



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.

Toll Free Service Line :

0800-233166



FAR EAST MACHINERY CO.,LTD

Factory Automation Technology CO.,LTD

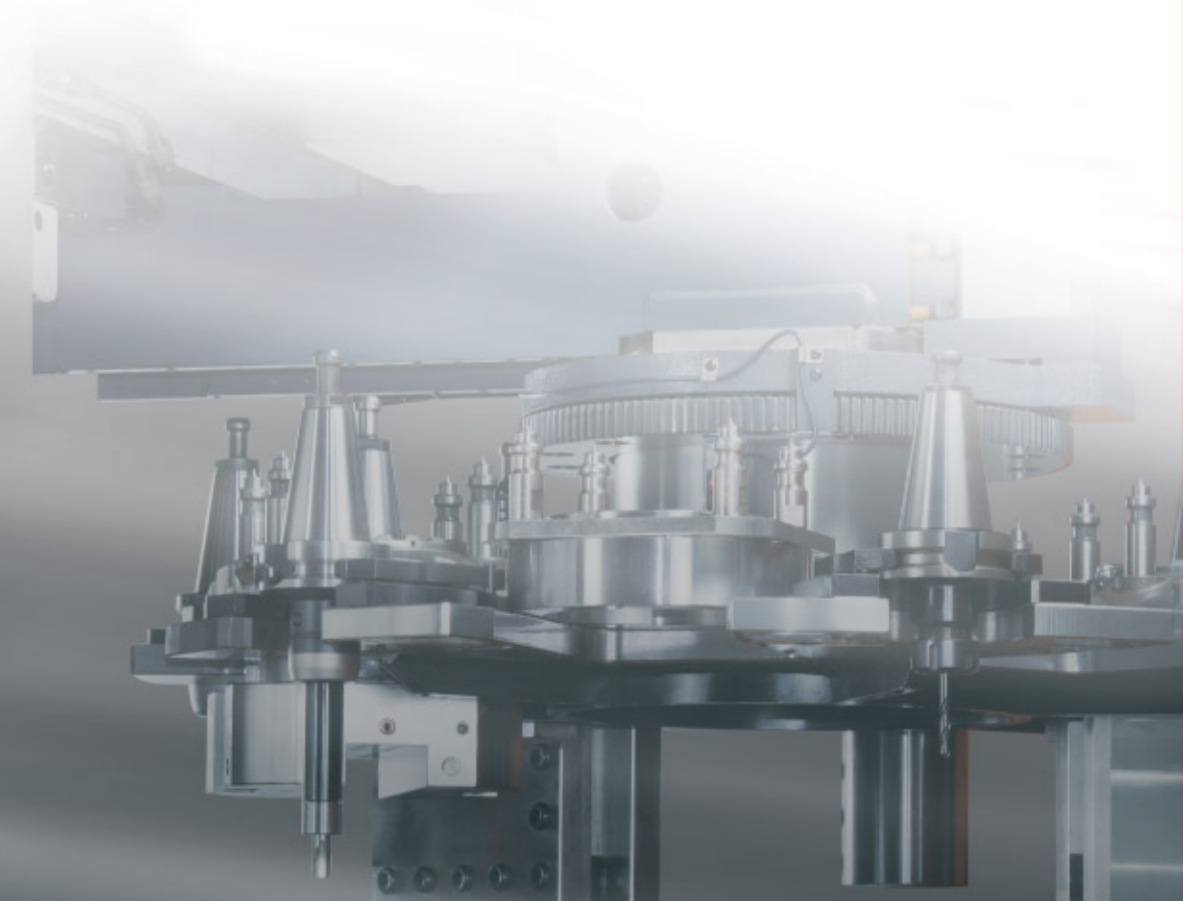
No. 26, Zhongshan Rd., Fule Village, Minxiong Township,
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Beyond Today's Possibilities, No Limits



