

# VTB/VTC Series

Double Column type CNC Vertical Lathe



VTB(C)-2530E/3040E/4050E/5060E



# VTB(C)-2530E/3040E/4050E/5060E

**Double Column type CNC Vertical Lathe with Cross-rail Elevating**

## ■ High Productivity

- Maximum 6000mm turning capacity
- 60 tons load capable table
- 100kW(135HP) main drive motor power
- Elevating cross rail of 1500~2500mm stroke
- Fully controlled C-axis and rotary spindle

## ■ High Reliability

- Heavy duty guide ways of box type
- Massive one-piece cast iron bed, column and cross rail
- Induction-hardened and precise-ground guide ways
- Extra large 300mm square spherical-graphite-iron ram

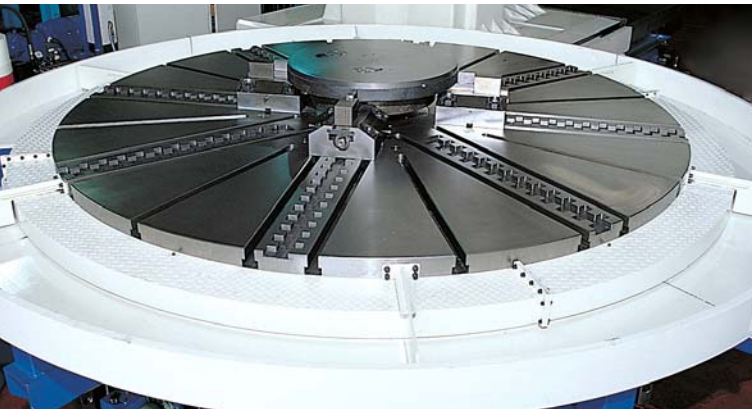
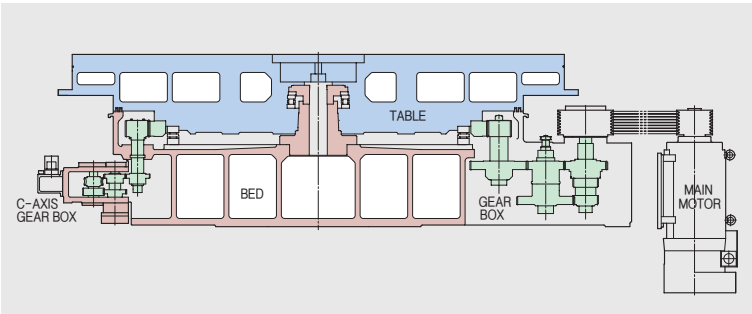
## ■ High Accuracy

- Qualified precision bearings & ball screws
- Fluoroplastic-bonded & hand-scraped guide ways
- Full automatic lubrication to all critical areas



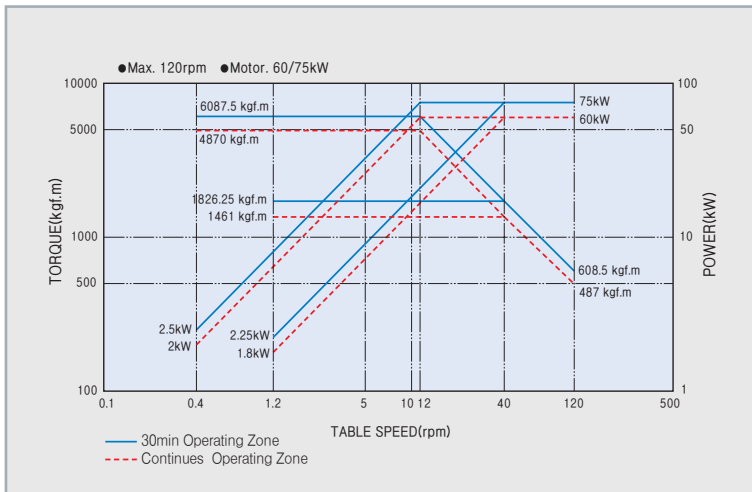
# Super large CNC vertical VTB/VTC series presents a new standard of double column type vertical lathe.

