Single Column type CNC Vertical Boring & Turning Mills

VLB/VLC Series

VLB-3070/4080, VLC-3070/4080

HANKOOK

Single Column type CNC Vertical Boring & Turning Mills

VLB/VLC Series

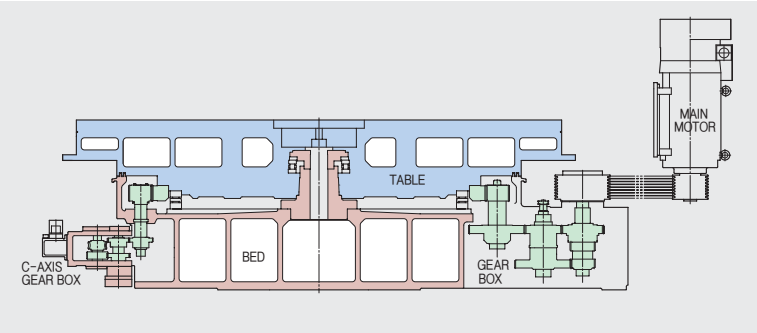
■ High Productivity
- Maximum 8000mm turning capacity
- 60 tons load capable table
- 75kW(100HP) main drive motor power
- Elevating cross rail of 2000mm stroke
- Fully controlled C-axis and rotary spindle

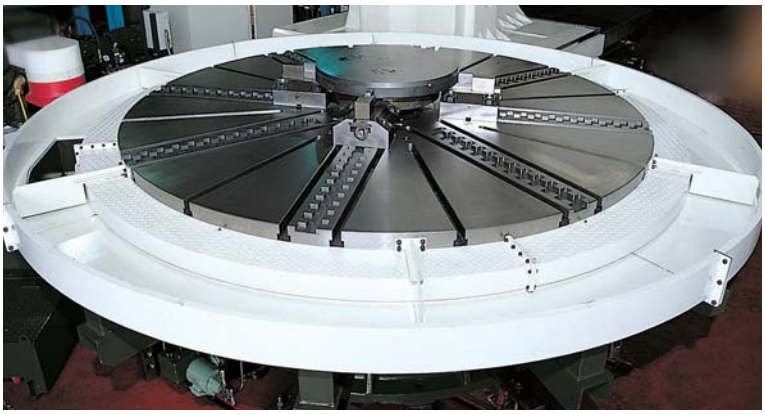
■ High Reliability
- Heavy duty guide ways of box type
- One-piece Meehanite cast iron bed and column
- Induction-hardened and precise-ground guide ways
- Extra large 300mm square spheroidal-graphite-iron ram

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

*Super large CNC vertical **VLB/VLC** series presents a new standard of single column type vertical lathe.*

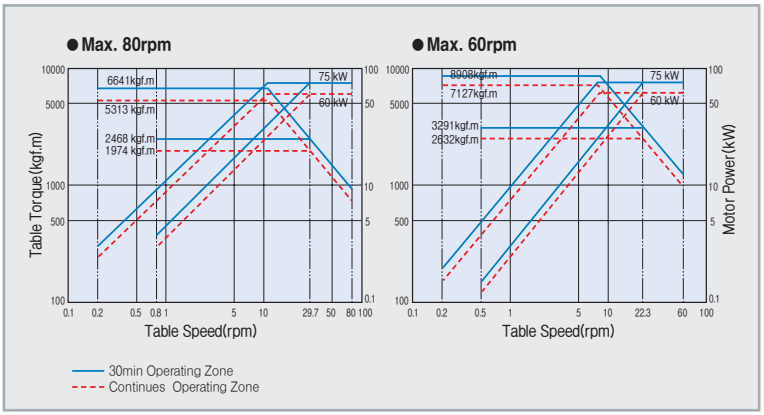
■ Bed/Table



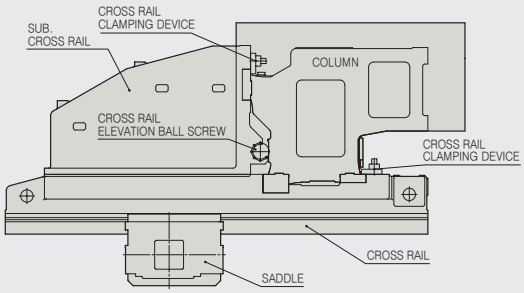


- One-piece casting bed of box shape and rib structure safely support the load of large work-piece to the maximum 60 tons.
- Wide flat type guide way for the column is firmly connected with the bed, and it can do the stable traveling.
- Table is made of high quality casting, and the variously shaped 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.(max. turning dia. 7m)
- 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 VLC 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



