



# KX<sup>Five</sup> Series

## 5 Axes High Performances Machining Centers

Performance  
Technology  
Power  
Accuracy





# KX<sup>Five</sup> Series

## Powerful, Rapid, Accurate

### 5 Axes High Performance Machining Center

The HSM machining centers, HURON KX Five, enable machining operations in 5 simultaneous axes on 5 sides, from roughing to finishing, of all types of complex work pieces such as injection molds, complex aerospace components or high integrity mechanical parts. The KX Five machining centers are projected to be at the highest level in Five Axis HSM Category. A combination of high dynamics and accuracy allows the KX Five to obtain very high quality surfacing.

- 5 axes machining for work pieces up to 500 kg (possible to position up to 750 kg by reducing feedrates and acceleration)
- Hard material machining in minimal time
- Very high accuracy in contouring and profiles
- Complete automation of the machine

## Structure : Rigidity and Accuracy

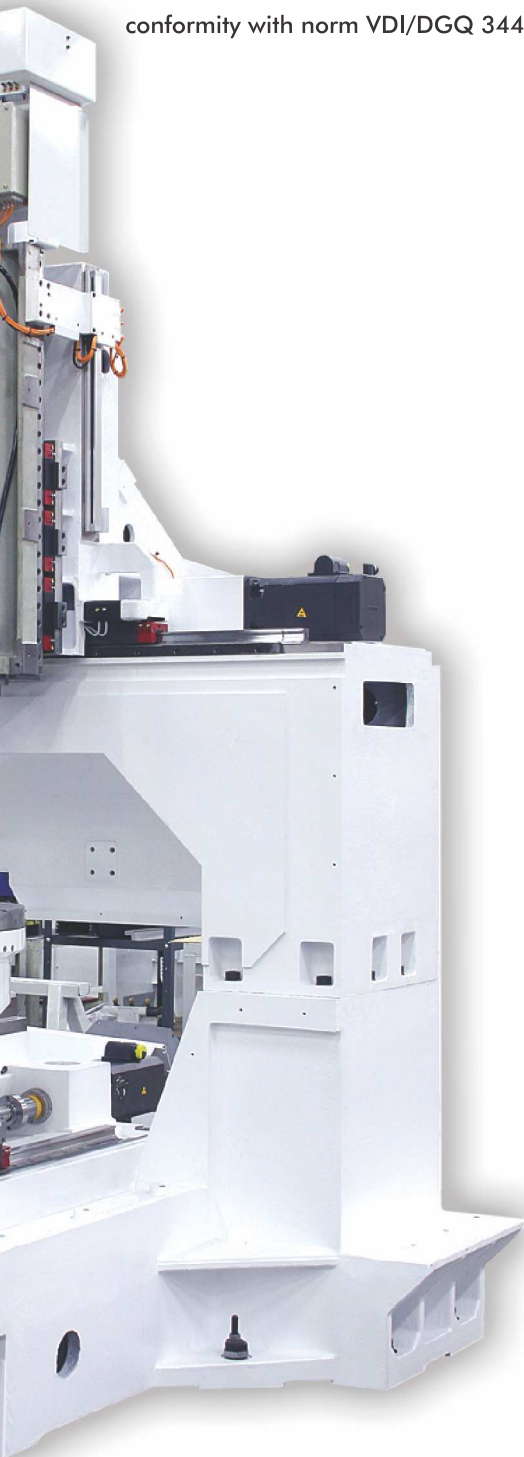
- Structure with fixed portal in ribbed cast iron with stiffness wall
- Cast iron with a high mechanical performance which maximises structure rigidity and allows optimum harmonic stability and maximum damping during demanding cutting conditions
- Machine secured on foundation with weight equally distributed 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 the customer
- Electrical cabinet protected IP54





## Linear Axes

- Preloaded ballscrews with integrated system of compensation for expansion
- Preloaded bearings to remove inversion backlash and axial stress on ballscrews enabling a high quality of surfacing
- Automatic grease lubrication of ballscrews and bearings minimising the pollution of coolant
- Absolute measurement by optical encoders in conformity with norm VDI/DGQ 3441



