

The CNC Horizontal Boring and Milling Machines are designed and manufactured with just one thought in mind - to allow each machine to offer high boring accuracy, heavy cutting capacity and maximum stability. The FBM series makes lifetime accuracy possible through their excellent structural design. The use of German imported spindle (W-axis) provides extra high boring accuracy. Japan imported gearbox permits smooth operation and heavy cutting with ease. No matter which model you select, you will get the capacity and precision you expect.

## CNC Horizontal Boring & Milling Machine Creating a Competitive Advantage

### Features:

- ▶ Choice of movable column or fixed column.
- ▶ Shortened distance from spindle to table for greater stability during boring.
- ▶ The German-imported spindle (W-axis) assures high accuracy operation.
- ▶ The spindle head is subject to Finite Element Analysis, assuring high machining accuracy.
- ▶ Japan-imported gear offers great torque output for heavy cutting.
- ▶ 40, 60, 90 or 120 tools chain-type magazine to choose from.
- ▶ Various auxiliary milling heads are available for flexible machining requirements.



# A New Generation of Boring & Milling Machine - Rugged Construction, High Efficiency

## CNC Horizontal Boring & Milling Machine

- Traveling column structure.
- High precision German made spindle.
- Choice of tools: 40, 60, 90 and 120 tools.
- Directly coupled rotary table.
- Linear scales on 3 axes provide closed loop controls.
- Box ways on X, Y-axis. Linear guide ways on Z-axis.

FBM-11025R



# Rugged, Precision Construction Throughout Makes The FBM series - Excellent for Precision Boring and Milling Operations

**Extra Long Table (Optional)**  
The FEELER FBM-W series is available to equip with various extra long tables.

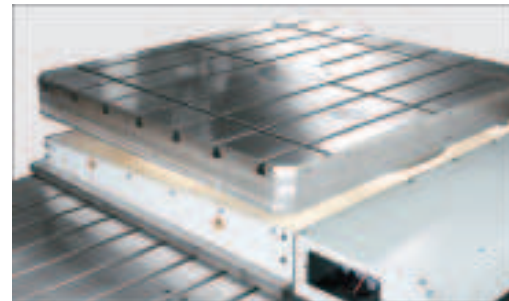
**Extra Long Table Dimensions:**

- 2,000 x 1,400 mm; X-axis travel 2,160 mm
- 3,000 x 1,400 mm; X-axis travel 3,200 mm
- 4,000 x 1,400 mm; X-axis travel 4,200 mm

