

**emco** group

Designed for your profit



# HYPERTURN 100 Powermill

Turning and Milling Centre for the Complete  
Machining of Complex Workpieces

**TURNING**  
EMCO-WORLD.COM

# Multifunctional Profit Centre

The Hyperturn 100 is a powerful multitasking machine for the machining of complex workpieces with a maximum turning diameter of 720 mm and a maximum turning length of 3100 mm (between the points). The 40 or 100 tool stations available allow for machining with high flexibility.

## 1 MAIN SPINDLE

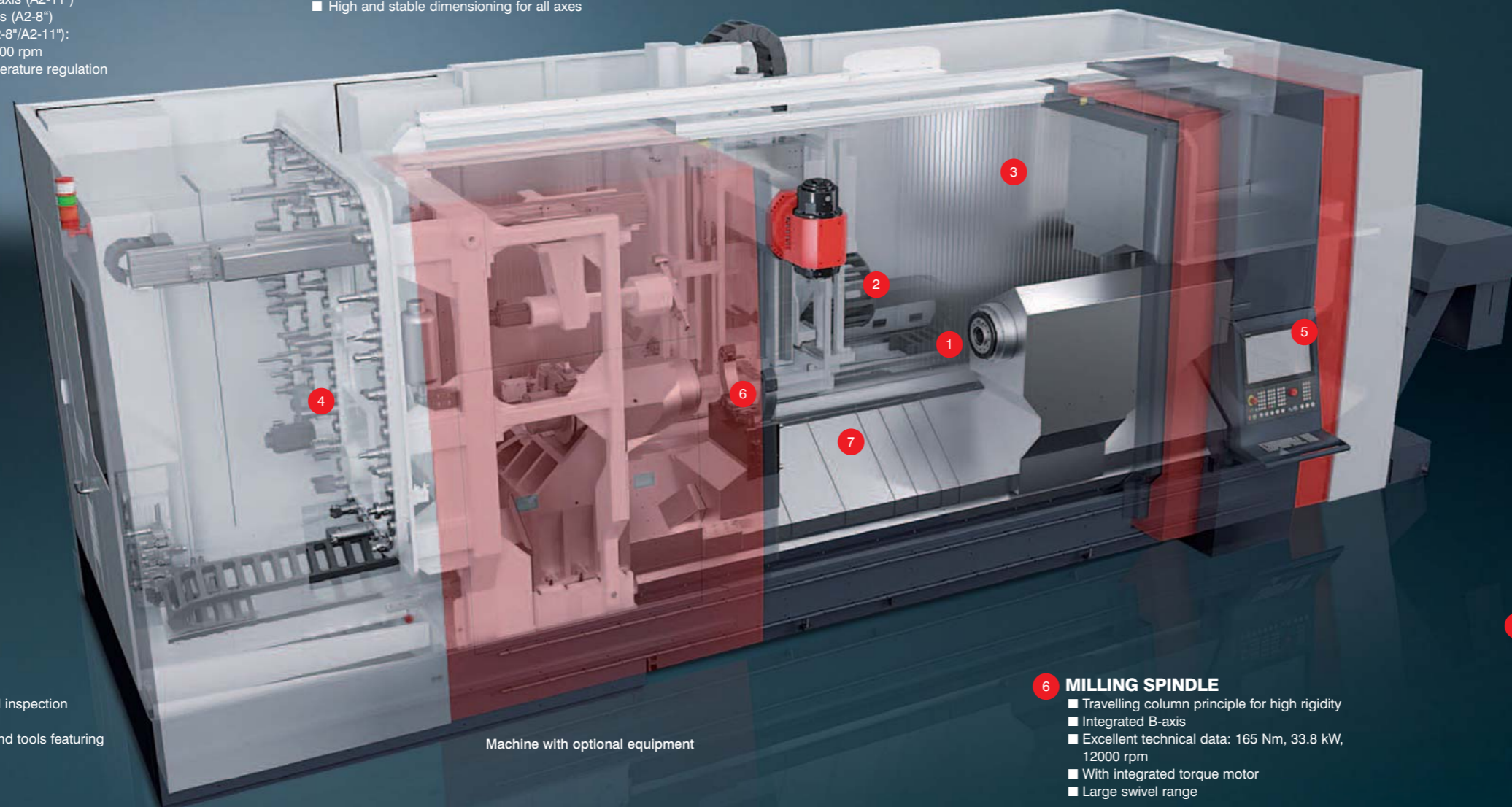
- Dual drive motor for a zero-play C-axis (A2-11")
- Integrated spindle motor with C-axis (A2-8")
- Impressive performance values (A2-8"/A2-11"):  
33/53 kW - 800/3500 Nm - 2500/3500 rpm
- Liquid cooling with automatic temperature regulation

