

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 Die & Mold Vertical Machining Center
NXV1020A, NXV1020AM

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, DCV2016B, DCV3016B, DCV4016B, DCV3021B, DCV4021B, DCV5021B, DCV6021B, DCV3025B, DCV4025B, DCV5025B, DCV4035B, DCV5035B, DCV6035B, DCV4030B, DCV5030B, DCV6030B, DCV4030B-5AF, DCV5030B-5AX, DCV6030B-5AX, DCV4030B-5AF

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



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 **STCPLUS**
 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



FV Series

High Speed High Performance Machining Vertical Center



FV Series
102A





HIGH SPEED HIGH PERFORMANCE MACHINING VERTICAL CENTER



The YEONG CHIN FV-Series

High-Speed, High-Power Vertical Machining Centers are specially designed for industries that demand high precision, high productivity application such as automotive, aerospace, electronic, and job shop industries.

With our unique IDD (Isolated Direct Drive)

Spindle Design and our ultra-wide, ultra-rigid internally ribbed construction, our FV-Series delivers exceptional cutting finish and accuracy.

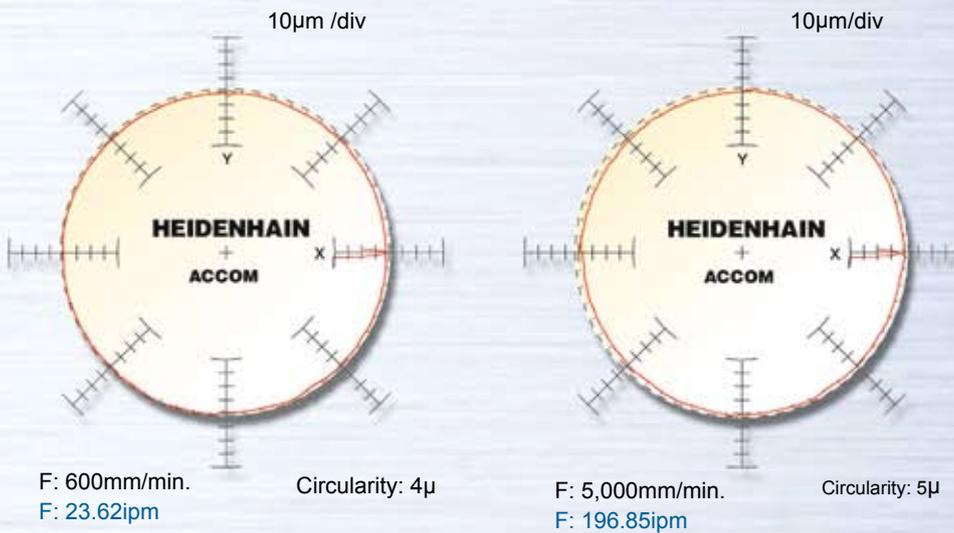
With the addition of ATC system that changes tool-to-tool in 1 second for 30# spindle, and 3.5 seconds for 40# spindle, the newly developed NR type linear motion guide ways from THK, and the FANUC high responsive AC servo units, our FV-Series will more than pay for its value in no time, and we will bring you success.

* Optional functions under FANUC MXP-200FB or MXP-200FC control system.

The most cost-effective solution in high-speed, high-precision mold & die machining.

0.1 μ m High Resolution Modular (HRM)* + Simultaneously Differential Feedrate Control (SDFC)*
Take a YCM FV-Series Vertical Machining Center with the HRM and SDFC functions, conduct tests and then check by Heidenhain Grid Encoder with the following results, which prove HRM and SDFC not only enhance the feed rate control but also keep good accuracy.

- Conduct R = 40mm 1.58" circular interpolation on XY plane with 600mm/min. 23.62ipm and 5,000mm/min. 196.85ipm cutting feed respectively.



- Conduct 45mm 1.77" linear interpolation on XY plane with 600mm/min. 23.62ipm and 5,000mm/min. 196.85ipm cutting feed respectively.





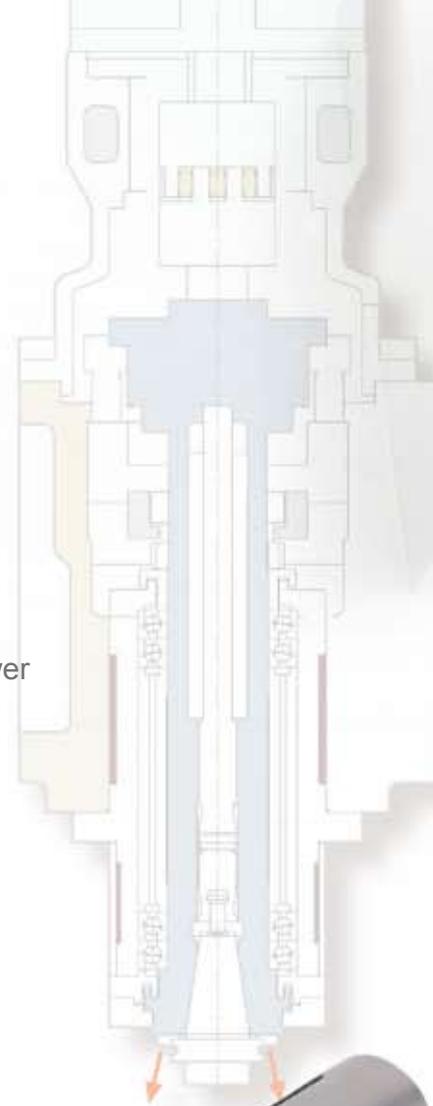
Unique Spindle IDD Design

Unique direct coupled spindle design could isolate heat source, reduce the thermal deformation, increase the spindle precision and prolong spindle life.

Isolated polyurethane flexible coupling is used between motor and spindle.

Optional spindle cooling system could achieve better accuracy control.

Direct power transfer from spindle shaft to the cutting edge, ensures the power efficiency. Detecting the spindle speed from the build-in encoder of spindle ensures the best performance of rigid tapping.



