

FMG-B1224

Traveling Column, Highly Efficient
Profile Grinder

Better flexibility for complex
grinding



CHEVALIER[®]
Grinding / Turning / Milling

We shape your ideas.™

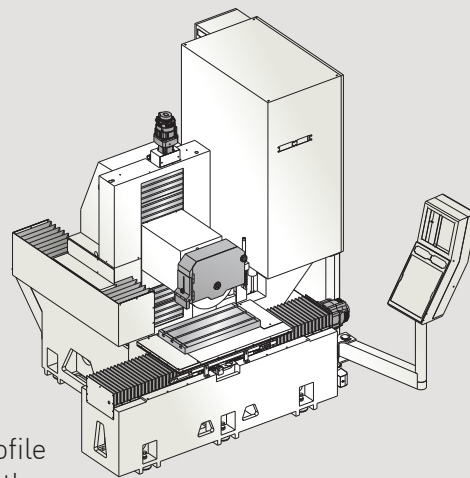
Introduction

Performance. Precision. Reliability. Affordability.

These are the driving forces behind the design of our new FMG-B1224 Traveling Column High-Efficient Profile Grinding Machine. They're the standards required by the medical, automotive, mining, semiconductor, aerospace and job shop industries in order to meet current and future market needs and pave the way to factory automation.

Chevalier achieved greater precision by placing the high waist traveling column on the same level as the spindle, creating a solid, rigid machine structure that minimizes vibration, movement, and displacement. Axial movements are programmable in increments of 0.001 mm (0.0001") with little effort.

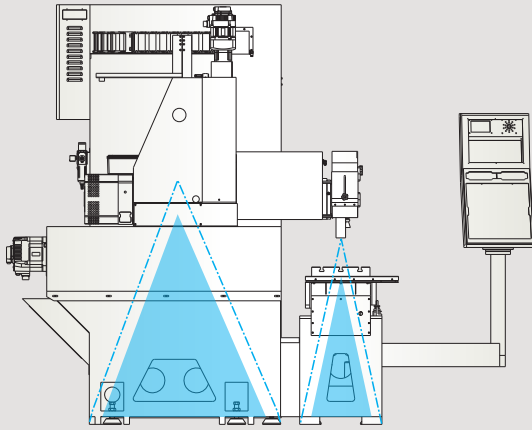
Our grinding machines are designed to be user friendly with our exclusive PC-based SMART iControl featuring conversational programming. Combined with TaskLink, it allows operators to create their own programs for generating complex grinding tasks in a single cycle—without an engineering degree.



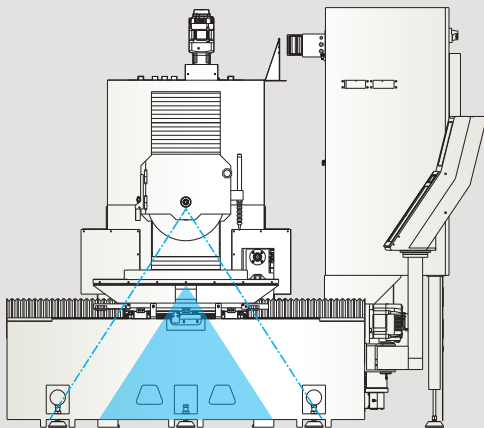
Key Features and Benefits

Optimized structure

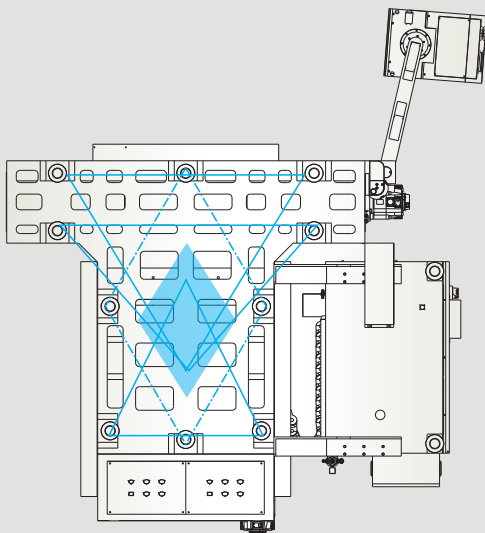
Chevalier's R&D team used precision analysis to design a rigid machine structure that incorporates a traveling column to effectively improve stability for high grinding efficiency and reliable machining accuracy.



To prevent vibration and ensure machining accuracy, the high-strength rigid design is built to withstand the maximum force caused by deformation.



By analyzing processing requirements and experience, we optimized the machine's structural integrity to ensure high performance.





Full enclosure design

The fully enclosed design meets safety and environmental regulations by preventing cutting coolant splashing and oil mist dissipation while fully protecting the operator from grinding dangers.



Control Features and Benefits

All new SMART iControl

The SMART iControl's powerful computing force enhances the HMI (Human Machine Interface) for greater precision. Combining the SMART iControl with data analysis from network connectivity allows managers to improve the production process and increase output.