**NOTE:**

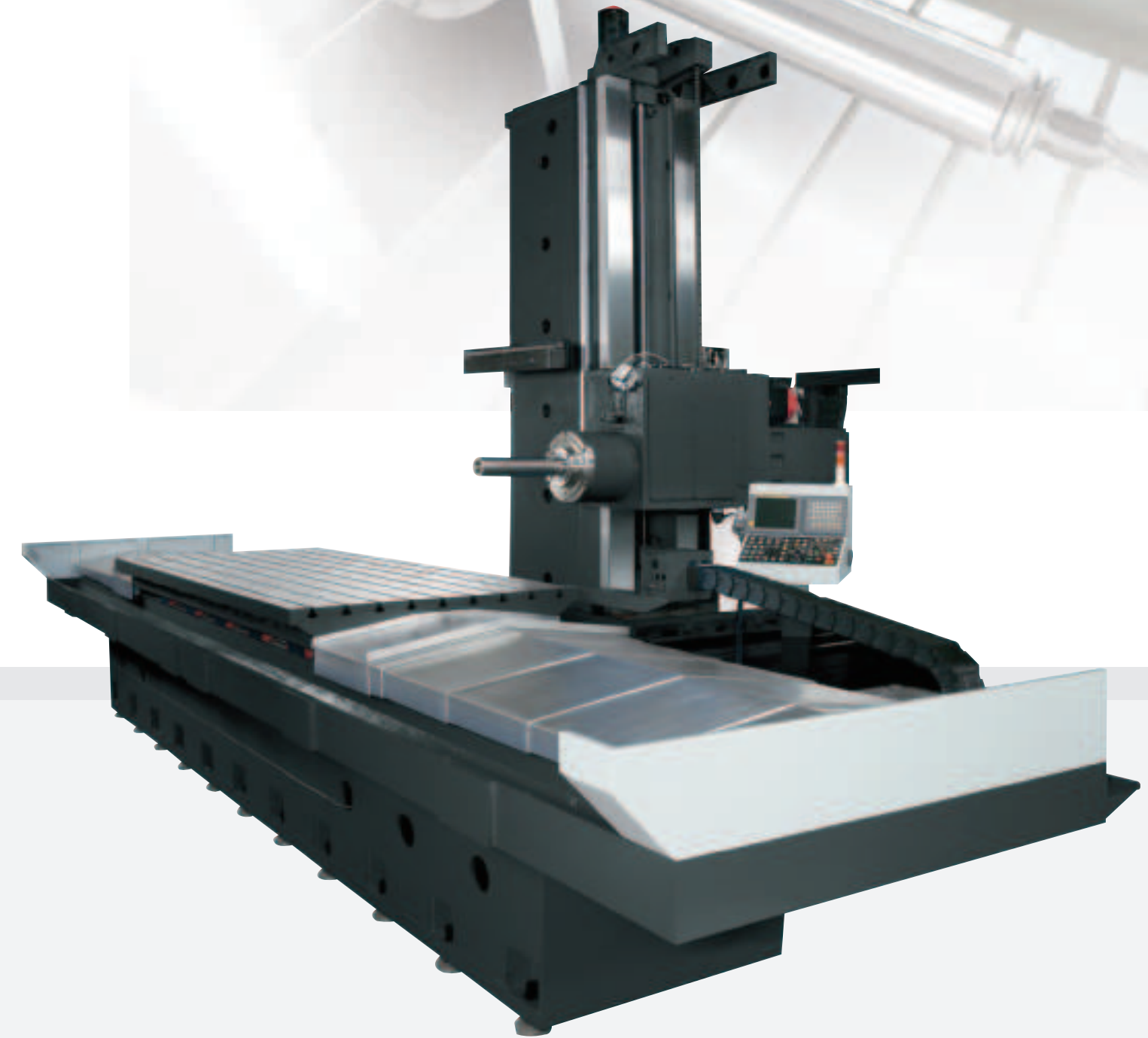
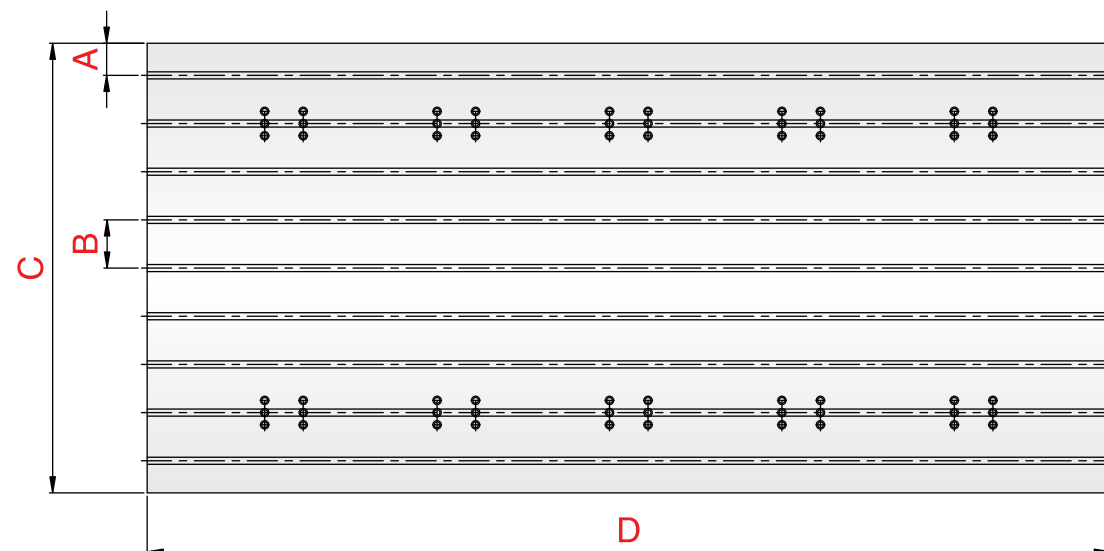
When using extra long table, the X-axis will be designed with liner ways.

