

[Technical data]

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HYPERTURN 65 Powermill

Work area	
Swing over bed	500 mm
Distance between spindle noses	1300 mm
Maximum turning diameter	500 mm
Max. part length	1040 mm
Max. bar-stock diameter	65 (76/95) mm
Travel	
Traverse path X1 / X2	405 / 210 mm
Traverse path Z1 / Z2	1050 / 1050 mm
Traverse path Y1 / Y2	220 / 100 mm
Traverse path counter spindle Z3	1050 mm
Main spindle	
Speed range (infinitely variable)	0 – 5000 (3500/4000) rpm
Maximum torque	250 (360) Nm
Spindle nose DIN 55026	A2-6 (A2-8)
Spindle bearing (inside diameter)	105 (130/140) mm
Spindle bore (excluding draw-back rod)	Ø 73 (86/106) mm
Counter spindle	
Speed range (infinitely variable)	0 – 5000 rpm
Maximum torque	250 Nm
Spindle nose DIN 55026	A2-6
Spindle bearing (inside diameter)	Ø 105 mm
C-axes	
Resolution	0,001°
Rapid traverse	1000 rpm
Drive power	
Main spindle (AC integrated-spindle motor)	29 (37) kW
Counter spindle (AC integrated-spindle motor)	29 kW
Milling spindle - Powermill	
Speed range	0 – 12000 rpm
Maximum torque	79 Nm
Maximum Drive power	29 kW
Type of tool shank	HSK-T63
B-axis	
Travel range	220°
Holding torque of clamp	4000 Nm
Interpolating drive torque	332 Nm
Tool magazine	
Tool storage capacity	20 / 40 / 80 mm
Max. tool diameter	Ø 80 (Ø 120) mm
Max. tool length	250 mm
Max. tool weight	5 kg

Tool turret	
Number of tool stations	12
VDI shaft (DIN 69880)	30 (40) mm
Tool cross-section for square-shank tools	20 x 20 (25 x 25) mm
Shank diameter for boring bars	32 (40) mm
Tool indexing time	0,7 sec.
Driven tools	
Speed range	0 – 5000 (4500) rpm
Torque	25 Nm
Drive power	6,7 kW
Tool turret with BMT-interface and direct drive	
Number of tool positions	12
Precision interface	BMT-55P
Tool cross-section for square-shank tools	20 x 20 (25 x 25) mm
Shank diameter for boring bars	40 mm
Tool indexing time	0,5 sec
Speed range of driven tools	0 – 12000 rpm
Torque of driven tools	30 Nm
Drive power of driven tools	10 kW
Feed drives	
Rapid speed X1 / X2	30 m/min
Rapid speed Z1 / Z2 / Z3	30 m/min
Rapid speed Y1 / Y2	12 m/min
Feed force X1 / X2	5000 N
Feed force Z1 / Z2	8000 N
Feed force Y1 / Y2	7000 N
Coolant system	
Tank capacity	450 l
Pump capacity	2 x 3,7 kW
Power consumption	
Connected load	50 kVA
Compressed air	6 bar
Dimensions	
Height of center above floor	1316 mm
Overall height	2490 mm
Required space L x D (without chip conveyor)	5300 x 3450 mm
Total weight	12250 kg
Safety devices	CE compliant



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[Technological Advance Accomplished]

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Salzburg contract manufacturer starts more sophisticated complete processing operations using a Hyperturn 65 Powermill

[MTE Metalltechnik Elsenhuber]

The Salzburg-based company MTE Metalltechnik Elsenhuber has specialised in the individual and series production of complex components including assembly production and the complete manufacturing of machines. High manufacturing depth in the area of metal machining and processing ensures very short delivery times with maximum flexibility. Founded in 1987 as a one-man locksmith's shop and repair workshop, MTE Metalltechnik Elsenhuber today employs 79 workers at its 15,500 m² factory in Elsbethen near Salzburg. The company has become a valued provider of different machine components manufactured in job order and assembly production to supply the construction industry as well as the industrial sectors of railway and crane construction, heating, cableway, agricultural and forestry technology.

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[Requirements Profile]

- Flexible complete processing of larger components
- Turning, drilling, milling and gearing operations in one set-up
- Simultaneous machining with 2 tools on the workpiece
- Good accessibility of the workspace



The Hyperturn 65 Powermill scores with user-friendly ergonomics and good workspace accessibility. A very large window provides an unrestricted view – the tool magazine and control are within the operator's immediate reach.

