



S.L.S. HFB-150 (E) - Copy right reserved



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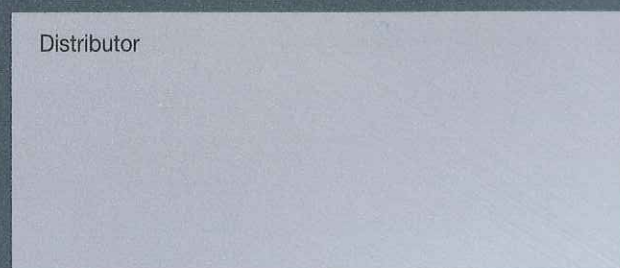
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Distributor



***HFB***  
***series***



# HFB Series



Quality Certification : ISO 9001

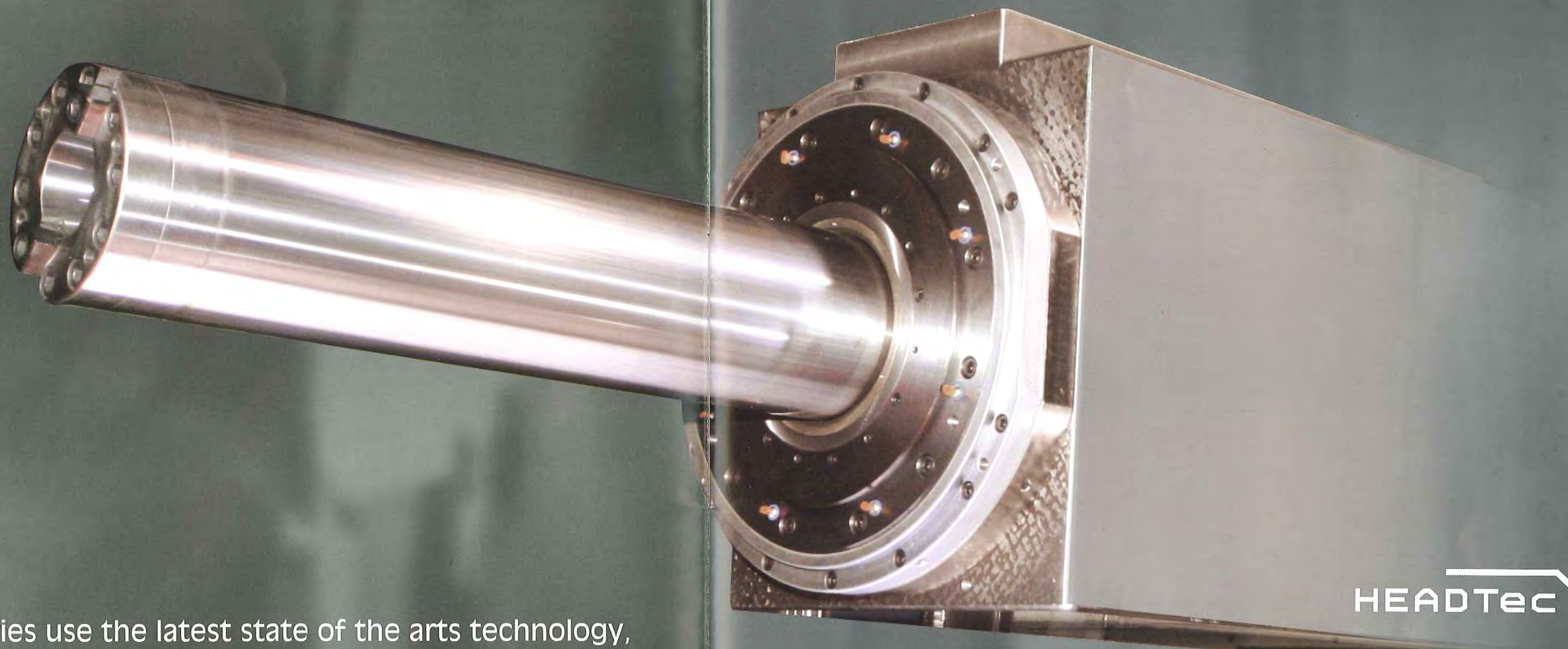
Standard : JIS, VDI/DGQ 3441, ISO-230



**Turn The Concept To Reality**  
**Powered by German Technology**



# Powered By German Technology



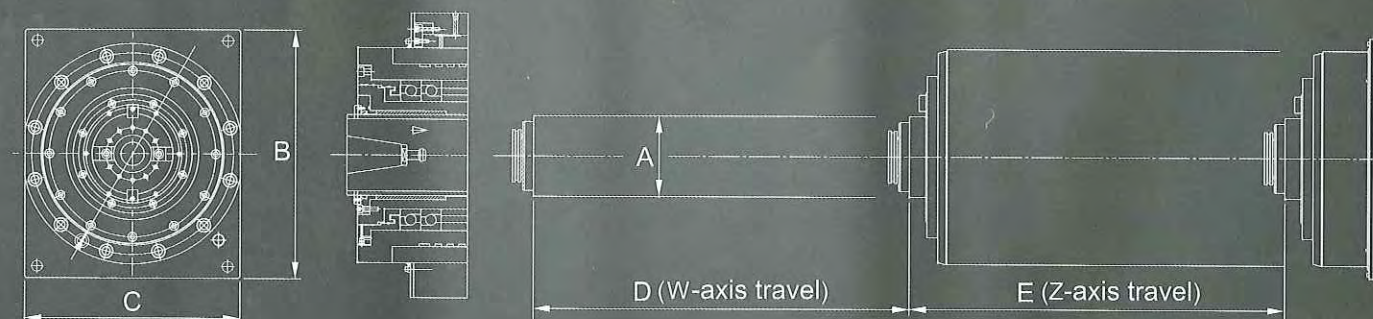
HEADTec

The HFB series use the latest state of the arts technology, our high accuracy W axis headstock is a German made HEADTec GmbH rigid product.

- The German design body is a rigid closed casting that minimizes W axis sag even under full W axis extension. The proven design allows high cutting capacity with minimum machine vibration even under the most difficult conditions.
- High-tech chosen materials have been used to maintain the minimal thermal deformation and guarantee the longest spindle life.
- The advance design of the tool clamping system, combined with a recirculating cooling system generates minimal heat thus minimizing any expensive down time.
- The state of the arts spindle design uses complex oil-air lubrication method thus reducing any undesirable thermal deformation.

## ►► Large Cross Section Ram

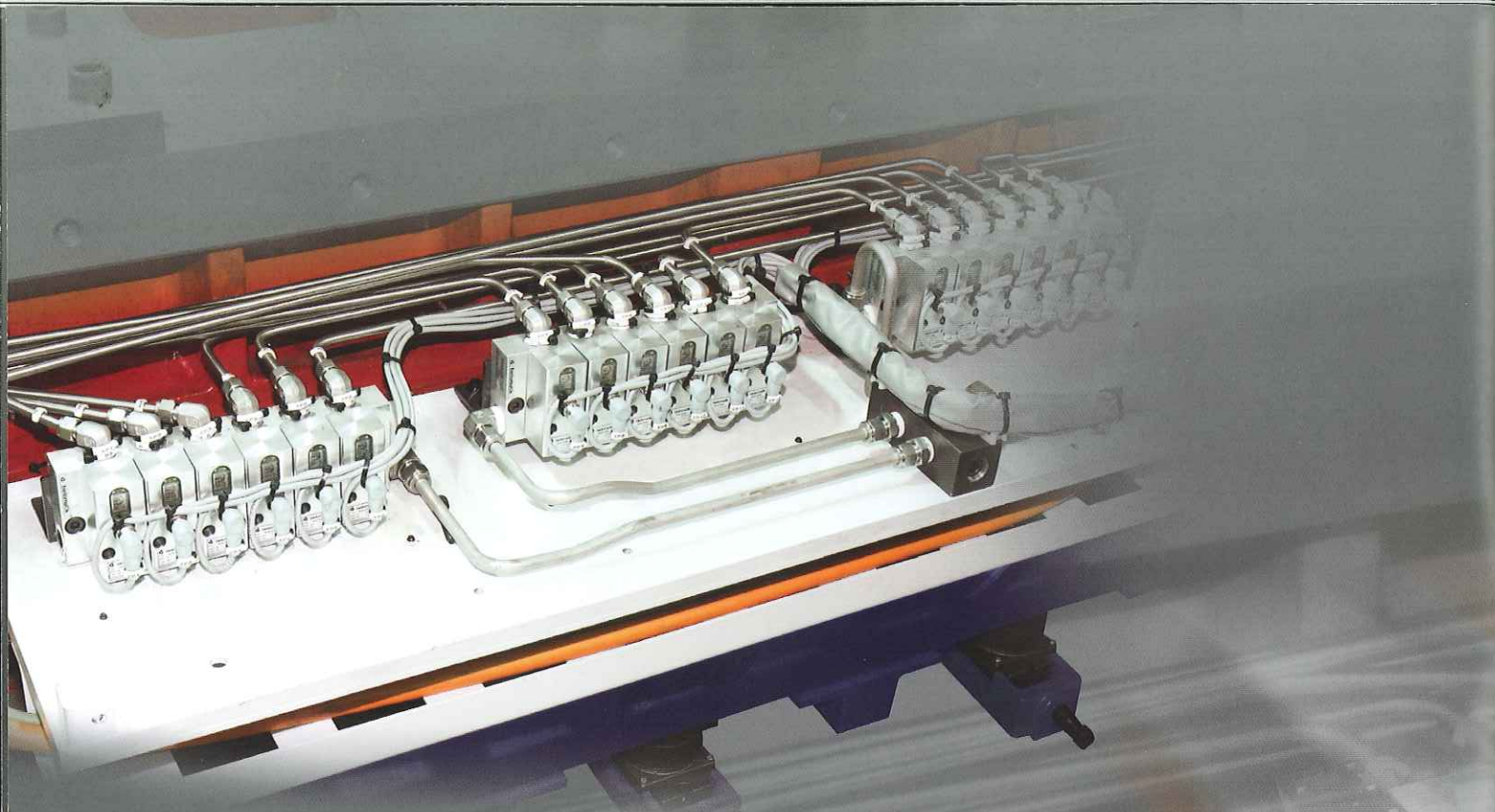
- The main structure of the large cross section Ram has been designed to ensure the maximum rigidity and high stability even under maximum Ram extension.