## 2 X-, Z-, Y-AXES

- All axes equipped with Heidenhain glass scales
- High feed forces
- NC-controlled tailstock and steady rest
- High and stable dimensioning for all axes

## 3 MACHINE DESIGN

- Optimum use of space
- Innovative protection system against flying chips and coolant
- Large work area
- Ergonomic access
- Chip flushing system in the work area (standard)



Machine with optional equipment

## 4 TOOL MAGAZINE

- Perfect accessibility for tool setup and inspection
- Up to 100 tool stations
- 3 additional stations for boring bars and tools featuring large dimensions

## 5 CONTROL

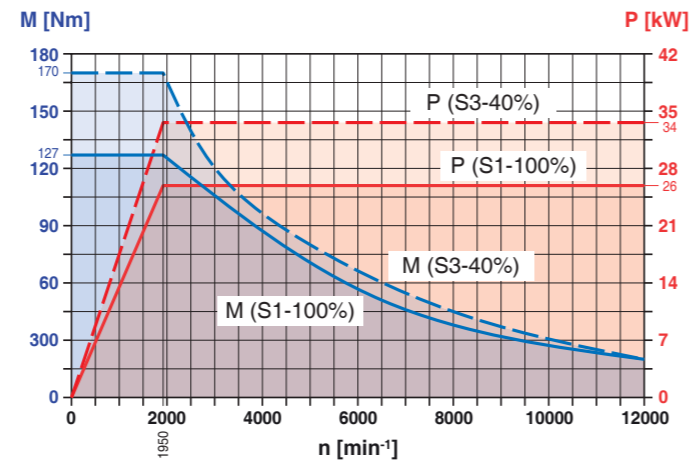
- Sinumerik 840D sl with 22" colour screen
- USB interface
- Swivel-mounted, movable control panel
- EMCO technology cycles
- AURIGA process assistant

## 6 MILLING SPINDLE

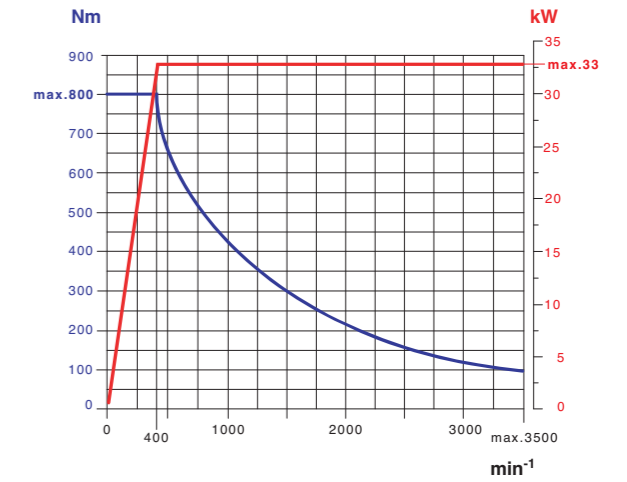
- Travelling column principle for high rigidity
- Integrated B-axis
- Excellent technical data: 165 Nm, 33.8 kW, 12000 rpm
- With integrated torque motor
- Large swivel range

## 7 TAILSTOCK

- Hydraulic quill
- Integrated bearing
- Off-centre quill setting for easier machining
- Positioning with NC-axis
- 100% programmable and monitored
- Powerful counter-spindle, identical to the main spindle



**Milling spindle.** The standard version comes with 12000 rpm and is suitable for all turning, drilling and milling operations and technologies. The water-cooled ISM (integrated spindle motor) can be delivered with up to 33,8 kW and a maximum torque of 165 Nm as well as with HSK-T 63 or PSC63 (Capto C6). Coolant inside and outside (up to 80 bar), which allows for the efficient production of turned and milled parts.

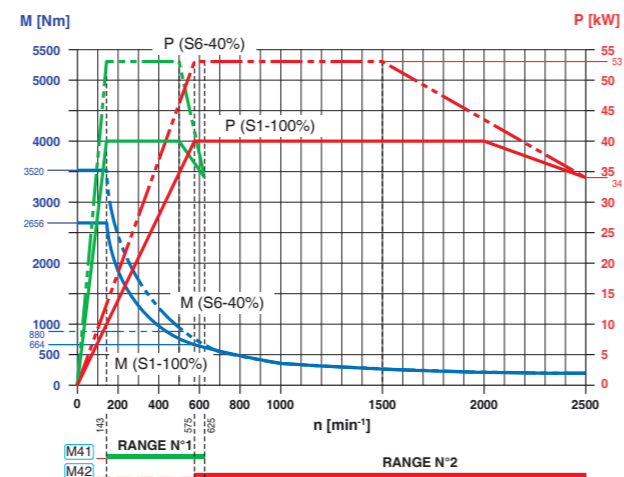


**Main spindle and counter-spindle (A2-8").** The A2-8" spindle version with dynamic direct drive and a maximum of 3500 rpm and 33 kW is available as an alternative. The standard spindle brake allows for additional stability during high-performance milling. Identical performance data are offered by the movable counter-spindle, which helps achieve a secure automated machining process.

