

# *INTELLIGENT PROCESSING SOLUTIONS*







Dongguan headquarters



Nanjing R&D bases



Ningxia R&D bases

**ORION**

## Company profile



Jirfine Intelligent Equipment Co., Ltd., established in 2009, is a national-level specialized and innovative "Little Giant" enterprise engaged in the design, research and development, production, sales, and service of mid-to-high-end CNC machine tools. Jirfine successfully listed on the GEM Board of Shenzhen Stock Exchange in 2024. Our products are widely used in strategic industries such as aerospace, marine engineering, rail transit, automotive, semiconductors, and consumer electronics. Jirfine is committed to the mission of "making manufacturing more stable, precise, efficient, and intelligent," and aims to be a leading provider of CNC equipment with the vision of "building a century-old enterprise." The company supports the high quality development of China's manufacturing industry and contributes to the upgrade of "Made in China" to "Intelligent Manufacturing in China," helping the country transition from a major manufacturing power to a strong manufacturing power.

1700+

Employees

3

R&D Bases

200+

Patent

10000+

Customer service

10

Categories

20

Series

**ORION**



*V SERIES VERTICAL MACHINING CENTER*



V-8B

VERTICAL MACHINING CENTER



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Scan to watch the machine in action



# DETONATE PRODUCTIVITY

## Features

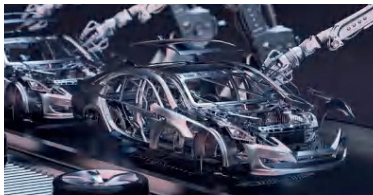
>>>>>

- High rigidity main structure, analyzed through finite element analysis, has good seismic resistance, maintains stability and does not deform over the long term, ensuring the stability of high-speed processing.
- The spindle uses vibration-absorbing materials, effectively improving precision, and uses imported ceramic ball bearings, which provide high operational accuracy and low temperature rise. The short and thick pull stud make better rigidity and stronger cutting performance
- The X/Y/Z axes all use pre-tensioned rods

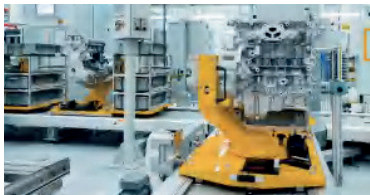
## Application field

>>>>>

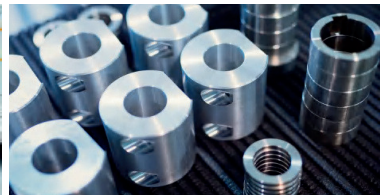
Inherited from the high-rigidity design of the V series, with a highrigidity internal circulation oil cooled spindle, the cutting performance is greatly improved. Regardless of any difficult to process materials, it can be easily processed, and it is the best choice for industries such as molds, hardware, auto parts, aviation, and medical equipment.



