

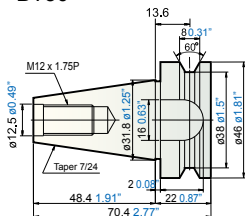
SPECIFICATIONS

	FV56 T	FV102 A	FV125 A
SPINDLE			
Spindle Speed (opt.)	15,000rpm	10,000rpm (12,000/15,000rpm)	
Spindle Power (opt.)	2.2/3.7kW 3/5HP (cont./15min.)	5.5/7.5/11/15kW 7/10/15/20HP (7.5/11/15/22kW 10/15/20/30HP) (cont./30min./10min./5min.)	
Spindle Taper	BT30	BBT40	
Front Bearing Diameter	ø45mm ø1.77"	ø70mm ø2.76"	
TRAVEL			
X-axis Travel	560mm 22.05"	1,020mm 40.16"	1,270mm 50"
Y-axis Travel	410mm 16.14"	520mm 20.47"	
Z-axis Travel	450mm 17.72"	540mm 21.26"	
Distance Between Spindle Nose & Table Top	110~560mm 4.33"~22.05"	150~690mm 5.91"~27.17"	105~645mm 4.13"~25.39"
TABLE			
Table size	700 x 420mm 27.56"~16.54"	1,120 x 520mm 44.09" x 20.47"	1,350 x 520mm 53.15" x 20.47"
T-Slots x Size x Pitch	3 x 14mm x 100mm 3 x 0.55" x 3.94"	5 x 18mm x 100mm 5 x 0.71" x 3.94"	
Max. Load on Table	300kg 661 lb	500kg 1,102 lb	1,000kg 2,205 lb
FEEDRATE			
Rapid Feedrate	36/36/24 m/min. (48/48/48 m/min.) 1,417/1,417/945ipm (1,890/1,890/1,890ipm)	36/36/24 m/min. 1,417/1,417/945ipm	24/24/24 m/min. 945/945/945ipm
Cutting Feedrate	1~10,000mm/min. (0.04~394ipm)	1~10,000mm/min. (0.04~394ipm)	
ATC			
Tool Magazine Capacity	16T (20T)	24T (30T)	
Max. Tool Weight (per piece)	4kg 8.8 lb	6kg 13.2 lb	
Pull Stud	MAS-P30T-1	MAS-P40T-1	
Max. Tool Dimensions	ø63 x 200mm ø2.48" x 7.87"	ø90mm x 300mm (ø76mm x 300mm) ø3.54" x 11.81" (ø2.99" x 11.81")	
Max.Tool Dimensions (Without adjacent tools)	ø100mm ø3.94"	ø125mm ø4.92"	
Tool Changer Method	Arm Type	Arm Type (Armless Type)	
Tool Selection Method	Random	Random (By Sequence)	
GENERAL			
Pneumatic Supplier	5.5kg/cm ² 78.2psi		
Machine Weight	2,800kg 6,173 lb	5,350kg 11,795 lb	6,700kg 14,771 lb

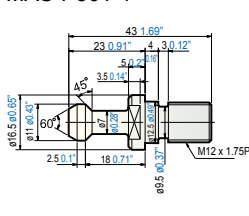
Note: The manufacturer reserves the right to modify the design, specifications, mechanisms, etc. to improve the performance of the machine without notice. All the specifications shown above are just for reference.

PULL STUD TOOL SHANK

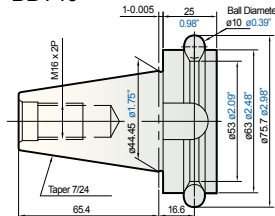
BT30



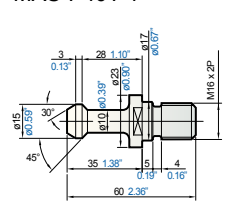
MAS-P30T-1



BBT40



MAS-P40T-1



ACCESSORIES

	56T	102A	125A
Tool Kit	●	●	●
Work Lamp	●	●	●
Pilot Lamp	●	●	●
Coolant Gun	●	●	●
Coolant Equipment System	●	●	●
Cutng Air Blast	●	●	●
Spindle Air Blast	●	●	●
Spindle Air Seal	●	●	●
Central Lubrication System	●	●	●
Oil Skimmer	●	●	●
Coolant Through Spindle System	-	○	○
Foundation Bolts	○	○	○
Leveling Blocks and Bolts	●	●	●
Oil-Mist Coolant System	○	○	○
Oil Hole Holder Function	-	○	○
Chips Flush Coolant System	○	○	○
Chip Conveyor	○	○	○
Workpiece Measurement System	○	○	○
Heat Exchanger for Electrical Cabinet	●	●	●
A/C. Cooler for Electrical Cabinet	○	○	○

