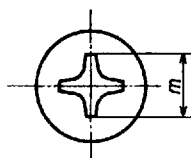
Notes (1) The dimensions of this part shall be 0.19 to 0.25 mm in width.

(2) This part shall be rounded with a radius from 0.13 to 0.18 mm

3.2 Measuring Method of Cross Recess Type H

3.2.1 Wing Length m of Cross Recess Type H The wing length m of the cross recess Type H shown in Fig. 1 shall be measured with the vernier callipers specified in JIS B 7507 or other equivalent instruments. However, when the dimension m is given, for reference purposes, in the standards for screws, this shall not be used as the subject of inspection.

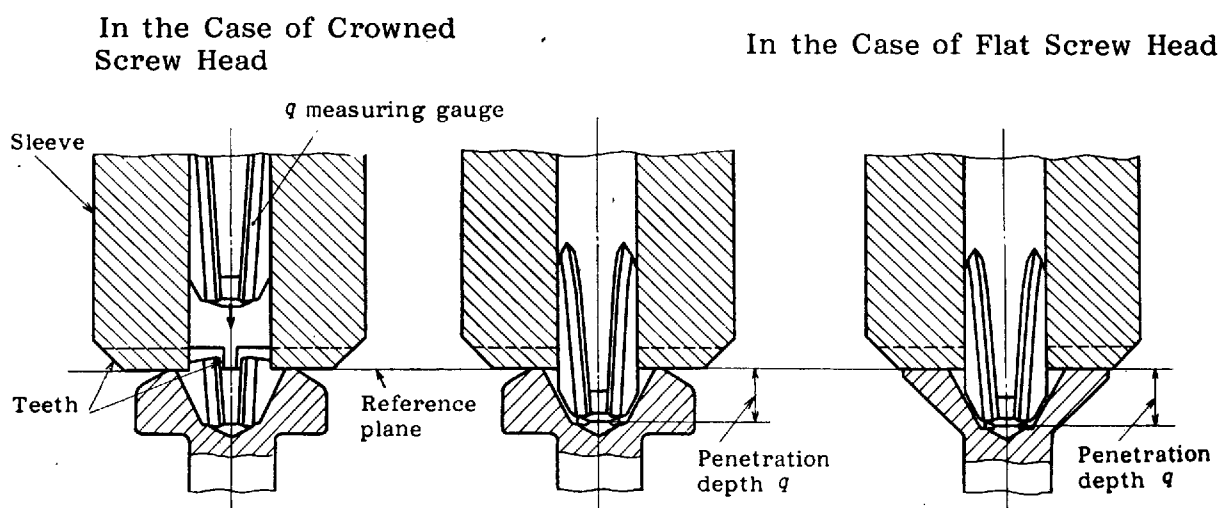
Fig. 1 Wing Length m of Cross Recess Type H



3.2.2 Penetration Depth q of Depth Gauge for Cross Recess Type H The penetration depth q of the cross recess Type H shown in Fig. 2 shall be measured with the gauge of which the shape and dimensions of the point conform to those given in Table 3.

An example of the method of measuring q is shown in Reference 1.

Fig. 2 Penetration Depth q of Depth Gauge for Cross Recess Type H



3.2.3 Engagement of Cross Recess Type H with Gauge The engagement test shall be carried out as follows: Push the gauge whose shape and dimensions conform to those given in Table 3 into the cross recess of a screw, turn it downwards from the horizontal position to the vertical position as shown in Fig. 3, and then check to ensure that the screw does not fall by its weight. However, the range of size (nominal diameter $\times$ length of screws) subjected to this test shall be determined in accordance with the respective standards for screws or agreed upon between the parties concerned with delivery.

This engagement test may be omitted by the agreement of the parties concerned.

