



**VERTICAL MACHINING CENTER
LINEAR GUIDE WAYS A SERIES**

EA-600

A-6/HPA-6

A-8/A-10

A-10L/HPA-10

A-12/A-14

Value models create profits and quality

 **Agma**



CE

EA-600

Vertical Machining Center

AGMA once again presents high speed linear guide ways A series Model EA-600 machining center to a foresighted customer like you with industry-leading scraping technology of hardened box way and the technological capacity of manufacturing process. EA-600 is the Highest Capability/Price Ratio Vertical Machining Center. This series of machines are based on high rigidity Meehanite cast iron (FC30) with stress relieved to ensure maximum accuracy and absolute rigidity. Adopt BT-40 Direct Driven 10,000rpm spindle as standard and Direct Driven 12,000/15,000rpm and Belt Driven 8,000/10,000rpm spindle as option. 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.



EA-600

X/Y/Z Traverse 600/410/460mm

BT-40 Arm type 24 tools ATC

BT-40 Direct Driven 10,000 rpm (standard)

BT-40 Direct Driven 12,000/15,000 rpm (option)

BT-40 Belt Driven 8,000/10,000 rpm (option)

EA-600

Highest Capability/Price Ratio

Synchronously adopt the European & Japanese design

- Wide-span rigid column
- Taiwan-made PMI extra-large 30/30/30mm precise ball-rail linear guide ways is standard and Taiwan made PMI roller-rail linear guide way and Japan made roller-rail linear guide way are 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 X/Y/Z -axis motor

3.0/3.0/3.0KW (no counter balance design)

High reliable and high accuracy ballscrew design

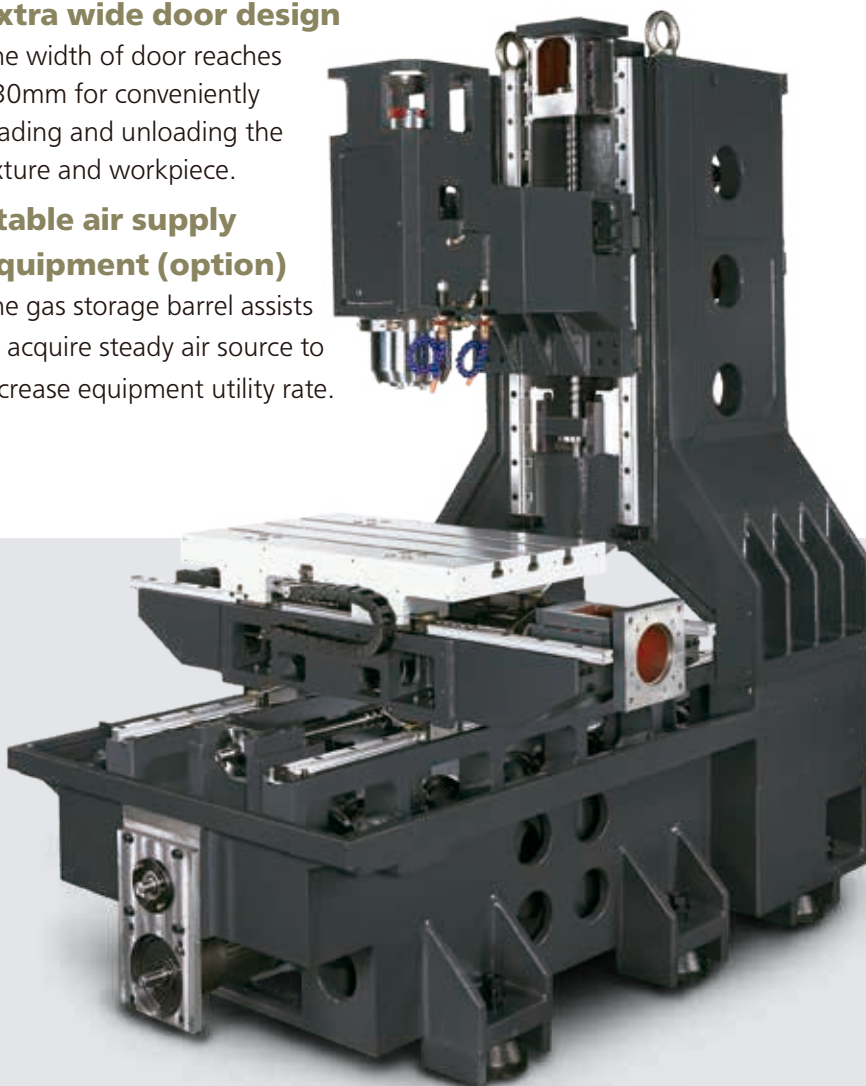
Ø32/32/32mm high class double nut ballscrew provides strong rigidity, high torque, better accuracy, long-life, and effectively heat extension control.

Extra wide door design

The width of door reaches 730mm for conveniently loading and unloading the fixture and workpiece.

Stable air supply equipment (option)

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



Unique Column Design

Single central screw type chip auger collocates left and right sides flush to remove the chip from front to back.



Chip Auger motor shrinks within to reduce the distance of the front sheet metal for ergonomics improvement on the ease of workpieces loading and unloading.



Single Screw Type Chip Auger on Y axis central (EA-600)

A-6

Vertical Machining Center

AGMA once again presents high speed linear guide ways A series Model A-6 machining center to a foresighted customer like you with industry-leading scraping technology of hardened box way and the technological capacity of manufacturing process. A-6 is the value model which creates profits and quality. This series of machines are based on high rigidity Meehanite cast iron (FC30) with stress relieved to ensure maximum accuracy and absolute rigidity. Adopt BT-40 Direct Driven 10,000rpm spindle as standard and Direct Driven 12,000/15,000rpm and Belt Driven 8,000/10,000rpm spindle as option. 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

BT-40 Arm type 24 tools ATC

BT-40 Direct Driven 10,000 rpm (standard)

BT-40 Direct Driven 12,000/15,000rpm (option)

BT-40 Belt Driven 8,000/10,000rpm (option)

HPA-6 Ultra-High-Speed Vertical Machining Center

Rapidest Cutting Feed rate 30,000mm/min among Taiwan Machine

AGMA once again presents Ultra-High-Speed linear guide ways A series HPA-6 machining center to a foresighted customer like you with industry-leading scraping technology of hardened box way and the technological capacity of manufacturing process. Rapidest Cutting Feedrate 30,000mm/min among Taiwanese machines is a special feature for this model which creates high-efficient and high-stability superiority. This series of machines are based on high-rigidity Meehanite cast iron (FC30) with stress relieved to ensure maximum accuracy and absolute rigidity. Adopt BT-40 Direct Driven 15,000rpm spindle as standard, and Direct Driven 10,000/12,000rpm spindle as option. 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.



HPA-6

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

BT-40 Arm type 24 tools ATC

BT-40 Direct Driven 15,000 rpm (standard)

BT-40 Direct Driven 10,000/12,000rpm (option)

A-6 / HPA-6

High-Rigidity Structure Design

Synchronously adopt the European & Japanese design

- Wide-span rigid column.
- Taiwan-made PMI extra-large 35/35/35mm precise roller-rail linear guide ways is standard and Japan made roller-rail linear guide way is option (for A-6).
- Adopt Japan-made NSK extra-large 35/35/35mm precise roller-type linear guide way (for HPA-6).
- Adopt high-end direct motors and high rigidity couplings in three axes.
- High quality fully enclosed splash guard, elegant appearance, well-executed and in good taste.

Extra-large X/Y/Z axis motor

3.0/3.0KW /3.0KW (no counter balance design) for A-6.

3.0/4.0KW /4.0KW (no counter balance design) for HPA-6 .

High reliable and high accuracy ballscrew design

Ø40/40/40mm high class double nut ballscrew provides strong rigidity, high torque, better accuracy, long-life, and effectively heat extension control (for A-6)

Taiwan Made PMI Ø40/40/40mm Hollow Ballscrew with Air Cooling System for HPA-6 is standard.

