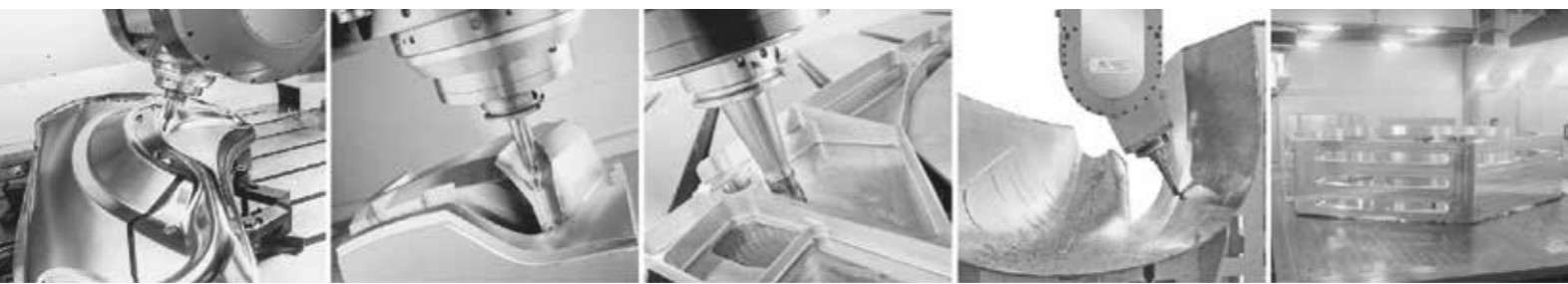


# MT15 series

## 5-axis High Speed Double Column Machining Center



Duo Black Rigidity Structure Design  
30m/min Speedy Feedrate  
Various Two-axis Head Options  
High-speed Aerospace Parts Machining



Asia Pacific Elite Corp.

ADD : 40852 No.7Jinke N Rd. Taichung, Taiwan.  
TEL : +886-4-23589313  
FAX : +886-4-23589311  
www.apecnc.com  
sales@apecnc.com

東台集團  
TONGTAI GROUP

**G Series**

X=2~12 m Y=2.0~3.0 m  
Rapid Traverse = 60 m/min



**MT Series**

X=3.2~6.2 m Y=1.5~3.4 m  
Rapid Traverse = 12~20 m/min



**GM Series**

X=4.0~6.0 m Y=2.7~3.7 m  
Rapid Traverse = 60 m/min



**MDU Series**

X=2.0~2.5 m Y=2.0~2.5 m  
Rapid Traverse = 10 m/min



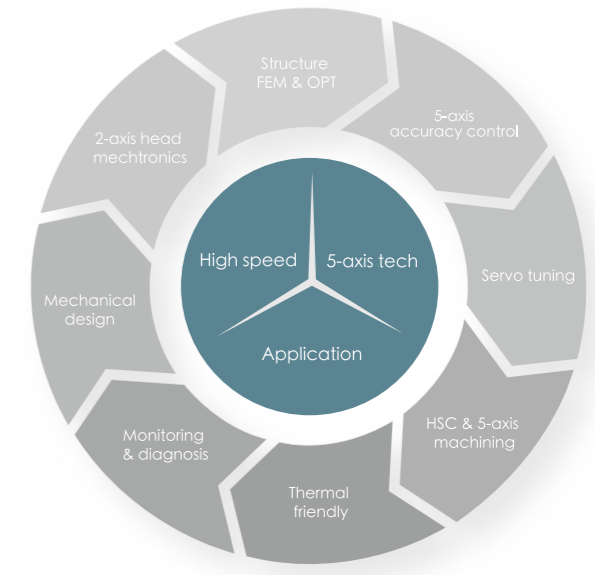
**GF Series**

X=6.0~30.0 m Y=4.0~5.0 m  
Rapid Traverse = 40 m/min



**About Asia Pacific Elite Corp.**

Creating benchmarks of large-scale 5-axis expert for high speed gantry machining center



**Excellent products and services**

APEC Ltd. affiliated with the TTG (Tongtai Group) which is the biggest machine tool manufacturing group in Taiwan, is the first company producing large gantry High-speed 5-axis machine in Asia area. To provide the most professional and complete products and service, we adopt the European main components design and manufacturing technology, designed for gantry type and high-end processing.

Since 2003, we have been successfully selling our products in wide range of industry of automotive and aerospace, and we also win the repeat orders in the Well-known enterprises all over the world and continue to build the excellent reputation.

