

KFO-620-5AX

5 Axis Simultaneous Machining Center

KAFO

5-AXIS SPECIFICATION

Work Table Diameter	Ø 500 / Ø 650 mm
Center Bore Diameter	Ø 50H7 X 30 mm
Distance Between Spindle Nose and Table	140 - 600 mm
Width of T-Slot	14H7 mm X 5 (18mm)
Servo Motor Type (Siemens)	Rotary : 1FK7083-5AF71-1AG3 / 3.3kW / 16Nm Tilt : 1FK7105-5AC71-1AG3 / 7.75kW / 48Nm
Servo Motor Type (Heidenhain)	Rotary : 155C / 4.5kW Tilt : 190D / 9.0kW
Transmission Ratio	Rotary : 1:120 Tilt : 1:120
Indexing Resolution	0.001°
Tilt Angle Range	-40° ~ 110°
Maximum Rotation Speed	Rotary : 16.6 rpm-1 Tilt : 11.1 rpm-1
Maximum Load	In Horizontal 300 Kg In Tilt (0-90 degree) 300 Kg
Permissible Cutting Force	40 kg-m
Drive Pressure / Method	35 kg / cm ² / Hydraulic
Brake Torque	Rotary : 250 kg-m Tilt : 450 kg-m
Indexing Accuracy	Rotary : 20" / sec Tilt : 20" / sec
Repeatability	Rotary : 4" / sec Tilt : 4" / sec

TECHNICAL SPECIFICATIONS

TRAVEL	
X / Y / Z-axis	620 / 520 / 460 mm
B,C Axis Rapid Feedrate	25 rpm
Max workpiece size	Ø 520 X 330L
Spindle Nose To Work Table Surface	140 - 600 mm
MAXIMUM TRAVERSE SPEED	
X / Y / Z-axis	36 m / min
TOOL (40 TAPER) 24 TOOL	
Maximum Length	250 mm
Maximum Diameter	76 mm
Without adjacent tool	127 mm
Maximum Each Tool Weight	7 Kg
Tool Change Time (T - T)	2 seconds (60Hz)
Tool Change Time (C - C)	5 seconds (60Hz)
Spindle Taper	40 (DIN, BT, CAT, HSK)
Spindle Motor (Cont / 30 min)	10 / 12.5 kw
OTHER	
Air Supply Required	6 kg / square cm
Power Supply Required	45 KVA / 380V
Machine Weight	6500 - 8500 kgs
Machine Dimension For Shipping	4210 x 2580 x 2910 mm

All specifications, dimensions and design characteristics shown in this catalogue are subject to change without notice.

Standard Equipment

- Spindle speed 12000rpm
- Spindle oil chiller
- Spindle bearing purge
- Programmable cutting air blast system
- Coolant gun
- Air gun
- Fully enclosed machining area
- Large table size 650mm
- Interlock front / side door
- Mechanical oil / coolant separator
- Automatic tool changer
- Spindle taper:#40 (DIN, BT, CAT)
- 24 station tool magazine
- Roller Linear guideways
- Z axis motor with brake system
- Work lamp
- M30 power off
- Heat exchanger for electrical cabinet
- Tailstock for tilt table

Optional Equipment

- Coolant through spindle
- Programmable cutting coolant nozzle
- Coolant cooling system
- Chain type chip conveyor
- Chip cart
- Chip flushing system
- Laser tool length measurement system TL Micro 200
- Contact type tool length measurement system TT140
- Work piece measurement kinematic system TT740+KHH100(250)
- Air supply for clamping fixture
- CE conformity specification
- Round metal plate type Oil Skimmer
- X, Y, Z optical encoder
- B / C axis optical encoder
- Air conditioner for electrical cabinet
- Transformer
- HSK 63 20,000rpm spindle (Built-in type)
- 15000rpm direct drive spindle
- Software for crash protection

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KFO-620-5AX

5 Axis Simultaneous
Machining Center

K2FO

- Traveling column structure.
- X, Y, Z-axis are built using heavy duty roller type linear guide ways.
- All structural parts of the machine are manufactured from high quality cast iron.
- Rotary tilt table.
- 12,000rpm direct-drive spindle.
- #40 spindle taper (DIN, BT, CAT)
- 24 station tool magazine.

*High Precision
High Efficiency*

Rotary Tilt Table

The precision rotary tilt table allows for either 3+2 or 5 axis simultaneous machining.

- Optical encoders available for B and C axes (optional).
- Table tilt angle (B-axis) : -40° ~ $+110^{\circ}$
- Table rotary angle (C-axis) : 360° continuous rotation.
- B and C axes are servo motor driven.

