



# KXG Series

**High Performance  
5 Axes Machining Centers with Linear Motors**

**Performance  
Technology  
Power  
Accuracy**





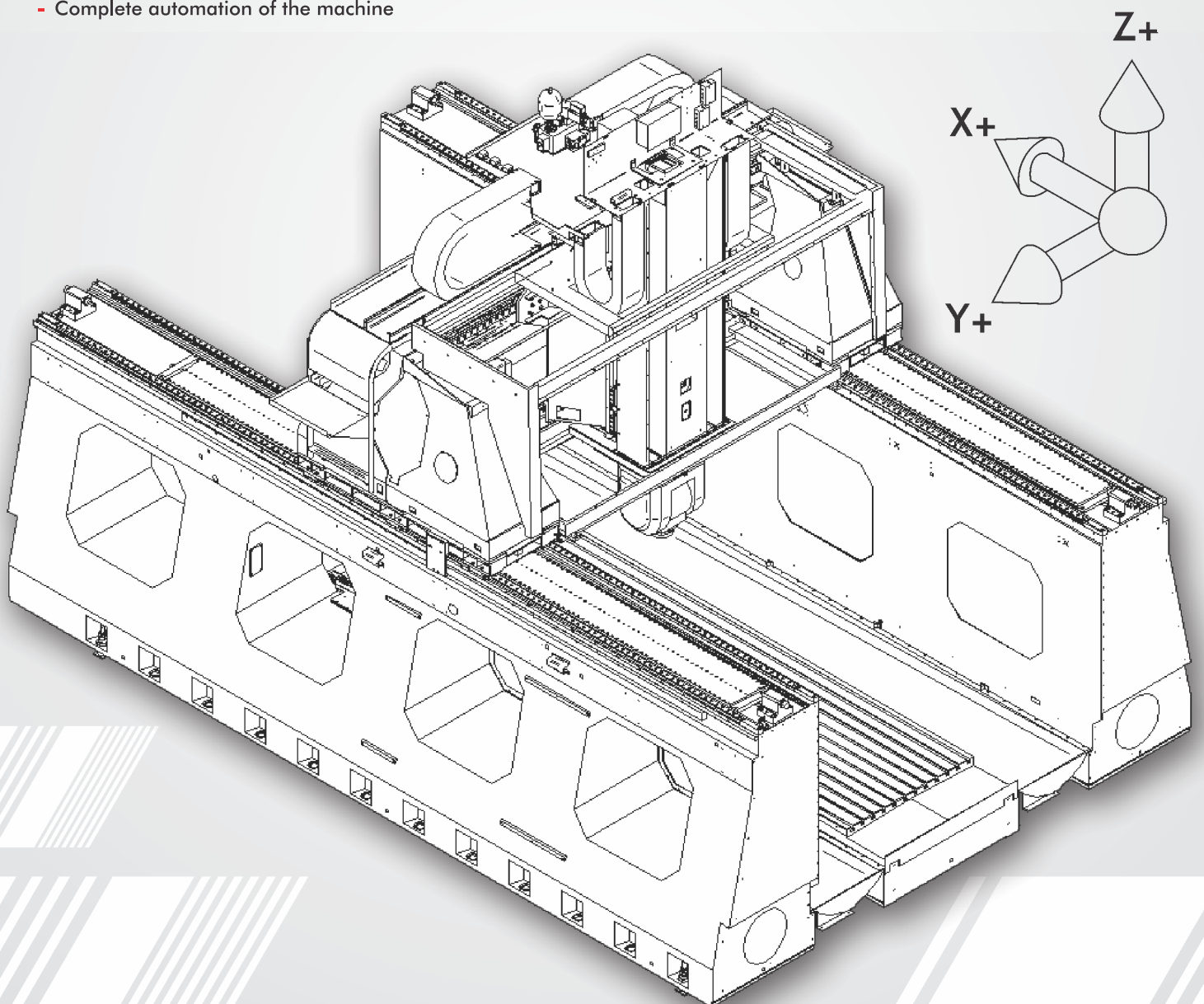
# KXG Series

## Powerfull, Rapid, Accurate

### 5 Axes High Performance Gantry Machining Center

The big sized Gantry machine type KXG 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 wheel-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



