



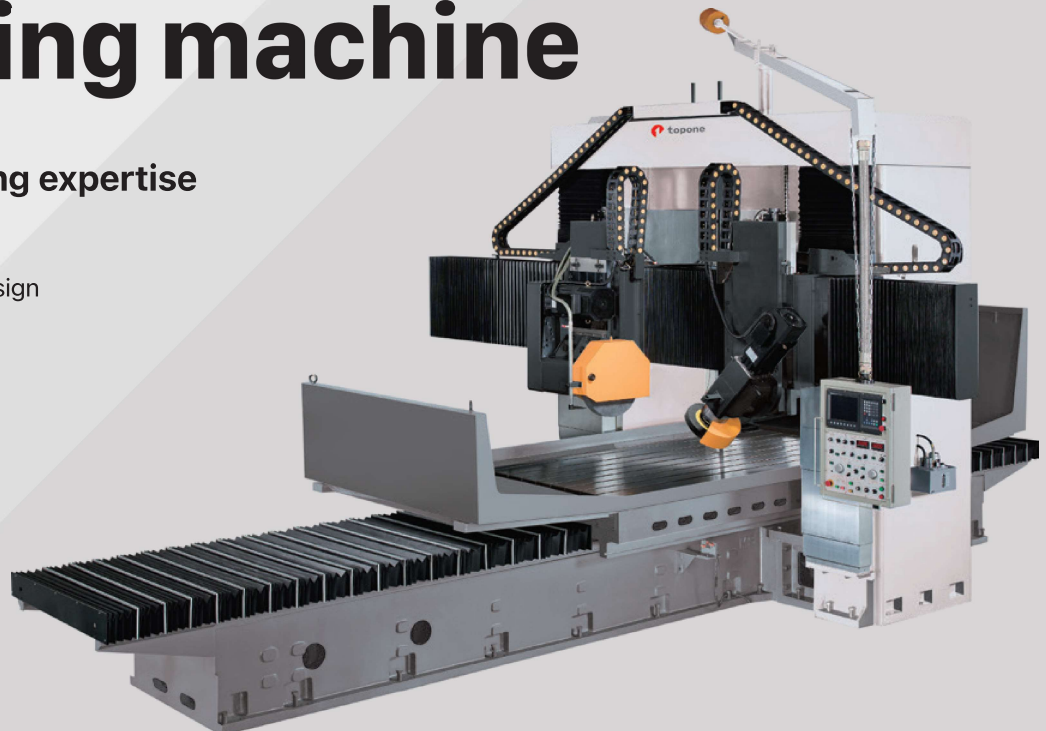
**topone**

# GL SERIES

## Crossrail Movable Type Double column surface grinding machine

### Precision grinding expertise

- Rugged construction
- Crossrail movable design





**TOP-ONE**

## What you can expect from Top-One's Crossrail Movable Type Surface Grinding Machine:

- **Superior surface finish**
- **High flatness accuracy**
- **Supreme dimensional accuracy**
- **The best rigidity and stability**

Successfully developed by Top-One's R&D team, this machine is excellent for precision grinding on extra large workpieces that also require highly efficient operations. This series of machine is ruggedly constructed, exhibiting unmatched precise performance. In addition, its crossrail movable type design ensures that the wheel head achieves the highest stability to upgrade the overall grinding quality.

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



**GL series**



### BEAM CLAMPING

The beam is clamped securely by hydraulic force in combination with the use of disc springs. This fully prevents the beam from slipping down to eliminate any loss in grinding accuracy.



### BEAM ELEVATION

The beam elevation is driven by an inverter controlled motor that drives a connecting shaft to transmit the two elevation screws at the left and right sides. This elevation driving system allows the beam to elevate synchronously at both ends, so as to ensure outstanding leveling accuracy of the beam.



### DOUBLE HYDRAULIC CYLINDERS' COUNTER-BALANCE

The beam elevation (Z-axis) is counter-balanced by two hydraulic cylinders, ensuring exceptionally smooth motion and the best travel 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.



