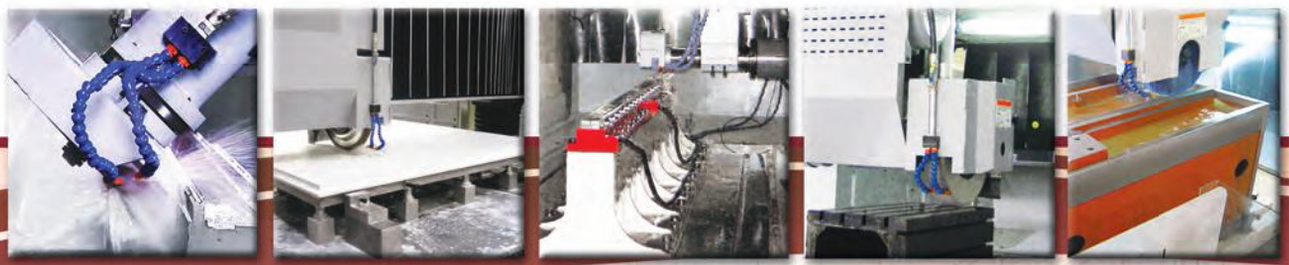
CHEVALIER®

Grinding / Turning / Milling



FPG Series

DOUBLE COLUMN WITH MOVING BEAM CNC GRINDER

FPG-60120DC • 60160DC • 60200DC
FPG-100160DC • 100200DC • 100240DC
100400DC • 100480DC
FPG-120200DC • 120515DC

CHEVALIER
Grinding / Turning / Milling

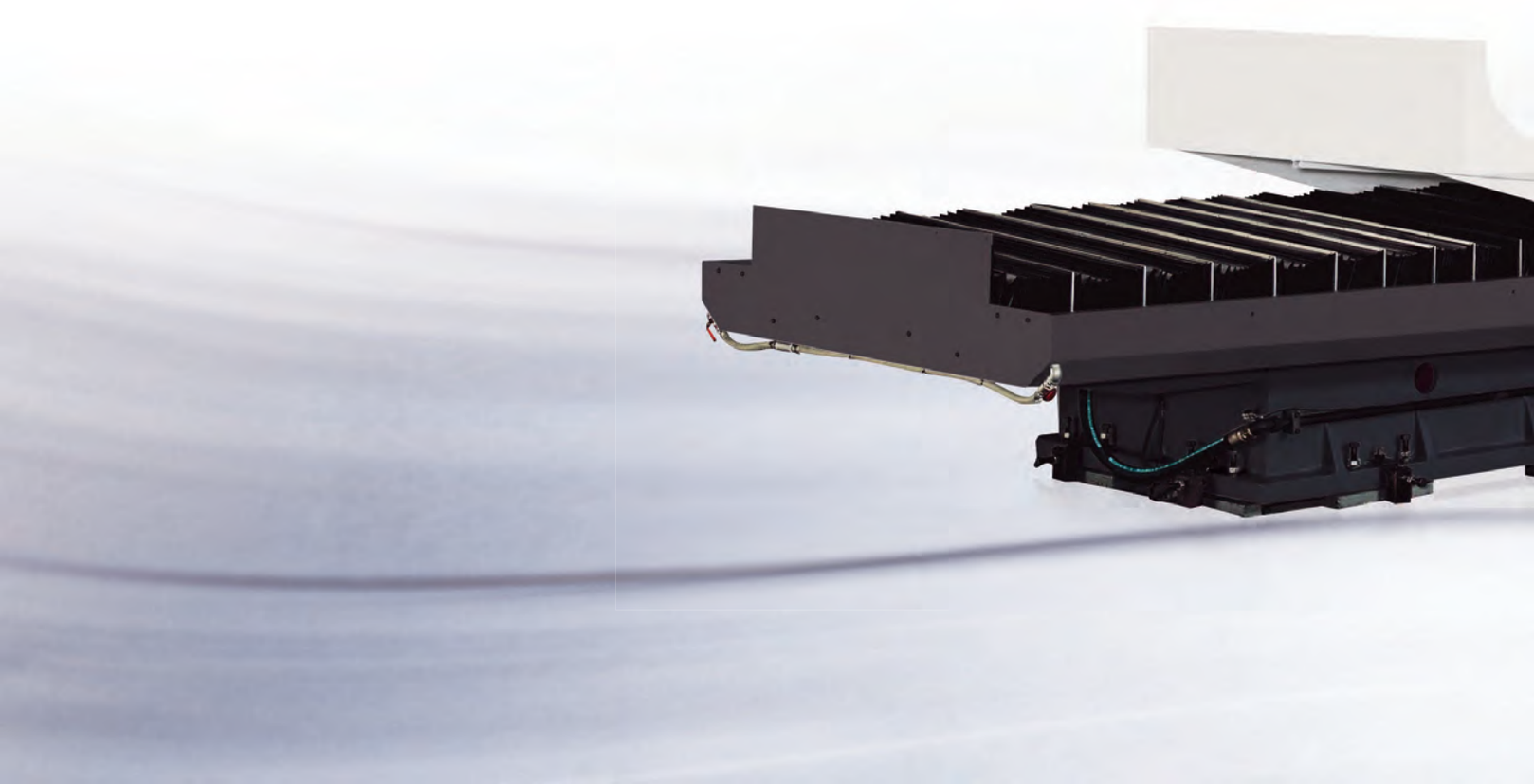
High Rigidity - High Precision - Easy Operation

