EMCO

HYPERTURN 65 PM HP

High-performance turning/milling center for complete machining

TURNING/MILLING CENTER FOR MAXIMUM PRODUCTIVITY AND FLEXIBILITY

Equipped with two turning spindles, a powerful milling spindle including a tool changer and a 40-slot magazine as well as with two lower tool turrets featuring 12 driven positions each, the new HYPERTURN 65 Powermill HP (HIGH PERFORMANCE) allows for maximum productivity, especially when it comes to the efficient production of small and medium-sized series with a high degree of variance.

1 MAIN SPINDLE

/ Water-cooled Integrated Spindle Motor (ISM) in synchronous technology
/ High drive power 29 (37) kW
/ High torque 250 (360) Nm
/ Large speed range 0 – 5000 (4000/3500) rpm
/ Highly dynamic
/ Bar capacity diameter 65 (76/95) mm

2 UPPER TOOL SYSTEM

/ Powerful milling spindle 22 kW
/ Wide speed range 0–12000 rpm
/ Water-cooled motor spindle with HSK-T63
/ Internal and external coolant supply
/ B-axis with zero backlash direct drive
/ B-axis position can be clamped in any position

3 B-AXIS

/ Direct drive with torque motor
/ Can be clamped in any position within a range of +/- 110°
/ 5-axis interpolation

4 UPPER Y-AXIS

/ Large working stroke +120 / -100
/ Short projection length
/ Pre-loaded roller guides
/ Wide guide clearance

5 TOOL MAGAZINE

/ 40/80-slot chain-type tool magazine
/ Ergonomically arranged at the front
/ Easy to be manually loaded with tooling
/ Max. tool length 250 mm
/ Max. tool diameter 80 (120) mm
/ Max. tool weight 5 kg

6 COUNTER SPINDLE

/ Water-cooled Integrated Spindle Motor (ISM) in synchronous technology
/ High drive power 29 kW
/ High torque 250 Nm
/ Wide speed range 0-5000 rpm
/ Internal coolant supply for flushing
/ Automatic part ejector

7 LOWER TOOL SYSTEM

/ 2x 12-station tool turret
/ Stable and precise BMTSSP interface
/ Water-cooled milling drive
/ 24 driven positions
/ Threading without length adjustment
/ Polygonal turning

8 LOWER Y-AXIS

/ Travel +/- 50 mm
/ Stable, compact construction
/ Wide guide clearances
/ Wedge carriage system

