HURON
CRÉATEUR DE MACHINES-OUTILS

HMC Series

High Dynamic Horizontal Machining Centers

Performance
Technology
Power
Accuracy

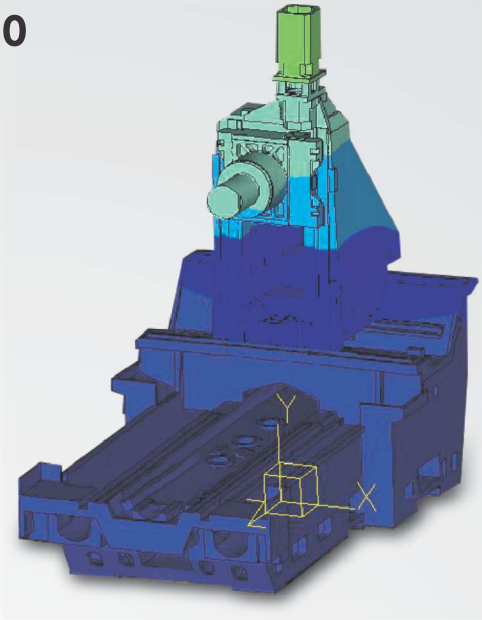
HMC Series

Overview

The company has developed high speed, high precision 4 axis horizontal machining centers with worlds best available features to match the demanding requirement of the industry.

These machines have very special standard features like Three Point Levelling, B-axis rotary table and electrospindle. These machines can easily perform variety of operations starting from heavy roughing to precision finishing work using different types of tools starting from the heavy milling cutters to the small drills and taps.

HMC 450



Rigid and Stable Structure

The machine base and column are made of 60 grade SG iron casting to provide very good rigidity and geometrical accuracy.

The machine is having a totally balanced and stable construction with optimum design features that makes vibration free and high speed cutting possible.

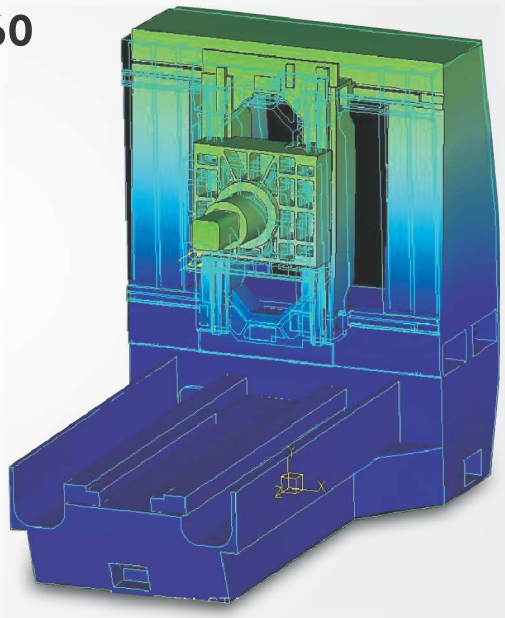
In HMC 560, column is fixed and saddle is traveling to provide rigidity and excellent balance while machining operations are performed in all positions of X and Y axis.