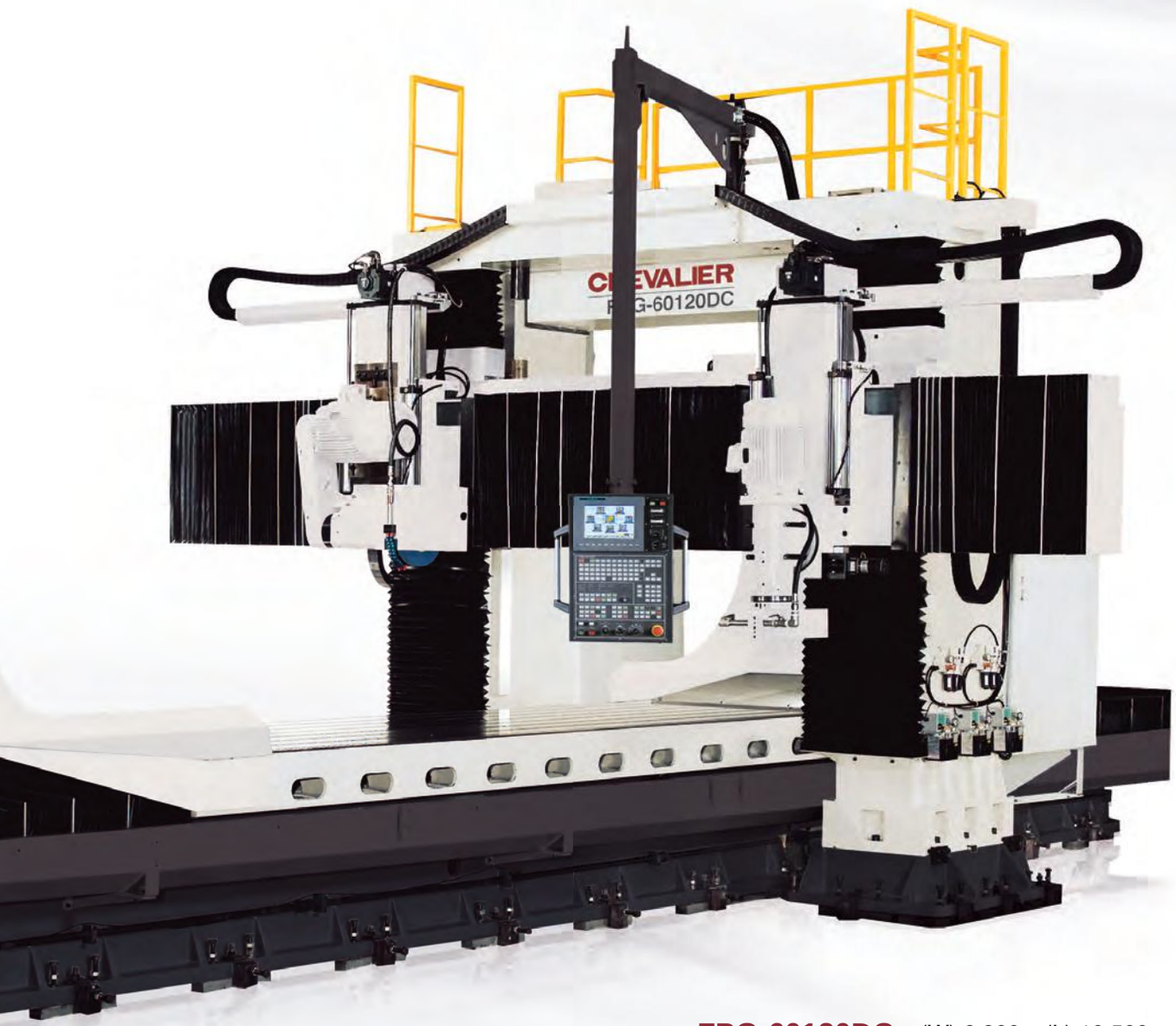
FPG-60 / 100 / 120DC

DOUBLE COLUMN WITH MOVING BEAM CNC GRINDER

Chevalier's Double Column Grinder with Moving Beam is designed for shops demanding speed, rigidity and a very large grinding area. These series of grinding machines are perfectly for grinding large workpiece, such as guideways for heavy machinery, wind turbine for wind mill power generation, mold for automotive and oil exploration.

- **Patented Ground Beam Design**
- **Patented Elevation Guideway and Spindle Mechanism**
- **Patented Steel Type Railway Design on Cross Slideways**
- **Patented Enlarged Double "V" Longitudinal Guideway Design**
- **User Friendly Conversational Programming**
- **Programmable Concave/Convex Grinding Functions**





FPG-60120DC : (W) 6,800 x (L) 10,500mm

Note: The photo shown above contains optional accessories. For the latest photos, please contact with sales department.

MECHANICAL STRUCTURE

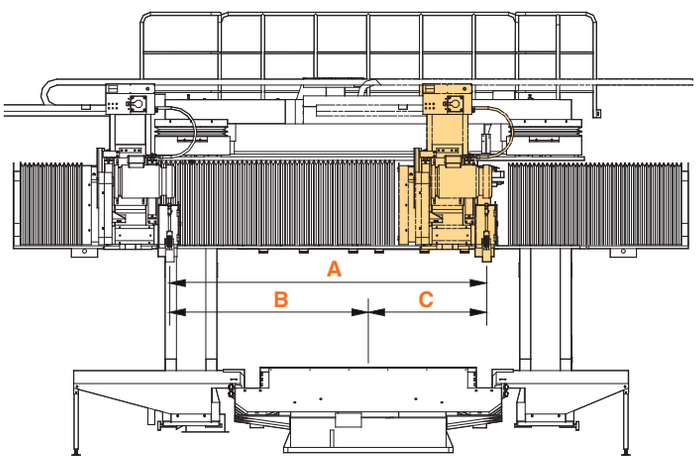
Horizontal Grinding Head

- The horizontal wheelhead is positioned with a Class C2 ballscrew and is counterbalanced with a pneumatic cylinder to ensure precise movement.
- The 610 x 203 x 100mm (20” x 8” x 4”) grinding wheel is driven by a 40 HP spindle motor. The spindle runs with NN type tapered roller bearings for extreme rigidity and high precision.

