



Agent



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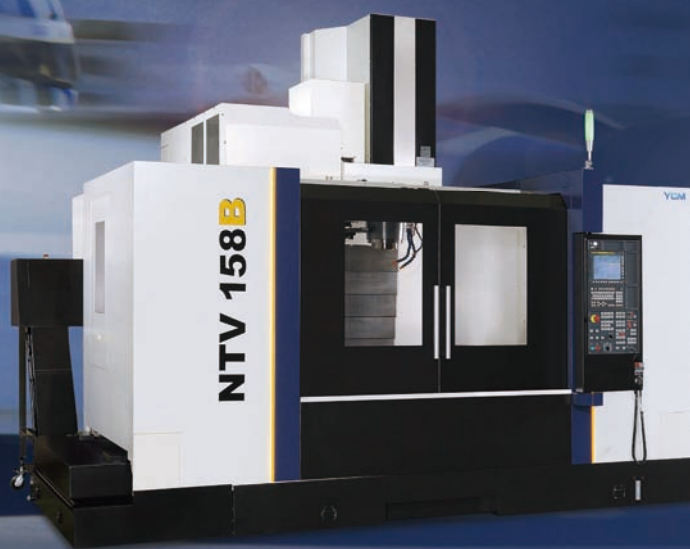
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201507-E04-2000

NTV Series

High Efficiency T-base Vertical Machining Center



YCM®

NTV 158A

NTV158A offers a high rapid feedrate with large Y-axis which provides mold maker and job shop an excellent machine selection.

Unique One-piece T-base Structure Design

- With the unique T-base structure, the machine footprint can be reduced effectively.
- Overhang-free table movement is supported by high-rigidity base to ensure the best dynamic accuracy.
- Dual screw-type chip augers efficiently elevate chip removal rate.

YCM In-house IDD Spindle

- Equipped with YCM in-house IDD spindle, the standard speed can reach up to 10,000rpm.
- YCM's uniquely designed IDD Spindle ensures direct transmission and is proven to maximize both spindle and tool life under harsh working environments.
- The cooling system for spindle motor seat and spindle makes real time control of spindle temperature. (opt.)
- 12,000 & 15,000rpm spindle with oil-air lubrication system ensures the spindle to work for high-speed and long period of time. (opt.)

High Speed Axial Movement

- All axes are equipped with roller type linear guideways to ensure higher dynamic accuracy, durability and rigidity.
- Preload high precision ball screws are directly driven by servo motor will efficiently eliminate axial backlash and vibrations.
- X-axis with 6 guideway blocks fully supports the saddle and efficiently releases loading from the table.
- No more counter weight design on Z-axis reduces friction and ensures fine surface roughness.

Efficiency-friendly Design

- The casting rigidity is enhanced through FEM analysis.
- Roller type guideways provides low friction which reduces energy waste.
- 10,000rpm IDD spindle lubricated by grease without gearbox and oil cooler to avoids wasting oil.

- Unique One-piece T-base Structure Design



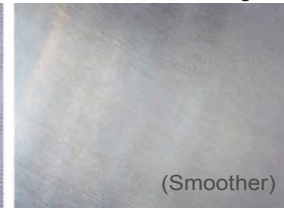
Without Counter-weight Design

- High response axial control provides smooth movement.
- Low inertia avoids vibration during high speed feedrate.

With Counter-weight



Without Counter-weight



■ MEEHANITE® casting.

NTV 158B

NTV158B is specially developed for die & mold industry. The Z-axis dual drive system and roller type guideways on all axes ensure perfect rapid feedrate which is suitable for various heavy cutting applications.

Superb Body Structure

- With the unique T-base structure, the machine footprint can be reduced.
- The overhang-free table is supported by high rigidity base to ensure the best dynamic accuracy.
- Dual drive system on Z-axis elevates exceptional axial smoothness and machining efficiency.
- Dual chip augers greatly increase chip removal efficiency.

