

V2/4/6 Series

CNC Vertical Lathe

Dedicated service line

400-615-9999



The text, patterns, diagrams and technical parameters contained herein may be changed due to technical development and without notice. (20220817-F122-0021)

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V2/4/6 Series CNC Vertical Lathe

Integral external protection

The integral protection structure ensures waterproof performance.

Convenient internal sliding door

Lower work intensity and better protection performance.

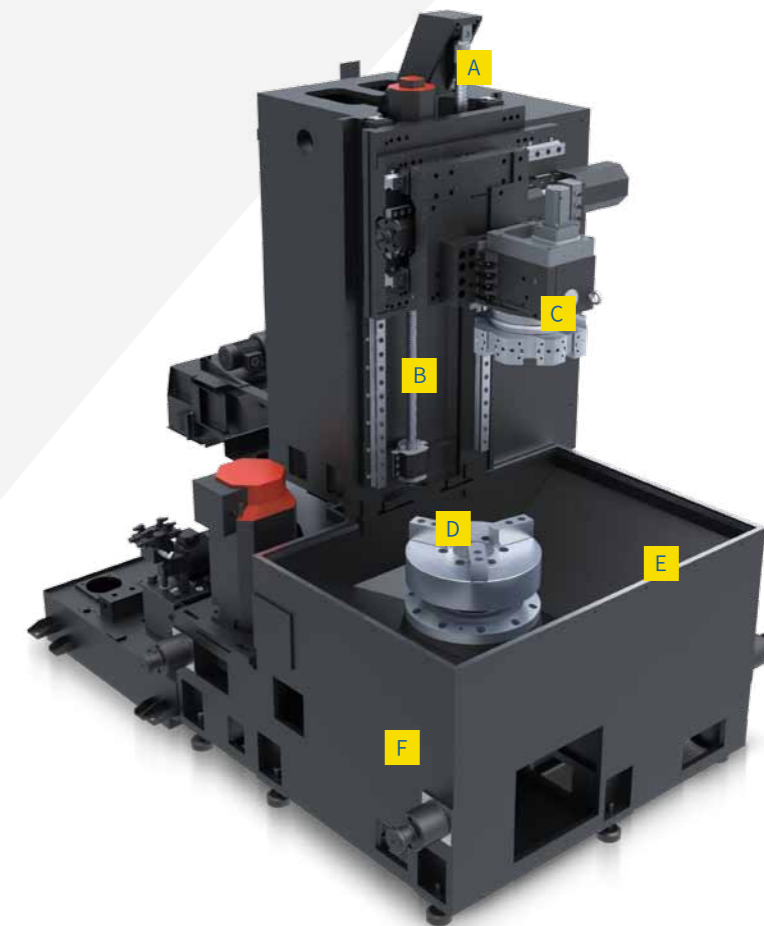


Maximum cutting diameter: $\Phi 600\text{mm}$

Maximum spindle speed: 2000r/min

Two-axis rapid traverse speed: 20m/min

Classic-inheriting and future-oriented



A Nitrogen balance

Independent nitrogen balance mechanism provides assurance of Z-axis fast motion and features environmental protection and energy-saving.

B Compact structure

The structure of main unit is compact and floor area is reduced.

C High-speed two axes

Machining efficiency is effectively enhanced

D Integral spindle

High-rigidity spindle ensures smoother cutting, and double-labyrinth waterproof structure ensures reliability of spindle.

E Large chip discharge angle

Chip discharge angle is enlarged to ensure smooth chip discharge.

F Integral bed

Bed is analyzed and optimized to enhance the rigidity of machine tool.

Application fields



Structural features



The product features compact feeding mechanism, adopts linear guiderail, and features high moving speed, good machining accuracy and high use reliability.



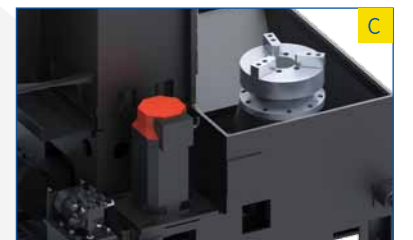
The product is configured with lateral electric cabinet and "L-shaped" water tank so that the overall layout is more reasonable and floor area is smaller.



The bed features higher rigidity; and the enlarged chip discharge angle is helpful for discharge of chip.



CRT cabinet is changed as external wiring, the waterproof performance is better and tool cabinet is added at operation position, so that the product is more practical and suitable for usage.