Fig. 3 Engagement of Cross Recess with Gauge

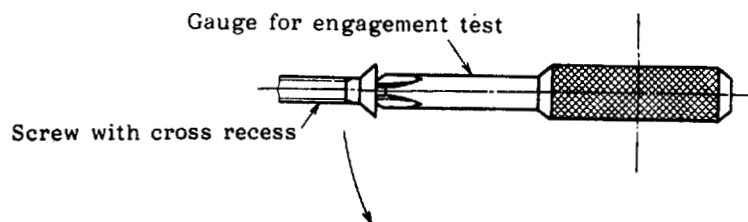
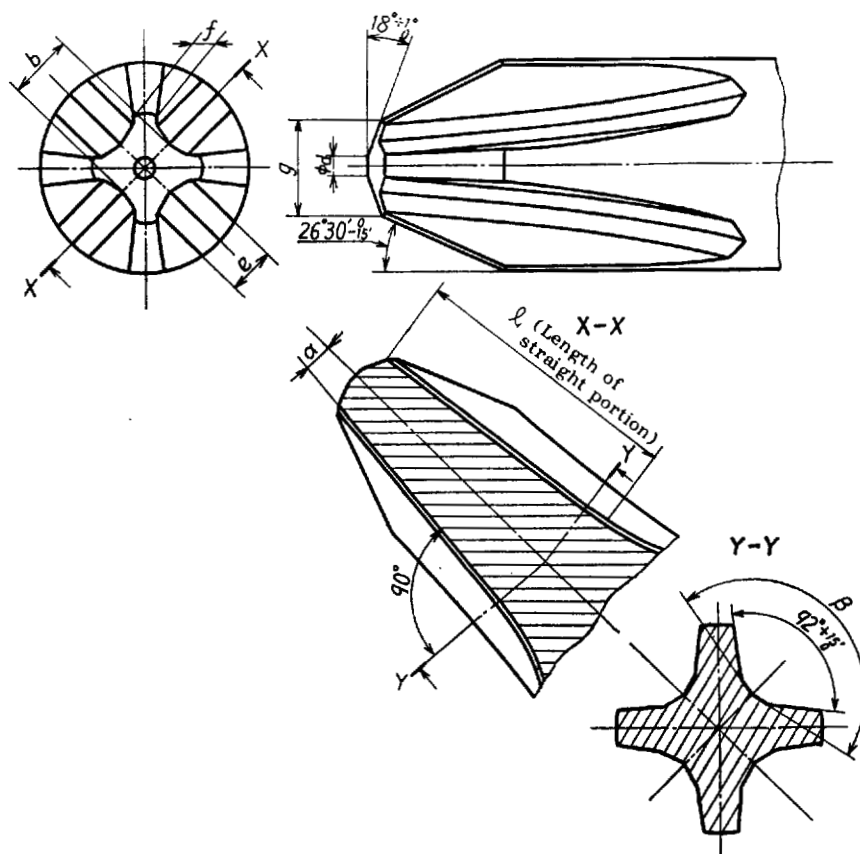


Table 3 Shape and Dimensions of Gauge Point for Cross Recess Type H



Unit: mm

Cross recess Type H No.		0	1	2	3	4
<i>b</i>	Basic dimension	0.640	1.001	1.539	2.497	3.574
	Tolerance	$\begin{matrix} 0 \\ -0.025 \end{matrix}$				
<i>d</i> ⁽³⁾	Basic dimension	0.25	0.38	0.38	0.38	0.38
	Tolerance	$\begin{matrix} +0.13 \\ 0 \end{matrix}$				
<i>e</i>	Basic dimension	⁽⁴⁾	0.513	1.102	2.098	2.738
	Tolerance		$\begin{matrix} 0 \\ -0.025 \end{matrix}$			
<i>f</i>	Maximum	0.310	0.505	0.623	0.782	1.118
	Minimum	0.281	0.475	0.590	0.746	1.078
<i>g</i>	Basic dimension	0.813	1.270	2.286	3.81	5.08
	Tolerance	$\begin{matrix} +0.025 \\ 0 \end{matrix}$				
<i>l</i>	Minimum	3.17	3.17	4.78	7.14	8.74
<i>α</i>	Basic dimension	7°	7°	5°45'	5°45'	7°
	Tolerance	$\begin{matrix} 0 \\ -15' \end{matrix}$				
<i>β</i>	Basic dimension	⁽⁵⁾	138°	140°	146°	153°
	Tolerance		$\begin{matrix} +15' \\ 0 \end{matrix}$			

Notes ⁽³⁾ When the engagement test specified in 3.2.3 is carried out, this dimension need not always be applied.

⁽⁴⁾ This part shall be 0.355 to 0.38 mm in width.

⁽⁵⁾ This part shall be rounded with a radius from 0.256 to 0.274 mm.