



UNISIGN

Unicom 6000-HV

5-Axes CNC Turning & Milling
Machining Centre



Unicom 6000-HV

UNISIGN

The economical solution to flexible complete machining!

The UNICOM 6000-HV represents the latest generation of UNISIGN machining centres for combined milling, drilling and vertical turning operations. This highly flexible and powerful machining centre for complete machining results from the continuous development of vertical machining centres over a period of more than 25 years.

The concept of UNICOM 6000-HV is based on a moving table with integrated carousel turning station and an interface that can receive pallets of up to 1.800 mm in diameter. The table movement is designated as Y-axis and it runs underneath a traverse with cross slide and spindle carrier. The movements of cross slide and spindle carrier are designated as X-and Z-axis respectively. Powerful servo drive systems allow for highest dynamical values, offering 30 m/min. of rapid traverse and 3 m/s² of acceleration and deceleration in all axes. Positioning times as well as tool- and head change times are thus reduced to an absolute minimum. The standard pallet changer with two pallets reduces set-up times by allowing loading and unloading parallel to the machining cycle.

The carousel turning station is powered by two drive units, each one consisting of an integrated water cooled drive motor with two-stage gearbox. The individual drive units are mounted on either end of the moving table, underneath the Y-axis steel telescope covers. Alternative to turning operations, the turn table may also be utilized as a highly accurate C-axis rotary table. The milling and drilling spindle is integrated in a nutating head that can be positioned at any angle between the vertical and horizontal planes. The tilting movement of the nutating head is designated as B-axis which - in conjunction with the rotary table's C-axis and the three linear axes - may be manoeuvred into any orientation to the component on the table or even simultaneously in all axes for true 5-axes machining! The chain type tool magazine offers space to 80 milling, drilling and turning tools with HSK 63 interface. Above the tool magazine a linear pickup station for the turning tool adapter(s) and a compact right angle head (option) is located.

For highest operating comfort and safety, the machine is equipped with a fully enclosed guarding section. An operator access door with large window is located sideways on the front of the machine, close to the machine spindle.

The control panel with integrated CNC-control is located next to this access door. The pallet changer is located sideways at the back of the machine. A rotary transfer unit delivers the pallet from the machine to the pallet loading station at the front of the machine, near the control panel.

UNICOM 6000-HV TOOLING SYSTEMS



Spindle loaded adapter for turning tools (1 and 2)

Nutating head with milling and drilling tools (3, 4 and 5)



5-Axes CNC Turn

STANDARD CONFIGURATION



- 5-Axes Turning & Milling Machining Centre
- Pallet Changer with two pallets \varnothing 1.250 mm
- Work Envelope X-2.000; Y-2.300; Z-1.000
- Swing circle \varnothing 2.000 mm
- Tilting B-axis 90° and Rotary C-axis 360°
- Integrated motor spindle 40 kW / 12.000 rpm / 137 Nm
- Carousel turning station 70 kW / 450 rpm / 25.000 Nm
- HSK-63 tool magazine with 80 pockets
- Spindle loaded adapter for turning tools
- Position feedback with linear scales
- High accuracy linear roller bearings in all axes

- Machine cooling system
- Fully enclosed guarding section
- Chip conveyor with integrated coolant collecting tank
- Two-tone machine painting in light grey / medium grey
- SIEMENS Sinumerik 840-D CNC-control
- TFT Color display
- Remote access via integrated modem

*Pallet Changer with **three** pallets (no safety fence for display purposes)*



APPLICATIONS

Components, typically suited for UNICOM 6000-HV

Aerospace:

- Jet Engines and Related Components

Oil and Gas Industry:

- Valves and Related Components

Power Generating Industry:

- Compressors and Turbo Chargers

Food Processing:

- Pumps and Related Components



AVAILABLE OPTIONS

Selection of available options

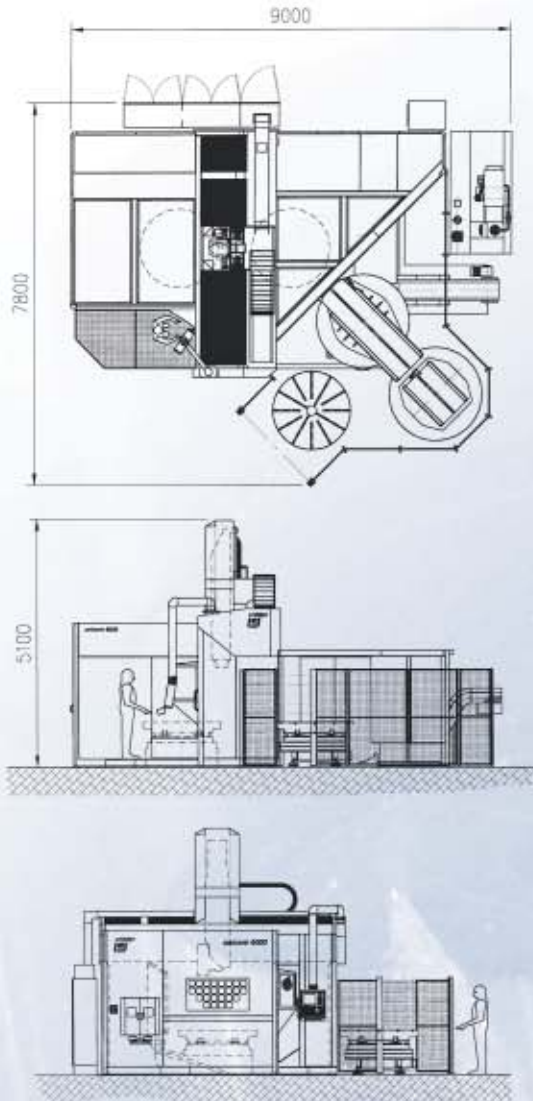
- Pallets \varnothing 1.600 mm or \varnothing 1.800 mm
- Extra pallet and pallet buffer station
- Tool magazine extension (+65 / +130 additional pockets)
- Compact spindle loaded right angle head HSK-63
- Spindle loaded turning tool adapter in extended execution
- High pressure through the spindle coolant supply
- Tool probe
- Tool identification system with data chips
- Tool life control with sister tool selection
- In-proces tool break detection
- Spindle loaded measuring probe
- In-proces measuring probe for finish turning
- Mist extraction system with electrostatic filter unit
- Handheld pulse generator with electronic handwheel
- Ethernet connection via integrated network card



