

**emco**



**MAXXTURN 65-1000**

Universal turning center for complete machining of bar stock and chuck work



# CNC-UNIVERSAL-TURNING CENTRE WITH MILLING DRIVE AND Y-AXIS

Featuring a clever, modular design, the MAXXTURN 65-1000 offers many possibilities when it comes to meeting specific customer requirements. Two structurally identical and powerful turning spindles offer the basis for unlimited complete machining. A tool turret on the cross slide with optional Y-axis ensures the requisite flexibility. Each of the tool turret's positions is able to hold both stationary and driven milling and drilling heads. The optionally available BMT turret with water-cooled direct drive makes it possible to produce turned/milled parts, which are machined predominantly using milling operations, in an economical way.



Sprocket adapter  
(Aluminium)

## 1 MAIN SPINDLE

- / Integrated, water-cooled spindle motor
- / Spindle nose A2-6 (A2-8)
- / High drive power 29 (37) kW
- / High torque 250 (360) Nm
- / Large speed range 0 – 5000 (4000 / 3500) rpm
- / Bar capacity diameter 65 (76,2 / 95) mm

## 2 TOOL SYSTEM

- / 12-station tool turret
- / VDI 30 (VDI 40) quick-change system
- / 12 driven tool stations
- / Servo-controlled
- / Rigid tapping, Polygonal turning, etc.
- / Optional with BMT-turret and direct drive

## 3 Y-AXIS

- / Travel +/- 50 mm
- / Stable, compact construction
- / Largely spaced guide ways
- / Wedge-style design

## 4 WORK AREA

- / Large spindle distance 1050 mm
- / Optimum accessibility
- / Straight chip drop
- / Stainless steel covers and linings



Machine with optional equipment

## 5 CONTROL UNIT

- / Ergonomically arranged on the right from the working area
- / Swiveling and height-adjustable
- / SINUMERIK 840D sl with 22" colour screen and EMCONNECT
- / FANUC 31i-B with 15" colour screen
- / Conversational programming (ShopTurn / Manual Guide i)
- / 3D simulation
- / USB interface

## 6 COUNTER SPINDLE

- / A2-6 (A2-8) spindle nose
- / Integrated, water-cooled spindle motor
- / High drive power 29 kW
- / High torque 250 Nm
- / Large speed range 0 – 5000 (4000/3500) rpm
- / Incl. coolant-fed parts ejector
- / Optional with Ø 65 (75/95) mm through hole for shaft unloading

