

## ■ SPECIFICATIONS

	NMV76A	NMV106A
<b>SPINDLE</b>		
Spindle Speed (opt.)	12,000 rpm (8,000 rpm / 10,000 rpm Gear Box)	
Spindle Power (opt.)	18.5 kW (18.5 kW / 18.5 kW Gear Box) 25 HP (25 HP / 25 HP)	
Spindle Taper	BBT40	
<b>TRAVEL</b>		
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 22.05"	600 mm 23.62"
Distance Between Spindle Nose & Table Top	120~680 mm 4.72"~26.77"	80~680 mm 3.15"~26.77"
<b>TABLE</b>		
Table Size	915 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
<b>FEEDRATE</b>		
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	
<b>ATC</b>		
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)	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	
<b>GENERAL</b>		
Pneumatic Supplier	5.5kg/cm <sup>2</sup> 78.2psi	
Machine Weight	5,100 kg 11,243 lb	6,500kg 14,330 lb

Note: Above specifications may vary depending on the machine and the surrounding environment. The manufacturer reserves the right to modify the design, specifications, mechanisms, etc., to improve the performance of the machine without notice. The test data provided in this catalog is performed under specific test procedures and environmental conditions.

## ■ 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	●	●
Dual-Chip Augers	●	-
Dual-Chip Augers (with Left / Right-hand Side Chip Conveyor)	○	○
Triple-Chip Augers (with 45° Outlet Pipe)	-	●
Triple-Chip Augers (with Straight Pipe)	-	○
Triple-Chip Augers (with Rear Side Chip Conveyor)	-	○
Safety Door	●	●
Air Gun	●	●
Circular Coolant Nozzle	●	●
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	○	○
CNC Control : FANUC MXP-200FB*	●	●
CNC Control : HEIDENHAIN TNC620	-	○
CNC Control : SIEMENS 828D (PPU280)	-	○

Note: Above specifications may vary depending on the machine and the surrounding environment. The manufacturer reserves the right to modify the design, specifications, mechanisms, etc., to improve the performance of the machine without notice.

# VMC

## Vertical Machining Center

**FP Series** High Precision High Performance Die Mold Vertical Machining Center  
**FP66A, FP100A, NFP66A**



**NXV Series** High Performance Vertical Machining Center  
**NXV600A, NXV560A-APC, NXV1020A/AM, NXV1270A, NXV1380A, NXV1680A/B**



**TV Series** Heavy Duty Vertical Machining Center  
**TV116B, TV146B, TV158B, TV188B, TV2110B, TV2610B**

**NTV Series** High Efficiency T-base Vertical Machining Center  
**NTV158A/B**

**NMV Series** High Performance High Rigidity Vertical Machining Center  
**NMV76A, NMV106A**



**WV Series** Ultra Wide High Performance Vertical Machining Center  
**WV108A/B**

**NFX Series** High Performance 5-axis Vertical Machining Center  
**NFX400A**

**NSV Series** Ultra High Performance Vertical Machining Center  
**NSV66A, NSV106A/AM/AS/AMS, NSV156A**



**TCV Series** High Performance Traveling Column Vertical Machining Center  
**TCV2000A, TCV3000A, TCV4500B, TCV2300A-4A, TCV3000A-4A/5AF/5AX**

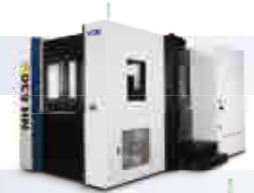
**DCV Series** Advanced Double Column Vertical Machining Center  
**DCV2012A/B, DCV3016B-6035B, DCV2018A-4018A-5AX, DCV4030B-6030B-5AX, DCV4030B-5AF**

**NDC Series** High Performance Double Column Vertical Machining Center  
**NDC2016B-4016B, NDC3022B-6027B, NDC2018B-4018B-AHC, NDC3022B-6027B-AHC**

