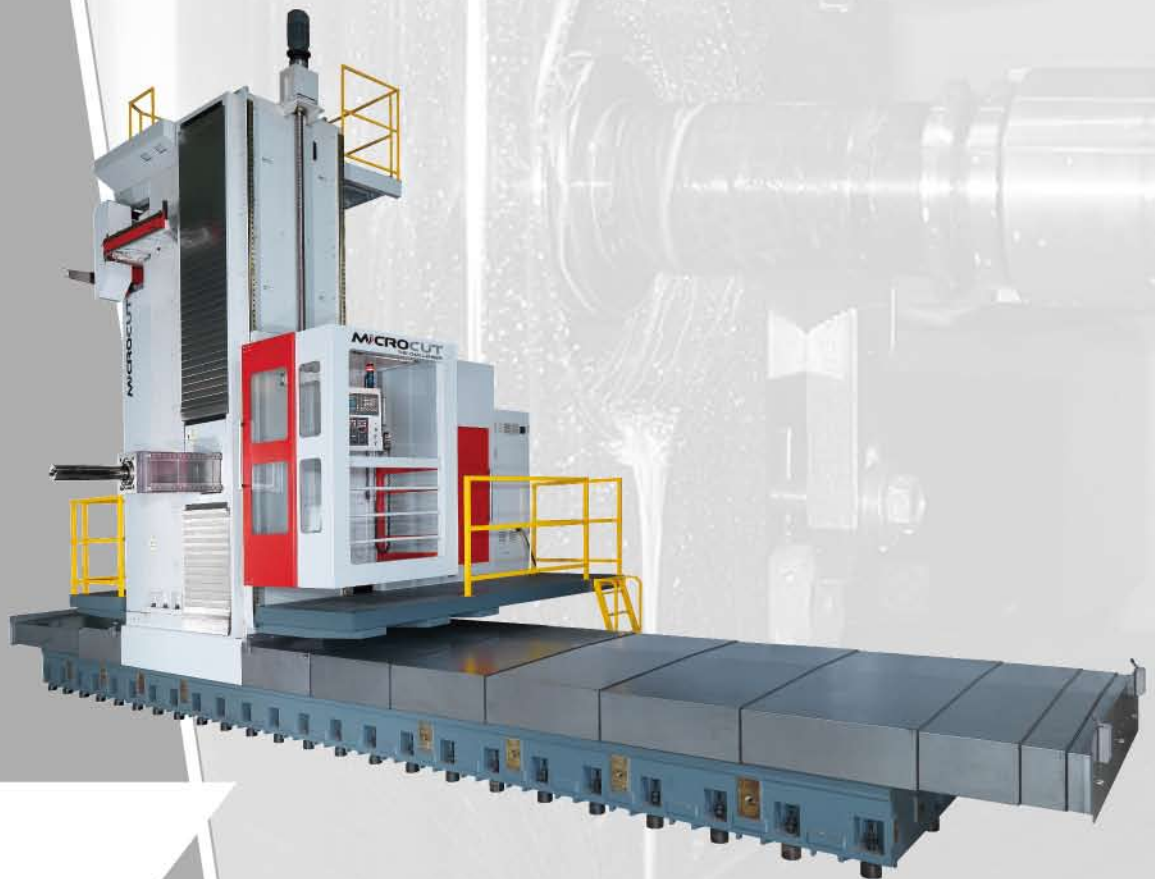


**MICROCUT**  
THE CHALLENGER



F

## **HBM-RF Series**

Floor Type CNC Horizontal Boring & Milling Center



National Award  
of Outstanding



ISO 14001:2004  
EMS 546518



ISO 9001:2008  
FM 538421

# Floor Type CNC Horizontal Boring

## Highlights

- Linear guideway structure RAM or hydrostatic technique RAM is available
- Extra-long travel (RAM+Quill): 800+700 mm ~ 1,200+1,000 mm
- Camlock design for rapid clamping / unclamping of multi-angle head / facing head
- X axis is rack transmission with roller-type linear guideway to give super stability during heavy loading machining with high speed.
- Y axis guideway is the box way design; integrated with cast iron column, offers strong structure and high rigidity.
- V & Z axes with roller-type linear guideways provide optimized geometrical accuracy and decrease vibration.
- Rotary-type or fixed-type working table selectable for different workpieces
- A variety of table combinations to meet all industries' demands
- High practicality on milling, drilling, boring and threading, suitable for the workpieces with complex shape, e.g. windmill cabinet, parts used in railway industry, and components with high-torque performance used in aerospace industry.