	56T	102A	125A
Mechanical, Electrical & Operating Manuals	●	●	●
Rigid Tapping	●	●	●
Guideway Cover (X,Y,Z)	●	●	●
Optical Scale	○	○	○
Automatic Door	○	○	○
Safety Door	●	●	●
4th Axis Rotary Table	○	○	○
Spindle Cooling System	○	○	○
Heavy Duty Coolant Pump	○	○	○
Auto Tool Length Measurement System	○	○	○
Full Chip Enclosure	●	●	●
Circular Coolant Nozzle	○	○	○
Screw Type Chip Conveyor	-	●	-
Air Gun	●	●	●
Automatic Power Off Device	○	○	○
Hydraulic System	○	○	○
Oil-Mist Collector	○	○	○
CNC Controller: MXP-200FB+	●	●	●
CNC Controller: MXP-200FC	○	○	○

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, 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/AM

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

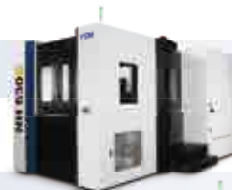
NDC Series High Performance Double Column Vertical Machining Center
NDC2016B~4016B, NDC3022B~6027B, NDC2018B~4018B-AHC, NDC3022B~6027B-AHC



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



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

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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.

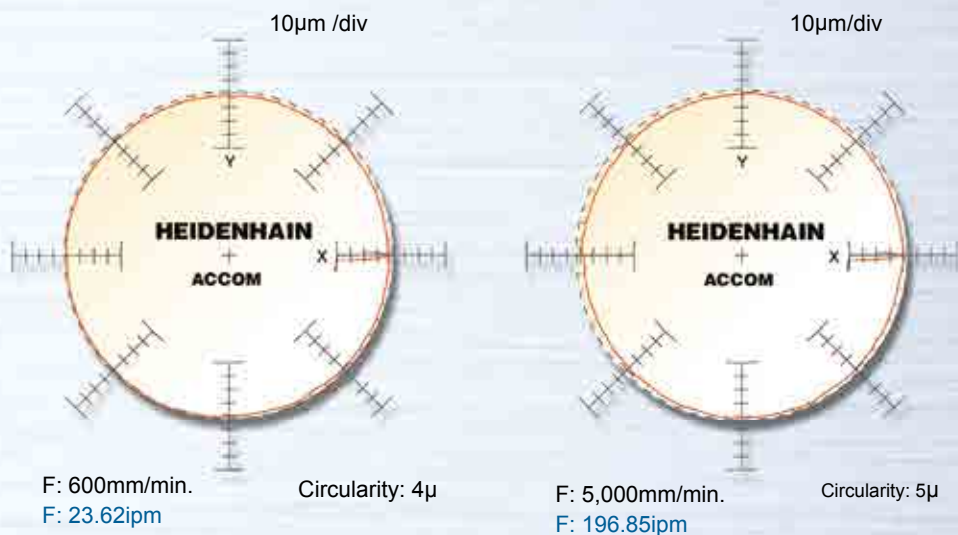
With the addition of ATC system that changes tool-to-tool in 1 second for 30# spindle, and 3.5 seconds for 40# spindle, the newly developed NR type linear motion guide ways from THK, and the FANUC high responsive AC servo units, our FV-Series will more than pay for its value in no time, and we will bring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

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

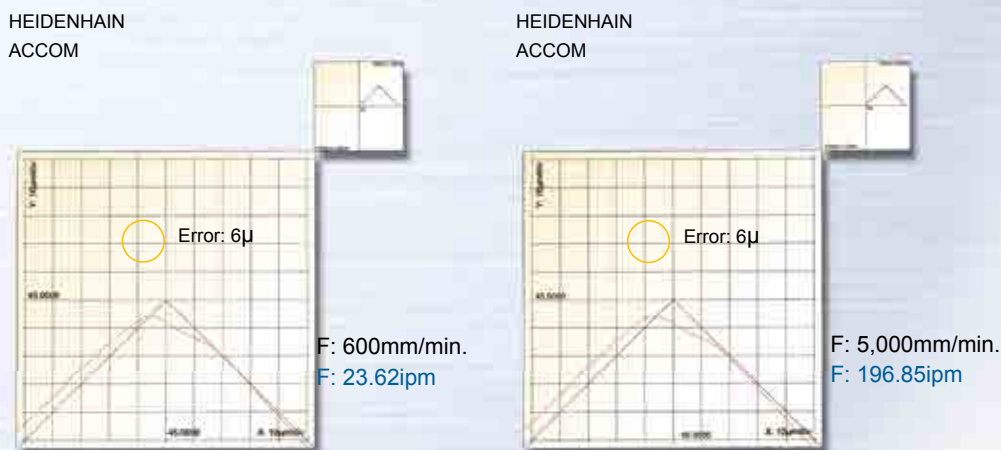
The most cost-effective solution in high-speed, high-precision mold & die machining.