Model	A	B	C	D	E
HFB150 Series	ø150	440	400	750	800
HFB180 Series	ø180	550	500	900	1100

Unit:mm





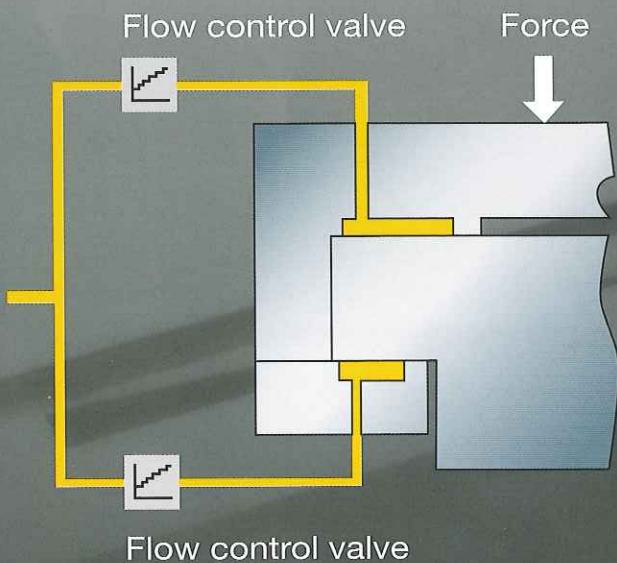
▲ German technology is used on control valves on the hydrostatic sliding unit.

►► **High Load Capacity on Hydrostatic Sliding Unit**

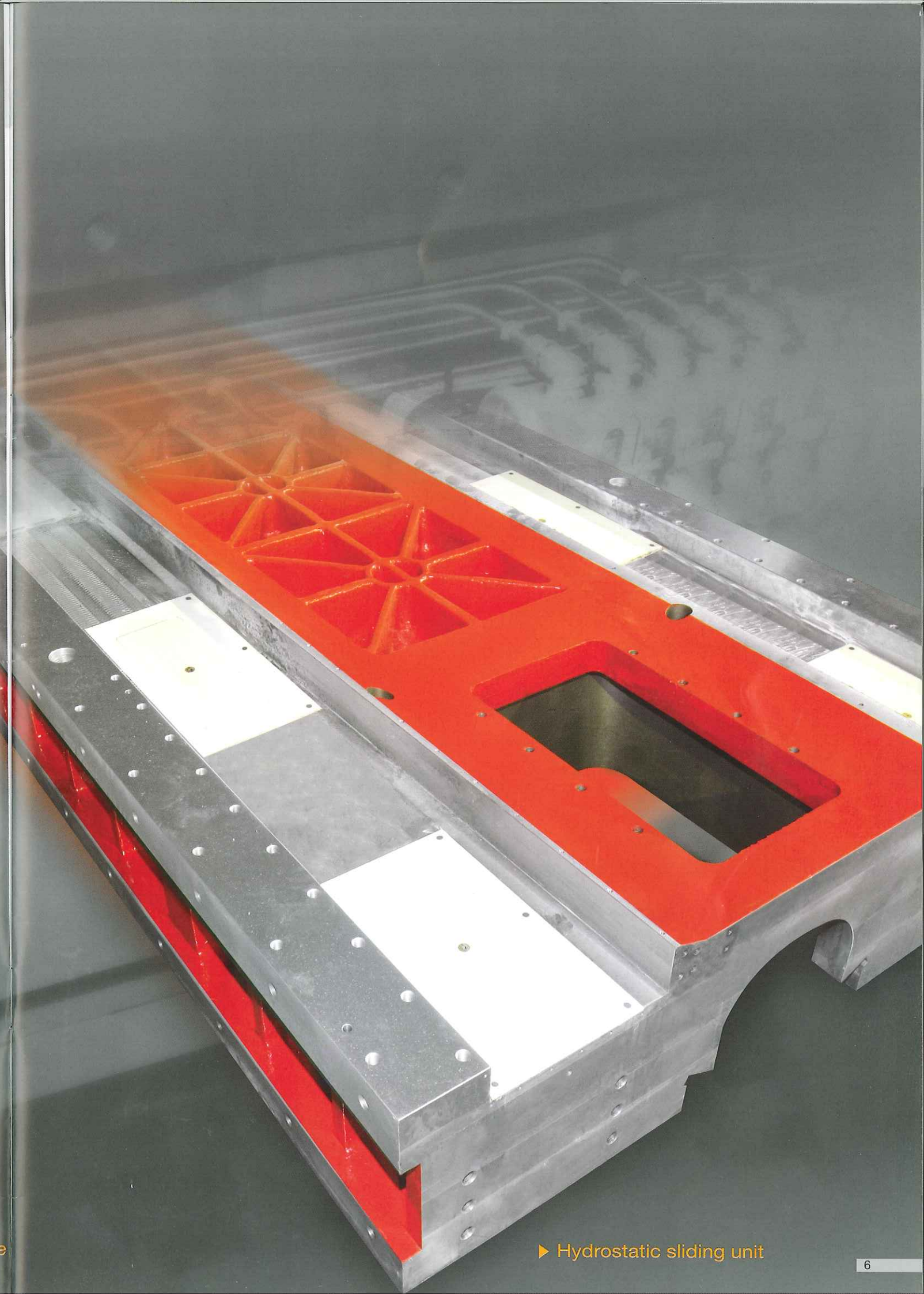
- Low friction of heavy parts on the X, Y and Z axis is obtained thanks to a perfect hydrostatic system. This high technology absorbs vibration during heavy cutting whilst still maintaining the accuracy thus providing the end user with the best machining results.



▲ Hydrostatic control unit



▲ Schematic for hydrostatic force



► Hydrostatic sliding unit





## ►► High Grade Controller System



FANUC 31i-B (option)



