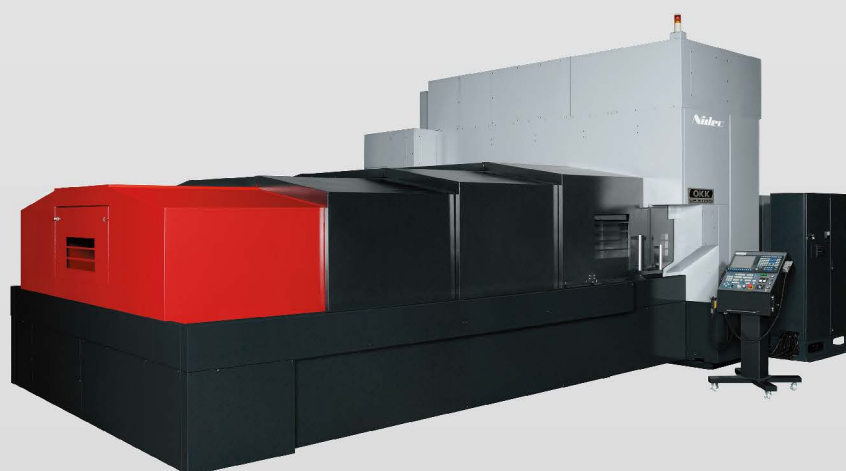


Grinding Center

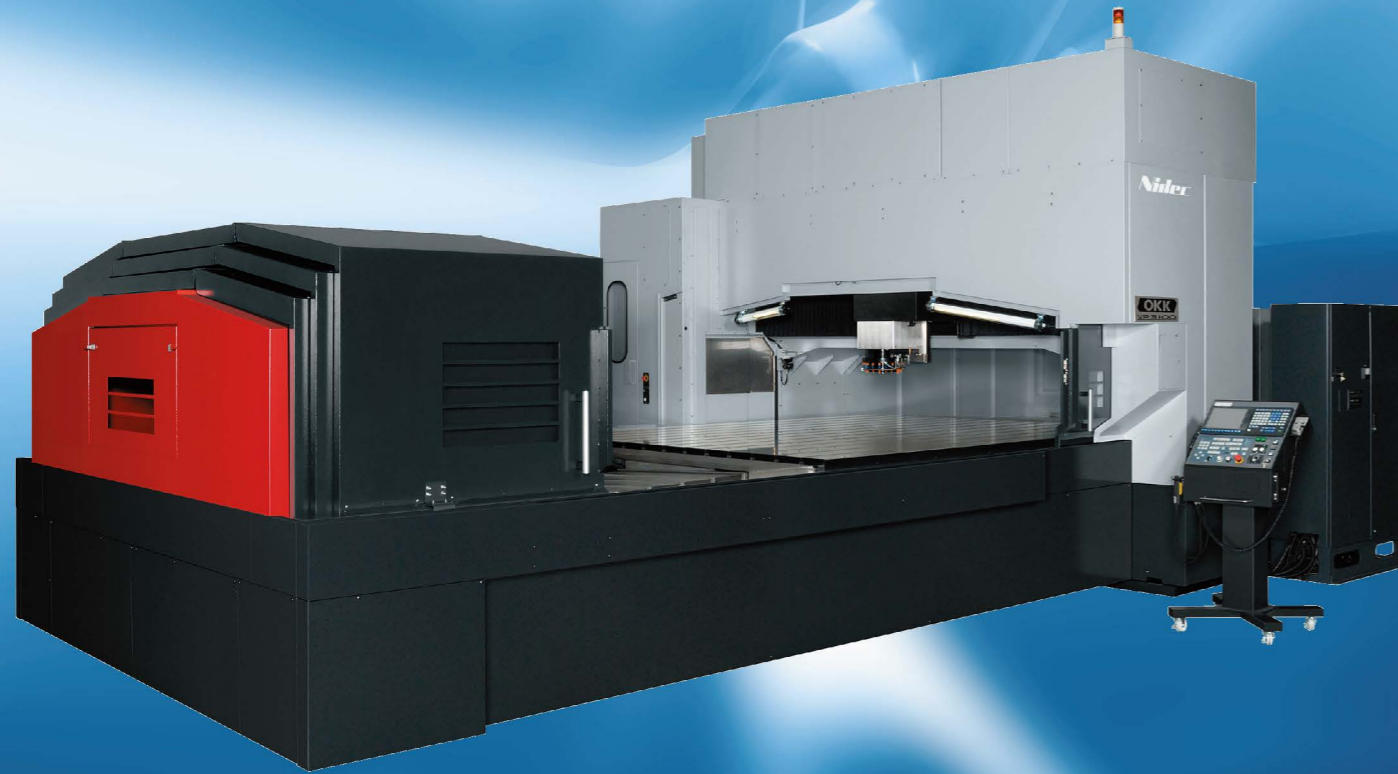
GC SERIES



Grinding Center

**Nidec OKK's grinding center continues advancing
Every grinding functions incorporated as standard equipment
Development of a variety of models and solid software**

Grinding centers for a wide range of workpieces including 400 to 3100 in size developed based on the Nidec OKK's best-seller machining centers, VP series and VM series



Effective processing of both highly hard materials and brittle materials

High-efficiency, high-precision processing of brittle materials such as ceramics, quartz glass and carbide as well difficult-to-process ferrous materials such as hardened steel.

Use of ultra-fine-particle grinding stones

In order to enable the high-efficiency grinding, the OKK Grinding Center series features a diamond wheel and CBN wheel to bring out the best performance from ultra-fine-particle grinding stones.

Adaptability to diverse processing needs

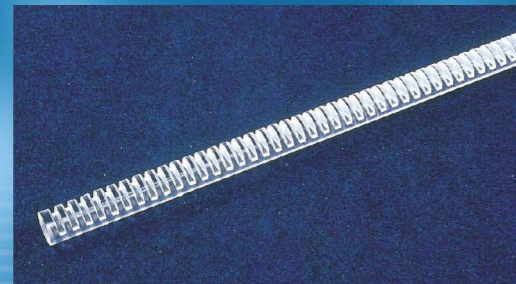
Diverse processes such as contouring, surface machining processing, grooving and drilling available with single Grinding Center. Easy processing of complicated parts without using a form grinding stone.

Advanced automation

Continuous processing of cutting and grinding is possible with a single workpiece setup. The automatic grinding stone and tool change system and NC functions have drastically advanced the automation of grinding operations.



Quartz glass



Quartz glass



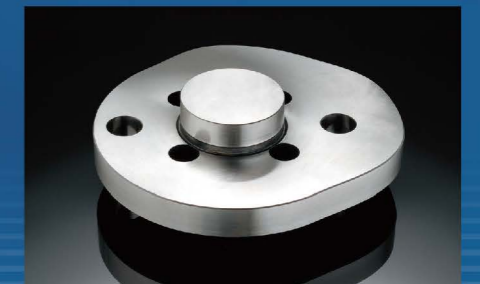
Ceramics



Ceramics



Carbide



Hardened steel

Complete resistant to rust and dust for added durability



Shown in the above is VP3100GC with optional linear scale.



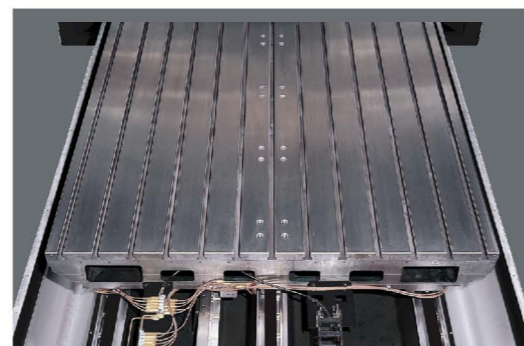
Blocks chips, grinding particles and coolant. The spindle nose section features a special anti-rust treatment and the ATC arm is coated in cold electric method.



Enclosing type shutters separate the ATC unit and tool magazine from the processing area for prevention of scattering of chips and splashing of coolant outside the processing area.



Covers enclosing the whole machine are provided as standard equipment to prevent chips and coolant from scattering and splashing outside the processing area. For protection of each slideway, scraper type stainless steel cover is provided on the X axis and bellows are on the Y and Z axes. All these features securely maintain the high machining accuracy.



Ball screws and linear roller guides are coated in cold electric method. Stainless coating of the table top surface is provided as standard specification.

Extensive models to process workpieces of varied sizes. Best fit for processing the IT-related parts.



