

**VH** Series

## CNC BED TYPE UNIVERSAL MILLING MACHINE



- VH-2000L
- VH-2600L
- VH-3000L
- VH-3500L

## Hydraulic weight Counterbalance

Due to hydraulic weight counterbalance in the vertical axis, the weight of the milling and vertical carriage is hydraulically compensated so that the long-term precision was increased and the load of the ball screw and feed drive could be decreased, which gives way to an extremely high positioning accuracy: thus, the VH machines can be used in the large tool production without any problem.

## VH modular design

Due to the use of a modular design, an optimum gradation in the X axis traveling range between 2000 to 3500 mm and thus a cost-effective use tailored to customer specifications is guaranteed. Design and construction were made using the finite element method (FEM).

## Safety system

An additional braking system on Z axis prevents the lowering of the milling head and saddle when switching off the machine or in case of a failure of the hydraulic weight counterbalance.





An idea machine for Die & Mold

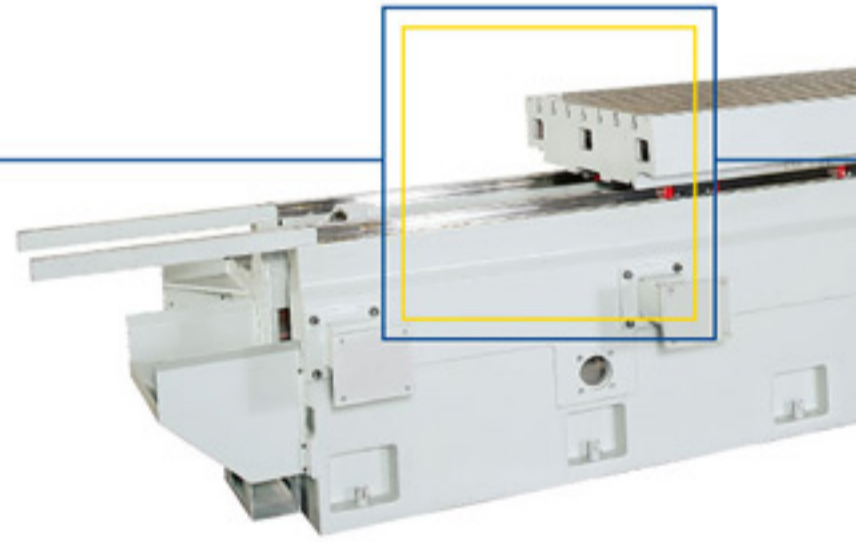
# VH series

CNC Bed Type Universal Milling Machine

## RIGID CONSTRUCTION

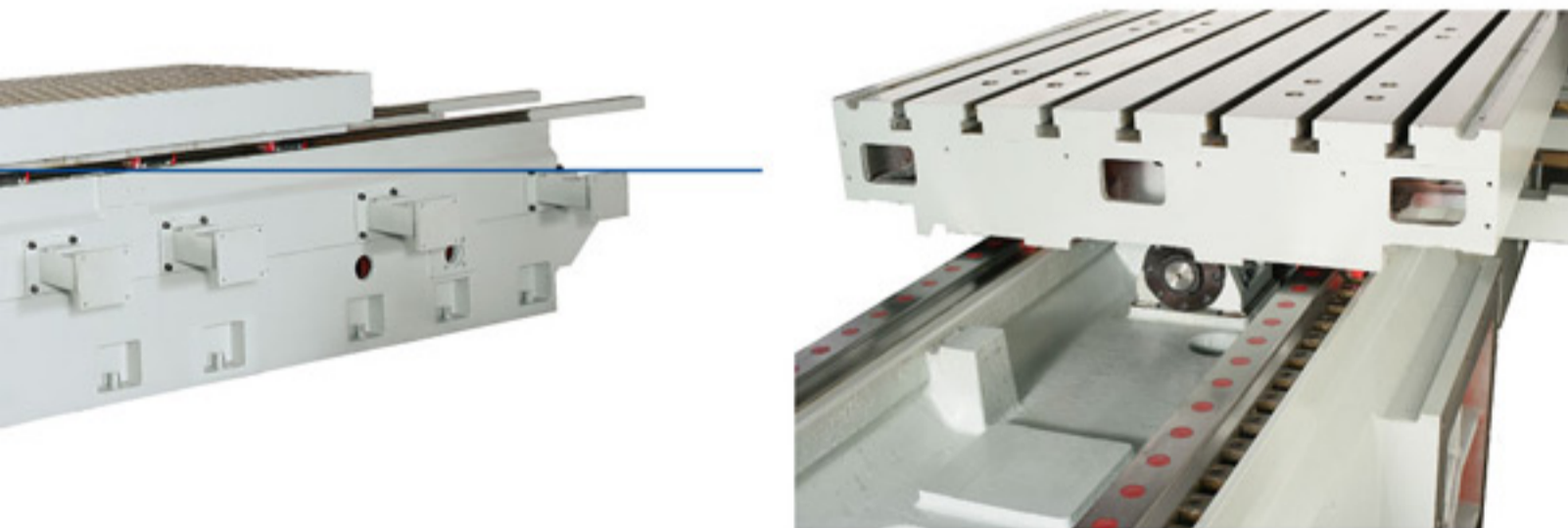
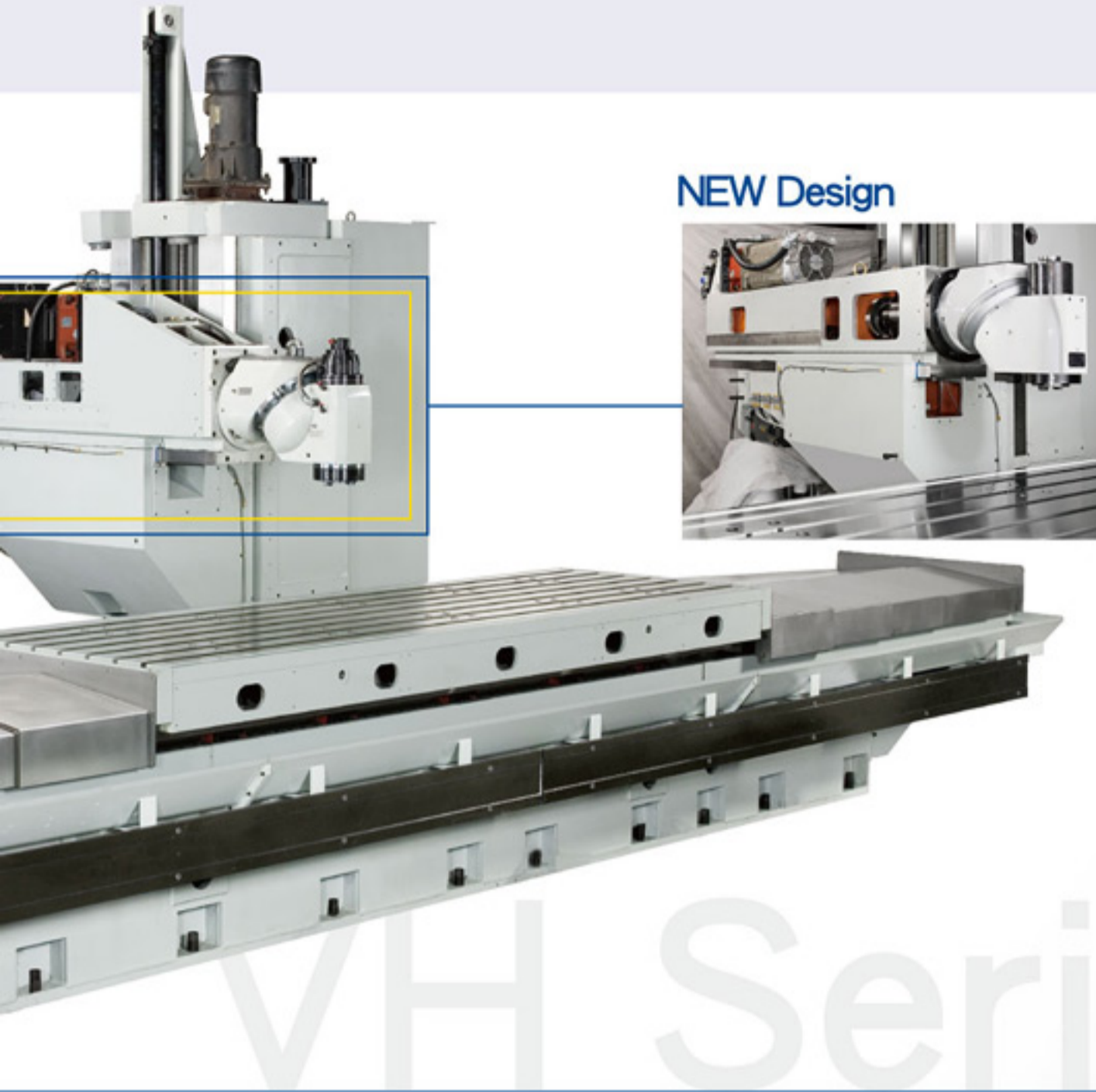
The overall sturdy design ensures stability, torsional rigidity and extremely high table load options.

All of the large components as base, column, saddle, ram as well as table are made from heavily ribbed Meehanite cast iron.



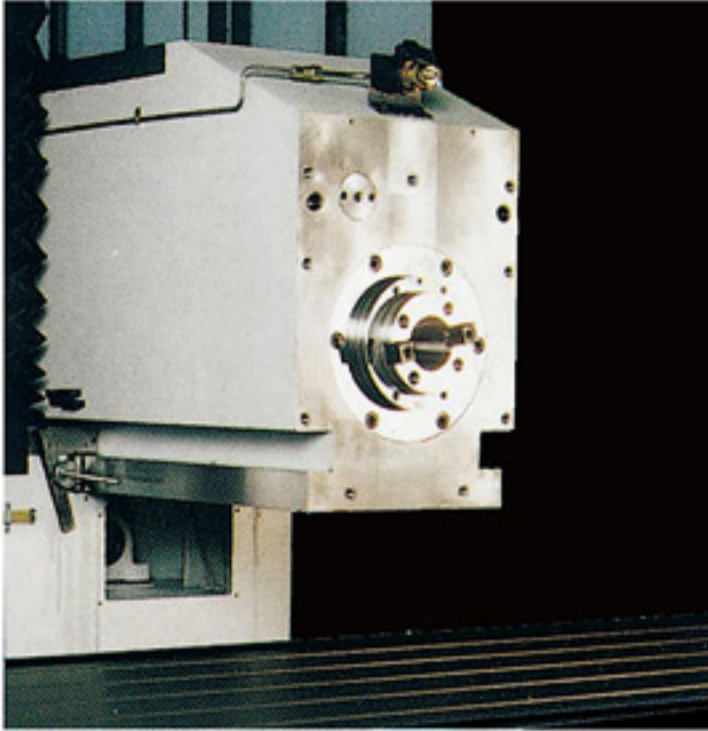
- Pre-Loaded & pre-tensioned being designed on ballscrew make sure machine accuracy into stable and long term kept.