**Perfect application supporting and customer training**

The most perfect application supporting and customer training APEC is the company that specializes in machining for Aerospace and Automobile industries.

APEC team, by analyzing the processing demand from customers, not only recommends the suitable equipment but also provide the complete solutions. It helps the improving of machining efficiency and accuracy, and it upgrades the processing.

**Auto attachment heads**



5 face machining



Heavy duty 5 face machining



5 axis continuous machining

**5 axis heads**

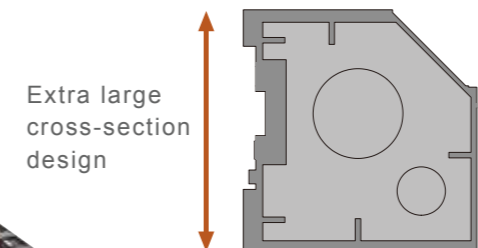
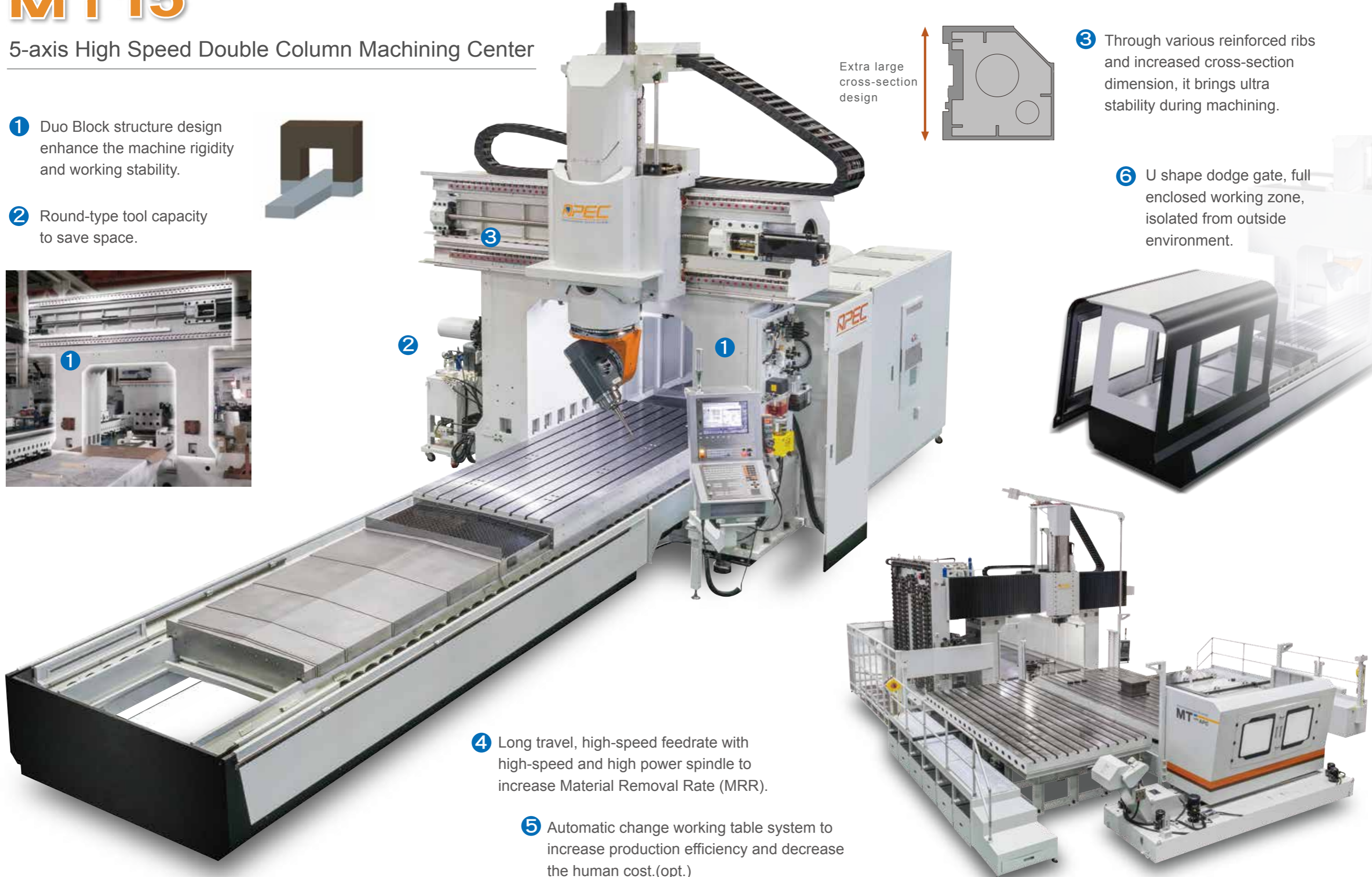




# MT15

## 5-axis High Speed Double Column Machining Center

- 1 Duo Block structure design enhance the machine rigidity and working stability.
- 2 Round-type tool capacity to save space.



