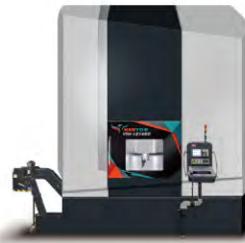
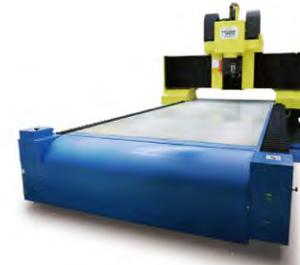
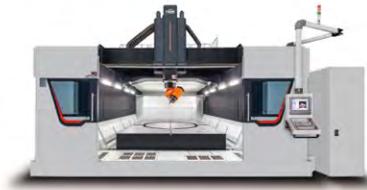


**VISION WIDE**  
High Efficiency Machining Center  
***JOURNAL***

**SYNERGI WORK X INC.**  
Inquiries: [info@synergiworkx.com](mailto:info@synergiworkx.com)



**SYNERGI WORK X INC.**



## Leadership of High Precision & Large Machine Manufacturing

| High Precision & large machine manufacturing | High Speed Machining | 5-Face Machining | 5-Axis Machining |

| Mill-Turn Machining | Composite Materials Machining |

Heavy Duty on  
Structure Machining

Precision & Speedy  
Mold & Die Machining

Aluminum & Composite  
Materials

01 | Towards Global Manufacturing

03 | Advanced Production Base

05 | Total Solution Provider for Advance Manufacturing Challenge

09 | CNC Talkbox

11 | Continuous 2-axis Head

13 | Auto Multi-Angle Head Attachment

### *5-Axis Machining*

17 | *ASM SERIES*

19 | *FA SERIES*

21 | *GSF SERIES*

23 | *ADM SERIES*

25 | *UC SERIES*

### *High Speed Machining*

29 | *SE SERIES*

31 | *GS SERIES*

33 | *GSA SERIES*

### *Multi-Angle Machining*

37 | *VB / VF SERIES*

39 | *SM SERIES*

41 | *SF SERIES*

43 | *NF / HF SERIES*

45 | *NFT SERIES*

### *Mega Workpiece Machining*

49 | *BM SERIES*

51 | *HFL SERIES*

52 | *HFM SERIES*

53 | *XM / XML SERIES*

55 | *XMF / XMS SERIES*

### *Vertical Turning Milling Lathe Machining*

59 | *VT / VTM SERIES*

### *Horizontal Machining*

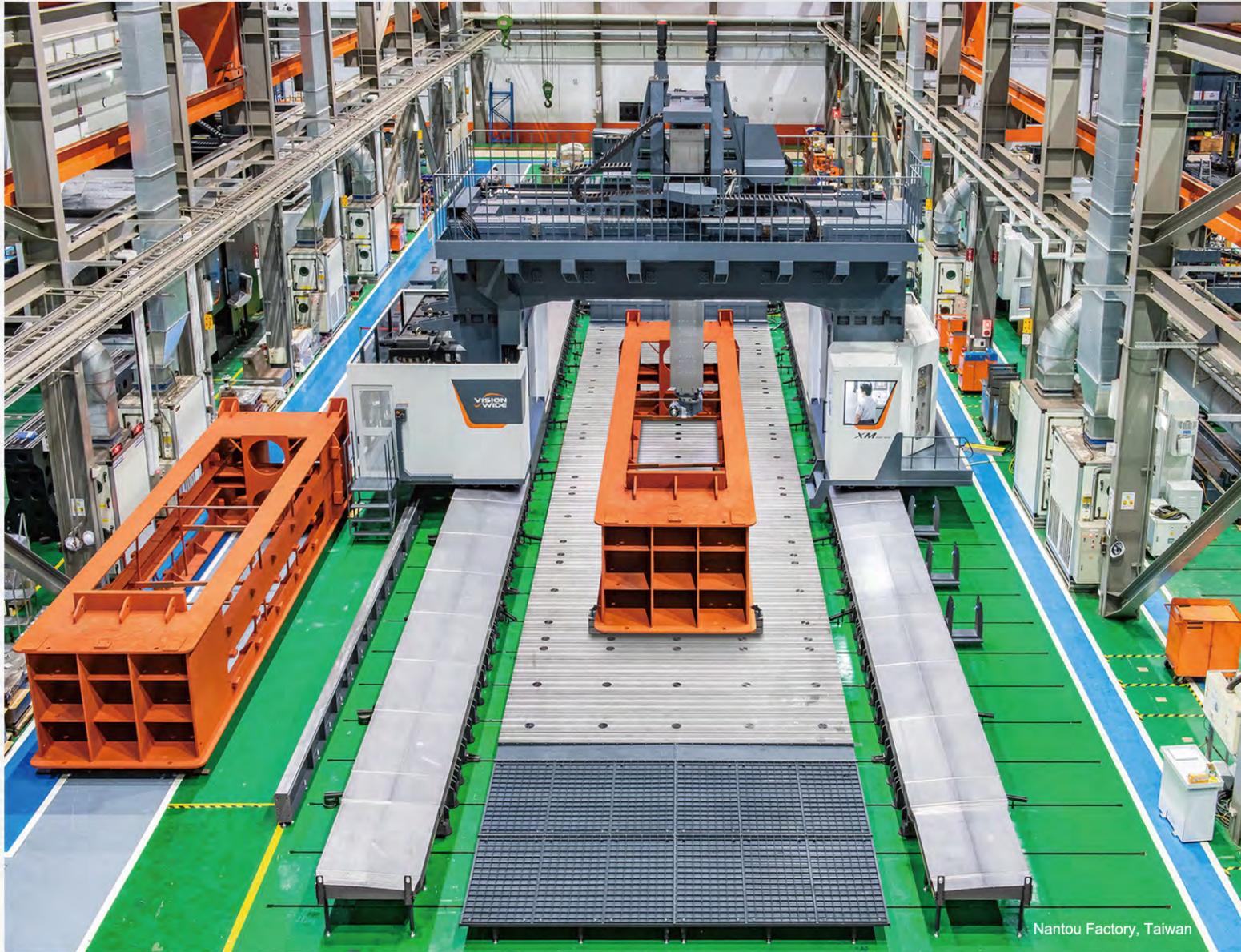
63 | *VHM SERIES*

65 | *VHT SERIES*

67 | *VBE SERIES*

69 | *VBT SERIES*

71 | *VBH SERIES*



Nantou Factory, Taiwan

Achieve Vision for  
High Precision &  
Large Machine  
Manufacturing

**VISION  
WIDE**  
Solution . Satisfaction . Smile

Solution . Satisfaction . Smile

## Towards Global Manufacturing



- Advanced manufacturing plant with constant ambient temperature and humidity and high-precision technology is built as the global development & application center and the experimental plant for consistently improving our capabilities.
- Continuously expanding precise manufacturing base for large-scale machine tool.
- Continuously developing high precision, high efficiency and high reliability large-scale CNC equipment.
- Promoting intelligentized and automated product services for customer.
- Implementing close cooperation between customer demand and localized production.
- Training up the local talents of high-level applications and services for products service capability enhancement.

Towards Global  
Manufacturing

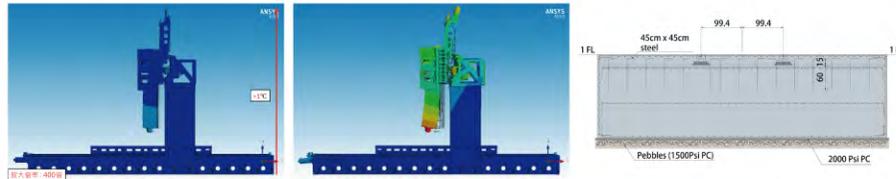
# Thermo-Static System

Whole factory central air conditioners



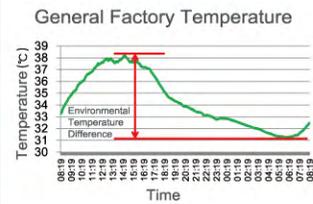
## Advanced Production Base

- Thermostatic manufacturing environment: temperature control within 1°C tolerance.
- High Rigidity Structure Foundation : 12 ton/m<sup>2</sup> Bearing Capacity.

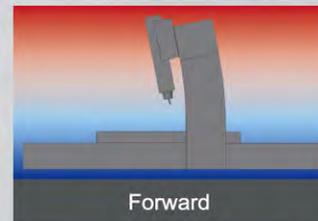
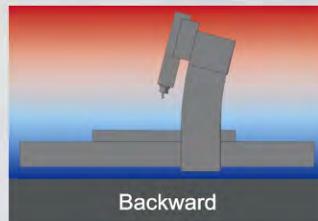


Manufacturing Fundamentals of Large-Scale Precision Machine

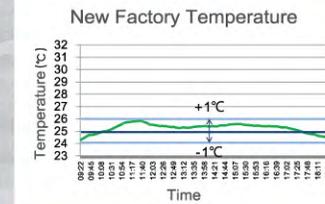
## Influence of Ambient Temperature



General Factory Full Day Ambient Temperature Difference Up to 6°C or more

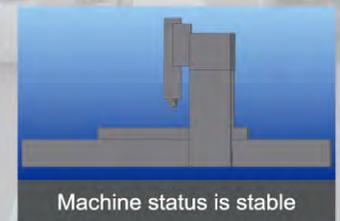


1. As the plant's ambient temperature changes, the machine will have deformations of forward and backward.
2. Different assembling datum changes with time.
3. Assemblage quality cannot be ensured.



Product environment is controlled within 1°C tolerance.

Building large machine tool in a steady environment with all time permanent accuracy.



1. Stable ambient temperature control.
2. Consistent assembled datum at any times.
3. Provide stable quality of machine assembly.

Solution . Satisfaction . Smile

# Exquisite and Skillful Scientific Manufacturing Workmanship Full of Craftsman's Effort and Persistence



R&D experimental plant, continuous operating test



- Sliding face: 15~20 scraping spots, 70% contact rate
- Fixed face: 25~30 scraping spots, 70% contact rate



Precision Scraping



CMM accuracy  
inspection for components



Focus and  
Persistence

**Precision and High Speed Machining Application**

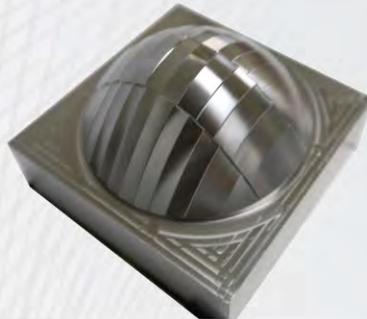
**High Speed Mold Surface Finishing  
Car Headlight Mold**

- L800 x W55 x H250 mm
- P20
- 12,000 rpm
- 4,000 mm/min
- Feature:
- Ra 0.4  $\mu$ m
- Contour Accuracy 0.04 mm



**Speedy Mold Surface Finishing  
Automotive Light Reflector Core**

- L160 x W160 x H100 mm
- NAK 80
- 12,000 rpm
- 1,500 mm/min
- Feature:
- Ra 0.4  $\mu$ m
- Contour Accuracy 0.02 mm



**Aerospace Aluminum Frame High Speed Machining (HSM)**

- L1425 x W680 x H70 mm
- Al6061
- 10,500 rpm
- 24,000 mm/min
- D25 endmill / Equal TEA path / Ap70mm
- Feature:
- Cutting efficiency 100 cc/kW  
( up to 200% increase in productivity)



**Landing Gear**

- L1,225 x W625 x H55 mm
- Al 6061
- Feature :
- Finished / row material ratio: 84%
- High-efficiency machining of D63 copy milling cutter
- 5 axis synchronized finishing with D20 end mill
- Side fillet machining with horizontal orientation
- One setup, Total finish time: 3hr.



**Case**

- D800 x H600 mm
- S45C
- Feature:
- Milling & Turning Machining:
- Inner and outer wall/ CW and CCW turning application.
- Fixed-angle inner cavity turning machining, reducing tool length and interference area.
- Powerful spindle, provides milling ability
- D40 face mill
- D32 indexable driller
- D20 end mill
- High precision machining
- Surface accuracy: 10um
- Hole positioning accuracy: 0.005°

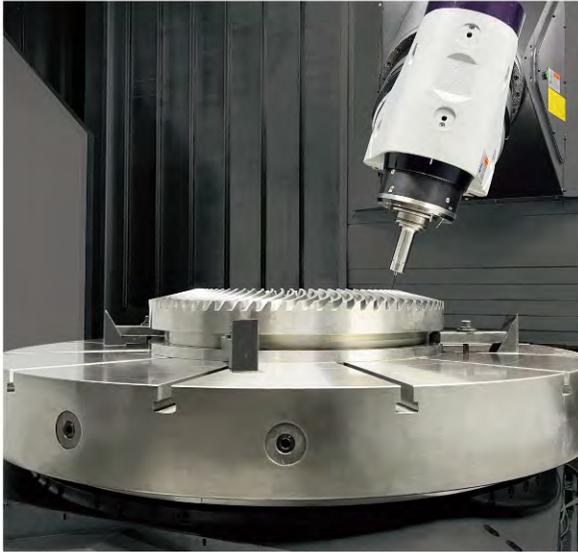


**Spiral Bevel Gear**

- D800 x H160mm
- Steel
- 5-axis dynamic synchronized machining
- D12 Roughing
- D8 Finishing



# Total Solution Provider for Advance Manufacturing Challenge



Gear Machining



Mill-Turn Machining for Hydraulic Pump



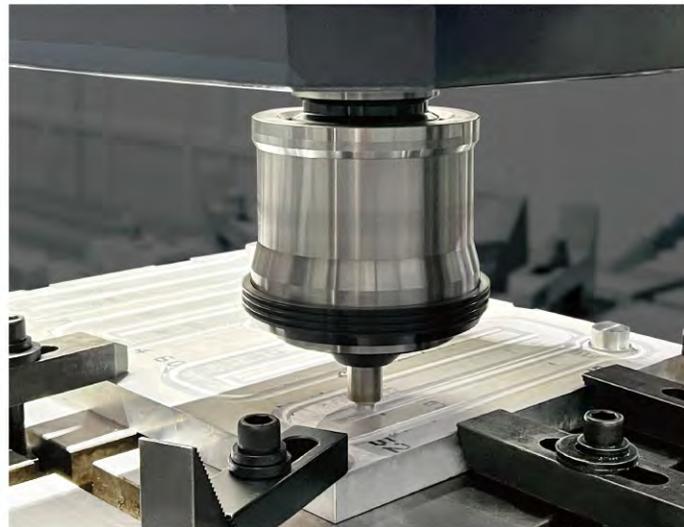
3D Cam Machining



Aerospace Parts Machining



Grinding



Friction Stir Welding

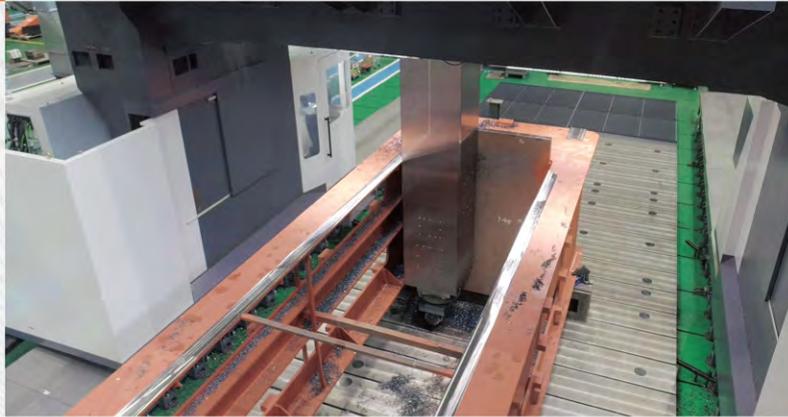
5-Axis  
Machining  
Application

Application



**Large Structure  
Machining Application**

# Industry Application

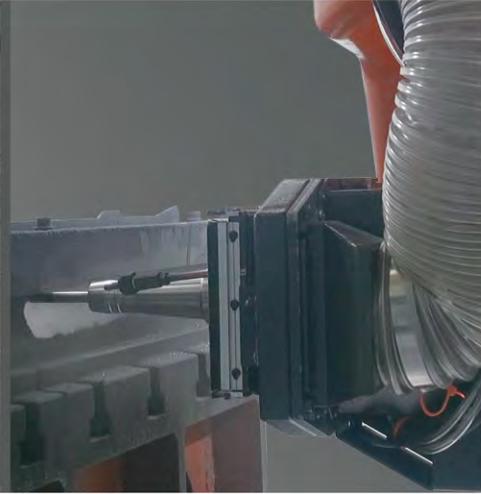


**Solution . Satisfaction . Smile**

# Total Solution Provider for Advance Manufacturing Challenge



Aircraft C Shape Frame Machining



CFRP Machining



Nomes Honeycomb Machining



Aluminium Honeycomb Machining



Aircraft Wing Rib Machining



2 piece Tire Mold



Frog Rail machining



# CNC TalkBox



CLOUD



CNC TalkBox



WEB



Intelligent Factory  
Management  
Can Be in Everywhere

CNC TalkBox possesses computing, storage and industrial internet functions. After computing, the production information can be uploaded to the cloud database or mobile devices to achieve the less hardware managements and the optimal mobile data exchanging capacity.



# CNC TalkBox

## Monitoring Software for Supporting Multiple Controllers Make Production Management Clear at A Glance

- Expandable industrial monitoring equipment, support multi-brand controllers, wireless transmission.
- Data transmission, accurate recording, automatic real-time monitoring, downloading machine status, capacity data, master the production rhythm and equipment performance.

| User Management |



| Machine Management |



| Production History Monitoring |



**CNC TalkBox**



| Machine Monitoring |

| Machine Production Analysis |

| Statistical Report |

| NC Program Management |

### Economic

Small hardware devices for rapid introduction of industrial Internet of Things(IoT).

### Stable

Timely record of production log is a benefit to analyze process and increase production capacity.

### Expandable

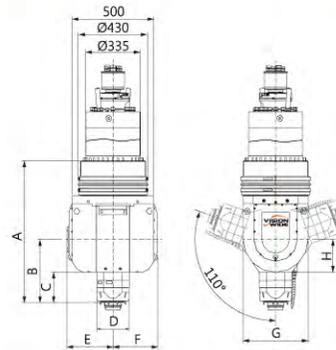
Complete data collection can make better decisions for process, dispatch, tool and material management.

Smart Factory  
Management

# Continuous 2-Axis Head

A variety of spindle units with a continuous 2-axis head achieve all machining requirements on one single machine.

