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5-AXIS

SIMULTANEOUS MACHINING CENTER

VG-800 ▶

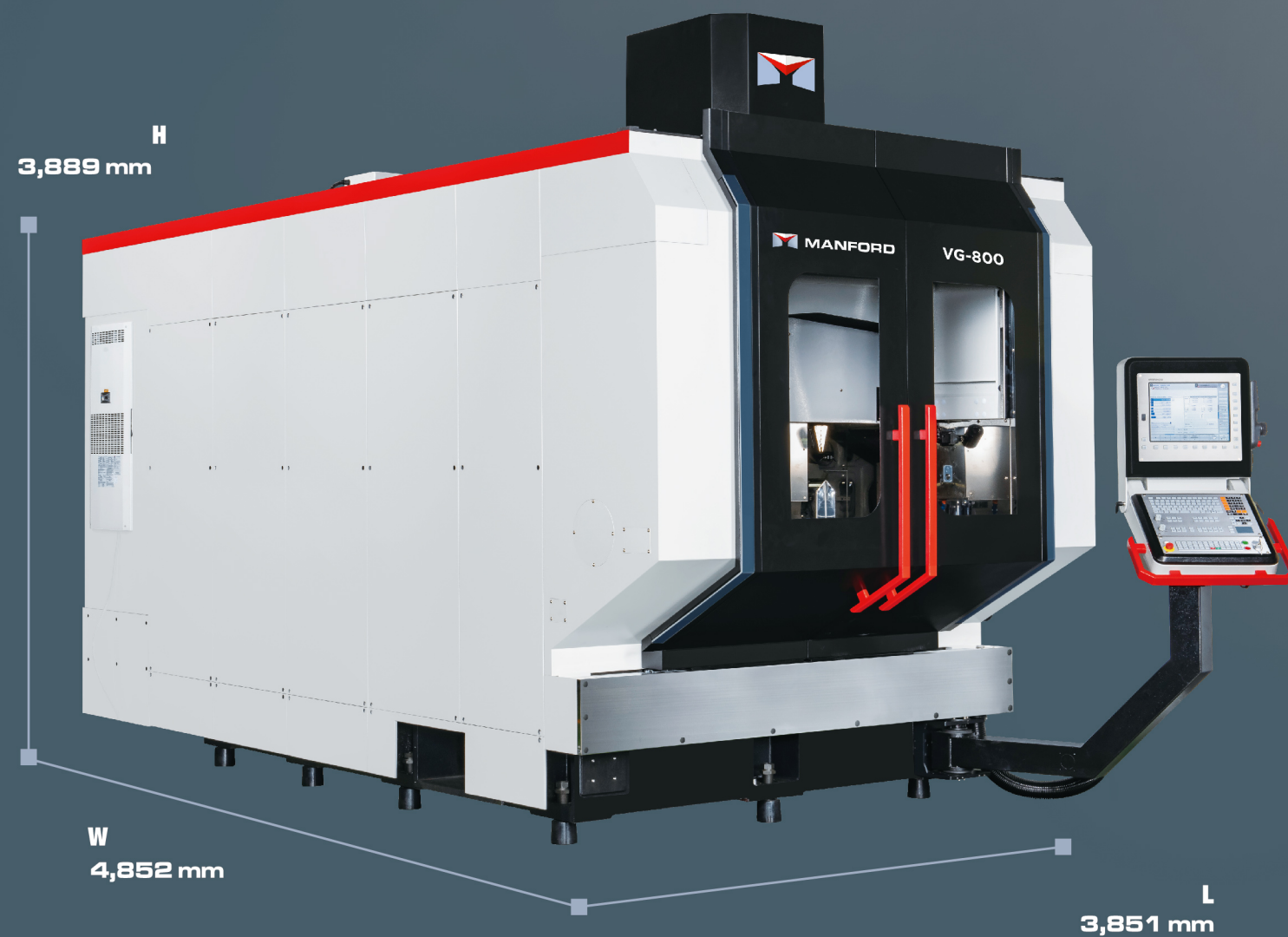
VG-800

About VG-800

When it comes to efficient machining of complex parts, 5-axis machining center is a perfect solution. With 5-axis simultaneous machining, high precision and high efficiency machining on complex parts can be achieved with only a single setup of the workpiece. This considerably reduces production time.

