

## PALMARY PRODUCTS

- Centerless Grinder
- Cylindrical Grinder
- Internal Grinder
- Vertical Grinder
- Surface Grinder
- Special Purpose Grinder

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# CNC VERTICAL GRINDER

**VIG** CNC series



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**PALMARY**  
PALMARY MACHINERY CO., LTD.

# CONCERTO OF HIGH ACCURACIES AND PRODUCTION

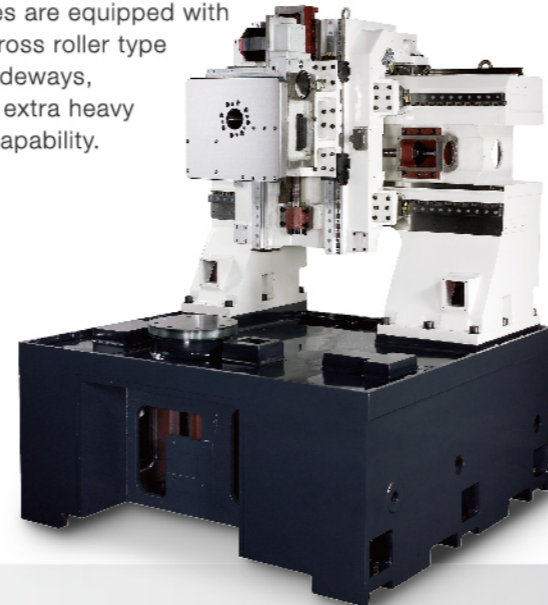


### OUTSTANDING FEATURES

1. No vibration and run-out caused by self-weights of the workpieces and chucks that may affect grinding accuracy.
2. Irregularly shaped workpieces are easy to chuck.
3. Non-symmetric part between inside hole and external shape can also proceed inside hole and end face grinding process.

### HONEYCOMB TYPE MACHINE STRUCTURE

1. Honeycomb type machine structure assures the best possible rigidity and stability. The machine bed is manufactured from high-quality Meehanite cast iron, heat treated and stress relieved for outstanding stability and without deformation.
2. X & Z axes are equipped with special cross roller type linear guideways, featuring extra heavy loading capability.



[ VIG-2015E ]

2 3 1



### CNC CONTROLLER

- The Mitsubishi M70 controller with a user-friendly control panel frame that allows operator to easily choose different grinding modes.
- FANUC controller is optional.



### BUILT-IN TYPE HIGH SPEED WHEEL SPINDLE

- 10000~45000 r.p.m. spindle for widely internal diameter range use.
- The spindle runs in ceramic angular contact ball bearings, with outstanding radial and axial loading capability, low heat growth at high speed operation and has a long service life.



### BUILT-IN TYPE EXTERNAL WHEEL SPINDLE

- 2000 r.p.m. Japanese brand spindle for standard wheel O.D. 355 mm.
- For CBN wheel (optional), the speed could change to 4500 r.p.m..
- For model VIG-2015E only.

### SPECIFICATIONS

## VIG-2015 / 2015E

MODEL	VIG-2015 / VIG-2015E	
<b>Capacity</b>	Internal grinding dia. (I.D.: length= 1:3)	Ø14~Ø200 mm
	External grinding dia.	Max. Ø200 mm
	Max. grinding length	150 mm
	Max. workpiece swing	Ø300 mm
	Max. workpiece length	150 mm
	Max. workpiece loading	100 kg
<b>Traverse</b>	X axis longitudinal traverse	500 mm
	Z axis vertical traverse	400 mm
<b>Internal Grinding Wheel</b>	Internal grinding wheel speed	10000~45000 r.p.m.
	Internal grinding wheel diameter	Ø10~Ø95 mm
	Linear velocity	33 M/sec.
<b>External Grinding Wheel (2015E only)</b>	External grinding wheel speed	2000 r.p.m.
	O.D. x Width x I.D.	Ø355 x Ø50 x 127 mm
<b>Work Spindle</b>	Linear velocity	33 M/sec.
	Speed	40~800 r.p.m.
<b>Infeed</b>	Chuck size	200 mm
	X / Z axis rapid traverse	6 M/min.
	X / Z axis cutting feed rate	0~6000 mm/min.
	X / Z axis min. setting unit	0.001 (0.0001) mm
	X / Z axis slide ways	Linear ways
	Work spindle motor	3.5 kw
<b>Motor</b>	Internal grinding wheel motor	3.0 kw Torque: S1= 1.1 Nm, S6= 1.5 Nm
	External grinding wheel motor (2015E only)	3.0 kw Torque: S1= 15 Nm, S6= 20 Nm
	Coolant pump motor	0.75 kw
	Hydraulic pump motor	0.75 kw
	Lubrication system motor	20 w
	Coolant tank	140 L
<b>Tank Capacity</b>	Hydraulic oil tank	20 L
	Spindle oil coolant tank	15 L
<b>Controller</b>	Mitsubishi	
<b>Machine Dimensions</b>	L x W x H	2300 x 1900 x 2400 mm
	Net weight	7000 kg

