



# EX Series

**Moving Column Versatile  
Vertical Machining Centers**

**Performance  
Technology  
Power  
Accuracy**





# EX Series

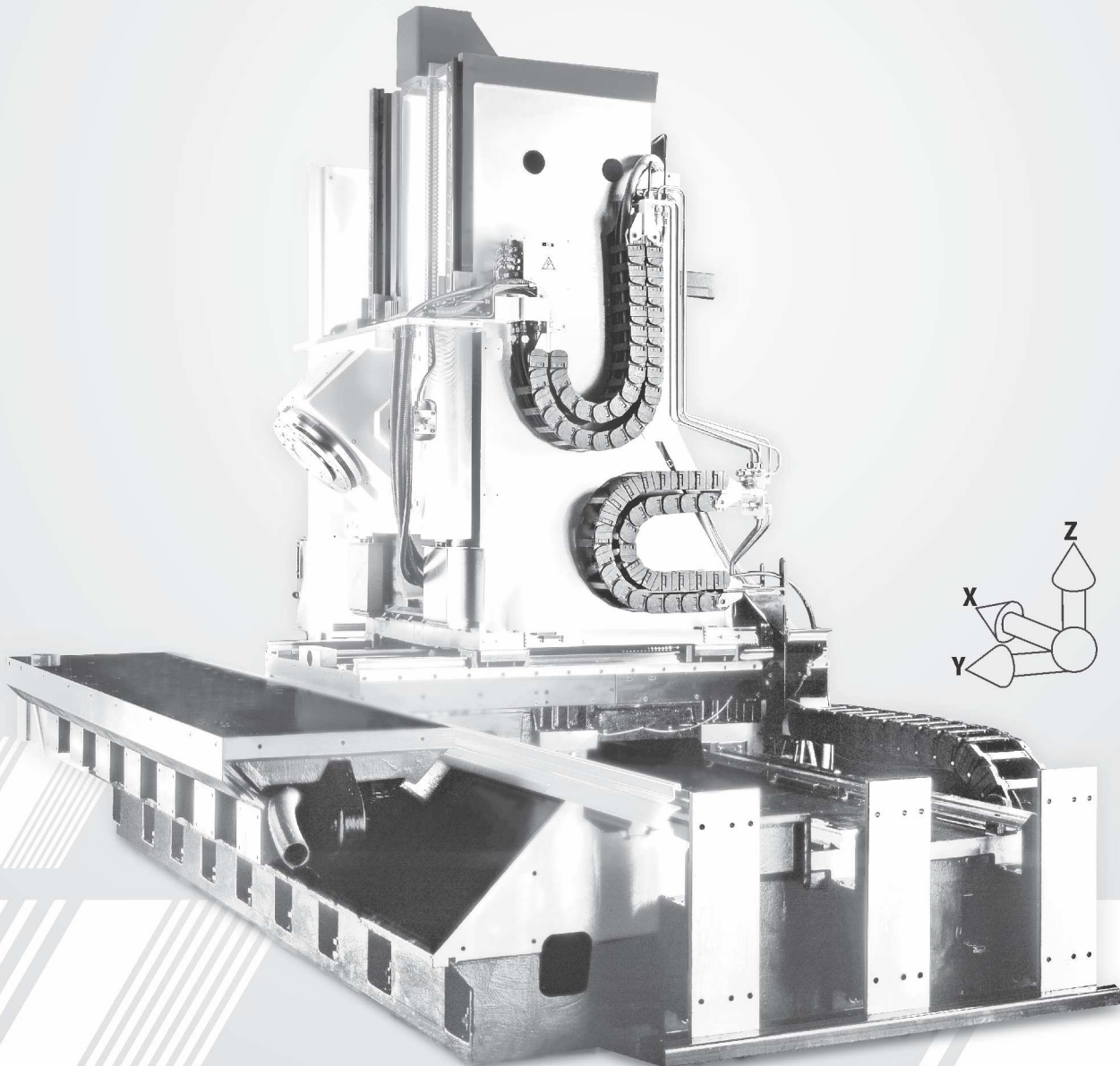
## Overview

Machine tool performance and versatility contribute to the competitiveness of manufacturing companies. EX Series machines possess versatility and capacity to carry out the maximum range of jobs within the working envelope with very high precision of dynamic positioning and total mechanical and thermal stability of the structural parts.

