

NMV Series

High Performance High Rigidity Vertical Machining Center



NMV Series

NMV Series Vertical Machining Center is the latest developed machine for efficient production industries; widely adopted in automobile, aerospace, electronic and precision die & mold industries ; especially its large Y-axis travel design accommodates most parts applications.



Rapid Feedrate
36/36/24 m/min.



Spindle Speed
Std. 12,000rpm IDD PLUS



Auto Tool Change Time
1.8 Sec.



Tool Magazine Capacity
Max. 40T (NMV106A)



■ Auto Tool Change (T-T): 1.8 sec.
IDD PLUS Spindle



■ 24T(30T/40T) (opt.) NMV106A



■ Absolute Encoder ATC System



■ High Rigidity Structural Design

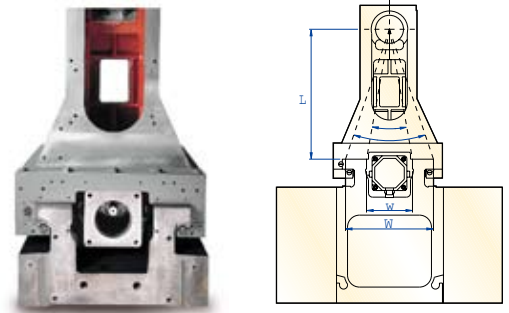
- The rigid body construction makes for uncompromising precision and rigidity.
- Finite Element Method analysis (FEM) is adopted to simulate the structural deformation of the body under various conditions, integrated with YCM hand scraping skills for box guideways, which ensures the best accuracy and life.
- Boxway design on three axis is suitable for heavy cutting.
- No counter-weight design on z-axis provides the best dynamic accuracy.

■ YCM In-house IDD Spindle

- Symmetrical Head Stock design homogeneously absorbs the thermal expansion and avoids thermal deformation.
- High precision ceramic ball bearing with low centrifugal force, low vibration and low coefficient of thermal expansion.
- Tool unclamping cushion design extends spindle bearing life by protecting spindle bearing from tool unclamping force.
- High precision helical springs features excellent balance.

■ High Stability Tool Magazine

- The bi-directional tool selection design takes the shortest random path.
- The standard tool magazine is equipped with 24T, for more machining demands, the tool magazine can be expanded to 40T(NMV106A).
- Absolut encoder and inventor control in ATC improve the tool change time 1.8 sec. only.
- Tool change speed can be adjustable.



■ Automatic Tool Magazine Door Design

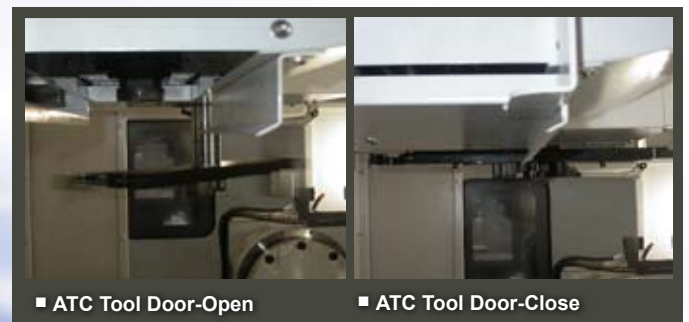
- Pneumatic cylinder driven.
- Prevent coolant and chips from entering tool magazine.

■ Brand New Exterior Design

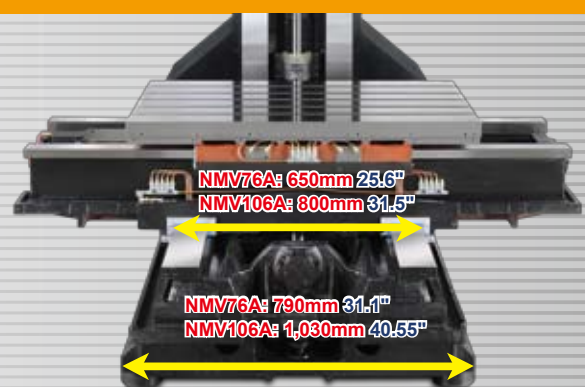
- Full enclosure exterior (including top cover).
- Convertible side window for convenient chip removal.
- Aesthetic rear cover design.
- Smooth chip removal.

The Z-axis is outside support design

- 1) The best L/W ratio.
- 2) Secure the utmost cutting rigidity.
- 3) The Z-axial movement is very smooth.