YCM In-house IDD Spindle Design

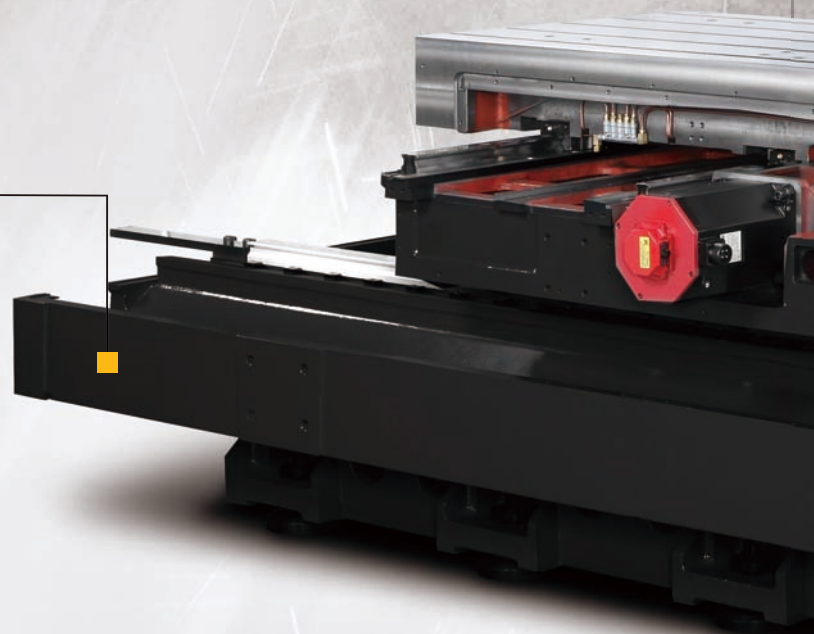
- The standard speed can be reached up to 10,000rpm.
- Reduces noise, backlash and vibration problems and maximizes spindle accuracy and life.
- The cooling system for spindle motor seat and spindle makes real time spindle temperature control. (opt.)
- 15,000rpm spindle provide more flexible applications. (opt.)

High Reliability Axial Movement

- All axes are equipped with roller type linear guideways to ensure higher dynamic accuracy, durability and rigidity.
- X-axis with 6 guideway blocks fully supports the saddle and efficiently release loading from the table.
- Y-axis is designed with 3 guideways maintaining exceptional dynamic accuracy.
- Without counter-weight design on Z-axis provides friction and ensures fine surface roughness.



- Dual chip augers greatly increase chip removal efficiency.

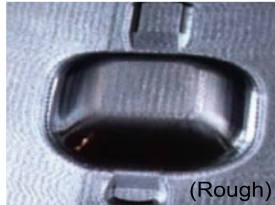




Without Counter-weight Design

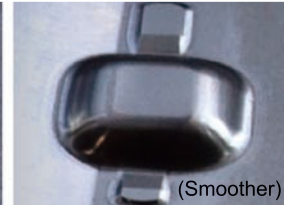
- High response axial control provides smooth movement.
- Low inertia avoids vibration during high speed feedrate.

With Counter-weight



(Rough)