As a full-service contract manufacturer, MTE Metalltechnik Elsenhuber considers modern and, above all, reliable machines a prerequisite for being able to offer the machining quality requested along with delivery times that are as short as possible. This is one of the reasons why mostly machine tools made by Emco are the company's number one choice. Having acquired a Hyperturn 65 Powermill, the Salzburg company has moreover accomplished a technological advance when it comes to the complete machining of complex components.

A machine park equipped with numerous cutting-edge CNC turning and milling machines, two trimming presses, one punch/laser combination machine, one laser cutting machine, four automatic saws as well as different robot and welding systems ensures MTE Metalltechnik Elsenhuber's high manufacturing depth, and thus the flexibility that full-service providers are required to offer. Apart from the Elsbethen location with 15,500 m², a second site in the nearby city of Grödig offers another 6,500 m² for typical steel construction works. All common materials from aluminium to stainless steel are processed there.

Technological Advancement

In order to be able to stay on the global market, Franz Elsenhuber considers continuous technological advancements and investments in modern and flexible as well as partly automated manufacturing approaches vital: 'That is why each year, between three and five percent of our sales are allowed for new acquisitions which are supposed to expand our capacity and take us a technological step further. This is the only way for us to be able to implement the high quality requested with very short delivery times.'

From the very beginning of the activity, the company has intensely cooperated with the local machine tool manufacturer Emco from the nearby city of Hallein. According to Elsenhuber, this was not only due to the wide range of products and an excellent price-performance ratio, but, above all, due to the good customer support and functioning service. 'To me, as a contract manufacturer, it is exceptionally vital that

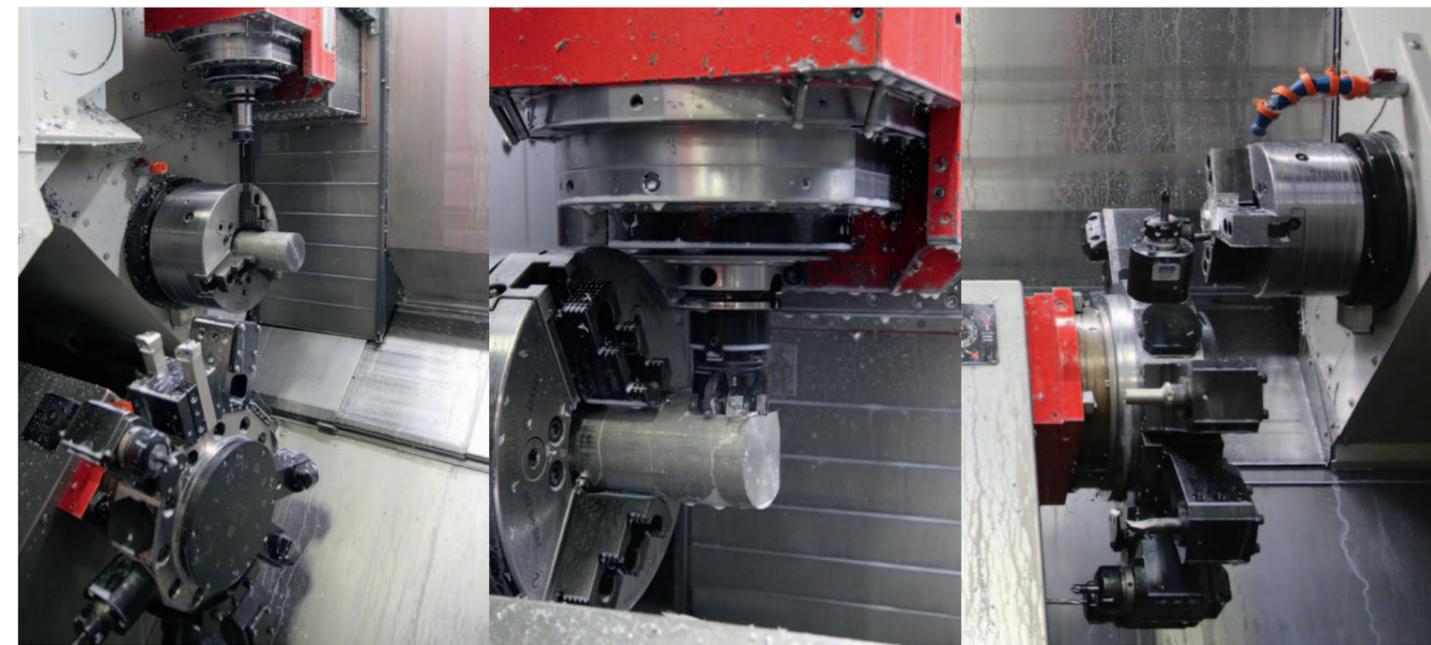
my machines are working. Emco turning and milling machines are stable and reliable anyway. Nevertheless, malfunctions can happen, in which case it is important to act rapidly and reliably. With Emco, this is absolutely guaranteed.' Over the years, a remarkable machine park has been established. Apart from other machines, it is also equipped with a total of 14 Emco machines: five turning centres in different construction sizes, two 5-axis milling machines, one Hyperturn 665 MC plus and, the latest acquisition, one Hyperturn 65 Powermill for the complete processing of complex components in just one set-up.