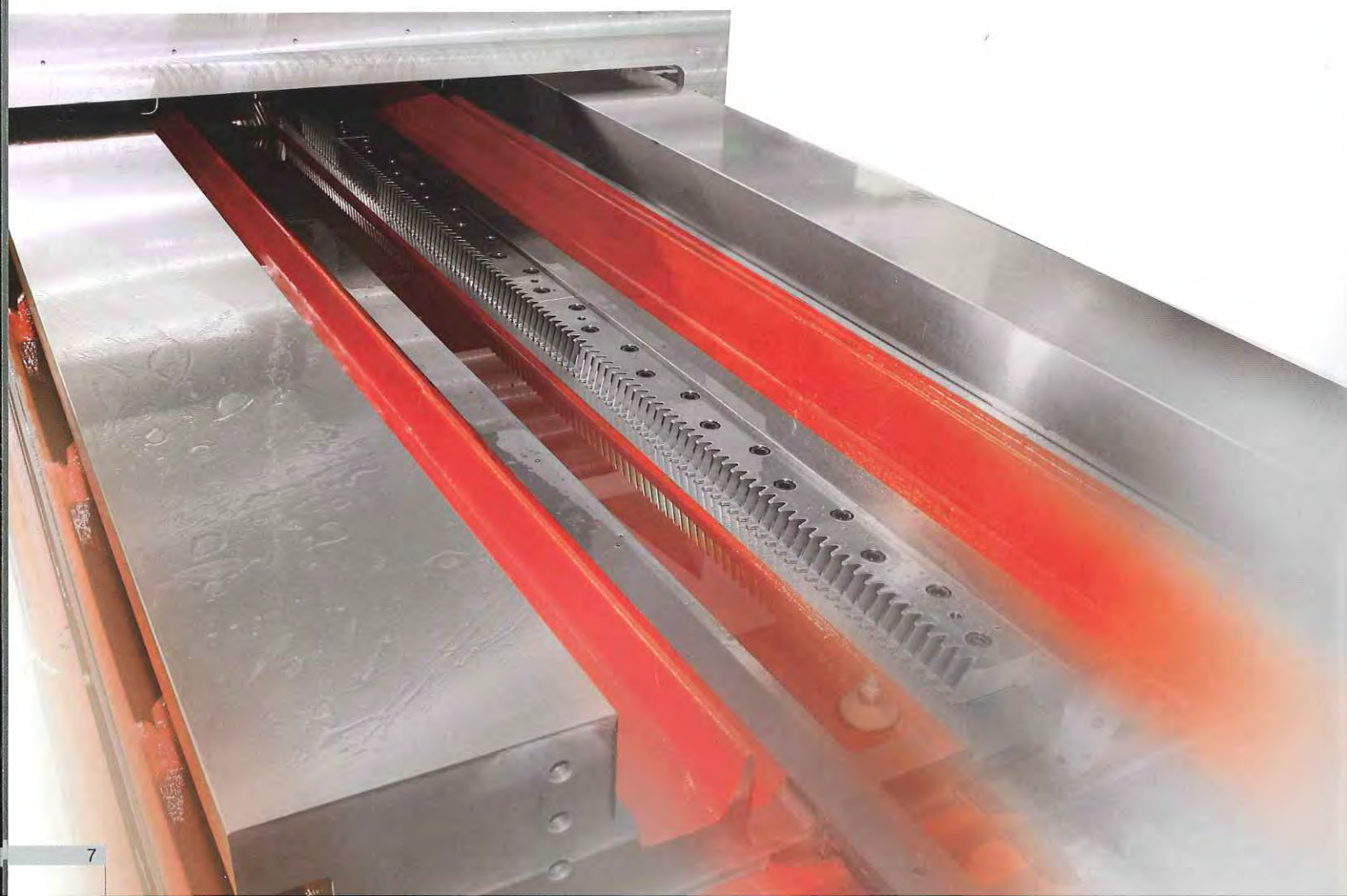
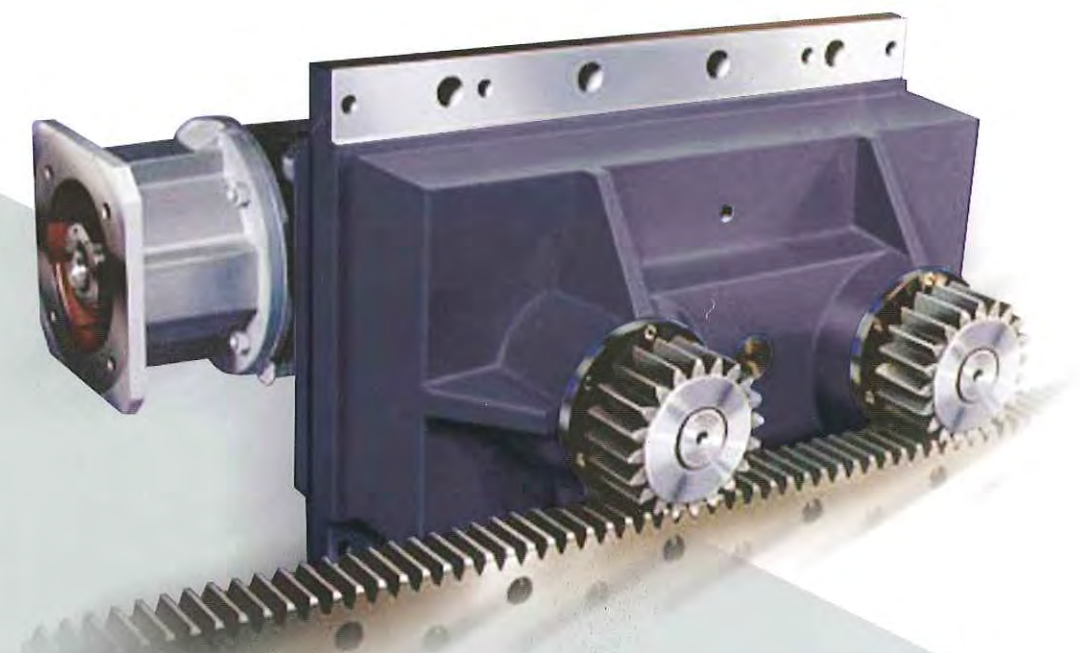
HEIDENHAIN iTNC530 (option)



SIEMENS 840D(Standard)

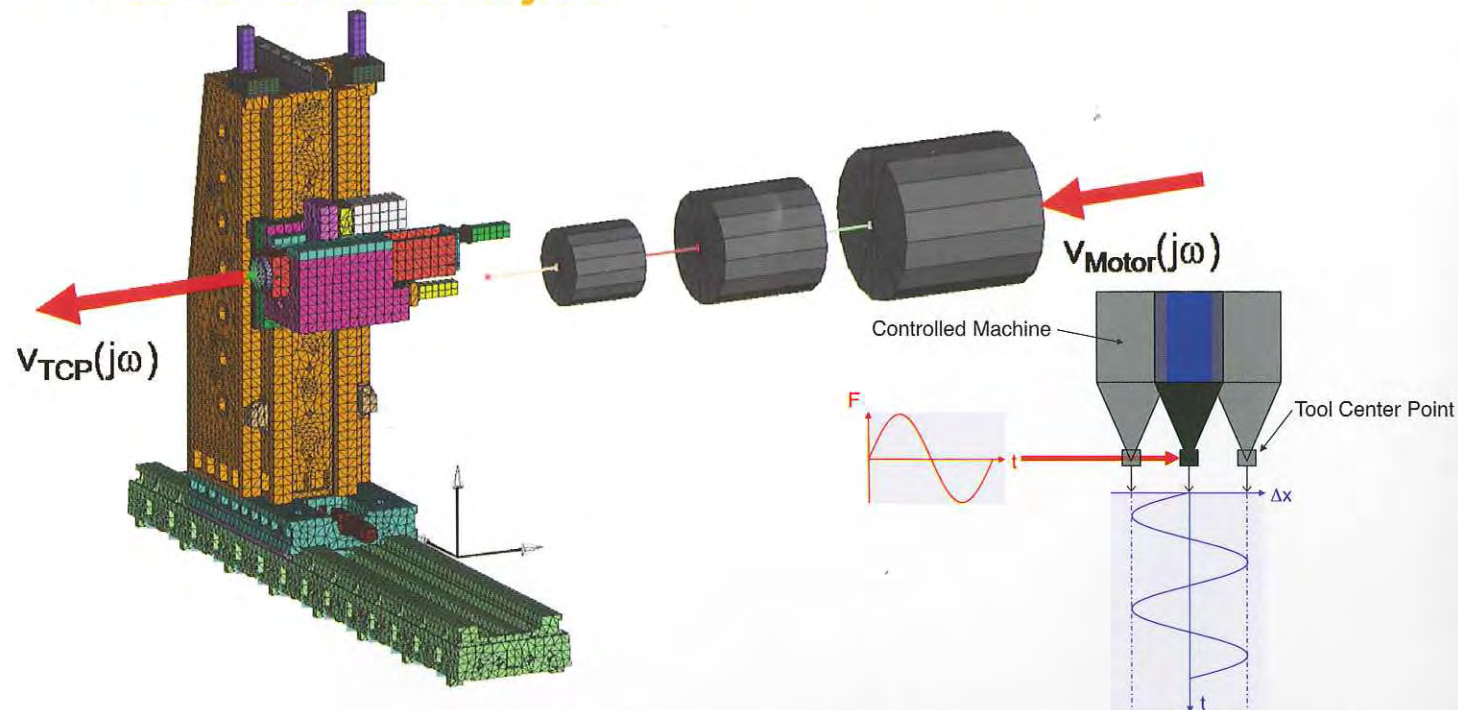
## ►► X Axis Drives with Master and Slave Concept

- The Rack and Pinion designed feature uses high accuracy helical gears, incorporated backlash elimination provides superior stiffness and positioning accuracy.





