

NH 450A

High Speed High Precision Horizontal Machining Center



NH 450A

NH-450A features of high capacity machining space, allowing to run machine with both 400 mm and 500 mm pallets in the same machine. Incorporates the features of high rigidity, high accuracy and high speed, which can satisfy automotive, job shops, aerospace industries' diverse machining requirements.



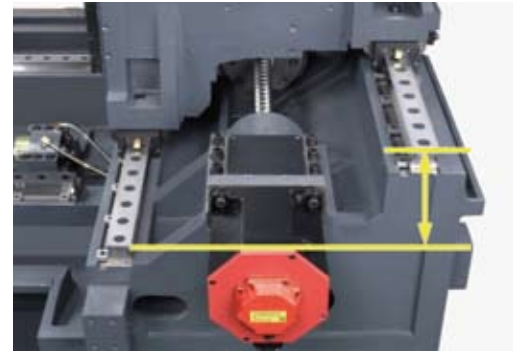
■ 15,000rpm IDD Spindle

■ Powerful 3,500 Nm Clamping Force

■ Auto Tool Change (T-T): 1 sec.

High Rigidity Design

- Machine base is made of one piece casting.
- The spindle headstock is made of one piece "FCD600" castings.
- Stepped castings design on X-axis to increase the cutting rigidity.
- The pallet is also made of "FCD600" casting to eliminate possible deformation caused by heavy payload.
- Structure of the machine column is dual-wall and symmetrical designed to virtually eliminate possible thermal deformation.
- Machine main component connection part 100% Hand-scraping to make sure long term cutting accuracy.



■ Stepped casting design on X-axis

Powerful IDD Spindle

- The powerful spindle utilizes ultra high precision ceramic ball bearings.
- High efficiency spindle oil cooler system effectively minimizes thermal deformation, ensuring high precision.
- Maximum 15,000 rpm
- 22 kW and 200 Nm torque is suitable for any cutting condition.
- BB40 with simultaneous taper and flange contact design provide higher machining accuracy, which can improve spindle & tool's life.

High Capacity Machining Space

- $\varnothing 750$ mm x 1,000 mm large working envelope table and max. load capacity reach to 500 kg each.
- Customer may order machine with 400 mm and 500 mm pallets.
- It allows to run machine with both 400 mm and 500 mm pallets in the same machine.

B-axis Rotary Table

- 1° programmable.
- Powerful 3,500 Nm clamping force.
- Air sensors confirm the pallets are accurately positioned and seated.

Reliable Auto Pallet Change

- 7 seconds pallet change.
- Driven by hydraulic.
- Simple design, reliable and easy maintenance.

Reliable Auto Tool Change

- It takes 1 second to complete one cycle of tool to tool change.
- ATC speed is programmable in high & low speed.
- Servo motor drive tool magazine, which have the features of high precision and find tool quickly.

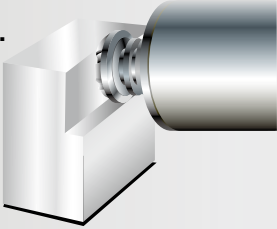


Cutting Texts

FACE MILL Aluminum

Material Removal Rate
2,450 cc/min.

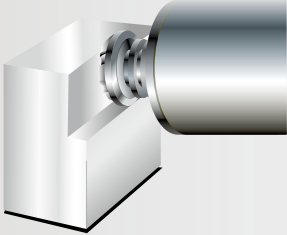
Tool $\varnothing 40\text{mm} \times 4\text{T}$
 Spindle Speed 12,000rpm
 Feedrate 20,000mm/min.
 Width of Cut 35mm
 Depth of Cut 3.5mm
 Spindle Loading 175%



FACE MILL S45C Steel

Material Removal Rate
709 cc/min.