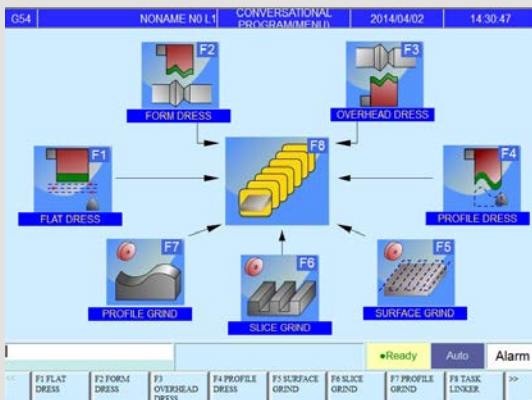
The SMART iControl's conversational programming eliminates complicated programming codes

The SMART iControl supports M3 serial communication servo systems, a communication bandwidth increased to 100Mbps and support for 24-bit resolution to improve reading speed and processing smoothness.

High computing capabilities of 2,000 single blocks per second produces high-precision smoothness, high-precision contour control, machining path smoothing, multigroup working conditions, and quick parameter setting to significantly improve the grinding machine's accuracy and flatness.

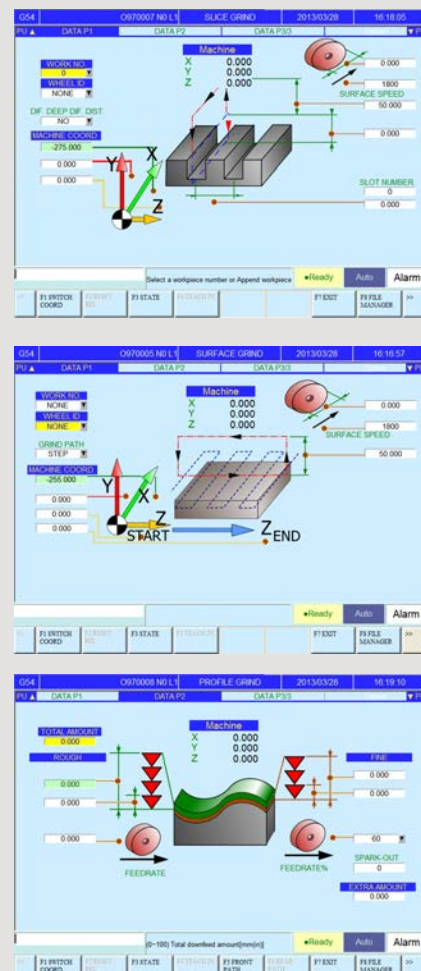
Up to six CNC axes can be controlled for multi-function machining requirements. A single axis group can connect up to four axes or four/five axes for complex forming machining.

The SRI interface external communication IO module adds extra IO points (optional) and connects other automation equipment to meet future automation needs.



The SMART iControl comes standard with a 10.4" TFT high color with HMI.*

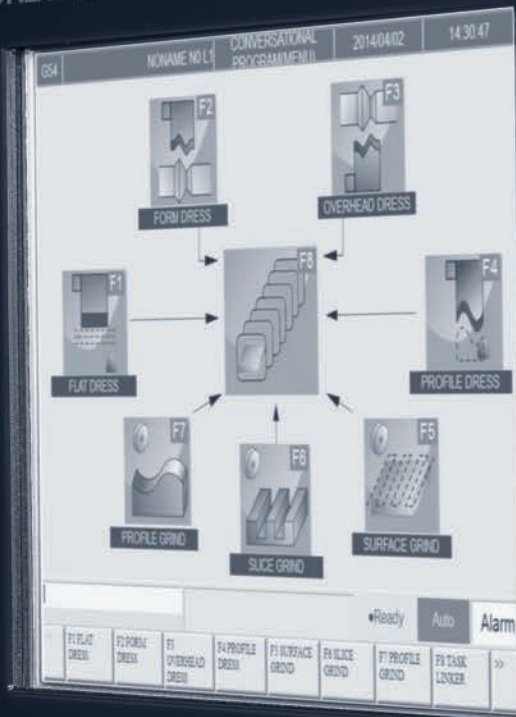
The three-dimensional graphic image display minimizes text descriptions and looks very similar to the actual workpieces.



*U.S.A. 15" TFT high color touchscreen with HMI is standard

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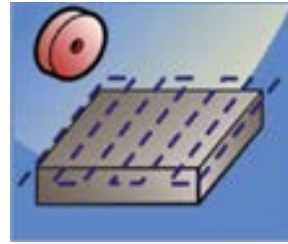
SMART iControl



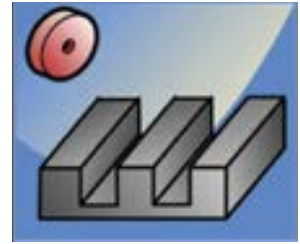
Auto Grinding Modes

The SMART iControl has four types of graphic conversational grinding modes.