Without Counter-weight

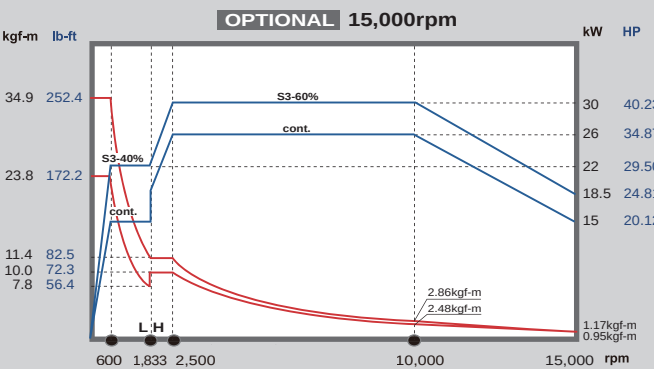
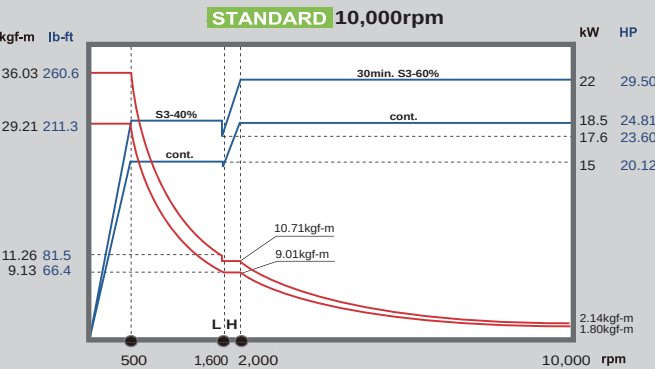
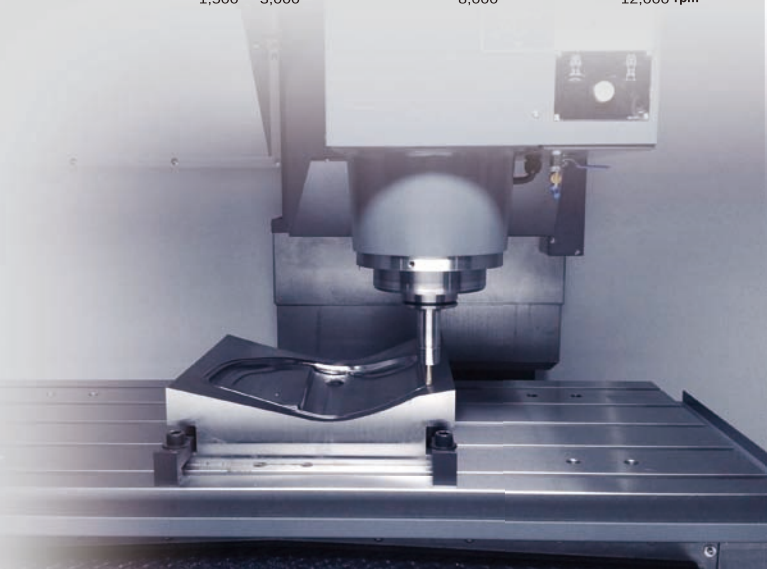
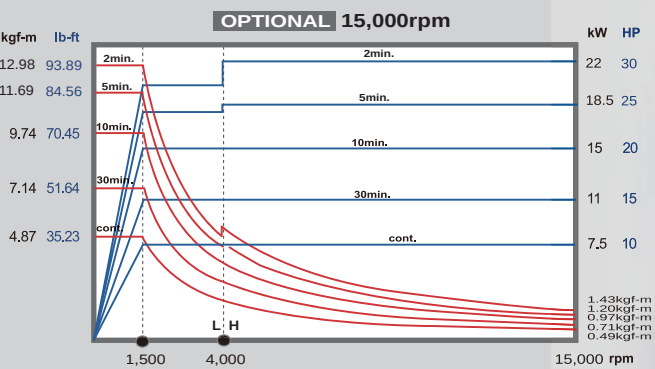
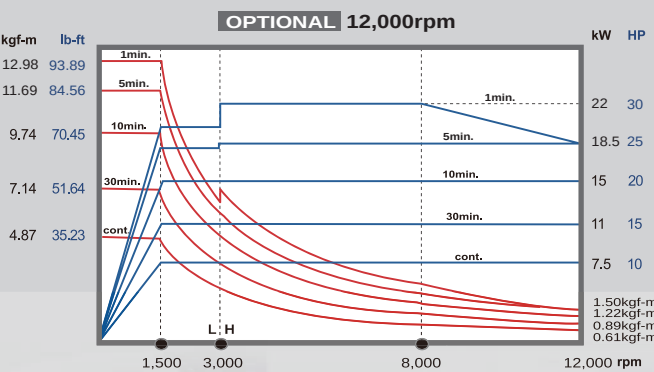
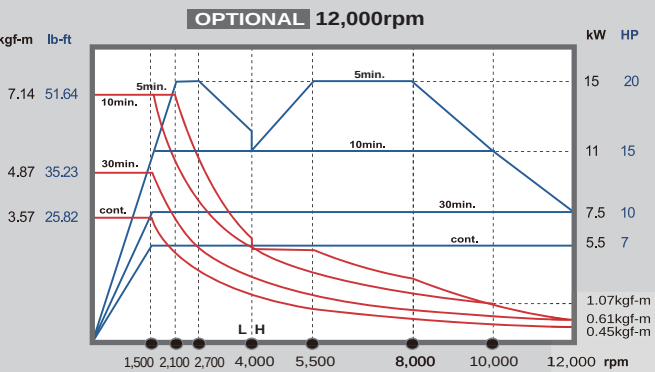
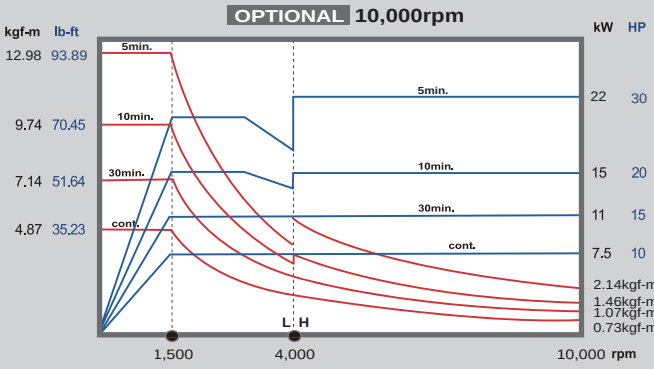
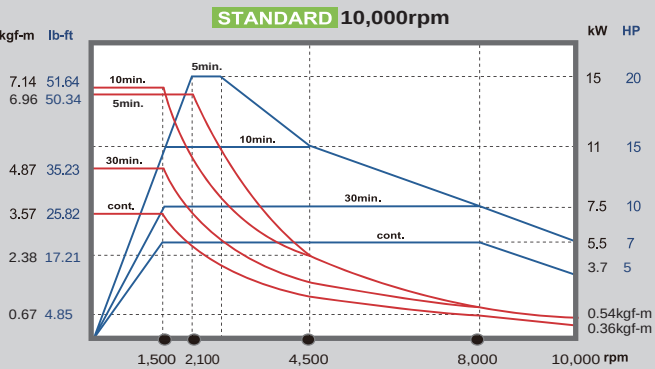