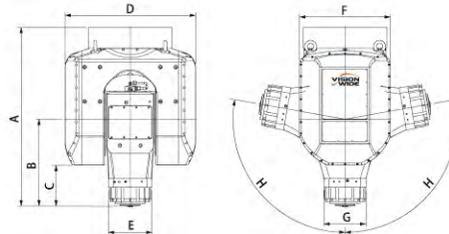
High Torque  
Machining



| High Performance for Multi Applications |

| Spindle NO. | Speed  | Power   | Torque    | Taper    | A   | B   | C   | D   | E   | F   | G   | H   |
|-------------|--------|---------|-----------|----------|-----|-----|-----|-----|-----|-----|-----|-----|
| -           | rpm    | KW      | Nm        | -        | mm  |
| CM21F-01-12 | 12,000 | 34 / 43 | 162 / 205 | HSK-A100 | 863 | 385 | 185 | 198 | 284 | 275 | 400 | 200 |
| CS8XF-01-24 | 24,000 | 40 / 48 | 67 / 80   | HSK-A63  | 631 | 265 | 110 | 180 | 265 | 265 | 310 | 155 |

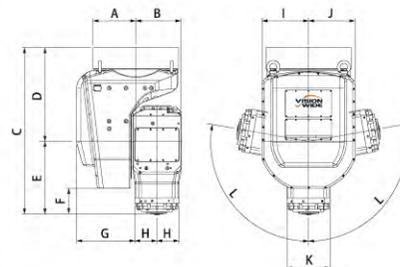
High Speed  
Machining



| High Power Application for Aluminum |

| Spindle NO. | Speed  | Power   | Torque    | Taper    | A     | B   | C     | D   | E   | F   | G   | H      |
|-------------|--------|---------|-----------|----------|-------|-----|-------|-----|-----|-----|-----|--------|
|             | rpm    | KW      | Nm        | -        | mm    | mm  | mm    | mm  | mm  | mm  | mm  | degree |
| H810F-01-24 | 24,000 | 42 / 55 | 67 / 87.5 | HSK-A63  | 780   | 340 | 120   | 634 | 210 | 440 | 205 | 105    |
| V810F-01-24 | 24,000 | 43 / 50 | 68 / 80   | HSK-A63  | 802.5 | 310 | 97.5  | 600 | 227 | 487 | 286 | 110    |
| V810F-02-14 | 14,000 | 47 / 53 | 150 / 169 | HSK-A100 | 842.5 | 350 | 137.5 | 600 | 227 | 487 | 286 | 110    |

High Speed  
Machining

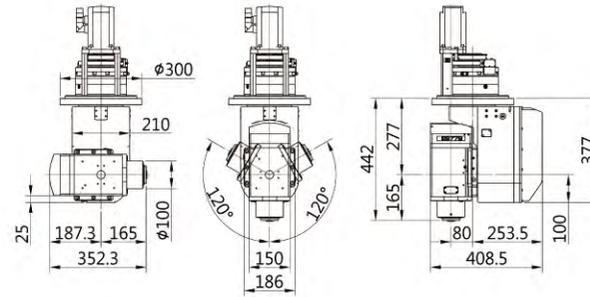


| High Speed Application for Deep Chamber Mold |

| Spindle NO. | Speed  | Power   | Torque     | Taper    | A   | B     | C   | D   | E   | F   | G   | H   | I   | J   | K   | L      |
|-------------|--------|---------|------------|----------|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
|             | rpm    | KW      | Nm         | -        | mm  | mm    | mm  | mm  | mm  | mm  | mm  | mm  | mm  | mm  | mm  | degree |
| H810S-01-24 | 24,000 | 42 / 55 | 67 / 87.5  | HSK-A63  | 203 | 214.8 | 780 | 440 | 340 | 120 | 276 | 105 | 220 | 220 | 205 | 100    |
| H810S-02-15 | 15,000 | 50 / 65 | 95.5 / 124 | HSK-A100 | 203 | 214.8 | 743 | 440 | 303 | 120 | 276 | 105 | 220 | 220 | 205 | 100    |

# 5-axis Composite Material Machining Center

5-axis  
Composite  
Material  
Machining

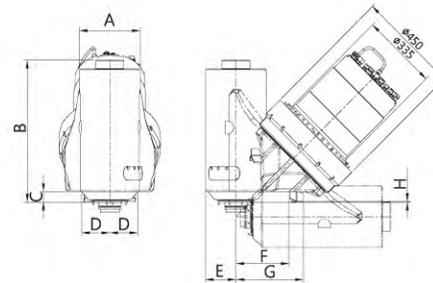


| ADM Series CFRP. GFRP Machining Application |

| UC Series Honeycomb Composite Material Machining Application |

| Spindle NO. | Speed  | Power   | Torque      | Taper   |
|-------------|--------|---------|-------------|---------|
| -           | rpm    | KW      | Nm          | -       |
| H673S-01-20 | 20,000 | 22 / 25 | 19.8 / 22.5 | HSK-A63 |

5-axis  
Universal  
Machining

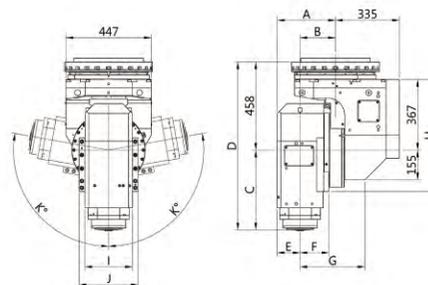


| Mill-Turn Machining Application |

| Spindle NO.   | Speed  | Power   | Torque    | Taper    | A   | B     | C   | D     | E   | F   | G   | H     |
|---------------|--------|---------|-----------|----------|-----|-------|-----|-------|-----|-----|-----|-------|
| -             | rpm    | KW      | Nm        | -        | mm  | mm    | mm  | mm    | mm  | mm  | mm  | mm    |
| CM21X-01-10   | 10,000 | 34 / 43 | 162 / 205 | HSK-A100 | 270 | 623   | 47  | 125   | 135 | 236 | 299 | 2.5   |
| ☆CM21X-04-10T | 10,000 | 42 / 53 | 201 / 253 | HSK-T100 | 270 | 638   | 140 | 129.5 | 135 | 236 | 299 | 95    |
| ☆CG30X-02-07T | 7,000  | 42 / 53 | 396 / 506 | HSK-T100 | 300 | 742   | 170 | 129.5 | 136 | 407 | 472 | 85    |
| ☆HF29X-02-10T | 10,000 | 34 / 41 | 191 / 229 | HSK-T100 | 285 | 669   | 125 | 130   | 130 | 130 | 220 | 102.5 |
| HF29X-01-24   | 24,000 | 42 / 53 | 67 / 88   | HSK-A63  | 250 | 500.7 | 50  | 110   | 116 | 105 | 196 | 25    |

☆Only for ASM-FD Series

Indexing  
High Speed  
Machining



| IAC High Speed Indexing Head |

| Spindle NO. | Speed  | Power   | Torque     | Taper    | A     | B     | C     | D     | E   | F   | G     | H   | I   | J   | K      |
|-------------|--------|---------|------------|----------|-------|-------|-------|-------|-----|-----|-------|-----|-----|-----|--------|
| -           | rpm    | KW      | Nm         | -        | mm    | mm    | mm    | mm    | mm  | mm  | mm    | mm  | mm  | mm  | degree |
| VAS15-240   | 24,000 | 43 / 50 | 68 / 80    | HSK-A63  | 294.5 | 179.5 | 350   | 808   | 115 | 146 | 334.2 | 583 | 175 | 217 | 100    |
| VAS14-150   | 15,000 | 50 / 65 | 95.5 / 124 | HSK-A100 | 294.5 | 179.5 | 350   | 808   | 115 | 146 | 334.2 | 583 | 175 | 217 | 100    |
| VAS16-120   | 12,000 | 47 / 55 | 150 / 169  | HSK-A100 | 304.5 | 184.5 | 414.5 | 872.5 | 120 | 151 | 340.5 | 583 | 250 | 310 | 110    |

- Above 40kW Spindle Driving Capacity.
- Auto Indexing: B/C axis 1°
- Surrounding Coolant Nozzles.
- Coolant Through Spindle 20 / 70 bars.

\*Standard specifications

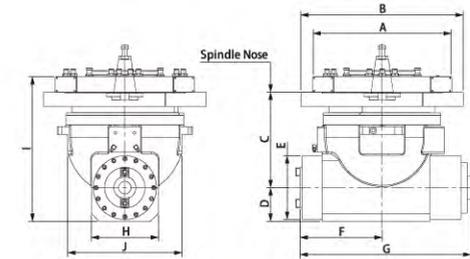
# Auto Multi-Angle Head Attachment

AC 90°  
angular  
head



| Item                          | AC 90° angular head     |                     |
|-------------------------------|-------------------------|---------------------|
|                               | G2                      | G4                  |
| Max. speed                    | 3,000rpm                | 5,000rpm            |
| Max. power                    | 26kW                    |                     |
| Tool clamping                 | Auto hydraulic clamping |                     |
| Head clamping                 | Auto hydraulic clamping |                     |
| C-axis indexing               | Auto 1°/ 5°             | Auto 1°/ 2.5°/ 5°   |
| Machining coolant             | Spindle nose nozzle     | Spindle nose nozzle |
| Coolant Through Spindle(opt.) | 20 / 70 Bar(Opt.)       | 20 / 70 Bar(Opt.)   |

| Item | AC 90° angular head |       |
|------|---------------------|-------|
|      | G2                  | G4    |
| A    | Ø436                | Ø420  |
| B    | Ø436                | Ø420  |
| C    | 300                 | 230.5 |
| D    | 100                 | 100   |
| E    | Ø200                | Ø200  |
| F    | 259                 | 259.5 |
| G    | 515.7               | 510   |
| H    | 212                 | 212   |
| I    | 486                 | 379.5 |
| J    | Ø352                | Ø380  |

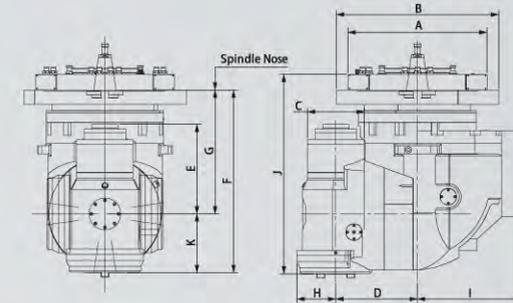


AC  
2-axis  
head



| Item                          | AC 2-axis head          |                     |
|-------------------------------|-------------------------|---------------------|
|                               | G2                      | G4                  |
| Max. speed                    | 3,000rpm                | 5,000rpm            |
| Max. power                    | 26kW                    |                     |
| Tool clamping                 | Auto hydraulic clamping |                     |
| Head clamping                 | Auto hydraulic clamping |                     |
| C-axis indexing               | Auto 1°/ 5°             | Auto 1°/ 2.5°/ 5°   |
| B-axis indexing               | Auto 1°                 | Auto 1°/ 2.5°/ 5°   |
| Machining coolant             | Spindle nose nozzle     | Spindle nose nozzle |
| Coolant Through Spindle(opt.) | 20 / 70 Bar(Opt.)       | 20 / 70 Bar(Opt.)   |

| Item | AC 2-axis head |      |
|------|----------------|------|
|      | G2             | G4   |
| A    | Ø436           | Ø420 |
| B    | Ø436           | Ø420 |
| C    | Ø200           | Ø200 |
| D    | 350            | 165  |
| E    | 292.4          | 275  |
| F    | 573.5          | 572  |
| G    | 300            | 387  |
| H    | 106            | 100  |
| I    | 329.5          | 270  |
| J    | 627.3          | 621  |
| K    | 259            | 185  |

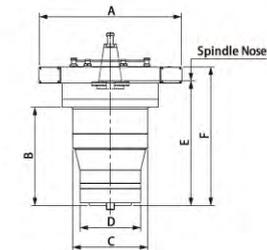


AC  
extended  
head

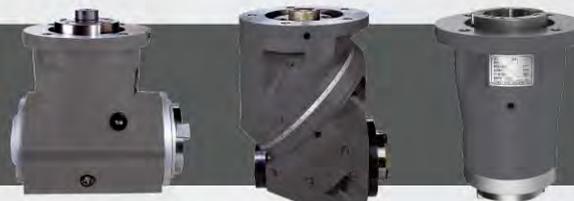


| Item              | AC extended head 300mm     |                     | AC extended head 420mm     |                     |
|-------------------|----------------------------|---------------------|----------------------------|---------------------|
|                   | G2                         | G4                  | G2                         | G4                  |
| Max. speed        | 4,000rpm                   | 5,000rpm            | 4,000rpm                   | 5,000rpm            |
| Max. power        | 26kW                       |                     |                            |                     |
| Tool clamping     | Auto hydraulic clamping    |                     |                            |                     |
| Head clamping     | Auto hydraulic clamping    |                     |                            |                     |
| C-axis indexing   | Auto 1°/ 5°                | -                   | Auto 1°/ 5°                | -                   |
| Machining coolant | Horizontal cutting coolant | Spindle nose nozzle | Horizontal cutting coolant | Spindle nose nozzle |

| Item | AC extended head 300mm |       | AC extended head 420mm |       |
|------|------------------------|-------|------------------------|-------|
|      | G2                     | G4    | G2                     | G4    |
| A    | Ø436                   | Ø420  | Ø436                   | Ø420  |
| B    | 300                    | 300.5 | 427                    | 427.5 |
| C    | Ø230                   | Ø230  | Ø230                   | Ø230  |
| D    | Ø185                   | Ø185  | Ø185                   | Ø185  |
| E    | 374                    | 374   | 501                    | 501   |
| F    | 389                    | 423.5 | 516                    | 550.5 |



Provides over 50 attachment head specifications  
Please contact sales for more details.



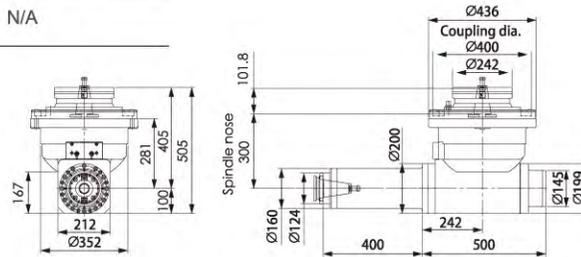
Newly launched, high torque, high speed and  
comprehensively promote automatic machining.

# Powerful and Precision Boring Head Attachment

## 400mm AC 90° spindle extension head



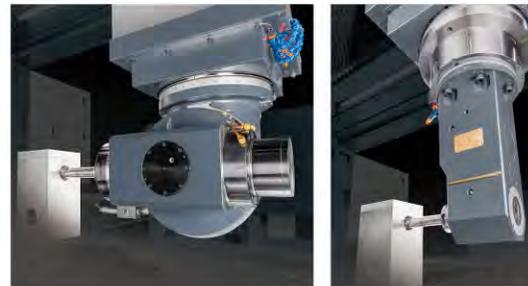
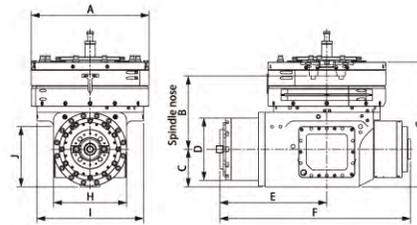
| Item                          | 400mm AC 90° spindle extension head |  |
|-------------------------------|-------------------------------------|--|
|                               | G2                                  |  |
| Max. speed                    | 2,000 rpm                           |  |
| Max. power                    | 26 kW                               |  |
| Tool clamping                 | Auto hydraulic clamping             |  |
| Head clamping                 | Auto hydraulic clamping             |  |
| C-axis indexing               | Auto 1° / 5°                        |  |
| Machining coolant             | Spindle nose nozzle                 |  |
| Coolant Through Spindle(opt.) | N/A                                 |  |



## AC 90° angular head (Strong)



| Item                          | AC 90° angular head (Strong) |                     |
|-------------------------------|------------------------------|---------------------|
|                               | G2                           | G4                  |
| Max. speed                    | 3,000 rpm                    | 2,000 rpm           |
| Max. power                    | 26 kW                        | 37 kW               |
| Tool clamping                 | Auto hydraulic clamping      |                     |
| Head clamping                 | Auto hydraulic clamping      |                     |
| C-axis indexing               | Auto 1°/5°                   | Auto 1°/2.5°/5°     |
| Machining coolant             | Spindle nose nozzle          | Spindle nose nozzle |
| Coolant Through Spindle(opt.) | N/A                          | 20 / 70 Bar(Opt.)   |
| A                             | Ø436                         | Ø420                |
| B                             | 300                          | 259                 |
| C                             | 122.5                        | 133                 |
| D                             | Ø210                         | Ø220                |
| E                             | 381.5                        | 381.5               |
| F                             | 638.2                        | 679.6               |
| G                             | 528                          | 441                 |
| H                             | 250                          | 260                 |
| I                             | Ø352                         | Ø380                |
| J                             | 207                          | 213                 |



## Intelligent multi-face machining

### 5-axis Level Tool Point Center Management TCPM

Each type of head attachment with tool center point management, takes vertical workpiece as origin benchmark, and converts the workpiece coordinates to any new specified plane of workpiece coordinates automatically.

### Auto Coordinates Tool axis 3D Conversion

3-axis mechanical coordinates system can be automatically converted to machining coordinates system, easily achieving face milling, end milling, drilling and rigid tapping machining operations in different directions.

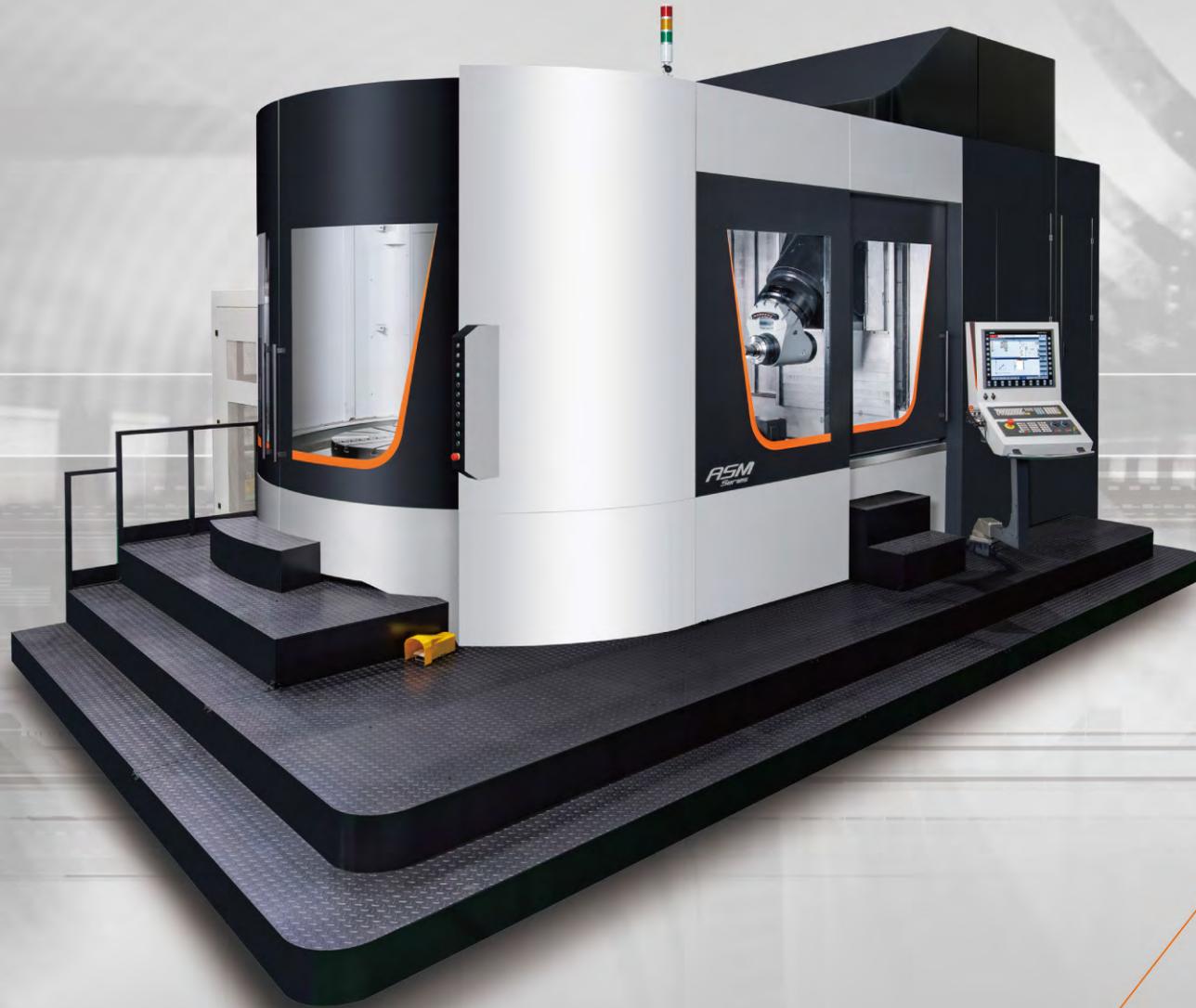
### Head Attachment Dimensions Correction

Intelligent compensation on each type of head attachments. The compensation including rotation center, tool size, workpiece coordinates system correction management. It greatly simplifies the complexity of programming and operation to achieve perfect auto multi-angle machining.



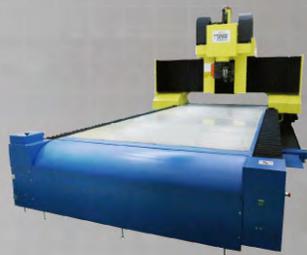
TCPM0.04mm





# VISION WIDE *5-AXIS* *MACHINING*

Solution . Satisfaction . Smile



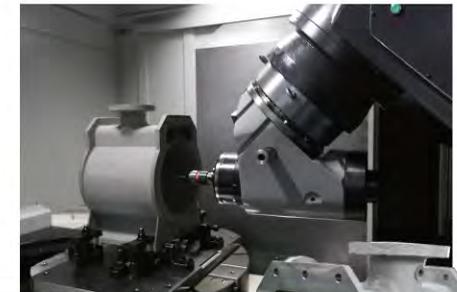
# ASM SERIES

5-axis Universal Machining Center



Multi-Task  
Solution Provider  
V/H 5-Axis  
Synchronized Motion  
Mill-Turn Machining  
APC, Auto pallet Change

- 45° Universal Head Mini. Interference Space.
- Spindle Temperature Protection Function
- Optimized tool center design to mini. cutting resistance.
- Heavy load rotary table, up to 3,000kg
- 10,000cc/min Chip Removal Capability.



Pump Industry  
Vacuum Compressor  
Body  
Cast Iron FC200



## A ccuracy

Positioning Accuracy: P 0.006mm  
Repeatability Accuracy: Ps 0.0055mm

## S peedy

40 m/min Rapid traverse  
24 m/min Cutting feedrate  
0.3G Acceleration

## M ax. Power

Universal 5-axis  
34/ 43kW power



### Vertical and Horizontal Machining



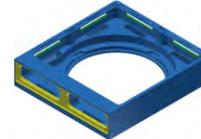
5-face machining completed chamber in one set up.