B AXIS ROTATIONS

B axis at 0°

B axis at -40°

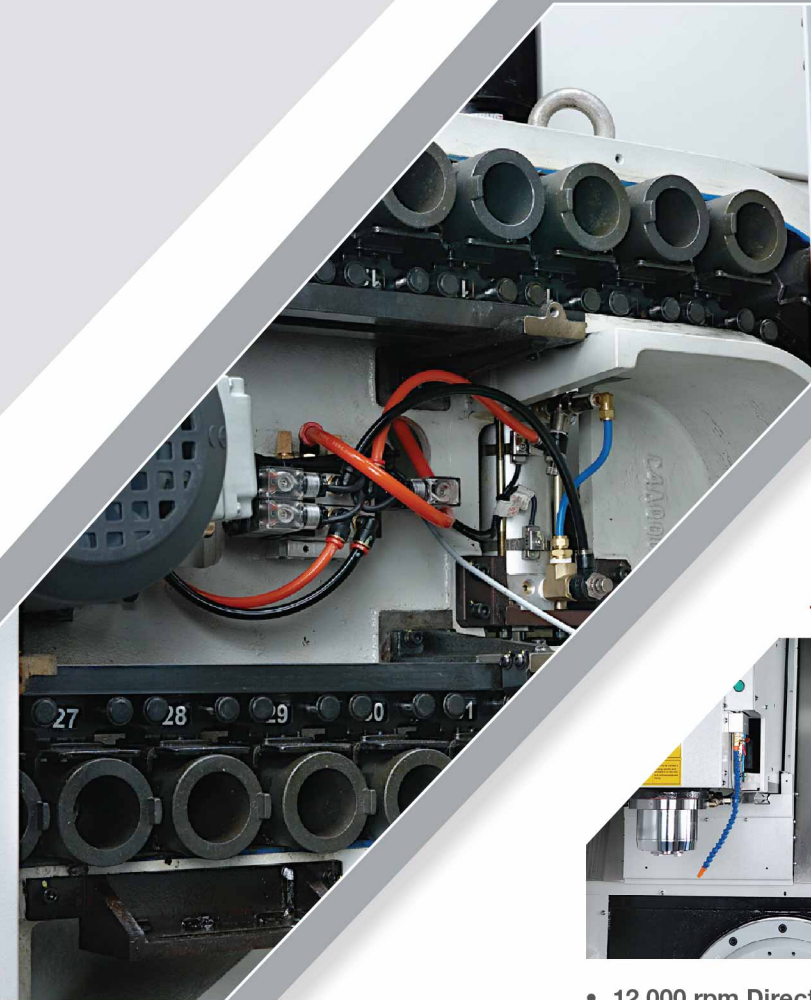
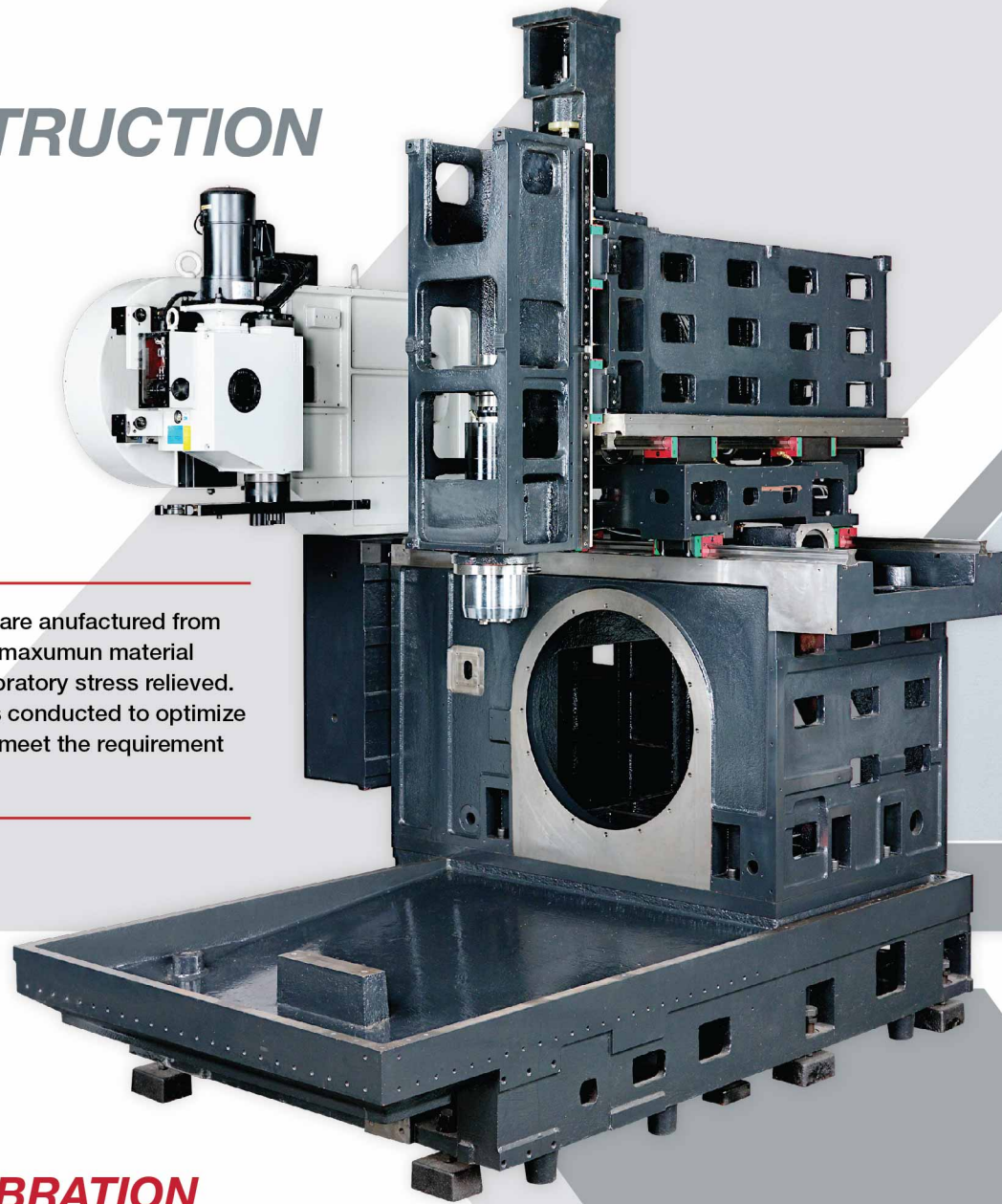
B axis at 110°