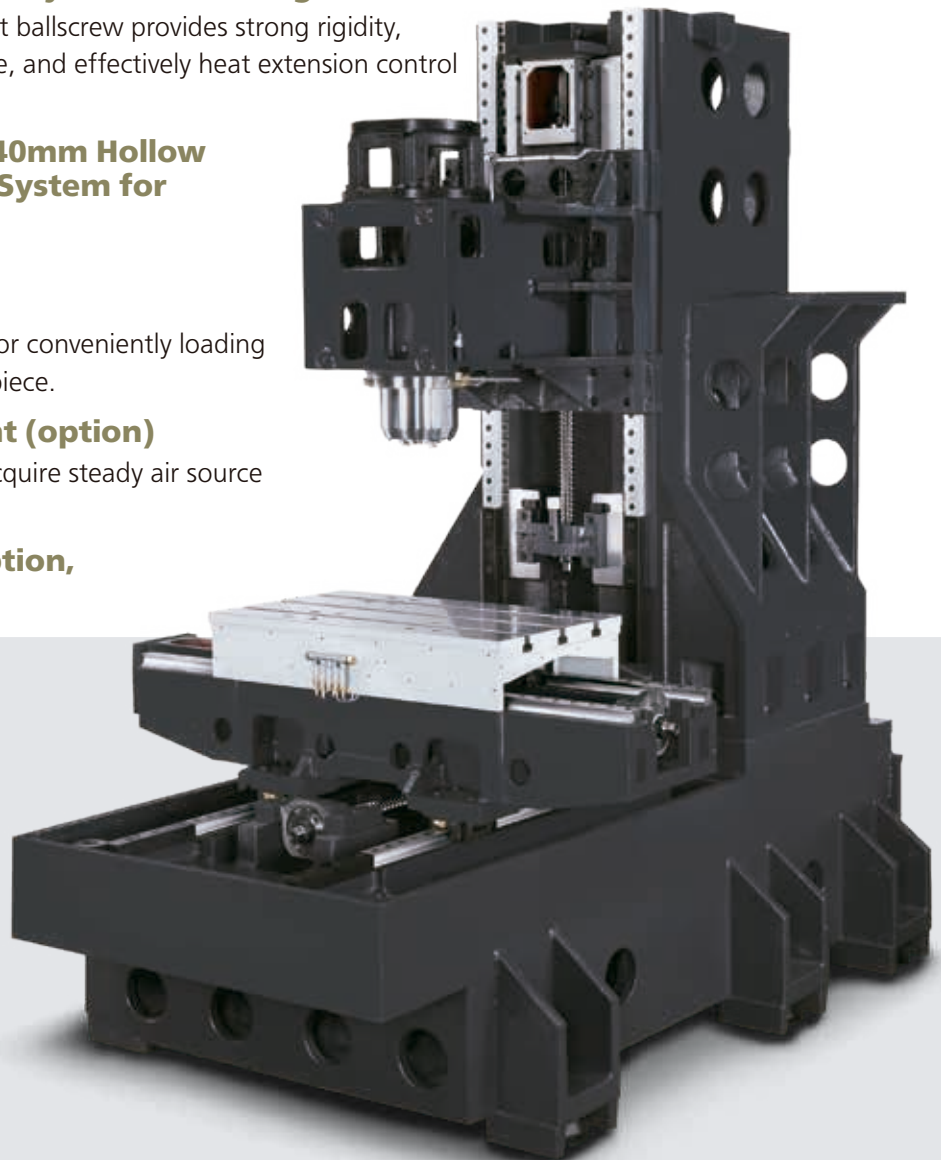
Extra wide door design

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

Stable air supply equipment (option)

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

Chip Conveyor for A-6 is option, but for HPA-6 is standard.



A-8

Vertical Machining Center

AGMA once again presents high speed linear guide ways A series model A-8 machining center to a foresighted customer like you with industry-leading scraping technology of hardened box way and the technological capacity of manufacturing process. A-8 is the value model which creates profits and quality. This series of machines are based on highrigidity Meehanite cast iron (FC30) with stress relieved to ensure maximum accuracy and absolute rigidity. Adopt BT-40 Direct Driven 10,000rpm spindle as standard and Direct Driven 12,000/15,000rpm and Belt Driven 8,000/10,000rpm spindle as option. 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-8

X/Y/Z Traverse 800/510/510mm

BT-40 Arm type 24 tools ATC

BT-40 Direct Driven 10,000 rpm (standard)

BT-40 Direct Driven 12,000/15,000rpm (option)

BT-40 Belt Driven 8,000/10,000rpm (option)

A-10

Vertical Machining Center

AGMA once again presents high speed linear guide ways A series model A-10 machining center to a foresighted customer like you with industry-leading scraping technology of hardened box way and the technological capacity of manufacturing process. A-10 is the value model which creates profits and quality. This series of machines are based on high-rigidity Meehanite cast iron (FC30) with stress relieved to ensure maximum accuracy and absolute rigidity. Adopt BT-40 Direct Driven 10,000rpm spindle as standard and Direct Driven 12,000/15,000rpm and Belt Driven 8,000/10,000rpm spindle as option. 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-10

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

BT-40 Arm type 24 tools ATC

BT-40 Direct Driven 10,000 rpm (standard)

BT-40 Direct Driven 12,000/15,000rpm (option)

BT-40 Belt Driven 8,000/10,000rpm (option)

A-10L

Vertical Machining Center

AGMA once again presents high speed linear guide ways A series A-10L machining center to a foresighted customer like you with industry-leading scraping technology of hardened box way and the technological capacity of manufacturing process. A-10L is a Performance and Speed beyond Expectation, Extended Y & Z Traverse model. This series of machines are based on high-rigidity Meehanite cast iron (FC30) with stress relieved to ensure maximum accuracy and absolute rigidity. Adopt BT-40 Direct Driven 10,000rpm spindle as standard and Direct Driven 12,000/15,000rpm and Belt Driven 8,000/10,000rpm spindle as option. 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-10L

X/Y/Z Traverse 1,020/600/600mm

BT-40 Arm type 24 tools ATC

BT-40 Direct Driven 10,000 rpm (standard)

BT-40 Direct Driven 12,000/15,000rpm (option)

BT-40 Belt Driven 8,000/10,000rpm (option)

HPA-10 Ultra-High-Speed Vertical Machining Center

Rapidest Cutting Feed rate 30,000mm/min among Taiwan Machine

AGMA once again presents Ultra-High-Speed linear guide ways A series HPA-10 machining center to a foresighted customer like you with industry-leading scraping technology of hardened box way and the technological capacity of manufacturing process. Rapidest Cutting Feedrate 30,000mm/min among Taiwanese machines is a special feature for this model which creates high-efficient and high-stability superiority. This series of machines are based on high-rigidity Meehanite cast iron (FC30) with stress relieved to ensure maximum accuracy and absolute rigidity. Adopt BT-40 Direct Driven 15,000rpm spindle as standard, and Direct Driven 10,000/12,000rpm spindle as option. 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.



HPA-10

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

BT-40 Arm type 24 tools ATC

BT-40 Direct Driven 15,000 rpm (standard)

BT-40 Direct Driven 10,000/12,000 rpm (option)

A-8/A-10/A-10L/HPA-10

High-Rigidity Structure Design

Synchronously adopt the European & Japanese design

- Wide-span rigid column
- Adopt Taiwan-made PMI extra-large 30/45/45mm (for A-8) and 35/45/45mm (for A-10/A-10L) precise roller type linear guide way is standard and Japan made roller-rail linear guide way is option.
- Adopt Japan-made NSK extra-large 35/45/45mm precise roller type linear guide way (for HPA-10).
- X/Y/Z axis adopts high specification direct driven motor and high rigid coupling.
- High quality fully enclosed splash guard, elegant appearance, well-executed and in good taste.

Extra-large X/Y/Z axis motor

3.0/3.0KW 3.0KW (no counter balance design) for A-8
 3.0/3.0KW 4.0KW (no counter balance design) for A-10/A-10L
 4.0/7.0KW 7.0KW (no counter balance design) for HPA-10

High reliable and high accuracy ballscrew design

Ø40/40/40mm high class double nut ballscrew provides strong rigidity, high torque, better accuracy, long-life, and effectively heat extension control (for A-8/A-10/A-10L)

Taiwan Made PMI Ø40/40/40mm Hollow Ballscrew with Air Cooling System for HPA-10 is standard.

