



# U-Mill Series

5-Axis Machining Center

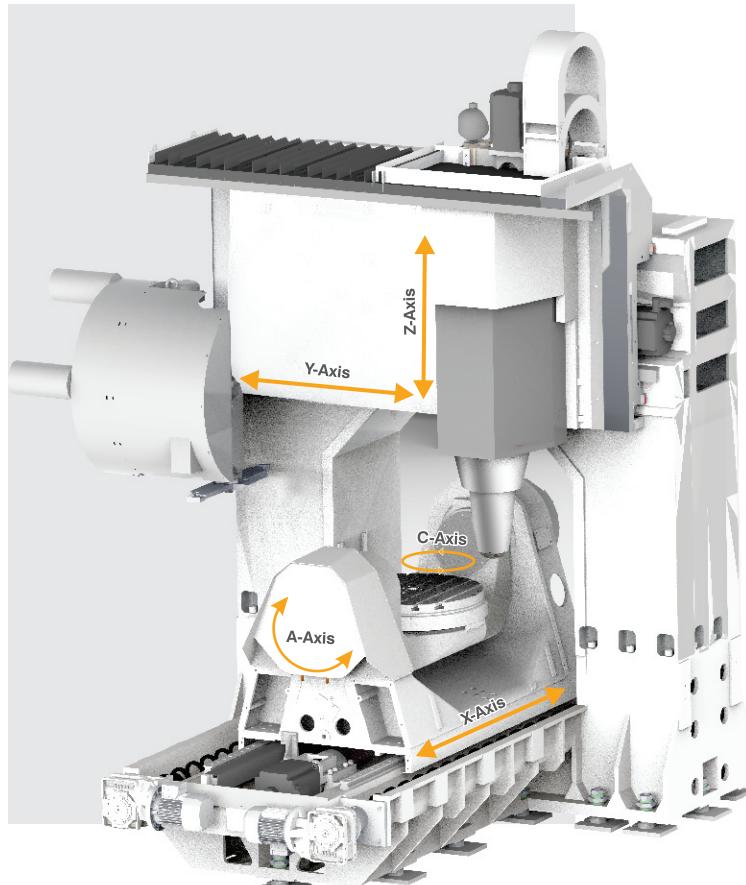


# U-MILL Series

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. Its 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 walls stiffness, balancing torsional stresses, assuring geometric stability.
- Cast iron with a high mechanical performance offers maximum structure rigidity, allows optimum harmonic stability and maximum damping during demanding cutting conditions.
- Machine secured on foundation with equally distributed weight 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 upto **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.
- High clamping torque by hydraulic brake + mechanical brake if power supply failure.



## 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.

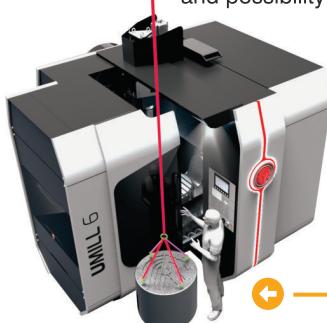


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## ERGONOMIC DESIGN

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



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



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



Opening of the panel 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.



Attractive, comfortable and aesthetic operator panel



## TECHNICAL SPECIFICATION

<b>Table</b>		<b>U-MILL 5</b>	<b>U-MILL 6</b>
Rotary Table Dia.	mm	500	630
T-Slot Size	mm	7 x 14 x 63	7 x 18 x 80
Center Bore	mm	Dia. 40 H7	Dia. 50 H7
Admissible Load	kg	450	600
Distance from Spindle Nose to Table Plane	mm	140/590	200/750
<b>Capacity</b>			
X-Axis Travel	mm	550	700
Y-Axis Travel	mm	560	740
Z-Axis Travel	mm	450	550
<b>Rotating Axis (Table)</b>			
Swivelling (A-Axis)	Deg	-20/+100	-20/+100
Swivelling Speed	rpm	25	20
Rotary Table (C-Axis)	Deg	360	360
Rotary Speed	rpm	45	35
<b>Feed (X/Y/Z Axis)</b>			
Rapid Traverse	m/min	40	40
Acceleration	m/s <sup>2</sup>	6/4/6	6/4/6
<b>Spindle</b>			
Spindle Speed Range	rpm	10000	10000
Motor Power -Siemens (S1/S6-40%)	kW	12/26.2	12/26.2
Motor Torque -Siemens (S1/S6-40%)	Nm	115/250	115/250
Spindle Nose		SK 40	SK 40
<b>Automatic Tool Changer</b>			
Number of Tool		30	30
Max. Tool Dia. Pockets (All/Adj. empty)	mm	80/150	80/150
Max.Tool Weight	Kg	7	7
Max.Tool Length	mm	300	300
<b>Accuracy (As per VDI/DGQ 3441)</b>			
Positioning Uncertainty (P)	mm	0.015	0.015
Repeatability (Ps medium)	mm	0.005	0.005
<b>Coolant</b>			
Flow - Pressure	l/min - Bar	30-3	30-3
Tank Capacity	Liters	380	380
<b>Other Data :</b>			
Machine Weight # (Approx.)	Kg	11000	13000
Machine Dimension # (Approx.)			
Length	mm	4225	5000
Width	mm	3550	3700
Height	mm	3195	3600

### CONTROL SYSTEM

The CNC System offered Latest Digital Controller Siemens 840D.

### STANDARD FEATURES

- AC Servo Spindle & Axis Drive
- Roller Type L.M. Guideways
- SK 40, 10,000 rpm Spindle
- 30 Tool ATC
- Auto & Manual Coolant System
- Airgun
- Chip Conveyor
- Electrical with Quality Devices & Panel A.C.
- Ethernet Network Connectivity
- 3-Tier Tower Light
- Complete Safe Guard

### PRODUCTIVITY IMPROVING OPTIONS

- 40 or 60 Tool ATC
- 15000,18000 & 24000 rpm Spindle
- Spindle Taper HSK 63A or BT 40
- Coolant Through Spindle
- Tool Tip Air Nozzle (For Dry Cutting)
- Coolant Gun
- Linear Glass Scale
- Tool Probe & Job Probe
- Air/Oil Mist Spray
- Coolant Gun
- Oil Skimmer
- Visiport Window
- Fully Tooled up Solutions to Meet the Customer Need

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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.

