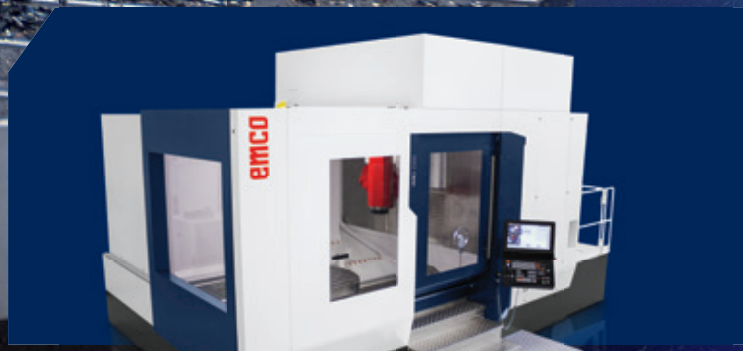
EMCO

UMILL 1500 / 1800



5-axis milling and turning centres for complete machining

/ OPTIMALLY EQUIPPED FOR 5-AXIS MACHINING

When it comes to typical 5-axis machining, the UMILL 1500 and UMILL 1800 are well equipped for any application. The UMILL 1500 and 1800 can show their perfomances in milling, drilling, tapping and turning in one set-up. Thanks to the gantry construction, they reach optimum results due to their particularly stable and rigid design in combination with maximum dynamics and precision.



5-axis machining as well as milling, drilling, turning and undercutting with up to 15° undercut at highest cutting performance and accuracy.

1 COMPACT DESIGN

/ The chip conveyors are integrated in the machine bed
/ No foundation – flexible installation possible
/ Expandable with pallet solution

2 MACHINE BASE

/ Cast construction with high stiffness and very good damping properties
/ Roller guides and glass scales in all linear axes
/ Large guideway spacing

3 FLEXIBILITY & STABILITY

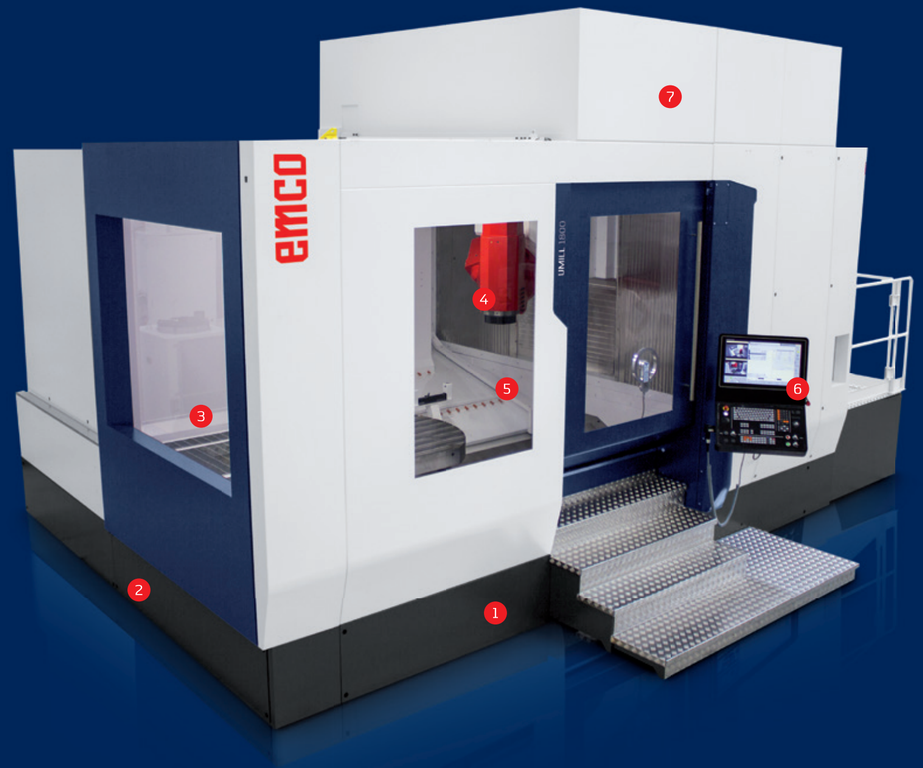
/ Flexible and robust for all milling and milling/turning operations
/ 5-sided machining
/ High payloads possible

4 MILLING SPINDLE

/ High speeds or high torque depending on requirements

5 ERGONOMICS

/ Automated loading door for convenient loading
/ Best accessibility and overview