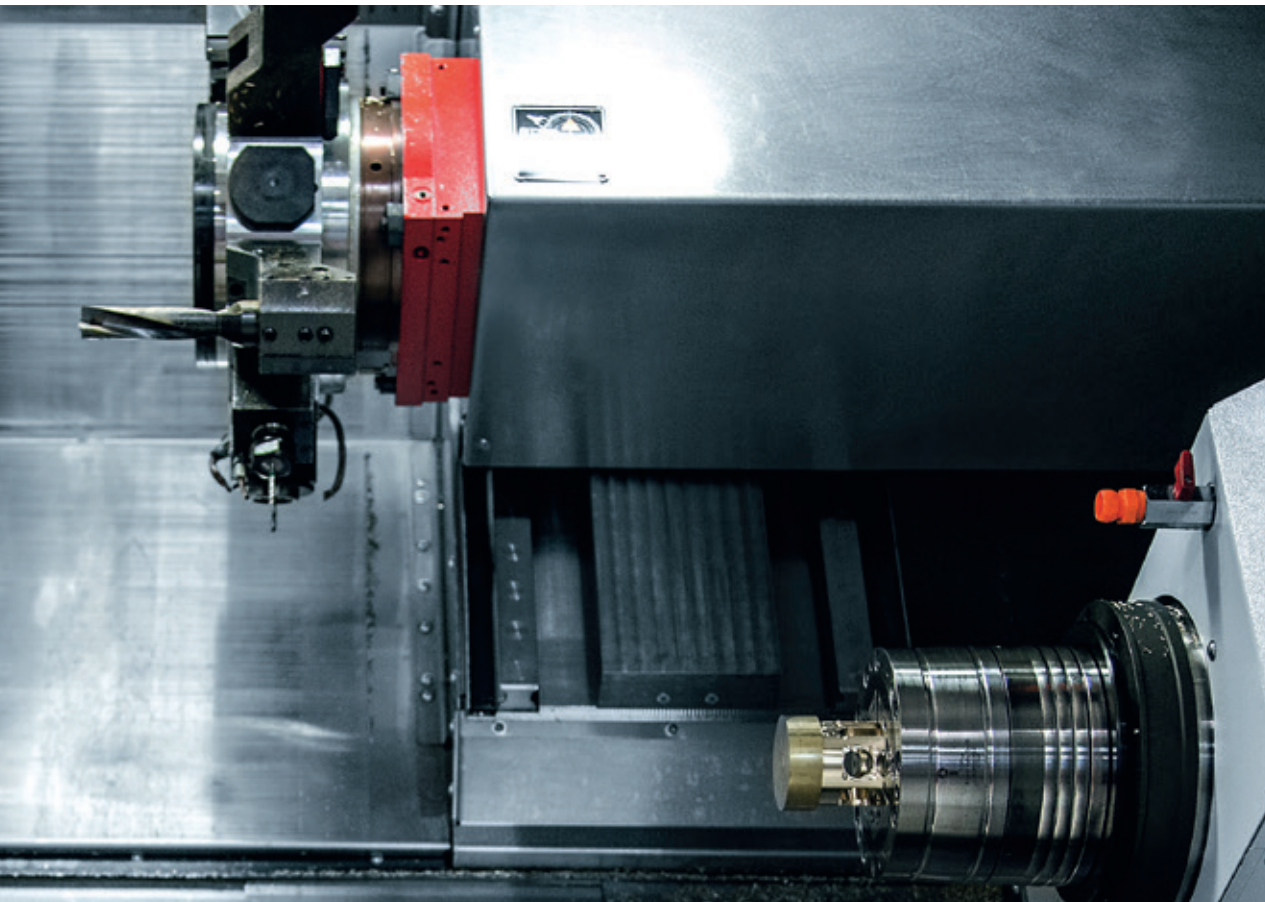
## 7 CHIP CONVEYOR

- / Hinged type conveyor belt
- / Ejection height 1200 mm
- / Integrated coolant tank 450 l
- / Turret pump 14 bar
- / Flushing pumps 2 x 3.7 bar

## 8 AUTOMATIC WORK PIECE PICK UP DEVICE

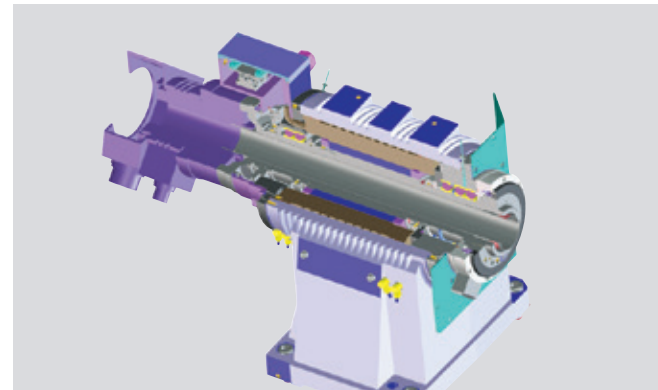
- / Optional arranged on the right in the working area
- / Protected against chips and coolants
- / Universally applicable
- / Including along-integrated prefabricated part buffering belt

# TECHNICAL HIGHLIGHTS



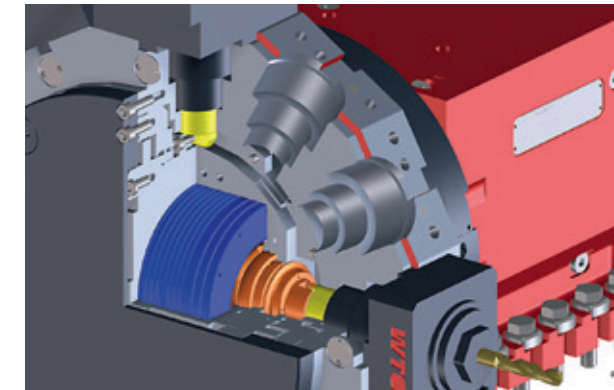
## TOOL TURRET

Fast 12-station servo turret with very short switching times for standardized VDI30 or VDI40 tools. All stations can hold driven tools for drilling, milling and threading operations. The operator is able to control the indexing speed with the override switch at any time.



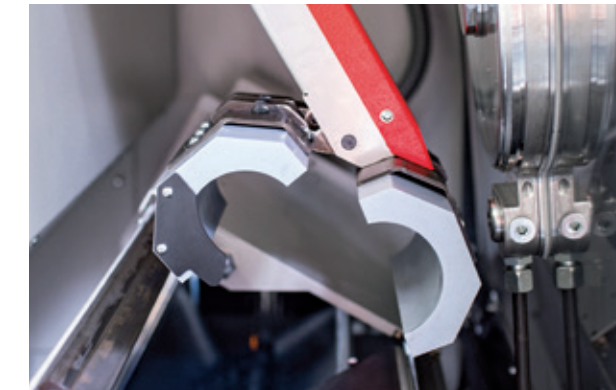
## INTEGRATED SPINDLE MOTOR (ISM)

The latest synchronous technology guarantees the highest dynamics and an exceptional torque in a compact design. Liquid cooling in conjunction with automatic temperature control maintains a constant temperature for all spindle motors.



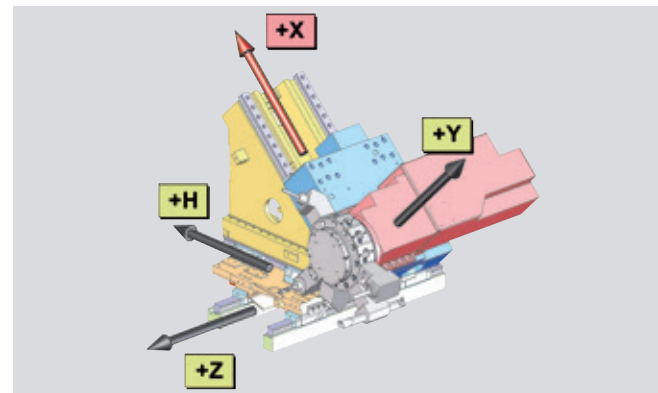
## BMT-TURRET

For economical production of complex turned/milled parts with mainly milling share, there is optional the BMT-turret with water cooled direct drive. With max. 12000 rpm, 30 Nm and 10 kW, this turret offers optimal prerequisites for the complete machining.