## Bed/Table

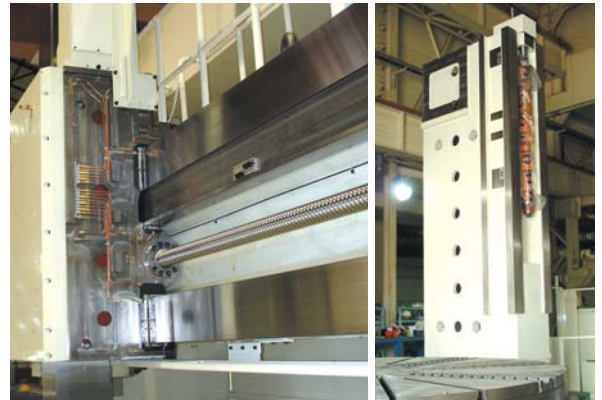


- One-piece casting bed of box shape and rib structure supports safely the load of large work-piece to the maximum 60tons.
- Table is made of high quality casting, and the variously shaped work-piece can be clamped with 8T-slots and 8 independent manual slide jaws on the table.
- Table is laid on the high precision thrust cylindrical roller bearing and tapered roller bearing, and it fully stands heavy-duty cutting load with rigidity.
- It is driving by the large diameter helical gear connected with powerful main motor and v-belts, and the gears are changed at two-step (high & low) by hydraulic cylinder.
- Shafts and gears are made by special steel, and heat-treated, precise-ground, so those help the table in stable rotation even at high torque.
- On VTC model, C-axis drive unit is installed on bed, and it can index to the minimum 0.001degree, so various milling jobs are possible with this unit.

## Table Torque-Power Diagram

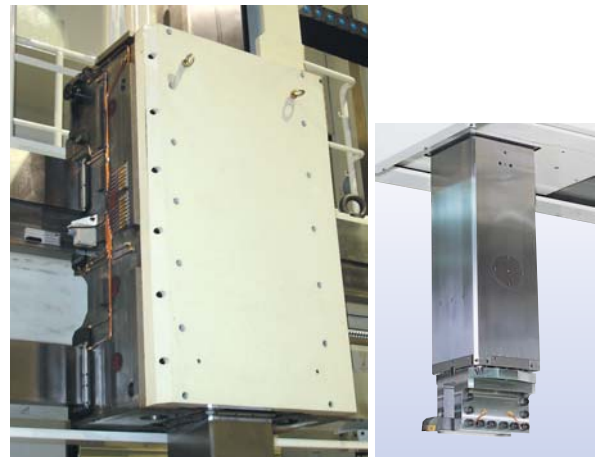


## Cross-rail/Column



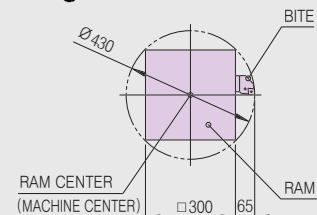
- Cross-rail is accurate-sliding on the column guide-way by AC servomotor and high precise ball screw and strong-fixed by hydraulic clamping device after positioning. It travels to the maximum 2500mm.
- Column has thick wall and rib structure of box-shape, so can be fully rigid to sustain torsion or bending generated during heavy-duty cutting.

## Saddle/Ram



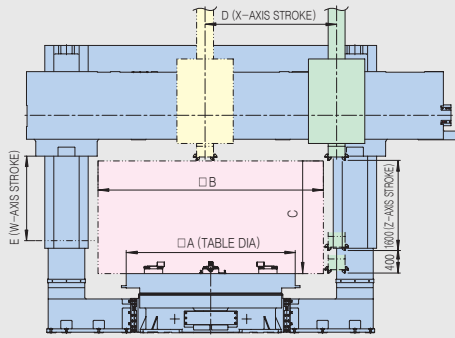
- The ram of special cast iron is heat-treated and precise-ground. 300mm sized square ram can vertically travel to the 1600mm maximum.
- Ram head can equip tool holders of ISO 7/24 taper #50(BT50) standard and MAS P50T-1 pull stud.
- Each guide-way for feeding axis is lubricated and also attached with Turcite to be reduce wearing and friction-resistance and to keep it in the most optimum condition.
- It is possible to face-mill, end-mill, drill or do other multiple milling jobs on VTC, so it increases productivity accompanied with intensive work progress and effective process.