### High Speed & High Power Spindle



The finest equipment for machining aluminum alloys

34/43kW, 10000RPM, 162/205 Nm  
 High speed rough machining  
 D63 Copy milling cutter  
 S9,500RPM, F6,000mm/min  
 Ap 10mm, Ae 40mm, Q2,400cc/min

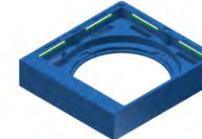


### Powerful Spindle & Structure



Power T-slot Cutter Machining

D200 T-slot Cutter for cavity machining  
 S1,000RPM, F2,000mm/min  
 Ap25mm, Ae 20mm, Q 1,000cc/min



| Model        | X axis | Y axis | Z axis | Table dimension | Table load (central region) | Workpiece Dimension |                 | Spindle speed | Cutting federate | Rapid traverse(X/Y/Z) |
|--------------|--------|--------|--------|-----------------|-----------------------------|---------------------|-----------------|---------------|------------------|-----------------------|
| Unit         | mm     | mm     | mm     | mm              | kg                          | mm                  |                 | rpm           | m/min            | m/min                 |
| -            | -      | -      | -      | -               | -                           | Vertical            | Horizontal      | -             | -                | -                     |
| ASM-1012     | 1,000  | 1,260  | 1,050  | ∅ 1,000         | 2,000                       | ∅ 1,250 x 1,060     | ∅ 1,250 x 1,200 | 10,000        | 24 / 24 / 24     | 40 / 40 / 40          |
| ASM-1212     | 1,250  |        |        | ∅ 1,200         | 2,000                       | ∅ 1,250 x 1,060     | ∅ 1,250 x 1,200 |               |                  |                       |
| ASM-1612     | 1,620  |        |        | ∅ 1,500         | 3,000                       | ∅ 1,500 x 965       | ∅ 1,500 x 1,100 |               |                  |                       |
| ASM-1612G    | 1,620  |        |        | ∅ 1,500         | 3,000                       | ∅ 1,500 x 965       | ∅ 1,500 x 1,100 |               |                  |                       |
| ASM-1012 FD  | 1,000  | 1,260  | 1,050  | ∅ 1,000         | 2,000                       | ∅ 1,250 x 970       | ∅ 1,250 x 1,200 | 10,000        | 24 / 24 / 24     | 40 / 40 / 40          |
| ASM-1212 FD  | 1,250  |        |        | ∅ 1,200         | 2,000                       | ∅ 1,250 x 970       | ∅ 1,250 x 1,200 |               |                  |                       |
| ASM-1612 FD  | 1,620  |        |        | ∅ 1,500         | 3,000                       | ∅ 1,500 x 870       | ∅ 1,500 x 1,100 |               |                  |                       |
| ASM-1612G FD | 1,620  |        |        | ∅ 1,500         | 3,000                       | ∅ 1,500 x 870       | ∅ 1,500 x 1,100 |               |                  |                       |

For details, please refer to Machine Specification Instruction



5-Axis  
Machining

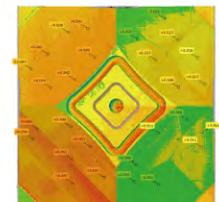
# FA SERIES

5-axis Double Column Machining Center



## Achieve High Precision, High Speed and Fully Automatic Machining

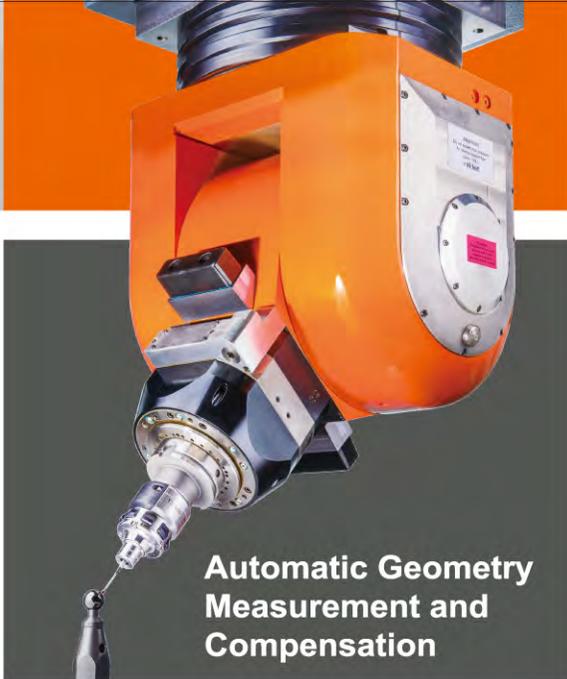
- 5-axis machining efficiently shortens the paths in machining, considerably reduces the cutting time, and extends the life of tool.
- Rigid structure designed with double column frame meets wide range of machining requirements.
- High dynamic performance on XYZ-axis with high accuracy 2-axis head realizes high excellent precision in multi-angle machining .
- German-made 2-axes head equips compact rotation structure and D.D. motor on B/C axis to ensure the high torque output.



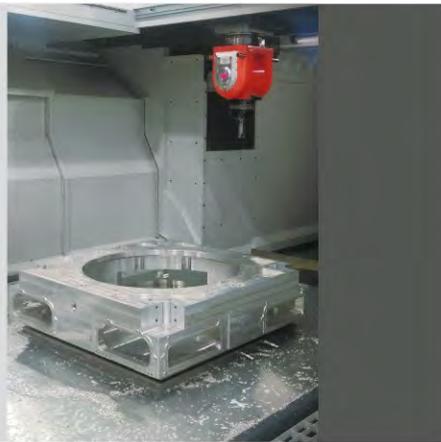
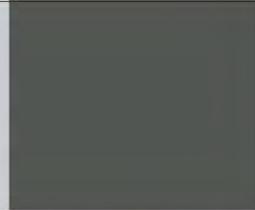
### Test Mold for 5-Axis Simultaneous Cutting Precision

L280, W 280 , H120 mm

The mold accuracy of multi-axis simultaneous and fixed axis machining. Tool marks <0.04mm.



**Automatic Geometry Measurement and Compensation**



**Achieve Excellent Accuracy Performance of 5-Axis Synchronization Motion. Dynamic Accuracy Reaches 0.04mm(TCPM).**

- B axis rotation positioning accuracy  $\pm 5''$ .
- C axis rotation positioning accuracy  $\pm 3''$ .
- B/C axis IDD motor design without backlash.
- Spindle vibration less than 1mm/sec.

| Model   | X axis | Y axis | Z axis                         | Table dimension | Max. table load | Spindle motor (S1/S6) | Spindle speed | Cutting federate | Rapid traverse (X/Y/Z) |
|---------|--------|--------|--------------------------------|-----------------|-----------------|-----------------------|---------------|------------------|------------------------|
| Unit    | mm     | mm     | mm                             | mm              | kg              | kW                    | rpm           | mm/min           | m/min                  |
| FA-2123 | 2,100  | 2,300  | 800/1,000 (Opt.) / 1,200(Opt.) | 2,300 x 1,600   | 10,000          | 25 / 30               | 24,000        | 1~20,000         | 24 / 24 / 20           |
| FA-2623 | 2,600  |        |                                | 2,800 x 1,600   | 12,000          |                       |               |                  |                        |
| FA-3123 | 3,100  |        |                                | 3,300 x 1,600   | 14,000          |                       |               |                  |                        |
| FA-3027 | 3,100  | 2,700  | 1,000/1,200 (Opt.)             | 3,000 x 1,800   | 10,000          | 34 / 43               | 12,000        | 1~10,000         | 24 / 18 / 15           |
| FA-4027 | 4,100  |        |                                | 4,000 x 1,800   | 12,000          |                       |               |                  | 18 / 18 / 15           |
| FA-3033 | 3,100  | 3,300  | 1,000/1,200 (Opt.)             | 3,000 x 2,450   | 13,000          | 34 / 43               | 12,000        | 1~10,000         | 24 / 15 / 15           |
| FA-4033 | 4,100  |        |                                | 4,000 x 2,450   | 16,000          |                       |               |                  | 18 / 15 / 15           |
| FA-5033 | 5,100  |        |                                | 5,000 x 2,450   | 20,000          |                       |               |                  | 12.5 / 15 / 15         |
| FA-6033 | 6,100  |        |                                | 6,000 x 2,450   | 22,000          |                       |               |                  | 10 / 15 / 15           |
| FA-8033 | 8,100  |        |                                | 8,000 x 2,450   | 24,000          |                       |               |                  | 8 / 15 / 15            |

For details, please refer to Machine Specification Instruction

**5-Axis Machining**



# GSF SERIES

5-axis Gantry Type Machining Center



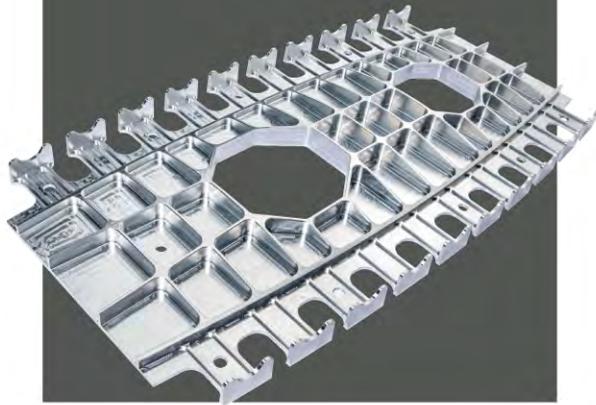
- Max. table load 3000 kg/m<sup>2</sup>.
- Built-in I.D.D. motor drive.
- Linear scale rotation positioning.
- Min. indexing accuracy 0.001°.
- High accuracy: positioning accuracy 10", repeatability accuracy 6".

## Continuous 2-Axis Head 5-Axis / 6 Axis Simultaneous Motion

- Built-in spindle with Direct-Driven B/C axis.
- No backlash on B/C axis.
- The minimal interference between workpiece and machine head.
- Thermal protection in all motors and bearing.
- Vibration protection in all bearings.
- 5-axis / 6-axis simultaneous dynamic accuracy reaches 0.04mm(TPCM).
- Rotation positioning accuracy  $\pm 5''$  on B/C axis.



High Speed &  
High Torque  
Rotary Table



### Aircraft Wing Rib

**Size:** L1,225 x W625 x H55 mm

**Material:** Al 6061

- Finished / row material ratio: 84%
- High-efficiency machining of D63 copy milling cutter
- 5 axis synchronized finishing with D20 end mill
- Side fillet machining with horizontal orientation
- One setup, Total finish time: 3hr.



### Aircraft Wing

**Dimension :** L800 x W600 x H60 mm

**Material :** Al6061

High speed removal capability:

- D32 Copy Mill
- Depth: 10mm
- Width: 32mm
- Feedrate: 10m/min
- Removal rate: 3,200cc/min

5-axis simultaneous machining:

- D20 End Mill
- Inclined wall finishing
- Depth 30mm
- 5-axis simultaneous machining

Rib Top finishing:

- End mill bottom finishing
- Efficiency 5X

### Case

**Dimension :** D800 x H600 mm

**Material :** S45C

Milling & Turning Machining:

- Inner and outer wall/ CW and CCW turning application.
- Fixed-angle inner cavity turning machining, reducing tool length and interference area.

Powerful spindle, provides milling ability

- D40 face mill
- D32 indexable driller
- D20 end mill

High precision machining

- Surface accuracy: 10um
- Hole positioning accuracy: 0.005°



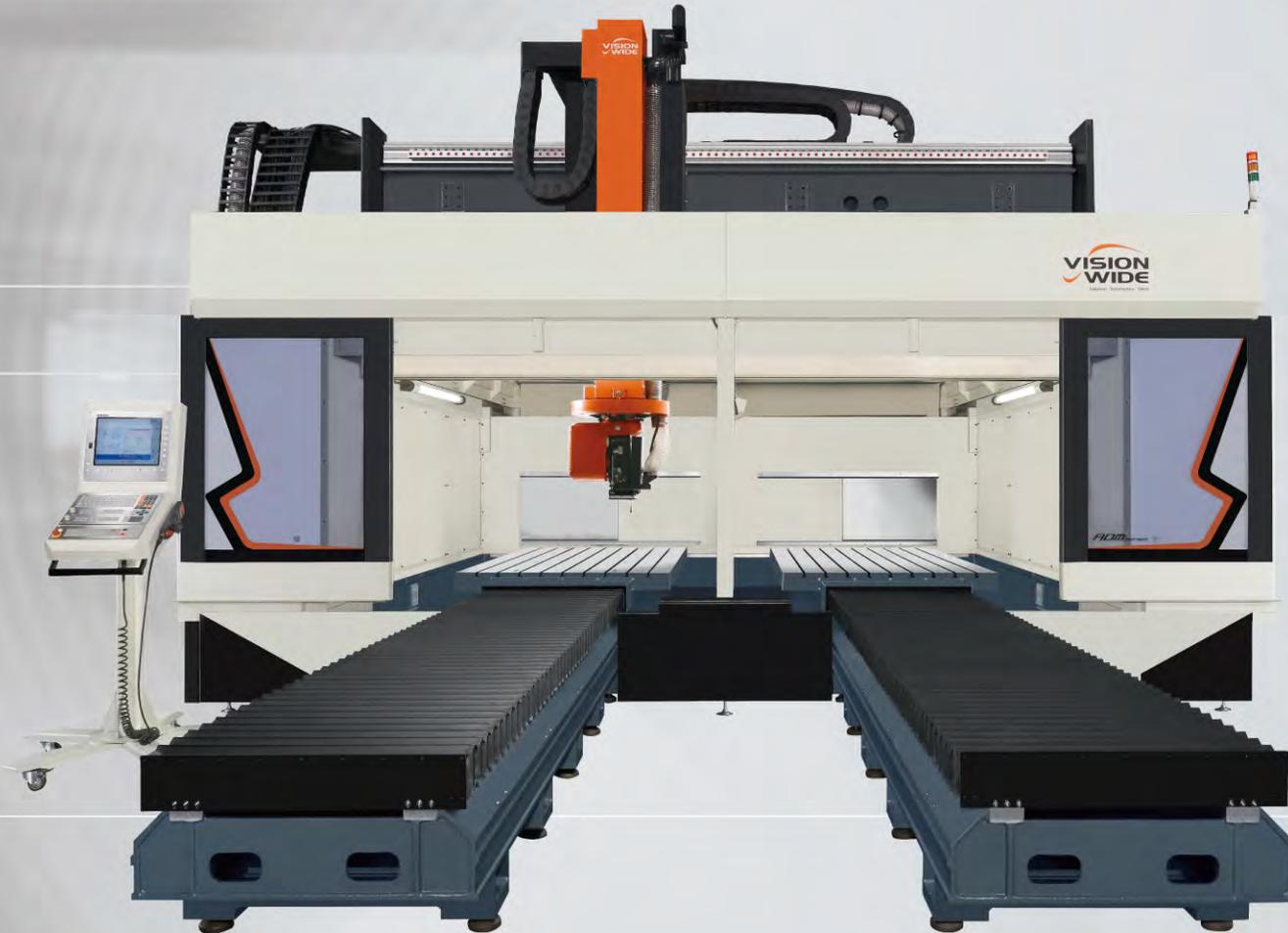
| Model    | X axis | Y axis | Z axis             | Table dimension | Max. table load   | Spindle motor (S1/S6) | Spindle speed | Cutting feedrate | Rapid traverse (X/Y/Z) |
|----------|--------|--------|--------------------|-----------------|-------------------|-----------------------|---------------|------------------|------------------------|
| Unit     | mm     | mm     | mm                 | mm              | kg/m <sup>2</sup> | kW                    | rpm           | mm/min           | m/min                  |
| GSF-1627 | 1,600  | 2,700  | 1,000/1,200 (Opt.) | 1,600 x 2,700   | 3,000             | 50 / 65               | 15,000        | 1~20,000         | 32 / 32 / 20           |
| GSF-2227 | 2,200  |        |                    | 2,200 x 2,700   |                   |                       |               |                  |                        |
| GSF-3027 | 3,000  |        |                    | 3,000 x 2,700   |                   |                       |               |                  |                        |
| GSF-4027 | 4,000  |        |                    | 4,000 x 2,700   |                   |                       |               |                  |                        |
| GSF-5027 | 5,000  |        |                    | 5,000 x 2,700   |                   |                       |               |                  |                        |
| GSF-6027 | 6,000  |        |                    | 6,000 x 2,700   |                   |                       |               |                  |                        |
| GSF-2232 | 2,200  | 3,200  | 1,000/1,200 (Opt.) | 2,200 x 3,200   | 3,000             | 50 / 65               | 15,000        | 1~20,000         | 32 / 32 / 20           |
| GSF-3032 | 3,000  |        |                    | 3,000 x 3,200   |                   |                       |               |                  |                        |
| GSF-4032 | 4,000  |        |                    | 4,000 x 3,200   |                   |                       |               |                  |                        |
| GSF-5032 | 5,000  |        |                    | 5,000 x 3,200   |                   |                       |               |                  |                        |
| GSF-6032 | 6,000  |        |                    | 6,000 x 3,200   |                   |                       |               |                  |                        |

For details, please refer to Machine Specification Instruction



# ADM SERIES

5-axis Composite Material Machining Center

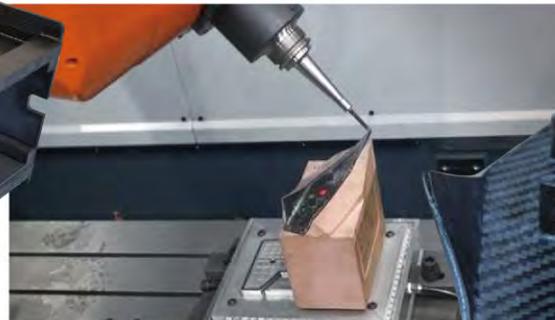
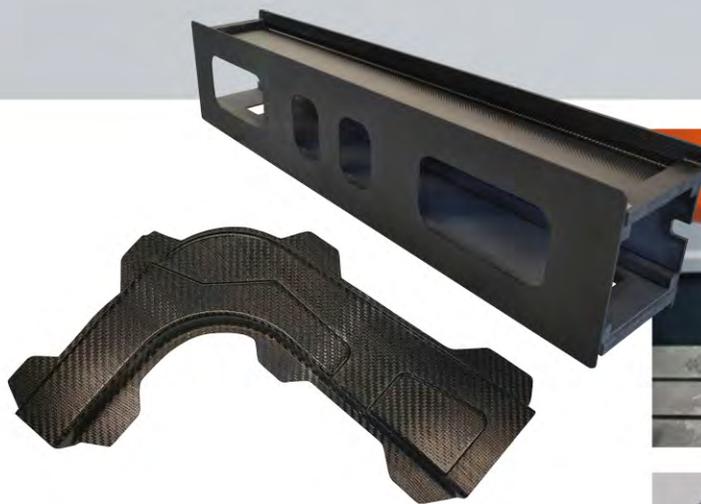


## Aerospace Parts CFRP / GFRP Dedicated Machine

ADM is a 5-axis machining center to process composite materials with high speed, precision and automation.

ADM is aimed at processing materials such as Carbon Fiber Reinforced Polymer (CFRP), Fiberglass, Plastic and Aluminum.

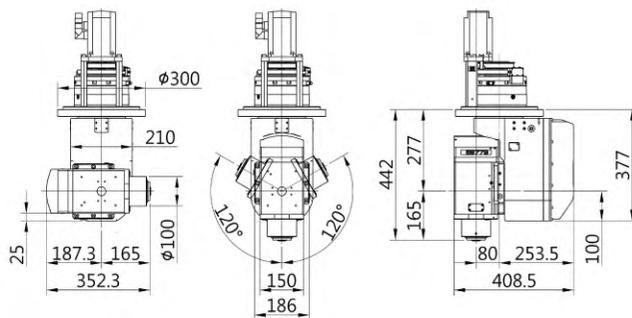
- High Speed Spindle.
- Dual ATC Magazines.
- 5-Axis Simultaneous Machining.
- Ultra-Low Temperature Spiral Tube Cooler.
- Single Table/ Twin Shuttle Table.
- Dust/ Suction Device.



