

JIS

JAPANESE INDUSTRIAL STANDARD

**Machining centers —
Tool shanks and retention knobs**

JIS B 6339—1992

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In the event of any doubt arising,
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1. Scope

This Japanese Industrial Standard specifies the tool shanks and retention knobs to be used mainly for the machining centers with automatic tool exchangers.

Remarks 1. To the tool shanks specified in the text of this Standard, the spindle ends specified in the text of JIS B 6340 shall conform.

2. Those which are the same in technical contents as the tool shanks specified in ISO 7388/1 and ISO/DIS 7388/3 are specified in Annex 1.

For the tool shanks specified in this Annex 1, the spindle ends specified in the Annex of JIS B 6340 shall conform.

3. Those which are the same in technical contents as the retention knobs specified in ISO 7388/2 and ISO/DIS 7388/3 are specified in Annex 2.

To the retention knobs specified in this Annex 2, the retention knobs for tool shanks specified in Annex 1 shall conform.

4. The retention knobs specified in the text of this Standard are of collet system in tensile mechanism.

5. The applicable standards to this Standard are given in Attached Table 1.

6. The equivalent International Standards to this Standard are given in the following:

ISO 7388/1-1983 Tool shanks with 7/24 taper for automatic tool changers - Part 1: Shanks Nos. 40, 45 and 50 - Dimensions

ISO 7388/2-1984 Tool shanks with 7/24 taper for automatic tool changers - Part 2: Retention knobs for shanks Nos. 40, 45 and 50 - Dimensions and mechanical characteristics

2. Shapes and dimensions

The shapes and dimensions of the tool shanks specified in the text of this Standard shall be in accordance with Fig. 1 and Table 1, and the shapes and dimensions of the retention knobs shall be in accordance with Fig. 2 and Table 2.

Table 1. Tool shanks

Unit: mm

Nominal number		BT30	BT35	BT40	BT45	BT50	BT55	BT60
Shank part	D_1 (°)	31.750	38.100	44.450	57.150	69.850	88.900	107.950
	l_1 ± 0.15	48.4	56.4	65.4	82.8	101.8	126.8	161.8
	r (Max.)	0.5		1				
Threaded part	d_1	14		19	23	27	33	
	d_2 H8	12.5		17	21	25	31	
	g 6H	M12		M16	M20	M24	M30	
	l_2 (Min.)	24		30	35	45	56	
	l_3 (Min.)	34		43	50	62	76	
	l_4 $+0.5$ 0	7		9	11	13	16	
Key part	C (Max.)	0.5			1			
	b H12	16.1			19.3	25.7		
	l_5 (Min.)	17	20	21	26	31	34	
	t 0 -0.2	16.3	19.6	22.6	29.1	35.4	45.1	60.1
	w	0.12				0.2		
Flange part	D_4	38	43	53	73	85	107	135
	D_5 h8	46	53	63	85	100	125	155
	f	20	22	25	30	35	40	45
	v ± 0.1	13.6	14.6	16.6	21.2	23.2	26.2	28.2
	x	4	5		6	7	9	11
	x_1 $+0.1$ 0	8	10		12	15	18	20
	y ± 0.4	2			3			
	y_1 0 -0.4	2			3			
Tolerances on 7/24 taper angle ⁽²⁾ AT ₀		$+0.0039$ 0	$+0.0045$ 0	$+0.0041$ 0	$+0.0052$ 0	$+0.0051$ 0	$+0.0063$ 0	$+0.0065$ 0
Informative reference	Small end diameter	17.633	21.650	25.375	33.000	40.158	51.917	60.758
	d	8	10		12	15	18	20
	D_6	56.144	65.679	75.679	100.215	119.019	147.823	180.359

Notes ⁽¹⁾ D_1 is the basic dimension, and is the diameter on gauge face.

⁽²⁾ The tolerances on 7/24 taper angle are in accordance with $+AT_4$ (grade AT4 specified in JIS B 0614).

Remarks 1. d_2 may be provided with clearance for grinding finish of fitting part.

2. The screw threads shall be in accordance with JIS B 0205.

3. Between the d_1 part and the d_2 part of the small end part of the tool shank may be connected by the straight line of 30° , combination of the straight line of 30° and of 60° or a curved line in respect to the center of axis.
4. The dimensional tolerances on the part not specified particularly shall be the tolerance grade m (medium grade) specified in JIS B 0405.

Fig. 2. Retention knobs