## ►► The most advanced analytic technology - Mechatronics analysis

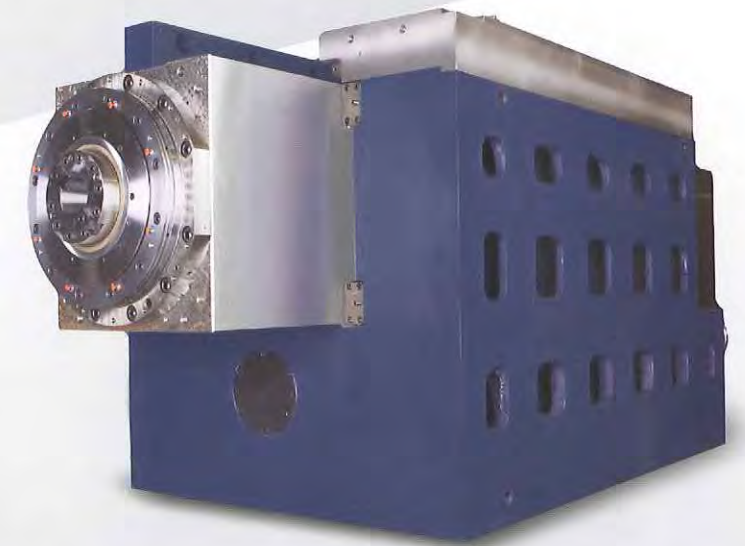


- During the design process for the horizontal floor type boring and milling machine we integrated German structural design technologies, working with Siemens using the very latest Mechatronic Optimization, Analysis and Simulation of Machines along with Finite Element Method (FEM) analysis as the design basis.

The characteristics of the servo control system were then added to produce the structural rigidity characteristics for the whole machine, so that during the design process, the positional accuracy, frequency response, fastest acceleration performance and many other details of the machine were all clearly grasped. Control parameters were also able to be optimized at this analysis stage of the process, for the mechanical and electrical systems in total delivering the most accurate guarantees of the machining capabilities and quality of the machine.

## Headstock Ram

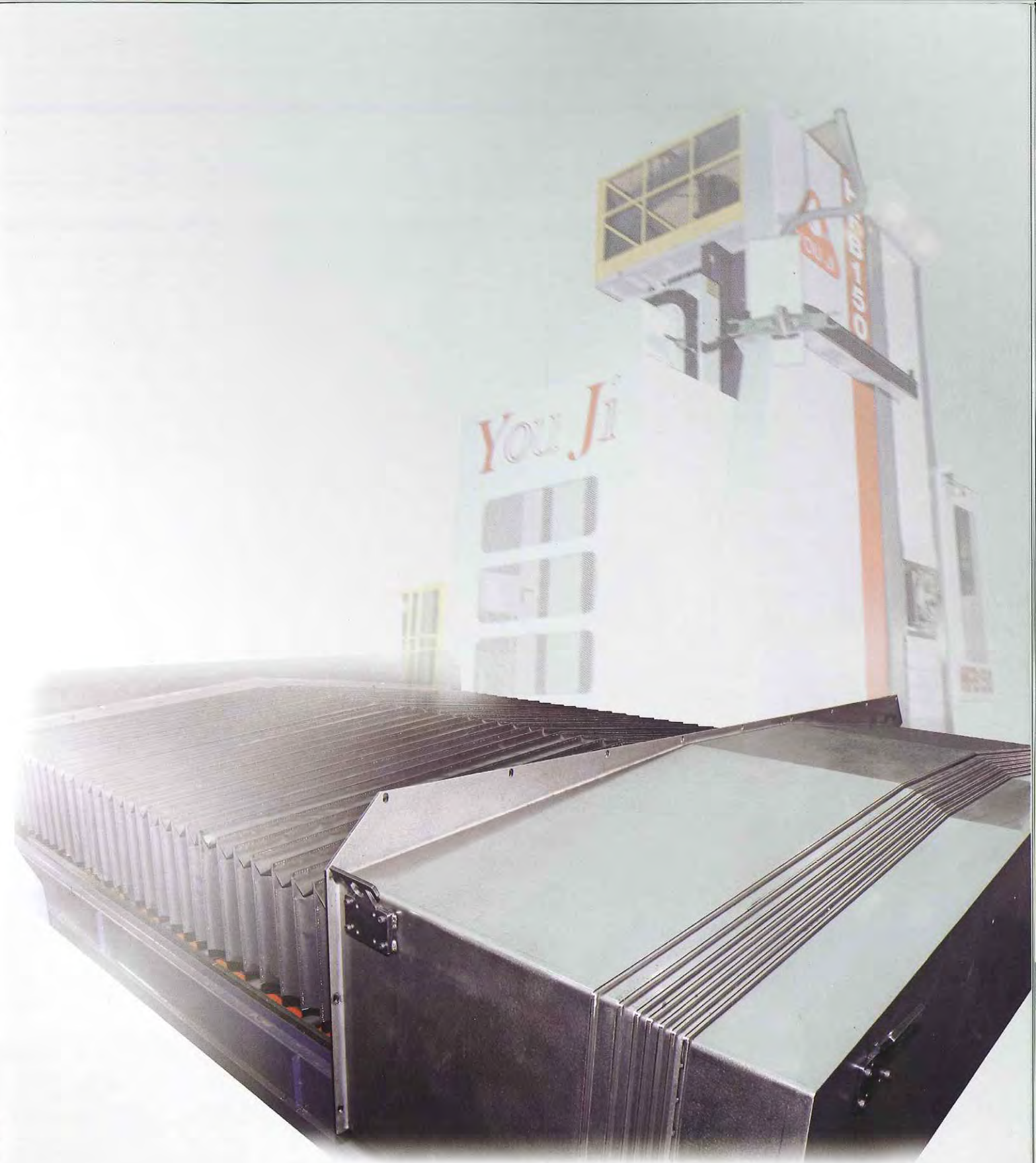
- Large sized body; this one piece closed casting block ensures excellent robustness, thus guaranteeing the upmost accuracy under all cutting conditions.



## ►► Machine Frame Stability and Accuracy

- The machine base structure is made of high quality cast iron with precision machined guide ways. All the machine parts come under a strict quality build method ensuring that the final result has no compromise on accuracy.



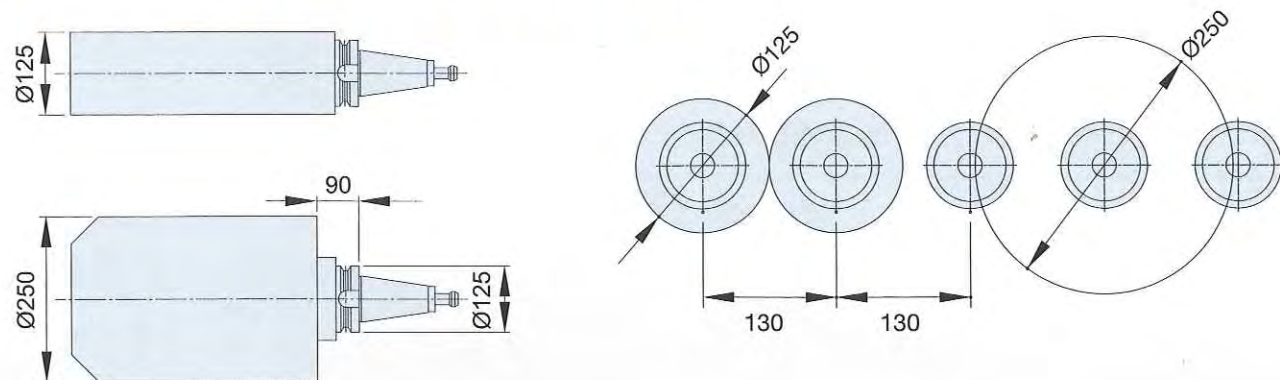


- Strong external telescopic covers made of sheet metal and internal bellow-type covers provide a total protection from chips dust, coolant and condensation dampness.

- The YOU JI designed and manufactured Y axis sliding unit uses dual ball screws integrated with Servo Tandem Control drives for balancing compensation, coupled to dual linear scales and with a closed-loop servo positioning method minimizing the accuracy deviation during W axis extension.



## ►► Standard Specification of ATC



### BT-50

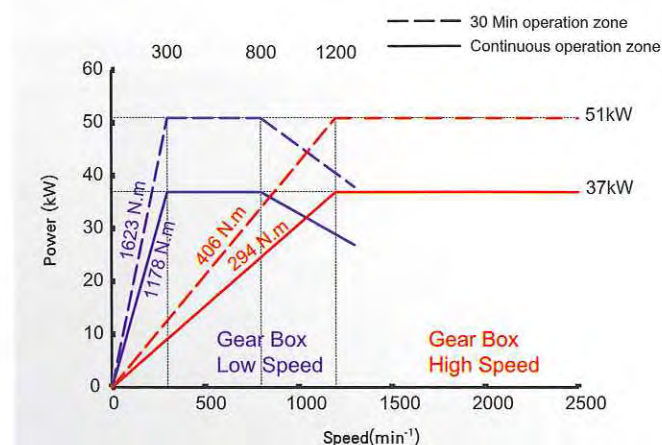
Max tool length	400mm	
Max tool diameter	Full tools (Ø125 mm)	Adjacent tool empty (Ø250mm)
Max tool weight	25kg (option 35kg)	

## ►► Automatic Tool Changer

- The HFB series machines can be supplied with either 60 to 120 tool pocket High-Capacity Automatic Tool Magazines with bi-directional tool selection that shortens tool change time to effectively increase production efficiency.