These machines are capable of machining work pieces with complex shapes along 3, 4 and 5 axes in light weight or hard materials meeting high demand requirements of mechanical manufacturing sectors having applications from smaller complex parts till bigger parts such as that of allied/aviation industries. Structurally having a very rigid architecture, equipped with linear guides EX Series has moving column with fixed table having an option of rotating table.

On a very rigid architecture, the milling center EX is equipped with linear guides and transducers and a high speed high power spindle. The different kinds of head provides versatility and ease of use. The milling center EX is perfectly adapted to a wide range of applications, for machining prototype work or small or medium sized batches.

- High speed machining with very high metal removal rates
- Versatility and capacity to carry out the maximum range of jobs within the working envelope
- Very high precision of dynamic positioning and total mechanical and thermal stability of the structural parts.





## Structure : Rigidity and Accuracy

- Moving column structure in Y & X-Axis, with fixed bed and fixed table. A saddle supporting milling spindle head moving in Z-Axis
- Structure made of cast iron with a high mechanical performance which maximises structure rigidity and allows optimum harmonic stability and maximum damping during demanding cutting conditions
- Machine is placed on foundation with weight equally distributed over fixing points enabling extreme rigidity and very high geometrical stability
- Modular design allows maximum flexibility in machine configuration to adapt to the technical requirements of the customer

## Linear Axes

- Linear motion guideways (roller type) in all 3-axes with rapid traverse rate up to 30 m/min.
- 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

## Working Table

Wide machine table is within the base casting making it fixed type enabling it to have higher load carrying capacity. Machine can receive a rotary table as an option.

## Spindle

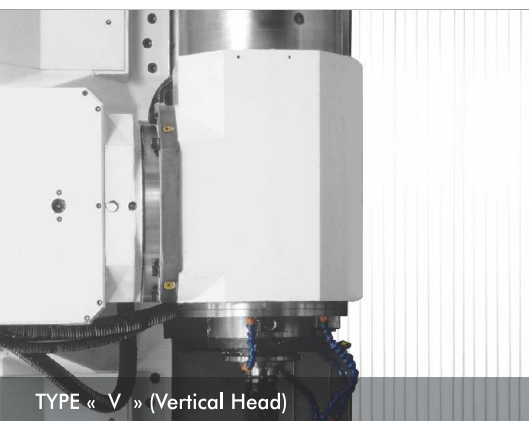
- EX Series machines are equipped with high torque heads for high metal removal rates.
- Spindle is mounted on moving column which covers better table area for different application requirements.
- Being modular construction design EX Series machine can be equipped with various kind of heads to match different demanding applications of 3, 4 & 5 -axes.

## Automatic Tool Changer

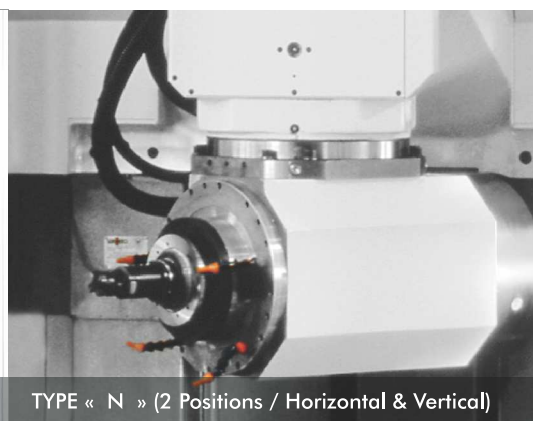
- Tools drum type ATC for feasibility of tool changing.
- Options available with different taper as per application requirement with relative heads.

