

專注航太・品質・創造未來
Aiming At Aerospace Solutions

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MEMBER OF
TT GROUP
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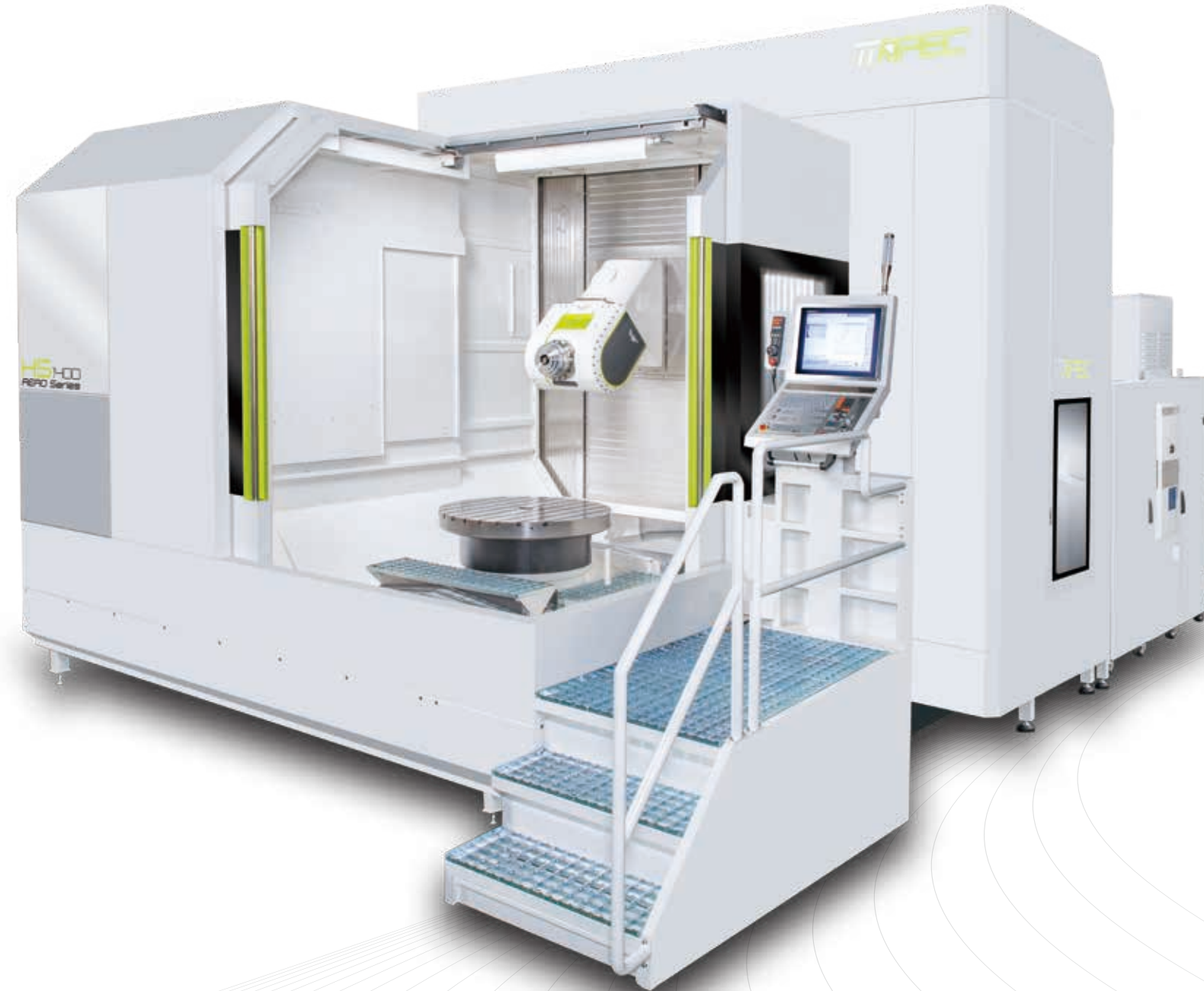




Brand story

APEC takes "Aiming at aerospace solutions" as the core spirit of the brand and provides great application support and customized solutions to high-end aerospace users. In summary, APEC is the system provider who provides factory planning, and Turnkey solutions. With customer driven innovation, APEC is the best strategic partners of our customers.