**BC-axis SPEC.**

|                     |                            |                     |
|---------------------|----------------------------|---------------------|
| Spindle speed (rpm) | Spindle power (S1/S6) (kW) | Max. Torque (S1/S6) |
| 20,000              | 22 / 25                    | 19.8 / 22.5         |

|                              | B-axis  | C-axis  |
|------------------------------|---------|---------|
| Swiveling range              | ±120°   | ±360°   |
| Rotation speed (rpm)         | 135     | 135     |
| Positioning accuracy         | ±30"    | ±30"    |
| Rotation torque(con.) (Nm)   | 295     | 427     |
| Rotation torque(max.) (Nm)   | 1,030   | 1,030   |
| Clamping torque(60 bar) (Nm) | 189~243 | 189~243 |



| Model    | X axis | Y axis | Z axis | Table dimension | Max. table load   | Spindle motor (S1/S6) | Spindle taper | Cutting feedrate | Rapid traverse (X/Y/Z) |
|----------|--------|--------|--------|-----------------|-------------------|-----------------------|---------------|------------------|------------------------|
| Unit     | mm     | mm     | mm     | mm              | kg/m <sup>2</sup> | kW                    |               | mm/min           | m/min                  |
| ADM-2638 | 2,600* | 3,800  | 1,000  | 2,500 x 3,500   | 3,000             | 22 / 25               | HSK-A63       | 20,000           | 40 / 40 / 20           |

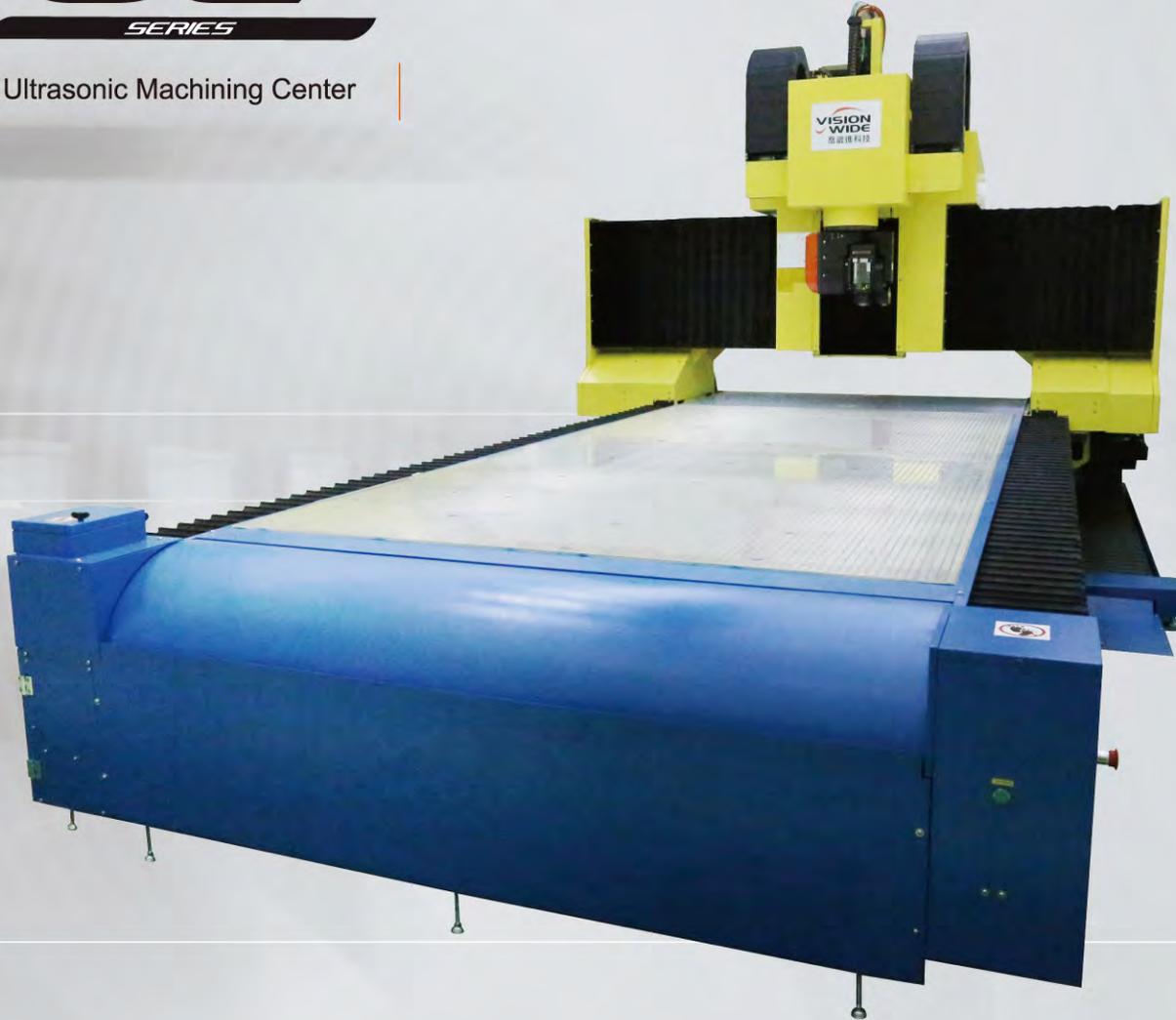
For details, please refer to Machine Specification Instruction

# 5-Axis Machining



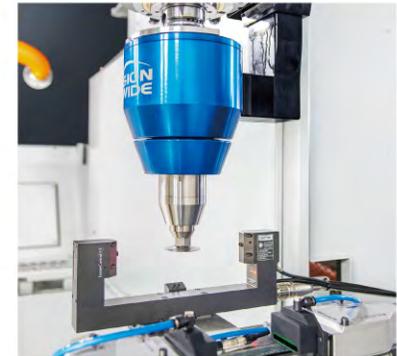
# UC SERIES

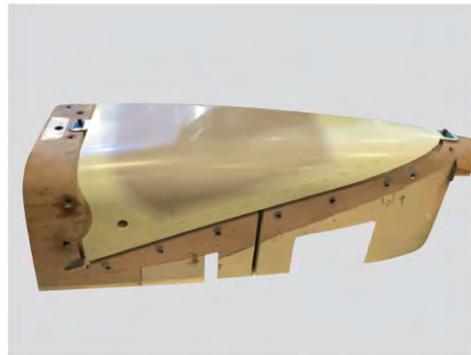
Ultrasonic Machining Center



## Aerospace Parts- Honeycombs Structure Machining

- Auto frequency modulation ultrasonic machining system.
- Vacuum working table.
- Oil free cutting-No pollution workpiece.
- Fixed angle cutting-Spindle sixth axis positioning.
- Flat tool magazine.
- Cutting tool angle measurement and orientation.





### Wing Diversion Cover

- The inner layer structure is a honeycomb material, which is used as an internal component to increase the overall structural rigidity.
- The outer layer is Carbon Fiber-Reinforced Plastics. (CFRP)

### Honeycomb material advantages

- Low structural density and light weight.
- High compressive strength.
- A lightweight, high-rigidity composite structure is available.



| Model   | X axis | Y axis | Z axis | Table dimension (LxW) | Spindle speed | Spindle motor (S1/S6) | Ultrasonic oscillating cutter frequency | Rapid traverse (X/Y/Z) | Cutting federate (X/Y/Z) | ATC capacity | Positioning accuracy          | Repeatability accuracy           | Machine weight |
|---------|--------|--------|--------|-----------------------|---------------|-----------------------|---|------------------------|--------------------------|--------------|-------------------------------|----------------------------------|----------------|
| Unit    | mm     | mm     | mm     | mm                    | rpm           | kW                    | Hz                                      | m/min                  | m/min                    | pcs          | mm                            | mm                               | kg             |
| UC-4020 | 4,000  | 2,000  | 550    | 4,000 x 2,000         | 20,000        | 22 / 25               | 20k ± 0.3k                              | 40 / 40 / 12           | 12 / 12 / 12             | 7            | X:P0.06<br>Y:P0.06<br>Z:P0.06 | X:Ps0.02<br>Y:Ps0.02<br>Z:Ps0.02 | 8,000          |

For details, please refer to Machine Specification Instruction

Ultrasonic  
Machining



Solutions  
Selection  
Style

VISION  
WIDE

**GS** series

VISION  
WIDE

Widen Your Cutting Vision

**VISION WIDE**  
***HIGH SPEED***  
***MACHINING***

Solution . Satisfaction . Smile



# SE SERIES

High Speed Double Column Machining Center



## High Speed and High Accuracy Machining of Mold Industry & Aluminum Structure

- Spindle Speed Reaches 28,000 rpm.
- 24 m/min Feedrate.
- Precise Contour Accuracy.
- Delicate Surface Roughness.
- Positioning Accuracy P 0.007mm.
- Repeatability Ps 0.003mm.
- Aluminum Chips Removal Rate 7,000 cc/min.
- Water fall flushing system.



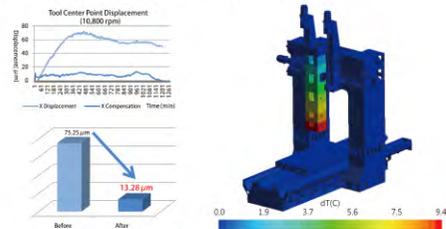


## Structure of Machine Head

- Box shape, symmetrical, and thermal friendly structure enables outstanding rigidity and precise accuracy.
- Anti-bending and deformation-resistant characteristic supports whole Z-axis travel and provides best straightness.

### Friendly Thermal Accuracy

Ambient Temperature Compensation (ATC) 0.005mm  
Spindle Thermal Compensation (STC) 0.02mm



## Aerospace Aluminum Frame



- Size : 1,425 x 680 x 70 mm
- Material : Al6061
- Tool : D25 End Mill
- Speed : 10,500 rpm
- Ap: 70 mm
- Tool Path : Equal TEA Path

### Features

- 24 m/min High Cutting Feedrate
- 2.8 times Tool Diameter~Cutting Depth Ratio
- 2000 cc/min High Material Removal Rate
- Alumina Cutting Efficiency: 90 cc/kW (2 Times Productivity)

## Car Headlight Mold



- Size : 800 x 550 x 250 mm
- Material : P20 (HRC30° )
- Tool : D10R5 Ball End
- Finish Pitch: 0.15mm
- Tool Path : 45° Projection Cutting
- Speed : 12,000 RPM
- Cutting Feedrate : 4,000mm/min

### Features

- 0.2G High Acceleration Mold Finishing
- High Feed Rough Machining: D40R1, F10,000mm/min, 160cc/min
- High Feed Mold Surface Finishing : D10R5 Ball End, F4,000mm/min
- High Surface Roughness : Ra0.4 μ m
- 0.04 mm Contour Accuracy

| Model   | X axis | Y axis | Z axis              | Table dimension | Max. table load | Spindle motor<br>(cont./ 30 min rated) | Spindle speed | Cutting federate | Rapid traverse(X/Y/Z)              |
|---------|--------|--------|---------------------|-----------------|-----------------|--|---------------|------------------|------------------------------------|
| Unit    | mm     | mm     | mm                  | mm              | kg              | kW                                     | rpm           | mm/min           | m/min                              |
| SE-1612 | 1,600  | 1,200  | 800/1,000<br>(Opt.) | 1,800 x 1,100   | 8,000           | 15 / 18.5                              | 15,000        | 1~24,000         | 24 / 24 / 24<br>30 / 30 / 24(Opt.) |
| SE-2112 | 2,100  |        |                     | 2,300 x 1,100   | 10,000          |  |               |                  |                                    |
| SE-2612 | 2,600  |        |                     | 2,800 x 1,100   | 12,000          |  |               |                  |                                    |
| SE-1618 | 1,600  | 1,800  |                     | 1,800 x 1,600   | 8,000           |  |               |                  |                                    |
| SE-2118 | 2,100  |        |                     | 2,300 x 1,600   | 10,000          |  |               |                  |                                    |
| SE-2618 | 2,600  |        |                     | 2,800 x 1,600   | 12,000          |  |               |                  |                                    |
| SE-3118 | 3,100  |        | 3,300 x 1,600       | 14,000          |                 |  |               |                  |                                    |

For details, please refer to Machine Specification Instruction

High Speed  
Machining



# GS SERIES

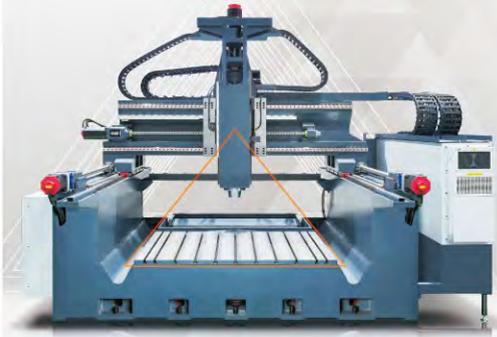
Gentry Type Machining Center



## High Speed Solution for Large Mold and Workpiece Machining Project

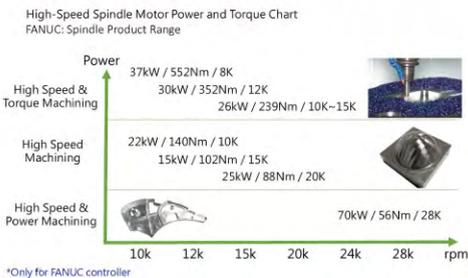
Precise contour accuracy, high-speed cutting feedrate, and excellent surface roughness.

- 30 m/min Feed Rate (OPT.)
- Positioning Accuracy P 0.006mm
- Repeatability Ps 0.004mm
- Aluminum Alloy Chips Removal Rate  
5,000 cc/min

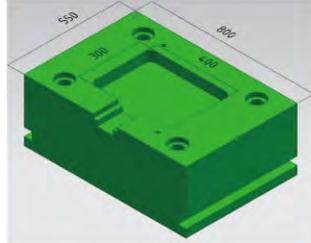


- ▶ Optimal dynamic response mechanism achieves high speed feed and high acceleration and deceleration.
- ▶ Weight of ratio Machine head/ Moving beam/ Base : 1 / 3 / 7
- ▶ Excellent kinetic structure for steady and speedy motion.

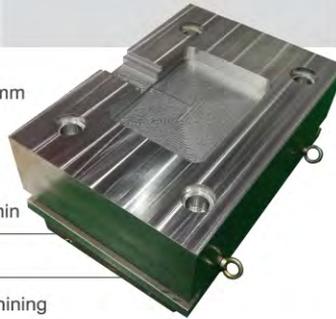
### Optional Spindles for Fanuc Controller



## Mold Base High Speed Feed Cutting



- Size : L800mm,W550mm ,H250mm
- Material : S45C
- Tool: D40R1
- Speed : 2,000rpm
- Cutting Feed Rate : 10,000mm/min



### Features

- F10,000mm/min High Feed Machining
- 300 cc/min Material Removal Rate
- VC 220m/min
- 0.008 mm Dimensional Accuracy of Boring Hole (Pitch 400x 700mm)



### Large Mold Machining

- F10,000mm/min High Speed Mold Surface Machining
- 0.3G Acceleration
- Tool Marks Gap: Ra< 0.2 μm

| Model   | X axis | Y axis | Z axis           | Table dimension | Max. table load   | Spindle motor (cont./ 30 min rated) | Spindle speed | Cutting federate | Rapid traverse(X/Y/Z)               |
|---------|--------|--------|------------------|-----------------|-------------------|-------------------------------------|---------------|------------------|-------------------------------------|
| Unit    | mm     | mm     | mm               | mm              | kg/m <sup>2</sup> | kW                                  | rpm           | mm/min           | m/min                               |
| GS-1220 | 1,200  | 2,000  | 800/1,000 (Opt.) | 1,200 x 2,000   | 3,000             | 15 / 18.5                           | 15,000        | 1~24,000         | 24 / 24 / 24<br>30 / 30 / 24 (Opt.) |
| GS-1620 | 1,600  |        |                  | 1,600 x 2,000   |                   |                                     |               |                  |                                     |
| GS-2020 | 2,000  |        |                  | 2,000 x 2,000   |                   |                                     |               |                  |                                     |
| GS-2520 | 2,500  |        |                  | 2,500 x 2,000   |                   |                                     |               |                  |                                     |
| GS-3020 | 3,000  |        |                  | 3,000 x 2,000   |                   |                                     |               |                  |                                     |

For details, please refer to Machine Specification Instruction

High Speed  
Machining



# GSA

SERIES

Indexing Head Gantry Type Machining Center



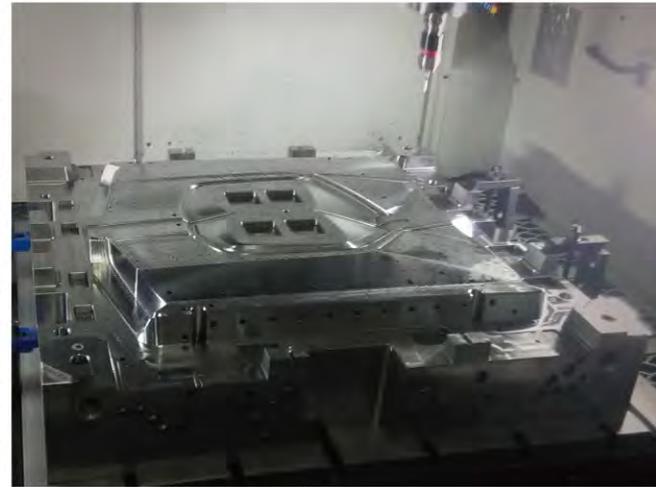
## Multi-Angle Machining Solution with Indexing, Compact, and High Speed IAC Head.

- Above 40kW Spindle Driving Capacity
- 12,000/ 15,000/ 24,000 rpm Spindle Speed
- Auto Tool Clamping
- Auto Indexing: B Axis 1° / C axis 1°
- Spindle Cooling Device
- High Tool Clamping Force: 20kN
- Spindle coolant ring
- Coolant Through Spindle 20/ 70 bars
- Independent Position Encoder for Each Rotation Axis

IAC - Indexing Attached Head :  
High Speed / Fixed / Multi-angle



| Model                        | Unit   | VAS15-240                   | VAS14-150 | VAS16-120 |
|------------------------------|--------|-----------------------------|-----------|-----------|
| Spindle speed                | rpm    | 24,000                      | 15,000    | 12,000    |
| Max. power                   | kW     | 43 / 50                     | 50 / 65   | 47 / 53   |
| Head change                  | -      | Fixed ( Can't to exchanged) |           |           |
| Spindle taper                | -      | HSK-A63                     | HSK-A100  | HSK-A100  |
| Max. tool length             | mm     | 150                         | 200       | 200       |
| Max. tool weight             | kg     | 8                           | 13        | 13        |
| Max. tool dimension          | mm     | 101                         | 150       | 150       |
| Tool clamping force          | kN     | 20                          |           |           |
| Tool clamping                | -      | Auto-hydraulic clamping     |           |           |
| B / C axis indexing function | -      | Auto Angle Position         |           |           |
| B / C axis angle             | degree | ±100° / ±200°               |           |           |
| B / C axis index             | degree | 1° / 1°                     |           |           |
| Indexing precision           | -      | ±0.03 / 300 mm              |           |           |
| Machining coolant            | -      | Spindle nose nozzle         |           |           |
| Coolant through spindle      | bar.   | 20 / 70 (Opt.)              |           |           |



| Model    | X axis | Y axis | Z axis                | Table dimension | Max. table load | Spindle moter(S1/S6) | Spindle speed                          | Cutting federate | Rapid traverse(X/Y/Z) |
|----------|--------|--------|-----------------------|-----------------|-----------------|----------------------|--|------------------|-----------------------|
| Unit     | mm     | mm     | mm                    | mm              | kg              | kW                   | rpm                                    | mm/min           | m/min                 |
| GSA-1627 | 1,600  | 2,700  | 1,000/1,200<br>(Opt.) | 1,600 x 2,700   | 3,000           | 50 / 65              | 15,000/<br>1,200(Opt.)/<br>2,400(Opt.) | 1~20,000         | 32 / 32 / 20          |
| GSA-2227 | 2,200  |        |                       | 2,200 x 2,700   |                 |                      |  |                  |                       |
| GSA-3027 | 3,000  |        |                       | 3,000 x 2,700   |                 |                      |  |                  |                       |
| GSA-4027 | 4,000  |        |                       | 4,000 x 2,700   |                 |                      |  |                  |                       |
| GSA-5027 | 5,000  |        |                       | 5,000 x 2,700   |                 |                      |  |                  |                       |
| GSA-6027 | 6,000  |        |                       | 6,000 x 2,700   |                 |                      |  |                  |                       |
| GSA-2232 | 2,200  | 3,200  | 1,000/1,200<br>(Opt.) | 2,200 x 3,200   | 3,000           | 50 / 65              | 15,000/<br>1,200(Opt.)/<br>2,400(Opt.) | 1~20,000         | 32 / 32 / 20          |
| GSA-3032 | 3,000  |        |                       | 3,000 x 3,200   |                 |                      |  |                  |                       |
| GSA-4032 | 4,000  |        |                       | 4,000 x 3,200   |                 |                      |  |                  |                       |
| GSA-5032 | 5,000  |        |                       | 5,000 x 3,200   |                 |                      |  |                  |                       |
| GSA-6032 | 6,000  |        |                       | 6,000 x 3,200   |                 |                      |  |                  |                       |

For details, please refer to Machine Specification Instruction

High Speed  
Machining





**VISION WIDE**  
***MULTI-ANGEL***  
***MACHINING***

Solution . Satisfaction . Smile



# VB SERIES

Heavy Duty Double Column Machining Center

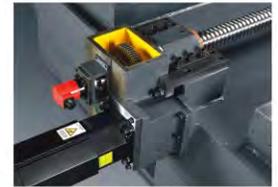


## Box Way Design Rigidity Cutting Machine

- Casting Structure
- 3 axis Box Way
- Step Square beam
- Z stroke of 800/1,020mm

### X axis

Gear reducer with 7 kW high power motor offers max. force and best precision in X axis motion.



### Y axis

Y axis with 4kW high power motor achieve best transmission accuracy and acceleration performance.



### Z axis

Transmission is equipped with high speed cylinder. Z axis has high shock-absorbing box way with 15m rapid traverse and reaches 0.5 acceleration.



| Model   | X axis | Y axis | Z axis              | Table dimension | Max. table load | Spindle motor<br>(cont./ 30 min rated) | Spindle speed       |         | Cutting federate | Rapid traverse<br>(X/Y/Z) |
|---------|--------|--------|---------------------|-----------------|-----------------|--|---------------------|---------|------------------|---------------------------|
|         |        |        |                     |                 |                 |  | 2-step gear         | rpm     |                  |                           |
| Unit    | mm     | mm     | mm                  | mm              | kg              | kW                                     |                     |         | mm/min           | m/min                     |
| VB-2016 | 2,000  | 1,600  | 800/1,020<br>(Opt.) | 2,000 x 1,300   | 8,000           | 18.5/22<br>(22/26Opt.)<br>(30/37Opt.)  | 4,000 / 6,000(Opt.) | 1~7,000 | 15 / 15 / 15     |                           |
| VB-2516 | 2,500  |        |                     | 2,500 x 1,300   | 9,000           |  |                     |         |                  |                           |
| VB-3016 | 3,100  |        |                     | 3,100 x 1,300   | 10,000          |  |                     |         |                  |                           |
| VB-2020 | 2,000  | 2,000  | 800/1,020<br>(Opt.) | 2,000 x 1,700   | 9,000           |  |                     |         |                  |                           |
| VB-2520 | 2,500  |        |                     | 2,500 x 1,700   | 10,000          |  |                     |         |                  |                           |
| VB-3020 | 3,100  |        |                     | 3,100 x 1,700   | 11,000          |  |                     |         |                  |                           |
| VB-4020 | 4,100  |        |                     | 4,100 x 1,700   | 12,000          |  |                     |         |                  |                           |

For details, please refer to Machine Specification Instruction



Gear type spindle  
4,000 rpm/ 6,000rpm(Opt.)

