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Aiming At Aerospace Solutions

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MEMBER OF  
**TII GROUP**  
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**MMT**<sub>15</sub> *AERO Series*  
Aluminium



## AIMING AT AEROSPACE SOLUTIONS



### **ASIA PACIFIC ELITE CORP. (APEC)** IS A SUBSIDIARY OF **TTGroup**, THE **BIGGEST MACHINE TOOLS GROUP** IN TAIWAN

APEC aims at "Aerospace manufacturing process" and defines ourselves as a resources integrator, solutions provider and customers' best strategic partner of OEM, Tier1 to Tier3.

APEC has the world's most complete medium and large aerospace structure and engine parts processing solutions.

Besides, we also have 20 years of professional practical experience in die & mold and precision machining.

Our clients are all over the world, like Canada, the USA, Germany, Japan, Mainland China and Taiwan, etc. Furthermore, we offer comprehensive customer services including factory planning, intelligent manufacturing, technical training, process upgrades and Turnkey solutions.



High-end facility & Smart manufacturing



Training program & Talent supply



Factory planning



Turnkey solution & Process level up



After - sales service



TIMS

- Production management
- Intelligent monitoring
- RFID tool management
- Workpiece management
- Order management



TLM

- Machine status
- Utilization analysis
- Alarm history
- Operation history
- Program upload/download



AGA key components

- Spindle
- Milling Head
- Trunnion Table



Aerospace Gebert APEC is a brand which provide key components of aerospace processing. It is developed by APEC and Dr.Gebert's team from Germany.AGA provides the brilliant components such as high power high speed Spindle, Milling Head and Trunnion Table which are especially designed for APEC machines. This allows us to provide after-sales service more effcently and accurately.



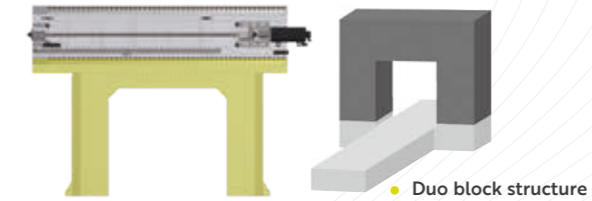


# MT<sub>15</sub> AERO Series

## 5-Axis High Speed Double Column Machining Center



- **Duo block structure design**  
Machine rigidity and working stability could be enhanced via duo block structure design.



- **Larger machining area**  
Despite the smallest footprint in its class, this compact model features a wide machining area and complete functions.

- **Suitable workpieces**

Wing structure



Wing rib(S/M)

Fuselage structure



Spar



Cross beam



Pylon



### Machine configuration for aerospace machining

#### Cross beam flushing system

High pressure pump with groups of powerful nozzles can quickly remove the chips.

#### Complex chip removal system

Large water tank equipped provides stable coolant fluid and helps removing chip efficiently.

#### Fully enclosed splash guard

Lower noise and prevent spreading of chips and coolant liquid.

#### Special spindle for aluminium alloy processing

High speed and power spindle with the best material removal rate.

#### Unequal thickness of Ram

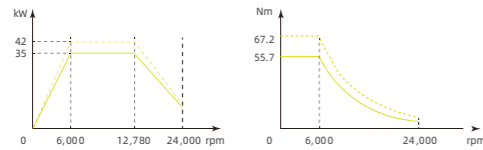
Special structure design of ram helps remain light and rigidity.

#### High dynamics

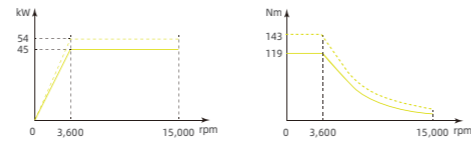
3-axis with high acceleration and deceleration, especially suitable for multiple bulkheads of aluminium alloy material processing.

| 24,000rpm     |         |      |      | 15,000rpm     |          |     |  |
|---------------|---------|------|------|---------------|----------|-----|--|
| Spindle taper | HSK-63A |      |      | Spindle taper | HSK-100A |     |  |
| Lubrication   | Oil air |      |      | Lubrication   | Oil air  |     |  |
| Power(kW)     | S1      | 35   | 60   | Power(kW)     | S1       | 45  |  |
|               | S6      | 42   | 75   |               | S6       | 54  |  |
| Torque(Nm)    | S1      | 55.7 | 48.2 | Torque(Nm)    | S1       | 119 |  |
|               | S6      | 67.2 | 60.5 |               | S6       | 143 |  |

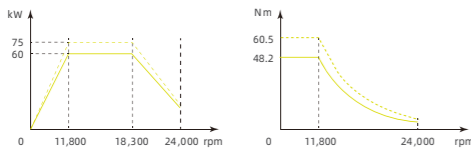
24,000rpm, HSK63A



15,000rpm, HSK100A



24,000rpm, HSK63A



Mono Support Milling Head  
(Std.)