- 3 Through various reinforced ribs and increased cross-section dimension, it brings ultra stability during machining.

- 6 U shape dodge gate, full enclosed working zone, isolated from outside environment.



- 4 Long travel, high-speed feedrate with high-speed and high power spindle to increase Material Removal Rate (MRR).

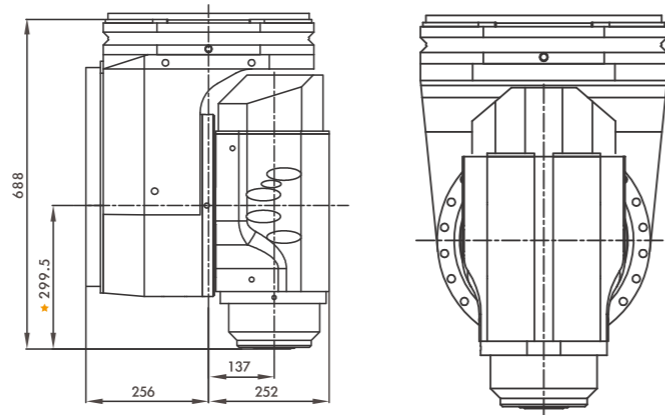
- 5 Automatic change working table system to increase production efficiency and decrease the human cost.(opt.)



# MT15

## High speed head & spindle

### Mono support 2-axis milling head

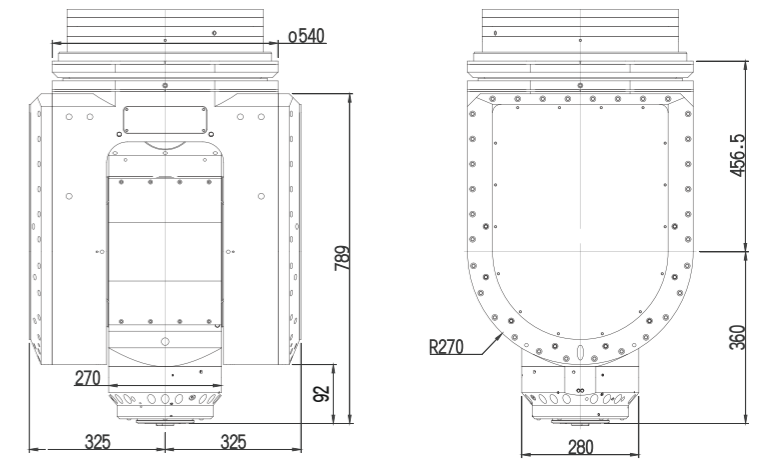


★ With HSK100A spindle, this value will be 339.5

Spindle taper	HSK63A	HSK100A
Tool clamping	Auto Clamping	
Spindle speed	24,000	12,000
Spindle power	35 / 42 kW	25 / 30 kW
Spindle torque	56 / 67 Nm	119 / 143 Nm
Indexing	Continuous	
Swivel/Rotating angle	A= ± 125° C= ± 200°	
Clamping torque	A= 4,000Nm C= 4,000Nm	

- Much smaller interference area (20% volume reduction)
- Rigid structure (ductile iron FCD600 and high stiffness rigid bearing inside)
- Invariant A- and C-axis positioning and axial accuracy (by ring brake design)
- Clean tech & environmental care (grease / oil-air)
- Wear-free torque motor in A- and C-axis (30 rpm)
- Germany maintenance-free re-greasing lubrication system in spindle
- A- and C-axis with torque motor and Heidenhain linear scale

