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# Vertical Machining Center QVM-610A+APC

High ■Quality ■Precision ■Efficiency ■Economy



Tongtai Machine & Tool Co.,Ltd.

# Vertical Machining Center

## QVM-610A+APC

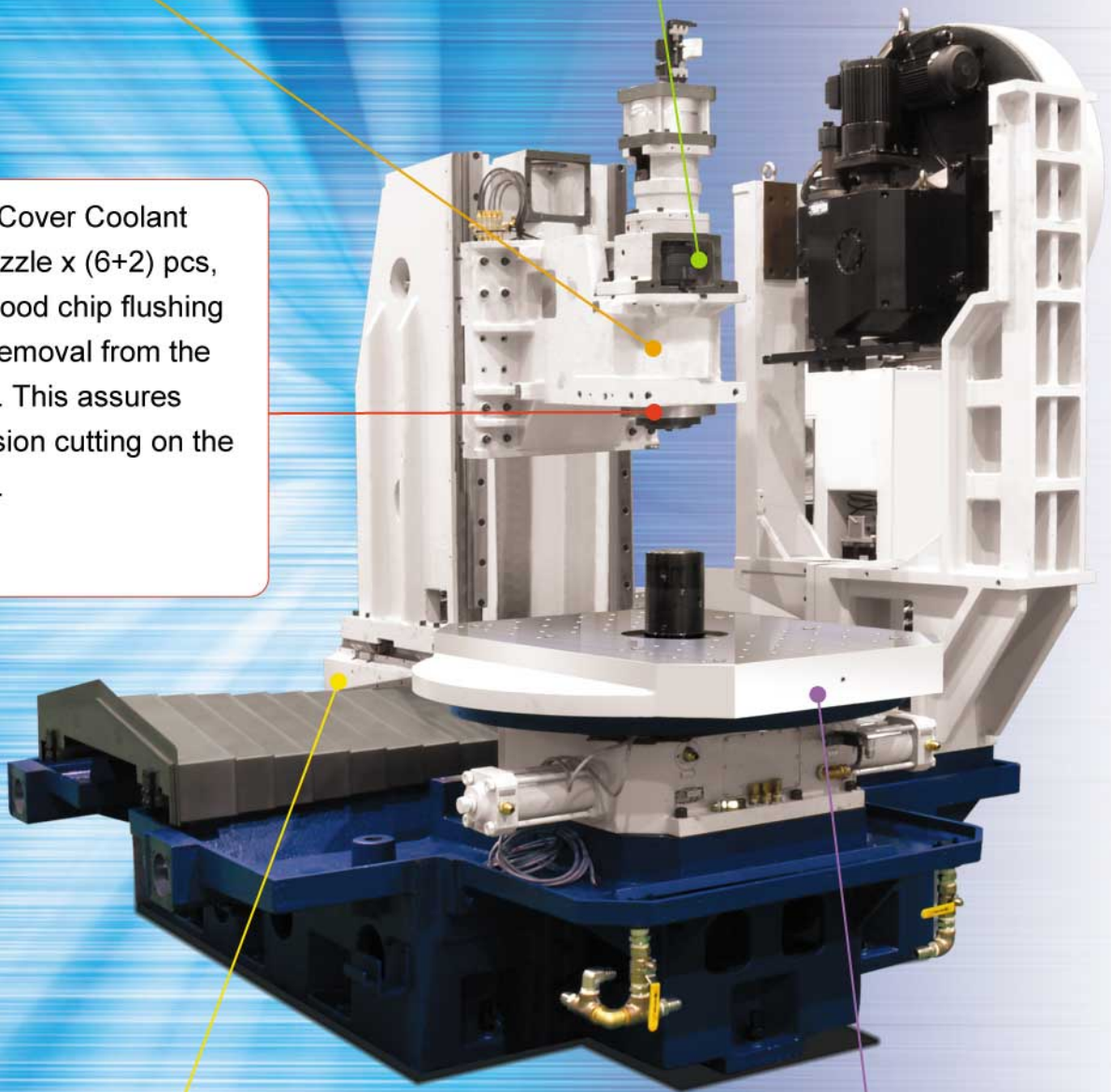
1. Spindle Bearing Protection, use maze type mechanical seal and air-blow to prohibit coolant entry.

2. High transmission power timing belt is used to transmit majority of the spindle motor power to the spindle and reduce the motor thermal conductivity to the spindle for preventing the expansion of the spindle.

3. Frontal Cover Coolant Supply Nozzle x (6+2) pcs, provides good chip flushing and heat removal from the workpiece. This assures high precision cutting on the workpiece.

4. 3-axis moving column design optimizes the cutting area and strokes to meet different parts demand.

5. Automatic pallet changer provides hydraulic supply system to the jig and fixture to reduce the loading and unloading time and shorten the machining time to suit for whole production line.