Vertical Grinding Head

- The vertical wheelhead is also positioned with a Class C2 ballscrew and is also counterbalanced with a pneumatic cylinder to ensure precise movement.
- An optional high resolution rotary encoder can be added for increased rotational accuracy.
- The vertical spindle can be rotated to a maximum swivel angle of -90°and +60°.
- The vertical spindle rotates with a MITSUBISHI 400W servo motor for easy positioning.

The Maximum Stroke of Horizontal Grinding Head

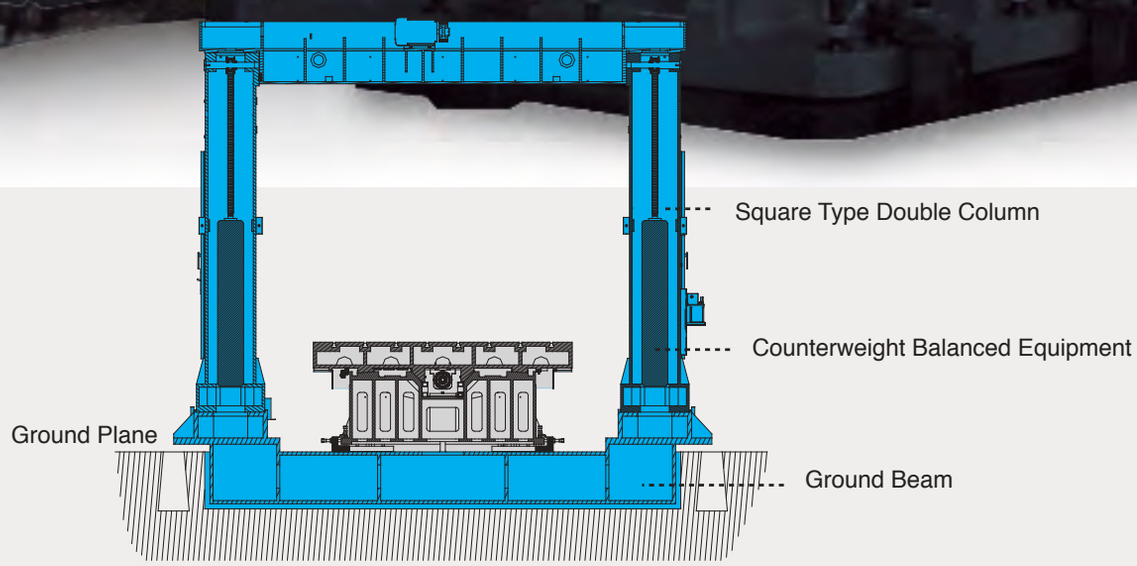


Unit:mm (”)

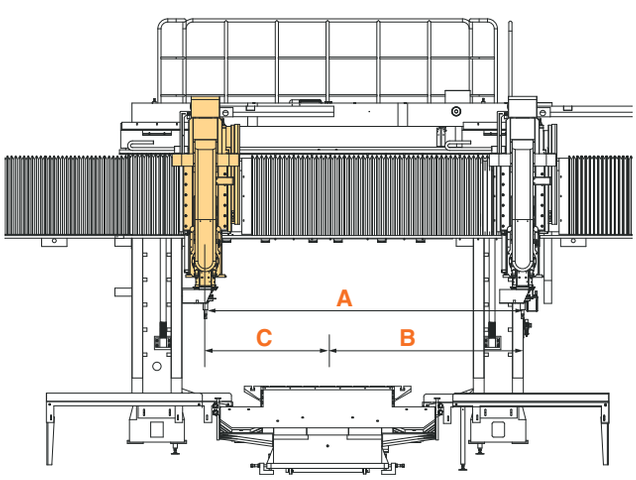
Model	FPG-60	FPG-100	FPG-120
A	2,849(112.2”)	3,820(150.4”)	4,847(190.8”)
B	1,826(71.9”)	2,297(90.4”)	2,827(111.3”)
C	1,023(40.3”)	1,523(60”)	2,020(79.5”)

Patented Ground Beam Design

- The column is anchored to a solid steel ground beam to ensure table load not to affect column alignment. by isolating the column from the base, column accuracy is not affected regardless of the table load.
- Box type double column design provides superior rigidity.
- Maximum distance between the two columns is 4,500mm.



The Maximum Stroke of Vertical Grinding Head

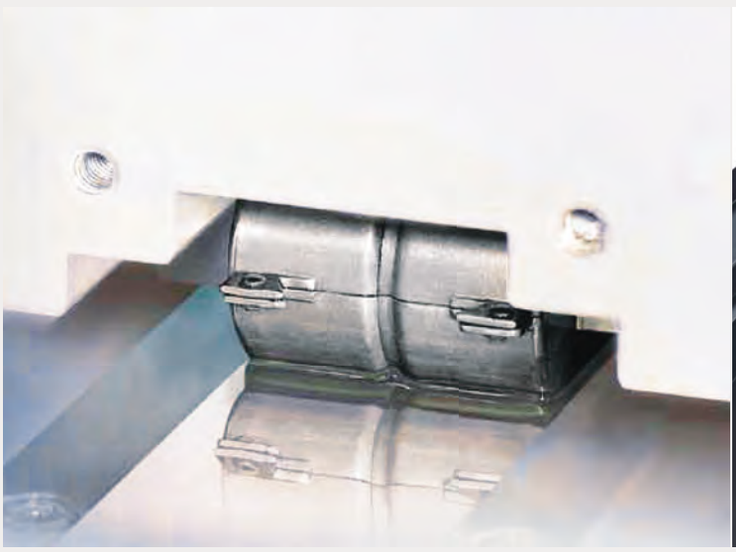


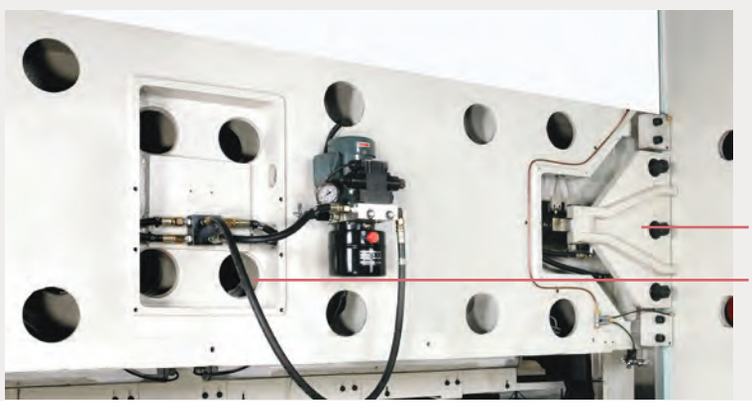
Unit:mm (")