# HMC

## Horizontal Machining Center

**NH Series** High Speed High Precision Horizontal Machining Center  
**NH500A, NH630B, NH800B**



# CNC LATHES

## CNC Turning Center

**NT Series** High Performance Mill/Turn Center  
**NT-2500SY**



**GT Series** High Performance Geo Turning Center  
**GT-200B/MA, GT-250B/MA, GT-300B/MA/LMB**

**TC Series** High Performance High Precision CNC Lathe  
**TC-16LA/LB, TC-26, TC-36, TC-46 1000/1650/2300/3200, TC-46M 3200**



**NTC Series** High Efficiency CNC Turning Center  
**NTC-2000LY/LSY**



**Integrated Operation Control System**



**Intelligent Production Management**

**Automation Solutions**



INTEGRATION AND SOLUTIONS



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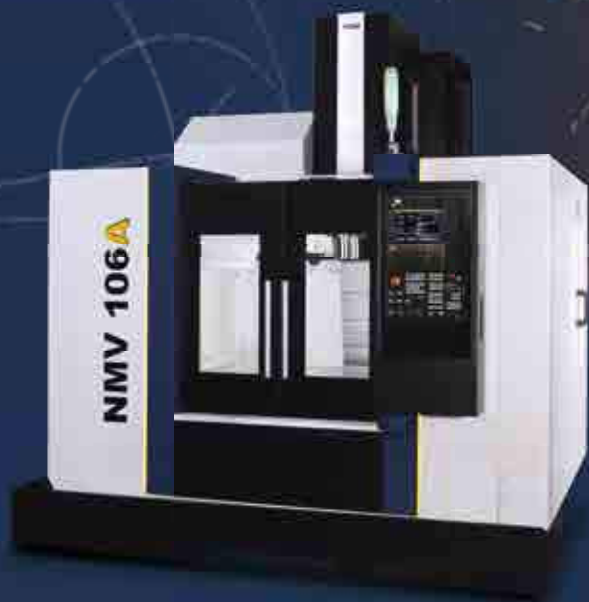
Email: [sales@YCMCNC.com](mailto:sales@YCMCNC.com)



202103-E05-2000

# 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 Spindle



■ 24T(30T/40T) (opt.) NMV106A



■ Absolute Encoder ATC System



### ■ High Rigidity Structural Design

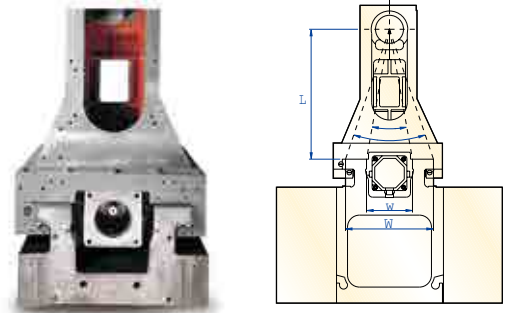
- The rigid body construction makes for uncompromising precision and rigidity.
- Finite Element Method analysis (FEM) is adopted to simulate the structural deformation of the body under various conditions, integrated with YCM hand scraping skills for box guideways, which ensures the best accuracy and 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

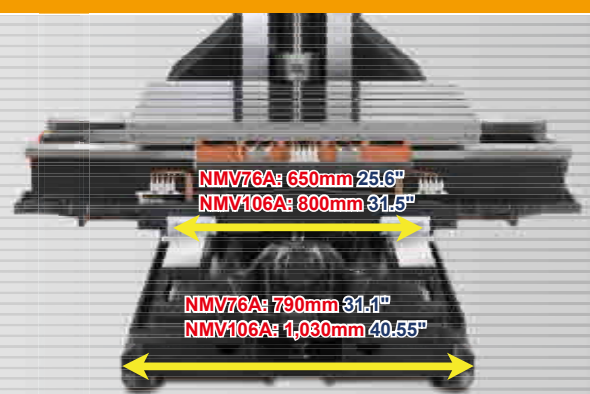
- Full enclosure exterior (including top cover).
- Convertible side window for convenient chip removal.
- Aesthetic rear cover design.
- Smooth chip removal.