## 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 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



TYPE « V » (Vertical Head)



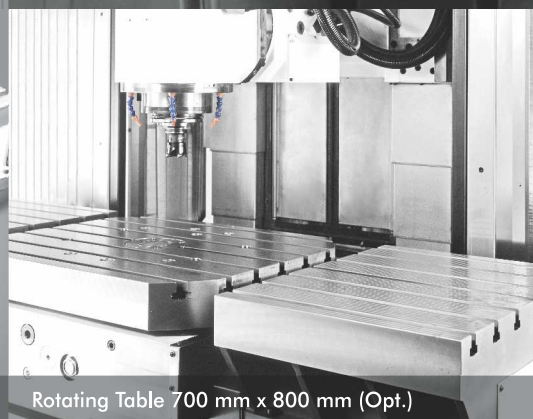
TYPE « N » (2 Positions / Horizontal & Vertical)



TYPE « P » (Continuous Servo Axis for 5 Axes machining)



Fixed table



Rotating Table 700 mm x 800 mm (Opt.)



Tool magazine - Drum Type



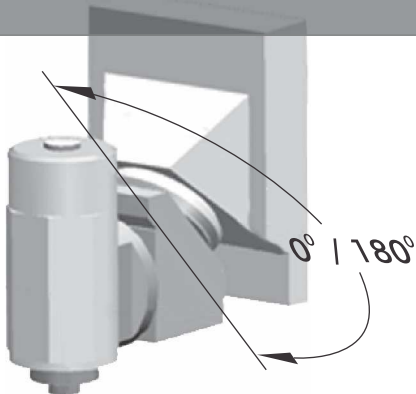


# EX Series

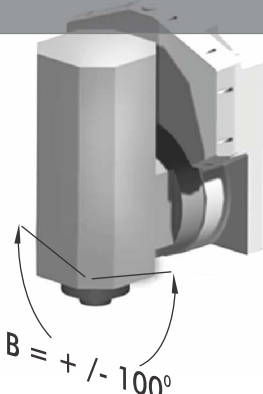
## Possible Option

### « N » & « P » heads

Rotating axes - « N » Head	
<ul style="list-style-type: none"> <li>- 2- positions only on axis</li> <li>- Horizontal</li> <li>- Vertical</li> <li>- Rotation of position on 45° plane</li> <li>- High torque motor for better material removal</li> </ul>	
Angle of rotation for position	0° / 180°



Rotating axes - « P » head	
<ul style="list-style-type: none"> <li>- Resolution = 0,001°</li> <li>- Measure on axis through absolute rotating encoder</li> </ul>	
<b>B axis</b>	
Clearance B axis (rotation / Y axis)	± 100°
Rotation speed	17,5 rpm
Drive torque (S1)	813 Nm
Clamping torque	6.000 Nm at 120 bar
Uncertainty (P)	6 sec
Repeatability (Ps medium)	8 sec
Reversal (U medium)	4 sec



### Automatic tool changer options

- 36 Tool chain Type ATC with ISO 40 taper for feasibility of tool changing for « V » head
- 60 tools ATC with HSK 63A taper for « V » head (Option)
- 36 tools chain type ATC with HSK 63A taper for « N » & « P » type head

