

Double Column Vertical Machining Center



Right Solution for Large Sized Components!

Series 1	Series 2	Series 3	Series 4
1020 1030	1520 1530 1540	2030 2040 2060	3040 3060

Double Column Machining Center for heavy duty Roughing & Finishing of Large Sized Components

Virat series is the Double Column Vertical Machining Centers is the symbol of greater Rigidity, exceptional Power and incredible efficiency.

The series offers tailor made solutions for machining large sized components for Die-Mould, Automotive, Aerospace, Mining, Agricultural, Construction and Textile sectors to keep the pace with growing market application.

Virat is a machine, with many best-in-class features as under:

Advanced Body Structure

- Integrated Column & Cross Beam (On 1020 & 1030 models)
- Strong & Rigid structure with internal rib design
- Minimum throat distance

Guideways

- Roller type LM guide-ways on X/Y axis
- Hardened and ground box guide-way on Z-axis
- Linear glass scale feedback as option

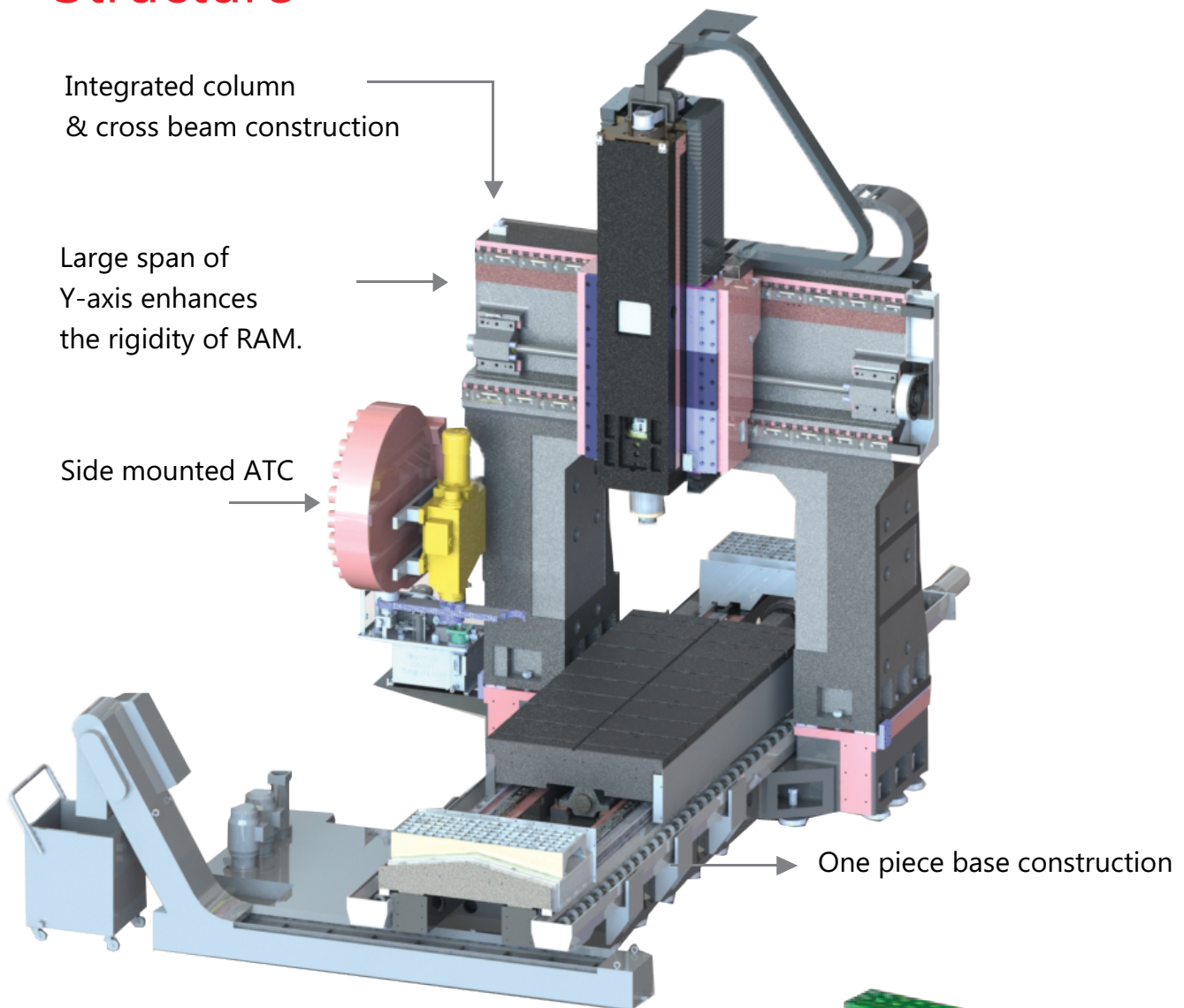


Virat series product range

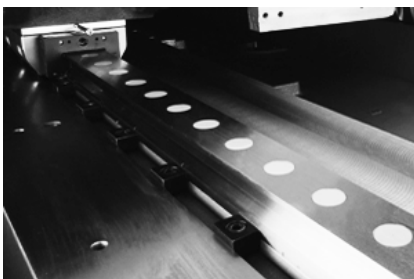
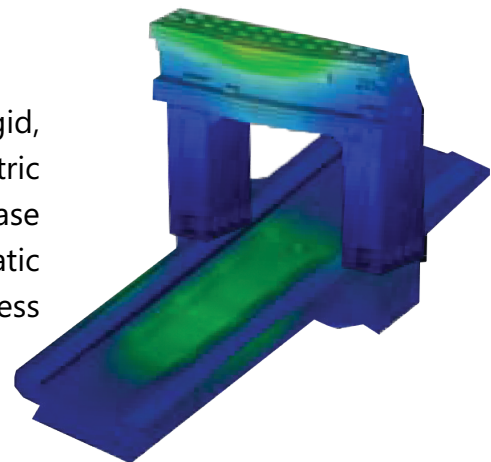