NEW Design



- Roller' s block plus Linear Guide way on X-axis. Low friction. Larger capacity keep very good "Rigid" and "Positioning" as movement.

## Standard horizontal spindle



A powerful AC motor in connection with the automatic 2-steps transmission generates high torques at the spindle.

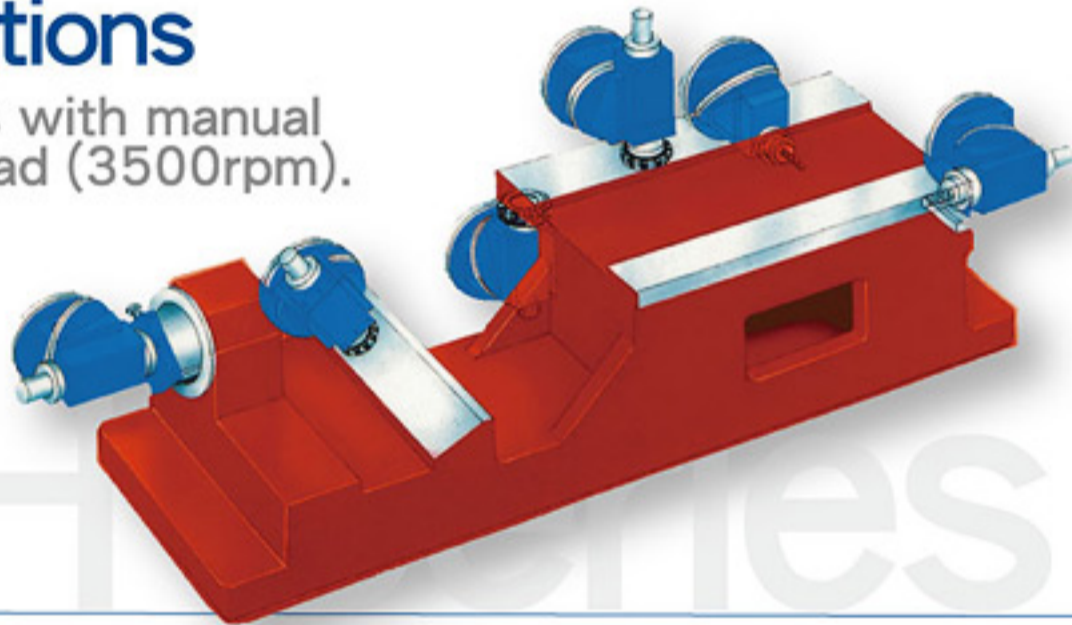
Work spindle speeds and rotating direction are directly selected or programmed via the control.

The standard equipment VH 2000L up to VH 3500L offer a generously dimensioned horizontal spindle with four bearings and a front bearing diameter of 90 mm, tools are held with a force of 32000kN.

Consequently, ultra high machining forces can be reached without any problems.

## Applications

Applications with manual universal head (3500rpm).



