

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

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MEMBER OF
TI GROUP
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AIMING AT AEROSPACE SOLUTIONS



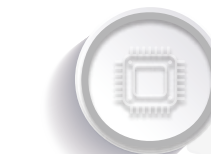
ASIA PACIFIC ELITE CORP. (APEC) IS A SUBSIDIARY OF **TTGroup**, THE **BIGGEST MACHINE TOOLS GROUP** IN TAIWAN

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.

**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 effciently and accurately.



- **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)

Fuselage structure



Bulkhead



Stringer



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 0.02mm.

Special spindle for aluminium alloy processing

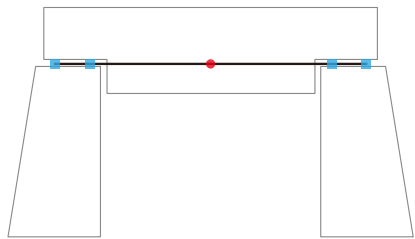
Ultra-high speed and power spindle with the best material removal rate.

Unequal thickness of Ram

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

Automatic attachment head exchange system

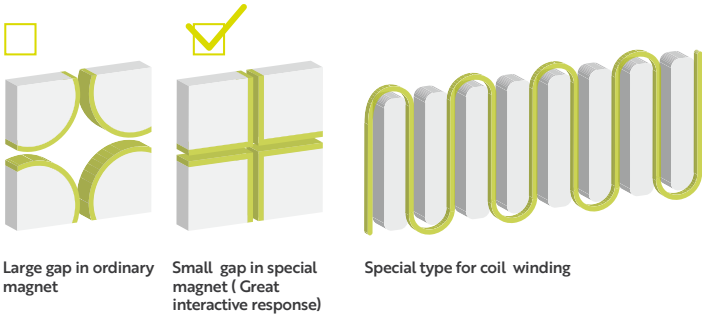
Different angle heads could be mounted to match various applications and it is best for machining in narrow spaces.



● Gravity of moving parts
■ Driving plane

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.



Large gap in ordinary magnet
Small gap in special magnet (Great interactive response)
Special type for coil winding

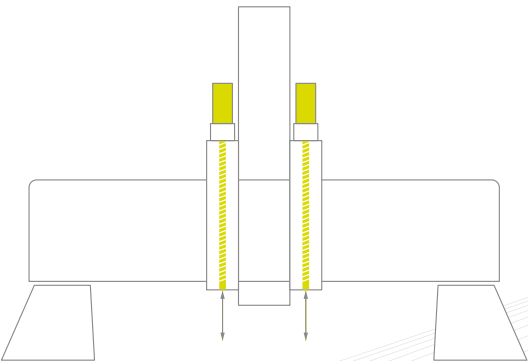
APEC linear motor not only save energy but also increase motor thrust

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.

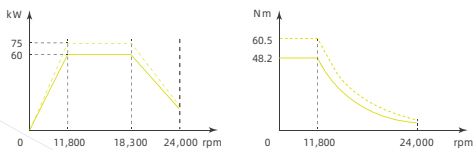


Fork Type Milling Head - Standard
(High power spindle)

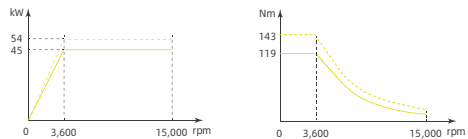
Spindle Taper	HSK63A/HSK100A
Swivel/Rotation Torque	B=1,192/1,980Nm C=1,050/1,740Nm
Swivel/Rotation Speed	B=C=30(cont)rpm B=C=60(max)rpm
Swivel/Rotation Angle	HSK63A: B=±120° C=±360° HSK100A: B=±115° C=±360°
Clamping Torque	B=4,000Nm C=4,000Nm

High power spindle			
24,000rpm		15,000rpm	
Spindle taper	HSK-63A	Spindle taper	HSK-100A
Lubrication	Oil air	Lubrication	Oil air
Power(kW)	S1 60 S6 75	Power(kW)	S1 45 S6 54
Torque(Nm)	S1 48.2 S6 60.5	Torque(Nm)	S1 119 S6 143

24,000rpm, HSK63A



15,000rpm, HSK100A



Specification	Unit	SK 25-5L	SK 30-5L
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/m ²	8,000	
Feedrate			
Rapid traverse	m/min	X/Y/Z=60/60/40	
X.Y.Z axis acceleration	m/sec ²	5	
Accuracy			
Positioning(VDI3441)	mm	X=0.012~0.030(Depending on the travel), Y=0.012, Z=0.008	
Repeatability(VDI3441)	mm	X=0.008~0.015(Depending on the travel), 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	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	●	Smart factory	TIMSystem	○
	HEIDENHAIN TNC640 MPG HR550	○		TLMsystem	○
	SIEMENS SINUMERIK 840D HT2	○		Security door interlocks	●
Spindle	AGA HSK63A 24,000rpm 60/75 kw	●	Others	Air dryer	●
	AGA HSK100A 15,000rpm 45/54 kw#1	○		Isolation transformer	●
Drive System	XY axis with linear motor drive,Z axis with ball screw drive	●		Spindle oil/air lubrication system	●
	30T	●		Oil mist collecting system	●
	40T	○		5 axis with Heidenhain optical scale	●
Automatic tool changer	60T	○		Waterproof working lamps	●
	Coolant around spindle	●		Brake system for linear motors	●
	Coolant through spindle 20bar	●		Automatic open/close top roof sliding cover #2	○
Cutting coolant	Coolant through spindle 70bar	○		Automatic Kinematics measuring and calibration system	○
	Chiller for spindle	●		Stabilizer	○
System coolant	Air conditioner for electrical cabinet	●	#1 If HSK 100A spindle is chosen, ATC standard would be 20T.Opt. would be 40T/60T		
	Complex chip conveyor	●	#2 SK2530/SK2540/SK3020 are standard, others are option.		
Chip removal system	Enlarged coolant tank	●			
	BLUM workpiece measurement system(TC60-RC66)	○			
Workpiece measurement system	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.