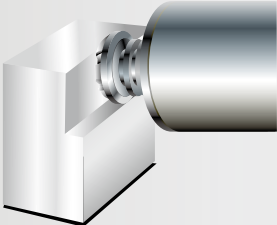
Tool $\varnothing 63\text{mm} \times 6\text{T}$
 Spindle Speed 1,500rpm
 Feedrate 3,150mm/min.
 Width of Cut 60mm
 Depth of Cut 3.75mm
 Spindle Loading 108%



FACE MILL S45C Steel

Depth of Cut
8 mm

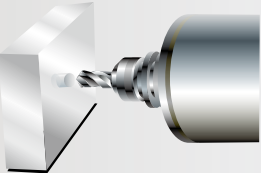
Tool $\varnothing 80\text{mm} \times 5\text{T}$
 Spindle Speed 600rpm
 Feedrate 450mm/min.
 Width of Cut 60mm
 Material Removal Rate 216cc/min.
 Spindle Loading 86%



DRILL S45C Steel

Width of Cut
 $\varnothing 59$ mm

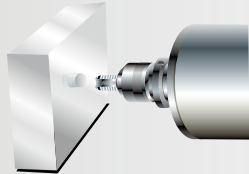
Tool $\varnothing 59\text{mm} \times 1\text{T}$
 Spindle Speed 1,050rpm
 Feedrate 158mm/min.
 Depth of Cut 50mm
 Material Removal Rate 431cc/min.
 Spindle Loading 105%



Max. TAPPING S45C Steel

M42

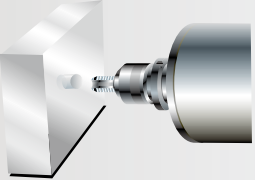
Tool M42 x 4.5P
 Spindle Speed 76rpm
 Feedrate 342mm/min.
 Spindle Loading 156%



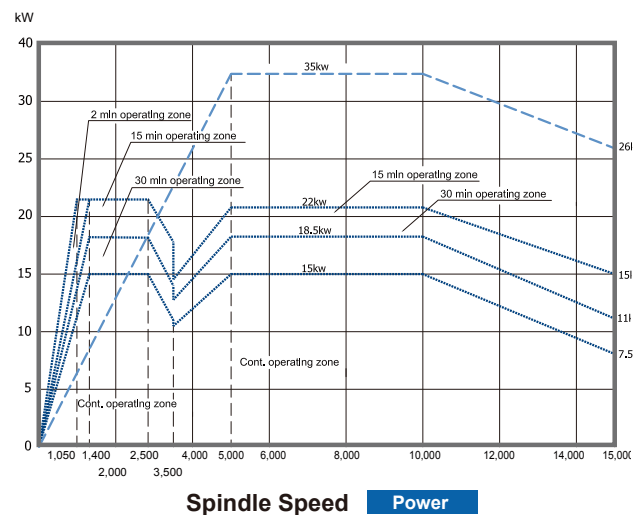
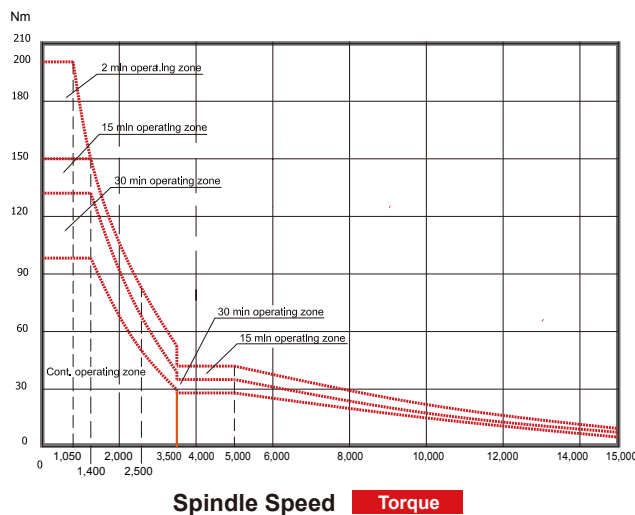
Min. TAPPING Aluminum

M1.2

Tool M1.2 x 0.25P
 Spindle Speed 12,000rpm
 Feedrate 300mm/min.



