JYOTI

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KX / K2X Series

3-Axis Bridge Type Vertical Machining Center with High Performance

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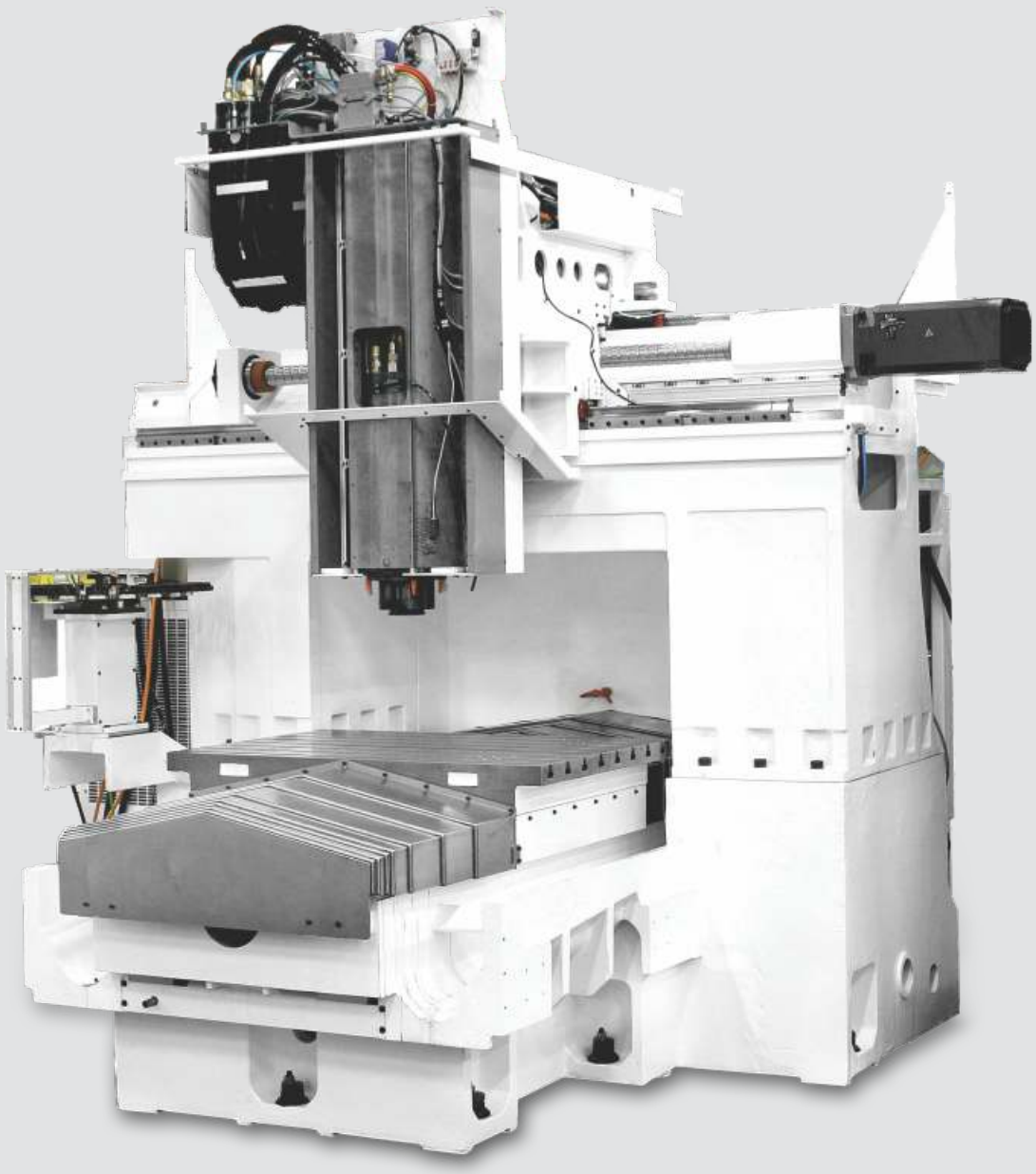
Powerful, Rapid, Accurate

3-Axis Portal High Performance
Machining Center

The machining centers, JYOTI HURON KX and K2X, enable machining operations in 3 axes, from roughing to finishing, of all kind of complex work pieces such as injection molds, forging dies, punching dies, cutting tools, aeronautic jobs or pieces for mechanics. These vertical machining centers are projected to be at the highest level in its category. Combination between dynamic and accuracy allows to obtain very high quality surfacing

