

**FMG-
1632CNC-HD**


High-Efficiency Grinding Center

Powerful, multi-axis, moving
column, high-precision grinder



CHEVALIER[®]
Grinding / Turning / Milling

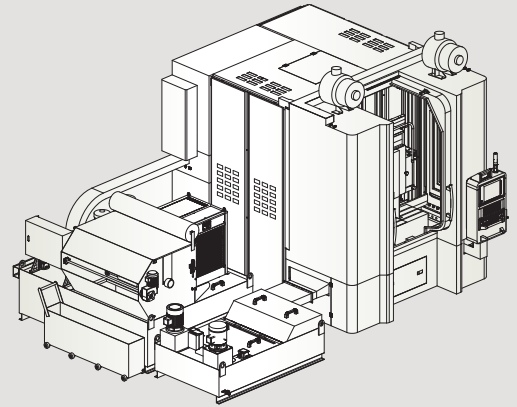
We shape your ideas.™



Solid high-waisted machine construction and movable column design with powerful servo motor providing heavy-duty rigidity for slow feed grinding

Powerful, multi-axis, moving column, high-precision grinder

FMG-1632CNC-HD is a high-precision, multi-axis, servo-driven, movable column machine designed for powerful CNC grinding. It is very suitable for forming and grinding various complex shapes and difficult-to-grind materials.



The X-, Y-, Z-axes linear slide rails make the heavy cutting process faster and more stable, ensuring optimum grinding accuracy. This machine is designed for heavy-duty, slow feed grinding and can be widely used in many fields, including, the aerospace, automotive, medical and mold industries.

The dual-air cylinders on the spindle function as the main counterbalance system for the stable-feeding axis transmission. A wheel head mounted or table mounted type diamond roller dresser and a built-in dynamic balance system ensure optimal grinding accuracy.

The wheel head and table mounted roller dressers can be configured for automatic dressing and compensation. An optional 4th and 5th axis rotary table is a high-precision, Swiss-made Lehmann indexing table that includes a servo-driven water spray system and servo configuration for multi-axis applications, resulting in optimally efficient grinding.



The FMG-1632CNC-HD is shown with optional accessories.

Key Features and Benefits

Moving column, high-waist structure design

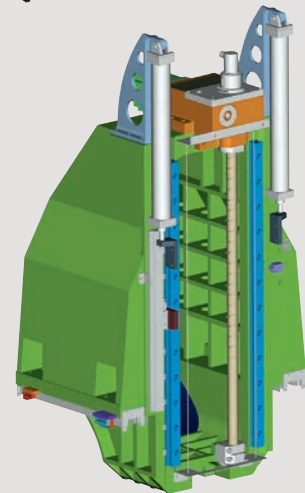
A highly rigid structure with a sturdy moving-column design with a low center of gravity and a powerful servo drive provide excellent grinding performance for creepfeed and high precision. The X-, Y-, and Z-axes are driven by a servo motor with linear guides that improve grinding performance and optimize grinding efficiency and stability.



Extra spindle support

Dual air cylinders on the spindle function as the main counterbalance system for axis feed stability.

The column is heavily ribbed for maximum rigidity. The Y-axis run on precision linear guideways, ensuring smooth movement. The $\text{\O}50$ mm, Class-2, pre-tensioned dual-anchored ballscrews with a speed reducing mechanism contribute to reliable, stable-feeding and grinding accuracy.



Servo motor drives coolant-nozzle transmission (optional)

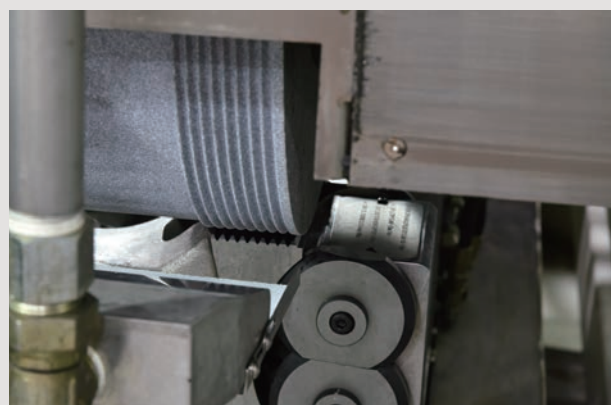
The coolant nozzle, with an elevating and longitudinal mechanism, lowers the temperature by longitudinal and transverse movements during operation.

