



### Horizontal Series

YBM8T-63TT · YBM10T-100TT · YBM7Ti · NRTmodel YBM10T-TH · YBM15T-TH



### 5-axis Precision center series



The improvement of high-efficiency machining and realization of process integration

• Complex three-dimensional form is machined in a single clamping operation. High efficiency and productivity is made possible by process reduction by simplification of fixture.

Through an improvement in tool rigidity and machining at optimal cutting speed, high-quality, high-precision, and highly efficient machining is achieved.

- Using a tilting axis, the tool length is minimized. By improving tool rigidity and longer tool life, high quality machining is realized.
- By machining at optimal cutter speed, high-precision and highly efficient machining is realized.



Machining through single clamping operation eliminates the need for a special jig

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•Machining using tools with short overhang length is possible.



Machining at optimal cutter speed is possible.

# TT/TH&NRT

### Table or Spindle head tilting type & NRT model

his series of machines with three linear axes (X/Y/Z) and two rotary axes enable the table or spindle head to be tilted to an arbitrary angle, realizing highly accurate multi-face machining by one chucking. The advantages are:

• Machining processes can be integrated.

**2** Machining by tools with short overhang is possible.

**③** Machining by setting the position of cutting tool is possible.

# PRECISION CENTER YBM 8T-630TT

# Unique mechanism with improved stability and reverse controllability

For the A-axis, which is sensitive to positional load change, workpiece weight, and cutting reaction force, the following items are employed to improve stability against disturbance and reverse controllability, preventing torsion and increasing speed:

**1** Twin-drive worm reducer. **2** The "Position tandem system" with scales mounted on both sides of the A-axis.

Also, **3** the X-axis guide for the trunnion base is widened by 110 mm in width compared to the existing machines in order to minimize distortion during the movement and to realize highly accurate positioning.



**Table Size** 



Table Size1000×1000mm

## PRECISION CENTER YBM 10T-100

# Overwhelming power for highly accurate machining of large workpieces

10T-100TT is developed for milling difficult-to-cut materials with high accuracy and high quality. It has YASDA's unique mechanisms and excellent advanced functions as follows:

Perfectly symmetrical trunnion to drive 1000 mm table. 2 Highly accurate and highly rigid drive/guiding system equipped with "three-roller bearing" and "high resolution rotary encoder" and furthermore, 3 Pallet chucking system with high positioning accuracy using powerful clamping force that draws a pallet with a pull rod. Moreover, the most notable is 4 the "torque tandem control spindle (option/patented)" driven by two motors for low-speed and high speed. It delivers remarkable performance for highly accurate machining of aircraft parts and large parts.



Pallet chucking mechanism



Torque tandem spindle (Option)





# Table-on-table structure for improving high-speed and high-precision machining of difficult-to-cut materials and heavy duty cutting

The table-on-table type 2-axis rotary table equipped with a high power DD motor and highly rigid bearing brings the following advantages:

• Rigidity with a workpiece loaded is increased four times and distortion is reduced to 40% compared to ordinary the existing machines, resulting in higher speed and higher accuracy. It is also ready to support "the operation without backlash" and "quick response manufacturing".

**2** YASDA's unique "thermal distortion stabilized system" and traditional large-diameter curvic couplings enhance reliability



for high-speed and highly accurate machining of difficult-to-cut materials and heavy duty cutting.





# **NRT Specifications**

By combining with the YASDA's rotary table "NRT", 4-axis machines YBM7T, YBM8T, and YBM10T are provided with 5-axis machine functions, thus highly accurate and highly efficient production ranging from heavy duty cutting to 3-dimensional milling is realized.

 YASDA "NRT" has the same mechanism of the rotary table mounted on the YBM series and delivers highly accurate indexing and excellent runout accuracy.

	NRT-40H	NRT-50H	NRT-63H
Table working surface	φ400	φ500	<i>φ</i> 630
Table loading capacity	200kg	250kg	300kg



### PRECISION CENTER YBM 10T-TH/15T-TH

# Machining the world's heaviest workpieces (10T = 5 ton, 15T = 12 ton) with high accuracy at high speed

Mechanisms and functions unique to YASDA are provided in many places of on our large machines so as to maintain the stable and highly accurate machining capability for a long period of time.

**1** The H-shaped bed made of solid steel plates (frame thickness: 90 mm in vertical/40 mm in horizontal) is extremely rigid. It prevents distortion caused by room



temperature change and maintains high machine body accuracy. 2 The large column consists of a bilaterally symmetrical double housing structure. The box shape with ribs placed inside both side walls ensures high rigidity and thermal stability. The robust and highly durable machine body realizes excellent machining accuracy. 3 To secure functional reliability, the "preload self-adjusting function" is employed in a built-in spindle dedicated for the tilting head. This function secures highly accurate rotation and highly accurate machining over the full rotation range.