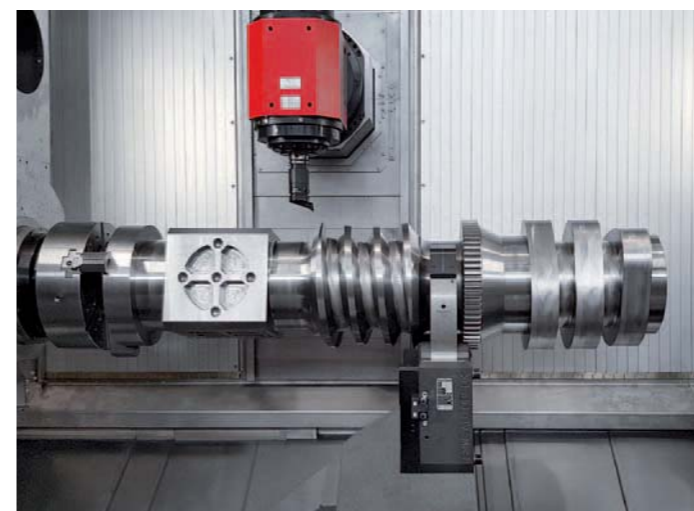


**Work area.** The spacious work area has been designed for workpieces featuring a turning diameter of up to 720 mm. The complete machining of complex workpieces in one setup is possible when using an NC steady rest and a counter-spindle.

# Hyperturn 100 Powermill Technical Highlights



**Main spindle and counter-spindle (A2-11").** Featuring performance data that enable all types of machining without any compromises. The Emco spindle concept comes with two servomotors that also act as a C-axis. The motors work synchronously, guarantee the compensation of plays and enable the achievement of the outputs and torques shown in the diagram. What is more, the main spindle and the counter-spindle are equipped with a special EMCO cooling system that optimises the temperature stability and guarantees maximum precision regardless of the machining duration.



**Hyperflexibility.** The Hyperturn 100 machine concept enables a wide range of machining operations in one setup, including off-centre turning and milling, bore levelling, gear milling, contour milling, 5-axis machining and much more.

## Highlights

- Very large work area for the complete machining of large workpieces featuring a turning diameter of up to 720 mm and a maximum length of 3100 mm
- Powerful main spindle and counter-spindle (A2-8", A2-11"), 33/53 kW and 800/3500 Nm
- Dynamic and precise B-axis with direct drive as well as high torque and performance
- Multitasking and multi-technology: Sinumerik 840D sl with Auriga process assistant
- Main spindle and counter-spindle: high-performance machining with vibration-damped boring bar, including a special magazine (option) with the same drive concept and identical performance data
- Automatic tool default settings and workpiece measuring probes
- One or several NC steady rests
- 40 / 100 tool magazine stations
- Flexible milling spindle with 12,000 rpm
- Boring bar pick-up system
- Simultaneous 5-axis machining
- Maximum coolant pressure: 80 bar
- Virtual machine – collision monitoring
- EMCO teleservice/network service
- Tool breakage monitoring
- Made in the Heart of Europe

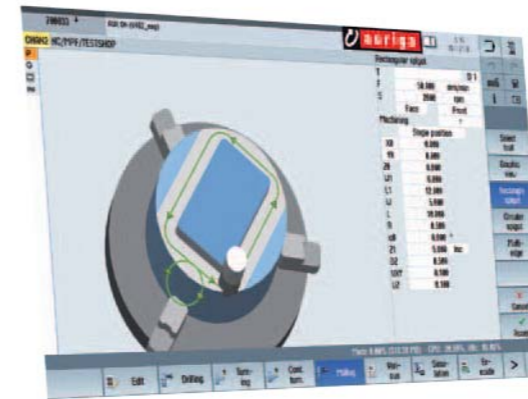


# Your „Control Center“ for the entire production flow



## DASHBOARD – For a Quick Overview of the Machine Status

Clear and compact processing of all relevant machine and NC data depending on the configuration of the machine (number of tool systems, spindles, ...) and the active operating mode (JOG, MDA, AUTO). Know at a glance whether everything is OK or whether the machine operator will be required to interact.