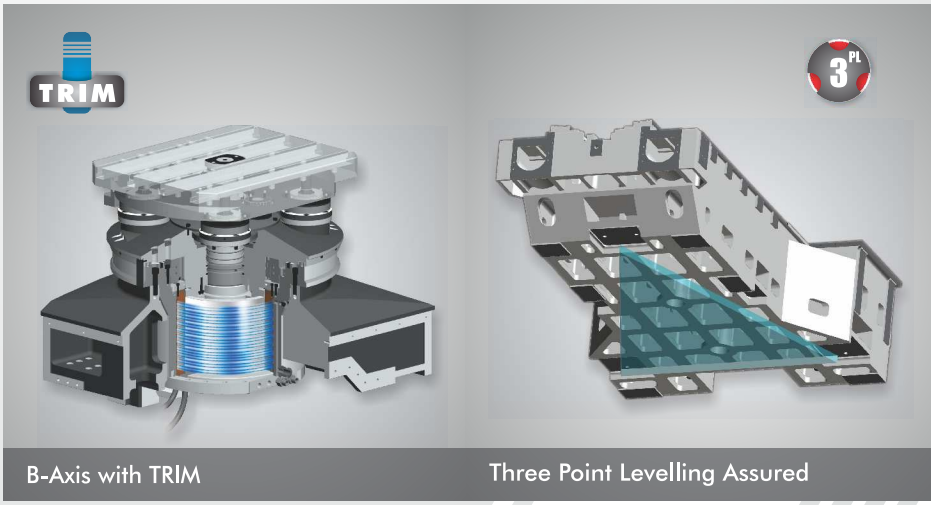
The X-axis is driven by two ball screw drives with motors synchronized in master slave configuration, thus the center of gravity of the moving mass will remain always within the driving points of the slide. X Slide is a cross ribbed structure which forms rigid support to Y Slide.

Three Point Levelling assured :

HMCs could be easily installed and leveled with the help of three point leveling, an important feature of this machine. This feature also eases the operation of moving and transferring the machine one location to other.

HMC 560





B-Axis with TRIM

Three Point Levelling Assured

Electrospindle

HMCs are having a high speed electrospindle for maximum cutting performance. Spindle is supported with a set of four ceramic angular contact bearings in the front and two angular contact bearings at the rear side. This arrangement provides high axial and radial rigidity to support variety of machining tasks. The spindle has ISO 50 / ISO 40 tool interface taper. The thermal stability of the spindle is maintained by using a special temperature controlled liquid chiller.

Automatic Tool Changer

Auto Tool Changer is having 40 pockets magazine as standard for these machines. This is a chain type magazine with twin arm type Auto Tool Changer. Tool change time is 3,5 seconds and chip to chip time is 6,5 seconds for HMC 560.

ATC with 60 / 120 pockets are also available as an option.

Operator Panel

The newly designed Easy-to-Operate operator panel of the machine is made considering the reliability and the operator friendliness.

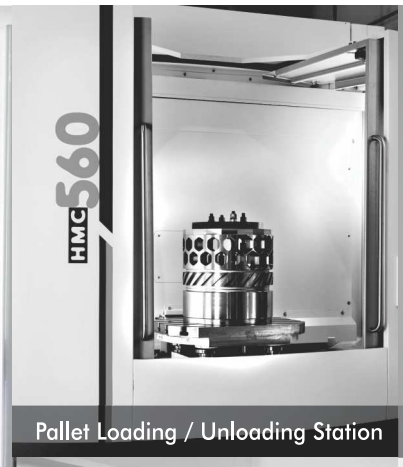
B-Axis with TRIM

Table with Rotary Integral Motor, new TRIMMED concept is the unique feature of HMCs which gives an axis resolution of 0,001 deg. With TRIM the B axis has become simple and effective compared to its earlier conventional type drives with worm gears. The concept has trimmed the complexity of mechanical gears into a new direct torque transmission system with an integrated high torque motor directly driving the table.

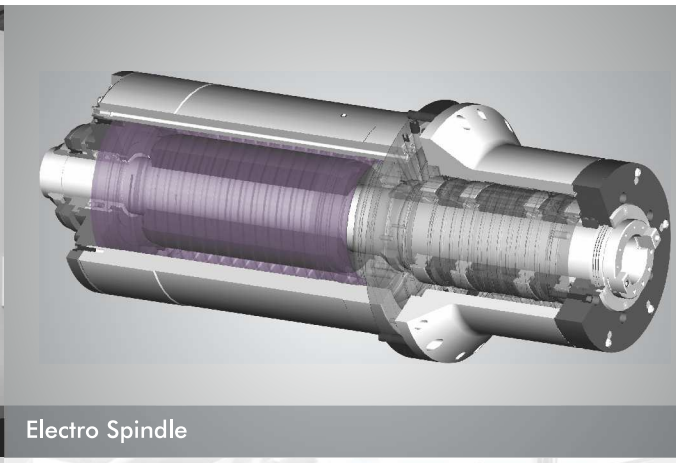
The CNC Controller

The controller is Siemens / Fanuc (Opt.), the best available in the world with its complete user friendly features. With the help of its enhanced look-ahead-facility, the program execution speed could be optimized to its peak. Torque and velocity oriented feed forward control almost eradicates following errors in the program execution and achieves consistently high precision even at fast machining speeds.