### 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



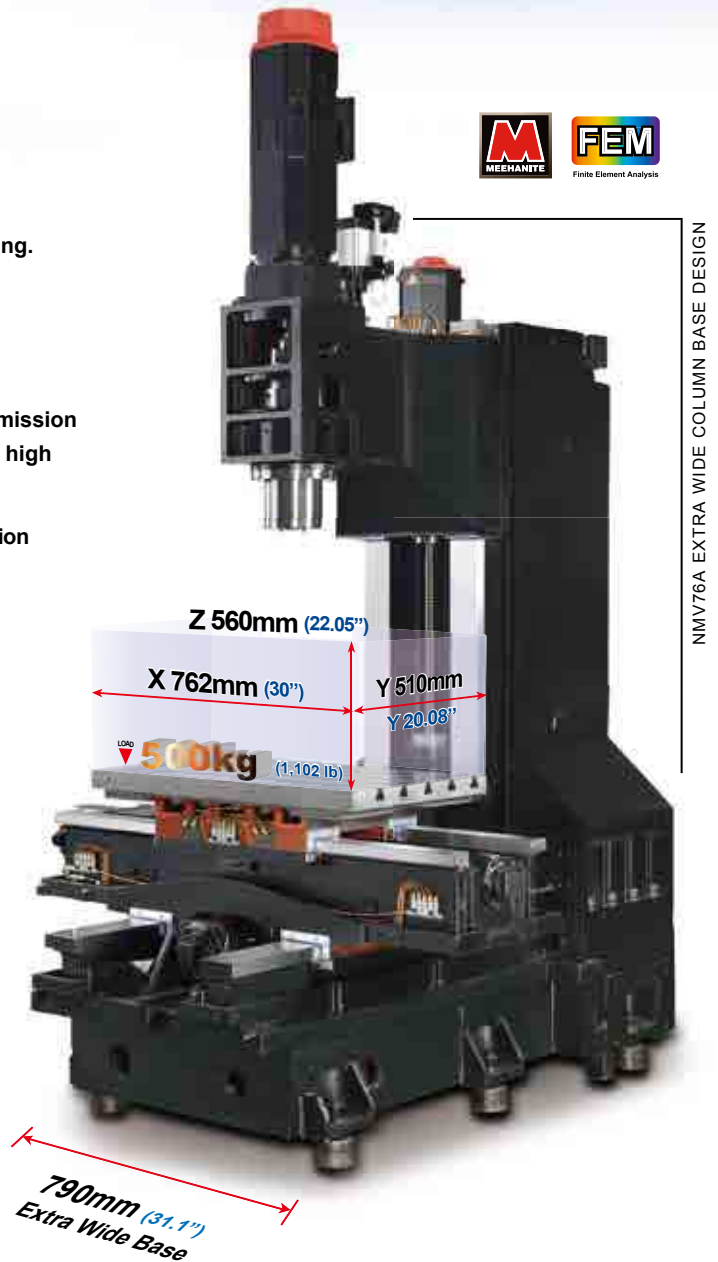
■ Rigid Column & Base Design  
Suitable for Heavier Cutting and Stable Accuracy

NMV76A: 650mm 25.6"  
NMV106A: 800mm 31.5"

NMV76A: 790mm 31.1"  
NMV106A: 1,030mm 40.55"

# NMV 76A

- Adopted consistent production process, box guideway type models with high vibration 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 45.04 kgf-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.
- The rear chip disposal design can meet the needs of production planning.



## NMV 76A Rapid Feedrate

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

## ■ ACCURACY

### NMV 76A

ACCURACY	ISO 10791-4	YCM*
<b>Axial Travel</b>	<b>Full Length</b>	
<b>Positioning (X/Y/Z) A</b>	0.025/0.025/0.025 mm 0.00098"/0.00098"/0.00098"	0.01/0.01/0.01 mm 0.00039"/0.00039"/0.00039"
<b>Repeatability (X/Y/Z) R</b>	0.015/0.015/0.015 mm 0.00059"/0.00059"/0.00059"	0.007/0.007/0.007 mm 0.00028"/0.00028"/0.00028"

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

# NMV 106A

- Adopted consistent production process, box guideway type models with high vibration 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 45.04 kgf-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.
- Dual chip augers combined with chip conveyor for fast chip disposal (opt.)