- 3 axes machining for work piece up to 2500 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 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 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
- On K2X, linear guideways on all axes allowing high feedrates
- On KX, guiding on Z axis is done by friction with Turcite coating
- 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 rate
- Spindle vibration monitoring allowing a very high level of harmonic stability

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 a safety of the machine, the operator and environment
- Very large accessibility from the top and the side thanks to a very big opening of the doors allowing loading of work piece with crane
- Operator panel

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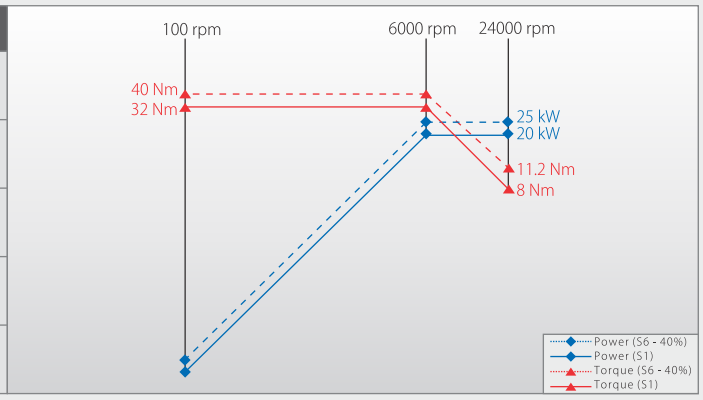
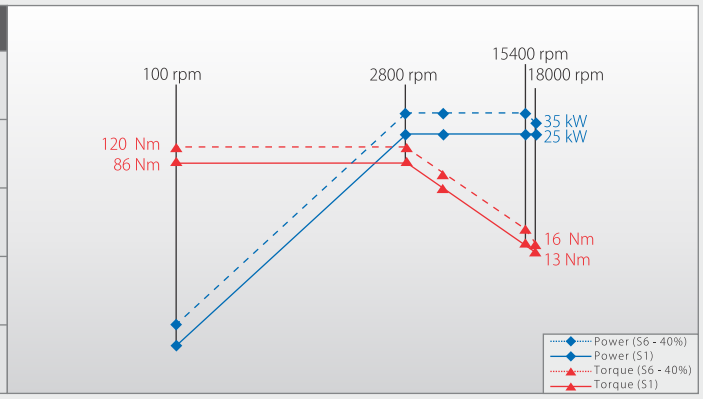
Electro Spindle

	K2X 8
Taper	HSK 63-A
Rotating Speed	100 - 24000 rpm
Power (S6-40% / S1)	25 kW / 20 kW
Torque (S6-40% / S1)	40 Nm / 32 Nm
Characteristic Speed	6000 rpm



	KX 10 / KX 30 / K2X 10 / K2X 20
Taper	HSK 63-A
Rotating speed	100 - 18000 rpm
Power (S6-40% / S1)	35 kW / 25 kW
Torque (S6-40% / S1)	120 Nm / 86 Nm
Characteristic Speed	2800 rpm



Equipment
▪ Air wall for spindle protection
▪ Control captor for angular positioning of the spindle
▪ Electro spindle cooling system
▪ Mechanical clamping with spring rings
▪ Tool unclamping with hydraulic control
▪ Air/Oil greasing of bearings
▪ Taper cleaning by compressed air

Tool Changer

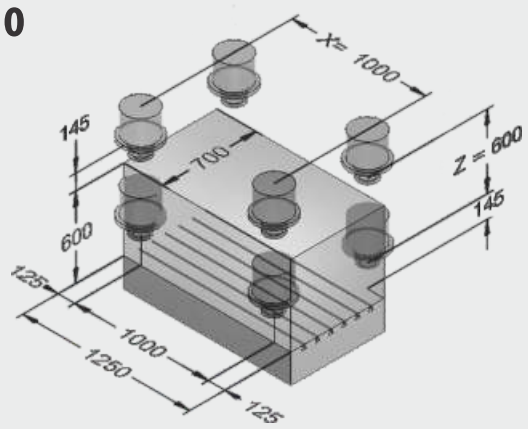
	K2X 8	KX 10 / KX 30 / K2X 10 / K2X 20
Pockets Qty.	20	20
Type	Disk	Disk
Tool Taper	HSK 63-A	HSK 63-A
Tool Dimensions :		
Max. Ø Contiguous / Non Contiguous	90 mm	90 mm
Max. Length	300 mm	300 mm
Max. Weight	8 kg	5 kg
Max. Weight Admissible in Magazine	80 kg	50 kg
Tool Changing Time :		
Tool to Tool	5 sec	5 sec
Chip to Chip	11.5 sec	9 sec