The automatic movement nozzle device (optional) features a coolant nozzle system driven by a servo motor that provides the operator with convenient directional control.



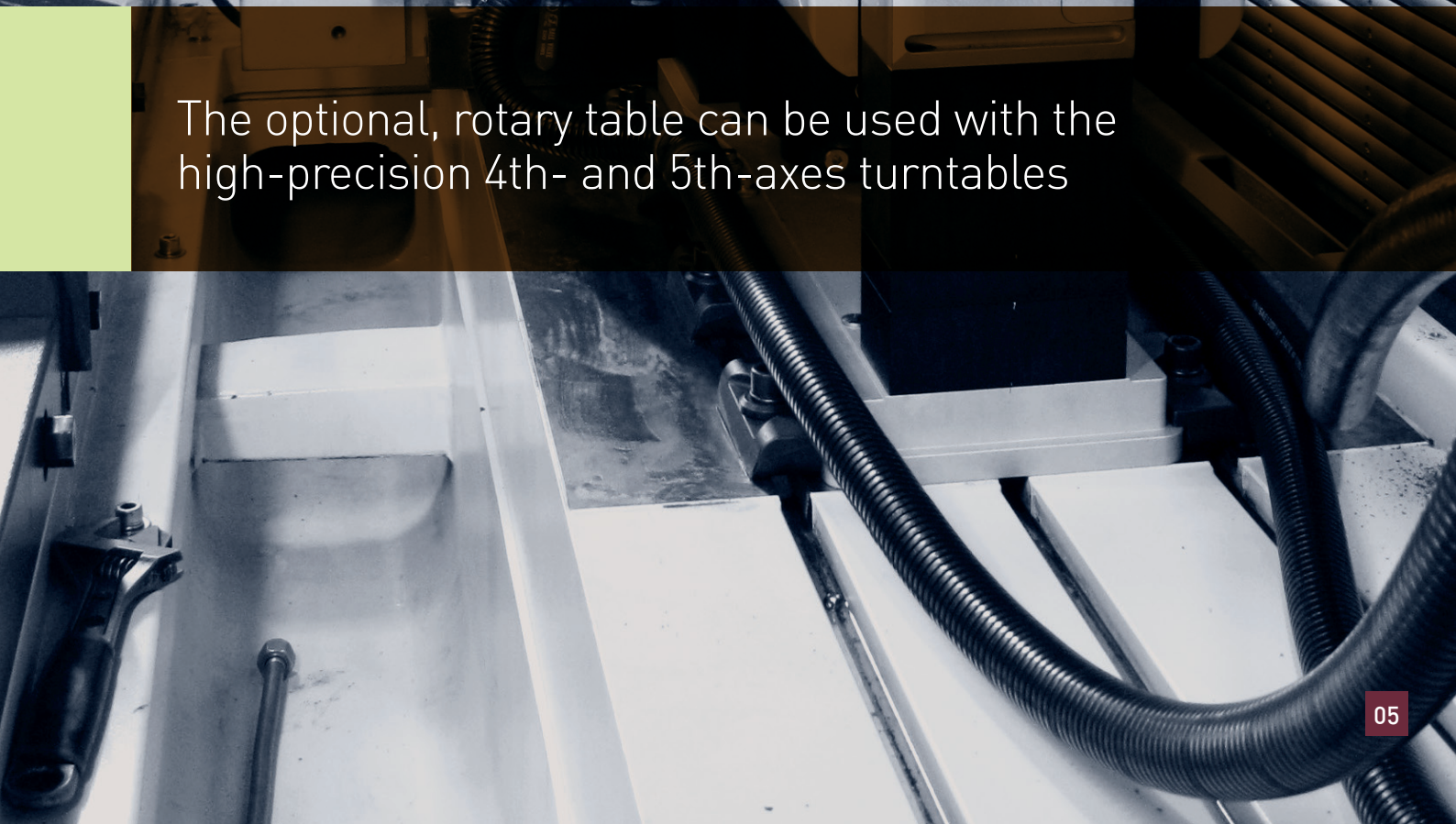
Grinding wheel forming and dressing

The grinding wheel can be trimmed according to the required contour of the part and the contour can be ground on the plane or arc surface of high-strength materials.





