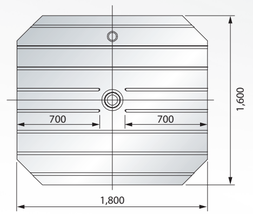
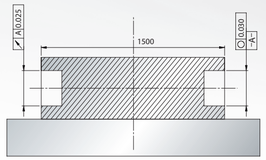
Dimensions

Table Dimensions

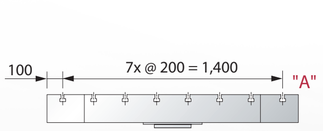


Boring Concentricity

0.025 mm / 1,500 mm



T-slot Dimensions



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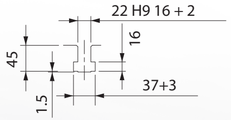
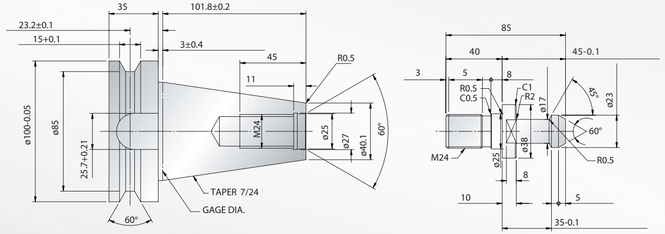


Tool Shank and Pull Stud Dimensions

BT50



(Unit : mm)

THE ULTIMATE MACHINING POWER

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ISO 9001 ISO 14001 CE

AGENT

A-BL-EN-201502

THE ULTIMATE MACHINING POWER

BL SERIES

High Rigidity Horizontal Boring Mills

High Rigidity Horizontal Boring Mills

Introducing AWEA with mature manufacturing abilities and advanced technology skills. The BL series combine high rigidity structure, heavy duty load capacity rotary table and a high torque spindle (BL-S) or high speed spindle (BL-FM) along with our professional assembly and hand scraping skills. BL series can easily overcome most stringent requirements of not only deep hole boring but high precision mold milling which meet your various needs for today and the future.

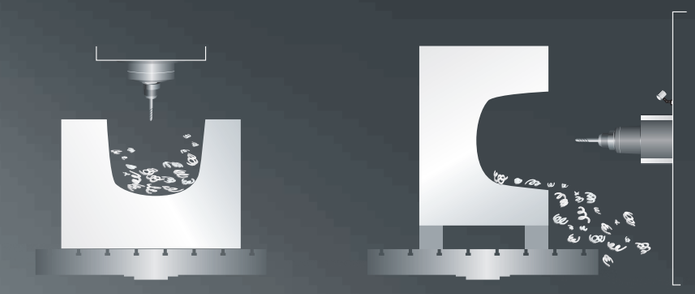
Travel (X x Y x Z) mm		Max. parts size (diameter x height) mm
BL-2018	2,000 x 1,800 x 1,300	1,600 x 1,300
BL-3018	3,000 x 1,800 x 1,300	
BL-4018	4,000 x 1,800 x 1,300	
BL-2024	2,000 x 2,400 x 1,300	
BL-3024	3,000 x 2,400 x 1,300	
BL-4024	4,000 x 2,400 x 1,300	

BL Series 2018 / 3018 / 4018 / 2024 / 3024 / 4024

High Rigidity Horizontal Boring Mills

With years of innovation and manufacturing experience on horizontal boring mills, combined with the latest machining center technology, to maximize the mechanical performance and the brand image as a professional boring mills manufacturer.

- Modular spindle design, BL-S quill type 2-steps gear box spindle continuous torque can be 1,308 N-m ; BL-FM ram type built-in spindle speed up to 8,000 rpm
- High damping, low friction oil floating design working table provide maximum table load capacity at 15,000 kg (Opt.)
- Balanced arrangement of tool magazine and headstock on the column to ensure excellent positioning accuracy



Vertical machining center **Horizontal boring mills**

- Horizontal boring mills provide better chips removal ability

BL Series 2018 / 3018 / 4018 / 2024 / 3024 / 4024

High Rigidity Horizontal Boring Mills

BL series' precision quality and superior performance are designed to meet aerospace industry, transportation equipment, energy industry large parts machining and mold machining needs.