The Table

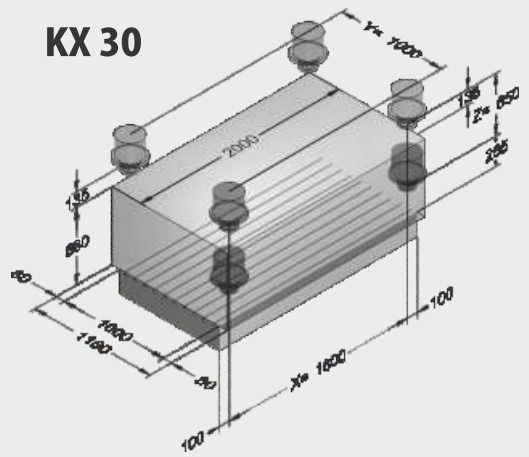
	KX 10	KX 30
Table Area (L X W)	1250 x 700 mm	2000 x 1000 mm
Admissible Load	1500 kg	2500 kg
Slots		
▪ Qty.	6	10
▪ Width Reference Slot	18 H7	18 H7
▪ Width Other Slots	18H12	18H12
▪ Distance Between Slots	100	100

Distances and Positioning Table/Head

KX 10



KX 30

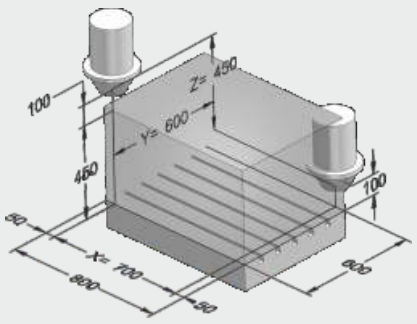


All dimensions in mm

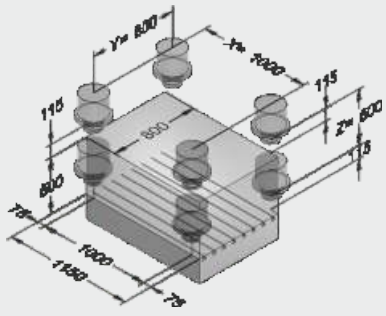
	K2X 8	K2X 10	K2X 20
Table Area (L X W)	800 x 600 mm	1150 x 800 mm	1400 x 1000 mm
Admissible Load	500 kg	1000 kg	2000 kg
Slots			
▪ Qty.	5	8	7
▪ Width Reference Slot	18 H7	18 H7	18 H7
▪ Width Other Slots	18H12	18H12	18H12
▪ Distance Between Slots	100	100	125

Distances and Positioning Table/Head

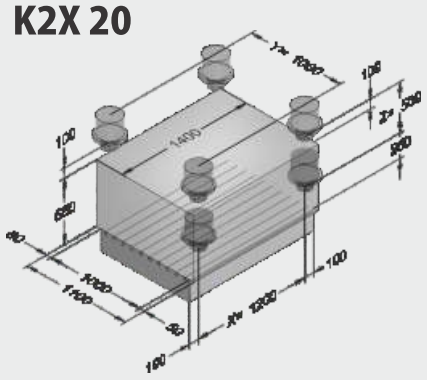
K2X 8



K2X 10



K2X 20



All dimensions in mm

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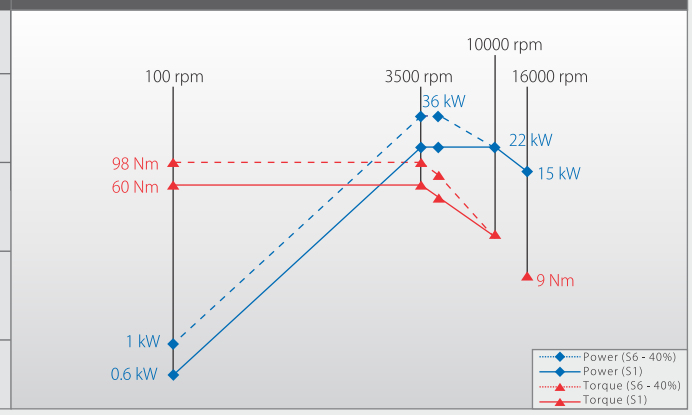
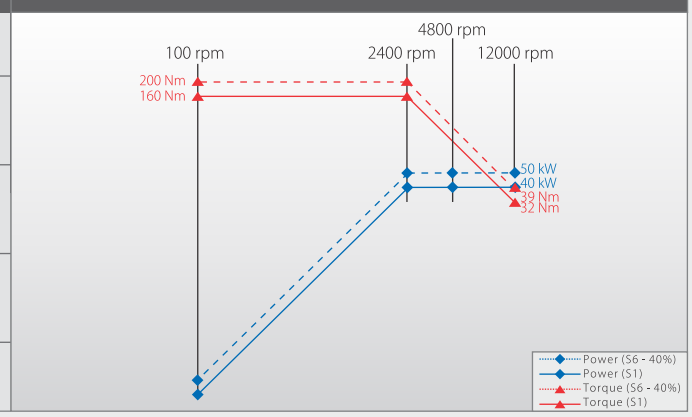
Alternative Tool Changers