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.





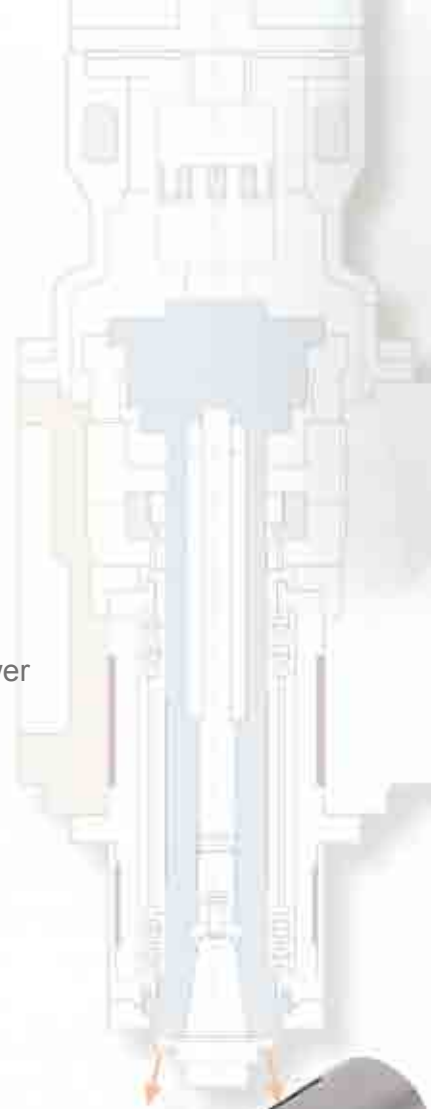
Unique Spindle IDD Design

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.

FV102A/125A (40#)

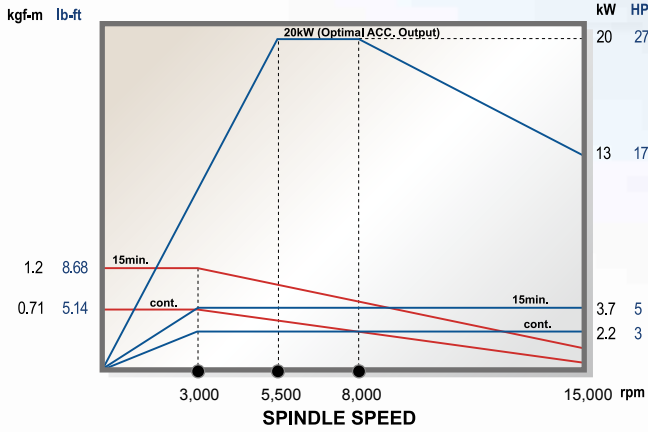
- The 10000rpm spindle deploys precision ceramic ball bearings of light mass, low centrifugal force, low swell factor, but high rigidity, which assure the optimal accuracy and spindle life span.
- Oil-Air lubrication 12,000rpm or 15,000rpm spindle is available for option.



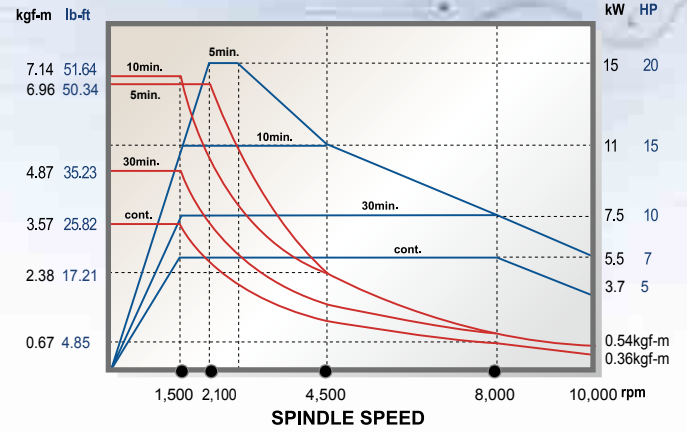
Various High-Speed Spindle Options for Selection to Meet the Utmost Machining Requirements.