Hi-Speed, Hi-Power Spindle Design

FV56T (30#)

- Ceramic bearings are applied on 15,000rpm spindle, with features of lighter weight, low centrifugal force, high rigidity, low coefficient of heat expansion, so as to achieve better accuracy and spindle life.
- High horse power design, maximum output for acceleration can achieve 20kW **27HP**.
- High torque, low inertia-form 0 to 6,000rpm takes only 0.3sec. to reach. Excellent in mass drilling and tapping works.
- The high precision spindle bearing system, with ID. 45mm, is to match the small & precise mold making requirements.
- Max. rigid tapping speed: 6,000rpm.

FV56A/85A/102A/125A (40#)

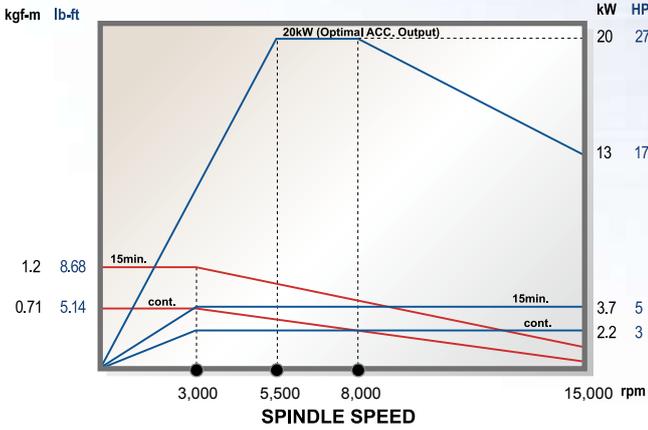
- The 10000rpm spindle deploys precision ceramic ball bearings of light mass, low centrifugal force, low swell factor, but high rigidity, which assure the optimal accuracy and spindle life span.
- Oil-Air lubrication 12,000rpm or 15,000rpm spindle is available for option.



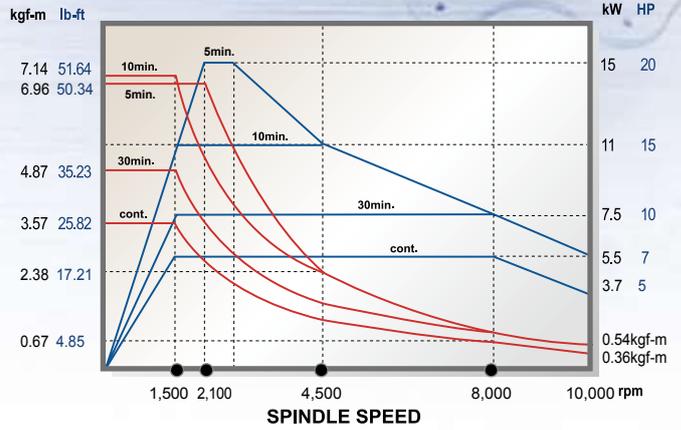
Various High-Speed Spindle Options for Selection to Meet the Utmost Machining Requirements.

POWER **TORQUE**

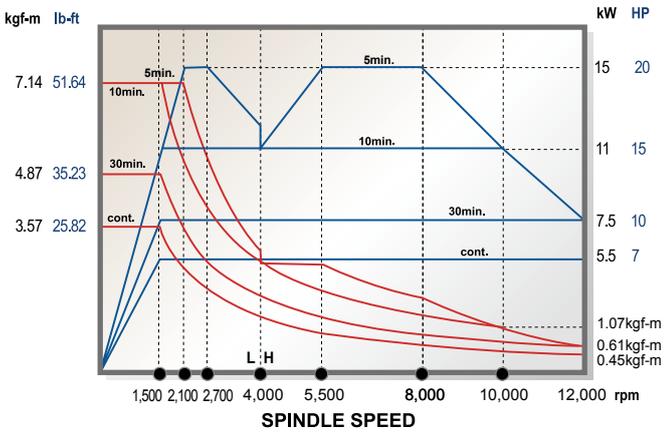
For : FV56T - 15,000rpm



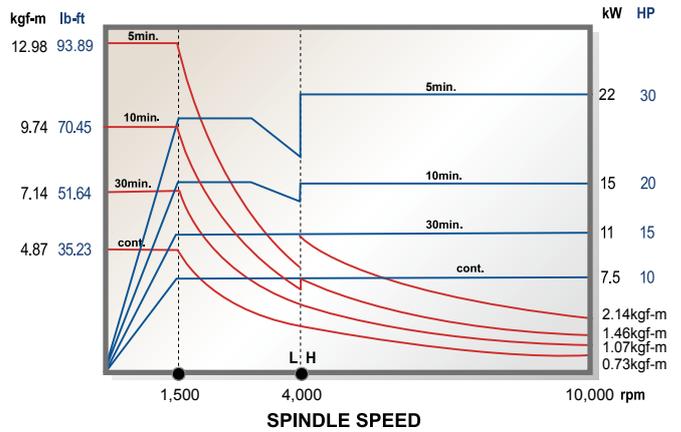
For : FV56A / FV85A / FV102A / FV125A
10,000rpm (std.)



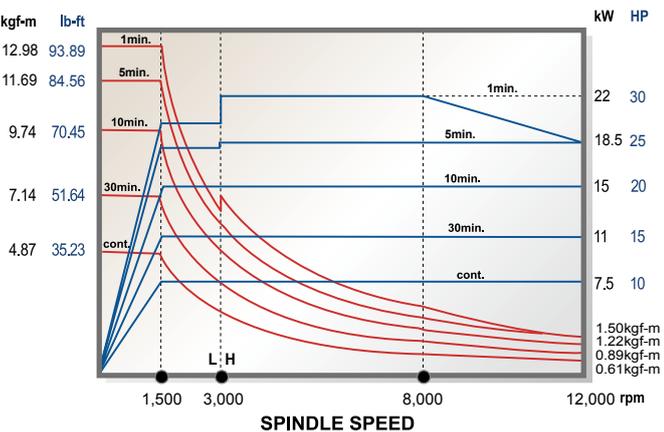
For : FV56A / FV85A / FV102A / FV125A
12,000rpm (opt.)



