



## 5-AXIS VERTICAL MACHINING CENTER

AX-320 / AX-450

BX-320C / BX-500C / BX-630C / BX-630CS

**CNC-TAKANG**

**CNC-TAKANG CO., LTD.**  
MANUFACTURER & EXPORTER

**5-AXIS VMC Series**



▲ 5-AXIS synchronized machining saves machining time, reduces repetitive workpiece setup and error. Excellent for aerospace parts, multiple curved faces mold and multiple -faces parts machining.

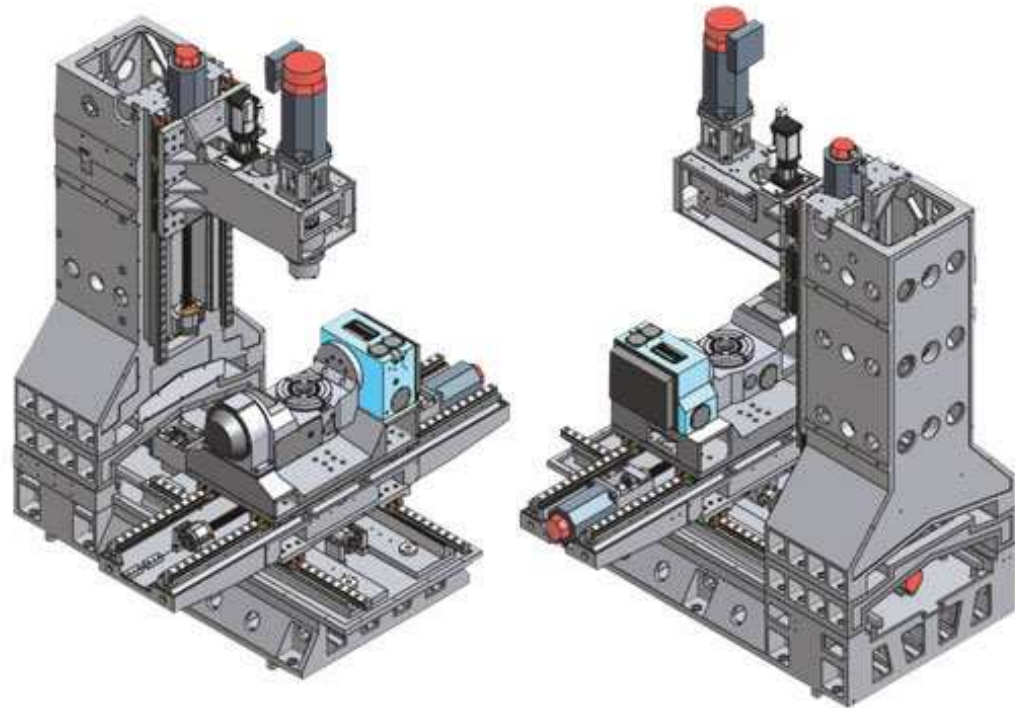
## ■ AX-320

X, Y, Z Axis Linear Way  
With 660mm / 610mm / 610mm Travel  
And Rapid Feed 30/30/24 m/min  
A Axis Tilt 150° (-120° to +30°)  
C Axis Rotary 360°  
ISO40 Spindle Taper

## ■ AX-450

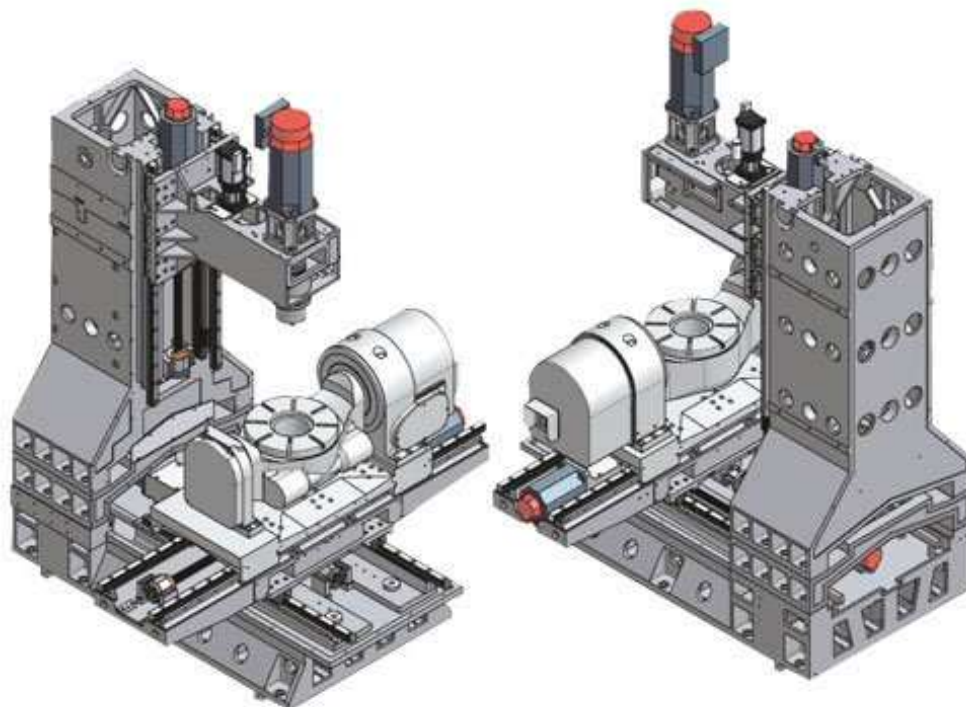
X, Y, Z Axis Linear Way  
With 760mm / 610mm / 560mm Travel  
And Rapid Feed 30/30/24 m/min  
A Axis Tilt 220° (-110° to +110°)  
C Axis Rotary 360°  
ISO40 Spindle Taper