The product adopts servo main motor and is able to provide better power performance.

V2 Series CNC Vertical Lathe

The product features compact and robust high rigidity structure and applies to machining of automotive components such as small-size brake disc and flywheel as well as electric motor and water pump housing. The product can be used for soft/hard turning of small size bearing and is able to realize replacement of grinding by turning.



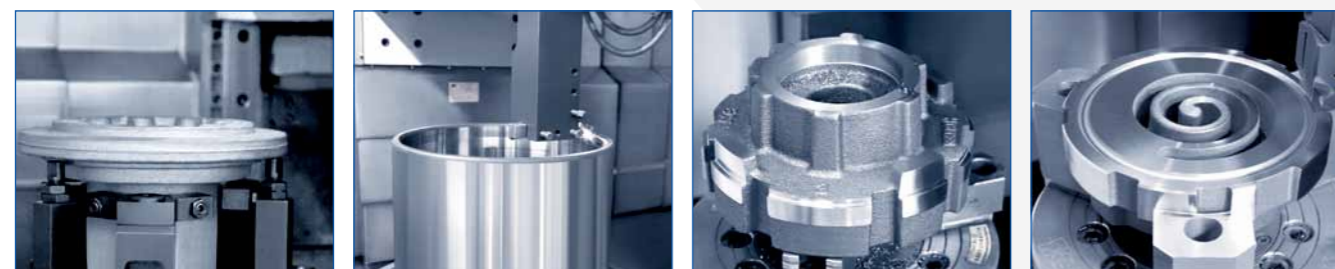
V4 Series CNC Vertical Lathe

The product features perfect combination of high machining performance and low floor area occupation, and applies to machining of automotive components such as wheel hub, brake disc and flywheel, etc. The product can also be used for soft/hard turning of bearing and is able to realize replacement of grinding by turning. The product is able to realize turning of brake disc after installation of auxiliary shaft, substantially enhancing efficiency and machining accuracy.

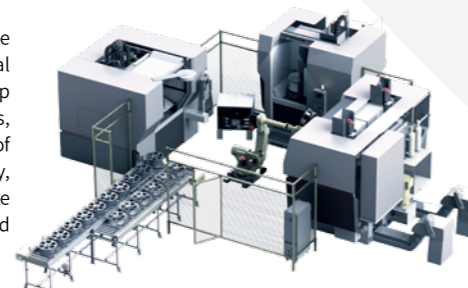


V6 Series CNC Vertical Lathe

Box structure featuring excellent shock-absorbing performance and larger machining space are suitable for machining of automotive components such as brake hub, wheel hub and reducer housing, elevator wheel, engineering chain wheel, valve and motor housing, etc. The product can also be used for soft/hard machining of bearing and is able to realize replacement of grinding by turning. The machine tool is convenient for installation of various special fixtures, and can be used for machining of components of complicated housings and components of abnormal shape.



Left-side machine tool can be added to form symmetrical layout, so as to facilitate 2-step machining of components, shorten operation distance of worker, enhance efficiency, enable one person to operate two units of machine tool and save labor cost.



The vertical lathe features small floor area, high machining accuracy, easiness of parts installation, accurate positioning, convenience of establishment of automated production line, reduction of labor and enhancement of efficiency.

High-performance integrated spindle

- ◆ The integrated spindle meets the requirements on high rigidity, high rotation speed and high accuracy of machine tool.
- ◆ The fit clearance with bed is reduced to 0.02mm and the shock absorption effect is good.
- ◆ Foreign matter penetration proof device ensures that spindle is able to work accurately under severe machining environment.
- ◆ Replacement in lieu of repair



Items	V2S	V4C	V4S	V6i	V6C	V6S
Spindle nose type	A2-8	A2-8	A2-11	A2-11	A2-11	A2-15
Bearing internal diameter d	120	140	160	180	180	200
Bearing external diameter D	180	210	240	250	250	280

Various chip conveying devices

		Chain plate	Scraper	Magnetic scraper	Dual-chain plate
Backside chip discharge	Materials to be machined	Metal and non-metal such as steel, copper, aluminum and polyurethane, etc.	Aluminum and cast iron, etc.	Steel and cast iron	Metal and non-metal such as steel and polyurethane, etc.
	Use environment	The device applies to various chips such as roll-shaped, lump-shaped and block-shaped chips	The device applies to continuous conveying of short chip and broken chip.	The device applies to conveying of steel chip and cast iron chip of which the length is less than 150mm in wet machining.	The device applies to conveying of lump-shaped metal or non-metal chip difficult to discharge for common chain plate chip remover and the situation of large-volume chip removal demand.