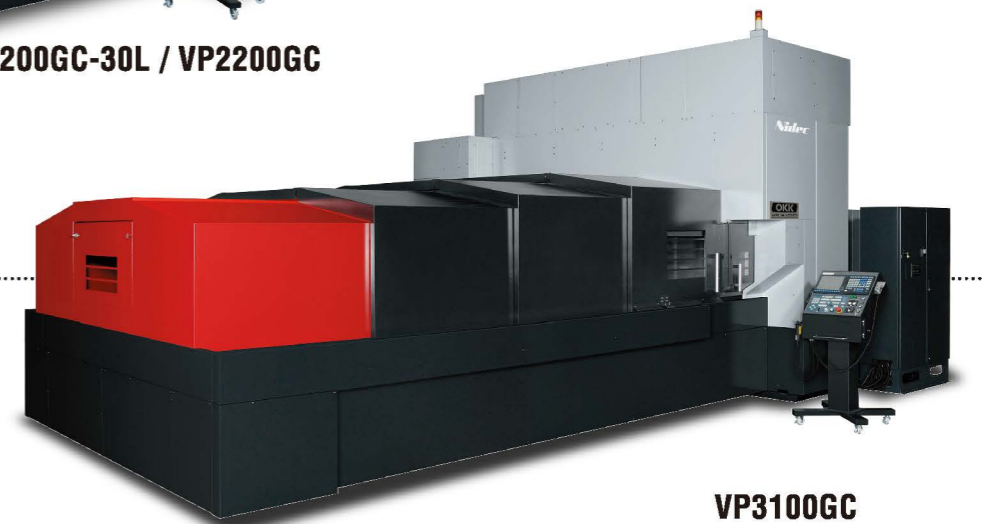
VP400GC / VP600GC



VP1200GC / VP1800GC



VP1200GC-30L / VP2200GC



VP3100GC

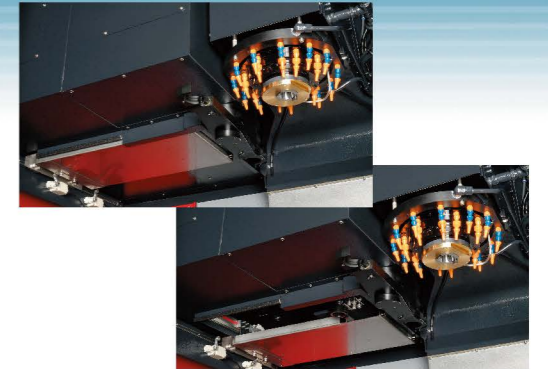
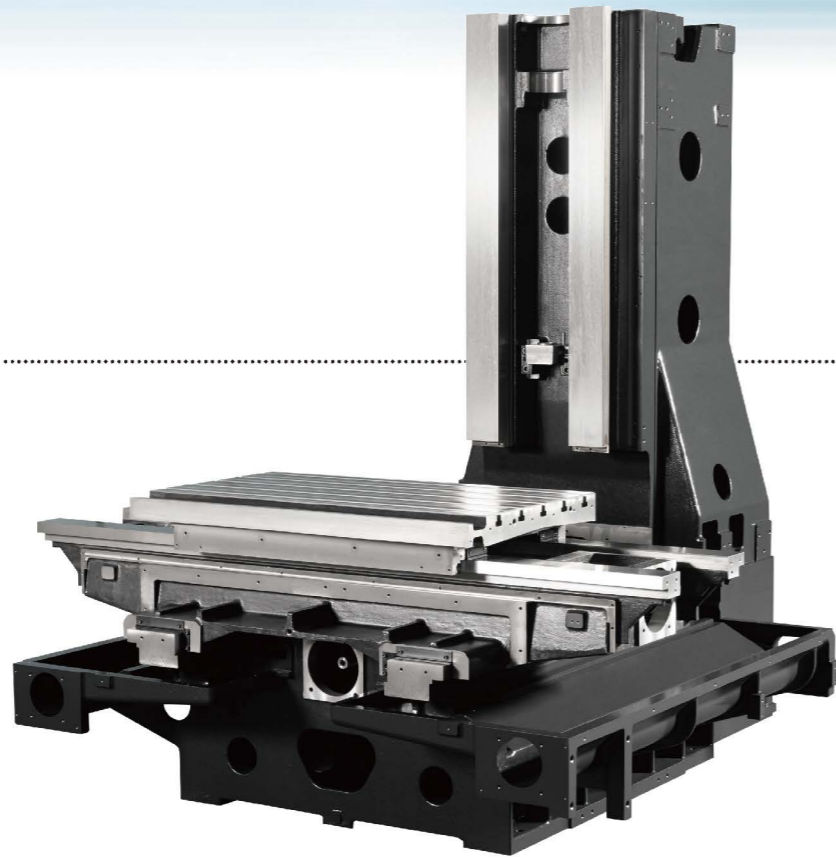
Grinding Center

High-rigidity machine combining the performance of the best-selling VM series and advanced GC functions
Best fit to ferrous grinding

Complete resistant to rust and dust supported by the abundant delivery records



No.40, 14000-rpm MS spindle with reputation established in the use on the VM series is provided as standard equipment. No.50, 12000-rpm MS spindle can be mounted optionally on GC53RII or GC76RII in the case where high rigidity is needed particularly for grinding ferrous materials.



Blocks chips, grinding particles and coolant. The spindle nose section features a special anti-rust treatment. The ATC shutter is provided as standard equipment. The ATC arm is coated in cold electric method.



GC53RII

The stainless steel doors resist rust, while the top-cover-equipped splash guard prevents chips and coolant from scattering and splashing outside of the processing area.

The X, Y and Z axes are equipped with stainless steel telescopic covers. In addition, the Y axis has a ball screw protection cover. All these features securely maintain the high machining accuracy.



GC53RII



GC43RII



GC76RII

Note This photo is image.
The shape differs from the actual machine.

GC Processing

Grinding Center

Standard Functions That Ensure High Grinding Center Performance

1 High-speed spindle

The high-rigidity, high-speed spindle ensures stable operation with minimum vibration. It assures optimum conditions for ultra-fine-particle grinding stones in a wide operating range.

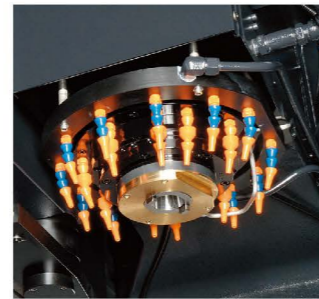
GC43RII	No.40	14000min ⁻¹ (OP:No.40 20000min ⁻¹)
GC53RII / GC76RII	No.40	14000min ⁻¹ (OP:No.40 20000min ⁻¹ , No.50 12000min ⁻¹)
VP400GC / VP600GC / VP1200GC / VP1800GC / VP2200GC / VP3100GC	No.40	12000min ⁻¹ (OP:No.40 14000min ⁻¹ , 20000min ⁻¹)

2 Through-spindle Coolant System (7-MPa High-pressure Coolant System)



The through-spindle coolant system, that is included in the standard specification of the GC Series, discharges high-pressure coolant through the center core of the spindle and tool at the pressure and rate of maximum 1015psi and 5 Gal/min (for 50 Hz) or 6 Gal/min (for 60 Hz). It realizes quite effective and accurate oiling for bore grinding, core drilling, and surface grinding with the cup grind wheel. It prevents clogging of grind wheels and burning of surfaces during grinding, and improves processing efficiency and surface roughness. This system can be used in conjunction with the external nozzles.

3 Three Coolant Systems with Separate Pumps (Through-spindle, Inner and Outer Spindle Nose Nozzles)



Multiple coolant nozzles arranged in two lines around the spindle can be directed to the desired angles. Discharge of coolant from the double nozzles can be synchronized with the discharge from the through-spindle so as to prevent burning during grinding.

4 Coolant processing system

According to the material of the work piece to be ground, Nidec OKK can provide the optimum combination of the equipment required for the processing with the GC such as the high-pressure coolant system, centrifugal separator, lift-up type chip conveyor, coccooler, mist collector, high-capacity coolant tank, magnet separator, and various filter units.

Super Separator (Option) Oil Mist Eliminator



It contains two lines of ten 1- μ bag filters. Automatic switching in case of clogging is available optionally (for each of the ten-filter lines).

Magnet Separator (Option)



It is a must for grinding iron materials. It is selectable from the three types: the standard drum specification with the rare-earth magnet drum capable to process 60 or 120 L/min and the largediameter-drum specification capable to process 120 L/min.

The mist eliminator inhales coolant mist in order to prevent dissipation of coolant and provide clean environment. The collected mist is condensed to return coolant tank.