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### PRECISION CENTER

#### **SPECIFICATIONS**

1. Standard specifications				
1-1	Travel			
	X-axis travel (Longitudinal movement of	of table) 1,000mm		
	Y-axis travel (Vertical movement of spi	indle head) 1,000mm		
	Z-axis travel (Cross movement of colur	mn) <b>1,100mm</b>		
1-2	Rotary table (A,B-axis)			
	Table working surface	630×630mm		
	Table loading capacity	Horizontal 800kg/Vertical 150kg·m		
	Max. size of workpiece	φ1,000×500mm		
1-3	Spindle			
	Spindle speed range	50~10,000min <sup>-1</sup>		
	Spindle taper hole	7/24 taper NT No.50		
	Spindle drive motor	18.5/22kW(Continuous/30min)		



# **YBM 10T-100**

#### SPECIFICATIONS

1. Standard specifications				
1-1	Travel			
	X-axis travel (Longitudinal movement	t of table)	1,500mm	
	Y-axis travel (Vertical movement of s	pindle head)	1,200mm	
	Z-axis travel (Cross movement of col	ravel (Cross movement of column)		
1-2	Rotary table (A,B-axis)			
	Table working surface		1,000×1,000mm	
	Table loading capacity	Horizontal	2,000kg/Vertical 500kg·m	
	Max. size of workpiece		φ1,350×595mm	
1-3	Spindle			
	Spindle speed range		50~10,000min <sup>-1</sup>	
	Spindle taper hole	-	7/24 taper NT No.50	
	Spindle drive motor	18.5/22	2kW(Continuous/30min)	

#### 1-4 Feed rate Rapid traverse rate (X,Y,Z-axis) (X)40,000mm/min (Y,Z)48,000mm/min Rapid traverse rate (B,A-axis) 7,200deg./min 1,800deg./min Cutting feed rate (X,Y,Z-axis) 5,000mm/min Cutting feed rate (B,A-axis) 4,320deg./min 1,080deg./min 0.0001mm(deg.) Least input increment 1-5 Automatic tool changer Tool shank type MAS BT50 Tool storage capacity 60 tools Maximum tool diameter (with limitation) φ360mm Maximum tool length 440mm Maximum tool mass 20kg FANUC 31i-B5



#### 1-4 Feed rate 16,000mm/min Rapid traverse rate (X,Y,Z-axis) Rapid traverse rate (B,A-axis) 2,160deg./min 720deg./min Cutting feed rate (X,Y,Z-axis) 10,000mm/min (Max.) Cutting feed rate (B,A-axis) 2,160deg./min 720deg./min 0.0001mm(deg.) Least input increment 1-5 Automatic tool changer MAS BT50 Tool shank type 60 tools Tool storage capacity Maximum tool diameter (with limitation) \$300mm Maximum tool length 440mm Maximum tool mass 20kg 1-6 NC unit FANUC 31i-B5





#### **SPECIFICATIONS**

1. 5	Standard specifications				
1-1	Travel		1-4	Feed rate	
	X-axis travel (Longitudinal movement of	table) 1,250mm		Rapid traverse rate (X,Y,Z-axis) 45,00	00•48,000•48,000mm/min
	Y-axis travel (Vertical movement of spin	dle head) 1,000mm		Rapid traverse rate (B,C-axis)	75min <sup>-1</sup> 100min <sup>-1</sup>
	Z-axis travel (Cross movement of colum	n) <b>1,100</b> mm		Cutting feed rate (X,Y,Z-axis)	10,000mm/min
1-2	Rotary table (B,C-axis)			Cutting feed rate (B,C-axis)	50min <sup>-1</sup> 60min <sup>-1</sup>
	Table working surface	500×500mm		Least input increment	0.0001mm(deg.)
	Table loading capacity	500kg	1-5	Automatic tool changer	
	Max. size of workpiece	φ630×500mm		Tool shank type	MAS BT50
	Table rotational axis (B-axis)	+110~-110deg.		Tool storage capacity	60 tools
1-3	Spindle			Maximum tool diameter (with limitation)	¢360mm
	Spindle speed range	50~10,000min <sup>-1</sup>		Maximum tool length	440mm
	Spindle taper hole	7/24 taper NT No.50		Maximum tool mass	20kg
	Spindle drive motor	18.5/22.0kW(Continuous/30min)	1-6	NC unit	FANUC 31i-B5
DI	MENSIONS	650 600 X AXIS : 1,250st 220, X TO B=0' X TO	INE	500 MAX. WORK HEIGHT 15000 1: SXXY J 9 9 9 9 9 9 9 9	

### **PRECISION CENTER**

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**SPECIFICATIONS** \* The 15T-TH and others in blue characters are the same as the 10T-TH.

1. Standard specifications		10T-TH	15T-TH
1-1	Travel		
	X-axis travel (Longitudinal movement of table	e) 1,500mm	2,100mm
	Y-axis travel (Vertical movement of spindle head) 1,5		Omm
	Z-axis travel (Cross movement of column)	1,800	Omm
1-2	Rotary table (B-axis)		
	Table working surface	1,000×1,000mm	1,500×1,500mm
	Table loading capacity	5,000kg	12,000kg
	Max. work height	1,500mm	2,000mm
	Max. turning diameter of work	φ1,350mm	φ2,050mm
1-3	Spindle		
	Spindle speed range (S	Standard) $60 \sim 6,000 \text{min}^{-1}$	(Option) 80~10,000min <sup>-1</sup>
	Spindle taper hole	7/24 taper	NT No.50
	Spindle drive motor	26/30kW(Cont	inuous/30min)

26/30kW(Continuous/30min)





		101-1H	151-1H
1-4	Feed rate		
	Rapid traverse rate (X-axis)	45,000mm/min	12,000mm/min
	Rapid traverse rate (Y,Z-axis	s) 16,000	mm/min
	Rapid traverse rate (B-axis)	3,600deg./min	1,080deg./min
	Rapid traverse rate (A-axis)	1,800d	eg./min
	Cutting feed rate (X,Y,Z-axis	s) Max.5,000mm	/min(Standard)
	Cutting feed rate (B-axis)	1,440deg./min	720deg./min
	Cutting feed rate (A-axis) 1,080		eg./min
	Least input increment	0.0001n	nm(deg.)
1-5	Automatic tool changer		
	Tool storage capacity	60 t	ools
	Maximum tool diameter	φ30	Omm

440mm





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