■ Column/Cross-rail



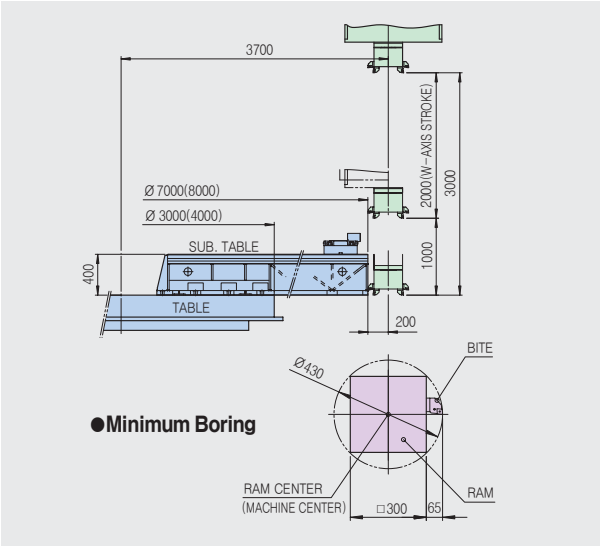
- Column has thick wall and rib structure of box-shape, so can be fully rigid to sustain torsion or bending generated during heavy-duty cutting.
- It is moved by AC servo motor and large-diameter and high-precision ball screw. It is clamped into the bed guide-way upon positioning by hydraulic clamping device.
  It travels maximum 1500(2000)mm.
- Tri-angular cross-rail has no displacement when the ram head does heavy-duty cutting at maximum traveling distance of cross-rail.
- 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 2000mm.

■ 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-I pull stud.
- Each guide-way for feeding axis is lubricated and attached with Turcite to be reduced wear 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 VLC, so it increases productivity accompanied with intensive work progress and effective process.

Machining Range

Unit : mm

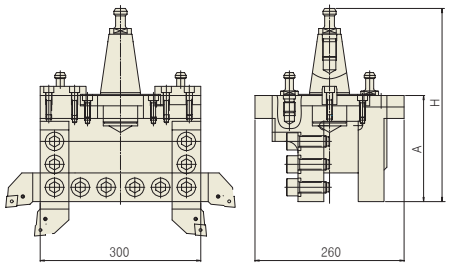


●Minimum Boring

Tool Holders (Option)

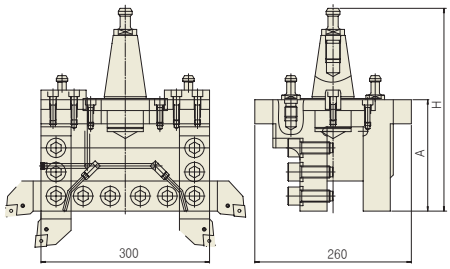
Unit : mm

●Square tool holder (Standard type)



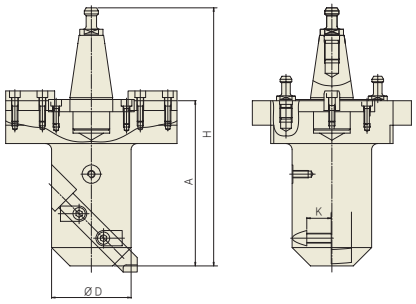
Model No.	A	H	Tool Size
TE25-41701-0060	185	336.8	□ 50
TE25-41701-0061	235	386.8	□ 50
TE25-41701-0062	285	436.8	□ 50

●Square tool holder (Through tool coolant)



