



Quality & Productivity Specialist

QUALITY ASSURANCE

Far East Machinery has standardized the processing and testing procedures for each specific model based on the machine characteristics, in order to guarantee quality and operational reliability. Assembly operators will use the fully featured auto-inspection function to test and record the system.

All machines manufactured by Far East Machinery conform to international testing standards.

All machines are QA tested with precision instruments before shipment to guarantee quality.

All machines manufactured by Far East Machinery confirm the international testing standards.



FAR EAST MACHINERY CO.,LTD

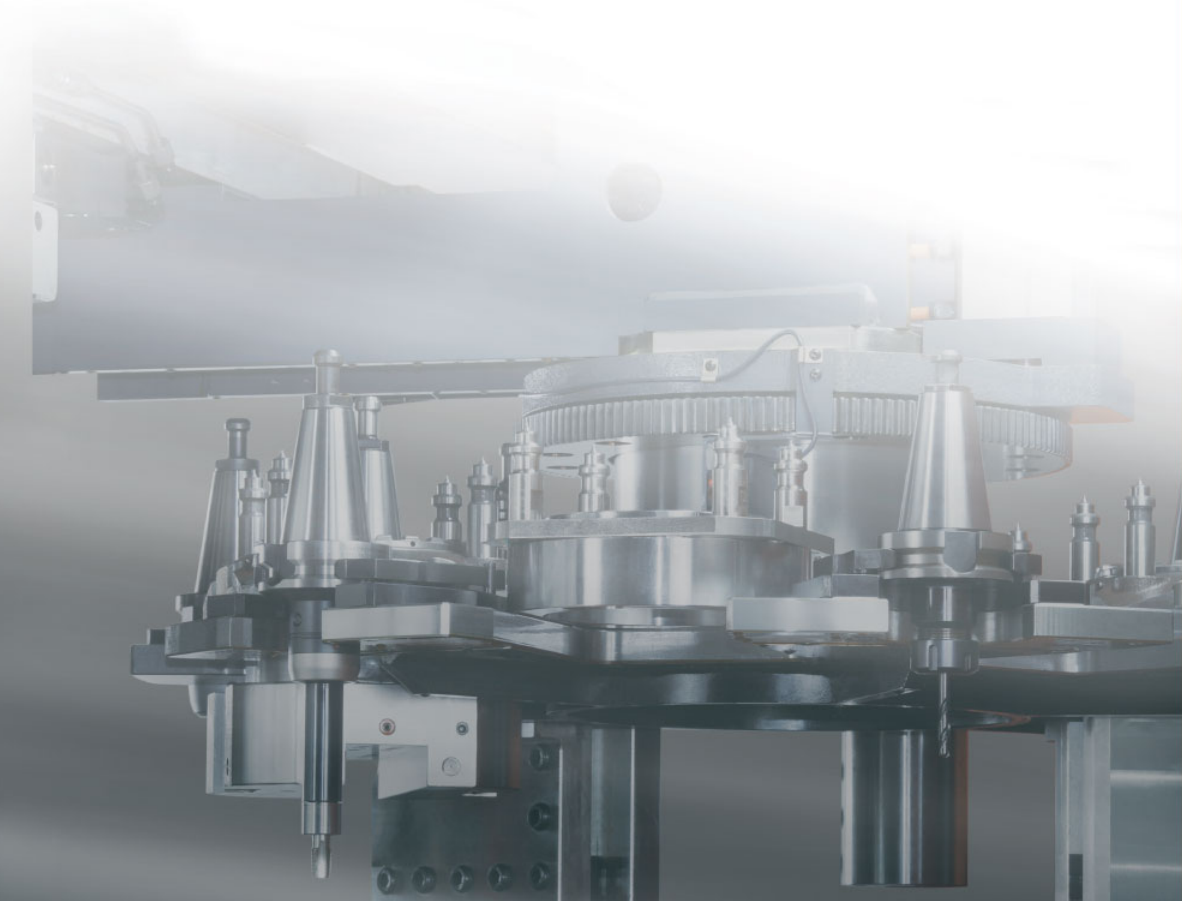
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Beyond Today's Possibilities, No Limits