Spindle Motor : 22/26kW  
Spindle Speed : 4,000rpm  
Material : S45C

Face Milling  
Tool dia. : 125 mm  
Spindle Speed : 600 RPM  
Cutting Feed : 1000 mm/min  
Cutting Width : 100 mm  
Cutting Depth : 6 mm  
Removal Rate : 600 cc/min

End Mill (Helical cutter)  
Tool dia. : 63 mm  
Spindle Speed : 800 RPM  
Cutting Feed : 400 mm/min  
Cutting Width : 40 mm  
Cutting Depth : 20 mm  
Removal Rate : 200 cc/min

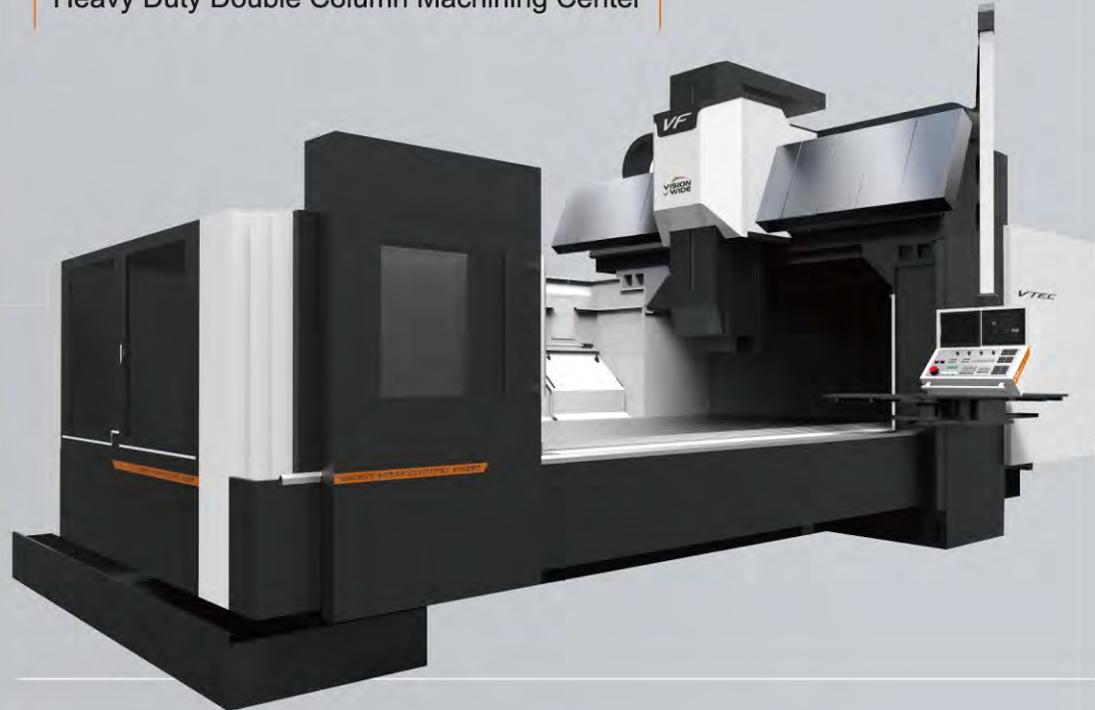
Indexable Insert Drilling  
Tool dia. : 63 mm  
Spindle Speed : 880 RPM  
Cutting Feed : 80 mm/min  
with CTS

Cutting Test Conditions:  
1/2x(Z axis travel)Drilling Tool with CTS

# VF

## SERIES

### Heavy Duty Double Column Machining Center



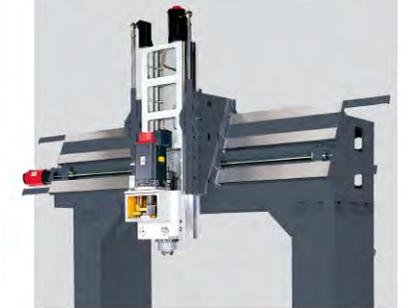
| Model   | X axis | Y axis        | Z axis              | Table dimension | Max. table load | Spindle motor<br>(cont./ 30 min rated) | Spindle speed     | Cutting federate | Rapid traverse<br>(X/Y/Z) |
|---------|--------|---------------|---------------------|-----------------|-----------------|--|-------------------|------------------|---------------------------|
|         |        |               |                     |                 |                 |  | 2-step gear       |                  |                           |
| Unit    | mm     | mm            | mm                  | mm              | kg              | kW                                     | rpm               | mm/min           | m/min                     |
| VF-3000 | 3,200  | 2,300         | 920/1,020<br>(Opt.) | 3,200 x 2,050   | 11,000          | 18.5/22<br>(22/26Opt.)<br>(30/37Opt.)  | 4,000/6,000(Opt.) | 1~7,000          | 12 / 12 / 12              |
| VF-4000 | 4,200  |               |                     | 4,200 x 2,050   | 13,000          |  |                   |                  | 10 / 12 / 12              |
| VF-5000 | 5,200  | 5,200 x 2,050 |                     | 15,000          | 12 / 12 / 12    |  |                   |                  |                           |
| VF-3026 | 3,200  | 3,200 x 2,050 |                     | 11,000          | 10 / 12 / 12    |  |                   |                  |                           |
| VF-4026 | 4,200  | 4,200 x 2,050 | 13,000              | 10 / 12 / 12    |                 |  |                   |                  |                           |
| VF-5026 | 5,200  | 5,200 x 2,050 | 15,000              | 10 / 12 / 12    |                 |  |                   |                  |                           |

For details, please refer to Machine Specification Instruction

## Heavy Cutting Precision Cutting

- Casting Structure
- 3-axis Box Way / Slant Support Design on Cross Beam
- 3 Guide Ways Support on Y Axis
- 920/1,020mm Z stroke

- Z axis center is close to beam and achieves exclusively excellent dynamic performance.
- Beam contact width (805mm) and 3 box ways support design greatly improve beam rigidity and cutting capability.
- Y axis motion with best straightness and cutting rigidity.



The large cross section dimension of column reaches 425x 1,000mm provides the best rigidity to

# SM SERIES

High Efficiency Double Column Machining Center



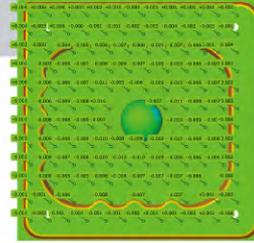
New Generation  
High Performance  
Bridge Machine  
High Rigidity  
Structure Design  
Best Choice in  
Precision Mold Industry

- Large precision ground table work area
- Enhanced positioning and repeatability accuracies
- Larger Y-axis travels
- Higher performance cutting and rapid feedrates
- Gear type spindle torque 1,163Nm (15 / 18.5kW)



### Bumper

- Mold surface with high smooth Ra 0.8 μm
- Fine cutting at acute angle with micro processing and clearing trails
- FC300
- D20R10 ball end
- 0.3 mm pitch
- S: 10,000 rpm
- F: 4,000 mm/min
- 1,000 x 400 x 350mm



### Deep chamber mold

- P20 die steel
- Short-distance surround processing, high-precision feed control
- Four-quadrant commutation without chatter marks
- Simultaneous processing to maintain high finish, no over-cutting, no chatter marks
- Plane accuracy: -0.011 ~ 0.006mm
- Spherical accuracy: -0.012 ~ 0.006mm
- High feed machining
  - S: 3,500rpm
  - F: 5,200mm/min
  - Ap: 0.8mm

| Model    | X axis | Y axis | Z axis            | Table dimension | Max. table load | Spindle motor<br>(cont./ 30min rated) | Spindle speed       | Cutting federate    | Rapid traverse(X/Y/Z) |          |              |                     |          |              |                     |
|----------|--------|--------|-------------------|-----------------|-----------------|---------------------------------------|---------------------|---------------------|-----------------------|----------|--------------|---------------------|----------|--------------|---------------------|
| Unit     | mm     | mm     | mm                | mm              | kg              | kW                                    | rpm                 | mm/min              | m/min                 |          |              |                     |          |              |                     |
| SM-1613  | 1,600  | 1,300  | 800 / 1,000(Opt.) | 1,800x1,100     | 6,000           | 15 / 18.5                             | Gear type:<br>6,000 | 1~15,000            | 20 / 20 / 15          |          |              |                     |          |              |                     |
| SM-2113  | 2,100  |        |                   | 2,300x1,100     | 8,000           |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-2613  | 2,600  |        |                   | 2,800x1,100     | 10,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-2622  | 2,600  | 2,200  | 800 / 1,000(Opt.) | 2,800x2,100     | 12,000          | 22 / 26                               |                     |                     | Gear type:<br>6,000   | 1~15,000 | 15 / 20 / 15 |                     |          |              |                     |
| SM-3122  | 3,100  |        |                   | 3,300x2,100     | 14,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-4122  | 4,100  |        |                   | 4,300x2,100     | 16,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-5122  | 5,100  | 2,700  | 800 / 1,000(Opt.) | 5,300x2,100     | 18,000          |                                       |                     |                     |                       |          | 22 / 26      | Gear type:<br>6,000 | 1~15,000 | 20 / 20 / 15 |                     |
| SM-6122  | 6,100  |        |                   | 6,300x2,100     | 20,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-2622Y | 2,600  |        |                   | 2,800x2,100     | 12,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-3122Y | 3,100  | 2,700  | 800 / 1,000(Opt.) | 3,300x2,100     | 14,000          |                                       |                     |                     |                       |          |              |                     |          | 22 / 26      | Gear type:<br>6,000 |
| SM-4122Y | 4,100  |        |                   | 4,300x2,100     | 16,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-5122Y | 5,100  |        |                   | 5,300x2,100     | 18,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-6122Y | 6,100  | 2,700  | 800 / 1,000(Opt.) | 6,300x2,100     | 20,000          |                                       | 22 / 26             | Gear type:<br>6,000 |                       |          |              |                     |          |              |                     |
| SM-2622E | 2,600  |        |                   | 2,800x2,100     | 12,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-3122E | 3,100  |        |                   | 3,300x2,100     | 14,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-4122E | 4,100  | 2,700  | 800 / 1,000(Opt.) | 4,300x2,100     | 16,000          | 22 / 26                               |                     |                     | Gear type:<br>6,000   | 1~15,000 |              |                     |          |              |                     |
| SM-5122E | 5,100  |        |                   | 5,300x2,100     | 18,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |
| SM-6122E | 6,100  |        |                   | 6,300x2,100     | 20,000          |                                       |                     |                     |                       |          |              |                     |          |              |                     |

For details, please refer to Machine Specification Instruction



High Efficiency  
Machining



# SF SERIES

High Efficiency Double Column Machining Center

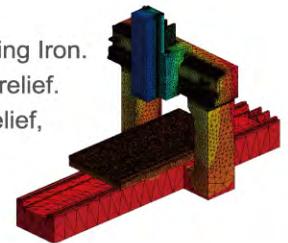


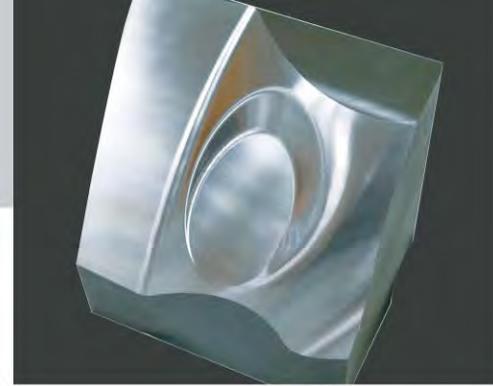
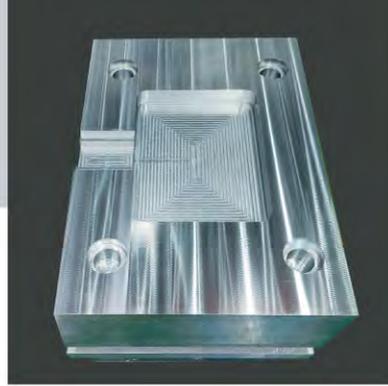
## General Machining Center

- Z-axis adopts double counterweight, oil-gas separation accumulator distribution device. There is no traditional mechanical hydraulic delay. Z-axis retracting function at power failure, providing the most stable performance on mold machining.
- Heavy-loaded roller type linear guideway on XY axis, possesses the low friction and rigidity characters ensures the best dynamic accuracy performance while machining.
- The working table structure is designed for high-rigidity and lightweight to ensure cutting on high acceleration and deceleration when table is loaded.

## Best Rigidity and Persistent Accuracy

- Casting design with optimal streamline & Finite Element Analysis.
- Symmetrical heat conduction in box shape structure.
- MEEHANITE Grade Casting Iron.
- Heat treatment for stress relief.
- V.S.R Vibration Stress Relief, eliminated component's interior stress via its natural frequency.





| Model   | X axis<br>Unit<br>mm | Y axis<br>mm | Z axis                |                       | Table dimension<br>mm                   | Max. table<br>load<br>kg | Spindle power<br>(cont. / 30 min.)<br>kW | Spindle speed                        |  | Cutting<br>feed rate<br>mm/min | Rapid traverse<br>(X/Y/Z)<br>m/min |
|---------|----------------------|--------------|-----------------------|-----------------------|---|--------------------------|--|--------------------------------------|--|--------------------------------|------------------------------------|
|         |                      |              | Box way<br>mm         | Linear way<br>mm      |   |                          |  | Box way<br>rpm                       | Linear way<br>rpm  |                                |                                    |
| SF-2116 | 2,100                | 1,600        | 800 / 1,020<br>(Opt.) | 800 / 1,000<br>(Opt.) | 2,000 x 1,500                           | 8,000                    | 18.5 / 22<br>(22 / 26 Opt.)*             | 2-step gear:<br>6,000 / 4,000 (Opt.) | Direct driven:<br>10,000 (Opt.) / 12,000 (Opt.)<br>Built-in: 8,000 (Opt.) /<br>12,000 (Opt.) | 1~10,000                       | 24 / 24 / 15                       |
| SF-2616 | 2,600                |              |                       |                       | 2,500 x 1,500                           | 9,000                    |  |                                      |  |                                |                                    |
| SF-3116 | 3,100                |              |                       |                       | 3,000 x 1,500                           | 10,000                   |  |                                      |  |                                |                                    |
| SF-4116 | 4,100                |              |                       |                       | 4,000 x 1,500                           | 12,000                   |  |                                      |  |                                |                                    |
| SF-2120 | 2,100                | 2,000        | 800 / 1,020<br>(Opt.) | 800 / 1,000<br>(Opt.) | 2,000 x 1,800                           | 8,000                    | 18.5 / 22<br>(22 / 26 Opt.)*             | 2-step gear:<br>6,000 / 4,000 (Opt.) | Direct driven:<br>10,000 (Opt.) / 12,000 (Opt.)<br>Built-in: 8,000 (Opt.) /<br>12,000 (Opt.) | 1~10,000                       | 24 / 24 / 15                       |
| SF-2620 | 2,600                |              |                       |                       | 2,500 x 1,800                           | 9,000                    |  |                                      |  |                                |                                    |
| SF-3120 | 3,100                |              |                       |                       | 3,000 x 1,800                           | 10,000                   |  |                                      |  |                                |                                    |
| SF-4120 | 4,100                |              |                       |                       | 4,000 x 1,800                           | 12,000                   |  |                                      |  |                                |                                    |
| SF-3122 | 3,100                | 2,200        | 800 / 1,020<br>(Opt.) | 800 / 1,000<br>(Opt.) | 3,300 x 2,100                           | 14,000                   | 18.5 / 22<br>(22 / 26 Opt.)*             | 2-step gear:<br>6,000 / 4,000 (Opt.) | Direct driven:<br>10,000 (Opt.) / 12,000 (Opt.)<br>Built-in: 8,000 (Opt.) /<br>12,000 (Opt.) | 1~10,000                       | 20 / 20 / 15                       |
| SF-4122 | 4,100                |              |                       |                       | 4,300 x 2,100                           | 16,000                   |  |                                      |  |                                |                                    |
| SF-5122 | 5,100                |              |                       |                       | 5,300 x 2,100                           | 18,000                   |  |                                      |  |                                |                                    |
| SF-3126 | 3,100                |              |                       |                       | 3,300 x 2,100<br>(3,000 x 2,450 (Opt.)) | 14,000                   |  |                                      |  |                                |                                    |
| SF-4126 | 4,100                | 2,600        | 800 / 1,020<br>(Opt.) | 800 / 1,000<br>(Opt.) | 4,300 x 2,100<br>(4,000 x 2,450 (Opt.)) | 16,000                   | 18.5 / 22<br>(22 / 26 Opt.)*             | 2-step gear:<br>6,000 / 4,000 (Opt.) | Direct driven:<br>10,000 (Opt.) / 12,000 (Opt.)<br>Built-in: 8,000 (Opt.) /<br>12,000 (Opt.) | 1~10,000                       | 20 / 20 / 15                       |
| SF-5126 | 5,100                |              |                       |                       | 5,300 x 2,100<br>(5,000 x 2,450 (Opt.)) | 18,000                   |  |                                      |  |                                |                                    |
| SF-2123 | 2,100                | 2,300        | 800 / 1,020<br>(Opt.) | 800 / 1,000<br>(Opt.) | 2,000 x 1,500                           | 8,000                    | 18.5 / 22<br>(22 / 26 Opt.)*             | 2-step gear:<br>6,000 / 4,000 (Opt.) | Direct driven:<br>10,000 (Opt.) / 12,000 (Opt.)<br>Built-in: 8,000 (Opt.) /<br>12,000 (Opt.) | 1~10,000                       | 24 / 20 / 15                       |
| SF-2623 | 2,600                |              |                       |                       | 2,500 x 1,500                           | 9,000                    |  |                                      |  |                                |                                    |
| SF-3123 | 3,100                |              |                       |                       | 3,000 x 1,500                           | 10,000                   |  |                                      |  |                                |                                    |
| SF-4123 | 4,100                |              |                       |                       | 4,000 x 1,500                           | 12,000                   |  |                                      |  |                                |                                    |
| SF-2127 | 2,100                | 2,700        | 800 / 1,020<br>(Opt.) | 800 / 1,000<br>(Opt.) | 2,000 x 1,800                           | 8,000                    | 18.5 / 22<br>(22 / 26 Opt.)*             | 2-step gear:<br>6,000 / 4,000 (Opt.) | Direct driven:<br>10,000 (Opt.) / 12,000 (Opt.)<br>Built-in: 8,000 (Opt.) /<br>12,000 (Opt.) | 1~10,000                       | 24 / 20 / 15                       |
| SF-2627 | 2,600                |              |                       |                       | 2,500 x 1,800                           | 9,000                    |  |                                      |  |                                |                                    |
| SF-3127 | 3,100                |              |                       |                       | 3,000 x 1,800                           | 10,000                   |  |                                      |  |                                |                                    |
| SF-4127 | 4,100                |              |                       |                       | 4,000 x 1,800                           | 12,000                   |  |                                      |  |                                |                                    |
| SF-3129 | 3,100                | 2,900        | 800 / 1,020<br>(Opt.) | 800 / 1,000<br>(Opt.) | 3,300 x 2,100                           | 14,000                   | 18.5 / 22<br>(22 / 26 Opt.)*             | 2-step gear:<br>6,000 / 4,000 (Opt.) | Direct driven:<br>10,000 (Opt.) / 12,000 (Opt.)<br>Built-in: 8,000 (Opt.) /<br>12,000 (Opt.) | 1~10,000                       | 20 / 20 / 15                       |
| SF-4129 | 4,100                |              |                       |                       | 4,300 x 2,100                           | 16,000                   |  |                                      |  |                                |                                    |
| SF-5129 | 5,100                |              |                       |                       | 5,300 x 2,100                           | 18,000                   |  |                                      |  |                                |                                    |
| SF-3133 | 3,100                |              |                       |                       | 3,300 x 2,100<br>(3,000 x 2,450 (Opt.)) | 14,000                   |  |                                      |  |                                |                                    |
| SF-4133 | 4,100                | 3,300        | 800 / 1,020<br>(Opt.) | 800 / 1,000<br>(Opt.) | 4,300 x 2,100<br>(4,000 x 2,450 (Opt.)) | 16,000                   | 18.5 / 22<br>(22 / 26 Opt.)*             | 2-step gear:<br>6,000 / 4,000 (Opt.) | Direct driven:<br>10,000 (Opt.) / 12,000 (Opt.)<br>Built-in: 8,000 (Opt.) /<br>12,000 (Opt.) | 1~10,000                       | 20 / 20 / 15                       |
| SF-5133 | 5,100                |              |                       |                       | 5,300 x 2,100<br>(5,000 x 2,450 (Opt.)) | 18,000                   |  |                                      |  |                                |                                    |

For details, please refer to Machine Specification Instruction



# NF/HF SERIES

High Efficiency Double Column Machining Center



- Enclosed sheet metal guard with roof (Opt.)

## Intelligent 5-face Machining High Efficiency Production

- The rigid beam possesses 1.1m width with stepped structure design, and large span in Y axis benefits to rigidity.
- Y axis adopts 65mm ultra-load guide way not only enhances more than 40% rigidity on higher cutting load but also prolongs the lifetime.
- The position of 3 roller type guide way is symmetric and lateral two rails with large span are symmetric to the center of table load's gravity. The middle rail and the ballscrew are designed with the minimal span, and aligned to the center of the motion, which achieves the high dynamic straightness in full travel.