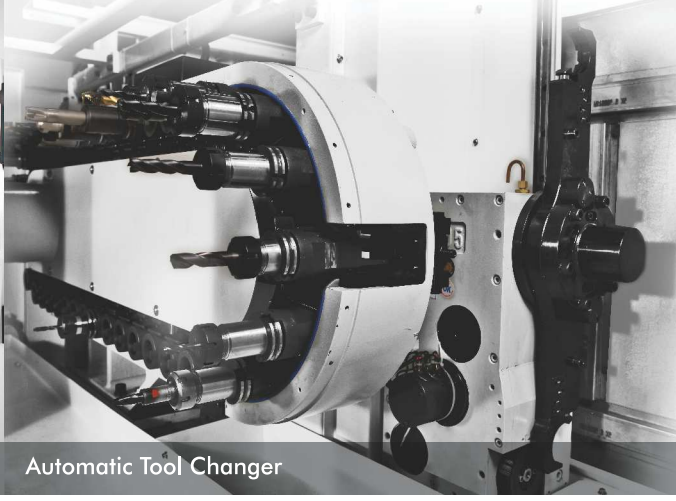

Operator Working Area



Pallet Loading / Unloading Station

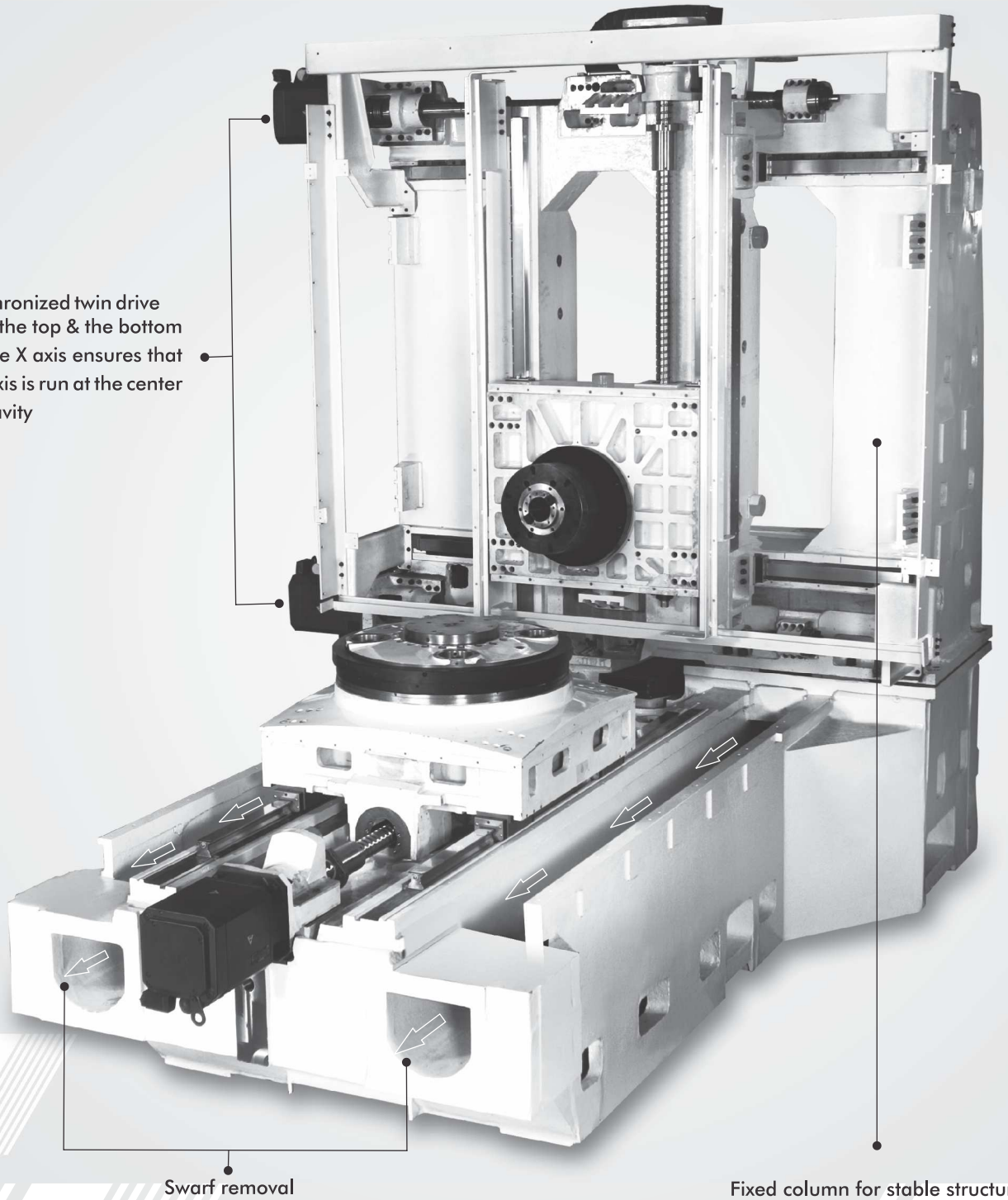

Electro Spindle


Operator Panel