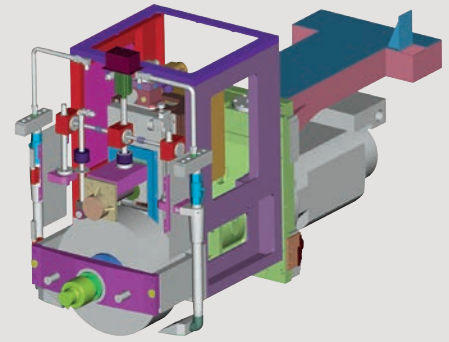
The optional, rotary table can be used with the high-precision 4th- and 5th-axes turntables



Machine Construction

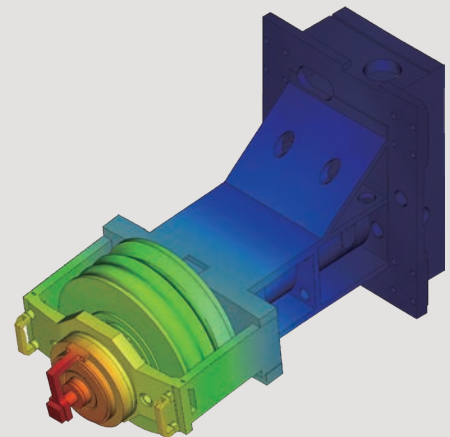
High efficient dressing device

Our machines provide continuous dressing and automatic compensation during grinding. Options include: a wheel-head mounted dressing system, table-mounted dressing system and built-in automatic dynamic balancing system, all which ensure optimal grinding performance.



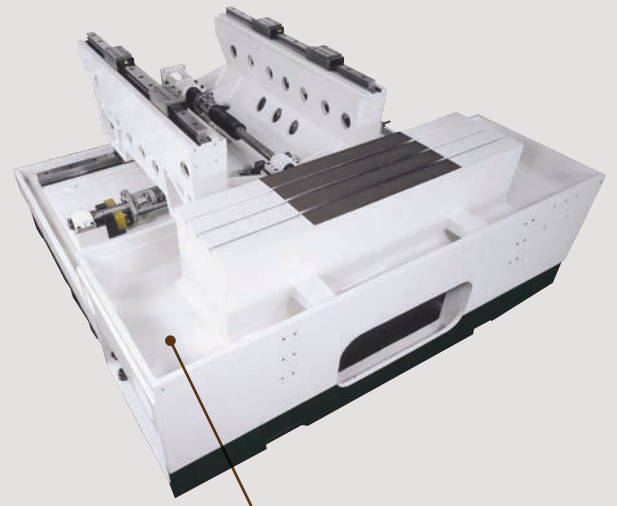
Spindle design

The heavy-duty spindle is supported by high-precision, P4-grade angular bearings (two pieces, front; four pieces, rear), with an optimum span arrangement, maximizing the machine's rigidity. The machine is capable of high-speed and heavy-duty grinding.



Solid machine construction

The use of 3D design and FEM software analyzes the mechanical structure, improves overall structure design and enables the machine to provide excellent rigidity during processing.