## ►► Torque Diagram

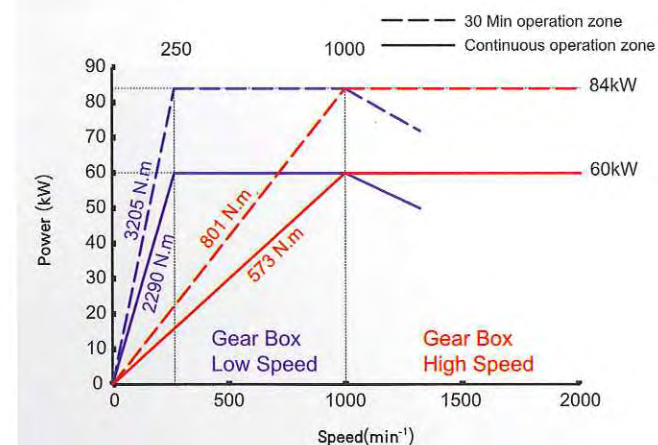
### HFB150 Series



Motor:SIEMENS 1PH7167-2NF03

High Speed : Low Speed=1.25 : 5

### HFB180 Series



Motor:SIEMENS 1PH7186-2NE03

High Speed : Low Speed=1.25 : 5

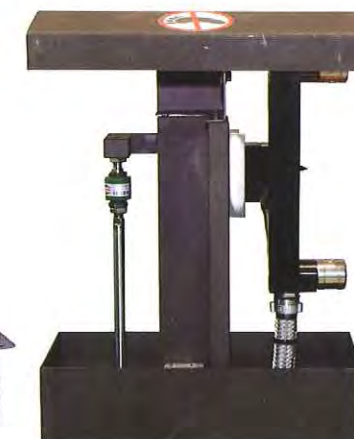
## ►► Optional Accessory



Indexing table



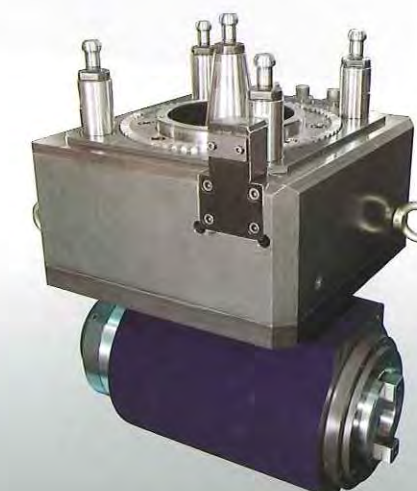
Process monitor



Tool presetter



Work piece probe



90° milling head

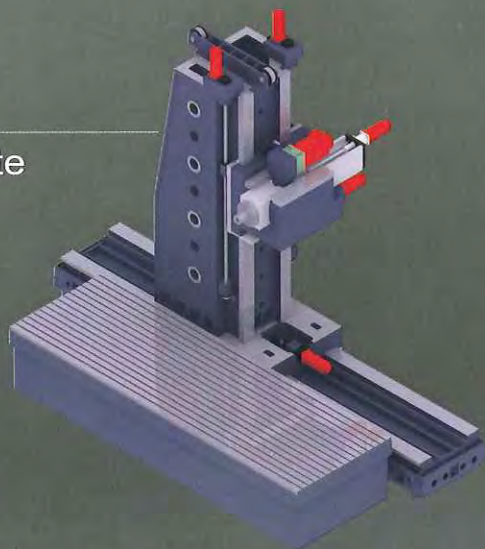


Angle plate

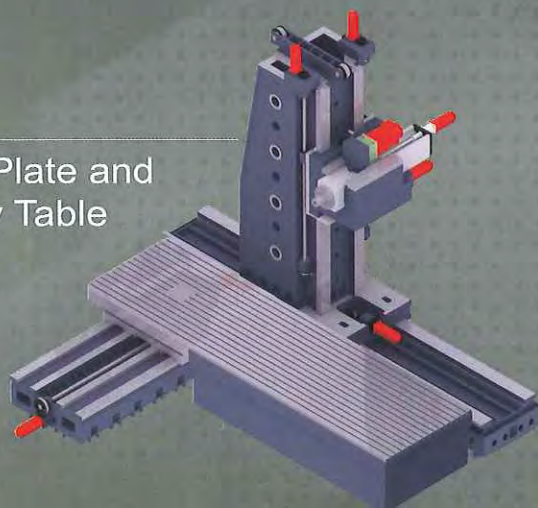
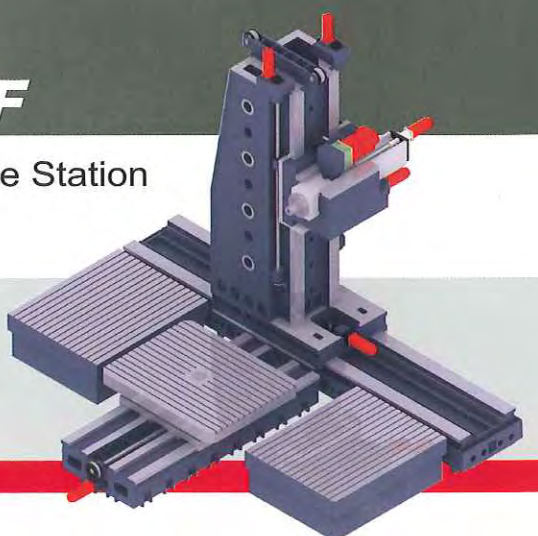
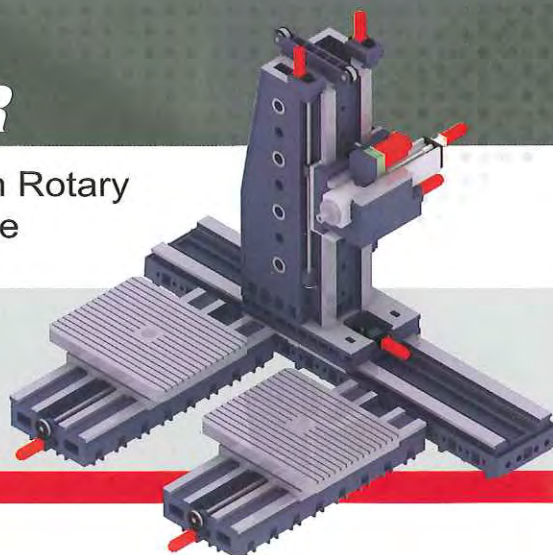


**FT**

Floor Plate

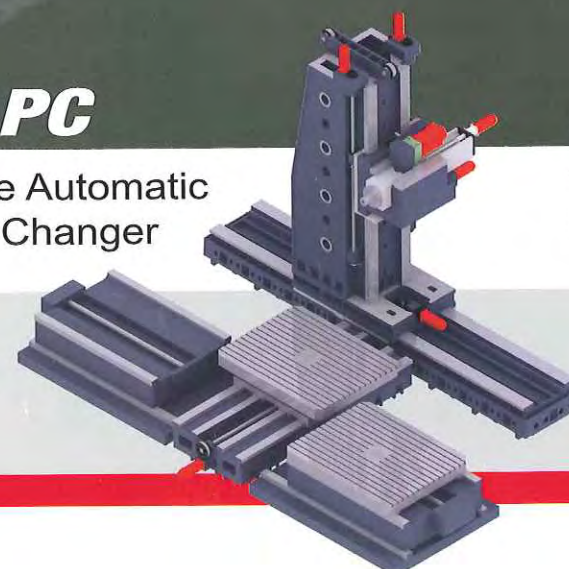
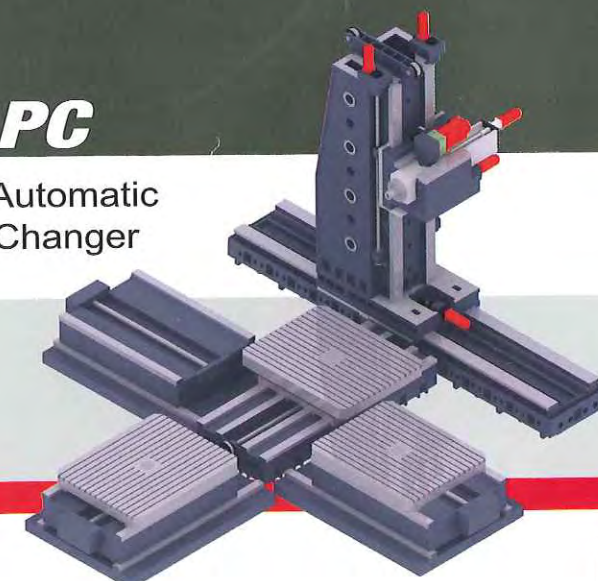