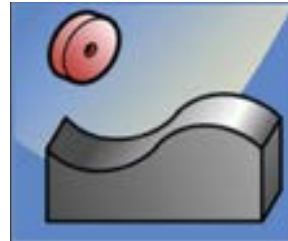
Additionally, our new TaskLink mode enables operators to complete complex grinding tasks in one cycle.



Surface Grinding



Slice Grinding



Profile Grinding

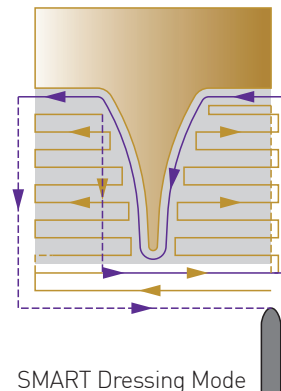
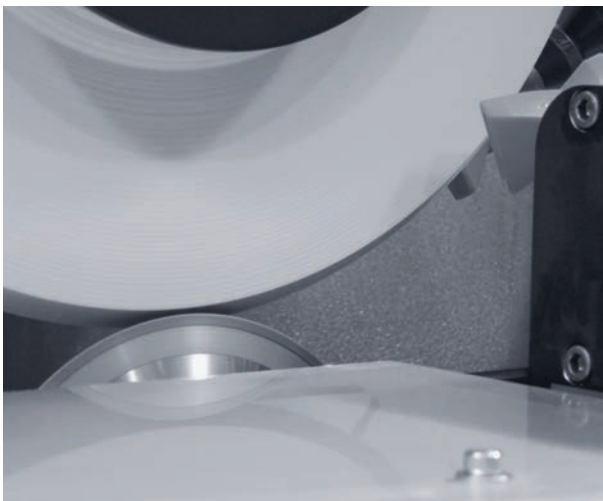


TaskLink

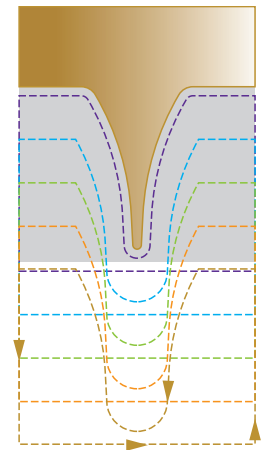
Wheel Dressing

Constant contact dressing mode

A Normal Dressing Mode wastes time by cutting in air. The SMART iControl Dressing Mode never cuts air because the diamond is in constant contact with the wheel to minimize dress time.



SMART Dressing Mode



Normal Dressing Mode

Auto dressing modes

Conversational graphic automatic wheel dressing modes can be linked with any—or all—grinding modes.

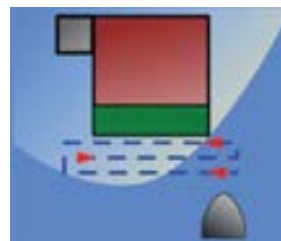


Table Type Single Tip Dresser

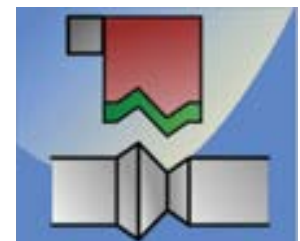
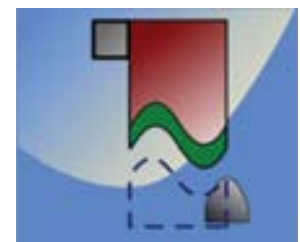


Table Type Diamond Roller

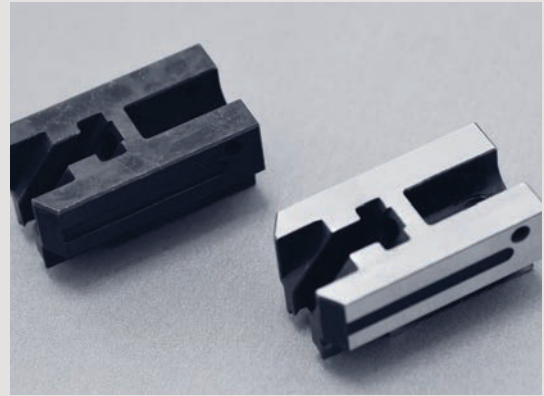
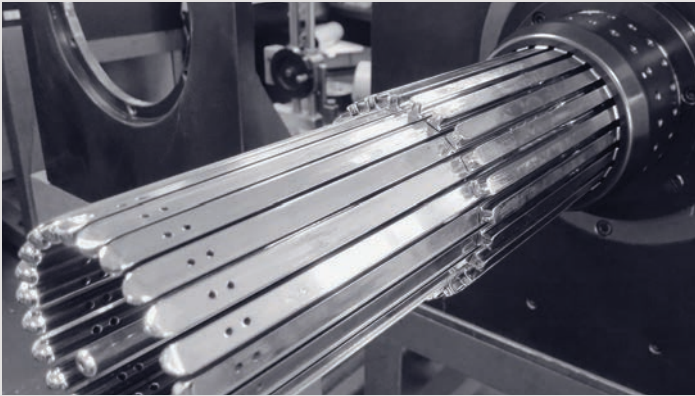