### DCG, Driving at the Center of Gravity



| Linear Way |



| Enclosed Box Way |



| Model               | X axis | Y axis          | Z axis                     |   | Table dimension | Max. table load      | Spindle motor<br>(cont./ 30 min rated)  | Spindle speed                          |   | Cutting federate | Rapid traverse                              |   |                                     |
|---------------------|--------|-----------------|----------------------------|---|-----------------|----------------------|---|--|---|------------------|---|---|-------------------------------------|
|                     |        |                 | Box way / single ballscrew | Linear way, Enclosed Box Ram/ Dual ballscrews |                 |                      |   | Box way / single ballscrew             | Linear way, Enclosed Box Ram/ Dual ballscrews |                  | XY (Y+700)                                  | Z-Box way / single ballscrew<br>Z-Linear way/ Dual ballscrews | Z-Enclosed Box Ram/ Dual ballscrews |
| Unit                | mm     | mm              | mm                         | mm  | mm              | kg                   | kW                                      | rpm                                    | rpm   | mm/min           | m/min                                       | m/min   | m/min                               |
| NF-3023 / NF-3030   | 3,100  | 2,300/<br>3,000 | 920 /<br>1,020(Opt.)       | 1,000(Opt.)/<br>1,200(Opt.)/<br>1,400(Opt.)   | 3,000 x 2,050   | 15,000               | 18.5/22<br>(22/26 Opt.)<br>(30/37 Opt.) | 2-step gear:<br>4,000 ;<br>6,000(Opt.) | 2-step gear:<br>4,000 ;<br>6,000(Opt.)        | 1~10,000         | 24/20(15)                                   | 15  | 12                                  |
| NF-4023 / NF-4030   | 4,100  |                 |                            |   | 4,000 x 2,050   | 18,000               |   |  |   |                  | 24/20(15)                                   |   |                                     |
| NF-5023 / NF-5030   | 5,100  |                 |                            |   | 5,000 x 2,050   | 20,000               |   |  |   |                  | 15/20(15)                                   |   |                                     |
| NF-6023 / NF-6030   | 6,100  |                 |                            |   | 6,000 x 2,050   | 22,000               |   |  |   |                  | 15/20(15)                                   |   |                                     |
| NF-8023 / NF-8030   | 8,100  |                 |                            |   | 8,000 x 2,050   | 24,000               |   |  |   |                  | 15/20(15)                                   |   |                                     |
| NF-10023 / NF-10030 | 10,100 |                 |                            |   | 10,000 x 2,050  | 26,000               |   |  |   |                  | 15/20(15)                                   |   |                                     |
| NF-3026 / NF-3033   | 3,100  | 2,600/<br>3,300 | 920 /<br>1,020(Opt.)       | 1,000(Opt.)/<br>1,200(Opt.)/<br>1,400(Opt.)   | 3,000 x 2,450   | 15,000               | 18.5/22<br>(22/26 Opt.)<br>(30/37 Opt.) | 2-step gear:<br>4,000 ;<br>6,000(Opt.) | 2-step gear:<br>4,000 ;<br>6,000(Opt.)        | 1~10,000         | 24/20(15)                                   | 15  | 12                                  |
| NF-4026 / NF-4033   | 4,100  |                 |                            |   | 4,000 x 2,450   | 18,000               |   |  |   |                  | 24/20(15)                                   |   |                                     |
| NF-5026 / NF-5033   | 5,100  |                 |                            |   | 5,000 x 2,450   | 20,000               |   |  |   |                  | 15/20(15)                                   |   |                                     |
| NF-6026 / NF-6033   | 6,100  |                 |                            |   | 6,000 x 2,450   | 22,000               |   |  |   |                  | 15/20(15)                                   |   |                                     |
| NF-8026 / NF-8033   | 8,100  |                 |                            |   | 8,000 x 2,450   | 24,000               |   |  |   |                  | 15/20(15)                                   |   |                                     |
| NF-10026 / NF-10033 | 10,100 |                 |                            |   | 10,000 x 2,450  | 26,000               |   |  |   |                  | 15/20(15)                                   |   |                                     |
| NF-3032 / NF-3039   | 3,100  | 3,200/<br>3,900 | 920 /<br>1,020(Opt.)       | 1,000(Opt.)/<br>1,200(Opt.)/<br>1,400(Opt.)   | 3,000 x 2,450   | 15,000               | 18.5/22<br>(22/26 Opt.)<br>(30/37 Opt.) | 2-step gear:<br>4,000 ;<br>6,000(Opt.) | 2-step gear:<br>4,000 ;<br>6,000(Opt.)        | 1~7,000          | 24/15(15)                                   | 15  | 12                                  |
| NF-4032 / NF-4039   | 4,100  |                 |                            |   | 4,000 x 2,450   | 18,000               |   |  |   |                  | 24/15(15)                                   |   |                                     |
| NF-5032 / NF-5039   | 5,100  |                 |                            |   | 5,000 x 2,450   | 20,000               |   |  |   |                  | 15/15(15)                                   |   |                                     |
| NF-6032 / NF-6039   | 6,100  |                 |                            |   | 6,000 x 2,450   | 22,000               |   |  |   |                  | 15/15(15)                                   |   |                                     |
| NF-8032 / NF-8039   | 8,100  |                 |                            |   | 8,000 x 2,450   | 24,000               |   |  |   |                  | 15/15(15)                                   |   |                                     |
| NF-10032 / NF-10039 | 10,100 |                 |                            |   | 10,000 x 2,450  | 26,000               |   |  |   |                  | 15/15(15)                                   |   |                                     |
| HF-4035 / HF-4042   | 4,100  | 3,500/<br>4,200 | 920 /<br>1,020(Opt.)       | 1,000(Opt.)/<br>1,200(Opt.)/<br>1,400(Opt.)   | 4,000 x 3,000   | 20,000               | 22/26<br>(30/37 Opt.)                   | 2-step gear:<br>4,000 ;<br>6,000(Opt.) | 2-step gear:<br>4,000 ;<br>6,000(Opt.)        | 1~7,000          | 24/15(15)                                   | 15  | 12                                  |
| HF-5035 / HF-5042   | 5,100  |                 |                            |   | 5,000 x 3,000   | 24,000               |   |  |   |                  | 15/15(15)                                   |   |                                     |
| HF-6035 / HF-6042   | 6,100  |                 |                            |   | 6,000 x 3,000   | 28,000               |   |  |   |                  | 15/15(15)                                   |   |                                     |
| HF-8035 / HF-8042   | 8,100  |                 |                            |   | 8,000 x 3,000   | 32,000               |   |  |   |                  | 15/15(15)                                   |   |                                     |
| HF-10035 / HF-10042 | 10,100 |                 |                            |   | 10,000 x 3,000  | 36,000               |   |  |   |                  | 15/15(15)                                   |   |                                     |
| HF-4040 / HF-4047   | 4,100  |                 |                            |   | 4,000/<br>4,700 | 920 /<br>1,020(Opt.) |   |  |   |                  | 1,000(Opt.)/<br>1,200(Opt.)/<br>1,400(Opt.) |   |                                     |
| HF-5040 / HF-5047   | 5,100  | 5,000 x 3,500   | 24,000                     | 15/15(15)                                     |                 |                      |   |  |   |                  |   |   |                                     |
| HF-6040 / HF-6047   | 6,100  | 6,000 x 3,500   | 28,000                     | 15/15(15)                                     |                 |                      |   |  |   |                  |   |   |                                     |
| HF-8040 / HF-8047   | 8,100  | 8,000 x 3,500   | 32,000                     | 15/15(15)                                     |                 |                      |   |  |   |                  |   |   |                                     |
| HF-10040 / HF-10047 | 10,100 | 10,000 x 3,500  | 36,000                     | 15/15(15)                                     |                 |                      |   |  |   |                  |   |   |                                     |

For details, please refer to Machine Specification Instruction



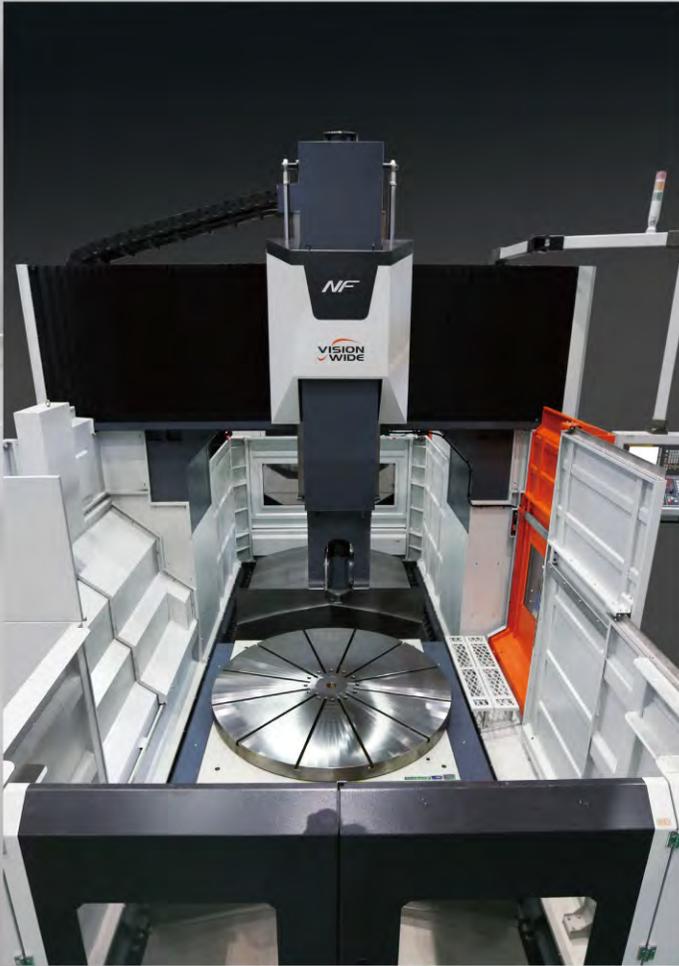
# Multi-Angel Machining



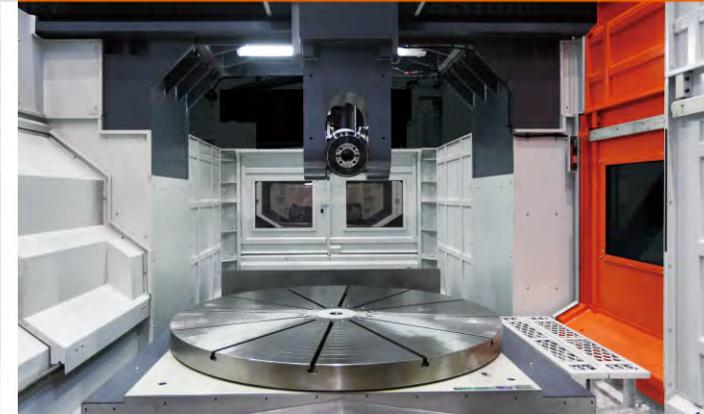
# NFT

## Double Column Machining Center With A Large Rotary Table Design

Designed for  
Cylindrical  
Workpiece



|                        |                                    |
|------------------------|------------------------------------|
| Tool Clamping Type     | Auto-Hydraulic Clamping            |
| Head Clamping Type     | Fixed                              |
| C axis Angle           | Fixed                              |
| B axis Angle           | ±110°                              |
| B axis Index           | B axis 1°                          |
| Indexing Precision(mm) | ±0.03 / 300                        |
| Indexing Function      | Auto angle indexing (B axis )      |
| Lubrication            | Bearing / gear oil-air lubrication |
| CTS Function           | Available for 20 / 70 Bar          |
| Spindle Cooling        | Spindle nose nozzle                |
| Max. Cutting Power     | 26kW                               |
| Spindle speed          | 4,000rpm                           |



| X axis | Y axis | Z axis          | Distance from Vertical Spindle Nose to Table | Distance from Horizontal Spindle Nose to Table | Table Dimension | Table Load (Central Region) | Min. division accuracy | Rated Torque | Max. Torque | Braking Torque | Max. Cutting Torque under Braking |
|--------|--------|-----------------|--|--|-----------------|-----------------------------|------------------------|--------------|-------------|----------------|-----------------------------------|
| mm     | mm     | mm              | mm   | mm   | mm              | kg                          | degree                 | Nm           | Nm          | Nm             | Nm                                |
| 2,200  | 2,300  | 920/1,020(Opt.) | 85~1,005                                     | 335~1,255                                      | Ø1,800          | 3,000                       | 0.001                  | 2,040        | 3,800       | 10,210         | 7,000                             |

For details, please refer to Machine Specification Instruction

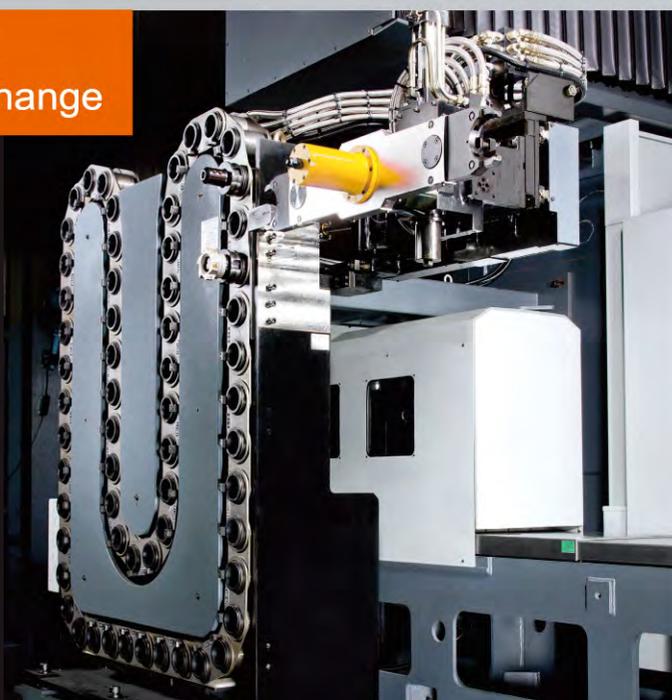
For special specifications,  
please contact sales.



## Attachment Magazine

- (A) Multi-heads magazine (at ATC side)
- (B) Auto swiveling arm type head bracket (on operation side)
- (C) Auto swiveling arm type head bracket (on operation side)
- (D) Manual swiveling arm type head bracket (on operation side)

## Auto Vertical and Horizontal Tool Change



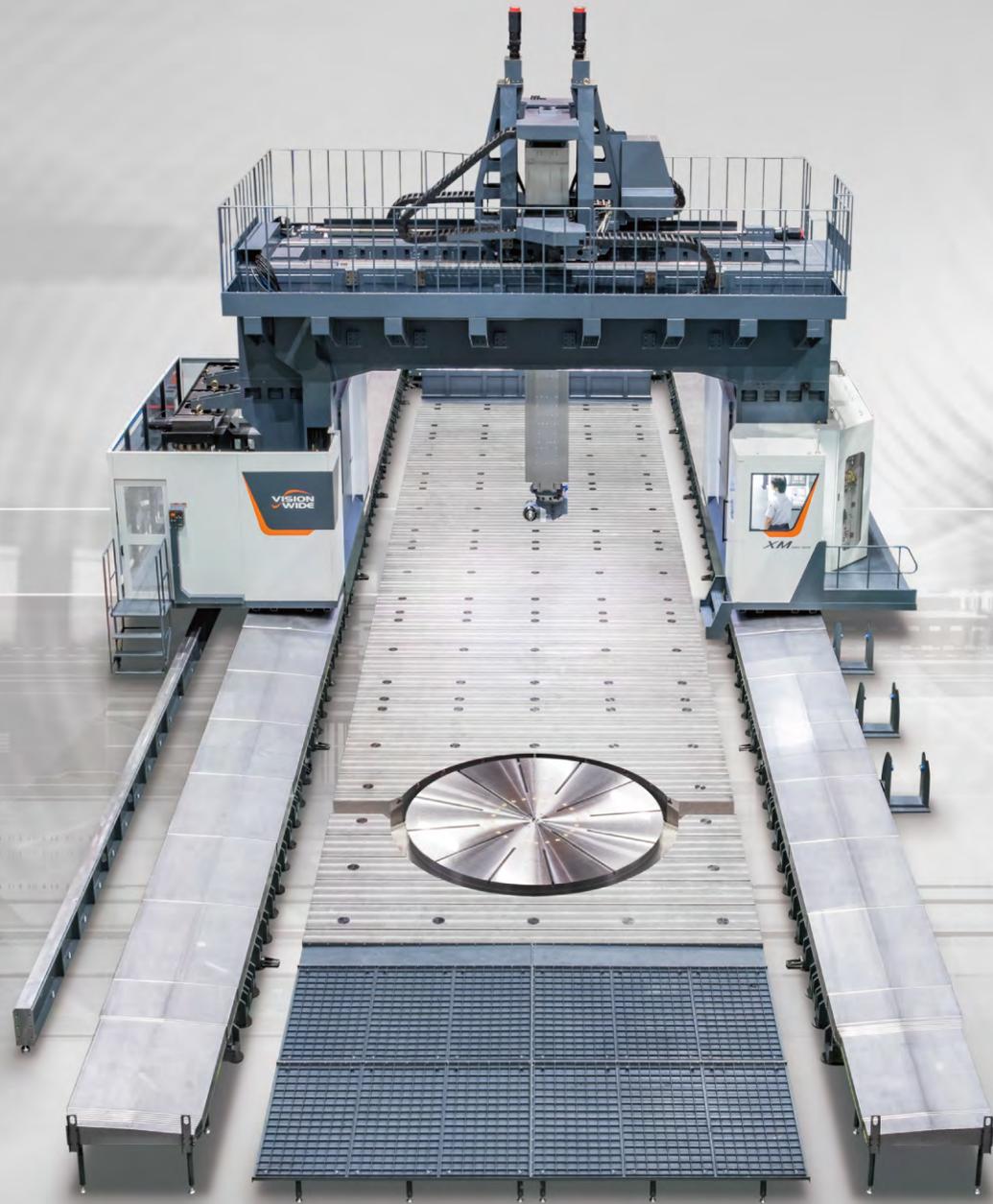
- Floor-standing vertical-horizontal type tool magazine



- Horizontal tool change for AC 90° angular head



- Vertical tool change for extended head



# VISION WIDE *MEGA WORKPIECE* *MACHINING*

Solution . Satisfaction . Smile



# BM SERIES

Beam Moving Double Column Machining Center



## Beam Moving Large-Scale & Multi-Angle Machining Center

BM series is oriented on large-scale automatic machining.

- With the firm structure, the workpiece can reach to 2,715mm height the maximum.
- The W-axis can be positioned at a designated height where the ATC can be performed as well.
- BM series possesses both capabilities of heavy workpiece loading and high spindle torque output.
- Auto multi-angle head attachments and auto head attachments tool changing achieve auto application on large workpiece machining.





| Linear Way |  
(Dual Ballcrews)



| Enclosed Box Ram |  
(Dual Ballcrews)



Hydrostatic Guideway type  
machine head (OPT.)

- Using dual servo direct-drive motors with high-speed reducers to replace the existing hydraulic counterbalance cylinder, improving performance and being environmentally friendly.
- Dual screw for the W-axis combined with dual linear scales provide the best W-axis motion positioning accuracy.

| Model             | X axis | Y axis      | Z axis                                | W axis                                | Table dimension | Max. table load | Spindle motor<br>(cont./30 min rated) | Spindle speed                             |                              | Cutting federate        | Rapid traverse<br>(X/Y/Z/W) |
|-------------------|--------|-------------|---------------------------------------|---------------------------------------|-----------------|-----------------|---------------------------------------|---|------------------------------|-------------------------|-----------------------------|
|                   |        |             |                                       |                                       |                 |                 |                                       | 2-step gear                               | Direct-driven                |                         |                             |
| Unit              | mm     | mm          | mm                                    | mm                                    | mm              | kg              | kW                                    | rpm                                       | rpm                          | m/min                   | m/min                       |
| BM-4030/BM-4037   | 4,100  | 3,000/3,700 | 1,000/<br>1,200(Opt.)/<br>1,400(Opt.) | 1,000/<br>1,200(Opt.)/<br>1,500(Opt.) | 4,000 x 2,450   | 16,000          | 22 / 26<br>(30/37 Opt.)               | 22 / 26kW:<br>4,000/<br>6,000(Opt.);      | 8,000(Opt.)/<br>10,000(Opt.) | X,Y,Z: 7 / 7 / 7<br>W:1 | 10 / 10 / 12 / 2            |
| BM-5030/BM-5037   | 5,100  |             |                                       |                                       | 5,000 x 2,450   | 20,000          |                                       |   |                              |                         | 8 / 10 / 12 / 2             |
| BM-6030/BM-6037   | 6,100  |             |                                       |                                       | 6,000 x 2,450   | 22,000          |                                       |   |                              |                         |                             |
| BM-8030/BM-8037   | 8,100  |             |                                       |                                       | 8,000 x 2,450   | 24,000          |                                       |   |                              |                         |                             |
| BM-10030/BM-10037 | 10,100 |             |                                       |                                       | 10,000 x 2,450  | 26,000          |                                       |   |                              |                         |                             |
| BM-4035/BM-4042   | 4,100  | 3,500/4,200 | 1,000/<br>1,200(Opt.)/<br>1,400(Opt.) | 1,000/<br>1,200(Opt.)/<br>1,500(Opt.) | 4,000 x 3,000   | 20,000          | 22 / 26<br>(30/37 Opt.)               | 30 / 37kW:<br>3,000(Opt.)/<br>5,500(Opt.) | 8,000(Opt.)/<br>10,000(Opt.) | X,Y,Z: 7 / 7 / 7<br>W:1 | 10 / 10 / 12 / 2            |
| BM-5035/BM-5042   | 5,100  |             |                                       |                                       | 5,000 x 3,000   | 24,000          |                                       |   |                              |                         | 8 / 10 / 12 / 2             |
| BM-6035/BM-6042   | 6,100  |             |                                       |                                       | 6,000 x 3,000   | 28,000          |                                       |   |                              |                         |                             |
| BM-8035/BM-8042   | 8,100  |             |                                       |                                       | 8,000 x 3,000   | 32,000          |                                       |   |                              |                         |                             |
| BM-10035/BM-10042 | 10,100 |             |                                       |                                       | 10,000 x 3,000  | 36,000          |                                       |   |                              |                         |                             |

For details, please refer to Machine Specification Instruction

Multi-Angel  
Machining



# HFL SERIES

Z axis travel\*1,500/2,000/2,200 mm

Ram size : 580 x 580 mm

The Z-axis adopts dual servo with dual screw drive to increase the feeding rigidity.