## Spindle

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

## Tilting and Rotating Table

- Table equipped with torque motor : **TRIM**<sup>®</sup> technology
- Table on an inclined plane :
  - K3X 8 Five : 55° plane allowing tilting from -30° to 180°
  - K2X 10 Five : 45° plane allowing tilting from -45° to 180°
- Tilting angle avoid chips accumulation on table
- Possibility to use all working planes between horizontal and vertical position
- Preloaded bearing with axial and radial combination
- High rate of rotational acceleration
- No backlash
- No wear
- Rigidity : high clamping torque enabling high power during roughing

## Numerical Controller

- 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 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 from top and side of the machine thanks to a large opening of doors and possibility to load with lifting equipment
- Operator panel



# KXX Five Series

## The Spindle 24.000 rpm

<b>Tool Taper</b>	<b>HSK 63-A</b>
<b>Rotating speed</b>	<b>100 - 24.000 rpm</b>
<b>Power S1 / S6</b>	<b>20 kW / 25 kW</b>
<b>Torque S1 / S6</b>	<b>32 Nm / 40 Nm</b>
<b>Characteristic speed</b>	<b>6.000 rpm</b>
<b>Equipment :</b>	
<ul style="list-style-type: none"> <li>- Air wall for spindle protection</li> <li>- Control captor for angular positioning of the spindle</li> <li>- Cooling system for electros spindle</li> <li>- Mechanical clamping with spring rings</li> <li>- Tool unclamping with hydraulic control</li> <li>- Air/Oil greasing of bearings</li> <li>- Taper cleaning by compressed air</li> </ul>	


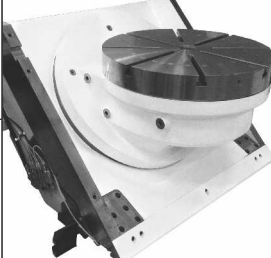
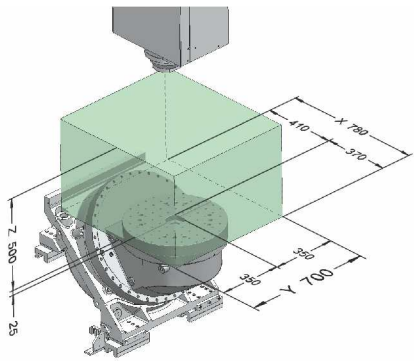
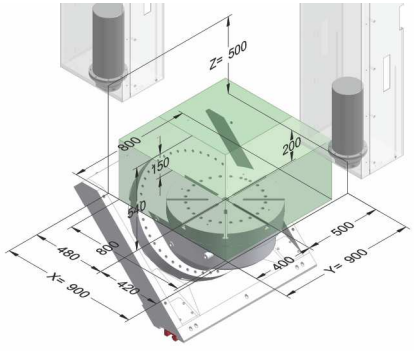
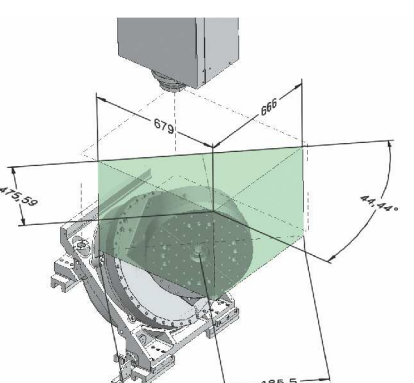
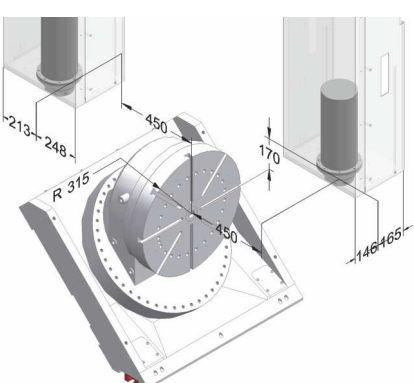
## The Tool Changer