Machining Applications

- Mold making industry
- Optical industry
- Medical equipment industry
- Aerospace industry
- High precision machine parts industry
- Automotive and motorcycle parts industries

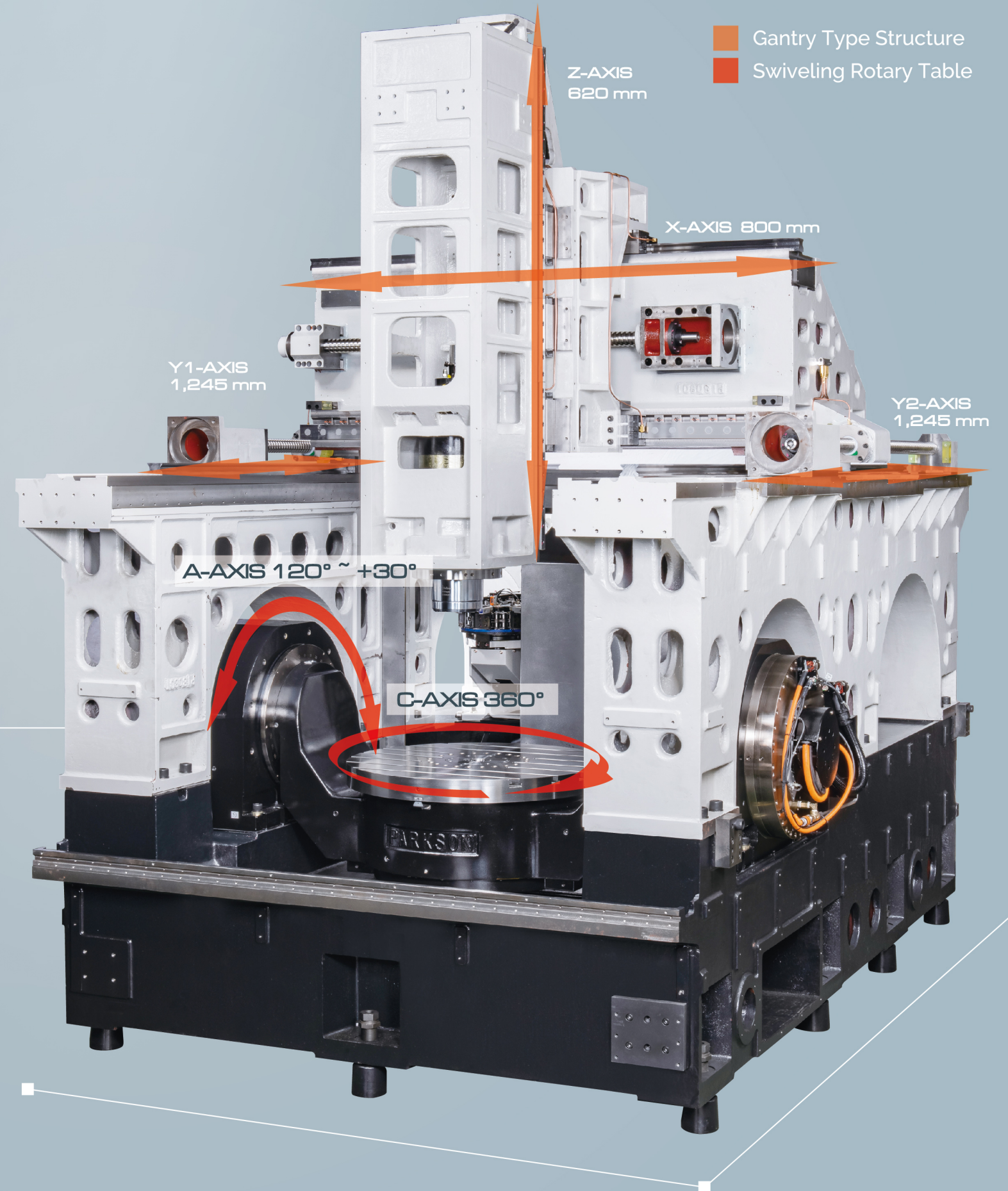


OPTIMIZED STRUCTURE DESIGN MAXIMUM STABILITY

VG-800

The VG-800 Gantry Type 5-Axis Machining Center fully exhibits extraordinary stability in high speed machining. Its gantry type structure combined with high rigid swiveling rotary table makes 5-axis machining more stable and smoother.

- Gantry type structure enhances efficient and stable machining.
- Step deployed linear ways on cross beam (X-axis).
- Synchronized transmission on Y1 & Y2 axis.
- Linear guideways on X/Y/Z axis.
- 15,000 RPM built-in type high speed spindle.
- Massive base provides solid support.
- 32 tools (single side) or 64 tools (both side).



GANTRY TYPE STRUCTURE ENHANCES EFFICIENT AND STABLE MACHINING

Step Deployed Linear Ways

- The linear guideways on the X-axis are step deployed, assuring increased stability for the spindle head in high speed cutting.
- Extra wide span between linear guideways on X-axis increases cutting stability.