## SINUMERIK - the Control and the Machine's Centerpiece

Thanks to the App Launcher operators may switch between the auriga Apps and the control at any time. All it takes to do so is a click on the auriga logo. To improve the work processes on the machine the control can, as shown in the picture, be operated in full screen mode or in interaction with practical apps (sidebar).



## MACHINE DATA – All Data related to Productivity at a Glance

Operating data collection to inform the user about the current production status and OEE (Overall Equipment Effectiveness) values full screen or sidebar.



auriga's hardware basis is a 22" industrial touch control panel combined with an industrial PC (IPC).

## Highlights

- Direct interaction between EMCO Apps and the control
- Intuitive user interface optimized for touch control
- Range of available applications is continuously being expanded
- Customised and project-specific applications
- Optimized for the EMCO machine range
- auriga allows for easy and quick configuration and updating

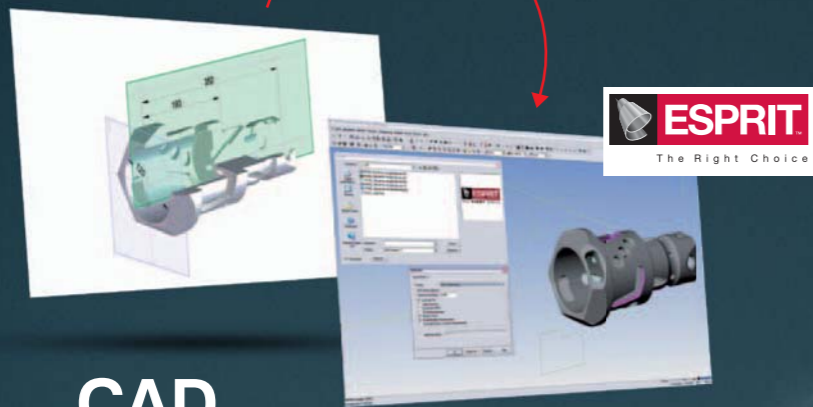


## DOCUMENTS – A Digital and Expandable Document Collection Customised to Suit Your Individual Needs

To display PDF documents such as machine documentations, programming instructions, process descriptions ... Including favourites management - full screen or sidebar

# Virtual Workflow. Real Benefits.

The Esprit CAM system offers high flexibility and process security, a comprehensive selection of machining cycles, maximum tool control, and cross-machine technology for your entire production facility. EMCO CPS Pilot provides a true 1:1 mapping of the real machine for defining and testing processes, optimising machining sequences and training new specialist workers.



