

FAIR FRIEND • ENGINEERING • EXCELLENCE • LEADERSHIP • EXPERTISE • RELIABILITY



**HEADQUARTERS**  
No. 186, Yong Chi Road, Taipei, Taiwan.  
Tel: +886-2-2763-9696  
Fax: +886-2-2768-0636/37/39  
www.ffg-tw.com  
E-mail: chairom@fairfriend.com.tw

**FEELER**<sup>®</sup> FAIR FRIEND GROUP  
**FAIR FRIEND ENTERPRISE CO., LTD.**

**FEELER MACHINE TOOLS DIVISION**  
No. 12, Jingke Rd., Nantun Dist., Taichung City, Taiwan  
Tel: +886-4-2359-4075  
Fax: +886-4-2359-4873  
www.feeler.com  
E-mail: sales@feeler.com



Website



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# VFP *SERIES*

## Vertical Machining Center



# FEELER VFP SERIES

## New Generation Innovation Universal Machining Center

The VFP series is designed to face high performance machining challenges.

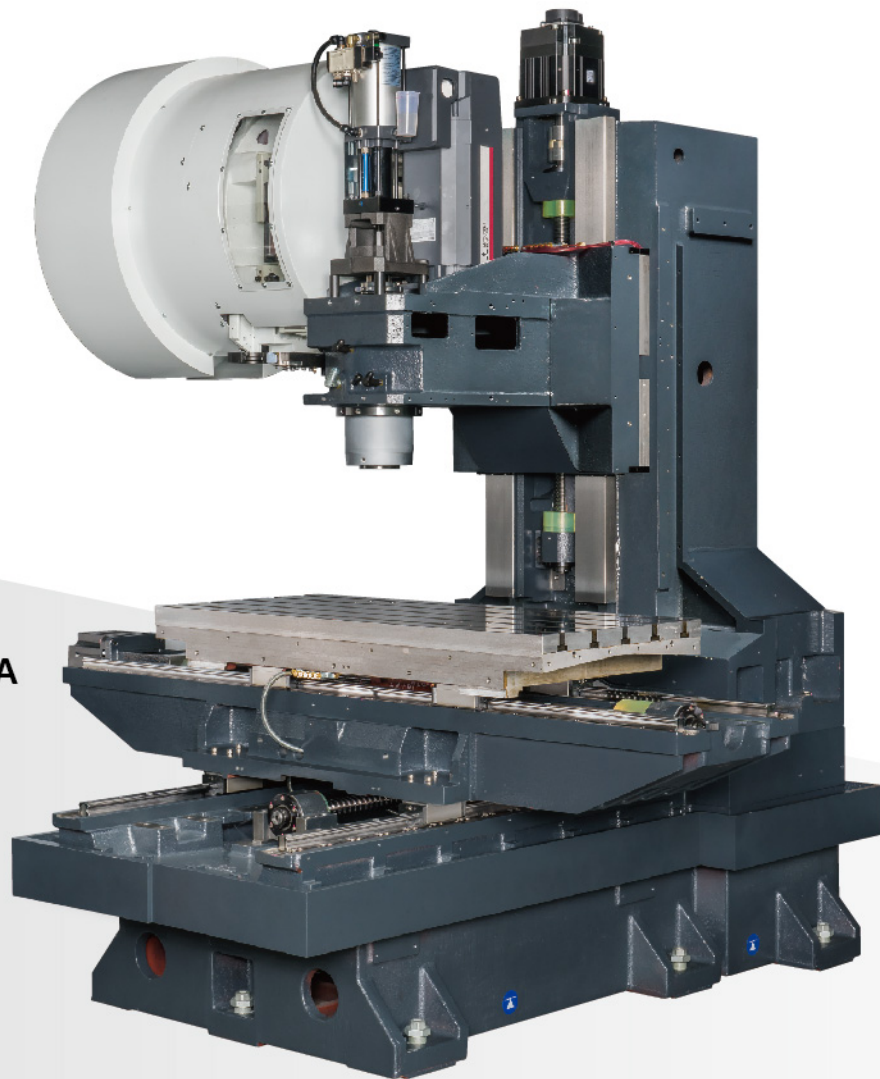
Automotive, Electronic, Aerospace and general purpose machining are suitable industries. The highly rigid structure design combines with the outstandingly quick ATC system and with the excellent chip conveying system. Creating the highest CP value to fit every customer demand.