## Automatic two positions milling head (3500RPM)

Vertical

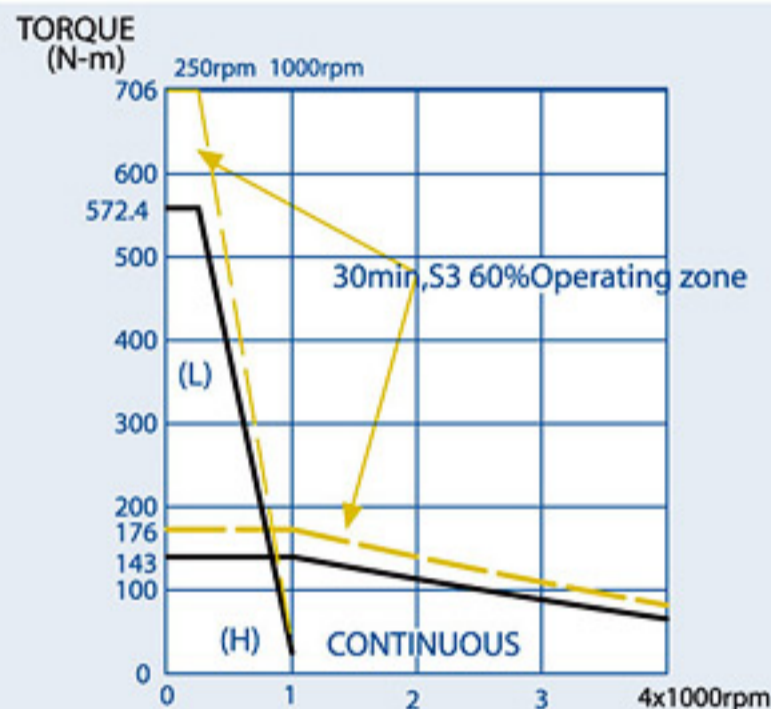
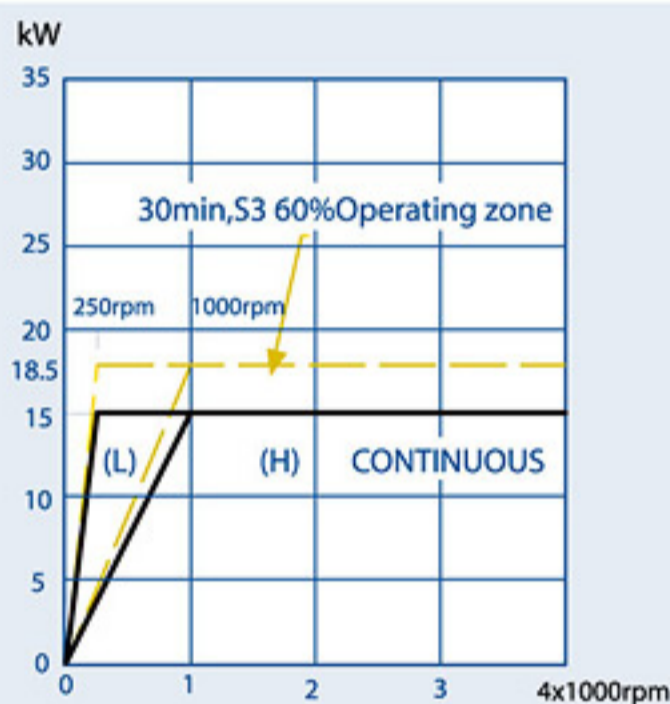


Horizontal



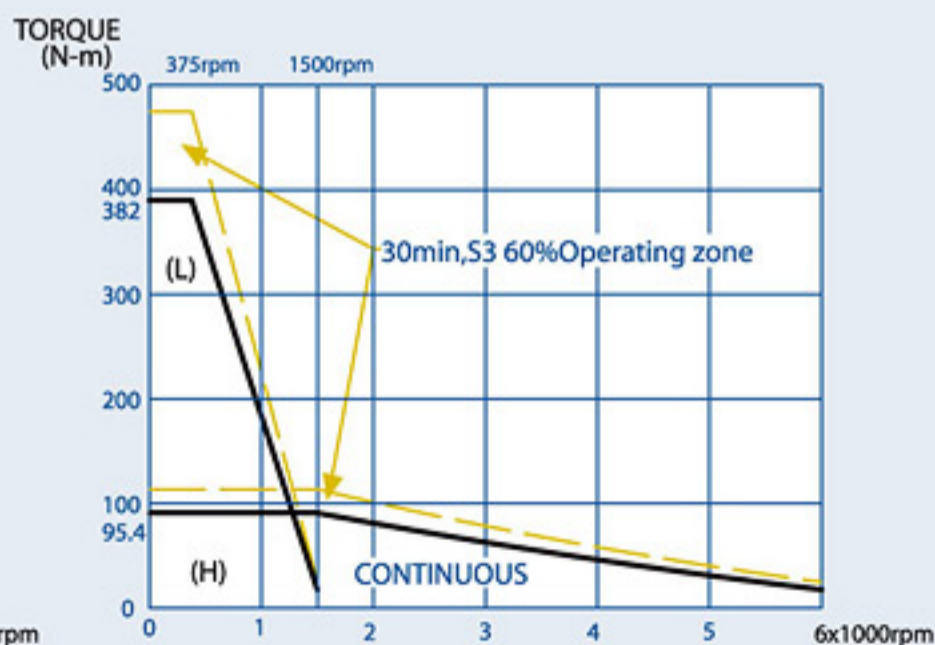
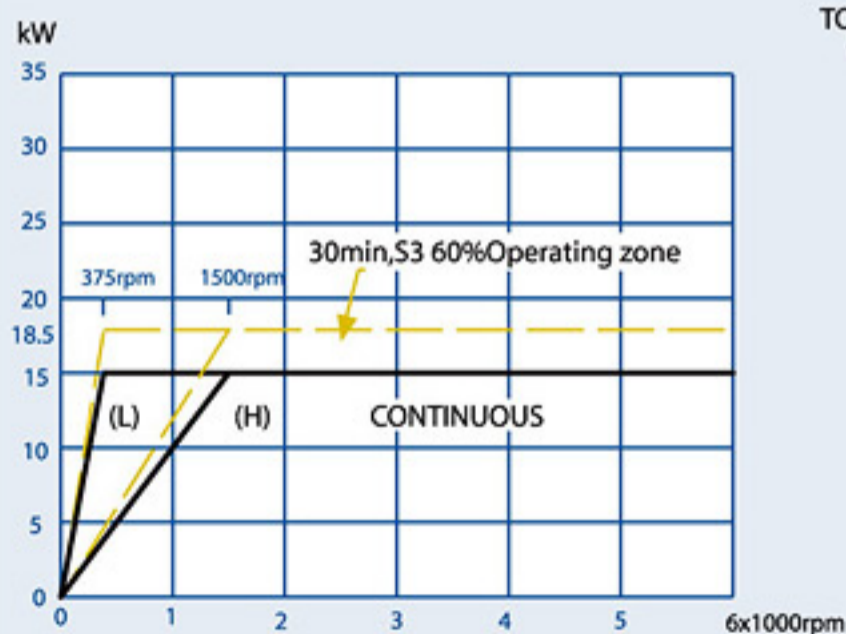
# FANUC i Series Spindle Motor Power & Torque Diagram