- The automatic load/unload of the tool is made vertically

	<b>K3X 8 Five</b>	<b>K2X 10 Five</b>	<b>Only with 42.000 rpm spindle</b>
<b>Pockets qty</b>	20	30	28
<b>Type of magazine</b>	Plate	Chain	Plate
<b>Tool taper</b>	HSK 63-A	HSK 63-A	HSK 40-E
<b>Tool dimensions :</b>			
<b>Max. Ø adjacent / non adjacent tool</b>	90 mm	90 mm	70 mm
<b>Max. length</b>	250 mm	300 mm	250 mm   300 mm (K3X 8 five)   (K2X 10 five)
<b>Max. Weight</b>	8 kg	8 kg	8 kg
<b>Max. weight admissible in magazine</b>	80 kg	120 kg	80 kg
<b>Tool changing time :</b>			
<b>tool to tool</b>	5 sec	5 sec	5 sec
<b>chip to chip</b>	8,5 sec	15 sec	15 sec



# The Birotational Table

	K3X 8 Five		K2X 10 Five	
<b>A axis</b> - Tilting angle - Rotating speed - Measuring increment	-30° / +180°  50 rpm  0,001°	Angle on 55° plane  	-45° / +180°  40 rpm  0,001°	Angle on 45° plane  
<b>C axis</b> - Rotating angle of table - Rotating speed - Measuring increment	360°  50 rpm  0,001°		360°  90 rpm  0,001°	
Table area	Ø 500 mm		Ø 630 mm	
Admissible load	250 kg		500 kg (750 kg if reducing the feedrates and accelerations)	
Clamping system	Holes M12 50/50 mm		8 slots 18H12	
Refering	20 H 7 mm – Width 5		20 H 7 mm – Width 5	
Centering	40 H 7 mm – Width 15		40 H 7 mm – Width 15	
	Table in horizontal position (- 0°)  		Table in horizontal position (- 0°)  	
	Table in vertical position (- 90°)  		Table in vertical position (- 90°)  	



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## Alternative to Table : Palettised Table