# KXG Series

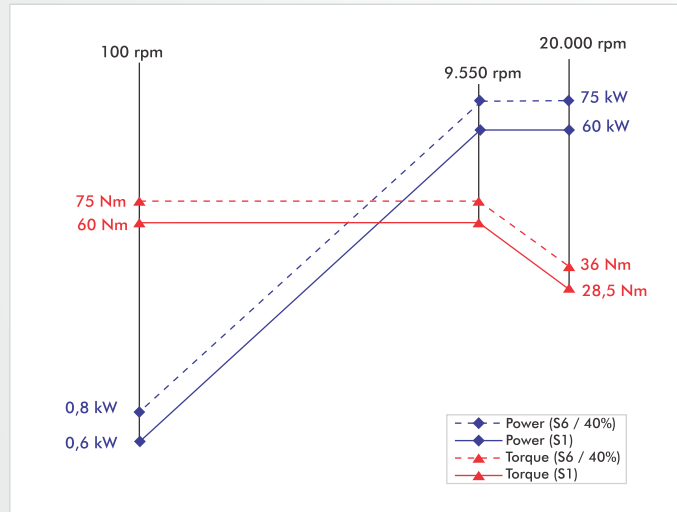
## The Spindle

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

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

## The Spindle 20.000 rpm



<b>Taper</b>	HSK 63-A
<b>Rotating speed</b>	100 - 20.000 rpm
<b>Power (S6 / S1)</b>	75 kW / 60 kW
<b>Torque (S6 / S1)</b>	75 Nm / 60 Nm
<b>Characteristic speed</b>	9.550 rpm
<b>Equipment</b>	
<ul style="list-style-type: none"> <li>- Collant by nozzles</li> <li>- Air wall for spindle protection</li> <li>- Control captor for angular positioning of the spindle</li> <li>- Electro spindle cooling system</li> <li>- Mechanical clamping</li> <li>- Tool unclamping with hydraulic control</li> <li>- Lifetime coolant of bearings</li> <li>- Taper cleaning by compressed air</li> </ul>	