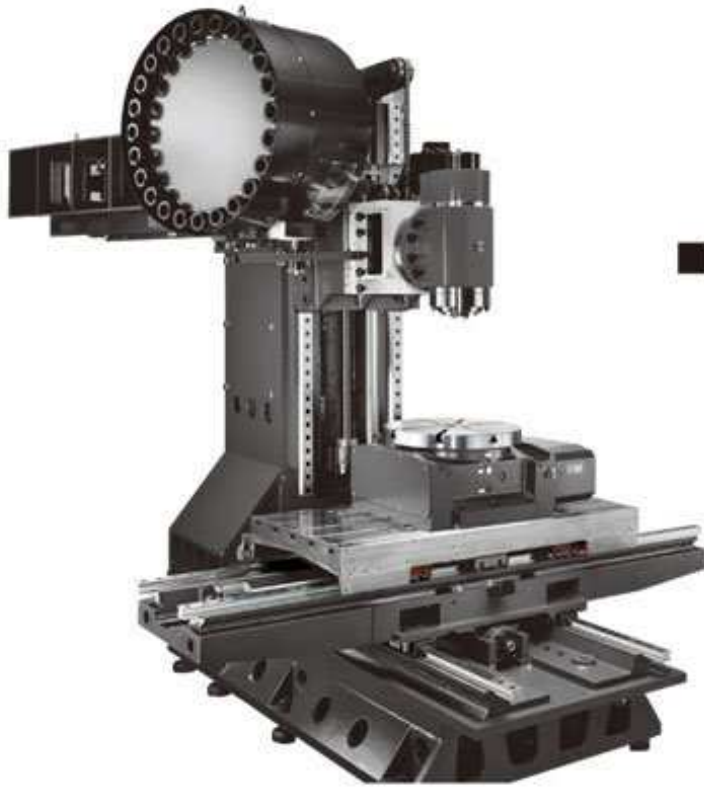
## ■ AX-320



The major structural parts are made from high quality Meehanite cast iron (BG 300), tempered for stress relief with hardness over 190HB.  
 45mm roller linear way on X, Y & Z axis increases stability.  
 X, Y & Z axes are transmitted with class C3, Dia.40mm ball screws.

## ■ AX-450





## ■ BX-320C / BX-500C / BX-630C

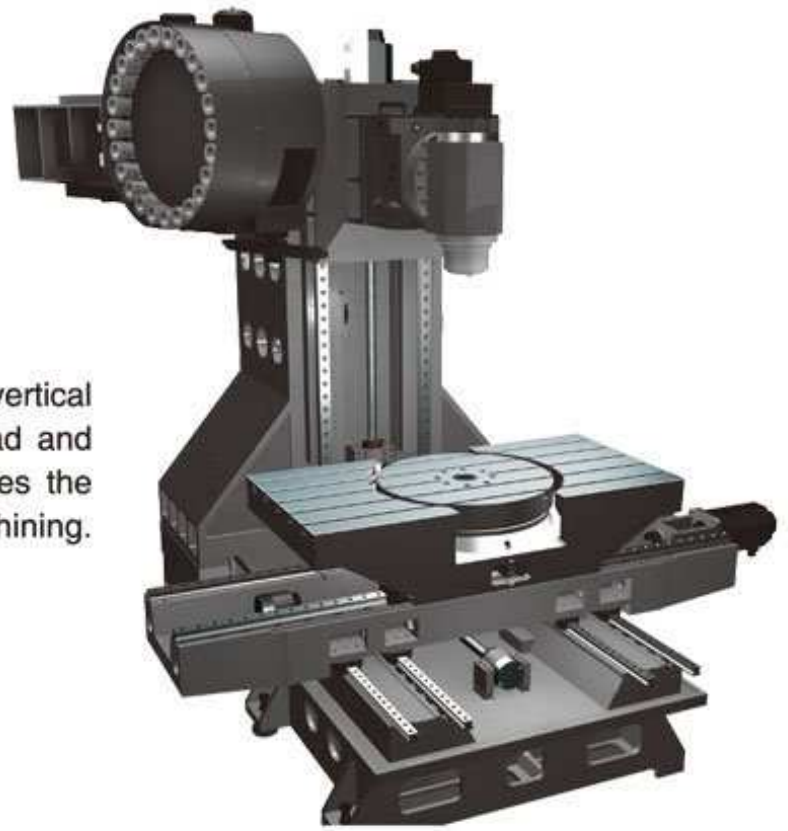
5-axis control vertical machining center with a swivel head and rotary table design.

With removable rotary table, machine can work as 4-axis machine.