(Smoother)

- No counter-weight machine gets smoother surface under the same cutting conditions.

Z-axis Dual Driven

- Increases the feedrate and acceleration/deceleration.
- High response axial control provide smooth movement.
- Low inertia avoids vibration during high speed feedrate.

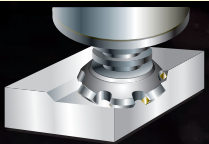


Cutting Capacity

NTV158A **BBT40** 12,000 rpm

FACE MILL **S45C Steel**

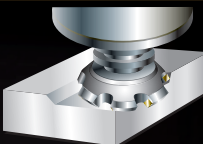
Depth of Cut
4
mm



Tool $\phi 63$ mm x 6T
Spindle Speed 760 rpm
Feedrate 456 mm/min.
Width of Cut 60 mm

FACE MILL **S45C Steel**

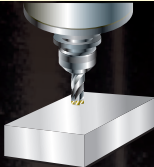
Material Removal Rate
522
cc/min.



Tool $\phi 63$ mm x 6T
Spindle Speed 2,100 rpm
Feedrate 3,780 mm/min.
Width of Cut 60 mm
Depth of Cut 2.3 mm

U-DRILL **S45C Steel**

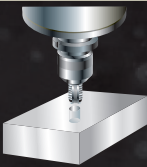
Cutter Diameter
 $\phi 34$
mm



Tool $\phi 34$ mm x 1T
Spindle Speed 1,500 rpm
Feedrate 225 mm/min.
Depth of Cut 10 mm

TAP **S45C Steel**

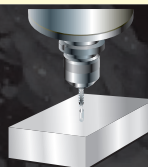
Tapping
M24



Tool M24 x 3P
Spindle Speed 60 rpm
Feedrate 180 mm/min.
Depth of Cut 25 mm

RIGID TAP **A6061 Aluminum**

Tapping
#0-80UNF
equals to M1.6

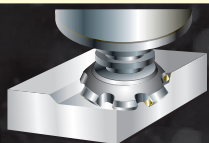


Tool #0-80UNF
Spindle Speed 1,200 rpm
Feedrate 381 mm/min.
Depth of Cut 4 mm

NTV158B **BBT50** 10,000 rpm

FACE MILL **S45C Steel**

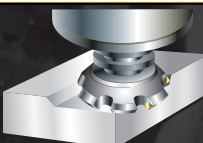
Depth of Cut
9
mm



Tool $\phi 160$ mm x 10T
Spindle Speed 500 rpm
Feedrate 360 mm/min.
Width of Cut 125 mm

FACE MILL **S45C Steel**

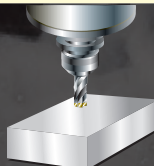
Material Removal Rate
693
cc/min.