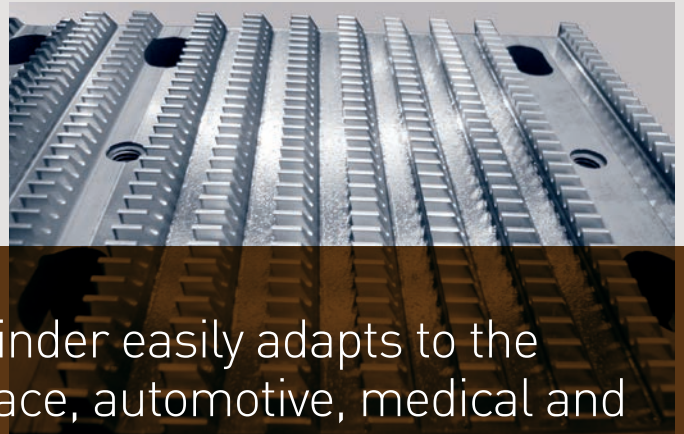
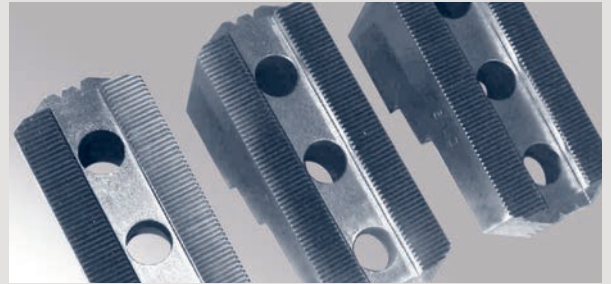
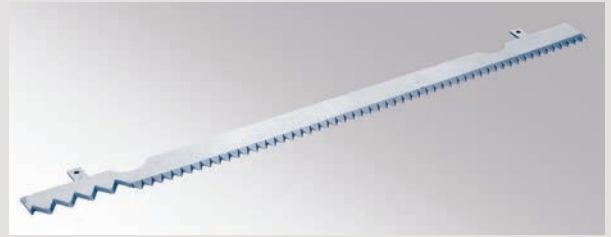
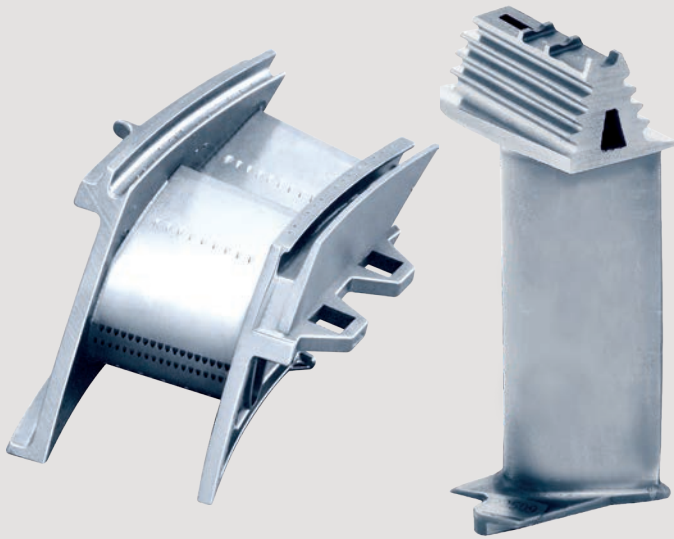
Efficient base backwater channel design.

Saddle, machine base and table design

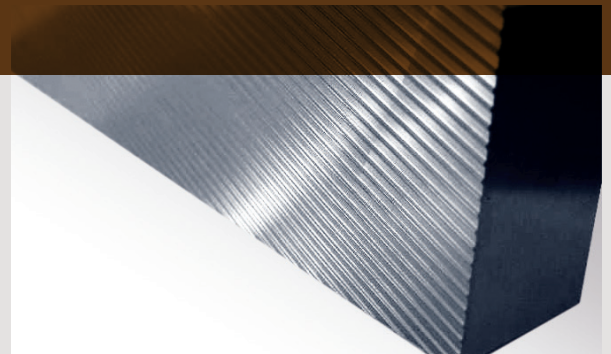
The double-anchored, pre-tensioned ballscrew drive is installed at the center of the saddle, providing the best balance and feeding accuracy and enabling the worktable to move smoothly even during high-speed or slow-feed grinding.

The high-strength, box-shaped base is designed for efficient drainage, ensuring the circulation of coolant during processing.