## CAD

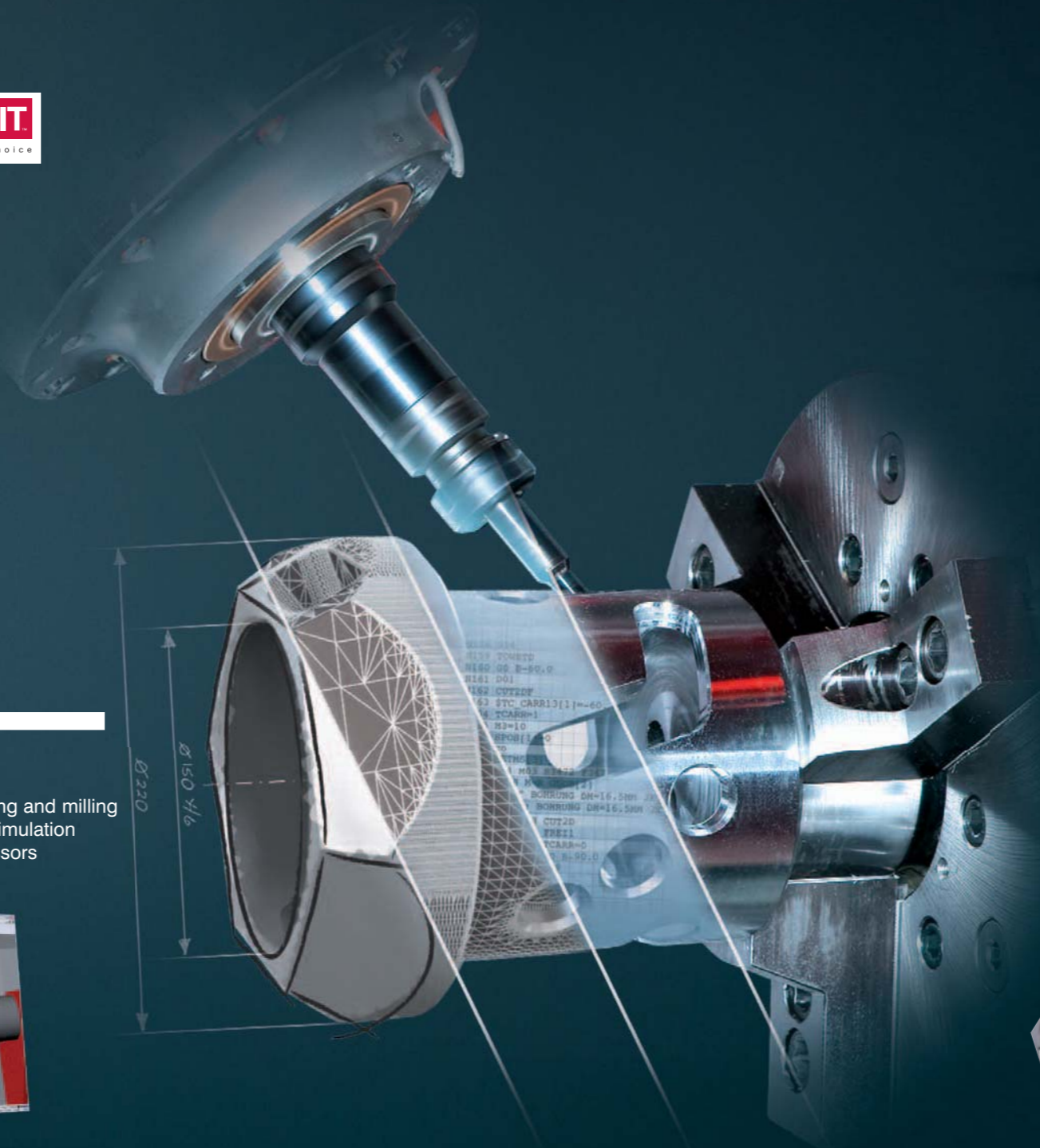
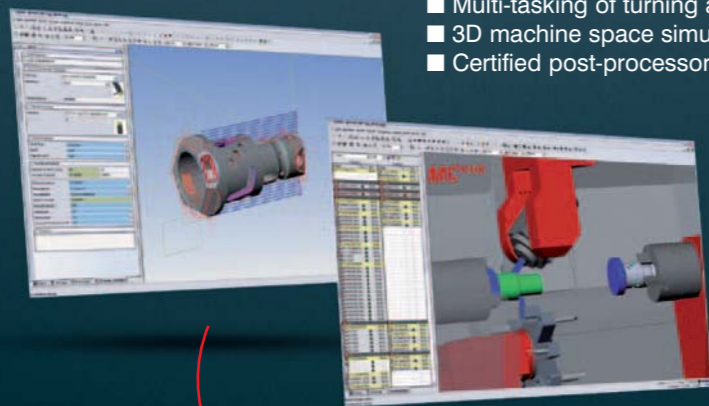
### Direct CAD data import

- AutoCAD (DWG)
- Parasolid®
- Solid Edge®
- Solid Works®
- ACIS® (SAT)
- Optional interfaces: CATIA®, Pro/ENGINEER®, STEP, STL,...



## CAM

- 2-22 axis turning
- 2-5 axis milling
- Multi-tasking of turning and milling
- 3D machine space simulation
- Certified post-processors



## CPS

- 1:1 simulation with collision detection
- Direct connection to CAM ESPRIT
- Process optimization
- Reverse simulation of existing NC codes
- Reduction in scrap rates
- Training on the virtual machine
- Simulation of loading systems (e.g. EMCO gantry loader)

