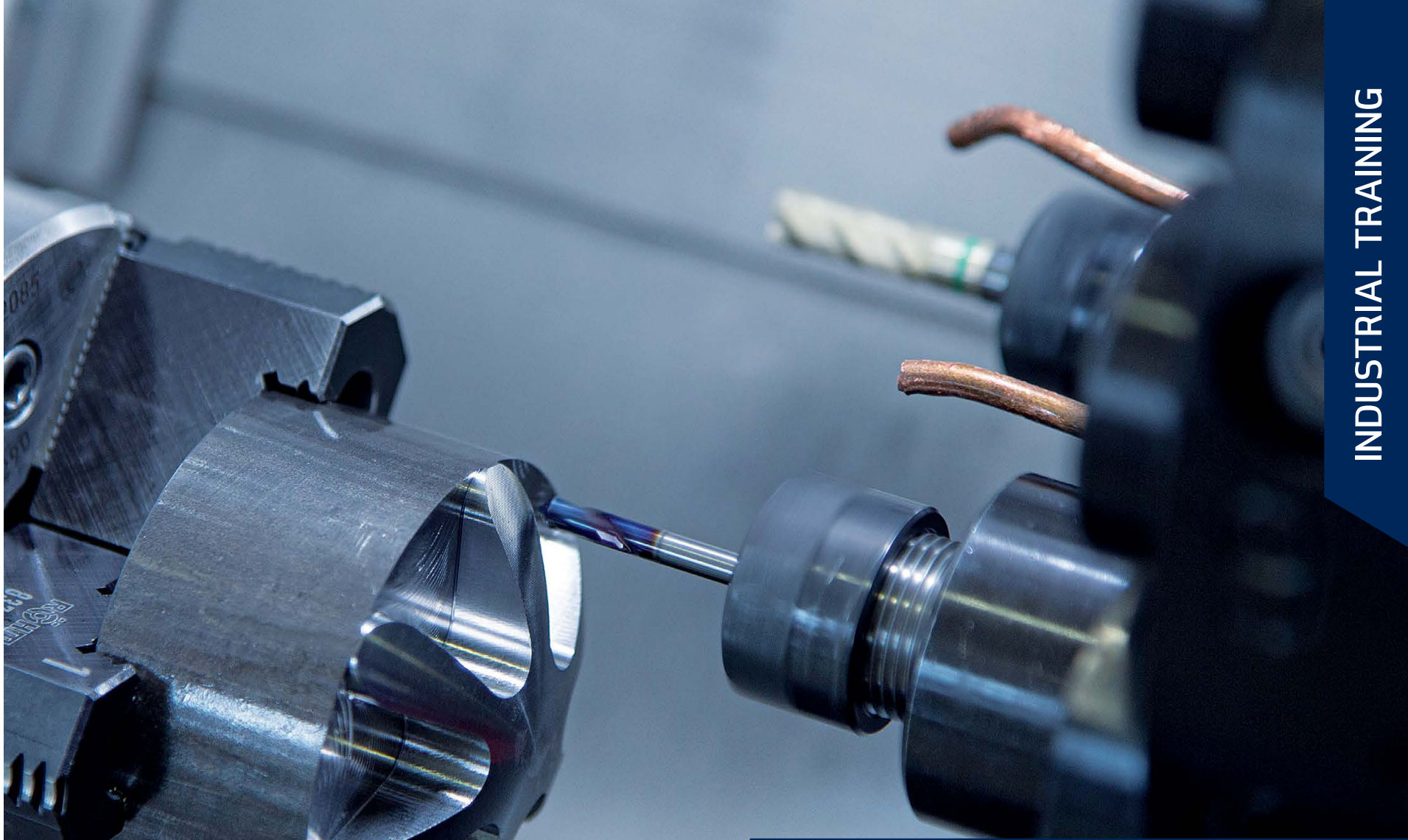


**EMCO**



**INDUSTRIAL TRAINING**

CNC training with industrial performance







# TRAINING IS WHAT MAKES THE FUTURE POSSIBLE

For many, the gateway to the world of machining is an EMCO. But the demands on training concepts are becoming ever more varied and are changing with digitalisation. That is why we also provide our customers with individual solutions in this area, which start as early as the planning phase and are designed precisely for the corresponding needs and possibilities. Our goal is to set new standards in consulting, training and education.