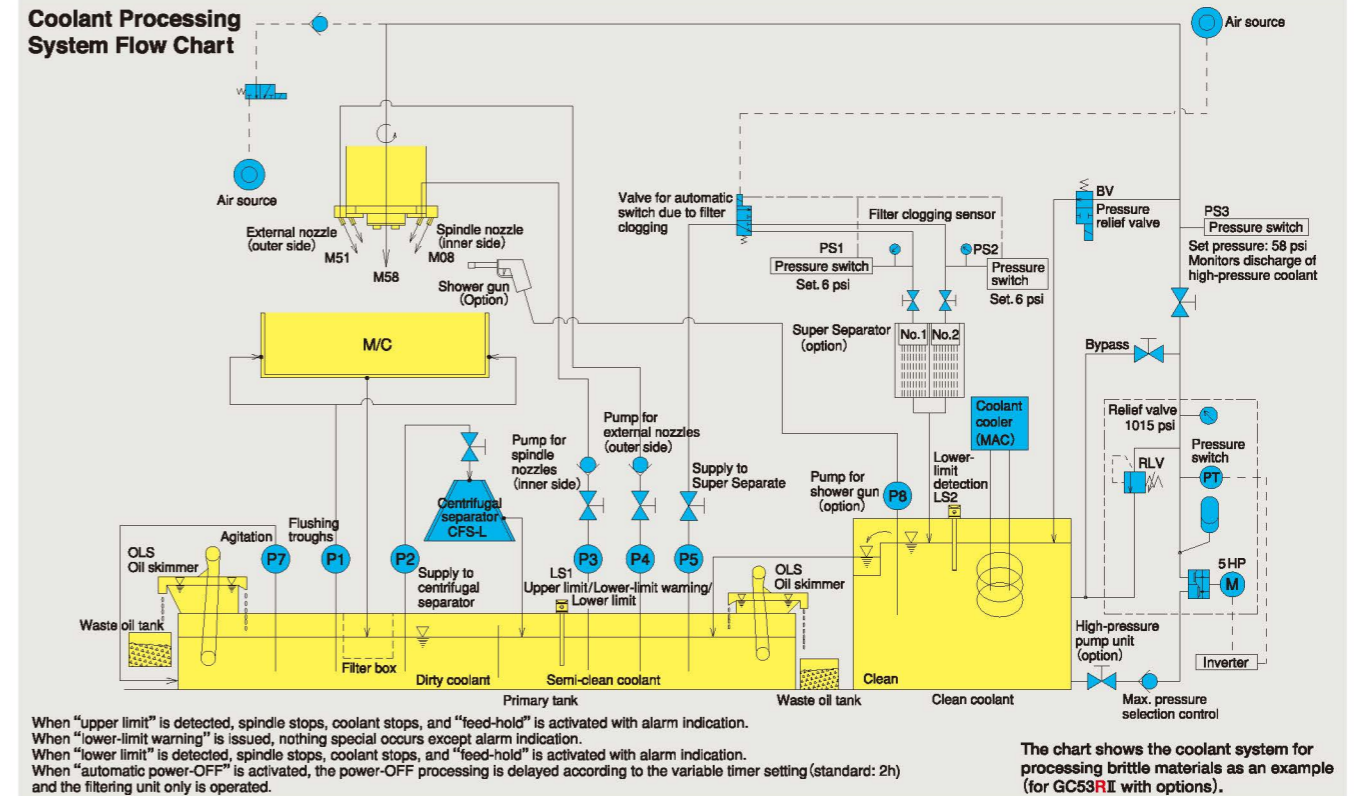
Coolant Cooler

The coolant cooler controls changes in temperature of coolant caused by heat generated in the grinding operation or by the high-pressure pump and minimize deformation of machine parts and work pieces.

Paper Filter



The boat-shaped filter unit uses the 10- μ paper filter roll. The attached float switch detects clogging and feeds out the roll automatically. The standard roll decrease sensor informs the need for roll replacement.



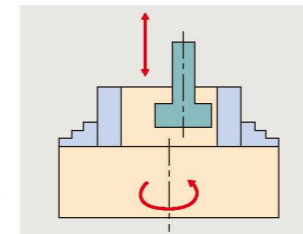
When "upper limit" is detected, spindle stops, coolant stops, and "feed-hold" is activated with alarm indication.
When "lower-limit warning" is issued, nothing special occurs except alarm indication.
When "lower limit" is detected, spindle stops, coolant stops, and "feed-hold" is activated with alarm indication.
When "automatic power-OFF" is activated, the power-OFF processing is delayed according to the variable timer setting (standard: 2h) and the filtering unit only is operated.

- The system shown above is the most generally used system for grinding brittle materials. The coolant system consists of the primary and secondary tank units.
- The Nidec OKK's coolant system is based on the off-line processing. This means that it does not process online the whole coolant required for processing but processes only a part of the coolant continuously. Processing the whole coolant with the accuracy of separating the solids in the size of several microns from liquid requires the gigantic processing unit and uneconomic.
- Only the through-spindle uses the completely processed coolant.
- The coolant used for processing flows into the primary tank. Rate of processing in the centrifugal separator attached to the primary tank must be around 15 L/min. It equals to processing around 900 L per hour. It processes coolant even when the machine is in processing or in the setup operation.
- Coolant of the primary tank is sent to the secondary tank via the Super Separator (optional) at the rate of about 50 L/min. Standard filtering size is 1 μ m (selectable according to the processing). This filter is also operating at any time and processes about 3000 L per hour. Assuming that the whole amount of the coolant is 1000 L, the coolant can pass the processing unit about 4 times (15 minutes for a single cycle) off-line.

- The primary tank unit contains the oil skimmer, pump for flushing built-in trough(s), pump for agitating coolant in the tank, pump for supplying coolant to the Super Separator, pump for supplying coolant to the centrifugal separator, and two pumps for spindle nose nozzles. The centrifugal separator installed separately circulates and cleans coolant in the primary tank continuously at any time.
- The secondary tank has the coolant cooler, high-pressure pump for the through-spindle, and pump for shower gun (optional). The surplus of the coolant supplied to the secondary tank through the separately-installed Super Separator (optional) i.e. the surplus cause by non-operation of the high-pressure pump or difference between the supply and the consumption of the high-pressure pump, returns to the primary tank as overflow. Thus coolant is circulated through the system's whole paths.
- You can select the other system such as the one having the paper filter unit (standard) and the cylindrical filter unit (optional) in place of the Super Separator (optional).
- When you grind the magnetic material such as steel, you may use the floor magnet conveyor (optional) and/or magnet separator (optional) in the circuit to combine with the centrifugal separator and eliminate filters in some cases.

5 Chopping function

For contouring and other processing, this function moves the cutting or grinding axis vertically and controls other axes according to the program in order to machine the side surfaces of a workpiece. It achieves smooth surfaces and improves the workpiece quality.

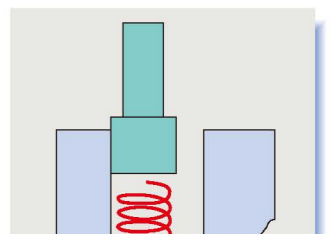


7 HQ control

- Pre-interpolation acceleration/deceleration:** Reduces workpiece contour error and inhibits radius decrease in circular cutting operations.
- Optimized corner deceleration:** Monitors command vectors in a machining program for automatic deceleration of travel at corners. This ensures high accuracy of precision edge machining.
- Feedforward control:** Contribute to accurate control with minimal servo error.

6 Helical interpolation

This function allows two axes to make a circular path and one axis to move linearly. It improves the efficiency and productivity of boring and thread cutting operations by using the grinding stone.



8 Soft Scale II m / III

Dynamic positioning accuracy is notably improved.

VP400GC, VP600GC, VP1200GC, VP1800GC, VP2200GC, GC3100GC	Soft Scale II m
GC43RII, GC53RII, GC76RII	Soft Scale III

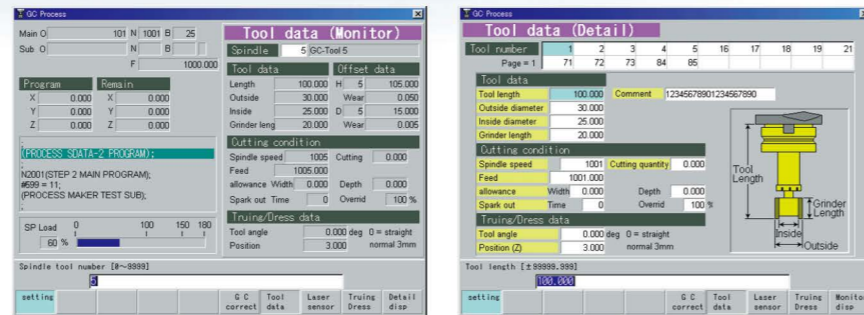
Optional Items That Further Enhance GC Processing

1 GC support system

Operation that is needed for highly accurate grinding such as workpiece measurement, grinding stone measurement, and truing / dressing can be controlled with ease through the dedicated screen.