### Fork type 2-axis milling head



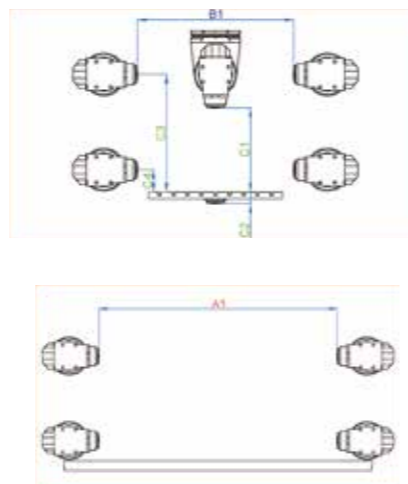
\* Head dimension for 8,000rpm

Suitable application	Aero Ti alloy processing	Aero Al alloy processing
Spindle taper	HSK100A	HSK63A
Tool clamping	Auto Clamping	
Spindle speed	8,000	30,000
Spindle power	50 / 60 kW	100 / 124 kW
Spindle torque	318 / 398 Nm	50 / 62Nm
Indexing	Continuous / Indexing 0.001	
Swivel/Rotating angle	A= ± 105° C= ± 200°	
Clamping torque	A= 6,000Nm C= 6,000Nm	

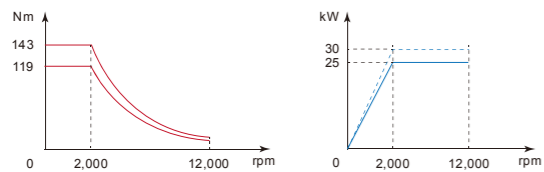
- Symmetrical fork type structure, Modular design. built-in spindle power, direct transmission by DD Motor drive on both sides.
- The A/C axis is driven by a VMS direct drive motor with a high performance hydraulic brake system. To compared with the traditional transmission structure of worm gear, it has a higher precision, zero back Gap and zero wear.
- In accordance with customer processing needs, optional spindle center water function(20/70 bar) °

### MT1530 with mono support 2-axis milling head

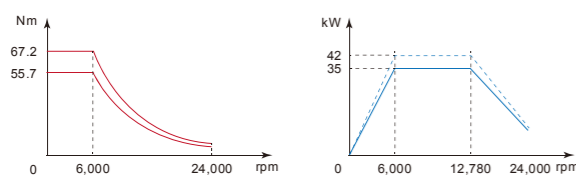
X-axis	
X mm	3000
A1 mm	2401
Y-axis	
Y mm	2000
B1 mm	1401
Z-axis	
Z mm	850 1000
C1 mm	750 900
C2 mm	100 100
C3 mm	1049.5 1199.5
C4 mm	199.5 199.5



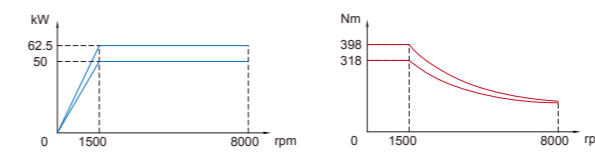
### 12,000rpm, HSK100A



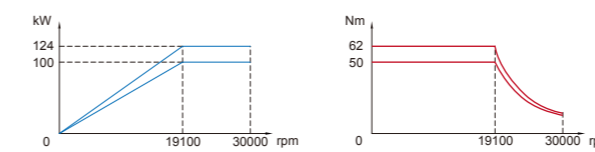
### 24,000rpm, HSK63A



### 8,000rpm, HSK100A

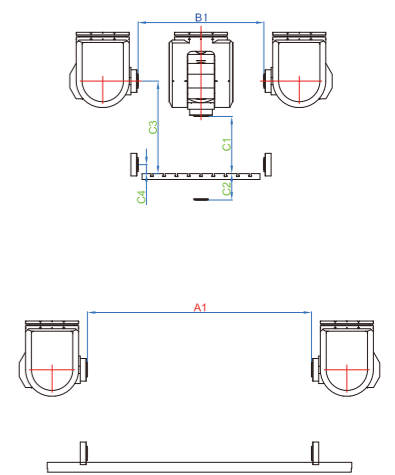


### 30,000rpm, HSK63A



### MT1530 with fork type 2-axis milling head

X-axis	
X mm	3000
A1 mm	2280
Y-axis	
Y mm	2000
B1 mm	1280
Z-axis	
Z mm	850 1000
C1 mm	581.5 731.5
C2 mm	268.5 268.5
C3 mm	941.5 1091.5
C4 mm	91.5 91.5





# MT15

## High speed, High precision machining capacity

Aerospace aluminum alloy structure parts

- High material removal rate
- High efficiency chip removal system
- High power, high speed spindle
- Various spindle specification options



