

A-6/A-10

Vertical Machining Center

Value models create profits and quality



A-6

Vertical Machining Center

AGMA once again presents high speed A-series machining centers to a foresighted customer like you with industry-leading scraping technology of hardened box way and the technological capacity of manufacturing process. This series of machines are based on high-rigidity Meehanite cast iron and adopt 8,000~10,000RPM belt driven spindle or 10,000 ~15,000RPM direct driven spindle. Three axes adopt high precision linear guideways and ball screws. Other optional accessories which fully comply with a variety of cutting demand are also available



A-6

X/Y/Z Traverse 610/420/460mm

ATC type/Arm type 24 tools magazine

Belt Driven 8,000/10,000RPM

Direct Driven 10,000/12,000/15,000RPM

High-Rigidity Structure Design

Synchronously adopt the European & Japanese design

- Wide-span rigid column
- Japan-made NSK extra-large 35mm precise roller-rail linear guide way (option)
- Adopt high-end direct motors and high rigidity couplings in three axes
- High quality full-length enclosed splash guard, elegant appearance, well-executed, and in good taste

Extra-large Z-axis motor

4.0KW (no counter balance design)

High reliable and high accuracy ballscrew design

Ø40mm high class double nut provides strong rigidity, high torque, better accuracy, long-life, and effectively heat extension control.

Extra wide door design

The width of door reaches 850mm for conveniently loading and unloading the fixture and workpiece.

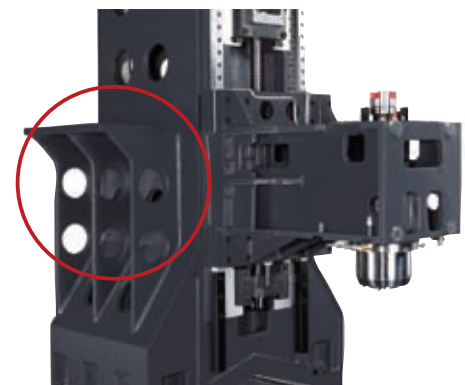
Stable air supply equipment

The gas storage barrel assists to acquire steady air source to increase equipment utility rate.