Hardened & ground ball screws are precisely pre-tensioned and supported by 6 pcs angular contact thrust bearings.

The AC servo motor transmits power directly through coupling to ball screw without backlashes to ensure the best positioning accuracy.

X, Y axes are installed with high precision THK linear guide way and Z-axis is with box way. The hybrid structure is designed to handle fast cutting and heavy duty cutting perfectly.

■ VFP-800A/1000A



■ VFP-800/1000A

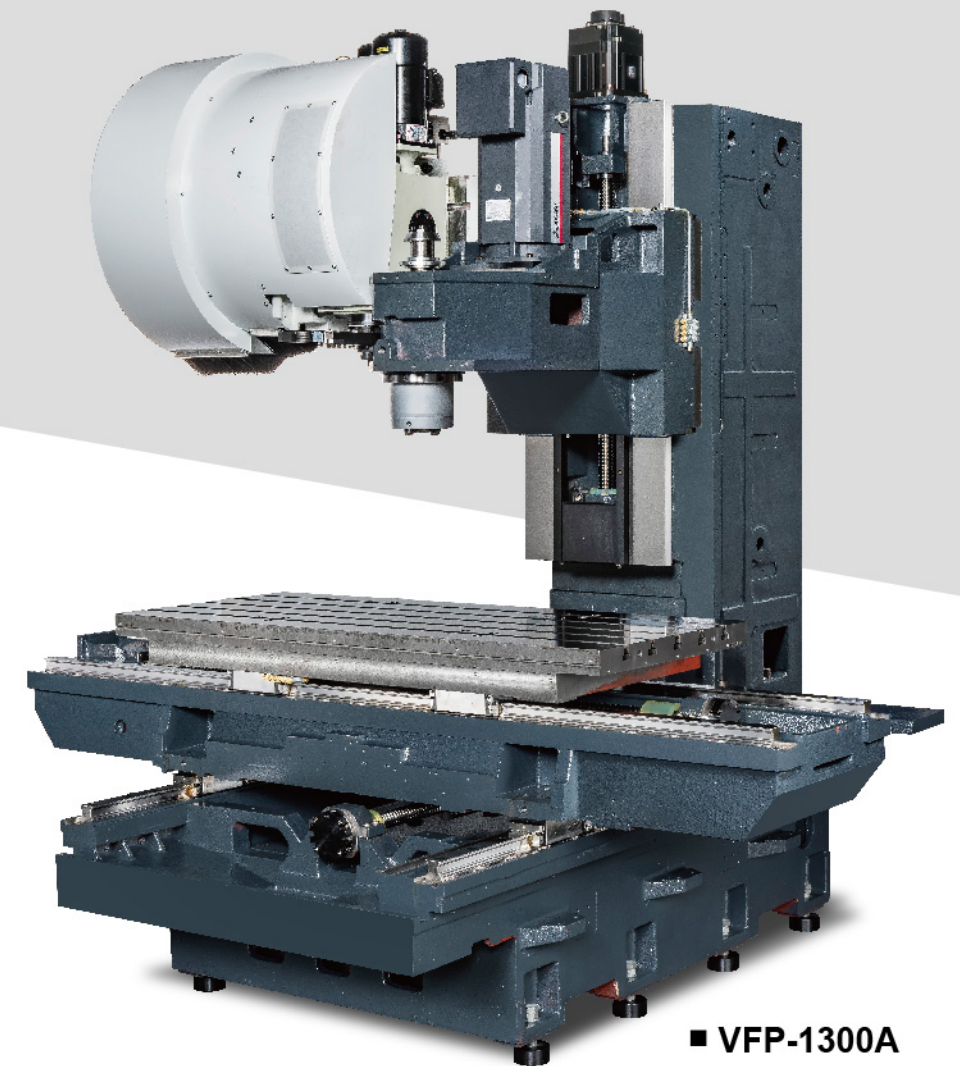
**Perfected Structure Design Brings You  
Excellent Accuracy, Rigidity and Stability!**