### Rotary table options

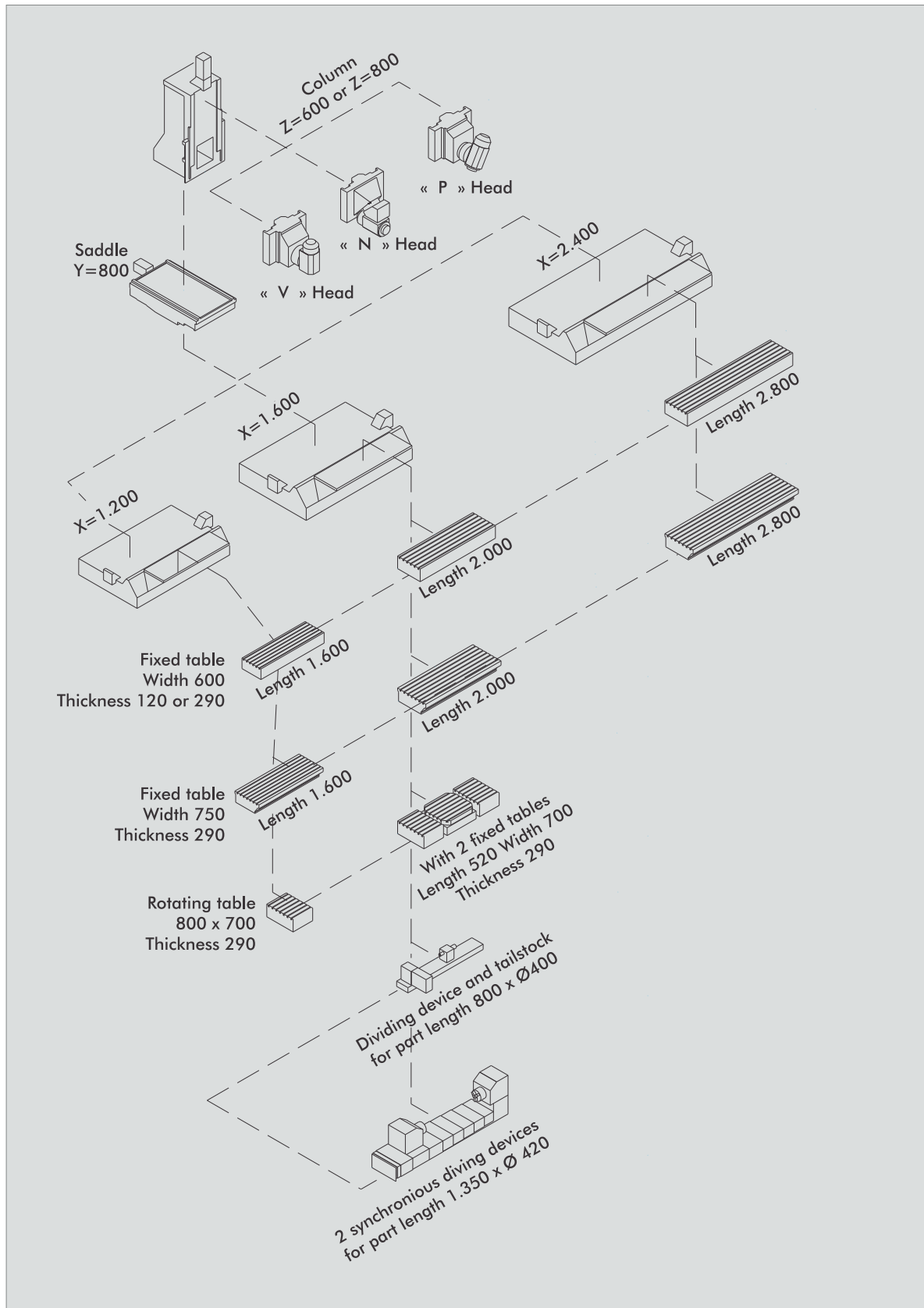
- Horizontal type rotary table can be incorporated within base to cope up with relative applications
- Different size separate rotary tables from small to big size diameter can be mounted on fixed table thanks to wide machine working area