## Minimum Boring



## Machining Range

Unit : mm

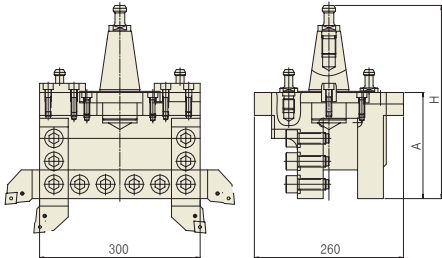


Model	A	B	C	D	E
VTB(C)-2530E	2500	3000	2000/2500	1835	1500/2000
VTB(C)-3040E	3000	4000	2000/2500	2335	1500/2000
VTB(C)-4050E	4000	5000	2500/3000	2835	2500/3000
VTB(C)-5060E	5000	6000	2500/3000	3335	2500/3000

## Tool Holders(Option)

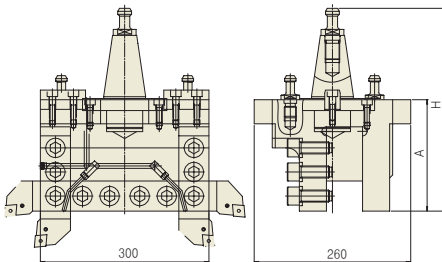
Unit : mm

### ● Square tool holder (Standard type)



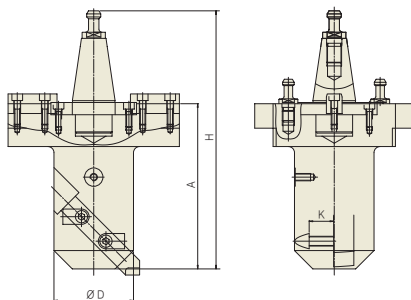
Model No.	A	H	Tool Size
TE25-41000-0060	185	336.8	□ 50
TE25-41000-0061	235	386.8	□ 50
TE25-41000-0062	285	436.8	□ 50

### ● Square tool holder (Through tool coolant)



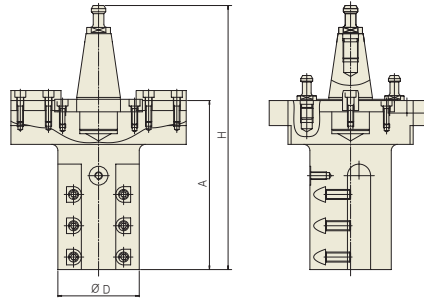
Model No.	A	H	Tool Size
TE25-41000-0160	185	336.8	□ 50
TE25-41000-0161	235	386.8	□ 50
TE25-41000-0162	285	436.8	□ 50

### ● Boring tool holder (BA type)



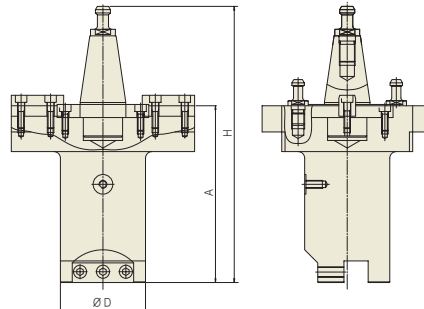
Model No.	A	D	H	Tool Size
TE25-41000-5040	270	∅ 130	421.8	□ 32
TE25-41000-5041	320	∅ 130	471.8	□ 32
TE25-41000-5042	370	∅ 130	521.8	□ 32
TE25-41000-5043	420	∅ 130	571.8	□ 32