Automobile



Automation



Hardware industry



Aerospace



New energy



Medical industry

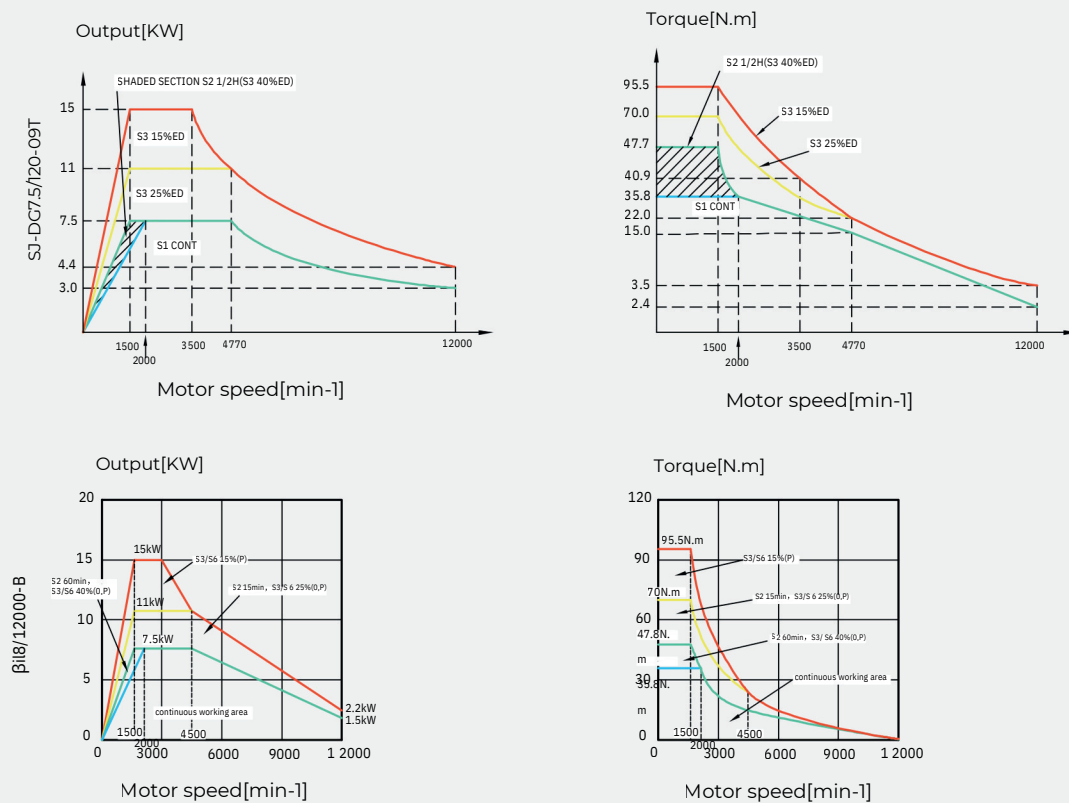


Communication

ORION

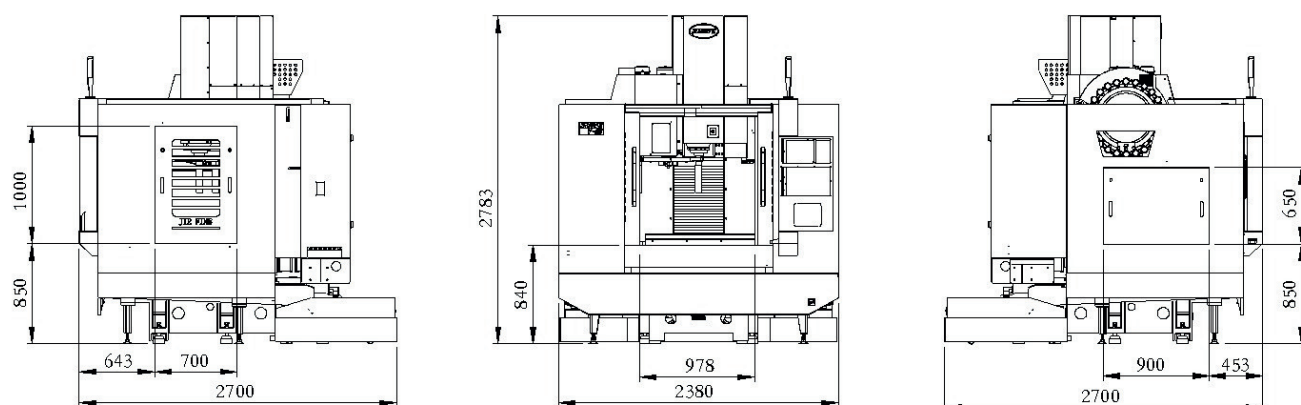
## Spindle motor characteristic curve

>>>>>



## Appearance drawing

>>>>>





## System configuration

# DETONATE

# PRODUCTIVITY

>>>>>

Using the MITSUBISHI M80 system or FANUC Oi MF Plus, with nano unit calculations, high-precision smooth processing can be achieved; equipped with a high-speed PLC engine to enhance calculation speed and enable high-speed processing.

### MITSUBISHI M80

AxisName	Motor Model	Motor Power	Max Torque
X	HG303	2KW	47N.m
Y	HG204	2KW	47N.m
Z	HG303B	3KW	64N.m
Spindle	SJ - DG7.5	7.5/ 15KW	95.5N.m

### FANUC Oi MF Plus

AxisName	Motor Model	Motor Power	Max Torque
X	$\beta$ iS 12	1.8KW	27N.m
Y	$\beta$ iS1 2	1.8KW	27N.m
Z	$\beta$ iS 22B	3KW	45N.m
Spindle	$\beta$ i18	7.5/ 15KW	95.5N.m