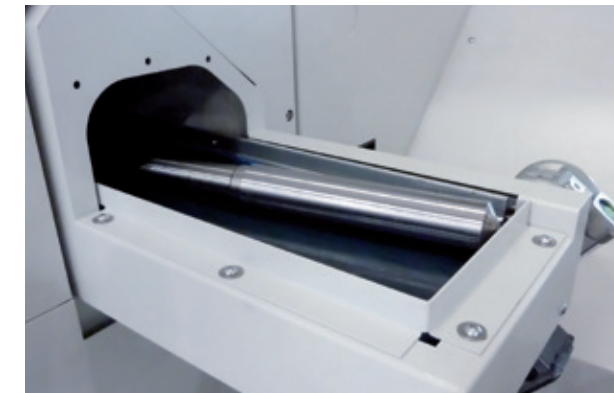
## PARTS CATCHER

The MT 65-1000 electro-pneumatic parts catcher is controlled using M functions. When needed, it moves to the front of the work area and pivots to the spindle center. The finished part is removed from the clamping device and transferred to the catcher tray. The parts catcher then moves back to its initial position and the part is tipped onto a conveyor belt.



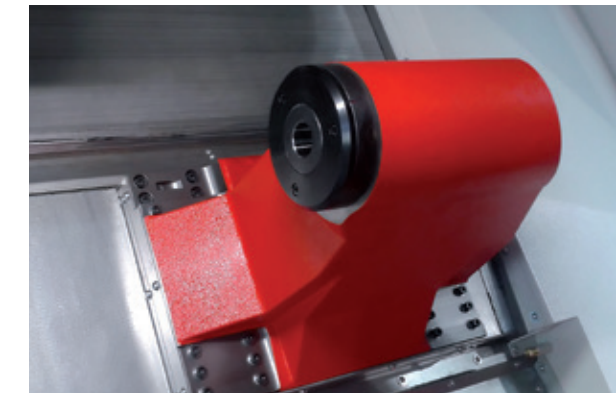
## HIGH-PRECISION Y-AXIS

The MAXXTURN's Y-axis is designed to distribute the cutting forces over two guide planes. The result: outstanding rigidity for all turning and milling operations. The +/- 50 mm travel path permits off-center milling and drilling.



## FINISHED PART CONVEYOR BELT

On the conveyor belt within the machine casing, arranged lengthwise, with a storage surface of 1400 x 180 mm, the work pieces are put down damage free.

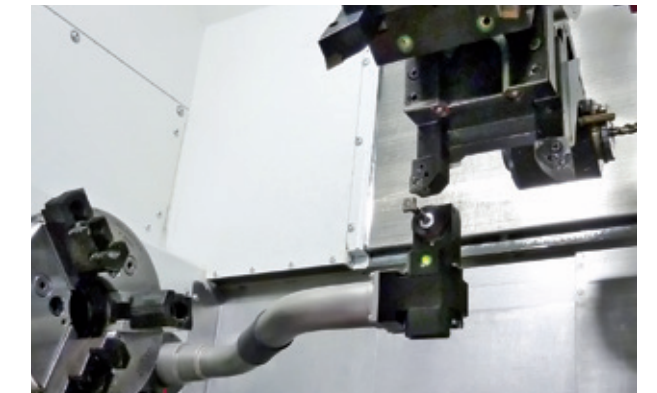


## TAILSTOCK

For shaft-type application, the MT 65-1000 offers two tailstock versions. On the one hand an universal, hydraulic movable tailstock for manually loaded machines and on the other hand a NC-tailstock for fully automatic loaded machines – with the advantage of very short idle times.

## HIGHLIGHTS

- / 2 high performance and water cooled spindle motors
- / 12-station turret with VDI 30 / 40 quick-change system
- / Optional with BMT-turret and direct drive up to 12000 rpm
- / Y-axis with 100 mm stroke for processing of complex turned/milled parts
- / Bar stock feed up to  $\varnothing$  95 mm
- / Optimum chip flow and user-friendly work area
- / SINUMERIK 840D sl or FANUC 31i-B for high-performance drive and controls
- / Made in the Heart of Europe



## TOOL MEASURING

The tool measuring arm equipped with a touch-probe enables fast and precise measuring of tools in the workspace. It is mounted manually in the bracket below the main spindle and returned to a storage tray in the left machine cladding after use.

# 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.

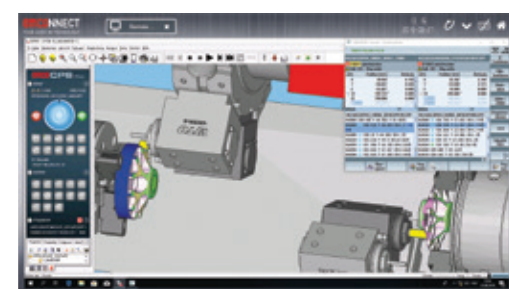
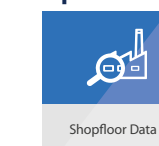
## EMCONNECT HIGHLIGHTS AND FUNCTIONS

- / 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 data
- / Future-proof**  
Continuous extensions as well as easy updates and upgrades

## 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
Shopfloor Data	Thread Reference
	Tricalc

## Optional



# The EMCO short bar loaders. Universal and powerful.



## SHORT AND TO THE POINT.

The EMCO SL 1200 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.