	Model	Table size (mm x mm)	Max safe load on table (kg)	Axes X/ Y/ Z (mm)	Distance between column (mm)	Feed rates X/Y/Z axes (m/ min)	Speed (rpm)	Power while 100% (kW)	Taper (type)	Number of tools (No.)	Max tool length (mm)	Max tool weight (Kg)
Series 1	DMC 1020	1000 x 2200	3000	2000/ 1000/ 800	~ 1300	24/ 24/ 15	6000	11/ 15	BT50	20	300 (350)	15
	DMC 1030	1000 x 3200	3500	3000/ 1000/ 800	~ 1300	15/ 24/ 15	6000	11/ 15	BT50	20	300 (350)	15
Series 2	DMC 1520	1500 x 2200	6000	2000/ 1500/ 800	~ 1800	20/ 20/ 15	6000	15/ 18.5	BT50	20 (40)	350	15
	DMC 1530	1500 x 3200	8000	3000/ 1500/ 800 (1000)	~ 1800	15/ 20/ 15	6000	15/ 18.5	BT50	20 (40)	350	15
	DMC 1540	1500 x 4200	10000	4000/ 1500/ 800 (1000)	~ 1800	12/ 20/ 15	6000	15/ 18.5	BT50	20 (40)	350	15
Series 3 *	DMC 2030	2000 x 3200	8000	3000/ 2000/ 1000	~ 2300	12/ 15/ 15	6000	18.5/ 22	BT50	20 (40)	350	15
	DMC 2040	2000 x 4200	10000	4000/ 2000/ 1000	~ 2300	10/ 15/ 15	6000	18.5/ 22	BT50	20 (40)	350	15
	DMC 2060	2000 x 6200	12000	6000/ 2000/ 1000	~ 2300	10/ 15/ 15	6000	18.5/ 22	Bt50	20 (40)	350	15
Series 4 *	DMC 3040	3000 x 4200	15000	4000/ 3000/ 1000	~ 3500	10/ 10/ 10	6000	22/ 26	BT50	20 (40)	350	15
	DMC 3060	3000 x 6200	16000	6000/ 3000/ 1000	~ 3500	10/ 10/ 10	6000	22/ 26	BT50	20 (40)	350	15