Model	FPG-60	FPG-100	FPG-120
A	2,849(112.2")	3,820(150.4")	4,847(190.8")
B	1,882(74")	2,351(92.5")	2,879(113.3")
C	967(38")	1,469(57.8")	1,968(77.4")

Patented Steel Type Railway Design on Cross Slideways

- The cross rail design features liner roller bearings sliding on steel guide ways to ensure smooth, stick-slip free movement while the robust lower box way guides coated with anti-friction material provides maximum rigidity.
- The elevating mechanism of the cross rail is driven by two servo motors and two ballscrews supported by a mechanical counterweight balance system for better positioning accuracy.
- Both horizontal spindle and vertical spindle feature the interlock function capable of locking the cross beam whenever it is moved to ensure perfect alignment at all times.





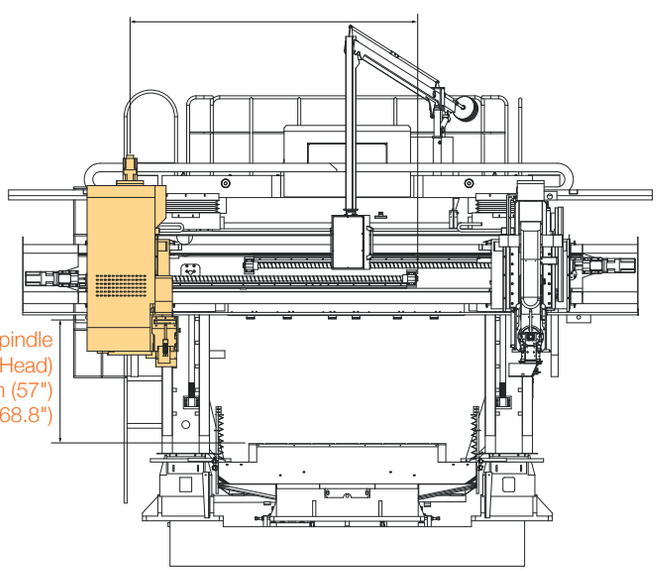
Hydraulic oil tank

- The hydraulic breaking system is very close to the horizontal beam, giving it instantaneous response when needed.
- A separate tank stores the hydraulic oil for this purpose.

Hydraulic braking device

HORIZONTAL GRINDING HEAD TRAVEL

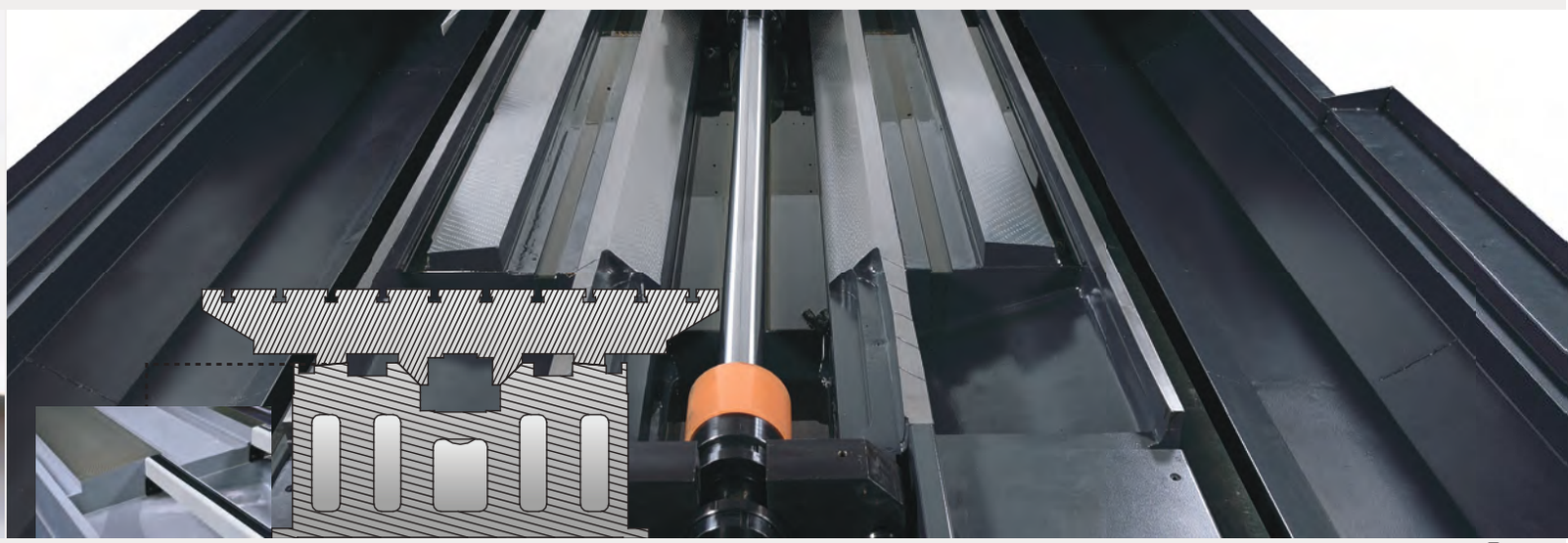
FPG-60 Series 2,000mm (78.7")
FPG-100 Series 2,800mm (110")
FPG-120 Series 3,800mm (150")