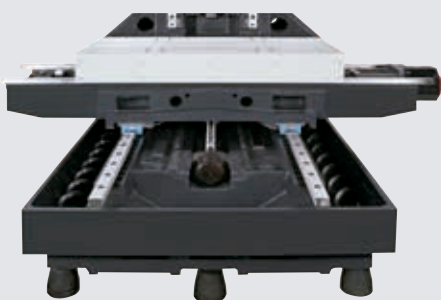
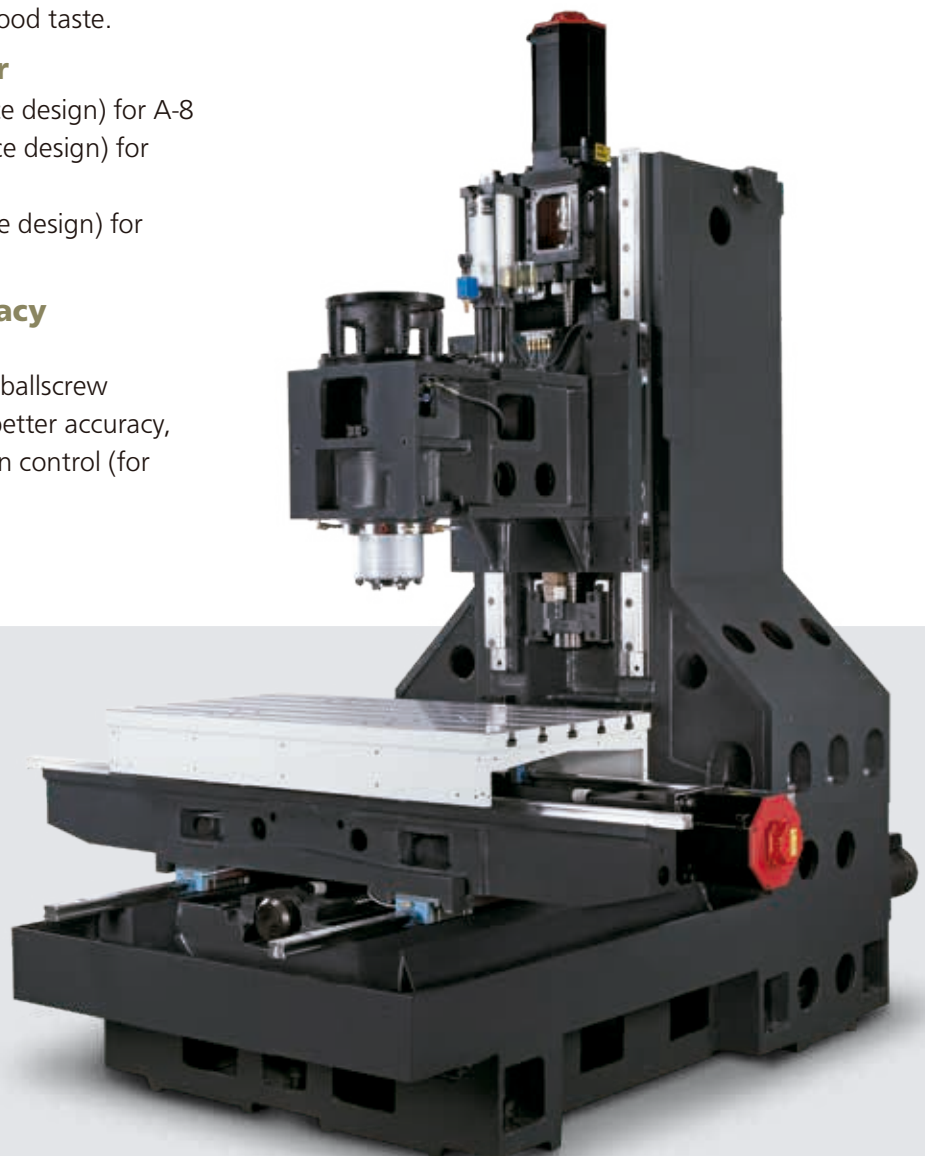
Extra Wide door design

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

Stable air supply equipment (option)

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

Chip Conveyor for A-8/A-10/A-10L is option, but for HPA-10 is standard.



Y-Axis Screw Type Chip Augers (2 pcs) (A-8/A-10/A-10L/HPA-10)

A12 / A14

Vertical Machining Center

The overall design of A12/A14 linear guide way A series is to achieve the best balance of structure rigidity, machining speed, and output efficiency for various industries, such as automobile and aerospace etc. Adopt BT-40 Belt Driven 8,000rpm spindle as standard, and BT-40 Belt Driven 10,000rpm and BT-40 Direct Driven 10,000/12,000/15,000rpm and BT-50 Belt Driven 8,000/10,000rpm spindle as option. The options on the spindle offer extensive flexibility and supports for various machining applications. All three axes adopt high precision 45/45/45mm roller-rail linear guideways and Ø45/45/45mm ball screws. A12/A14's unique four roller-rail linear guide ways with eight sliders on the Y axis enable the optimal support for high speed and machining accuracy. With Meehanite cast iron (FC30) with stress relieved across the machine structure, machine column and saddle are carefully designed with dual layers casting for the most rigid structure to absorb cutting vibration.



A-12/A-14

- X/Y/Z Traverse 1,200/700/700mm (for A-12)
- X/Y/Z Traverse 1,400/700/700mm (for A-14)
- BT-40 Arm type 24 tools ATC (standard)
- BT-50 Arm type 24 tools ATC (option)
- BT-40 Belt Drive 8,000rpm (standard)
- BT-40 Belt Drive 10,000rpm (option)
- BT-40 Direct Drive 10,000/12,000/15,000rpm (option)
- BT-50 Belt Drive 8,000/10,000rpm (option)

A-12 / A-14

High-Rigidity Structure Design

Synchronously Adopt the Advantages of the European & Japanese Design

- 954mm wide-span rigid column.
- Taiwan-made PMI extra-large 45/45/45mm precise roller-rail linear guide way is standard and Japan made roller-rail linear guide way is option.
- Adopt high-end direct motors and high rigidity couplings in three axes.

Extra-large X/Y/Z axis motor

3.0/3.0KW 4.0KW (no counter balance design) for BT-40.

3.0/3.0KW 4.0KW (with counter balance design) for BT50.

High Reliability and High Accuracy for Ballscrew Design

Ø45/45/45mm Pitch 12 C3 ball screw with high class double nut provides strong rigidity, high torque, better accuracy, long-life, and effectively heat extension control.

