



# CROSSRAIL FIXED TYPE DOUBLE COLUMN SURFACE GRINDING MACHINE

**Precise, Stable, Heavy Duty**

This and More can be Found on the TOP-ONE Grinding Machine

GP SERIES

[www.topone-m.com](http://www.topone-m.com)

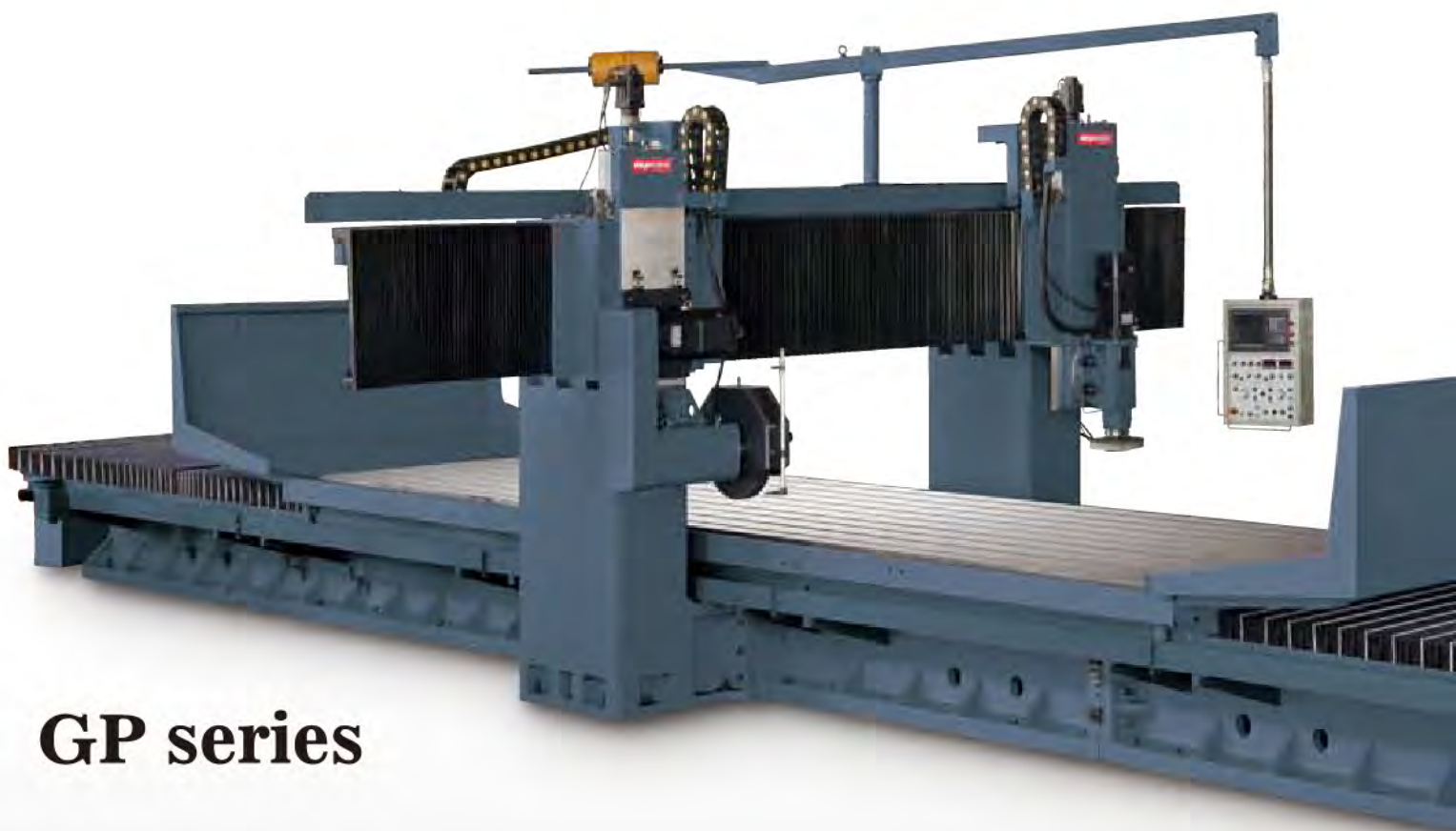


TOP-ONE MACHINERY CO., LTD

# TOP-ONE


## CROSSRAIL FIXED TYPE DOUBLE COLUMN SURFACE GRINDING MACHINE

With a massive and rigid construction, the GP series double column surface grinding machine from Top-One is designed and built for precision grinding for extra-large work pieces. This series of machine is equipped with a horizontal grinding head as standard equipment, and a vertical wheel head is available upon request. High precision Z-axis downfeed can reach 2  $\mu\text{m}$ , which will fully meet high accuracy grinding requirements.