Fork Type Milling Head

|                        |                                   |   |
|------------------------|-----------------------------------|---|
| Spindle Taper          | HSK63A/HSK100A                    | HSK63A/HSK100A                                    |
| Swivel/Rotation Torque | A=529/869Nm<br>C=783/1,300Nm      | B=1,192/1,980Nm<br>C=1,050/1,740Nm                |
| Swivel/Rotation Speed  | A=C=30(cont)rpm<br>A=C=60(max)rpm | B=C=30(cont)rpm<br>B=C=60(max)rpm                 |
| Swivel/Rotation Angle  | A=±125°<br>C=±360°                | HSK63A:B=±120° C=±360°<br>HSK100A:B=±115° C=±360° |
| Clamping Torque        | A=4,000Nm<br>C=4,000Nm            | B=4,000Nm<br>C=4,000Nm                            |

| Specification                            | Unit               | MT15      |                             |
|--|--------------------|-----------|-----------------------------|
|  |                    | MT1520-5S | MT1530-5S                   |
| Travel                                   |                    |           |                             |
| X-axis                                   | mm                 | 2,000     | 3,000                       |
| Y-axis                                   | mm                 |           | 2,000                       |
| Z-axis                                   | mm                 |           | 850(1,000 opt)              |
| Distance from spindle end to table       | mm                 |           | -100-750                    |
| Table                                    |                    |           |                             |
| T-slot size                              | mm                 |           | 20x125                      |
| Length                                   | mm                 | 2,100     | 3,100                       |
| Width                                    | mm                 |           | 1,200                       |
| Max. table load                          | tons.              | 3         | 5                           |
| Feedrate                                 |                    |           |                             |
| Rapid traverse                           | m/min              |           | X/Y/Z=30                    |
| X,Y,Z axis acceleration                  | m/sec <sup>2</sup> |           | 5                           |
| Accuracy                                 |                    |           |                             |
| Positioning(VDI3441)                     | mm                 |           | X=0.030 , Y=0.010 , Z=0.008 |
| Repeatability(VDI3441)                   | mm                 |           | X=0.025 , Y=0.008 , Z=0.005 |
| Spindle(Standard)                        |                    |           |                             |
| Spindle taper                            |                    |           | HSK63A                      |
| Spindle speed                            | rpm                |           | 24,000                      |
| Spindle power(S1/S6)                     | kW                 |           | 60/75                       |
| Spindle torque(S1/S6)                    | Nm                 |           | 48/60                       |
| Automatic tool changer                   |                    |           |                             |
| Tool shank                               | pcs                |           | 32T                         |
| Max. tool length                         | mm                 |           | 300                         |
| Max. tool diameter with adjacent tool    | mm                 |           | Ø75                         |
| Max. tool diameter without adjacent tool | mm                 |           | Ø130                        |
| Max. tool weight                         | kg                 |           | 8                           |
| Others                                   |                    |           |                             |
| Machine weight                           | tons.              | 20        | 24                          |

● Standard accessories ○ Optional accessories

| Item                    | Specification                                 |   | Item                     | Specification   |   |
|-------------------------|---|---|--------------------------|---|---|
| Controller              | HEIDENHAIN TNC640 MPG HR510                   | ● | Smart factory            | TIMSystem   | ○ |
|                         | HEIDENHAIN TNC640 MPG HR520                   | ○ |                          | TLMsystem   | ○ |
|                         | HEIDENHAIN TNC640 MPG HR550                   | ○ | Security door interlocks | ●   |   |
|                         | SIEMENS SINUMERIK ONE                         | ○ | Air dryer                | ●   |   |
| Spindle                 | AGA HSK63A 24,000rpm 60/75 kw                 | ● | Others                   | Isolation transformer                                 | ● |
|                         | AGA HSK100A 15,000rpm 45/54 kw                | ○ |                          | Spindle oil/air lubrication system                    | ● |
|                         | AGA HSK63A 24,000rpm 35/42 kw                 | ○ |                          | Oil mist collecting system                            | ● |
| Drive System            | XYZ with high speed ball screw driving        | ● |                          | 5 axis with Heidenhain optical scale                  | ● |
|                         | 32T   | ● |                          | Waterproof working lamps                              | ● |
|                         | 40T   | ○ |                          | Fully enclosure Splash Guard                          | ● |
| Automatic tool changer  | 60T   | ○ |                          | Automatic Kinematics measuring and calibration system | ○ |
|                         | Coolant around spindle                        | ● |                          | Stabilizer  | ○ |
|                         | Coolant through spindle 20bar                 | ● |                          |   |   |
| Cutting coolant         | Coolant through spindle 70bar                 | ○ |                          |   |   |
|                         | Chiller for spindle                           | ● |                          |   |   |
|                         | Air conditioner for electrical cabinet        | ● |                          |   |   |
| System coolant          | Complex chip conveyer                         | ● |                          |   |   |
|                         | Enlarged coolant tank                         | ● |                          |   |   |
| Chip removal system     | BLUM workpiece measurement system(TC60-RC66)  | ○ |                          |   |   |
|                         | Renishaw workpiece measurement system(RMP600) | ○ |                          |   |   |
|                         | BLUM tool measurement system(NT-A4)           | ○ |                          |   |   |
| Tool measurement system | Renishaw tool measurement system(NC4-F230)    | ○ |                          |   |   |



- Please contact with our sales if you have special requirement.
- All specifications and design are subject to change without notice.