Nitrogen balance system reduces the motion impact of z-axis to the minimum

In comparison with the previous hydraulic balance system, the nitrogen balance system features the following advantages:

- ◆ It does not need external power equipment and saves energy.
- ◆ It is able to adapt to high speed rotation and lift/lower quickly and stably, is free from noise and improves the disadvantages of balance weight and hydraulic system.
- ◆ In the machining process, it is able to enhance accuracy and degree of finish substantially, reduce slight shock and extend the useful life of lead screw and motor.



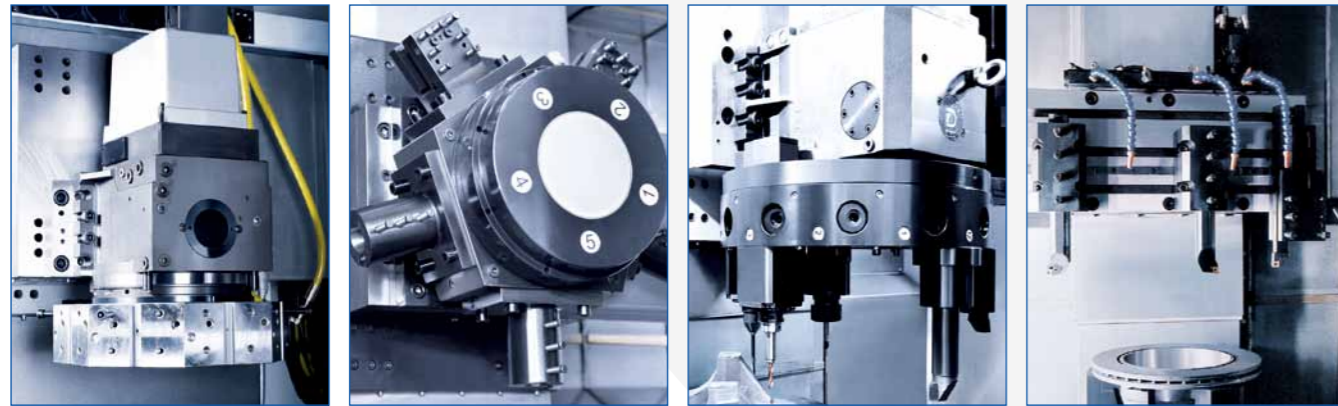
Create large travel and large cutting range model

Items	V2S	V4C	V4S	V6i	V6C	V6S
Maximum swing diameter mm	Φ500	Φ650	Φ720	Φ800	Φ860	Φ1000
Maximum machining diameter mm	Φ330	Φ500	Φ600	Φ600	Φ800	Φ900

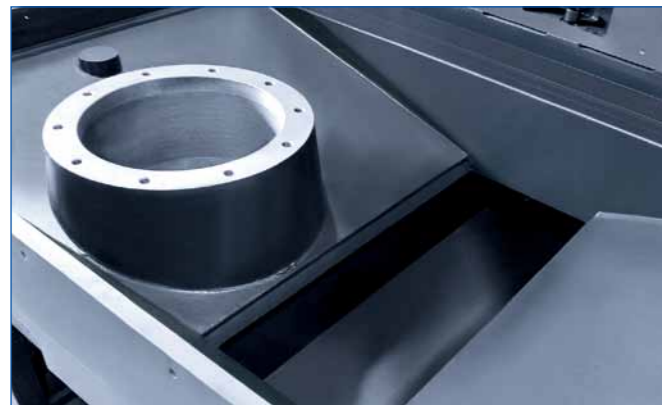


More optimal local structure

The product provides different machining performance, cutter head mode and cutter layout, so that cutting effect is better.