Modular Configuration Table

**FR**Floor Plate and  
Rotary Table**FRF**Multiple Station  
Table**TR**Twin Rotary  
Table

### ►► Hydrostatic Rotary Table (B Axis)

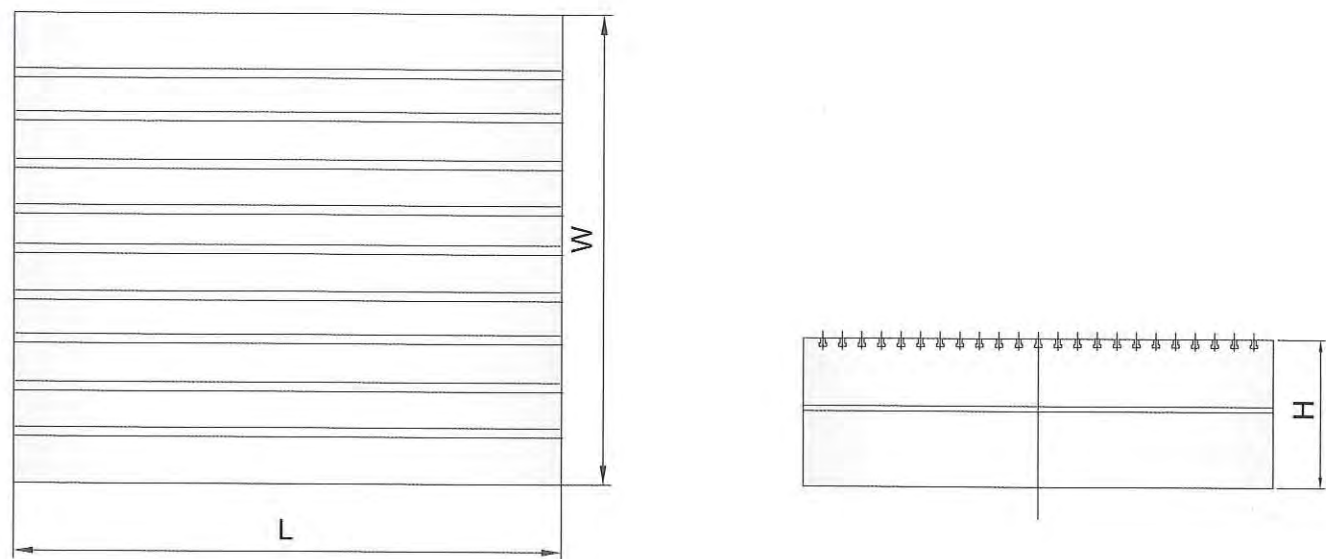
- The YOU JI designed Rotary Table uses the latest Hydrostatic technology, our system can carry a maximum of 80 tons load on 3500x4000 mm table.
- High precision B axis provides  $\pm 7.5''$  positioning accuracy, and  $\pm 5''$  repeatability accuracy.
- The combination of the 3 axis of the machine and B axis allows four-axis-machining capability, which provides all necessary criteria for critical machining needs of complex work pieces.
- The Floating Braking System ensures superior accuracy and stability even under heavy cutting.

**2 APC**Double Automatic  
Pallet Changer**3 APC**Triple Automatic  
Pallet Changer



# HFB Series

## ▶▶ Floor Plates

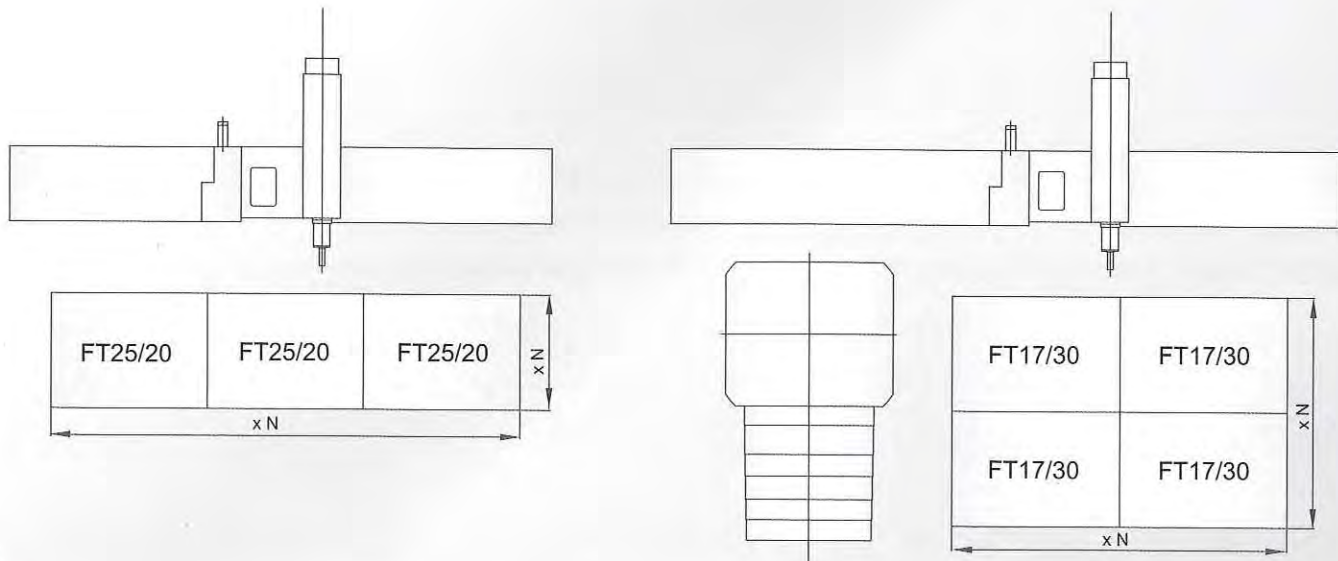


## ▶▶ Floor Plate Dimension

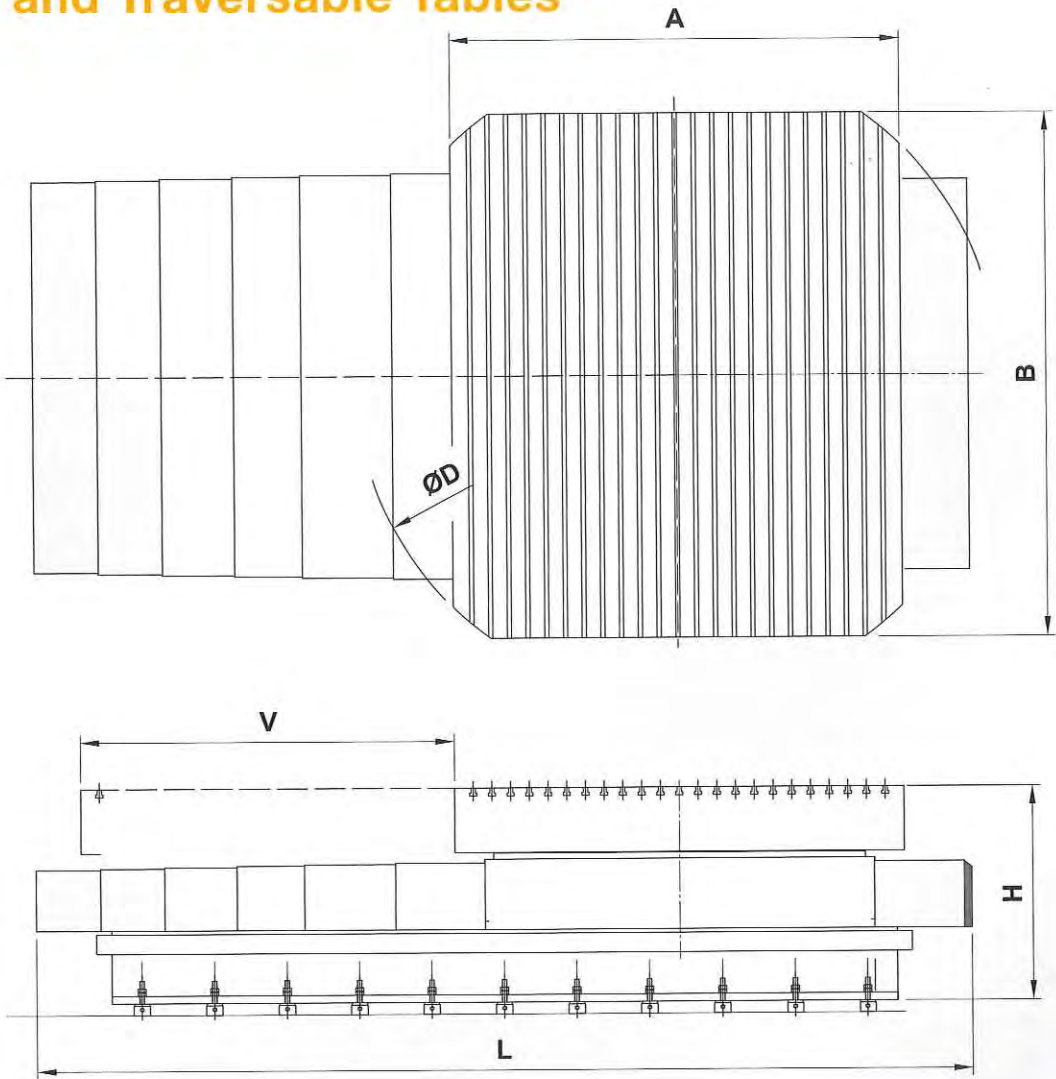
Type	Unit	FT 25/20 (HFB150 Series)	FT 17/30 (HFB180 Series)
Table dimension (WxL)	mm	2500x2000	1750x3000
Table thickness (H)	mm	280	350
T-slots (size/ pitch/number)		28x200x7	36x250x7

★ Remark: The floor plate and T-slots are customized for the customer requirements.