Max. Dis. from the Centerline of Spindle to the Table Surface (Horizontal Head)
FPG-60 Series: 1,450mm (57")
FPG-100/120 Series: 1,750mm (68.8")

Patented Enlarged Double ”V” Longitudinal Guideway Design

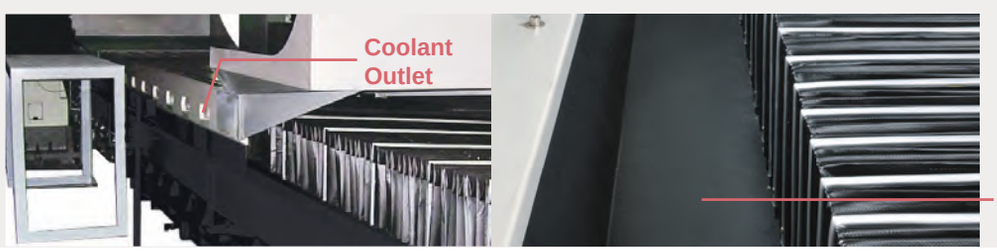
• The enlarged double “V” and design for the longitudinal slideways system ensure low friction and low thermal deformation.

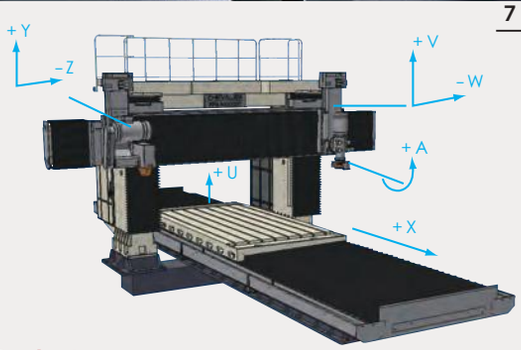


New Table and Coolant Channel Design

• The coolant outlet is built in the table, allowing constant coolant circulation around the table and reducing table area deformation.

• The slanted coolant channel prevents chip and debris accumulated on the table.

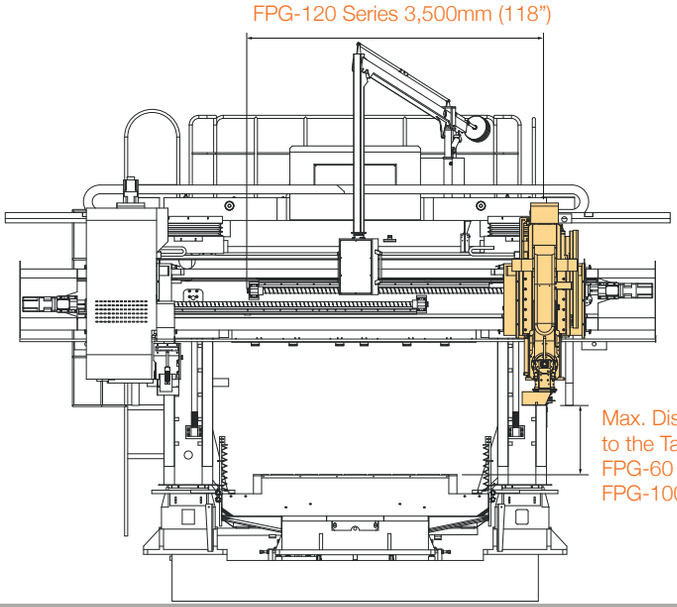




Definition for All Axes

VERTICAL GRINDING HEAD TRAVEL

FPG-60 Series 1,500mm (59”)
FPG-100 Series 2,500mm (98”)
FPG-120 Series 3,500mm (118”)



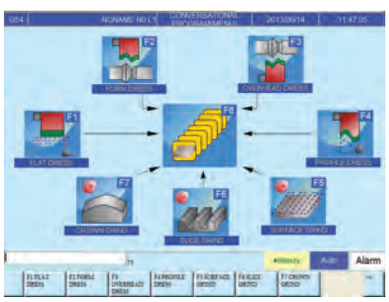
Max. Dis. from the Surface of wheel to the Table Surface (Vertical Head)
FPG-60 Series: 1,050 mm (41.3")
FPG-100/120 Series: 1,350 mm (53.1")

User Friendly Conversational Programming

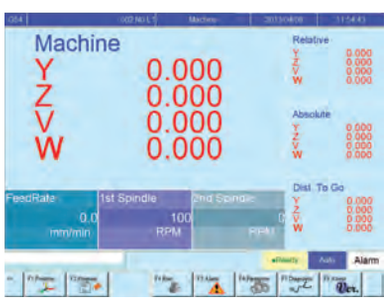
Applicable For FPG-60 / 100 / 120DC Series

- CHEVALIER SAMRT CNC controller (PC Based).
- 10.4" TFT color screen.
- Table stroke can be adjusted from screen (patented design).
- Internet/Intranet connectivity.
- Conversational graphics program for grinding and finish.
- Surface/Plunge/Criiss-cross/Concave/Convex canned cycles.
- Optional profile grinding programs.
- Integrated conversational grinding and wheel dressing with automatic compensation.
- Grinding simulation mode executable through the MPG handwheel.
- Non-equal pitch and depth grinding capability.
- Program transfers through Ethernet port.
- FANUC CNC program compatible.
- Automatic energy-saving function.
- Support USB and CF card and screen can be copied and saved for record and service.