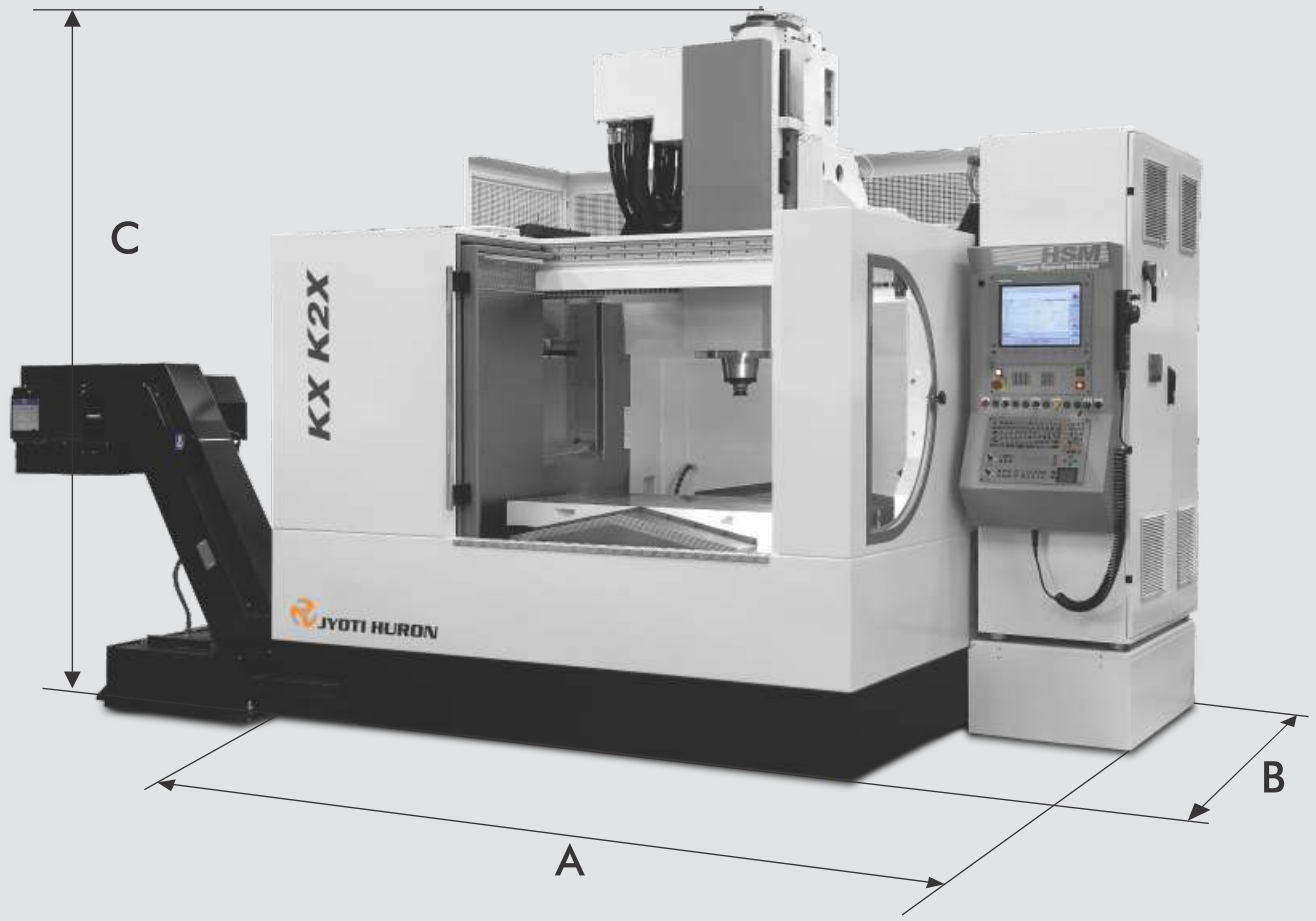
	K2X 8 / K2X 10 / K2X 20 / KX 30			
Pockets Qty.	30	40	60	100
Type	Pick-Up Chain	Pick-Up Chain with 2 Plates	Pick-Up Chain with 2 Plates	Arm Transfer Bi-Directional Vertical Chain
Tool Taper	HSK 63-A	HSK 63-A	HSK 63-A	HSK 63-A
Tool Dimensions :				
Max. Ø Contiguous / Non Contiguous	90 mm	90 mm	90 mm	90 mm
Max. Length	300 mm	300 mm	300 mm	300 mm
Max. Weight	8 kg	8 kg	8 kg	8 kg
Max. Weight Admissible in Magazine	120 kg	160 kg	240 kg	400 kg
Tool Changing Time :				
Tool to Tool	5 sec	5 sec	5 sec	5 sec
Chip to Chip	8.5 sec	15 sec	15 sec	30 sec