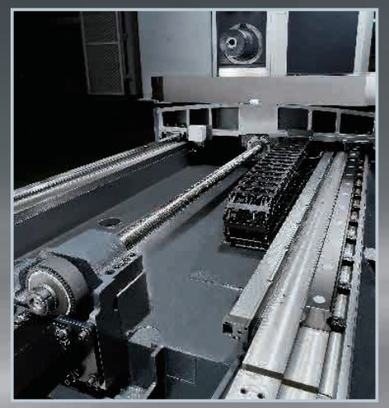
- Enclosure splash guard as option can avoid chips and coolant splash out of machine to provide safe and clean working environment.
- Standard fully enclosed operator room moves along with column to protect operator against hazard and the ease of use.
- To ensure the machine ultimate performance and high quality, every machines should pass heavy cutting test before shipping.

BL Series 2018 / 3018 / 4018 / 2024 / 3024 / 4024

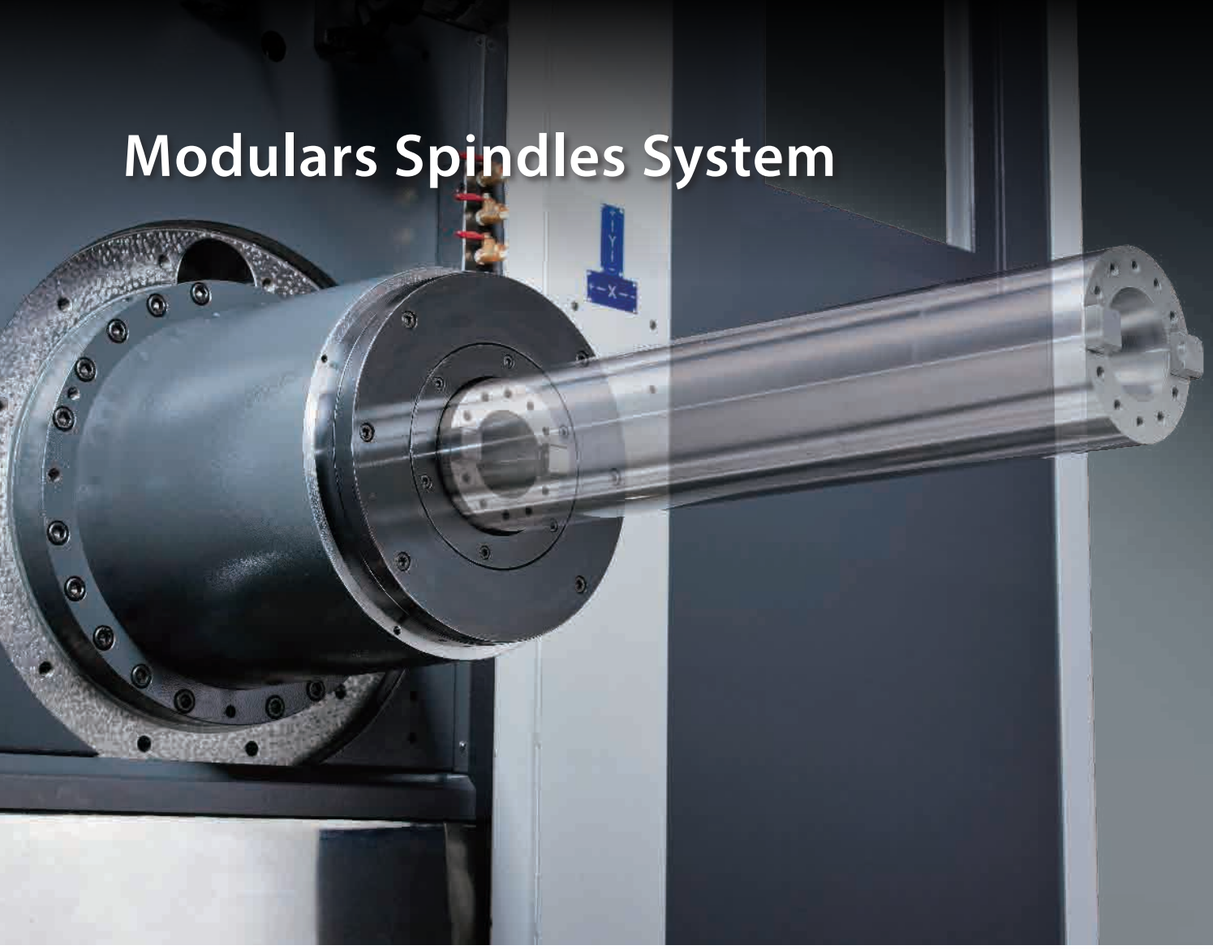
High Rigidity Horizontal Boring Mills

High rigidity structure

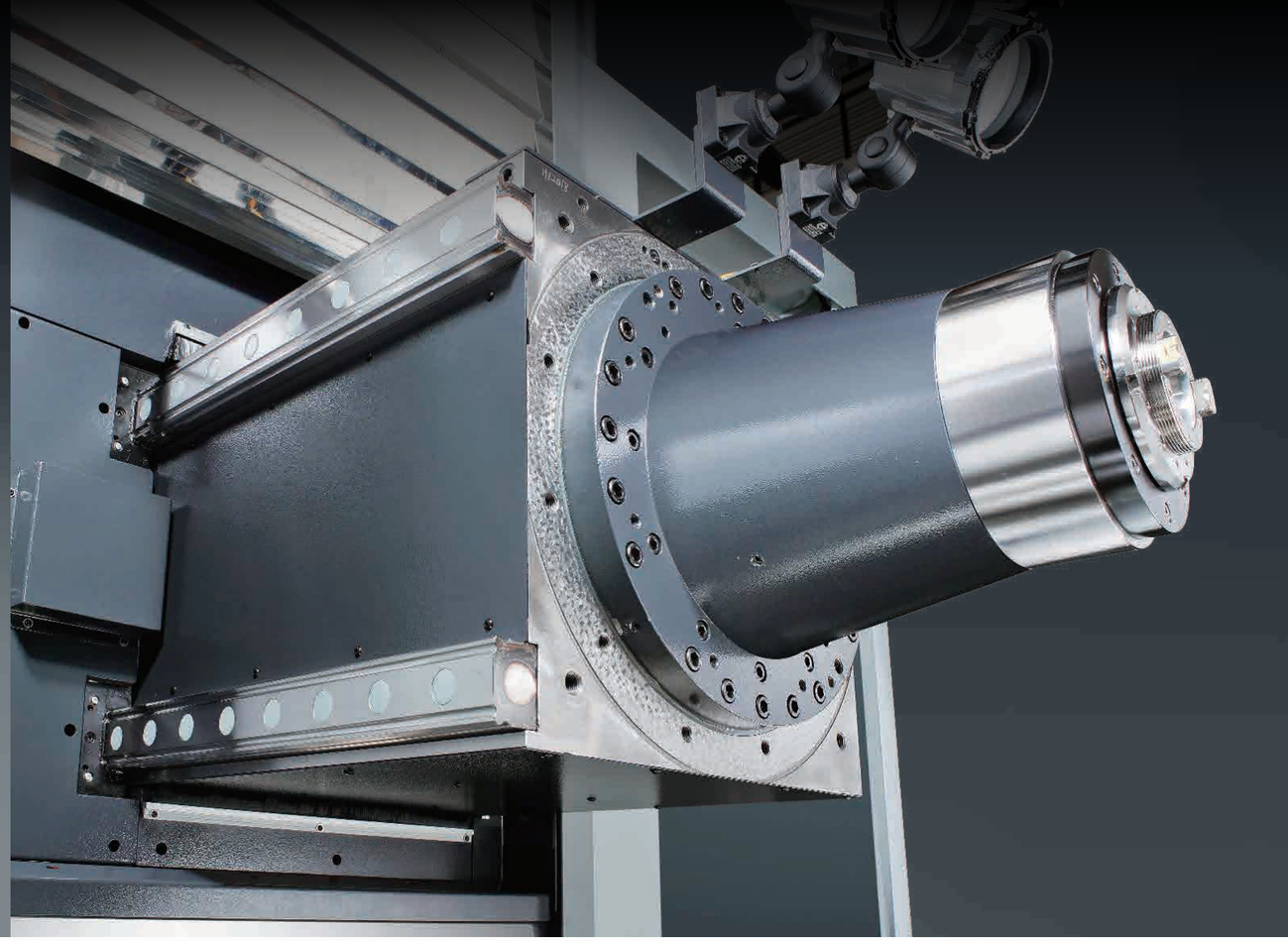
- Through Finite Element Method (FEM) analysis, light-weighted structure yet optimized design are achieved to ensure best machine rigidity.
- The heavily ribbed bed, column, table, head stock and saddle are all made by "MEEHANITE" casting, a fully annealing process and aging have been implemented to ensure best stability for long term usage.
- High precision and heavy-duty feed system.
  - 3 axes are equipped with high precision ball screw which is direct driven by high torque FANUC αi series motor, fast speed can reach up to 12 m/min.
  - 3 axes feed system is adopted with full travel support high rigidity linear guide ways to fulfill heavy cutting requirement.
  - HEIDENHAIN linear scale with resolution up to 1 μm as standard on 3 axes, assuring positioning accuracy at $\pm$0.010 mm / full travel (JIS).