# Spindle Structure Design

## Coolant Through Spindle:(Optional)

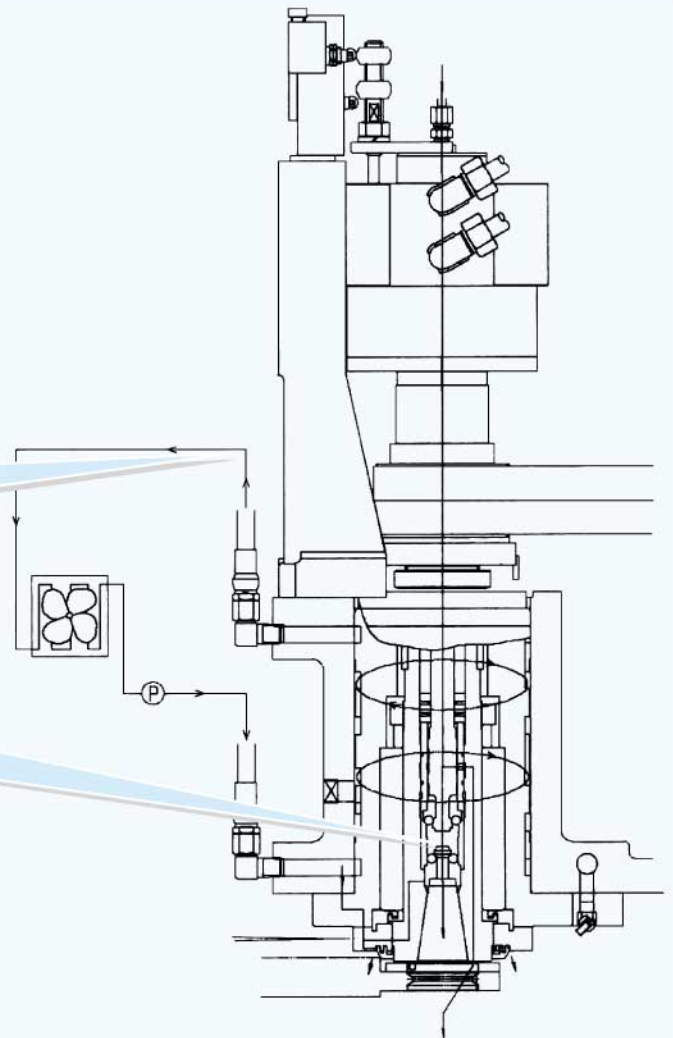
Coolant through spindle allows tool cooling, lengthens tool life and eases chip flow in deep hole drilling process.

## Spindle Cooler:(Optional)

Spindle Cooling Unit uses a synchronous Temperature Regulator Controller with room temperature to prevent the heat generated by the motor from transmitting to the machine body, thus minimizing thermal distortion.

## Reinforced Pull Stud Mechanism

The pull stud force is 1000kg. The stud release force is only 250kg. This design could lengthen the life time of spindle bearing.



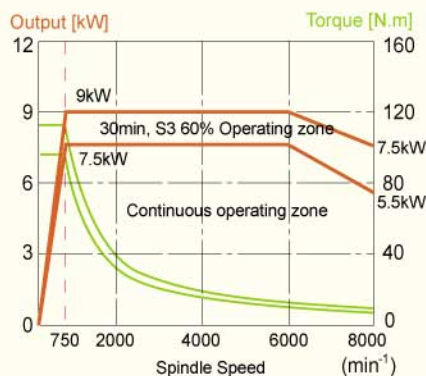
# Spindle Output Diagram

High rigidity, High precision Spindle motor 8000rpm  $\alpha$  6(7.5/5.5 kW)  
8000rpm  $\alpha$  P15(9/7.5kW OPT)10000rpm  $\alpha$  12(15/11kW OPT)

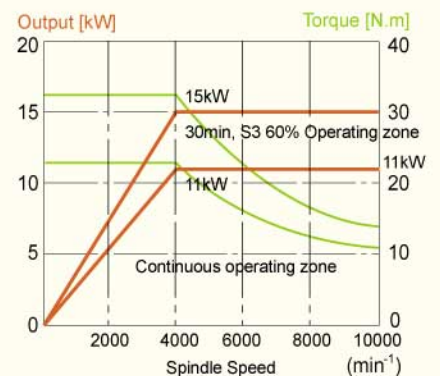
■FANUC  $\alpha$ 6 -Standard



■FANUC  $\alpha$ P15 -OPT



■FANUC  $\alpha$ 12 -OPT



## High Speed

Rapid traverse (X.Y.Z)	30 m/min
Cutting feedrate (MAX.)	10 m/min
ATC (C-C)	4.2 sec
ATC (T-T)	3.4 sec
APC	4.9 sec

## Cutting Capabilities

(Material:S45C)

		Face Milling Ø80	End Milling Ø40	Drilling Ø30	Tapping
Cutting Capacity	cc/min	219	24	-	M24x3.0
Cutting Width x Depth	mm	65 x 4.5	30 x 20	-	
Spindle Speed	min <sup>-1</sup>	750	200	265	265
Cutting Feedrate	mm/min	750	40	0.2 mm/rev	-

©High speed and Cutting capabilities chart data are the actuality obtained under static testing conditions in a temperature controlled environment per JIS-Standard.