POWER TORQUE

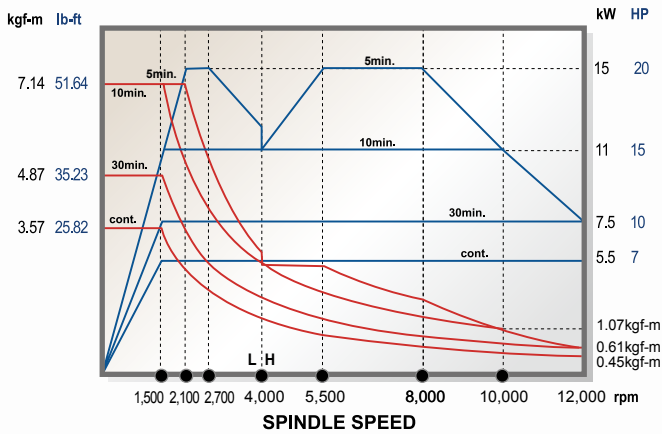
For : FV56T - 15,000rpm



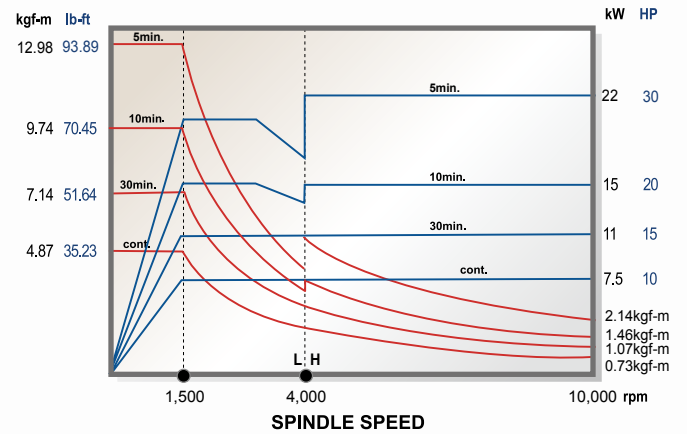
For : FV102A / FV125A
10,000rpm (std.)



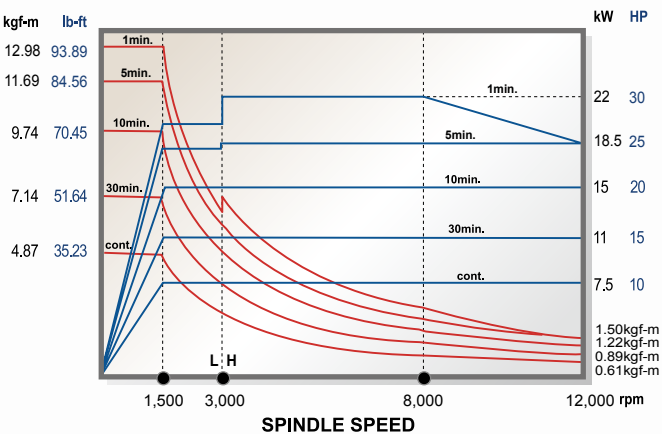
For : FV102A / FV125A
12,000rpm (opt.)



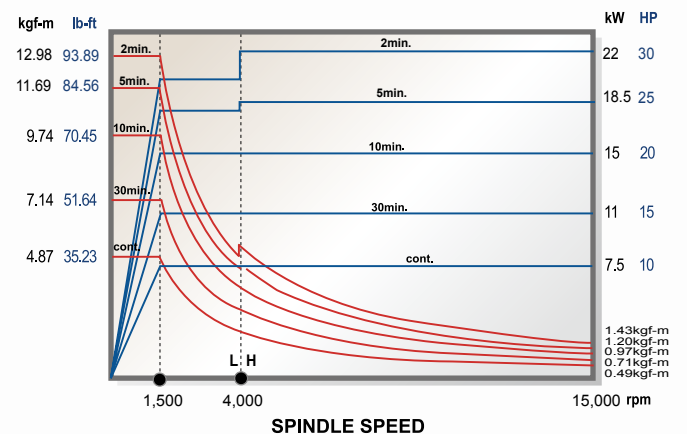
For : FV102A / FV125A
10,000rpm (opt.)