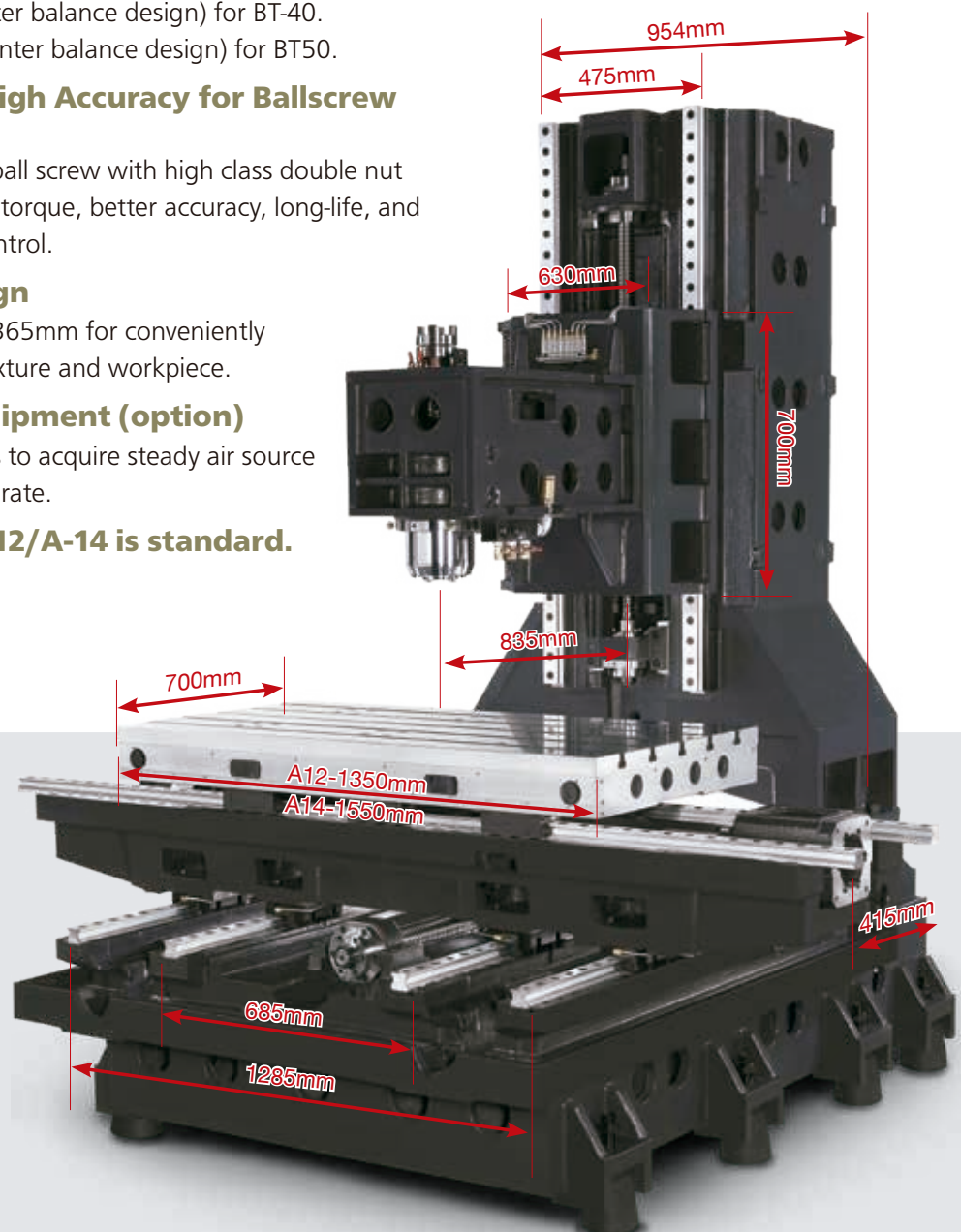
Extra Wide door design

The width of door reaches 1365mm for conveniently loading and unloading the fixture and workpiece.

Stable Air Supply Equipment (option)

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

Chip Conveyor for A-12/A-14 is standard.

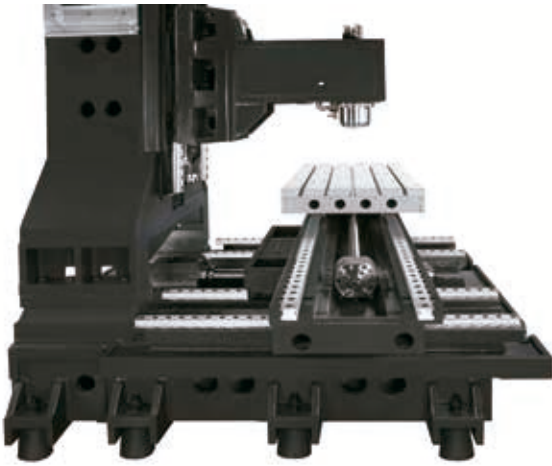


A12 / A14

High-Rigidity Structure Design

Design with More Sliders and More Stable Support for X, Y, and Z axis

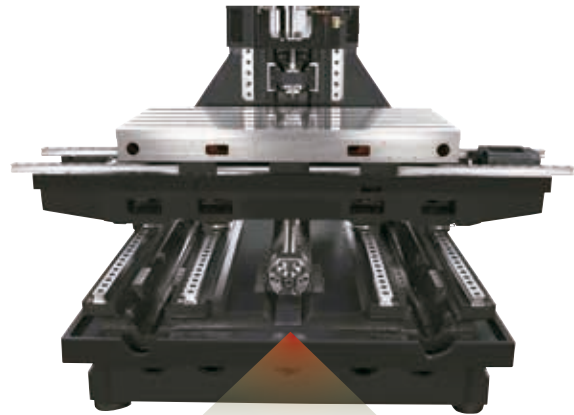
- X /Y/Z axes adopt Taiwan made PMI 45/45/45mm width roller-rail linear guide ways with slider quantity 3/2/3 and track quantity 2/4/2.



Design with More Screw-Type Chip Augers for Y axis

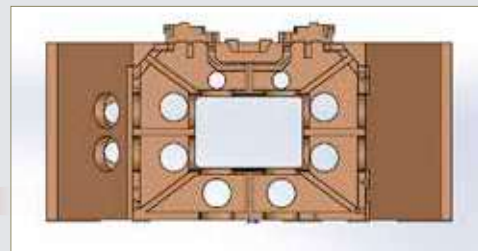
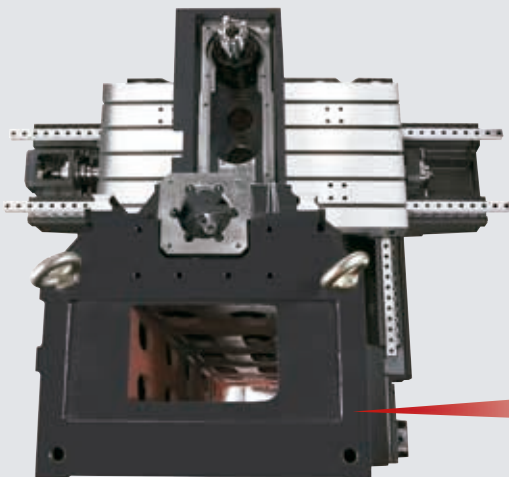
2 pcs Screw-type chip augers on Y axis to increase the chip removable capacity.

Enlarge Saddle Pads to Enhance the Support for the Table.



Box-Type Dual-Layers Casting Column

The unique column design achieves the ultra-excellent rigidity to minimize cutting induced vibration and deformation.

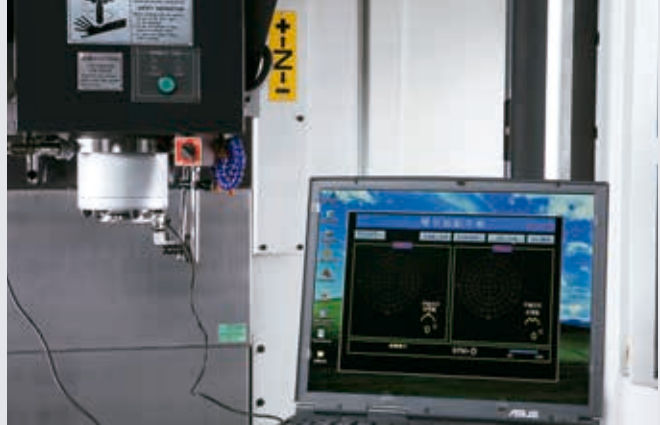


Standard and option accessories

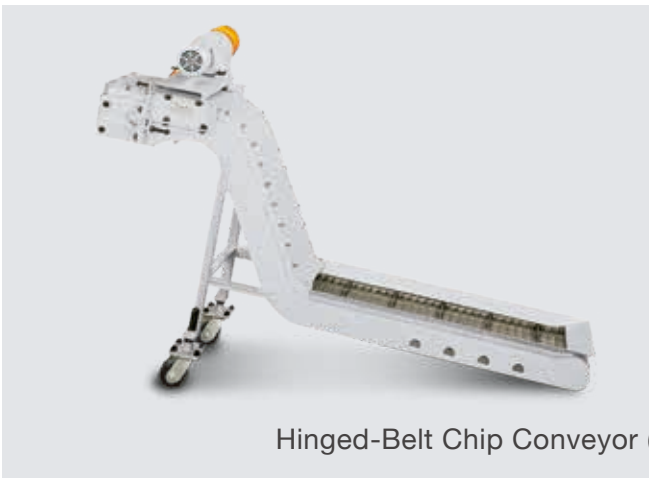


Renishaw Ballbar System

Carry out a three dimensional circular test and optimal adjustment.