Power Chart



Specifications

	NH450A
SPINDLE	
Spindle Speed	15,000 rpm
Spindle Power	15 / 18.5 / 22 / 22 kW 20 / 25 / 30 /30 HP (cont./30min./15min./2min.)
Spindle Torque	100 / 125 / 150 / 200 Nm (cont./30min./15min./2min.)
Spindle Taper	BBT40
TRAVEL	
X-axis Travel	640 mm 25.2"
Y-axis Travel	610 mm 24.02"
Z-axis Travel	680 mm 26.77"
Distance Between Spindle Nose and Table Center	100~780 mm 3.94"~30.71"
TABLE	
Pallet Size (opt.)	400 x 400 mm 15.75" x 15.75" (500 x 500 mm 19.7" x 19.7")
Max. Load on Table	500 kg
Pallet Surface Continguration (opt.)	M16 x 80 mm x 80 mm M16 x 3.15" x 3.15" (M16 x 100 mm x 100 mm M16 x 3.15" x 3.94")
Pallet top height (from the floor)	1,100mm
Pallet Index (opt.)	1° (0.001°)
Pallet Change Time	7sec.
FEEDRATE	
Rapid Feedrate X/Y/Z	60 / 60 / 60 m/min. 2,362ipm/2,362ipm/2,362ipm
Cutting Feedrate	1~20,000 m/min. 0.04~787ipm
ATC	
Tool Magazine Capacity (opt.)	40T (60T)
Max. Tool Weight	8 kg 18 lb
Max. Tool Dimensions (opt.) (W/O Adjacent Tools)	ø75 mm x 400 mm ø2.95" x 15.75" (ø150 mm x 400 mm ø5.91" x 15.75")
GENERAL	
Pneumatic Pressure	6 kg/cm ² 78.23psi
Power Consumption	45 kVA
Machine Weight	10,945 kg 24,129 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.

STANDARD ACCESSORIES

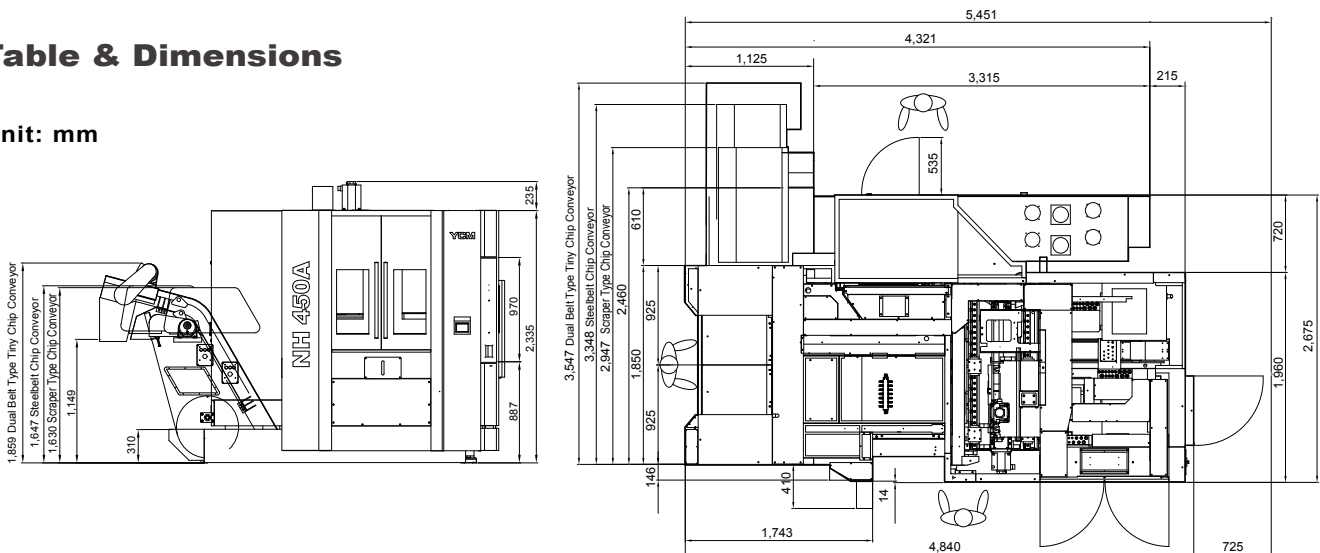
- Full Chip Enclosure
- Automatic Power on/off
- Spindle Air Blast
- Guideway Cover
- Sealed Electrical Cabinet
- Heat Exchanger for Electrical Cabinet
- Central Lubrication System
- Coolant Equipment System
- Coolant Equipment System (With Coolant Shower)
- Spindle Cooling System
- Coolant Through Spindle System (30 Bar)
- Chip Auger
- Cutting Air Blast
- Spindle Air Seal
- Spindle Air Blast
- Oil Skimmer
- Safety Door
- Pilot Lamp
- Work Lamp
- Prepped 70 bar (1,000 psi) CTS
- Leveling Blocks and Bolts
- Tool Kit
- Mechanical, Electrical & Operating Manuals