Over the Head Diamond Roller

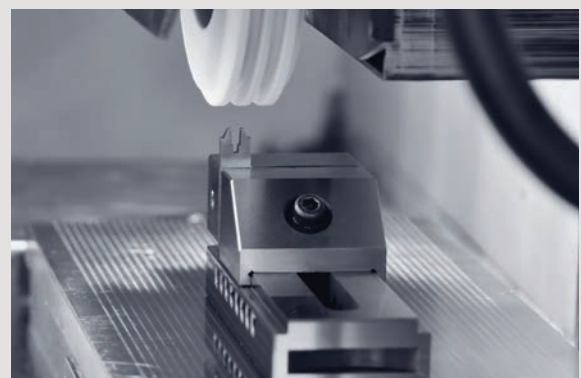


Profile Dressing

Applications



The FMG-B1224 easily adapts to future needs for job shops, medical, automotive, semiconductor and aerospace



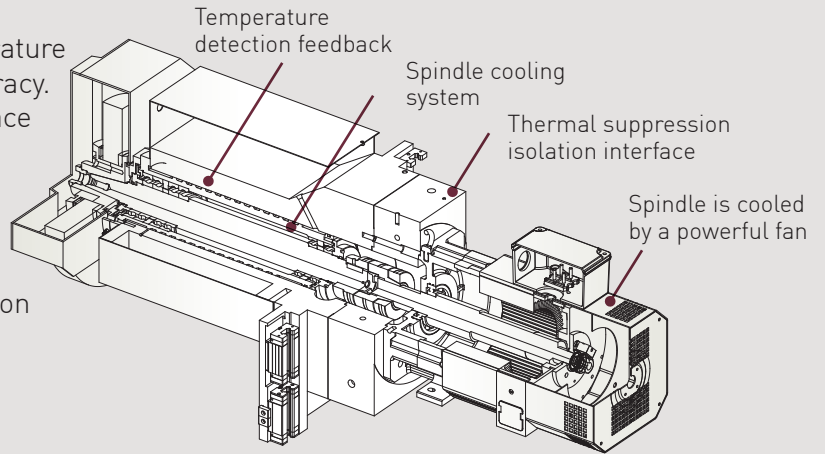
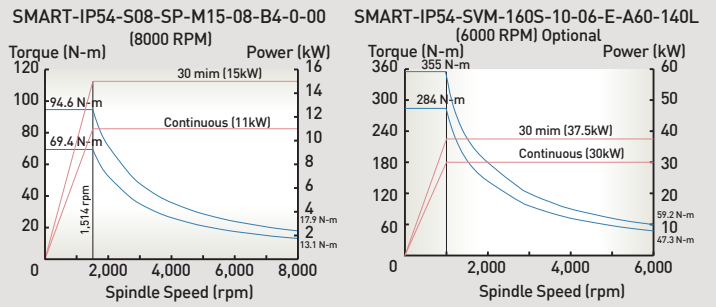
Machine Construction

Spindle

The cartridge-style spindle is suitable for heavy-duty grinding loads. It's supported by six super-precision angular contact bearings (four front pieces and two rear pieces). Runout is within 2µm. Fully sealed lubrication ensures long life and greater precision.

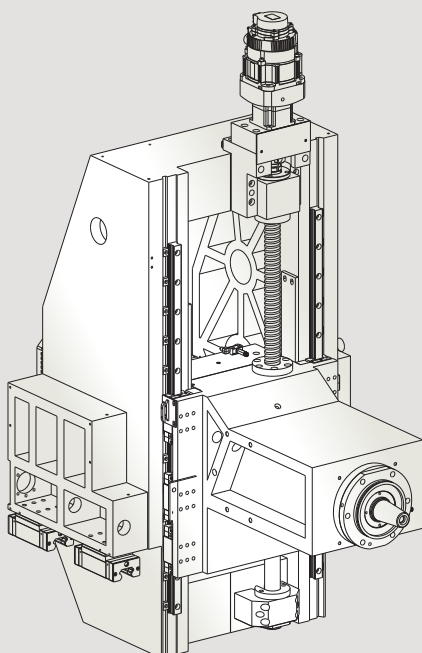
Air cooling the spindle minimizes temperature increases to further ensure spindle accuracy. The thermal suppression isolation interface can reduce the temperature rise to the lowest level, effectively inhibiting spindle expansion.

Maximum spindle horsepower offers an optional 30kW (40 HP) for high-precision or semi-heavy profile grinding.