Tool data can be controlled through the tool data screen.

(Maximum 100 tools are registerable.)

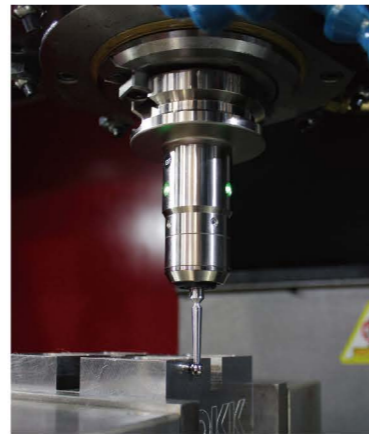


Tool Data Screen



T1A (spindle touch sensor) workpiece measurement system

Wireless touch sensor that does not interfere with external nozzles around the spindle can be used to maintain and control the processing accuracy. This system is necessary for wear compensation system.

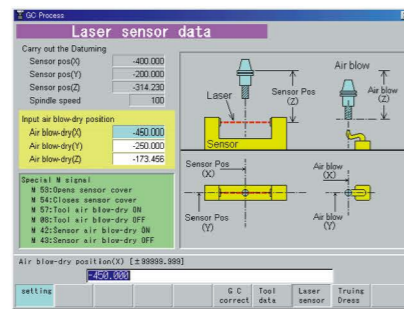


Laser measurement system

Contact-free laser measurement of the tool length and diameter is available. Measurement while rotating the tool enables measurement including error factors such as deviation of tool holder or spindle rotation. Contact-free measurement enables high-speed approach to the sensor and reduces necessary time for measurement.



Grind stone laser measurement unit



Laser Sensor Data Screen

Truing / Dressing system

Rotary truing device for vitrified CBN (ferrous grinding) grinding wheel is used. This system is essential for getting a high-quality ground surface when grinding ferrous material.

This system cannot be used effectively without the grinding stone laser measurement unit.

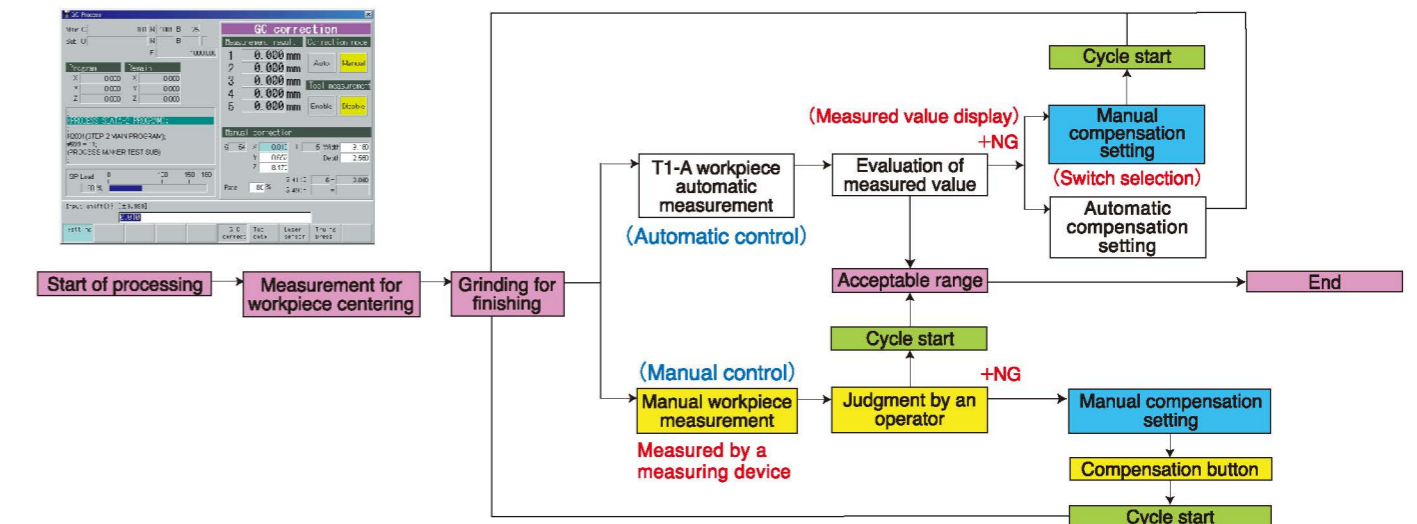


Truing (Rotary wheel)

Automatic Measurement & Correction System

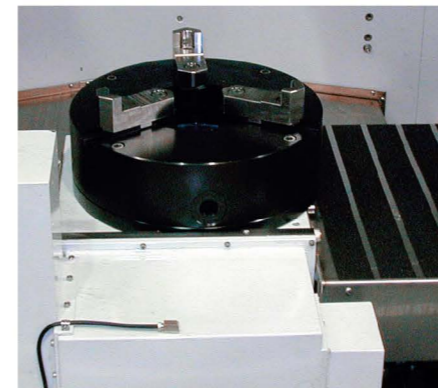
The system for maintaining and controlling the processing accuracy in grinding operation.

There are two types of control systems: automatic and manual control systems. In the automatic control system,



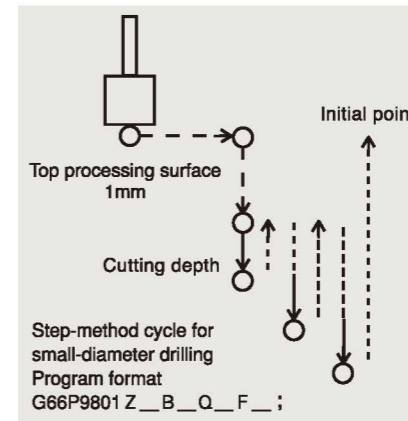
2 High-speed rotary table

This device allows high-precision cylindrical processing (effective grinding of inside and outside walls of a cylinder). The device enables continuous high-speed operation between 100 and 300 rpm, depending on the rotary table specification, thus enabling the highly effective grinding.



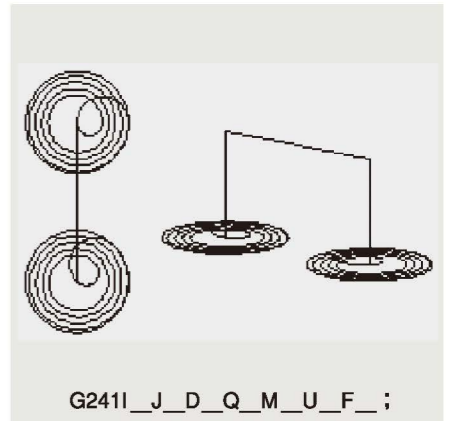
3 GC Pattern Cycle

This program is designed exclusively for grinding centers. It allows seven different types of processing such as small-diameter drilling, thread cutting etc.



4 High-speed Pattern Macro

Fine shaping that is indispensable for grinding can be instructed with simple programming.