High-speed spindle dynamic characteristic verification diagram



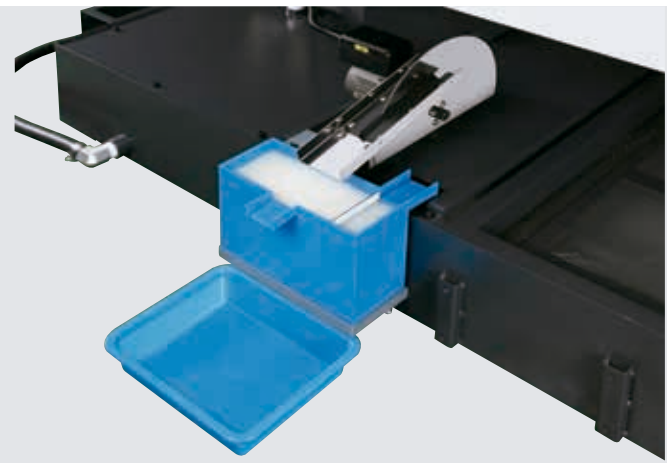
Hinged-Belt Chip Conveyor (option)



Oil Circulating Coolant System for Spindle

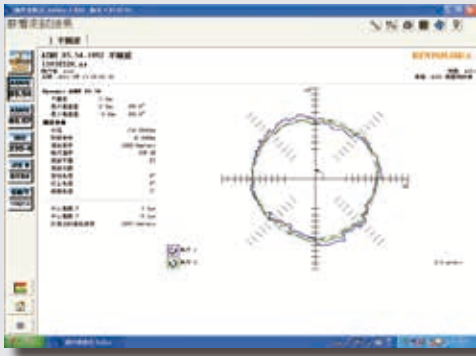


Chassis Chip Flushing



Oil Skimmer (option)

Standard and option accessories



Circle chart

Correct roundness and machine with roundness tester/Renishaw Geometric accuracy of the table, which ensures the movement of the machine degree.



24 Tools Magazine

A rapid arm-type tool changer is driven with a precision cam, maintaining tool-changing accuracy of 0.01mm, which in turn will help maintain long-term spindle clamping accuracy.



LED Fluorescent Light

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



Tool Setup Probe (Tool Setter) (option)



Precision Ball-Rail (standard for EA-600 only) or Roller Rail (standard for other models) Linear Guideways and C3 Class Ball Screws for Three Axes

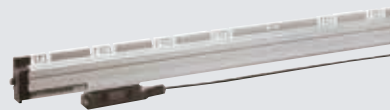
Linear Guide ways are used on all three axes. Because of their high rigidity, low noise, and low friction, this helped to achieve high-speed rapid movement and excellent circular accuracy. Double nut C3 class precision ballscrews are used on all three axes. Along with pretension double nut and supports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



Crystal panel
(for all models)



Crystal panel
(for EA-600 only)



X/Y/Z Linear Scale (option)



Spindle Ring Sprinkler

Strict Quality Control

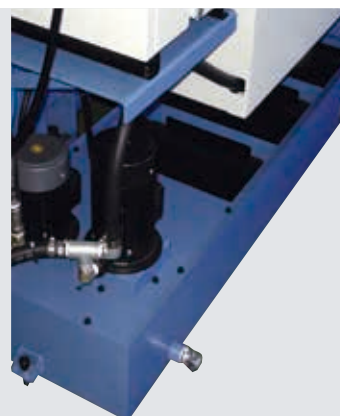
Calibration with Laser Interferometer was performed

All of our machines are calibrated according to the "VDI 3441 3 σ " standard. Calibration is performed for full travel length for each axis. Each measurement is taken six times to ensure the most consistent and accurate readings.



Electric Cabinet with Heat Exchanger

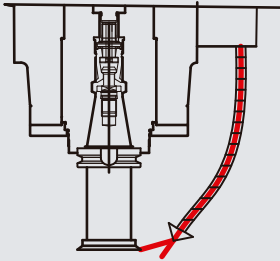
All electrical components are in compliance with safety rules and regulations. All components inside the cabinets are clearly labeled and identified for easy of troubleshooting.



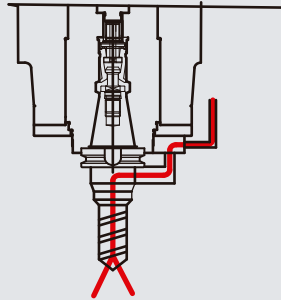
Chip Remover Equipment

Automatic base-box chip remover equipment which is very easy to remove the chip even the machine is under running.

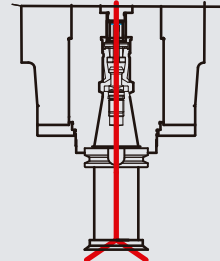
Std.-Directional Pipe
Purpose-General



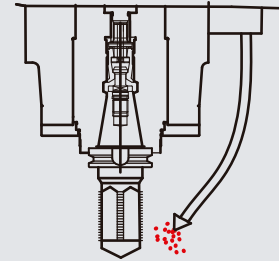
Opt.-Oil Hole Holder
Purpose-Drilling, Boring, etc.



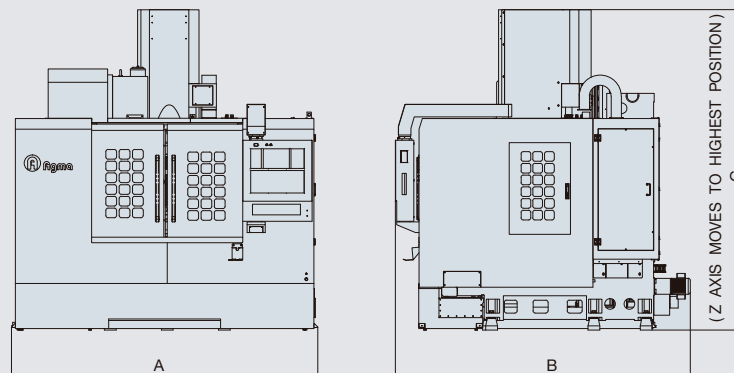
Opt.-Coolant Through Spindle(C.T.S.)
Purpose-Drilling, Boring, etc.



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

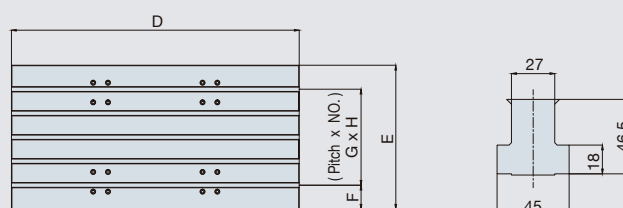


Machine Layout



| MODEL | A | B | C | D | E | F | G | H | T-slot |
|--------|------|------|------|------|-----|------|-----|---|--------|
| EA-600 | 1900 | 2560 | 2560 | 730 | 430 | 65 | 100 | 3 | 18 |
| A-6 | 2250 | 2890 | 2390 | 700 | 420 | 30 | 120 | 3 | 18 |
| HPA-6 | 2250 | 2890 | 2690 | 700 | 420 | 30 | 120 | 3 | 18 |
| A-8 | 2200 | 2480 | 2650 | 970 | 510 | 5 | 100 | 5 | 18 |
| A-10 | 2250 | 2610 | 3031 | 1100 | 560 | 30 | 100 | 5 | 18 |
| A-10L | 2800 | 2750 | 3090 | 1200 | 600 | 50 | 100 | 5 | 18 |
| HPA-10 | 4200 | 2350 | 2980 | 1100 | 560 | 30 | 100 | 5 | 18 |
| A-12 | 3600 | 3350 | 3200 | 1350 | 700 | 37.5 | 125 | 5 | 18 |
| A-14 | 3800 | 3350 | 3200 | 1550 | 700 | 37.5 | 125 | 5 | 18 |