## ◇ (VH-2000L/2600L/3000L/3500L) SPINDLE 4000RPM ◇



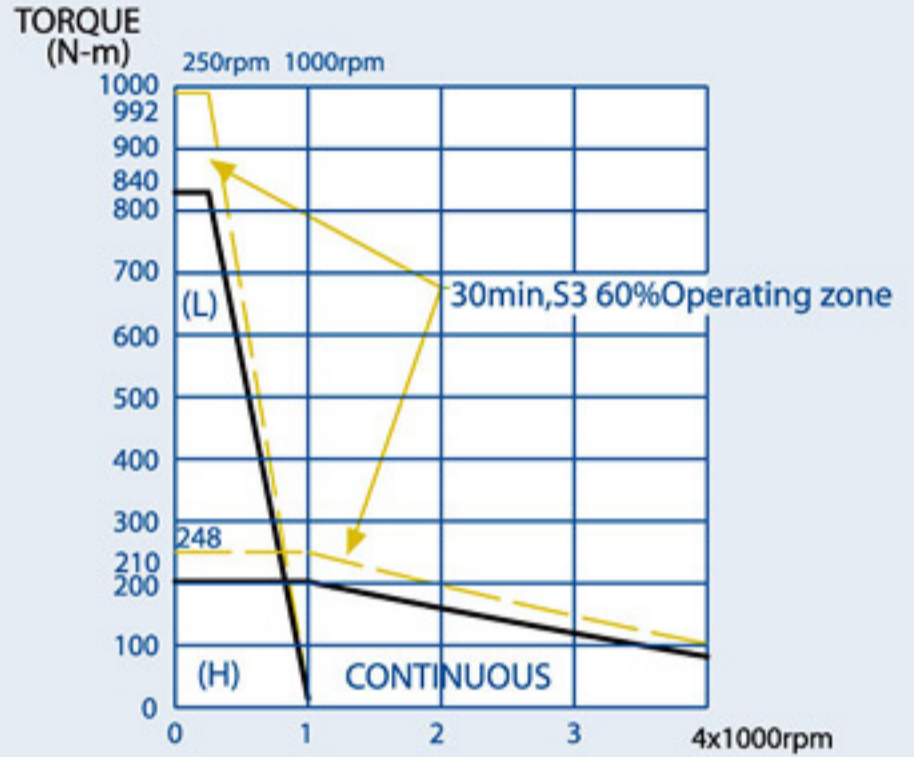
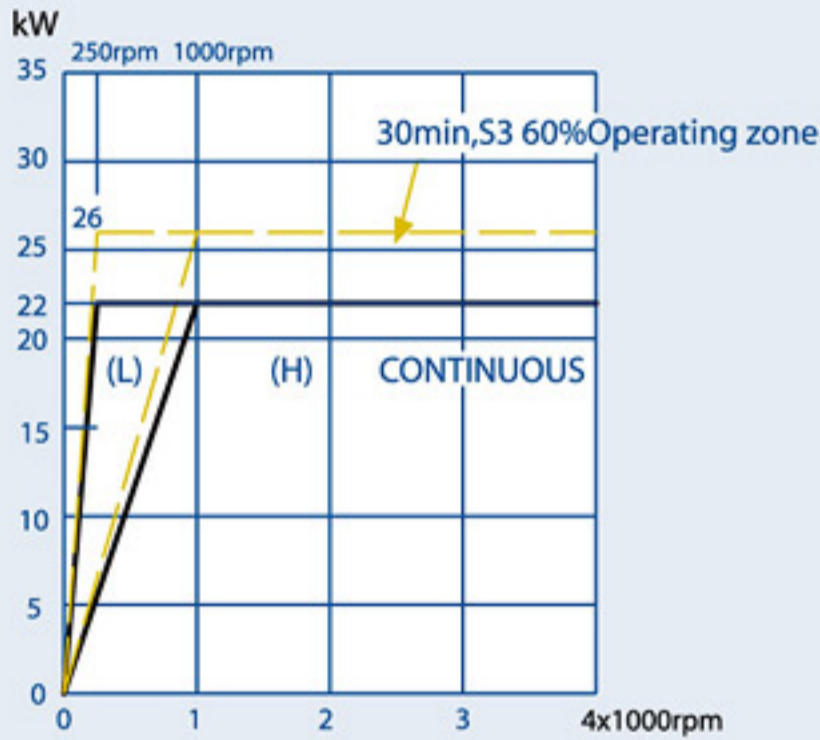
15/18.5kW spindle motor with Z.F. 2k250 gear box (FANUC α 15i)