**Rotary Table (Optional)**



**Extra Long Table Dimensions** (Available for FBM-11020/11030/11040 only)

- A - (Width from Side to the First T-Slot): 100 mm
- B - (Width Between T-Slots): 150 mm
- C - (Width ): 1,400 mm
- D - (Length): 2,000, 3,000, 4,000 mm



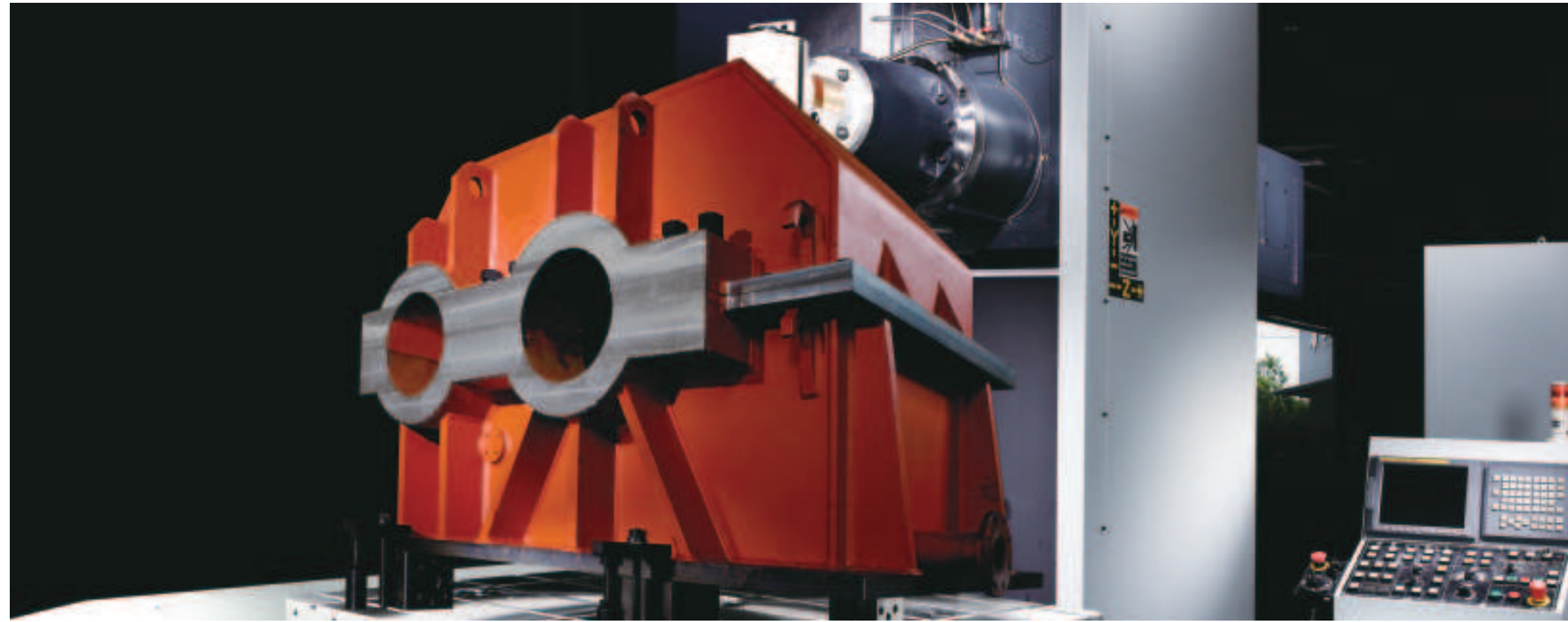
FBM-11020 / 11030 / 11040 (Movable Column)

# With The FBM series, You Get Outstanding Features for Accurate, Efficient Boring and Boring Operations Year After Year



## Shortened Distance from Spindle to Table

The spindle head features a flange design, allowing for a shorter distance from spindle nose to the table center. The flange length is of up to 300 mm, making the machine ideal for various boring and milling operations with maximum stability.



## German Imported Spindle (W-axis)

- Ø110 mm extra big spindle diameter provides an increase of machining stability.
- The German imported spindle (W-axis) features outstanding accuracy.
- Spindle extension up to 500, 700 or 400 mm (for fixed column model).
- Spindle extension to 700 mm is available (optional).



## Finite Element Analysis

The spindle head is designed by means of Finite Element Analysis to simulate machining conditions. Axial and side cutting loads are 1,400 kgf and torque output reaches 1,428 kgf/cm. Deformation at all directions is kept within 10  $\mu$ m. This advanced analysis will assure high machining accuracy.