Roller Type Linear Guideways

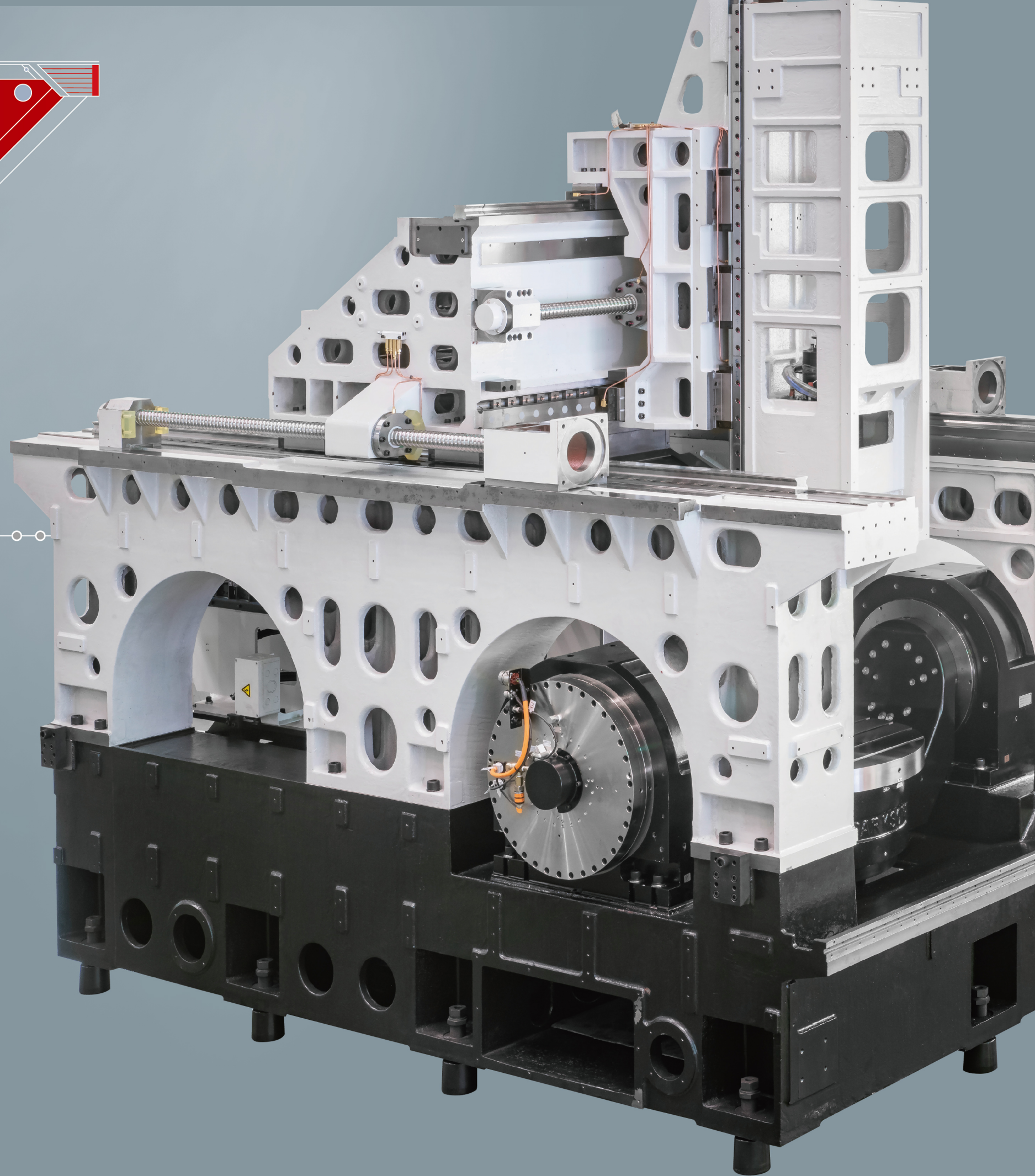
- X/Y/Z axis are fitted with heavy duty roller type linear guideways, featuring low stick-slip and low coefficient of friction to achieve high positioning accuracy.
- Rapid traverse rates on X/Y/Z axis can reach 48 m/min.

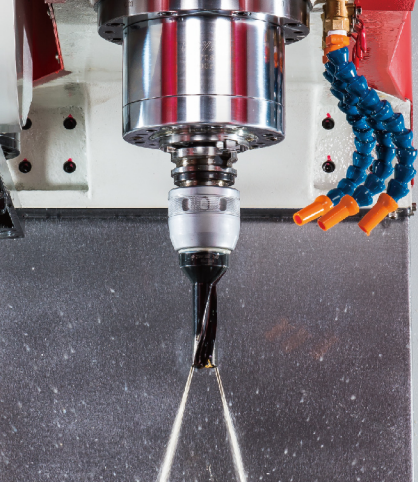
Extra Stable Gantry Type Structure

- With the gantry type machine structure, the workpiece is fixed without traveling.
- The spindle head moves on the X & Y axis, positioning accuracy is fully supported and not affected by the weight of workpiece.