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



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

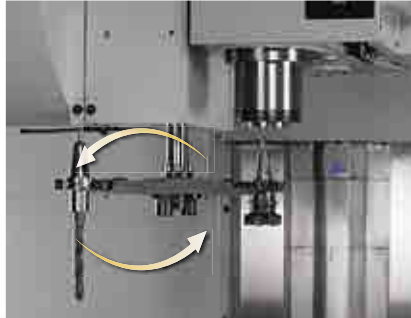




High Efficiency Utmost performance Integration, Solution & Automation

Reliable ATC Unit

- Fast and reliable roller gear cam ATC allows ATC time in 1 second (for FV56T), and 3.5 seconds (for FV56A/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. (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, 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

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

FV56T		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 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.



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-Aaxis
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"





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

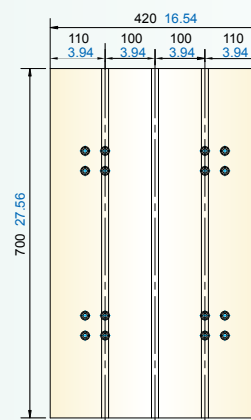
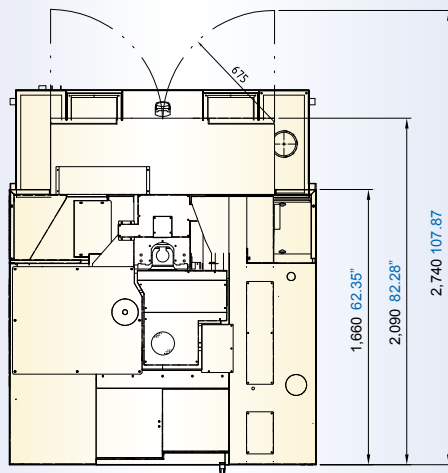
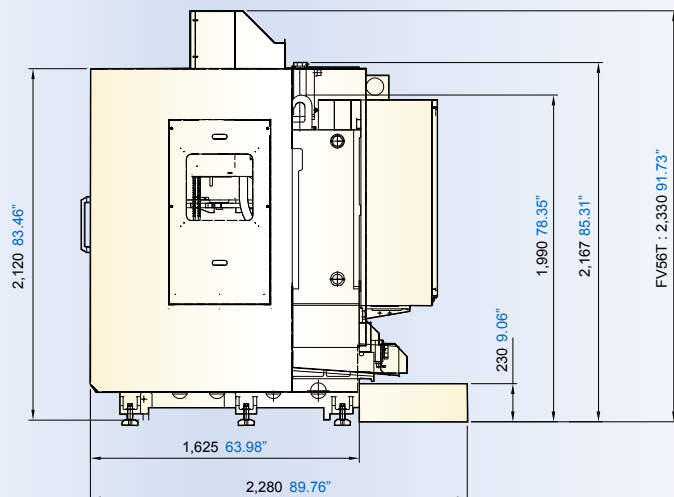
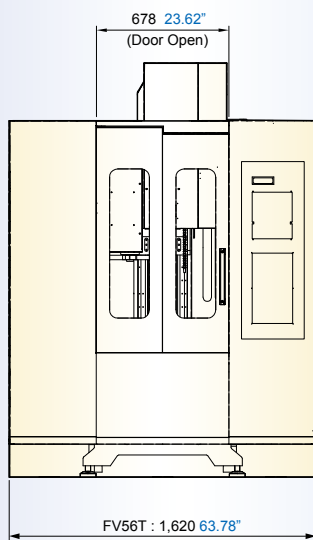
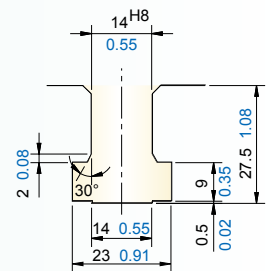