## Maximize Smoothness and Stability with Optimal Structural Design

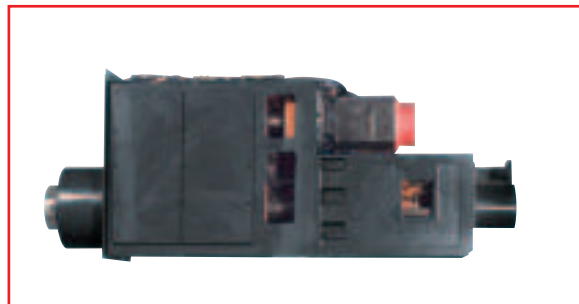
- The moving column (T-shape) construction provides an increase of machine rigidity and cutting accuracy.
- Z-axis is mounted with 3 roller-type linear ways in combination with 12 blocks to enhance extraordinary smoothness of movement and rigidity.
- Box ways on X, Y-axis with great span between ways for stability. Way surfaces are hardened and precision ground.
- Model FBM-11020RF with fixed column is available to choose.





### Chain Type Magazine

- The chain type magazine is separately mounted to prevent chips or coolant from polluting the tools or magazine.
- Choice of 40, 60 90 or 120-tool magazine.
- The magazine accommodates BT-150 or CAT-50 tool shank.



### Gearbox

All gears in the gearbox are imported from Japan, featuring high torque output, making the machine ideal for heavy cutting. Extra smooth and quiet running is ensured.



### High Precision Rotary Table

- The oversized table measures 1,600 x 1,400 mm.
- Direct drive table.
- 0.001° indexing accuracy for continuous drive.
- Table positions at every 90° by means of positioning pins, assuring high positioning accuracy.
- Maximum table loading capacity is up to 7,000 kgs.