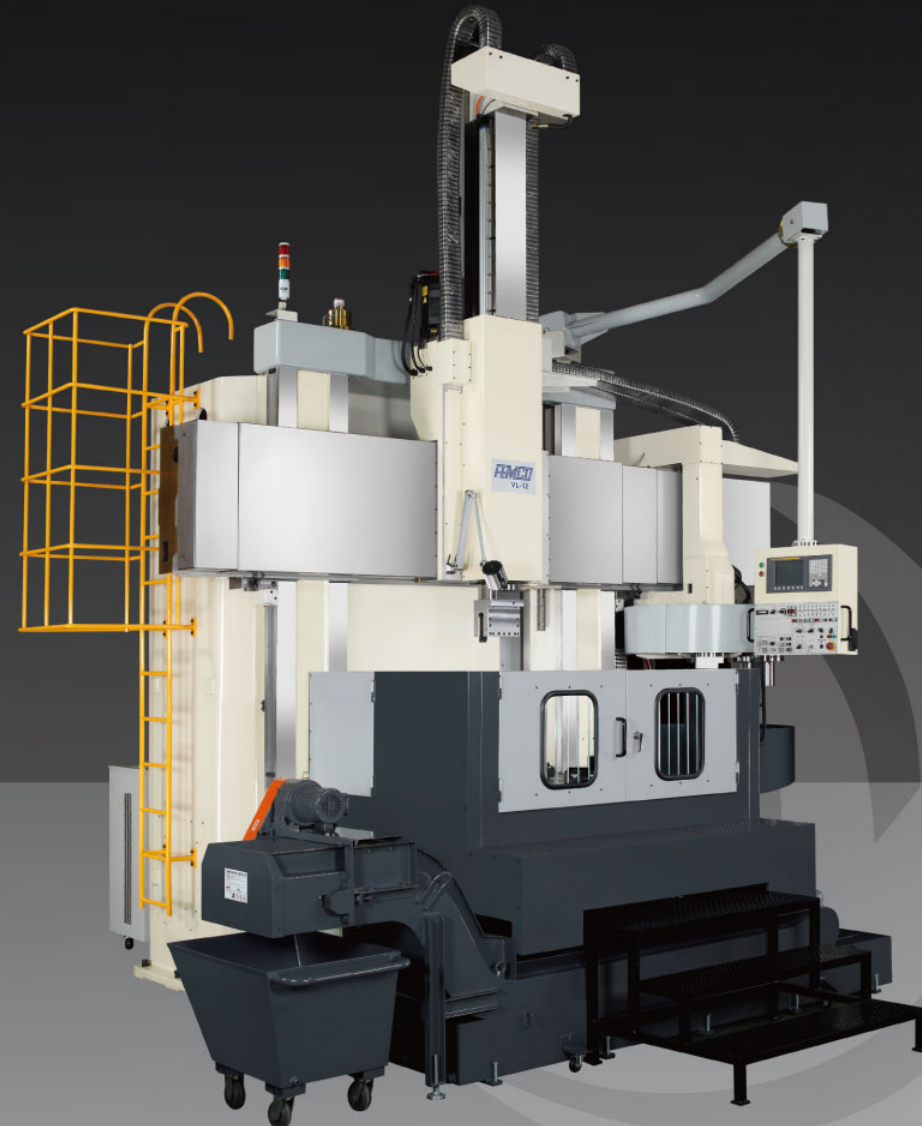
CNC VERTICAL LATHE

www.femco.com.tw

VL-12

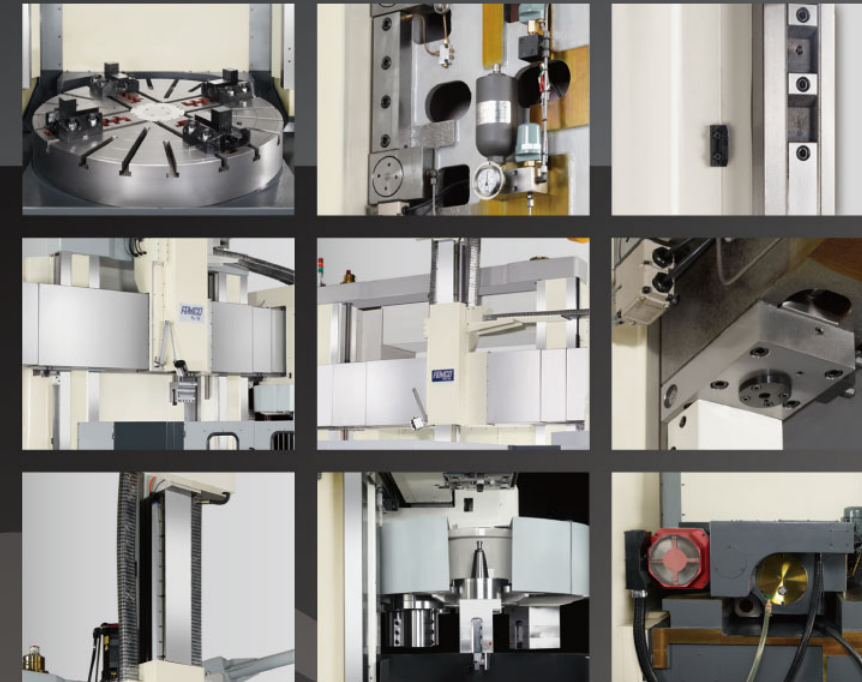
CNC VERTICAL LATHE

HIGH-RIGIDITY, HEAVY-DUTY CUTTING MODEL



VL-12 Specifications:

- Maximum turning height: 1,100mm
- Maximum table loading: 5,000kg
- 37/45kW spindle motor
- Maximum table rotating speed : 280rpm
- X-axis rapid traverse rate 10,000mm/min
- Z-axis rapid traverse rate 10,000mm/min
- Cross rail moving speed: 400mm/min



Worktable

The worktable is made of high quality Meehanite cast iron. The supporting base is made of ductile iron casting that is designed with an embedded locking safety mechanism that prevents the clamping base from detaching during operation. The rotating worktable utilizes a high load capacity crossed roller bearing for rigid and precise machining.

Crossrail Hydraulic Clamping and Pressure Storage Device

This device will not be influenced by a loss of power. When a loss of power occurs, the pressure storage device will provide the required pressure for the crossrail hydraulic system to ensure positioning, clamping functioning well.

Double Precision Positioned Rack

The one-piece grinding dual racks ensure the flatness between the two positioning hooks of the crossrail and the engaging surfaces of the racks and provide the levelness required by the crossrail. It can also meet the same requirement of levelness to secure the perpendicularity between sliding columns and the horizontal line of the crossrail at any arbitrarily selected operating height of the crossrail (ascending and descending movement can be performed in a step of 100mm).

Crossrail

The crossrail is made of Meehanite cast iron. The surface of the guide ways are heat-treated for hardness and tensile strength. The saddle is treated with Turcite-B for smooth and precise movement of the crossrail.

Vertical Columns

Double column design is built with two heavy columns. Each column features hardened box guide ways for rigid and precise machining.

Crossrail Positioning Hooks and Mechanical Anti Fall-off Device

When the hooks are positioned, the anti fall-off device is also compulsively activated without any interference from a loss of power to secure the positioning accuracy of the crossrail.

Closed-Loop Feedback Control

To avoid the influence due to temperature difference or the rigidity of the transmission system, linear scales for X-axis and Z-axis can be adopted to build up closed-loop feedback control, which ensures the stability of processing accuracy for a long operating

Automatic Tool Changer

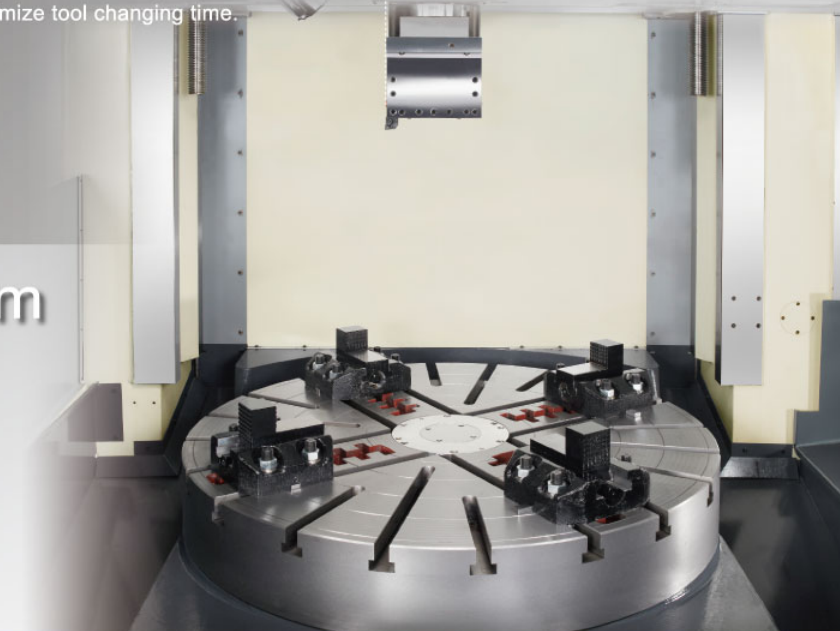
The machine features a 8 tool BT50 automatic tool changer. Tool changer is designed for bi-directional movement to minimize tool changing time.

Spindle motor

The high performance spindle motor is capable of producing high torque and has a maximum power output of 45kW.

RAM

With the combination of square section ram and movable crossrail, it enables the achievement of extremely high rigidness during deep hole machining.



VL-25

CNC VERTICAL LATHE

HEAVY-LOAD, LARGE-SIZE PROFESSIONAL MACHINING MODEL



VL-25 Specifications:

- Maximum turning height: 1,800mm
- Maximum table loading: 20,000kg
- 37/45kW spindle motor
- Maximum table rotating speed : 160rpm
- X-axis rapid traverse rate 8,000mm/min
- Z-axis rapid traverse rate 8,000mm/min
- Cross rail moving speed: 400mm/min



Worktable with high loading capacity

The maximum allowable load of the worktable is 20 tons with a diameter of 2,700mm and it utilizes high-rigidity, high-precision crossed roller bearing with proper preload that is capable of resisting cutting load from all directions.

High Rigidity Dual Vertical Columns

The columns are constructed of a box structure, which has extremely high rigidity, to form a door-shaped structure with left and right columns. They can improve the accuracy and the rigidity during processing.

Double Precision Positioned Rack

The one-piece grinding dual racks ensure the flatness between the two positioning hooks of the crossrail and the engaging surfaces of the racks and provide the levelness required by the crossrail. It can also meet the same requirement of levelness to secure the perpendicularity between sliding columns and the horizontal line of the crossrail at any arbitrarily selected operating height of the crossrail (ascending and descending movement can be performed in a step of 100mm).