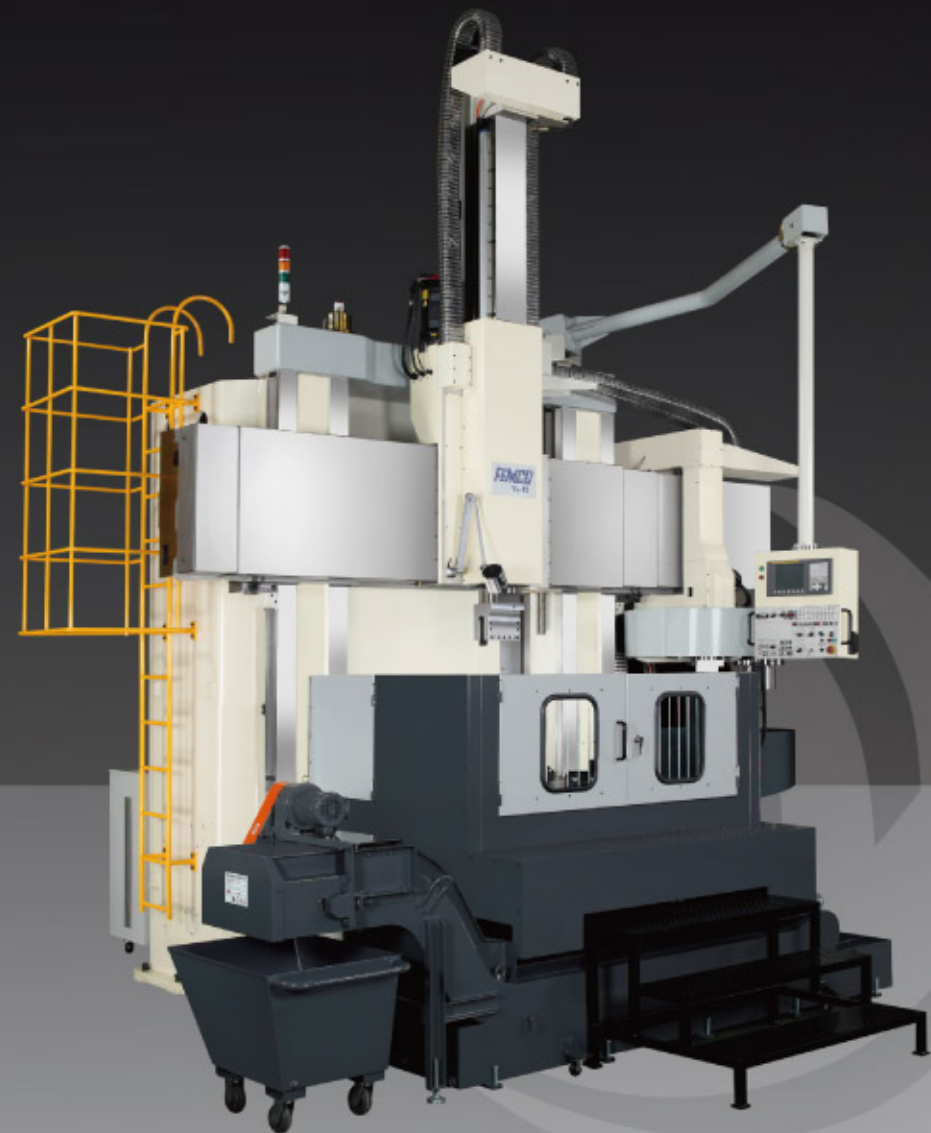
CNC VERTICAL LATHE

www.femco.com.tw

VL-12

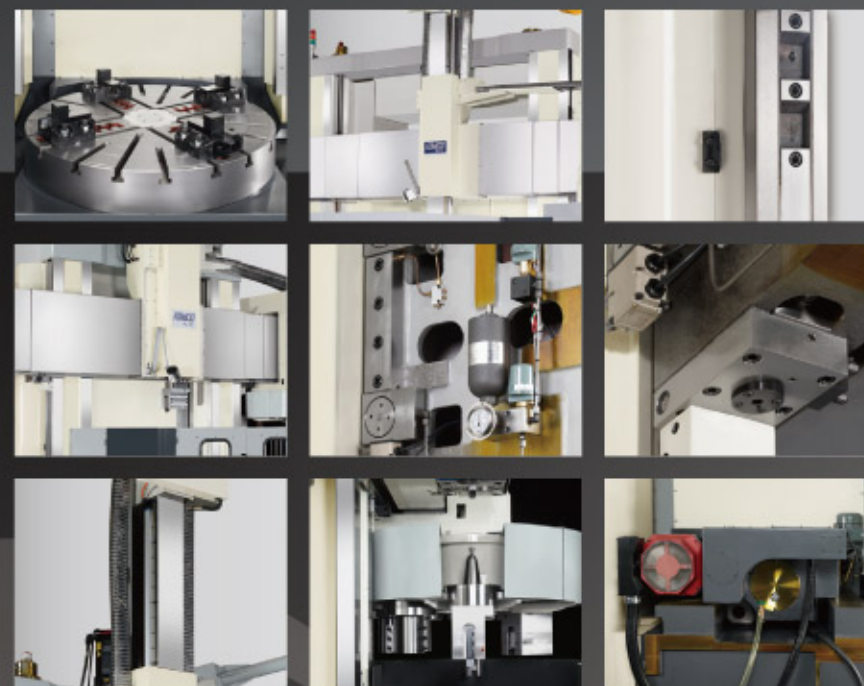
CNC VERTICAL LATHE

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

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.

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

Vertical Columns

Double column design is built with two heavy columns. Each column features hardened box guide ways 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.

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.

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 Positioning Hooks and Mechanical Anti Fall-off Device

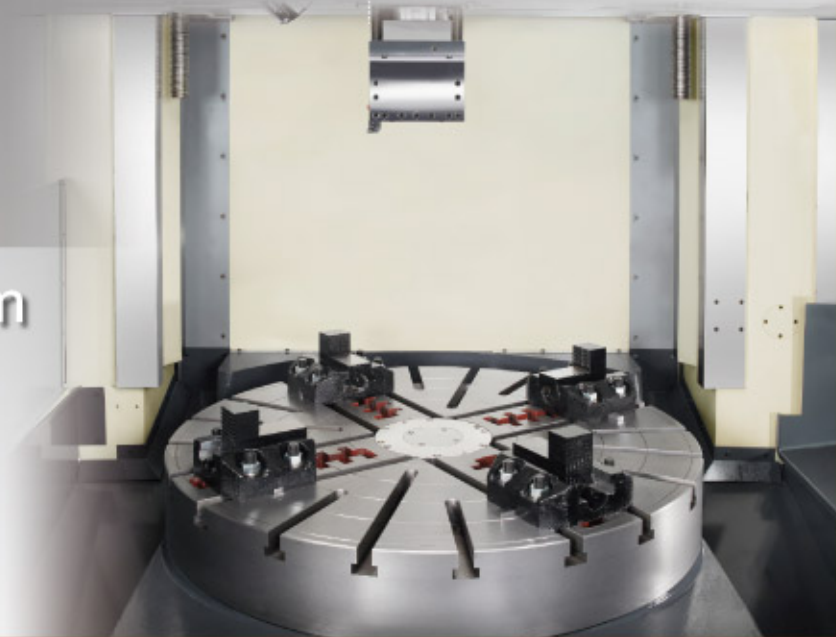
When the hooks are positioned, the anti fall-off device is also compulsively activated without any interference from a loss of power to secure the positioning accuracy of the crossrail.

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 rigidity 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.

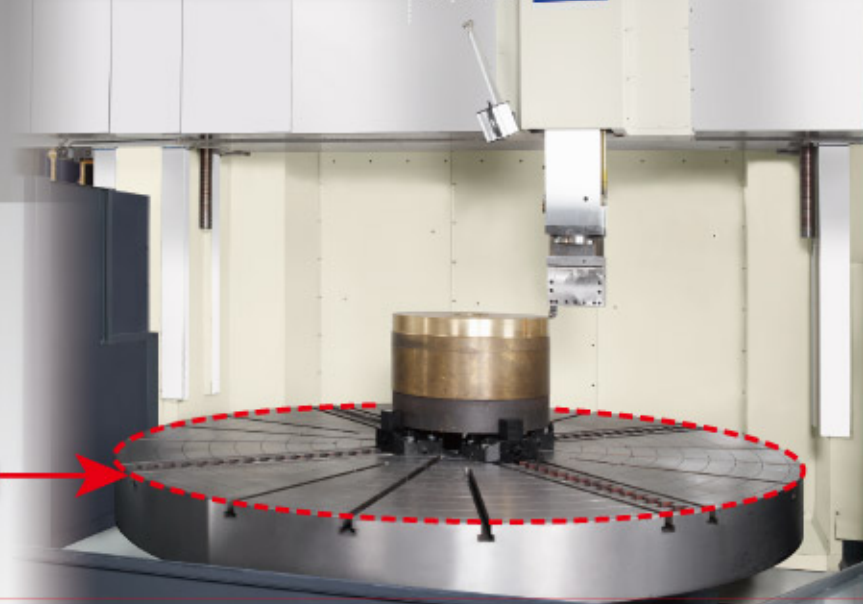


Electrical Cabinet

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

CNC VERTICAL LATHE

HEAVY-LOAD, LARGE-SIZE PROFESSIONAL MACHINING MODEL

NVL-12 / 12M Specifications:

