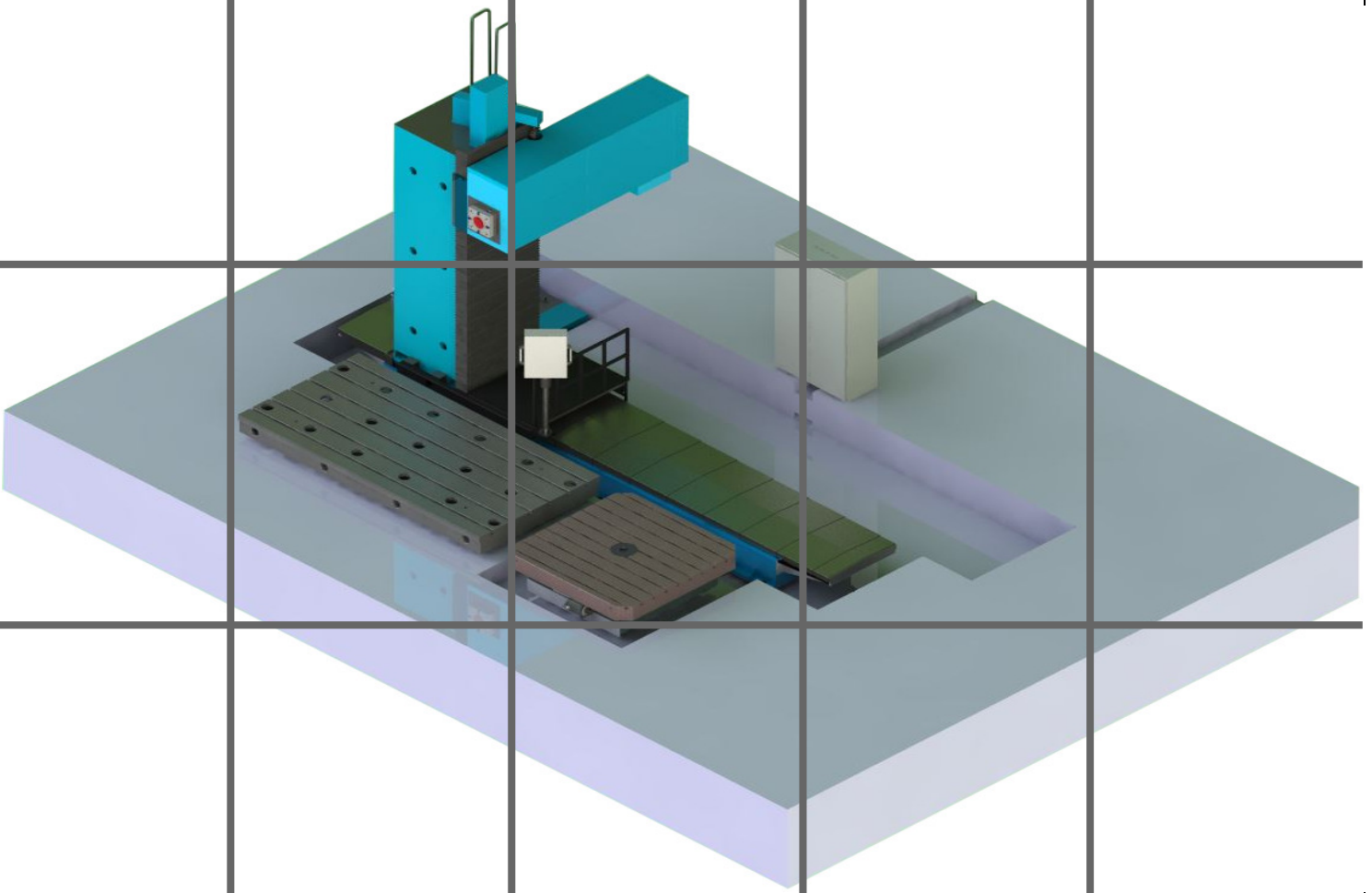


FLOOR TYPE HORIZONTAL BORING  
AND MACHINING CENTRE

vhs



VHS MECHATRONICS SERVICES (P) LTD.