Tool $\phi 160$ mm x 10T
Spindle Speed 550 rpm
Feedrate 1,232 mm/min.
Width of Cut 125 mm
Depth of Cut 4.5 mm

U-DRILL **S45C Steel**

Cutter Diameter
 $\phi 49$
mm

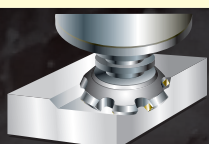


Tool $\phi 49$ mm x 1T
Spindle Speed 715 rpm
Feedrate 172 mm/min.
Depth of Cut 20 mm

NTV158B **HSK A100** 15,000 rpm

FACE MILL **S45C Steel**

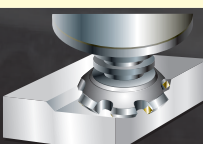
Depth of Cut
4
mm



Tool $\phi 125$ mm x 8T
Spindle Speed 382 rpm
Feedrate 305 mm/min.
Width of Cut 120 mm

FACE MILL **S45C Steel**

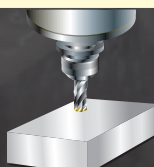
Material Removal Rate
720
cc/min.



Tool $\phi 125$ mm x 8T
Spindle Speed 600 rpm
Feedrate 2,400 mm/min.
Width of Cut 120 mm
Depth of Cut 2.5 mm

U-DRILL **S45C Steel**

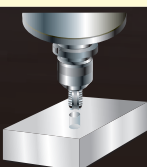
Cutter Diameter
 $\phi 44$
mm



Tool $\phi 44$ mm x 1T
Spindle Speed 600 rpm
Feedrate 150 mm/min.
Depth of Cut 24 mm

TAP **S45C Steel**

Tapping
M33



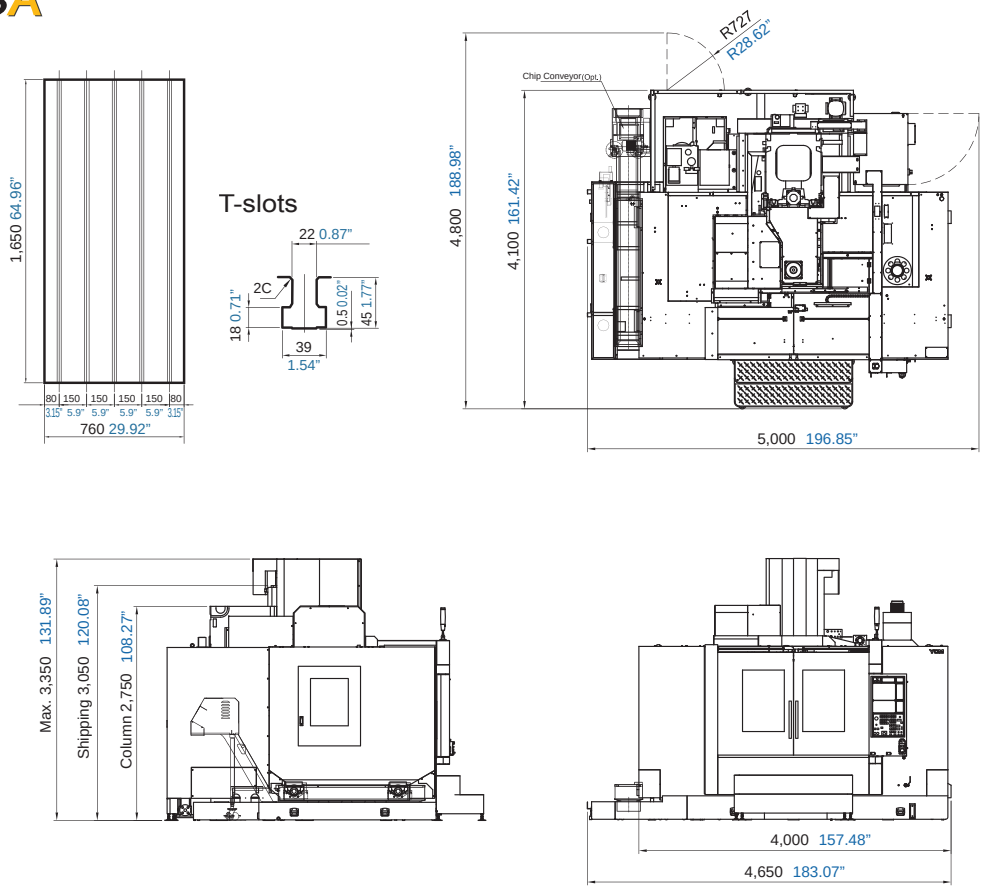
Tool M33 x 3P
Spindle Speed 48 rpm
Feedrate 144 mm/min.
Depth of Cut 33 mm