## ◇ (VH-2000L/2600L/3000L/3500L) SPINDLE 6000RPM ◇



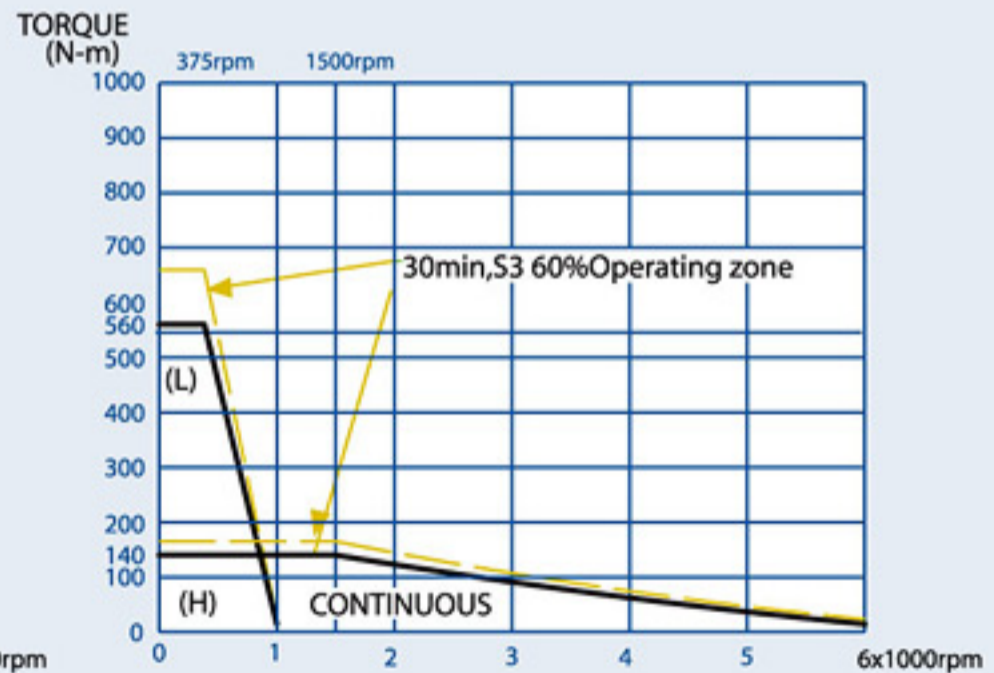
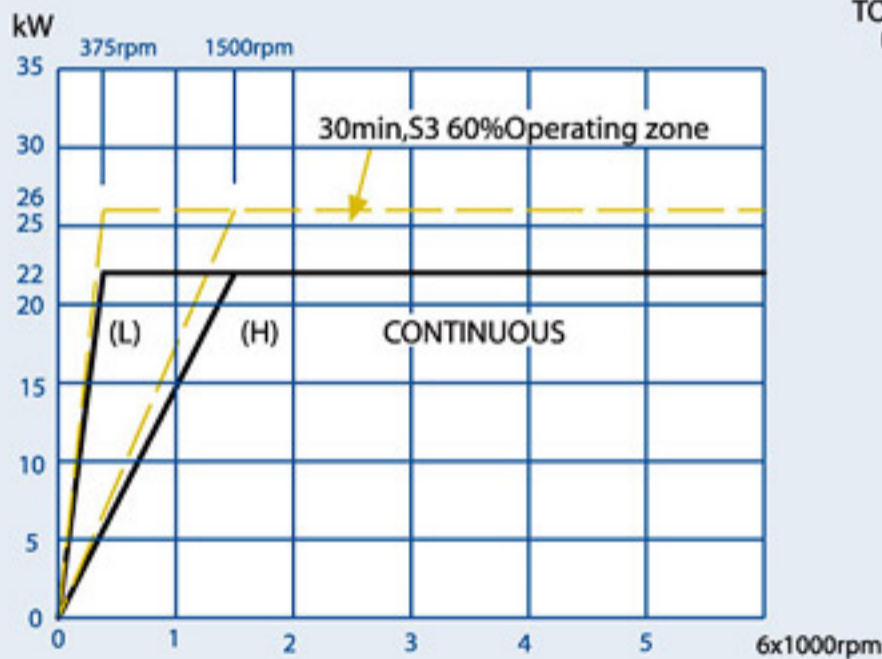
15/18.5kW spindle motor with Z.F. 2k250 gear box (FANUC α 15i)

◇ (VH-2000L/2600L/3000L/3500L) SPINDLE 4000RPM ◇



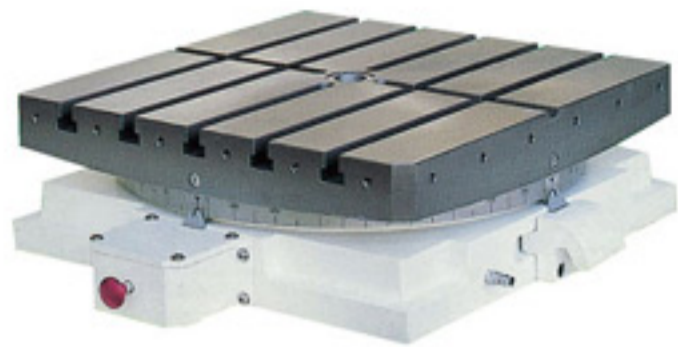
22/26kW spindle motor with Z.F. 2k250 gear box (FANUC  $\alpha$  22i)

◇ (VH-2000L/2600L/3000L/3500L) SPINDLE 6000RPM ◇



22/26kW spindle motor with Z.F. 2k250 gear box (FANUC  $\alpha$  22i)

## OPTIONAL ACCESSORIES



- ◇ Manual Indexing Table With Various Size.