- Maximum turning height: 1,300mm
- Maximum table loading: 8,000kg
- 37/45kW spindle motor
- Maximum table rotating speed : 400rpm
- 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

Based on ergonomics, the worktable equipped with auto chips removal mechanism facilitates user's operation.

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 turning 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 be 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



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- 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



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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.

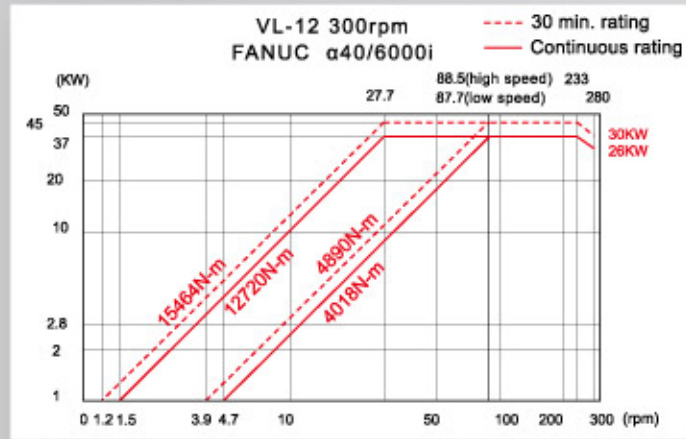
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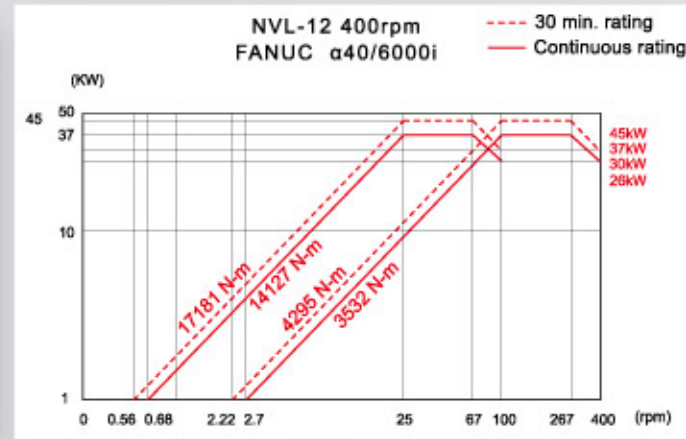
The unique rotational turret can perform inner and outer diametrical turning and is capable of installing up to 6 outer diamertical tools and be quickly changed tools at the site where the ram is located.