### GP series





Every Top-One machine is manufactured  
with the tradition of Top-One's quality excellence.



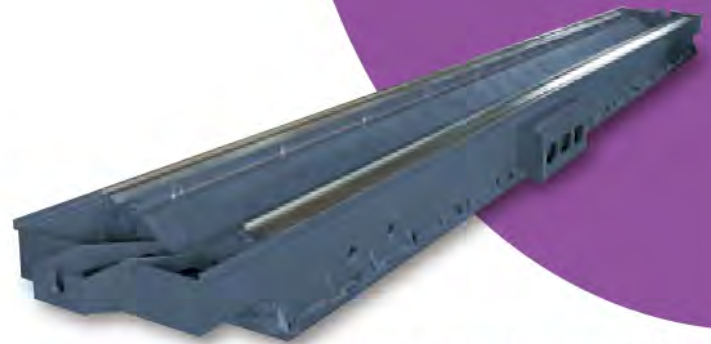


## CROSSRAIL MOVABLE TYPE

- The ruggedly constructed beam provides a solid support for the horizontal and vertical grinding heads, resulting in outstanding stability during grinding operations.
- The grinding head movement (Y-axis) is individually driven by a servo motor and transmitted through a precision ball screw for high positioning accuracy.

## MASSIVE BASE

- The base is a one-piece fabrication from high quality Meehanite cast iron, tempered to relieve internal stress for eliminating thermo deformation.
- Two extra-long, wide and deep vee slideways on the base provide outstanding load-resisting capabilities.
- The double V slideway surfaces are precision scrapped in combination with forced lubrication, ensuring smooth table feed.



## DOUBLE V SLIDEWAYS (optional)



## V & FLAT (standard)

Upon customer's requirement, V and Flat slideways on the base is available.

## RIGID TABLE

- The box-type table is a one-piece fabrication made from Meehanite cast iron, and tempered to relieve stress.
- The table slideways are coated with Turcite-B for outstanding wear-resistance.
- Extra-large span between slideways provides an increase in rigidity. In addition, the table is capable of resisting heavy loads without deformation.



## X-AXIS DRIVEN BY HYDRAULIC CYLINDER

- The table feed (X-axis) is driven by a double-acting hydraulic cylinder.
- The cylinder stroke speed can be adjusted on the control panel.
- The hydraulic system has a buffering function, which may suppress serious impact at both ends of the cylinder stroke. This function provides a protection for the cylinder while extending its service life.





PC BASE CONTROL SYSTEM (standard)  
MITSUBISHI / FANUC CNC CONTROL SYSTEM (optional)

Top-One GP series double column grinding machine is equipped with an advanced PC BASE control system.



HANGED CONTROL BOX

- The hanged control box can be moved to any position. This excellent accessibility makes it easy for the operator to check during grinding test and idling.
- The hanged control box is equipped with a counter-balance weight to facilitate control box movement.

TABLE IS SELF-FINISHED BY THE MACHINE

When assembling the table on the machine, our technicians use the machine to finish the table surface. The self-finishing of the table ensures better geometric accuracy.



OIL COOLER

The hydraulic oil in the oil tank is cooled through a high efficiency oil cooler to keep a constant temperature. The oil cooler allows the hydraulic system to actuate normally and extends the service life of the oil.



PAPER FILTER



HYDRAULIC UNIT

- The hydraulic circuit is specially designed, providing smooth movement on the X-axis and eliminating jerks at both ends of the X-axis travel in order to ensure superior grinding quality.
- Powerful feed motion is maintained even when X-axis feeds at a low speed.
- The hydraulic system is consisted of high quality hydraulic parts, which results in longer service life, low noise and stable motion.