RIGID CONSTRUCTION

All major structural parts are manufactured from Meehanite cast iron with maximum material stability, annealed and vibratory stress relieved. Finite Element Analysis is conducted to optimize the machine structure to meet the requirement of 5-axis machining.



24 Station Tool Changer
Optional : 32 / 40 station



- 12,000 rpm Direct-drive Spindle
- Optional 15,000rpm #40 Spindle Taper (DIN, BT, CAT)
- Optional HSK 63 20,000rpm Built-in type

LASER CALIBRATION

X, Y, Z, B, C axes are laser calibrated for linear positioning and angular accuracy.



Control panel



Chip removing system



There are two funnel shapes formed between the base and table combined with two chip augers and Y-axis guard to achieve outstanding chip removing effect.

Spindle oil cooler



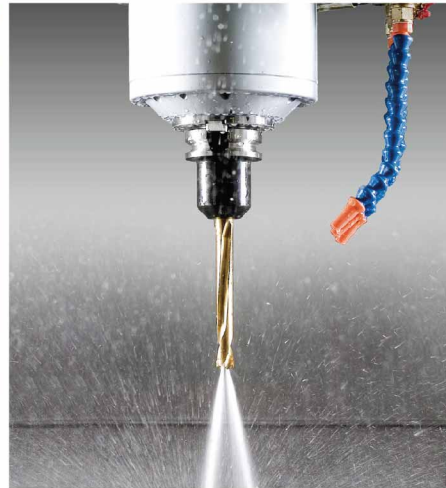
Stainless steel water-proof way cover



OPTIONAL ACCESSORIES



HEIDENHAIN TT140
Tool Measuring System



20 BAR Coolant Through Spindle (CTS) System



OPTICAL LINEAR SCALE
X, Y, Z HEIDENHAIN Optical Linear Scales



B/C-AXIS
HEIDENHAIN Optical Encoder

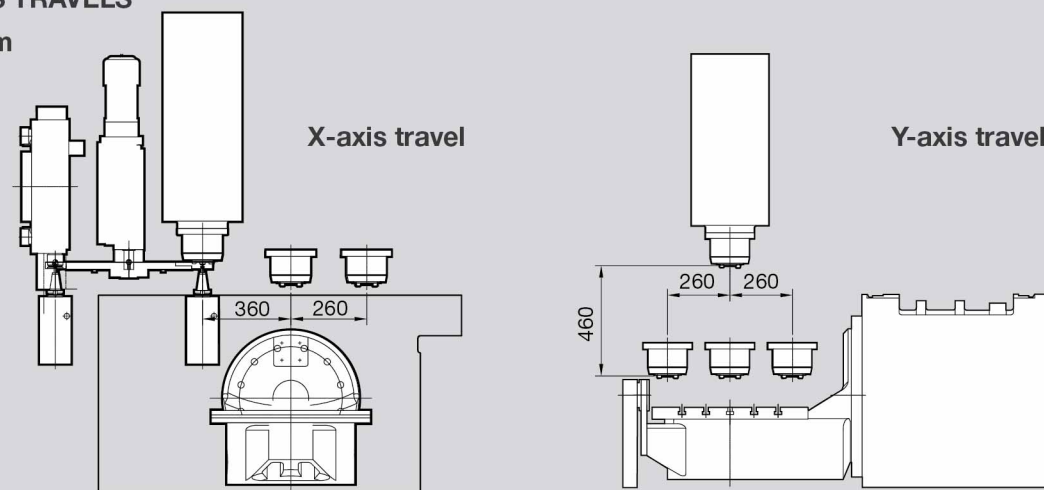


HEIDENHAIN TT740 + KKH100(250) infrared probe for automatic kinematic measurement and calibration of 5 axis positioning.

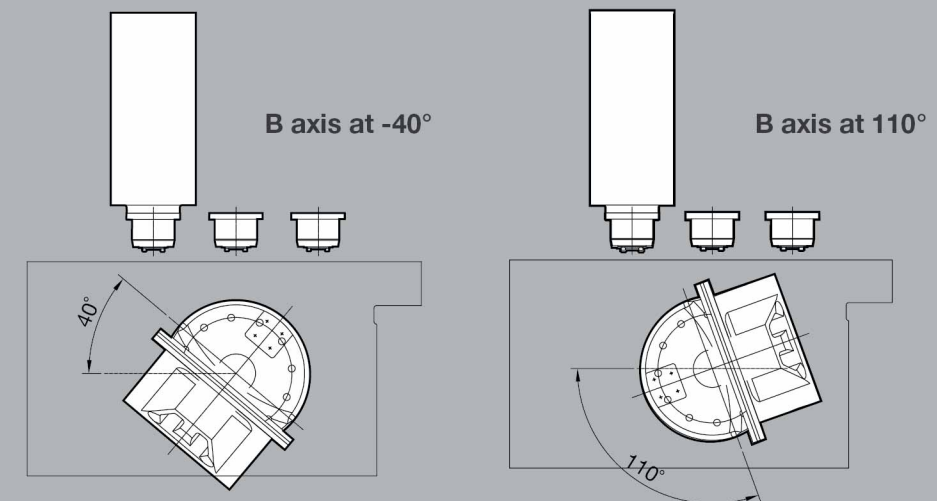


X, Y AXIS TRAVELS

Unit : mm



B AXIS TILT TRAVEL



DIMENSIONS

Unit : mm

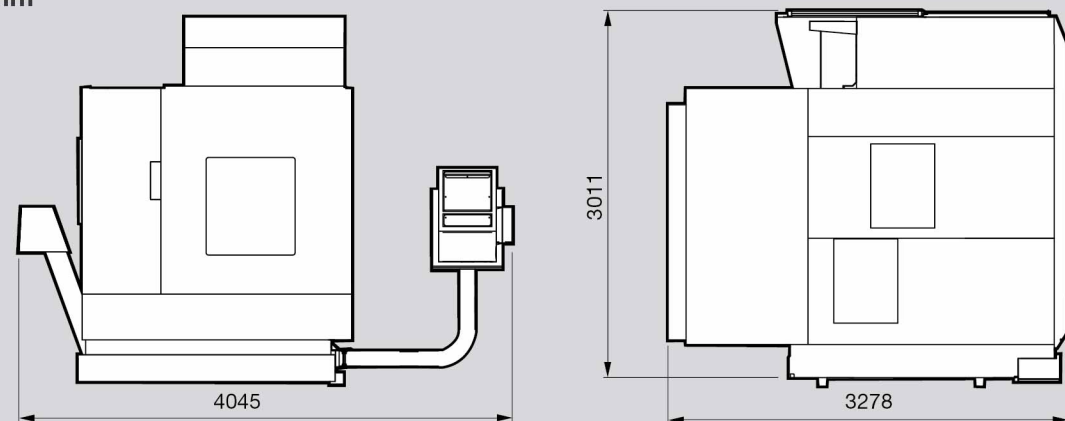


TABLE DIMENSION

Unit : mm