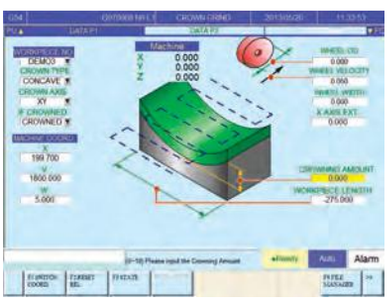
HUMAN INTERFACE DESIGN



Grinding Menu



Machining Axis Display

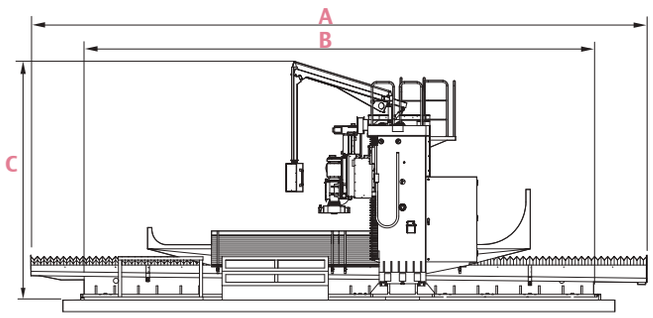


Concave / Convex Conversational Setting Screen

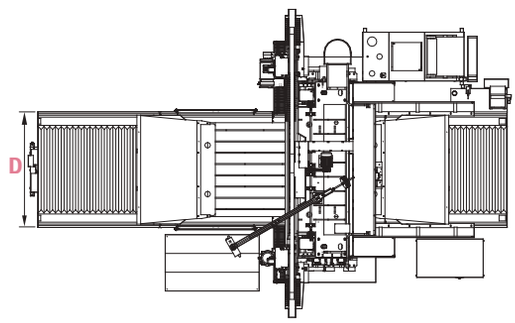
MECHANICAL DIMENSIONS

Unit:mm (")

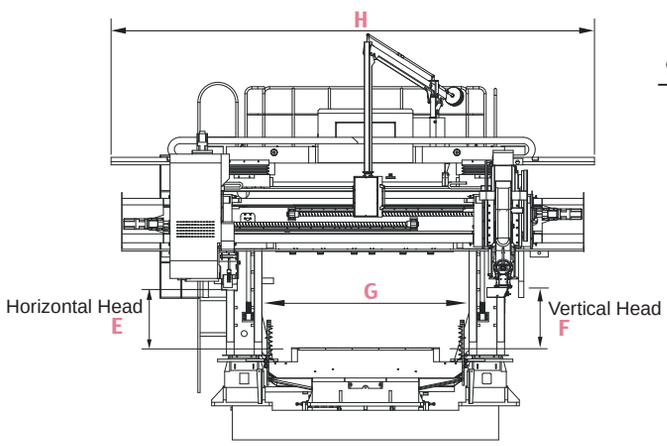
Model	FPG-60120DC	FPG-60160DC	FPG-60200DC
A	10,500mm(413.4")	12,500mm(492")	14,500mm(570.8")
B	8,000mm(315")	10,000mm(393.7")	12,000mm(472.4")
C	5,500mm(217")	5,500mm(217")	5,810mm(229")
D	2,030mm(80")	2,030mm(80")	2,230mm(88")
E	1,200mm(47.2")	1,200mm(47.2")	1,200mm(47.2")
F	1,050mm(41.3")	1,050mm(41.3")	1,050mm(41.3")
G	2,500mm(98.4")	2,500mm(98.4")	2,500mm(98.4")
H	6,800mm(268")	6,800mm(268")	6,800mm(268")



Model	FPG-100160DC	FPG-100200DC	FPG-100240DC
A	12,500mm(492")	14,500mm(570.8")	16,500mm(649.6")
B	10,000mm(393.7")	12,000mm(472.4")	14,000mm(551")
C	5,500mm(217")	5,500mm(217")	6,110mm(240.5")
D	2,970mm(117")	2,970mm(117")	3,270mm(128.7")
E	1,500mm(59")	1,500mm(59")	1,500mm(59")
F	1,350mm(53.1")	1,350mm(53.1")	1,350mm(53.1")
G	3,500mm(137.8")	3,500mm(137.8")	3,500mm(137.8")
H	7,800mm(307")	7,800mm(307")	7,800mm(307")



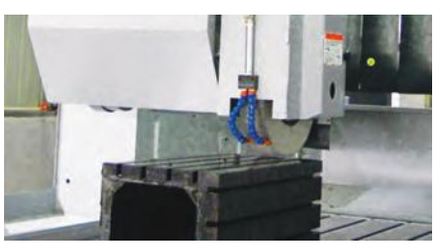
Model	FPG-100400DC	FPG-100480DC	FPG-120200DC	FPG-120515DC
A	26,000mm(1023.6")	30,000mm(1181")	14,500mm(570.8")	32,500mm(1279.5")
B	22,000mm(866")	26,000mm(1023.6")	12,000mm(472.4")	30,500mm(1,200.8")
C	5,500mm(217")	5,500mm(217")	5,500mm(217")	5,500mm(217")
D	2,970mm(117")	2,970mm(117")	3,570mm(141")	3,570mm(141")
E	1,500mm(59")	1,500mm(59")	1,500mm(59")	1,500mm(59")
F	1,350mm(53.1")	1,350mm(53.1")	1,350mm(53.1")	1,350mm(53.1")
G	3,500mm(137.8")	3,500mm(137.8")	4,500mm(177")	4,500mm(177")
H	9,000mm(354")	9,000mm(354")	9,000mm(354")	9,000mm(354")



PRODUCT APPLICATIONS

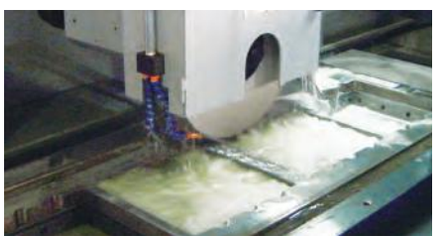
Applicable on vehicle industry, aerospace industry, machinery and metal industry, pneumatic & hydraulic parts industry, electronics industry, textile industry, automation industry and others.