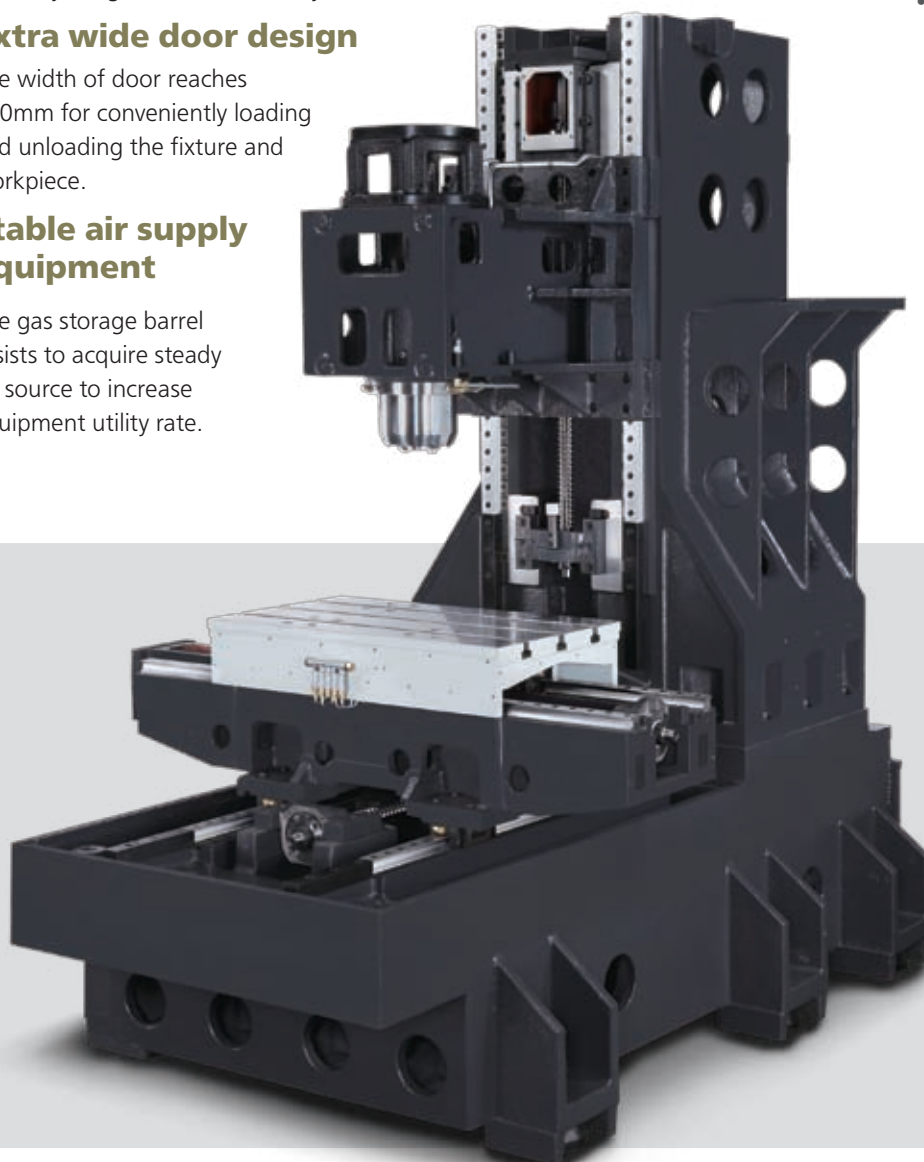


Unique Column Design

- Wide-span column
- X-shaped cross rib package column structure



- Integrated ATC support interface Block



A-10

Vertical Machining Center

Adopt Meehanite cast iron (General Industrial Standard: FC20~25) and heat balance design. Since Meehanite cast iron provides larger damping and smaller deformation, our machines are more durable and with extraordinary performance to cope with long term manufacturing.



A-10

X/Y/Z Traverse 1,020/560/510mm

ATC type/Arm type 24 Tools Magazine

Belt Driven 8,000/10,000RPM

Direct Driven 10,000/12,000/15,000RPM

High-Rigidity Structure Design

Synchronously adopt the European & Japanese design

- Wide-span rigid column
- Japan-made NSK extra-large 45mm precise roller-rail linear guide way (option)
- Adopt high-end direct motors and high rigidity couplings in three axes
- High quality full-length enclosed splash guard, elegant appearance, well-executed, and in good taste

Extra-large Z-axis motor

7.0KW (no counter balance design)

High reliable and high accuracy ballscrew design

ø40mm high class double nut provides strong rigidity, high torque, better accuracy, long-life, and effectively heat extension control.

Extra wide door design

The width of door reaches 1160mm for conveniently loading and unloading the fixture and workpiece.

Stable air supply equipment

The gas storage barrel assists to acquire steady air source to increase equipment utility rate.



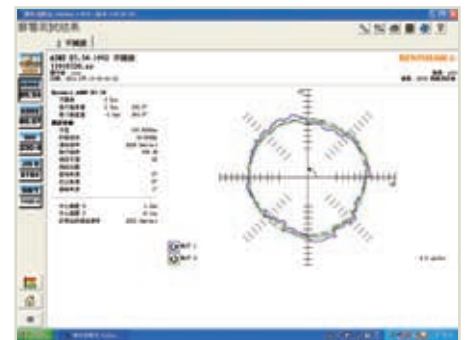
A-6/A-10

Strict Quality Control



Renishaw Ballbar System

Carry out a three dimension circular test and optimal adjustment.