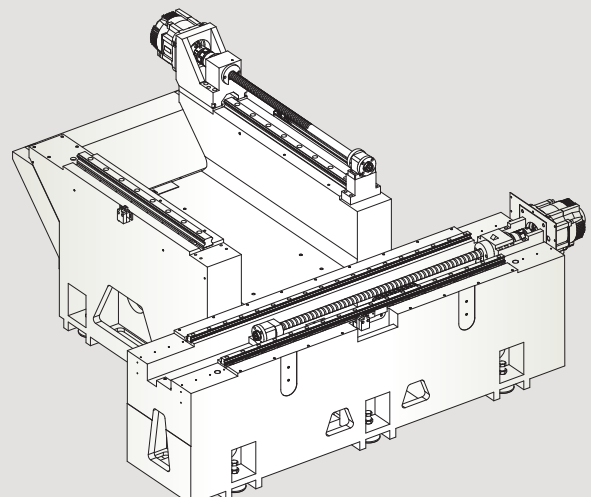


The machine's powerful spindle provides greater accuracy and precision for superior cutting efficiency

The X/Y/Z axis is driven by an AC servo motor and a high-precision ballscrew to maximize control of the table speed and position.



The FMG-B1224 traveling column high-efficient profile grinding machine is built with a massive, one-piece rigid machine base with a low center to fully support table travel. All castings have undergone FEM analysis to optimize the mechanical design and minimize the machine's weight. The ergonomic machine structure is optimally designed to provide better grinding efficiency and accuracy.





FMG-B1224 offers more value for your investment

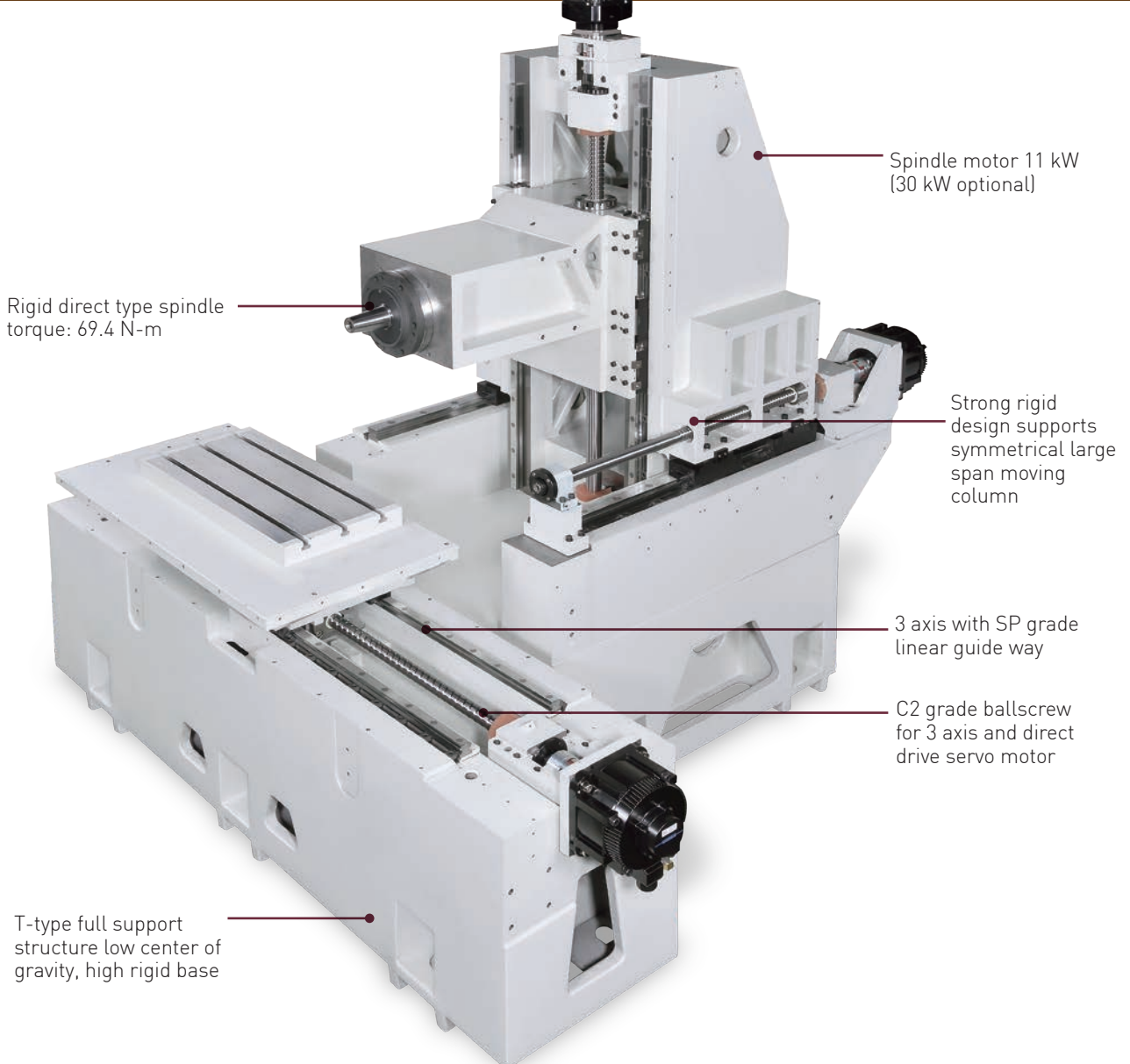
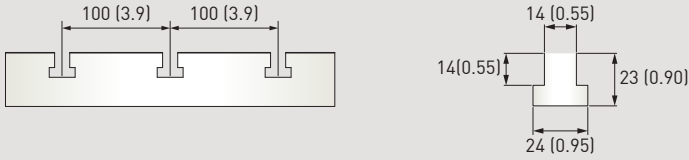
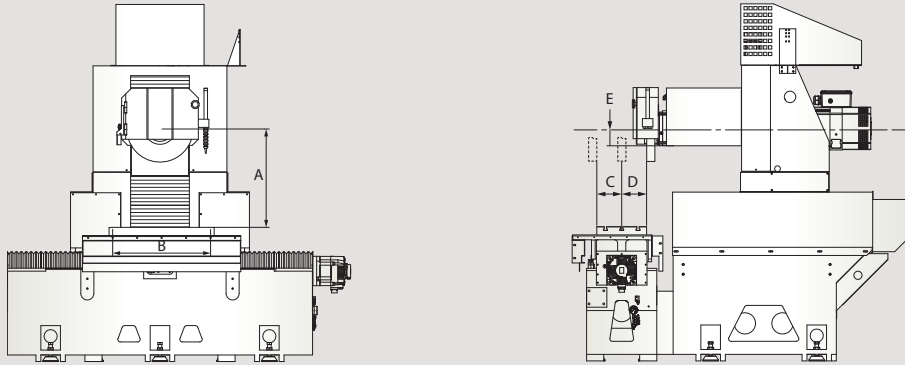