6 CONTROL SYSTEM

/ **Heidenhain or Sinumerik**



7 MAXIMUM MACHINE AVAILABILITY

/ Automatic temperature compensation of the electrospindle
/ Automatic adjustment of the machine kinematics
/ Continuous and dynamic correction of vibrations
/ Dynamic collision monitoring
/ Remote maintenance and tele-service
/ Balancing analysis for the turning table (optional)

PRODUCTIVITY ALWAYS NEEDS MODULAR SOLUTIONS

Today, modern production is only feasible if the degree of utilization of the machinery is optimally exploited. Automation is a central factor here, because the market demands fast reaction and short production times. With our modular solutions, you are well prepared for these challenges and remain competitive.



TOOL MAGAZINE WITH UP TO 203 PLACES

Placed outside the working area and separated from the machine base. The tool magazines with HSK 63A, HSK 100A/T (T for turning applications), are offered customer-specific in various configuration levels. Tool management and momitoring systems are optionally available.



MILLING HEAD WITH ELECTROSPINDLE

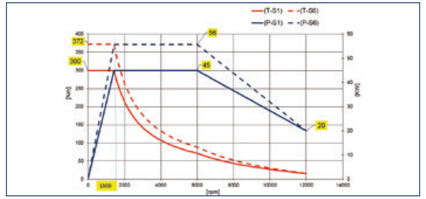
Compact design with powerful electrospindle. High dynamics of the infinitely variable milling head with electrospindle for simultaneous machining in combination with the NC rotary table. Wide range of optional possibilities: Tool solutions up to interchangeable angle heads, internal coolant up to 80 bar, and much more.



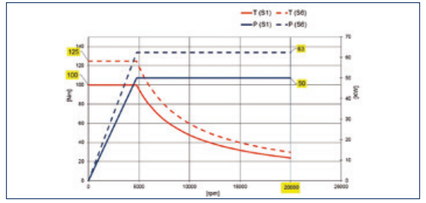
ROTARY TABLE

The rotary table with torque motor for milling operations in simultaneous positioning. Designed for workpieces up to 6000 / 10000 kg (UMILL 1500/1800)

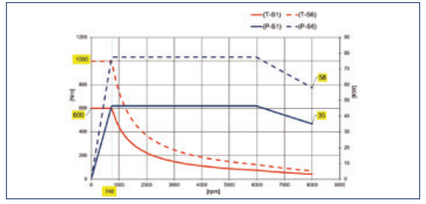
POWER AND TORQUE



E58G 12000 rpm / 45 kW / 300 Nm (standard equipment for milling and turning operations)



E61G 20000 rpm / 50 kW / 100 Nm (High Speed version only for milling operations)



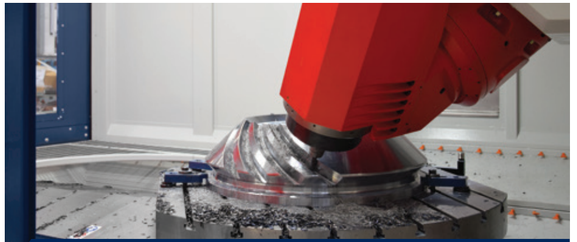
E67 8000 rpm / 46 kW / 600 Nm (High Power version only for UMILL 1800)

TECHNICAL HIGHLIGHTS



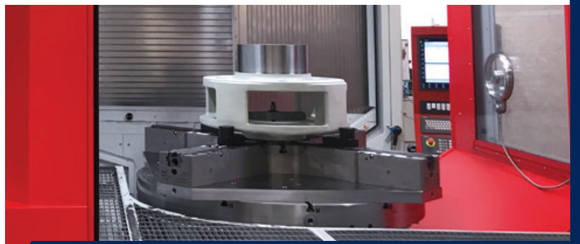
AUTOMATION

Individual automation solutions are possible in almost all variants and can be implemented in a customer-specific manner. To optimise productivity – e.g. a two-stations linear pallet storage system with UMILL 1500, pallet dimensions up to 1400 x 1400 mm, loading including pallet up to 4500 kg.



5-AXIS MACHINING

With the powerful milling spindle and the high accuracy of the UMILL machines, all technical requirements can be implemented precisely and efficiently. The 5-axis simultaneous machining is fully possible on all UMILL machines in the basic configuration and guarantees a high surface quality.



