

# U-MILL Series

5-Axis Machining Center

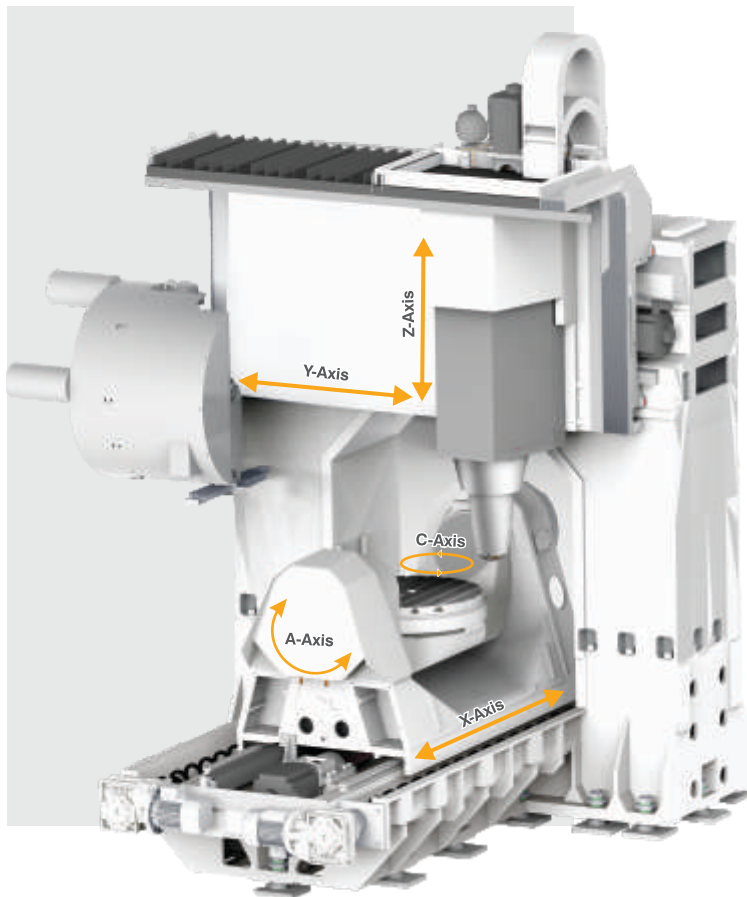


# U-MILL Series

5-Axis Machining Center

## OVERVIEW

U-Mill range is a 5-axis machining center with a portal structure and a swiveling rotary table on cradle to match the demand of greater accuracy and total reliability at higher speed. It's modern design and compact size are optimized to guarantee a minimal footprint without compromising the fundamental characteristics like Performance, Accuracy, Technology and Power of HURON machines. This range is ideally suitable for various sectors such as high precision mechanical parts, automotive, railway, energy, machining of 3D forms or aerospace.



## RIGID STRUCTURE

- Special unique symmetrically designed Structure with fixed portal in heavily ribbed cast iron with stiffness walls, balancing torsional stresses, assuring geometric stability.
- Cast iron with a high mechanical performance offers maximum 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 structural stability.
- Modular design allows maximum flexibility in machine configurations to adapt to the technical requirements of the customer.



## PRECISION LINEAR AXIS

- Recalculating precision class preloaded ball screws assuring long time accuracy. Preloaded bearings to remove inversion backlash and axial stress on ball screws.
- Roller Type L.M. guideways on the all linear axis permits high rapid rate upto **40 m/min.** and excellent stability in dynamic working condition.
- Automatic grease lubrication of ballscrews and bearings minimizing the pollution of coolant and the consumption.

## SWIVELING ROTARY TABLE

- U-Mill Series is equipped with Swiveling rotary table fixed on cradle and moving along the X-Axis for higher rigidity with heavy load carrying capacity of **600 kg.**
- The table design is ideally suitable for complex 3 & 5-Axis component machining in one setup make the machine versatile in range.
- Direct measurement on each rotating axis with absolute encoder assures greater level of movement synchronization.



## DIRECTLY COUPLED SPINDLE

Specially designed directly coupled **10000 rpm** spindle with motor produces higher torque which allows higher material removal rate. Spindle supported by ceramic roller bearings which transfers appropriate heat and improves the spindle life. Lubrication of bearings with grease which makes maintenance free spindle.

## AUTOMATIC TOOL CHANGER

The auto tool changer is a twin arm type and drum type design capable to accommodate 30 tools at a time with maximum tool length of **300 mm.** Tool loading and unloading is made vertically.