Synchronized Transmission On Twin Y Axis (Y1, Y2)

- The twin Y axis are directly driven by an independent servo motor. With the outstanding mechanism accuracy in combination with the control function, twin Y axis (Y1, Y2) synchronous movement is ensured.



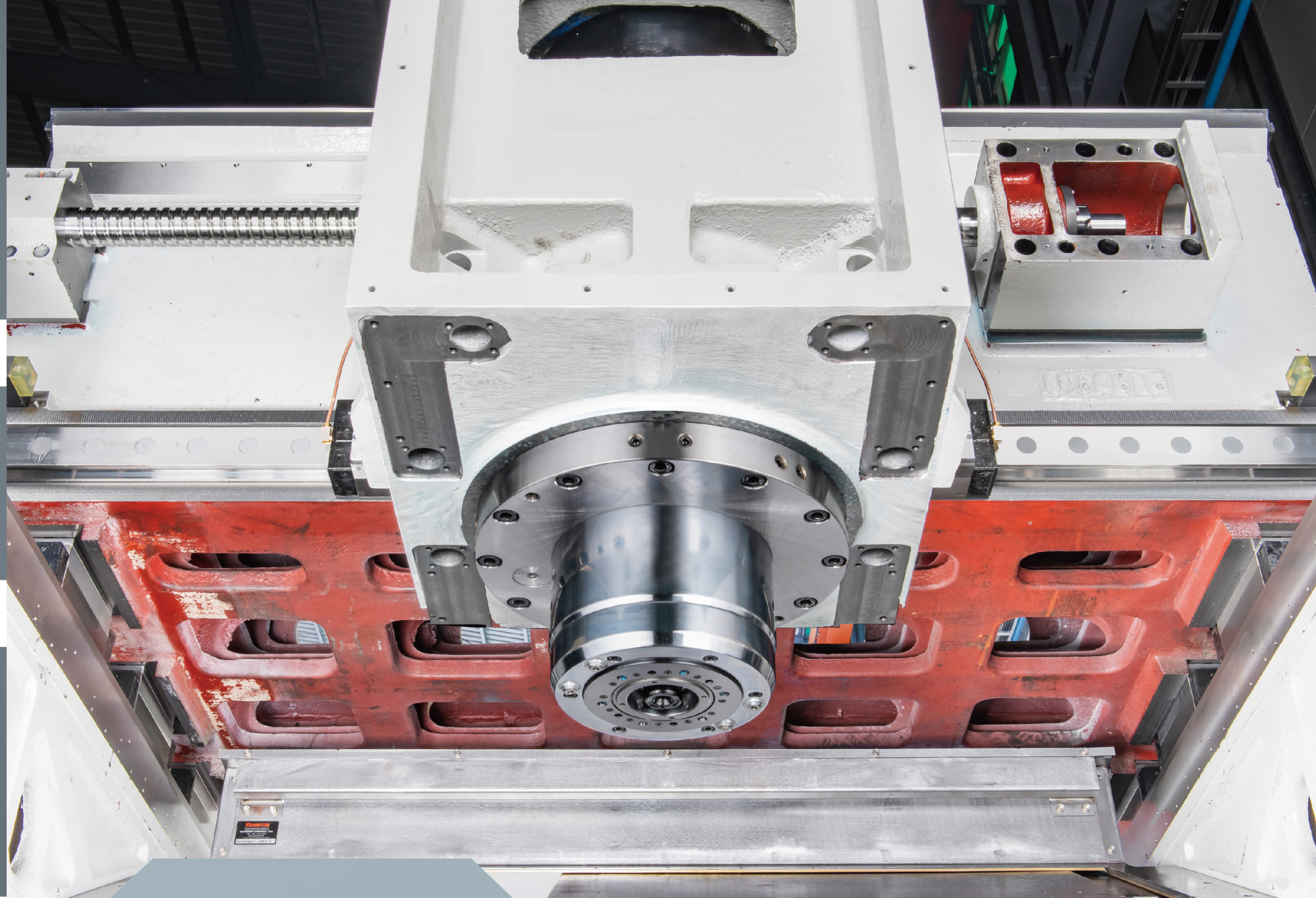


Coolant Jets Around Spindle

- The coolant jets around spindle are used to remove heat from the cutting tool and the workpiece during cutting, this ensuring high cutting accuracy.