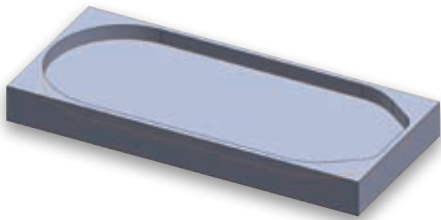
Ballbar Test Figure

Each machine goes through telescoping ball-bar tests to check contouring accuracy and uncover any geometric errors. This testing ensures the machine structure is both square and parallel.

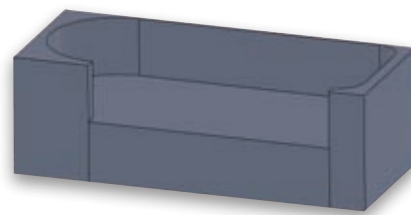
Calibration with Laser Interferometer was Performed and Certified by PMC

Agma authorizes PMC to conduct 100% inspection to full travel length of three axes. Standard VDI 3441 3 σ is employed to ensure the machine accuracy and righteousness of the inspection. For each axis, inspection along full axial travel length backwards and forwards for 6 times is conducted.

Cutting Capability



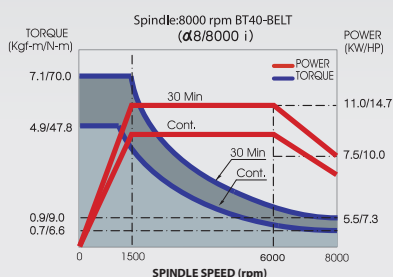
Workpiece Material : A6061 T6
 Spindle Speed : 12,000rpm
 Cutting Feedrate : **10,000mm/min.**
 Cutter : $\phi 12 \times 3$ Flutes End Mill for Aluminum
 Depth of cut : 12 mm
 Width of cut : 1.8 mm



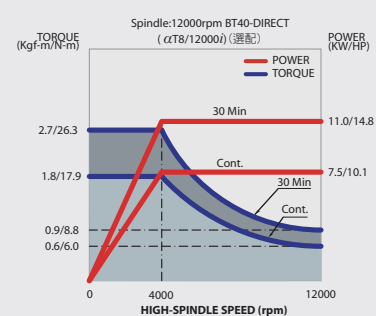
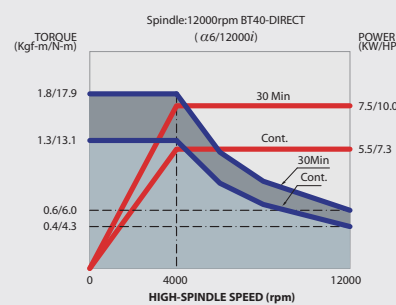
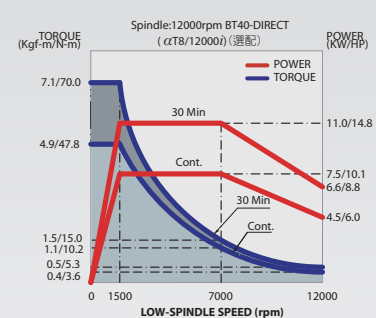
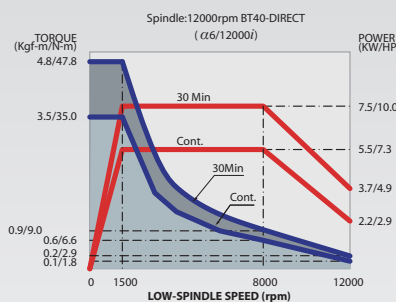
Workpiece Material : P20
 Spindle Speed : 7,000rpm
 Cutting Feedrate : **6,500mm/min.**
 Cutter : $\phi 12 \times 4$ Flutes End mill
 Depth of cut : 18 mm
 Width of cut : 0.8 mm