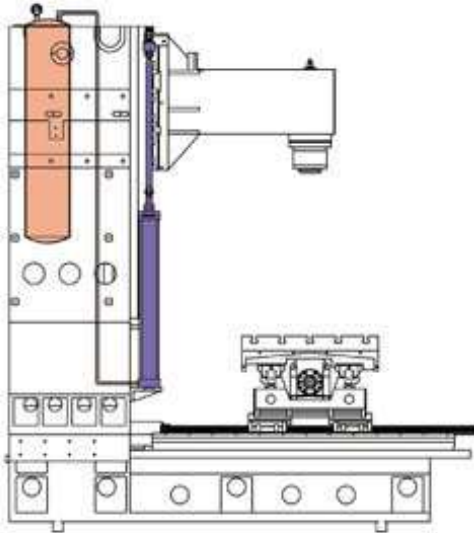


## ■ BX-630CS

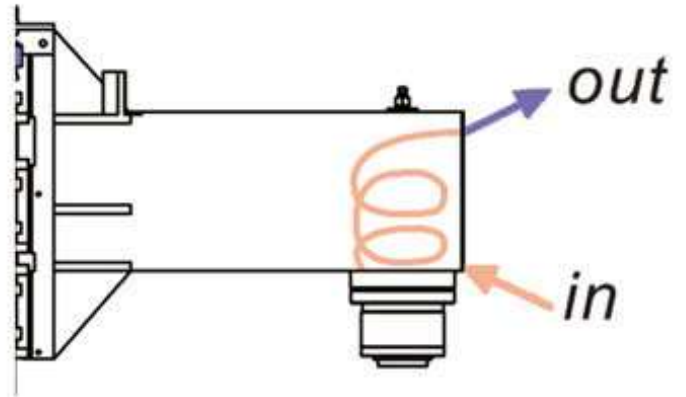
High precision, 5-axis controlled vertical machining center with swivel head and DD motor on rotary table achieves the highest productivity in 5-axis machining.