Crossrail

The crossrail is made of Meehanite cast iron. The surface of the guide ways are heat-treated for hardness and tensile strength. The saddle is treated with Turcite-B for smooth and precise movement of the crossrail.

Multiple Table Windows

The multi-angle table windows design eliminates blind corners. The operator position can be changed as the processing status can be seen from four directions.

Crossrail Positioning Hooks and Mechanical Anti Fall-off Device

When the hooks are positioned, the anti fall-off device is also compulsively activated without any interference from a loss of power to secure the positioning accuracy of the crossrail.

Closed-Loop Feedback Control

To avoid the influence due to temperature difference or the rigidity of the transmission system, linear scales for X-axis and Z-axis can be adopted to build up closed-loop feedback control, which ensures the stability of processing accuracy for a long operating

Cooling System

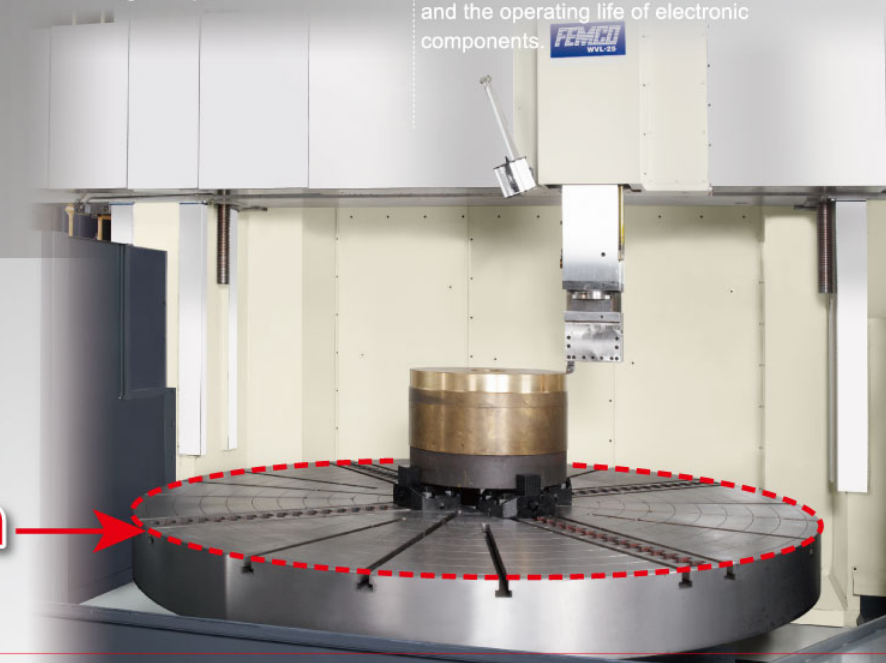
This system provides constant temperature operation inside electrical cabinet. Steady controlling performance can be maintained even under high temperatures.

Electrical Cabinet

A heat exchanger is embedded within this electric circuit control panel, which can maintain a constant temperature in any condition to ensure the sensitivities of control and the operating life of electronic components.

Designed Specifically for Large and Heavy-duty Workpiece

Capable of cutting diameter up to **3000mm**



NVL-12/12M/16M

CNC VERTICAL LATHE

HEAVY-LOAD, LARGE-SIZE PROFESSIONAL MACHINING MODEL

NVL-12 / 12M / 16M Specifications:

- Maximum turning height: 1,300mm / 1600mm
- Maximum table loading: 8,000kg / 10000kg
- 37/45kW spindle motor
- Maximum table rotating speed : 280rpm / 350rpm / 320rpm
- X-axis rapid traverse rate 20,000mm/min
- Z-axis rapid traverse rate 20,000mm/min
- Spindle rotating speed : 40-3,000mm
- Cross rail moving speed: 480mm/min
- Spindle motor power : 15/18.5kw



※ The markings and icons on the machine are only for reference.
The actual appearance should be based on the in-situ condition.



Unique drive Mechanism of Worktable

The patented design of worktable's drive mechanism delivers the elimination of backlash by PLC system. Using single motor to drive the table saves the time-switching between turning and milling processings. Besides, the worktable can be precisely positioned and fixed at any angle for continuous contouring in milling

Ergonomics Design

Ergonomic design - Reduced the height of the table to reach and adjust the workpiece easier, and save time of uploading/offloading.

Brake Clamping Mechanism

The float-type brake mechanism will not influence the position accuracy of the worktable when clamping and its clamping function will not be influenced by temperature rise.

Unique RAM Exchange Interface Design

The RAM has three special features. First, the unique interface design enables automatic tools exchange. Second, the built-in power tools provide milling function. Third, the precision indexed positioning facilitates wide milling and turning applications. Such characteristics can keep free of cutting force applying on bearing, thus prolonging the bearing lifespan.

Tool Station

Tool stations has the capacity for 6 positions (right-angle milling head and turning tool head) and 12 positions(power tool head). Combining with RAM can achieve auto tool change function.

RAM

The dimensions of square cross-sectional ram are 230mmx230mm with Z-axis travel of 1,000mm. With the vertically moving crossrail, the ram can perform all kinds of deep hole boring.

Fully Covered Saddle

This model features a fully enclosed hydrostatic system with artificial granite casting. This reduces vibration during operation and increases precision and cutting efficiency while machining.

Multi-functional Processing

Besides automatic exchange between tool seats for inner and outer machining, the NVL-12M RAM is also capable of performing milling, drilling, threading, boring, grinding and automatic exchange of right-angle milling heads. This multi-function machining center delivers the faster and more efficient machining processes. Both RAM and right-angle milling head can equipped with coolant-through-outside tool or coolant- through-spindle tool.

Lathing and Milling Spindle Motor

The maximum output power of milling spindle motor is 45kW. This motor has the characteristics of high torque output power, which is suitable for processing workpieces of all different shapes.

Worktable of C-axis can perform non-backlash for accurate positioning and clamping at any angle or continuous profile machining.



VL-25M

CNC VERTICAL LATHE

HEAVY-LOAD, LARGE-SIZE PROFESSIONAL MACHINING MODEL



VL-25M Specifications:

- Maximum turning height: 1,800mm
- Maximum table loading: 20,000kg
- 37/45kW spindle motor
- Maximum table rotating speed : 160rpm
- X-axis rapid traverse rate 20,000mm/min
- Z-axis rapid traverse rate 20,000mm/min
- Spindle rotating speed : 40-3,000mm
- Cross rail moving speed: 400mm/min
- Spindle motor power : 15/18.5kw



Unique drive Mechanism of Worktable

The patented design of worktable's drive mechanism delivers the elimination of backlash by PLC system. Using single motor to drive the table saves the time-switching between turning and milling processings. Besides, the worktable can be precisely positioned and fixed at any angle for continuous contouring in milling.

Worktable with high loading capacity

The maximum allowable load of the worktable is 20 tons with a diameter of 2,700mm and it utilizes high-rigidity, high-precision crossed roller bearing with proper preload that is capable of resisting cutting load from all directions.

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The float-type brake mechanism will not influence the position accuracy of the worktable when clamping and its clamping function will not be influenced by temperature rise.

Unique RAM Exchange Interface Design

The RAM has three special features. First, the unique interface design enables automatic tools exchange. Second, the built-in power tools provide milling function. Third, the precision indexed positioning facilitates wide milling and turning applications. Such characteristics can keep free of cutting force applying on bearing, thus prolonging the bearing lifespan.milling.