DIMENSIONS

NTV158A

Unit : mm inch

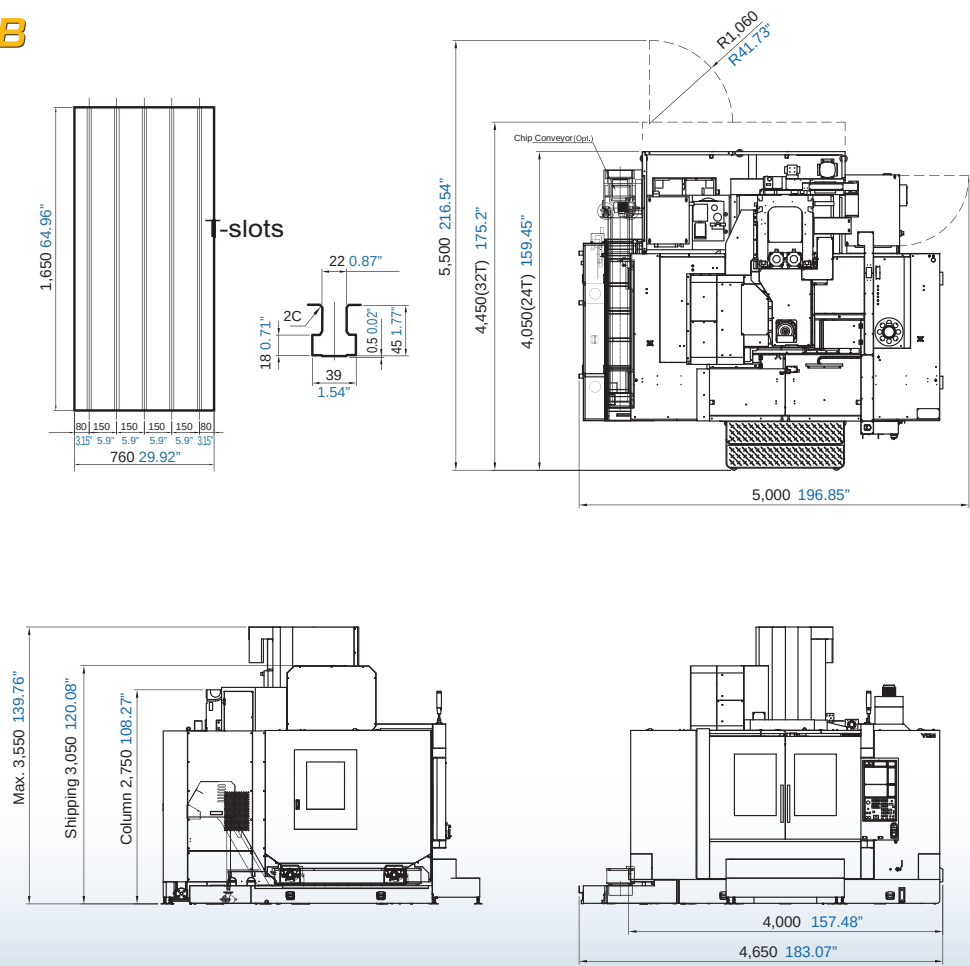
Table Size



NTV158B

Unit : mm inch

Table Size



SPECIFICATIONS

	NTV158A	NTV158B
SPINDLE		
Spindle Speed (opt.)	10,000 rpm (12,000 / 15,000 rpm)	10,000 rpm (15,000 rpm)
Spindle Power (opt.)	15 kW (22 kW) 20 HP (30 HP)	22 kW (30 kW) 30 HP (40 HP)
Spindle Taper (opt.)	BBT40	BBT50 (HSK A100 for 15,000 rpm)
TRAVEL		
X-axis Travel	1,530 mm 60.2"	1,530 mm 60.2"
Y-axis Travel	762 mm 30"	762 mm 30"
Z-axis Travel	700 mm 27.6"	700 mm 27.6"
Distance Between Spindle Nose & Table Top	150~850 mm 5.91"~33.46"	200~900 mm 7.87"~35.43"
TABLE		
Table Size	1,650 x 760 mm 64.96" x 29.9"	1,650 x 760 mm 64.96" x 29.9"
No. T-slots x Size x Pitch	5 x 22 mm x 150 mm 5 x 0.87" x 5.91"	5 x 22 mm x 150 mm 5 x 0.87" x 5.91"
Max. Load on Table	2,000 kg 4,409 lb	2,000 kg 4,409 lb
FEEDRATE		
Rapid Feedrate	30 / 30 / 24 m/min. 1,181/1,181/945 ipm	30 / 30 / 24 m/min. 1,181/1,181/945 ipm
Cutting Feedrate	1~10,000 mm/min. 0.04~393.7 ipm	1~10,000 mm/min. 0.04~393.7 ipm
ATC		
Tool Magazine Capacity (opt.)	24T (30 / 48T)	24T (32 / 40T)
Max. Tool Weight (per piece)	6 kg 13.2 lb	20 kg 44 lb
Max. Tool Dimensions	24T : ø90 x 300 mm ø3.54" x 11.81" 30 / 48T : ø76 x 300 mm ø2.99" x 11.81"	24T : ø110 x 350 mm ø4.33" x 13.78" 32 / 40T : ø120 x 350 mm ø4.72" x 13.78"
Max. Tool Dimensions (W/O Adjacent Tools)	24T : ø140 x 300 mm ø5.51" x 11.81" 30 / 48T : ø125 x 300 mm ø4.92" x 11.81"	24T : ø190 x 350 mm ø7.48" x 13.78" 32 / 40T : ø240 x 350 mm ø9.45" x 13.78"
Tool Changer Method	Arm Type	Arm Type
Tool Selection Method	Random	Random
GENERAL		