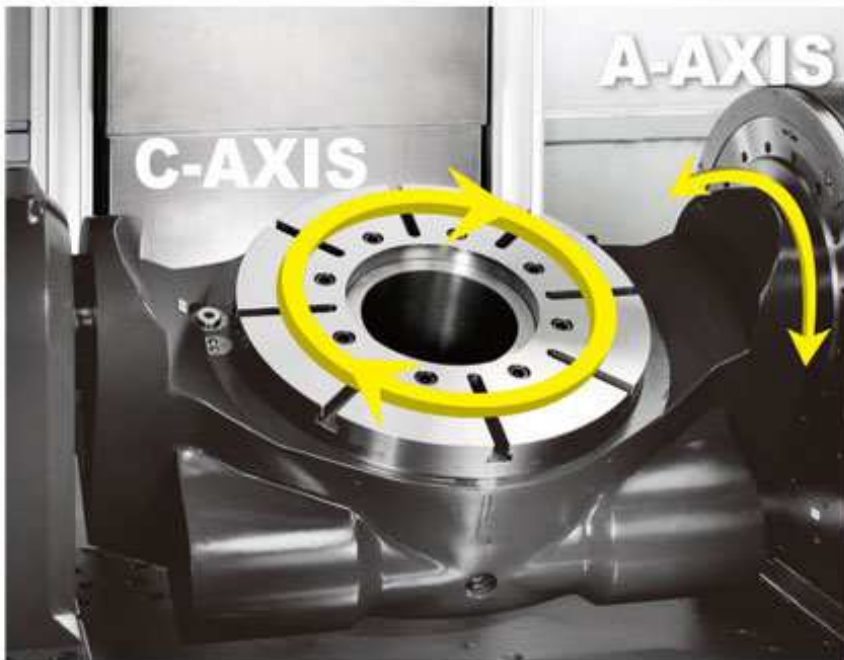
# AX Series



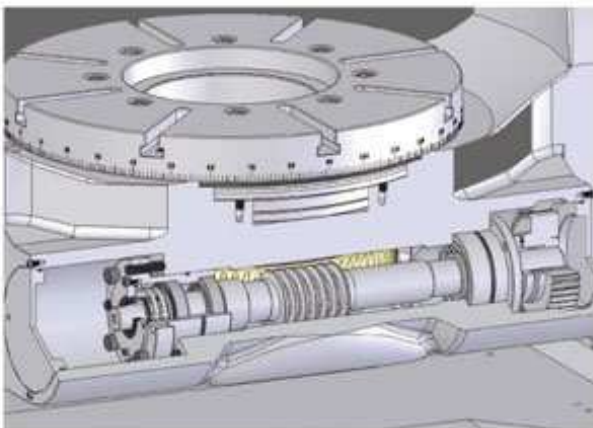
▲ PNEUMATIC COUNTER BALANCE SYSTEM



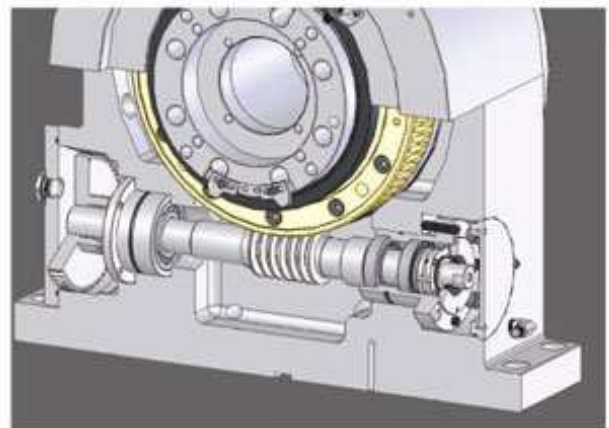
▲ COOLING SYSTEM TO SPINDLE



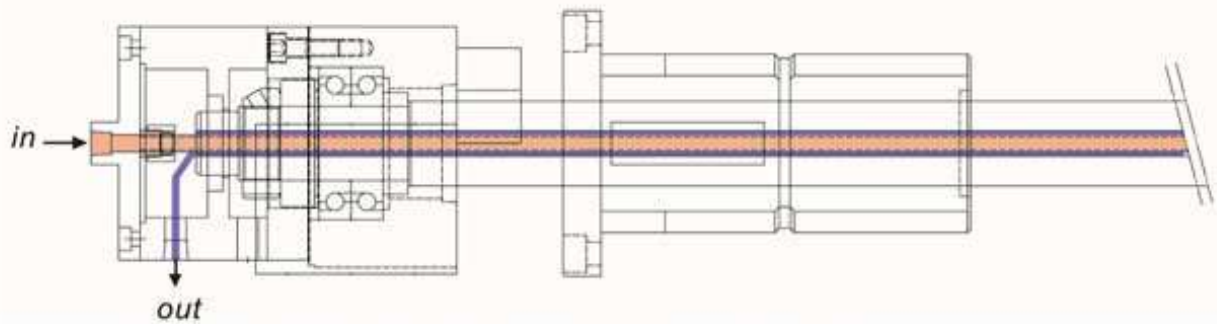
▲ Rotary Table diameter 320 / 450mm  
Table rotation and tilting are driven by servo motors.



▲ Rotating index accuracy 15 arc sec.



▲ Tilting index accuracy 45 arc sec.



▲ COOLANT THROUGH BALL SCREW ( AX & BX Series )

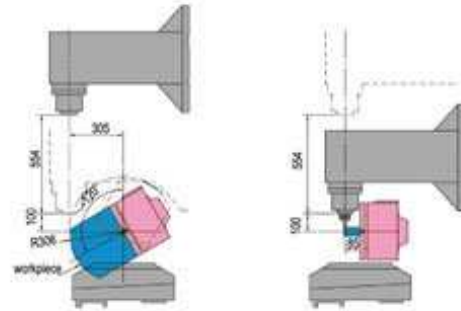
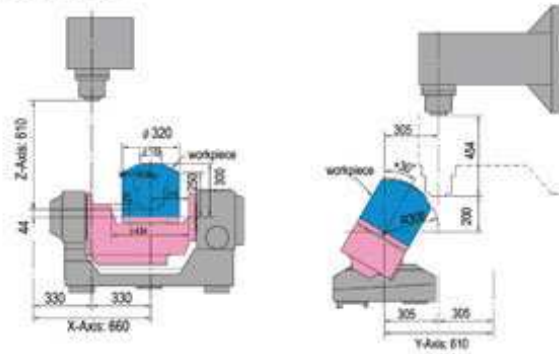
## ■ BX series



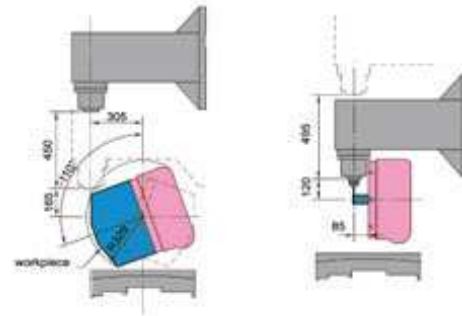
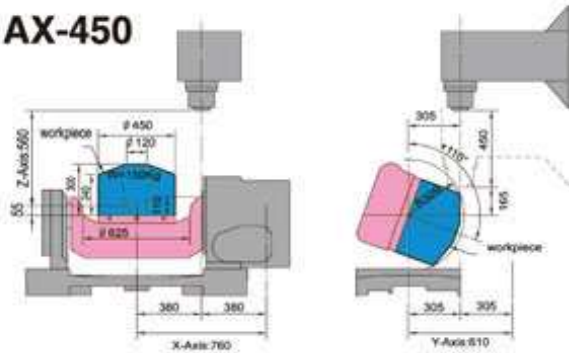
- ▲ Built-in 15,000rpm spindle with  $\pm 120^\circ$  swing.  
B axis swivel head is designed with dual pitch worm gear set to eliminate teeth backlash and create excellent transmission.

## WORK RANGE (unit:mm)

### AX-320

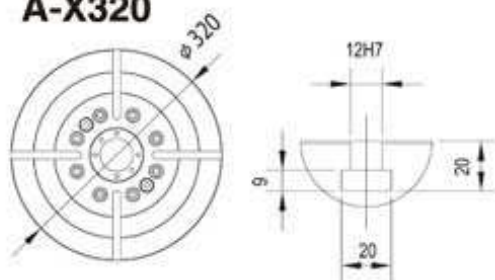


### AX-450

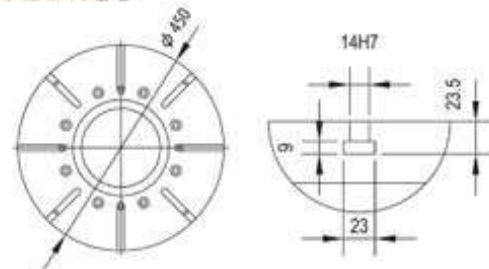


## TABLE SIZE (unit: mm)

### A-X320

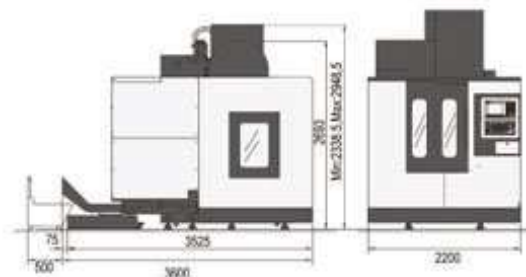
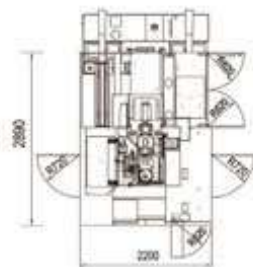