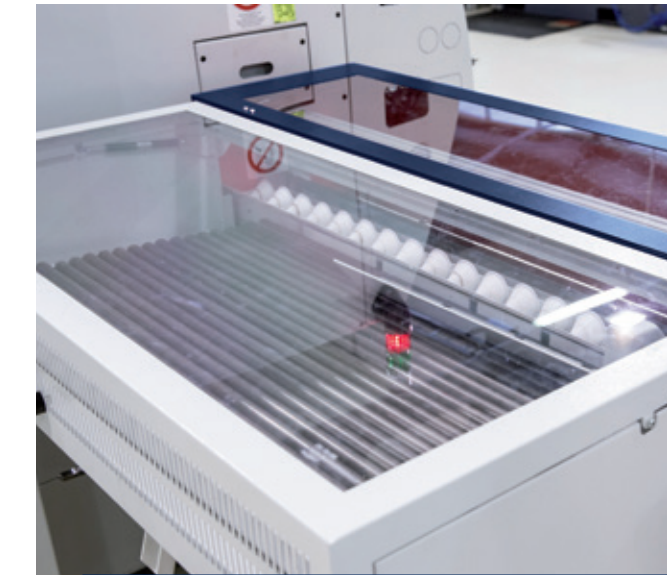
The technology. The SL 1200 can be used immediately as a "plug-and-play" solution. Their extremely small footprint enables processes to be automated even if space is tight. Apart from complying with the latest safety requirements, it is easy to operate and moveable

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 SL 1200

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	SL 1200
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

# THE EMCO GANTRY LOADER. INDIVIDUAL PROCESS OPTIMIZATION.

- 1 GANTRY LOADER
- 2 PALLET MAGAZINE (with 20 stations)
- 3 GRIPPER SYSTEM



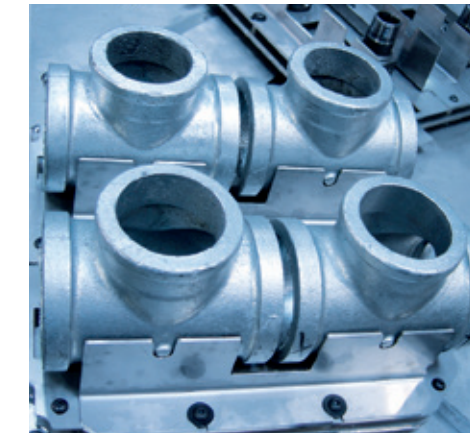
## ADVANTAGES

- / Fully automatic loading and unloading of the workpieces
- / Multi-channel Sinumerik control incl. user cycles
- / Seamless interplay between the machine tool and the loading device
- / Varied possibilities of customer-specific adaptation
- / Possibility of integration of measuring station, signing station, cleaning station, etc.
- / Short spare time due to a loading hatch

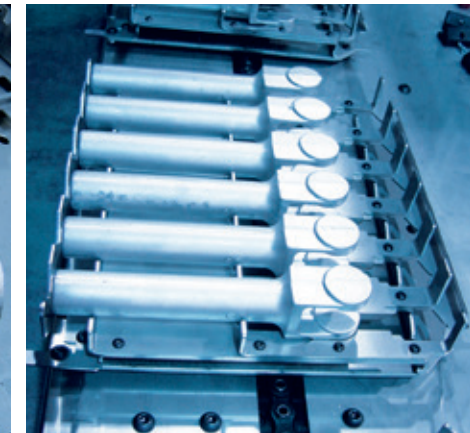
## AUTOMATIC RETURN ON INVESTMENT

### Workpiece magazine

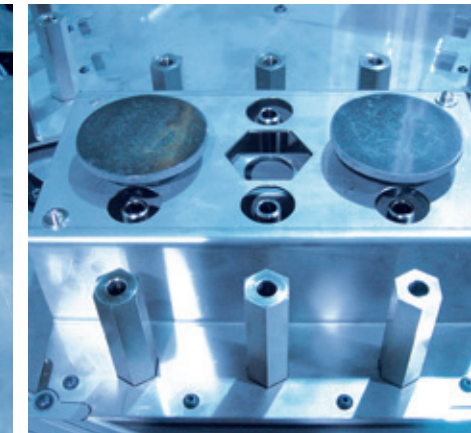
Blank-specific pallet attachments enable oriented loading of blanks into the machine and increase the parts stock for unmanned production. Changeover times are reduced or eliminated thanks to the perfect adjustment to the customer's parts.