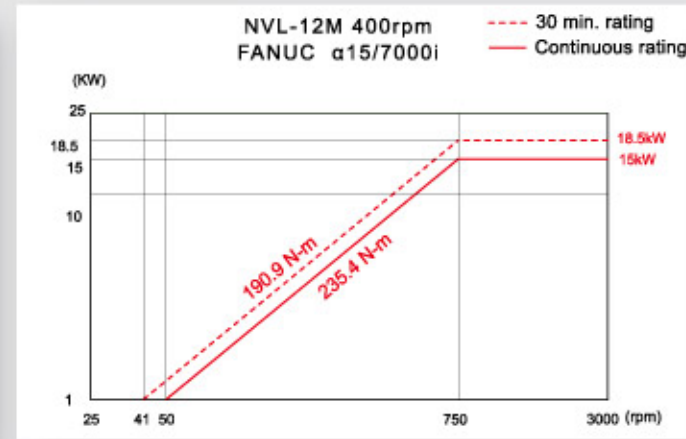
Chart of Spindle Torque Output



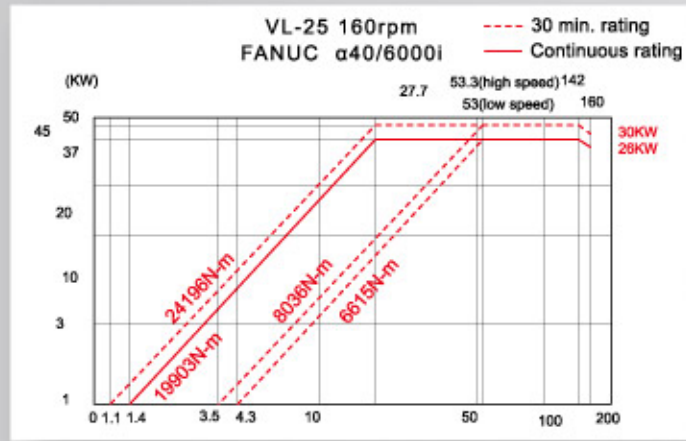
VL -12



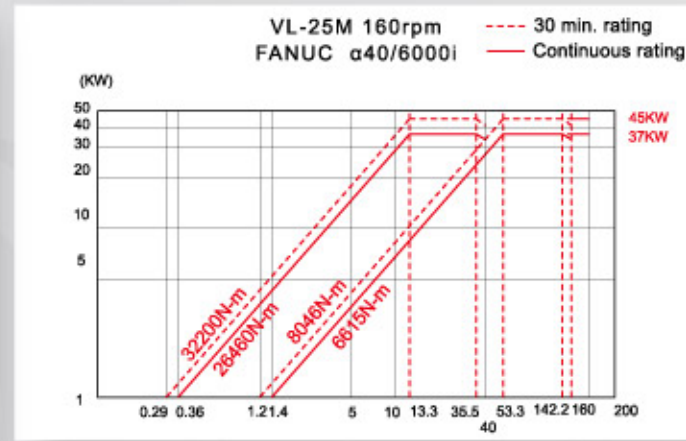
NVL -12



NVL -12M

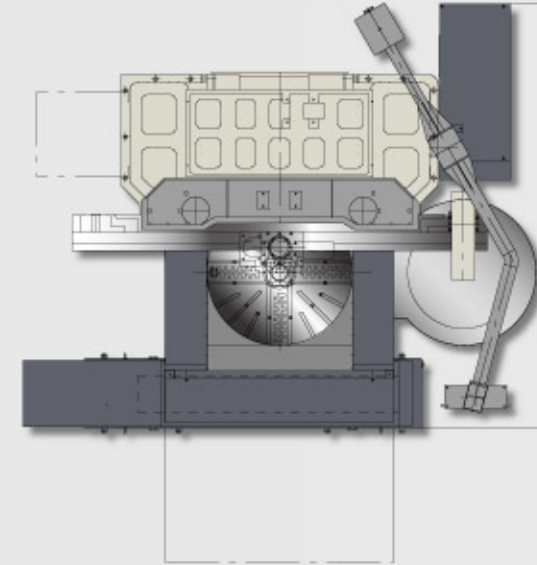


VL -25

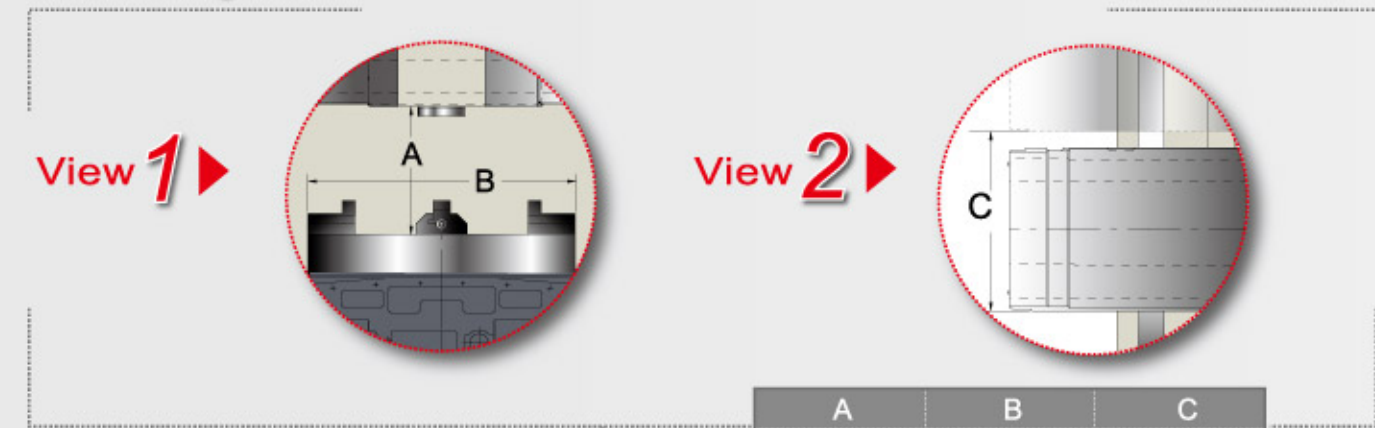


NVL -25M

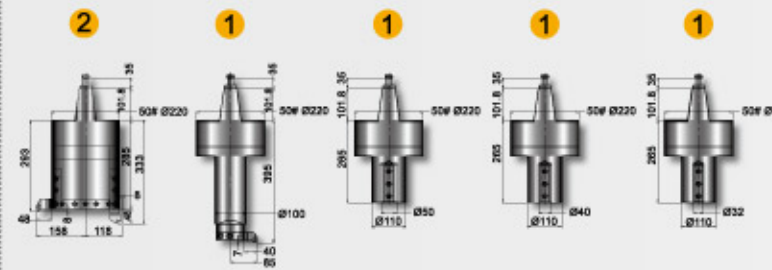
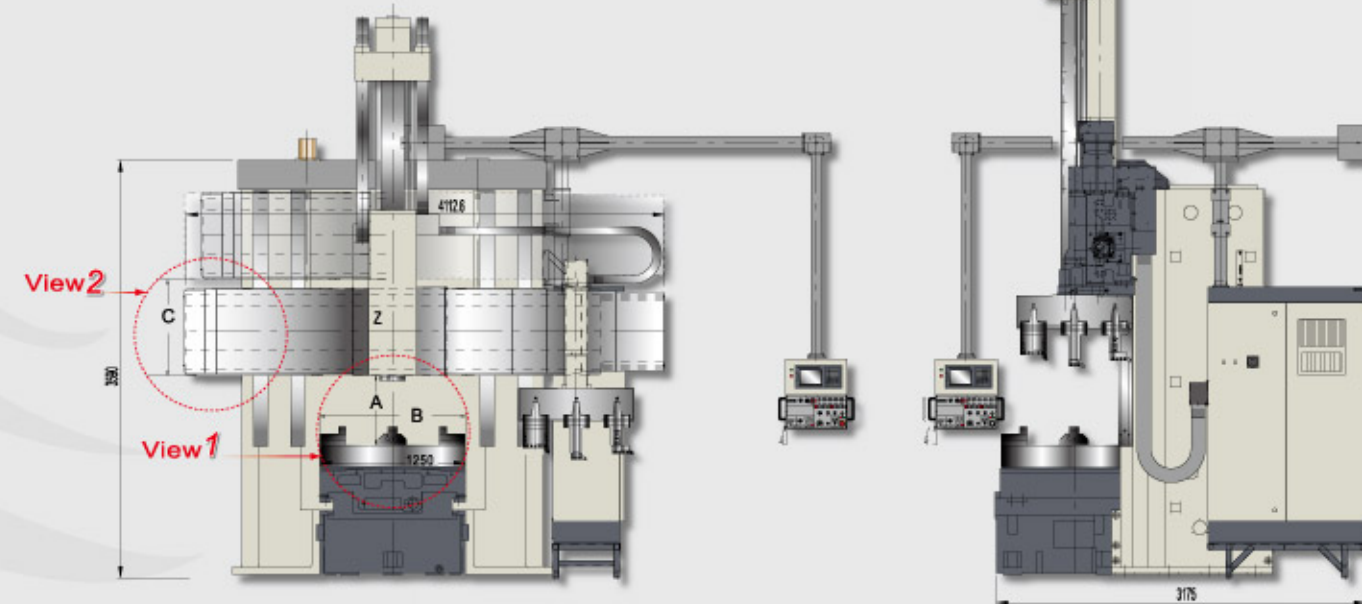
Machine Dimensions VL-12