Other special accessories

- Increase in the number of storable tools
- Linear scale
- Electromagnetic chuck
- Vacuum chuck
- Measurement of grind wheel with touch probe
- Grind wheel touch signal detection sensor
- Point dresser
- Stick dresser
- Brake dresser
- Hyper HQ control
- Anticorrosive table top face (GC43R, GC53R, GC76R only)
- Through-spindle-end-face
- Supporting coolant system for hardened steel
 - Lift-up type conveyor with floor magnet separator
 - Magnet separator
- Super Separator specification, Cylindrical filter specification
- 290 psi high-pressure coolant system
- Increase in high-pressure pump capacity (870 psi: 7.4 HP, 10/11 gal)
- Control of Max pressure of high-pressure pump selectable from 8 steps (Max. 1015 psi)

VP400GC, VP600GC

● Main Specifications of the Machine

Item	VP400GC	VP600GC
Travel on X axis (Saddle: right / left)	mm 600 (23.62")	1120 (44.09")
Travel on Y axis (Table: back / forth)	mm 410 (16.14")	610 (24.02")
Travel on Z axis (Spindle head: up / down)	mm 460 (18.11")	460 (18.11")
Distance from table top surface to spindle nose	mm 150 to 610 (5.91" to 24.02")	150 to 610 (5.91" to 24.02")
Distance from column front to spindle center	mm 620 (24.41")	740 (29.13")
Table work surface area (X-axis direction × Y-axis direction)	mm 900 × 410 (35.43" × 16.14")	1300 × 610 (51.18" × 24.02")
Max. workpiece weight loadable on table	kg 500 (1102 lbs)	1200 (2600 lbs)
Table work surface configuration (Number and nominal dimension of T slots and spacing)	mm 18 (0.71") × 125 (4.92") × 3	22 (0.87") × 125 (4.92") × 5
Height from floor level to table work surface	mm 800 (31.5")	850 (33.46")
Spindle speed	min ⁻¹ 100 to 12000	100 to 12000
Number of spindle speed shift steps	Stepless	Stepless
Spindle nose (nominal number)	7/24 taper No. 40	7/24 taper No. 40
Spindle bearing bore diameter	mm φ65 (dia 2.56")	φ65 (dia 2.56")
Rapid traverse rate	m/min X,Y:48 (1890ipm), Z:36 (1417ipm)	X,Y:48 (1890ipm), Z:36 (1417ipm)
Cutting feed rate	mm/min 1 to 36000 (0.04 to 1417 ipm) *1	1 to 36000 (0.04 to 1417 ipm) *1
ATC (Automatic Tool Changer)		
Type of tool shank (Nominal number)	JIS B 6339 BT40	JIS B 6339 BT40
Type of pull stud (Nominal number)	MAS 403 P40T-1	MAS 403 P40T-1
Tool storage capacity	20 tools (Option: 30 tools)	20 tools (Option: 30 tools)
Maximum tool diameter	mm φ110 (dia 4.33")	φ110 (dia 4.33")
Maximum tool length (from the gauge line)	mm 300 (11.81")	300 (11.81")
Maximum tool weight	kg 7 (15 lbs)	7 (15 lbs)
Tool selection method	Memory random method	Memory random method
Tool changing time (tool-to-tool)	s 1.2	1.2
Tool changing time (cut-to-cut)	s 5.8	5.8
Motor		
Spindle motor (30-min rating / continuous rating)	kW 7.5/5.5 (10/7 HP)	7.5/5.5 (10/7 HP)
Feed motors	kW MITSUBISHI X, Y axes:2.0 (2.7 HP); Z axis:3.5 (4.7 HP) FANUC X, Y and Z axes:4.5 (6.0 HP)	MITSUBISHI X, Y axes:2.0 (2.7 HP); Z axis:3.5 (4.7 HP) FANUC X, Y and Z axes:4.5 (6.0 HP)
Coolant pump unit *2		
Trough flushing pump motor	kW 0.25 (0.3 HP) × 0.25 (0.3 HP)	
Magnet separator feed pump motor (option)	kW 0.4 (0.5 HP)	
Centrifugal separator feed pump motor	kW 0.18 (0.2 HP)	
Motor for spindle nozzle (normal pressure)	kW 0.75 (1 HP) × 2 (50 Hz) / 1.1 (1.5 HP) × 2 (60 Hz)	
High-pressure pump motor	kW 3.7 (5.0 HP)	
Motor for centrifugal separator (2 units)	kW 2.2 (3.0 HP)	2.2 (3.0 HP)
Motor for magnet separator (option)	kW 0.012 (0.02 HP)	0.012 (0.02 HP)
Motor for coolant cooler	kW 2.15 (2.9 HP)	2.15 (2.9 HP)
Motor for mist collector	kW 1.5 (2.0 HP)	1.5 (2.0 HP)
Motor for spindle head oil cooler	kW 1.1 + 0.4 (1.5 + 0.5 HP)	1.1 + 0.4 (1.5 + 0.5 HP)
Motor for ATC unit	kW 0.75 (1.01 HP)	0.75 (1.01 HP)
Motor for magazine	kW MITSUBISHI: 1.5 (2.0 HP) FANUC: 1.4 (1.9 HP)	
Required power supply		
Power supply	kVA MITSUBISHI: 44 / FANUC: 43	MITSUBISHI: 44 / FANUC: 43
Supply voltage, Supply frequency	V, Hz AC200 ± 10%, 50 / 60 ± 1 AC220 ± 10%, 60 ± 1 *3	
Compressed air supply pressure	MPa 0.5 (73 psi)	0.5 (73 psi)
Air supply flow rate (atmospheric pressure)	L/min (ANR) 500 (132 gal)	500 (132 gal)
Coolant tank capacity	L 1485 (392 gal)	1485 (392 gal)
Spindle head cooling oil tank capacity	L 50 (13 gal)	50 (13 gal)
Machine height (from floor level)	mm 2746 (108.11")	2796 (110.08")
Floor space required for operation (left-to-right × depth)	mm 3711 × 4810 (146.10" × 189.37")	3711 × 5250 (146.10" × 206.69")
Required floor space incl. maintenance area (left-to-right × depth)	mm 4500 × 5200 (177.17" × 204.72")	4500 × 5700 (177.17" × 224.41")
Machine weight	kg 8000 (17600 lbs)	10500 (23100 lbs)
Controller	°C 5 to 40	5 to 40

*1 Under the HQ or Hyper HQ control

*2 The above pump output shows the one in the 60-Hz area.

*3 When the supply voltage is 220VAC, 60-Hz supply frequency only is available.

Note : Machining accuracy can be affected by the environment where the machine is installed.

Please make sure to install the machine in an appropriate environment.

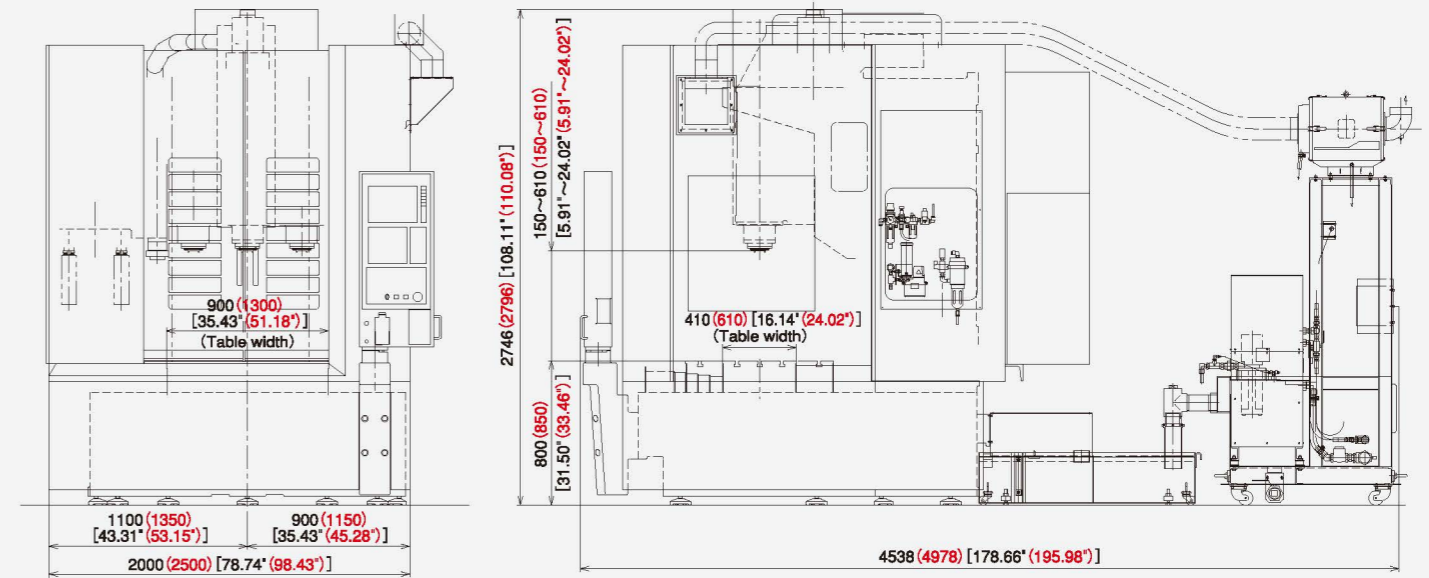
● Standard Accessories

High-pressure coolant system
Centrifugal separator
Paperfilter
Coolant cooler
Mist collector
High-pressure external nozzle
High-capacity coolant tank
Oil skimmer
Spindle nose air purge
Machine cover for enclosing a whole machine
Magazine / ATC shutter
X- and Z-axis slideway protection covers (bellows)
Y-axis slideway protection cover
Rust-proofing of linear roller guides on X, Y and Z axes
Rust-proofing of ball screws on X, Y and Z axes
Rust-proofing of table top surface
Automatic grease lubricating unit
Rust-proofing of ATC arm unit
SUS bolts for coolant related parts
Spindle head lubricating oil temperature controller
Chip flow coolant
Workpiece flushing gun
Signal lamp
Lighting unit
Leveling block
Parts for machine transportation
Automatic power off
Electrical spare parts (fuses)
Instruction manual (1 sets)
Electrical instruction manual (hardware diagrams)