**Creating A Standard in Machining Efficiency.  
Stable, Rigid Machine Structure.**



■ VFP-1300A



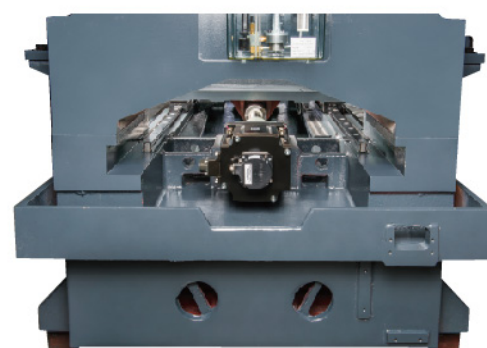
■ VFP-1300A

- All casting designs were subjected to Finite Element Method ( FEM ) analysis, to ensure the best rigidity of every components.
- The massive & high rigid ribbed construction provides stable cutting and enhances the finishing cutting performance
- Rib reinforced working table retracts vibration while increasing machining stability.
- Wide column, machine base and large saddle to get maximum cutting rigidity.
- The machine structure and major parts are manufactured with Meehanite cast iron for outstanding material stability and longterm deformation-free performance.
- Boxways for Z axis are coated with low friction Turcite B, enhancing the cutting rigidity.

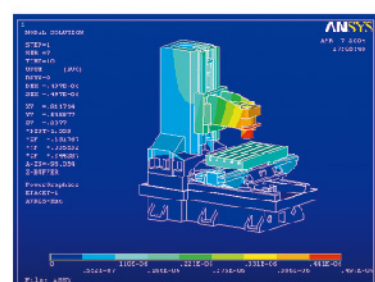




- Fast ATC system T to T 1.7 Sec / 60Hz
- All series are standard with 24T or 30T(OPT.) arm type ATC system to easily fulfill various types of processing needs.
- Rigid clamping force to eliminate the risk of tool dropping.

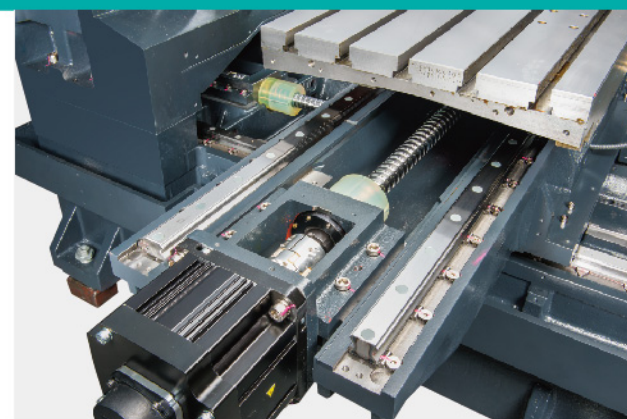


**Rear mounted Y-axis servo motor for increased maintenance space.**

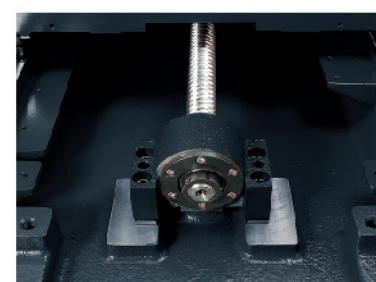


#### FEM ANALYSIS

FEELER'S machine structure is designed and analyzed using advanced Finite Element Analysis software for dynamic simulation and structural analysis. This design method assures optimum structural rigidity, machine accuracy and reliability.



Transmission without backlash and power lost servo motor transmit power to ball screw through precision coupling.