Processing stroke



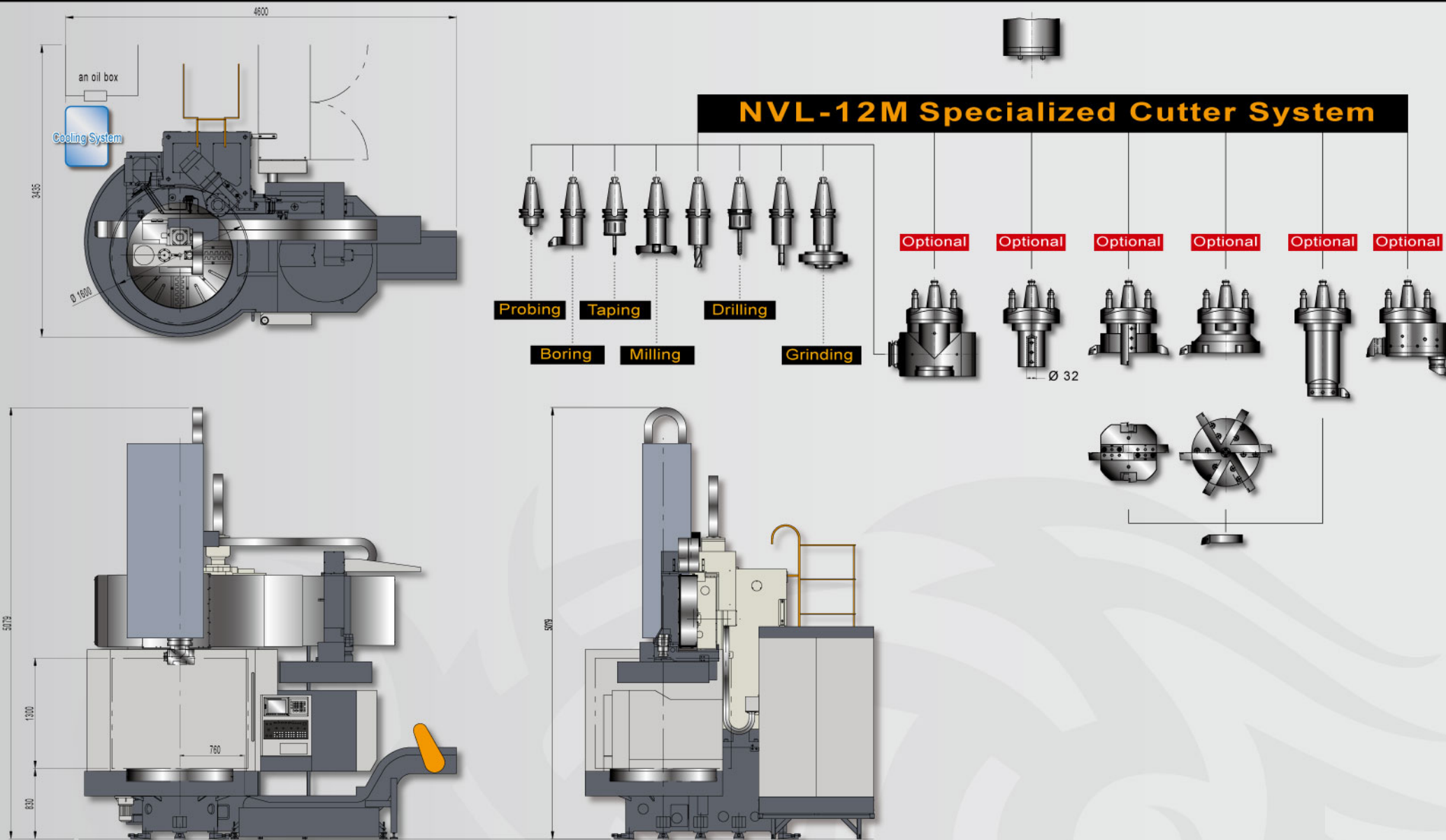
| A | B | C |
|-------|---------|--------|
| 400mm | Ø1250mm | 1000mm |



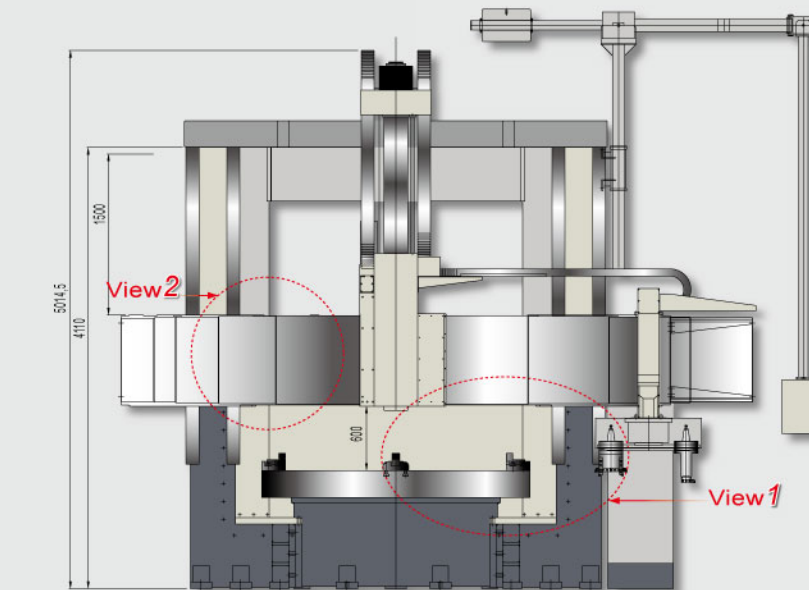
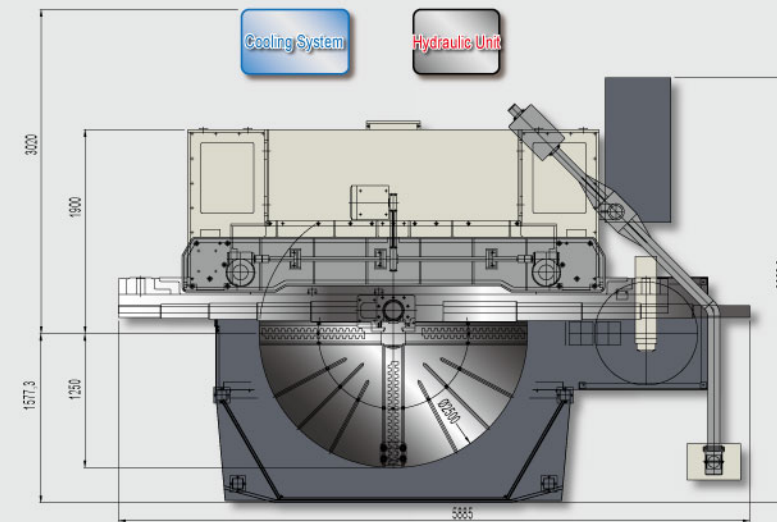
▲ ISO #50 Taper VL Series Tooling System