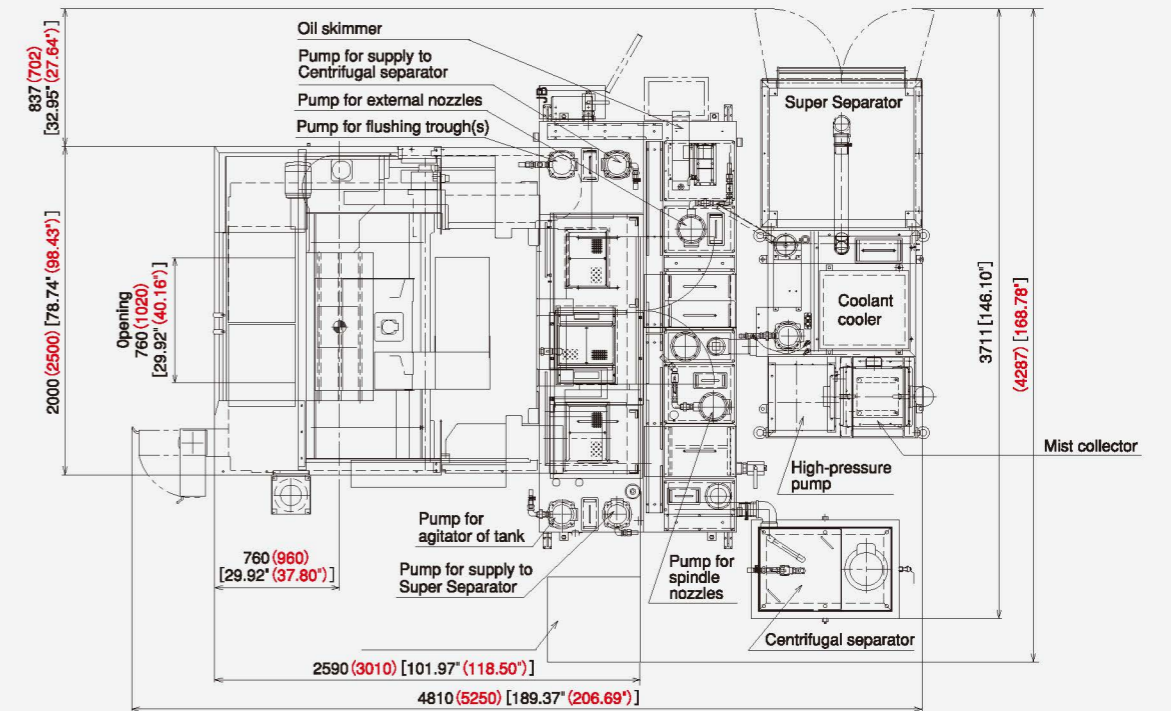
VP400GC, VP600GC

Main Dimensions of the Machine

() : VP600GC dimensions

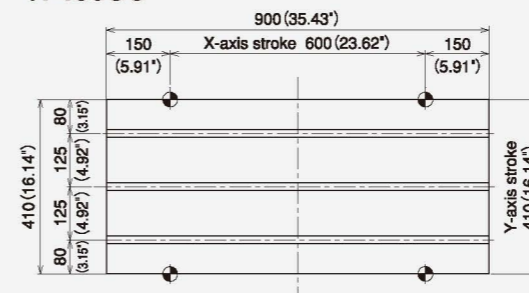


Floor Space

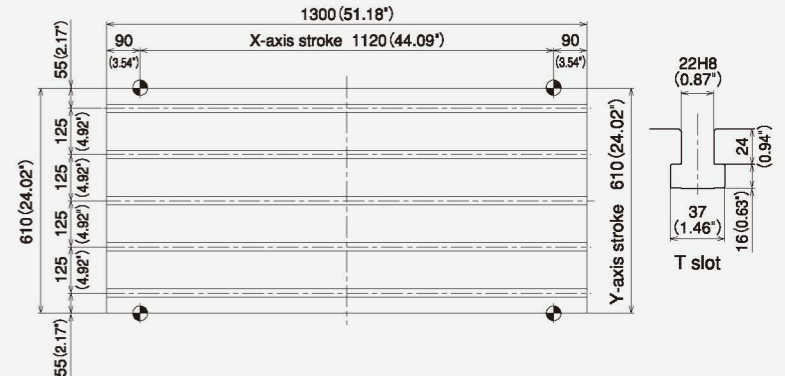


Table

VP400GC



VP600GC



VP1200GC, VP1200GC-30L, VP1800GC

● Main Specifications of the Machine

Item	VP1200GC	VP1200GC-30L	VP1800GC
Distance between gates	mm 1480 (58.27")	1480 (58.27")	2010 (79.13")
Travel on X axis (Table: right / left)	mm 1600 (62.99")	3050 (120.08")	2200 (86.61")
Travel on Y axis (Saddle: back / forth)	mm 1300 (51.18")	1300 (51.18")	1800 (70.87")
Travel on Z axis (Spindle head: up / down)	mm 460 (18.11")	460 (18.11")	460 (18.11")
Distance from table top surface to spindle nose	mm 100 to 560 (3.94" to 22.05")	100 to 560 (3.94" to 22.05")	100 to 560 (3.94" to 22.05")
Distance from column front to spindle center	mm 635 (25.00")	635 (25.00")	635 (25.00")
Table work surface area (X-axis direction × Y-axis direction)	mm 1600×1300 (62.99"×51.18")	3000×1300 (118.11"×51.18")	2200×1800 (86.61"×70.87")
Max. workpiece weight loadable on table	kg 2000 (4400 lbs)	3000 (6600 lbs)	3000 (6600 lbs)
Table work surface configuration (Number and nominal dimension of T slots and spacing)	mm 22 (0.87") × 140 (5.51") × 9	22 (0.87") × 140 (5.51") × 9	22 (0.87") × 140 (5.51") × 13
Height from floor level to table work surface	mm 900 (35.43")	1000 (39.37")	900 (35.43")
Spindle speed	min ⁻¹ 100 to 12000	100 to 12000	100 to 12000
Number of spindle speed shift steps	Stepless	Stepless	Stepless
Spindle nose (nominal number)	7/24 taper No. 40	7/24 taper No. 40	7/24 taper No. 40
Spindle bearing bore diameter	mm φ65 (dia 2.56")	φ65 (dia 2.56")	φ65 (dia 2.56")
Rapid traverse rate	m/min X, Y : 48 (1890 ipm), Z : 36 (1417 ipm)	X : 16 (630 ipm), Y : 48 (1890 ipm), Z : 36 (1417 ipm)	X, Y : 24 (945 ipm), Z : 36 (1417 ipm)
Cutting feed rate	mm/min 1 to 36000 (0.04 to 1417 ipm) *1	1 to 16000 (0.04 to 630 ipm) *1	1 to 24000 (0.04 to 945 ipm) *1
ATC (Automatic Tool Changer)			
Type of tool shank (Nominal number)	JIS B 6339 BT40	JIS B 6339 BT40	JIS B 6339 BT40
Type of pull stud (Nominal number)	MAS 403 P40T-1	MAS 403 P40T-1	MAS 403 P40T-1
Tool storage capacity	40	40	40
Maximum tool diameter	mm φ82 (dia 3.23")	φ82 (dia 3.23")	φ82 (dia 3.23")
Maximum tool length (from the gauge line)	mm 300 (11.81")	300 (11.81")	300 (11.81")
Maximum tool weight	kg 7 (15 lbs)	7 (15 lbs)	7 (15 lbs)
Tool selection method	Address fixing method	Address fixing method	Address fixing method
Tool changing time (tool-to-tool)	s 1.2	1.2	1.2
Tool changing time (cut-to-cut)	s 5.5	8.5	7.5
Motor			
Spindle motor (30-min rating/continuous rating)	kW 7.5 / 5.5 (10 / 7 HP)	7.5 / 5.5 (10 / 7 HP)	7.5 / 5.5 (10 / 7 HP)
Feed motors	MITSUBISHI X axis: 7.0 (9.4 HP); Y and Z axes: 3.5 (4.7 HP) FANUC X axis: 9.0 (12.1 HP); Y and Z axes: 4.5 (6.0 HP)		
Coolant pump unit *2			
Trough flushing pump motor	0.25 (0.3 HP) / 0.25 (0.3 HP) × 2		
Magnet separator feed pump motor (option)	0.4 (0.5 HP)		
Centrifugal separator feed pump motor	0.18 (0.2 HP)		
Motor for spindle nozzle (normal pressure)	0.75 (1 HP) × 2 (50Hz) / 1.1 (1.5 HP) × 2 (60Hz)		
High-pressure pump motor	3.7 (5.0 HP)		
Motor for centrifugal separator (2 units)	kW 2.2 (3.0 HP)	2.2 (3.0 HP)	2.2 (3.0 HP)
Motor for magnet separator (option)	kW 0.012 (0.02 HP)	0.012 (0.02 HP)	0.012 (0.02 HP)
Motor for coolant cooler	kW 2.15 (2.9 HP)	2.15 (2.9 HP)	2.15 (2.9 HP)
Motor for mist collector	kW 1.5 (2.0 HP)	1.5 (2.0 HP)	1.5 (2.0 HP)
Motor for spindle head oil cooler	kW 1.5+0.75 (2.0+1.01 HP)	1.5+0.75 (2.0+1.01 HP)	1.5+0.75 (2.0+1.01 HP)
Motor for ATC unit	kW 0.75 (1.01 HP)	0.75 (1.01 HP)	0.75 (1.01 HP)
Motor for magazine	kW MITSUBISHI : 1.5 (2.0 HP) FANUC : 1.4 (1.9 HP)	MITSUBISHI : 1.5 (2.0 HP) FANUC : 1.4 (1.9 HP)	MITSUBISHI : 1.5 (2.0 HP) FANUC : 1.4 (1.9 HP)
Required power supply			
Power supply	kVA MITSUBISHI : 49 / FANUC : 48	MITSUBISHI : 49 / FANUC : 48	MITSUBISHI : 49 / FANUC : 48
Supply voltage, Supply frequency	V, Hz AC200±10%, 50/60±1 / AC220±10%, 60±1 *3		
Compressed air supply pressure	MPa 0.5 (73 psi)	0.5 (73 psi)	0.5 (73 psi)
Air supply flow rate (atmospheric pressure)	L/min (ANR) 500 (132 gal)	500 (132 gal)	500 (132 gal)
Coolant tank capacity	L 1600 (423 gal)	1600 (423 gal)	1600 (423 gal)
Spindle head cooling oil tank capacity	L 72 (19 gal)	72 (19 gal)	72 (19 gal)
Machine height (from floor level)	mm 2895 (113.98")	2995 (117.91")	2895 (113.98")
Floor space required for operation (left-to-right × depth)	mm 4107×7582 (161.69"×298.50")	4484×10420 (176.54"×410.24")	4699×9500 (185.00"×374.02")
Required floor space incl. maintenance area (left-to-right × depth)	mm 4900×8400 (192.91"×330.71")	5300×11200 (208.66"×440.94")	5500×10300 (216.54"×405.51")
Machine weight	kg 19000 (41900 lbs)	22000 (8500 lbs)	25000 (55100 lbs)
Controller	°C 5 to 40	5 to 40	5 to 40