## NMV 106A Rapid Feedrate

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

## ■ ACCURACY

NMV 106A		
ACCURACY	ISO 10791-4	YCM*
<b>Axial Travel</b>	<b>Full Length</b>	
<b>Positioning (X/Y/Z) A</b>	0.032/0.025/0.025 mm 0.00126"/0.00098"/0.00098"	0.01/0.01/0.01 mm 0.00039"/0.00039"/0.00039"
<b>Repeatability (X/Y/Z) R</b>	0.018/0.015/0.015 mm 0.00071"/0.00059"/0.00059"	0.007/0.007/0.007 mm 0.00028"/0.00028"/0.00028"

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

## ■ Cutting Capacity

**NMV 106A** BBT40/12,000rpm

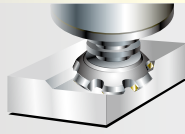
### FACE MILL

S45C Steel

Depth of Cut

**6.5**  
mm

Tool  $\phi$ 80mm x 5T  
Spindle Speed 600rpm  
Feedrate 450mm/min  
Width of Cut 60mm



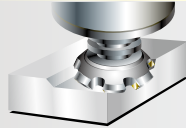
### FACE MILL

S45C Steel

Material Removal Rate

**648**  
cc/min.

Tool  $\phi$ 63mm x 6T  
Spindle Speed 1,500rpm  
Feedrate 2,700mm/min  
Width of Cut 60mm  
Depth of Cut 4mm



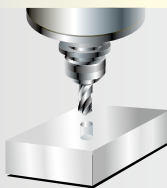
### U-DRILL

Drilling (Max.)

**$\phi$ 44**  
mm

Tool  $\phi$ 44mm  
Spindle Speed 1,500rpm  
Feedrate 150mm/min  
Depth of Cut 44mm

S45C Steel



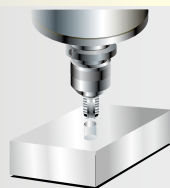
### TAP

Tapping (Max.)

**M24**

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

S45C Steel



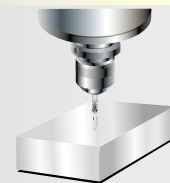
### RIGID TAP

A6061 Aluminum

Tapping (Min.)

**M1.2**

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



Note: Internal cutting test data are just for reference. This is tested for the max. machining capability of the machine, but not for the optimum tool life conditions.