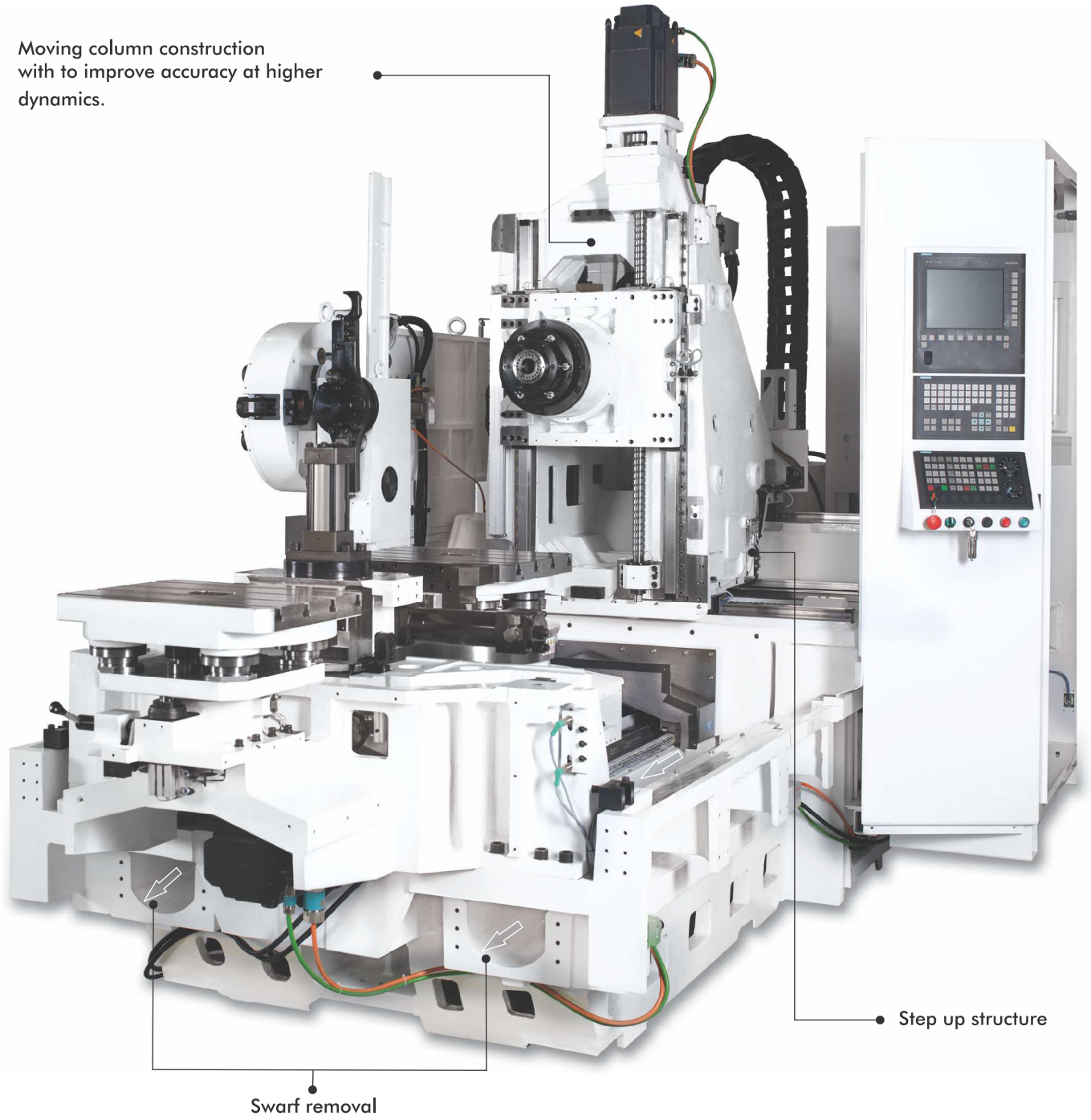

Automatic Tool Changer

HMC Series

A Perfect Structure - HMC 560



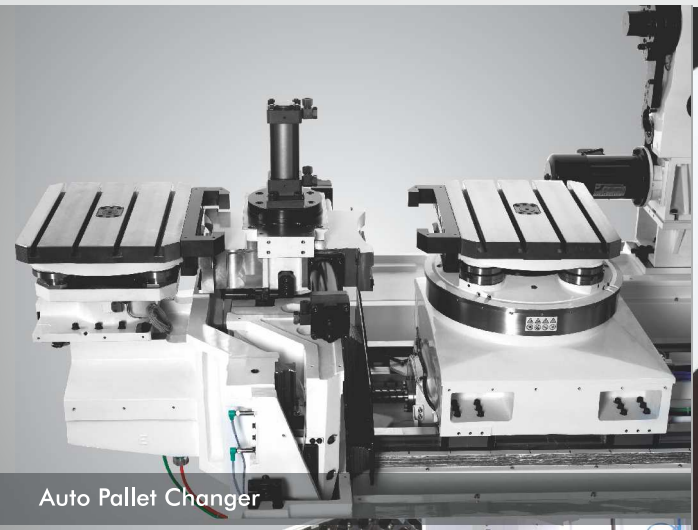
Structure for HMC - 450 / 860 / 1200 / 1600



