Umill Series

Vertical milling centre with portal, versatile, high performances

Performance
Technology
Power
Accuracy

Umill Series

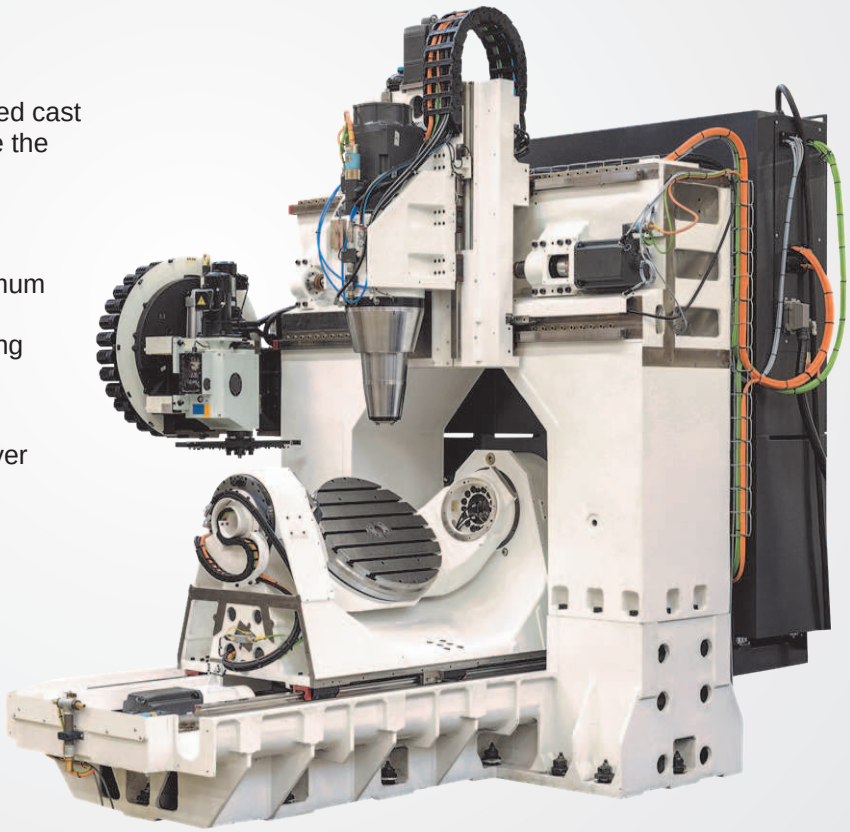
The Umill range is a 5-axis machining centres with a portal structure and a swivelling rotary table on craddle.

Its modern design and compact size are optimized to guarantee a minimal footprint without compromising either to the workpiece volume or to the fundamental characteristic of the HURON machines : enhanced rigidity for high performance and quality machining.

This range is ideally suited for complex parts in 3 or 5 axes, from roughing to finishing, for various sectors such as high precision mechanical parts, automotive, rail, energy, machining of 3D forms, or aerospace.

Structure

- Structure with fixed portal in ribbed cast iron with stiffness walls attenuate the torsional stresses
- Cast iron with a high mechanical performance which maximizes 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 configurations



Linear axes

- Preloaded ballscrews
- Preloaded bearings to remove inversion backlash and axial stress on ballscrews enabling a high quality of surfacing
- Roller guideways on the X, Y and Z permitting high travel speeds, and excellent stability of the movement
- Automatic grease lubrication of ballscrews and bearings minimising the pollution of coolant and the consumption

Numerical controller

- Control of up to 5 continuous axes
- Great ergonomics, color screen and full alphanumeric keypad
- Integrated and easily accessible communication interfaces
- High memory and calculation capacity
- Interactive programming
- Graphic simulation before machining for optimum safety

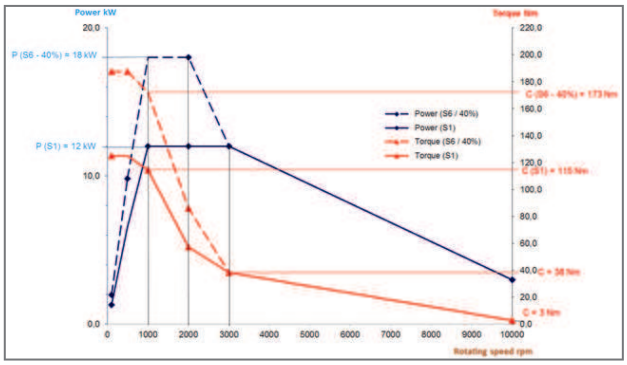
Environment - Ergonomics

- Evacuation channels for chips equipped with washing device and spiral conveyors
- 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
- Opening of the panels is simplified for an easy maintenance
- Operator panel