Tool Station

Tool stations has the capacity for 6 positions (right-angle milling head and turning tool head) and 12 positions(power tool head). Combining with RAM can achieve auto tool change function.

RAM

The dimensions of square cross-sectional ram are 230mmx230mm with Z-axis travel of 1,200mm. With the vertically moving crossrail, the ram can perform all kinds of deep hole boring.

Fully Covered Saddle

This model features a fully enclosed hydrostatic system with artificial granite casting. This reduces vibration during operation and increases precision and cutting efficiency while machining.

High Rigidity Dual Vertical Columns

The columns are constructed of box structure, which has extremely high rigidity, to form a door-shape structure with left and right columns. They can improve the accuracy and the rigidity during milling.

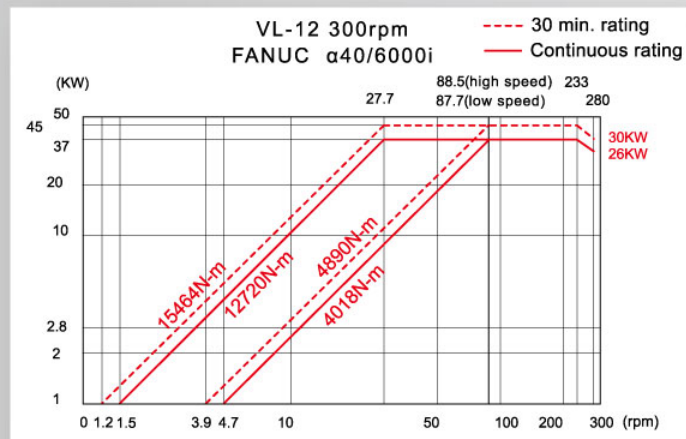
Lathing and Milling Spindle Motor

The maximum output power of milling spindle motor is 45kW. This motor has the characteristics of high torque output power, which is suitable for processing workpieces of all different shapes.

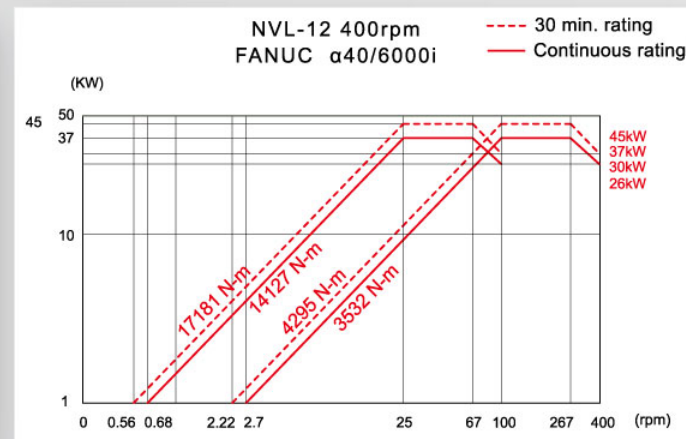
The unique rotational turret can perform inner and outer diametrical turning and is capable of installing up to 6 outer diamertical tools and be quickly changed tools at the site where the ram is located.