■ One-Piece Motor Seat / Bearing Seat Close-Loop Force Flow



■ Rigid Column & Base Design
Suitable for Heavier Cutting and Stable Accuracy

NMV 76A

- Adopted consistent production process, box guideway type models with high shock absorption and wear resistance, are the best for heavy cutting.
- With rigorous hand scrapping skills for box guideways, it ensures the best dynamic accuracy and durability.
- The wide span 650mm Y-axis with rigid dual-wall saddle design fully supports table movement. No counter weight on Z-axis provides the utmost machining accuracy.
- Direct-drive 12,000 rpm spindle, suitable for parts machining.
- The optional 8,000 rpm spindle design incorporates gear transmission is capable of reaching 36.52kgf-m torque; perfect for casting and titanium machining.
- The optional 10,000rpm spindle combines with gear transmission for heavy cutting. Even using the small-diameter tools for high speed cutting can achieve refined machining roughness (oil cooler: opt.)
- The rear chip disposal design can meet the needs of production planning.



NMV76A EXTRA WIDE COLUMN BASE DESIGN

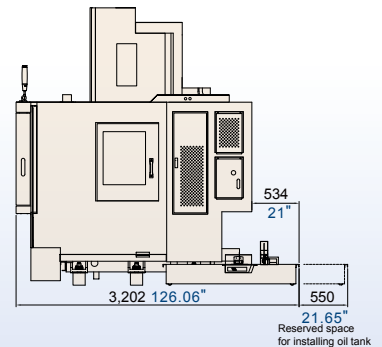
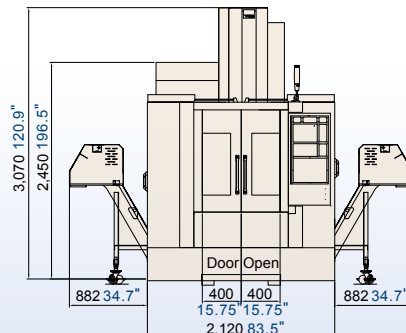
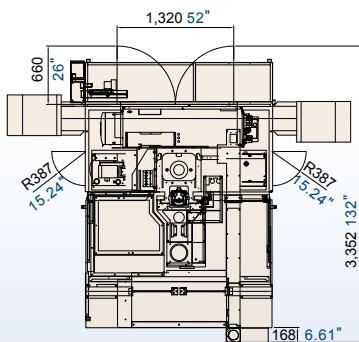
NMV 76A Rapid Feedrate

X	36 m/min	1,417 ipm
Y	36 m/min	1,417 ipm
Z	24 m/min	945 ipm

DIMENSIONS

Unit: mm inch

NMV 76A



NMV 106A

- Adopted consistent production process, box guideway type models with high shock absorption and wear resistance, are the best for heavy cutting.
- With rigorous hand scrapping skills for box guideways, it ensures the best dynamic accuracy and durability.
- The wide span 800mm Y-axis with rigid dual-wall saddle design fully supports table movement. No counter weight on Z-axis provides the utmost machining accuracy.
- Direct-drive 12,000 rpm spindle, suitable for parts machining.
- The optional 8,000 rpm spindle design incorporates gear transmission is capable of reaching 36.52kgf-m torque; perfect for casting and titanium machining.
- The optional 10,000rpm spindle combines with gear transmission for heavy cutting. Even using the small-diameter tools for high speed cutting can achieve refined machining roughness (oil cooler: opt.)
- Dual chip augers combined with chip conveyor for fast chip disposal.



NMV106A EXTRA WIDE COLUMN BASE DESIGN

NMV 106A Rapid Feedrate

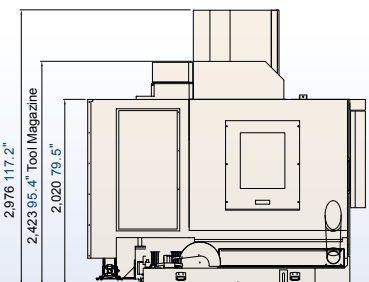
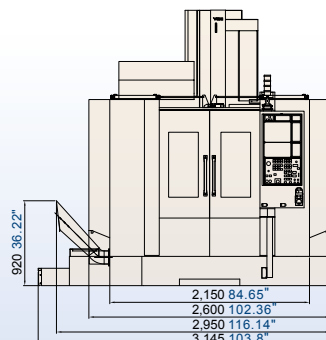
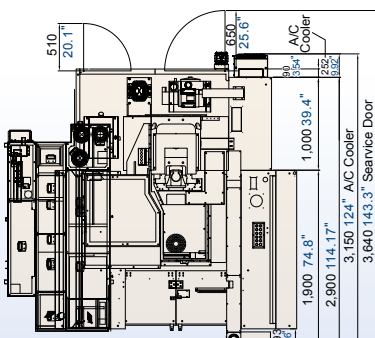
X	36 m/min	1,417 ipm
Y	36 m/min	1,417 ipm
Z	24 m/min	945 ipm