4-station pallet attachment for tees



6-station pallet attachment for articulated brackets



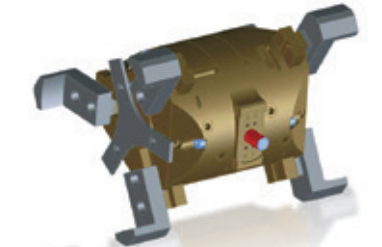
Multi-pallet attachment for a family of parts



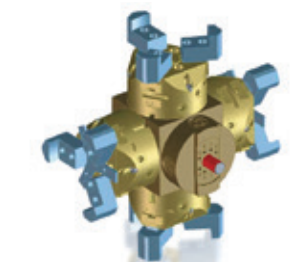
4-station pallet attachment for valve caps



20-station pallet magazine with customer-specific pallets



2 x 3-jaw double gripper head



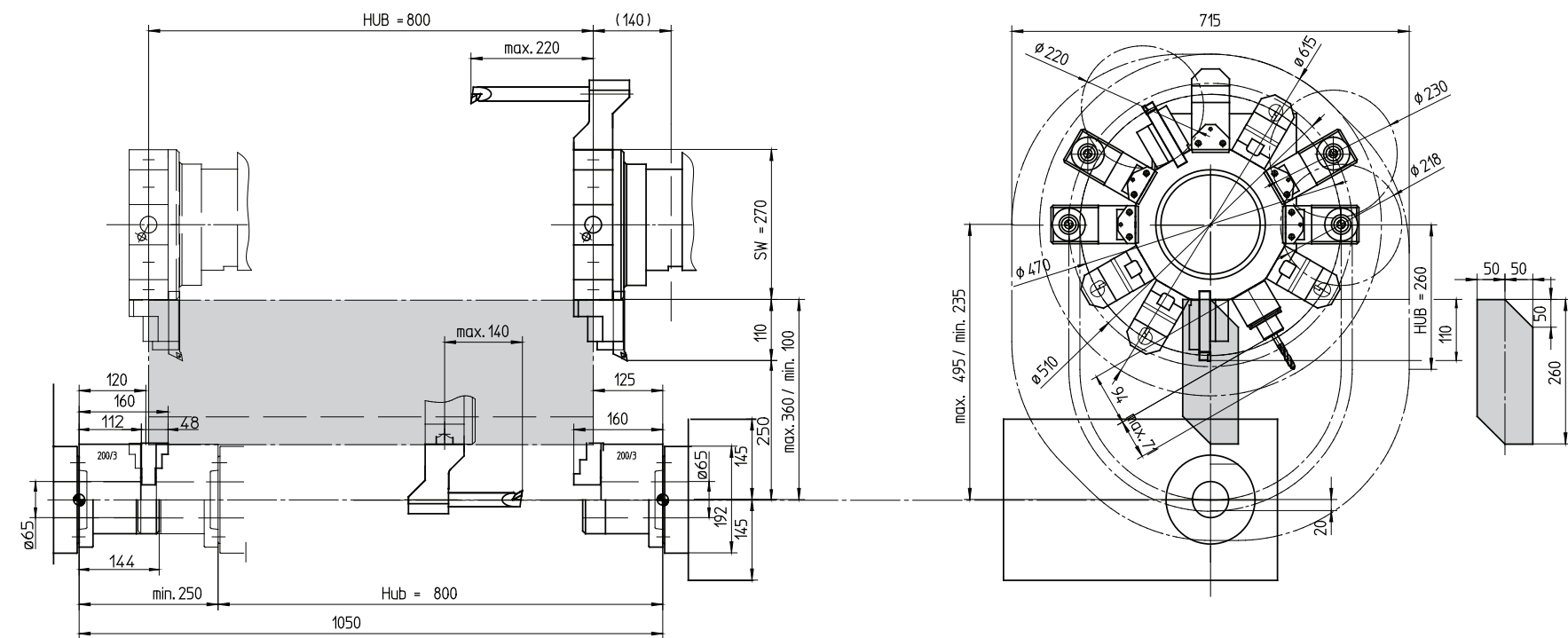
4 x 3-jaw gripper head



Shaft gripper head

# WORKSPACE

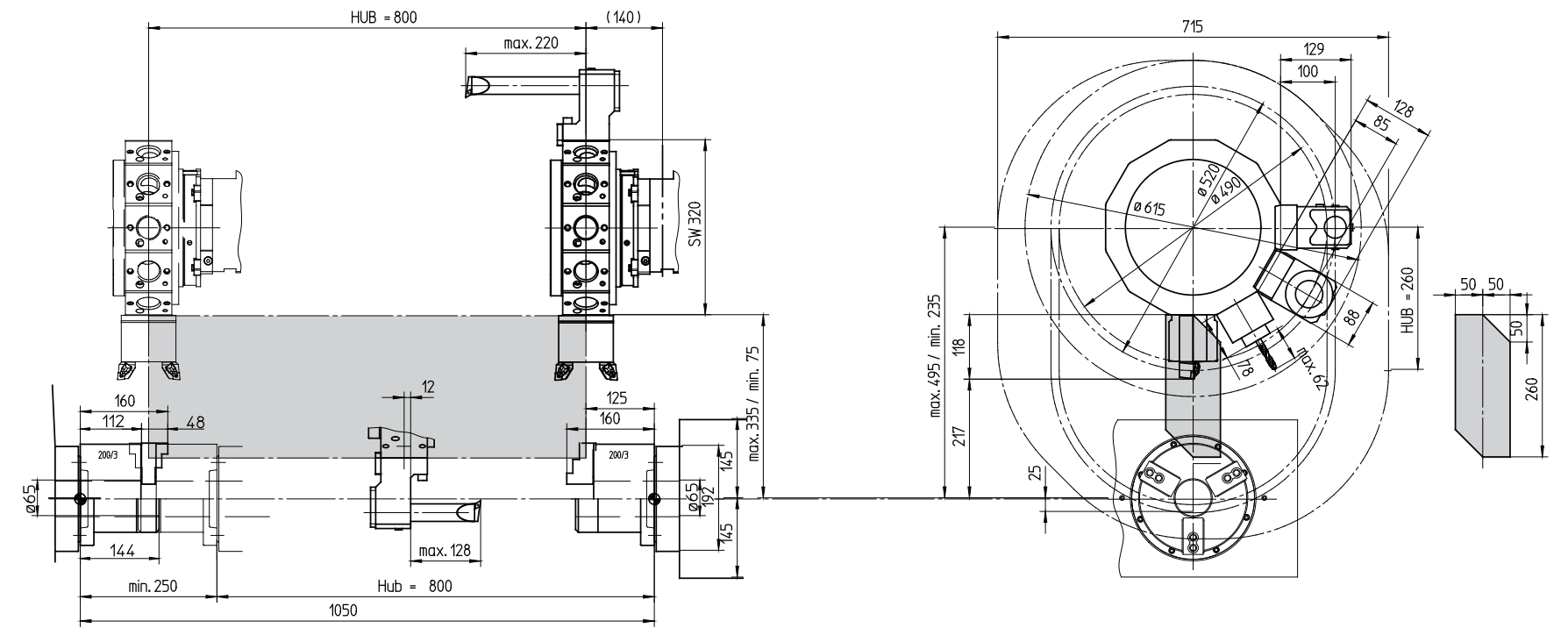
Maxxturn 65-1000  
with VDI 30



Indications in millimeters

# WORKSPACE

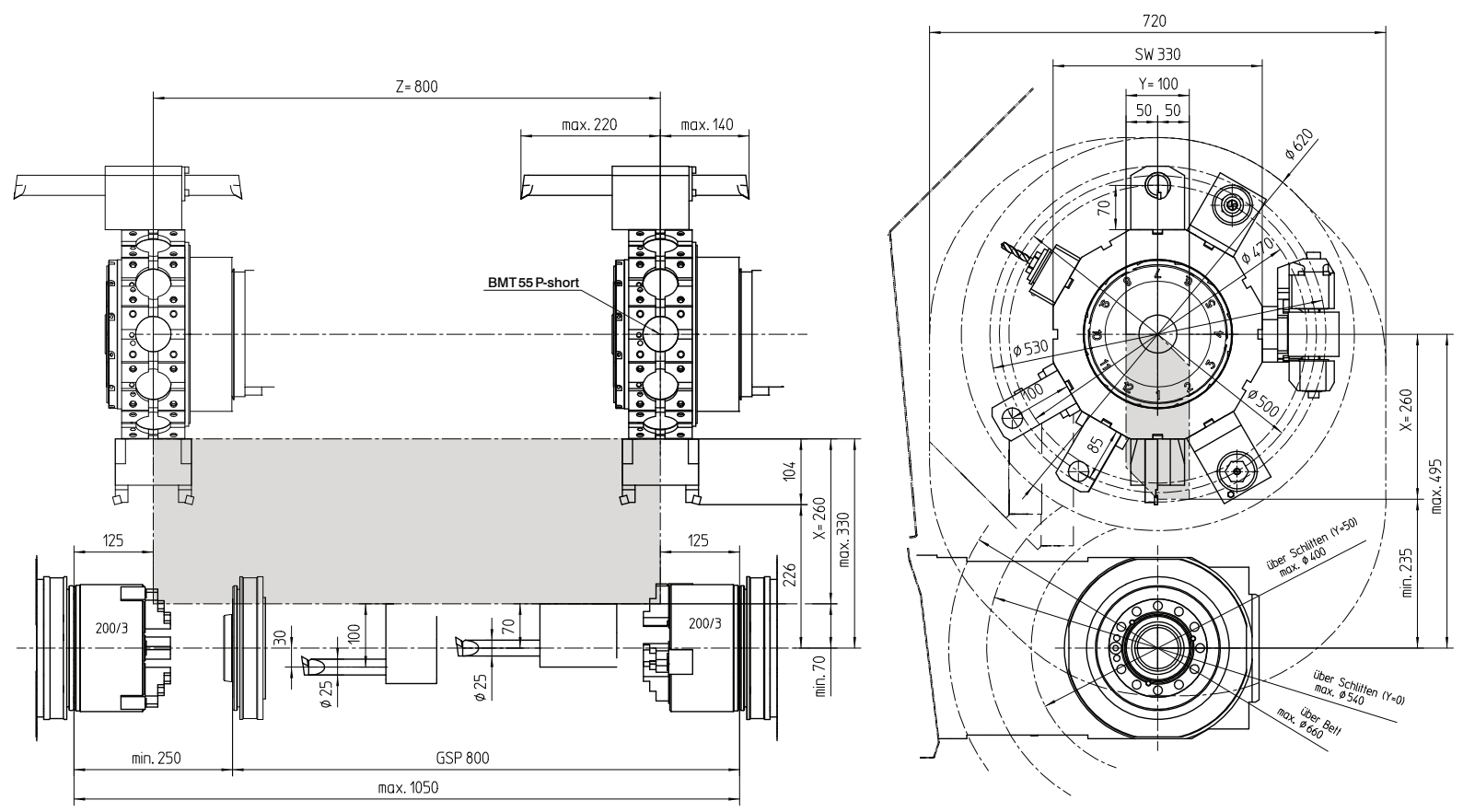
Maxxturn 65-1000  
with VDI 40



Indications in millimeters

# WORKSPACE

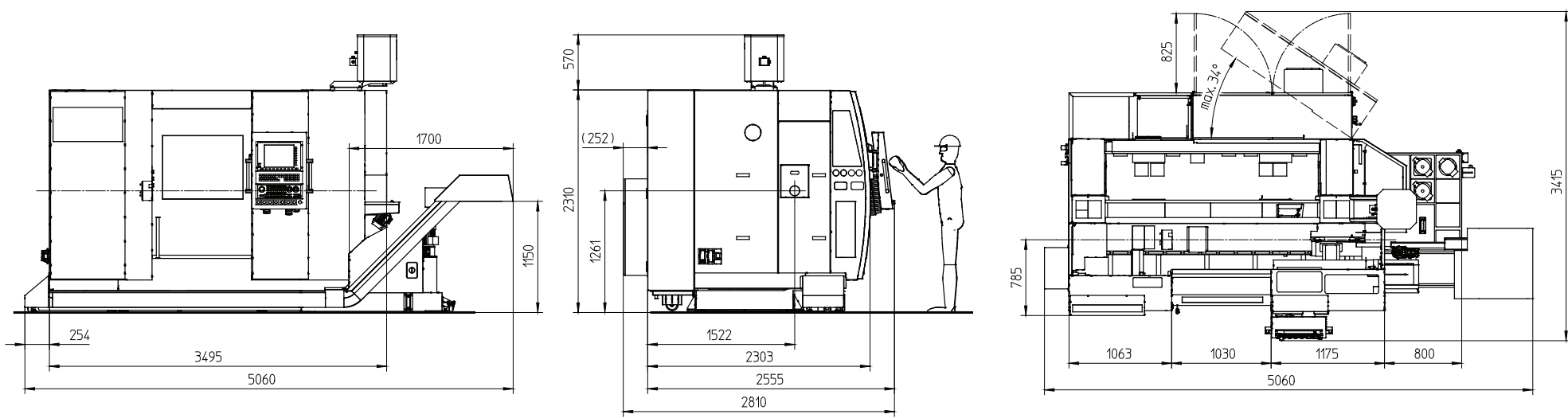
Maxxturn 65-1000 with BMT55P