**STRENGTH  
PRECISION  
RELIABILITY**

**This machine is designed as a floor type horizontal milling, drilling and boring machine. A column moves on a bed fitted with linear motion guide ways and on the faces of the column a Ram head moves vertically constituting X and Y axis.**

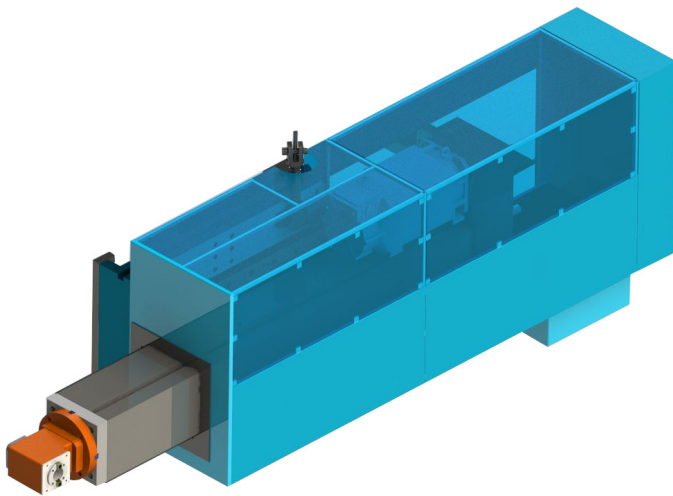
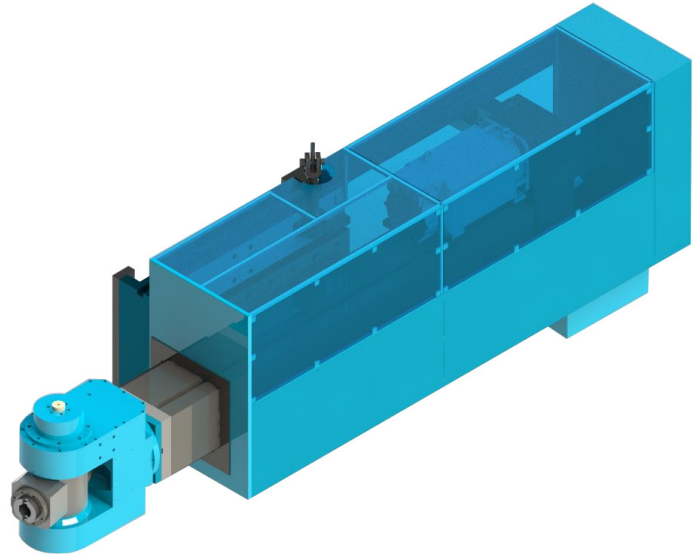
**The Ram having a cross section of 340mm X 340mm moves horizontally on linear motion guide ways constituting the Z axis. The Ram is fitted with a BT50/HSK 100 live spindle driven by a 22/30 kw motor through a pair of pulleys or optionally through a two speed geared motor of 1:1 and 1:4 gear ratio.**

**Maximum speed offered for the spindle is infinitely variable from 5-2000 rpm in two ranges. A separate encoder driven by the spindle is provided for thread cutting and orientation. The guide ways of the bed and column are protected by telescopic covers and bellows. Through coolant facility is offered as standard for the machine. All the 3 axis are driven by ball screws and servo motors through backlash free gear boxes.**

**The vertical movement of the Ram head is counter balanced by a counter weight. Floor plates for job clamping can be supplied as required by the user. NC rotary tables of different sizes and loading capacities with 'B' and 'W' axis or only with 'B' axis can be supplied as required.**

**The machine in its basic version is offered with Siemens 808D advanced controller with 3 axis simultaneous control. The machine can also be offered with other controllers from Fanuc, Siemens, Heidenheins etc.**

**As the machines are built modular various X, Y, Z combinations can be offered to suit specific requirement of the customer. This machine can be offered with various accessories like right angle milling head, facing and boring head, universal milling head etc..**

**4 AXIS****5 AXIS****4 AXIS VERSION:**

In this version the RAM has a hollow spindle and a co-axially mounted rotary spindle. The rotary spindle is driven by a 22/30 KW variable speed motor similar to the 3axis version; either directly through a pair of pulleys or through a two speed gear box. The hollow spindle is configured as 'C' axis driven by a servomotor and back lash free worm gear box. On the hollow spindle a vertical head can be mounted manually or automatically from a head parking station.