Pneumatic Supplier	5.5 kg/cm ² 78.2 psi	5.5 kg/cm ² 78.2 psi
Power Consumption (Transformer)	34 kVA (40 kVA)	67 kVA (80 kVA)
Machine Weight	14,170 kg 31,293 lb	15,500 kg 34,171 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.

ACCURACY

	NTV series	
	ISO 10791-4	YCM*
Axial Travel	Full Length	
Positioning (X/Y/Z) A	0.032 / 0.025 / 0.025 mm 0.00126" / 0.00098" / 0.00098"	0.014 / 0.010 / 0.010 mm 0.00055" / 0.00039" / 0.00039"
Repeatability (X/Y/Z) R	0.018 / 0.015 / 0.015 mm 0.00071" / 0.00059" / 0.00059"	0.010 / 0.007 / 0.007 mm 0.00039" / 0.00028" / 0.00028"

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

ACCESSORIES

■ : Standard ■ : Option

- Work Lamp
- Pilot Lamp
- Safety Door
- Coolant Gun
- Coolant Equipment System
- Cutting Air Blast
- Spindle Air Seal
- Spindle Air Blast
- Central Lubrication System
- Oil Skimmer
- Guideway Cover (X,Y,Z)
- Leveling Blocks and Bolts
- Foundation Bolts (NTV158B)
- Mechanical, Electrical & Operating Manuals
- Heat Exchanger for Electrical Cabinet
- Full Chip Enclosure
- Dual Chip Augers (X-axis)
- Air Gun
- Spindle Cooling System (NTV158B)
- Circular Coolant Nozzle (NTV158B)
- CNC Control: MXP-200FB
- CE
- Automatic Door
- Optical Scale (X/Y/Z-axis)
- Foundation Bolts (NTV158A)
- Oil-mist Collector
- Oil-mist Coolant System
- Chip Conveyor
- Chip Flush Coolant System
- A/C. Cooler for Electrical Cabinet
- 4th Axis Rotary Table
- Spindle Cooling System (NTV158A)
- Coolant Through Spindle System
- Heavy Duty Coolant Pump
- Workpiece Measurement System
- Auto Tool Length Measurement System
- Circular Coolant Nozzle (NTV158A)
- Oil Hole Holder Function
- CNC Control: MXP-200FC