## The Tool Changer

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

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

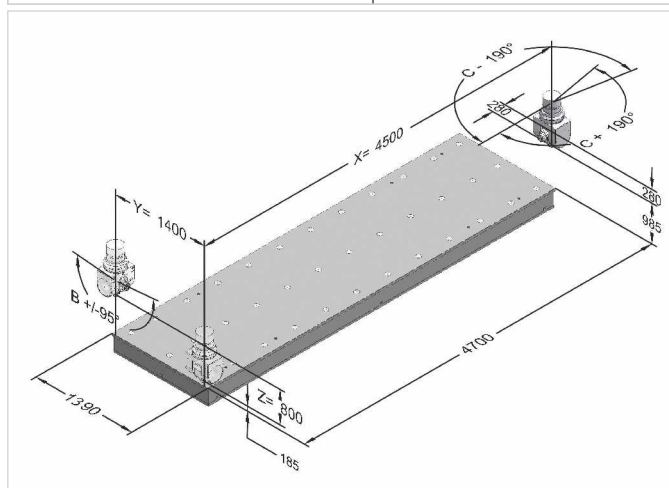




## The Table

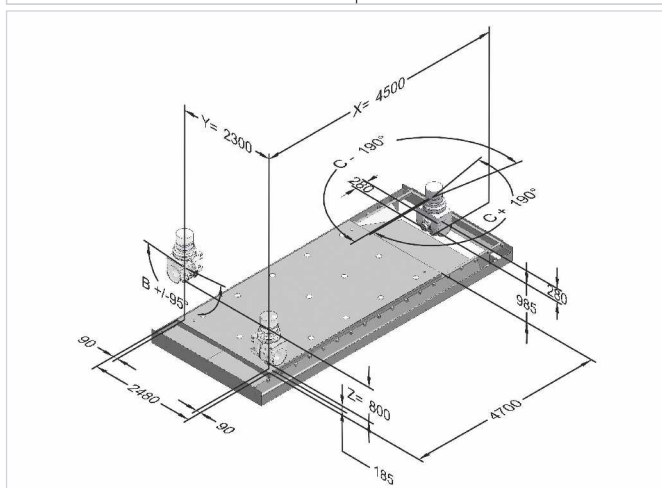
### KXG 45-14

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



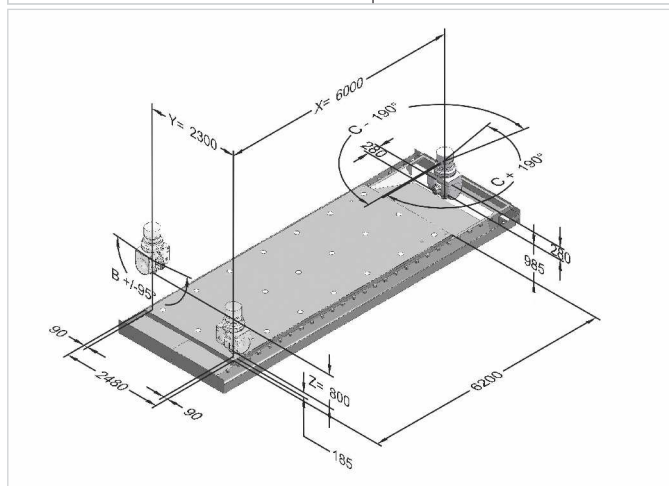
### KXG 45-23

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



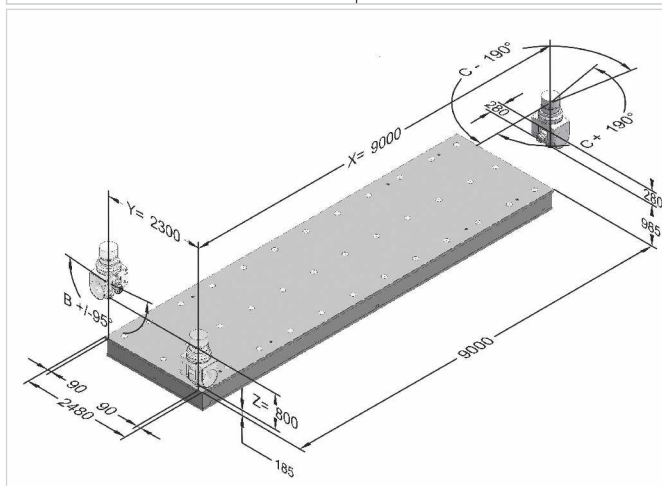
### KXG 60-23

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



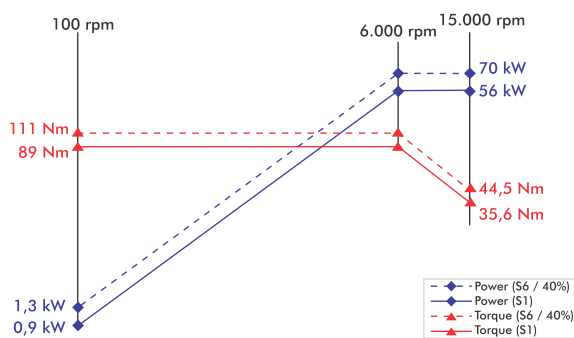
# KXG Series

## Alternative : Tool Changers

Tool Chagement with Arm Transfer		
Pockets qty	60	100
Tool taper	HSK 63-A	HSK 63-A
<b>Tool dimensions :</b>		
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
<b>Tool changing time :</b>		
tool to tool - chip to chip	5 sec - 15 sec	5 sec - 20 sec

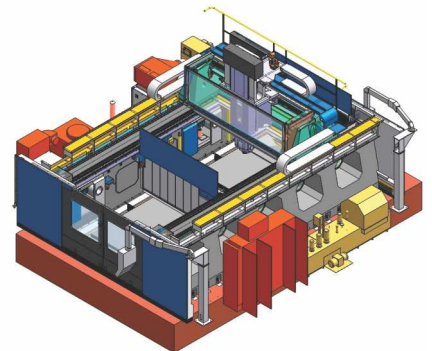
## Alternative : Spindle

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	
<b>Table area</b>	6.200 x 2.480 mm		9.000 x 2.480 mm	
<b>Wall positioning</b>	<b>Area A</b>	<b>Area B</b>	<b>Area A</b>	<b>Area B</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
<b>Admissible load on table</b>	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 <sup>2</sup>	X = 4 / Y = 4,5 / Z = 6			
<b>Table</b>					
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
<b>Head / Rotating Axes B - C</b>					
B axis	Deg	± 95°			
C axis	Deg	± 190°			
Rotating speed	rpm	60			
<b>Accuracies</b>					
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			
<b>Spindle</b>					
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			
<b>Tool Magazine</b>					
Pockets qty		40			
Tool taper		HSK 63-A			
Tool dimension :					
Length – Diameter – Weight	mm - Ø mm - kg	300 – 90 - 8			
<b>Coolant</b>					
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		60	100
Pockets qty			
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	Area A	Area B
Position of the wall : Front	mm	1.000 mm	4.050 mm	2.500 mm	5.550 mm
Medium	mm	1.500 mm	3.550 mm	3.000 mm	5.050 mm
Rear	mm	2.000 mm	3.050 mm	3.500 mm	4.550 mm