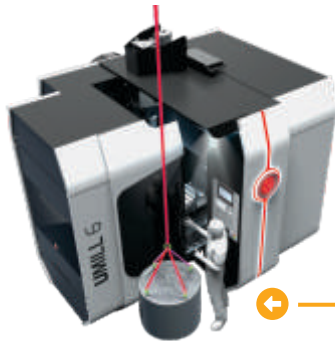


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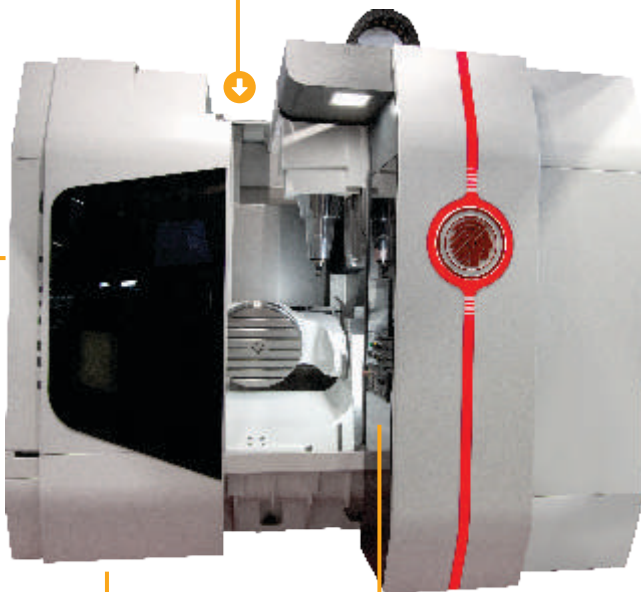
5-Axis Machining Center

## ERGONOMICS DESIGN

Complete safeguard ensuring safety of the machine, the operator and environment



Accessibility to the machining area from top and side of the machine and possibility to load with crane



Evacuation channels for chips equipped with washing device for easy chip removal



Attractive, comfortable and aesthetic operator panel



Opening of the panels is simplified for an easy maintenance at the rear of the machine well within the reach of operator for regular checking points like pneumatic, lubrication etc.



TECHNICAL SPECIFICATION

U-MILL 6		
<b>Linear Axis (X/Y/Z Axis)</b>		
Travels	mm	700 x 740 x 550
Rapid Feed Rates	m/min	40
Acceleration	m/s <sup>2</sup>	6/4/6
<b>Rotating Axis (Table)</b>		
Swivelling (A-Axis)	Deg.	-20 / + 100
Swivelling Speed	rpm	20
Rotary Table (C-Axis)	Deg.	360
Rotary Speed	rpm	35
<b>Table</b>		
Rotary Table Dia.	mm	630
T-Slot Size	mm	7 x 18 x 80
Center Bore	mm	Dia. 50 H7
Admissible Load	Kg	600
Min/Max.Distance Spindle Nose to Table plane	mm	200 / 750
Floor to Table Height	mm	850
<b>Spindle</b>		
Spindle Speed	rpm	10,000
Taper		SK 40
Power-Torque (S1 / S6-40%)	kW/Nm	12/26.2 - 115/250
Characteristic Speed	rpm	1000
<b>Accuracy on Linear Axis</b> (as per VDI DGQ 3441)		
Positioning Uncertainty (P)	mm	0.015
Repetability (Ps Medium)	mm	0.005
<b>Tool Changer</b>		
Number of Tool		30
Max. Tool Dia. (All / Adj. Empty)	mm	80 / 150
Max. Tool Weight	kg	7
Max. Tool Length	mm	300
<b>Coolant</b>		
Flow - Pressure	l/min - Bar	30 - 3
Tank Capacity	Liters	380
<b>Dimensions</b>		
Weight of Machine	Kg	13000
Dimensions :		
Length	mm	3700
Width	mm	5350
Height	mm	3600

CONTROL SYSTEM

The CNC System offered with Latest Digital Controller from Siemens.

STANDARD FEATURES

- AC Servo Spindle & Axis Drive
- Roller Type L.M. Guideways
- SK 40, 10000 rpm Spindle
- 30 Tool ATC
- Auto & Manual Coolant System
- Airgun
- Electrical with Quality Devices & Panel A.C.
- Ethernet Network Connectivity
- 3-Tier Tower Light
- Complete Safe Guard

PRODUCTIVITY IMPROVING OPTIONS

- Coolant Through Spindle
- Tool Tip Air Nozzle (For Dry Cutting)
- Coolant Gun
- Linear Glass Scale
- Tool Probe & Job Probe
- Spindle Taper HSK 63A or BT 40
- 40 or 60 Tool ATC
- Fully Tooled up Solutions to Meet the Customer Need

**JYOTI CNC AUTOMATION LTD.**  
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Note: Specified information are 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 show in the catalogue. Other controller will have different configuration. Machine images are shown with option.



ISO 9001 : 2008