The spindle

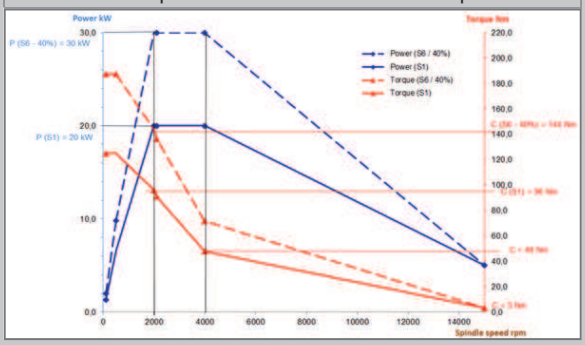
- Powerful spindle with high torque allowing high metal removal rates
- Direct coupling of the motor on spindle for a better transmission of the forces
- Direct drive for a higher positioning accuracy and less maintenance
- Spindle body designed to facilitate accessibility to the workpiece during the 5-axis machining
- Ceramic ball bearing guidance increases stiffness and spindle life; less vibrations and decrease of operating temperature
- Grease lubrication of bearings requiring no maintenance

Taper	ISO 40
Rotating speed	**10.000 rpm**
Power (S6/S1)	12 / 18 kW
Torque (S6/S1)	115 / 173 Nm
Characteristic speed	1.000 rpm

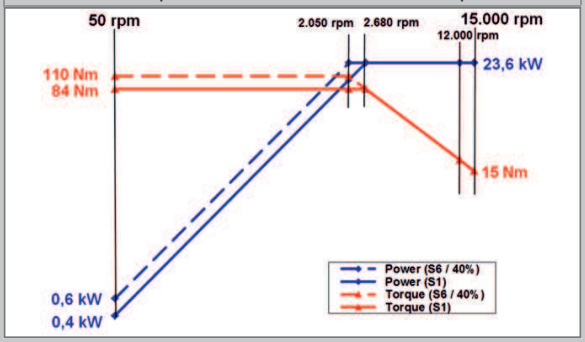


Spindle alternatives

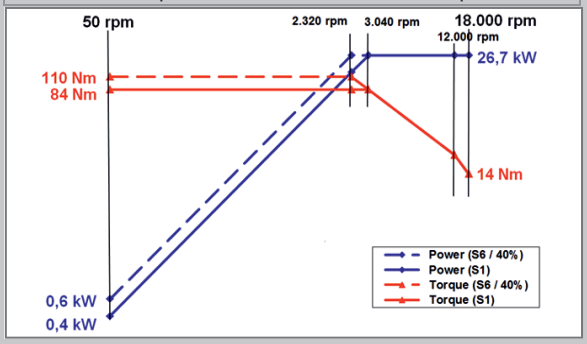
Spindle with direct drive - 15.000 rpm	
Taper	ISO / BT 40
Rotating speed	15.000 rpm
Power (S6/S1)	30 / 20 kW
Torque (S6/S1)	144 / 96 Nm
Characteristic speed	2.000 rpm



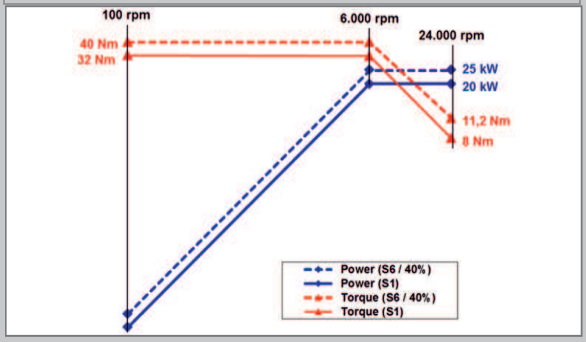
Electrospindle 15.000 rpm	
Taper	ISO 40 / BT 40 / HSK 63-A
Rotating speed	15.000 rpm
Power (S6/S1)	23,6 / 23,6 kW
Torque (S6/S1)	110 / 84 Nm
Characteristic speed	2.680 rpm