ROTARY TABLE (Milling/Turning operation)

The rotary table for milling and turning operations in simultaneous positioning, is designed for workpieces up to 3500 / 6000 kg (UMILL 1500/1800).



UMILL COMPLETE MACHINING PROCESS

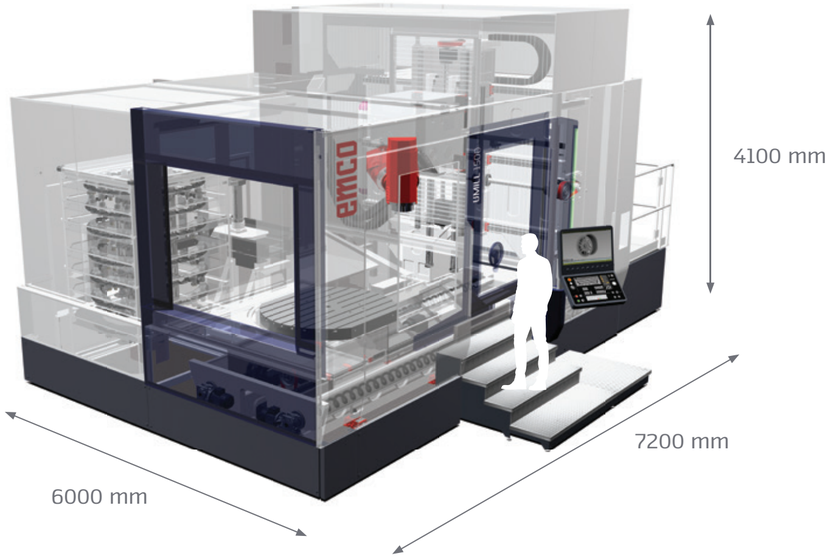
The standard milling and turning operations are guaranteed with the E58 milling spindle and a powerful torque motor / NC rotary table. The high rigidity is given by the machine structure, a sophisticated control concept enables complex milling and turning complete machining operations at highest productivity.



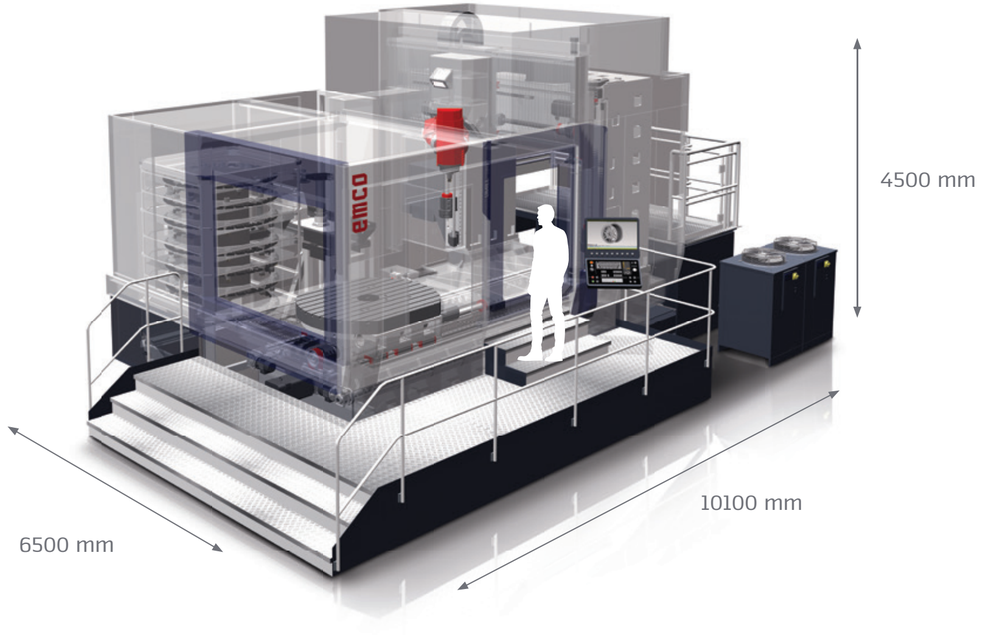
PALLET CHANGER

The basic automation concept is a 2-stations pallet hanger. This allows the operator to clamp the parts with the manual or automatic clamping device while production is running.
The modular design of the machine allows a space-saving implementation.