Indications in millimeters

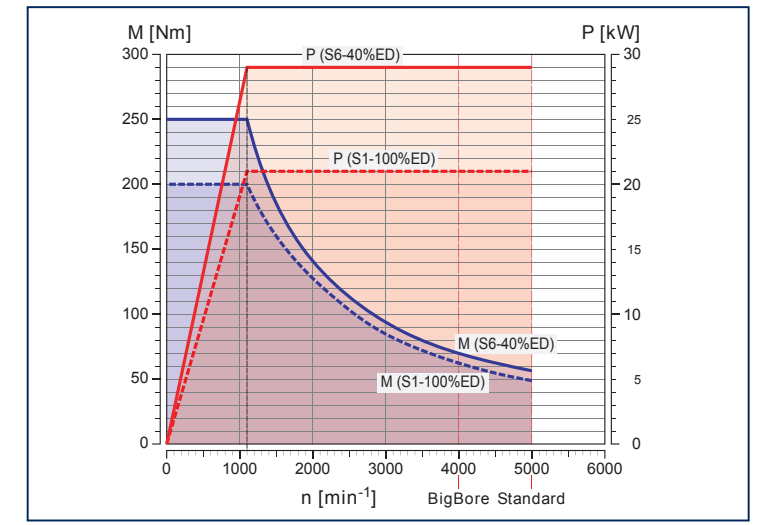
# MACHINE LAYOUT

Machine layout Maxxturn 65-1000

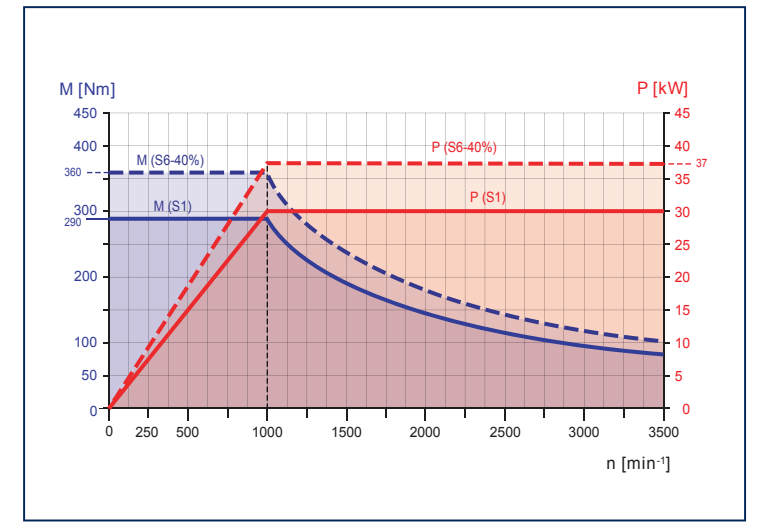


Indications in millimeters

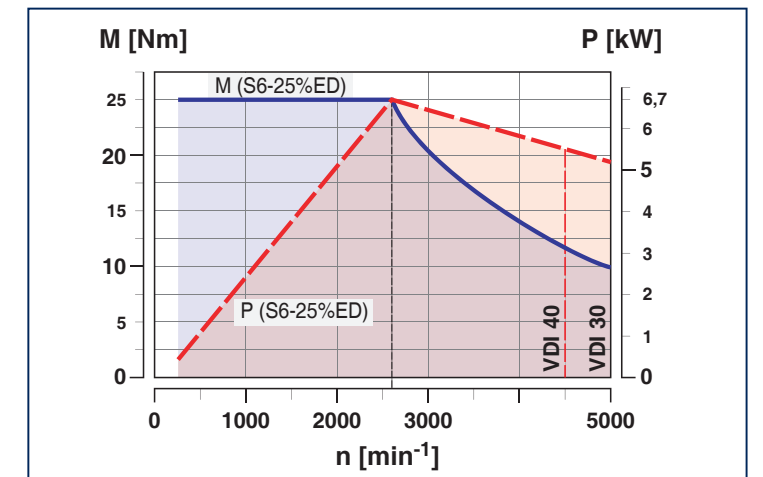
# PERFORMANCE AND TORQUE



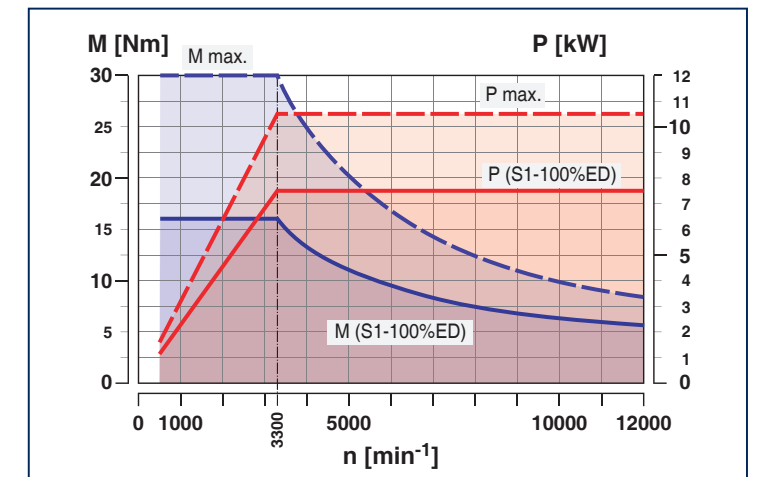
Main and counter spindle ø 65 / 76,2 mm



Main spindle ø 95 mm



Performance and torque tool turret - driven tools VDI 30/40



Performance and torque tool turret - driven tools BMT55P



# TECHNICAL DATA

## Work area

Swing over bed	Ø 660 mm
Swing over cross slide	Ø 540 mm
Distance between spindle noses	1050 mm
Maximum turning diameter	Ø 500 mm
Max. part length	800 mm
Max. bar-stock diameter	Ø 65 (76,2 / 95) mm

## Travel

Traverse path X	260 mm