■ DIMENSIONS Unit: mm inch

NMV 106A

■ Triple-Chip Auger

■ Triple Chip Auger with 45° Pipe



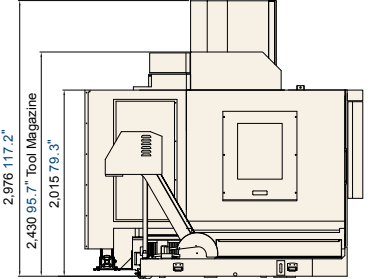
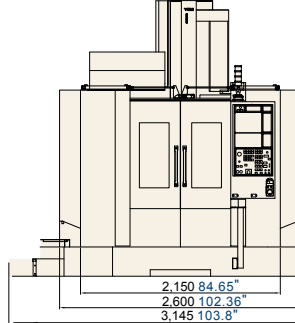
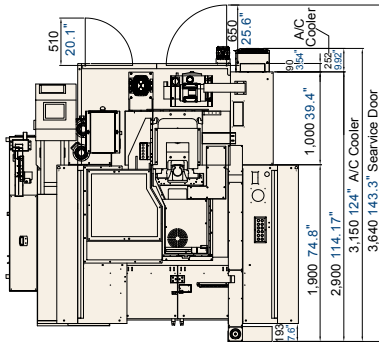
DIMENSIONS

Unit: mm inch

NMV 106A

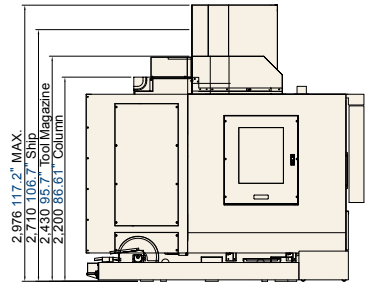
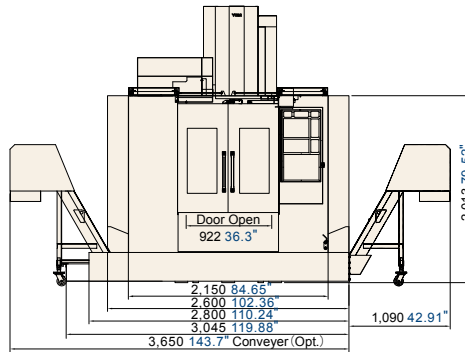
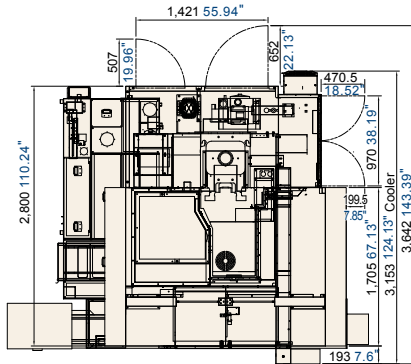
Triple-Chip Auger

Rear Side Chip Conveyor (opt.)



Dual-Chip Auger

Right-hand Side Chip Conveyor (opt.)



ACCURACY

NMV 106A		
ACCURACY	ISO 10791-4	YCM*
Axial Travel	Full Length	
Positioning (X/Y/Z) A	0.032/0.025/0.025 mm 0.00126"/0.001"/0.001"	0.01/0.01/0.01 mm 0.0004"/0.0004"/0.0004"
Repeatability (X/Y/Z) R	0.018/0.015/0.015 mm 0.0007"/0.0006"/0.0006"	0.007/0.007/0.007 mm 0.0003"/0.0003"/0.0003"

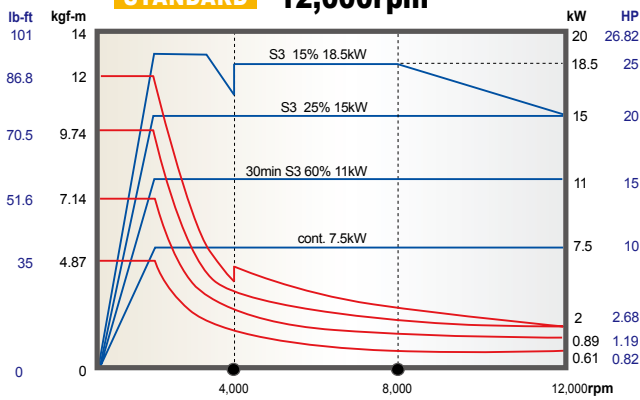
*All values shown above are measured for the machine in good air-conditioned environments.