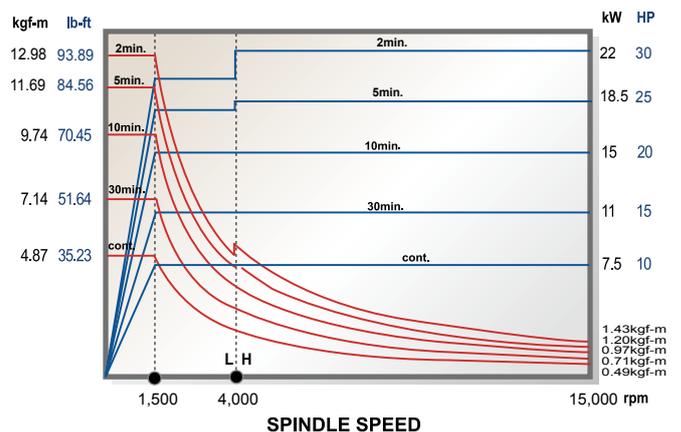
For : FV85A / FV102A / FV125A
10,000rpm (opt.)



For : FV85A / FV102A / FV125A
12,000rpm (opt.)



For : FV85A / FV102A / FV125A
15,000rpm (opt.)

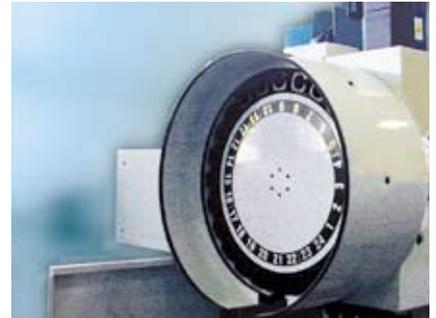
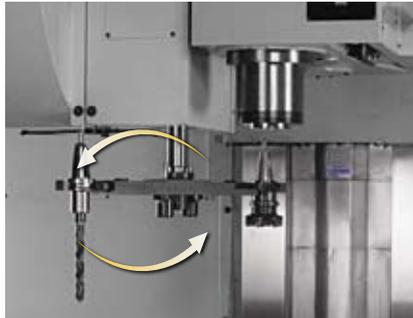




High Efficiency Utmost performance Integration, Solution & Automation

Reliable ATC Unit

- Fast and reliable roller gear cam ATC allows ATC time in 1 second (for FV56T), and 3.5 seconds (for FV56A/FV85A/ FV102A/FV125A), lowers the idle time and enhances the machining efficiency.
- The ATC units were running tested more than million times before their mass production to ensure high reliability.



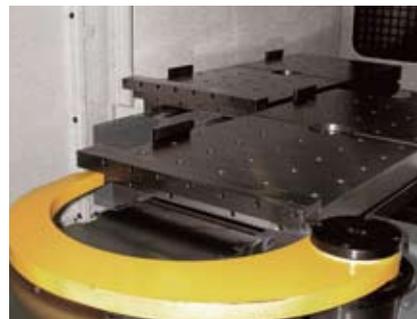
Complete chips disposal system

- Ensure the cleanness of machining environment. Optional flush coolant can be used to prove the chips disposal efficiently.
- Screw type chip conveyor makes the chips disposal more easily & efficiently. (FV85A/ FV102A)
- Complete set of the Y-axis back side plate well protects the guide-way for durable operation.



Shuttle Type Automatic Pallet Changer (FV102A, Option)

- APC's swivel arm is driven by X-axis servo motor with unique rack transmission design, features fast and accurate pallet change mechanism.
- APC time is around 15 seconds.
- Over sized taper pins are applied to ensure backlash-free positioning and rigid clamping on the pallet.
- APC feed rate is adjustable to appropriate speed for different work pieces' demand.



Advanced APC Design (FV56T/A, Option)

- Hi-speed rotary auto-pallet changer.
- APC time takes 9 seconds only.
- Reliable rotary mechanism driven by servo motor reducer achieves quick APC speed.
- Rotary speed is adjustable to ensure better stability when heavy loading on the pallet.
- Shot flush coolant could clean the positioning block automatically.
- The minimum floor space required, saving floor space and saving money.



FV Series 56T/56A

Super-Accuracy & Rigidity Construction for High Speed Epoch

- Tough and durable MEEHANITE castings deliver exceptional cutting stability and consistent accuracy - the massive, rigid internally ribbed construction reduces damping effect for superb part finishing.
- The extra wide column base and machine base maximize the cutting rigidity, and enhance machine stability during heavy-duty machining.
- Hardened & ground ballscrews are precisely pre-tensioned at both ends, supported by angular contact thrust bearings, and directly coupled with high responsive AC servomotors of backlash-free for outstanding positioning repeatability and accuracy during long machining cycles.
- All axes utilize the newly developed NR type linear motion guide ways from THK of its superior rigidity, low friction, low noise, thus to assure much smoother movement in high-speed traverse.
- All linear motion guide ways are mounted on the very fine surface for maximum surface contact and exceptional cutting rigidity and stability.



FV56T
Headstock

Extra Wide Column Base



Extra Wide Machine Base 960mm 37.80"

FV56T / FV56A ACCURACY

	Standard	ISO 10791-4	JIS B 6338 (1985)
Tolerances			
Axial Travel		Full Length	—
Positioning	A	0.010mm (0.00039")	0.003/300mm(0.00012"/12)
Repeatability	R	0.007mm (0.00028")	±0.002mm(±0.00008")

VDI/DGQ3441 is equivalent to A of ISO10791-4, and PS is equivalent to R.
All values shown above are measured for machine in good air conditioned environments.

Axial Rapid Feedrate (opt.)