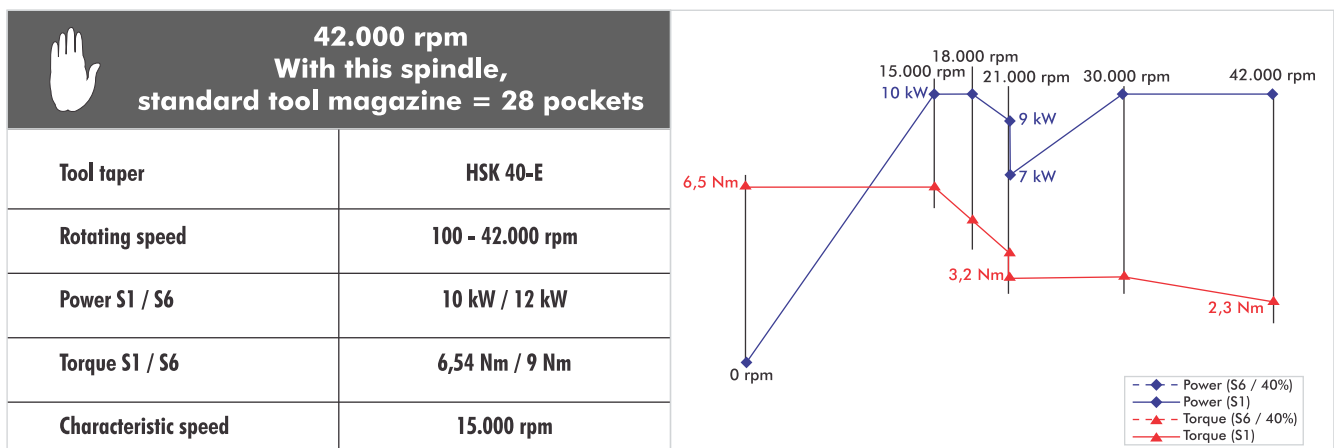
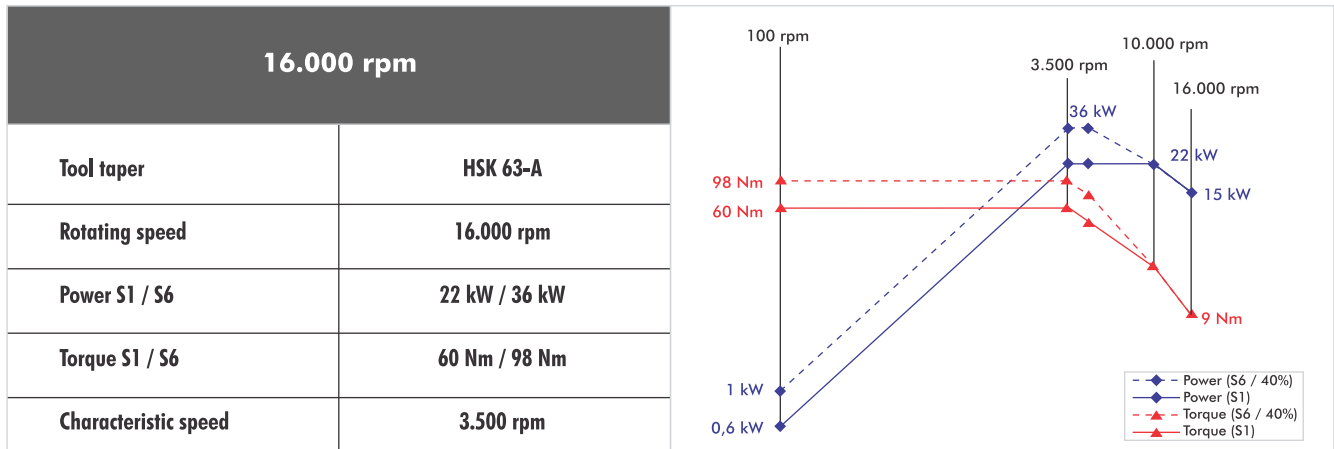
	K3X 8 Five		K2X 10 Five	
<b>A axis</b>		Angle on 55° plane		Angle on 45° plane
- Tilting angle	-30° / +180°		-45° / +180°	
- Rotating speed	50 rpm		40 rpm	
- Measuring increment	0,001°		0,001°	
<b>C axis</b>				
- Rotating angle of table	360°		360°	
- Rotating speed	50 rpm		90 rpm	
- Measuring increment	0,001°		0,001°	
Table area	Ø 500 mm		Ø 630 mm	
Admissible load	250 kg		500 kg (750 kg if reducing the feedrates and accelerations)	
Clamping system	Holes M12 50/50 mm		8 slots 18H12	
Refering	20 H 7 mm – Width 5		20 H 7 mm – Width 5	
Centering	40 H 7 mm – Width 15		40 H 7 mm – Width 15	
	Table in horizontal position (- 0°)		Table in horizontal position (- 0°)	
	Table in vertical position (- 90°)		Table in vertical position (- 90°)	



## Alternative to Tool Changers

	30	40	60	90
Pockets qty	30	40	60	90
Type of magazine	Pick-Up Chain	Pick-Up Chain with 2 plates	Pick-Up Chain with 2 plates	Transfer Arm 2 discs
Tool taper	HSK 63-A	HSK 63-A	HSK 63-A	HSK 63-A
<b>Tool dimensions :</b>				
Max. Ø adjacent / non adjacent	90 mm	90 mm	90 mm	90 mm
Max. length (8 five / 10 five)	250 / 300 mm	250 / 300 mm	250 / 300 mm	250 / 300 mm
Max. Weight	8 kg	8 kg	8 kg	8 kg
Max. weight admissible in magazine	80 kg	160 kg	240 kg	400 kg
<b>Tool changing time :</b>				
tool to tool	5 sec	5 sec	5 sec	5 sec
chip to chip	8,5 sec	15 sec	15 sec	8,5 sec