* Specifications are subjected to change

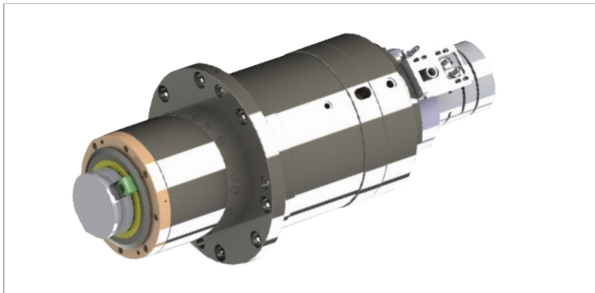
Structure



Rigid,
Thermo-symmetric
design for column & base
with high static
and dynamic stiffness



Roller type Linear Motion Guides for:
Low friction table movement.
Better dynamic and stable load-bearing capacity.
Superior geometric accuracy and surface quality.
Better anti-vibration behavior to extend tool life.

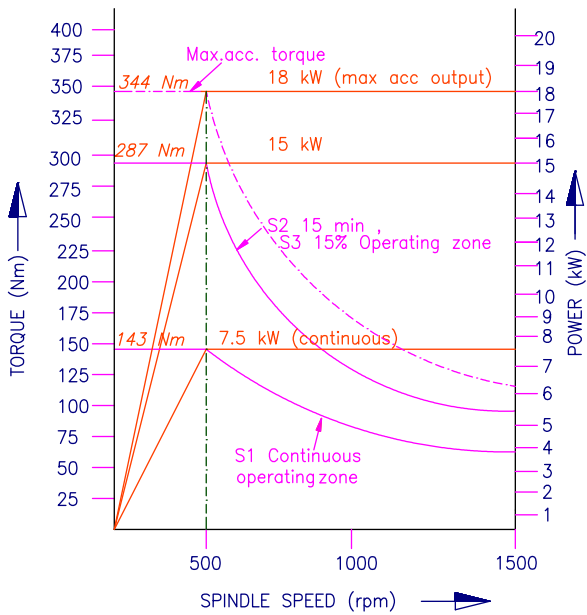


Spindle

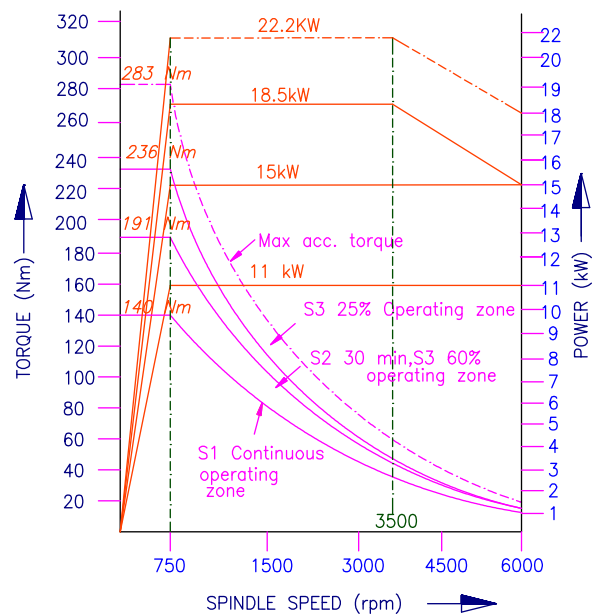
Inline spindle with $\varnothing 100$ bearing. Best-in-class spindle with 287 Nm on 1020 & 1030 models. The spindle is with syringe type de-clamping which prevents load coming on bearing. Spindle is dynamically balanced up-to 2.5G. The Spindle cooling can be provided as an option to control any thermal in-accuracies

Motor Model : Alpha 22/6000iIP
 Motor Power : 11 /15KW
 Motor Speed : 6000 rpm

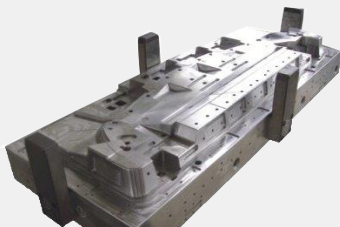
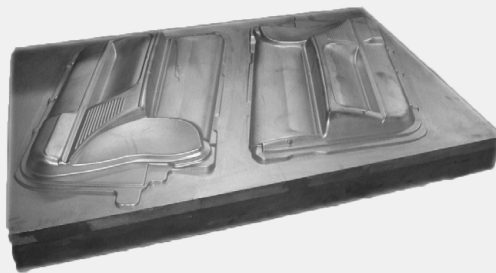
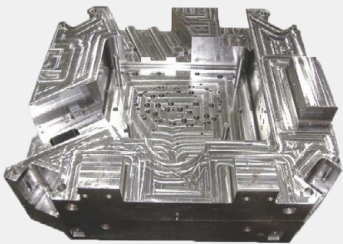
LOW SPEED WINDING