### V & FLAT (standard)

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

### DOUBLE V SLIDEWAYS (optional)

### 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 GL 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.



### 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.

### PAPER FILTER

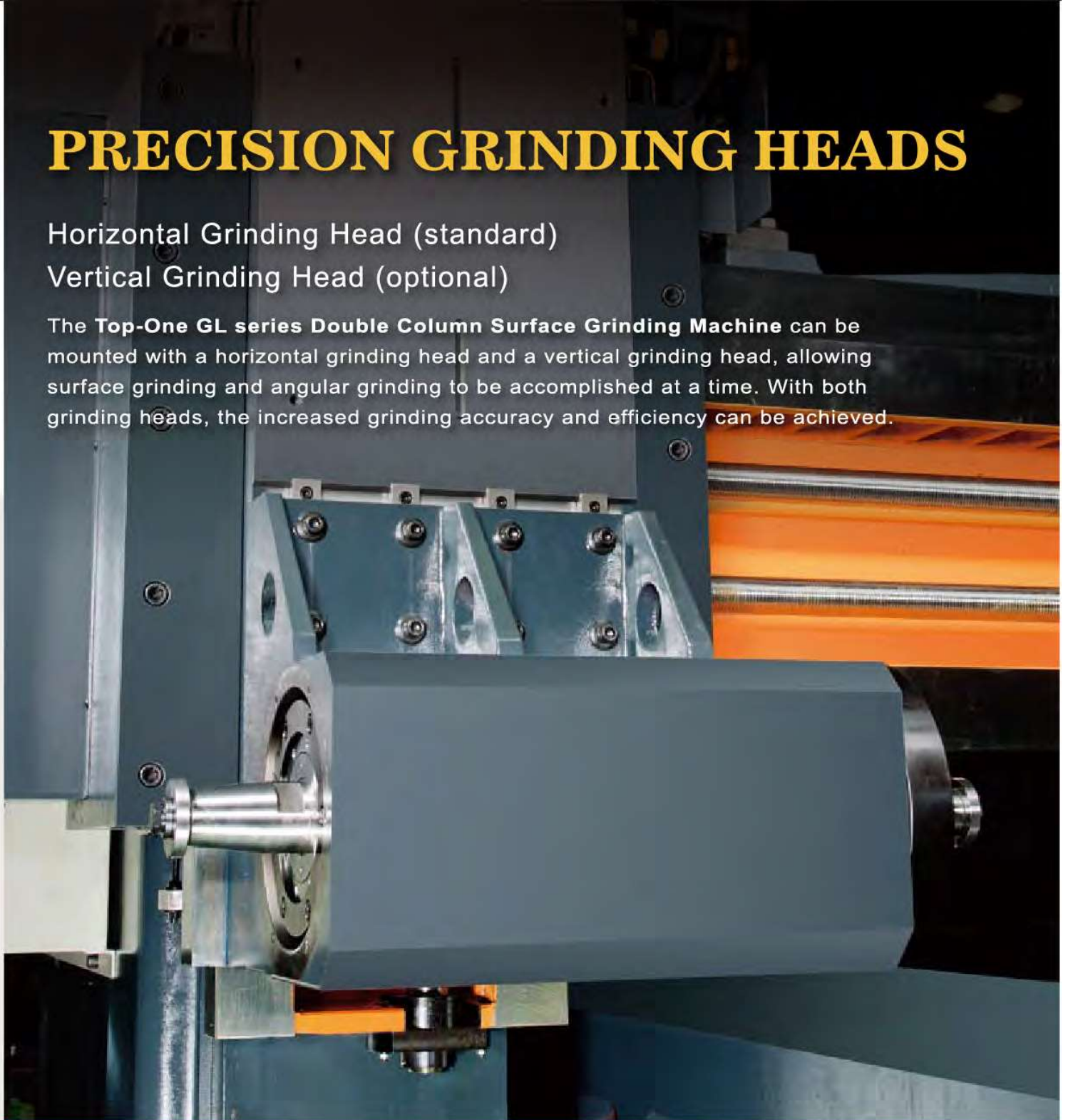


# PRECISION GRINDING HEADS

Horizontal Grinding Head (standard)

Vertical Grinding Head (optional)

The **Top-One GL 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 GL-2500 or larger models) servo motor, enable the heavy duty grinding with increased efficiency.
- The grinding head accommodates the maximum of  $\text{Ø}510$  mm grinding wheel (610mm for GL-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.



## 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	GL-1500	GL-1800	GL-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
Grinding height	mm			
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
W axis travel	mm			
Z axis travel	mm			
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		
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.



GL-2500	GL-3000	GL-3500	GL-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			
1,000~2,000			
3,000~10,000	4,000~13,000		
2,500	3,000	3,500	4,000
1,000~2,000			
400			
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			
400			
0.002			
0.002/X1X10X100			
ing on machine dimensions			
ing on machine dimensions			
30			
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 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.



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