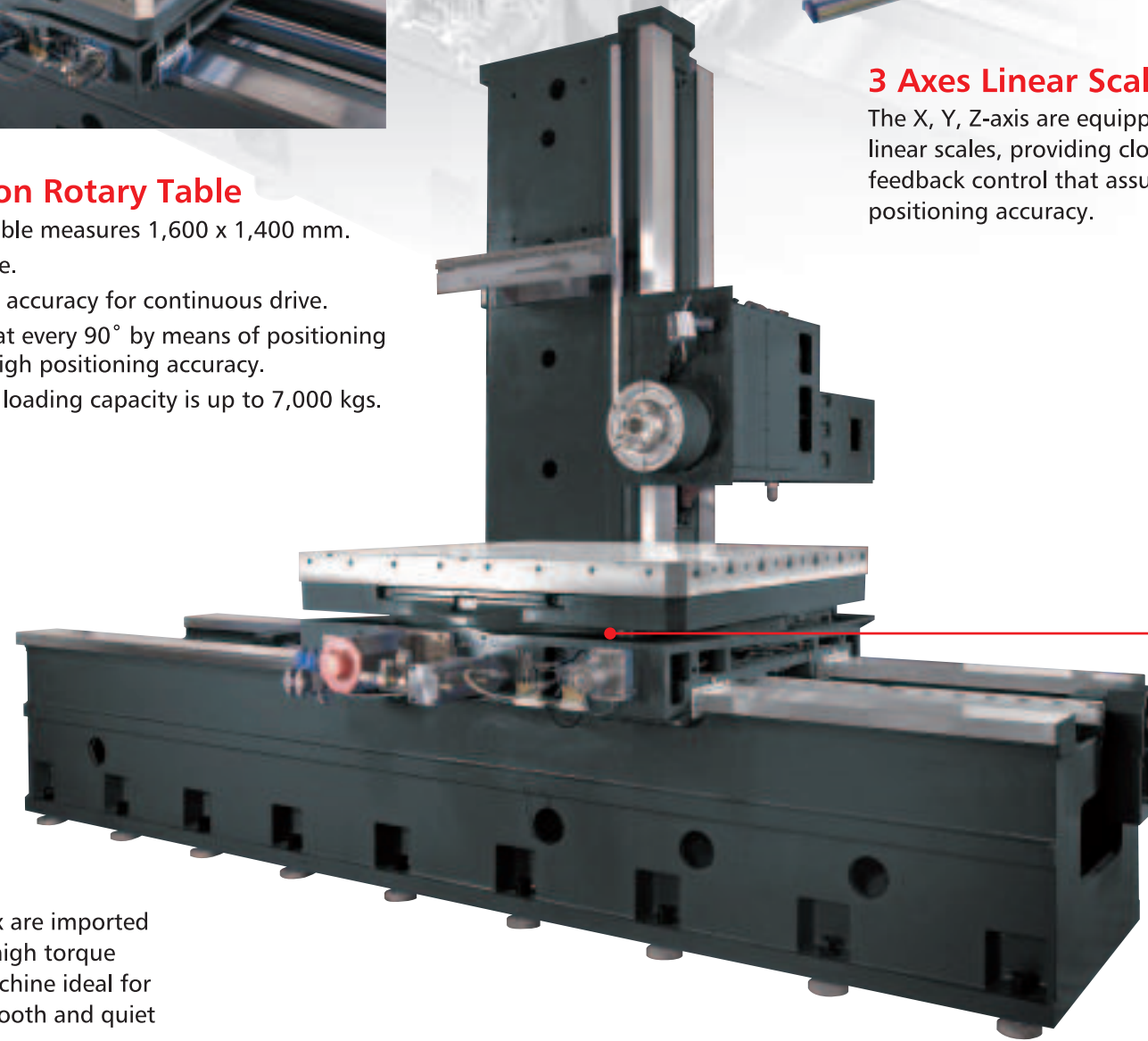
### 3 Axes Linear Scales

The X, Y, Z-axis are equipped with linear scales, providing close-loop feedback control that assures high positioning accuracy.



### Oil Cooler

The machine employs a big-capacity oil cooler for efficient cooling on spindle and gearbox.



### Optional Accessories



Angular Block



90° Angle Plate



Spindle Extension Sleeve



Angle Milling Head



Universal Milling Head





## FBM-11025R / FBM-11030R / FBM-11040R / FBM-11020RF Specifications

MODEL	UNIT	FBM-11025R	FBM-11030R	FBM-11040R	FBM-11020RF
<b>TABLE</b>					
Overall size	mm	1,400 x 1,600			1,000 x 1,200
T-Slots	mm	24 x 7			22 x 9
Height from ground	mm	1,225			1,240
Maximum loading	kg	7,000			4,000
B-Axis mini. Increment	°	0.001° Automatic 4 Positions (90°)			
<b>TRAVEL</b>					
X axis travel	mm	2,500	3,000	4,200	2,000
Y axis travel	mm	1,800 (2,000 / 2,300 / 2,500)			1,600
Z axis travel	mm	1,500 (1,700)			1,200 (1,400)
W axis travel	mm	500 (700)			400
<b>SPINDLE</b>					
Diameter	mm	Ø110			
Speed	rpm	5-2,500			
Taper		ISO NO.50 7/24			
<b>FEED RATE</b>					
Rapid feedrate X/Y/Z	mm/min	10,000			
Rapid feedrate W	mm/min	5,000			
Minimum setting	mm/min	0.001			
Cutting feedrate	mm/min	5,000			
<b>MOTOR</b>					
30 min. sequent	kW	15 / 18.5 (22 / 26)			
Axis X / Y / Z / W / B	kW	7 / 7 / 9 / 3 / 4.2			7 / 7 / 7 / 3 / 4.2
<b>ATC (Automatic Tool Changer)</b>					
No. of tools	Tools	40 (60 / 90 / 120)			40 (60)
Taper		MAS BT-50 (DIN69871)			
Pull stud		MAS P50T-1 (DIN69872)			
Tool Selection		Absolute type			
Tool change (Tool to Tool)	sec	15			
Diameter of max. tool	mm	Ø125 / Ø250			
Max. tool length	mm	400			
Max tool weight	kg	25			
<b>MISCELLANEOUS</b>					
Power Supply	KVA	45			
Hydraulic tank volume	L	260			
Coolant tank volume	L	400			
Lubrication unit	L	8			
Machine dimensions (LxWxH)	mm	6,870(7,070)x5,510x4,300 (4,500 / 4,800 / 5,000)	7,070 x 6,010 x 4,300 (4,500 / 4,800 / 5,000)	7,070 x 7,220 x 4,300 (4,500 / 4,800 / 5,000)	7,000 x 5,200 x 4,100
Machine weight (About)	kg	32,000	33,000	34,000	21,000
CNC controller		21iMB			

★ Specifications subject to change without prior notice.