HIGH SPEED WINDING



Applications

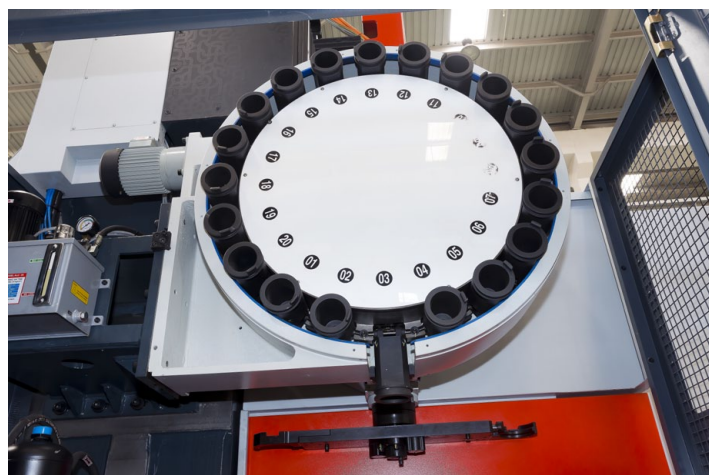




Operator panel with swing arm for easy accessibility to working area enabling better operator friendliness ▲



An exclusive design of moving RAM in Z-Axis increases the dynamic characteristics and ensures rigidity, stability and vibration free cutting, thus improving surface finish of machined components. ▲

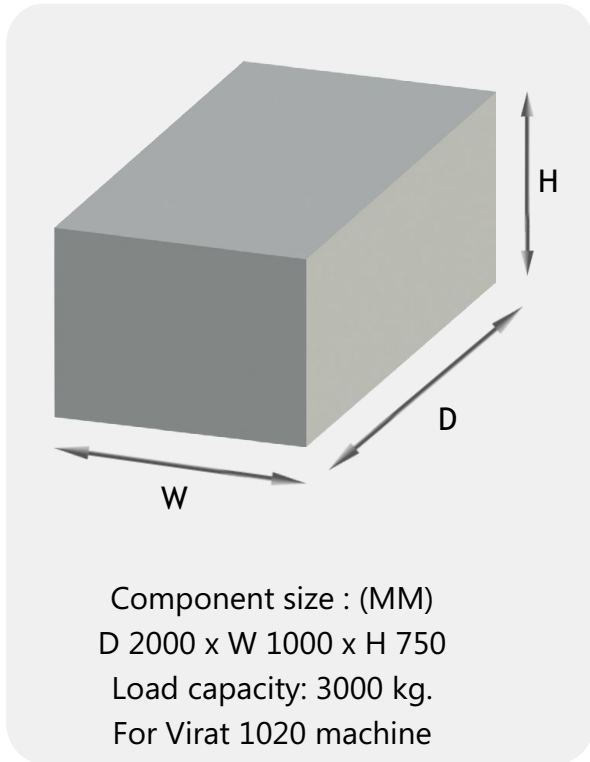


Tool magazine - Robust tool changer; 20 tools ATC (Option) (Disc type & Umbrella type) ▲