Thanks to its modular structure, the concept of EMCO Industrial Training is suitable for customer-specific consulting and optimally adapted CNC training.

## Customised planning for training

The determination of the specific customer requirements for machines, CNC software and courseware are an important part of every order. With optimal training of the individual instructors at the machines, in the programming and in the didactic documents, EMCO Industrial Training supports customers in every phase of the project. In addition, there is guaranteed comprehensive support during the training process.

## Extensive hardware and software package

EMCO Industrial Training can be optimally adapted to the various needs of individual companies and partners and, in addition to concept machines and software, also includes optimally coordinated instructional documents - the courseware. Special CAD/CAM programs and 3D CNC simulators make it really easy to learn fundamentals and procedures.

# PERFECT ENTRY INTO THE INDUSTRY- RELATED TRAINING

The Concept TURN 60 is a PC-controlled 2-axis CNC tabletop turning machine conforming to the industry standard in terms of design and function. It offers the user more power and functionality, in accordance with the demands of ISO 23125. All the key processes in modern manufacturing can be illustrated using this device and comprehended in a practical and realistic way. With appropriate simplification, clear machine design and easy operation. Operators will quickly learn how to use it successfully.



Round-head bolt  
(Aluminium)

- 1 **MAIN SPINDLE**
  - / Max. speed 4200 rpm
  - / Clockwise/counterclockwise spindle rotation
  - / Spindle bore  $\varnothing$  16 mm
- 2 **WORK AREA**
  - / Fully enclosed work area
  - / Large safety glass window in door
  - / All-round protection against chips
- 3 **MACHINE BASE**
  - / With extensible drawer
  - / Additional space for PC tower
- 4 **TOOL TURRET**
  - / Disc turret
  - / 8 stations
- 5 **MAIN DRIVE**
  - / Infinitely adjustable main drive
  - / 3-phase AC asynchronous motor
  - / High-resolution axis motors
- 6 **SAFETY**
  - / In accordance with ISO 23125
  - / Door lock
  - / Standstill and speed limit monitoring



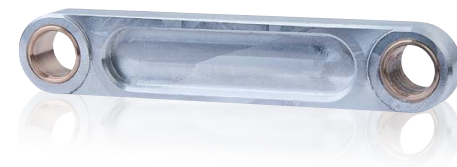
Machine with optional equipment

- 7 **SWIVEL TABLE**
  - / Extensible drawer for PC keyboard
  - / Arranged ergonomically
- 8 **EMCO EASY2CONTROL**
  - / On-screen control keyboard in conjunction with Easy2operate
  - / Operation is also possible using a 16:9 full-HD touchscreen
- 9 **MACHINE DESIGN**
  - / Industry-standard inclined-bed design
  - / Core components made from stable cast iron
- 10 **OPERATION**
  - / Enabling key
  - / Emergency stop push buttons
  - / Mode selection



# SMALL MACHINE. GREAT PERFORMANCE.

This compact milling machine is well suited for CNC training and has almost all the features of an industrial machine: optional with 8-station tool changer with swivel arm and pick-up system, NC indexing device as fourth axis, minimum quantity lubrication and latest state-of-the-art control technology.