Efficiency in Complete Processing

With the objective of being able to machine larger components with one set-up and even more flexibility, this year's investment has been a Hyperturn 65 Powermill: 'Our aim has been to further increase our customer base and to be able to efficiently process larger components, too', explains Elsenhuber. Now, after the machine has been used for approximately half a year, MTE Metalltechnik Elsenhuber can definitely confirm the advantages of the new turning and milling centre.

'With a spindle distance of 1,300 mm, a high-performance counter spindle that enables 4-axis machining as well, a B-axis with direct drive for complex, simultaneous 5-axis machining as well as an additional Y-axis for the bottom turret, the Hyperturn 65 Powermill constitutes a high-performance expansion for each and every machine park. It is a perfect match for MTE Elsenhuber's manufacturing concept', adds Rupert Lehenauer, sales manager at Emco.

The advantages of the turning and milling centre are obvious to Franz Elsenhuber, too: 'Thanks to the Hyperturn 65 Powermill, we are now able to implement complex and sophisticated turning, drilling, milling and even gearing operations in only one work process. Setup changes and intermediate storage are no longer required.' He is moreover convinced that the precision on the workpiece was further increased, and that, thanks to the complete processing, the total production times could be significantly reduced.



Equipped with an identical main and counter spindle as well as an additional bottom turret with Y-axis, it is possible to perform 4-axis and simultaneous 5-axis machining as well as machining with both spindles during production time.

Top-Level Technology

The identical main and counter spindle rotates with up to 5,000 rpm, offers a capacity of 29 kW and a torque of 250 Nm. 'Simultaneous machining with two tools on one workpiece is thus possible. This so-called 4-axis machining is an additional advantage when it comes to increasing productivity', stresses Lehenauer.

Another high-performance component is the milling spindle, ensuring high efficiency with 29 kW, 79 Nm and 12,000 rpm. 'With the B-axis direct drive (travel of 220°) the Hyperturn 65 Powermill achieves high dynamics and contour accuracy in simultaneous 5-axis machining, whilst at the same time reducing the non-productive times during tool changing', continues Lehenauer. The additional Y-axis at the bottom turret facilitates different milling operations in parallel with the milling spindle.

The Hyperturn 65 Powermill is equipped with a Siemens Sinumerik 840D sl control. Intuitive and easy programming is possible with the modern user interface. 'At our company, specialist workers still programme at the machine. Due to the complexity of the possible parts, however, we are considering the purchase of a CAM system', says Elsenhuber.

Apart from that, the machine offers user-friendly ergonomics and good workspace accessibility. 'This is crucial, above all, when performing complex processing operations', stresses Lehenauer. A very large window provides an unrestricted view of the generously sized workspace. The tool magazine with a maximum of 80 pockets and the control too are within the operator's immediate reach.

Cooperation That Pays Off

With the new turning and milling machine, MTE Elsenhuber has advanced into a new range of parts, and has thus already been able to win new customers. 'Apart from our intention to clearly position ourselves in the high-end segment of technology, expanding our range of parts is another goal. The Hyperturn 65 Powermill and the competent technical

advice on the part of Emco provide us with tremendous support in doing so.'

Rupert Lehenauer can only emphasise the fruitful cooperation: 'MTE Elsenhuber is a classic Emco customer from the area of job order production, and an excellent reference in Austria. Shortest delivery times and top-quality components speak for themselves.'



'We have been cooperating with Emco ever since the company was founded. Not only do we rely on their large range of products and excellent price-performance ratio, but we also appreciate their good support and functioning customer service.'

Franz Elsenhuber, managing director at MTE Metalltechnik Elsenhuber GmbH



'Featuring a spindle distance of 1,300 mm, a high-performance counter spindle, a B-axis with direct drive for complex, simultaneous 5-axis milling operations as well as an additional Y-axis for the bottom turret, the Hyperturn 65 Powermill is a high-performance upgrade to match any machine park.'

Rupert Lehenauer, area sales manager at Emco GmbH