

KXG Series

High Performance
5 Axes Machining Centers with Linear Motors

Performance
Technology
Power
Accuracy





KXC Series

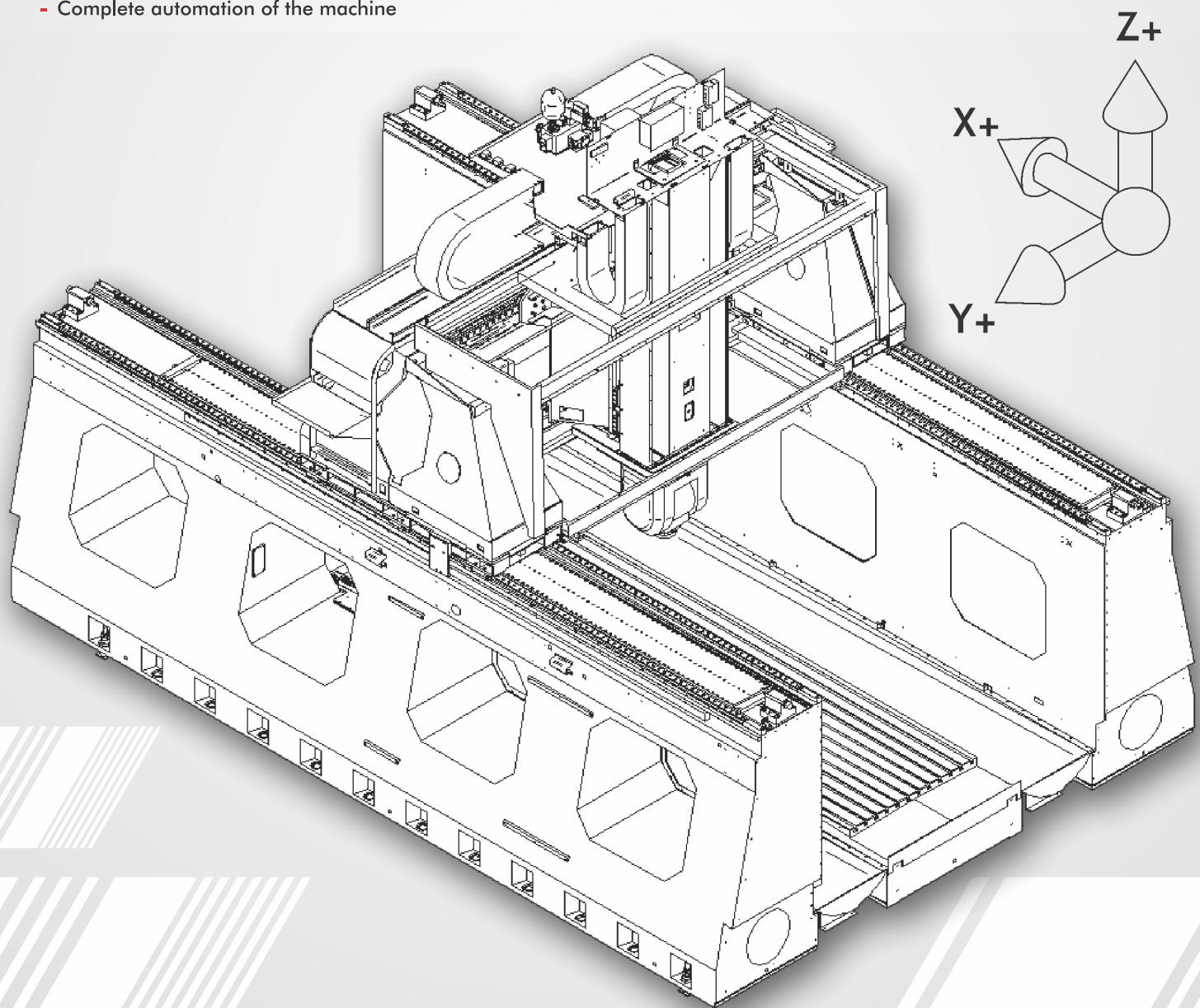
Powerfull, Rapid, Accurate

5 Axes

High Performance Gantry Machining Center

The big sized Gantry machine type KXC is a 5 axes 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 axes machining for work piece up to 52.000 kg
- 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 wheld-mechanic enabling a very high static and dynamic rigidity
- Structure integrating large windows 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 Axes

- 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
- Absolute measurement by linear scales in conformity with norm VDI/DGQ 3441