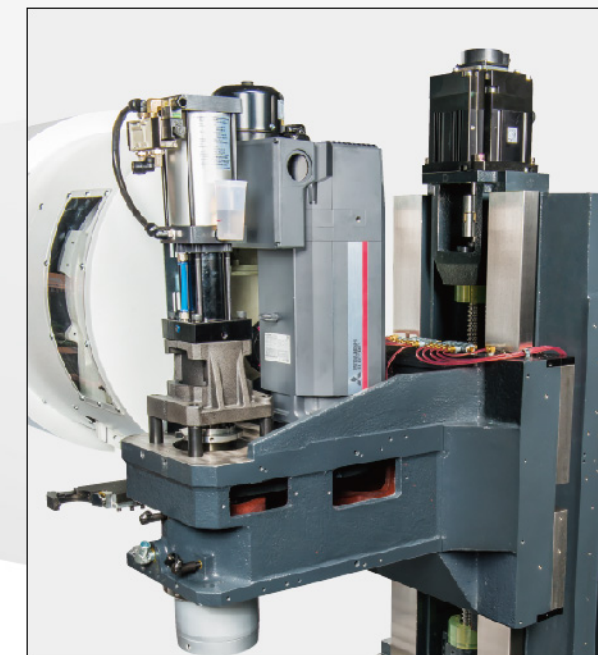
#### PRECISION BALLSCREWS

Pretensioned ballscrews on X, Y, Z axes ensure accuracy and eliminate positioning errors.

## Pragmatic Operational Features

### BELT DRIVE SPINDLE-STD

- The high torque belt type spindle provides 10,000 rpm spindle speed as standard or 12000 rpm as optional.
- The spindle is equipped with FANUC  $\alpha$  8i motor to provides maximum output of 11 kW ( 15 HP ).
- 6 bearings support to get excellent cutting finish, extend spindle life and lower maintenance cost.
- The spindle head and column contact surfaces is contact by Turcite B through precisely hand scraping to assure the best accuracy and optimum machining performance.

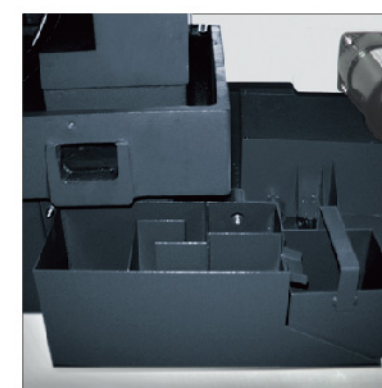


### DIRECT DRIVE SPINDLE (DDS)-OPT (VFP-800/1000)

- 10000, and 12000 rpm.
- Less vibration under high speed cutting.



**Coolant Tank**



### OIL / COOLANT SEPARATION DEVICE (VFP-800/1000)

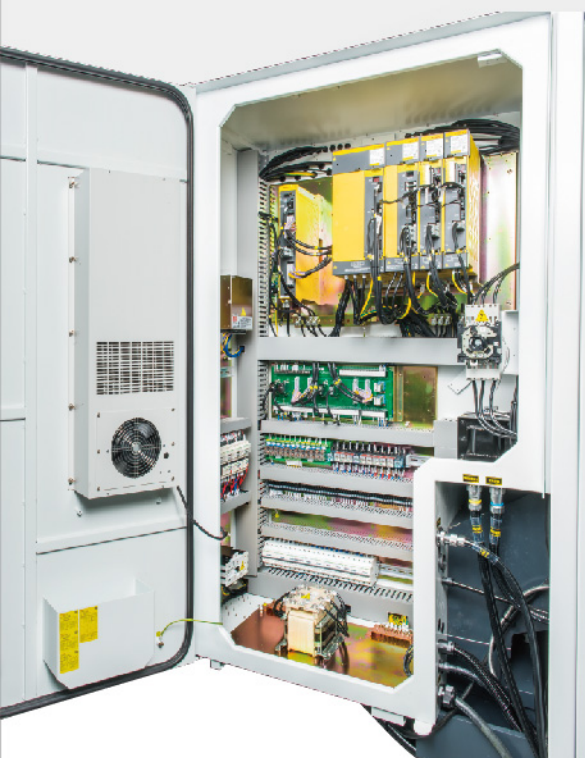
Mounted at the side of the base, the oil / coolant separation device does not require additional leveling adjustment.