#### Heavy cutting

>>>>>



Tool: large fly-cutter D63  
Material: 45# steel

Deep cut: 4mm  
Tool spacing: 47.25mm  
Speed: 1500r/min  
Feed: 1500mm/min

#### Large thread tapping

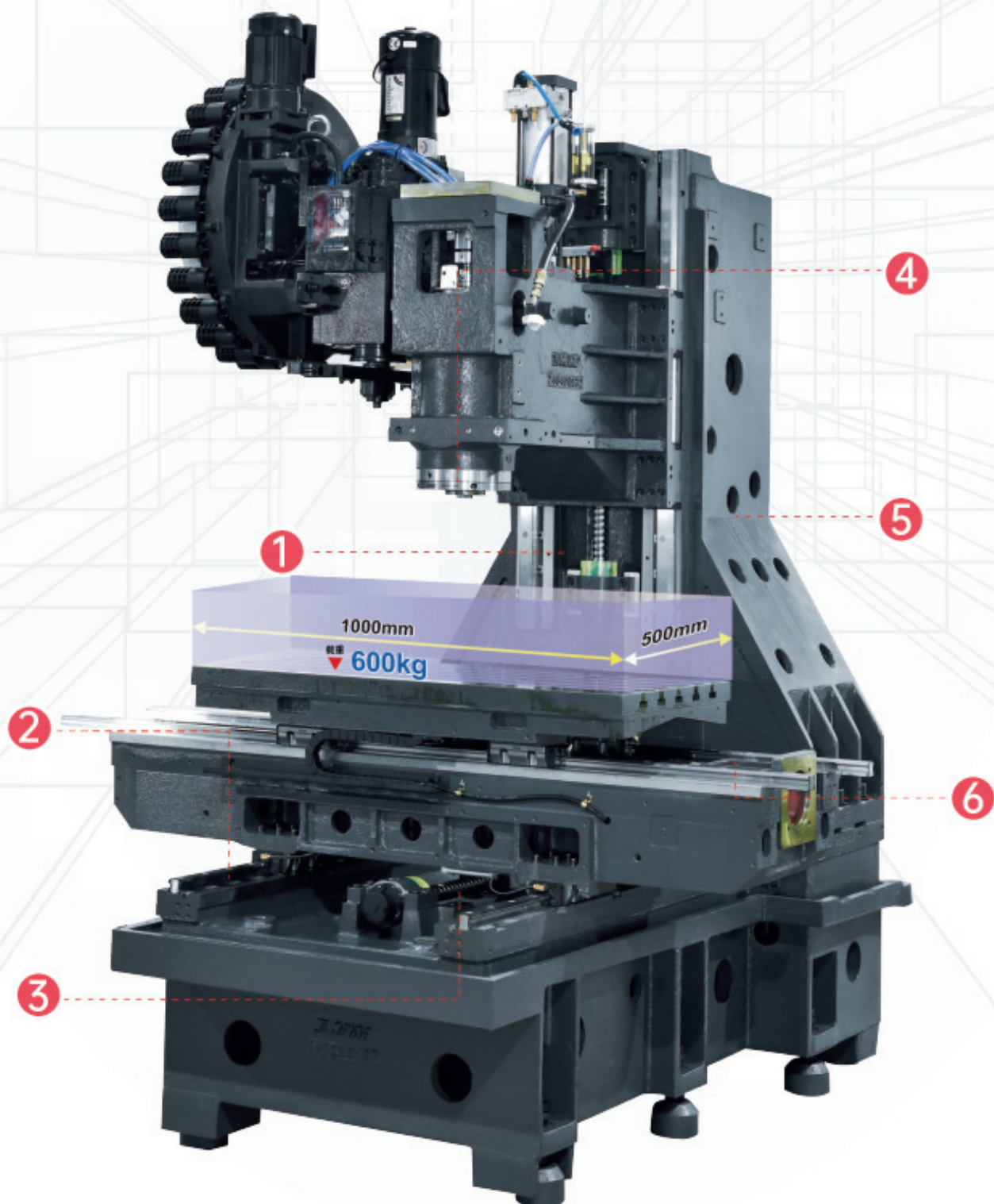
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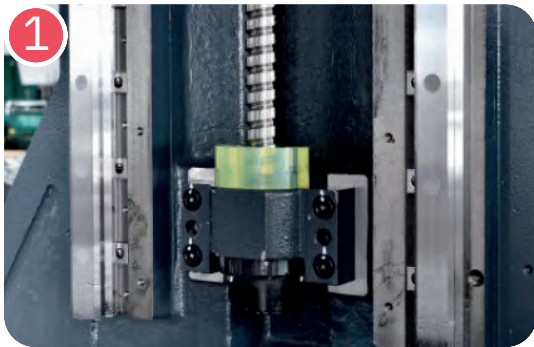
Material: 45# steel

Tapping limit: M24\*3.0  
Cutting depth: 35mm  
Speed: 120r/min  
Feed: 360mm/min

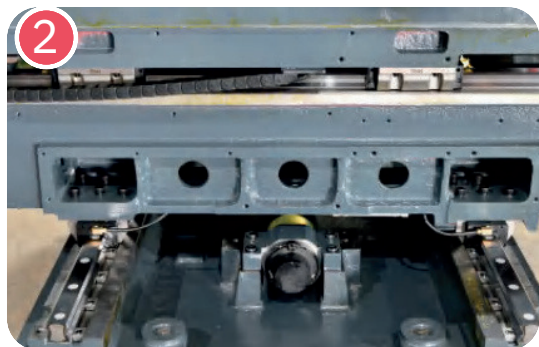
## V-8B Model details display







**The Z-axis uses a new pre-tensioned structure**  
which can suppress the thermal expansion of the lead screw and offset the thermal expansion of the spindle, further enhancing the stability of the Z-axis precision.



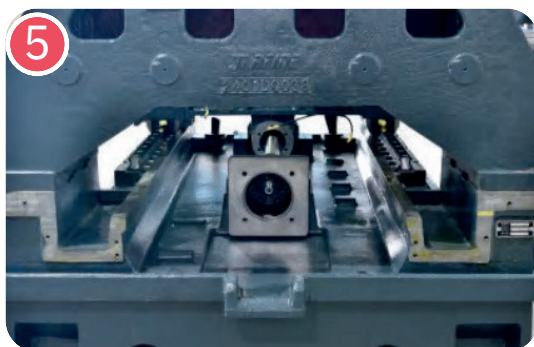
**Design of Y-axis guide rail with large span**  
Increased the support rigidity, stability, and load capacity of the Y-axis.