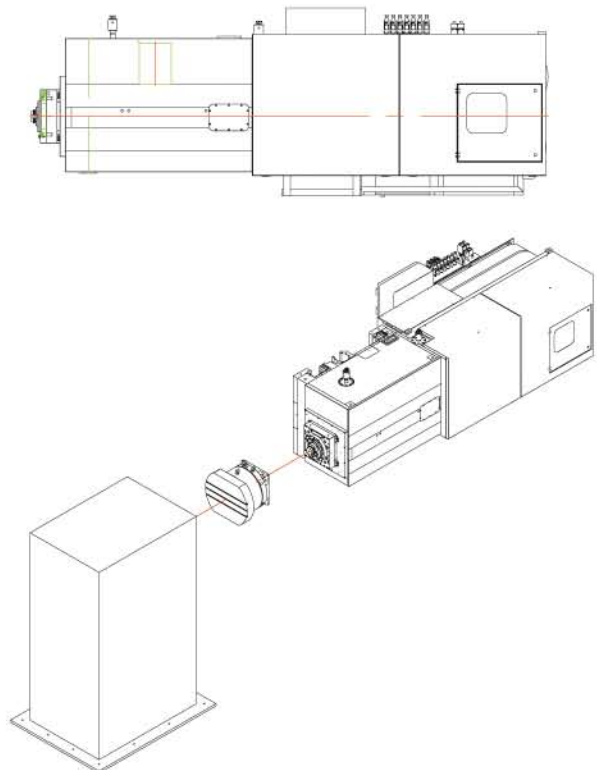
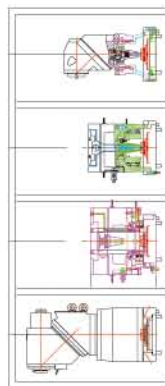


Linear Guideway RAM



Hydrostatic RAM

## Camlock System for Rapid Head Loading / Unloading



### Interface Available for Various Heads

- Pull force: 10,000kgs
- Loading force: max. 700kgs (for 140mm Quill diameter RAM)

## Optional Head Available



Universal Head

Right Angle Milling Head

Spindle Extension Sleeve

Facing Head

Facing Head



# & Milling Center

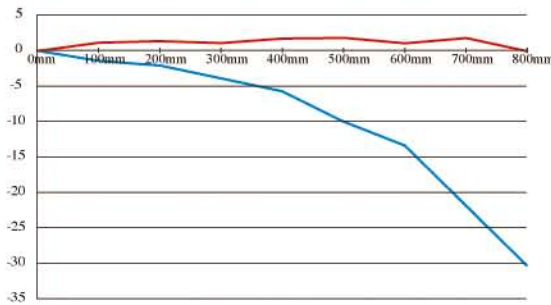
## SMART & Intelligent Technology



SCT

**Straightness Compensation Technology** is applied to ensure linear accuracy of the Ram (option). The RAM-Quill combination spindle applied in horizontal boring & milling center can enlarge the working capacity of the machine to meet various machining applications. Due to the component drooping caused by the weight and gravity, MICROCUT designs the RAM Compensation Technology by applying the hydraulic compensation mechanism to prevent the RAM-Quill combination spindle from drooping.

### Ram Straightness Compensation



— Without compensation  
— With compensation

\* Max dev. without compensation **31µm**  
\* With compensation, the tolerance is within **+/- 3µm**

**Tolerance improved  
80%**



SVS

### Spindle Vibration Supervision

ensures a high precision finish and prolongs lifespan of spindle and cutter (option).



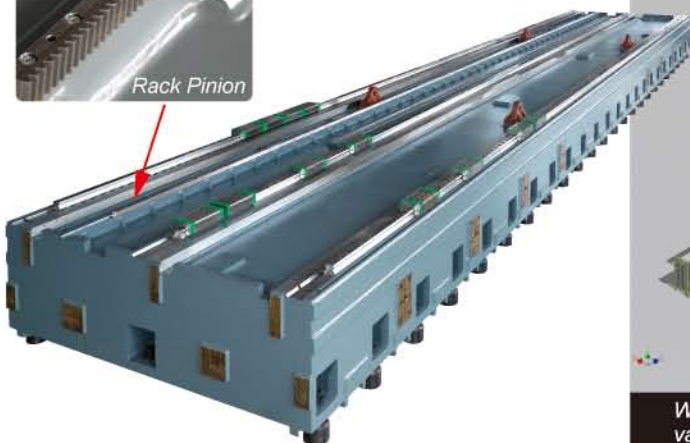
VST

### Vision Technology

Digitized inspection of the hand-scraping offers the uniformity of the contact points to eliminate possible errors caused by the human; also, VST can be applied to the turnkey solution (option).

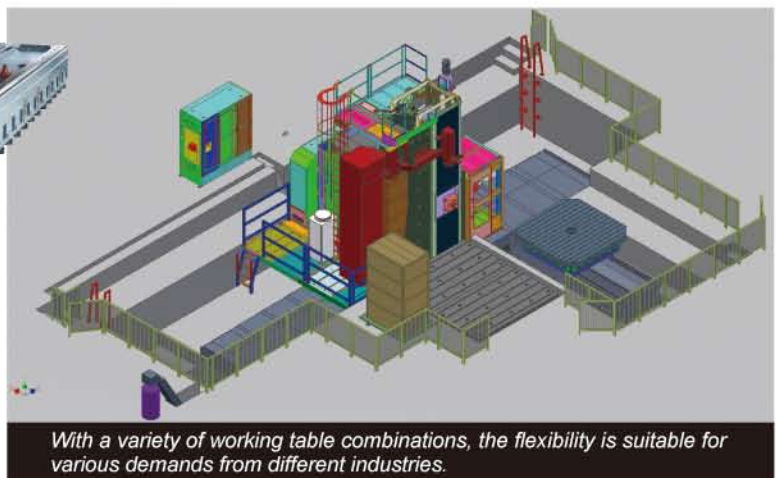
### X Axis

Roller-type linear guideway with rack pinion gives super stability under high-speed hard cutting.