Rotary Table Options



## Modular Construction - Choose Your Options



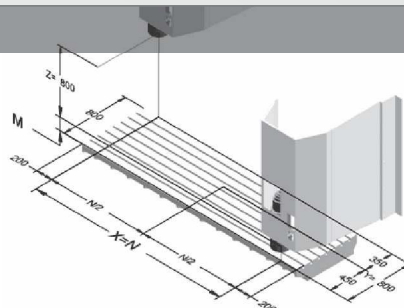
All dimensions in mm



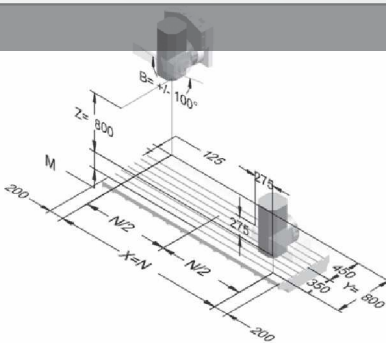
# EX Series

## Machine working interface diagram

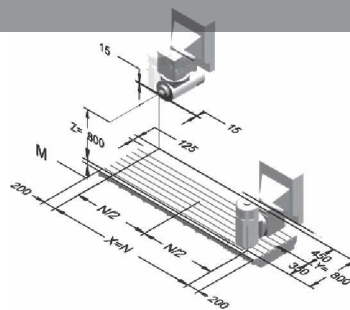
Fixed table – « V » head	
<b>Distance Spindle / Table</b>	
<b>Table</b>	<b>M</b>
Width 800 x Height 200 mm	150 mm
<b>X travel</b>	<b>N</b>
EXV 10	1.200 mm
EXV 20	1.600 mm
EXV 30	2.400 mm



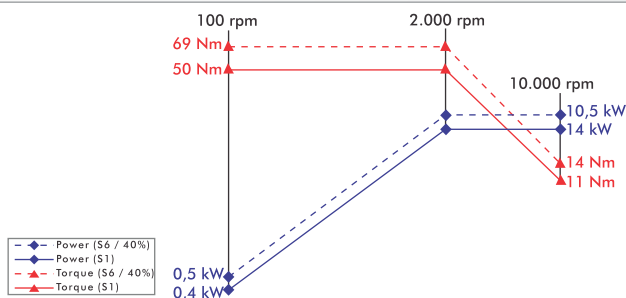
Fixed table – « P » head	
<b>Distance Spindle / Table</b>	
<b>Table</b>	<b>M</b>
Width 600 x Height 120 mm	230 mm
Width 750 x Height 290 mm	60 mm
<b>X travel</b>	<b>N</b>
EXP 10	1.200 mm
EXP 20	1.600 mm
EXP 30	2.400 mm



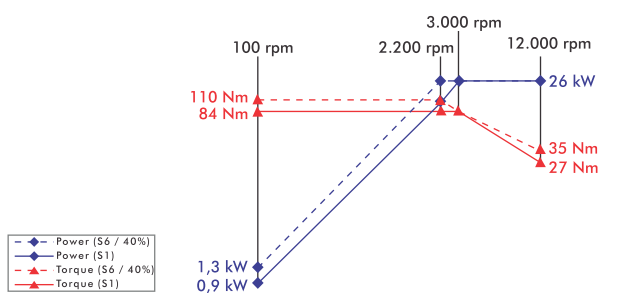
Fixed table – « N » head	
<b>Distance Spindle / Table</b>	
<b>Table</b>	<b>M</b>
Width 600 x Height 120 mm	230 mm
Width 750 x Height 290 mm	60 mm
<b>X Stroke</b>	<b>N</b>
EXN 10	1.200 mm
EXN 20	1.600 mm
EXN 30	2.400 mm



Spindle 10.000 rpm ( « V » Head)	
<b>Tool taper</b>	<b>ISO 40</b>
<b>Rotation speed</b>	<b>100 - 10.000 rpm</b>
<b>Spindle motor (S6 / S1)</b>	<b>14,5 – 10,5 kW</b>
<b>Spindle torque (S6 / S1)</b>	<b>69 – 50 Nm</b>
<b>Characteristic speed</b>	<b>2.000 rpm</b>