### STANDARD ACCESSORIES:

- Coolant tank
- Spindle lubrication coolant system
- Linear scale on X, Y, & Z axes
- Lubrication system
- Chip augers & conveyor
- ATC with 40 tool magazine
- B axis with 90° auto positioning
- Working lamp
- NC pilot lamp
- RS-232 & RJ-45 Interface
- Operator manual electrical circuit diagram
- Foundation bolts, leveling screws & pads
- Machine adjusting tool set
- Inspection report
- Auto power off (M30)

### OPTIONAL ACCESSORIES:

- Air conditioned cabinet
- Square block: (A) 600 x 600 x 900 mm  
(B) 800 x 500 x 800 mm
- Rotary table (Simultaneously when machining)
- ATC with 60, 90 or 120 tool holders
- Tool length measurement (RENISHAW TS-27)
- Work-piece measurement (RENISHAW OMP-60)
- Various type of controller
- Spindle extension sleeve
- 90° milling head
- Universal milling head (VAR-3, Spanish)
- W-axis travel extendable to 700 mm  
(Except FBM-11020RF)
- Coolant through spindle

## FBM-11020 / FBM-11030 / FBM-11040 Specifications

MODEL	UNIT	FBM-11020	FBM-11030	FBM-11040
<b>TABLE</b>				
Overall size	mm	2,000 x 1,400	3,000 x 1,400	4,000 x 1,400
T-Slots	mm	22 x 9		
Height from ground	mm	1,225		
Maximum loading	kg	7,000	9,000	10,000
<b>TRAVEL</b>				
X axis travel	mm	2,160	3,200	4,200
Y axis travel	mm	1,800 (2,000 / 2,300 / 2,500)		
Z axis travel	mm	1,500 (1,700)		
W axis travel	mm	500 (700)		
<b>SPINDLE</b>				
Diameter	mm	Ø110		
Speed	rpm	5-2,500		
Taper		ISO NO.50 7/24		
<b>FEED RATE</b>				
Rapid feedrate X/Y/Z	mm/min	10,000		
Rapid feedrate W	mm/min	5,000		
Minimum setting	mm/min	0.001		
Cutting feedrate	mm/min	5,000		
<b>MOTOR</b>				
30 min. sequent	kW	15 / 18.5 (22 / 26)		
Axis X / Y / Z / W	kW	7 / 7 / 9 / 3		
<b>ATC (Automatic Tool Changer)</b>				
No. of tools	Tools	40 (60 / 90 / 120)		
Taper		MAS BT-50 (DIN69871)		
Pull stud		MAS P50T-1 (DIN69872)		
Tool Selection		Absolute type		
Tool change (Tool to Tool)	sec	15		
Diameter of max. tool	mm	Ø125 / Ø250		
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Max tool weight	kg	25		
<b>MISCELLANEOUS</b>				
Power Supply	KVA	45		
Hydraulic tank volume	L	260		
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Lubrication unit	L	8		
Machine dimensions (LxWxH)	mm	6,870 (7,070) x 5,520 x 4,300 (4,500 / 4,800 / 5,000)	7,070 x 7,630 x 4,300 (4,500 / 4,800 / 5,000)	7,070 x 10,085 x 4,300 (4,500 / 4,800 / 5,000)
Machine weight (About)	Kg	31,000	33,000	35,000
CNC controller		21iMB		