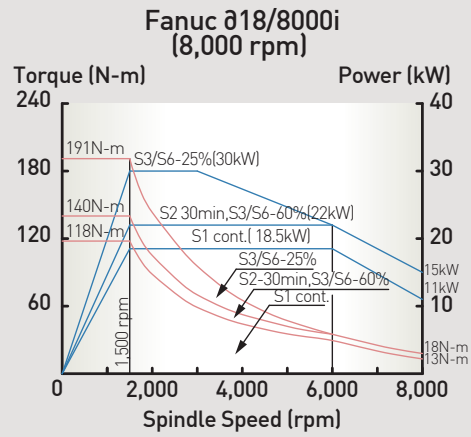
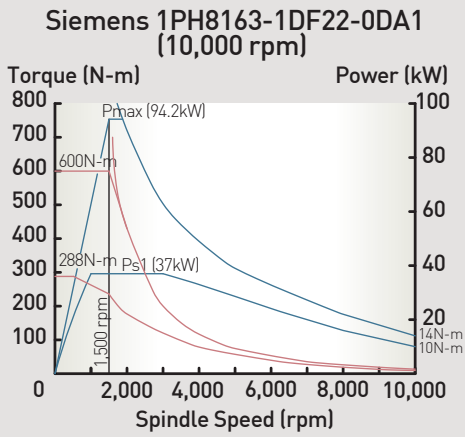
Applications



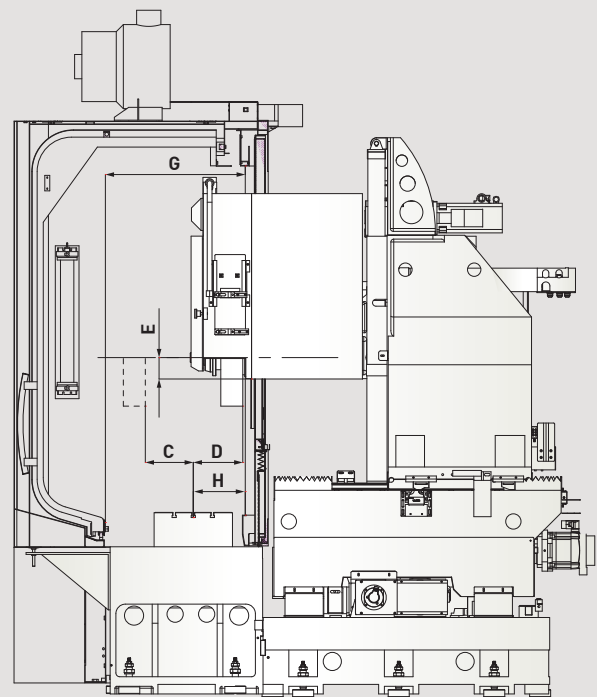
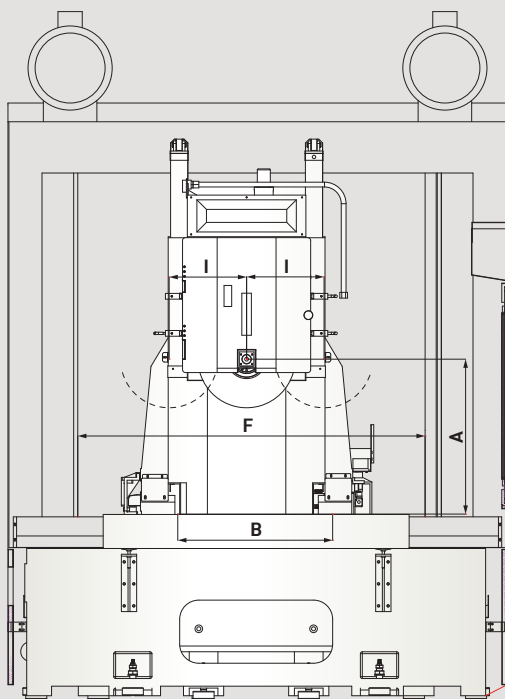
The FMG-1632CNC-HD grinder easily adapts to the future needs of the aerospace, automotive, medical and mold industries