• The mentioned specifications & dimensions are subject to change without notice.

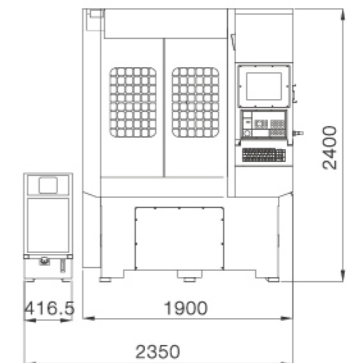
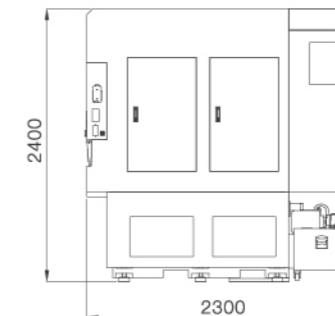
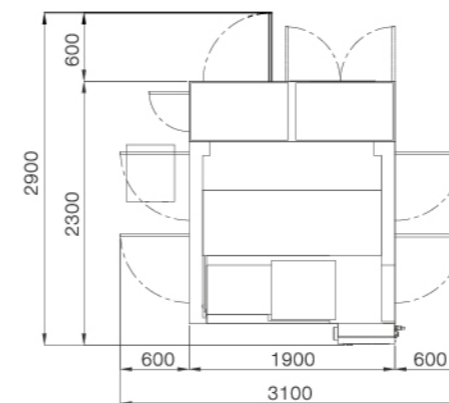
### STANDARD ACCESSORIES

- Fully enclosed splash guard ---1
- CNC controller (Mitsubishi M70 with PC-NC conversation software) ---1
- Diamond dresser ---1
- Hydraulic system ---1
- Coolant system ---1
- Electric system ---1
- Built-in type grinding wheel spindle (10000~45000 r.p.m.) ---1
- Built-in type grinding wheel spindle (2000 r.p.m.) (VIG-2015E only) ---1
- Wheel spindle oil cooler ---1
- X & Z axes linear scale ---2
- Tools and tool box ---1

### OPTIONAL ACCESSORIES

- 3-jaw chuck
- Rotary type dressing device
- Soft jaw turning device
- Oil mist collector
- Magnetic coolant separator
- Paper filter
- Auto. measuring gauge
- Current gap control

### MACHINE DIMENSIONS



# A TOTAL DEDICATION TO NEW TECHNOLOGICAL LEVEL

## HONEYCOMB TUBULAR TYPE MACHINE STRUCTURE

### OUTSTANDING FEATURES

#### 1. High Rigidity Machine Bed

- The design of honeycomb tubular type machine bed and cross guideway structure for improving the higher rigidity and stability.

#### 2. High Grinding Efficiency

- For end face grinding application, the wheel spindle can swivel to 22.5 degrees for easy grinding.
- Equipped with 6 no. ATC (Auto Tool Change) system.
- The high rigidity HSK tool holder is used in this model.

#### 3. Space Saving

- Reduced machine layout for saving more space.
- The round rotating dressing device saving more interior space.

#### 4. High Precision

- The coolant flow has an isolation design from the machine bed and can reduce the heat deformation and dirt contamination on the bed.
- The standard accessories 2 axes full-close loop digital linear scales equipped.
- The diamond roller dressing device is optional.

#### 5. High Rigidity Work Spindle

- The work spindle uses high accuracy bearings in the turn table.