### ● Boring tool holder (BP type)



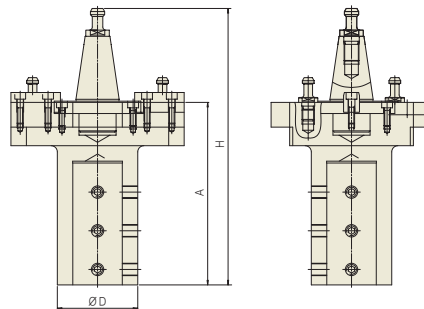
Model No.	A	D	H	Tool Size
TE25-41000-5140	270	∅ 130	421.8	□ 32
TE25-41000-5141	320	∅ 130	471.8	□ 32
TE25-41000-5142	370	∅ 130	521.8	□ 32
TE25-41000-5143	420	∅ 130	571.8	□ 32

### ● Boring tool holder (BF type)



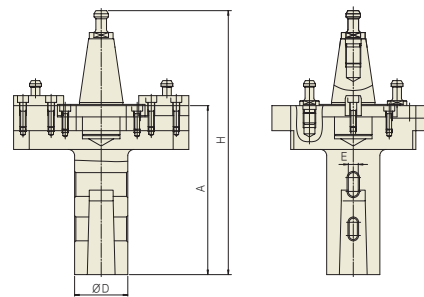
Model No.	A	D	H	Tool Size
TE25-41000-5240	270	∅ 130	421.8	□ 32
TE25-41000-5241	320	∅ 130	471.8	□ 32
TE25-41000-5242	370	∅ 130	521.8	□ 32
TE25-41000-5243	420	∅ 130	571.8	□ 32

### ● Side lock holder

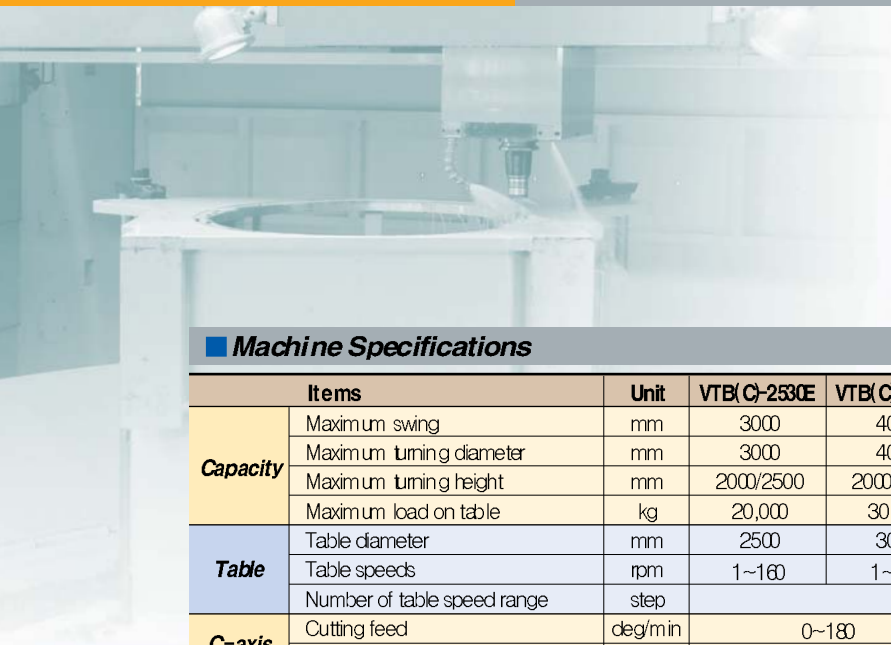


Model No.	A	D	H	Tool Size
TE25-41000-5350	220	∅ 80	371.8	∅ 40
TE25-41000-5360	220	∅ 100	371.8	∅ 50
TE25-41000-5370	245	∅ 100	396.8	∅ 60
TE25-41000-5380	295	∅ 130	446.8	∅ 80

