

KXG Series

High Performance 5-Axis Machining Centers with Liner Motor



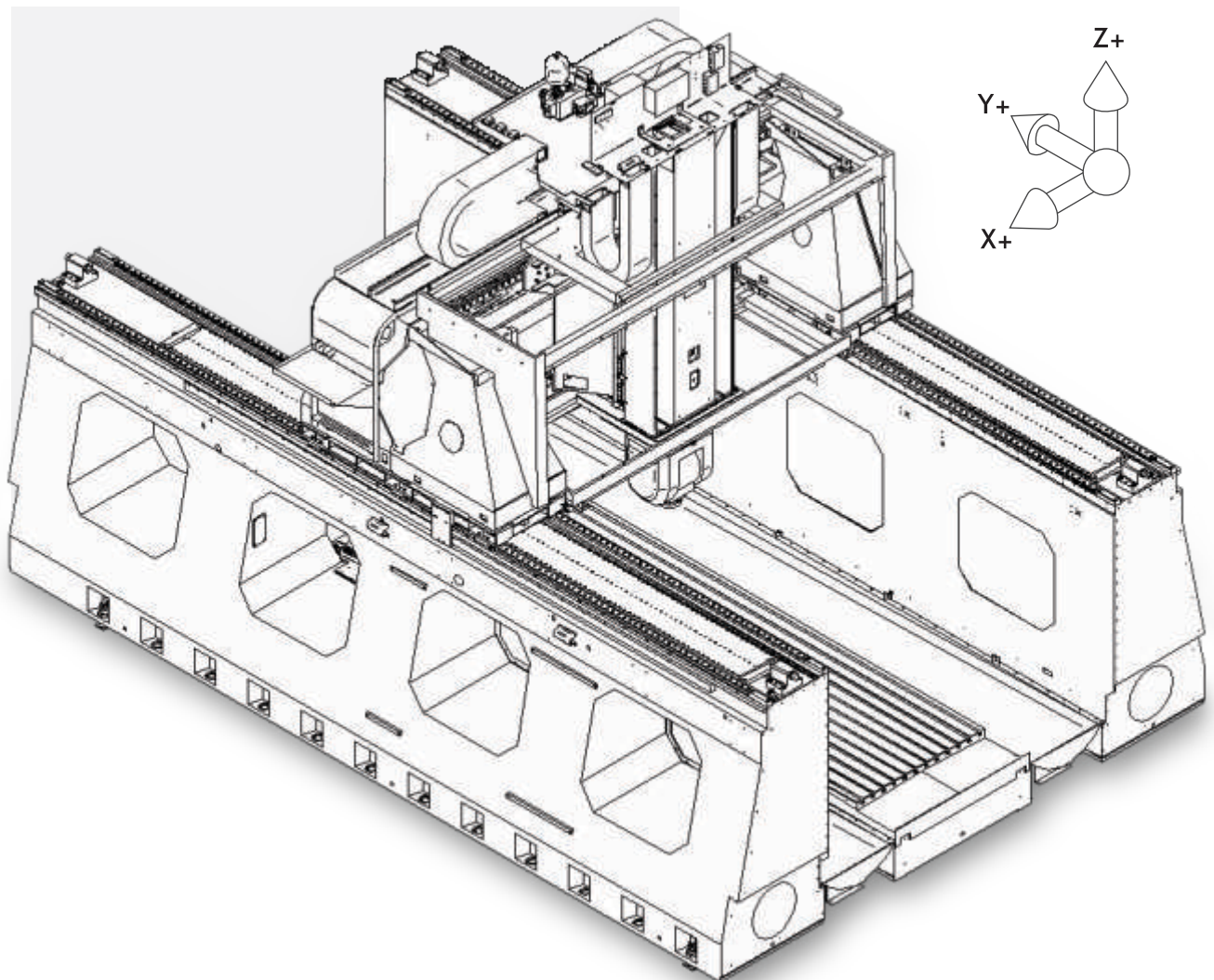
KXG Series

High Performance 5-Axis Machining Center With Linear Motor

OVERVIEW

The big sized Gantry machine type KXG is a 5 axis machine enabling machining operations in 5-Axes and on 5 sides, in one setup part clamping, from roughing to finishing. This machine is particularly suitable for big sized complex workpieces for machining of moulds, dies, punches and tools as well as high precision part jobs for automotive, aeronautic and mechanics.