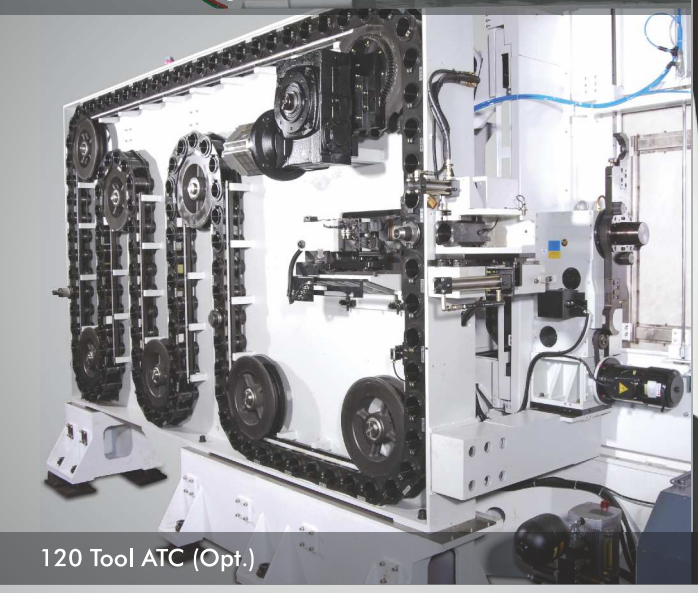
HMC Series

Auto Pallet Changer

Auto Pallet Changer is fast and accurate with hydraulically actuated rotary indexing.