Table and T-Slot Dimensions

Units: mm (")



Max. Working Space



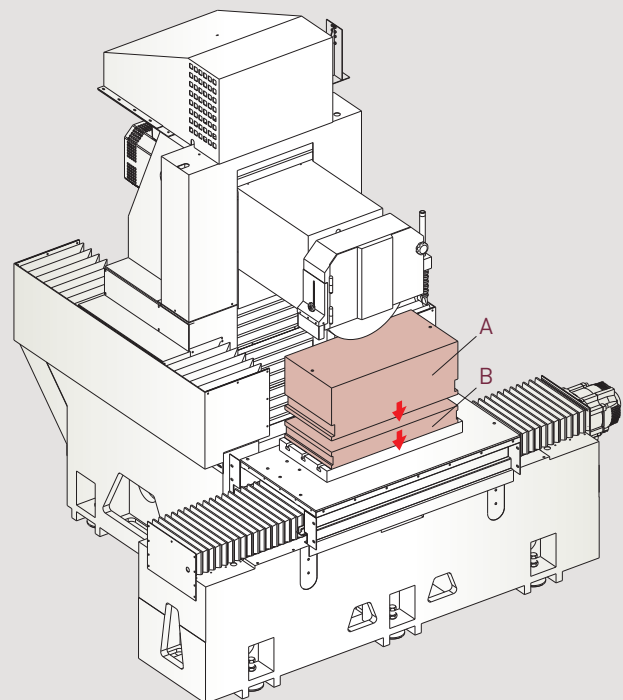
Item	A	B	C	D	E
FMG-B1224	590 (23.2)	600 (23.6)	152.5 (6)	152.5 (6)	106.5 (4.2)

Stronger rigidity produces less vibration and less movement for years of consistent, reliable operation

Loading Capacity

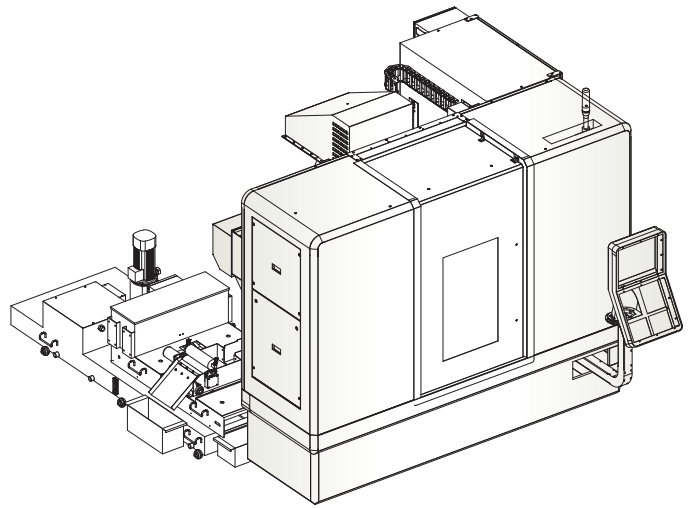
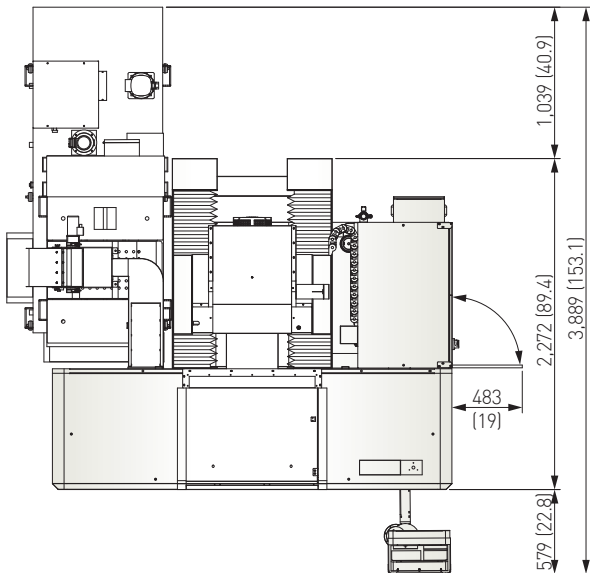
A	314 kg (690 lbs.)
B	106 kg (233 lbs.)
C	420 kg (923 lbs.)