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

Numerical Controller

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

Environment - Ergonomics

- Evacuation channels for chips equipped with 2 side screw type conveyors
- 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

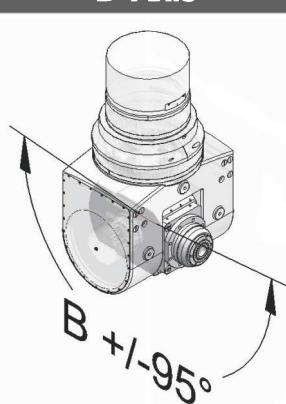
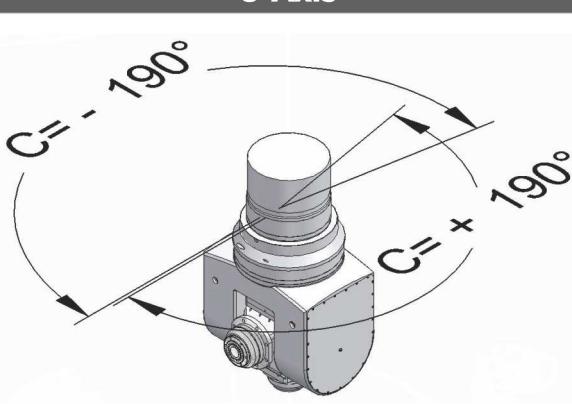


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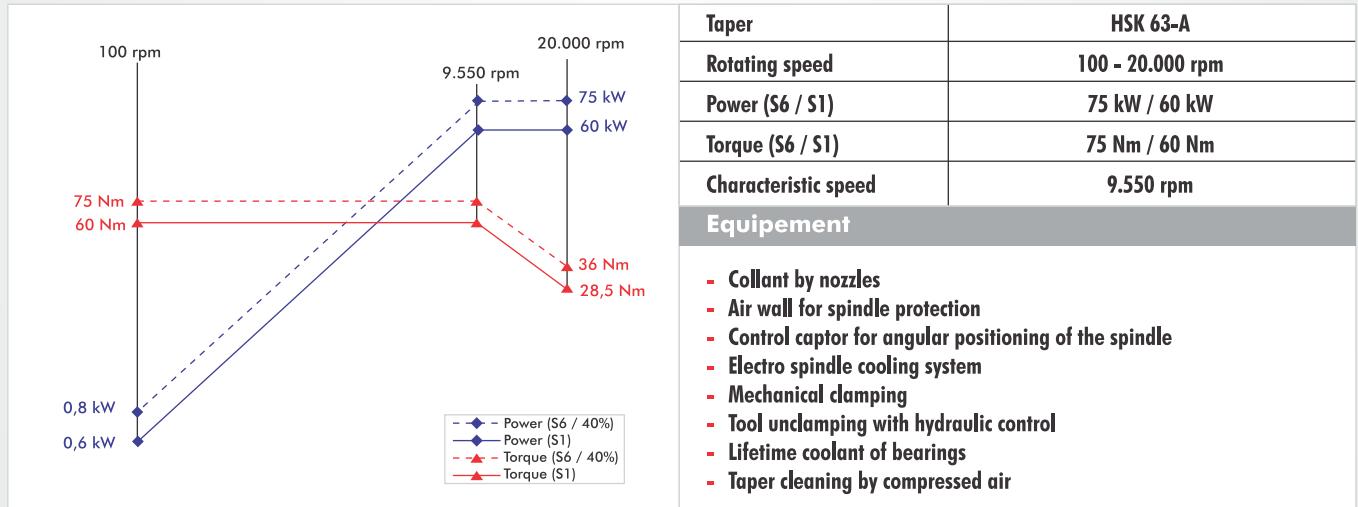
The Spindle

Fork head with 2 rotation axes

- 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

C axis	$\pm 190^\circ$
B axis	$\pm 95^\circ$
Rotating speed	60 rpm
Clamping torque	4.000 Nm
Increment of measurement	0,001°
	
B-Axis  $B \pm 95^\circ$	
C-Axis  $C = -190^\circ$ $C = +190^\circ$	

The Spindle 20.000 rpm



The Tool Changer

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

Pockets qty	40
Tool taper	HSK 63-A
Tool Dimensions :	
Max. Ø adjacent / non adjacen tools	90 mm
Max. length	300 mm
Max. w eight	8 kg
Max. weight admissible in magazine	160 kg
Tool Changing Time :	
Tool to tool - chip to chip	5 sec - 15 sec