Piston rod  
(Aluminium)

## 1 MAIN DRIVE

- / Infinitely variable main drive
- / 3 phase asynchronous motor

## 2 WORK AREA

- / Full cover of work area
- / Large safety glass window in door
- / All-round protection against chips

## 3 MACHINE BASE

- / With removable drawer
- / Space for PC tower

## 4 TOOL CHANGER

- / 8 stations
- / Swivel arm with pick-up system

## 5 SWIVEL TABLE

- / Extensible drawer for PC keyboard
- / Arranged ergonomically

## 6 MACHINE DESIGN

- / Stable, gray cast-iron construction

## 7 EMCO EASY2CONTROL

- / On-screen control keyboard in conjunction with Easy2operate
- / Operation is also possible using a 16:9 full-HD touchscreen



Machine with optional equipment

# SOLID AND PRECISE IN PERFORMANCE. COMPACT IN DESIGN.

PC-controlled 2-axis turning machine with table format. All precision components of the Concept TURN 105 such as headstock, slide, tool system and tailstock are installed on a rigid, vibration-damping, gray cast-iron inclined bed. Generously sized motors ensure high feed forces and acceleration values. Pre-stressed, backlash-free circulating-ball spindles and an optimum guide ratio for the slides ensure stability and precision.



Hose nozzle  
(Brass)

## 1 WORK AREA

- / Fully enclosed work area
- / Large safety glass window in door
- / Generous view of working area
- / All-round protection against chips
- / Best ergonomics

## 2 MAIN DRIVE

- / Infinitely variable main drive
- / 3 phase asynchronous motor

## 3 MACHINE BASE

- / With extensible drawer
- / Provides space for PC tower

## 4 TOOL TURRET

- / Disk-type turret
- / 8 stations

## 5 SWIVEL TABLE

- / Extensible drawer for PC keyboard
- / Arranged ergonomically

## 6 TAILSTOCK

- / Pneumatic tailstock
- / Quill diameter 35 mm

## 7 EMCO EASY2CONTROL

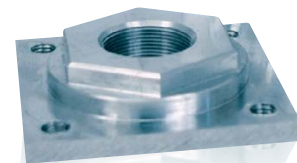
- / On-screen control keyboard in conjunction with Easy2operate
- / Operation is also possible using a 16:9 full-HD touchscreen



Machine with optional equipment

# SMALL VOLUME. GREAT PERFORMANCE.

To ensure maximum precision the slides and load-bearing elements of the Concept MILL 105 are manufactured from gray cast iron. Equipped with infinitely variable main drive, 10-station tool changer, pneumatic vise and NC indexing device as optional fourth axis, this compact machine in table format is optimally suitable for teaching of sophisticated function and manufacturing technologies. The control for the Concept MILL 105 is connected via PC, on which the interchangeable WinNC control from EMCO can be installed.



Milled part  
(Machining steel)

## 1 TOOL MAGAZINE

- / Tool magazine with directional logic
- / For 10 tools

## 2 WORK AREA

- / Generous view of work area
- / Best ergonomics

## 3 MACHINE BASE

- / With extensible drawer
- / Provides space for PC tower



Machine with optional equipment

## 4 MACHINE COVERS

- / All-round protection against chips
- / 100% coolant retention
- / Optimum view of working area
- / Large safety glass window in door

## 5 SWIVEL TABLE

- / Extensible drawer for PC keyboard
- / Arranged ergonomically

## 6 EMCO EASY2CONTROL

- / On-screen control keyboard in conjunction with Easy2operate
- / Operation is also possible using a 16:9 full-HD touchscreen

# TECHNICALLY CHALLENGING TRAINING PARTNER FOR EDUCATION AND INDUSTRY- RELATED MANUFACTURING.

The Concept TURN 260 convinces by its extreme solid machine bed, a thermosymmetric spindle head, precision spindle bearing, preloaded roller guides in all axes and a fast tool turret. The interchangeable control EMCO WinNC for all current industrial controls completes the machine.