### AX-450

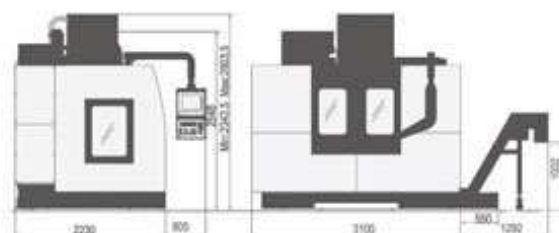
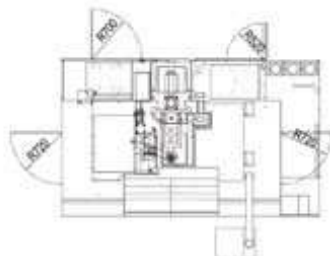


## FLOOR SPACE (unit: mm)

### AX-320



### AX-450





## SPECIFICATIONS

MODEL / DESCRIPTION		AX-320	AX-450
Table	Table size	Dia. 320 mm (12.6")	Dia. 450 mm (17.72")
	Travel ranges (X / Y / Z)	660 x 610 x 610 mm (25.98 x 24.02 x 24.02")	760 x 610 x 560 mm (29.92 x 24.02 x 22.05")
	T slot size	12 mm x 90° (0.47" x 90°)	14mm x 45° (0.55" x 45°)
	Max. table load	100 kgs	150 kgs
	Max. workpiece size (W x H)	Dia. 320 x 300 mm (12.6 x 11.81")	Dia. 450 x 300 mm (17.72 x 11.81")
	Diameter of table hole	50 mm (1.97")	171 mm (6.73")
	Spindle nose to table surface	44 ~ 654 mm (1.73 ~ 25.75")	55 ~ 615 mm (2.17 ~ 24.21")
	A axis, tilt (deg) / (0.001°)	150° (-120° / +30°)	220° (± 110°)
	C axis, rotary (deg) / (0.001°)	360°	
Spindle	Tool shank & pull stud	ISO 40	
	Spindle inner diameter	70 mm (2.76")	
	Spindle speed direct drive	10000 rpm	
	Spindle speed built-in	15000 rpm	
	Main motor (con / 30 min)	9 / 12 kw	
	Axis Servo Motor	Rapid feed rate ( X / Y / Z)	30 / 30 / 24 M/min.
Feed rate (X / Y / Z)		10000 mm/min.	
Feed rate (A / C)		5.5 / 11.5 rev/min.	
X axis rated torque		10 Nm	
Y axis rated torque		10 Nm	
Z axis rated torque		10 Nm	
A axis rated torque		5 Nm	10 Nm
C axis rated torque		3.8 Nm	10 Nm
Auto Tool Changer	ATC type	DISK / CHAIN (Opt.)	
	CAM type	ARM	
	Tool selection (Bi-direction)	RANDOM	
	Tool storage capacity	24 pcs / 32 , 40 pcs (Opt.)	
	Max. tool diameter	90 mm (3.54") / 76 mm (2.99") (Opt.)	
	Max. tool length	300	
	Max. tool weight	8	
Miscellaneous	Air requirement	6 kg/cm <sup>2</sup>	
	Hydraulic requirement	40 kg/cm <sup>2</sup> , 30L	
	Power requirement	40 KVA	
	Coolant tank capacity	300 L	
	Machine weight	6500 kgs	7000 kgs
	Machine height	2900 mm (114.17")	
	Floor space (L x W)	2200 x 3600 mm (86.61 x 141.73")	3100 x 2230 mm (122.05 x 87.8")
Packing size (L x W x H)	2200 x 3600 x 2560 mm (86.61 x 141.73 x 100.79")	3100 x 2230 x 2560 mm (122.05 x 87.8 x 100.79")	

※THE SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

### ■ STANDARD ACCESSORIES:

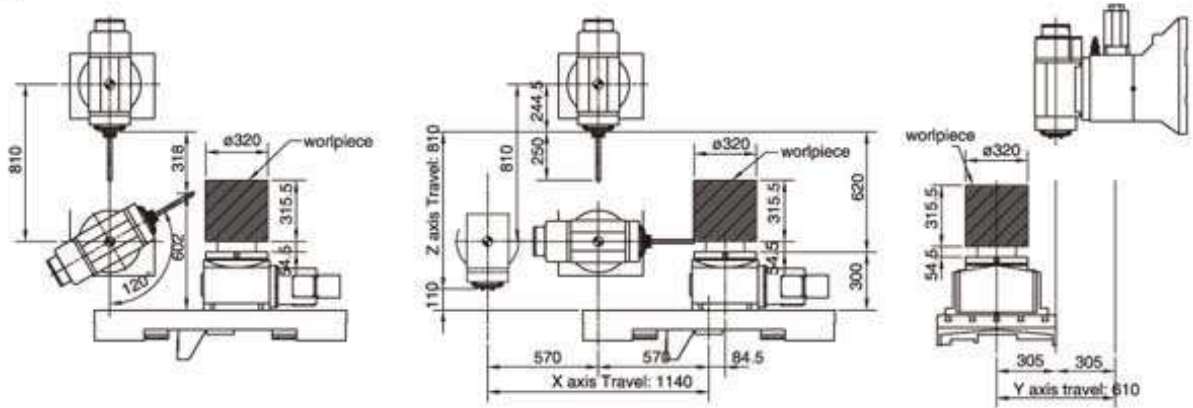
1. 24 tools arm type ATC
2. Spindle oil chiller
3. Cutting air blower
4. Coolant & auto lubrication system
5. Full splash guard
6. Telescope steel cover
7. Z axis pneumatic balance system
8. Hollow ball screws with cooling system
9. Heat exchanger for electrical cabinet
10. Encoder for A/C axes (AX series)
11. Encoder for B/C axes (BX series)
12. Rigid tapping
13. Remote MPG
14. RS-232 interface
15. Operation status light
16. Work light
17. Tool box & tools
18. Leveling bolts & pads
19. Operation & program manuals