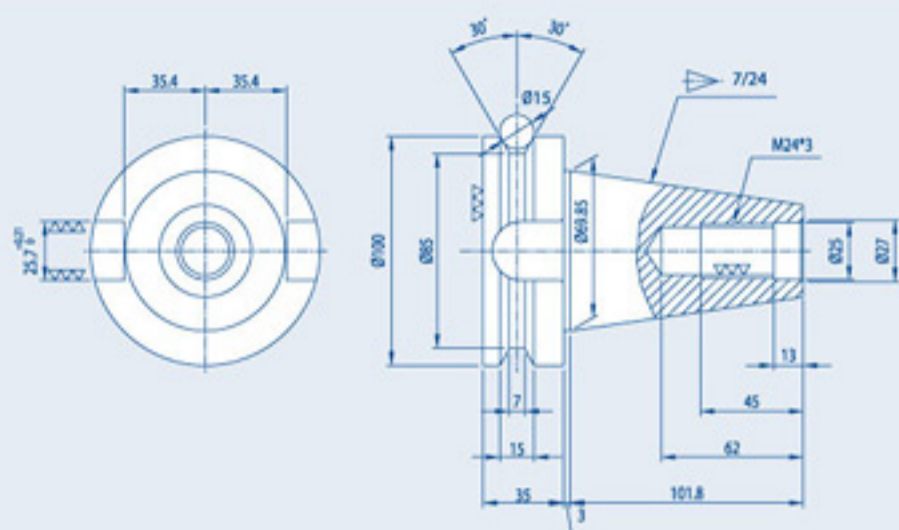
- ◇ CNC Indexing Table With Various Size.



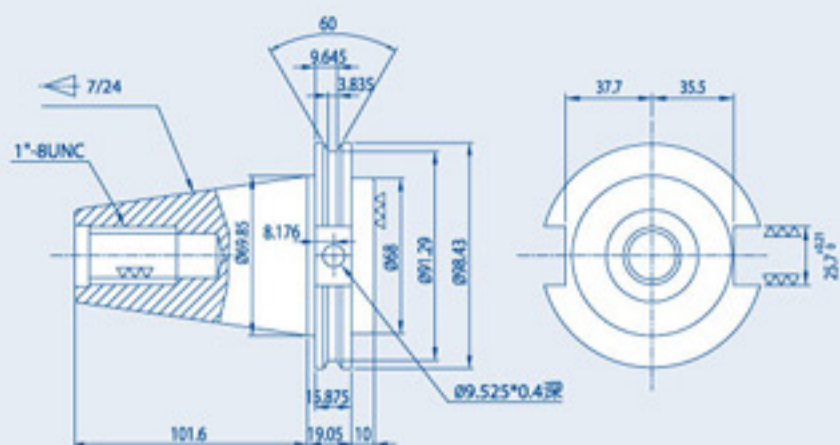
- ◇ 24 Position Swing ARM Automatic Tool Changer for " Vertical" .