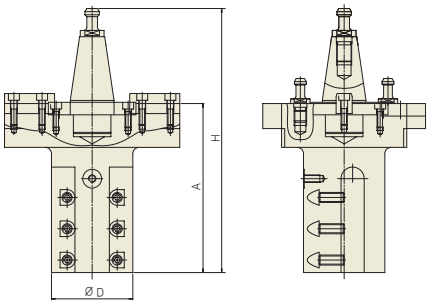
Model No.	A	H	Tool Size
TE25-41701-0160	185	336.8	□ 50
TE25-41701-0161	235	386.8	□ 50
TE25-41701-0162	285	436.8	□ 50

●Boring tool holder (BA type)



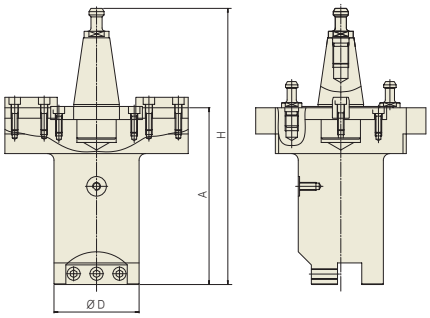
Model No.	A	D	H	Tool Size
TE25-41701-5040	270	ø 130	421.8	□ 32
TE25-41701-5041	320	ø 130	471.8	□ 32
TE25-41701-5042	370	ø 130	521.8	□ 32
TE25-41701-5043	420	ø 130	571.8	□ 32

●Boring tool holder (BP type)



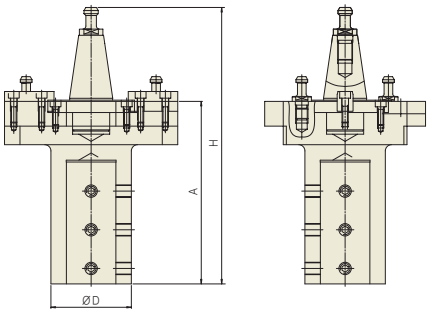
Model No.	A	D	H	Tool Size
TE25-41701-5140	270	ø 130	421.8	□ 32
TE25-41701-5141	320	ø 130	471.8	□ 32
TE25-41701-5142	370	ø 130	521.8	□ 32
TE25-41701-5143	420	ø 130	571.8	□ 32

●Boring tool holder (BF type)



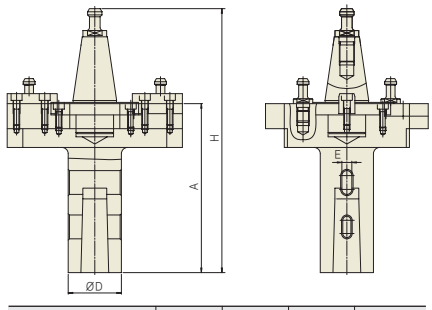
Model No.	A	D	H	Tool Size
TE25-41701-5240	270	ø 130	421.8	□ 32
TE25-41701-5241	320	ø 130	471.8	□ 32
TE25-41701-5242	370	ø 130	521.8	□ 32
TE25-41701-5243	420	ø 130	571.8	□ 32

●Side lock holder



Model No.	A	D	H	Tool Size
TE25-41701-5350	220	ø 80	371.8	□ 40
TE25-41701-5360	220	ø 100	371.8	□ 50
TE25-41701-5370	245	ø 100	396.8	□ 60
TE25-41701-5380	295	ø 130	446.8	□ 80

●Morse taper holder



Model No.	A	D	H	Tool Size
TE25-41701-5450	270	ø 85	421.8	MT # 5
TE25-41701-5460	345	ø 110	496.8	MT # 6
TE25-41701-5470	420	ø 130	571.8	MT # 7