### ■ OPTIONS:

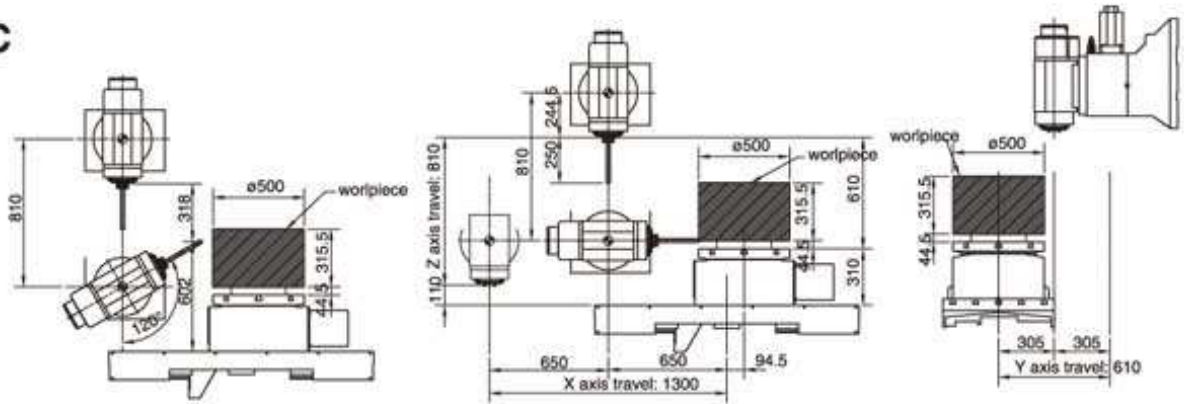
1. Coolant through spindle
2. Chip conveyor
3. 3 axes linear scales
4. Auto tool length measurement
5. Auto workpiece measurement
6. Transformer
7. CE mark