## DCG, Driving at the Center of Gravity DPR, Dual Positioning Rigidity

- The minimum distance between the spindle center and the Z-axis roller way not only shortens the cutting lever arm but also significantly improves rigidity.
- The spindle is located at the driving center which is the center of gravity of the Z axis, providing the Z axis the optimum microscope feeding and thermal equilibrium.
- Efficiently eliminating unbalanced torque and ensuring microscope feeding and long-term accurate positioning.



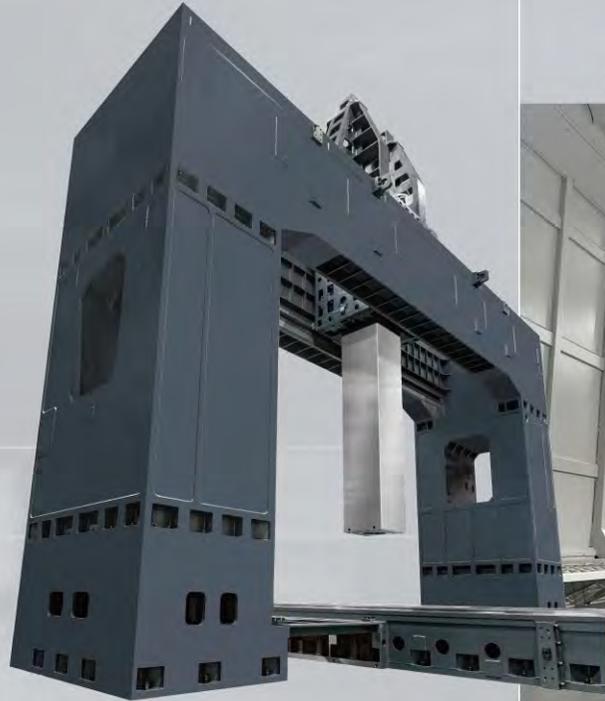
| Model     | X axis travel | Y axis travel | Z axis travel<br>Linear way,<br>Enclosed Box Ram/<br>Dual ballscrews | Dimension      | Max. table load | Spindle motor<br>(cont./30 min. rated) | Spindle speed          | Cutting federate | Rapid traverse<br>(X / Y / Z) |
|-----------|---------------|---------------|--|----------------|-----------------|--|------------------------|------------------|-------------------------------|
| Unit      | mm            | mm            | mm   | mm             | kg              | kg                                     | kW                     | mm/min           | m/min                         |
| HFL-6037  | 6,100         | 3,700         | 1,500  | 6,000 x 2,450  | 22,000          | 22 / 26<br>(30/37Opt.)                 | 4,000 /<br>6,000(Opt.) | 1-7,000          | 8 / 10 / 12                   |
| HFL-8037  | 8,100         |               |  | 8,000 x 2,450  | 24,000          |  |                        |                  |                               |
| HFL-10037 | 10,100        |               |  | 10,000 x 2,450 | 26,000          |  |                        |                  |                               |
| HFL-6042  | 6,100         | 4,200         | 1,500  | 6,000 x 3,000  | 28,000          | 22 / 26<br>(30/37Opt.)                 | 4,000 /<br>6,000(Opt.) | 1-7,000          | 8 / 10 / 12                   |
| HFL-8042  | 8,100         |               |  | 8,000 x 3,000  | 32,000          |  |                        |                  |                               |
| HFL-10042 | 10,100        |               |  | 10,000 x 3,000 | 36,000          |  |                        |                  |                               |
| HFL-6047  | 6,100         | 4,700         | 1,500  | 6,000 x 3,500  | 28,000          | 22 / 26<br>(30/37Opt.)                 | 4,000 /<br>6,000(Opt.) | 1-7,000          | 8 / 10 / 12                   |
| HFL-8047  | 8,100         |               |  | 8,000 x 3,500  | 32,000          |  |                        |                  |                               |
| HFL-10047 | 10,100        |               |  | 10,000 x 3,500 | 36,000          |  |                        |                  |                               |

For details, please refer to Machine Specification Instruction

# HFM

SERIES

Box in Box Structure  
High Rigidity Hydraulic Bearing Design  
Ultra-Large Workpieces Cutting Ability



- Cross beam design with box-in-box structure can reduce deformation caused by Z-axis loaded on unilateral cross beam.

Z Axis Travel 2,000~4,000mm

- The gravity center of head is located on the centerline of symmetric structure, the design can reduce the influence from ambient temperature.
- Head adopts hydrostatic transmission design which provides better rigidity, low friction and stability for large Z-axis travel machine.



| Model     | X axis travel | Y axis travel | Z axis travel<br>Linear way,<br>Enclosed Box Ram/<br>Dual ballscrews | Dimension      | Max. table load | Spindle motor<br>(cont./30 min. rated) | Spindle speed          | Cutting federate | Rapid traverse<br>(X / Y / Z) |
|-----------|---------------|---------------|--|----------------|-----------------|--|------------------------|------------------|-------------------------------|
| Unit      | mm            | mm            | mm   | mm             | kg              | kg                                     | kW                     | mm/min           | m/min                         |
| HFM-6042  | 6,100         | 4,200         | 2,500  | 6,000 x 3,000  | 28,000          | 22 / 26<br>(30/37Opt.)                 | 4,000 /<br>6,000(Opt.) | 1-7,000          | 8 / 10 / 12                   |
| HFM-8042  | 8,100         |               |  | 8,000 x 3,000  | 32,000          |  |                        |                  |                               |
| HFM-10042 | 10,100        |               |  | 10,000 x 3,000 | 36,000          |  |                        |                  |                               |
| HFM-6047  | 6,100         | 4,700         | 2,500  | 6,000 x 3,500  | 28,000          | 22 / 26<br>(30/37Opt.)                 | 4,000 /<br>6,000(Opt.) | 1-7,000          | 8 / 10 / 12                   |
| HFM-8047  | 8,100         |               |  | 8,000 x 3,500  | 32,000          |  |                        |                  |                               |
| HFM-10047 | 10,100        |               |  | 10,000 x 3,500 | 36,000          |  |                        |                  |                               |

For details, please refer to Machine Specification Instruction

# XM/XML

SERIES

Extremely Mighty Machining Center



Huge Workpiece  
Machining Space.  
Excellent Moving Column  
Positioning Accuracy.  
Fully Automatic Multi-face  
Machining.

- High torque spindle with heavy cutting capability.
- Fully automatic tool changer.
- Friendly operation.
- Milling and turning compound solution.
- Straightness 0.02mm/ 20m structural machining equipment.

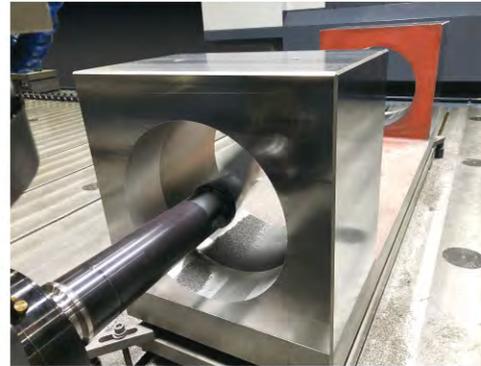


Front-mounted cross beam design

XM : 460 x 470 mm

XML : 580 x 580 mm

Dual ballscrews and servo motors achieve double times of rigidity, and axial thrust driving force, raising 50% positioning accuracy and acceleration speed.



| Model  | X axis                 | Y axis | Z axis  | Max. workpiece width | Dimension (W x L) | Max. table load   | Spindle motor<br>(cont./30 min rated) | Spindle speed         |                              | Cutting federate | Rapid traverse (X/ Y/ Z) | ATC capacity              |
|--------|------------------------|--------|---|----------------------|-------------------|-------------------|---------------------------------------|-----------------------|------------------------------|------------------|--------------------------|---------------------------|
|        |                        |        |   |                      |                   |                   |                                       | 2-step gear           | Built-in                     |                  |                          |                           |
| Unit   | mm                     | mm     | mm  | mm                   | m                 | kg/m <sup>2</sup> | kW                                    | rpm                   | rpm                          | mm/min           | m/min                    | pcs                       |
| XM-32  | 8,200(X+1m)<br>~60,200 | 3,200  | 1,000 /<br>1,200(Opt.) /<br>1,400(Opt.)                 | 3,120 (2,700)        | 2.5 x(8~60)m      | 5,000             | 22 / 26                               | 4,000/<br>6,000(Opt.) | 8,000(Opt.)/<br>12,000(Opt.) | 1-10,000         | 15/ 20/ 12               | 32/ 40(Opt.)/<br>60(Opt.) |
| XM-37  |                        | 3,700  |   | 3,620 (3,200)        | 3 x(8~60)m        |                   |                                       |                       |                              |                  |                          |                           |
| XM-42  |                        | 4,200  |   | 4,120 (3,700)        | 3.5 x(8~60)m      |                   |                                       |                       |                              |                  |                          |                           |
| XM-47  |                        | 4,700  |   | 5,050 (4,600)        | 4 x(8~60)m        |                   |                                       |                       |                              |                  |                          |                           |
| XM-57  |                        | 5,700  |   | 6,050 (5,600)        | 5 x(8~60)m        |                   |                                       |                       |                              |                  |                          |                           |
| XML-37 | 8,200(X+1m)<br>~60,200 | 3,700  | 1,500/<br>1,800(Opt.) /<br>2,000(Opt.) /<br>2,200(Opt.) | 4,050 (3,600)        | 3 x(8~60)m        | 5,000             | 22 / 26                               | 4,000/<br>6,000(Opt.) | 8,000(Opt.)/<br>12,000(Opt.) | 1-10,000         | 15/ 20/ 12               | 32/ 40(Opt.)/<br>60(Opt.) |
| XML-42 |                        | 4,200  |   | 4,550 (4,100)        | 3.5 x(8~60)m      |                   |                                       |                       |                              |                  |                          |                           |
| XML-47 |                        | 4,700  |   | 5,050 (4,600)        | 4 x(8~60)m        |                   |                                       |                       |                              |                  |                          |                           |
| XML-57 |                        | 5,700  |   | 6,050 (5,600)        | 5 x(8~60)m        |                   |                                       |                       |                              |                  |                          |                           |

For details, please refer to Machine Specification Instruction

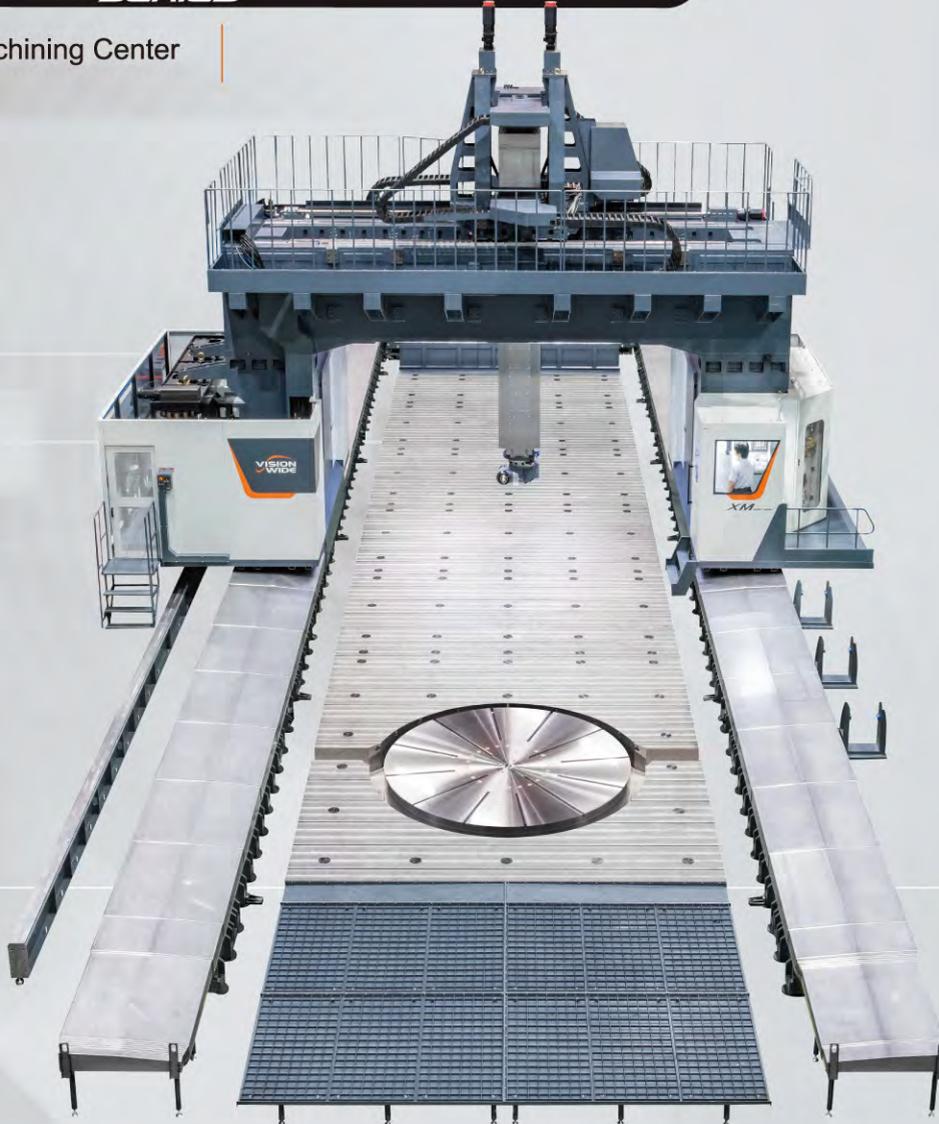
# Huge Parts Machining



# XMF/XMS

SERIES

Extremely Mighty Machining Center



Savior of  
Large Workpiece.  
Excellent Moving Column  
Positioning Accuracy.

- High torque spindle with heavy cutting capability.
- Fully automatic tool changer.
- Fully Automatic Multi-face Machining.
- Friendly operation.
- Milling and turning compound solution.
- Straightness 0.02mm/20m structural machining equipment.
- Max. Workpiece High 3,500mm.





- Box-in-Box cross beam design
- Hydrostatic Guideway Type
- High rigidity provides a high cutting capability.
- Ensure the clamping of the head, providing the best machining rigidity and spindle torque 1500Nm.



| Model  | X axis                 | Y axis | Z axis  | Max. workpiece width | Dimension (W x L) | Max. table load   | Spindle motor<br>(cont./30 min rated) | Spindle speed         |                              | Cutting federate | Rapid traverse (X/Y/Z/W) | ATC capacity              |
|--------|------------------------|--------|---|----------------------|-------------------|-------------------|---------------------------------------|-----------------------|------------------------------|------------------|--------------------------|---------------------------|
|        |                        |        |   |                      |                   |                   |                                       | 2-step gear           | Built-in                     |                  |                          |                           |
| Unit   | mm                     | mm     | mm  | mm                   | m                 | kg/m <sup>2</sup> | kW                                    | rpm                   | rpm                          | mm/min           | m/min                    | pcs                       |
| XMF-42 | 8,200(X+1m)<br>~60,200 | 4,200  | 2,500 /<br>3,000                                      | 5,000 (4,600)        | 4 x(8-60)         | 5,000             | 22 / 26                               | 4,000/<br>6,000(Opt.) | 8,000(Opt.)/<br>12,000(Opt.) | 1-10,000         | 15/ 20/ 12               | 32/ 40(Opt.)/<br>60(Opt.) |
| XMF-47 |                        | 4,700  |   | 5,500 (5,100)        | 4 x(8-60)         |                   |                                       |                       |                              |                  |                          |                           |
| XMF-52 |                        | 5,200  |   | 6,000 (5,600)        | 5 x(8-60)         |                   |                                       |                       |                              |                  |                          |                           |
| XMF-57 |                        | 5,700  |   | 6,500 (6,100)        | 5 x(8-60)         |                   |                                       |                       |                              |                  |                          |                           |
| XMF-62 |                        | 6,200  |   | 7,000 (6,600)        | 5 x(8-60)         |                   |                                       |                       |                              |                  |                          |                           |
| XMS-37 | 8,200(X+1m)<br>~60,200 | 3,700  | 2,000/<br>1,500(Opt.)/<br>1,800(Opt.)/<br>2,200(Opt.) | 4,500 (4,100)        | 3.5 x(8-60)       | 5,000             | 22 / 26                               | 4,000/<br>6,000(Opt.) | 8,000(Opt.)/<br>12,000(Opt.) | 1-10,000         | 15/ 20/ 12               | 32/ 40(Opt.)/<br>60(Opt.) |
| XMS-42 |                        | 4,200  | 5,000 (4,600)   | 4 x(8-60)            |                   |                   |                                       |                       |                              |                  |                          |                           |
| XMS-52 |                        | 5,200  | 6,000 (5,600)   | 5 x(8-60)            |                   |                   |                                       |                       |                              |                  |                          |                           |

For details, please refer to Machine Specification Instruction

# Huge Parts Machining





**VISION WIDE | KENYOU**  
*VERTICAL*  
*TURNING MILLING*  
*LATHE*  
*MACHINING*

Solution . Satisfaction . Smile

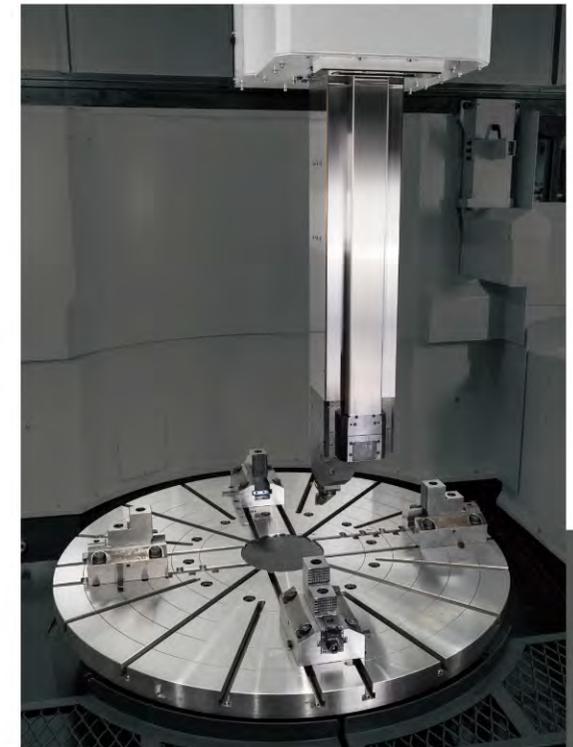
# KENYOU

## VT/VTM SERIES

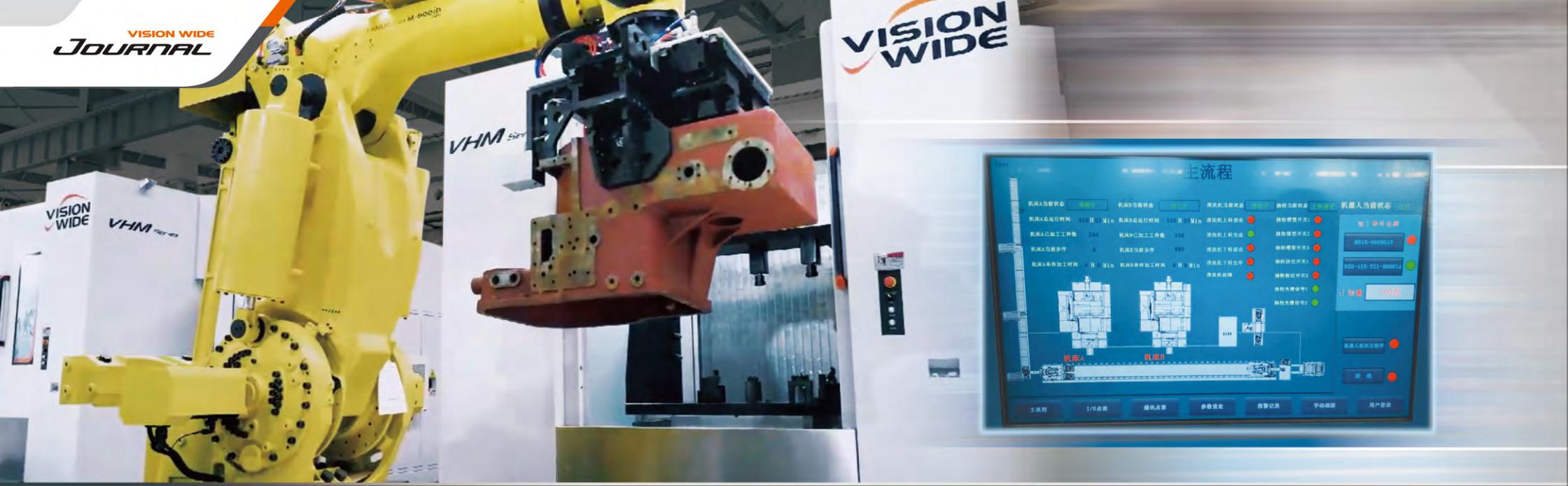
Vertical Turning Milling Lathe

Vertical Turning  
Milling Solution  
Table dia.1,250-5,000mm

- Patent design high pressure coolant system up to 125 bar
- Turning 75Kw
- Vertical milling
- Grinding
- Turning-Milling ATC