Machine Specifications

Items		Unit	VLB-30/70	VLB-40/80
Capacity	Maximum swing	mm(inch)	7000(276.6)	8000(315)
	Maximum turning diameter	mm(inch)	7000(276.6)	8000(315)
	Maximum turning height	mm(inch)	3000(118)	3000(118)
	Maximum load on table	kg(lbs)	40,000(88,180)	60,000(132,280)
Table	Table diameter	mm(inch)	3000(118.1)	4000(157.5)
	Table speed	rpm	1~80	1~60
	Number of table speed range	step	Automatic 2	
	Maximum torque	kgf.m(ft.lbs)	6640(47,810)	8908(64,140)
Ram Head	Tool size	mm(inch)	50×50(1.97×1.97)	
	Spindle taper	-	ISO 7/24 No.50	
	Spindle tip diameter	mm(inch)	110(4.3)	
	Section dimension of square ram	mm(inch)	300×300(11.8×11.8)	
Travel & Feedrate	Horizontal travel of saddle(X-axis)	mm(inch)	2225(87.6)	
	Vertical travel of ram(Z-axis)	mm(inch)	1600(63)	
	Vertical travel of cross rail(W-axis)	mm(inch)	2000(78.7)	
	Horizontal travel of column	mm(inch)	1500(59)	2000(78.7)
	X/Z-axis cutting feedrate	mm/min(ipm)	Max. 2000(78.7)	
	X/Z-axis rapid traverse	mm/min(ipm)	8000(315)	
	Cross rail/Column rapid traverse	mm/min(ipm)	300/500(12/20)	
ATC	Type of tool holder	-	MAS BT50	
	Number of tool magazine	set	16 tools	
	Maximum tool weight	kg(lbs)	70(154)	
	Type of pull stud	-	P50T-I	
Motors	Table motor	kW(HP)	AC 60/75(80/100)	
	X/Z-axis servo motor	kW(HP)	AC 9(12)	
	Column servo motor	kW(HP)	AC 9(12)	
	Cross rail servo motor	kW(HP)	AC 7(9.5)	
Power capacity		kVA	65	
Machine weight		kg(lbs)	114,000(251,320)	120,000(264,500)
CNC system		-	FANUC 18i-TB	

● VLC

※Refer the other specifications VLC to the above.

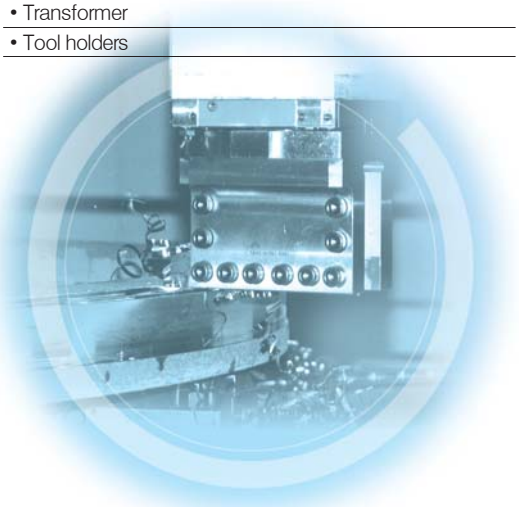
Items		Unit	VLC-30/70	VLC-40/80
C-axis	Minimum table index angle	deg.	0.001°	
	Cutting feedrate	deg/min	0~180	
	Maximum speed	rpm	0~0.5	
	Maximum torque	kgf.m(ft.lbs)	4000(28,800)	
Spindle	Milling spindle speed	rpm	15~1500	
ATC	Number of tool magazine	set	24 tools(Turning 12, Milling 12)	
Motors	Milling spindle motor(30min/Cont.)	kW(HP)	AC 22/18.5(30/25)	
	C-axis servo motor	kW(HP)	AC 9(12)	

Standard Accessories

- CNC controller, FANUC 18i-TB
- AC table and servo drives and motors
- Heavy duty 4-jaw independent chuck
- Automatic tool changer (ATC device 16/24 set)
- Table lubrication cooling system
- Hydraulic power unit
- Automatic lubrication system for guides
- Coolant system
- Splash guard
- X-axis telescopic steel cover
- Work light
- Warning 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



Standard CNC Control Features

FANUC 18 i-TB Control Features:
- Simultaneously controllable axes: 2
- Minimum programmable increment: 0.001mm(0.0001″)
- Tape storage length: 160m(520feet)
- Registerable programs: 63
- Backlash compensation
- Pitch error compensation
- Constant surface speed control
- Self diagnostic functions