## ■ WORK RANGE (unit: mm)

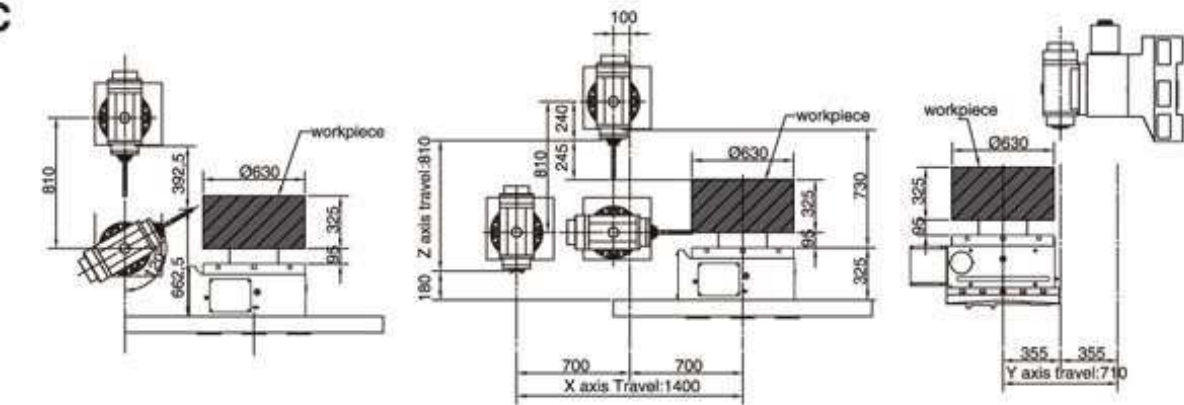
### BX-320C



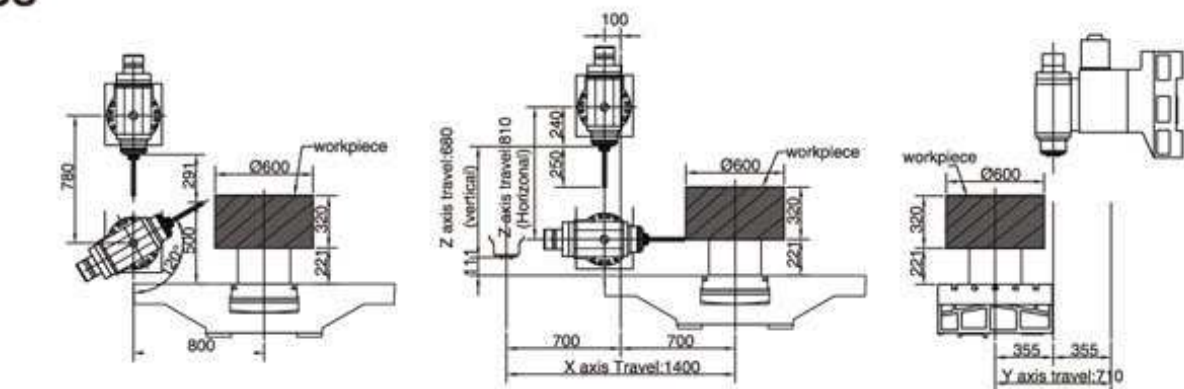
### BX-500C



### BX-630C

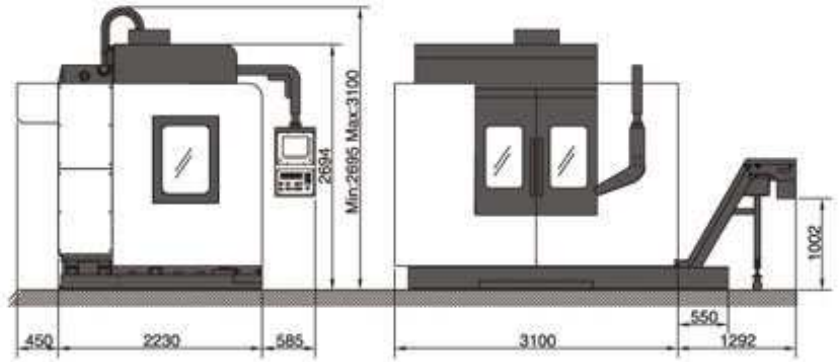
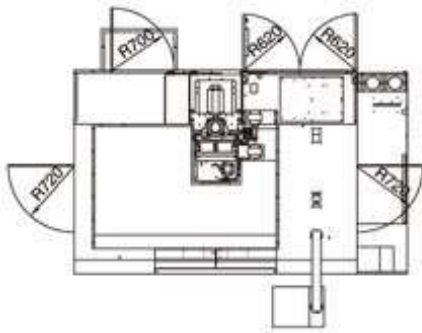


### BX-630CS

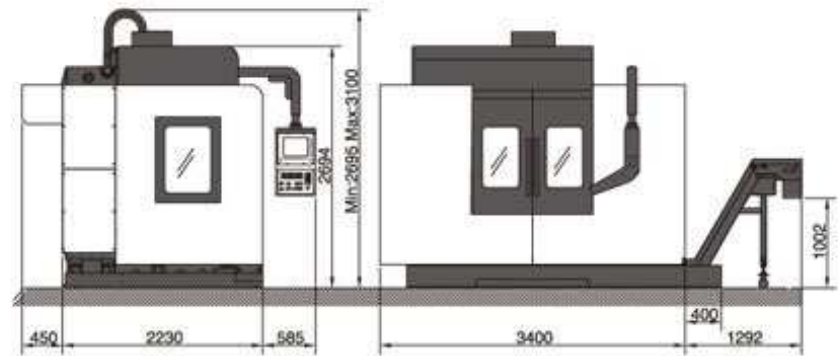
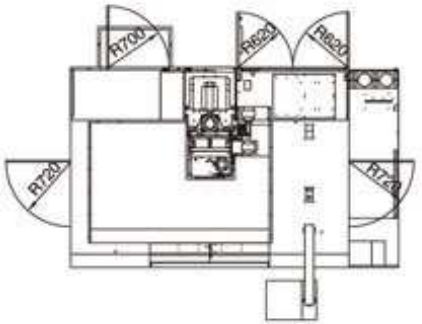


## ■ FLOOR SPACE (unit: mm)

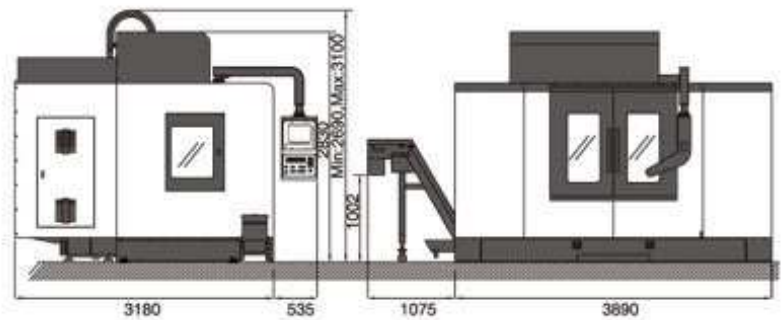
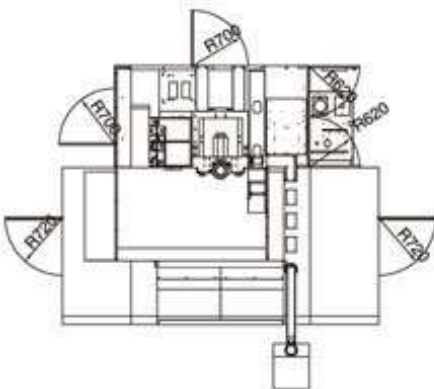
### BX-320C