• **Aero-structure component** ✈️  
 High efficiency machining  
 Tool : D50 R3.1 indexable insert tool  
 Spindle speed : 21,895 rpm  
 Cutting feedrate : 12,000mm/min  
 Cutting depth : 20mm  
 Cutting width : 3.5mm  
 Material : Aluminum alloy-7075<sub>3</sub>  
 Material Removal Rate : 770cm /min



• **Aero-structure component** ✈️  
 Trochoidal machining  
 Tool : D16 carbide end mill  
 Spindle speed : 19,100 rpm  
 Cutting feedrate : 13,178mm/min  
 Cutting depth : 5mm  
 Cutting width : 40mm  
 Material : Aluminum alloy-7075<sub>3</sub>  
 Material Removal Rate : 2,306cm /min

## Aerospace structure component machining applications

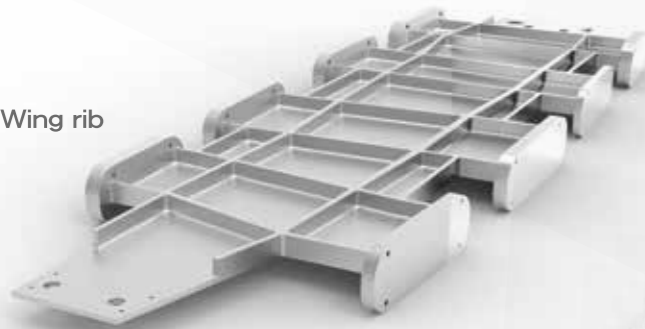
Stringer



Spar



Wing rib



Flap track



Aerospace titanium alloy structure parts

- Heavy duty machining ability
- High dynamic 5-axis machining continuously
- Provide high capacity & high pressure coolant system



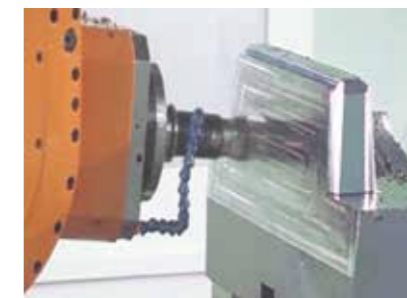
## Mold & Die machining applications



• **Tire mold**  
 High speed finishing  
 Tool : R12.5 indexable insert tool  
 Spindle speed : 20,400 rpm  
 Cutting feedrate : 10,100 mm/min  
 Pitch : 0.2 mm  
 Material : S45C



• **Plastic injection mold**  
 High speed slot penciling  
 Tool : R1 carbide ball mill  
 Spindle speed : 23,885 rpm  
 Cutting feedrate : 1,200 mm/min  
 Pitch : 0.15 mm  
 Material : Mold steel P20



• **Plastic injection mold**  
 Mold high speed roughing  
 Tool : D50 indexable insert tool  
 Spindle speed : 1,502 rpm  
 Cutting feedrate : 1,444 mm/min  
 Cutting depth : 3.5 mm  
 Cutting width : 35 mm  
 Material : S45C