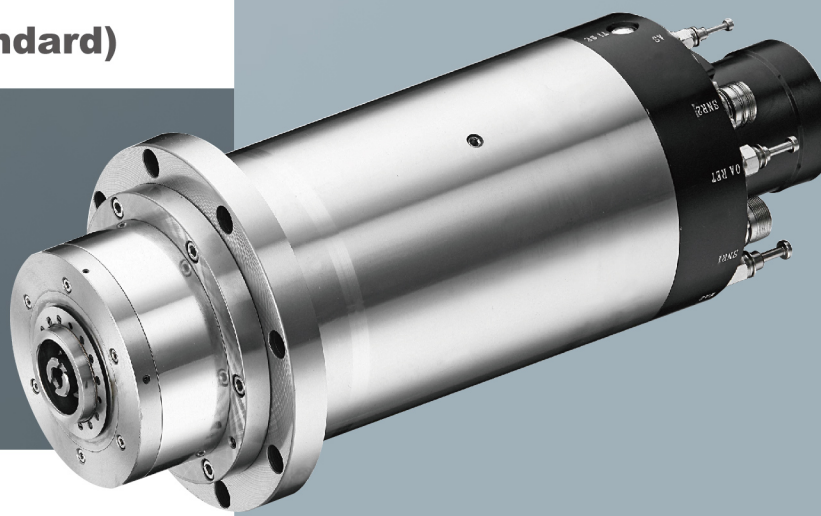
Coolant Through Spindle (Optional)

- The high pressure coolant flushes at the contact position between the cutting edge and the workpiece, and can remove the heat generated during cutting. This not only increases the machining surface accuracy and machining efficiency, but also dramatically extends the service life of the cutting tool.



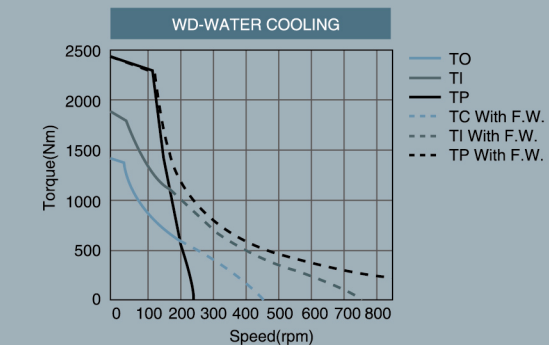
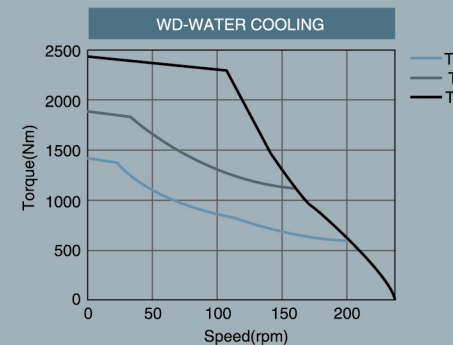
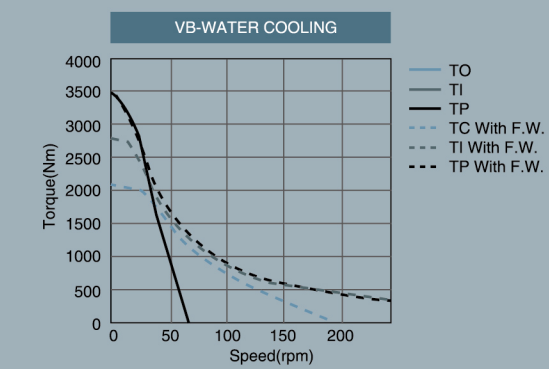
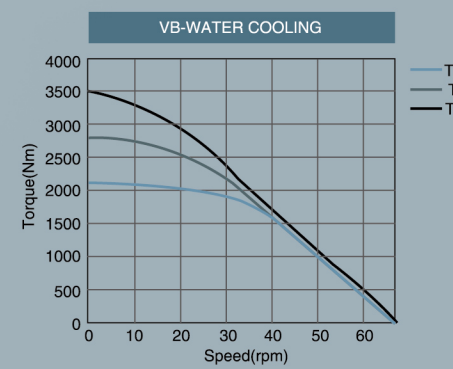
15,000 Rpm Built-in Type Spindle (Standard)

- The Manford VG-800 comes with a 15,000 RPM built-in type spindle, making the machine ideal for high speed machining with outstanding finish on machined surfaces.
- The built-in type spindle features compact structure, light weight, low vibration, and low noise.