- 5-Axis machining for work piece up to 52000 kg
- Hard material machining in a minimal time
- Very high accuracy in contouring and profiles
- Complete automation of the machine





STRUCTURE : RIGIDITY AND ACCURACY

- Structure with Gantry configuration
- Fixed components and walls in concrete specifically adapted to the harmonic requirements of the machine which maximises structure rigidity and allows maximum damping during demanding cutting conditions
- Mobile components, slide, saddle and transverse are in wheel-mechanic enabling a very high static and dynamic rigidity
- Structure integrating large glasses allowing an easy control of machining
- Machine secured on foundation with weight equally distributed over fixing points enabling extreme rigidity and a very high geometrical stability
- Modular design allows maximum flexibility in machine configuration to adapt to the technical requirements of customer
- Electrical cabinet protected IP54

LINEAR AXIS

- X axis driven by synchronous linear motors placed on the top of the structural lateral walls
- Y and Z axes driven by asynchronous motors coupled directly at the end of high precision ballscrews
- Guide rails with low friction roller bearings
- Automatic lubrication of ballscrews and guide rails
- Incremental measurement by linear scales in conformity with norm VDI/DGQ 3441

NUMERICAL CONTROLLER

- Powerful
- Ergonomic design
- Very high capacity of memory and calculation
- Interactive programming
- Graphic simulation before machining for optimal safety

HEAD

- Head equipped with integrated torque motor.
- High rate of rotational and acceleration
- No backlash
- Measurement device on each axis
- No wear
- Rigidity : high clamping torque enabling high power during roughing

SPINDLE

- Powerful spindle with high torque allowing high metal removal rates
- Spindle vibration monitoring allowing a very high level of harmonic stability

ENVIRONMENT - ERGONOMICS

- Evacuation channels for chips equipped with washing device
- Tool magazine outside of working area
- Complete safeguard ensuring safety of the machine, the operator and environment
- Very large accessibility to the table and the work piece thanks to a retractable bellows
- Operator panel