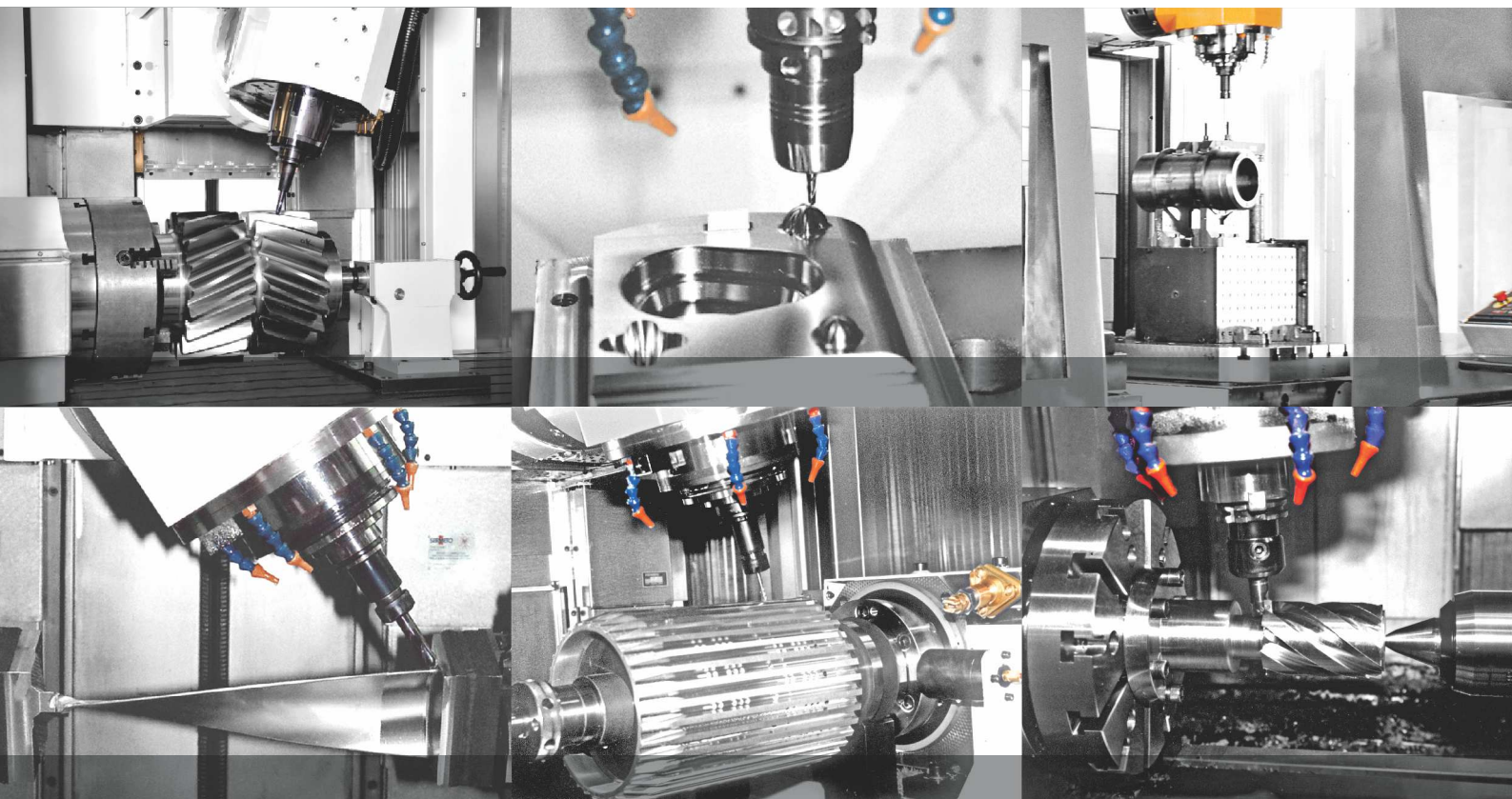