Suggested maximum table loads
 A = Workpiece, B = Chuck, C = A+B

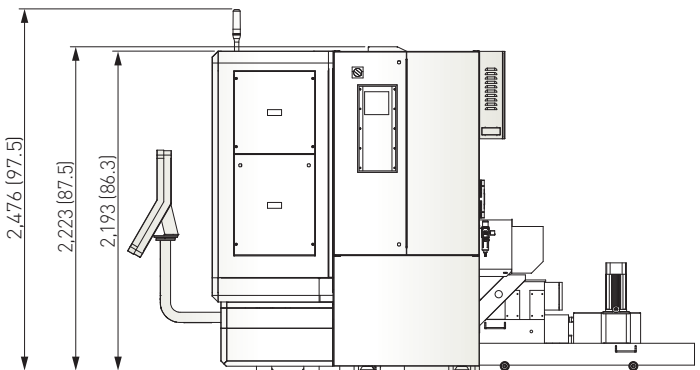
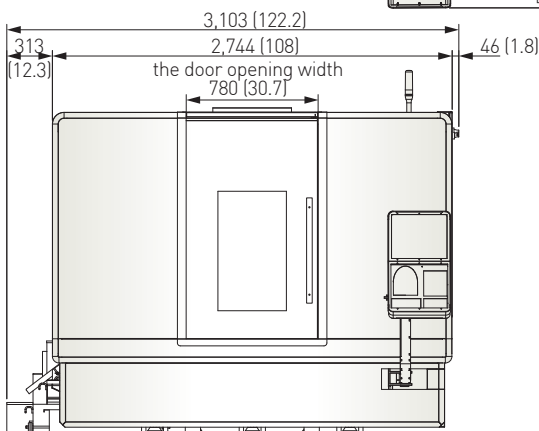


Machine Dimensions

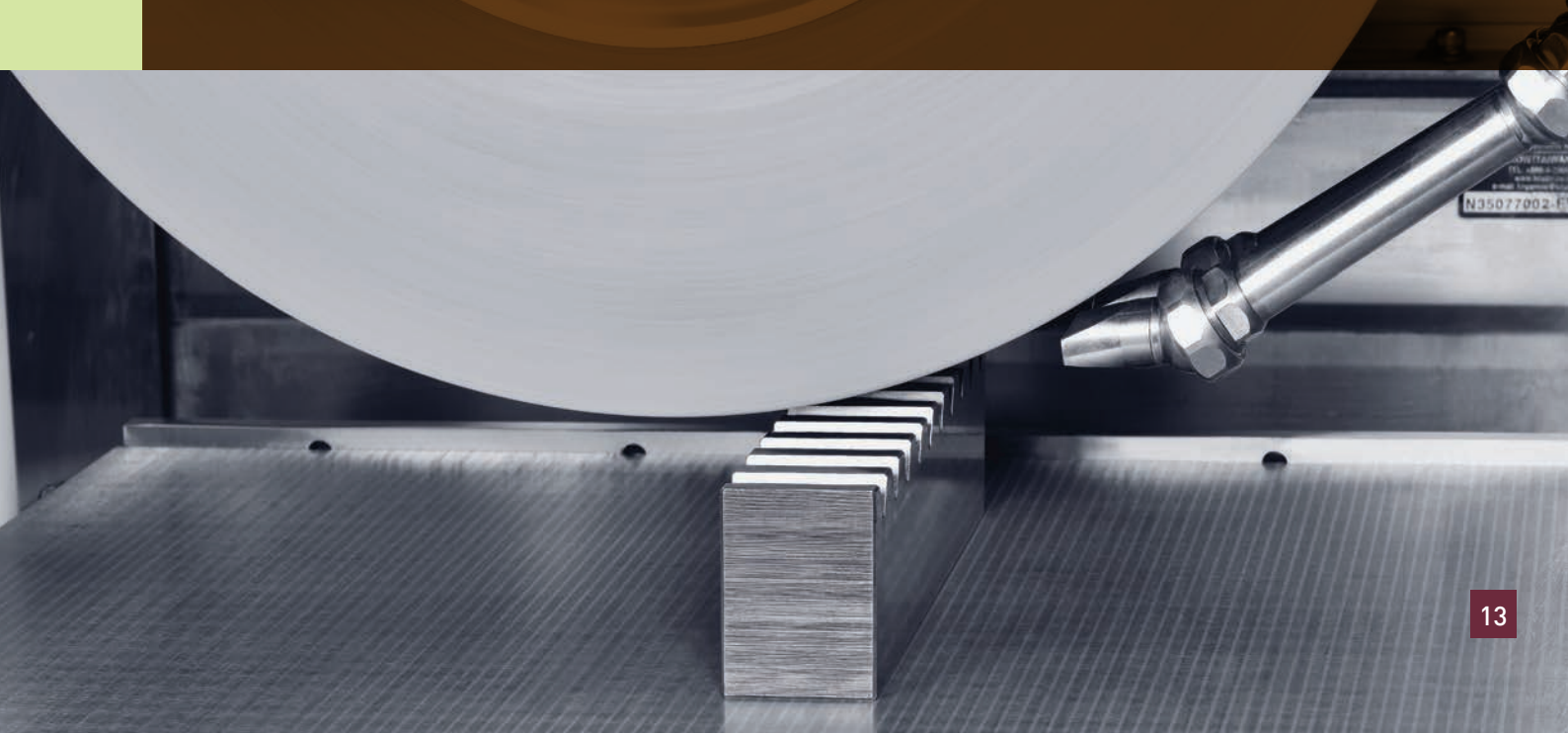
Units: mm (")