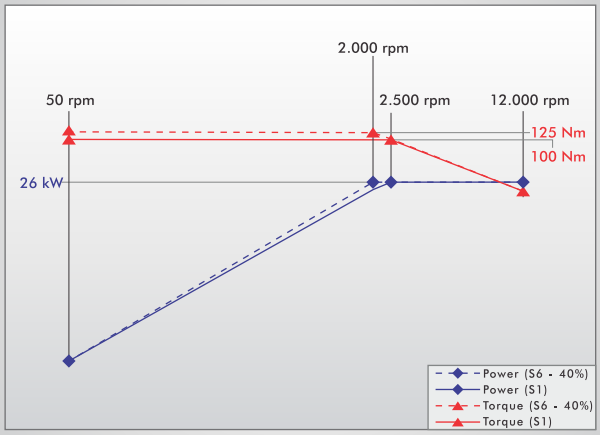
Auto Pallet Changer



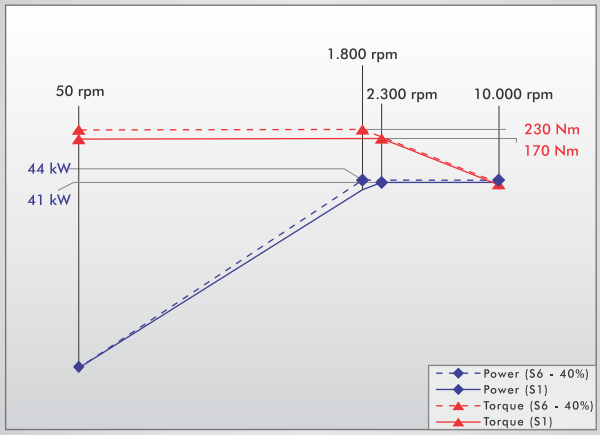
120 Tool ATC (Opt.)