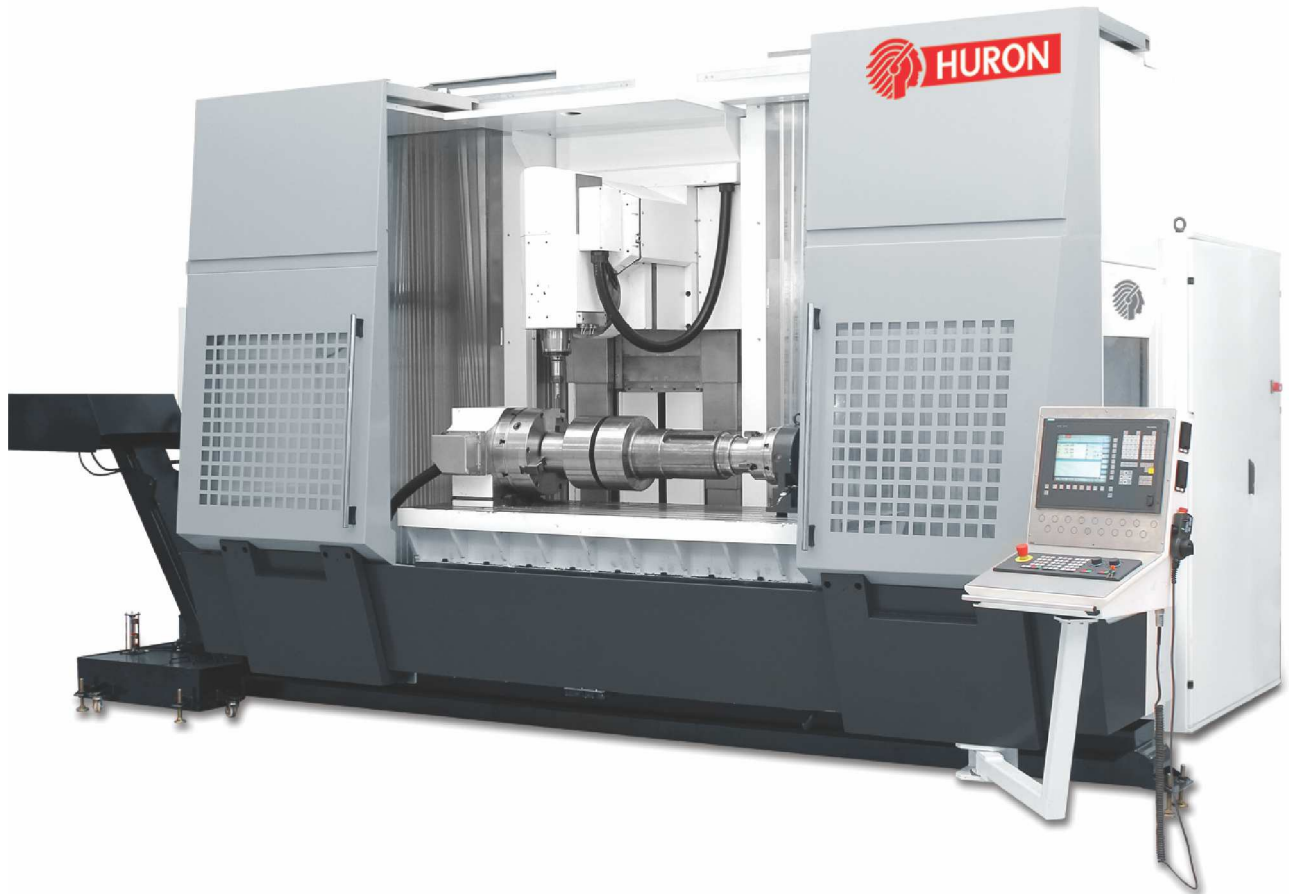