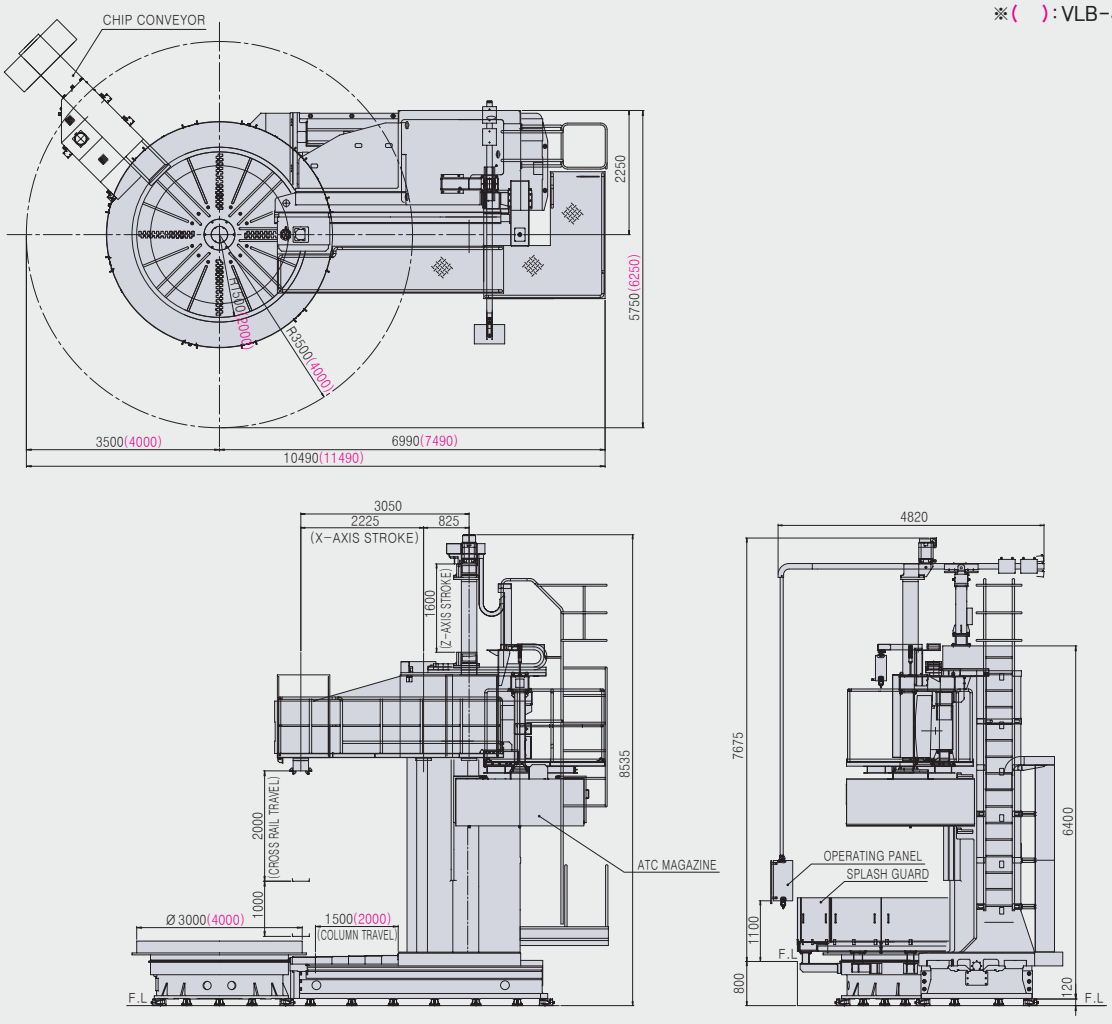
Programming Features:
- Circular interpolation by radius designation
- Tool nose radius compensation (G40-G42)
- Combined use of absolute/incremental command
- Inch/metric programming
- Chamfering, corner R
- Multiple repetitive cycles (G70-G76)
- Canned cycles (G90, G92, G94)
- Decimal point programming
- Reference point return (G27-G30)
- Sub-program 4 holds nested
- Custom macro B

Operation Features:
- 10.4″color LCD
- Absolute position encoders(no zero return required)
- Geometry and wear offsets
- 16 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

※( ): VLB-40/80



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

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