Spindle Power Torque Diagram



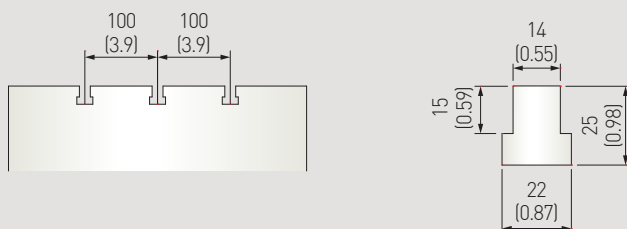
Max. Working Space



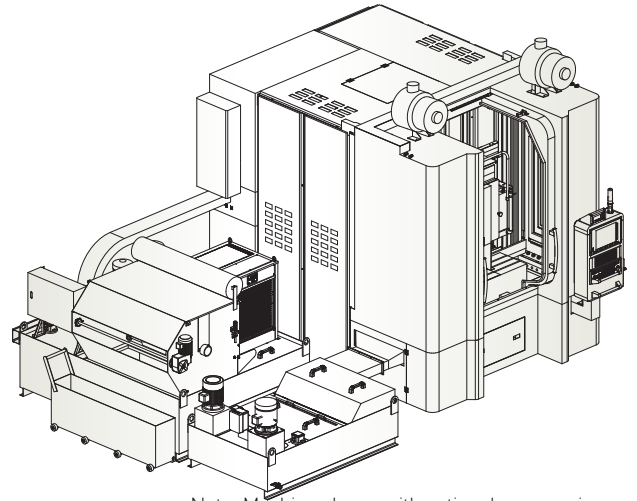
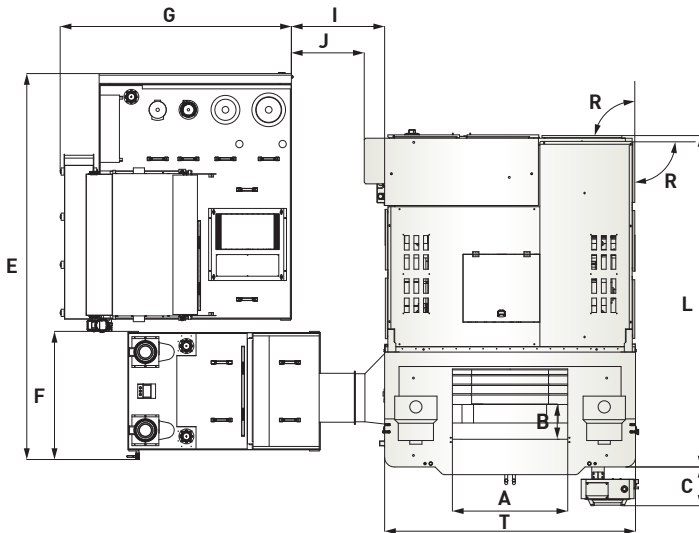
Units: mm (")

Item	A	B	C	D	E	F	G	H	I
FMG-1632CNC	810 (31.9)	810 (31.9)	251 (9.9)	259 (10.2)	112 (4.4)	1,816 (71.5)	732 (28.8)	272 (10.7)	405 (15.9)

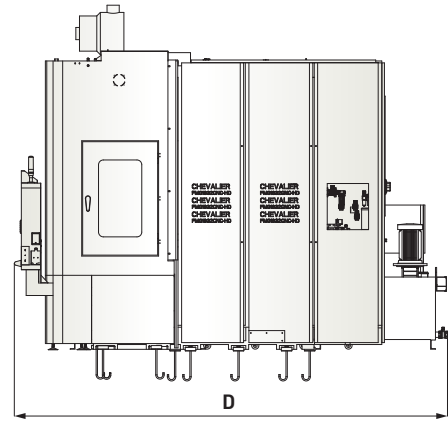
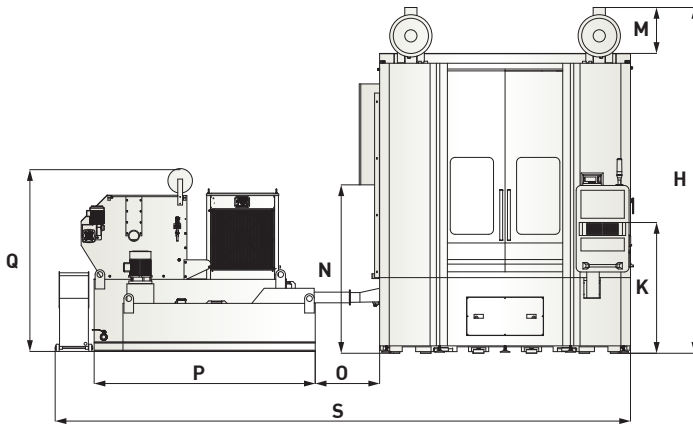
Table and T-slot Dimensions



Machine Dimensions



Note: Machine shown with optional accessories.