## ◇ SPINDLE TAPER CHOICES ◇

### BT 50

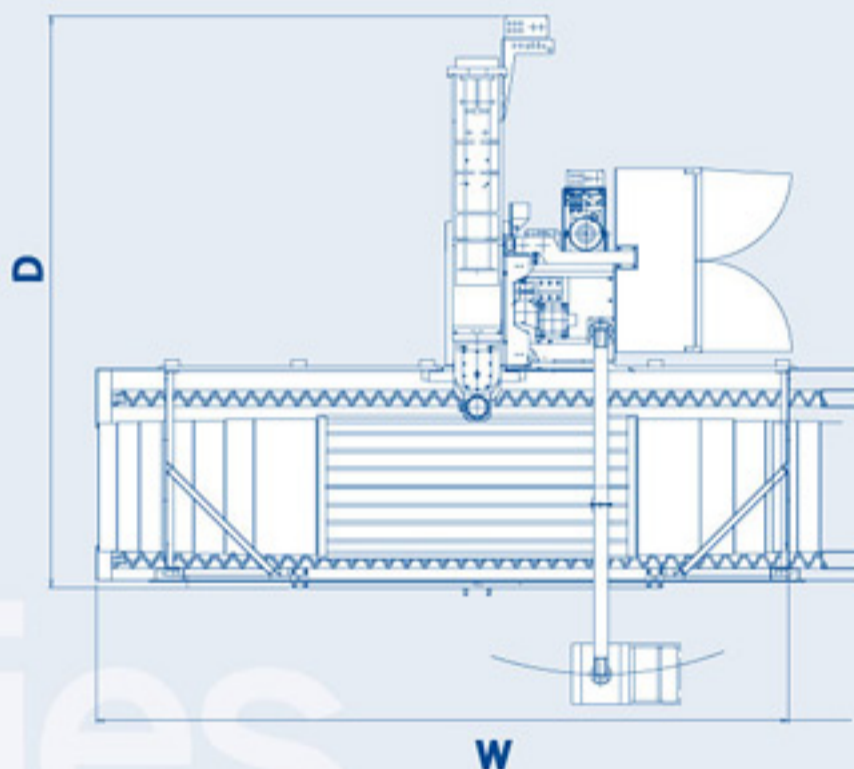
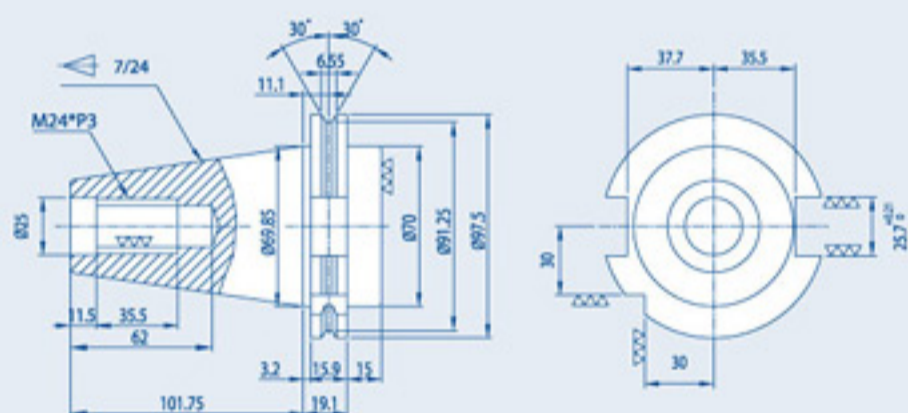


### CAT 50



### DIN 50

### Top View



## ◇ FLOOR SPACE ◇

Unit:mm

	WIDTH	DEPTH	HEIGHT
VH-2000L	5300	4510	3530(Y-axis: 1200) 3875(Y-axis: 1500)
VH-2600L	6560		
VH-3000L	7060		
VH-3500L	8460		

## Optional Accessories:

6000 rpm spindle(BT-50)

Linear Scale

C.T.S Form A

C.T.S to filter system

Oil mist

Manual 90° angular head

A.T.C with 24 tools magazine(BT-50)

Auto tool length measurement (A.T.L.M)

Auto tool setter Renishaw TS-27

Rotary table with 4th axis control

Air conditioner in cabinet

DNC link software

Transformer

## Various type of controller



◇ FANUC



◇ SIEMENS



◇ HEIDENHAIN

## ◇ MACHINE SPECIFICATIONS ◇

MODEL	UNIT	VH-2000L	VH-2600L	V-3000L	VH-3500L
<b>Table</b>					
Working Area	mm	2100x1000	2700x1000	3100x1000	3600x1000
T Slots (size x no)	mm	22H8 x 7 slots			
Distance From Floor To Table Top	mm	1005			
Max. Loading	kg	5000	6000	7000	8000
<b>Travel(Horizontal w/o optional milling head)</b>					
X Axis	mm	2000	2600	3000	3500
Y Axis	mm	1200(1500)			
Z Axis	mm	1000			
<b>Horizontal Spindle</b>					
Taper		DIN69871/BT50			
Speed	rpm	4000(6000)			
Max. Power Output	kW	15/18.5(22/26)			
<b>Freedrate</b>					
Cutting	mm/min	1-5000			
Rapid	m/min	10000			
<b>Ballscrews</b>					
X Axis Dia.x Pitch	mm×mm	∅63x10	∅63x10	∅63x10	∅63x10
Y Axis Dia.x Pitch	mm×mm	∅50x10			
Z Axis Dia.x Pitch	mm×mm	∅50x10			
Precision	mm/mm	0.008/300			
<b>Accuracy</b>					
Positioning	mm	ISO 3070-2 X axis : 0.02 YZ axis : 0.015			
Repeatability	mm	ISO 3070-2 X axis : 0.015 YZ axis : 0.011			
Roundness	mm/dia	0.02/300 X,Y			
<b>General</b>					
Machine Net Weight	kg	1500	16000	18800	20000
Pneumatic Required	kg <sup>2</sup> /cm	6			
Hydraulic Required	kg <sup>2</sup> /cm	3.5			
Power Required	kVA	40kVA	45kVA	45kVA	50kVA

### Standard accessories

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Programmable coolant system.</li> <li>2. Automatic lubrication system.</li> <li>3. Spindle air blast system<br/>(only available with STD spindle head)</li> <li>4. Indication lamp for dwell &amp; end of job.</li> <li>5. Working lamp.</li> <li>6. Levelling bolts &amp; pads.</li> </ol> | <ol style="list-style-type: none"> <li>7. RS-232 terminal interface port.</li> <li>8. Tool box.</li> <li>9. Automatic power off.</li> <li>10. M.P.G</li> <li>11. Spindle coolant system.</li> <li>12. Splash guard.</li> <li>13. Three Axes Linear Scales.</li> </ol> |
|---|---|

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