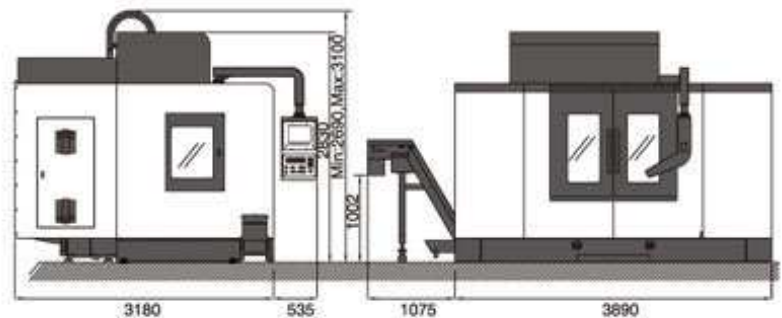
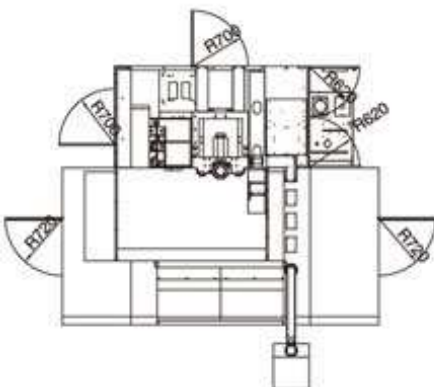
### BX-500C



### BX-630C



### BX-630CS



## SPECIFICATIONS

MODEL / DESCRIPTION		BX-320C	BX-500C	BX-630C	BX-630CS	
Table	Table size	1300 x 610 mm (51.18 x 24.02")	1450 x 610 mm (57.09 x 24.02")	1600 x 700 mm (62.99 x 27.56")		
	Travel ranges (X)	1140 mm (44.88")	1300 mm (51.18")	1400 mm (55.12")		
	Travel ranges (Y)	610 mm (24.02")		710 mm (27.95")		
	Travel ranges (Z)	810 mm (31.89")			Vertical Milling 680 Horizontal Milling 810	
	Max. table load	600 kg		800 kg	1200 kg	
	Spindle nose to table surface (vertical)	110 - 920 mm (4.33 - 36.22")		180 - 990 mm (7.09 - 38.98")	110 - 790 mm (4.33 - 31.1")	
	Spindle center to table surface (horizontal)	355 - 1165 mm (13.98 - 45.87")		420 - 1230 mm (16.54 - 48.43")	220 - 1030 mm (8.66 - 40.55")	
	T-slot (W x D x N)	18 x 125 x 5 mm (0.71 x 4.92 x 0.2")				
Built-in Spindle	Spindle taper	BT 40				
	Spindle inner diameter	70 mm (2.76")				
	Spindle center to column	675 mm (26.57")		760 mm (29.92")		
	Spindle speed	15000 rpm				
	Draw bar force	800 ± 100 kgf		900 ± 100 kgf		
	Main Motor (con / 30 min)	15 / 18 kw		15 / 19.4 kw		
	Motor type	INDRAMAT IMB 160F-4B		E+A mW16/17-8		
	Motor torque (con / max)	48 / 120 Nm		71.6 / 134 Nm		
Swing Head	Driver type	WORM GEAR				
	Reduction ratio	1 : 72		1 : 120		
	Tilting range (deg)	± 120°				
	Max. speed	25 rpm		16.6 rpm		
	Min. unit	0.001°				
	Clamp torque	1157 Nm		1765 Nm		
	Working torque	764 Nm		765 Nm		
Rotary Table	Drive type	WORM GEAR			DIRECT DRIVE	
	Type	SEPARATED			EMBEDDED	
	Table diameter	320 mm (12.6")	500 mm (19.69")	630 mm (24.8")		
	Center bore diameter	70 mm (2.76")	60 mm (2.36")	75 mm (2.95")	60 mm (2.36")	
	Rotation speed	22.2 rpm	11.1 rpm	11.1 rpm	50 rpm	
	Min. index	0.001°				
	Max. table load	350 kgs	500 kgs	800 kgs	1000 kgs	
Axis Servo Motors	Rapid feed rate (X / Y / Z)	36 / 36 / 24 M/min.				
	Feed rate (X / Y / Z)	10000 mm/min.				
	Rated torque (X / Y / Z)	11 / 11 / 11 Nm		18.1 / 18.1 / 18.1 Nm		
	B-axis rated torque	11 Nm				
	C-axis rated torque	11 Nm		533 Nm		
Tool Magazine	ATC type	DISK / CHAIN (Opt.)				
	CAM type	ARM				
	Tool selection (Bi-direction)	RANDOM				
	Tool storage capacity	24 pcs / 32, 40 pcs (Opt.)				
	Max. tool diameter	90 mm (3.54") / 76 mm (2.99") (Opt.)				
	Max. tool length	250				
Accuracy	Max. tool weight	8				
	Positioning XYZ linear axis	0.005 mm				
	BC rotary	10 sec.				
	Repeatability XYZ linear axis	0.003 mm				
Miscellaneous	BC rotary	6 sec.				
	Air requirement	6 kg/cm <sup>2</sup>				
	Power requirement	40 KVA				
	Coolant tank capacity	300 L		450 L		
	Machine weight	6500 kgs	6800 kgs	11000 kgs	12000 kgs	
	Machine height	3100 mm (122.05")		3200 mm (125.98")		
	Floor space (L x W)	3100 x 2230 mm (122.05 x 87.8")	3400 x 2230 mm (133.86 x 87.8")	3890 x 3180 mm (153.15 x 125.2")		
Packing size (L x W x H)	3150 x 2300 x 2550 mm (124.02 x 90.55 x 100.39")	3450 x 2300 x 2550 mm (135.83 x 90.55 x 100.39")	3230 x 2300 x 2560 mm (127.17 x 90.55 x 100.79")			

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### ■ STANDARD ACCESSORIES & OPTIONS:

Same as AX series (p.9)

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