The Table

KXG 45-14

Table area	4.700 x 1.390 mm
Admissible load	18.000 kg
Distance between column	2.550 mm

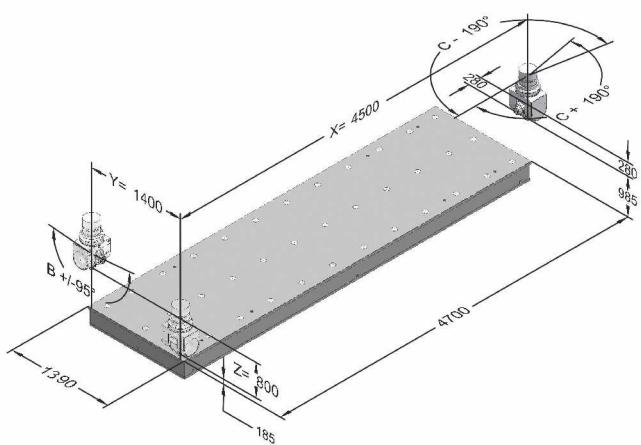
**KXG 45-23**

Table area	4.700 x 2.480 mm
Admissible load	25.000 kg
Distance between column	3.280 mm

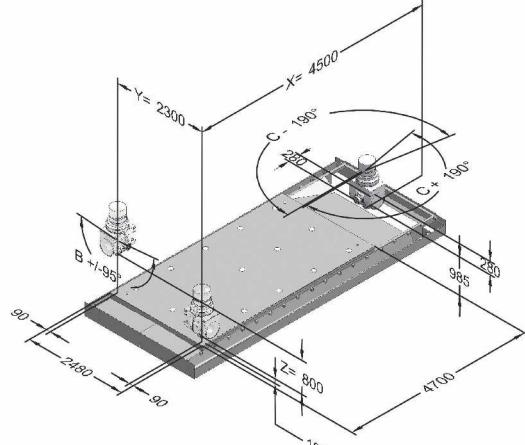
**KXG 60-23**

Table area	6.200 x 2.480 mm
Admissible load	30.000 kg
Distance between column	3.280 mm

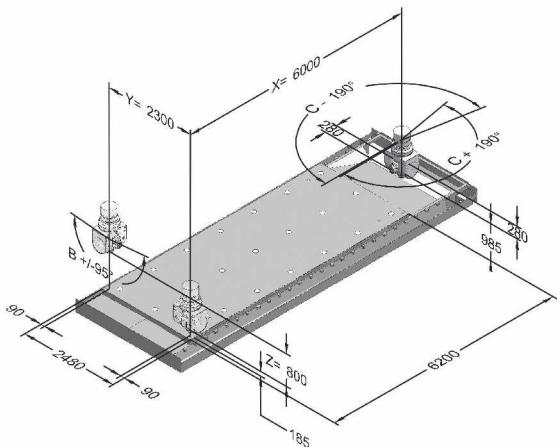
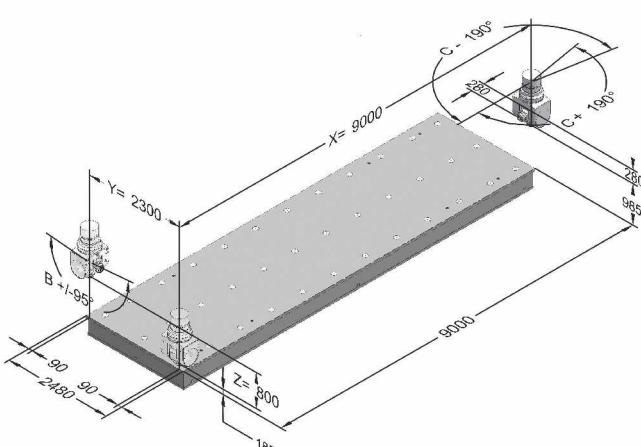
**KXG 90-23**

Table area	9.000 x 2.480 mm
Admissible load	52.000 kg
Distance between column	3.280 mm



All dimensions in mm



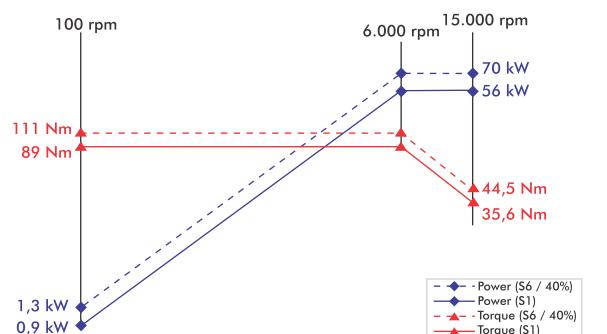
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Alternative : Tool Changers