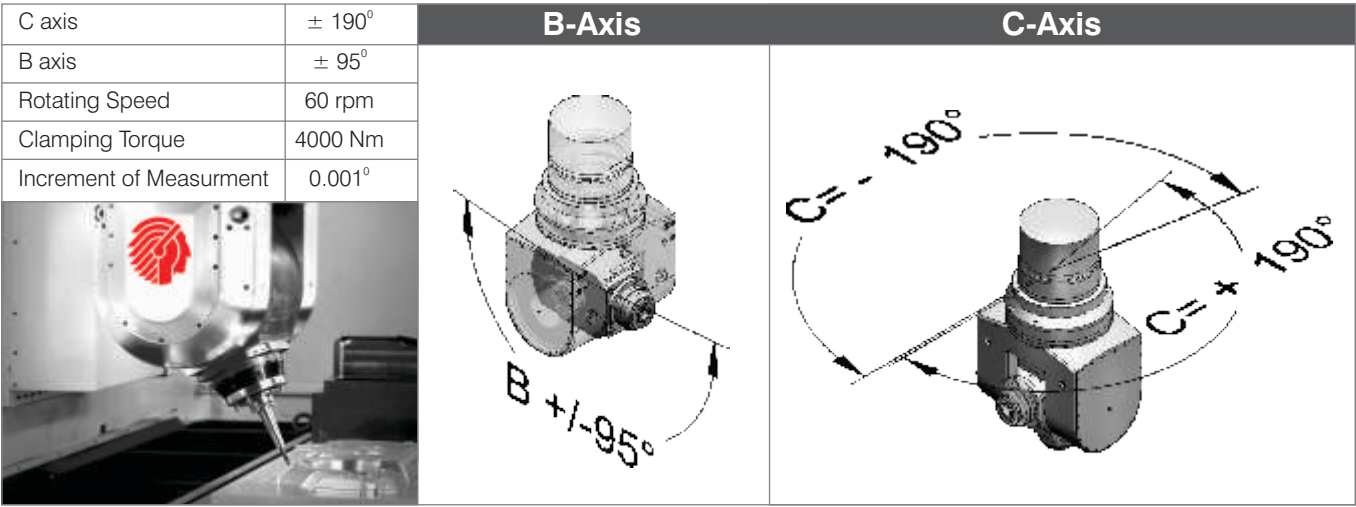
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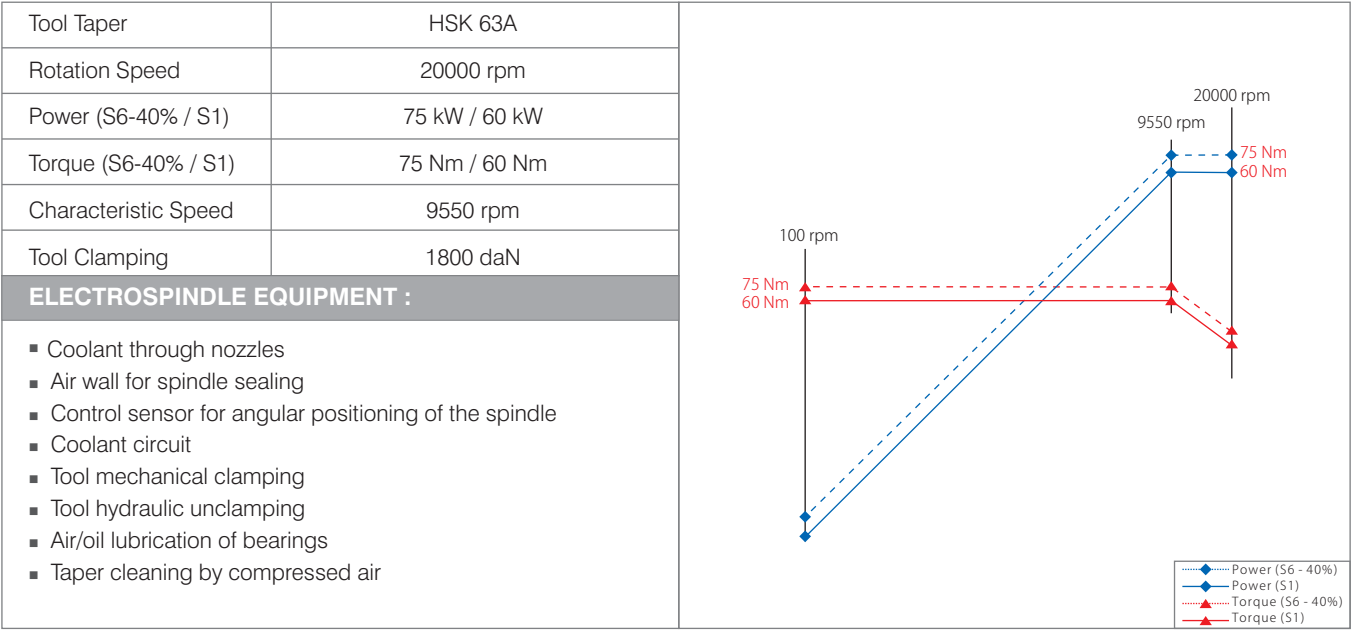
ELECTRO SPINDLE

Fork head with 2 rotation axis

- C axis, oriented in X-Y plane, allows rotation around the vertical Z axis
- B axis, with evolution in the Z-Y and Y-Z plane, enables electrospindle's tilting around an horizontal axis