[ VIG-50 ]



### SPECIFICATIONS

#### VIG-50

MODEL	VIG-50	
<b>Capacity</b>	O.D. grinding range	Ø38~500 mm
	Max. I.D. grinding length	~Ø199: 200 ; Ø200~: 350 mm
	Max. O.D. grinding length	350 mm
	Spindle Swivel dia.	Ø550 mm
	Max. workpiece length	410 mm
<b>Wheel Spindle</b>	Max. workpiece load	500 kg
	Distance between spindle upper side to G.W.	500 mm
	G.W. speed	2700~15000 r.p.m.
	G.W. diameter	25~205 mm
	Max. linear speed	2700 m/min.
<b>Work Spindle</b>	Tool holder type	HSK-E63
	Work table size	Ø550 mm
	Work spindle speed (variable speed)	20~220 r.p.m.
	X axis traverse	970 mm
	X axis speed	0~20 mm
<b>Traverse</b>	X axis MPG each graduation movement	Ø0.0001, Ø0.001, Ø0.05 mm
	X axis min. setting unit	Ø0.0001 mm
	Z axis traverse	550 mm
	Z axis speed	0~20 m/min.
	Z axis MPG each graduation movement	0.0001, 0.001, 0.05 mm
<b>Motor</b>	Z axis min. setting unit	0.0001 mm
	Work spindle	5.5 kw
	Grinding wheel spindle	15 kw
	X axis	4 kw
	Y axis	4 kw
<b>Power</b>	B axis (ATC)	0.75 kw
	Coolant pump (cleanse bed & wheel spindle high pressure)	0.375 & 2.1 kw
	Hydraulic pump	0.75 kw
	Electricity	30 KVA
	Air (work pressure & useful discharge)	0.7 Mpa & 1800 NL/min
<b>Tank Capacity</b>	Coolant tank	600 L
	Oil tank (hydraulic system)	30 L
	Oil tank (spindle change)	12 L
	Oil tank (spindle cooler)	45 L
<b>Control Machine Dimensions</b>	FANUC	
	L x W x H	2350 x 3300 x 2755 mm
	Machine weight	7000 kg

### STANDARD ACCESSORIES

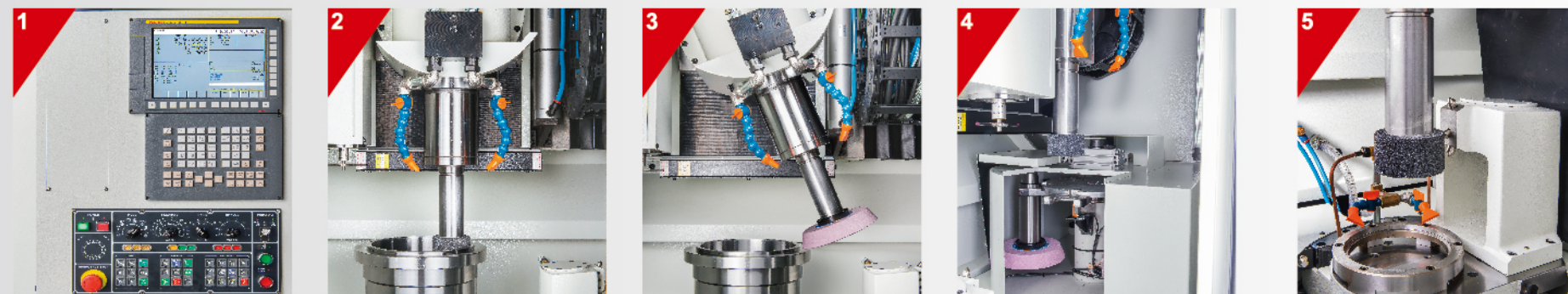
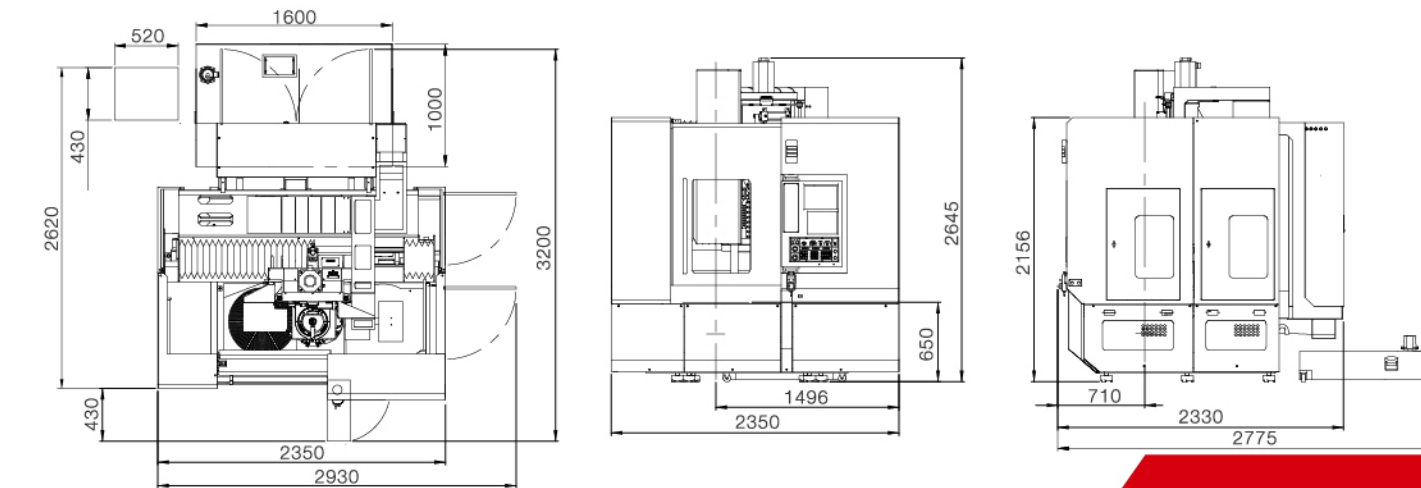
- Fully enclosed splash guard ---1
- FANUC CNC controller (included current gap control function) ---1
- Grinding wheel ---4
- Single point diamond dresser (with 3 no. diamond dressing pen) ---1
- Hydraulic system ---1
- Coolant system ---1
- Electric system ---1
- Full-close loop digital scale (for X & Z axes) ---2
- Wheel spindle (2700~15000 r.p.m. variable speed) ---1
- Wheel oil cooler system ---1
- ATC system (auto. tool Change system, max. 6 no. wheels) ---1
- Standard HSK-E63 tool ---4
- Wheel spindle hydraulic change tool system ---1
- Ø550 face plate ---1
- Wheel balancing stand ---1
- Tools & tool box ---1