Tool Changement with Arm Transfer		
Pockets qty	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

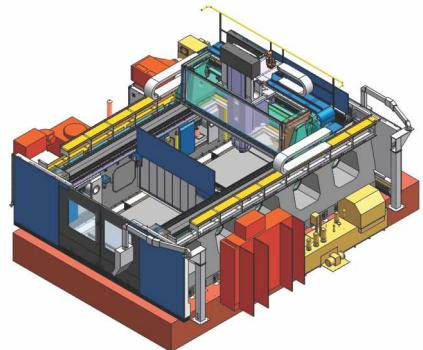
Alternative : Spindle

15.000 rpm	
Taper	HSK 63-A
Rotating speed	15.000 rpm
Power (S6 / S1)	70 kW / 56 kW
Torque (S6 / S1)	111 Nm / 89 Nm
Characteristic speed	6.000 rpm



Alternative : TWIN / Pendulum Machining

- Separating wall fixed on 2 guide rails enabling pendulum machining
- 3 positions : Front, Medium, 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	6.200 x 2.480 mm		9.000 x 2.480 mm	
Wall positioning	Area A	Area B	Area A	Area B
-front	1.000 mm	4.050 mm	2.500 mm	5.550 mm
-middle	1.500 mm	3.550 mm	3.000 mm	5.050 mm
rear	2.000 mm	3.050 mm	3.500 mm	4.550 mm
Admissible load on table	30.000 kg		52.000 kg	





Technical Features

Linear Axes X / Y / Z		KXG 45 - 14	KXG 45 - 23	KXG 60 - 23	KXG 90 - 23
Travels X	mm	4.500	4.500	6.000	9.000
Y	mm	1.400	2.300	2.300	2.300
Z	mm	800	800	800	800
Rapid feedrates	m/min	X-Y = 60, Z = 45			
Acceleration on axis	m/s ²	X = 4 / Y = 4,5 / Z = 6			
Table					
Area	mm	4.700 x 1.390	4.700 x 2.480	6.200 x 2.480	9.000 x 2.480
Admissible load on table	kg	18.000	25.000	30.000	52.000
Distance min/max spindle face / top table	mm	150 / 950	150 / 950	150 / 950	150 / 950
Head / Rotating Axes B – C					
B axis	Deg	$\pm 95^\circ$			
C axis	Deg	$\pm 190^\circ$			
Rotating speed	rpm	60			
Accuracies					
Uncertainty : P (X / Y / Z) Linear Axes		25 / 10 / 10 μm	25 / 10 / 10 μm	35 / 10 / 10 μm	50 / 10 / 10 μm
Repeatability : Ps medium (Linear Axes)		5 / 5 / 5 μm	5 / 5 / 5 μm	6 / 5 / 5 μm	6 / 5 / 5 μm
Uncertainty : P (Rotating Axes)		10 Sec			
Repeatability : Ps medium (Rotating Axes)		5 Sec			
Spindle					
Rotating speed	rpm	20.000			
Tool taper		HSK 63-A			
Power – Torque (S6 / S1)	kW - Nm	75 / 60 – 75 / 60			
Characteristic speed	rpm	9.550			
Tool Magazine					
Pockets qty		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 – 50			
Tank	Litres	1.500			