## ▶▶ Reference for Floor Plates



## ▶▶ Rotary and Traversable Tables



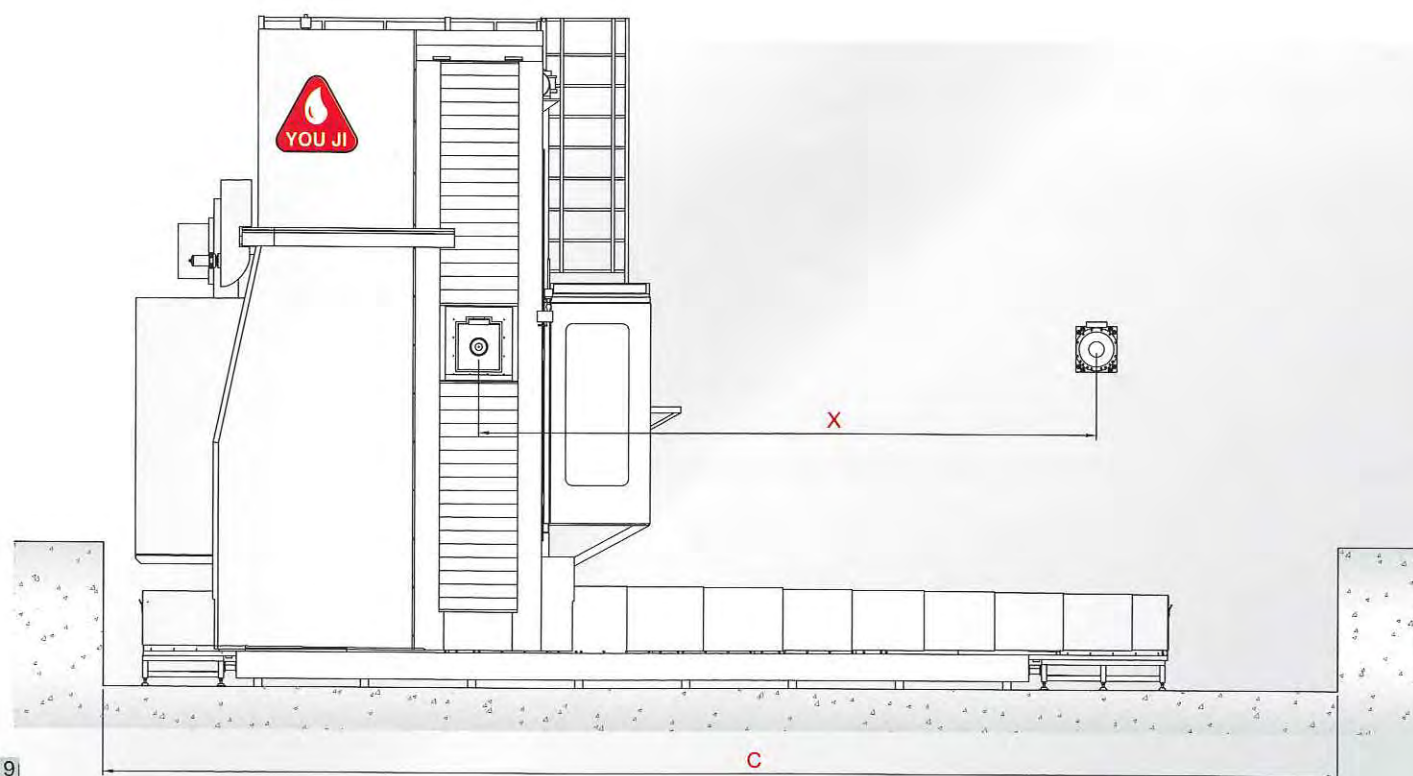
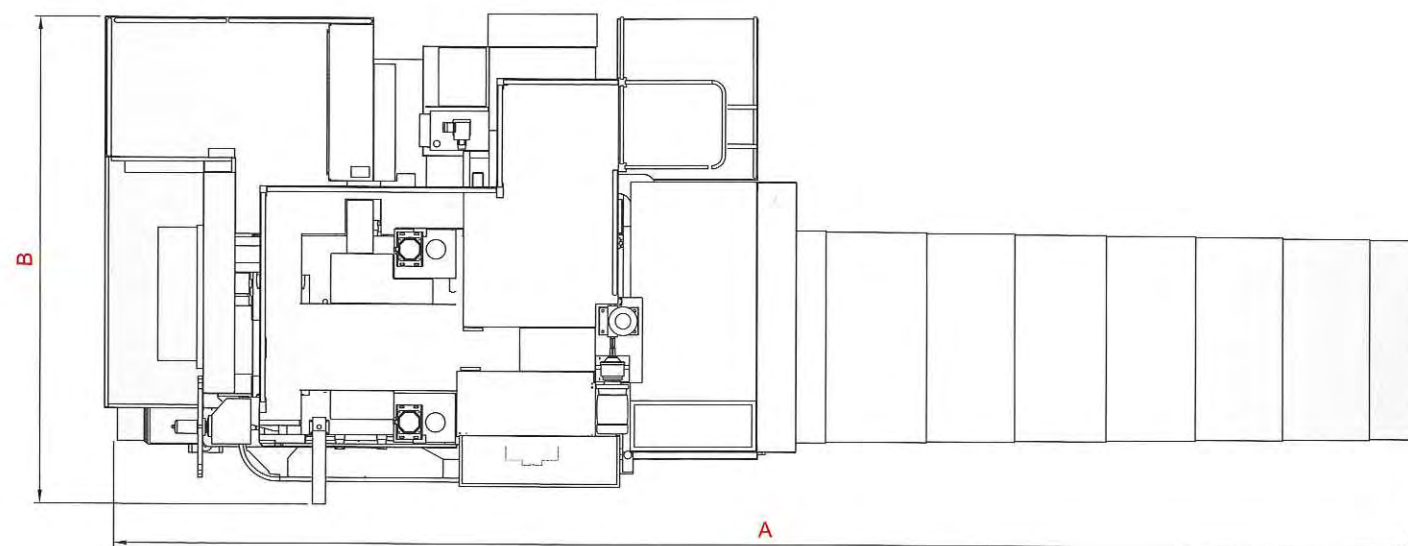
## ▶▶ Rotary and Traversable Table Specification

Type	Unit	BR20/25	BR25/30	BR30/35	BR35/40
Table dimension (AxB)	mm	2200x2500	2500x3000	3000x3500	3500x4000
Table swing dimension (D)	mm	Ø3200	Ø3900	Ø4300	Ø5300
Load capacity	ton	25	40	60	80
T-slots (size/ pitch/number)		28x200x11	28x200x15	36x250x17	36x250x20
V axis travel (V)	mm	1500	2000	2500	3000
V axis feed feed rate	m/min	4	4	4	4
V axis cutting feed rate	mm/min	1~3000	1~3000	1~3000	1~3000
B axis rotating speed	degree/min	200	200	200	200
Height of sliding unit (H)	mm	950	950	1150	1150
Length of sliding unit (L)	mm	4500	5500	6500	7000