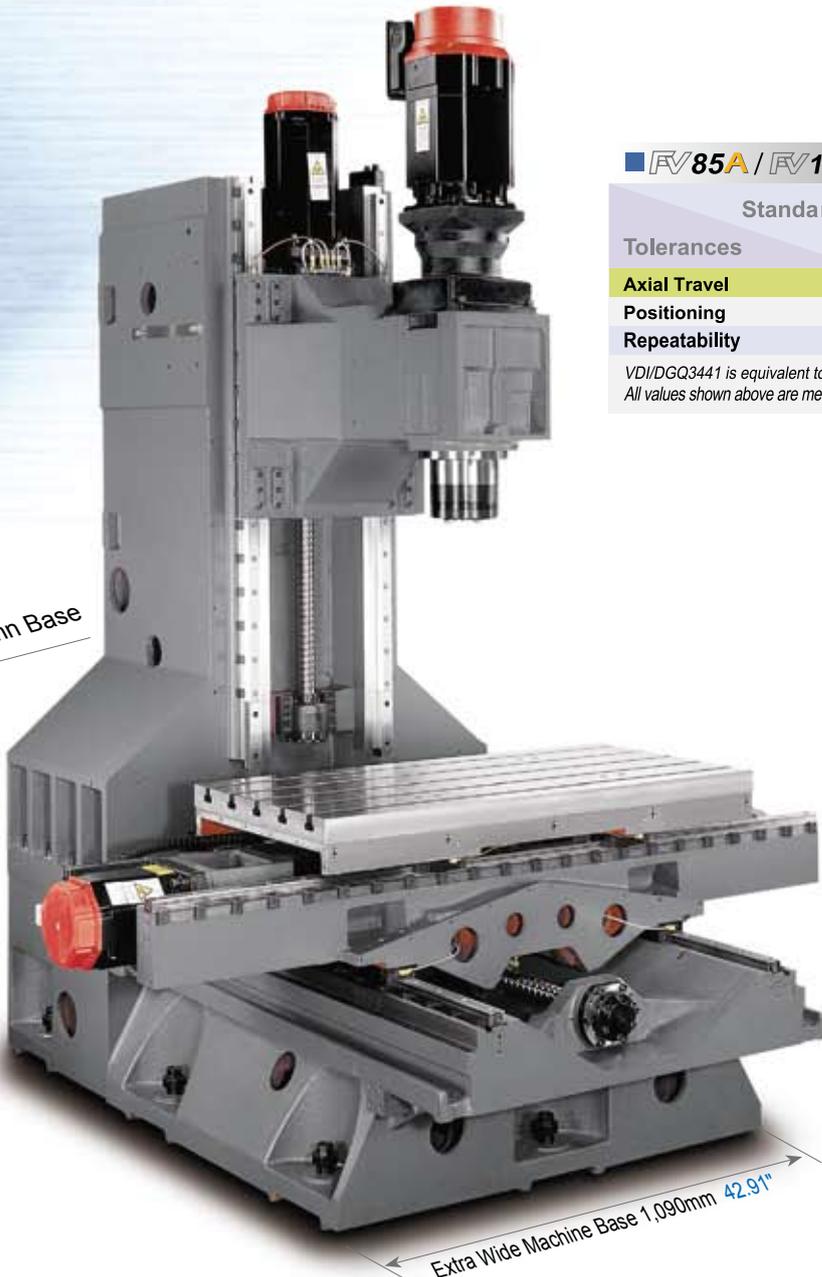
X	36m/min. (48m/min.) 1,417ipm (1,890ipm)
Y	36m/min. (48m/min.) 1,417ipm (1,890ipm)
Z	24m/min. (48m/min.) 9,45ipm (1,890ipm)



FV Series 85A/102A

Super-Accuracy & Rigidity Construction for High Speed Epoch

- Tough and durable MEEHANITE castings deliver exceptional cutting stability and consistent accuracy - the massive, rigid internally ribbed construction reduces damping effect for superb part finishing.
- The extra wide column base and machine base maximize the cutting rigidity, and enhance machine stability during heavy-duty machining.
- Hardened & ground ballscrews are precisely pre-tensioned at both ends, supported by angular contact thrust bearings, and directly coupled with high responsive AC servomotors of backlash-free for outstanding positioning repeatability and accuracy during long machining cycles.
- All axes utilize the newly developed NR type linear motion guide ways from THK of its superior rigidity, low friction, low noise, thus to assure much smoother movement in high-speed traverse.
- All linear motion guide ways are mounted on the very fine surface for maximum surface contact and exceptional cutting rigidity and stability.



FV85A / FV102A ACCURACY

Standard	ISO 10791-4	JIS B 6338 (1985)
Tolerances		
Axial Travel	Full Length	—
Positioning	A 0.010mm (0.00039")	0.003/300mm(0.00012"/12)
Repeatability	R 0.007mm (0.00028")	±0.002mm(±0.00008")

VDI/DGQ3441 is equivalent to A of ISO10791-4, and PS is equivalent to R.
All values shown above are measured for machine in good air conditioned environments.