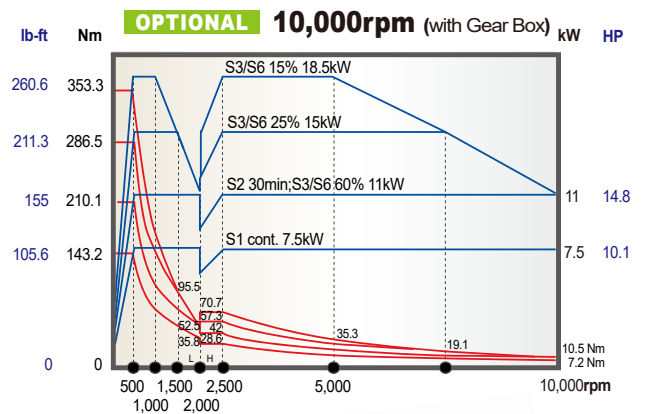
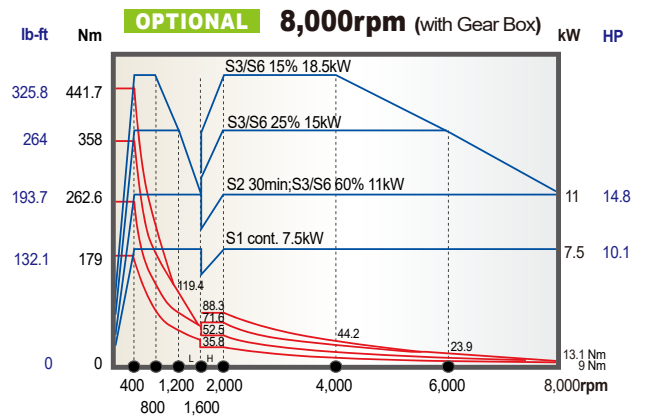
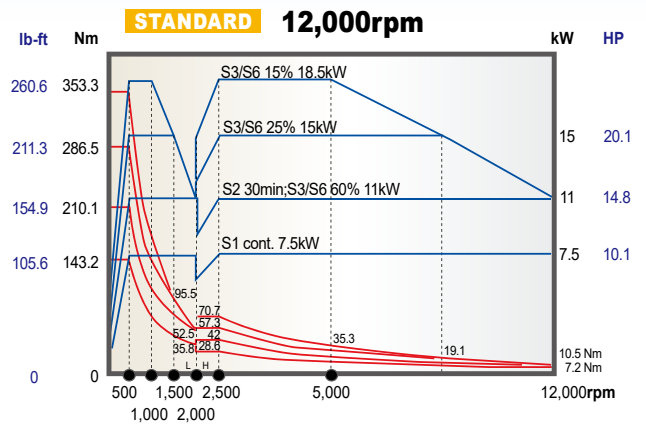
## ■ Power Chart