Fitting  
(Stainless steel)

## 1 WORK AREA

- / Free chip drop
- / Excellent ergonomics
- / All-round protection against chips
- / Large safety glass window in door

## 2 MAIN SPINDLE

- / High drive performance
- / Thermoresistant construction
- / Large speed range
- / Bar capacity  $\varnothing$  25 mm
- / Hollow clamping device

## 3 TOOL TURRET

- / 12 stations VDI16 axial
- / 6 stations driven on request for milling work
- / Synchronized thread cutting



Machine with optional equipment

## 4 ROLLER GUIDES

- / In X and Z axes
- / No backlash
- / No wear
- / High speed

## 5 CONTROL

- / Latest digital AC control technology
- / 21.5" touchscreen
- / MOC: integrated PC
- / WinNC concept: all standard NC controls on one machine
- / Multifunctional handwheel

## 6 MACHINE BASE

- / Small installation area
- / Large coolant tank
- / Easy to clean



# NOT JUST TRAINING. REAL ACTION!

The Concept MILL 260 convinces with a drive performance of 6.8 kW and a 20-position tool magazine with a quick double gripper. Thanks to its stable and compact design, the Concept Mill 260 fits into the smallest space. The exchangeable EMCO WinNC control allows for maximum flexibility when it comes to training in the use of all common machine controls.



Cutter head  
(Non-ferrous metal)

## 1 MAIN SPINDLE

- / Infinitely variable main drive
- / Powerful asynchronous AC motor
- / Main spindle bearing: Lifetime lubricated

## 2 MACHINE DESIGN

- / Stable, gray cast-iron construction
- / Roller guideways in X / Y / Z with automatic central oil lubrication

## 3 MACHINE BASE

- / Stable construction



Machine with optional equipment

## 4 CONTROL

- / Latest digital AC control technology
- / 21,5" touchscreen
- / MOC: integrated PC
- / WinNC: all standard
- / NC controls on one machine
- / Multifunction handwheel

## 5 TOOL MAGAZINE

- / 20-station tool magazine
- / Quick release with double-gripper
- / Tool system SK 30 DIN 69871



# PRODUCTIVE TRAINING AT INDUSTRY LEVEL

Equipped with a programmable, hydraulic tailstock and in combination with C-axis, driven tools and digital drive technology, the Concept TURN 460 corresponds in function and performance to a modern industrial machine. With its WinNC control system, it is also perfectly adapted to the requirements of the training situation.



Geared wheel  
(Stainless steel)

## 1 TOOL TURRET

- / 12 stations VDI 30 axial
- / 6 driven stations upon request
- / Milling of polygons
- / Synchronized thread cutting

## 2 WORK AREA

- / Unobstructed chip fall
- / Best possible ergonomics
- / Completely covered guideways

## 3 SPINDLE

- / High drive power
- / Thermostable assembly
- / Large rotational speed range
- / Spindle connection A2-5
- / Maximum bar  $\varnothing$  45 mm

## 4 MACHINE COVERS

- / Comprehensive protection against flying chips
- / 100 % cooling medium tight
- / Optimal vision in the work area
- / Large safety glass window in door



Machine with optional equipment

## 5 CONTROL UNIT

- / Up-to-date digital AC controlling technology
- / 21.5" touchscreen
- / MOC: integrated PC
- / WinNC concept: all standard NC controls on one machine
- / Multifunctional handwheel