# FMS System

Multi-Machine Automated Robotic Production Line



# VISION WIDE *HORIZONTAL* *MACHINING*

Solution . Satisfaction . Smile



# VHM SERIES

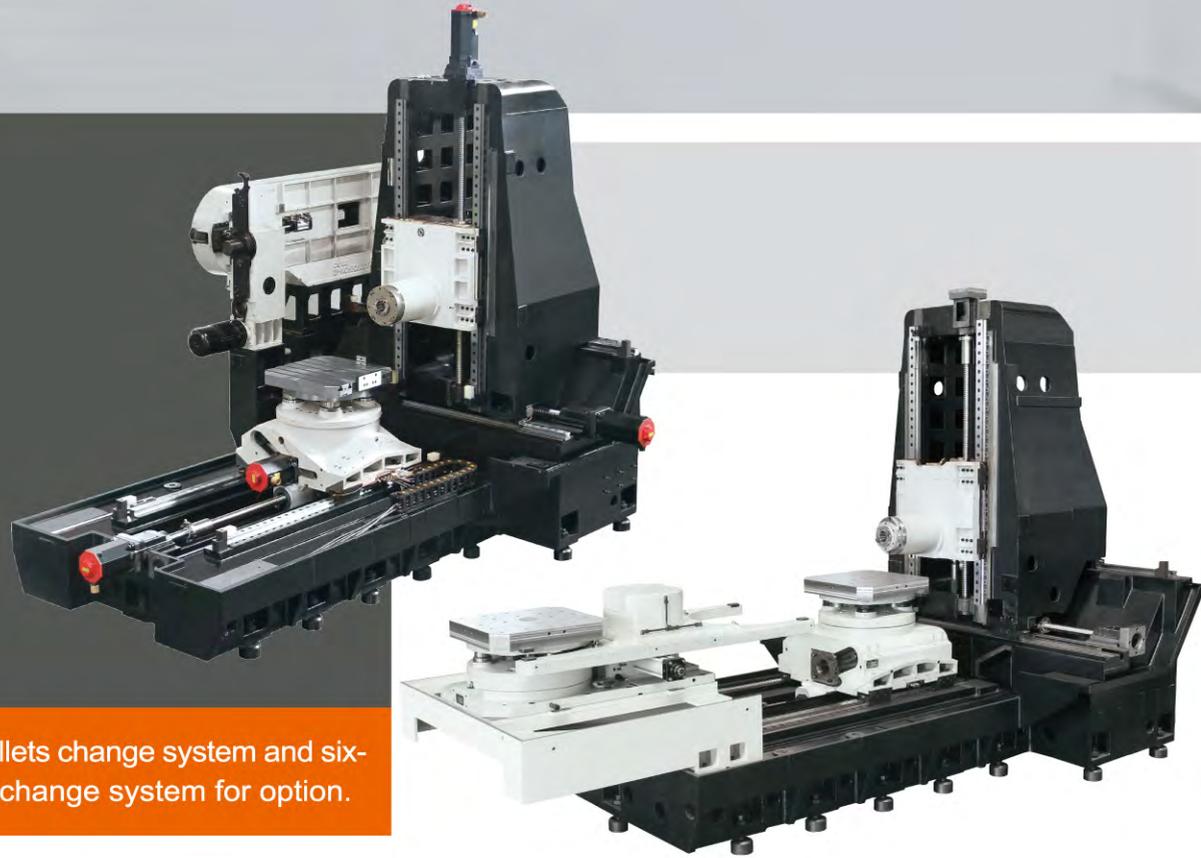
Horizontal Turning Machining Center



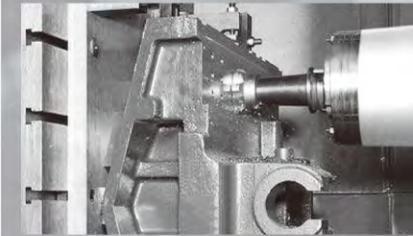
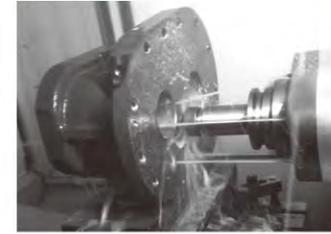
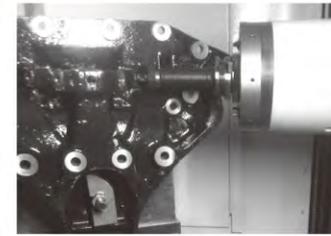
## High-Speed and Efficiency Horizontal CNC Machining Center

- High-speed horizontal machining.
- Superior 3-axis positioning and repeatability accuracy.
- High-load rotary table with precise positioning.
- Flexible twin / multi-pallet exchange for stability and flexibility.
- Rigid structure with high-torque spindle.
- 3-axis ballscrew cooling design.
- FMS enhances multi-process machining efficiency.





Two pallets change system and six-pallets change system for option.



# Horizontal Machining

| Model    | X axis | Y axis | Z axis | Table size<br>(L x W) | Min. division<br>accuracy | Max. table load<br>(central area) | Number<br>of table | Max. swing<br>dia. of workpiece | Max. height of<br>workpiece | Spindle<br>Speed | Spindle power<br>(cont. / 30 min.) | Cutting<br>feed rate | Rapid traverse<br>(X/Y/Z) |
|----------|--------|--------|--------|-----------------------|---------------------------|-----------------------------------|--------------------|---------------------------------|-----------------------------|------------------|------------------------------------|----------------------|---------------------------|
| Unit     | mm     | mm     | mm     | mm                    | o                         | kg                                | pcs                | mm                              | mm                          | rpm              | kW                                 | m/min                | m/min                     |
| VHM-630  | 1,050  | 1,000  | 1,000  | 630 x 630             | 0.001 / 1 (Opt.)          | 1,200                             | 2                  | Ø1,050                          | 1,050                       | 6,000            | 18.5 / 22                          | 32                   | 40 / 40 / 40              |
| VHM-800  | 1,300  | 1,200  | 1,200  | 800 x 800             | 0.001 / 1 (Opt.)          | 2,000                             | 2                  | Ø1,400                          | 1,300                       |                  | 22 / 26                            |                      |                           |
| VHM-1000 | 1,600  | 1,300  | 1,300  | 1,000 x 1,000         | 0.001 / 1 (Opt.)          | 2,000                             | 2                  | Ø1,600                          | 1,600                       |                  |                                    |                      |                           |

For details, please refer to Machine Specification Instruction

# VHT SERIES

Horizontal Turning Machining Center



## Large & High-Strength Horizontal CNC Machining Center

- Large travel horizontal machine.
- High-load rotary table with precise positioning.
- Standard single (multi) worktable configuration for high stability and flexibility.
- High-rigidity structure with high-torque cutting spindle.
- Greatest three-axis positioning accuracy.
- FMS enhances multi-process machining efficiency.





## Multi-Machine, Multi-Station Gantry Handling and Loading System

Complete line planning for versatile production,  
achieving an automated production line.



| Model    | X axis                       | Y axis                       | Z axis | Table size<br>(L x W) | Min. division<br>accuracy | Max. table load<br>(central area) | Number<br>of table | Max. swing<br>dia. of workpiece | Max. height of<br>workpiece | Spindle<br>Speed | Spindle power<br>(cont. / 30 min.) | Cutting<br>feed rate | Rapid traverse<br>(X/Y/Z) |
|----------|------------------------------|------------------------------|--------|-----------------------|---------------------------|-----------------------------------|--------------------|---------------------------------|-----------------------------|------------------|------------------------------------|----------------------|---------------------------|
| Unit     | mm                           | mm                           | mm     | mm                    | o                         | kg                                | pcs                | mm                              | mm                          | rpm              | kW                                 | m/min                | m/min                     |
| VHT-1000 | 2,000 /<br>2,500<br>( Opt. ) | 1,300 /<br>1,600<br>( Opt. ) | 1,300  | 1,000 x 1,000         | 0.001 / 1 (Opt.)          | 3,500                             | 1 / 2 (Opt.)       | ∅2,000 /<br>∅2,500(Opt.)        | 1,400 /<br>1,700(Opt.)      | 6,000            | 22 / 26                            | 10                   | 20 / 15 / 20              |
| VHT-1250 |                              |                              |        | 1,250 x 1,250         | 0.001                     | 5,000                             |                    |                                 |                             |                  |                                    |                      |                           |
| VHT-1416 |                              |                              |        | 1,400 x 1,600         | 0.001                     | 8,000                             |                    |                                 |                             |                  |                                    |                      |                           |

For details, please refer to Machine Specification Instruction

Horizontal  
Machining

# VBE SERIES

Horizontal Boring &  
Milling CNC Machining Center



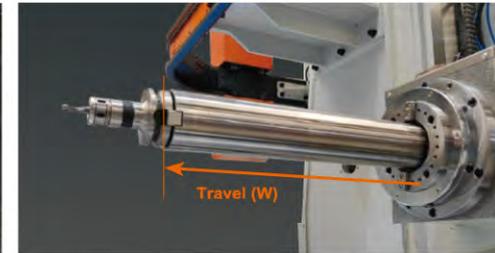
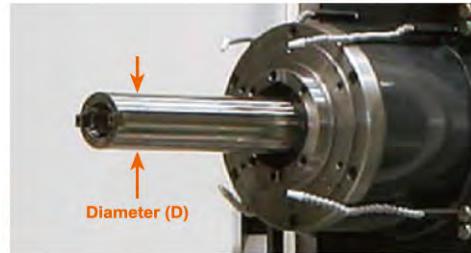
## Agile Horizontal Boring and Milling CNC Machining Center

- Three-axis box way design for high straightness and cutting rigidity.
- XZ cross-type worktable ensures stable geometric accuracy with thermal-friendly design.
- High-load rotary table with precise positioning and rotational accuracy.
- High-torque spindle and boring bar for rigid and precise boring machining.
- Multiple head attachments and extended heads enable automated multi-angle machining.



## Multi-Machine, Multi-Station Gantry Handling and Loading System

- X, Y, Z axes are direct driven, achieving high positioning accuracy.
- The wide-span bed structure ensures stable operation and provides a strong foundation.
- Three-axis box ways, featuring high-vibration-absorbing castings, enhance cutting performance.



| Diameter (D) | Travel (W) |
|--------------|------------|
| Ø 110 mm     | Ø 550 mm   |

| Model        | X axis | Y axis | Z axis | W axis | Table size<br>( L x W ) | Min. division<br>accuracy | Max. table load<br>(central area) | Spindle Speed | Spindle power<br>(cont. / 30 min.) | Cutting feed rate<br>(X/Y/Z/W) | Rapid traverse<br>(X/Y/Z/W) |
|--------------|--------|--------|--------|--------|-------------------------|---------------------------|-----------------------------------|---------------|------------------------------------|--------------------------------|-----------------------------|
| Unit         | mm     | mm     | mm     | mm     | mm                      | °                         | kg                                | rpm           | kW                                 | m/min                          | m/min                       |
| VBE-110-1250 | 1,600  | 1,300  | 1,300  | 550    | 1,250 x 1,250           | 0.001 / 1 (Opt.)          | 5,000                             | 3,500         | 18.5 / 22                          | 10 / 10 / 10 / 6               | 15 / 15 / 15 / 6            |
| VBE-110-1416 | 2,000  | 1,600  | 1,300  | 550    | 1,400 x 1,600           | 0.001 / 1 (Opt.)          | 8,000                             |               |                                    |                                |                             |

For details, please refer to Machine Specification Instruction

Horizontal  
Machining

# VBT

SERIES

Horizontal Boring &  
Milling CNC Machining Center

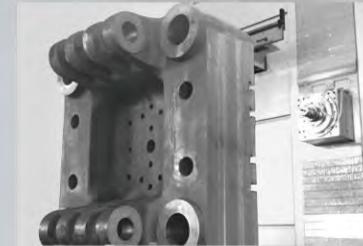
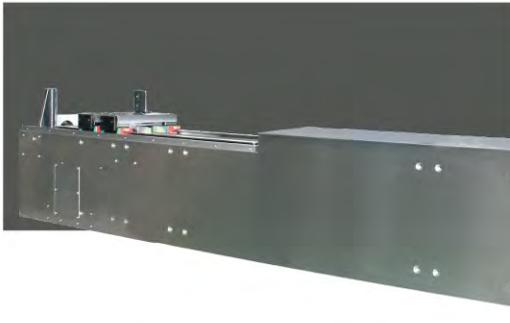
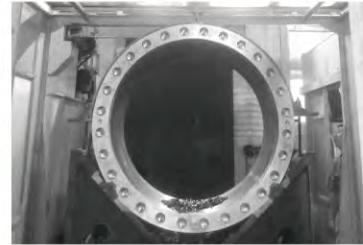
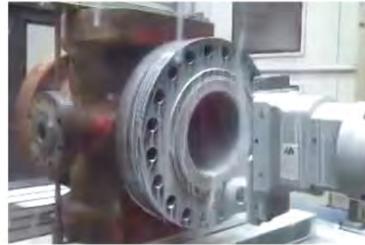


## Large & High-Strength Horizontal Boring and Milling CNC Machining Center

- XZ axes are supported by high-precision roller linear guides, providing heavy-load precision positioning.
- Y axis is supported by a stable saddle, offering a high-strength structure for heavy-duty cutting.
- High-load rotary table with precise positioning and rotational accuracy.
- High-torque spindle and boring bar for rigid and precise boring machining.
- Multiple head attachments and extended heads enable automated multi-angle machining.

## 4,000 N-m High Torque Spindle Design :

The enclosed box ram and the gear box are one-piece casting which greatly improves the rigidity and stability of the Z and W axis, and enhances the cutting ability and precision. The spindle is equipped with a large-span cylindrical roller bearing, which perfectly present for heavy cutting machining.



| Model        | X axis               | Y axis               | Z axis               | W axis                 | Table size (L x W)     | Min. division accuracy | Max. table load (central area) | Spindle Speed | Spindle power (cont. / 30 min.) | Cutting feed rate (X/Y/Z/W) | Rapid traverse (X/Y/Z/W) |
|--------------|----------------------|----------------------|----------------------|------------------------|------------------------|------------------------|--------------------------------|---------------|---------------------------------|-----------------------------|--------------------------|
| Unit         | mm                   | mm                   | mm                   | mm                     | mm                     | o                      | kg                             | rpm           | kW                              | m/min                       | m/min                    |
| VBT-110-1250 | 2,000 / 2,500 (Opt.) | 1,600 / 2,000 (Opt.) | 1,500                | 550                    | 1,250 x 1,250          | 0.001 / 1 (Opt.)       | 5,000                          | 3,500         | 18.5 / 22                       | 10 / 10 / 10 / 6            | 15 / 15 / 15 / 6         |
| VBT-110-1416 |                      | 2,000                |                      |                        | 1,400 x 1,600          |                        | 6,000 / 10,000 (Opt.)          |               |                                 |                             |                          |
| VBT-110-1618 |                      |                      |                      |                        | 1,600 x 1,800          | 15,000 / 20,000 (Opt.) |                                |               |                                 |                             |                          |
| VBT-130-1416 | 2,000 / 2,500 (Opt.) | 2,000 / 2,500 (Opt.) | 1,500 / 2,000 (Opt.) | 700                    | 1,400 x 1,600          | 0.001                  | 6,000 / 10,000 (Opt.)          | 3,000         | 22 / 30                         | 10 / 10 / 10 / 5            | 15 / 12 / 15 / 5         |
| VBT-130-1618 |                      |                      |                      |                        | 1,600 x 1,800          |                        | 15,000 / 20,000 (Opt.)         |               |                                 |                             |                          |
| VBT-130-1822 | 3,000 / 3,500 (Opt.) | 2,500 / 3,000 (Opt.) |                      |                        | 1,800 x 2,200          |                        | 20,000                         |               |                                 |                             |                          |
| VBT-130-2025 |                      |                      | 2,000 x 2,500        | 20,000 / 30,000 (Opt.) |                        |                        |                                |               |                                 |                             |                          |
| VBT-130-2525 | 3,500 / 4,000 (Opt.) | 3,000 / 3,500 (Opt.) | 2,000 / 2,500 (Opt.) | 2,500 x 2,500          | 35,000 / 40,000 (Opt.) | 12 / 10 / 12 / 5       |                                |               |                                 |                             |                          |
| VBT-130-2530 | 4,500 / 5,000 (Opt.) |                      |                      | 2,500 x 3,000          | 40,000 / 45,000 (Opt.) |                        |                                |               |                                 |                             |                          |

For details, please refer to Machine Specification Instruction

Horizontal  
Boring  
Machining

# VBH

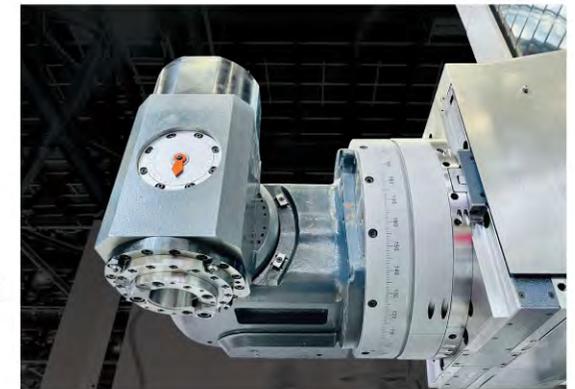
SERIES

Horizontal Boring &  
Milling CNC Machining Center



## Advanced Precision Horizontal Boring and Milling CNC Machining Center

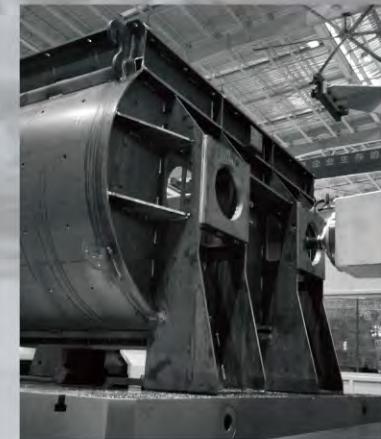
- High-precision roller linear guides on XYZ axes, providing heavy-load capacity and precise positioning.
- Y axis centrally mounted box-in-box spindle, featuring a symmetrical structure, ensures stable geometric accuracy with thermal-friendly design.
- High-load rotary table with precise positioning and rotational accuracy.
- High-torque spindle and boring bar for rigid and precise boring machining.
- Multiple head attachments and extended heads enable automated multi-angle machining.





### Rotary Table is Driven by Worm Gear

Worm gear transmission provide compact structure, stable transmission. It minimized vibration, shock, and noise effect. The large transmission ratio can be obtained by single stage transmission, which is realized high indexing accuracy of the rotary table.



| Model        | X axis               | Y axis               | Z axis               | W axis                 | Table size (L x W)     | Min. division accuracy | Max. table load (central area) | Spindle Speed | Spindle power (cont. / 30 min.) | Cutting feed rate (X/Y/Z/W) | Rapid traverse (X/Y/Z/W) |
|--------------|----------------------|----------------------|----------------------|------------------------|------------------------|------------------------|--------------------------------|---------------|---------------------------------|-----------------------------|--------------------------|
| Unit         | mm                   | mm                   | mm                   | mm                     | mm                     | o                      | kg                             | rpm           | kW                              | m/min                       | m/min                    |
| VBH-110-1250 | 2,000 / 2,500 (Opt.) | 1,600 / 2,000 (Opt.) | 1,500                | 550                    | 1,250 x 1,250          | 0.001 / 1 (Opt.)       | 5,000                          | 3,500         | 18.5 / 22                       | 10 / 10 / 10 / 6            | 15 / 15 / 15 / 6         |
| VBH-110-1416 |                      | 2,000                |                      |                        | 1,400 x 1,600          |                        | 6,000 / 10,000 (Opt.)          |               |                                 |                             |                          |
| VBH-110-1618 |                      |                      |                      |                        | 1,600 x 1,800          | 15,000 / 20,000 (Opt.) |                                |               |                                 |                             |                          |
| VBH-130-1416 | 2,000 / 2,500 (Opt.) | 2,000 / 2,500 (Opt.) | 1,500 / 2,000 (Opt.) | 700                    | 1,400 x 1,600          | 0.001                  | 6,000 / 10,000 (Opt.)          | 3,000         | 22 / 30                         | 10 / 10 / 10 / 5            | 15 / 12 / 15 / 5         |
| VBH-130-1618 |                      |                      |                      |                        | 1,600 x 1,800          |                        | 15,000 / 20,000 (Opt.)         |               |                                 |                             |                          |
| VBH-130-1822 | 3,000 / 3,500 (Opt.) | 2,500 / 3,000 (Opt.) |                      |                        | 2,000 / 2,500 (Opt.)   |                        | 1,800 x 2,200                  |               |                                 |                             |                          |
| VBH-130-2025 |                      |                      | 2,000 x 2,500        | 20,000 / 30,000 (Opt.) |                        |                        |                                |               |                                 |                             |                          |
| VBH-130-2525 |                      |                      | 3,500 / 4,000 (Opt.) | 2,500 x 2,500          | 35,000 / 40,000 (Opt.) |                        |                                |               |                                 |                             |                          |
| VBH-130-2530 | 4,500 / 5,000 (Opt.) | 3,000 / 3,500 (Opt.) | 2,000 / 2,500 (Opt.) | 2,500 x 3,000          | 40,000 / 45,000 (Opt.) | 12 / 10 / 12 / 5       |                                |               |                                 |                             |                          |

For details, please refer to Machine Specification Instruction

Horizontal  
Boring  
Machining



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