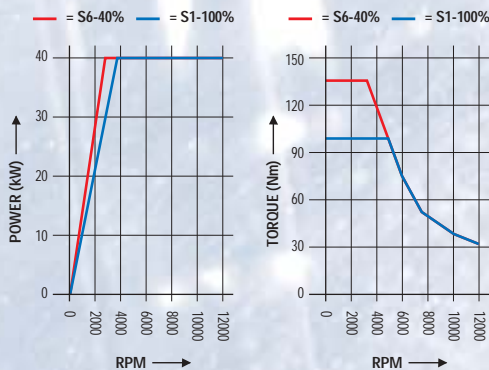
1. Compact right angle head HSK-63 with automatic tool change
2. Extended turning tool adapter for turning of deep and narrow bores
3. In-process measuring probe on separate slide for finish turning high accuracy diameters



TECHNICAL SPECIFICATIONS



POWER/TORQUE CHARTS:



Work Area			
Swing circle	mm	ø 2.000	
X-axis, cross travel	mm	2.000	
Y-axis, table travel	mm	2.300	
Z-axis, spindle height travel	mm	1.000	
Distance spindle nose to pallet top	mm	150 - 1.150	

Pallet Changer			
Number of pallets, standard	-		2
Pallet size	Standard	mm	ø 1.250
	Optional	mm	ø 1.600
	Optional	mm	ø 1.800
Admissible pallet load	kgs		3.000
Pallet central bore	mm	ø 100H6	
Pallet radial T-slots, number	-		12
Pallet radial T-slots, size	mm		22H9
Pallet change time	sec		60

Milling and Drilling Spindle			
Direct drive AC (S1-100%)	kW		40
Spindle speed	rpm		12.000
Spindle torque	Nm		137
Main spindle bearing diameter	mm		70

Carousel Turning Station			
Main drive AC (S6-60%)	kW		70
Gearbox	-		2-speed
Max. speed of rotation	with ø 1.250 mm pallet	rpm	450
	with ø 1.600 mm pallet	rpm	350
	with ø 1.800 mm pallet	rpm	315
Max. available torque	Nm		25.000

Tool System			
<i>Chain type rotary tool magazine located at the column</i>			
Taper size DIN 69893	drilling and milling tools	-	HSK 63-A
	turning tools	-	HSK 63-A
Number of pockets	Standard	-	80
	Optional	-	+65 / +130
Maximum tool size	nominal tool diameter	mm	ø 125
	boring bars	mm	125 x 200
Maximum tool length	mm		450
Maximum tool weight	kgs		10
Tool change time, chip-to-chip	sec.		10

Axis Drive- and Feed System			
<i>Digital AC-Servo drives</i>			
Rapid traverse	X-, Y- and Z-axis	mm/min	30.000
	B- and C-axis	°/min	3.600/5.400
Feed rate	X-, Y- and Z-axis	mm/min	5 - 30.000
	B- and C-axis	°/min	3.600/5.400
Acceleration / deceleration,			
	X-, Y- and Z-axis	m/sec ²	3
Feed pressure	X- and Y-axis	N	30.000
Drilling pressure	Z-axis	N	16.000

Capacity in C45			
<i>With 12.000 rpm Direct Drive Spindle</i>			
Drilling	mm		ø 50
Tapping	-		M 42
Milling	cm ³ /min		400

Various			
Power supply	KVA		140
Electrical cabinet	-	400 V / 3 ph / 50 Hz	
Foot print, approx.	mm		9.000 x 7.000
Overall weight, approx.	kgs		65.000

We reserve the right to change technical specifications without prior notice.



PANNINGEN
THE NETHERLANDS

UNISIGN

The Unisign range of standard products, UNIVERS, UNIPRO, UNIPORT and UNICOM, are ideally suited for almost any machining task due to their flexibility. All configurations guarantee high productivity combined with competitive prices.

The machining centres are developed and built by Unisign and supported by our well trained service technicians for fast and reliable service, direct from Unisign.

More information? Please contact us:

TWW WORLD WIDE
Metal-Technologie Consulting and Transfer GmbH

Am Wall 7
14979 Großbeeren

Tel.: +49 33701-7458-90
Fax.: +49 33701-7458-86



info@tww-gmbh.de
www.tww-gmbh.de

Unisign

Industrieterrein 36
P.O. Box 7047
NL-5980 AA PANNINGEN
The Netherlands
Tel: +31 (0) 77 - 307 37 77
Fax: +31 (0) 77 - 307 54 36
E-mail: info@unisign.nl
www.unisign.nl