Table Dimension



Vertical Machining Center Linear Guide Ways A Series

| MODEL | ITEM | UNIT | EA-600 | A-6 | HPA-6 | A-8 |
|-------------------|---|----------------------|---|---------------------------------------|---------------------------------------|---------------------------------------|
| SPINDLE | SPINDLE TAPER | | NO.40 | NO.40 | NO.40 | No. 40 |
| | TRANSMISSION | | DIRECT DRIVEN | DIRECT DRIVEN | DIRECT DRIVEN | DIRECT DRIVEN |
| | SPINDLE SPEED | r.p.m. | 10,000 | 10,000 | 15,000 | 10,000 |
| | SPINDLE DIAMETER | mm(inch) | 150(5.9) | 150(5.9) | 150(5.9) | 150(5.9) |
| TABLE | TABLE SIZE | mm(inch) | 730x430 (28.7x16.93) | 730x430 (28.7x16.93) | 700x420 (27.56x16.54) | 970 x 510 (38.19x20.08) |
| | T-SLOT | mm(inch) | 18 x 3 x100 (0.71x3x3.94) | 18 x 3 x120 (0.71x3x4.72) | 18 x 3 x120 (0.71x3x4.72) | 18 x 5 x 100 (0.71x5x3.94) |
| | WORK AREA | mm(inch) | 600x410 (23.62x16.14) | 610x420 (24.02x16.54) | 610x420 (24.02x16.54) | 800 x 510 (31.50x20.08) |
| | MAX. TABLE LOAD | kgs(lbs) | 300(660) | 500(1,100) | 600(1,320) | 500(1,100) |
| TRAVEL & FEEDRATE | X AXIS | mm(inch) | 600(23.62) | 610(24.95) | 610(24.02) | 800(31.50) |
| | Y AXIS | mm(inch) | 410(16.14) | 420(16.54) | 420(16.54) | 510(20.08) |
| | Z AXIS | mm(inch) | 460(18.11) | 460(18.11) | 460(18.11) | 510(20.08) |
| | DISTANCE FROM SPINDLE NOSE TO TABLE | mm(inch) | 160~625(6.30~24.46) | 150~610(5.91~24.02) | 150~610(5.91~24.02) | 150~660(5.91~25.98) |
| | DISTANCE FROM SPINDLE CENTER TO SURFACE OF COLUMN WAY | mm (inch) | 494(19.45) | 434(17.09) | 434(17.09) | 565(22.24) |
| | RAPID TRAVERSE (X/Y/Z) | m/min(ipm) | X,Y,Z:48/48/48 (1,888/1,888/1,888) | X,Y,Z:36/36/36 (1,416/1,416/1,416) | X,Y,Z:36/36/36 (1,406/1,406/1,406) | X,Y,Z:36/36/30 (1,416/1,416/1,181) |
| CUTTING FEEDRATE | mm/min(ipm) | X,Y,Z: 1~10,000(391) | X,Y,Z: 1~12,000(469) | X,Y,Z: 1~30,000(1,172) | X,Y,Z: 1~12,000(469) | |
| ATC | TOOL SHANK | | BT-40 | BT-40 | BT-40 | BT-40 |
| | PULL STUD | | MAS P40T-1(45°) | MAS P40T-1(45°) | MAS P40T-1(45°) | MAS P40T-1(45°) |
| | MAGAZINE CAPACITY | pcs | 24 | 24 | 24 | 24 |
| | MAX. TOOL DIAMETER (FULL STORAGE) | mm(inch) | Ø80(3.15) | Ø80(3.15) | Ø80(3.15) | Ø80(3.15) |
| | MAX. TOOL DIAMETER (WITH ADJACENT POCKET EMPTY) | mm(inch) | Ø125(4.93) | Ø125(4.93) | Ø125(4.93) | Ø125(4.93) |
| | MAX. TOOL LENGTH | mm(inch) | 250 (9.84) | 300(11.81) | 300(11.81) | 300(11.81) |
| | MAX. TOOL WEIGHT | kgs(lbs) | 7(15.4) | 7(15.4) | 7(15.4) | 7(15.4) |
| | ATC TYPE | | ARM TYPE | ARM TYPE | ARM TYPE | ARM TYPE |
| MOTOR | FOR SPINDLE (CONT./30 min.) | kw (hp) | 7.5/11(10/15) | 11/15 (15/20) | 7.5/11/15(10/15/20) | 11/15 (15/20) |
| | X/Y/Z Axis | kw (hp) | Fanuc: 3/3/3(4/4/4) Mitsubishi: 1.5/2.2/3 (2.04/3/4.08) | 3/3/3 (4/4/4) | 3/4/4(4/5.4/5.4) | 3/3/3 (4/4/4) |
| | LUBRICATION PUMP | kw (hp) | 0.025(0.033) | 0.025(0.033) | 0.025(0.033) | 0.025(0.033) |
| | COOLANT PUMP | kw (hp) | 0.49(0.66) | 0.49(0.66) | 0.49(0.66) | 0.49(0.66) |
| LINEAR GUIDEWAY | X/Y/Z WIDTH | mm(inch) | 30/30/30 (11.81/11.81/11.81) | 35/35/35 (13.78/13.78/13.78) | 35/35/35 (13.78/13.78/13.78) | 30/45/45 (11.81/17.72/17.72) |
| | SLIDER QUANTITY | PC | 2/2/2 | 2/2/2 | 2/2/2 | 2/2/2 |
| | TRACK QUANTITY | PC | 2/2/2 | 2/2/2 | 2/2/2 | 2/2/2 |
| | TYPE | | BALL RAIL | ROLLER RAIL | ROLLER RAIL | ROLLER RAIL |
| MISC. | MACHINE HEIGHT | mm(inch) | 2,560(1,008) | 2,390(941) | 2,690(1,059) | 2,650(1,043) |
| | MACHINE SPACE | mm(inch) | 1,900x2,560 (748x1,008) | 2,250x2,890 (886x1,138) | 2,250x2,890 (886x1,138) | 2,200x2,475 (866x974) |
| | MACHINE WEIGHT | kgs(lbs) | 4,000(8,818) | 5,500(12,125) | 5,700(12,566) | 6,000(13,227) |
| | CONTROLLER | | 0iMF 8.4" STD M80 8.4" OPT. | 0iMF 8.4" STD M80 8.4" OPT. | 0iMF 8.4" STD M80 8.4" OPT. | 0iMF 8.4" STD M80 8.4" OPT. |