## 6 TRAY

- / PC keyboard with PC mouse

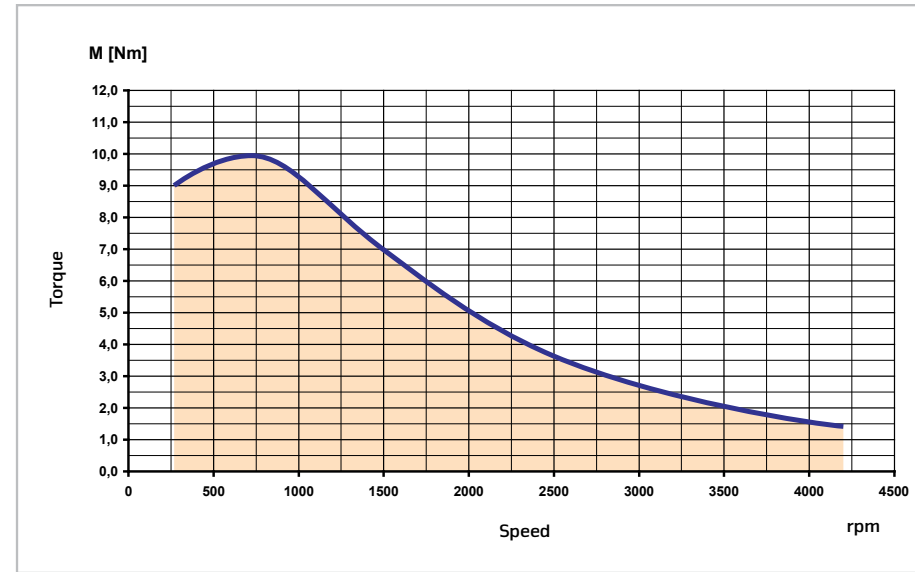
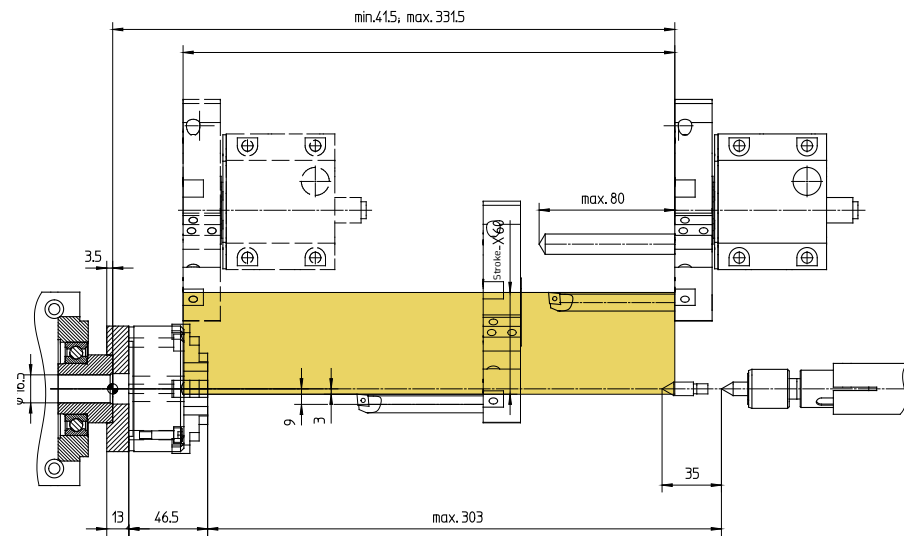
## 7 TAILSTOCK