### OPTIONAL ACCESSORIES

- Ø500 magnetic chuck with demagnetizer
- Special chuck (individual design)
- Rotary type dressing device
- Magnetic coolant separator
- Paper filter
- Hydrocyclone coolant separator
- Oil cooler

The mentioned specifications & dimensions are subject to change without notice.

### MACHINE DIMENSIONS



#### 1. CNC CONTROLLER

- FANUC control system for widely use in kinds of different grinding application.

#### 2. BUILT-IN TYPE WHEEL SPINDLE

- Variable speed range from 2700 to 15000 r.p.m.
- The forced spindle lubrication system and oil-cooling system bring the higher stability.

#### 3. ANGULAR WHEEL

- For end face grinding application, the wheel spindle could swivel to 22.5 degrees for easily grinding.

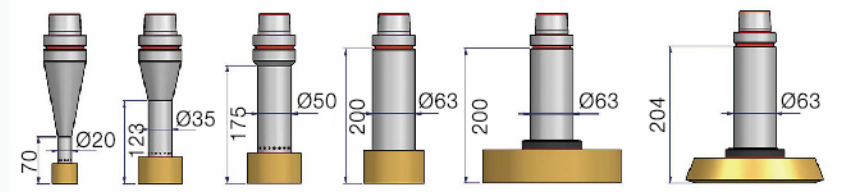
#### 4. AUTO. TOOL CHANGE SYSTEM (ATC)

- Equipped max. 6 no. grinding wheels for different diameter or accuracy requirement.
- The tool holder is HSK-E63 type for higher rigidity.

#### 5. WHEEL DRESSING DEVICE

- The round rotating dressing device save more interior space.