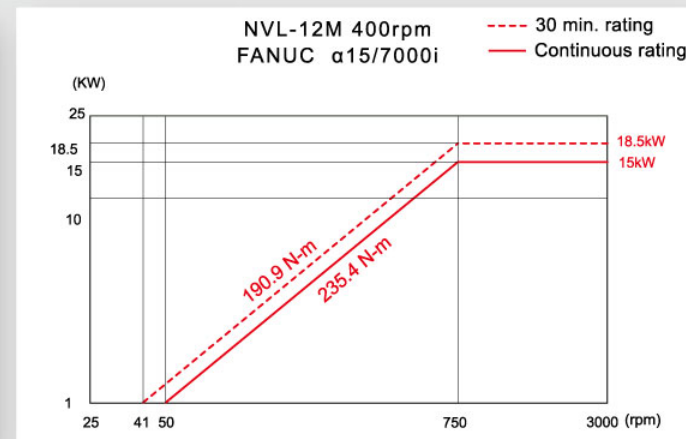
Chart of Spindle Torque Output



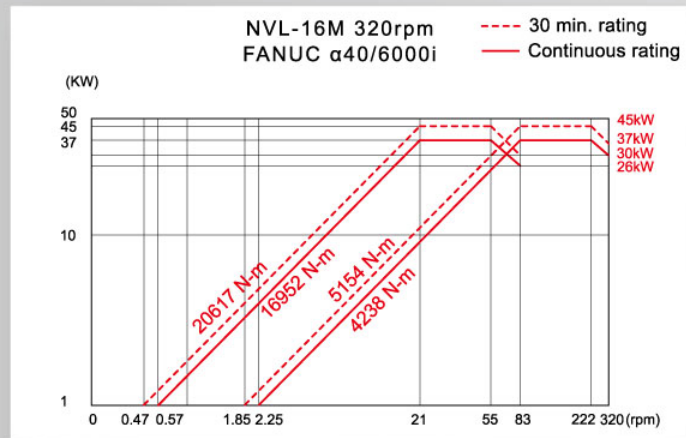
VL -12



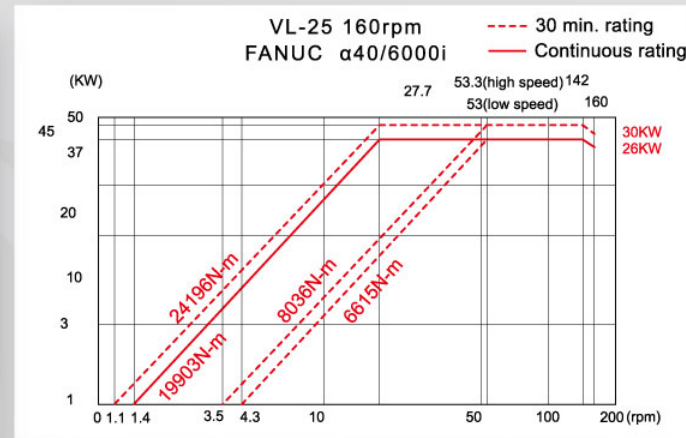
NVL -12



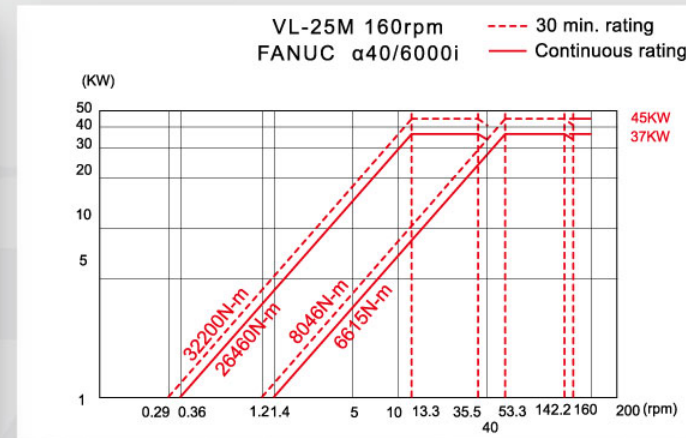
NVL -12M



NVL -16M

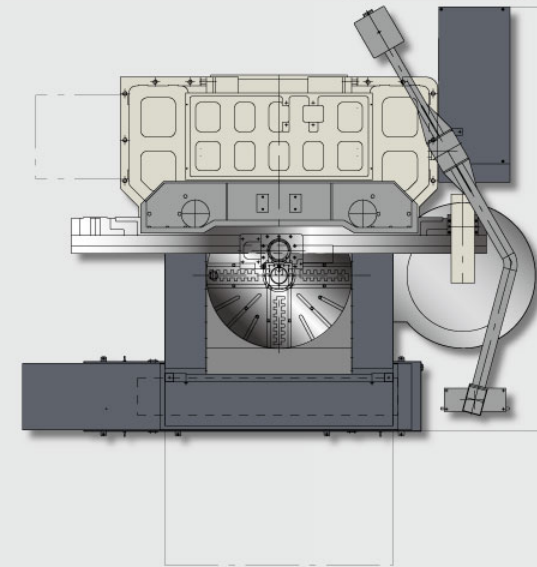


VL -25



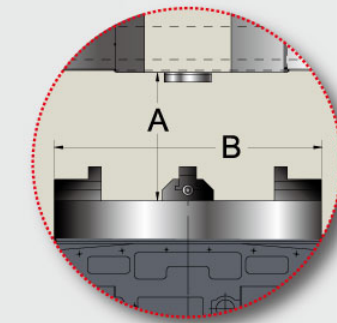
NVL -25M

Machine Dimensions VL-12

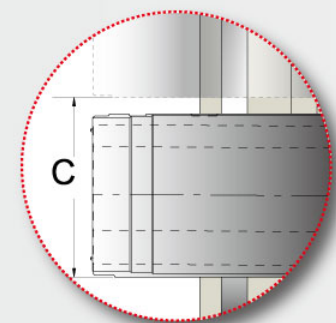


Processing stroke

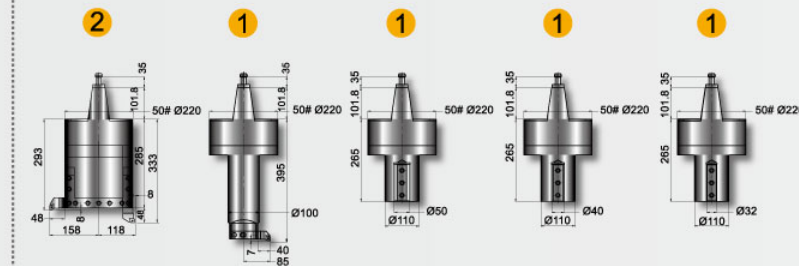
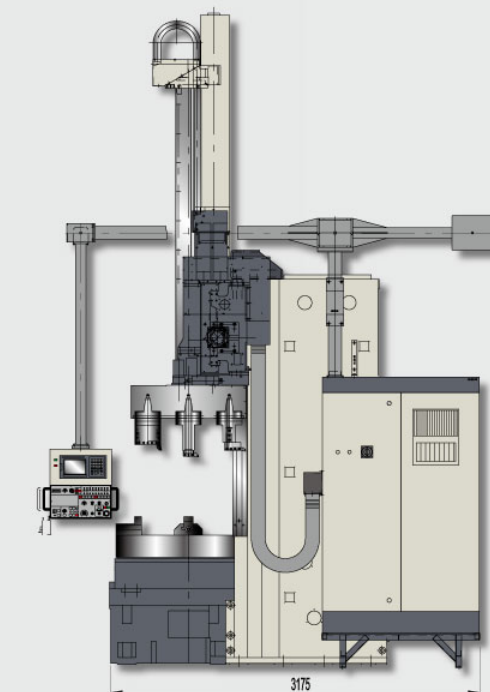
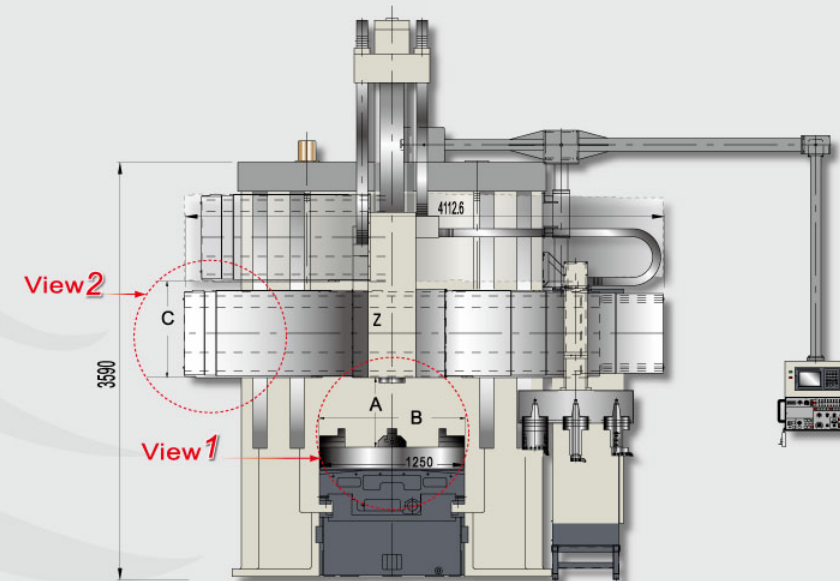
View 1