Electronics Industry (LCD TV)



Machinery & Metal Industry(Casting)

Machinery & Metal Industry (Casting)



Building Industry (Tile Molds)

MACHINE SPECIFICATIONS

Description		FPG-60120DC	FPG-60160DC	FPG-60200DC	FPG-100160DC
Table Size		1,500 x 3,000mm (59" x 118")	1,500 x 4,000mm (59" x 157")	1,500 x 5,000mm (59" x 197")	2,500 x 4,000mm (98" x 157")
Max. Grinding Length	Longitudinal	3,000mm (118")	4,000mm (157")	5,000mm (197")	4,000mm (157")
Max. Grinding Width	Crosswise	Horizontal Head 2,000mm (78.7"), Vertical Head 1,500mm (59")			
Max. Dis. from the Centerline of Spindle to the Table Surface (Horizontal Head)		1,450mm (57")			
Max. Dis. from the Surface of wheel to the Table Surface (Vertical Head)		1,050mm (41")			
Max. Table Load Capacity kgs (lbs)		8,000 (17,600)	10,000 (22,000)	12,000 (26,400)	20,000 (44,000)
T-slot No.		8			
Distance between Columns		2,500mm (98")			
X Axis Table Speed		5~25m/min (16~82fpm)			
X Axis Max. Table Stroke		3,500mm (137")	4,500mm (177")	5,500mm (216")	4,500mm (177")
Z / W Axis					
Max. Stroke (Z / W Axes)		2,700mm (106")			
Feed Speed		0~5m/min (0~16fpm)			
Min. Input Value		0.001mm (0.0001")			
Table Longitudinal Stroke Setting		NC data input			
U Axis Max. Feed Stroke		1,100mm (43")			
Y Axis					
Max. Feed Stroke		400mm (16")			
Feed Speed		0~2m/min (0~6.5fpm)			
Min. Input Value		0.001mm (0.0001")			
Table Longitudinal Stroke Setting		NC data input			
V Axis					
Max. Feed Stroke		400mm (16")			
Feed Speed		0~2m/min (0~6.5fpm)			
Min. Input Value		0.001mm (0.0001")			
Auto. Feed		NC data input			
Spindle Grinding Drive	Speed	500~2,000rpm			
	Power Rating	Horizontal Head 29.4kW(40HP), Vertical Head 14.7kW(20HP) Horizontal Head 36.7kW(50HP) (Opt.), Vertical Head 22kW(30HP) (Opt.)			
Wheel Size (OD x Hole Diameter x W)		Horizontal Head ø610 x 203 x 100mm (24" x 8" x 4") Vertical Head ø405 x 127 x 50mm (16" x 5" x 2")			
Total Rated Power		62.5kW(85HP)	69.8kW(95HP)	84.5kW(115HP)	69.8kW(95HP)
Control System (Opt.)	Coolant Volume	2,000 L			
	Paper Filter	200 L/min			
	Coolant Motor	2.2kW(3HP)			
Control System		CHEVALIER SMART CNC Control			
Net Weight kgs (lbs)		40,000 (88,000)	45,000 (99,000)	50,000 (110,000)	75,000 (165,000)

STANDARD ACCESSORIES

- Oil cooler for hydraulic system.
- Air conditioner for electric cabinet.
- Grinding wheel.
- Wheel flanges (1 for horizontal spindle, 1 for vertical spindle).
- Operator platforms (both ends).
- Tool kit (one tool set and lifting fixture)
- Diamond dresser with diamond.
- Leveling bolts, nuts and pads.
- Balancing arbor.
- Operation manual.

The Counterbalance System of Control Pendant

(Also applicable on vertical head mechanism)

- The control pendant has its own counterbalance system for fast and precise positioning.

Hydraulic tank and oil cooler

- The hydraulically driven table can reach speeds of up to 25m/min. A built-in oil cooler stabilizes the hydraulic oil temperature to maintain a constant viscosity.

Unit:mm (")

FPG-100200DC	FPG-100240DC	FPG-100400DC	FPG-100480DC	FPG-120200DC	FPG-120515DC
2,500 x 5,000mm (98" x 197")	2,500 x 6,000mm (98" x 236")	2,500 x 10,000mm (98" x 394")	2,500 x 12,000mm (98" x 472")	3,000 x 5,000mm (118" x 197")	3,000 x 13,000mm (118" x 511.8")
5,000mm (197")	6,000mm (236")	10,000mm (394")	12,000mm (472")	5,000mm (197")	13,000mm (511.8")
Horizontal Head 2,800mm (110"), Vertical Head 2,500mm (98")				Horizontal Head 3,800mm (150"), Vertical Head 3,500mm (138")	
1,750mm (69")				1,750mm (69")	
1,350mm (53")				1,350mm (53")	
25,000 (55,000)	30,000 (66,000)	40,000 (88,000)	50,000 (110,000)	30,000 (66,000)	80,000 (176,000)
8				12	
3,500mm (138")				4,500mm (177")	
5~25m/min (16~82fpm)				5~25m/min (16~82fpm)	5~25m/min (16~82fpm)
5,500mm (216")	6,500mm (255")	10,500mm (413")	12,500mm (492")	5,500mm (216")	13,500mm (531.5")
3,700mm (145")				4,700mm (185")	
0~5m/min (0~16fpm)				0~5m/min (0~16fpm)	
0.001mm (0.0001")				0.001mm (0.0001")	
NC data input				NC data input	
1,400mm (55")				1,400mm (55")	
400mm (16")				400mm (16")	
0~2m/min (0~6.5fpm)				0~2m/min (0~6.5fpm)	0~1.5m/min(0~5fpm)
0.001mm (0.0001")				0.001mm (0.0001")	
NC data input				NC data input	
400mm (16")				400mm (16")	
0~2m/min (0~6.5fpm)				0~2m/min (0~6.5fpm)	0~1.5m/min(0~5fpm)
0.001mm (0.0001")				0.001mm (0.0001")	
NC data input				NC data input	
500~2,000rpm				500~2,000rpm	
Horizontal Head 29.4kW(40HP), Vertical Head 14.7kW(20HP) Horizontal Head 36.7kW(50HP) (Opt.), Vertical Head 22kW(30HP) (Opt.)				Horizontal Head 29.4kW(40HP), Vertical Head 14.7kW(20HP) Horizontal Head 36.7kW(50HP)(Opt.), Vertical Head 22kW(30HP)(Opt.)	
Horizontal Head ø610 x 203 x 100mm (24" x 8" x 4") Vertical Head ø405 x 127 x 50mm (16" x 5" x 2")				Horizontal Head ø610 x 203 x 100mm (24" x 8" x 4") Vertical Head ø405 x 127 x 50mm (16" x 5" x 2")	
91.9kW(125HP)	91.9kW(125HP)	110kW(150HP)	117.6kW(160HP)	106.6kW(145HP)	132.4kw(180HP)
2,000 L				2,000 L	
200 L/min				200 L/min	
2.2kW(3HP)				2.2kW(3HP)	
CHEVALIER SMART CNC Control				CHEVALIER SMART CNC Control	
85,000 (187,000)	110,000 (242,000)	133,000 (292,600)	143,000 (314,600)	120,000 (264,000)	180,000(396,000)