- All series are standardly equipped with screw type chip conveyor. Each model can be equipped with single screw or triple screw type chip conveyors according to the customer need.
- Ideal coolant flow design to remove chip efficiently.
- The optional extra high pressure high volume chips flush coolant system is also available.



## Various Advanced CNC Controllers to Choose From



The hang type control panel and spacious operating area provide an ergonomic working environment.

The servo system can be adjusted and optimized according to the signals from each axis movement. This provides:

- Increased servo system rigidity.
- Reduced machine vibration.
- Reduced machining time.
- Optimization for acceleration/deceleration time before and after interpolation.



**FANUC Oi SERIES**



**MITSUBISHI M80**

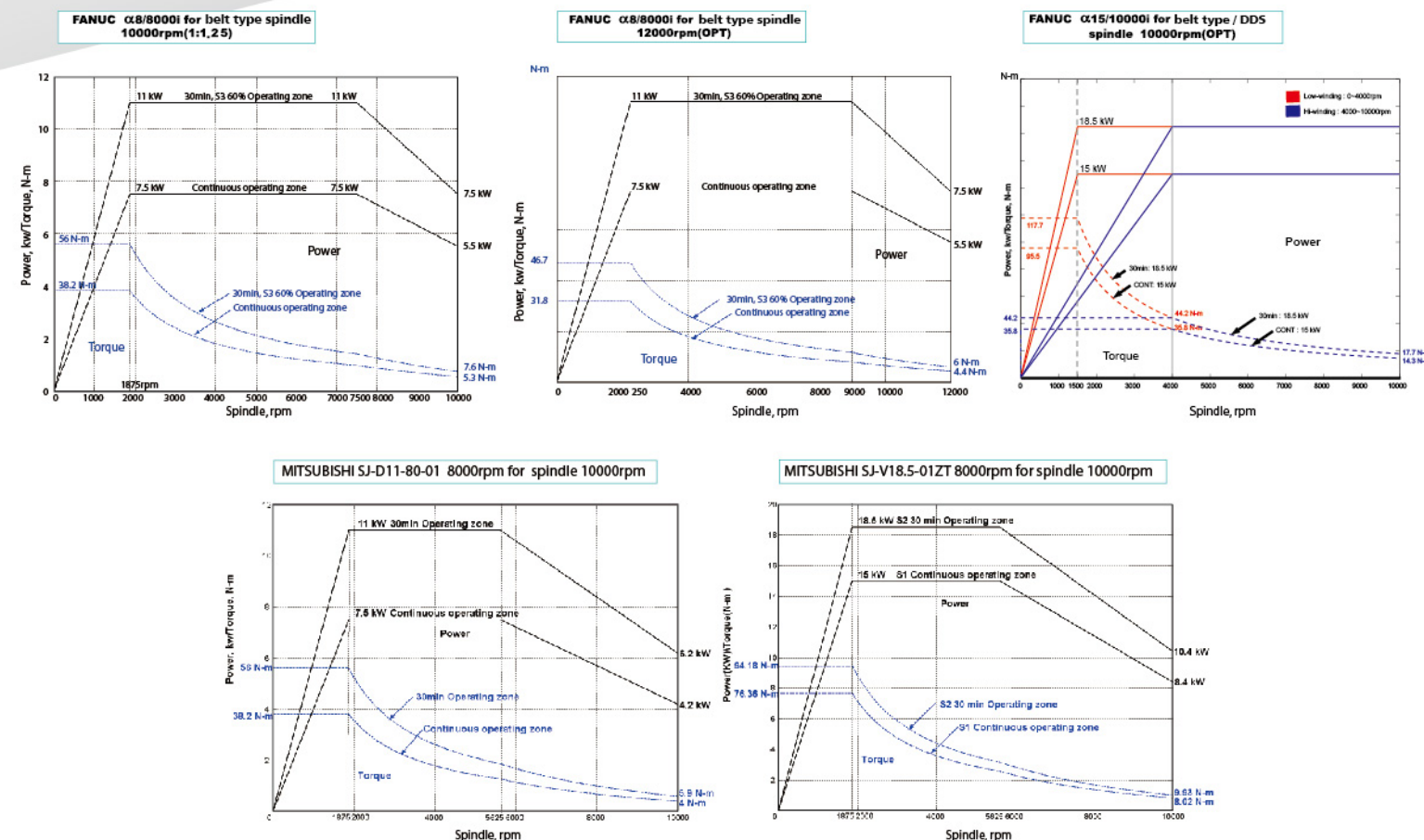


**HEIDENHAIN  
iTNC 530**



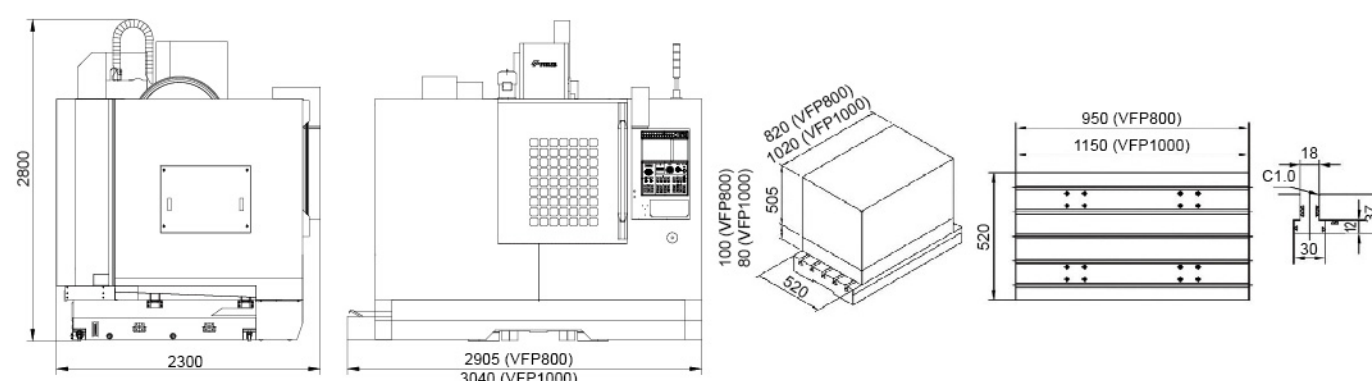
**SIEMENS 828D**

## SERVO SYSTEM ADJUSTMENT AND OPTIMIZATION

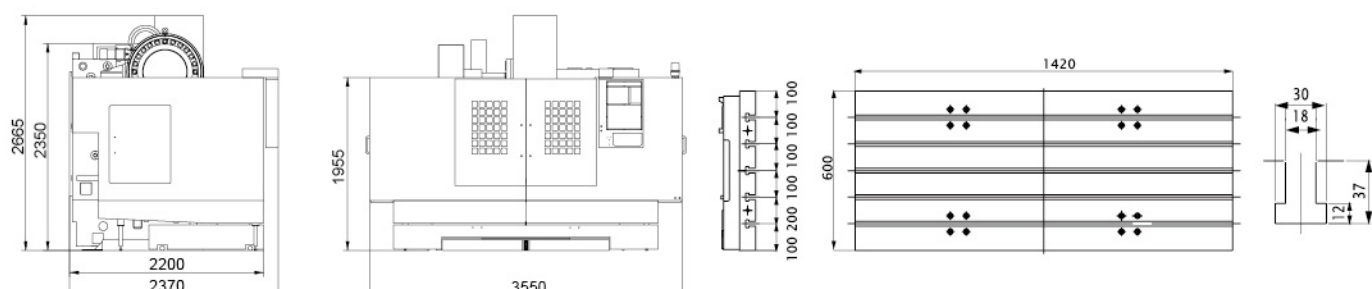


## Machine Dimensions, Table Dimensions and Working Capacity

**VFP-800 / 1000**



**VFP-1300**





## MACHINE ACCESSORIES

	VFP-800A	VFP-1000A	VFP-1300A