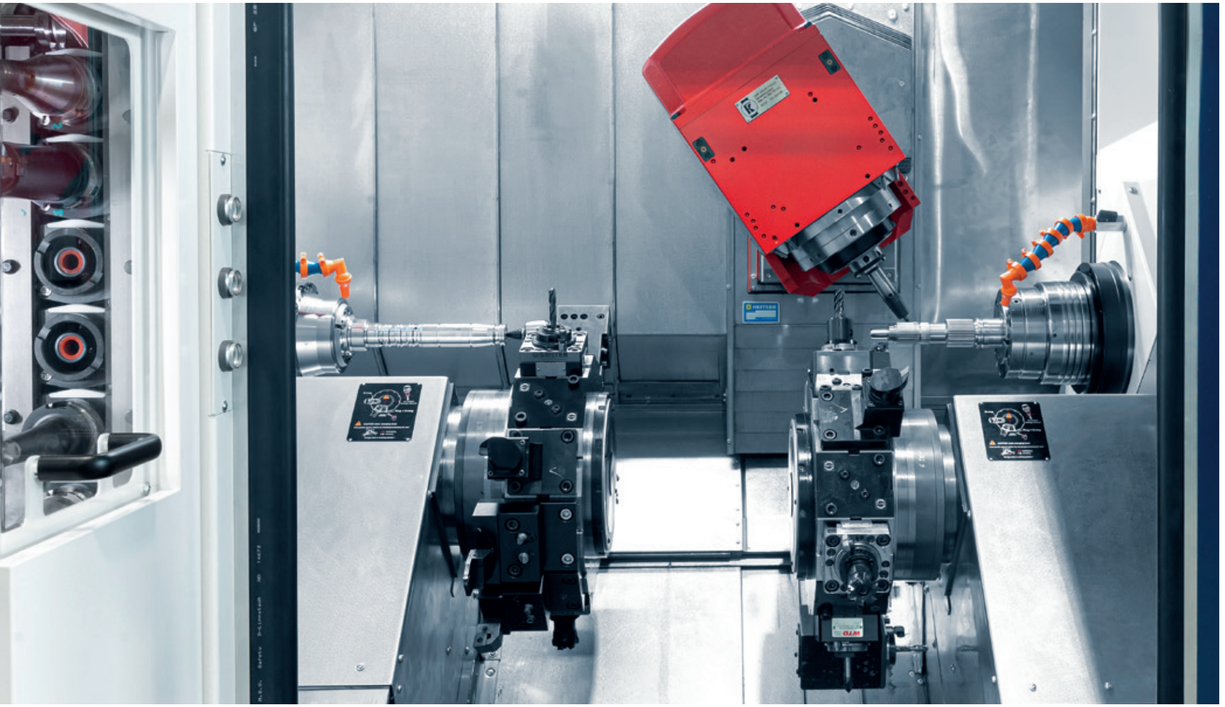
9 CONTROL UNIT

/ Ergonomically designed
/ 90° swivelling
/ Height adjustment: 100 mm
/ Lateral adjustment: 300 mm
/ Siemens Sinumerik ONE
/ 22'' multi-touch display incl. IPC

10 CHIP CONVEYER

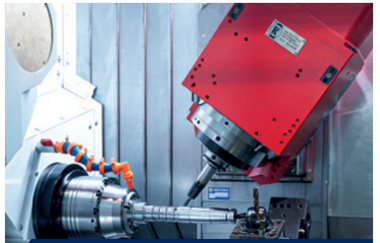
/ Hinged type conveyor belt
/ Throw-off height 1200 mm
/ Integrated coolant tank 400 l
/ Turret pumps: 2 x 14 bar
/ Flushing pumps: 2 x 3.7 bar

TECHNICAL HIGHLIGHTS



MAIN SPINDLE

With an output of 29 (37) kW and 250 (360) Nm torque, the main spindle is powerful enough to machine from bar-stock up to a diameter of 65 (76/95) mm to chuck parts up to a diameter of 250 mm. A mechanical clamp brake ensures additional stability for high-performance milling.

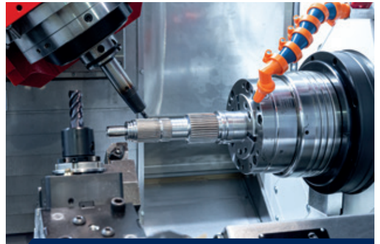


MILLING SPINDLE

At 22 kW and 60 Nm and a max. speed of 12000 rpm, the HYPERTURN 65 Powermill HP supports state-of-the-art milling processes such as HSC or HPC. This means that complex turned and milled parts can be produced in an extremely efficient manner.

MANUAL TOOL CHANGING

Tools can be loaded into the tool magazines from the front. This avoids the need for the user to go to the rear of the machine. Also tool wear or break inspections can be handled in a time-saving way.



COUNTER SPINDLE

The moving counter spindle offers identical performance data to the main spindle. The mechanical disc brake is also included in the basic equipment level. Additionally, a stroke-monitored part ejector that is flooded with coolant is integrated into the spindle. This ensures a reliable, unmanned machining process.

HOLDING BRAKE ON THE MAIN AND COUNTER SPINDLE

It is always the respective C-axis which is positioned for milling and drilling operations. Additionally, however, it is possible to clamp each spindle in any position.

CONTROL UNIT

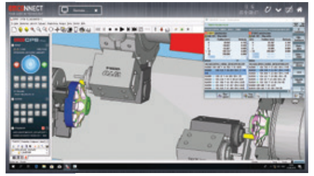
On the Hyperturn 65 Powermill HP, the Sinumerik ONE control unit is located on the right side of the work area in a swivelling panel. This ensures maximum ergonomics for setting up and running in the machine.

NETWORKS ARE CREATED INDIVIDUALLY – OUR SOLUTIONS AS WELL

Staying in touch is important not only among human beings. Persons, machines and the whole production environment must also be connected perfectly and safely in order to ensure efficient procedures during the production process. With EMCONNECT, the machine is optimally equipped for this purpose. The optional EMCONNECT Digital Services offer innovative online services for optimized machine operation. The user has always the control of the machine status. The automatic notification in case of malfunctions or standstill of the machine as well as the extended capabilities for remote maintenance, minimise downtimes.