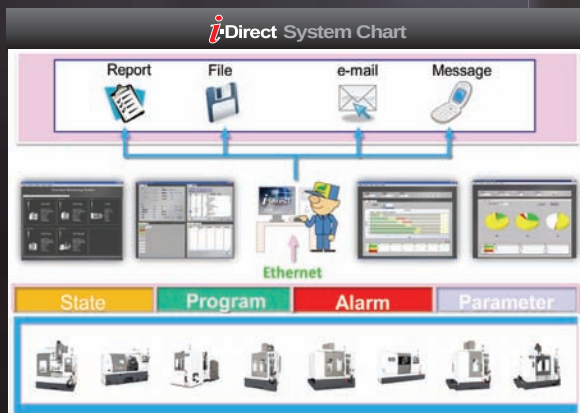
MXP-200 FB/FC

YCM CONTROL
by **FANUC**

- High Response AC Digital Servo & Spindle Drives with High Definition
- AICC II High Speed High Accuracy with Auto Switching on/off Machining
- JERK Control Function (opt.)
- High Rigidity Tapping, Helical Interpolation
- Custom Marco B and Tool Path Graphics
- Manual Guide i with large Screen Display . (MXP-200FC, opt.)
- Program File Management for Easy Program Classifying
- USB Interface for Easy Parameters & CNC Programs Transfer
- 512KB Memory
- High Speed Positioning Function (MXP-200FC, opt.)
- Memory Card Program Edit & Operation (opt.)
- 3D Interference Check (5-axis control as standard)
- NANO Smoothing Function (opt.)
- 400 pairs tool offset, 1,000 total registered programs
- 48 pairs of workpieces coordinate system
- Extended parts program editing (cut, copy, and paste. maximum 4,000 characters)

i-Direct A remote monitoring system

The YCM Production Line Monitoring System i-Direct overcomes the limitations of time and distance. This software provides plant operators with instant production status, including production value, output, standby, alarm time, status display and malfunction records of the machine. These data could be browsed online and printed. When incidents occur, i-Direct will automatically warn plant operators through e-mail or MMS message. With i-Direct Production Line Monitoring System the plant operators can easily keep track of production statuses regardless of time and distance.



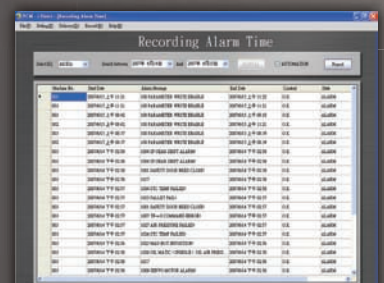
Single Machine Status Browsing
Machine Status Browsing



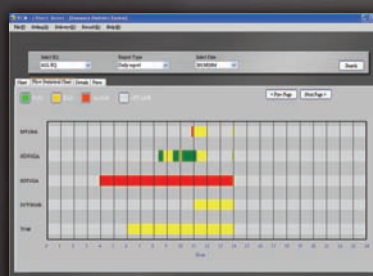
Plant Operation Status Monitoring



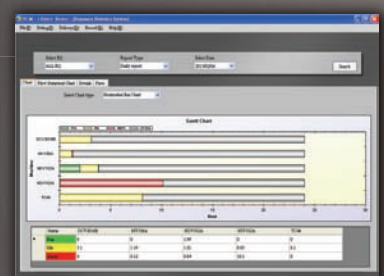
Machine connection, MMS and e-mail settings



Machine Status Time Record



Production Status Process Record



Production Management Statistics

i-OPERATION *Plus II*

Software Enhancement Exclusively from YCM



Pre-machining Preparation

Intelligent Tool Data Management
Comprehensive tool data management function allows operators to monitor and manage all positions in tool magazine

FORM DATA TABLE

TOOL NO. 121

TOOL NAME 017

TOOL TYPE 017

TOOL NO. 122

TOOL NAME 018

TOOL TYPE 018

TOOL NO. 123

TOOL NAME 019

TOOL TYPE 019

TOOL NO. 124

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