## Alternative to Spindles





# KX Five Series

## Palettization Device

		K3X 8 Five	K2X 10 Five
Pallet area		Ø 500	Ø 630
Admissible load : pallet + workpiece		250 kg	500 kg
Clamping system		Holes M12 50/50 mm	Holes M12 50/50 mm
Refering		Ø 40 H7	Ø 50 H6
Centering		Slot 20H7	Slot 20H6

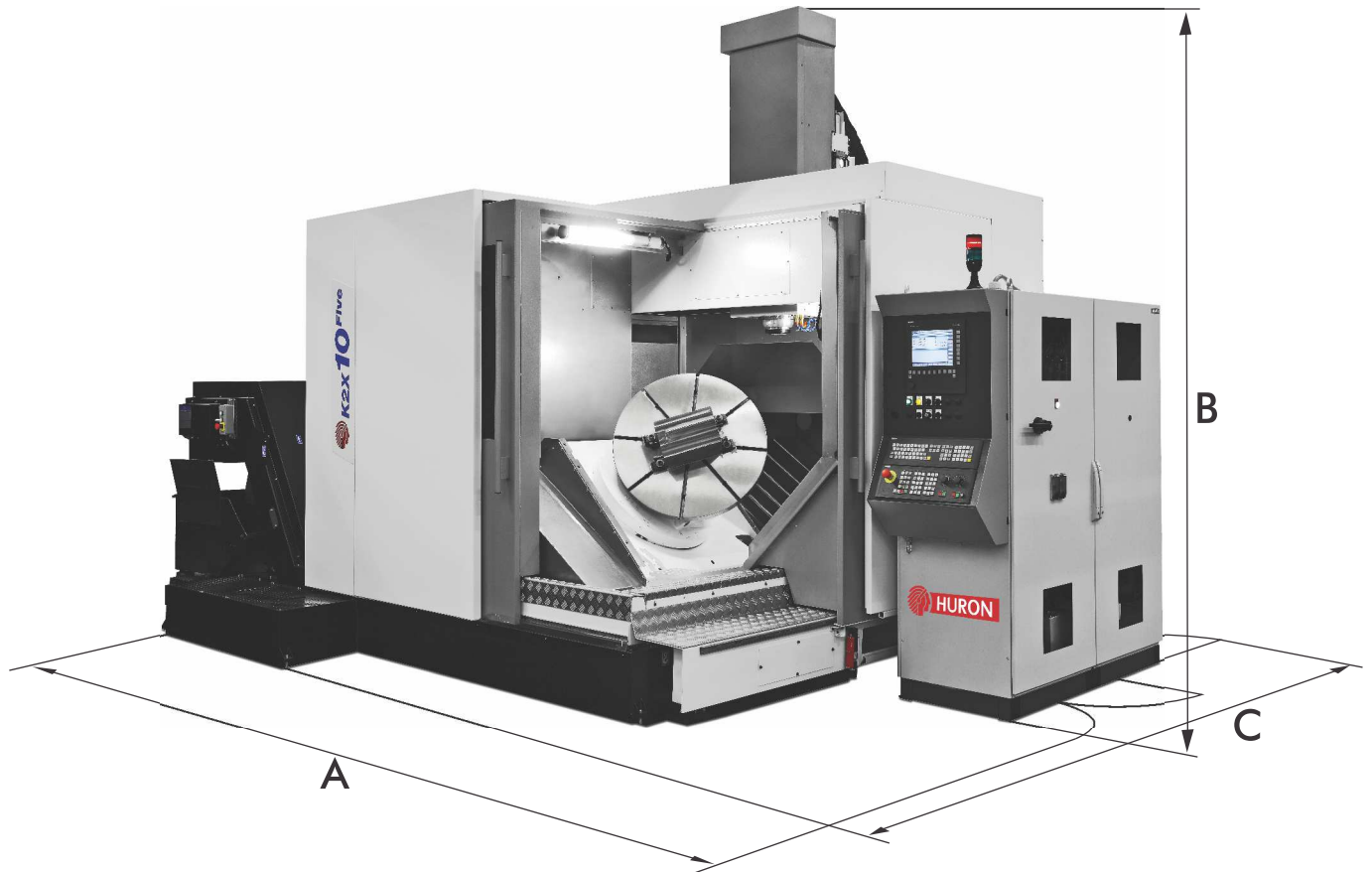
Bi-pallet device with table or palettized table		
<b>Bi-pallet device</b> - Pallets qty - Pallet changing time : pallet to pallet - Loading station qty	2 35 sec 1	