*1 Under the HQ or Hyper HQ control

*2 The above pump output shows the one in the 60-Hz area.

*3 When the supply voltage is 220VAC, 60-Hz supply frequency only is available.

Note : Machining accuracy can be affected by the environment where the machine is installed.
Please make sure to install the machine in an appropriate environment.

VP2200GC, VP3100GC

● Main Specifications of the Machine

Item	VP2200GC	VP3100GC
Distance between gates	mm 2500 (98.43")	3100 (122.05")
Travel on X axis (Table: right / left)	mm 3050 (120.08")	3500 (137.80")
Travel on Y axis (Saddle: back / forth)	mm 2200 (86.61")	3100 (122.05")
Travel on Z axis (Spindle head: up / down)	mm 460 (18.11")	560 (22.05")
Distance from table top surface to spindle nose	mm 100 to 560 (3.94" to 22.05")	100 to 660 (3.94" to 25.98")
Distance from column front to spindle center	mm 520 (20.47")	520 (20.47")
Table work surface area (X-axis direction × Y-axis direction)	mm 3000×2200 (118.11"×86.61")	3600×2750 (141.73"×108.27")
Max. workpiece weight loadable on table	kg 3000 (6600 lbs)	4000 (8800 lbs)
Table work surface configuration (Number and nominal dimension of T slots and spacing)	mm 22 (0.87") × 200 (7.87") × 11	22 (0.87") × 200 (7.87") × 13
Height from floor level to table work surface	mm 1000 (39.37")	1100 (43.31")
Spindle speed	min ⁻¹ 100 to 12000	100 to 12000
Number of spindle speed shift steps	Stepless	Stepless
Spindle nose (nominal number)	7/24 taper No. 40	7/24 taper No. 40
Spindle bearing bore diameter	mm φ65 (dia 2.56")	φ65 (dia 2.56")
Rapid traverse rate	m/min X,Y:16 (630 ipm), Z:36 (1417 ipm)	X, Y : 12 (472 ipm), Z : 32 (1260 ipm)
Cutting feed rate	mm/min 1 to 16000 (0.04 to 630 ipm) *1	1 to 12000 (0.04 to 472 ipm) *1
ATC (Automatic Tool Changer)		
Type of tool shank (Nominal number)	JIS B 6339 BT40	JIS B 6339 BT40
Type of pull stud (Nominal number)	MAS 403 P40T-1	MAS 403 P40T-1
Tool storage capacity	40	40
Maximum tool diameter	mm φ82 (dia 3.23")	φ82 (dia 3.23")
Maximum tool length (from the gauge line)	mm 300 (11.81")	300 (11.81")
Maximum tool weight	kg 7 (15 lbs)	7 (15 lbs)
Tool selection method	Address fixing method	Address fixing method
Tool changing time (tool-to-tool)	s 1.2	3.2
Tool changing time (cut-to-cut)	s 11.5	21
Motor		
Spindle motor (30-min rating/continuous rating)	kW 7.5/5.5 (10/7 HP)	7.5/5.5 (10/7 HP)
Feed motors	MITSUBISHI X axis : 9.0 (12.1 HP); Y and Z axes : 3.5 (4.7 HP) FANUC X axis : 9.0 (12.1 HP); Y and Z axes : 4.5 (6.0 HP)	
Coolant pump unit *2		
Trough flushing pump motor	kW 0.25 (0.3 HP) / 0.25 (0.3 HP) × 2	0.25 (0.3 HP) / 0.25 (0.3 HP) × 3
Magnet separator feed pump motor (option)	0.4 (0.5 HP)	
Centrifugal separator feed pump motor	0.18 (0.2 HP)	
Motor for spindle nozzle (normal pressure)	0.75 (1 HP) × 2 (50 Hz) / 1.1 (1.5 HP) × 2 (60 Hz)	
High-pressure pump motor	3.7 (5.0 HP)	
Motor for centrifugal separator (2 units)	kW 2.2 (3.0 HP)	2.2 (3.0 HP)
Motor for magnet separator (option)	kW 0.012 (0.02 HP)	0.012 (0.02 HP)
Motor for coolant cooler	kW 2.15 (2.9 HP)	2.15 (2.9 HP)
Motor for mist collector	kW 1.5 (2.0 HP) × 2	1.5 (2.0 HP) × 2
Motor for spindle head oil cooler	kW 1.5+0.75 (2.0+1.01 HP)	1.5+0.75 (2.0+1.01 HP)
Motor for ATC unit	kW 0.75 (1.01 HP)	0.75 (1.01 HP)
Motor for magazine	kW MITSUBISHI:1.5 (2 HP) / FANUC:1.4 (1.9 HP)	MITSUBISHI:1.5 (2 HP) / FANUC:1.4 (1.9 HP)
Required power supply		
Power supply	kVA MITSUBISHI 49 / FANUC 48	MITSUBISHI 52 / FANUC 56
Supply voltage, Supply frequency	V, Hz AC200 ± 10%, 50 / 60 ± 1 / AC220 ± 10%, 60 ± 1 *3	
Compressed air supply pressure	MPa 0.5 (73 psi)	0.5 (73 psi)
Air supply flow rate (atmospheric pressure)	L/min(ANR) 500 (132 gal)	500 (132 gal)
Coolant tank capacity	L 1900 (502 gal)	2160 (571 gal)
Spindle head cooling oil tank capacity	L 72 (19 gal)	72 (19 gal)
Machine height (from floor level)	mm 2995 (117.91")	3530 (138.98")
Floor space required for operation (left-to-right × depth)	mm 5145 × 10420 (202.56" × 410.24")	12367 × 6203 (486.89" × 244.21")
Required floor space incl. maintenance area (left-to-right × depth)	mm 5900 × 11200 (232.28" × 440.94")	13200 × 7000 (519.69" × 275.59")
Machine weight	kg 32000 (70500 lbs)	41000 (90400 lbs)
Controller	°C 5 to 40	5 to 40

*1 Under the HQ or Hyper HQ control

*2 The above pump output shows the one in the 60-Hz area.