NMV 76A / NMV 106A

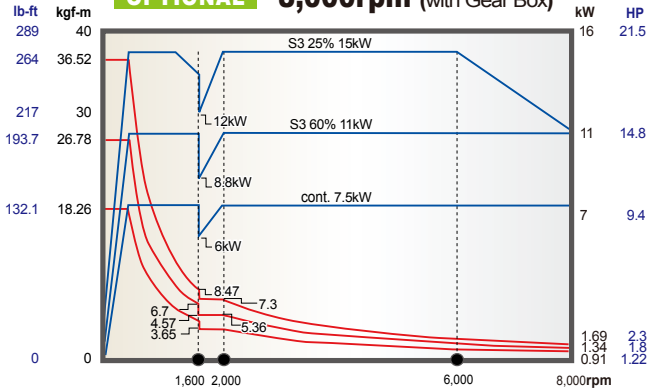


■ IDD PLUS Spindle 12,000 rpm

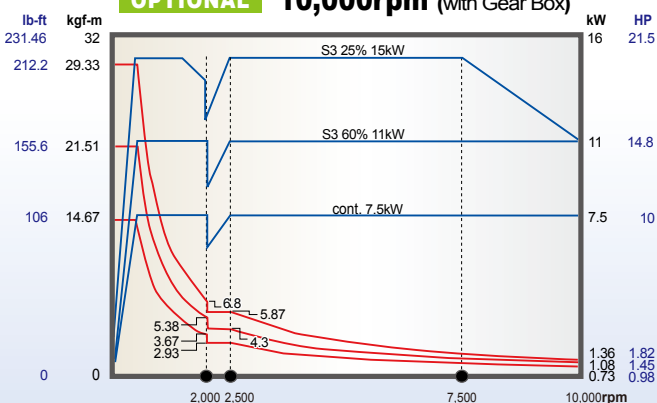
STANDARD 12,000rpm



OPTIONAL 8,000rpm (with Gear Box)



OPTIONAL 10,000rpm (with Gear Box)



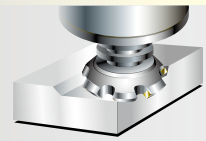
NMV 106A BBT40/12,000rpm

FACE MILL

S45C Steel

Depth of Cut

6.5 mm



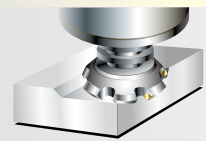
Tool ø80mm x 5T
Spindle Speed 600rpm
Feedrate 450mm/min.
Width of Cut 60mm

FACE MILL

S45C Steel

Material Removal Rate

648 cc/min.



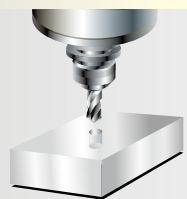
Tool ø63mm x 6T
Spindle Speed 1,500rpm
Feedrate 2,700mm/min.
Width of Cut 60mm
Depth of Cut 4mm

U-DRILL

S45C Steel

Drilling (Max.)

ø44 mm



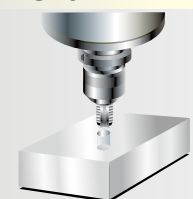
Tool ø44mm
Spindle Speed 1,500rpm
Feedrate 150mm/min.
Depth of Cut 44mm

TAP

S45C Steel

Tapping (Max.)

M24



Tool M24 x 3P
Spindle Speed 80rpm
Feedrate 240mm/min.

RIGID TAP

A6061 Aluminum

Tapping (Min.)

M1.2



Tool M1.2 x P0.25
Spindle Speed 1,200rpm
Feedrate 300mm/min.