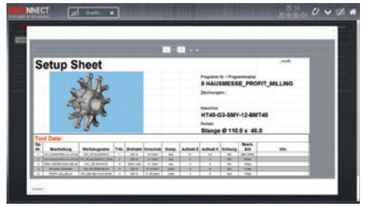
Integration into control

EMCONNECT offers several possibilities of operation according to different situations. For quick access, apps may be used simultaneously in the side panel of controlling.
In this way, you can always look at your familiar numerical control, the well-known centrepiece of the machine.



An innovative concept

These powerful apps may be used independently from the control, while in the background the machine is busy in the production process. With only one click, you can change at any moment between numerical control and EMCONNECT. This is possible with the help of an innovative and ergonomic control panel, equipped with a modern 22" multi-touch display, an industrial PC with associated keyboard and HMI hotkeys.



The control panel as central platform

With EMCONNECT, the control panel of the machine becomes the central platform for the access to all the operative functions. The user gets every type of support from the apps, which directly provide all the necessary applications, data and documents. In this way, EMCONNECT makes an important contribution to a highly efficient processing at the machine.

Comprehensive connectivity options

With the remote support, the web browser and the remote desktop, there are numerous connectivity options, even beyond the direct production environment. With the help of the integrated remote support, it is easily possible to carry out the remote diagnosis and remote maintenance. The optionally available OPC UA interface enables data exchange with the IT system environment and interaction with other machines for automation at shop floor level.

EMCONNECT HIGHLIGHTS AND FUNCTIONS

- **Fully connected**
  Connection to all applications via remote control of the office computer and the web browser
- **Structured**
  Clear monitoring of the machine state and the production data
- **Customized**
  Open platform for modular integration of customer-specific applications
- **Compatible**
  Interface for seamless integration into the operating environment
- **User-friendly**
  Intuitive and production-optimized touch operation
- **Future-proof**
  Continuous extensions as well as easy updates and upgrades

Optional

Shopfloor Data

Standard Apps

Control
Dashboard
Machine Data
System
Remote Desktop
Web Browser
Remote Support
Settings
Cutting Calculator
Calculator
Notes
Service
Documents
EMCO TechSheet
GD&T
File Import
Thread Reference
Tricalc

/ Ing. Johann Brisker
Brisker GmbH

''All EMCO turning machines are automated with short bar or bar loaders, which frees up employees for other tasks and, as a consequence, increases productivity.''

/ The EMCO short bar loaders. Universal and powerful.

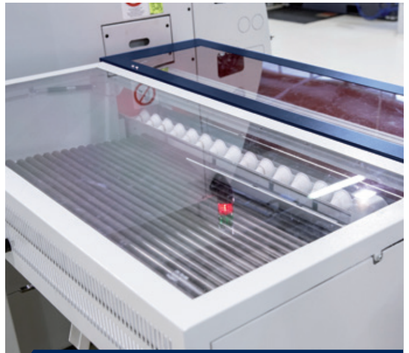
SHORT AND TO THE POINT.

The EMCO SL1200 is the perfect solution for automatic feeding and loading of cut-to-length bars. The key advantages are a small footprint and rapid loading times resulting from shorter strokes.

The technology. The EMCO SL1200 can be used immediately as a ''plug-and-play'' solution. Their extremely small footprint enables processes to be automated even if space is tight. Apart from complying with the latest safety requirements, it is easy to operate and moveable for service purposes. Besides, it can comfortably be incorporated into the production process using the machine control's programme input masks. Minimum setup efforts are required when switching over to other bar diameters.

EMCO SL1200

Space-saving and cost-effective bar loading magazine. Operation and programming could not be easier. May also be used for loading single items through the lathe's main spindle.



MATERIAL STORAGE

The material storage surface with a length of 560 mm is arranged at the rear of the bar loader in a manner with no influence whatsoever on the space available. Depending on the diameter it is possible to store a different number of short bars.