Enclosed Splash Guard	●	●	●
Work Light	●	●	●
3-Color Signal Light	●	●	●
Rigid Tapping	●	●	●
3-Axis Pro-Tensioned Ball Screw	●	●	●
Spindle Air Sealing	●	●	●
Automatic Lubrication System	●	●	●
Outside Air Blast	●	●	●
RS232	●	●	●
Ethernet Interface	●	●	●
Spindle Air Blast	●	●	●
Front Side Ship Flushing System	●	●	●
Oil-Water Separator	●	●	N/A
Spindle Coolant Nozzle	●	●	○
Air Gun Interface	●	●	○
24T Nos. ATC	●	●	●
30T Nos. ATC	○	○	○
Dust-Proof Electrical Cabinet	●	●	●
Heat Exchanger	●	●	●
Air Condition	○	○	○
Spindle Speed 10000 rpm(Belt-Steel Bearing)	●	●	●
Spindle Speed 12000 rpm(Belt-Ceramic Baring)	○	○	○
Spindle Speed 8000/12000/15000 rpm(DDS)	○	○	N/A
Oil Skimmer	○	○	○
Coolant Gun	○	○	○
Chip Flushing System	○	○	○
Spindle Oil Cooler	○	○	○
CTS Interface	○	○	○
C.T.S with Filiter System(top roof must included)	○	○	○
Top Roof	○	○	○
Linear Scale	○	○	○
Screw Type Chip Conveyor-Left/Right Side Discharge & Chip Bucket	○	○	○
Chip Conveyor-Left/Right Side Discharge & Chip Bucket	○	○	○
4th Axis Interface	○	○	○
Auto Tool Length Measurement	○	○	○
Auto Workpiece Measurement	○	○	○

●:Standard ○: Optional N/A: Not available

## MACHINE SPECIFICATIONS

Model	Unit	VFP-800A	VFP-1000A	VFP-1300A
Travel				
