

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

🏠 No.7, Jingke N. Rd.Nantun Dist.,Taichung
City 40852Taiwan (R.O.C.)
☎ +886-4-2358-9313
📠 80150711
🌐 www.apeccnc.com
✉ sales@apeccnc.com



MEMBER OF
TTC GROUP
2020/03/01



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.

Factory planning

Capabilities of planning the most suitable automatic/ semi-automatic production cell and production line for the factory.

Process level up

Process improvement & optimization services could be provided to increase production efficiency.

High-end facility

Complete machining solutions for various aerospace structures and engine parts.

Aiming At Aerospace Solutions

Training program

- 5-axis operation
- Machine maintenance
- Tool & jig planning
- 5-axis programming upgrade

Talent supply

Industry-academia collaboration

Smart manufacturing

TLM system could be applied to monitor machine status and operation history. Production traceability and improvement could be made. TMS could fulfill smart manufacturing purpose and the function includes tool management, order management and quality control.

Turnkey solution

With the optimal combination of perfectly adapted technology modules including process analysis, machine recommendation, clamping devices, tools and software, the optimized Turnkey solution could be provided.

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. The after-sales services could then be offered more efficient and accurate.



TIMS

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



TLM

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

SK AERO Series 5-Axis High Speed Gantry Machining Center



• U-shape structure

U-shape structure can be completely shipped with one container without disassembly. Rework time could be reduced when installing the machine.



• One-piece base

Model | SK3020



• Column and base connected

Model | SK2530~
SK2560
SK3040~
SK3060



• Column and base separate

Model | Customized machine
SK2580/SK3080

• X/Y axis driven by linear motor

Max. feedrate : 60 m/min

Max. acceleration : 5 m/sec²

• Suitable workpieces

Wing structure



Wing rib(L)



Stringer

Fuselage structure



Bulkhead



Landing gear panel



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

Dual chip removal system with a large-capacity water tank could make coolant and chip removal stable and efficient.

Automatic top-roof cover

Movable beam design of top-roof cover could prevent spreading of chips and coolant liquid.

5-axis simultaneous machining

5-axis machining accuracy difference is below 0.01mm.

Special spindle for aluminium alloy processing

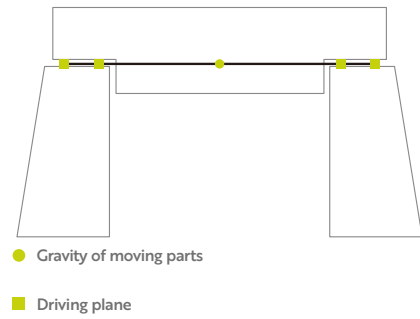
Ultra-high speed and power spindle with the best material removal rate.

Unequal thickness of Ram

Ram equipped with quadrilateral structure performs the best balancing design and better geometry.

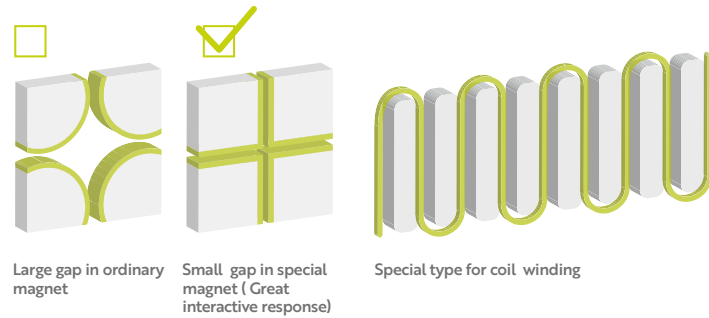
Automatic attachment head exchange system

Different angle heads could be mounted to match various applications and it is best for machining in narrow spaces



The lowest gravity center in the world

Zero distance between gravity of the moving parts and the driving plane makes the gravity center closer to the driving plane. The machining stability could then be improved and the best machine rigidity could be ensured.



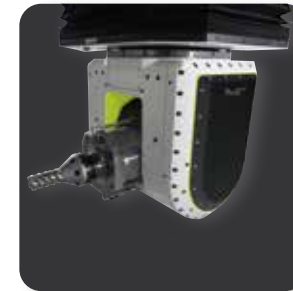
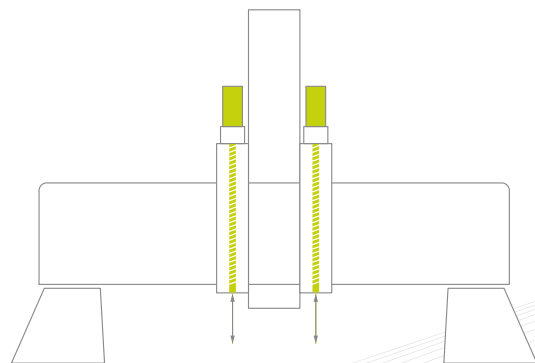
APEC linear motor not only save energy but also increase motor thrust

APEC linear motor can save 32% of energy thanks to special magnet and cooling design.

- **Linear motor thrust increased by 10%.**
New linear motor magnet design increases magnetic flux and makes linear motor thrust increased by 10%.
- **Best cooling**
Special coil winding makes motor temperature constant.

Double ball screw driving in Z axis

Double ball screws in Z axis and twin servo motor driving provide high dynamic and stable cutting accuracy.