ELECTRO SPINDLE 20000 RPM

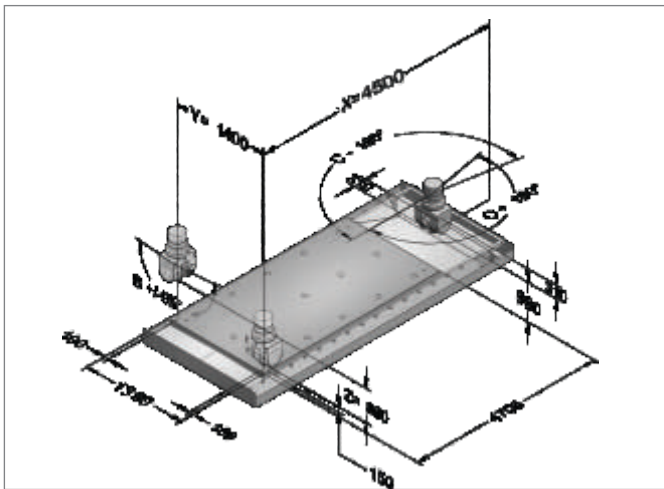




THE TABLE

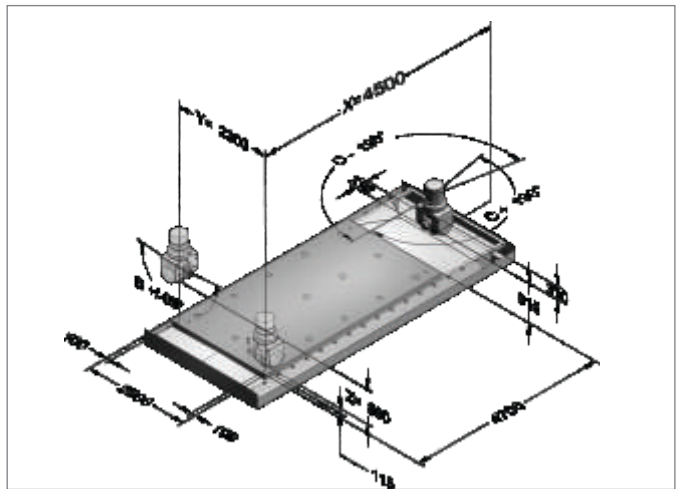
KXG 45-14

Table Area	4700 x 1400 mm
Admissible Load	18000 kg
Distance Between Column	2550 mm



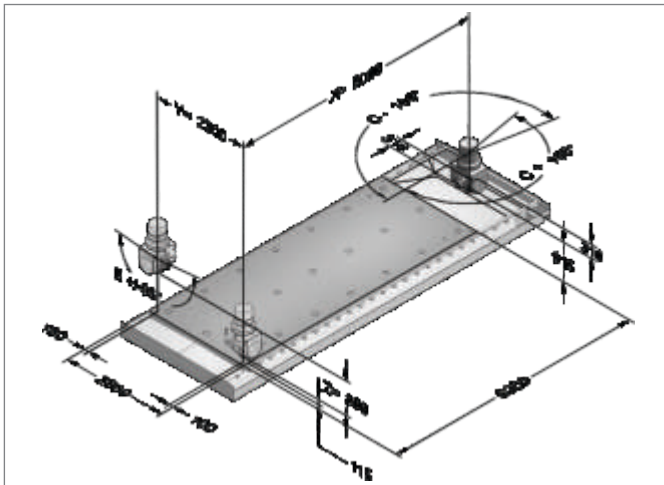
KXG 45-23

Table Area	4700 x 2500 mm
Admissible Load	25000 kg
Distance Between Column	3280 mm