(The picture is only for reference, please make the object as the standard.)

- **Special for aerospace superalloy processing**

Equipped with a high-power, high-torque spindle, it can greatly increase the removal rate of processing and shorten the processing time.

- **High rigidity T-shaped structure design**

Inverted dual V-shaped rib structure applied in basement design to achieve best force flow path. The whole travel of X-axis is supported, and this is to avoid gravitational dropping and deformed into guarantee workpiece and surface machining accuracy.

- **Double-wall and symmetrical structure design**

The column adopts double-wall structure design to increase the structure rigidity and to minimize the possibilities of thermal deformation.

- **X/Y/Z-axis driven by high-speed ball screw**

X/Y/Z-axis are driven by double ball screws which could ensure concentricity of the moving part center and the weight center so that the vibration could be eliminated.

- **Suitable workpieces**

Engine Structural Parts



Blisks



Impellers



Casing

Super Alloy Structural Parts



Stringer



Large Five-axis Complex Structural Parts



Machine configuration for aerospace machining

Fully enclosed splash guard

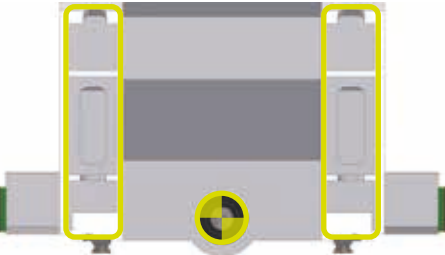
Lower noise and prevent spreading of chips and coolant liquid.

High torque clamping system

B-axis clamping torque: 6,000 N m, the powerful torque clamping system provides extremely high processing rigidity.

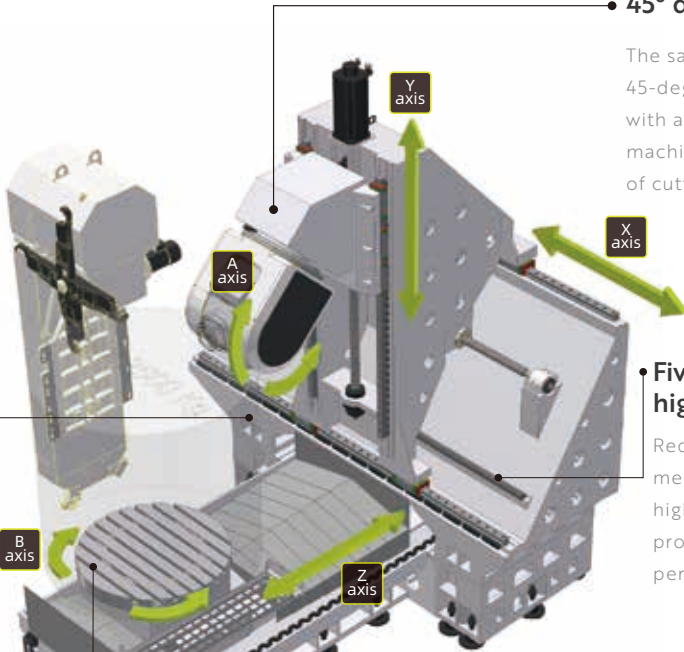
AGA special spindle for super alloy processing

High-torque spindle, the highest specification can reach 500 Nm (opt), especially suitable for cutting super alloy.



Double-wall structure designed column

Increase the structure rigidity and to minimize the possibilities of thermal deformation.