Pallet device with 6 pallets with table or palettized table		
<b>Pallet device</b> - Pallets qty - Pallet changing time : pallet to pallet - Loading station qty	6 35 sec 1	





## Overall Measurements – Standard Machine



	K3X 8 Five	K2X 10 Five
A : Length	5.260 mm	5.700 mm
C : Width	2.690 mm	3.660 mm
B : Height	3.325 mm	3.470 mm
Weight of the machine	9.700 kg	13.000 kg



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## Technical Features

Linear axes X / Y / Z		K3X 8 Five		K2X 10 Five	
Travels	mm	780 x 700 x 500 mm		900 x 900 x 500 mm	
Rapid feedrates	m/min	50			
Acceleration on axes	m/s <sup>2</sup>	5			
<b>Structure</b>		Table on a 55° plane		Table on a 45° plane	
<b>Rotating axes A/C (On table)</b>		A axis Tilting	C axis Rotation	A axis Tilting	C axis Rotation
Angle		-30° / +180°	360°	-45° / +180°	360°
Working positioning (Angle spindle axis / Table)		Horizontal position = 0° Vertical position = 90° Inclined = -20°		Horizontal position = 0° Vertical position = 90°	
<b>Table</b>					
Area	mm	Ø 500		Ø 630	
Admissible load on table	kg	250		500 (750 kg if reducing feedrates and accelerations)	
Rotating speeds	rpm	50	50	40	90
<b>Accuracies</b>					
Uncertainty : P		Linear axes X – Y – Z : 4 µm – Rotating axes A – C : 7,2 sec			
Repeatability : Ps medium		Linear axes X – Y – Z : 2 µ – Rotating axes A – C : 3,6 sec			
<b>Spindle</b>					
Rotating speed	rpm	24.000			
Tool taper		HSK 63-A			
Power – Torque (S1 / S6)	kW - Nm	20 / 25 – 32 / 40			
Characteristic speed	rpm	6.000			
<b>Tool magazine</b>		K3X 8 Five		K2X 10 Five	
Pockets qty		20		30	
Tool taper		HSK 63-A		HSK 63-A	
Tool dimensions : Length – Diameter – Weight	mm - Ø mm - kg	250 - 90 - 8		300 - 90 - 8	
<b>Coolant</b>					
Flow – Pressure	l/min – bar	30 – 3			
Tank	Litres	230			



## Alternatives

Spindles		16.000 rpm	42.000 rpm
Rotating speed	rpm	16.000	42.000
Tool taper		HSK 63-A	HSK 40-E
Power – Torque (S1 / S6)	kW	22 / 36 – 60 / 98	10 / 12 – 6,54 / 9
Characteristic speed	rpm	3.500	15.000

Rotating axis C – Palletized table			
Table area	mm	Ø 500	Ø 630
Admissible load on table	kg	250	500
Rotating speed	rpm	A, C : 50	A-40, C-90

Tool magazines					
Pockets qty		30	40	60	100
Tool taper		HSK 63-A	HSK 63-A	HSK 63-A	HSK 63-A
Tool dimensions :					
Length (8 Five / 10 Five) – Diameter – Weight	mm / Ø mm / kg	250/300 - 90 - 8	250/300 - 90 - 8	250/300 - 90 - 8	250/300 - 90 - 8

## Equipment as Options

- Palletization device
- Air blast
- Oil extraction system
- Air conditioning of electrical cabinet
- Micro spraying coolant
- Part probe
- Graphit dust removal system
- Sigh glass
- High pressure coolant 50 bar
- Tool probe
- Pressurization of measuring scales
- Oil separator

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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