View 2



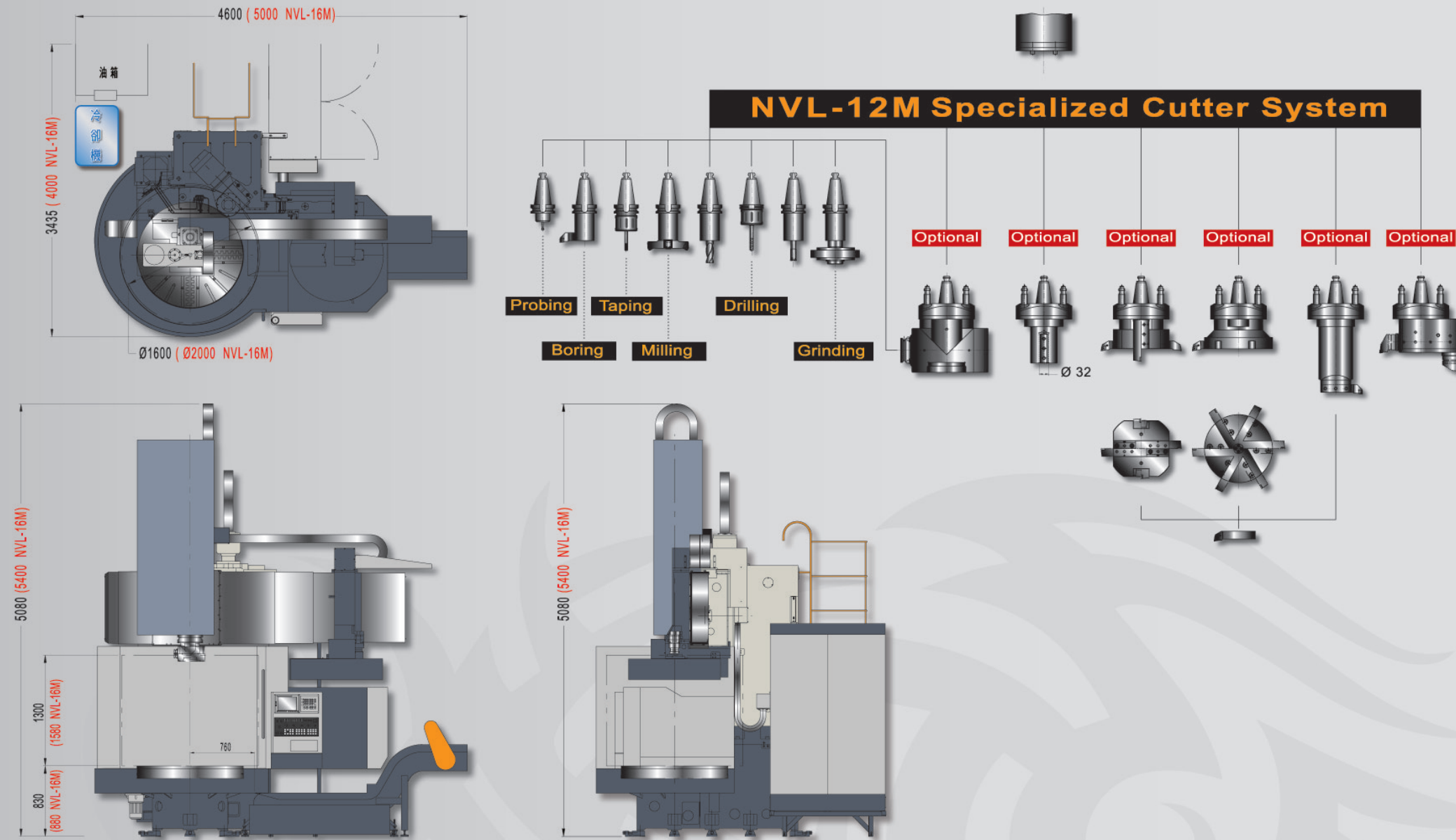
A	B	C
400mm	Ø1250mm	1000mm



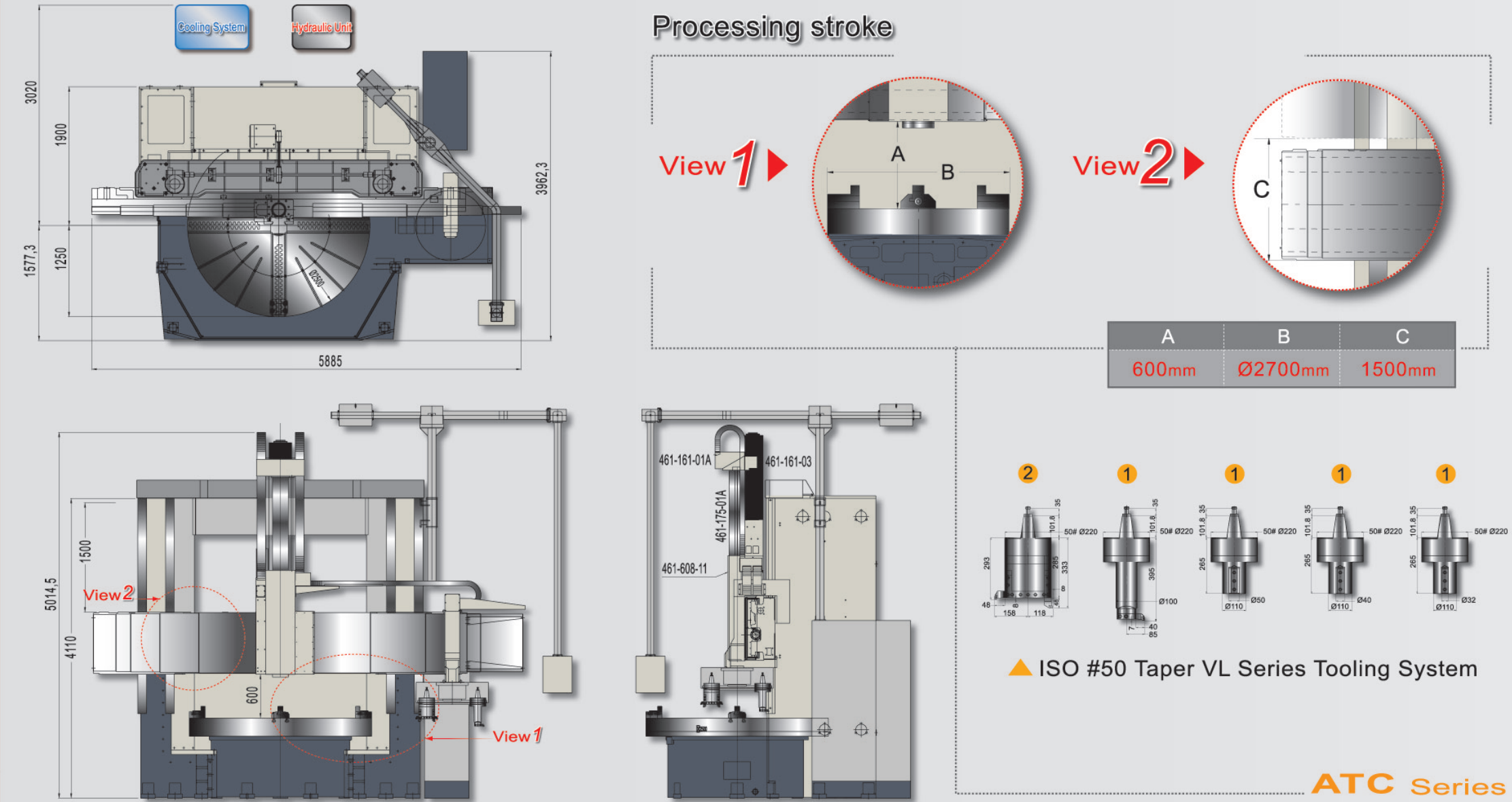
▲ ISO #50 Taper VL Series Tooling System