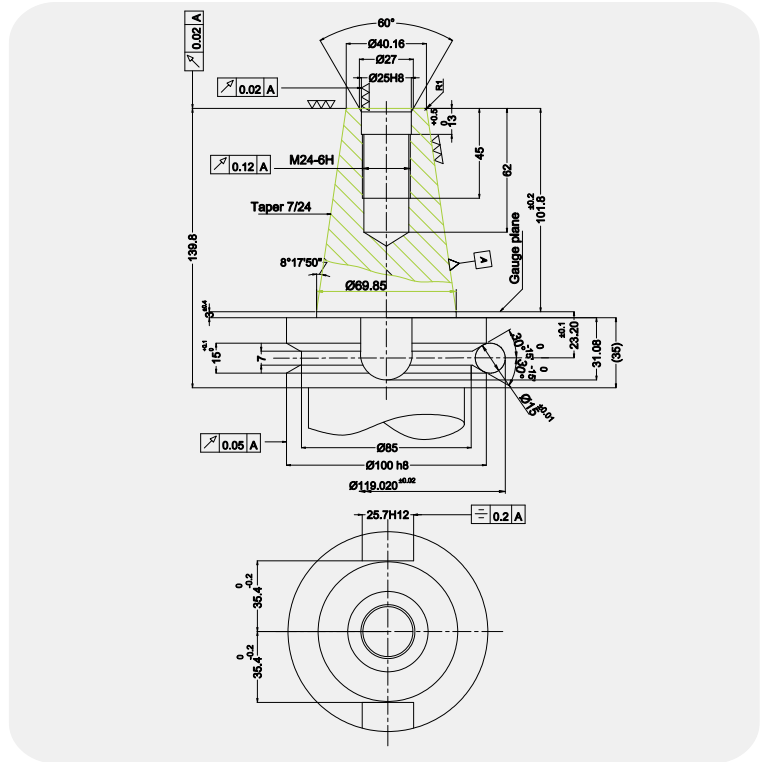


Screw Conveyor on both side of table for easy chip flow management ▲

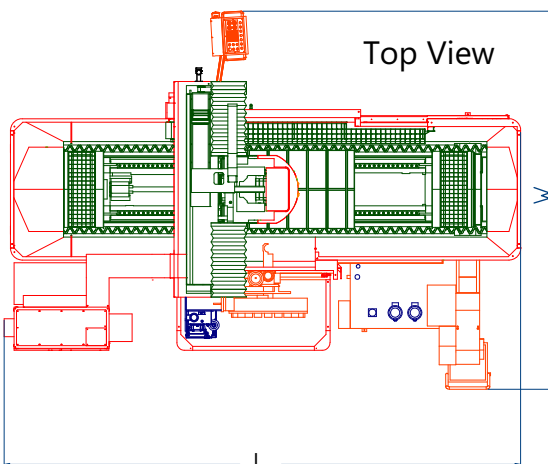
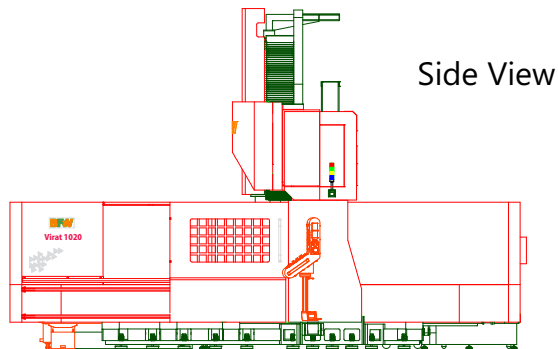
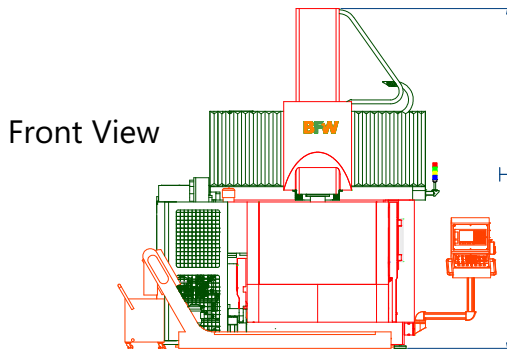
Job Size