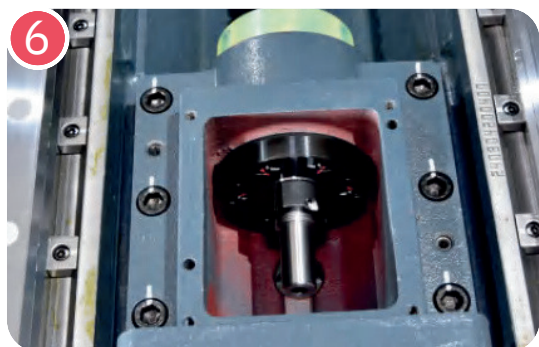
**The X / Y / Z axes all use pre-tensioned rods**  
Effectively suppressed thermal expansion along the three axes, with better precision stability



**The spindle uses vibration-absorbing materials**  
Effectively improving precision, and uses imported ceramic ball bearings, which provide high operational accuracy and low temperature rise. The short and thick pull stud make better rigidity and stronger cutting performance



**The columns use a large-span truss box structure**  
Processing efficiency is stable



**The three-axis component uses a lightweight design concept**  
Dynamic effect performance is better, efficiency improved

*V SERIES VERTICAL MACHINING CENTER*



V-11 / V13

VERTICAL MACHINING CENTER



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# DETONATE

## Features

# PRODUCTIVITY

>>>>>

- By the analysis of FEA finite elements and reinforced body structure design provides better rigidity and thermal stability
- It has excellent dynamic precision performance and superior processing precision during rapid displacement  
Cylinder counterweight on Z-axis is adopted for good stability, high safety and
- low driving noise, thus effectively improve the service life of screw and stability and machining precision

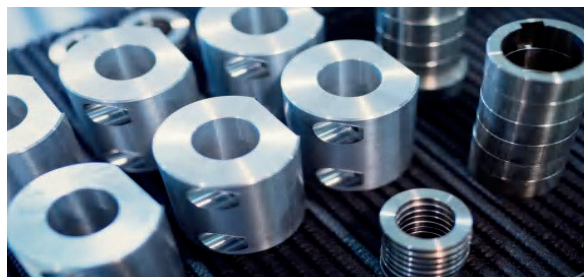
## Application field

>>>>>

It is suitable for small and medium-sized batch processing of various types of complex parts such as small and medium-sized boxes, plates, discs, valves, shells, molds, etc. The machine tool adopts high-precision linear rails and lead screws. The machine tool has better dynamic response, can realize high-speed cutting, low-speed and no crawling, and is widely used in precision parts 3C products, hardware, auto parts, and medical equipment industries.



Automobile



Hardware



3C



Precision parts



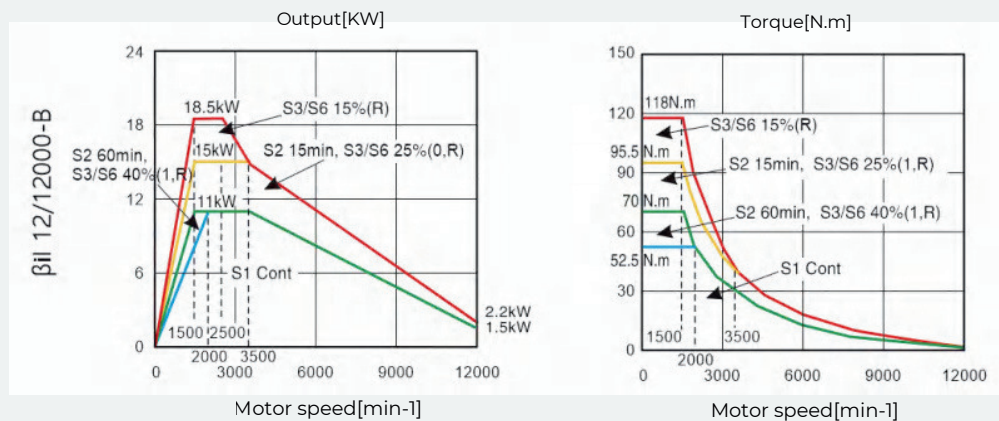
Medical

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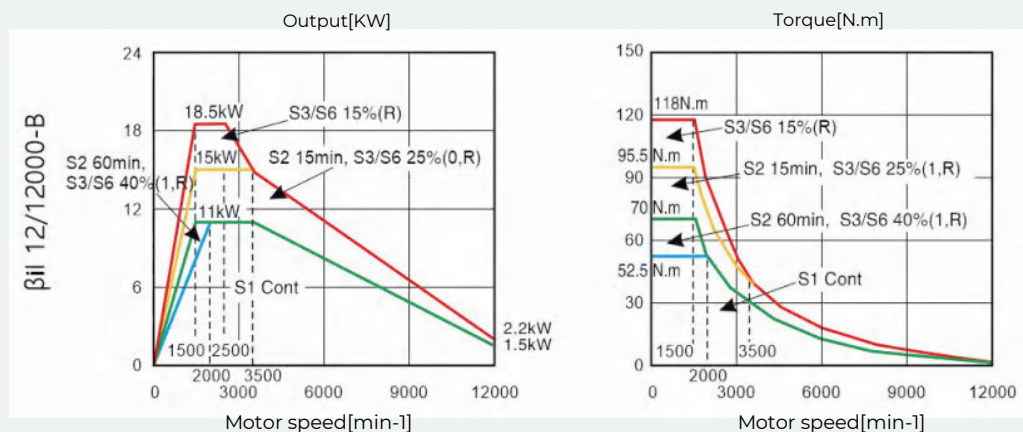
## Spindle motor characteristic curve

>>>>>

V-11



V-13



Heavy cutting

>>>>>



Tool: large fly-cutter D63

Material: 45# steel

Deep cut: 4mm

Tool spacing: 47.25mm

Speed: 1500r/min

Feed: 1500mm/min

Large thread tapping

>>>>>



Material: 45# steel

Tapping limit: M24\*3.0

Cutting depth: 35mm

Speed: 120r/min

Feed: 360mm/min



# System configuration

>>>>>

Using the MITSUBISHI M80 system or FANUC Oi MF Plus, with nano unit calculations, high-precision smooth processing can be achieved; equipped with a high-speed PLC engine to enhance calculation speed and enable high-speed processing.