ATC Series

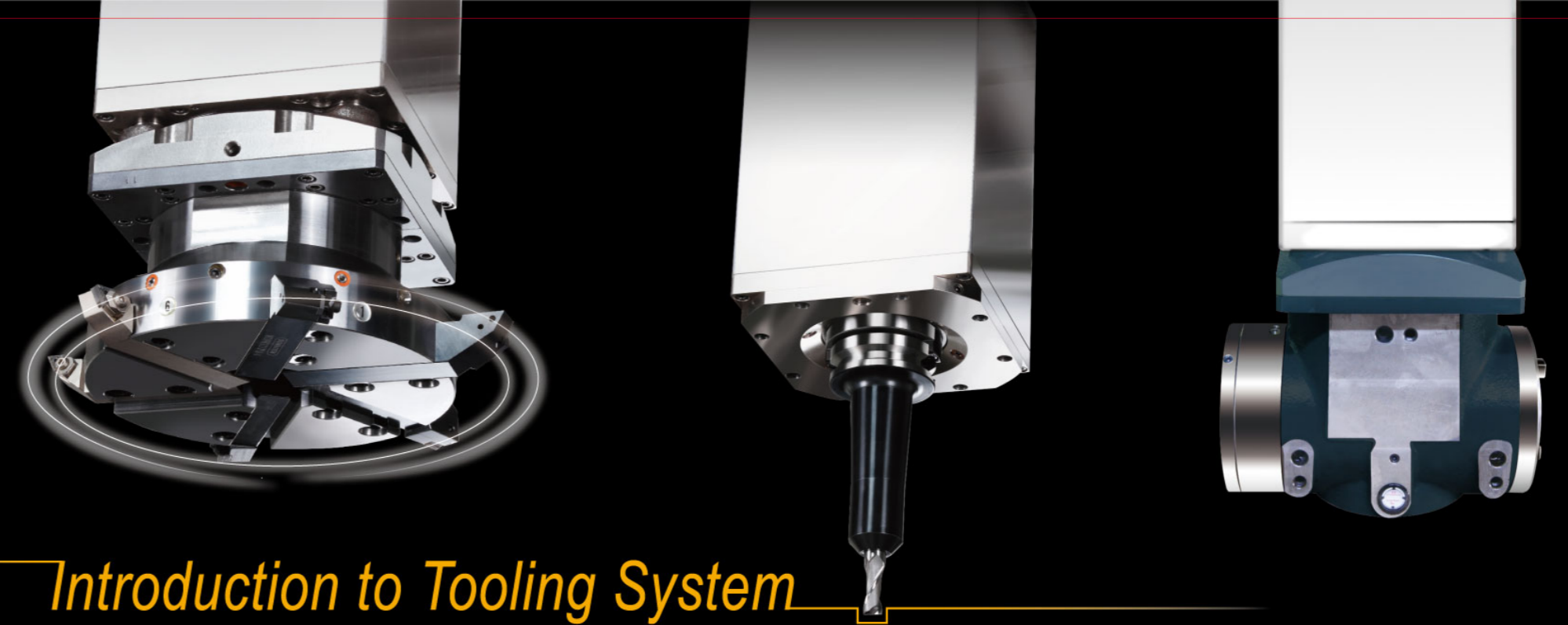
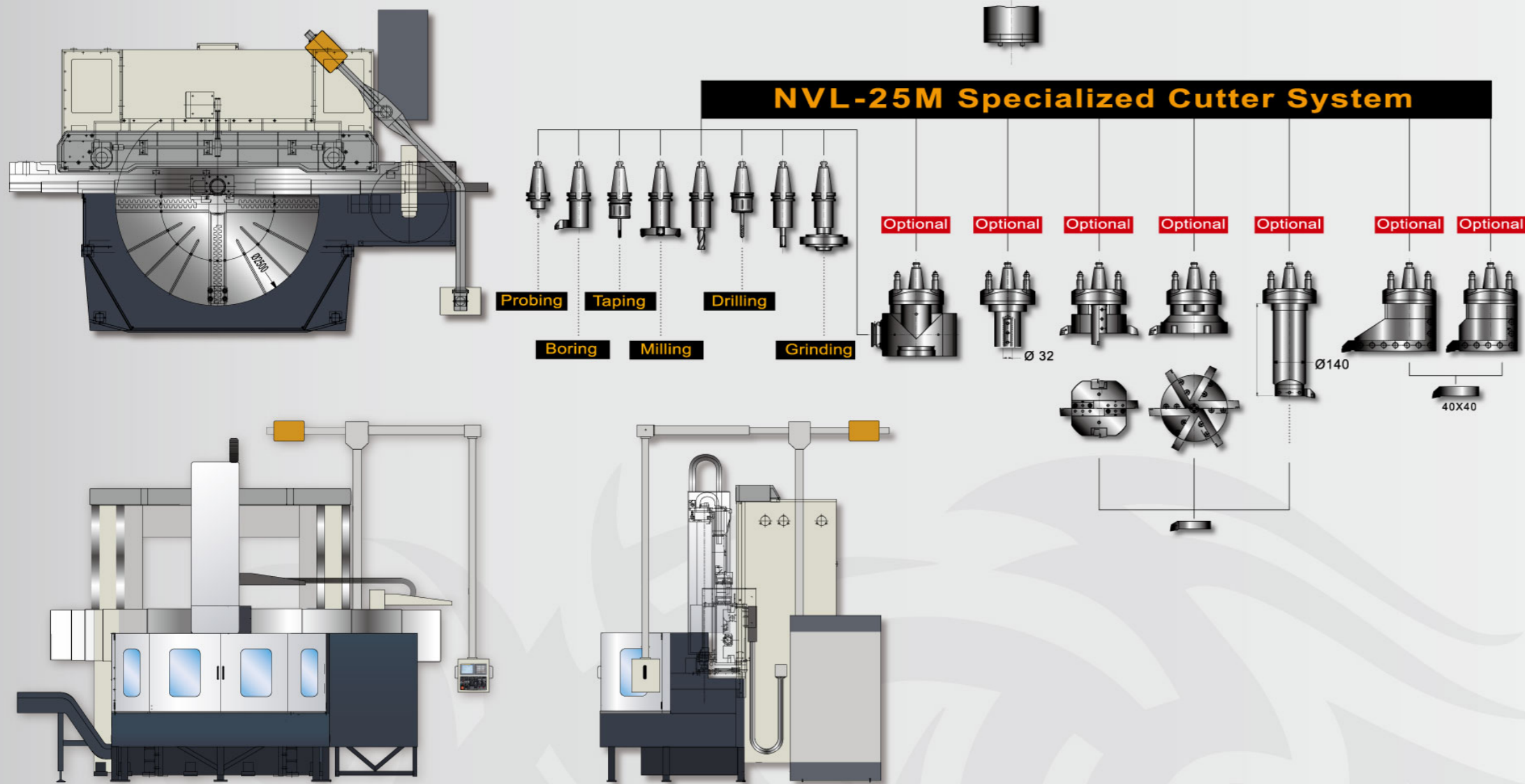
Machine Dimensions NVL-12 / 12M / 16M



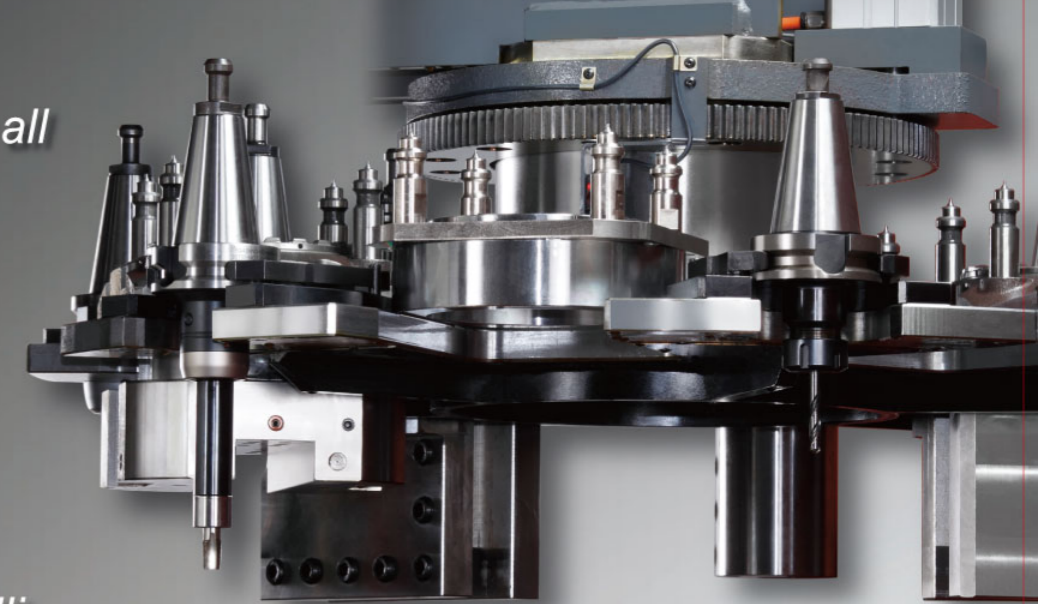
VL-25



Machine Dimensions VL-25M



- 1** The compact design of tool station can accommodate all kinds of tools.
- 2** Equipped with an automatic tool exchanger, which enable faster tool exchange at the site where the RAM is located.
- 3** Improve the complication of integrating turning and milling process, and the disadvantage of insufficient numbers of tools.



