

Trust & Technology



Tongtai

ISO 9001 ISO 14001 CE
A Worldwide Tradition of Quality Products and Customer Service

MOLD & Die Milling Series QVM-1100

High ■Quality ■Precision ■Efficiency ■Economy



Tongtai Machine & Tool Co., Ltd.

QVM-1100 Vertical High Speed Machining Center

**Powerful
Skillful**



- Reduce machining processes and fast delivery time.
- Give perfect surface accuracy finishing and save the time for further polishing.
- Capable to machine material with hardness above HRC 40°. The time of EDM could reduce by means of small diameter ball nose endmill to clean up corner.
- Excellent in machining aerospace industrial alloy, light and thin wall work pieces.

- X/Y/Z Feed Stroke=1100/600/510mm
- X/Y/Z Rapid Traverse=24/24/24m/min
(Opt. 40/40/40m/min)
- Max. Load Capacity=500kg
- W×L×H=2600×3050×3180mm
- Weight=9000kg

- Synchronous moving Hermetic telescopic cover to save the space and of high speed motion, smooth and quite.
- Self-lubricating system for linear guide to extend the coolant life and reduce the environmental pollution.



- Controller
FANUC 0i-M/31i(Opt.)
SIEMENS 840D(Opt.)

High precision of B function(Opt.)

- Data. Server with ATA flash card.
- DNC operation through PCMCIA port.
- Servo HRV3 control
- AI Nano HPCC.
- Look-ahead blocks 600.
- Nano interpolation.(Opt.)
- 10



- Main Electrical Cabinet
Air conditioner for internal
temperature control (Opt.)



- BT40/HSK-63A(Opt.)



- Rigid type coupling
Ensure μm fine feeding and no
backlash accuracy.



- Ball screw
Use pre-loaded mechanism to reduce
effect upon thermal expansion during
machining.



- Twin screw type chip
conveyor design. Good chip drives out
performance.

Spindle System



Powerful Spindle 12000RPM

- 18.5/22kW
- 7/24 TAPER No.40
- High Grade Grease Lubrication

Reinforced Pull Stud Mechanism: Lengthen the accuracy and lifetime of spindle bearings.



High Speed 20000RPM(Opt.)

- 30/45kW
- BBT40/HSK-63A
- Oil Mist Lubrication.



Spindle Cooling System



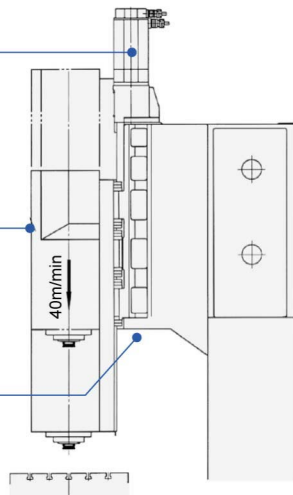
Coolant Through Spindle

15kg/cm²(Opt.)
12000RPM Type

Big diameter and pre-loaded ball screw to prohibit the axial thermal expansion servo motor and ball screw is connected by high torque coupling directly to keep rigidity.

Light weight slide for high speed feed rate.

High acceleration/deceleration
V=40m/min for 0.7G



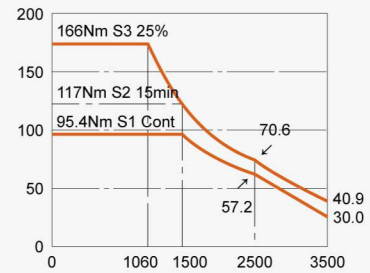
FANUC αB112L-18.5(BT40 RPM12000)

Low Winding

Output[kW]

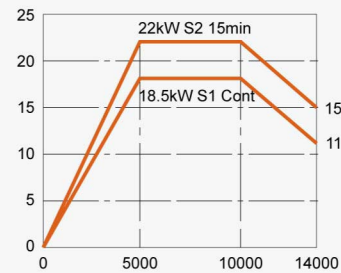


Torque[Nm]

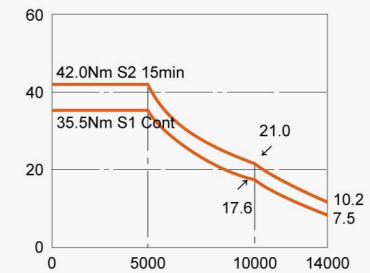


High Winding

Output[kW]



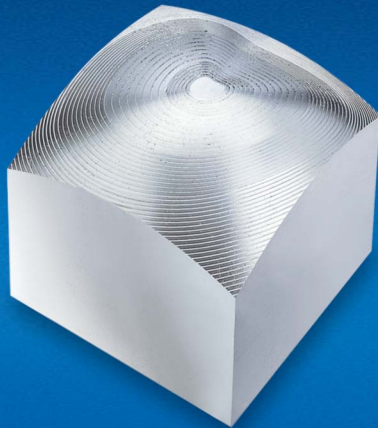
Torque[Nm]



Door open width
1200mm
easy for workpiece
loading/unloading

Special splashguard(Opt.)