FANUC Spindle Torque Drawing

α 8i Belt-Driven Spindle

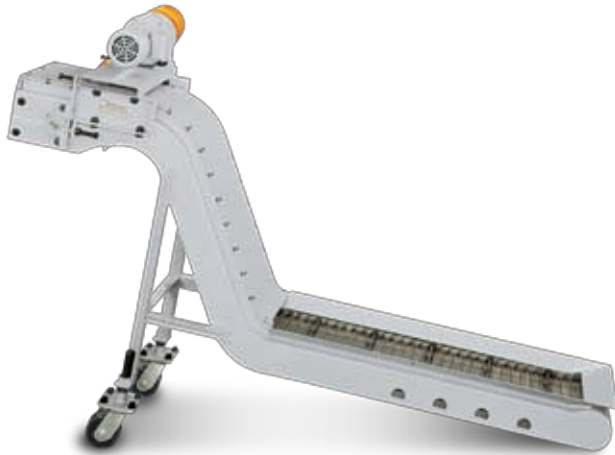


α Direct-Driven Spindle



A-6/A-10

Standard and special accessories



Hinge Type Chip Conveyor



X/Y/Z-Axis Optical Linear Scale (Special Accessories)



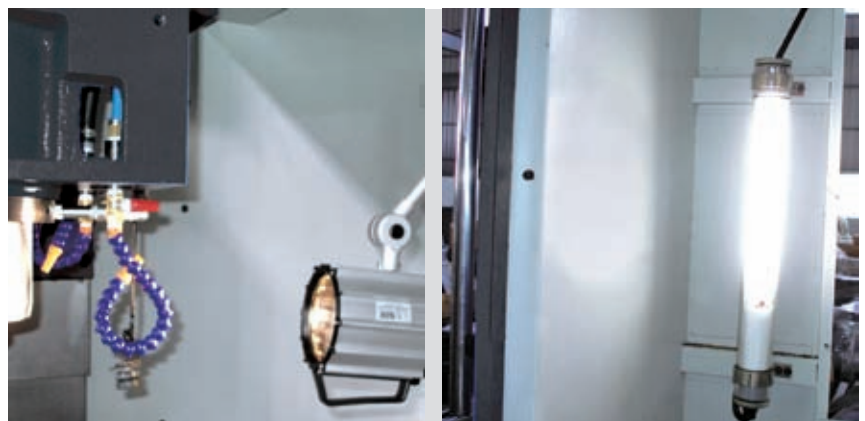
Spindle ring sprinkler



Thin-film panel

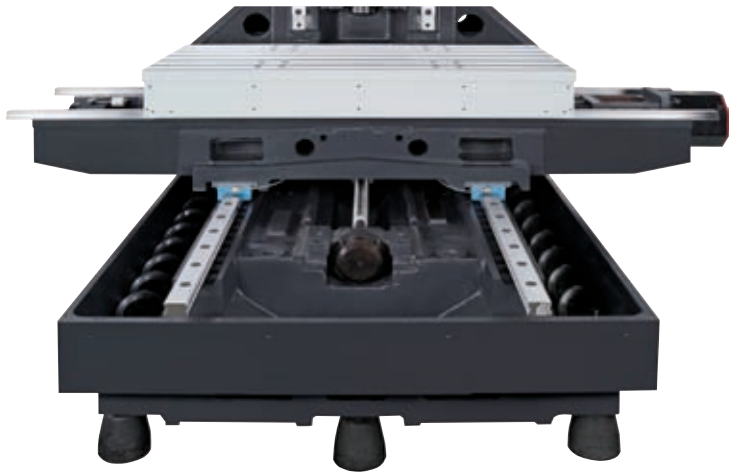


Oil Circulating Coolant System for Spindle

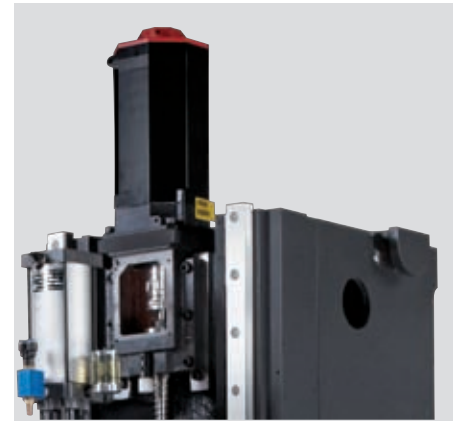


Fluorescent Light & Quartz Work Light

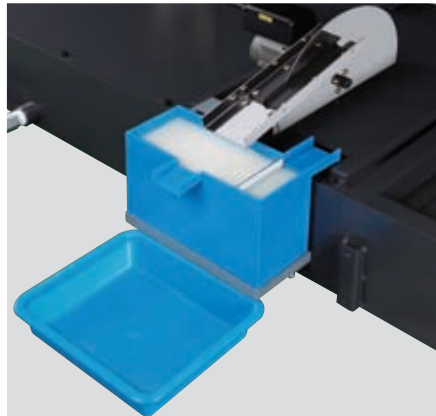
The fluorescent light is installed with the fully enclosed splash guard and it is located on the left hand corner, and the quartz work light is installed on the right hand upper corner to provide a well-lit table area.



Y-Axis Screw Type Chip Augers (2 pcs) (A-10 only)



Extra-large Z axis motor 7.0KW (A-10 only)



Oil Skimmer (Special Accessories)