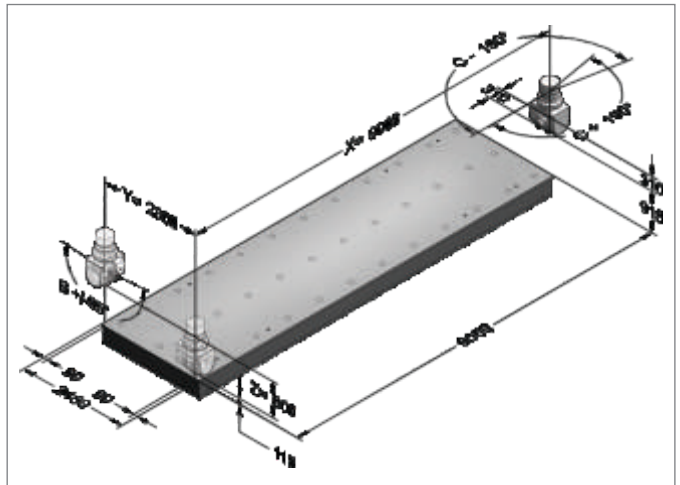
KXG 60-23

Table Area	6200 x 2500 mm
Admissible Load	30000 kg
Distance Between Column	3280 mm



KXG 90-23

Table Area	9000 x 2500 mm
Admissible Load	52000 kg
Distance Between Column	3280 mm



All dimensions in mm

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THE TOOL CHANGER

- The tool magazine is a chain type circulating on 2 plates.
- The automatic load/unload is a Pick-Up system

Pockets Quantity	40
Tool Taper	HSK 63-A
Tool Dimensions :	
Max. Ø Adjacent / Non Adjacent Tools	90 mm
Max. Length	300 mm
Max. Weight	8 kg
Max. Weight Admissible in Magazine	160 kg
Tool Changing Time :	
Tool to Tool - Chip to Chip	5 sec - 15 sec

ALTERNATIVE : TOOL CHANGERS

Tool Changing with Arm Transfer		
Pockets Quantity	60	100
Tool Taper	HSK 63-A	HSK 63-A
Tool Dimensions :		
Max. Ø Adjacent / Non Adjacent Tools	90 mm	90 mm
Max. Length	300 mm	300 mm
Max. Weight	5 kg	5 kg
Max. Weight Admissible in Magazine	150 kg	250 kg
Tool Changing Time :		
Tool to Tool - Chip to Chip	5 sec - 15 sec	5 sec - 20 sec

ALTERNATIVE : ELECTRO SPINDLES

10000 rpm	
Taper	HSK 63-A
Rotating Speed	10000 rpm
Power (S6-40% / S1)	37 kW / 28 kW
Torque (S6-40% / S1)	120 Nm / 90 Nm
Characteristic Speed	3000 rpm

100 rpm 3000 rpm 10000 rpm

120 Nm
90 Nm

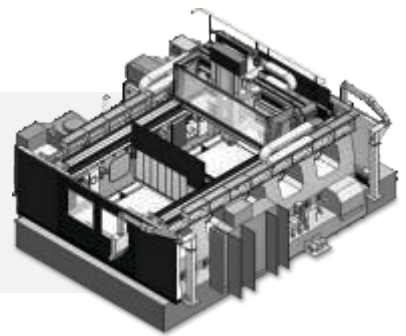
37 kW
28 kW

Power (S6 - 40%)
Power (S1)
Torque (S6 - 40%)
Torque (S1)

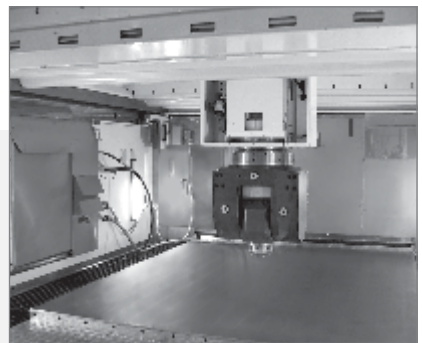


ALTERNATIVE : TWIN / PENDULUM MACHINING

- Separating wall fixed on 2 guide rails enabling pendulum machining
- 3 positions : Front, Middle, Rear
- Parking position of the separating wall enabling the use the entire X travel
- Displacement of the head from an area to another, thanks to a sash-shutter
- working area protected with 2 wide bellows all along the X travel
- Accessibility to working areas by sliding doors placed in front and at the rear of the machine