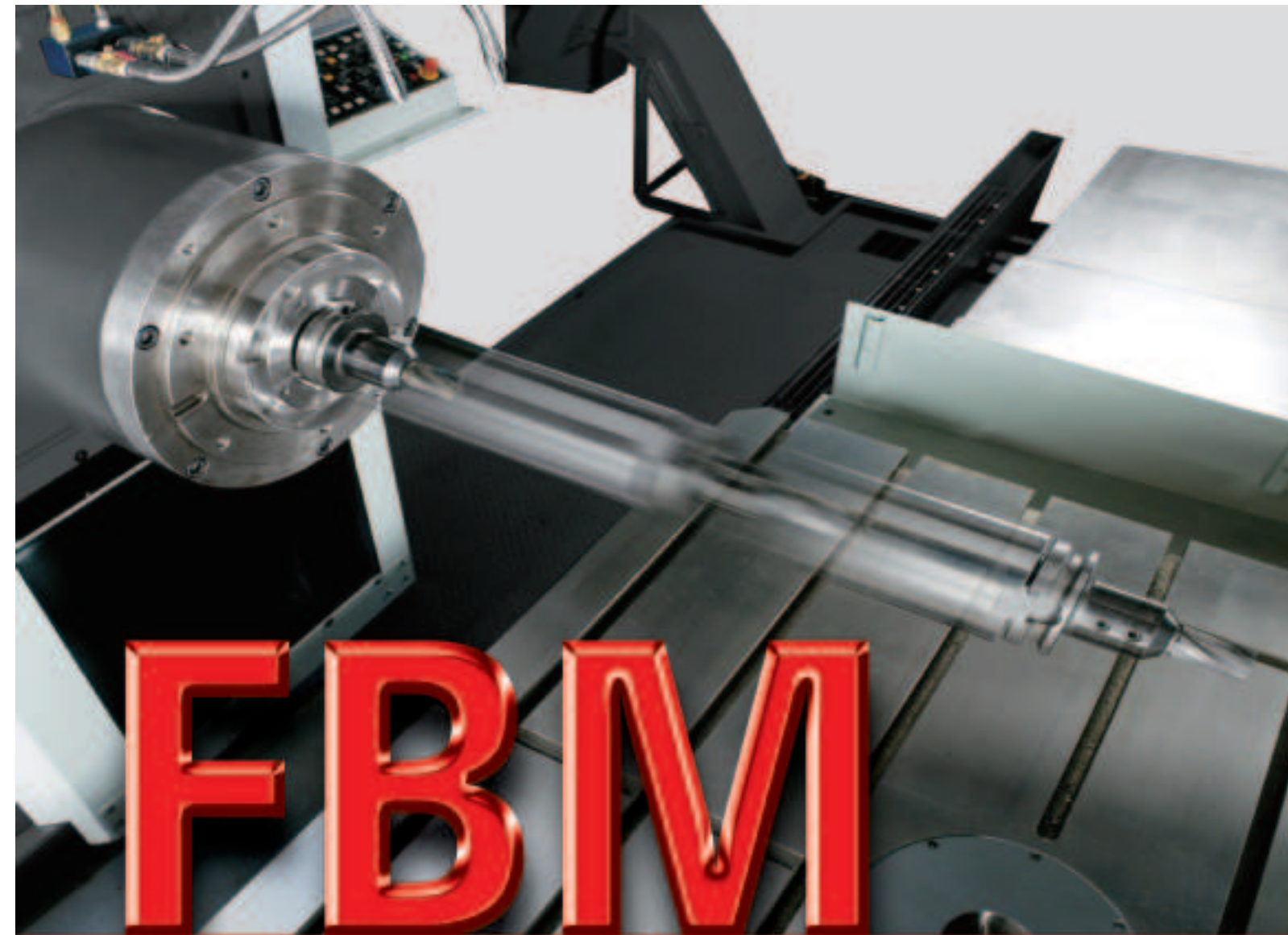
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### STANDARD ACCESSORIES:

- Coolant tank
- Spindle lubrication coolant system
- Linear scale on X, Y, & Z axes
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- ATC with 40 tool magazine
- Working lamp
- NC pilot lamp
- RS-232 & RJ-45 Interface
- Operator manual electrical circuit diagram
- Foundation bolts, leveling screws & pads
- Machine adjusting tool set
- Inspection report
- Auto power off (M30)

### OPTIONAL ACCESSORIES:

- Air conditioner for electric cabinet
- Auxiliary work table 600 x 600 x 900 mm
- Other tables on request
- Rotary table
- ATC with 60, 90 or 120 tools magazine
- Tool length measurement (RENISHAW TS-27)
- Work-piece measurement (RENISHAW OMP-60)
- Various controllers
- Spindle extension sleeve
- 90° milling head
- Universal milling head
- W-axis travel extendable to 700 mm  
(Except FBM-11020RF)
- Coolant through spindle



*INNOVALUE & EXCELLENCE*

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**ISO 9001**  
**ISO 14001**



# FBM SERIES

## CNC Horizontal Boring & Milling Machine with Extendable Spindle

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