### ● Morse taper holder



Model No.	A	D	H	Tool Size
TE25-41000-5450	220	∅ 80	421.8	MT # 5
TE25-41000-5460	220	∅ 110	496.8	MT # 6
TE25-41000-5470	245	∅ 130	571.8	MT # 7



**Machine Specifications**

Items		Unit	VTB(C)-2530E	VTB(C)-3040E	VTB(C)-4050E	VTB(C)-5060E
<b>Capacity</b>	Maximum swing	mm	3000	4000	5000	6000
	Maximum turning diameter	mm	3000	4000	5000	6000
	Maximum turning height	mm	2000/2500	2000/2500	2500/3000	2500/3000
	Maximum load on table	kg	20,000	30,000	50,000	60,000
<b>Table</b>	Table diameter	mm	2500	3000	4000	5000
	Table speeds	rpm	1~160	1~120	1~60	1~50
	Number of table speed range	step	Automatic 2			
<b>C-axis</b>	Cutting feed	deg/min	0~180		0~120	
	Maximum speed	rpm	0.5		0.333	
<b>Spindle Head</b>	Tool size	mm	50×50			
	Spindle taper	-	ISO 7/24 No. 50			
	Section dimension of square ram	mm	300×300			
<b>Travel &amp; Feed</b>	X-axis travel(Saddle cross)	mm	1835	2335	2835	3335
	Z-axis travel(Ram vertical)	mm	1600			
	W-axis travel(Cross rail vertical)	mm	1500/2000		2000/2500	
	X/Z-axis cutting feed-rate	mm/rev	0.01~500			
	X/Z-axis rapid traverse	m/min	8		6	
	W-axis rapid traverse	mm/min	500			
<b>ATC</b>	Type of tool holder	-	MAS BT50			
	Number of tool	set	VTB: 12 tools, VTC: 24 tools			
	Maximum tool weight	kg	70			
	Type of pull stud	-	P50T-I			
<b>Motors</b>	Table motor	kW(HP)	AC 60/75(80/100)		AC 100(135)	
	Mill spindle motor	kW(HP)	AC 22/26(30/35)			
	X-axis servo motor	kW(HP)	AC 9(12)			
	Z-axis servo motor	kW(HP)	AC 9(12)			
	C-axis servo motor	kW(HP)	AC 9(12)		AC 16(21.3)	
	W-axis servo motor	kW(HP)	AC 7(9.5)		AC 9(12)	
<b>Machine weight</b>		kg	75,000	92,000	110,000	120,000
<b>CNC system</b>		-	FANUC 31i-TA			

**Standard Accessories**

- CNC controller, FANUC 31i-TA
- AC table and servo drives and motors
- Heavy duty 4-jaw independent chuck
- Automatic tool changer system (VTB:Turning 12-tool, VTC:Turning 12, Milling 12-tool)
- Table gears & bearings oil cooling unit
- C-axis scale
- Hydraulic power unit
- Automatic lubrication system for guides
- Coolant system
- Splash guard
- X-axis telescopic steel cover
- Work light
- Patrol lamp(Red, Yellow, Green)
- Levelling block
- Foundation bolt & nut
- Operating tool box & tool kits

**Optional Accessories**

- Through the tool coolant
- Chip conveyor & bucket
- NC power off
- Transformer
- Tool holders
- X-axis scale



## Standard CNC Control Features

### FANUC 31i-TA Control Features:

- Simultaneously controllable axes: 2
- Minimum programmable increment: 0.001 mm (0.0001")
- Tape storage length: 320m (1050 feet)
- Registerable programs: 125
- Backlash compensation
- Pitch error compensation
- Constant surface speed control
- Self diagnostic functions

### Programming Features:

- Graphic display
- Dynamic graphic display
- Circular interpolation by radius designation
- Tool nose radius compensation (G40-G42)
- Combined use of absolute/incremental command
- Chamfering, corner R
- Canned cycles (G90, G92, G94)
- Decimal point programming
- Reference point return (G27-G30)
- Sub-program 4 holds nested