- Two augers and caterpillar type chip conveyor as standard to ensure chips removal efficiency and cooling effect.



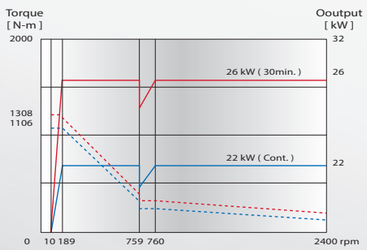
Modulars Spindles System



BL-S series quill type spindle Parts processing

- Quill diameter Ø120 mm, W-axis travel can extend to 600 mm.
- Max. spindle speed at 2,400 rpm with 2-step gear box which can provide maximum torque output at 1,308 N-m under 189 rpm.
- W-axis feed system combined ball screw with linear guide ways, W-axis extension can be determined according to different kinds of processing requirement.
- All series is equipped with a spindle oil cooler and cooling jacket, the temperature-regulated volume of cooling oil automatically maintain the temperature of bearings, motor, and gears within precisely defined range which effectively reduce the spindle thermal deformation thus achieving higher machining accuracy.

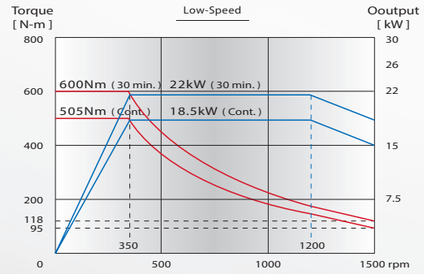
2,400 rpm Gear Spindle



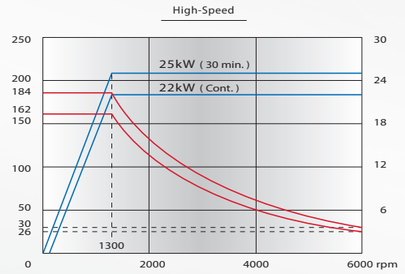
BL-FM series ram type spindle Mold processing

- Strong ram with cross section at 480 x 470 mm, W-axis travel can extend to 600 mm
- Max. spindle speed at 6,000 rpm (8,000 rpm as option) with built-in spindle which can provide maximum torque output at 600 N-m under 350 rpm.
- W-axis feed system combined ball screw with linear guide ways, W-axis extension can be determined according to different kinds of processing requirement.