MITSUBISHIM80

FANUC Oi MF PLUS

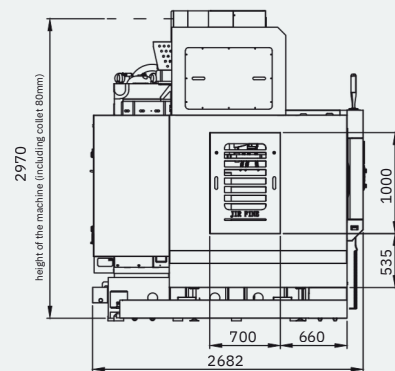
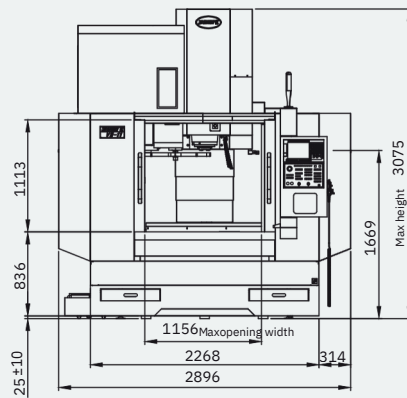
OPTIONALS OF FANUC SYSTEM

Axis Name	Motor Model	Motor Power	Max Torque	Axis Name	Motor Model	Motor Power	Max Torque	Axis Name	Motor Model	Motor Power	Max Torque
X	HG204	3KW	64N.m	X	$\beta$ S 22	3KW	45N.m	X	$\beta$ S 22	3KW	45N.m
Y	HG303	3KW	64N.m	Y	$\beta$ S 22	3KW	45N.m	Y	$\beta$ S 22	3KW	45N.m
Z	HG303B	3KW	64N.m	Z	$\beta$ S 22B	3KW	45N.m	Z	$\beta$ S 22B	3KW	45N.m
Spindle	SJ-DG11	11/ 18.5KW	118N.m	Spindle	$\beta$ S 12	11/ 18.5KW	118N.m	Spindle	$\alpha$ 18/1500	11/15KW	47.2N.m

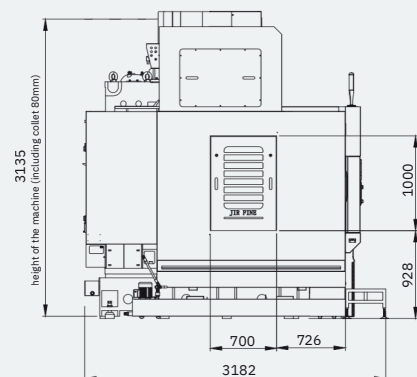
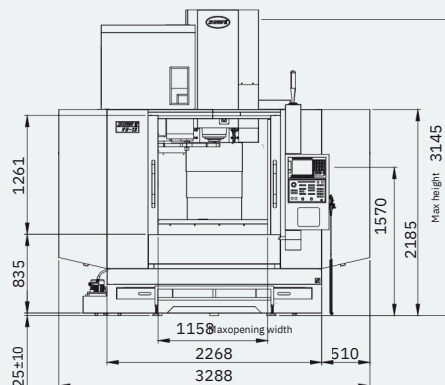
# Appearance drawing

>>>>>

V-11



V-13



*V SERIES VERTICAL MACHINING CENTER*



VH-85

VERTICAL MACHINING CENTER



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# DETONATE

## Features

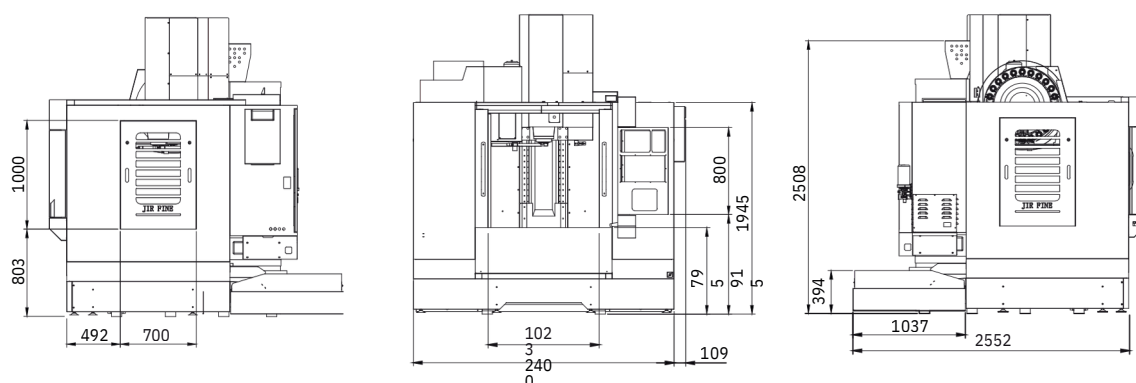
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# PRODUCTIVITY

- The machine body is made of high-grade castings, with design of box structure and multi stiffeners to improve rigidity
- The spindle adopts high-rigidity and high-precision ceramic ball bearings with ultra-low temperature rise characteristics to improve thermal elongation characteristics and cutting precision
- The chassis is widened, the span of X,Y and Z guide rail is increased to make the machine body more stable and shock-resistant