TABLE SIZE

T-SLOTS



Unit : mm inch

FV Series 102A

DIMENSIONS



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

60	100	100	100	100	60
2.36	3.94	3.94	3.94	3.94	2.36

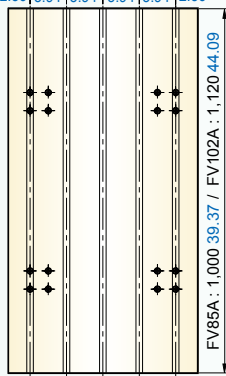
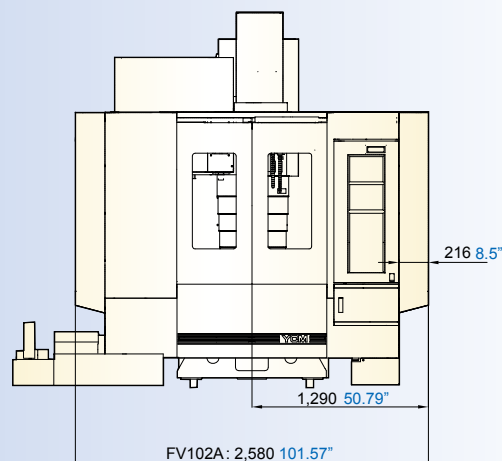
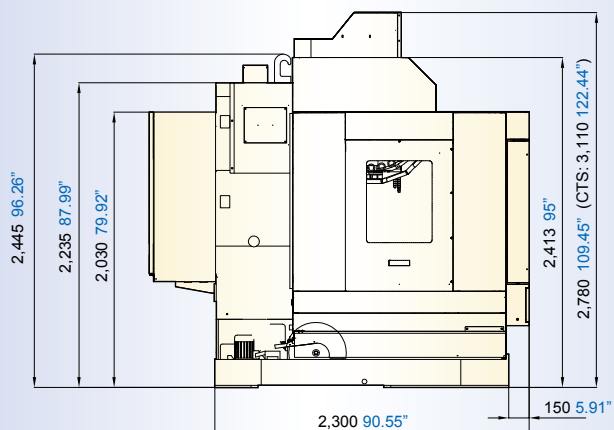
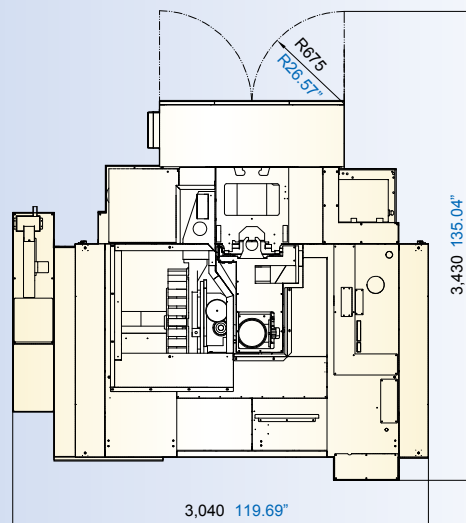
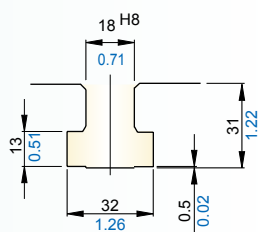


TABLE SIZE

T-SLOTS



FV Series 125A DIMENSIONS



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

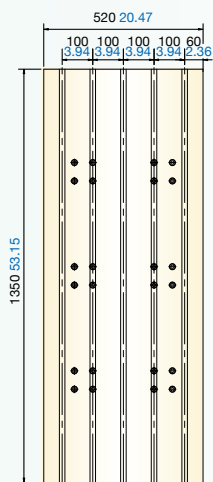
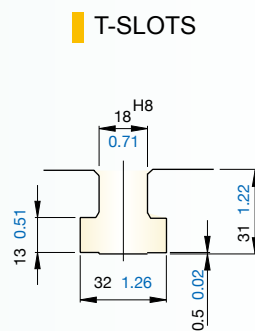
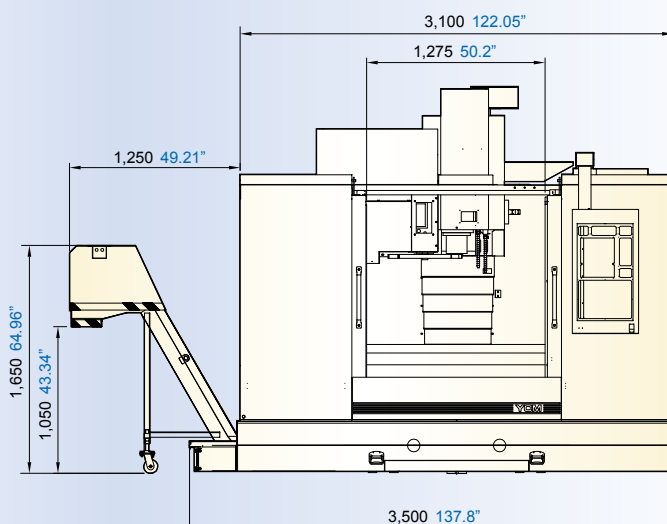
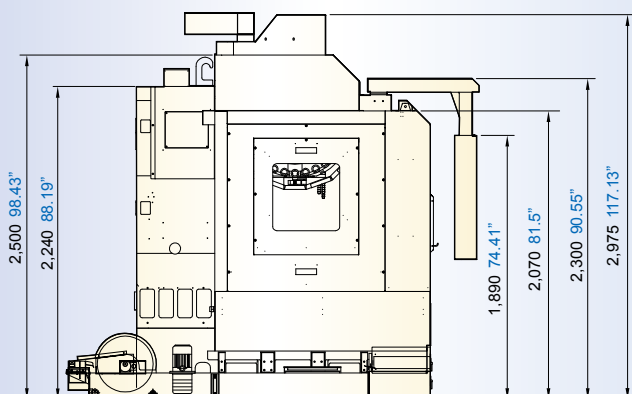
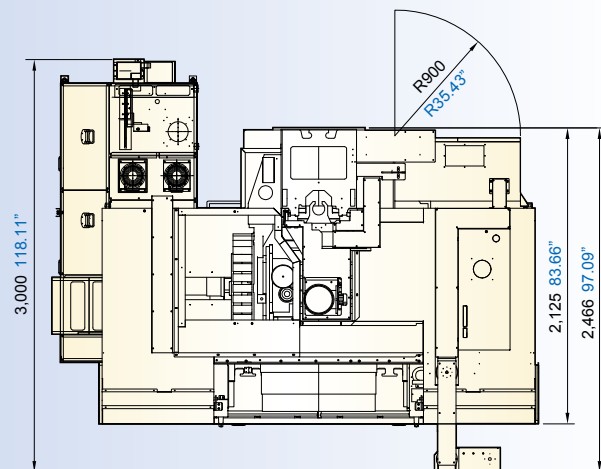