*All content is for reference only and may be subject to change without notice or obligation.

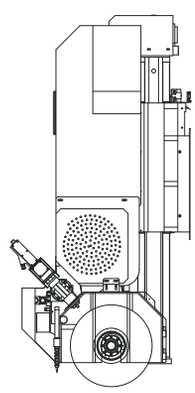
The heavy duty cooling system features:

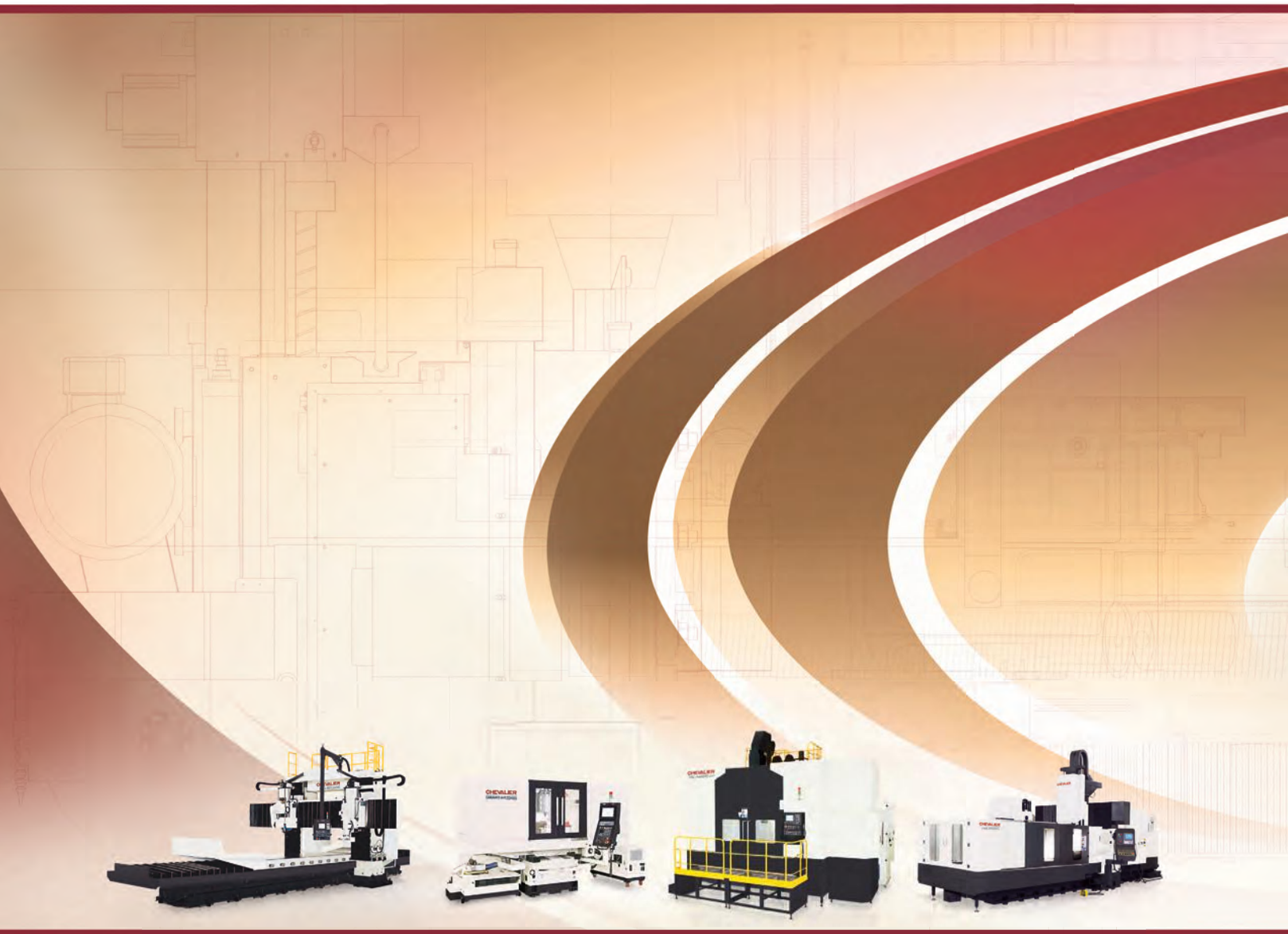
(with temperature control system) (Opt.)

- Coolant chiller
- Oil skimmer
- Drum type filtration system
- Capacity:2000L

OPTIONAL ACCESSORIES

- Electromagnetic chuck (with chuck control)
- Table mounted grinding wheel dresser (without diamond disc)
- Automatic paper filter type coolant system with magnetic separator and chiller (With temperature contr ol system)
- Dynamic wheel balancing system
- Anti-crash protection device for spindle
- Y, Z, V, W, -axis digital read out system
- Wheel balancing stand
- Extra wheel flange
- The horsepower of spindle motor can up to: Horizontal Head (50HP), Vertical Head (30HP)
- Grinding wheel dresser (as shown on the right hand side)





Grinding Machines | Grinding Machines | Turning Machines | Milling Machines

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