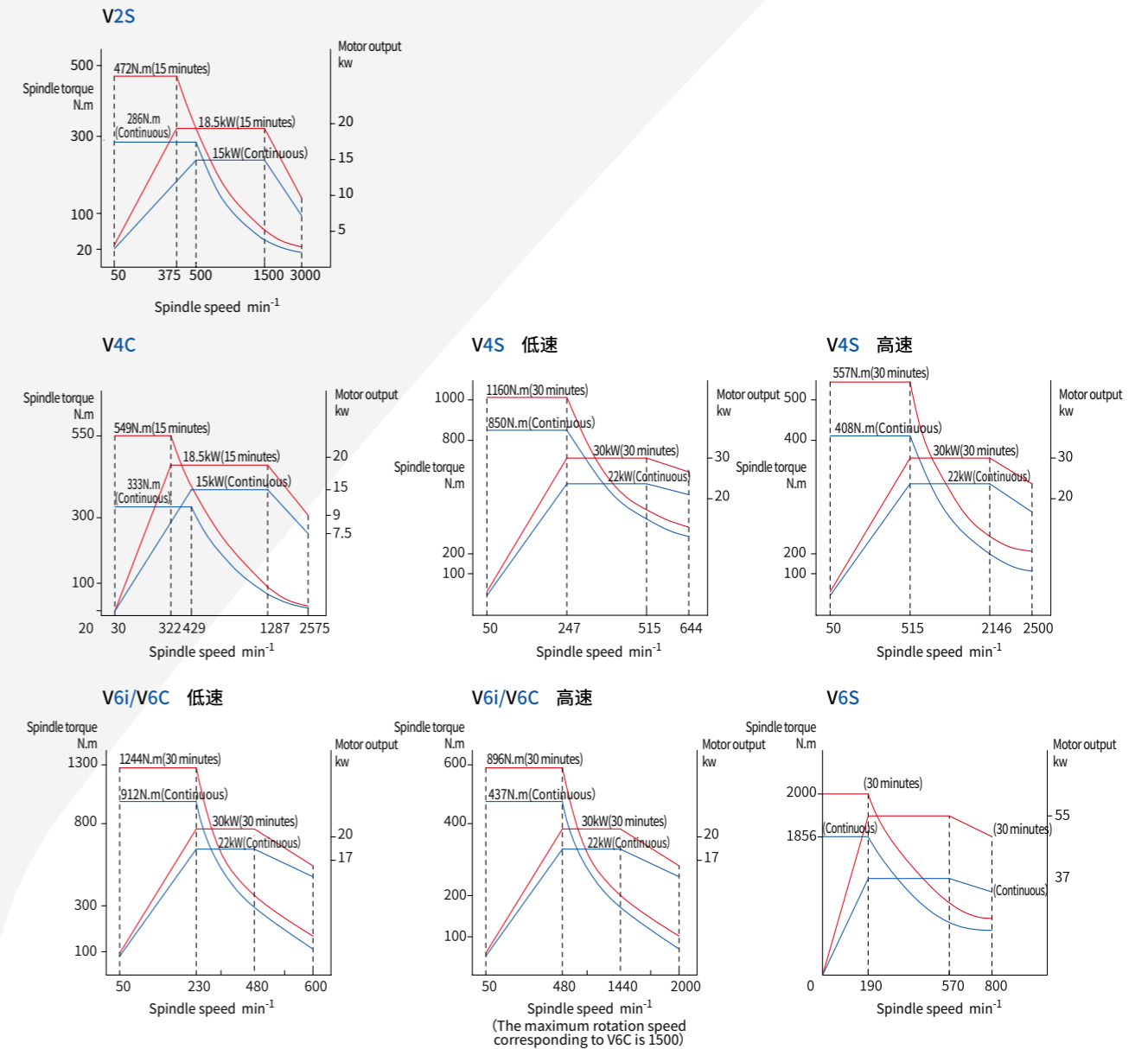
Large chip discharge outlet and concentrated treatment of iron chip and cutting fluid



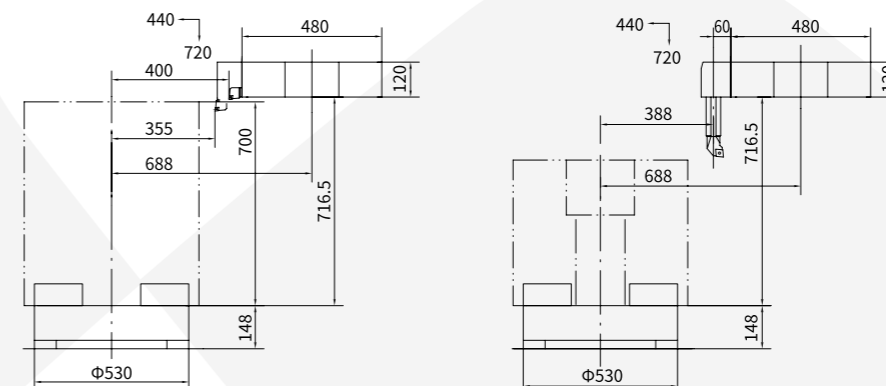
Separated waterfall chip flushing structure