ATC Series

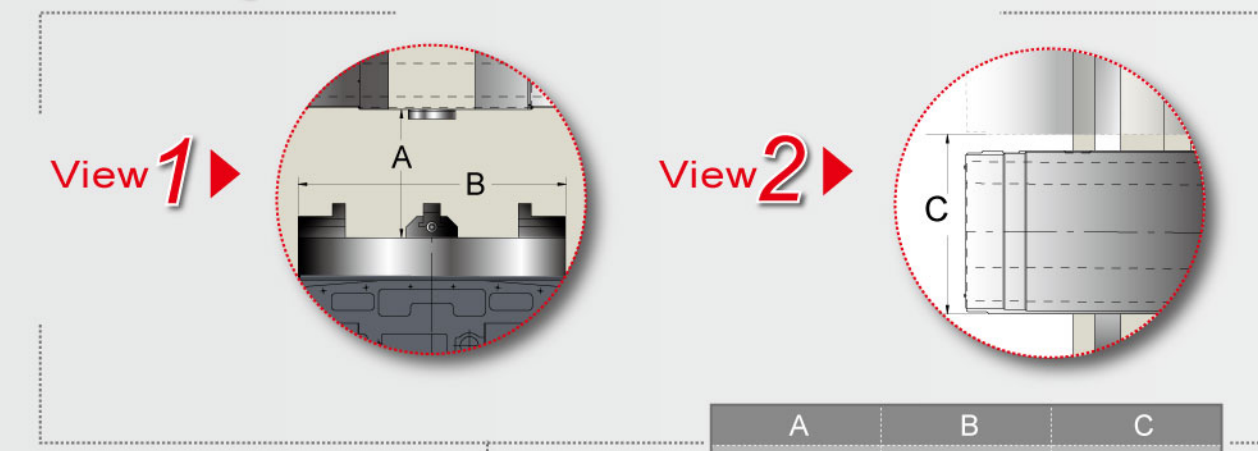
Machine Dimensions NVL-12 / 12M



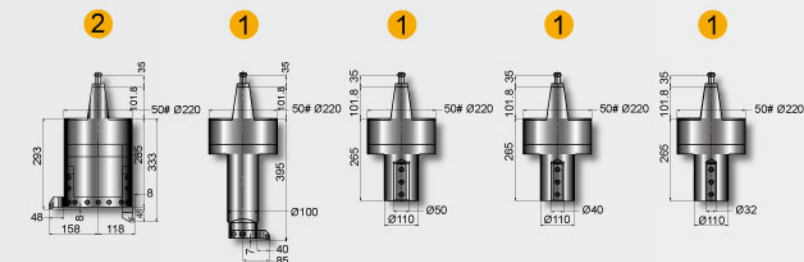
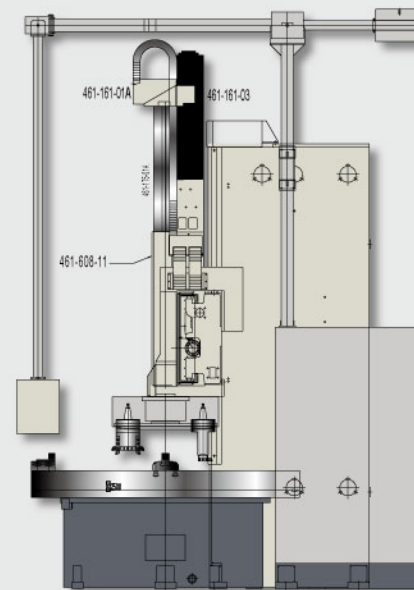
VL-25