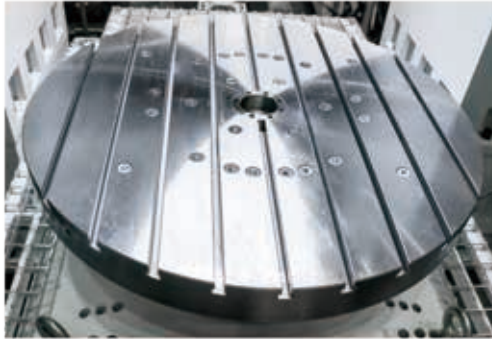


45° degree saddle design

The saddle is designed with a 45-degree angle and matched with a fork-type head, the machine can achieve more angles of cutting range.

Five-axis with Heidenhain high-precision optical scale

Reduce errors caused by mechanical transmission, ensure high-precision servo control, and provide the best contour performance.



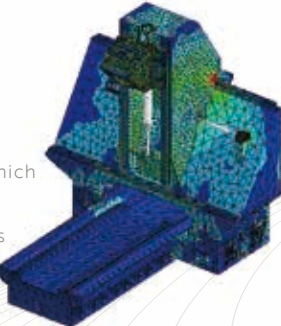
The base structure is optimized through Finite Element Analysis (FEA)

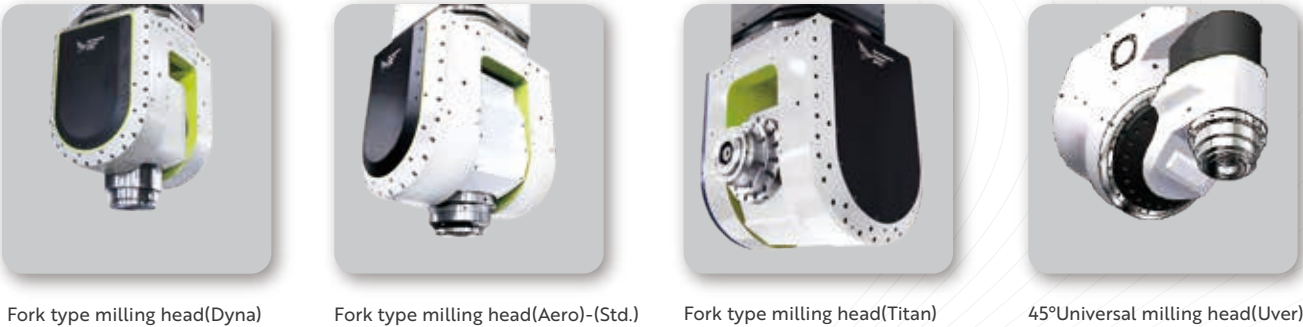
The X-axis adopts high and low rail design. The L1 size is larger than other industry and driving the center of gravity is closer to the tool tip point, which improves rigidity and stability. It is suitable for processing difficult-to-cut materials and achieves perfect cutting dynamic characteristics.



The shortest force flow bed design

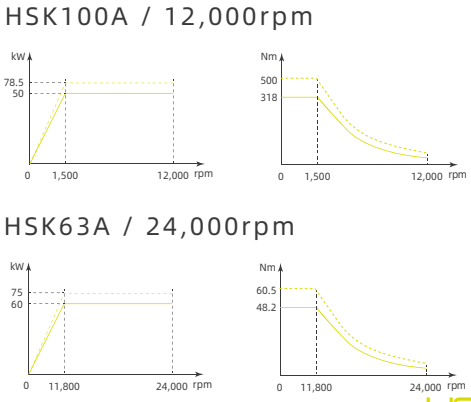
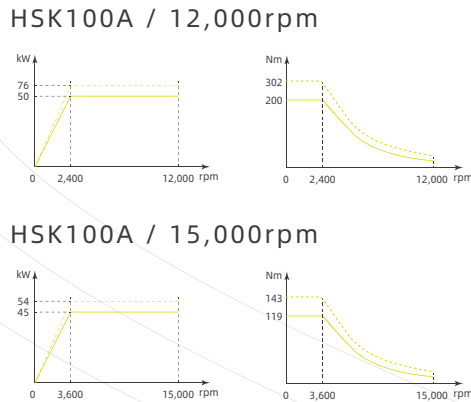
The ribbed structure of the bottom bed is V-shaped ribs to make the structure strong and ensure processing stability. The shortest configuration of the force flow between the guide rail and the anchor bolts meets the demand for high rigidity.