Fork Type Milling Head - Standard
(High power spindle)

Spindle Taper	HSK63A/HSK100A
Swivel/Rotation Torque	B=1,192/1,980Nm C=1,050/1,740Nm
Swivel/Rotation Speed	B=C=30(cont)rpm B=C=60(max)rpm
Swivel/Rotation Angle	HSK63A: B=±120° C=±360° HSK100A: B=±115° C=±360°
Clamping Torque	B=4,000Nm C=4,000Nm

High power spindle

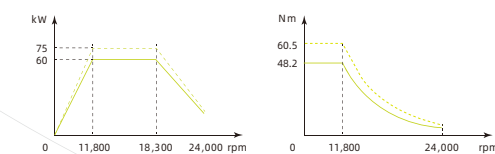
24,000rpm

Spindle taper	HSK-63A
Lubrication	Oil air
Power(kW)	S1 60 S6 75
Torque(Nm)	S1 48.2 S6 60.5

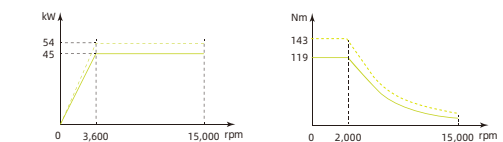
15,000rpm

Spindle taper	HSK-100A
Lubrication	Oil air
Power(kW)	S1 45 S6 54
Torque(Nm)	S1 119 S6 143

24,000rpm, HSK63A



15,000rpm, HSK100A



Specification	Unit	SK 25	SK 30
Travel		SK 2530/40/50/60/80	SK 3020/40/50/60/80
X-axis	mm	3,000/4,000/5,000/6,000/8,000	2,000/4,000/5,000/6,000/8,000
Y-axis	mm	2,500	3,000
Z-axis	mm	1,000	1,000
Distance from spindle end to table	mm	According to the selected model, the configuration will be different.Please contact our sales for more details.	
Table			
T-slot size	mm	28	
Length	mm	3,000/4,000/5,000/6,000/8,000	2,000/4,000/5,000/6,000/8,000
Width	mm	2,000	3,000/2,500/2,500/2,500/2,500
Max. table load	kg/m²	8,000	
Feedrate			
Rapid traverse	m/min	X/Y/Z=60/60/40	
X.Y.Z axis acceleration	m/sec²	5	
Accuracy			
Positioning	mm	1000mm-3000mm	VDI344:0.005-0.008 ISO230-2:0.003-0.005
Repeatability	mm	1000mm-3000mm	VDI344:0.003-0.005 ISO230-2:0.002-0.003
DBB circularity	mm	0.15/XY,0.25/YZ,0.25/XZ	
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	30T	
Max. tool length	mm	300	
Max. tool diameter with adjacent tool	mm	Ø100	
Max. tool diameter without adjacent tool	mm	Ø130	
Max. tool weight	kg	7	
Others			
Machine weight	tons.	35-65	

☒ Standard accessories ☐ Optional accessories

Item	Specification		Item	Specification	
Controller	HEIDENHAIN TNC640 MPG HR520	<input checked="" type="radio"/>	Smart factory	TIMSystem	<input type="radio"/>
	HEIDENHAIN TNC640 MPG HR550	<input type="radio"/>		TLMsystem	<input type="radio"/>
	SIEMENS SINUMERIK 840D HT2	<input type="radio"/>		Security door interlocks	<input checked="" type="radio"/>
Spindle	AGA HSK63A 24,000rpm 60/75 kw	<input checked="" type="radio"/>	Others	Air dryer	<input checked="" type="radio"/>
	AGA HSK100A 15,000rpm 45/54 kw#1	<input type="radio"/>		Isolation transformer	<input checked="" type="radio"/>
Drive System	XY axis with linear motor drive,Z axis with ball screw drive	<input checked="" type="radio"/>		Spindle oil/air lubrication system	<input checked="" type="radio"/>
	30T	<input checked="" type="radio"/>		Oil mist collecting system	<input checked="" type="radio"/>
	40T	<input type="radio"/>		5 axis with Heidenhain optical scale	<input checked="" type="radio"/>
Automatic tool changer	60T	<input type="radio"/>		Waterproof working lamps	<input checked="" type="radio"/>
	Coolant around spindle	<input checked="" type="radio"/>		Brake system for linear motors	<input checked="" type="radio"/>
	Coolant through spindle 20bar	<input checked="" type="radio"/>		Automatic open/close top roof sliding cover #2	<input type="radio"/>
Cutting coolant	Coolant through spindle 70bar	<input type="radio"/>		Automatic Kinematics measuring and calibration system	<input type="radio"/>
	Chiller for spindle	<input checked="" type="radio"/>		Stabilizer	<input type="radio"/>
	Air conditioner for electrical cabinet	<input checked="" type="radio"/>	#1 If HSK 100A spindle is chosen, ATC standard would be 20T.Opt. would be 40T/60T #2 SK2530/SK2540/SK3020 are standard, others are option.		
Chip removal system	Complex chip conveyer	<input checked="" type="radio"/>			
	Enlarged coolant tank	<input checked="" type="radio"/>			
	BLUM workpiece measurement system(TC60-RC66)	<input type="radio"/>			
Workpiece measurement system	Renishaw workpiece measurement system(RMP600)	<input type="radio"/>			
	BLUM tool measurement system(NT-A4)	<input type="radio"/>			
	Renishaw tool measurement system(NC4-F230)	<input type="radio"/>			

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

專 注 航 太 · 品 質 · 創 造 未 來
A i m i n g A t A e r o s p a c e S o l u t i o n s

🏠 No.7, Jingke N. Rd.Nantun Dist.,Taichung
City 40852Taiwan (R.O.C.)
☎ +886-4-2358-9313
📠 80150711
🌐 www.apeccnc.com
✉ sales@apeccnc.com



MEMBER OF
TT GROUP
2020/03/01

SK *AERO Series*
A l u m i n i u m