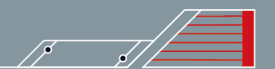


20,000 Rpm Built-in Spindle (Optional)

- This type of spindle is directly driven by built-in motor, which can eliminate the problems of backlash or vibration that normally occur on a belt-driven or gear-driven spindle.

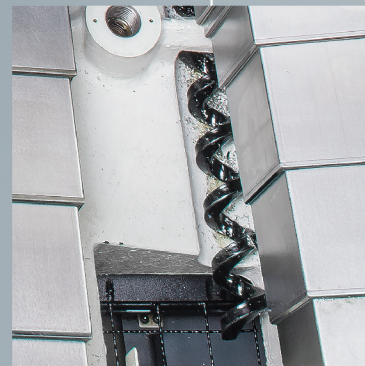


CNC CONTROLLERS



Double Chip Augers on BASE

- The double chip augers deliver chips out of machine during cutting that prevent chips from depositing themselves in the machine. Another benefit is to save time and labor cost in chip removing by the operator.



30/70 Bars Coolant Through Spindle (Optional)

- The coolant through spindle device employs powerful cutting fluid that flow through the center of the spindle for cooling the cutting tool and the workpiece. This device not only helps to upgrade machining quality, but also extends the service life of the cutting tool.

Open Type Top Guard

- The top guard of the machine can be opened, allowing the operator to use an electric hoist to load/unload the workpiece from the top of the machine.
- Manual opening of top guard is standard.
- Automatic opening of top guard is optional.

LHL Lubrication System

- With excellent penetration between mechanical parts, LHL is a great idea of maintaining machinery life, preventing the deterioration and decomposition of cutting fluid, and reduce the abrasion of machine parts. Low consumption per year and eco-friendly characteristic optimized the using experiences of LHL.

Manford VG-800 provides two types of CNC controllers to select. Heidenhain TNC-640 is standard. Siemens 840DSL is optional.



SIEMENS 840DSL

HEIDENHAIN TNC-640

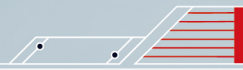
HEIDENHAIN TNC-640 is particularly suitable for 5-axis machineries. The workshop oriented and versatile control features numerous functions.

The optimized user interface of the TNC-640 gives a fast overview: various color coding, standardized table editors and smartSelect—the dialog-guided fast selection of functions—aid you at your work.

It features optimized motion control, short block processing times and special control strategies. Together with its uniform digital design and its integrated digital drive control including inverters, it enables you to reach very high machining speeds and the best possible contour accuracy—particularly when machining 3-D contours.