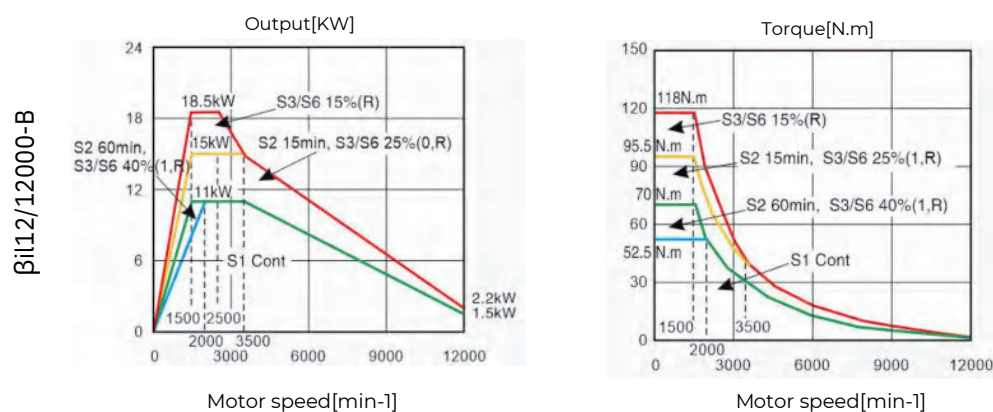
## Appearance drawing

>>>>



## Spindle motor characteristic curve

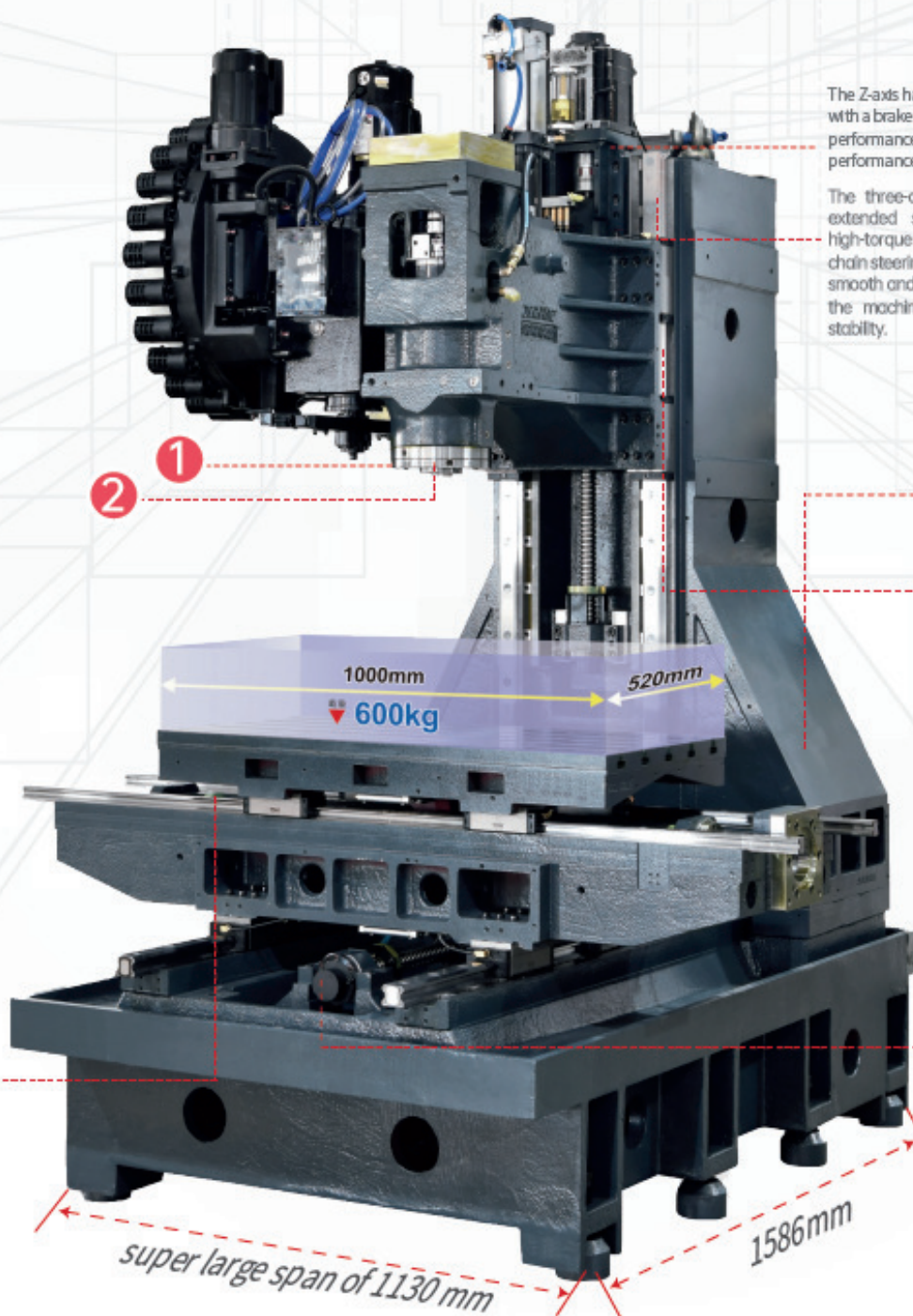
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## VH-85 Model details display