Note: Machine shown with optional accessories.



The FMG-B1224's traveling column allows operators to easily grind complex workpieces





When it comes to affordable traveling column grinders, Chevalier's FMG-B1224 is your only choice

Accessories

Standard accessories

- Fully enclosed splash guard
- Wheel flange:
Clamping width 19~100 mm (0.7" ~ 3.9")
- Grinding wheel (OD x Width x Bore):
Ø405 x 50 x Ø127 mm (Ø16" x 2" x Ø5")
- Leveling pad: 10 pcs.
- Leveling screws and nuts: 10 sets
- Heat exchanger for electric cabinet
- Toolbox (includes balancing arbor, wrench, hex head wrench, diamond dresser with diamond and hole plugs)
- Automatic grease type lube system

Optional accessories

- 15" TFT high color touch screen with HMI*
- Rotary diamond dresser head-mounted
- Rotary diamond dresser table-mounted
- Grinding wheel dynamic balancing system
- Spindle oil cooling system
- Double supported spindle
- Automatic door system
- Servo-driven coolant nozzle (single axis elevating)
- Auto in line measuring system
- Spindle motor 30 kW (40 HP)
- Coolant system
- Electromagnetic chuck
- CNC rotary table
- Three-point diamond dresser
- Linear scales

Specifications

Item	Description	FMG-B1224	
Control system		SMART iControl	
Capacity	Max. grinding length-longitudinal	610 mm (24")	
	Max. grinding width-crosswise	305 mm (12")	
	Distance between table to spindle centerline	590 mm (23.2")	
	Height from table to ground	810 mm (32")	
	Max. table load	420 kg (926 lbs.)	
Table	Table size	300 x 600 mm (11.8" x 23.6")	
	T-slots (width, x pitch x no.)	14 mm x 100 mm x 3 (0.6" x 3.9" x 3)	
	Table speed	0-25 m/min (0-82 fpm)	
	Max. table travel	710 mm (28")	
Transverse movement (Z)	Max. travel	350 mm (13.7")	
	Feed speed	0-4,000 mm/min (0-13 fpm)	
	Min. input	0.001 mm (0.0001")	
Wheelhead elevation (Y)	Max. travel	450 mm (17.7")	
	Feed speed	0-3,800 mm/min (0-12.5 fpm)	
	Min. input	0.001 mm (0.0001")	
Spindle	Spindle speed	600-3,600 rpm	
Motors	Spindle motor	11 kW (15 HP)	
	Axis motors (X/ Y/ Z)	X: AC servo 2.9 kW / Y: AC servo 1.8 kW / Z: AC servo 2.9 kW	
Wheel dimension	OD x Width x Bore	Ø405 x 50 x Ø127 mm (Ø16" x 2" x Ø5")	
Power and air requirement	Power required	26 kVA	
	Total air consumption	Pressure	6 kg/cm ² (86 psi)
		Flow	200 NL/min (7 cfm)
Machine dimensions	Floor space (W x D x H)	3,103 x 3,889 x 2,476 mm (122" x 153" x 97.5")	
	Net weight	5,800 kg (12,786 lbs.)	
Accuracy	Positioning accuracy	0.005 mm (0.00019")	
	Repeatability accuracy	0.003 mm (0.0001")	
	Accuracy standard	ISO 1986-1	

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



Grinding
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SMART
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