Electrospindle 18.000 rpm	
Taper	HSK 63-A
Rotating speed	18.000 rpm
Power (S6/S1)	26,7 / 26,7 kW
Torque (S6/S1)	110 / 84 Nm
Characteristic speed	3.040 rpm



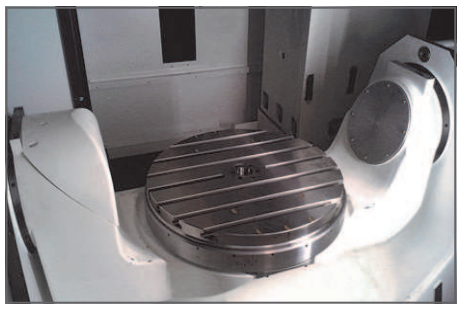
Electrospindle 24.000 rpm	
Taper	HSK 63-A
Rotating speed	24.000 rpm
Power (S6/S1)	25 / 20 kW
Torque (S6/S1)	40 / 32 Nm
Characteristic speed	6.000 rpm



Vibrations monitoring

Vibration monitoring ensures safe operation of the machine components, tool and workpiece. The system consists of a vibration sensor and an electronic signal processing unit.

Table

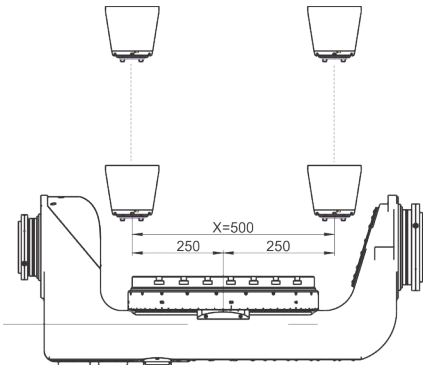


- Swivelling rotary table fixed on cradle and moving along the X axis for higher rigidity
- Excellent approach to the workpiece on its 5 faces thanks to the swivelling of the table
- Travels are optimized to offer an important distance under the spindle nose
- Direct measurement on each rotating axes with absolute encoder

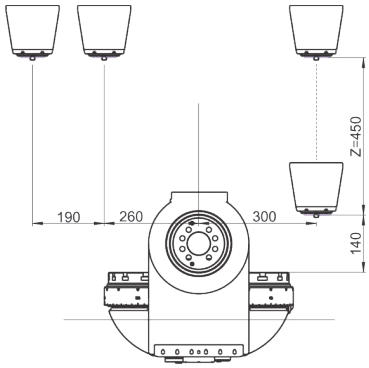
		Umill 5	Umill 6
Table dimension	mm	Ø 500	Ø 630
Admissible load	kg	450	600
Rotating speed	rpm	45	35
Max. workpiece volume : diameter / height	mm	Ø 600 / 350	Ø 780 / 400
Height table plane / floor	mm	1.010	1.070
Min/max distance spindle nose / table plane (table in vertical position)	mm	140 / 590	200 / 750
Distance portal / table	mm	725	725
Qty T-slots		7	7
Distance between slots	mm	63 mm	80 mm
Reference slot	mm	14H7	18H7
Other slots	mm	14H12	18h12
Central bore	mm	Ø 40H7 - Depth 15	Ø 50H7 - Depth 15