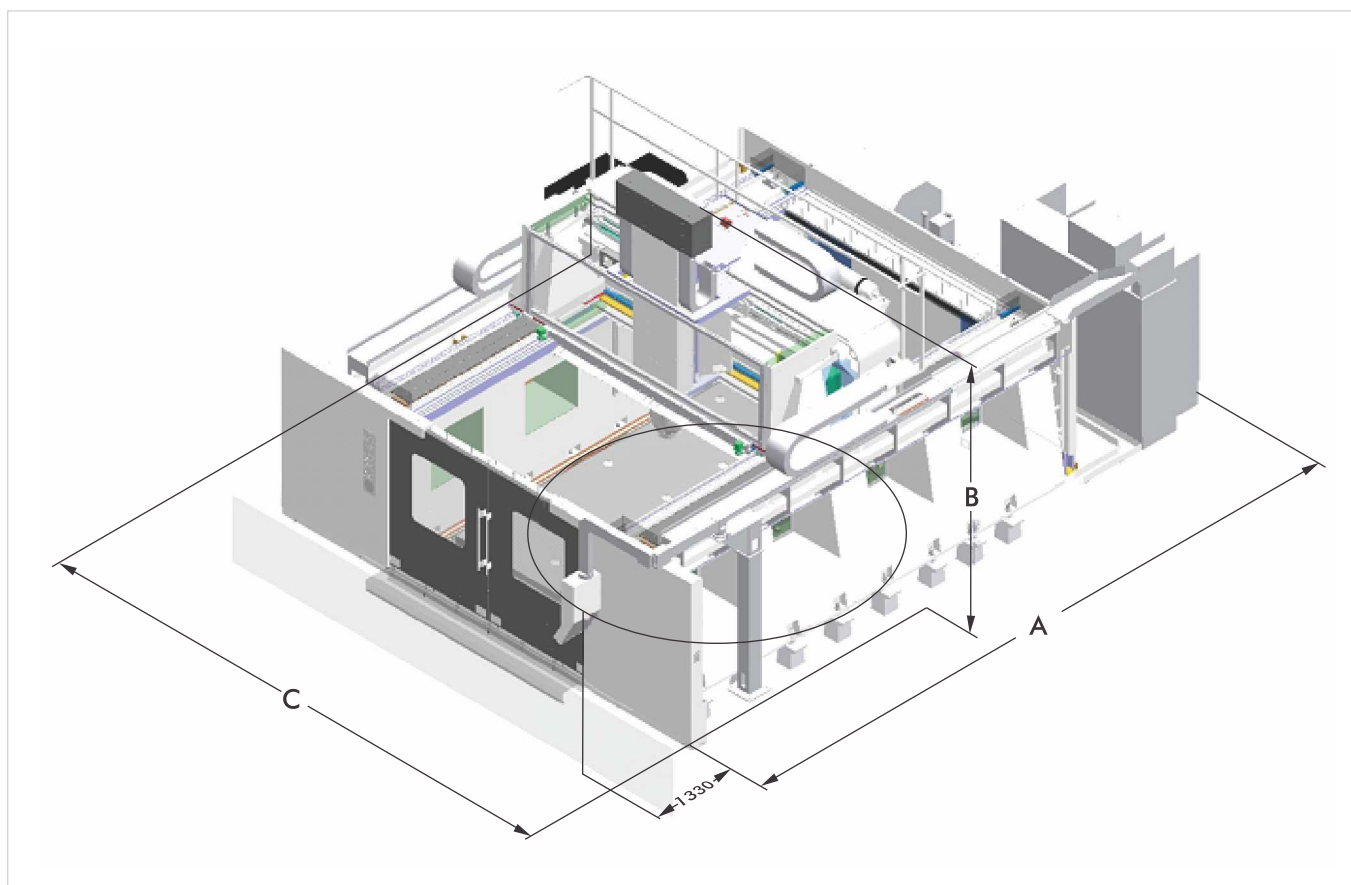
## Equipment as Options

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





## 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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Note : \*All above information is subject to change arising out of continuous product improvement.  
• The description 'standard accessories / feature' conforms to its list; not the photo of machine shown in the catalogue.

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