# User Friendly Operation



## ■ Comfortable operating space:

1. Table front to cover : 155mm
2. Table height : 950mm

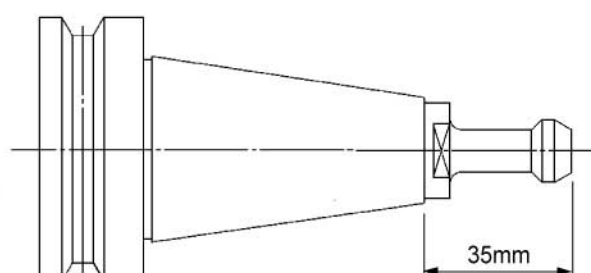
## ■ Swivel control panel:

1. Swivel out control panel for programming
2. After programming, panel swivels into splash guard for space saving. Easy operator's movement.

## ■ Auger type conveyor inside of bed for easy chip flow with chip conveyor on rear side and optional additional coolant pump for washing bed.

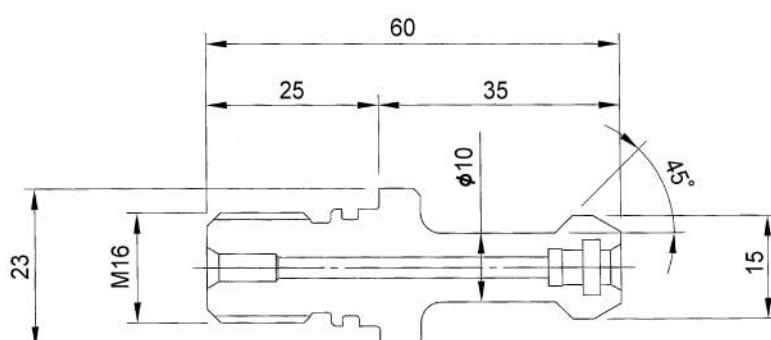
## ■ The operator works safely with APC and ATC door interlock.

### Tool Shank BT40



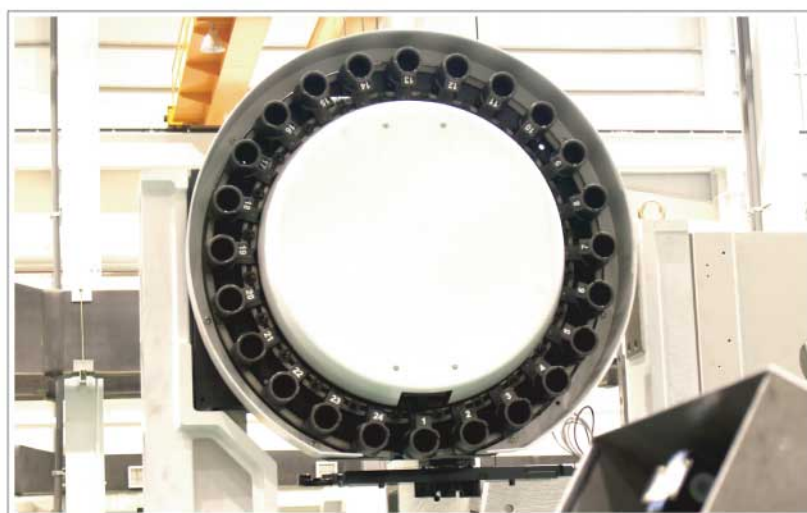
### Pull Stud (A TYPE)

Unit:mm



# ATC Capacity

- ❶ Max. Weight of Tool:7kg
- ❷ Max. Length of Tool:250mm
- ❸ Tool Capacity:24 pc
- ❹ Side magazine design, easy for tool arrangement.
- ❺ The ATC auto door prohibits coolant from spraying out.