Umill 5 interference diagrams

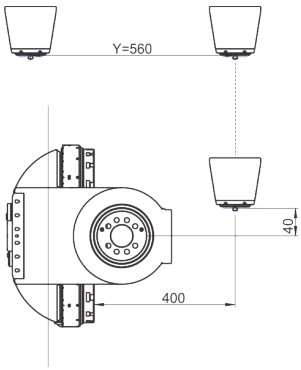
X-Z plane view



Y-Z plane view / Table position 0°

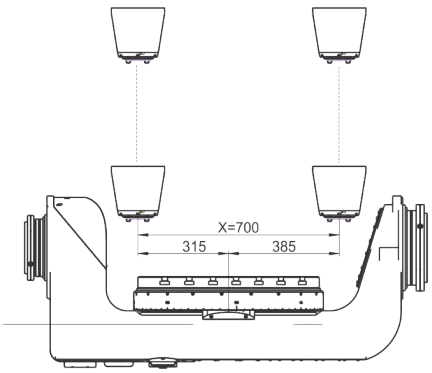


Y-Z plane view / Table position 90°

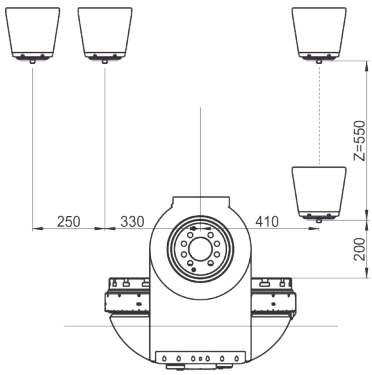


Umill 6 interference diagrams

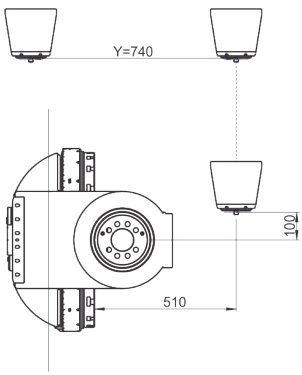
X-Z plane view



Y-Z plane view / Table position 0°

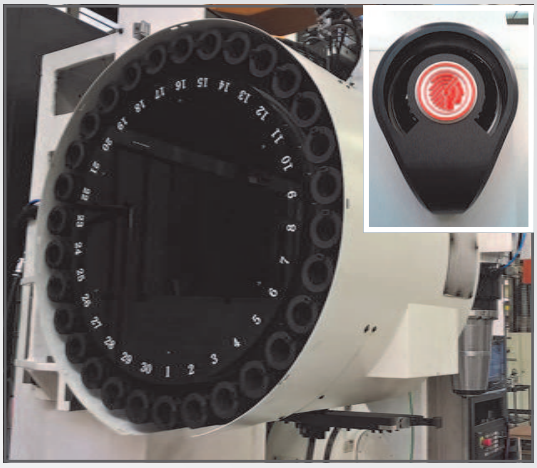


Y-Z plane view / Table position 90°



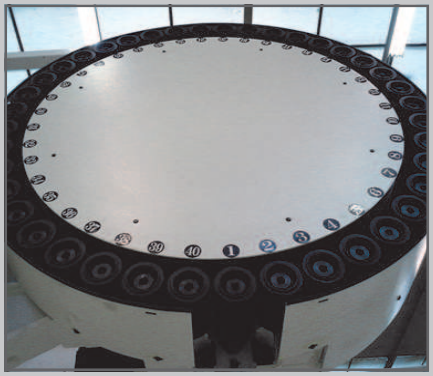
Tools changer

The automatic load/unload of the tool is made vertically.	30 housings
Type Loading / Unloading	Drum Double arm
Housings	30
Taper	ISO 40
Tool dimension : – Max. Ø adjacent / non adjacent tool – length – weight – total weight in the magazine	 80 mm / 150 mm 300 mm 7 kg 150 kg
Tool changing time : tool/tool - chip/chip	8 sec - 15 sec



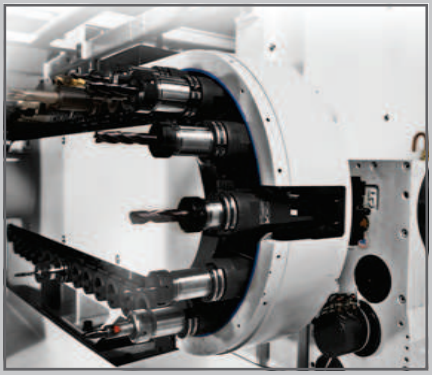
Tools changer

The automatic load/unload of the tool is made vertically.	40 housings
Type Loading / Unloading	Drum Double arm
Housings	40
Taper	ISO 40 / BT 40 / HSK 63-A
Tool dimension : – Max. Ø adjacent / non adjacent tool – length – weight / total weight in the magazine	 75 mm / 125 mm 300 mm 7 kg / 200 kg
Tool changing time : tool/tool - chip/chip	8 sec - 15 sec