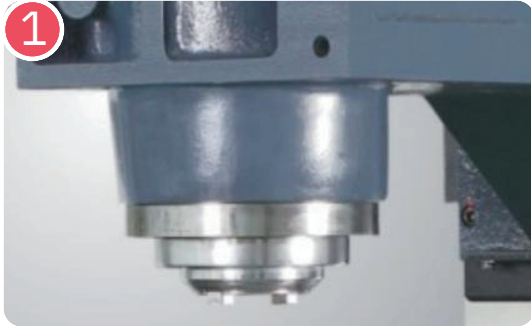
With the large span, high stability could be ensured in machining process



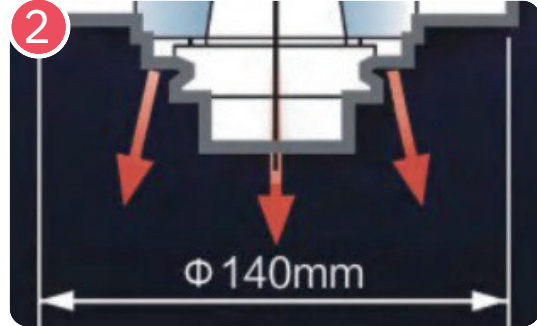
The Z-axis has no counterweight design, and it is equipped with a brake servo motor to improve the driving performance of the Z-axis, achieving high speed and optimal performance.

The three-axis span is enlarged, and the 45-type extended slider is used. Integrated fully sealed, high-torque bearing capacity of the best ball and ball chain steering and guiding design, making the operation smooth and smooth. Reasonable configuration enables the machine to exert extremely strong processing stability.

# DETONATE PRODUCTIVITY



The spindle bearing adopts imported preloaded high-precision oblique angle ball bearing to ensure maximum rigidity and precision of the spindle; High torque AC servo spindle is adopted for strong cutting. It is especially suitable for high torque machining occasions, and can improve machining efficiency. Direct spindle is optional and the speed can reach 15000 rpm at maximum.



## Air sealing is adopted for the spindle

The top of the spindle adopts a labyrinth design to effectively prevent oil mist from entering the spindle, and with the spindle air curtain to blow air, the service life of the spindle is greatly improved.



Extended slide block for higher stability during processing.



In the design of herringbone column, honeycomb stiffeners are used to increase the torsional and flexural strength, to ensure high rigidity of connection with the machine body



The slide block of Z axis is extended and weight-bearing to enhance its rigidity and provide high accuracy and stability in machining process



With long travel length and heavy weight, the machine is stable, shock-resistant and runs with rigidity

*V SERIES VERTICAL MACHINING CENTER*



VH-1380/1680/1890

VERTICAL MACHINING CENTER



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## VH-1380/1680 Features

>>>>>

- The base adopts four-line rail design to improve rigidity and effectively avoid workpiece position deviation caused by large overhangs.
- The column adopts a super-large "herringbone"-shaped large-span design to improve stability.  
The spindle box adopts Jirfine's national patented built-in double-cylinder counterweight system to make processing more stable and efficient.

## VH-1890 Features

>>>>>

- The spindle bearing adopts imported preloaded high-precision oblique angle ball bearing to ensure maximum rigidity and precision of the spindle
- High torque AC servo motor of spindle is adopted for strong cutting and it is especially suitable for high torque machining occasions  
The interior of the base adopts a staggered layout of solar ribs, which can provide excellent support rigidity and ensure the most stable dynamic precision.

## Application field

>>>>>

The workpiece can automatically and continuously complete the processing of milling, drilling, boring, expanding, reaming, countersinking, tapping and other processes after one clamping. The machine tool is suitable for small and medium-sized boxes, plates, discs, valves, multi-variety and small batch processing of shells, molds and other complex parts are widely used in precision parts, 3C products, hardware, auto parts, and medical equipment industries.



Automobile



Automation



Aerospace



Mold



Construction machinery

# Mechanical specifications

&gt;&gt;&gt;&gt;&gt;