Specifications

Item		VL-12	NVL-12	NVL-12M	NVL-16M	VL-25	VL-25M
Processing Capability	Maximum swing diameter	mm 1600	1600	1600	2000	3000	3000
	Maximum turning height	mm 1100	1300	1300	1600	1800	1800
	Maximum torque	Nm 15553	17181	17181	18791	24252	32200
Ball Screw	X-axis	mm Ø 63* P12	Ø 63* P10	Ø 63* P10	Ø 63* P10	Ø 63* P12	Ø 63* P12
	Z-axis	mm Ø 63* P12	Ø 63* P12	Ø 63* P10	Ø 63* P10	Ø 63* P12	Ø 63* P10
Worktable	Diameter	mm Ø 1250	Ø 1250	Ø 1250	Ø 1600	Ø 2700	Ø 2700
	Maximum load	kg 5000	8000	8000	10000	20000	20000
	Rotating speed	rpm 2.8-280	1-350	1-350	1-320	1.6-160	1.6-160
	Inner diameter/outer diameter of bearing	mm Ø 580 / Ø 760	Ø 580 / Ø 760	Ø 580 / Ø 760	Ø 685 / Ø 915	Ø 1028.7 / Ø 1327.15	Ø 1028.7 / Ø 1327.15
	Motor	α40 / 6000i	α40 / 6000i	α40 / 6000i	α40 / 6000i	α40 / 6000i	α40 / 6000i
	Motor output	kW 37/45	37/45	37/45	37/45	37/45	37/45
RAM	X-axis stroke	mm 1300	1500	1500	1800	2100	2100
	Z-axis vertical stroke	mm 1060	1000	1000	1000	1060	1200
	X-axis feeding speed	mm/min 0-10000	0-20000	0-20000	0-20000	0-8000	0-8000
	Z-axis feeding speed	mm/min 0-10000	0-10000	0-20000	0-20000	0-8000	0-20000
	Live tool speed	mm —		40-3000	40-3000	—	40-3000
	Cross-section	mm 220 x 220	230 x 230	230 x 230	230 x 230	220 x 220	230 x 230
Crossrail	Vertical stroke	mm 1000	600	600	900	1500	1500
	Vertical speed	mm/min 400	480	480	480	400	400
Automatic Tool Change	Number of tools	8, BT50	6 holders+6 tools,ISO50	6 holders+6 tools,ISO50	6 holders+6 tools,ISO50	8, BT50	6 holders+6 tools,ISO50
	Tool holder size	mm □32(□25), Ø32/Ø40/Ø50	□32, Ø32/Ø40/Ø50	□32, Ø32/Ø40/Ø50	□32, Ø32/Ø40/Ø50	□32(□25), Ø32/Ø40/Ø50	□32, Ø32/Ø40/Ø50
Servo Motor	Worktable	kW AC 37/45	AC 37/45	AC 37/45	AC 37/45	AC 37/45	AC 37/45
	Crossrail elevation	kW AC 3.7	AC 5.5	AC 5.5	AC 5.5	AC 5.5	AC 5.5
	Hydraulic power	kW AC 5.5	AC 5.5	AC 5.5	AC 5.5	AC 5.5	AC 5.5
	Table surface lubrication	kW AC 0.37	AC 0.75	AC 0.75	AC 0.75	AC 0.37	AC 0.37
	Sliding rail lubrication	kW AC 0.025 (2台)	AC 0.025 (1台)	AC 0.025 (1台)	AC 0.025 (1台)	AC 0.025 (2台)	AC 0.025 (2台)
	X-axis motor type	kW α30i	α30i	α30i	α30i	α30i	α30i
	Z-axis motor type	kW α40iB	α40iB	α40iB	α40iB	α40iB	α40iB
	Live tool motor	kW —		15/18.5	15/18.5	—	15/18.5
Machine Dimensions	Width	mm 5280	4600	4600	5200	6250	6250
	Depth	mm 3730	3435	3435	4000	4590	4696
	Height	mm 5220	5080	5080	5400	6300	6410
	Weight	mm 18000	18000	18000	20000	30000	30000
Electric Capacity	KVA 80		95	95	80	95	
Control System		FANUC 0i-T	FANUC 0i-T	FANUC 0i-T	FANUC 0i-T	FANUC 0i-T	FANUC 0i-T
Positioning Accuracy	Positioning accuracy X/Z (C)	mm/m 0.03	0.03	0.03 (±7.5"/360°)	0.03 (±7.5"/360°)	0.03	0.03 (±7.5"/360°)
	Repeating bi-directional accuracy (C)	mm/m 0.015	0.015	0.015 (±5")	0.015 (±5")	0.015	0.015 (±5")

STANDARD & OPTIONAL

● STANDARD ● OPTIONAL

ITEM	VL-12	NVL-12	NVL-12M	NVL-16M	VL-25	VL-25M
1 Four-jaw Manual Chuck	●	●	●	●	●	●
2 Work lamp	●	●	●	●	●	●
3 Table splash guard	●	●	●	●	●	●
4 Protective cover for crossbeam sliding rail	●	●	●	●	●	●
5 Crossrail elevation pointing device	●	—	—	—	●	●
6 Operator manual	●	●	●	●	●	●
7 Chip conveyor	●	●	●	●	●	●
8 Foundation bolts, plates	●	●	●	●	●	●
9 Cooling system	●	●	●	●	●	●
10 □32 or □25 tool holder	●	●	●	●	●	●
11 FANUC 0i-T control system	●	●	●	●	●	●
12 FANUC 31I/32I control system	●	●	●	●	●	●
13 Transformer (380V/415V/440V)	●	●	●	●	●	●
14 X-axis and Z-axis linear scale	●	●	●	●	●	●
15 Four-jaw hydraulic chuck	●	●	●	●	●	●
16 Workpiece presetter	●	●	●	●	●	●
17 Automatic Tool Change	●	●	●	●	●	●
18 Worktable C-axis control	—	—	●	●	—	●
19 Tool presetter	●	●	●	●	●	●

The company reverse the right to modify the specifications at any circumstances.

FEMCO PRODUCT LINE-UP

HL SERIES



HL-25N



HL-25D



HL-25DM



HL-25DMS



HL-35 / 35D / 35DM



HL-35DMSY



HL-45(1000 / 1500)



HL-55S(1250 / 2000 / 2500)

WT SERIES



WHL-55



WHL-55SP



WHL-68



WHL-68SP



WVL-F24



WVL-F24A



WVD-24C / 24x



WVL-T24

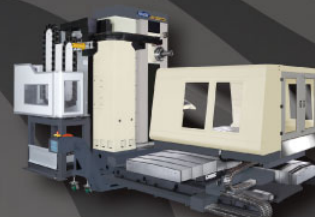
BMC SERIES



BMC-110R1 / 110R1F / FR1A



BMC-110R2 / R3



BMC-110R2S



BMC-110R3



BMC-135R



BMC-110T2 / T3 / T4



BMC-110HT



BMC-110FT2 / FT2 A / FT3 / FT4

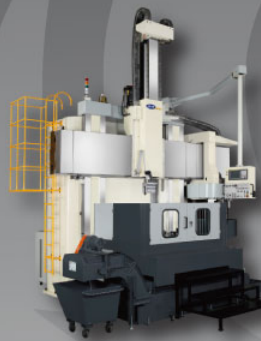


BMC-135TN



BMC-250T(8) / 250T(15)

VL SERIES



VL-12



NVL-12 / NVL-12M / NVL-16M



VL-25



VL-25M

APC SERIES



BMC-110R1APC

FX SERIES



F5X-630



F5X-630L