TABLE SIZE



T-SLOTS





102A APC DIMENSIONS

Series

Relevant Specifications of APC (Option)

Model	FV102A
Pallet Size	1,000 x 480mm 39.37" x 18.9"
Table Load Capacity	400kg 882 lb
Distance Between Spindle	30~570mm
Nose and Table Top	1.18"~22.44"
Axial Rapid Feedrate (X/Y/Z)	24/24/24 m/min. 945/945/945ipm
Machine Weight	6,360kg 14,021 lb



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

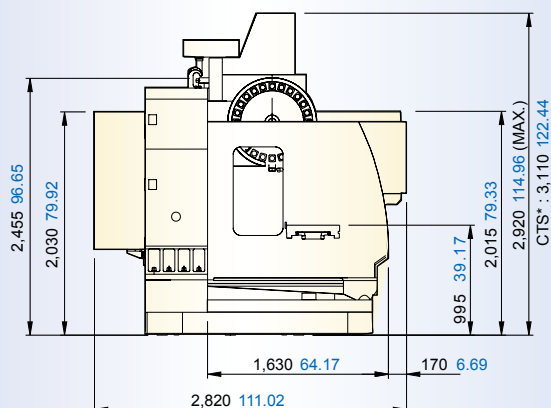
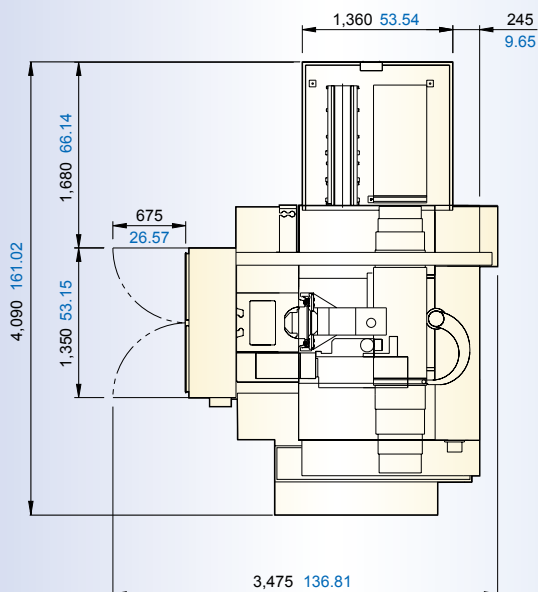
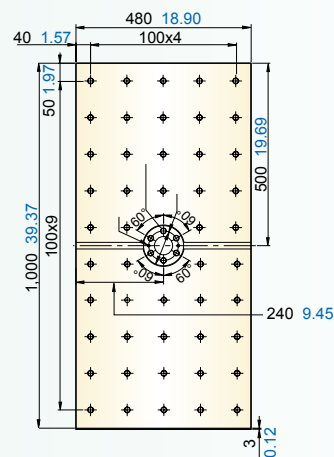
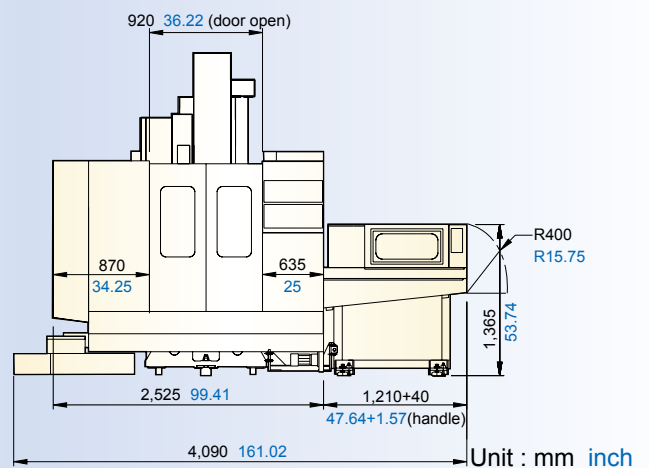
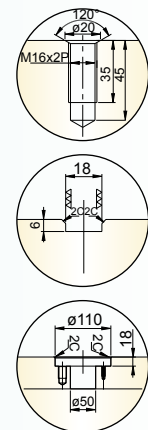