Units: mm (")

Item	FMG-1632CNC-HD	Item	FMG-1632CNC-HD
A	920 (36.2)	K	1,390 (54.7)
B	360 (14.2)	L	3,455 (136.0)
C	410 (16.1)	M	500 (19.7)
D	4,510 (177.6)	N	1,760 (69.3)
E	4,015 (158.1)	O	670 (26.4)
F	1,340 (52.8)	P	2,300 (90.6)
G	2,410 (94.9)	Q	1,900 (74.8)
H	3,602 (141.8)	R	655 (25.8)
I	970 (38.2)	S	6,020 (237.0)
J	760 (29.9)	T	2,610 (102.8)

With different optional accessories, the machine dimensions will be varied.



A full line of standard and optional accessories adds flexibility to FMG grinders

Accessories

Standard accessories

- Siemens 828D control
- Wheel flanges: Clamping width 5 ~ 150 mm (0.2" ~ 5.9")
- Grinding wheel (OD x Width x Bore):
Ø405 x 75 x Ø127 mm (Ø16" x 3" x Ø5")
- Dressing device with diamond pen
- Fully enclosed splash guard
- Heat exchanger
- Toolbox (including wheel-fixing bolt set, magnet chuck-fixing bolt, balancing arbor, lifting bolt, L-shaped hexagon wrench, open-end wrench)
- Leveling pad
- Leveling screw set
- Nine sets of ball hexagon wrenches

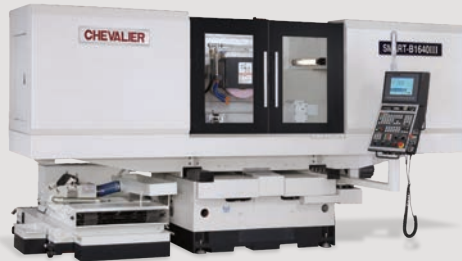
Optional accessories

- Siemens 840D control
- Fanuc control
- Double support spindle
- Rotary diamond dresser head-mounted
- Rotary diamond dresser table-mounted
- Grinding wheel balance stand
- Coolant system with auto paper feeding device
- Linear scale
- Water cooling device
- Oil cooling device
- Automatic wheel dynamic balancing system
- Programmable coolant nozzle system (Y- and X-axis)
- Oil mist collector
- Air gun
- Clean water gun (independent pump)
- Automatic door system

Specifications

Item	Description	FMG-1632CNC-HD
Control system		Siemens 828D
Capacity	Max. grinding length-longitudinal	810 mm (31.9")
	Max. grinding width-crosswise	410 mm (16.1")
	Distance between table to spindle centerline	810 mm (31.9")
	Height from table to ground	960 mm (37.8")
	Max. table load	1,500 kg (3,300 lbs.)
Table	Table size	410 x 810 mm (16.1" x 31.9")
	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	920 mm (36.2")
Transverse movement (Z)	Max. travel	510 mm (20.1")
	Feed speed	0~4,000 mm/min (0~13 fpm)
	Min. input	0.001 mm (0.0001")
Wheelhead elevation (Y)	Max. travel	600 mm (23.6")
	Feed speed	0~3,800 mm/min (0~12.5 fpm)
	Min. input	0.001 mm (0.0001")
Spindle	Spindle speed	500 ~ 1,800 rpm
Wheel dimension	OD x Width x Bore	Ø405 x 75 x Ø127 mm (Ø16" x 3" x Ø5")
Motors	Spindle motor	1PH8163, 37 kW
	Axis motors (X / Y / Z)	X: 1FT7108, 10.5 kW Y: 1FK7084, 3.1 kW Z: 1FK7101, 4.9 kW
Power and air requirements	Power required	110 kVA
	Input voltage	380V
	Total air consumption	Pressure 6 kg/cm ² (86 psi) Flow 250 NL/min (8.75 cfm)
Tank capacity	Lubricant tank capacity	1.5 L
Machine dimension	Floor space (W x D x H)	6,020 x 4,510 x 3,602 mm (237.0" x 177.6" x 141.8")
	Net weight	11,000 kg (24,200 lbs.)
Accuracy	Positioning accuracy	0.005 mm
	Repeatability accuracy	0.003 mm
	Accuracy standard	ISO 1986-1

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