Power/torque diagram



V6C machining travel diagram



Horizontal tool post machining dimension diagram

Technical parameters

Items	Unit	V2S	V4C	V4S	V6i	V6C	V6S
Machining capacity							
Maximum swing diameter over bed	mm	Φ500	Φ650	Φ720	Φ800	Φ860	Φ1000
Maximum cutting height	mm	350	500	650	740	700	800
Maximum cutting diameter	mm	Φ330	Φ500	Φ600	Φ600	Φ800	Φ900
Spindle							
Spindle nose type	-	A2-8	A2-8	A2-11	A2-11	A2-11	A2-15
Spindle speed range	r/min	50-3000	50-2500	50-2500	50-2000	50-1500	50-800
Output power of main motor	KW	15/18.5 β motor 11/15 α motor	15/18.5	22/30	22/30	22/30	37/55
Maximum output torque of spindle	Nm	472 β motor 530 α motor	549 β motor 715 α motor	1160 homemade motor 1159 α motor	1244	1245	2000
Chuck diameter	inch	10"	12"	15"	21"	21"	24"
Feeding							
X-axis rapid traverse speed	m/min	30	18	18	20	16	10
Z-axis rapid traverse speed	m/min	30	18	18	20	16	12
Travel							
X-axis travel	mm	200	300	300	340	440	800
Z-axis travel	mm	400	520	690	740	720	850
Tool post							
Tool post type		Horizontal 8-position	Horizontal 8-position	Horizontal 8-position	Horizontal 8-position	Horizontal 8-position	Horizontal 6-position
Tool size	mm	25×25/Φ40	25×25/Φ50	25×25/Φ50	32×32/Φ50	32×32/Φ50	32×32/Φ50
Accuracy							
Machining accuracy	-	IT6	IT6-IT7	IT6-IT7	IT6	IT6-IT7	IT6-IT7
Surface roughness of workpiece machined	μm	Ra1.25	Ra1.6	Ra1.6	Ra1.6	Ra1.6	Ra1.6
Positioning accuracy							
X-axis	mm	0.008	0.008	0.008	0.008	0.008	0.018
Z-axis	mm	0.008	0.008	0.008	0.010	0.010	0.020
Positioning repeatability							
X-axis	mm	0.004	0.005	0.005	0.006	0.006	0.0075
Z-axis	mm	0.005	0.005	0.005	0.006	0.006	0.015
Maximum load capacity							
Disks (including chuck and fixture)	kg	300	350	400	500	600	800
Machine weight							
Main unit	kg	4500	6800	7300	10100	10500	15000
Overall dimension							
L×W×H	mm	2000×1370×2275	2260×1780×2880	2260×1780×3060	2750×2030×3180	2700×2200×3300	3150×2650×3700

Remarks: the parameters provided in the table are only for reference, and please refer to the actual product in case of change.

Configuration of the machine

Main configuration		V2S	V4C	V4S	V6i	V6C	V6S
Servo system	FANUC Oi-TF	◆	◆	◆	◇	◆	◆
	GSK988TA	◇	◇	-	◆	◇	-
Holding system (hydraulic chuck)		10" solid	12" solid	15" solid	21" solid	21" solid	24" solid
Feeding system							
Rolling guiderail	Imported	◆	◆	◆	◆	◆	◆
	Homemade	◇	◇	◇	◇	◇	◇
Two axes lead screw	Imported	◇	◇	◇	◇	◇	◇
	Homemade	◆	◆	◆	◆	◆	◆
Spindle bearing +lead screw bearing	Imported	◆	◆	◆	◆	◆	◆
Encoder	Homemade	◆	◆	◆	◆	◆	◆
Machining system (tool post)	Imported	◇	◇	◇	◇	◇	◇
	Homemade servo	◆	◆	◆	◆	◆	◆
Auxiliary system							
Chip removing system		◆	◆	◆	◆	◆	◆
Hydraulic and lubrication system		◆	◆	◆	◆	◆	◆
Automation system							
Workpiece testing device		◇	◇	◇	◇	◇	◇
Automation		◇	◇	◇	◇	◇	◇
Safety system		◆	◆	◆	◆	◆	◆

Remarks: ◆ Standard configuration ◇ Optional configuration