#### Grinding Wheel Type



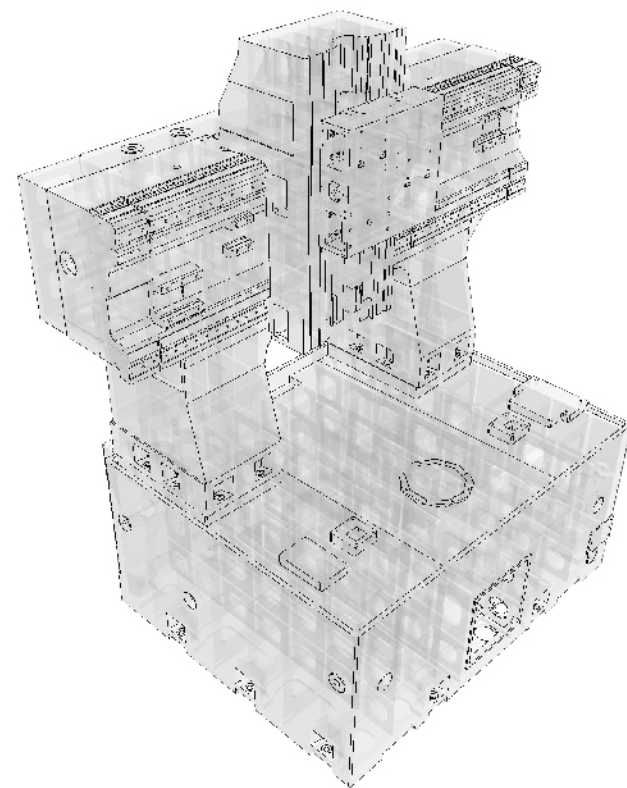
#### HSK-E63 Tool Holder



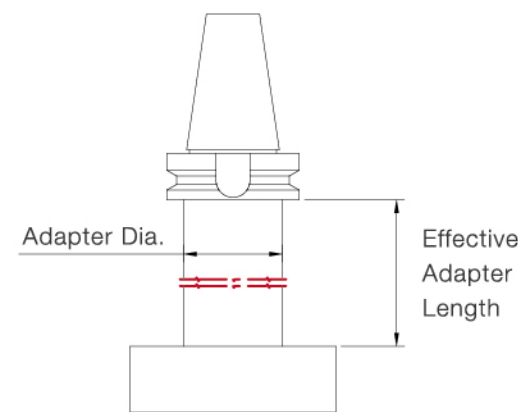
# PRECISION PERFECTION EXCELLENCE



[ VIG-8050 ]

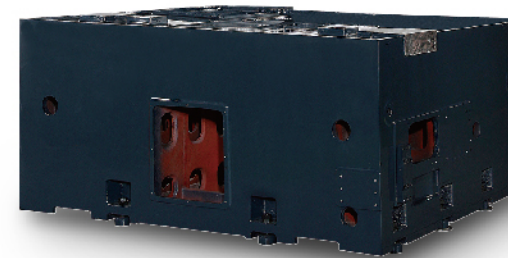


BBT. 50 TOOL HOLDER



## HONEYCOMB TYPE MACHINE STRUCTURE

1. Honeycomb type machine structure assures the best possible rigidity and stability.
2. The machine structure is manufactured from high-quality Meehanite cast iron, heat treated and stress relieved for outstanding stability and without deformation.
3. X & Z axes are equipped with special cross roller type linear guideways, featuring extra heavy loading capability.



Grinding Wheel Size

Adapter Dia. (mm)	Effective Adapter Length (mm)	Wheel Size	Min. Hole Dia. x Max. x Depth
Ø55	175	Ø80 x 45	Ø90 x 200
	250	Ø90 x 45	Ø100 x 200
		Ø80 x 45	Ø90 x 275
Ø75	175	Ø90 x 45	Ø100 x 275
	250	Ø100 x 50	Ø110 x 205
		Ø125 x 50	Ø135 x 205
Ø85	225	Ø100 x 50	Ø110 x 280
	300	Ø125 x 50	Ø135 x 280
		Ø150 x 50	Ø160 x 330
		Ø200 x 50	Ø210 x 550