Axial Rapid Feedrate

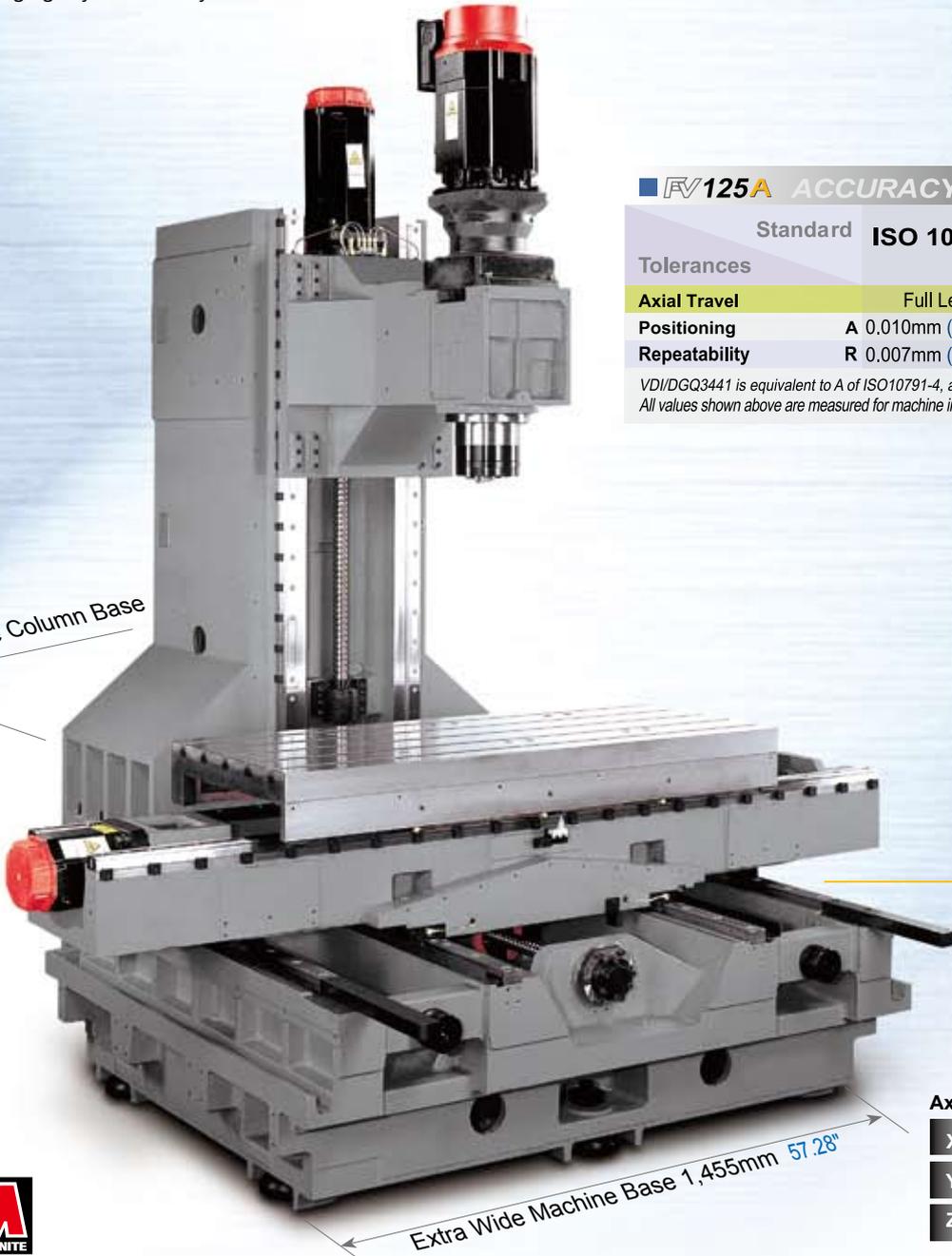
X	36m/min. 1,417ipm
Y	36m/min. 1,417ipm
Z	24m/min. 9,45ipm



FV Series 125A

Super-Accuracy & Rigidity Construction for High Speed Epoch

- Tough and durable MEEHANITE castings deliver exceptional cutting stability and consistent accuracy - the massive, rigid internally ribbed construction reduces damping effect for superb part finishing.
- The extra wide column base and machine base maximize the cutting rigidity, and enhance machine stability during heavy-duty machining.
- Hardened & ground ballscrews are precisely pre-tensioned at both ends, supported by angular contact thrust bearings, and directly coupled with high responsive AC servomotors of backlash-free for outstanding positioning repeatability and accuracy during long machining cycles.
- All axes utilize the newly developed NR type linear motion guide ways from THK of its superior rigidity, low friction, low noise, thus to assure much smoother movement in high-speed traverse.
- All linear motion guide ways are mounted on the very fine surface for maximum surface contact and exceptional cutting rigidity and stability.



FV125A ACCURACY

	Standard	ISO 10791-4	JIS B 6338 (1985)
Tolerances			
Axial Travel		Full Length	—
Positioning	A	0.010mm (0.00039")	0.003/300mm(0.00012"/12)
Repeatability	R	0.007mm (0.00028")	±0.002mm(±0.00008")

*VDI/DGQ3441 is equivalent to A of ISO10791-4, and PS is equivalent to R.
All values shown above are measured for machine in good air conditioned environments.*

Extra Wide Column Base

Y-Axis
4-Slideway Design

Axial Rapid Feedrate

X	24m/min. 9,45ipm
Y	24m/min. 9,45ipm
Z	24m/min. 9,45ipm



Extra Wide Machine Base 1,455mm 57.28"



Series 56T/56A DIMENSIONS



*The appearance of the machines will be diverse due to different model and selectivity of controllers.

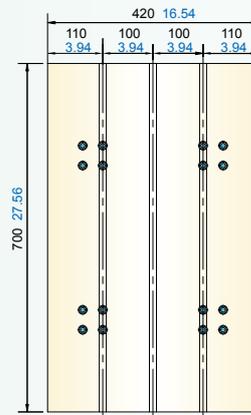
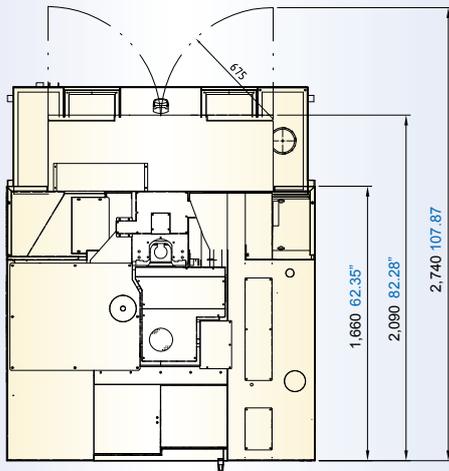
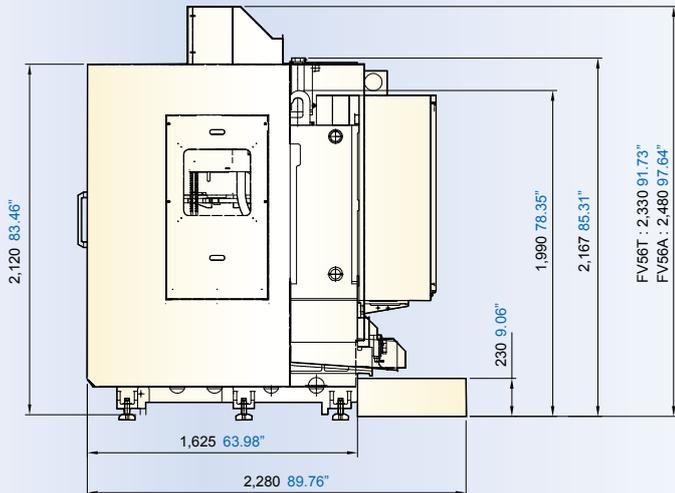
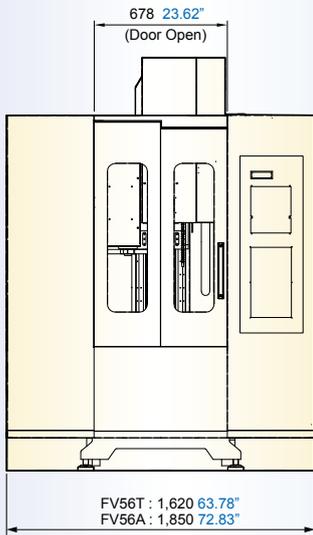
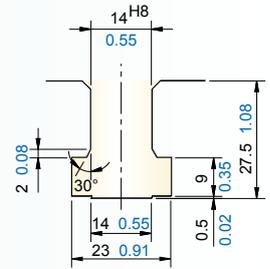