Processing stroke



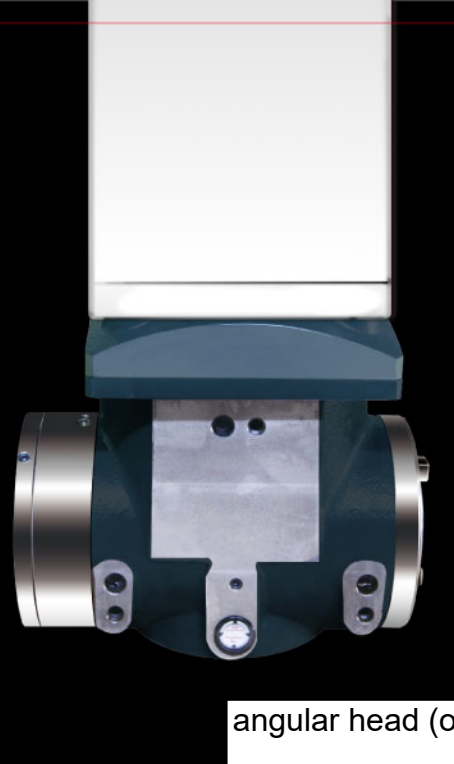
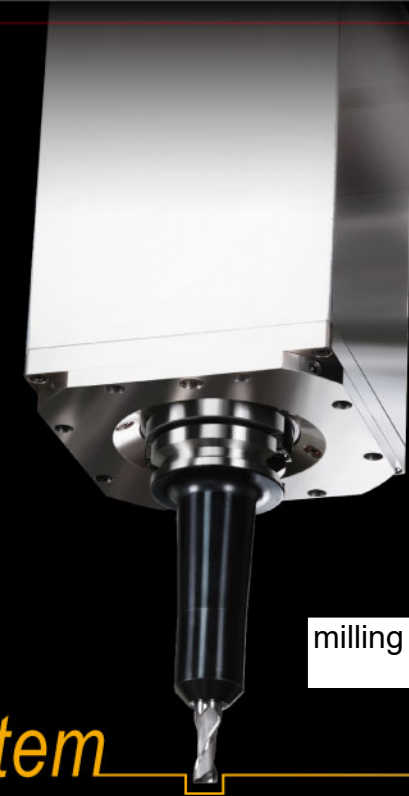
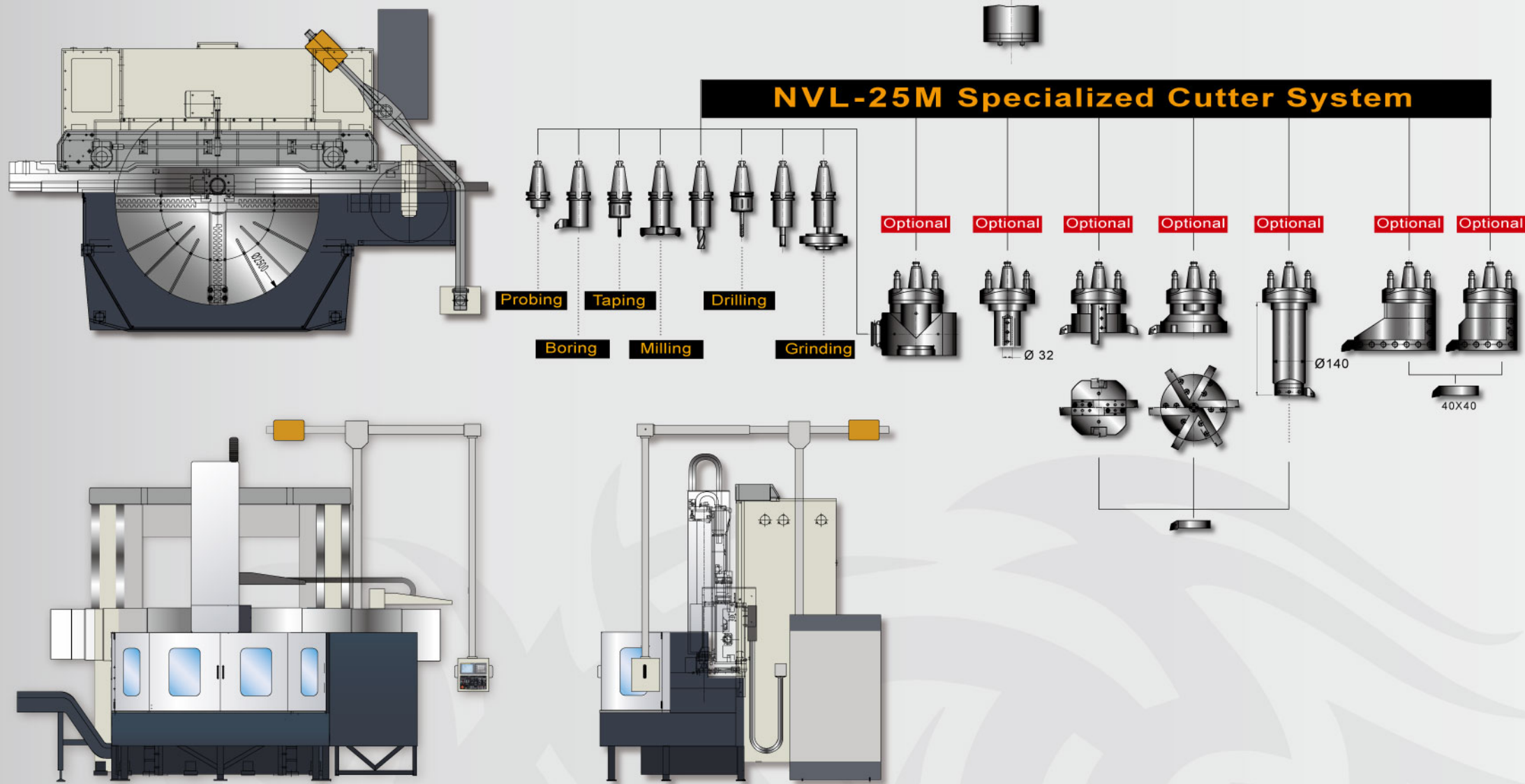
| A | B | C |
|-------|---------|--------|
| 600mm | Ø2700mm | 1500mm |