POWER

TORQUE

FANUC

NMV 76A / NMV 106A

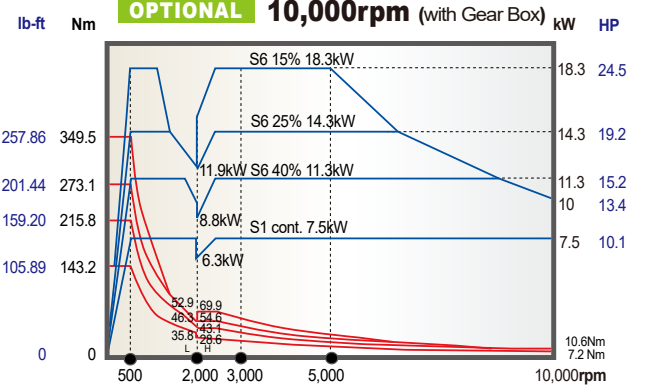
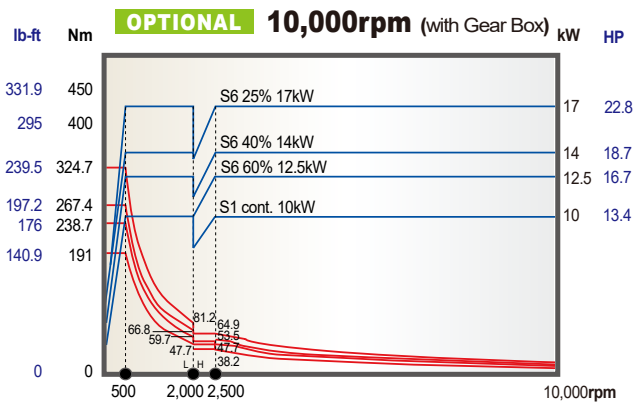
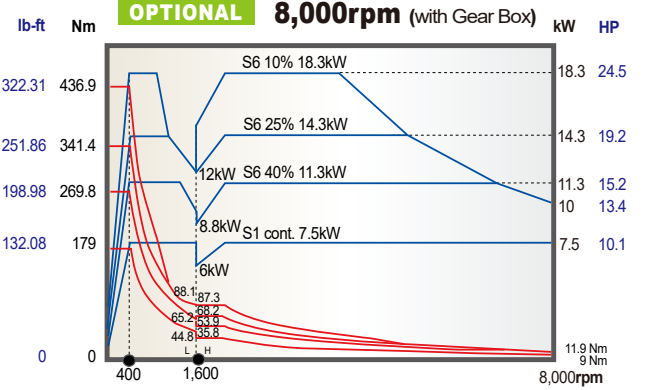
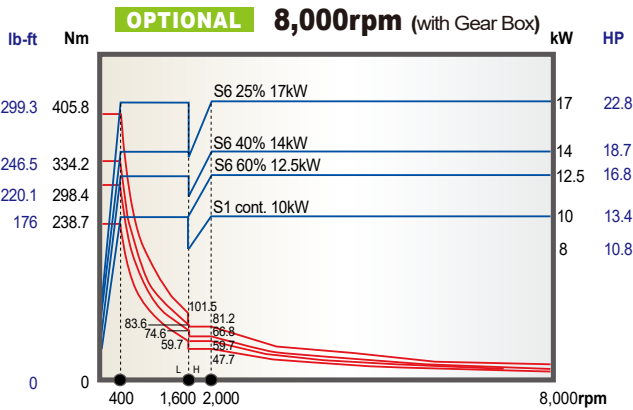
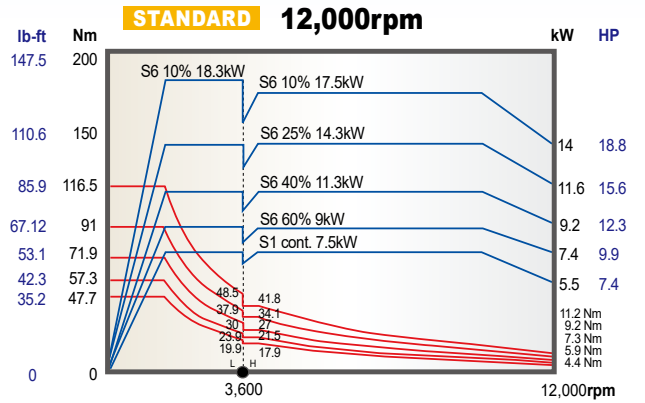
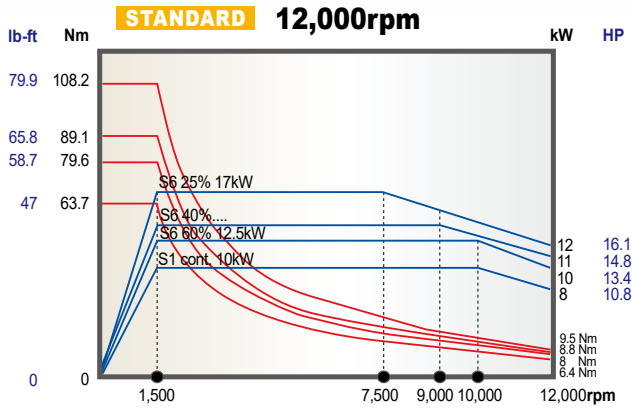