Tool Shank Details



Machine Dimensions



		Virat 1020	Virat 1030
W	mm	~ 4750	~ 4750
L	mm	~ 6550	~ 8550
H	mm	~ 4400	~ 4400

All dimensions in mm

Technical Specification

Specifications	Unit	Virat 1020	Virat 1030
Table:			
Clamping area	mm x mm	1000 x 2200	1000 x 3200
No./ width/ CD of T slots	No./ mm/	9 x 22 x 250	13 x 22 x 250
Max safe load on table	kg	3000	4000
Distance from table to spindle face	mm	150-950	150-950
Traverses:			
X axis	mm	2000	3000
Y axis	mm	1000	1000
Z axis	mm	800	800
Distance between column	mm	1300	1300
Feed rates:			
Cutting feed rates	mm/ min	1 - 10000	1 - 10000
Rapid feed rates X/ Y/ Z axes	m/ min	24/ 24/ 15	15/ 24/ 15
Spindle:			
Speed	rpm	6000	6000
Power while 100 %	kW	11	11
Max spindle power	kW	15	15
Nose taper	type	BT50	BT50
Accuracy ISO 10791- 4 [ISO 230 - 2]			
Linear axis (Without Scale)			
Positioning accuracy (full stroke)	mm	0.02	0.025
Repeatability (full stroke)	mm	0.015	0.020
Linear axis (With Scale)			
Positioning accuracy (full stroke)	mm	0.012	0.015
Repeatability (full stroke)	mm	0.009	0.012
Automatic Tool Changer (Option) :			
Number of tools	No	20	20
Max tool dia with all pockets full	mm	130	130
Maximum tool dia with adjacent pockets empty	mm	220	220
Maximum tool length	mm	300 (350)	300 (350)
Maximum tool weight	mm	15	15
Tool change time	sec	~ 10	~ 10
Pullstud	Type	MAS P50T-1	MAS P50T-1
CNC System:	make	Fanuc Oi MF	
Installation Data:			
Length	mm	~ 6550	~ 8550
Width	mm	~ 4750	~ 4750
Height	mm	~ 4400	~ 4400
Weight	kg	~ 20000	~ 22000
Total connected load	kva	~ 60	~ 60
Pneumatic supply	bar	6	6
Power supply	415 V, 50 Hz, 3 phase		

Standard Features

- ▶ BT 50 spindle - 6000 rpm
- ▶ AC servo drives
- ▶ Hardened and ground LM roller guide-ways for X & Y axis
- ▶ Hardened and ground box guide-ways for Z axis
- ▶ Hardened and ground ball-screws for all the 3 axis
- ▶ In-line spindle
- ▶ ATC with 20 tool magazine for BT50 tool holder
- ▶ Air blast for spindle taper cleaning
- ▶ Tool clamping through disc springs and de-clamp by hydraulics
- ▶ Air curtain for spindle
- ▶ Centralised lubrication system
- ▶ Electronic counterbalance for vertical axis
- ▶ Feedback through absolute encoder
- ▶ Rigid tapping facility
- ▶ RS 232 Serial Interface for PC connection
- ▶ Sliding covers, bellows and splash guards
- ▶ Instruction manuals
- ▶ 3 tier signal tower lamp
- ▶ Machine lamp
- ▶ Leveling and foundation kit
- ▶ Mobile MPG
- ▶ Standard coolant system with chip tray
- ▶ Coil conveyor on either side of bed
- ▶ Maintenance tool kit
- ▶ Semi-enclosure splash guard
- ▶ Fanuc Oi MF with Alpha motors & drives
- ▶ 8.4" color LCD display
- ▶ Operator door safety interlock
- ▶ ATC auto door

Optional Features

- ▶ Hydraulic counterbalance for Z axis
- ▶ Coolant gun
- ▶ Air gun
- ▶ Flood coolant 50 LPM at 2 bar
- ▶ 40 tools magazine
- ▶ Linear glass scale for X, Y & Z axis
- ▶ Full splash guard
- ▶ Scrapper/ slat / dual type conveyors with chip trolley
- ▶ Ring coolant
- ▶ Oil skimmer
- ▶ AC for electrical cabinet
- ▶ Voltage stabilizer
- ▶ Spindle mounted probe
- ▶ Coolant through spindle
- ▶ Machine color as per customer requirement
- ▶ Auto work piece measurement
- ▶ Spindle with the gear box
- ▶ 90 deg Automatic head
- ▶ Transformer
- ▶ Spindle chiller



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We are continuously working on the development of our products, the information contained in this brochure is subject to modification.

While all efforts have been made to ensure that this publication carries correct information, the reader is advised to consult an authorised representative of Bharat Fritz Werner to ascertain latest details. The information on this publication is subject to change without notice.

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