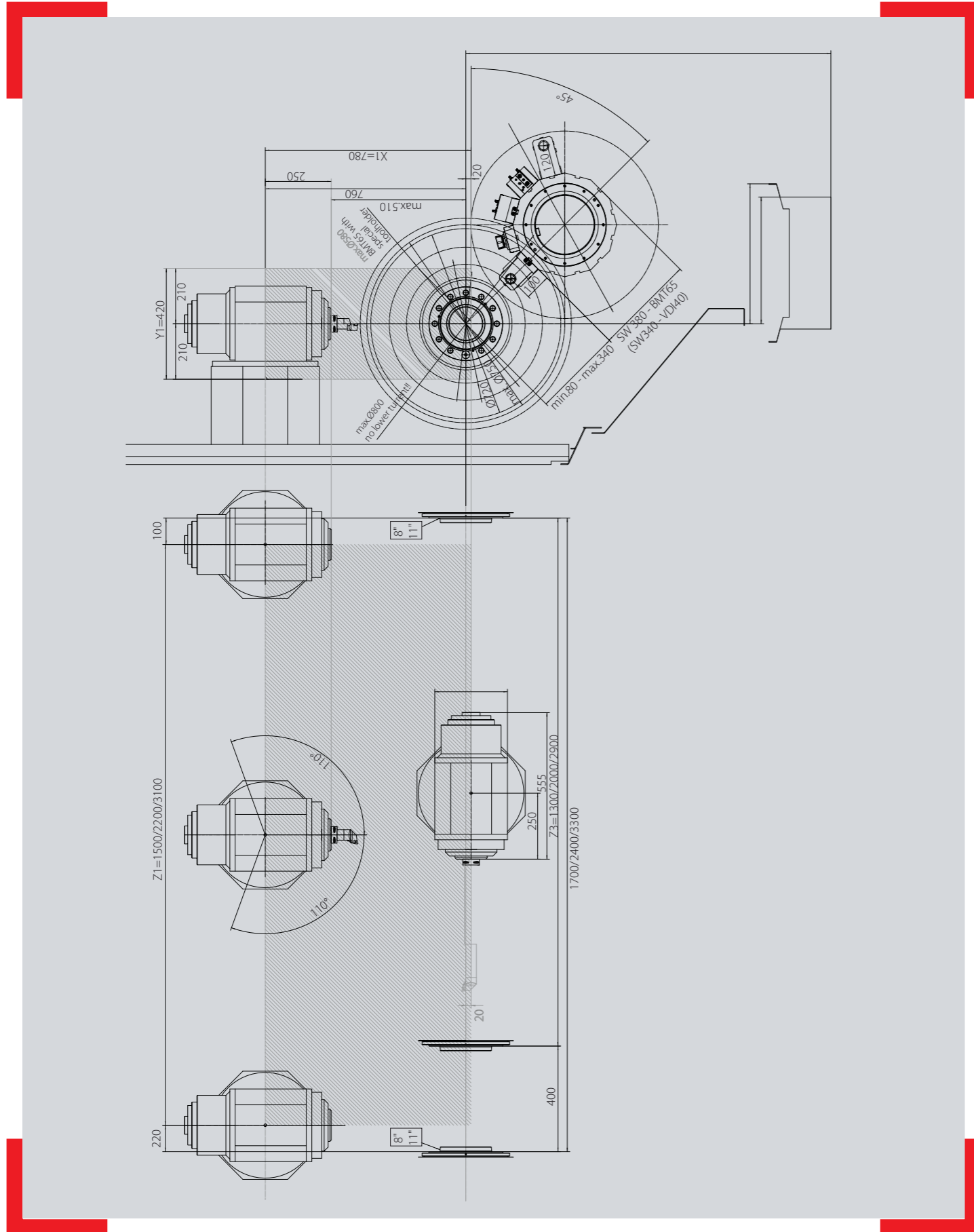


## Production

- Reduction in set-up costs
- Reduction in downtimes
- Reduction in repair costs
- Optimum machine utilization