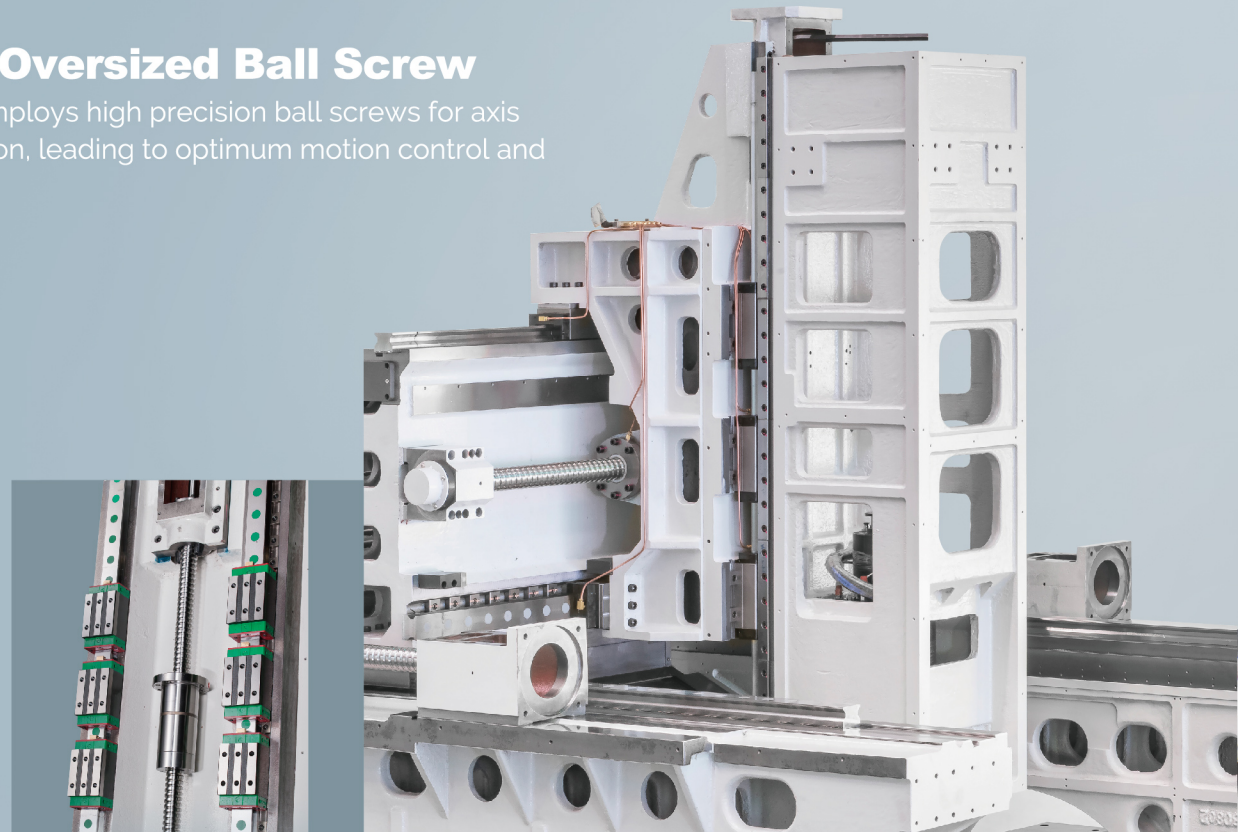
6 Blocks on Linear Ways on Column



- The column is fitted with 6 blocks that provide firm support for the spindle head. During high speed machining, the spindle head presents the highest stability.

50 mm Oversized Ball Screw

- VG 800 employs high precision ball screws for axis transmission, leading to optimum motion control and accuracy.

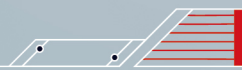


24-120 Tools Chain Type Magazine



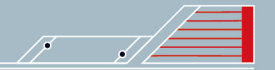
- Magazine with double tool loading capacity (48/64/96/120 tools) is available.
- The tool magazine accommodates HSK A63 tool shank as standard. Tool shanks BBT40, CAT40, and DIN40 are optional.
- Magazine rotation driven by motor is standard, and driven by servomotor is optional.

Coolant Through Ballscrew (Optional)



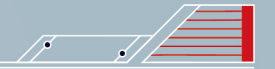
- A cooling system is available for cooling the ballscrew and bearing on the X, Y axis. This cooling device can effectively suppress thermal deformation on the ballscrews, even under heavy loads, while ensuring high positioning accuracy.
- Only nut cooling is allowed on the Z-axis.

Swiveling Rotary Table (A, C Axis)