## SPECIFICATIONS

### VIG-8050

MODEL	VIG-8050	
<b>Capacity</b>	Internal grinding range (I.D.: length= 1:3)	Ø70~Ø700 mm
	Max. external grinding diameter	Max. Ø700 mm
	Z axis max. external grinding length	500 mm
	Z axis max. internal grinding length	Ø70~Ø270=325 mm
<b>Traverse</b>	Max. workpiece swivel	Ø800 mm
	Max. workpiece length	600 mm (including clamping fixture)
	Max. workpiece load	850 mm
	X axis longitudinal traverse	1000 mm
<b>Wheel Spindle</b>	Z axis vertical traverse	650 mm
	Z axis external grinding wheel spindle speed	2000~10000 r.p.m.
	Z axis external grinding wheel diameter	Ø100~Ø200 mm
	Z axis external grinding wheel nose hole type	BBT. 50
<b>Work Spindle</b>	Z axis internal grinding wheel diameter	Ø50~Ø150 mm
	Z axis internal grinding wheel spindle nose hole type	BBT. 50
	Work spindle speed	12~200 r.p.m.
	Work table size (face plate)	Ø800 mm
<b>ATC</b>	Screw nut size for t-groove	M20
	Work chuck size (optional)	Ø450 mm (18")
	X, Z axis rapid traverse	10 M/min.
	X, Z axis cutting speed	0~6000 mm/min.
<b>Motor</b>	X, Z micro movement / each turn	0.1, 1.0, 10 mm
	X, Z micro movement / each graduation	0.001, 0.01, 0.1 mm
	X, Z axis min. setting unit	0.001 mm
	X, Z axis guideway type	Linear guideway
<b>Tank Capacity</b>	Auto. wheel change number	6 pcs
	Storeroom type	Round plate stand type
	Wheel spindle nose tool holder type	BBT. 50
	Wheel auto change type	X, Z axis servo movement
<b>Controller</b>	External grinding wheel spindle motor	7.5 kw
	Work spindle motor	7.5 kw
	Coolant pump motor	2.6 kw
	Dressing device hydraulic pump motor	0.75 kw
<b>Machine</b>	Lubrication system motor	20 w
	Hydraulic oil tank	24 L
	Auto. electric lubricator tank	6 L
	Oil cooler tank	15 L
<b>Dimensions</b>	Pneumatic tank	30 L
	Coolant tank	500 L
<b>Controller</b>		Mitsubishi
<b>Machine</b>		L x W x H
<b>Dimensions</b>		3500 x 3200 x 3600 mm
		Net weight
		14000 kg

• The mentioned specifications & dimensions are subject to change without notice.

## STANDARD ACCESSORIES

- Fully enclosed splash guard ---1
- CNC controller (Mitsubishi M70 with PC-NC conversation software) ---1
- Grinding wheel ---4
- Single point diamond dresser ---1
- Hydraulic oil lubricator system ---1
- Coolant system ---1
- Electric system ---1
- Full-close loop digital scale (X & Z axes) ---2
- Wheel spindle (2000~10000 r.p.m. variable speed) ---1
- Wheel spindle oil cooler system ---1
- ATC system (auto. tool change system, max. install 6 no. wheels) ---1
- Standard BBT. 50 tool ---4
- Ø800 mm face plate ---1
- Tools and tools box ---1

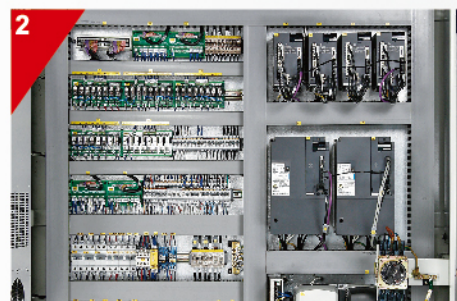
## OPTIONAL ACCESSORIES

- BBT. 50 tool (individual design)
- Workpiece clamping fixture (individual design)
- Diamond roller dressing device
- Magnetic coolant separator
- Paper filter
- Hydrocyclone coolant separator
- Oil mist collector
- Touch probe gauge
- Current gap control



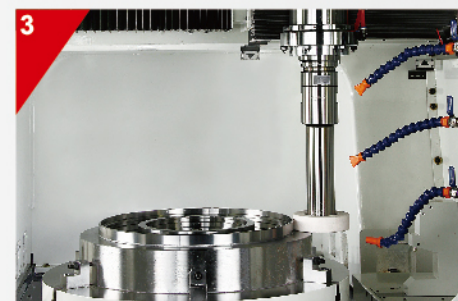
## CNC CONTROLLER

- The Mitsubishi M70 controller with a user-friendly control panel frame that allows operator to easily choose different grinding modes.
- FANUC controller is optional.



## ELECTRIC CABINET

- Electric components meet with international standard for safety.
- The cabinet is equipped with a heat exchanger to keep in normal temperature range for stable working environment.



## BUILT-IN TYPE GRINDING WHEEL SPINDLE

- Variable speed range from 2000~10000 r.p.m..
- The spindle equipped oil-cooling system offers better stability.



## AUTO. TOOL CHANGE SYSTEM (ATC)

- Equipped with max. 6 no. grinding wheels for different diameter or accuracy requirement.
- The tool holder is BBT. 50 type for higher rigidity.

## MACHINE DIMENSIONS