Pallet Loading/Unloading Station

Power / Torque Diagram



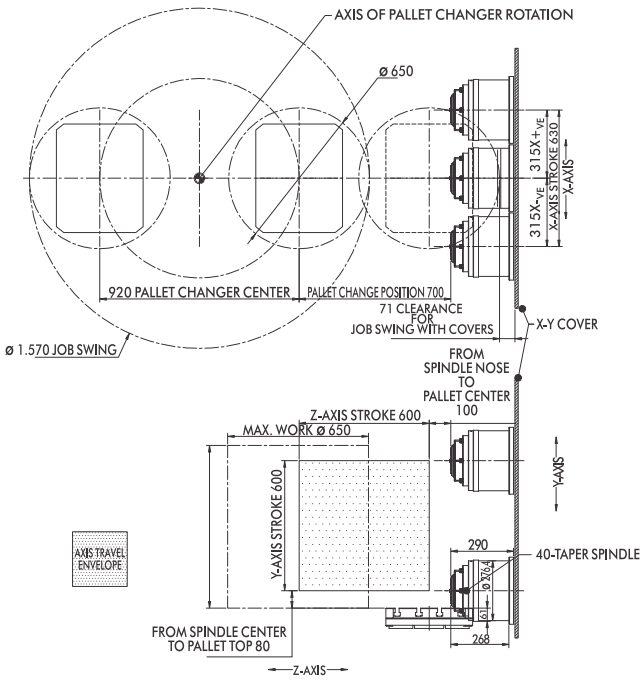
Power / Torque Diagram - HMC 450



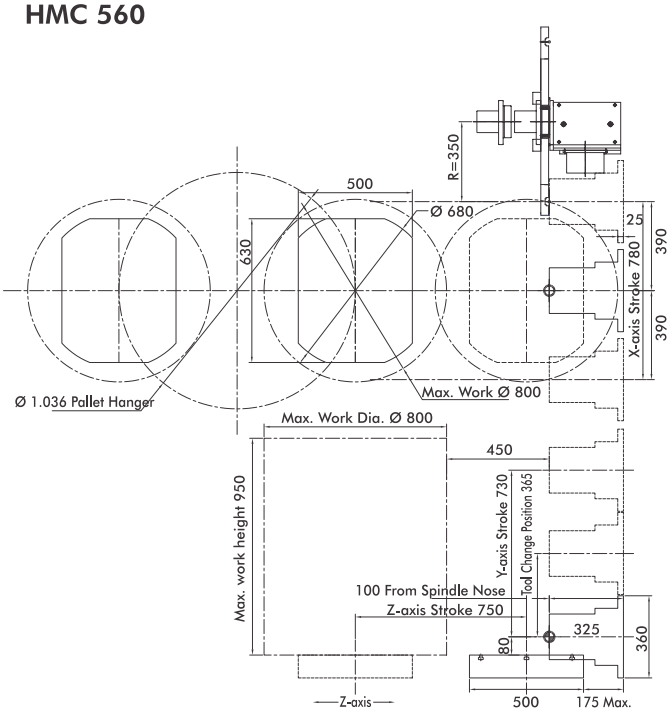
Power / Torque Diagram - HMC 560 / HMC 860 / HMC 1200 / HMC 1600