# PRECISION GRINDING HEADS

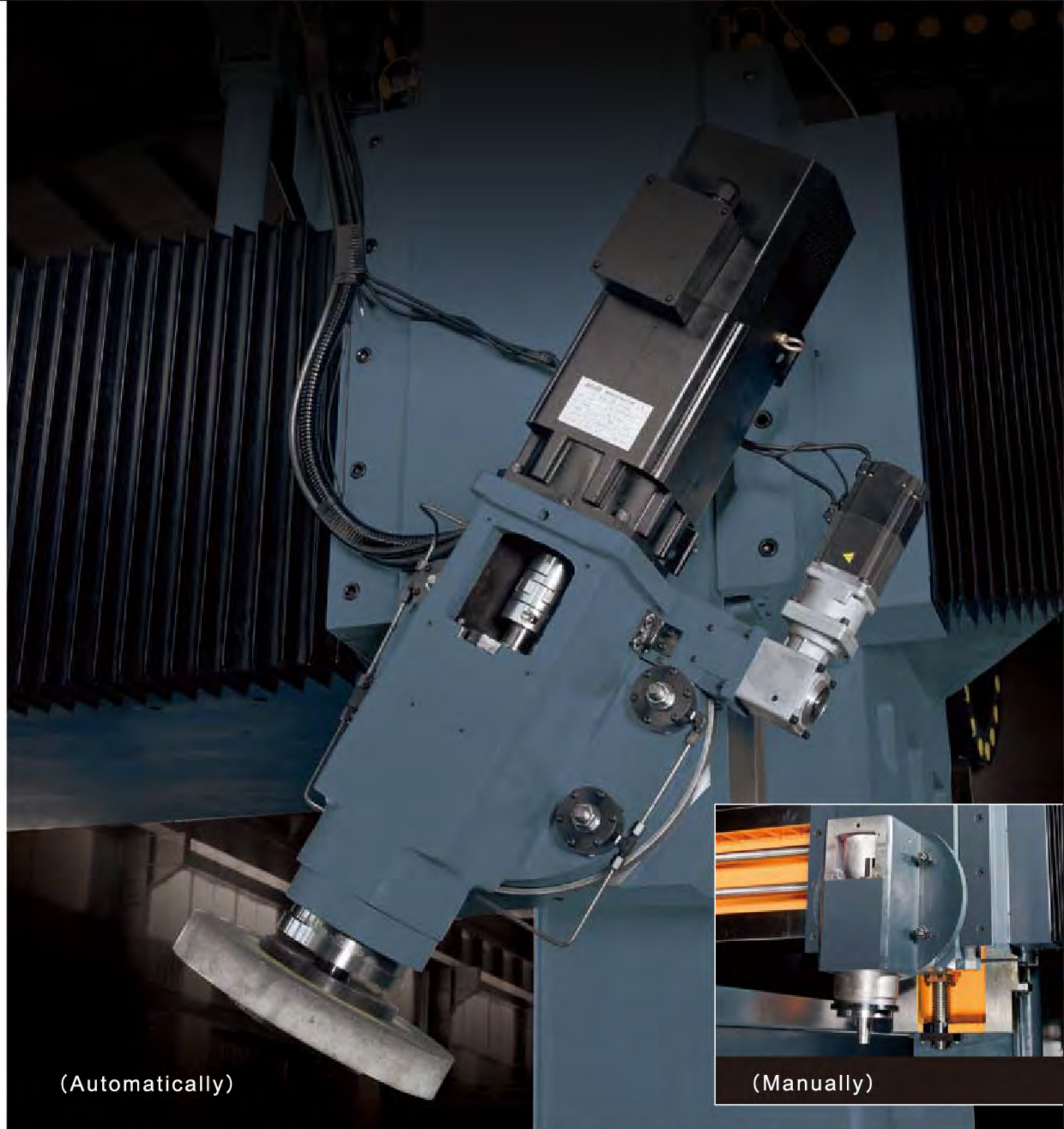
Horizontal Grinding Head (standard)  
Vertical Grinding Head (optional)

The **Top-One GP series Double Column Surface Grinding Machine** can be mounted with a horizontal grinding head and a vertical grinding head, allowing surface grinding and angular grinding to be accomplished at a time. With both grinding heads, the increased grinding accuracy and efficiency can be achieved.

## HORIZONTAL GRINDING HEAD (STANDARD)

- The horizontal grinding head is driven by a powerful 20HP (30HP for GP-2500 or larger models) servo motor, enable the heavy duty grinding with increased efficiency.
- The grinding head accommodates the maximum of  $\varnothing 510$  mm grinding wheel (610mm for GP-2500 or larger models) for performing precision surface grinding.
- Precision spindle construction allows the machine to operate for a long time with minimum thermal growth.





(Automatically)



(Manually)

## MANUAL / SEMI AUTOMATIC / AUTOMATIC VERTICAL SWIVELING GRINDING HEAD (OPTIONAL)

- The vertical grinding head can swiveled up to 45° for both left and right side, which allows grinding the angular surfaces.
- The oblique angle of vertical grinding head can be adjusted manually.
- The automatic swiveling head is powered by servo motor with fine-adjustment and hydraulic braking functions, guaranteeing high accuracy in angular positioning.