Milling Head	Dyna	Aero	Titan	Uver
Max. speed (rpm)	60	60	60	60
A-axis torque (S1/S6)	1,192 / 1,980	1,192 / 1,980	1,344 / 2,420	1,610 / 2,940
A-axis clamping torque	4,000	4,000	6,000	6,000

Spindle							
12,000rpm(Std.)		12,000rpm		15,000rpm		24,000rpm	
Spindle taper	HSK-100A	Spindle taper	HSK-100A	Spindle taper	HSK-100A	Spindle taper	HSK-63A
Lubrication	Oil air	Lubrication	Oil air	Lubrication	Oil air	Lubrication	Oil air
Power(kW)	S1 50 S6 76	Power(kW)	S1 50 S6 78.5	Power(kW)	S1 45 S6 54	Power(kW)	S1 60 S6 75
Torque(Nm)	S1 200 S6 302	Torque(Nm)	S1 318 S6 500	Torque(Nm)	S1 119 S6 143	Torque(Nm)	S1 48.2 S6 60.5



Specification	Unit	
Travel		HS-1400
X-axis	mm	1,450
Y-axis	mm	1,200
Z-axis	mm	1,300
Distance from spindle end to table	mm	-150~1,050 (Vertical Std.) 200~1,400 (Horizontal Std.)
Rotary table –Without APC		
Table size (Diameter)	mm	Ø1,000
Max. processing diameter	mm	Ø1,400 X 1,400
Max. table load	kg	2,500
B-axis max. rotation angle	deg	continuous
B-axis max. rotation speed	rpm	80
B-axis torque	Nm	B=2,134 / 3,777
B-axis clamping torque	Nm	15,000
Feedrate		
X.Y.Z axis acceleration	m/min	50
Accuracy		
Positioning	mm	X / Y / Z=0.010
Repeatability	mm	X / Y / Z=0.008
Spindle(Standard)		
Spindle taper		HSK-100A
Spindle speed	rpm	12,000
Spindle power(S1/S6)	kW	50 / 76
Spindle torque(S1/S6)	Nm	200 / 302
Milling Head(Std.)		
Max. speed	rpm	60
A-axis torque (S1/S6)	Nm	1,192 / 1,980
A-axis clamping torque	Nm	4,000
Swivel angle	deg	-155° ~ +65°
Automatic tool changer		
Tool shank	pcs	40
Max. tool length	mm	400
Max tool diameter with adjacent tool	mm	125
Max tool diameter without adjacent tool	mm	250
Max. tool weight	kg	25

● Standard accessories ○ Optional accessories

Item	Specification	
Controller	HEIDENHAIN TNC640 MPG HR520	●
Spindle	AGA HSK100A 12,000rpm, 200/302 Nm	●
	AGA HSK100A 12,000rpm, 318/500 Nm	○
	AGA HSK100A 24,000 rpm 60/75kw	○
	AGA HSK100A 15,000 rpm 45/54kw	○
Drive System	XYZ axis with linear motor drive	●
Automatic tool changer	40T	●
	60T	○
	120T	○
Cutting coolant	Coolant around spindle	●
	Coolant through spindle 20bar	●
	Coolant through spindle 70bar	○
System coolant	Chiller for spindle	●
	Air conditioner for electrical cabinet	●
Chip removal system	Complex chip conveyer	●
	Enlarged coolant tank	●
Workpiece measurement system	BLUM workpiece measurement system(TC60-RC66)	○
	Renishaw workpiece measurement system(RMP600)	
Tool measurement system	BLUM tool measurement system(NT-A4)	○
	Renishaw tool measurement system(NC4-F230)	
Others	Security door interlocks	●
	Air dryer	●
	Isolation transformer	●
	Fully enclosure splash guard	●
	Oil mist collecting system	●
	5 axis with Heidenhain optical scale	●
	Automatic pallet change system (APC)	○
	Oil separator	○
	Coolant temperature control system	○

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

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