Machining Interference Diagram

HMC 450

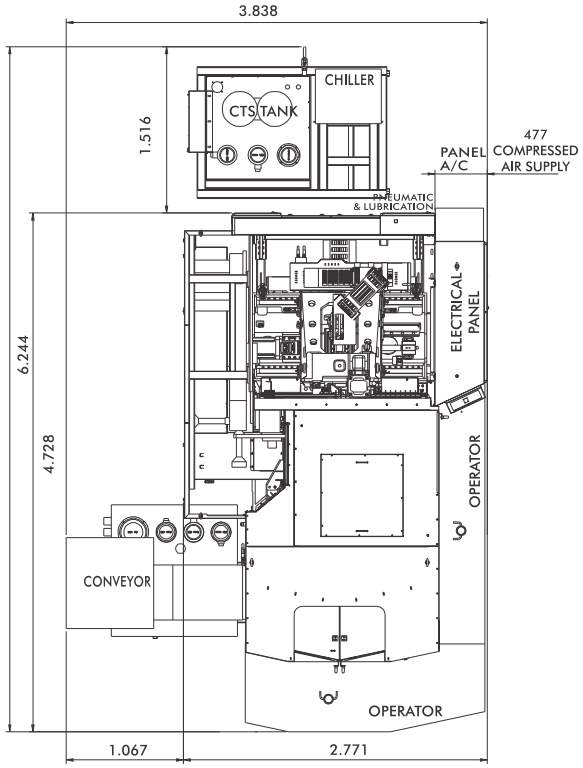


HMC 560



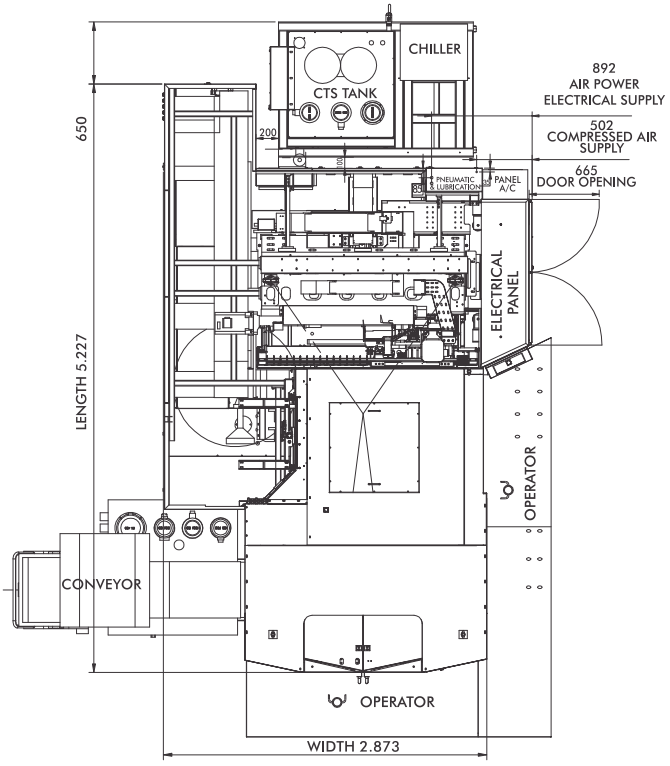
Machine Layout

HMC 450



Max. height : 2.650 mm

HMC 560



Max. height : 3.500 mm

Technical Specifications

ISO : 9001 CE

		HMC 450	HMC 560	HMC 860	HMC 1200	HMC 1600
Travels						
X axis	mm	630	780	1.000	1.200	1.600
Y axis	mm	600	730	900	1.000	1.000
Z axis	mm	600	750	900	1.000	1.200
Distance from pallet surface to spindle center	mm	80-680	80-810	80-980	80-1080	80-1080
Distance from pallet center to spindle nose	mm	100-700	100-850	100-1.000	100-1.100	100-1.300
Auto Pallet Changer						
Pallet size	mm	400 x 500	500 x 630	630 x 800	800 x 1.000	1.000 x 1.200
Maximum workpiece size (dia. x height)	mm	650 x 750	800 x 950	1.000 x 1.100	1.200 x 1.000	1.600 x 1.000
Maximum weight on pallet	kg	400	700	1.100	1.500	2.500
Pallet indexing time	sec	10	10	25	40	40
Spindle						
Spindle speed (Max)	rpm	12.000	10.000	10.000	10.000	10.000
Spindle taper		ISO 40	ISO 50	ISO 50	ISO 50	ISO 50
Spindle power	kW	26	41	41	41	41
Spindle torque	Nm	125	170	170	170	170
Rotary Table						
Minimum table indexing as rotary table	deg.	0,001°	0,001°	0,001°	0,001°	0,001°
Type of drive		Direct Torque Motor	Direct Torque Motor	Direct Torque Motor	Direct Torque Motor	Direct Torque Motor
Max. speed	rpm	80	60	50	50	50
Feedrate						
Rapid traverse	m/min	50	50	20	20	20
Cutting feed	m/min	20	20	10	10	10
Automatic Tool Changer						
Tool storage capacity		40	40	40	40	40
Max. tool diameter with all pockets full	mm	76	125	125	125	125
Max. tool diameter with adjacent pockets empty	mm	127	230	230	230	230
Max. tool length	mm	300	350	350	350	350
Max tool weight	kg	7	15	15	15	15
Tool changing time (tool to tool)	sec	2,25	3,5	3,5	4,5	4,5
Accuracy (VDI/DGQ 3441)						
Positioning uncertainty (P)	mm	0,010	0,010	0,015	0,015	0,015
Repeatability (Ps medium)	mm	0,005	0,005	0,007	0,007	0,007
Other Datas						
Dimensions :						
Length	mm	4.235	3.255	6.500	7.200	7.800
Width	mm	2.775	5.212	3.300	3.500	4.000
Height	mm	2.650	3.500	3.375	3.575	3.500
Machine weight (including NC unit)	kg	12.000	19.000	22.000	28.000	35.000

Standard Features

- AC motorised spindle drive
- AC servo digital drive
- B-axis with directly driven torque motor
- Linear Guideways (roller type)
- Auto & manual coolant system
- Centralised & programmable lubrication
- Laser calibrated axis for highly precise positioning accuracy and repeatability
- Chips Conveyor

Possible Options

- Coolant through spindle
- 60 / 120 pockets ATC
- Additional pallets
- Oil extractor system
- Linear scale feed back
- Probes (Tool & Workpiece)

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

HURON
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