Tools changer

The automatic load/unload of the tool is made vertically.	60 housings
Type Loading / Unloading	Chain Double arm
Housings	60
Taper	ISO 40 / BT 40 / HSK 63-A
Tool dimension : – Max. Ø adjacent / non adjacent tool – length – weight / total weight in the magazine	 75 mm / 125 mm 300 mm 7 kg / 200 kg
Tool changing time : tool/tool - chip/chip	8 sec - 15 sec



Technical characteristics

Linear axes X / Y / Z		Umill 5	Umill 6
X travel	mm	500	700
Y travel	mm	560	740
Z travel	mm	450	550
Rapid feedrates	m/min	40	40
Acceleration per axis (G0)	m/s²	6	6
Table - A / C axes		**Umill 5**	**Umill 6**
A axis : Swivelling	°	+20° / -110°	+20° / -110°
Swivelling speed	rpm	25	20
C axis : Rotation	°	360°	360°
Rotating speed	rpm	45	35
Table dimension	mm	Ø 500	Ø 630
Admissible load	kg	450	600
Max. distance spindle nose / top table	mm	590	750
Spindle		**Umill 5**	**Umill 6**
Rotating spped	rpm	10.000	10.000
Taper		ISO 40	ISO 40
Power - Torque (S6/S1)	kW - Nm	18 / 12 - 173 - 115	18 / 12 - 173 - 115
Characteristic speed	rpm	1.000	1.000
Accuracies (VDI DGQ 3441)		**Umill 5**	**Umill 6**
Linear axes (X/Y/Z)			
– Positioning (P)	mm	0,015	0,015
– Repeteability (Ps medium)	mm	0,005	0,005
Rotating axes (A, C)			
– Positioning (P)	sec	10	10
– Repeteability (Ps medium)	sec	5	5
Tool changer		**Umill 5**	**Umill 6**
Housings		30	30
Tool length	mm	300	300
Tool Ø	mm	80	80
Tool weight / Total weight in magazine	kg	7 / 150	7 / 150
Tool changing time : tool/tool - chip/chip	sec	5 - 15	5 - 15
Coolant		**Umill 5**	**Umill 6**
Flow - Pressure	l/min - bar	30 - 3	30 - 3
Tank	liters	380	380
Over-all measurments		**Umill 5**	**Umill 6**
Weight of the machine	kg	11.000	13.000
Depth	mm	3.800	4.170
Width	mm	4.200	4.406
Height	mm	3.300	3.540

Optional equipments

Spindle alternatives - Tool changers alternatives - Medium pressure coolant 20 bar - High pressure coolant 70 bar - Coolant by microspraying - Air blast - Piece probe - Tool probe - Linear axes measuring scales - Oil mist extractor - Oil skimmer - Pressurization of measuring scales - Electrical cabinet conditioning - Sight glass

All descriptions, data and photos are supplied for information only. Huron Graffenstaden reserves the right to make changes to the models described for technical or commercial reasons at any time.
The standard description, accessories and technical datas conforms to our pricelist, and not to the photo of machines shown in the catalogue.

HURON
www.huron.eu

FRANCE
Huron Graffenstaden SAS
156 route de Lyon
BP 30030
67401 Illkirch Graffenstaden Cedex
✆ +33 (0)3 88 67 52 52
🖷 +33 (0)3 88 67 69 00
✉ commercial@huron.fr

GERMANY
Huron Fräsmaschinen GmbH
Siemensstrasse 56
70839 Gerlingen
✆ +49 (0)7156 92836 12
🖷 +49 0)7156 92836 50
✉ verkauf@huron.de

INDIA
Jyoti CNC Automation Ltd
G-506 & 2839, Lodhika, G.I.D.C.,
Vill. Metoda,
Dist: Rajkot - 360 021
✆ +91-2827 287081/082
✉ info@jyoti.co.in

CANADA
Huron Canada
85 rue St-Charles Ouest #105
Longueuil, Québec, J4H 1C5
✆ +1 514 448 4873
🖷 +1 514 448 4875
✉ infocanada@huron.fr

TURKEY
Huron Turkey
Gayrettepe mah. Ayazma Dere Caddesi
Pazar sok. Bareli Is merkezi No.2-4 Kat 2
34387 Gayrettepe / Istanbul
✆ +90 (212) 671 20 92
✉ info-turquie@huron.fr

2017-07 - Umill Series / English / HURON