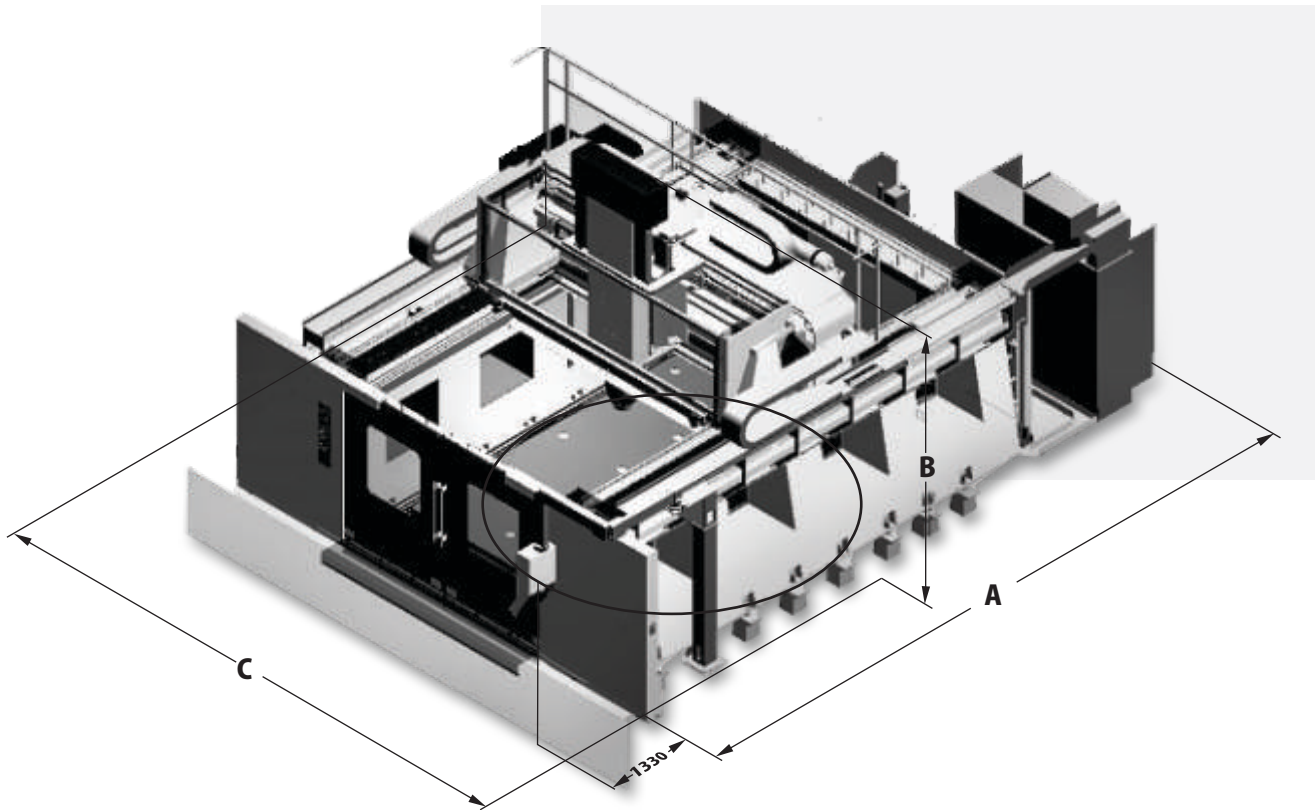
	60-23 TWIN		90-23 TWIN	
Table Area	6200 x 2500 mm		9000 x 2500 mm	
Wall Positioning	Area A	Area B	Area A	Area B
-Front	1000 mm	4050 mm	2500 mm	5550 mm
-Middle	1500 mm	3550 mm	3000 mm	5050 mm
-Rear	2000 mm	3050 mm	3500 mm	4550 mm
Admissible Load on Table	30000 kg		52000 kg	