Precision Ball-Rail or Roller Rail (option) Linear Guideways and C3 Class Ball Screws for Three Axes

Linear Guide ways are used on all three axes. Because of their high rigidity, low noise, and low friction, this helped to achieve high-speed rapid movement and excellent circular accuracy. Double nut C3 class precision ballscrews are used on all three axes. Along with pretension double nut and supports to minimize the backlash and to compensate for error caused by temperature differences in order to maintain positioning accuracy.



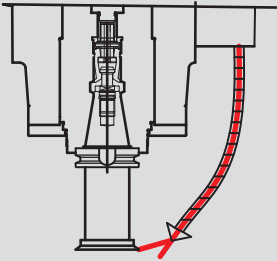
Chassis Chip flushing



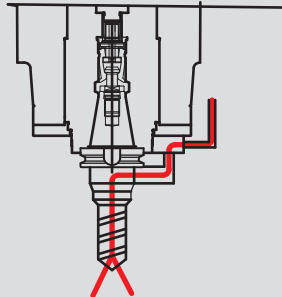
Tool Setep Probe (Tool Setter)

A-6/A-10

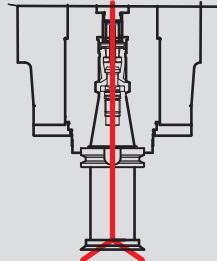
Std.-Directional Pipe
Purpose-General



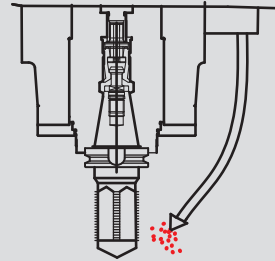
Opt.-Oil Hole Holder
Purpose-Drilling, Boring, etc.



Opt.-Coolant Through Spindle(CT.S.)
Purpose-Drilling, Boring, etc.