Electrospindle 12.000 rpm ( « N » & « P » Head)	
<b>Tool taper</b>	<b>HSK 63-A</b>
<b>Rotation speed</b>	<b>100 - 12.000 rpm</b>
<b>Spindle motor (S6 / S1)</b>	<b>26 – 26 kW</b>
<b>Spindle torque (S6 / S1)</b>	<b>110 – 84 Nm</b>
<b>Characteristic speed</b>	<b>2.200 rpm</b>





## Wide Range of Applications





# Technical Specifications

ISO : 9001



		EX 10	EX 20	EX 30			
<b>Linear axes</b>							
X axis travel	mm	1.200	1.600	2.400			
Y axis travel	mm	800	800	800			
Z axis travel	mm	800	800	800			
Dist. From spindle face to table top	mm	150 - 950	150 - 950	150 - 950			
Rapid feedrate	m/min	30	30	30			
Cutting feedrate	m/min	10	10	10			
		EXV 10	EXN/P 10	EXV 20	EXN/P 20	EXV 30	EXN/P 30
Table area	mm	1.600 x 800	1.600 x 750	2.000 x 800	2.000 x 750	2.800 x 800	2.800 x 750
Thickness	mm	200	120	200	120	200	120
Max. load on table	kg	2.500		3.500		4.500	
T-Slot dimension	mm	7 x 18 x 12		7 x 18 x 12		7 x 18 x 12	
Dist. From floor to table	mm	1.000/920		1.000/920		1.000/920	
		EX with "V" Head		EX with "N" or "P" Head			
Spindle speed	rpm	10.000		12.000			
Spindle torque (S6/S1)	kW	14,5/10,5		26/26			
Spindle power (S6/S1)	Nm	69/50		110/84			
Spindle nose		ISO 40		HSK 63A			
<b>Automatic tool changer</b>							
Qty of pockets		36					
Max. tool dia. (not adjacent)	mm	100					
Max. tool length	mm	300					
Max. tool weight	kg	10					
<b>Accuracy</b>							
<b>Without glass scale</b>		EXV 10	EXV 20	EXV 30			
Positioning Uncertainty (P)	mm	0,02	0,02	0,02			
Repeatability (Ps medium)	mm	0,008	0,008	0,008			
<b>With glass scale</b>		EXN/P 10	EXN/P 20	EXN/P 30			
Positioning Uncertainty (P)	mm	0,01	0,01	0,01			
Repeatability (Ps medium)	mm	0,006	0,006	0,006			
<b>Other Datas</b>							
Weight	kg	17.000	18.000	18.000			
Dimensions :	Length	mm	6.085	6.445	6.445		
	Width	mm	5.460	5.460	5.460		
	Height	mm	3.600	3.600	3.600		

## Standard Features

- AC spindle drive
- AC servo axis drive
- Roller type Guideways
- Auto & Manual coolant system
- Centralized & Programmable lubrication
- Laser calibrated axis for high precise positioning accuracy and repeatability
- Chip conveyor

## Optional equipments

- Spindle speeds 6.000 / 12.000 / 14.000 / 18.000 rpm
- Gearbox with Vertical Head « V »
- 60 tools ATC
- Linear glass scale
- Probes (Tool / Workpiece)
- Flood coolant system
- Coolant through Spindle
- Rotary table
- 4th & 5th axis option

Note : All above informations are subject to change arising out of continuous product improvement. The standard description, accessories and technical datas conforms to our pricelists, not to the photo of machines shown in the catalogue.



Jyoti Group



www.jyoti.co.in

**FRANCE : HURON GRAFFENSTADEN**  
 156, Route de Lyon - BP 30030  
 67401 Strasbourg-IIIkirch Cedex  
 Tel +33 (0)3 88 67 52 52  
 Fax +33 (0)3 88 67 69 00  
 www.huron.eu / commercial@huron.fr

**CANADA : HURON CANADA**  
 408 Isabey  
 St-Laurent, Québec H4T 1V3  
 Tel +1 514 44 84 873  
 Fax +1 514 44 84 875  
 www.huron.fr / infocanada@huron.fr

**GERMANY : HURON FRÄSMASCHINEN**  
 Siemensstrasse 56 - 70839 Gerlingen  
 Tel +49 (0)7156 92836 12  
 Fax +49 (0)7156 92836 50  
 www.huron.de / verkauf@huron.de