TABLE SIZE

T-SLOTS





Series 85A/102A DIMENSIONS



* The appearance of the machines will be diverse due to different model and selectivity of controllers.

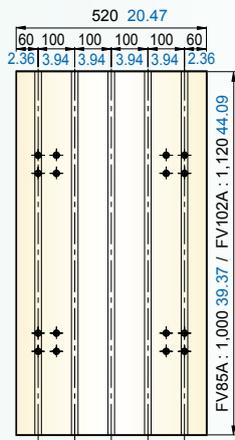
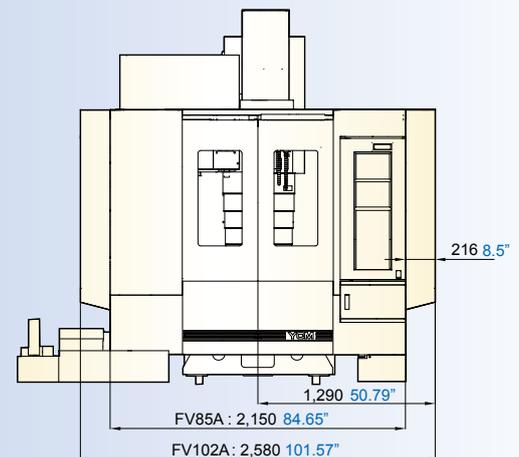
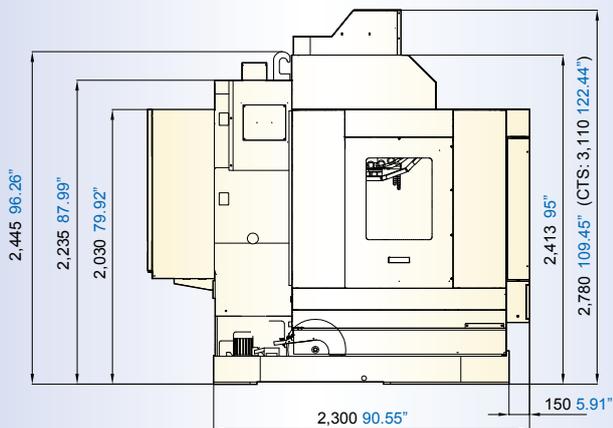
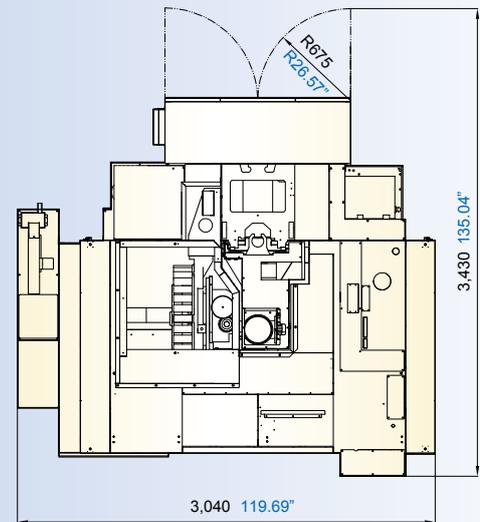
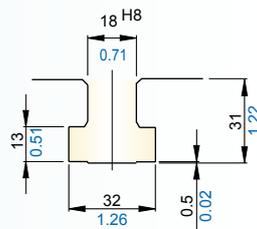


TABLE SIZE

T-SLOTS





Series 125A DIMENSIONS



*The appearance of the machines will be diverse due to different model and selectivity of controllers.