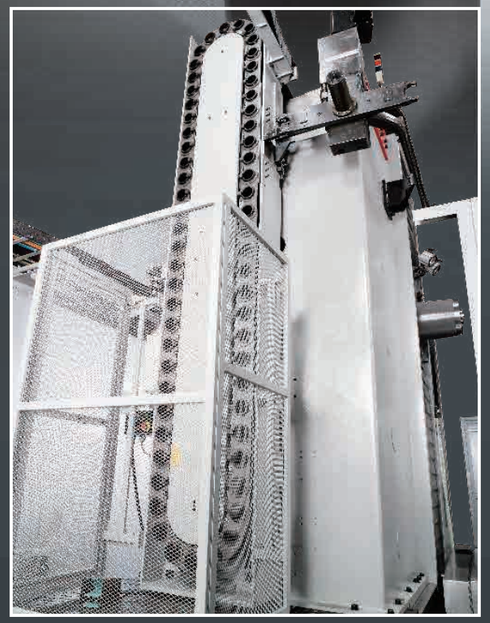
6,000 rpm Built-in Splinle



6,000 rpm Built-in Splinle



High Reliability Tool Exchange System



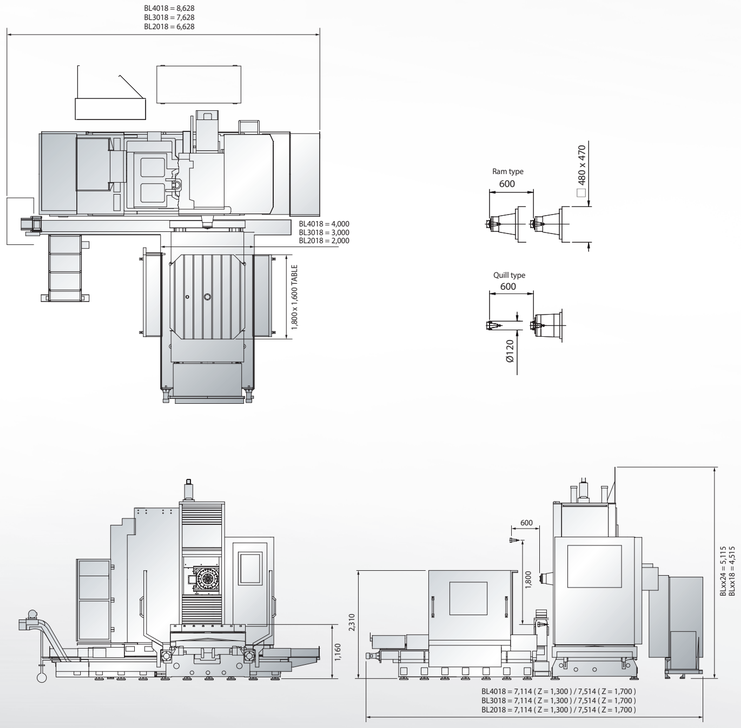
- Standard 40T ATC system, 60 tools magazine as option.
- Max. tool load at 25 kg, maximum tool magazine load at 600 kg which can meet different kinds of boring and milling condition.

High Performance Rotary Table

- High damping, low friction oil floating design rotary table along with high rigidity fully support base provide maximum table load capacity at 12,000 kg (15,000 kg as option).
- B-axis utilizes a closed loop feedback rotary encoder system achieves indexing resolution at 0.001˚. Simultaneously, the disc type holing mechanism provides excellent and stable positioning accuracy.

Dimensions

Machine Dimension



(Unit : mm)

		BL-2018S	BL-3018S	BL-4018S	BL-2018FM	BL-3018FM	BL-4018FM
Specifications							
X-axis travel	mm	2,000	3,000	4,000	2,000	3,000	4,000
Y-axis travel	mm	1,800			1,800		
Z-axis travel	mm	1,300			1,300		
W-axis travel	mm	600			600		
Distance from spindle nose to table center	mm	885			885		
Working Table							
Table size (X x Y)	mm	1,600 x 1,800			1,600 x 1,800		
Table load capacity	kg	12,000			12,000		
Spindle							
Boring spindle size	mm	Quill with Ø120			Ram 480 x 470 section		
Spindle motor (cont. / 30 min.)	kW (HP)	22 / 26 (30 / 35)			22 / 26 (30 / 35)		
Spindle speed	rpm	2,400			6,000		
Spindle torque	Nm	1,308			600		
Spindle taper		BT50			BT50		
Feed Rate							
X / Y / Z axes rapid feed rate	mm/min	12,000			12,000		
W-axis rapid feed rate	mm/min	5,000			5,000		
Cutting feed rate	mm/min	1 ~ 5,000			1 ~ 5,000		
Tool Magazine							
Tool magazine capacity		40T			40T		
Max. tool diameter / adj. pocket empty	mm	Ø125 / Ø250			Ø125 / Ø250		
Max. tool length (from gauge line)	mm	400			400		
Max. tool weight	kg	25			25		
Accuracy							
Positioning accuracy (JIS B 6338)	mm	± 0.01 / Full Travel			± 0.01 / Full Travel		
Positioning accuracy (VDI 3441) / Full Travel	mm	P= 0.016	P= 0.020	P= 0.025	P= 0.016	P= 0.020	P= 0.025
Repeatability (JIS B 6338)	mm	± 0.003			± 0.003		
Repeatability (VDI 3441)	mm	Ps= 0.012	Ps= 0.015	Ps= 0.018	Ps= 0.012	Ps= 0.015	Ps= 0.018
General							
Power requirement		70 kVA, 220±10%, 3 phase, 50/60 Hz			70 kVA, 220/380~415 ±10%, 3 phase, 50/60 Hz		
Pneumatic pressure requirement (min.)	kg/cm²	5 ~ 8 (5)			5 ~ 8 (5)		
Lubrication oil tank capacity	liter	4.6			4.6		
Coolant tank capacity (pump)	liter	400	480	560	400	480	560
Machine weight	kg	30,000	34,000	38,000	31,000	35,000	39,000
Machine hight	mm	4,515			4,515		