TABLE SIZE



SCREW HOLE DIMENSIONS



Unit : mm inch



YCM®

MXP-200FB+



Communication Interface

RJ45 Ethernet
RS-232C
USB
CompactFlash Card

Excellent Vision Quality

10.4" LCD display

User-Friendly Design

Detachable keyboard
(QWERTY)

Fine Surface Setting Technology

1. AICC II+, high precision and high accuracy AI contour control
2. Smooth tolerance control+
3. Machining quality level adjustment function

Fast Cycle Time Technology

1. Maximum 400 blocks of look-ahead for pre-calculating the machining program
2. Block processing time 1ms for achieving high-speed machining requirement
3. Smart rigid tapping function combined with spindle capability for high-speed machining

Program Dynamic Simulation

Manual Guide i features dynamic simulation of machining programs with full-screen display

Upgraded Setting & Programming Application

1. 2 MB program storage size
2. Built-in memory card for easy program editing
3. Directory filing structure with organized file management
4. 400 pairs of tool offset, 1,000 registrable programs, 48 pairs of workpiece coordinate system, 256 pairs of tool life management

YCM®

i-OPERATION

Software Enhancement Exclusively from **YCM**

Plus II



Pre-Machining



Intelligent Tool Data Management

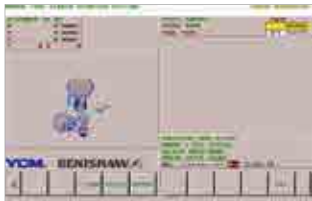
Comprehensive tool data management function allows operators to monitor and manage all positions in tool magazine



Workpiece Coordinate Calculation

Conversational window provides convenient and fast setup of workpiece coordinates

RENISHAW GUI System (Conversational Graphic Operating Interface)

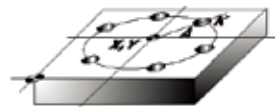


Tool Measurement & Measurement Calibration

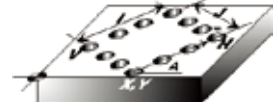


Workpiece Measurement (applicable to certain models)

Program Editing



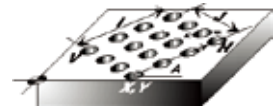
CIRCULAR HOLE PATTERN
(G120 P1) Function



RECTANGULAR HOLE PATTERN
(G120 P4) Function

i_PATTERN

- (1) 15 sets of machining cycle program
- (2) Saving programming time and memory time
- (3) Graphic interface & conversational command input



GRID HOLE PATTERN
(G120 P5) Function

Machining

High Performance Machining Mode M300

With 5 sets of parameter settings, it's easy to find suitable and optimized machining.

High Speed Machining Mode M400

Reducing machining time for drilling and tapping process

Tool Load Management

Instant tool load monitoring with alarm function

Multi-Display Function

Displaying 4 statuses simultaneously with configurable status display

Tool Life Management

Indicating tool status of each group with tool life alarm



Smart Control Panel



iPANEL

Easy to set up and operate important functions

Intelligent Counter



Instantly providing users with periodic maintenance notifications and work-pieces counter management