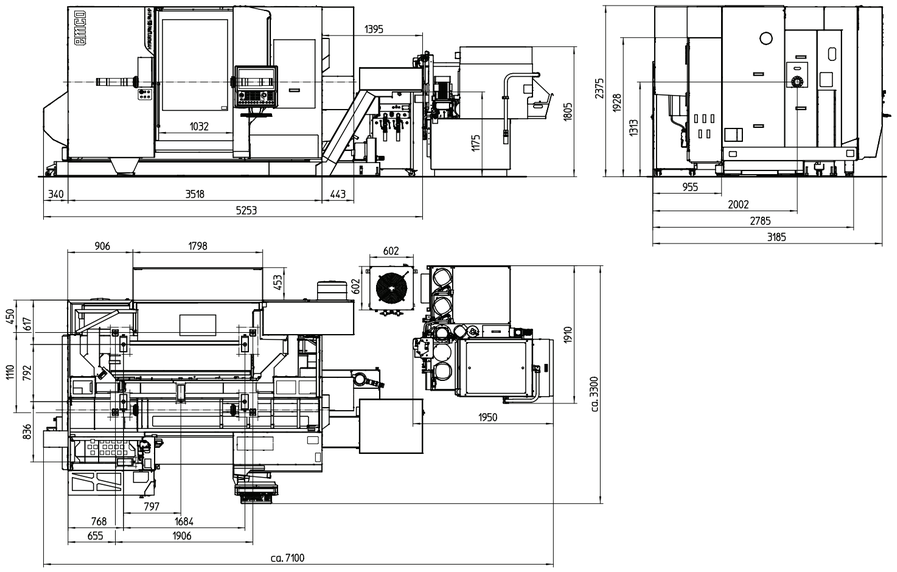
THE BENEFITS

- / Small footprint
- / Easy to use
- / Short feed times
- / Fast, straightforward changeover
- / Option to load individual workpieces
- / Central diameter adjustment
- / The loader operates without oil
- / Ergonomic EMCO design

Technical data	SL1200
Bar diameter	Ø 8 – 95 mm
Max. bar length	1200 mm
Min. bar length	150 mm
Max. bar weight	45 kg
Material storage length	approx. 560 mm
Feed rate	0 – 60 m/min
Bar change time	approx. 15 sec.
Dimensions (L x W)	1700 x 1250 mm
Weight	approx. 500 kg