OPTIONAL ACCESSORIE

- Optical Scale
- Optical Scale on B Axis
- Oil-mist Collector
- Chip Conveyor
- A/C. Cooler for Electrical Cabinet
- 4th Axis Rotary Table (0.001°)
- Workpiece Measurement System
- Auto Tool Length Measurement System
- Laser Tool Length Measurement System
- 50 kVA Transformer
- 500 mm x 500 mm pallet
- Hydraulic Clamping System for Fixtures
- Illumination for pallet loading station
- Tool Shank
- Pull stud
- Auxiliary Table
- Rotary Wiper
- Coolant Through Spindle System (70 Bar)
- Additional Pallet

Table & Dimensions

Unit: mm



VMC

YCM[®] PRODUCT LINES

Vertical Machining Center

FP Series High Precision High Performance Die Mold Vertical Machining Center
/ High Precision Graphite Vertical Machining Center
FP55LX, FP66A, FP100A / FP66G

FV Series High Speed High Performance Vertical Machining Center
/ High Speed High Performance Drilling & Tapping Center
FV56T, FV56A, FV85A, FV102A, FV125A / FV50T

XV Series High Performance Vertical Machining Center
XV560A, XV1020A, XV1250A

NXV Series High Precision Vertical Machining Center
NXV1020A/AM

TV Series Heavy Duty Vertical Machining Center
TV116B, TV146A/B, TV158B, TV188B, TV2110B, TV2610B

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

MV Series High Performance High Rigidity Vertical Machining Center
MV66A, MV76A, MV86A, MV106A

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

FX Series High Performance 5-axis Vertical Machining Center
FX380A

NSV Series Ultra High Performance Vertical Machining Center
NSV66A, NSV85A, NSV102A, NSV156A

NDV Series High Precision Die Mold Vertical Machining Center
NDV66A, NDV85A, NDV102A

NBX Series High Performance Swivel Head 5-axis Vertical Machining Center
NBX102A

TCV Series High Performance Traveling Column Vertical Machining Center
TCV2000A, TCV3000A, TCV3000A-5AF, TCV3000A-5AX

DCV Series Advanced Double Column Vertical Machining Center

DCV2012A/B, DCV3016B, DCV4016B, DCV3021B, DCV4021B, DCV5021B, DCV6021B, DCV3025B, DCV4025B, DCV5025B, DCV4030B, DCV5030B, DCV6030B, DCV4035B, DCV5035B, DCV6035B, DCV4030B-5AX, DCV5030B-5AX, DCV6030B-5AX, DCV4030B-5AF

NDC Series High Performance Double Column Vertical Machining Center
NDC2016B, NDC3016B, NDC4016B

HMC

Horizontal Machining Center

H Series High Production Horizontal Machining Center
H500A/B, H630B, H800B, H2612B

NH Series High Speed High Precision Horizontal Machining Center
NH450A, NH630B, NH800B

HBM

Horizontal Boring Milling Machining Center

BMP Series High Accuracy Heavy Duty Boring Machine
BMP1416B

CNC LATHES

CNC Turning Center

NT Series High Performance Mill-axis Mill/Turn Center
NT-2000Y/SY, NT-2500Y/SY

GT Series High Performance Geo Turning Center
GT-200A/B/MA, GT-250A/B/MA/MB, GT-300A/B/LA/LB/MA/MB/LMA/LMB, GT-380A/B/LA/LB

TC Series High Performance High Precision CNC Lathe
TC-16A/B/LA/LB/MA/MB/LMA/LMB, TC-26, TC-26L, TC-36, TC-36W, TC-46, TC-46M

INTEGRATION
AND SOLUTIONS

Integrated Operation Control System **iOPERATION**

Spindle Thermal Compensation System **STC PLUS**

Remote Monitoring System **iDirect**

Automation Solutions



YEONG CHIN MACHINERY INDUSTRIES CO., LTD.

888 Homu Road, Shengang District, Taichung, Taiwan

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

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



201304-E01-1000