Alternatives

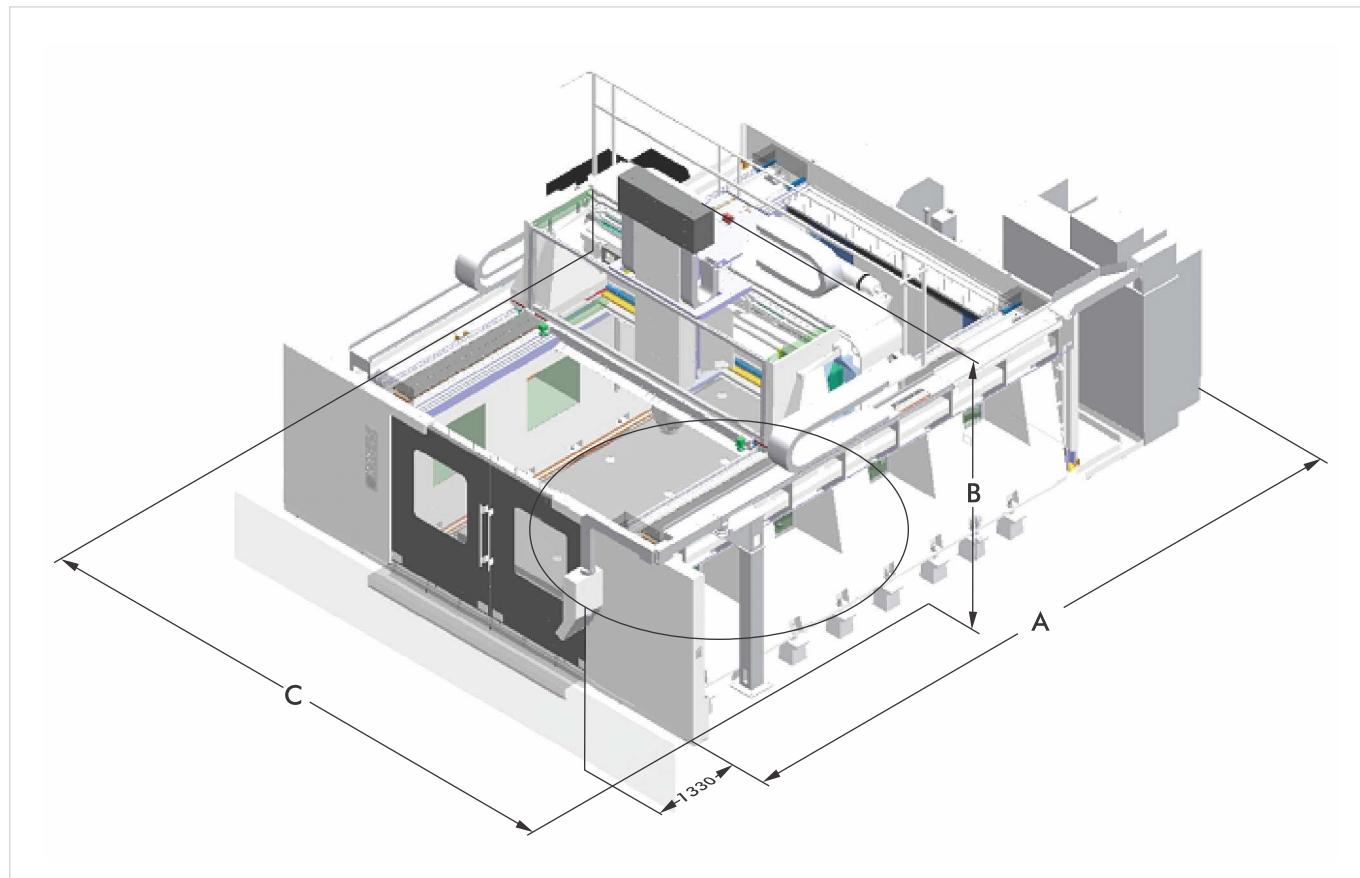
Travels		Y Travel	Z Travel 45-23 / 60-23 / 90-23
Travel	mm	3.000	1.000
Distance min/max spindle face / top table	mm	-	150 / 1.150
Spindles		15.000 rpm	
Tool taper		HSK 63-A	
Power – Torque (S6 / S1)	kW	70 / 56 – 111 / 89	
Characteristic speed	rpm	6.000	
Tool Magazines			
Pockets qty		60	100
Tool taper		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
		Area A	Area B
Position of the wall : Front	mm	1.000 mm	4.050 mm
Medium	mm	1.500 mm	3.550 mm
Rear	mm	2.000 mm	3.050 mm
		Area A	Area B
		2.500 mm	5.550 mm
		3.000 mm	5.050 mm
		3.500 mm	4.550 mm

Equipment as Options

- Micro spraying coolant
- Part probe
- Oil extraction system
- Oil separator
- Air blast
- Tool probe
- Pressurization of measuring scales



Overall Measurements – Standard Machine



		KXG 45-14	KXG 45-23	KXG 60-23	KXG 90-23
A : Length	mm	9.950	9.950	11.700	15.000
C : Width	mm	7.550	8.200	8.200	8.200
B : Height	mm	5.000	5.000	5.000	5.000
Weight of the machine	tons	60	65	90	120

ISO : 9001



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