INSTALLATION PLAN

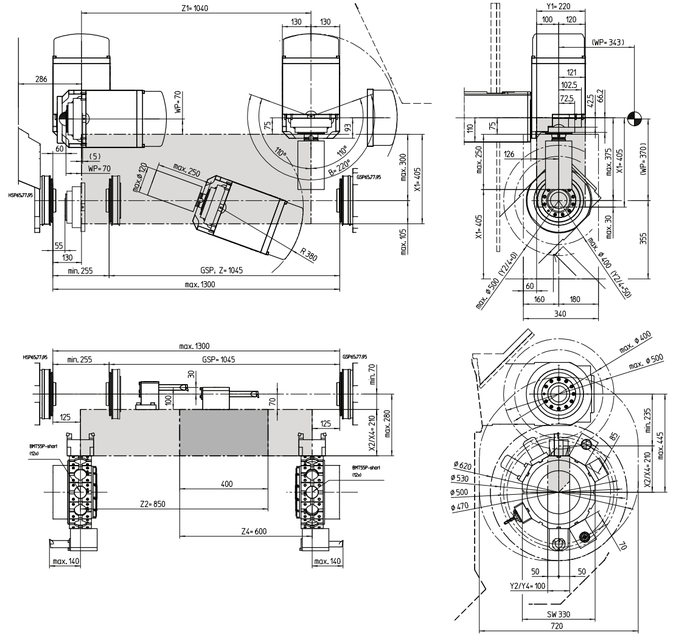
Installation plan HT65 PM HP



Indications in millimetres

WORK AREA

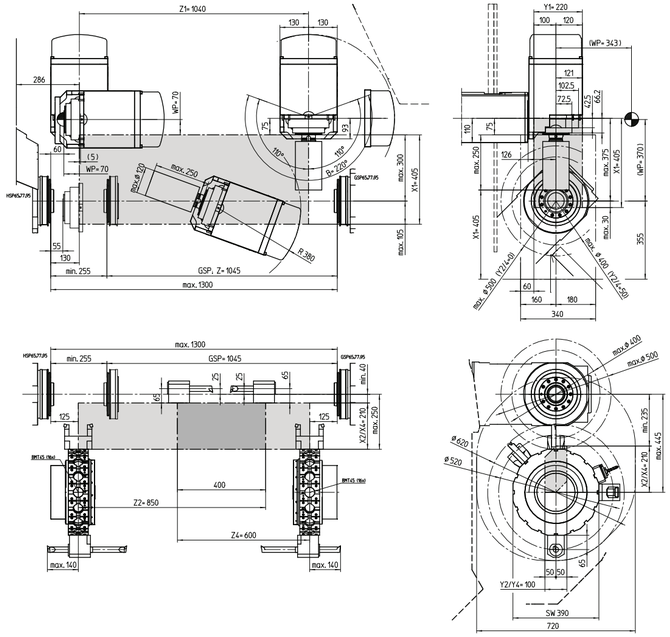
Working area HT 65 PM HP with 12-position BMT55P turret



Indications in millimetres

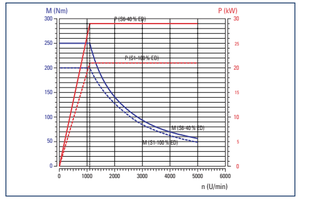
WORK AREA

Working area HT 65 PM HP with 16-position BMT45P turret

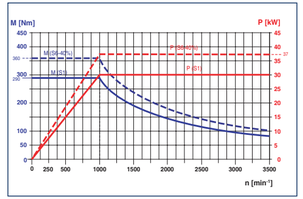


Indications in millimetres

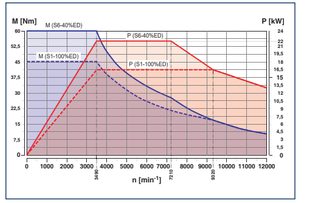
POWER AND TORQUE



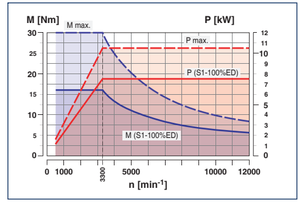
Main and counter spindle ø 65 mm / ø 76 mm



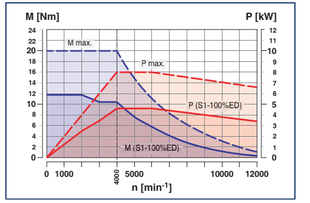
Main spindle ø 95 mm



Milling spindle with max. 12000 rpm



Tool turret with direct drive – BMT55P



Tool turret with direct drive – BMT45P

TECHNICAL DATA

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 (76,2/95) mm

Travel

Travel X1 / X2 / X4	405 / 210 / 210 mm
Travel Z1 / Z2 / Z4	1040 / 850 / 600 mm
Travel Y1 / Y2 / Y4	220 / 100 / 100 mm
Traverse path counter spindle Z3	1045 mm

Main spindle

Speed range (infinitely variable)	0 – 5000 (4000/3500) 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 (4000/3500) rpm
Maximum torque	250 (280) Nm
Spindle nose DIN 55026	A2-6 (A2-8)
Spindle bearing (inside diameter)	Ø 105 (130/140) mm

C-axis

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	60 Nm
Maximum drive power	22 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	40 / 80 mm
Max. tool diameter	Ø 80 (Ø 120) mm
Max. tool length	250 mm
Max. tool weight	5 kg

Tool turret with BMT interface and direct drive

Number of tool positions	2x 12 (16)
Precision interface	BMT55P (BMT45P)
Tool cross-section for square-shank tools	25 x 25 (20 x 20) mm
Shank diameter for boring bars	40 (32) mm
Tool indexing time	0,5 sec.
Speed range of driven tools	0 – 12000 rpm
Torque of driven tools	30 (20) Nm
Drive power of driven tools	10 (8) 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	400 + 980 l
Coolant pumps for the tool systems	3x 25 bar
Scavenge pumps for the work area	2 x 3,7 bar

Power consumption

Connected load	50 kVA
Compressed air	6 bar

Dimensions/weight

Height of center above floor	1313 mm
Overall height	2375 mm
Required space L x D (without chip conveyor)	5253 x 3200 mm
Total weight	12250 kg

Safety devices CE compliant

EMCO

beyond standard

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