▲ ISO #50 Taper VL Series Tooling System

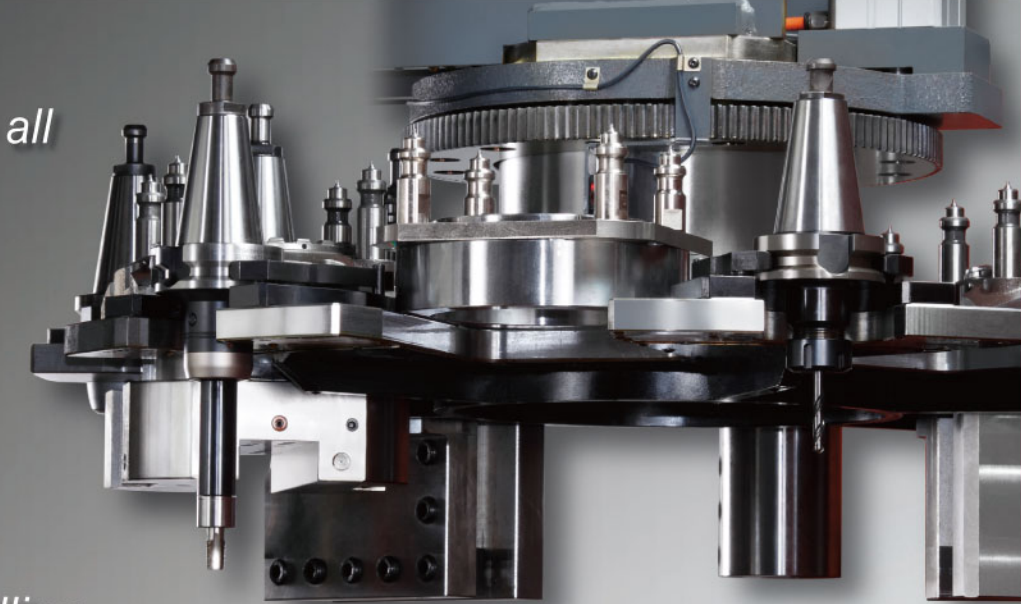
ATC Series

Machine Dimensions VL-25M



Introduction to Tooling System

- 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 | VL-25 | VL-25M |
|-----------------------|--|-----------------------|-------------------------|-------------------------|-----------------------|
| Processing Capability | Maximum swing diameter | 1600 | 1600 | 1600 | 3000 |
| | Maximum turning height | 1100 | 1300 | 1300 | 1800 |
| | Maximum torque | 15553 | 17181 | 17181 | 24252 |
| Ball Screw | X-axis | Ø 63* P12 | Ø 63* P10 | Ø 63* P10 | Ø 63* P12 |
| | Z-axis | Ø 63* P12 | Ø 63* P10 | Ø 63* P10 | Ø 63* P10 |
| Worktable | Diameter | 1250 | 1250 | 1250 | 2700 |
| | Maximum load | 5000 | 8000 | 8000 | 20000 |
| | Rotating speed | 2.8-280 | 1-350 | 1-350 | 1.6-160 |
| | Inner diameter/outer diameter of bearing | Ø 580 / Ø 760 | Ø 580 / Ø 760 | Ø 580 / Ø 760 | Ø 1028.7 / Ø 1327.15 |
| | Motor | α40 / 6000i | α40 / 6000i | α40 / 6000i | α40 / 6000i |
| | Motor output | 37/45 | 37/45 | 37/45 | 37/45 |
| RAM | X-axis stroke | 1300 | 1500 | 1500 | 2100 |
| | Z-axis vertical stroke | 1060 | 1000 | 1000 | 1060 |
| | X-axis feeding speed | 0-10000 | 0-20000 | 0-20000 | 0-8000 |
| | Z-axis feeding speed | 0-10000 | 0-20000 | 0-20000 | 0-8000 |
| | Live tool speed | — | — | 40-3000 | — |
| | Cross-section | 220 x 220 | 230 x 230 | 230 x 230 | 220 x 220 |
| Crossrail | Vertical stroke | 1000 | 600 | 600 | 1500 |
| | Vertical speed | 400 | 480 | 480 | 400 |
| Automatic Tool Change | Number of tools | 8, BT50 | 6 holders+6 tools,ISO50 | 6 holders+6 tools,ISO50 | 8, BT50 |
| | Tool holder size | □32(□25), Ø32/Ø40/Ø50 | □32, Ø32/Ø40/Ø50 | □32, Ø32/Ø40/Ø50 | □32(□25), Ø32/Ø40/Ø50 |
| Servo Motor | Worktable | AC 37/45 | AC 37/45 | AC 37/45 | AC 37/45 |
| | Crossrail elevation | AC 3.7 | AC 5.5 | AC 5.5 | AC 5.5 |
| | Hydraulic power | AC 3.7 | AC 3.7 | AC 3.7 | AC 3.7 |
| | Table surface lubrication | AC 0.37 | AC 0.75 | AC 0.75 | AC 0.37 |
| | Sliding rail lubrication | AC 0.025 (two) | AC 0.025 (one) | AC 0.025 (one) | AC 0.025 (two) |
| | X-axis motor type | α30i | α30i | α30i | α30i |
| | Z-axis motor type | α30iB | α40iB | α40iB | α40iB |
| Machine Dimensions | Width | 5280 | 4600 | 4600 | 6250 |
| | Depth | 3730 | 3435 | 3435 | 4590 |
| | Height | 5220 | 5080 | 5080 | 6300 |
| | Weight | 18000 | | | 30000 |
| Electric Capacity | KVA | 80 | 95 | 95 | 80 |
| Control System | mm | FANUC 0iTD | FANUC 0iTD | FANUC 0iTD | FANUC 0iTD |
| Positioning Accuracy | Positioning accuracy X/Z (C) | 0.03 | 0.03 | 0.03 (±7.5"/360°) | 0.03 (±7.5"/360°) |
| | Repeating bi-directional accuracy (C) | 0.015 | 0.015 | 0.015 (±5") | 0.015 (±5") |

STANDARD & OPTIONAL

● STANDARD ● OPTIONAL

| ITEM | VL-12 | NVL-12 | NVL-12M | 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 cover | ● | — | — | ● | ● |
| 6 Operator manual | ● | ● | ● | ● | ● |
| 7 Chip conveyor | ● | ● | ● | ● | ● |
| 8 Foundation bolts, plates | ● | ● | ● | ● | ● |
| 9 Cooling system | ● | ● | ● | ● | ● |
| 10 □32 or □25 tool holder | ● | ● | ● | ● | ● |
| 11 FANUC 0iTD control system | ● | ● | ● | ● | ● |
| 12 Transformer (380V/415V/440V) | ● | ● | ● | ● | ● |
| 13 X-axis and Z-axis linear scale | ● | ● | ● | ● | ● |
| 14 Four-jaw hydraulic chuck | ● | ● | ● | ● | ● |
| 15 Tool presetter | ● | ● | ● | ● | ● |
| 16 Automatic Tool Change | ● | ● | ● | ● | ● |
| 17 FANUC 21iTD control system | ● | ● | ● | ● | ● |
| 18 Worktable C-axis control | — | — | ● | — | ● |
| 19 Tool calibrator | ● | ● | ● | ● | ● |

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



WWL-F24



WWL-F24A



WWD-24

BMC SERIES



BMC-110R1



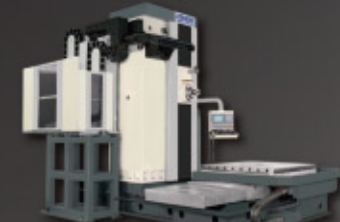
BMC-110R2



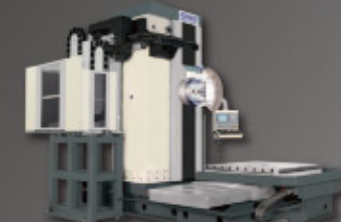
BMC-110R3



BMC-135R



BMC-110T2 / T3 / T4 / P



BMC-110FT2 / FT3 / FT4



BMC-135T



BMC-250T

VL SERIES



VL-12



NVL-12 / NVL-12M



VL-25



VL-25M

APC SERIES



BMC-110APC

FX SERIES



F5X-630



F5X-630L