■ IDD PLUS Spindle 12,000 rpm

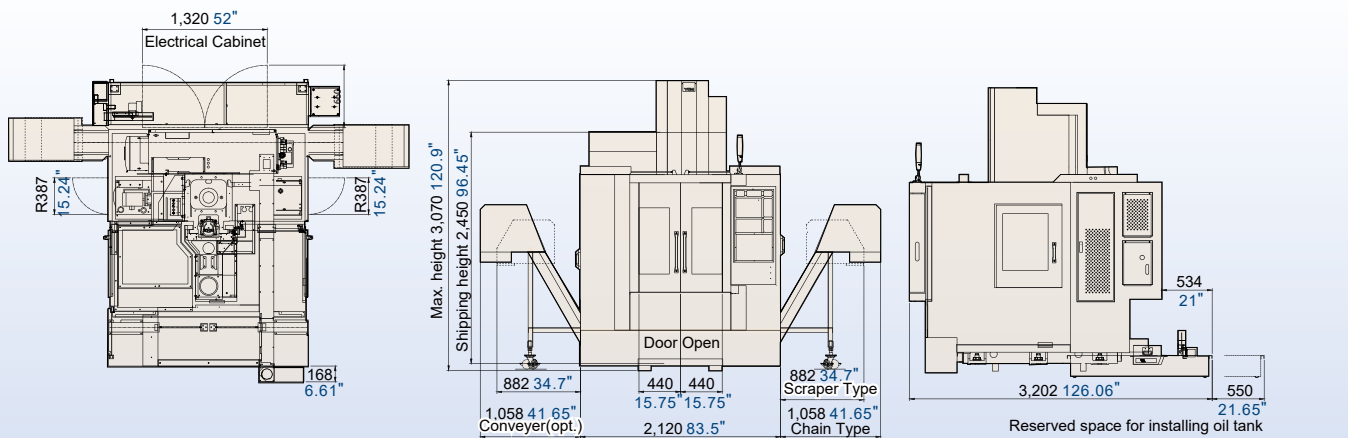


**HEIDENHAIN NMV 76A / NMV 106A**

**SIEMENS NMV 106A**



**DIMENSIONS Unit: mm inch NMV 76A**



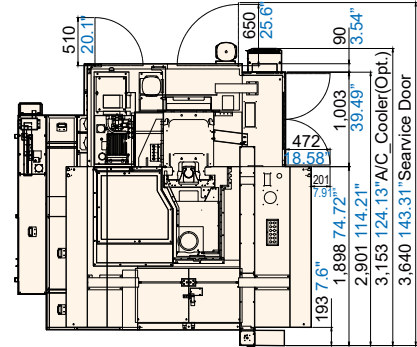
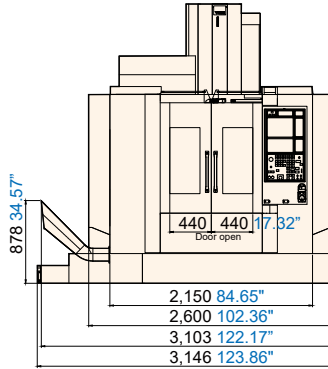
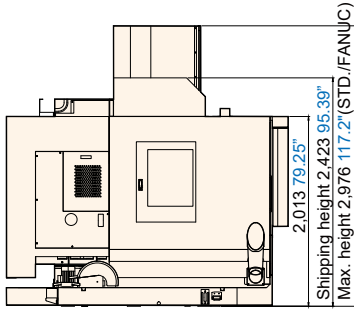
# DIMENSIONS

Unit: mm inch

# NMV 106A

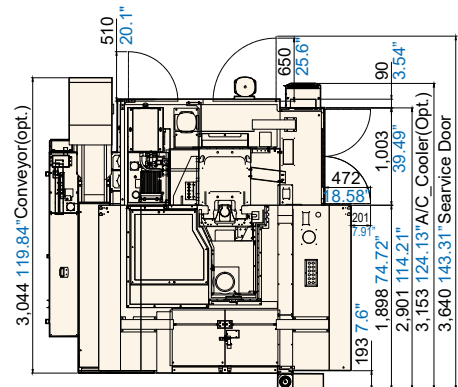
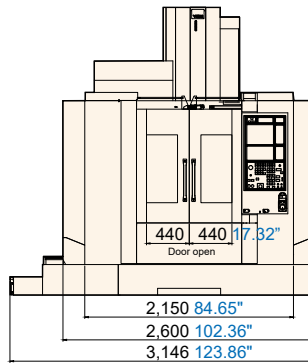
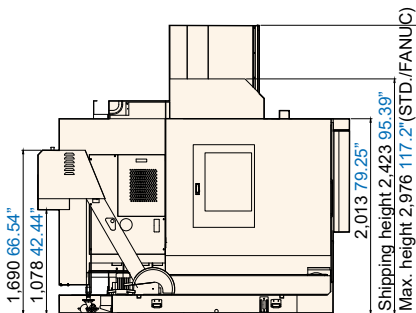
## Triple-Chip Auger

### Triple Chip Auger with 45° Pipe



## Triple-Chip Auger

### Rear Side Chip Conveyor (opt.)



## Dual-Chip Auger

### Left / Right-Hand Side Chip Conveyor (opt.)