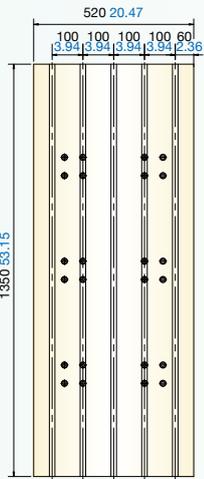
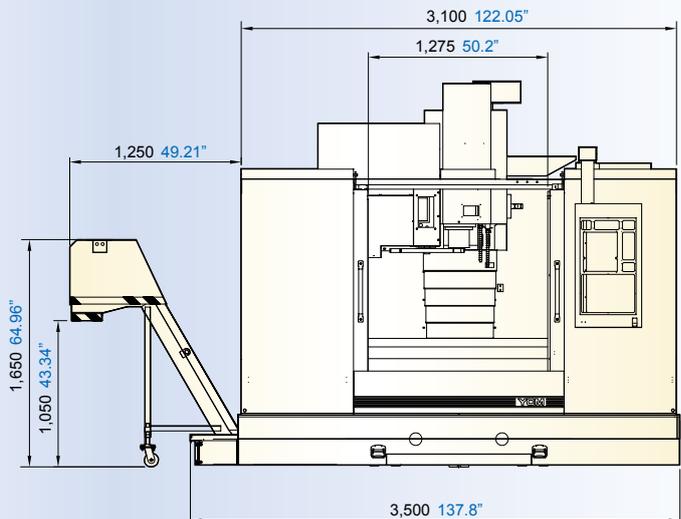
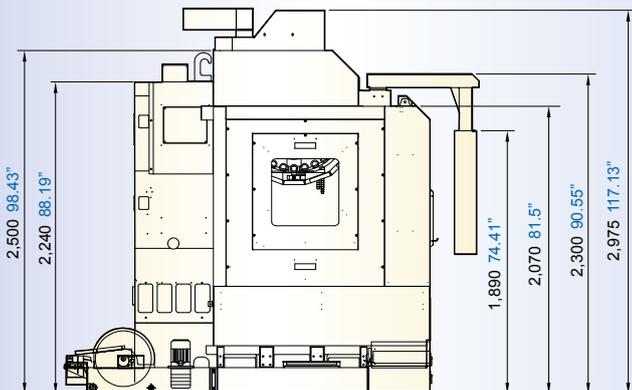
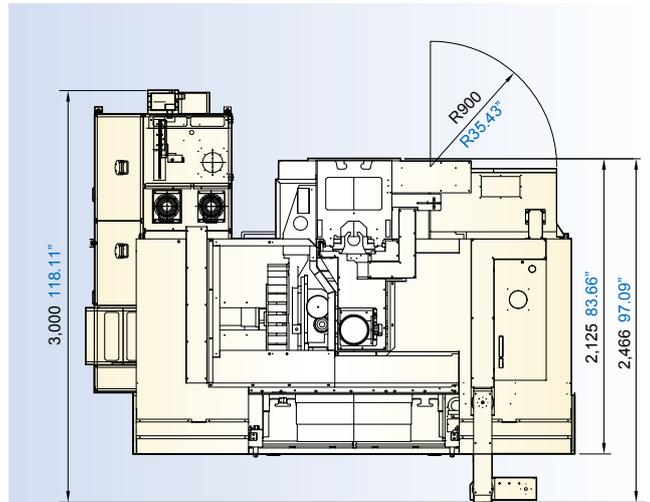
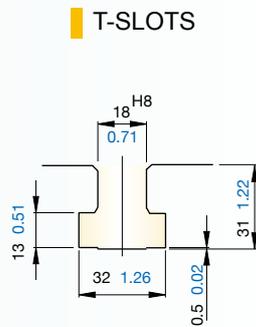


TABLE SIZE





Series 56T/56A APC

DIMENSIONS

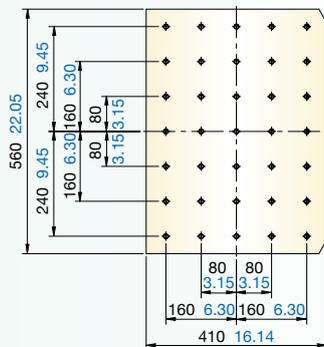
Relevant Specifications of APC (Option)

Model	FV56T	FV56A
Pallet Size	560 x 410mm 22.05" x 16.14"	
Table Load Capacity	120kg 265 lb	
Distance Between Spindle	25 ~ 475mm 0.98"~18.70"	
Nose and Table Top		
Axial Rapid Feedrate (X/Y/Z)	36/36/24 m/min. 1,417/1,417/945ipm	
Machine Weight	3,630kg 8,003 lb	3,850kg 8,488 lb

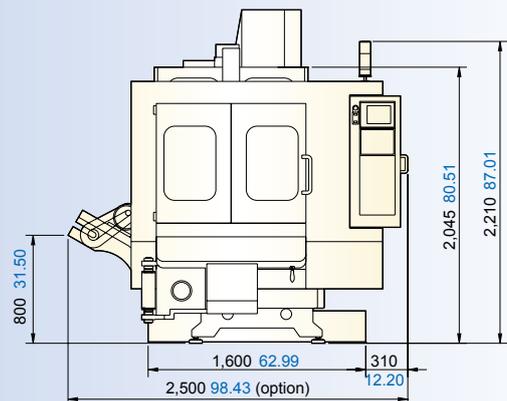
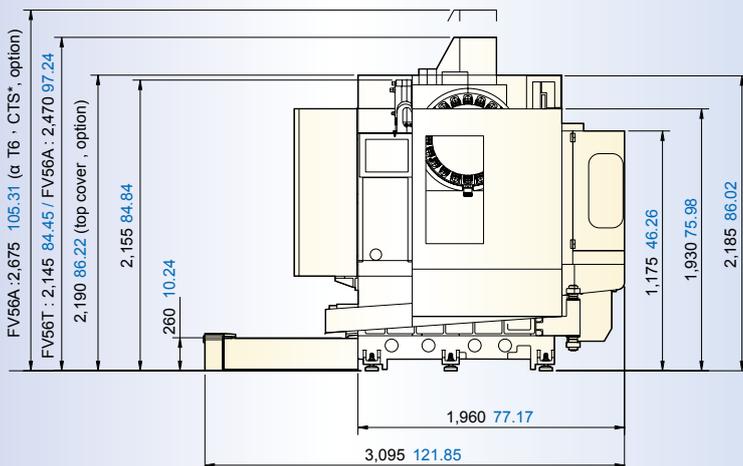
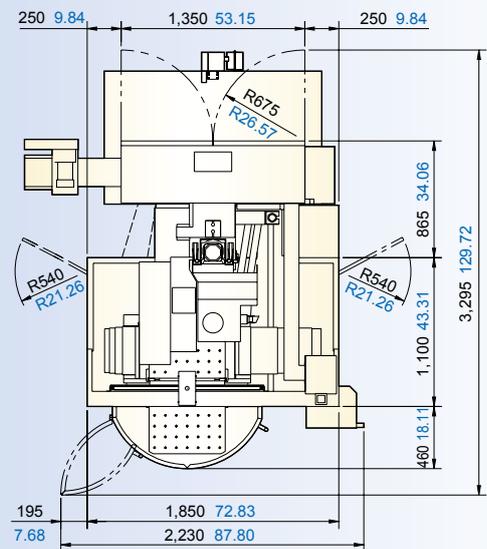
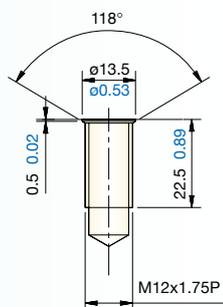
* The appearance of the machines will be diverse due to different model and selectivity of controllers.