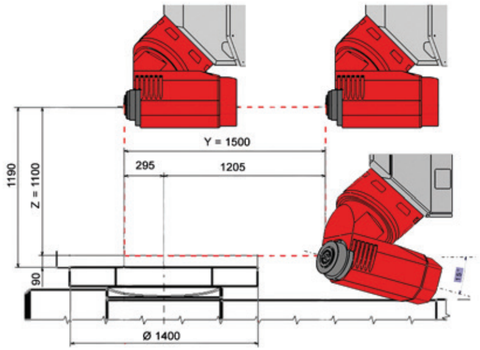
MACHINE DIMENSIONS UMILL 1500

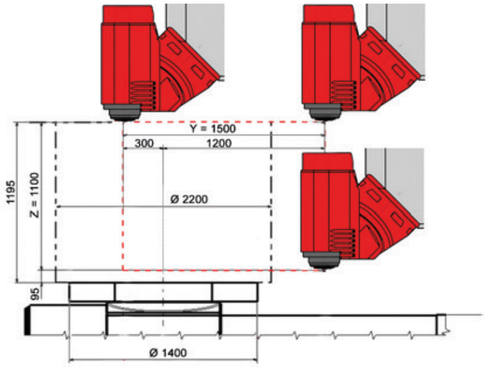


MACHINE DIMENSIONS UMILL 1800



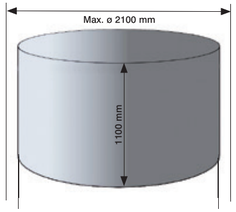
WORK AREA UMILL 1500





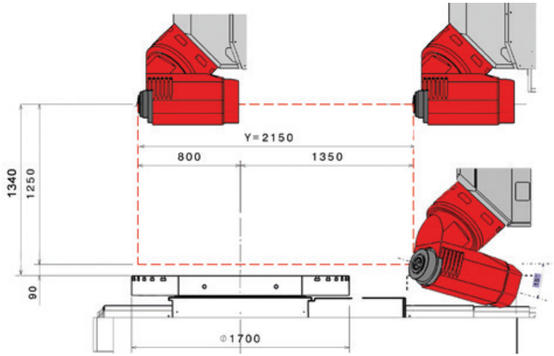
Axis travel

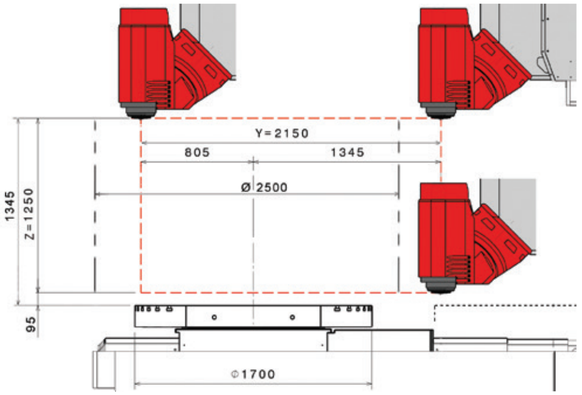
X (transverse axis)	1500 mm
Y (horizontal axis)	1500 mm
Z (vertical axis)	1100 mm
Rotation range of the milling head on the A-axis (0=vertical)	+/- 180°
NC rotary table	360°



Indications in millimetres

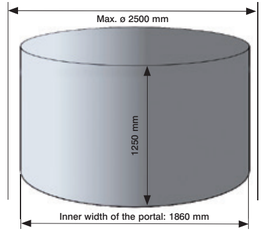
WORK AREA UMILL 1800



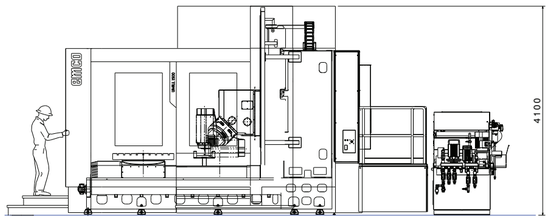


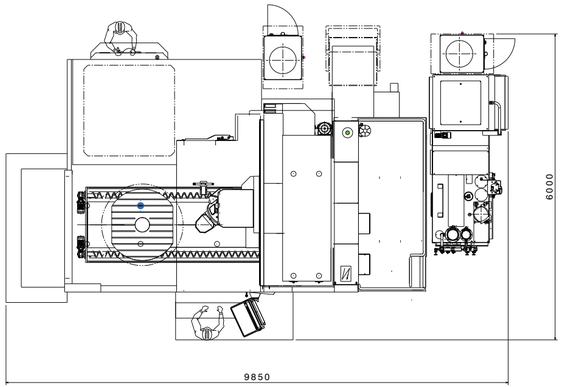
Axis travel

X (transverse axis)	1800 mm
Y (horizontal axis)	2150 mm
Z (vertical axis)	1250 mm
Rotation range of the milling head on the A-axis (0=vertical)	+/- 180°
NC rotary table	360°