●Specification is subject to change without further notice

| MODEL | ITEM | A-10 | A-10L | HPA-10 | A-12 | A-14 |
|------------------------------|---|-------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|
| SPINDLE | SPINDLE TAPER | NO.40 | NO.40 | NO.40 | NO.40 | NO.40 |
| | TRANSMISSION | DIRECT DRIVEN | DIRECT DRIVEN | DIRECT DRIVEN | BELT DRIVEN | BELT DRIVEN |
| | SPINDLE SPEED | 10,000 | 10,000 | 15,000 | 8,000 | 8,000 |
| | SPINDLE DIAMETER | 150(5.9) | 150(5.9) | 150(5.9) | 150(5.9) | 150(5.9) |
| TABLE | TABLE SIZE | 1,100x560 (43.31x22.05) | 1,200x600 (47.24x23.62) | 1,100x560 (43.31x22.05) | 1,350x700 (53.15x27.56) | 1,550x700 (61.02x27.56) |
| | T-SLOT | 18 x 5 x100 (0.71x5x3.94) | 18 x 5 x100 (0.71x5x3.94) | 18 x 5 x100 (0.71x5x3.94) | 18 x 5 x125 (0.71x5x4.92) | 18 x 5 x125 (0.71x5x4.92) |
| | WORK AREA | 1,020x560 (40.16x22.05) | 1,020x600 (40.16x23.62) | 1,020x560 (40.16x22.05) | 1,200*700 (47.24x27.56) | 1,400*700 (55.12x27.56) |
| | MAX. TABLE LOAD | 700(1,540) | 700(1,540) | 900(1,980) | 1,200(2,640) | 1,400(3,080) |
| TRAVEL & FEEDRATE | X AXIS | 1,020(40.16) | 1,020(40.16) | 1,020(40.16) | 1,200(47.24) | 1,400(55.12) |
| | Y AXIS | 560(22.05) | 600(23.62) | 560(22.05) | 700(27.56) | 700(27.56) |
| | Z AXIS | 510(20.08) | 600(23.62) | 510(20.08) | 700(27.56) | 700(27.56) |
| | DISTANCE FROM SPINDLE NOSE TO TABLE | 150~660(5.91~25.98) | 150~750(5.91~29.53) | 150~660(5.91~25.98) | 120~820(4.72~32.28) | 120~820(4.72~32.28) |
| | DISTANCE FROM SPINDLE CENTER TO SURFACE OF COLUMN WAY | 624(24.57) | 655(25.79) | 624(24.57) | 820(32.28) | 820(32.28) |
| | RAPID TRAVERSE (X/Y/Z) | X,Y,Z:32/32/24 (1,259/1,259/944) | X,Y,Z:32/32/24 (1,259/1,259/944) | X,Y,Z:32/32/30 (1,250/1,250/1,172) | X,Y,Z:32/32/24 (1,259/1,259/944) | X,Y,Z:32/32/24 (1,259/1,259/944) |
| CUTTING FEEDRATE | X,Y,Z: 1~12,000(469) | X,Y,Z: 1~12,000(469) | X,Y,Z: 1~30,000(1,172) | X,Y,Z: 1~10,000(391) | X,Y,Z: 1~10,000(391) | |
| ATC | TOOL SHANK | BT-40 | BT-40 | BT-40 | BT-40 | BT-40 |
| | PULL STUD | MAS P40T-1(45°) | MAS P40T-1(45°) | MAS P40T-1(45°) | MAS P40T-1(45°) | MAS P40T-1(45°) |
| | MAGAZINE CAPACITY | 24 | 24 | 24 | 24 | 24 |
| | MAX. TOOL DIAMETER (FULL STORAGE) | Ø80(3.15) | Ø80(3.15) | Ø80(3.15) | Ø80(3.15) | Ø80(3.15) |
| | MAX. TOOL DIAMETER (WITH ADJACENT POCKET EMPTY) | Ø125(4.93) | Ø125(4.93) | Ø125(4.93) | Ø125(4.93) | Ø125(4.93) |
| | MAX. TOOL LENGTH | 300(11.81) | 300(11.81) | 300(11.81) | 300(11.81) | 300(11.81) |
| | MAX. TOOL WEIGHT | 7(15.4) | 7(15.4) | 7(15.4) | 7(15.4) | 7(15.4) |
| | ATC TYPE | ARM TYPE | ARM TYPE | ARM TYPE | ARM TYPE | ARM TYPE |
| MOTOR | FOR SPINDLE (CONT./30 min.) | 11/15 (15/20) | 11/15 (15/20) | 7.5/11/15(10/15/20) | 11/15 (15/20) | 11/15 (15/20) |
| | X/Y/Z Axis | 3/3/4(4/4/5.4) | 3/3/4(4/4/5.4) | 4/7/7(5.4/10/10) | 3/3/4(4/4/5.4) | 3/3/4(4/4/5.4) |
| | LUBRICATION PUMP | 0.025(0.033) | 0.025(0.033) | 0.025(0.033) | 0.025(0.033) | 0.025(0.033) |
| | COOLANT PUMP | 0.49(0.66) | 0.49(0.66) | 0.49(0.66) | 0.49(0.66) | 0.49(0.66) |
| LINEAR GUIDEWAY | X/Y/Z WIDTH | 35/45/45 (13.78/17.72/17.72) | 35/45/45 (13.78/17.72/17.72) | 35/45/45 (13.78/17.72/17.72) | 45/45/45 (17.72/17.72/17.72) | 45/45/45 (17.72/17.72/17.72) |
| | SLIDER QUANTITY | 2/2/2 | 2/2/2 | 2/2/2 | 3/2/3 | 3/2/3 |
| | TRACK QUANTITY | 2/2/2 | 2/2/2 | 2/2/2 | 2/4/2 | 2/4/2 |
| | TYPE | ROLLER RAIL | ROLLER RAIL | ROLLER RAIL | ROLLER RAIL | ROLLER RAIL |
| MISC. | MACHINE HEIGHT | 2,650(1,043) | 3,085(1,215) | 2,980(1,173) | 3,200(1,260) | 3,200(1,260) |
| | MACHINE SPACE | 2,250x2,610 (886x1,028) | 2,800x2,736 (1,102x1,077) | 4,200x2,350 (1,654x925) | 3,600x3,350 (1,417x1,319) | 3,800x3,350 (1,496x1,319) |
| | MACHINE WEIGHT | 6,500(14,330) | 6,800(14,991) | 6,800(14,991) | 9,500(20,944) | 10,000(22,046) |
| | CONTROLLER | 0iMF 8.4" STD M80 8.4" OPT. | 0iMF 8.4" STD M80 8.4" OPT. | 0iMF 8.4" STD M80 8.4" OPT. | 0iMF 8.4" STD M80 8.4" OPT. | 0iMF 8.4" STD M80 8.4" OPT. |

●Specification is subject to change without further notice

Linear Guide Way A Series Accessories

STANDARD: ● ; OPTION: ○ ; NOT AVAILABLE: X

| ITEM / MODEL | EA-600 | A-6 | HPA-6 | A-8 |
|--|---------------|-----------------|-----------------|-----------------|
| 1. Fully Splash Guard | ● | ● | ● | ● |
| 2. Spindle Air Blast | ● | ● | ● | ● |
| 3. Oil Circulating Cooling System Spindle | ● | ● | ● | ● |
| 4. Cutting Coolant Equipment | ● | ● | ● | ● |
| 5. Three-color Indicator Light | ● | ● | ● | ● |
| 6. LED Fluorescent Light | ● | ● | ● | ● |
| 7. Automatic Lubrication Equipment | ● | ● | ● | ● |
| 8. Three Axes Slideways Protector | ● | ● | ● | ● |
| 9. Heat Exchanger for Electric Cabinet | ● | ● | ● | ● |
| 10. Tool Box w/ Levelling Bolts & Pads | ● | ● | ● | ● |
| 11. One Year Warranty for Machine | ● | ● | ● | ● |
| 12. Auto Power Off | ● | ● | ● | ● |
| 13. RS-232 Interface | ● | ● | ● | ● |
| 14. Cutting Air Blast | ● | ● | ● | ● |
| 15. Rigid Tapping | ● | ● | ● | ● |
| 16. Operation Manual | ● | ● | ● | ● |
| 17. Remote Manual Pulse Generator (M.P.G.) | ● | ● | ● | ● |
| 18. Spindle Ring Sprinkler | ● | ● | ● | ● |
| 19. Chassis Chip Flushing | ● | ● | ● | ● |
| 20. X Axis Screw Type Chip Auger | X | X | X | ● In Front |
| 21. Y Axis Screw Type Chip Auger | ● In Central | X | X | ● 2 pcs |
| 22. Chip Conveyor | ○ In Back | ○ In Back | ● In Back | ○ In Front |
| 23. Forceful Cleaning Spray-Gun | ● | ● | ● | ● |
| 24. Hollow Ballscrew with Air Cooling System | X | X | ● | X |
| 25. AICC For Fanuc only | ● | ● | ● | ● |
| 26. Transformer (Exclude Taiwan, China, India, USA and Canada) | 20KVA | 20KVA | 25KVA | 20KVA |
| 27. Ball-Rail/Roller-Rail | PMI Ball-Rail | PMI Roller-Rail | NSK Roller-Rail | PMI Roller-Rail |
| 28. CE/CSA Electrical Specification for European/Canada only | ● | ● | ● | ● |
| 29. 24 TOOLS BT-40 ATC | ● | ● | ● | ● |
| 30. 30 TOOLS BT-40 ATC | X | X | X | X |
| 31. 16 TOOLS ARMLESS TYPE BT-40 ATC | ○ | ○ | ○ | ○ |
| 32. WITHOUT ATC | ○ | ○ | ○ | ○ |
| 33. BT-40 DIRECT DRIVEN 10,000RPM 7.5/11KW | ● | ○ | ○ | ○ |
| 34. BT-40 DIRECT DRIVEN 12,000RPM 7.5/11KW | ○ | ○ | ○ | ○ |
| 35. BT-40 DIRECT DRIVEN 15,000RPM 7.5/11KW | ○ | ○ | ● | ○ |
| 36. BT-40 BELT DRIVEN 8,000RPM 7.5/11KW | ○ | ○ | X | ○ |
| 37. BT-40 BELT DRIVEN 10,000RPM 7.5/11KW | ○ | ○ | X | ○ |
| 38. BT-40 DIRECT DRIVEN 10,000RPM 11/15KW | ○ | ● | X | ● |
| 39. BT-40 DIRECT DRIVEN 12,000RPM 11/15KW | ○ | ○ | X | ○ |
| 40. BT-40 BELT DRIVEN 8,000RPM 11/15KW | ○ | ○ | X | ○ |
| 41. BT-40 BELT DRIVEN 10,000RPM 11/15KW | ○ | ○ | X | ○ |
| 42. BT-50 BELT DRIVEN 8,000RPM 15/18.5KW | X | X | X | X |
| 43. BT-50 BELT DRIVEN 10,000RPM 15/18.5KW | X | X | X | X |
| 44. Mitsubishi M80 10.4" controller | ○ | ○ | ○ | ○ |
| 45. Siemens 828D/840D Controller | ○ | ○ | ○ | ○ |
| 46. Heidenhain TNC-620/TNC-640 Controller | ○ | ○ | ○ | ○ |
| 47. Taiwan made PMI roller-rail linear guideway | ○ | ● | ○ | ● |
| 48. Japan made THK/NSK ball-rail/roller-rail linear guideways | ○ | ○ | ● | ○ |
| 49. Coolant-thru tool holder | ○ | ○ | ○ | ○ |
| 50. Three Axes Optical Linear Scale | ○ | ○ | ○ | ○ |
| 51. Oil Mist | ○ | ○ | ○ | ○ |
| 52. Oil Mist Collector | ○ | ○ | ○ | ○ |
| 53. Coolant Through Spindle A Type (20/70 Bars- closed hole) | ○ | ○ | ○ | ○ |
| 54. Renishaw TS-27R Tool Setup Probe (Tool Setter) | ○ | ○ | ○ | ○ |
| 55. Renishaw Tool Machining Probe OMP-60 | ○ | ○ | ○ | ○ |
| 56. Disc Type Oil Skimmer | ○ | ○ | ○ | ○ |
| 57. Automatic Door | ○ | ○ | ○ | ○ |
| 58. Air Conditioning For Electrical Cabinet | ○ | ○ | ○ | ○ |
| 59. Data Server (Include 2G Card) For Fanuc 0iMF | ○ | ○ | ○ | ○ |
| 60. AICCI-200 For Fanuc 0iMF | ○ | ○ | ○ | ○ |
| 61. Nano Smoothing For Fanuc 0iMF | ○ | ○ | ○ | ○ |
| 62. 4TH AXIS INTERFACE | ○ | ○ | ○ | ○ |
| 63. CNC ROTARY TABLE | ○ | ○ | ○ | ○ |