# SPECIFICATIONS

MODEL	UNIT	GP-1500	GP-1800	GP-2000
Max. grinding surface (LxW)	M	2/3/4 M x 1.2 M	2/3/4 M x 1.5 M	2/3/4/5/6 M x 1.6 M
Machining height	mm			
X axis travel	mm	2,000~6,000	3,000~6,000	
Y axis travel	mm	1,500	1,800	2,000
Distance between columns	mm	1,700	2,000	2,200
Table size (length)	mm	2,000~6,000	3,000~6,000	
Table size (width)	mm	1,200		1,600
T-slot	mm	□22		
Max. table load	Ton	6~10	6~12	6~15
Double V slide distance	mm	700		900
X axis grinding speed	mm/min			
Y axis rapid feed	mm/min			
Z axis rapid feed	mm/min			
Z axis feeding travel	mm			
Min. Z axis feeding	mm			
M.P.G. feeding increment	mm			
Y-axis motor		Depend		
Z-axis motor		Depend		
Horizontal spindle motor	HP	20 HP		
Grinding wheel	inch x mm	Vertical 14" x 50 mm Horizontal 20" x 50 mm		
Horizontal spindle speed	rpm			

Note: The machine specifications, dimensions and design characteristics are subject to change without prior notice.



GP-2500	GP-3000	GP-3500	GP-4000
2/3/4/5/6 M x 2.0 M	2/3/4/5/6 M x 2.5 M	2/3/4/5/6 M x 3.0 M	2/3/4/5/6 M x 3.5 M

750 / 1,000 / 1,250

3,000~10,000	4,000~13,000		
--------------	--------------	--	--

2,500	3,000	3,500	4,000
-------	-------	-------	-------

2,700	3,200	3,700	4,200
-------	-------	-------	-------

3,000~10,000	4,000~13,000		
--------------	--------------	--	--

2,000	2,500	3,000	3,500
-------	-------	-------	-------

□24	□28		
-----	-----	--	--

6~20	9~30	9~35	10~40
------	------	------	-------

1,100	1,400		
-------	-------	--	--

5,000~30,000			
--------------	--	--	--

3,000			
-------	--	--	--

2,000			
-------	--	--	--

750 / 1,000 / 1,250			
---------------------	--	--	--

0.002			
-------	--	--	--

0.002/X1X10X100			
-----------------	--	--	--

ing on machine dimensions			
---------------------------	--	--	--

ing on machine dimensions			
---------------------------	--	--	--

30 HP			
-------	--	--	--

Vertical 16" x 75 mm			
----------------------	--	--	--

Horizontal 24" x 80 mm			
------------------------	--	--	--

300~2,000			
-----------	--	--	--

## STANDARD ACCESSORIES

- Grindstone calibrate base
- Diamond cutting knife
- Magnetic base
- Grinding wheel balancing correction table
- Horizontal grinding wheel (510 (OD) x 203.2 (ID) x 65 (T) mm)
- 8" Flange (Including stone reject)
- Electrical control box with heat exchange coolant
- Hydraulic circulating cooler
- Paper tape filter (Including filter paper and water tank)
- AVR
- Tool box

## OPTIONAL ACCESSORIES

- Vertical grinding head
- Grinding wheel
- Increase spindle speed
- Increase the power of spindle motor
- Auto. rotating for vertical grinding head (incl. servo driver & hydraulic brake)
- Spare vertical grinding stone flange
- Spare horizontal grinding stone flange

## CONTROL SYSTEM

- PC BASE control
- Portable manual pulse generator
- Monochromatic LCD display
- X axis hydraulic control system
- Hanged type control box
- Y,Z axes servo motor

## KEEPING OUR CUSTOMERS IN THE LEAD

Top-One Machinery Co., Ltd. is an internationally recognized manufacturer of vertical machining centers, double column machining centers and double column grinding machines. Based on our outstanding R&D capabilities, we are capable of designing and manufacturing high quality products with greater machining capacity, high accuracy and stability. Our objective is to offer the best machines to help customers stay competitive.



### **TOP-ONE MACHINERY CO., LTD.**

No. 2-161, Shen Qing Road, Dong Shan Village

Qing Shui District, Taichung City 436, Taiwan

Tel: +886-4-2620-2901

Fax: +886-4-2620-2955

<http://www.topone-m.com>

E-mail: [topone@topone-m.com](mailto:topone@topone-m.com)