- / Hydraulically actuated, programmable tailstock

## 8 MACHINE BASE

- / Easy to transport
- / Large cooling tank
- / Easy to clean

# WORK AREA AND TORQUE CONCEPT TURN 60



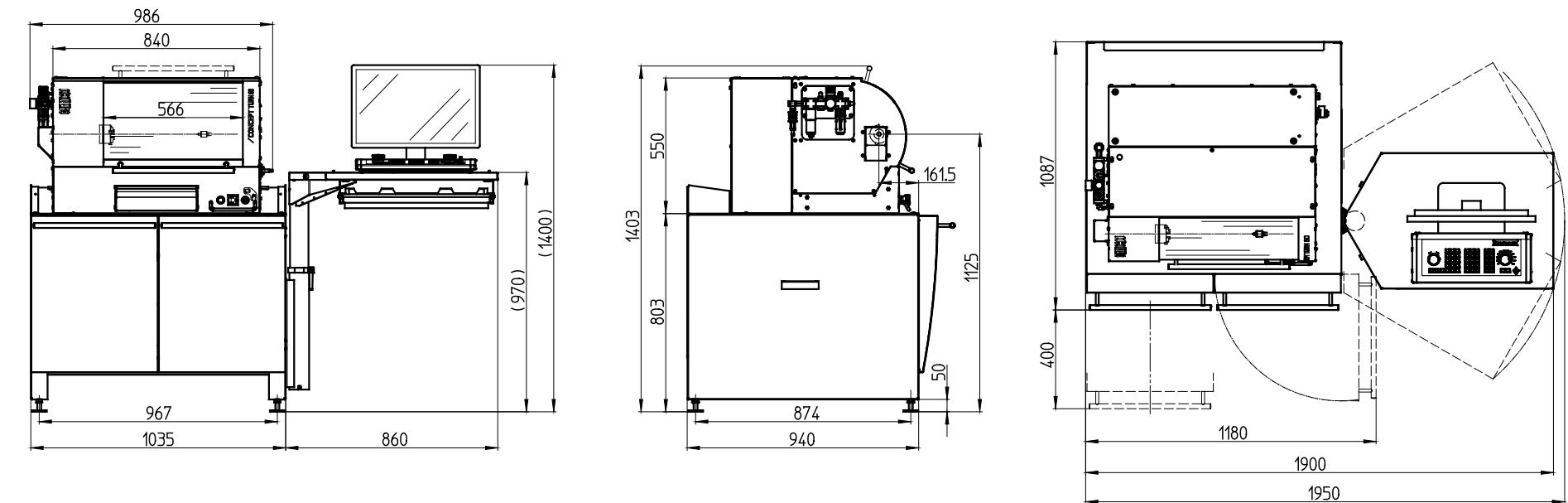
## HIGHLIGHTS

- / Industry-standard inclined-bed design
- / High-resolution axis motors
- / Clockwise/ counterclockwise spindle rotation
- / Infinitely adjustable main drive
- / Automatic 8-position tool turret: above the center of rotation for improved chip removal and optimal reachability of the workpiece by the operator
- / Automatic referencing
- / Profile rail guides (linear guides)
- / Premium industrial components
- / Safety technology according to the latest lathes standard
- / Made in the Heart of Europe

## OPTIONS

- / Mechanical tailstock
- / Robotics and DNC interface and OPC UA UMATI interface
- / Automatic clamping devices
- / Automatic door and electromechanical tailstock
- / Electronic handwheel
- / Minimal quantity lubrication
- / Machine base with swivel table
- / Easy2operate

# MACHINE LAYOUT

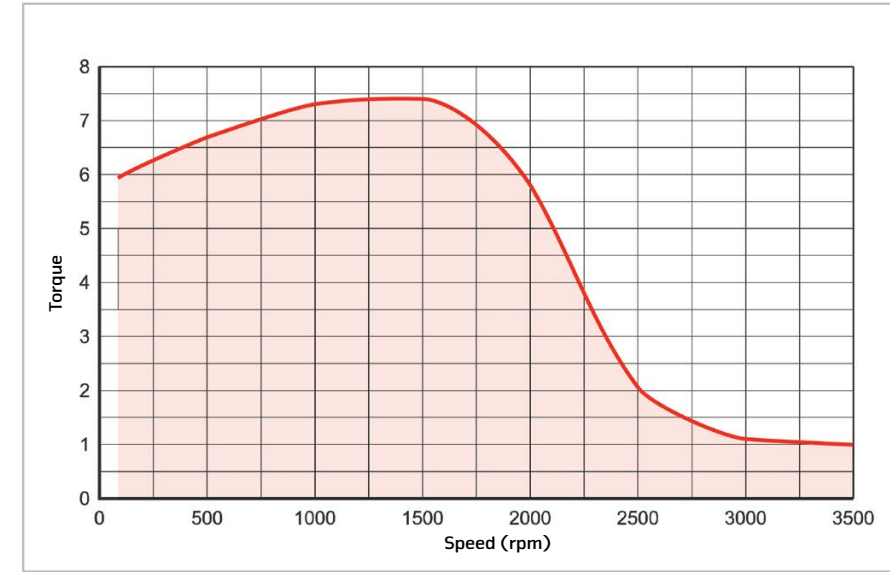
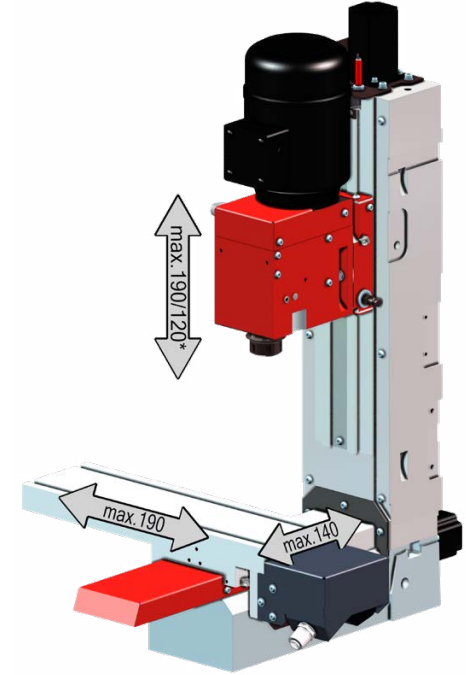