# MT15

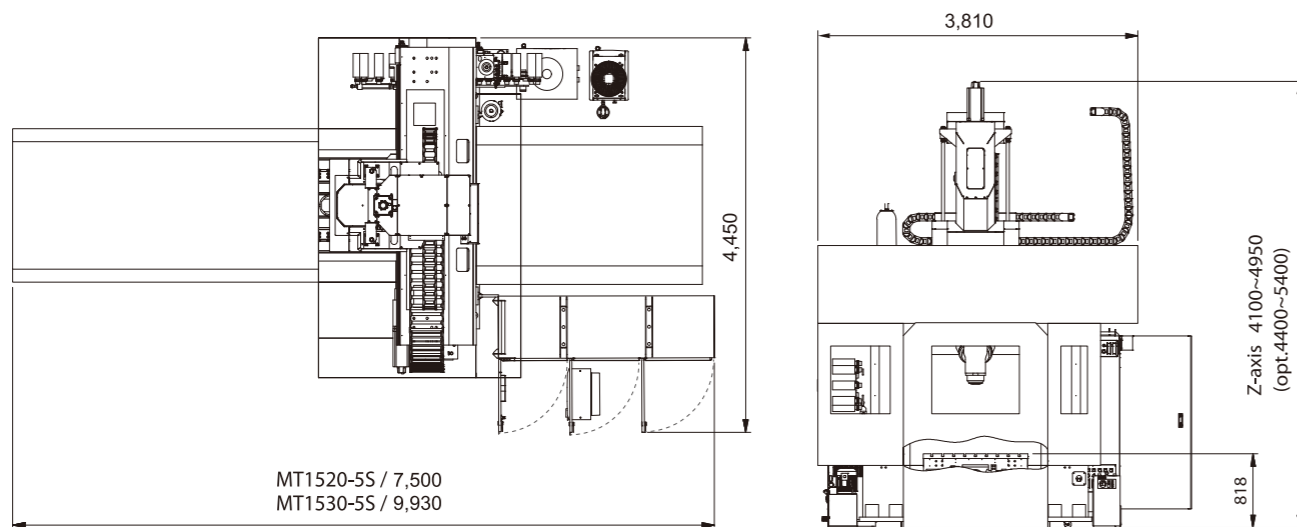
## Attaching equipment

- The complete peripheral units are placed at the side of machine, and according to the site space constraints, the placed position could be adjusted.



- Cable chain made by Germany, power cable use igus, SEIMENS, CE mark
- Rapid response of nitrogen hydraulic counter balance system balances the weight of spindle and ram to make up the gravity loading of high speed and acceleration by accumulator principle.
- Perfect electrical cabinet equipment to maintain caabinet and avoiding inner electrical components damaging.

## Machine Layout



## Machine specifications

Spec.	unit	MT15	
		MT1520	MT1530
<b>Travel</b>			
X-axis	mm	2,000	3,000
Y-axis	mm	2,000	
Z-axis	mm	850(opt.1,000)	
Distance between two columns	mm	1,500	
Distance from spindle end to table	mm	-100~750	
<b>Table</b>			
Length × Width: Load	mm : tons.	2,100x1,200 : 3T*1	3,100x1,200 : 5T*1
<b>Traverse</b>			
Feedrate	m/min	X/Y/Z=30/30/30*1	
<b>Spindle</b>			
Spindle taper	-	HSK63A	
Spindle speed	rpm	24,000	
Spindle power(S1/S6)	kW	35 / 42	
Spindle torque(S1/S6)	Nm	56 / 67	
<b>2-axis head</b>			
A / C-axis motor torque	Nm	416 / 309	
A / C-axis clamping torque	Nm	4,000	
A / C-axis indexing	deg	Continuous	
Swivel/rotating angle	deg	A= ± 125° C= ± 200°	
<b>Accuracy</b>			
Positioning (VDI344)	mm	0.03 mm / 1,000~3,000 mm	
Repeatability (ISO230-2)	mm	0.005 mm / 2,000 mm	
DBB circularity	mm	XY / XZ / YZ 0.02mm	
<b>Power requirements</b>			
Nominal voltage	KVA	100	
<b>Automatic Tool Changer</b>			
Tool capacity	pcs	32	
<b>Others</b>			
Machine weight	tons.	20	24

\*1 Mold options:  
Table load MT1520 / 8T, MT 1530 / 10T; Feedrate X/Y/Z:20 / 30 / 30

\*\*All specifications and designs are subjected to change without notice

### Standard accessories

- Heidenhain iTNC530 / iTNC640 CNC controller
- Auto lubrication device
- Full enclosure cover
- Pad & adjusting bolt
- High precision positioning head with HSK63A/24,000rpm/35kW/56Nm
- Coolant device
- Chip conveyer
- Tool kits
- Automatic tool magazine with vertical tool changer 32 tools
- Hydraulic unit
- Auto power-off device
- Accuracy report
- Chiller for spindle
- XYZ-axis with linear scale (for 5 axes)
- RS-232 interface
- Operation manual
- Air blast through spindle
- Manual pulse generator
- Air conditioner for electrical cabinet
- PLC & electrical circuit diagram
- Waterproof working lamps
- 3-color signal lamp

### Optional accessories

- FANUC / SIEMENS CNC controller
- German made 2-axis head
- Mist cooling device
- HSK100A / 15,000rpm electric spindle
- Auto vertical tool changer 40/60 tools
- Oil separator
- 6,000rpm gear head spindle
- Coolant through spindle system 20/70 bar
- Transformer
- Auto workpiece measurement system
- Auto tool measuring system
- Chip cart
- Enclosure splash guard (without roof / with roof)
- Auto 5-axis measurement & compensation
- Twin chip augers on table side (mold option)