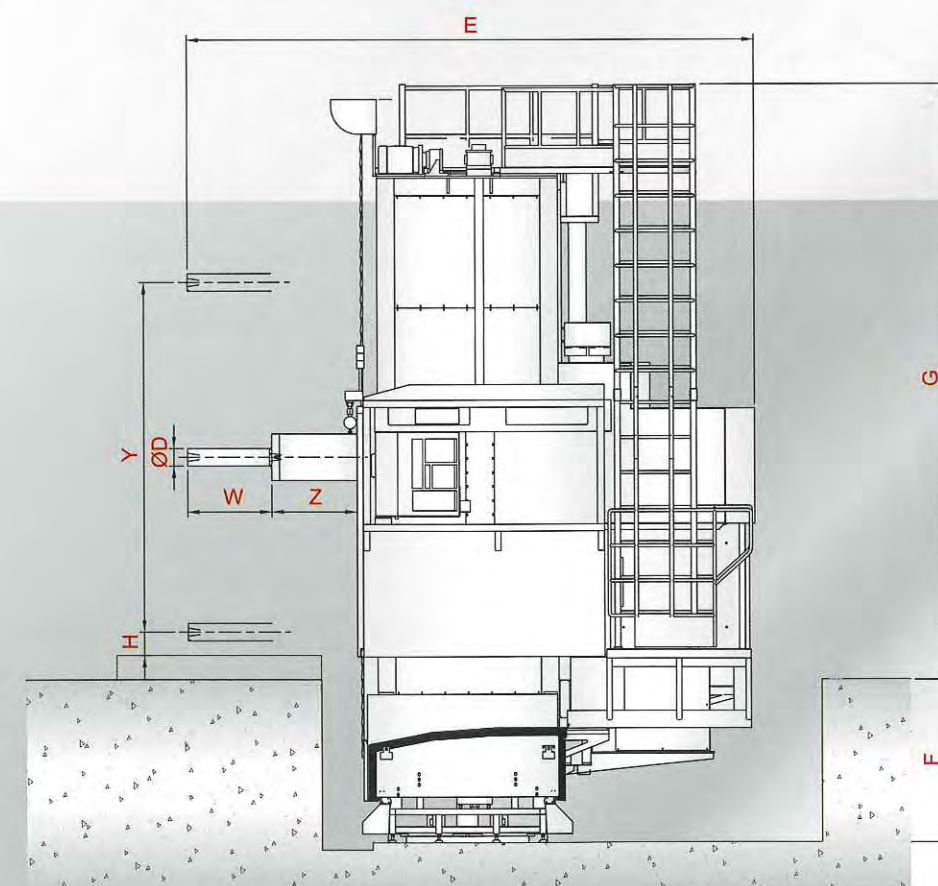
# HFB Series

## ►► Machine Layout



## ►► Machine Dimension

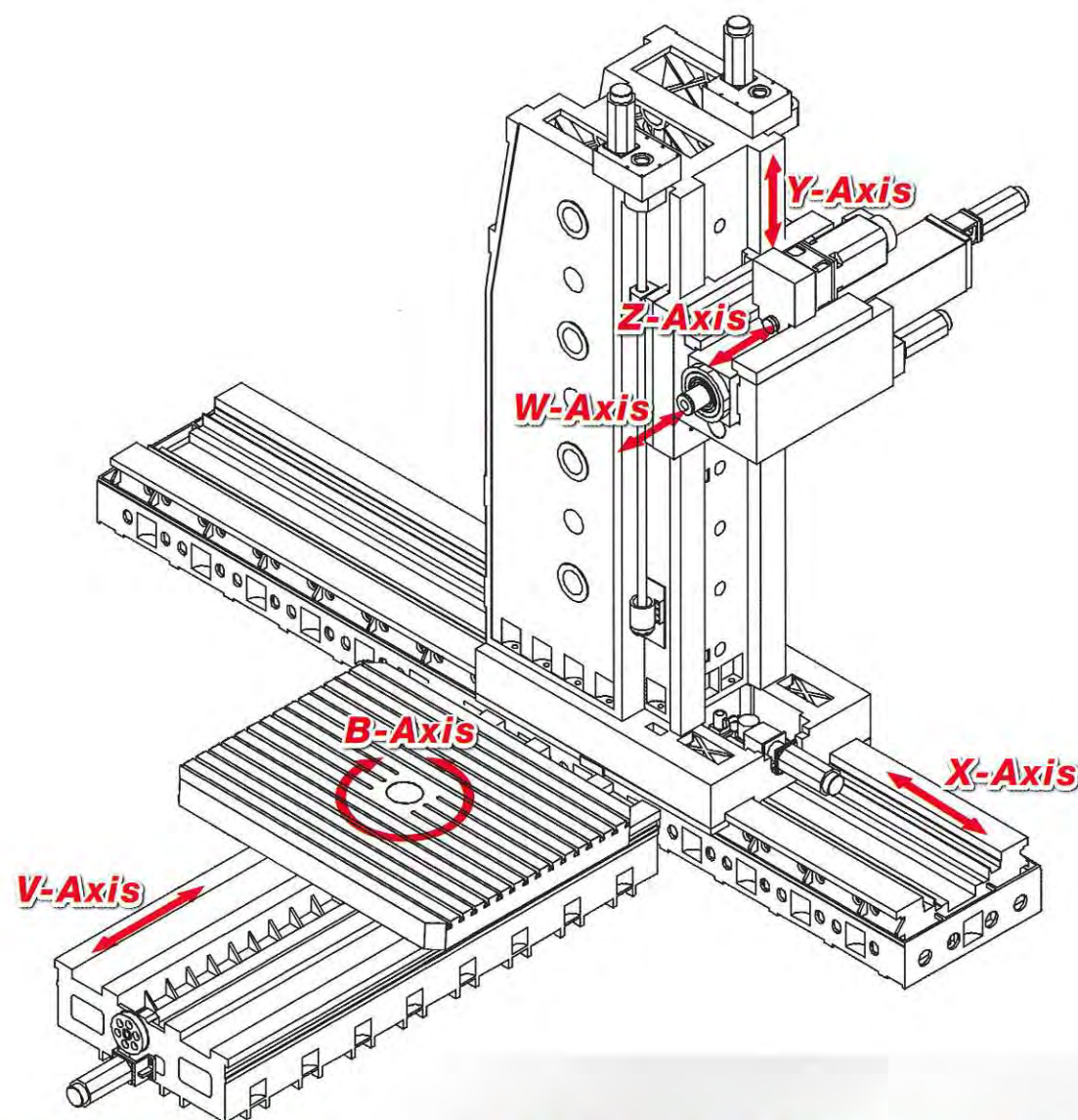
	Unit	HFB150 Series	HFB180 Series
X	mm	4000/5000/6000/8000/10000/12000/14000	6000/8000/10000/12000/14000
Y	mm	2500/3000/3500/4000/4500/5000	3000/3500/4000/4500/5000/5500/6000
Z	mm	800	1100
W	mm	750	900
A	mm	X+3000	X+3500
B	mm	3550	3850
C	mm	X+7000	X+8000
D	mm	150	180
E	mm	4850	5780
F	mm	1630	1630
G	mm	4850	6630
H	mm	250	350





# HFB Series

## ►► Axial Direction



## ►► Standard Accessories

- SIEMENS 840D controller
- Hydraulic unit
- Coolant system
- Spindle air blow system
- Spindle cooler
- Automatic lubrication system
- Telescopic cover for all guide ways
- Air conditioner for electric cabinet
- Chip conveyor and bucket
- Oil skimmer
- X/Y/W axis linear scale (HEIDENHAIN)
- Working lamp
- Three stages signal tower
- Tool kit
- Leveling blocks and foundation bolts
- Operation manual

## ►► Optional Accessories

- FANUC 31i-B controller
- HEIDENHAIN iTNC 530 controller
- Coolant Through Spindle 8 bar
- Work piece probe (RENISHAW RMP-60)
- Tool presetter
- Operator platform
- Dual filter system
- Transformer
- 60/80/120 st. tool magazine
- Scraper type chip conveyor
- Level sensor
- 90° milling head
- Process monitor
- Angle plate
- CE regulation

## ►► Specifications

Item	Unit	HFB150 Series	HFB180 Series
<b>Axis travel</b>			
X-axis travel	mm	4000/5000/6000/8000/10000/12000/14000	6000/8000/10000/12000/14000
Y-axis travel	mm	2500/3000/3500/4000/4500/5000	3000/3500/4000/4500/5000/5500/6000
Z-axis travel	mm	800	1100
W-axis travel	mm	750	900
<b>Headstock with traveling spindle</b>			
Spindle quill diameter	mm	Ø150	Ø180
Spindle taper		BT-50	BT-50
Max. rotating speed	min <sup>-1</sup>	2500	2000
Max. spindle torque	N-m/kgf-m	1623 (165)	3205 (327)
RAM cross section	mm	440 x 400	550 x 500
<b>Automatic tool changer</b>			
No. of tools		60	60
Max. tool weight	kg	25	25
Max. tool diameter	mm	Ø125 (Max.250)	Ø125 (Max.250)
Max. tool length	mm	400	400
<b>Feed rate</b>			
X/Y-axis rapid traverse	m/min	6	6
Z/W-axis rapid traverse	m/min	10	10
Cutting feed rate	mm/min	1~4000	1~4000
Manual feed rate	mm/min	1~4000	1~4000
<b>Control system</b>			
Controller		SIEMENS 840D	SIEMENS 840D
Spindle motor	kW	37/51 (1PH7167-2NF03)	60/84 (1PH7186-2NE03)
X/Y/Z/W-axis servo motor	kW	8.17 (1FK7105-5AF71)	8.17 (1FK7105-5AF71)
Coolant motor	kW	1.5	1.5
Total power consumption	KVA	115	138
<b>Tank capacity</b>			
Lubrication tank	L	8	8
Hydrostatic oil tank	L	250	250
Coolant tank	L	800	800

## Machine Description

**HFB 150 / 05 30**

★ Specification is subject to change without prior notice

Y-axis travel (30:3000mm)

X-axis travel (05:5000mm)

Boring spindle diameter

Horizontal Floor Type Boring and Milling Machine