Indications in millimeters



# WORK AREA AND TORQUE CONCEPT MILL 55

# MACHINE LAYOUT



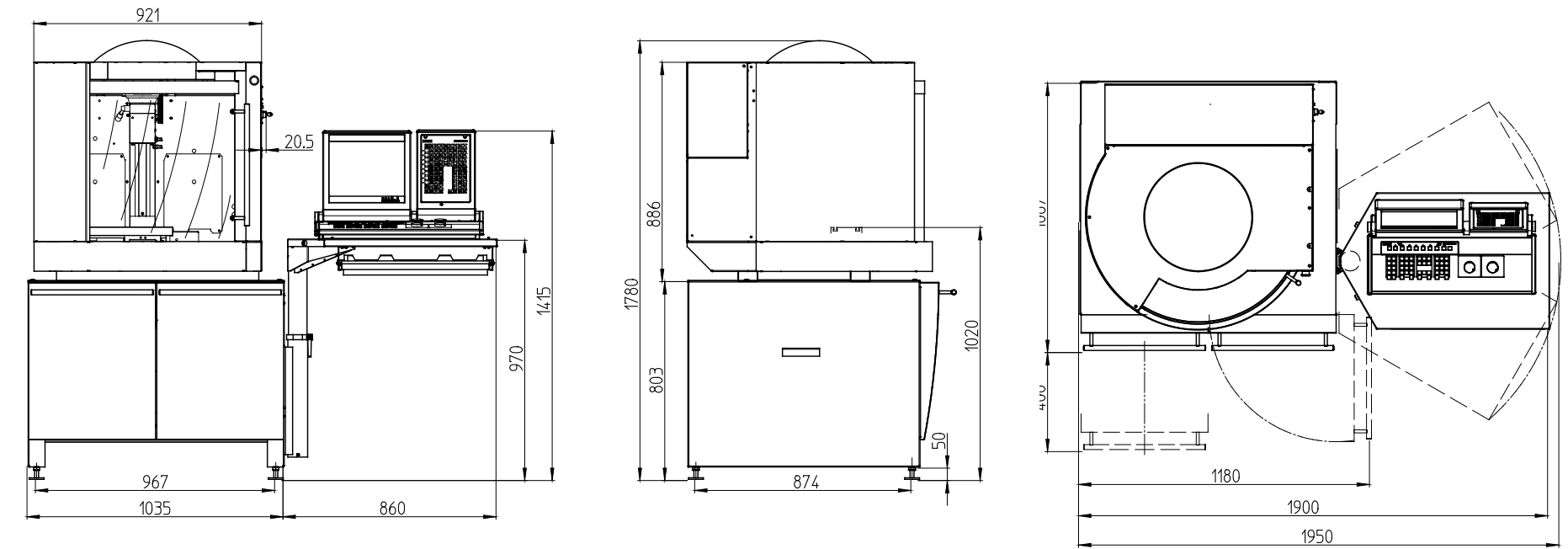
## HIGHLIGHTS

- / Stable, gray cast iron construction
- / Clockwise/counterclockwise spindle rotation
- / Infinitely variable main drive
- / Automatic reference points
- / Fully covered work area
- / Made in the Heart of Europe