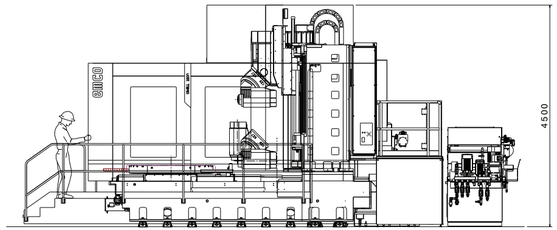
FLOOR PLAN UMILL 1500

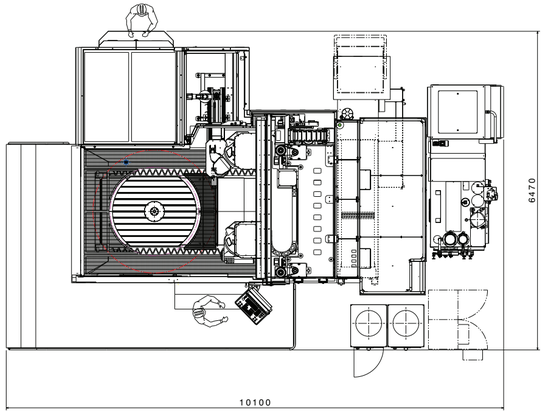




Indications in millimetres

FLOOR PLAN UMILL 1800





Indications in millimetres

TECHNICAL DATA

Axis travel instead of displacement linear axes	UMILL 1500	UMILL 1800
X (transverse axis)	1500 mm	1800 mm
Y (horizontal axis)	1500 mm	2150 mm
Z (vertical axis)	1100 mm	1250 mm
Feed rate	60 m/min	60 m/min

Workpiece/tool cooling		
External cooling	28 l/min; 6 bar	28 l/min; 6 bar
Internal cooling	20 l/min; 40 bar	20 l/min; 40 bar

Milling head with electrospindle basic equipment E58		
Power S1 / S6	45 / 58 kW	45 / 58 kW
Torque S1 / S6	300 / 372 Nm	300 / 372 Nm
Speed	12000 rpm	12000 rpm
Tool taper	HSK-A(T)100	HSK-A(T)100
Undercut	15°	15°

Milling head with electrospindle High Power milling E67		
Power S1 / S6	–	46 /77 kW
Torque S1 / S6	–	600 / 1000 Nm
Speed	–	8000 rpm
Tool taper	–	HSK-A100
Undercut	–	15°

Milling head with electrospindle High Speed milling E61		
Power S1 / S6	50 / 63 kW	50 / 63 kW
Torque S1 / S6	100 / 125 Nm	100 / 125 Nm
Speed	20000 rpm	20000 rpm
Tool taper	HSK-A63	HSK-A63
Undercut	15°	15°

Magazine places	UMILL 1500	UMILL 1800
Magazine places	88 / 122 / 203 pockets	88 / 122 / 203 pockets

NC – Rotary table basic equipment		
Size	1400 x 1200 mm	1700 x 1400 mm
Max. load	6000 kg	10000 kg
Drive	torque motor	torque motor
Max. torque	3000 Nm	6800 Nm
Max. speed	20 rpm	10 rpm

NC – Rotary table for mill-turn operations		
Size	ø 1400 mm	ø 1800 mm
Max. load	3500 kg	6000 kg
Drive	torque motor	torque motor
Max. torque	3000 Nm	6800 Nm
Max. speed	up to 260 rpm	up to 260 rpm

Coolant system		
Tank volume	2500 l (paper band filter)	2500 l (paper band filter)
Coolant pumps for inside/outside	40 / 60 / 80 bar	40 / 60 / 80 bar
Working area and washing gun	6 bar	6 bar

EMCO

beyond standard

EMCO Mecof S.r.l. / Via Molino 2 / 15070 Belforte Monferrato AL / Italia / T +39 0143 8201 / F +39 0143 823088 / infp@emco-mecof.it

EMCO GmbH / Salzburger Str. 80 / 5400 Hallein-Taxach / Austria / T +43 6245 891-0 / F +43 6245 86965 / info@emco.at

www.emco-world.com

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