Traverse path Z1 / Z2	800 / 800
Traverse path Y	100 (+/-50)

## Main spindle

Speed range	0 – 5000 (4000 / 3500) rpm
Maximum torque	250 (250 / 360) Nm
Spindle nose DIN 55026	A2-6 (A2-8 / A2-8)
Spindle bearing (inside diameter)	Ø 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-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

## Tool turrets top and bottom

Number of tools 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 mm
Tool indexing time	0,7 sec

## Driven tools

Speed range	0 – 5000 (4500) rpm
Torque	25 Nm
Drive power	6,7 kW
Driven tools	12

## Turret with BMT-interface and direct drive

Number of tool positions	12
Precision interface	BMT-55P
Tool cross-section for square tools	20 x 20 (25 x 25) mm
Shank diameter for boring bars	40 mm
Tool change time	0,7 sec
Speed range of the driven tools	0 – 12000 rpm
Torque of the driven tools	30 Nm
Driving power of the driven tools	10 kW

## Feed drives

Rapid speed X	30 m/min
Rapid speed Z1 / Z2	30 m/min
Rapid speed Y	12 m/min
Feed force X	5000 N
Feed force Z1 / Z2	8000 N
Feed force Y	7000 N

## Coolant system

Tank capacity	450 liter
Coolant pump for the tool turret	14 bar
Flushing pumps for the work area	2 x 3,7 bar

## Power consumption

Connected load	40 kVA
Compressed air	6 bar

## Dimensions

Height of center above floor	1261 mm
Overall height	2341 mm
Required space L x D (with chip conveyor)	5060 x 2825 mm
Total weight	8450 kg

## Safety devices CE compliant

beyond standard /

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