Examples of Machining



Lamp Mold
 Tool: 0.1R Ball Nose End Mill
 Speed: 20000RPM
 Feedrate: 1000mm/min
 Machining Time: 9.8hr
 Material: NAK80、HRC 40°
 Workpiece Size: 120×120×80mm



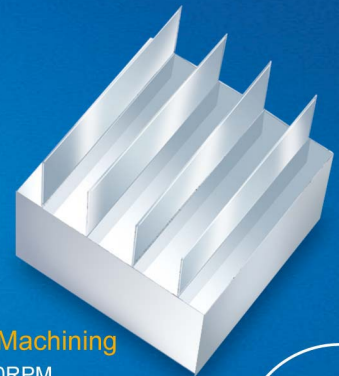
Hand Phone Mold
 Tool: 0.3R Ball Nose End Mill
 Speed: 18000RPM
 Feedrate: 1200mm/min
 Machining Time: 5.4hr
 Material: NAK80、HRC 40°
 Workpiece Size: 80×180×50mm



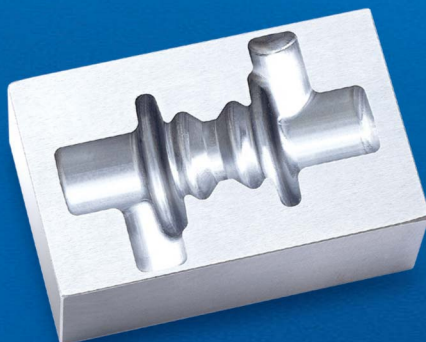
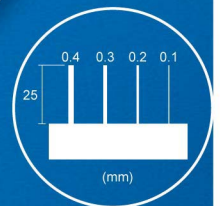
Fan Mold
 Machining Time: 5.75hr
 Material: NAK80、HRC 40°



Forging Mold
 Machining Time: 4.8hr
 Material: SKD61、HRC 52°
 Workpiece Size: 100×100×35mm



Thin Wall Machining
 Speed: 20000RPM
 Feedrate: 8000mm/min
 Material: AL 7075
 The Well: 0.4/0.3/0.2/0.1mm



Crankshaft Mold
 Tool: Ø3 Ball Nose End Mill
 Speed: 13000RPM
 Feedrate: 2200mm/min

Finishing Time: 1.2hr
 Material: SKD11、HRC 60°
 Workpiece Size: 80×50×30mm



Connecting Rod
 Material: NAK80(HRC40)
 Workpiece Size: 300×180×40mm
 Machining Time: 4.5hr

QVM-1100 Standard Specifications

Item	Specification	Unit	QVM-1100
TABLE	Working Area (L×W)	mm	1200×600
	Max. Load Capacity	kg	500
	Table Height from Floor	mm	900
	T-Slots (Size×No.)	mm	18×5
SPINDLE	Spindle Nose		7/24 Taper No. 40 (Opt. HSK-63A)
	Spindle Speed	rpm	12000 (Opt. 20000)
	Spindle Bearing Diameter	mm	Ø65
STROKE	X/Y/Z Axis Stroke	mm	1100/600/510
	Spindle Nose to Table	mm	150-660
FEED	X/Y/Z Rapid Traverse	m/min	40/40/40
	Cutting Feedrate	mm/min	1-10000
ATC	Tool Shank		BT40 (Opt. HSK-63A)
	Tool Capacity	pc	24
	Max. Tool Diameter	mm	Ø95
	Max. Tool Diameter(w/o Adjacent Tool)	mm	-
	Max. Tool Length	mm	300
	Max. Tool Weight	kg	7
MOTOR	Spindle Motor (50% ED)	kw	22/18.5 (Opt. 45/30)
	X/Y/Z Servo Motor	kw	3.0/4.0/7.0
	Coolant Motor	kw	0.37
MACHINE	L×W×H	mm	3050×3050×3180
	Weight	kg	9000

Standard Accessories

- Spindle Speed 12000 RPM
- Spindle Nose BT40
- Air Blower Unit
- Rigid Tapping
- Halogen
- Coolant Unit
- Automatic Lubrication Equipment
- Door Interlock Unit
- Spindle Cooler Unit
- Spindle Load Meter
- Workpiece Counter

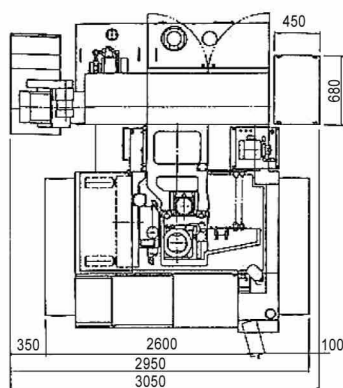
Option Accessories

- Spindle Speed 20000 RPM
- Spindle Nose HSK-A63
- Transformer / Stabilizer
- Auto Door
- Full-Enclosed Splash Equipment
- Liner Scale
- Coolant Through Spindle
- Tool Length Automatic Measuring Unit
- Tool Life Management
- Tool Breakage Detector
- Function Modular Package A
- Function Modular Package B
- Oil Separator / Oil & Mist Collector
- Chip Conveyor / Chips Tank
- 4 TH-Axis Function
- A/C For Electric Cabinet
- M CODE
- Auto Power Off
- Sub Operation Box

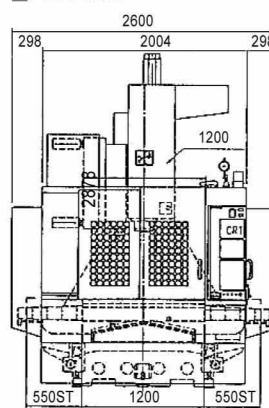
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Machine Dimensions

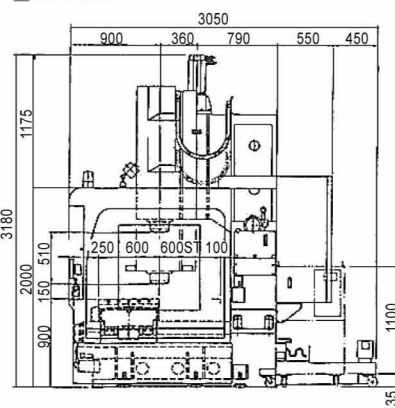
■ Top View



■ Front View



■ Side View



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