▲ ATC



# QVM-610A+APC Numerical Control System FANUC 0i-M

Item	Specification
Control axis	4 Axes
Parts program storage length	640 M
Setting/display unit	8.4" color LCD/MDI
Graphic function	Standard
Servo waveform display	Standard
HRV control	Standard
Inch/metric conversion	Standard
Stored stroke check	Standard
Stored pitch error compensation	Standard
Manual handle feed	Standard
Positioning	G00
Single positioning	G60
Linear interpolation	G01
Circular interpolation	G02/G03
Dwell	G04
Cylindrical interpolation	Standard
Threading, synchronous cutting	Standard
Advanced preview control	Standard
Max. programmable dimensions	8 digits
Program number	04-digits
Polar coordinate command	standard
Workpiece coordinate system	G54-G59

Item	Specification
Addition of workpiece coordinate system pair	48 pairs
Programmable data input	G10
Custom macro B	Standard
Canned cycles for drilling	Standard
Automatic corner override	Standard
Automatic corner deceleration	Standard
Scaling	Standard
Coordinate system rotation	Standard
Programmable mirror image	Standard
Rigid tapping	Standard
Tool function	Standard
Tool offset pairs	6 digits - 400 sets
Tool offset memory C	Standard
Tool life management	Standard
Number of registerable programs	400
Background editing	Standard
Parts count display	Standard
Multi-language display	English / Japan / German / French / Italian / Chinese / Spanish / Korean

©SPECIFICATIONS MAY BE CHANGED WITHOUT PRIOR NOTICE

## Standard Accessories

- Air Blow Unit
- Hydraulic Unit
- 24 Tools ATC (BT40)
- Spindle Speed 8000RPM (7.5/5.5 kW)
- APC Pallet
- Portable Manual Pulse Generator
- Tool Kits and Tool Box
- Workpiece Counter
- Spindle Load Meter
- Warning Light
- Chip Conveyor
- Chip Trolley
- Work Light
- Leveling Pads
- Coolant Unit
- Call Buzzer

## Optional Accessories

- Linear Scale (HEIDENHAIN)
- Spindle Speed 10000RPM
- High Torque of Spindle Motor (9/7.5kW, 15/11kW)
- Coolant Through Spindle (A Type/B Type)
- Electrical Cabinet with Air Conditioner
- Magnetic Type Chip Conveyor
- Automatic Power Off
- Automatic Tool Life Management
- Automatic Tool Length Detector
- Automatic Tool Breakage Detector
- 3-Color Warning Light
- Scraper Type Chip Conveyor
- CE
- EMC
- Spare M CODE(8 Codes)
- Sub Operation Box
- Oil Skimmer
- Oil Mist Collector
- Transformer
- Voltage Stabilizer

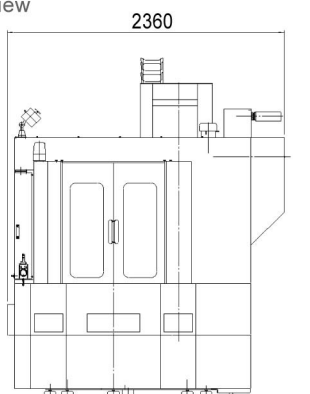
# QVM-610A+APC Standard Specifications

Item	Specification	Unit	QVM-610A+APC
TABLE	Working Table Area (L×W)	mm	700×410
	Max. Load Capacity	kg	200×2
	Table Height from Floor	mm	950
	T-Slots (Size x No.)	mm	-
SPINDLE	Spindle Nose		7/24 Taper No.40
	Spindle Speed	rpm	8000 (OPT. 10000)
TRAVEL	X/Y/Z Axis Stroke	mm	610/410/460
	Spindle Nose to Table	mm	180-640
FEED	X/Y/Z Rapid Traverse	m/min	30/30/30
	Cutting Feedrate	mm/min	1-10000
ATC	Tool Shank		BT 40
	Tool Capacity	pc	24
	Max. Tool Diameter	mm	Φ89
	Max. Tool Length	mm	250
	Max. Tool Weight	kg	7
MOTOR	Spindle Motor(50%ED)	kw	7.5/5.5(OPT. 9.0/7.5)
	X/Y/Z Servo Motor	kw	3.0/3.0/4.0
	Coolant Motor	kw	0.37/0.55
MACHINE	L×W ×H	mm	2360×4360×2880
	Weight	kg	7500

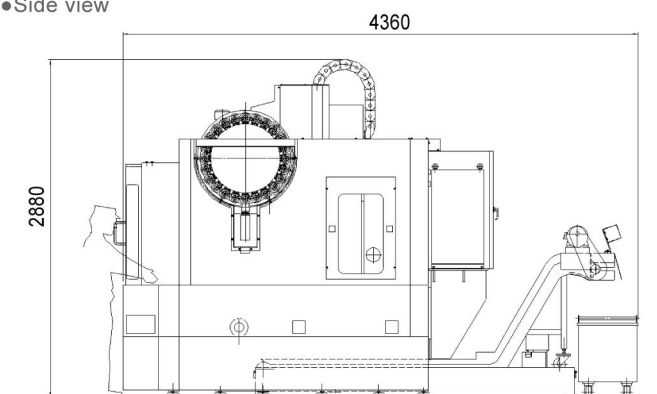
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## Machine Dimensions

●Front view



●Side view



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