*3 When the supply voltage is 220VAC, 60-Hz supply frequency only is available.

Note : Machining accuracy can be affected by the environment where the machine is installed.
Please make sure to install the machine in an appropriate environment.

● Standard Accessories

High-pressure coolant system
Centrifugal separator
Paperfilter
Coolant cooler
Mist collector
High-pressure external nozzle
High-capacity coolant tank
Oil skimmer
Spindle nose air purge
Machine cover for enclosing a whole machine
Magazine / ATC shutter
X- and Z-axis slideway protection covers (bellows)
Y-axis slideway protection cover
Rust-proofing of linear roller guides on X, Y and Z axes
Rust-proofing of ball screws on X, Y and Z axes
Rust-proofing of table top surface
Automatic grease lubricating unit
Rust-proofing of ATC arm unit
SUS bolts for coolant related parts
Spindle head lubricating oil temperature controller
Chip flow coolant
Workpiece flushing gun
Signal lamp
Lighting unit
Leveling block
Parts for machine transportation
Automatic power off
Electrical spare parts (fuses)
Instruction manual (1 sets)
Electrical instruction manual (hardware diagrams)

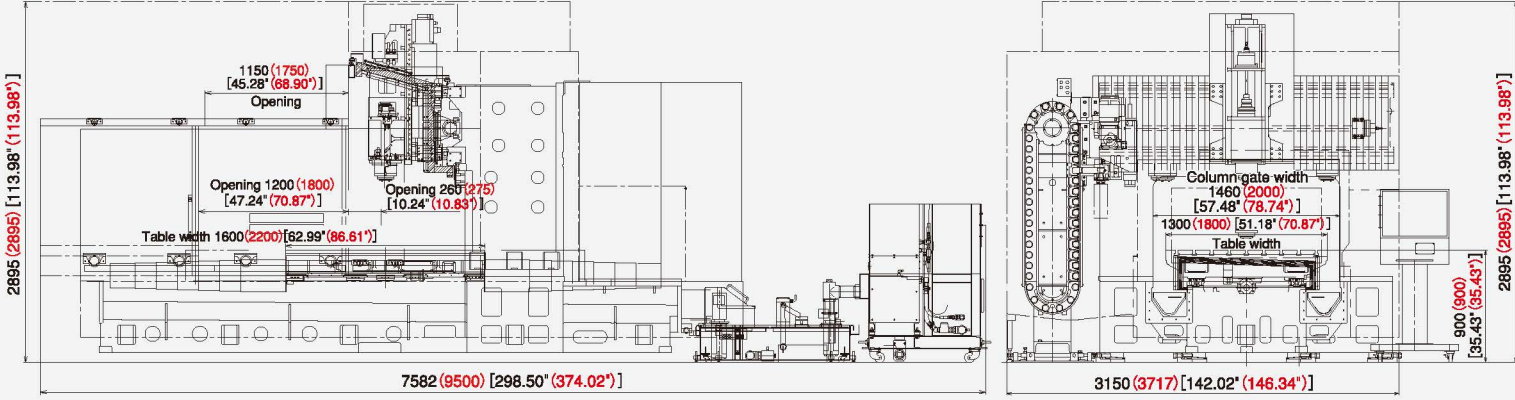
● Standard Accessories

High-pressure coolant system
Centrifugal separator
Paperfilter
Coolant cooler
Mist collector
High-pressure external nozzle
High-capacity coolant tank
Oil skimmer
Spindle nose air purge
Machine cover for enclosing a whole machine
Magazine / ATC shutter
X- and Z-axis slideway protection covers (bellows)
Y-axis slideway protection cover
Rust-proofing of linear roller guides on X, Y and Z axes
Rust-proofing of ball screws on X, Y and Z axes
Rust-proofing of table top surface
Automatic grease lubricating unit
Rust-proofing of ATC arm unit
SUS bolts for coolant related parts
Spindle head lubricating oil temperature controller
Chip flow coolant
Workpiece flushing gun
Signal lamp
Lighting unit
Leveling block
Parts for machine transportation
Automatic power off
Electrical spare parts (fuses)
Instruction manual (1 sets)
Electrical instruction manual (hardware diagrams)

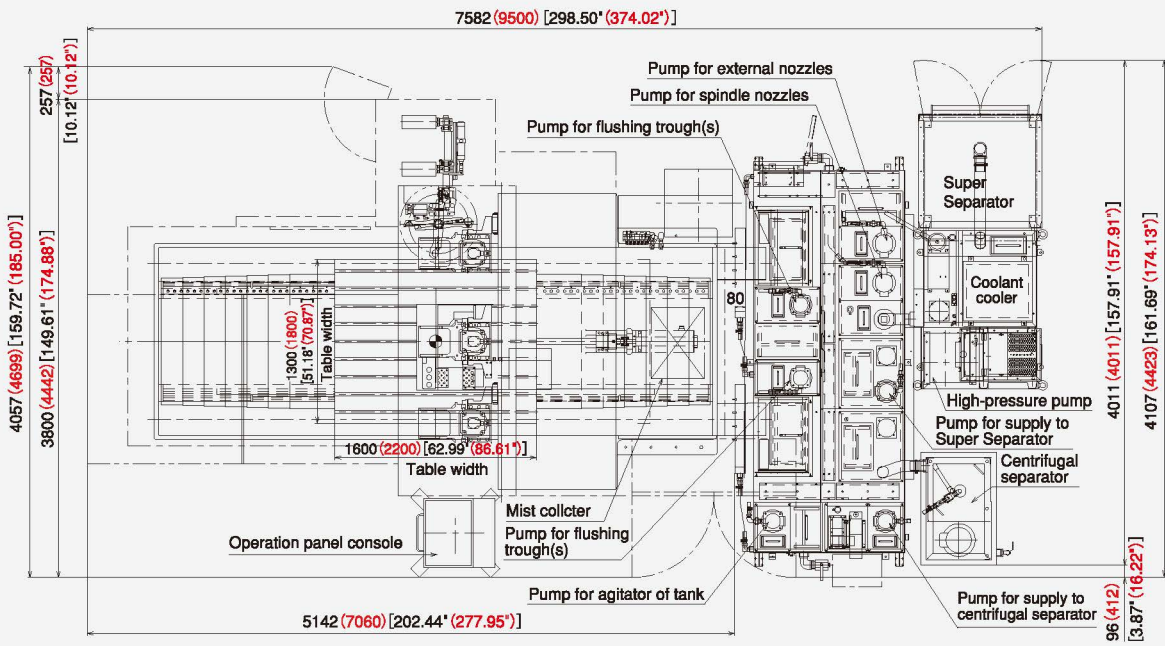
VP1200GC, VP1800GC

Main Dimensions of the Machine

() : VP1800GC dimensions

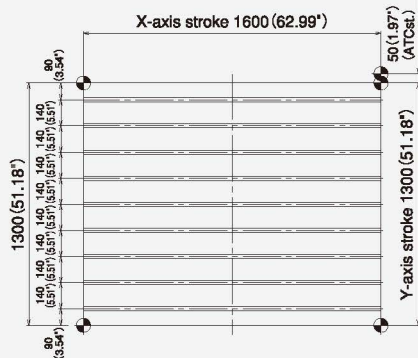


Floor Space

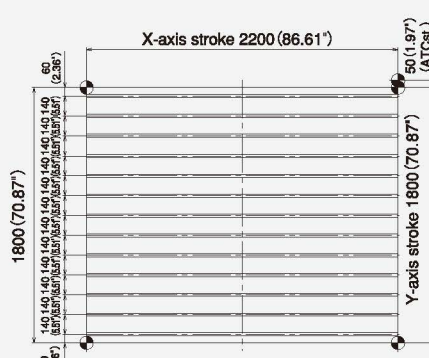


Table

VP1200GC



VP1800GC



VP1200GC, VP1800GC