Alternative Electro Spindles

	K2X 8	
Taper	HSK 63-A	
Rotating Speed	16000 rpm	
Power (S6-40% / S1)	36 kW / 22 kW	
Torque (S6-40% / S1)	98 Nm / 60 Nm	
Characteristic Speed	3500 rpm	

	KX 30	
Taper	HSK 100-A	
Rotating Speed	12000 rpm	
Power (S6-40% / S1)	50 kW / 40 kW	
Torque (S6-40% / S1)	200 Nm / 160 Nm	
Characteristic Speed	2400 rpm	

Overall Measurements – Standard Machine



		K2X 8	KX 10	K2X 10	K2X 20	KX 30
A : Length (Length indicated are for machines with Chip Conveyor)	mm	4480	5750	5640	4340	5100
B : Width	mm	2570	2840	3520	5050	6310
C : Height	mm	3060	3030	3400	3560	3160
Weight of the machine	kg	7000	10500	12500	14400	17000

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Technical Features

Linear Axes			K2X 8	K2X 10	K2X 20	KX 10	KX 30
Travels	X	mm	700	1000	1200	1000	1800
	Y	mm	600	800	1000	700	1000
	Z	mm	450	500	500	600	600
Rapid Feedrates		m/min	40	60	X = 50 Y – Z = 60	X – Y = 30 Z = 18	X – Y = 30 Z = 18
Acceleration on Axis		m/s^2	4	6	X = 4 Y – Z = 6	3	3
Table							
Table Area		mm	800 X 600	1150 x 800	1400 x 1000	1250 x 700	2000 x 1000
Admissible Load		kg	500	1000	2000	1500	2500
Distance Spindle Nose / Table Area		mm	100 / 550	115 / 615	250 / 750	145 / 745	250 / 840
Accuracies on Linear Axes							
Uncertainty P		µm	4	4	5	7	X = 9 Y – Z = 7
Repeatability : Ps medium		µm	2	2	3	5	5
Spindle							
Rotating Speed		rpm	24000	18000			
Taper			HSK 63A	HSK 63A			
Power–Torque (S6-40% / S1)		kW - Nm	25/20 - 40/32	35/25 – 130/86			
Characteristic Speed		rpm	6000	2800			
Tools Magazine							
Pockets Qty.			20	20			
Taper			HSK 63A	HSK 63A			
Tool Dimension : Length – Diameter – Weight		mm - Ø mm - kg	300 – 90 - 8	300 – 90 - 5			
Coolant							
Flow – Pressure		l/min – bar	30 – 3	30 – 3	30 – 3	30 – 3	30 – 3
Tank		Litres	230	250	330	150	600

Alternatives

Spindles		KX 30	K2X 8
Rotating Speed	rpm	12000	16000
Taper		HSK 100A	HSK 63A
Power – Torque (S6-40% / S1)	kW - Nm	50 /40 – 200 / 160	36 / 22 – 98 / 60
Characteristic Speed	rpm	2400	3500

Tools Magazine		K2X 8 / K2X 10 / K2X 20 / KX 30			
Pockets Qty.		30	40	60	100
Taper		HSK 63A	HSK 63A	HSK 63A	HSK 63A
Tool Dimension : Length – Diameter – Weight	mm - Ø mm - kg	300 - 90 - 8	300 - 90 - 8	300 - 90 - 8	300 - 90 - 8

Equipment as Options

- Micro Spraying Coolant
- High Pressure Coolant 50 Bar
- Air Blast
- Component Probe
- Tool Probe
- 4th Axis Dividing Plate
- Oil Extraction System
- Graphit Extraction System
- Pressurization of Measuring Scales
- Air Conditioning of Electrical Cabinet
- Sight Glass
- Oil Separator

Note : • All above information is 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 shown in the catalogue.

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2014-12 - KX/ K2X / K-1 / radiant - 079-26582434/54