ITEM		V-8B	V-11	V-13	V-1270	V-1585	
Travel							
X.Y.Z axis travel	mm	820/550/550	1100/600/600	1300/700/700	1200/700/600	1500/850/700	
Distance from spindle nose to worktable	mm	120-670	130-730	130-830	100-700	130-830	
Distance from spindle center to Z-axis shield	mm	540	625	750	715	870	
Workbench							
Workbench size	mm	1000x500	1200x600	1400x700	1320x650	1600x850	
T-slot (size x slot x space)	mm	18x5x80	18x5x100	18x5x125	18x5x100	18x7x125	
Maximum load of workbench	kg	600	800	850	600	850	
Spindle							
Rotating speed	rpm	12000	12000/10000 (OPT)		12000	12000	
Spindle Spinality	#	BT40	BT40		BBT40	BBT40	
Transfer method	#	Direct drive	Belt drive/Direct drive		Direct drive	Direct drive	
Feed							
Three-axis cutting feed	mm/min	1-10000					
Three-axis rapid feed	m/min	48x48x48	36x36x36	24x24x24	36x36x36	30x30x30	
Precision GB/T20957.4-2007							
Positioning precision (X/Y/Z)	mm	0.008/0.006/0.006	0.008/0.006/0.006	0.010/0.007/0.007	0.008/0.007/0.006	0.010/0.008/0.007	
Repeatability (X/Y/Z)	mm	0.005/0.004/0.004	0.005/0.004/0.004	0.006/0.004/0.004	0.005/0.004/0.004	0.006/0.005/0.004	
Tool changing system							
Total number of tools	pcs	24	30				
Max tool weight	kg	8					
Max tool length	mm	300					
Max tool diameter (Full tool/adjacent empty tool)	mm	80/150					
Tool magazine form	#	Disc					
CNC system							
Control System	#	FANUC Oi MF Plus (Mitsubishi M80A/M80B)					
Spindle motor power	Kw	7.5/15	11/18.5				
Three-axis motor power	mm	2.0/2.0/3.0	3.0/3.0/3.0				
Others							
Required air pressure	kgf/cm³	≥6					
Electricity demand	KVA	20	25	25	25	25	
Dimensions (L×W×H)	mm	2400x2700x2830	2900x2680x3050	3290x2920x3170	2860x3285x2935	4600x3150x3200	

※These mechanical specifications may be subject to change without notice as quality improvements are made.

## OPT

## Applicable industries

- |   |  |  |   |  |  |
|---|--|--|---|--|--|
| <ul style="list-style-type: none"> <li>● Fourth axis</li> <li>● Fifth axis</li> <li>● CTS (coolant through spindle)</li> <li>● Automatic tool setting instrument</li> </ul> | <ul style="list-style-type: none"> <li>● Workpiece Measuring Device</li> <li>● Tool Measuring Device</li> <li>● Chip removal machine</li> <li>● Oil-water separation device</li> </ul> | <ul style="list-style-type: none"> <li>● Optical scale</li> <li>● 112000/15000rpm spindle</li> <li>● 30/32T tool magazine</li> <li>● Column heightening 200mm</li> </ul> | <ul style="list-style-type: none"> <li>● Mold</li> <li>● Transportation</li> <li>● Communication</li> <li>● Food</li> </ul> | <ul style="list-style-type: none"> <li>● Electronic</li> <li>● Education</li> <li>● Automation</li> <li>● Apparel</li> </ul> | <ul style="list-style-type: none"> <li>● Aerospace</li> <li>● Medical</li> <li>● Machine made</li> <li>● Optics</li> </ul> |
|---|--|--|---|--|--|

# DETONATE PRODUCTIVITY

VH-85	VH-11	VH-13	VH-1380	VH-1680	VH-1890
850/550/550	1100/600/600	1300/700/700	1300/800/800	1600/800/800	1800/1000/800
110-660	130-730	130-830	200-1000	200-1000	200-1000
560	625	750	910	920	985
1000x520	1200x600	1400x700	1500x800	1800x800	2000x900
18x5x100	18x5x100	18x5x125	22x5x125	22x5x125	22x5x125
600	800	850	1200	1500	2200
12000/10000(OPT)	6000				
BT40	BT50	BT50	BT50	BT50	
Belt drive/Direct drive	Belt drive	Belt drive	Belt drive	Belt drive	
1-10000					
36x36x36		24x24x24	24x24x24	24x24x24	20x20x20
0.008/0.006/0.006	0.008/0.006/0.006	0.010/0.007/0.007	0.015/0.010/0.010	0.015/0.010/0.010	0.015/0.010/0.010
0.005/0.004/0.004	0.005/0.004/0.004	0.006/0.004/0.004	0.010/0.008/0.008	0.010/0.008/0.008	0.012/0.008/0.008
24					
8			15	18	
300			350	350	
80/150	110/220	110/220	105/200	112/200	
Disc					
FANUC Oi MF Plus (Mitsubishi M80A/M80B)					
11/18.5		11/15		15/18.5	
3.0/3.0/3.0			3.0/3.0/3.0		
≥6		≥6.5			
30	30	30	35	45	45
2510x2750x2800	2900x2680x3100	3290x2920x3270	4980x3355x3545	5065x3675x3625	5925x4070x3660

## OPT

- Fourth axis
- Fifth axis
- CTS (coolant through spindle)
- Automatic tool setting instrument
- Workpiece Measuring Device
- Tool Measuring Device
- Chip removal machine
- Oil-water separation device

## Applicable industries

- Optical scale
- 112000/15000rpm spindle
- 30/32T tool magazine
- Column heightening 200mm
- Mold
- Transportation
- Communication
- Food
- Electronic
- Education
- Automation
- Apparel
- Aerospace
- Medical
- Machine made
- Optics



# Precision. Productivity. Performance.

## CNC solutions built for the most demanding industrial environments.



Vertical Machining Center



Horizontal Machining Center



Drilling & Milling Machining Center



CNC Lathe



Gantry Machining Center



5-axys CNC Machining



### **Authorized Distributor**

OZ Tech Solutions Ltda. is the officially appointed distributor of Jirfine Intelligent Equipment Co., Ltd. in Brazil.

This partnership ensures Brazilian industries have direct access to Jirfine's advanced CNC machining technology, with local technical support, training, and after-sales service provided by OZ Tech.



## OZ TECH SOLUTIONS LTDA (Orion Machines)

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 Atendimento em todo Brasil

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