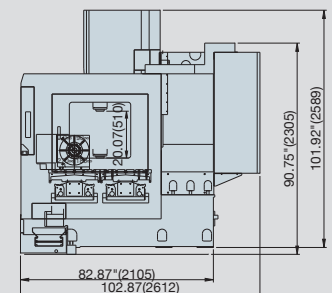
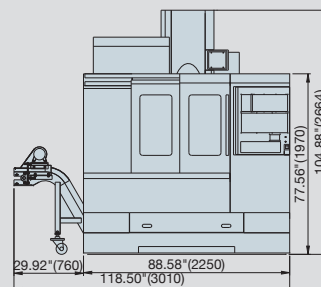
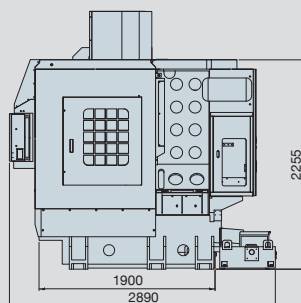
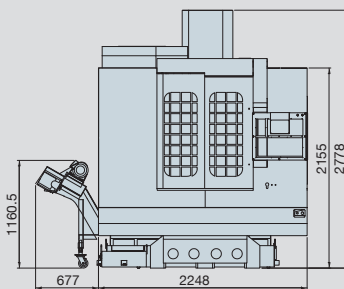
Opt.- Oil Mist
Purpose-Tapping, Reaming, etc.



Machine Layout

A-6

A-10



BT-40 Toolholder Figure

MAZAK BT-40 Toolholder Figure (coolant through spindle)

CAT-40 Toolholder Figure (coolant through spindle)

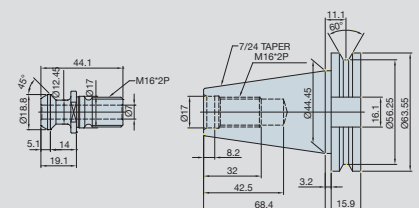
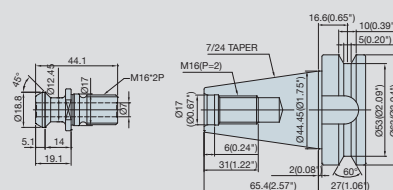
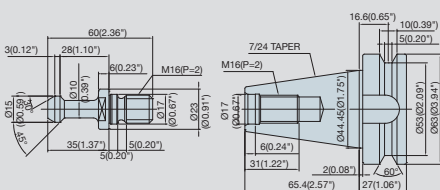
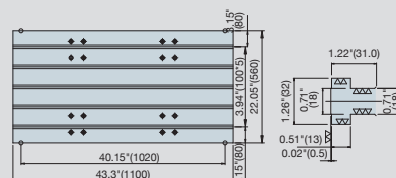
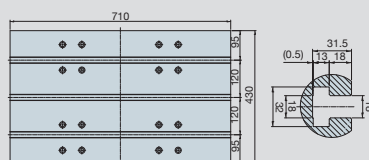


Table Dimension

A-6

A-10



| Model | A-6 | A-10 |
|---|----------------------------|-------------------------|
| Spindle | | |
| Spindle Taper | NO.40 | |
| Transmission | Belt Driven | |
| Spindle Speed | 8,000 r.p.m. | |
| Table | | |
| Table Size | 700 x 420 mm | 1,100 x 560 mm |
| T-Slot | 18 x 3 x 120 mm | 18 x 5 x 100 mm |
| Working Area | 610 x 420 mm | 1,020 x 560 mm |
| Max. Table Load | 500 kgs | 700 kgs |
| Travel & Feedrate | | |
| X Axis | 610 mm | 1,020 mm |
| Y Axis | 420 mm | 560 mm |
| Z Axis | 460 mm | 510 mm |
| Distance from Spindle Nose to Table | 150~610 mm | 150~660 mm |
| Distance from Spindle Center to Surface of Column Way | 434 mm | 624 mm |
| Rapid Traverse (X/Y/Z) | X,Y,Z:36/36/36 M/min | X,Y,Z:32/32/28 M/min |
| Cutting Feedrate | X,Y,Z:1~12,000 mm/min | |
| ATC | | |
| Tool Shank | BT-40 | |
| Pull Stud | MAS P40T-1(45°) | |
| Magazine Capacity | 24 pcs | |
| Max. Tool Diameter (Full Storage) | φ 80 mm | |
| Max. Tool Diameter (With Adjacent Pocket Empty) | φ 130 mm | |
| Max. Tool Length | 300 mm | |
| Max. Tool Weight | 7 kgs | |
| ATC Type | Arm Type | |
| Tool Choose Method | Short Cut for Tool Choose | |
| Motor | | |
| For Spindle (Cont./30 min./10min.) | 7.5/11 kw(10/15 HP) | |
| For X/Y/Z Axis (Fanuc) | 2/3/4 kw (2.7/4/5.4 HP) | 3/3/7 kw (4/4/10 HP) |
| Lubrication Pump | 0.025 kw | |
| Coolant Pump | 0.86 kw | |
| Misc. | | |
| Machine Height | 2,390 mm | 2,650 mm |
| Machine Space | 2,250 x 2,890 mm | 2,250 x 2,610 mm |
| Machine Weight | 5,500 kgs | 6,800 kgs |
| Controller | FANUC OiMD 8.4" | |