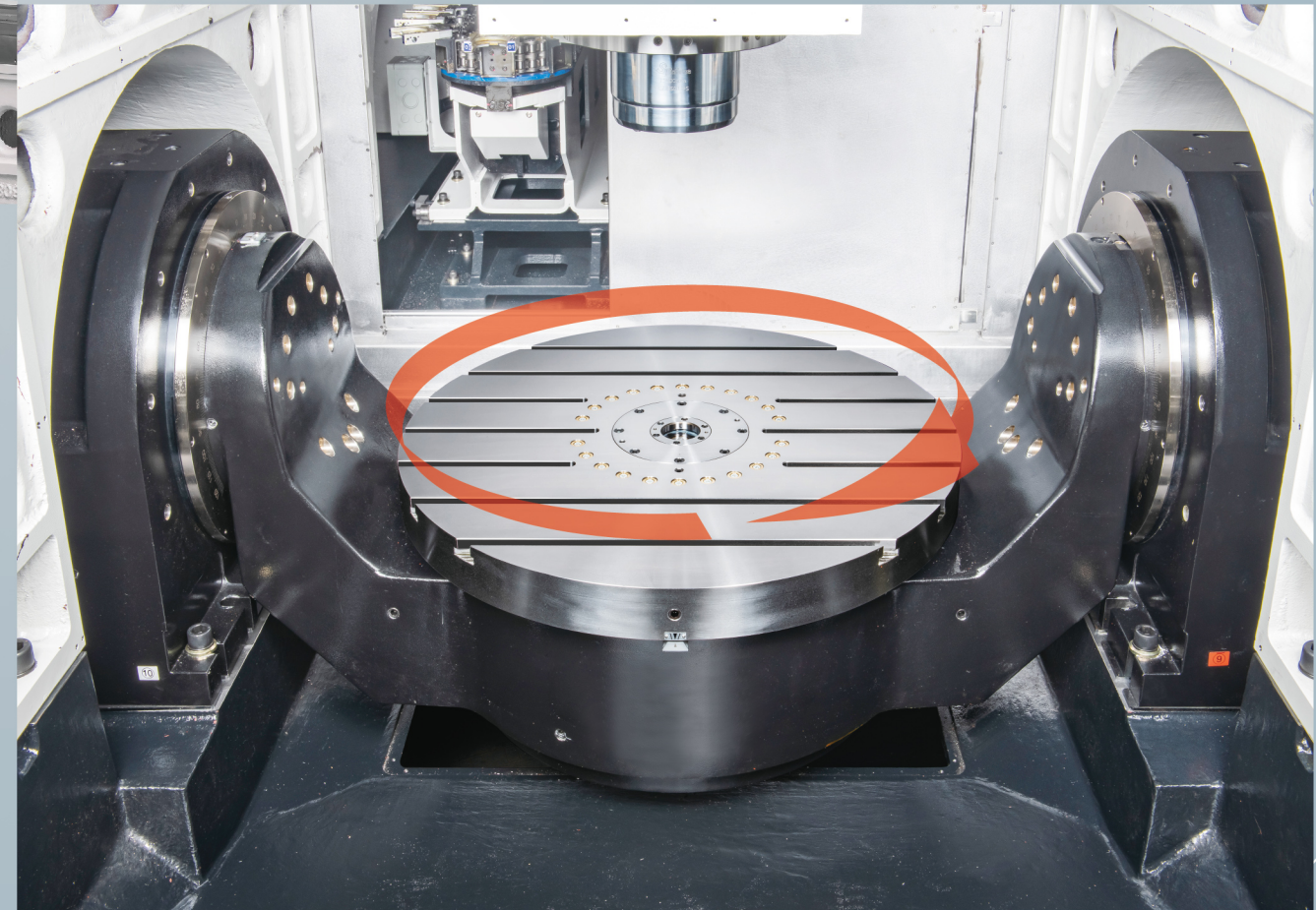


- The swiveling axis can swivel in the range of $120^\circ \sim +30^\circ$ along the A-axis.
- The rotating axis can rotate 360° along the C-axis.
- Both A and C axis are directly driven by an independent DD motor, featuring high positioning and repeatability accuracy.
- Positioning accuracy on A/C axis: 10 sec.
- Repeatability accuracy on A/C axis: 8/6 sec.

Encoders On A/C Axis



- The A & C axis on the swiveling rotary table are equipped with independent encoders, ensuring high indexing accuracy on the A & C axis.



Specifications



Model		UNIT	VG-800
Travel	X travel	mm	800
	Y travel	mm	1245 (900+345 Tool change travel)
	Z travel	mm	620
	Distance from spindle nose to table surface	mm	100 ~ 720
Work table	Work table dimension	mm	800
	Max. table load (kgs) (Level/Tilt)	kg	1000 / 500
	T-slot (No. x Slot width x Dist)	mm	7 X 14 X 100
Spindle	Spindle	rpm	15,000 (Opt 20,000)
	Spindle taper	-	Build in
	Spindle KW (S1/100% / S6/60% / S6/40%)	kW	21 / 25 / 29
	Spindle torque (S1/100% / S6/60% / S6/40%)	N-m	69.2 / 83.2 / 99.3
A axis	A axis	-	D.D.M
	Tilt degree	degree	-120° ~ +30°
	Max. Speed	rpm	50
	Minimum split angle	degree	0.001
C axis Rotary table	C axis	-	D.D.M
	Tilt degree	degree	360°
	Max. Speed	rpm	100
	Minimum split angle	degree	0.001
ATC	Tool amount	-	32T
	Taper type	-	HSK A63 (Opt BBT-40)
	Max tool dimension Partial Load / Full Load	mm	125 / 75
	Max tool length	mm	300
Feed system	Max tool weight	kg	8
	Rapid feed time X / Y / Z	m/min	48 / 48 / 48
	Cutting feed rate	mm/min	1 ~ 20000
Other	Machine dimension	mm	3,851 x 4,852 x 3,889
	Machine weight	kgs	18,000

- Specifications subject to change without prior notice.

Standard Accessories



- LHL lubrication system
- Spindle / AC axis coolant system
- Linear scale A/C axis
- Pneumatic system Airtac
- Spindle outside air spray 2 outputs
- Spindle Coolant pump
- Chain type chip conveyor
- Water gun
- Air gun
- Remote Handwheel
- Work light
- 3 Colors Alarm Light

Options Accessories



- 20,000 rpm Spindle
- Controller 840 DSL
- Tool length measurement Renishaw / BLUM/Marposs
- Work piece measurement Renishaw / Heidenhain
- CTS 30/70 bars
- Spindle outside air spray 4 outputs
- Pneumatic system - SMC / Mindman
- Linear scale XYZ axis
- Temperature Compensation

Machine Dimensions