Standard accessories

- Spindle cooling system
- X / Y / Z linear scale
- Hydraulic system (w/o air resource and external pipe)
- Moving stand on X axis
- Tool box
- Heat exchanger for electrical cabinet
- Foot switch for tool clamping (at operation side)
- RS-232 interface
- Twin hydraulic counter weight balance
- Centralized automatic lubricating system
- Coolant system with pump and tank
- Caterpillar type chip conveyor and bucket
- Ladder
- Movable operation cabinet
- Alarm light
- Operation & maintenance manual
- 40 tools magazine (w/o tools)
- Recycling lubricating oil collector
- Air gun
- Foundation bolt kit
- 0.001° indexing rotary table
- MPG remote handwheel
- 2-piece splash guard

		BL-2024S	BL-3024S	BL-4024S	BL-2024FM	BL-3024FM	BL-4024FM
Specifications							
X-axis travel	mm	2,000	3,000	4,000	2,000	3,000	4,000
Y-axis travel	mm	2,400			2,400		
Z-axis travel	mm	1,300			1,300		
W-axis travel	mm	600			600		
Distance from spindle nose to table center	mm	885			885		
Working Table							
Table size (X x Y)	mm	1,600 x 1,800			1,600 x 1,800		
Table load capacity	kg	12,000			12,000		
Spindle							
Boring spindle size	mm	Quill with Ø120			Ram 480 x 470 section		
Spindle motor (cont. / 30 min.)	kW (HP)	22 / 26 (30 / 35)			22 / 26 (30 / 35)		
Spindle speed	rpm	2,400			6,000		
Spindle torque	Nm	1,308			600		
Spindle taper		BT50			BT50		
Feed Rate							
X / Y / Z axes rapid feed rate	mm/min	12,000			12,000		
W-axis rapid feed rate	mm/min	5,000			5,000		
Cutting feed rate	mm/min	1 ~ 5,000			1 ~ 5,000		
Tool Magazine							
Tool magazine capacity		40T			40T		
Max. tool diameter / adj. pocket empty	mm	Ø125 / Ø250			Ø125 / Ø250		
Max. tool length (from gauge line)	mm	400			400		
Max. tool weight	kg	25			25		
Accuracy							
Positioning accuracy (JIS B 6338)	mm	± 0.01 / Full Travel			± 0.01 / Full Travel		
Positioning accuracy (VDI 3441) / Full Travel	mm	P= 0.016	P= 0.020	P= 0.025	P= 0.016	P= 0.020	P= 0.025
Repeatability (JIS B 6338)	mm	± 0.003			± 0.003		
Repeatability (VDI 3441)	mm	Ps= 0.012	Ps= 0.015	Ps= 0.018	Ps= 0.012	Ps= 0.015	Ps= 0.018
General							
Power requirement		70 kVA, 220±10%, 3 phase, 50/60 Hz			70 kVA, 220/380~415 ±10%, 3 phase, 50/60 Hz		
Pneumatic pressure requirement (min.)	kg/cm²	5 ~ 8 (5)			5 ~ 8 (5)		
Lubrication oil tank capacity	liter	4.6			4.6		
Coolant tank capacity (pump)	liter	400	480	560	400	480	560
Machine weight	kg	31,500	35,500	39,500	32,500	36,500	40,500
Machine hight	mm	5,115			5,115		

Specifications are subject to change without notice.

Optional accessories

- Full splash guard
- 8,000 rpm built-in spindle (FM)
- Coolant through spindle (with coolant tank)
- 60 tools magazine
- Y-axis travel extend to 2,400 mm
- Z-axis travel extend to 1,700 mm
- Additional table for high table load capacity
- Air conditioner for electrical cabinet