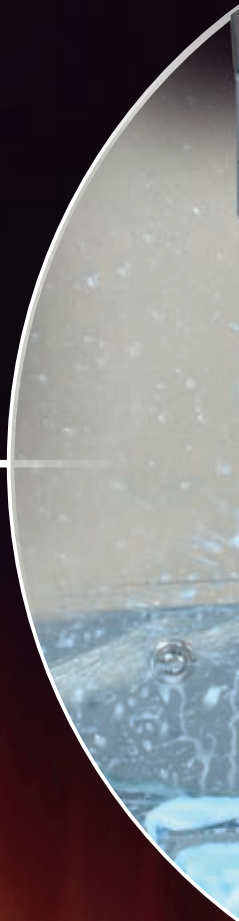
• Specification is subject to change without further notice.

Standard Accessories :

- 1.FANUC OiMD Controller
- 2.Heat Exchanger for Electric Cabinet
- 3.Program Execution/End/Abnormal Three Color Indicate Light
- 4.Quartz Work Lamp
- 5.Fluorescent Lamp
- 6.RS-232C Interface
- 7.Oil Circulating Coolant System for Spindle
- 8.Spindle Air Blast
- 9.Automatic Lubrication Equipment
- 10.Protection device for three axes slide ways
- 11.Full Splash Guard
- 12.Rigid Tapping
- 13.Auto Power Off
- 14.Y-Axis Screw Type Chip Augers (2 pcs) (A-10 only)
- 15.Tool Box w/ Leveling Bolt
- 16.Machine and Electric Operation Manual
- 17.(380/220V) Transformer (Exclude India, USA and Canada)
- 18.CE/CSA Electrical Specification (For European/Canada Only)
19. Taiwan made Ball-rail linear guide way

Optional Accessories :

- 1.FANUC 31iMB Controller
- 2.Mitsubishi 70/720/730M controller
- 3.Belt Driven Spindle 10,000RPM
- 4.Direct Driven Spindle 10,000/12,000/15,000RPM
- 5.Armless Type 16 tools ATC. (A-10 only)
- 6.Hinge Type Chip Conveyor
- 7.Taiwan made PMI roller-rail linear guideway
8. Japan made THK/NSK ball-rail/roller-rail linear guideways
- 9.Coolant-thru tool holder
- 10.Three Axes Optical Linear Scale
- 11.Oil Mist
- 12.Oil Mist Collector
- 13.Coolant Through Spindle A Type (20 Bars)
- 14.Renishaw TS-27R Tool Setup Probe (Tool Setter)
- 15.Disc Type Oil Skimmer
- 16.CNC Rotary Table
- 17.Air Conditioning Equipment for Electric Cabinet
- 18.4Th Axis Interface



AGMACHINE TECHNO CO., LTD.

No.7, Ln. 34, Jhuangcian Rd., Shengang Dist.,

Taichung City 42951, Taiwan(R.O.C.)

TEL:+886-4-25612868

FAX:+886-4-25610409 & 25613010

E-mail: mk21@agma.com.tw

<http://www.agma.com.tw>



Distributor :