■ SPECIFICATIONS

NMV76A			NMV106A		
SPINDLE					
Spindle Speed (opt.)	12,000rpm (8,000rpm / 10,000rpm Gear Box)				
Spindle Power (opt.)	18.5kW (15kW / 15kW Gear Box) 25HP (20HP / 20HP)				
Spindle Taper	BBT40				
TRAVEL					
X-axis Travel	762 mm 30"	1,020 mm 40.16"			
Y-axis Travel	510 mm 20.08"	600 mm 23.62"			
Z-axis Travel	560 mm 20.05"	600 mm 23.62"			
Distance Between Spindle Nose & Table Top	120~680 mm 4.72"~26.77"	80~680 mm 3.15"~26.77"			
TABLE					
Table Size	910 x 560 mm 36.02" x 22.05"	1,120 x 600 mm 44" x 23.62"			
No. T-slots x Size x Pitch	5 x 18 mm x 100 mm 5 x 0.71" x 3.94"				
Max. Load on Table	500 kg 1,102 lb	800 kg 1,763 lb			
FEEDRATE					
X/Y/Z Rapid Feedrate	36 / 36 / 24 m/min. 1,417 / 1,417 / 945 ipm				
Cutting Feedrate	1~20,000 mm/min. 0.04~787 ipm				
ATC					
Tool Magazine Capacity(opt.)	24T (30T)	24T (30/40T)			
Max. Tool Weight (per piece)	6kg 13.2 lb				
Max. Tool Dimensions (opt.) (W/O Adjacent Tools)	ø76 mm x 300 mm (ø125 mm x 300 mm) ø3" x 11.81" (ø4.92" x 11.81")	24T: ø90 mm x 300 mm (ø140 mm x 300 mm) 30/40T: ø76mm x 300 mm (ø125 mm x 300 mm) 24T: ø3.54" x 11.81" (ø5.51" x 11.81") 30/40T: ø3" x 11.81" (ø4.92" x 11.81")			
Tool Changer Method	Arm Type				
Tool Selection Method	Random				
GENERAL					
Pneumatic Supplier	5.5kg/cm ² 78.2psi				
Power Consumption	33 kVA (40 kVA)	35 kVA (40 kVA)			
Machine Weight	5,100 kg 11,243 lb	6,500kg 14,330 lb			

Note: The manufacturer reserves the right to modify the design, specifications, mechanisms, etc. to improve the performance of the machine without notice. All the specifications shown above are just for reference.

■ ACCESSORIES

●: Standard ○: Optional –: None

	NMV76A	NMV106A
Tool Kit	●	●
Work Lamp \ Pilot Lamp	●	●
Oil Skimmer	●	●
Coolant Equipment System	●	●
Full Chip Enclosure	●	●
Coolant Gun	●	●
Spindle Air Blast	●	●
Cutting Air Blast	●	●
Spindle Air Seal	●	●
Central Lubrication System	●	●
Guideway Cover (X/Y/Z)	●	●
Leveling Blocks and Bolts	●	●
Mechanical, Electrical and Operating Manuals	●	●
Heat Exchanger for Electrical Cabinet	●	●
Triple-Chip Augers	–	●
Dual-Chip Augers	●	○
45° Outlet Pipe	–	●
Straight Pipe	–	○
Safety Door	●	●
Air Gun	●	●
Circular Coolant Nozzle	●	●
CNC Control: MXP-200FA	●	●
CE	○	○
Automatic Door	○	○
Optical Scale	○	○
Foundation Bolts	○	○
Coolant Shower	●	●
Spindle Cooling System	○	○
Spindle Cooling System (Gear box 10k)	●	●
Oil-mist Coolant System	○	○
Oil Hole Holder Function	○	○
Coolant Through Spindle System (Form A/20/30/70bar)	○	○
Chip Conveyor	○	○
4th Axis Rotary Table	○	○
A/C. Cooler for Electrical Cabinet	○	○
Automatic Power Off	○	○
Auto Tool Length Measurement System (METROL_T24E-04-08)	○	○
Workpiece Measurement System (RENISHAW_OMP60)	○	○
Oil-mist Collector	○	○
Heavy Duty Coolant Pump	●	●
Extended 250mm Column	–	○
Jerk Control	○	○



YEONG CHIN MACHINERY INDUSTRIES CO., LTD.

No. 888, Sec. 1, Homu Road, Shengang District, Taichung 42953, Taiwan

Tel : +886-4-2562-3211 ■ Fax: +886-4-2562-6479

Web Page: www.YCMCNC.com ■ Email: sales@YCMCNC.com



201508-E01-2000