X Axis Travel	mm	820	1020	1300
Y Axis Travel	mm	520	520	610
Z Axis Travel	mm	505	505	560
Spindle Nose To Table Surface	mm	100-605	80-585	125-685
Spindle Center To Column Surface	mm	560	560	640
Table Surface To Floor	mm	920	940	910
Table Center To Column Surface	mm	300-820	300-820	320-930
Table				
Table Dimension	mm	950x520	1150x520	1420x600
Max.loading Wetght	kg	800	800	1500
T-slots (Wxno.xp)	mm	18x5x100	18x5x100	18x5x100
Spindle				
Spindle Speed	rpm	10000	10000	10000
Spindle Taper		7/24 taper NO.40	7/24 taper NO.40	7/24 taper NO.40
Dia. Of Spindle	mm	Ø 70	Ø 70	Ø 70
Spindle Motor	kw	7.5/11	7.5/11	15/18.5
Feedrate				
Rapid Traverse X Axis	m/min	36	36	32
Rapid Traverse Y Axis	m/min	36	36	24
Rapid Traverse Z Axis	m/min	30	30	24
Automatic Tool Changer				
No. Of Tools		24	24	22 (24)
Pull Stud		P-40T (45°)	P-40T (45°)	P-40T (45°)
Max. Tool Weight	kg	8	8	8
Max. Tool Length	mm	300	300	300
Max. Tool Diameter	mm	Ø 80	Ø 80	80
Max. Tool Diameter (No Adjacent Tool)	mm	Ø 150	Ø 150	150
Tool Changing Time (Tool To Tool)	sec	1.7	1.7	1.7 sec
Floor Space	mm	2905×2300	3040×2300	3550×2370
Machine Weight	kg	5800	6300	7100
Max. Machine Height	mm	2800	2800	2665
Power Capacity	KVA	30	30	30
Air Source	bar	6~8	6~8	6~8