| ITEM / MODEL | A-10 | A-10L | HPA-10 | A-12 | A-14 |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1. Fully Splash Guard | ● | ● | ● | ● | ● |
| 2. Spindle Air Blast | ● | ● | ● | ● | ● |
| 3. Oil Circulating Cooling System Spindle | ● | ● | ● | ● | ● |
| 4. Cutting Coolant Equipment | ● | ● | ● | ● | ● |
| 5. Three-color Indicator Light | ● | ● | ● | ● | ● |
| 6. LED Fluorescent Light | ● | ● | ● | ● | ● |
| 7. Automatic Lubrication Equipment | ● | ● | ● | ● | ● |
| 8. Three Axes Slideways Protector | ● | ● | ● | ● | ● |
| 9. Heat Exchanger for Electric Cabinet | ● | ● | ● | ● | ● |
| 10. Tool Box w/ Levelling Bolts & Pads | ● | ● | ● | ● | ● |
| 11. One Year Warranty for Machine | ● | ● | ● | ● | ● |
| 12. Auto Power Off | ● | ● | ● | ● | ● |
| 13. RS-232 Interface | ● | ● | ● | ● | ● |
| 14. Cutting Air Blast | ● | ● | ● | ● | ● |
| 15. Rigid Tapping | ● | ● | ● | ● | ● |
| 16. Operation Manual | ● | ● | ● | ● | ● |
| 17. Remote Manual Pulse Generator (M.P.G.) | ● | ● | ● | ● | ● |
| 18. Spindle Ring Sprinkler | ● | ● | ● | ● | ● |
| 19. Chassis Chip Flushing | ● | ● | ● | ● | ● |
| 20. X Axis Screw Type Chip Auger | ● In Front | ● In Front | X | X | X |
| 21. Y Axis Screw Type Chip Auger | ● 2 pcs | ● 2 pcs | ● 2 pcs | ● 2 pcs | ● 2 pcs |
| 22. Chip Conveyor | ○ In Front | ○ In Front | ● In Front | ● In Front | ● In Front |
| 23. Forceful Cleaning Spray-Gun | ● | ● | ● | ● | ● |
| 24. Hollow Ballscrew with Air Cooling System | X | X | ● | X | X |
| 25. AICC For Fanuc only | ● | ● | ● | ● | ● |
| 26. Transformer (Exclude Taiwan, China, India, USA and Canada) | 20KVA | 20KVA | 35KVA | 35KVA | 35KVA |
| 27. Ball-Rail/Roller-Rail | PMI Roller-Rail | PMI Roller-Rail | NSK Roller-Rail | PMI Roller-Rail | PMI Roller-Rail |
| 28. CE/CSA Electrical Specification for European/Canada only | ● | ● | ● | ● | ● |
| 29. 24 TOOLS BT-40 ATC | ● | ● | ● | ● | ● |
| 30. 30 TOOLS BT-40 ATC | ○ | ○ | ○ | ○ | ○ |
| 31. 16 TOOLS ARMLESS TYPE BT-40 ATC | ○ | ○ | ○ | ○ | ○ |
| 32. WITHOUT ATC | ○ | ○ | ○ | ○ | ○ |
| 33. BT-40 DIRECT DRIVEN 10,000RPM 7.5/11KW | ○ | ○ | ○ | ○ | ○ |
| 34. BT-40 DIRECT DRIVEN 12,000RPM 7.5/11KW | ○ | ○ | ○ | ○ | ○ |
| 35. BT-40 DIRECT DRIVEN 15,000RPM 7.5/11KW | ○ | ○ | ● | ○ | ○ |
| 36. BT-40 BELT DRIVEN 8,000RPM 7.5/11KW | ○ | ○ | X | ○ | ○ |
| 37. BT-40 BELT DRIVEN 10,000RPM 7.5/11KW | ○ | ○ | X | ○ | ○ |
| 38. BT-40 DIRECT DRIVEN 10,000RPM 11/15KW | ● | ● | X | ○ | ○ |
| 39. BT-40 DIRECT DRIVEN 12,000RPM 11/15KW | ○ | ○ | X | ○ | ○ |
| 40. BT-40 BELT DRIVEN 8,000RPM 11/15KW | ○ | ○ | X | ● | ● |
| 41. BT-40 BELT DRIVEN 10,000RPM 11/15KW | ○ | ○ | X | ○ | ○ |
| 42. BT-50 BELT DRIVEN 8,000RPM 15/18.5KW | X | X | X | ○ | ○ |
| 43. BT-50 BELT DRIVEN 10,000RPM 15/18.5KW | X | X | X | ○ | ○ |
| 44. Mitsubishi M80 10.4" controller | ○ | ○ | ○ | ○ | ○ |
| 45. Siemens 828D/840D Controller | ○ | ○ | ○ | ○ | ○ |
| 46. Heidenhain TNC-620/TNC-640 Controller | ○ | ○ | ○ | ○ | ○ |
| 47. Taiwan made PMI roller-rail linear guideway | ● | ● | ○ | ● | ● |
| 48. Japan made THK/NSK ball-rail/roller-rail linear guideways | ○ | ○ | ● | ○ | ○ |
| 49. Coolant-thru tool holder | ○ | ○ | ○ | ○ | ○ |
| 50. Three Axes Optical Linear Scale | ○ | ○ | ○ | ○ | ○ |
| 51. Oil Mist | ○ | ○ | ○ | ○ | ○ |
| 52. Oil Mist Collector | ○ | ○ | ○ | ○ | ○ |
| 53. Coolant Through Spindle A Type (20/70 Bars- closed hole) | ○ | ○ | ○ | ○ | ○ |
| 54. Renishaw TS-27R Tool Setup Probe (Tool Setter) | ○ | ○ | ○ | ○ | ○ |
| 55. Renishaw Tool Machining Probe OMP-60 | ○ | ○ | ○ | ○ | ○ |
| 56. Disc Type Oil Skimmer | ○ | ○ | ○ | ○ | ○ |
| 57. Automatic Door | ○ | ○ | ○ | ○ | ○ |
| 58. Air Conditioning For Electrical Cabinet | ○ | ○ | ○ | ○ | ○ |
| 59. Data Server (Include 2G Card) For Fanuc OiMF | ○ | ○ | ○ | ○ | ○ |
| 60. AICCII-200 For Fanuc OiMF | ○ | ○ | ○ | ○ | ○ |
| 61. Nano Smoothing For Fanuc OiMF | ○ | ○ | ○ | ○ | ○ |
| 62. 4TH AXIS INTERFACE | ○ | ○ | ○ | ○ | ○ |
| 63. CNC ROTARY TABLE | ○ | ○ | ○ | ○ | ○ |



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