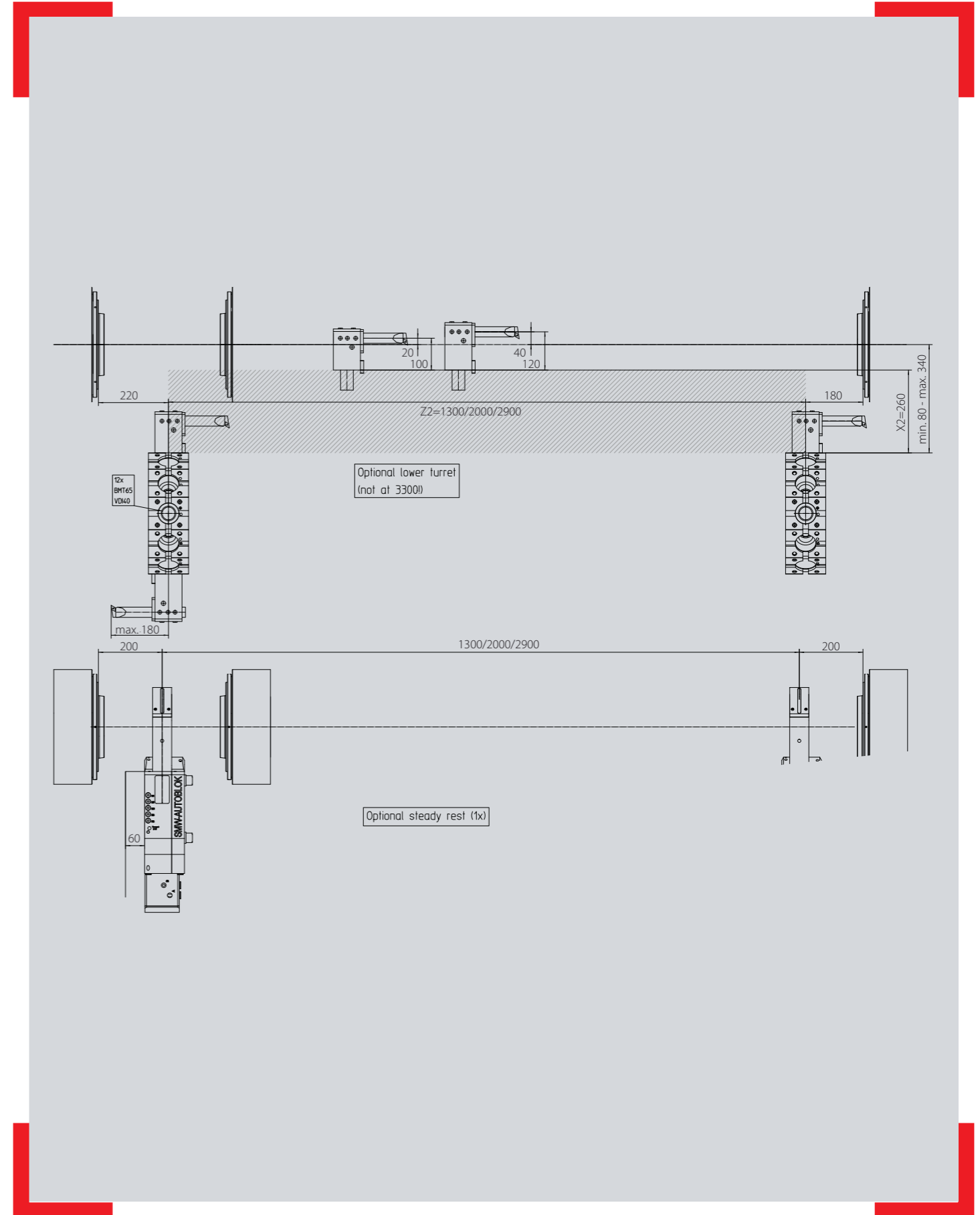


# Work Area



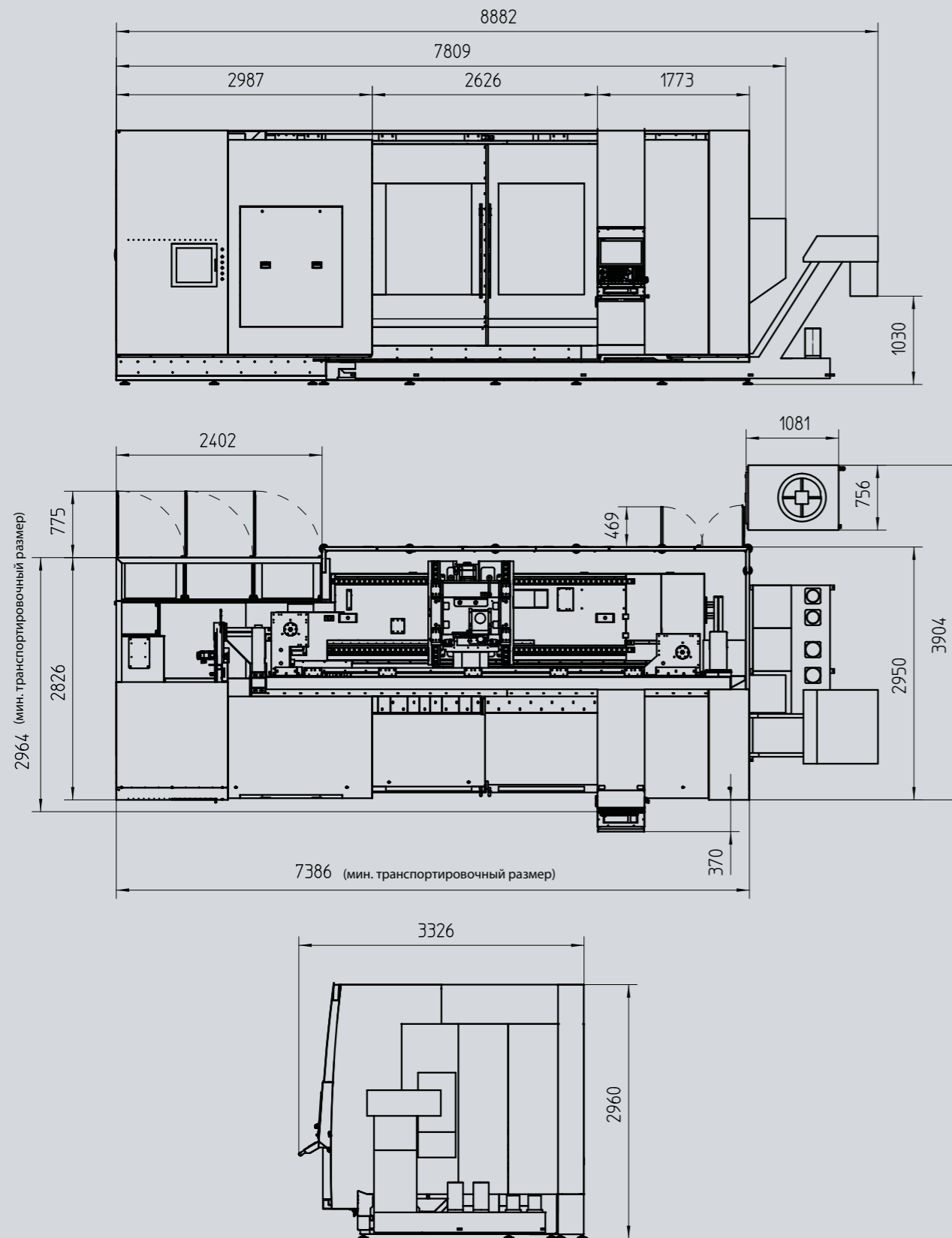
Indications in millimetres

# Work Area



Indications in millimetres

# Installation plans



Indications in millimetres

## HYPERTURN 100 Powermill Technical Data

### Working area

|                                   |                       |
|-----------------------------------|-----------------------|
| Swing over bed                    | 750 mm                |
| Max. turning diameter             | 720 mm                |
| Length between spindle and centre | 1700 / 2400 / 3300 mm |
| X1-axis                           | 750 mm                |
| Y-axis                            | 420 mm                |
| Z1-axis                           | 1500 / 2200 / 3100 mm |

### Main spindle

|   |                              |
|---|------------------------------|
| Spindle connection (DIN 55026)              | A2-8" // A2-11"              |
| Power chuck diameter                        | 315 / 630 // 400 / 630 mm    |
| Max. spindle speed (with transmission)      | 400 / 3500 // 143 / 2500 rpm |
| Max. drive power, main spindle              | 33 / 53 kW                   |
| Max. torque (S1/S6 40% DC)                  | 580 / 800 // 2600 / 3500 Nm  |
| Max. weight incl. chuck                     | 350 // 500 kg                |
| Max. weight between the centres incl. chuck | 800 // 1500 kg               |

### Tailstock with quill MK 5

|                                       |                       |
|---------------------------------------|-----------------------|
| Travel distance (without steady rest) | 1300 / 2000 / 2800 mm |
| Travel distance, quill                | 150 mm                |
| Quill diameter                        | 150 mm                |
| Max. contact pressure                 | 2500 – 22200 N        |