### Y Axis

- Y axis is driven by a braking motor and a NC electromagnetic braking system is adopted at the end of ballscrew as security mechanism.
- The box-way design provides high rigidity.
- Mechanical counter weight with holding device ensures a smooth Y-movement and multi axes simultaneous movement.



*With a variety of working table combinations, the flexibility is suitable for various demands from different industries.*

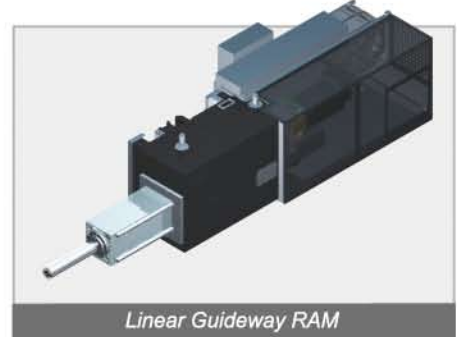
## Specifications

Item	Unit	HBM-140RF
<b>Travel</b>		
X axis	mm	6,000/8,000/10,000/12,000/14,000/16,000
Y axis	mm	3,200
Z axis (RAM)	mm	800
W axis (Quill)	mm	700
<b>Spindle</b>		
Spindle taper		ISO50
Transmission		Geared
Spindle speed	rpm	2,500
Spindle output	kW	FANUC: 37/45
Spindle torque	Nm	2,362
Spindle step		2 step (auto)
Quill diameter (W axis)	mm	Ø140
<b>Axis Transmission</b>		
X axis ballscrew	mm	Ballscrew / rack pinion + linear scale feedback
Y axis ballscrew	mm	Ø100xP20xC3
Z axis ballscrew	mm	Ø63xP25xC3
W axis ballscrew	mm	Ø50xP20xC3
<b>Axis Feed Rate</b>		
X/Y/V/Z/W axis rapid feed rate	m/min	10/10/10/10/10
<b>Cutting Feed Rate</b>		
X/Y/V/Z/W axis cutting feed rate	m/min	5/5/5/5/5
B axis cutting speed	rpm	1.5
<b>Guideway</b>		
X axis guideway type		Linear guideway / 65mm (roller)
X axis guide distance	mm	1,875
Y axis guideway type		Box way
Y axis guide distance	mm	1,050
V axis guideway type		Linear guideway / 65mm (roller)
V axis guide distance	mm	1,250
Z axis guideway type		Linear guideway / 45mm (roller)
Z axis guide distance	mm	319
W axis guideway type		Linear guideway / 25mm (roller)
W axis guide distance	mm	290
<b>ATC System (Option)</b>		
No. of tools		60
ATC type		Arm
Tool shank type		BT / CAT / DIN 50
Max. tool diameter	mm	Ø125
Max. tool diameter w/ next tool empty	mm	Ø245
Max. tool length	mm	300/500
Max. tool weight	kg	25
Max. loading weight	kg	900
Tool changing time (T-T)	sec	16
<b>Table (Option)</b>		
Table size	mm	2,500x2,500
Table height	mm	1,415
Max. table load	T	20
Table index	degree	0.001°
V axis	mm	2,500
V axis ballscrew	mm	Ø80xP10xC3

\*Specifications are subject to change without notice.

### Linear Guideway RAM

Quill diameter	mm	140	160	180
Z stroke (RAM)	mm	800	1200	1200
W stroke (Quill)	mm	700	1000	1000
Z+W stroke	mm	1500	2200	2200
Cross section	mm	380x400	400x440	400x440
Spindle speed	rpm	2500	2000	2000
Spindle speed changer		2	3	3



Linear Guideway RAM

### Standard Accessories

- CNC controller: Heidenhain iTNC530 HSCI, Fanuc 31iMB, or Siemens 840D sl for the selection
- Spindle and servo motor package
- Precision ground ballscrew
- ISO 50 spindle
- Coolant system
- Spindle speed 2000~3000rpm
- CE declaration of conformity for EU countries
- Heavily ribbed cast iron components
- Automatic central lubrication
- Telescopic covers
- Low voltage circuit system

### Optional Accessories

- Tool setting probe RENISHAW OTS
- Workpiece probe RENISHAW RMP-60
- Tool setting probe BLUM TC-54-20
- Workpiece probe BLUM TC-60
- Angle milling head
- Universal milling head
- NC facing head

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