APC TABLE SIZE



SCREW HOLE DIMENSIONS

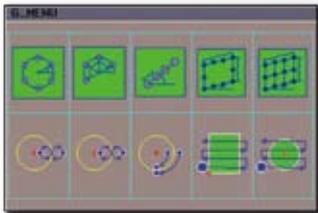


Unit : mm inch

MXP-200 FB/FC

YCM CONTROL
by **FANUC**

- High Performance AC Digital Servo & Spindle Drives with Super Precision Absolute Positioning Encoders
- AI NANO CNC Controller for High Precision Operation in Nanometers and Acknowledged HRV Control
- AICC II High Speed High Accuracy JERK Function & Auto Switching on/off Machining Control Function
- High Speed High Accuracy Rigid Tapping, Helical Interpolation, Custom Marco B, and Tool Path Graphics
- Manual Guide i with Big & Double Screen Display (MXP-200FC, opt.)
- Program File Management for Easy Program Classifying
- USB Drive Port for Easy Parameters & CNC Programs Transfer
- Large Program Capacity with 1,280 Meters of Memory
- High Speed Positioning Function (MXP-200FC, opt.)
- Memory Card Program Edit & Operation (opt.)
- 3D Interference Check (opt.)
- NANO Smooth (opt.)



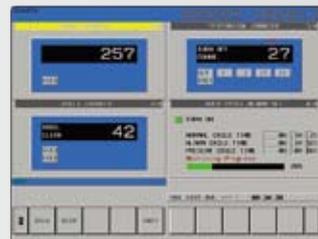
G-menu Function
User-friendly G-menu function provides multiple machining cycles that greatly simplifies programming steps



Calculator Function
Convenient calculator function provides fast calculation and setting of workpiece offsets

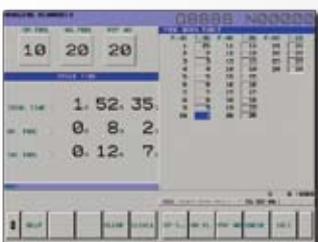


Easy Shop-floor Programming Manual Guide i
Easy to use conversational software offers convenience of part programming right on the shop-floor with 3D graphical display and full simulation function

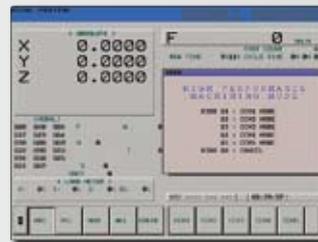


Counter Function
Allows user to easily keep track on number of workpieces with:

- Main Counter
- Periodical Counter
- Daily Counter
- Over Cycle Alarm



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



High Speed Machining Mode: M400
Combined with artificial intelligence, M400 provides users more convenient and easier ways of operation and achieves fast cycle time for the best machining result.



Pop-up Alarm Display
Detailed troubleshooting procedures will be automatically displayed when machine alarm occurs that allows users to restore machine status and minimize down time



Intelligent Maintenance Reminder
Pre-set maintenance schedules are programmed to remind operators to inspect periodically prolonging machine life



Automatic Tool Length Measurement
Pre-set macros and graphical procedure are provided for automatic tool length measurement function



Manual Tool Length Measurement
Easy setup of tool length measurement provides convenient setting of tool offsets data from one tool to another

1. 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.
2. The functions of the controllers will be distinct due to different model and selectivity.



i OPERATION *Plus*

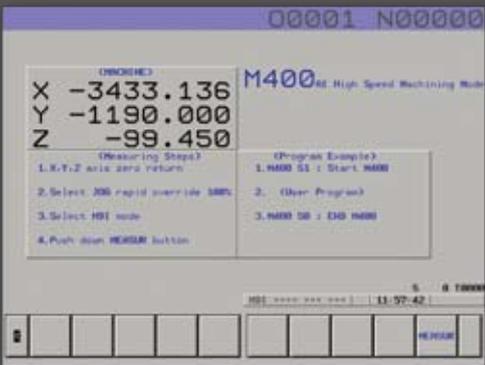
Software enhancement exclusively from YCM



Multi-function Display

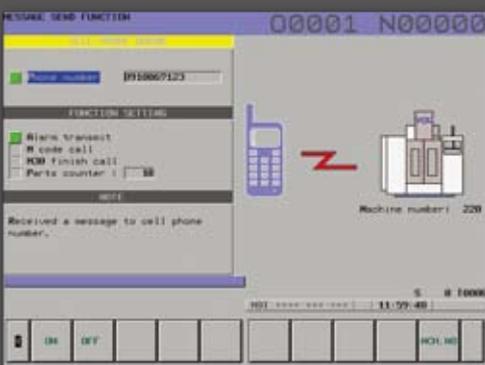
Easily select multiple windows from the following list of display for your monitoring needs.

- G-code Status
- M-code Status
- Spindle Status
- Controller Running Hours
- Feedrate
- Tool Data
- Work Coordination
- Spindle Load
- Parts Count
- Machining Hours
- Date and Time
- Function Display



High Speed Machining Mode: M400

Artificially intelligent machining function that is developed from accumulation of all YCM knowledge and experience on high speed to achieve the fastest cycle time with best machining results. Machining efficiency improved by 25% without sacrificing machining accuracy.



Wireless Message Notification (opt.)

Integrating GSM communication and CNC technology, YCM developed the WMN system for wireless notification of machine and work status report.