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OVERALL MEASUREMENTS – STANDARD MACHINE



		KXG 45-14	KXG 45-23	KXG 60-23	KXG 90-23
A : Length	mm	9500	9500	11500	15000
C : Width	mm	7200	8200	8200	8200
B : Height	mm	5000	5000	5000	5000
Weight of the Machine	tons	60	65	90	120



TECHNICAL FEATURES

Linear Axis X / Y / Z		KXG 45 - 14	KXG 45 - 23	KXG 60 - 23	KXG 90 - 23
Travels X	mm	4500	4500	6000	9000
Y	mm	1400	2300	2300	2300
Z	mm	800	800	800	800
Rapid Feedrates	m/min	X-Y = 60, Z = 45			
Acceleration on Axis	m/s²	X = 4 / Y = 4.5 / Z = 6			
Table					
Area	mm	4700 x 1400	4700 x 2500	6200 x 2500	9000 x 2500
Admissible Load on Table	kg	18000	25000	30000	52000
Distance min/max Spindle Face / Top Table	mm	150 / 950	150 / 950	150 / 950	150 / 950
Head / Rotating Axis B – C					
B-Axis	Deg	± 95°			
C-Axis	Deg	± 190°			
Rotating Speed	rpm	60			
Accuracies		Linear Axis		Rotating Axis	
Uncertainty : P		10 μ		10 sec	
Repeatability : Ps Medium		5 μ		5 sec	
Spindle					
Rotating Speed	rpm	20000			
Tool Taper		HSK 63-A			
Power – Torque (S6-40% / S1)	kW - Nm	75 / 60 – 75 / 60			
Characteristic Speed	rpm	9550			
Tool Magazine					
Pockets Quantity		40			
Tool Taper		HSK 63-A			
Tool Dimension : Length – Diameter – Weight	mm - Ø mm - kg	300 – 90 - 8			
Coolant					
Flow – Pressure	l / min – bar	10 - 45			
Tank	Litres	1500			

ALTERNATIVES

Travels		Y Travel	Z Travel 45-23 / 60-23 / 90-23
Travel	mm	3000	1000
Distance min/max spindle face / top table	mm	-	150 / 1150

Spindles		10000 rpm
Tool Taper		HSK 63-A
Power – Torque (S6 / S1)	kW-Nm	37 / 28 – 120 / 90
Characteristic Speed	rpm	3000

Tool Magazines		60	100
Pockets Quantity		60	100
Tool Taper		HSK 63-A	HSK 63-A
Tool Dimension : Length – Diameter – Weight	mm - Ø mm - kg	300 – 90 – 5	300 – 90 – 5

TWIN Version		KXG 60-23 TWIN		KXG 90-23 TWIN	
Position of the Wall :		Area A	Area B	Area A	Area B
Front	mm	1000 mm	4050 mm	2500 mm	5550 mm
Medium	mm	1500 mm	3550 mm	3000 mm	5050 mm
Rear	mm	2000 mm	3050 mm	3500 mm	4550 mm

OPTIONAL EQUIPMENTS

- Micro Spraying Coolant
- Air Blast
- Job Probe
- Tool Probe
- Oil Extraction System
- Pressurization of Measuring Scales
- Oil Separator
- Two CNC Controller for Independent Operations for TWIN / Pendulum Machining

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Note: Specified information are subject to change arising out of continuous product improvement without notice. The description standard accessories/feature conforms to its list; not the photo of machine show in the catalogue. Other controller will have different configuration. Machine images are shown with option.



ISO 9001 : 2008