| Movement speed, tailstock             | 15 m/min              |

### X-, Z-, Y-axes

|                                    |                    |
|------------------------------------|--------------------|
| X1-X2, Z2 / Z1 and counter-spindle | 30 / 40 / 20 m/min |
| Feed force X1 / X2                 | 1640 N             |
| Feed force Z1 / Z2                 | 1640 N             |
| Counter-spindle                    | 1640 N             |

### Driven Tools (BMT 65P – VDI 40)

|                                    |          |
|------------------------------------|----------|
| Speed range                        | 6000 rpm |
| Torque                             | 62 Nm    |
| Max. drive power (max.)            | 21 kW    |
| Max. number of driven tools (max.) | 12       |

### Tool magazine

|                          |          |
|--------------------------|----------|
| Tool magazine stations   | 40 / 100 |
| Max. tool length         | 500 mm   |
| Max. tool diameter       | 90 mm    |
| Max. turning tool weight | 12 kg    |

### Coolant system

|                                  |            |
|----------------------------------|------------|
| Max. coolant pressure (max.)     | 80 bar     |
| Flushing system in the work area | 2x7 bar    |
| Cooling tank capacity            | from 600 l |

### Power consumption

|                            |        |
|----------------------------|--------|
| Max. connected load (max.) | 86 kVA |
| Compressed air connection  | 6 bar  |

### Dimensions

|  |                       |
|--|-----------------------|
| Height above floor                             | 1450 mm               |
| Total length including chip conveyor           | 8100 / 8800 / 9600 mm |
| Height   | 3000 mm               |
| Width / with control panel                     | 2900 mm               |
| Weight (depending on the type and accessories) | 18000 – 22000 kg      |