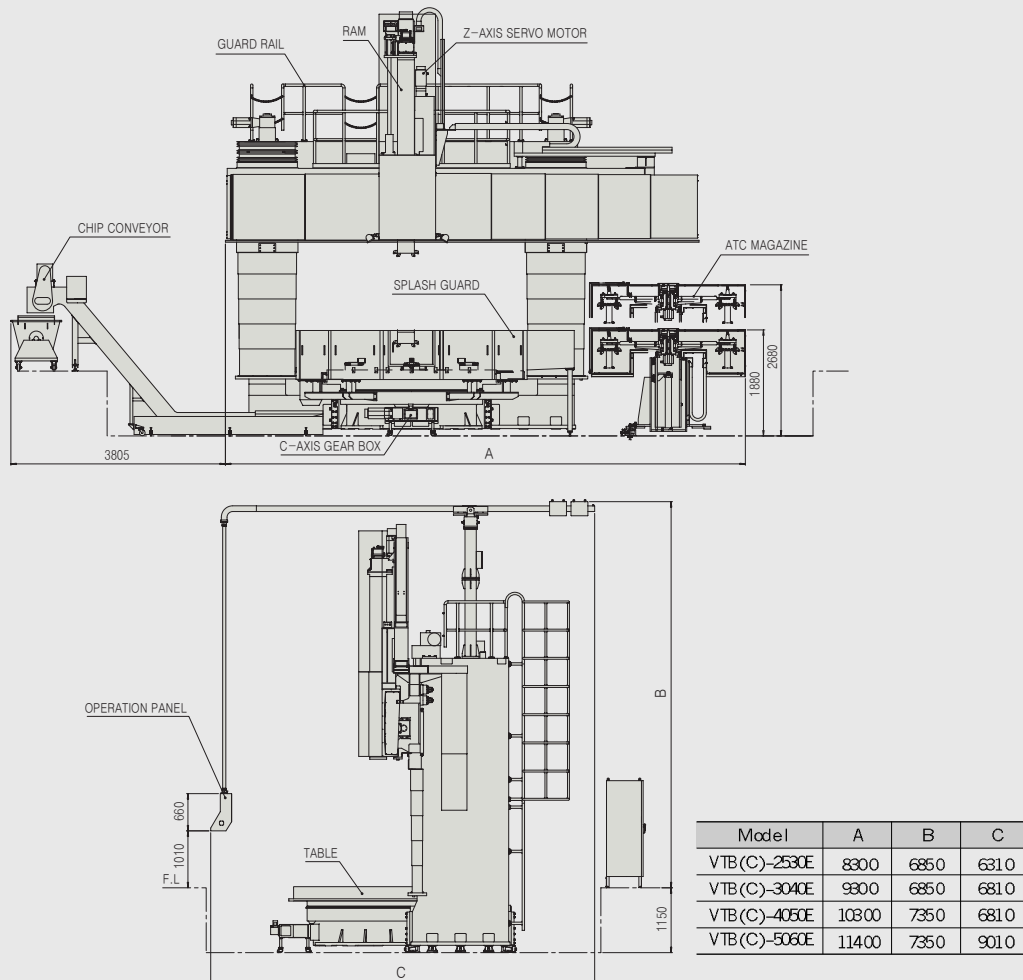
- Custom macro B
- Multiple repetitive cycles (G70-G76)
- Multiple repetitive cycle II
- Custom macro additional variable (#500-#999)

### Operation Features:

- 15.1" color LCD
- Incremental encoder
- Geometry and wear offsets
- 32 pairs of tool offsets
- Run hour display
- Thread cutting retract
- Input/output interface (RS232C)
- Keyboard type manual data input (MDI full key)
- Program protect key
- Incremental offset
- Rapid traverse override
- Feed rate override
- Spindle speed override
- Tape code: EIA, ISO automatic recognition

## External Dimensions

Unit: mm



Note: Specifications and features are subject to change without prior notice.



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