With the arrangement this machine can be used as a 5 face machining centre by tilting the vertical head to any angle required. The drive for the milling head spindle is derived from the main horizontal spindle at 1:1 ratio.

**5 AXIS VERSION:**

In this version the Ram has a built in 'C' axis hollow spindle on which a fork type head is mounted. The hollow spindle rotation is controlled by a servo motor and worm gearing. A fork type tilting head is mounted on the flange of the hollow spindle. The following two types of heads are offered and to be ordered along with the machine.

**High Torque Head:**

In this version the fork spindle drive is derived from main spindle motor through bevel gears delivering a power of up to 22/30 kw and torque up to 1000 Nm at a maximum speed of 2000 rpm for heavy duty machining is offered as standard.

**High Speed Head (Optional):**

The fork head can be equipped with a motorized spindle delivering 25/30 kw at 15000 rpm maximum and a torque of 98 Nm. With this head the machine can be used for die mould machining and aerospace application.

**CNC Controller:**

The machine can be fitted with Siemens 828D controller or Fanuc OiF controller for simultaneous control of 4 axis at a time, or Siemens 840SL / Fanuc 31i controller for 5 axis simultaneous machining with prior end user certificate clearance from system suppliers.

FHB – 5000/6000		Version 3 AXIS	Version 4 AXIS	Version 5 AXIS
SL.NO	DESCRIPTION	STANDARD		
1	Column travel on bed X-axis	5000 mm/ (6000mm Option)	5000 mm/ (6000mm Option)	5000 mm/ (6000mm Option)
2	Vertical travel of Ram head Y-axis	2500 mm	2500 mm	2500 mm
3	Ram out travel horizontal Z-axis	1000 mm	1000 mm	1000 mm
4	Fork Head Rotation - 'C' axis	-	± 210°	± 210°
5	Spindle Head Tilting – 'A' axis	-	-	±105°
6	Spindle Speed in RPM	20-2000	20-2000	20-2000
7	No of Steps	One/ (Two Option)	One/ (Two Option)	One/ (Two Option)
8	Max torque on Spindle – Nm	400/ (1000 Option)	400/ (1000 Option)	400/ (1000 Option)
9	Power of spindle motor cont/30mts -	22/30 Kw	22/30 Kw	22/30 Kw
10	Power of Axis motors –Nm	X	30 Nm	30 Nm
		Y	40 Nm	40 Nm
		Z	30 Nm	30 Nm
11	Feed rate of axes:	X, Y, Z	1-5000 mm/min	1-5000 mm/min
		'A' and 'C' axis	-	'C' axis only = 0-6 rpm`
12	Positioning Accuracy:	X, Y, Z	-	±0,015 / meter
		'A' and 'C' axis	-	'C' axis only = ± 10 seconds of an arc
13	Rapid traverse rate X, Y, Z	7500 mm/min	7500 mm/min	7500 mm/min
14	Maximum drilling Capacity – mm	65/ (100 Option)	65/ (100 Option)	65/ (100 Option)
15	Maximum dia of Cutter – mm	160/ (250 Option)	160/ (250 Option)	160/ (250 Option)
OPTIONAL ACCESSORIES				
16	Floor plate area req Min – mm	6000 X 2000	6000 X 2000	6000 X 2000
17	Recommended Rotary table	20T	2000 X 2000	2000 X 2000
		30T	2500 X 2500	2500 X 2500
18	Right angle milling head, Universal milling head.	YES	YES	-
19	Chip Conveyor, Coolant Pump and Fittings.	YES	YES	YES
20	High Pressure coolant pump.	YES	YES	YES
21	Automatic tool changer- 20-60 Tool Magazine	YES	YES	YES

## VHS MECHATRONICS SERVICES (P) LTD.,

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