\* with tool changer (option)

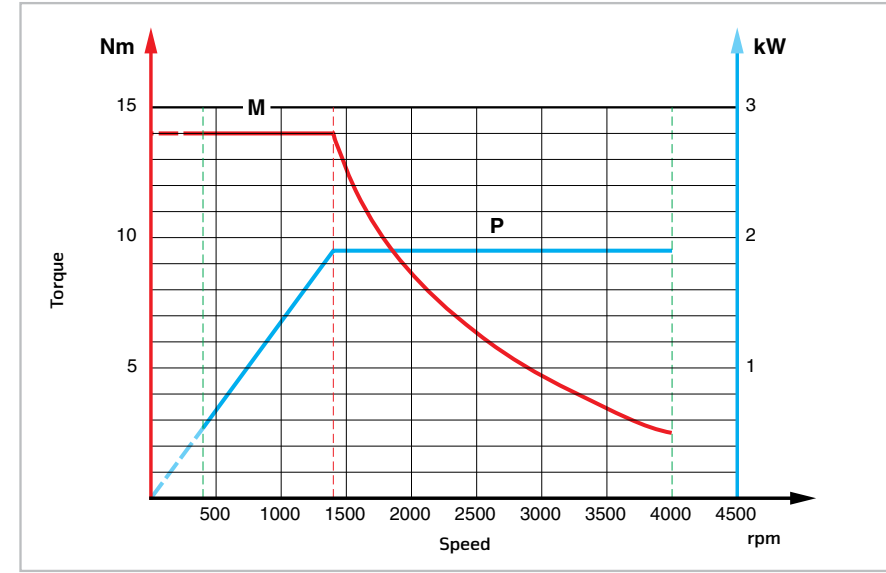
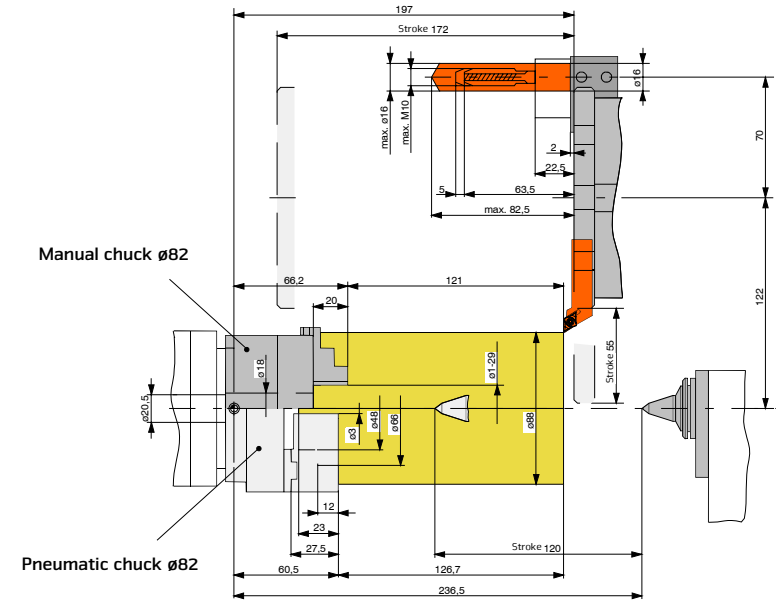
## OPTIONS

- / 8-station tool changer
- / Minimum quantity lubrication
- / Electronic handwheel
- / Engraving spindle attachment
- / NC indexing attachment as optional fourth axis
- / Robotics and DNC interface and OPC UA UMATI interface
- / Machine base with swivel table
- / Easy2operate



Indications in millimeters

# WORK AREA AND TORQUE CONCEPT TURN 105



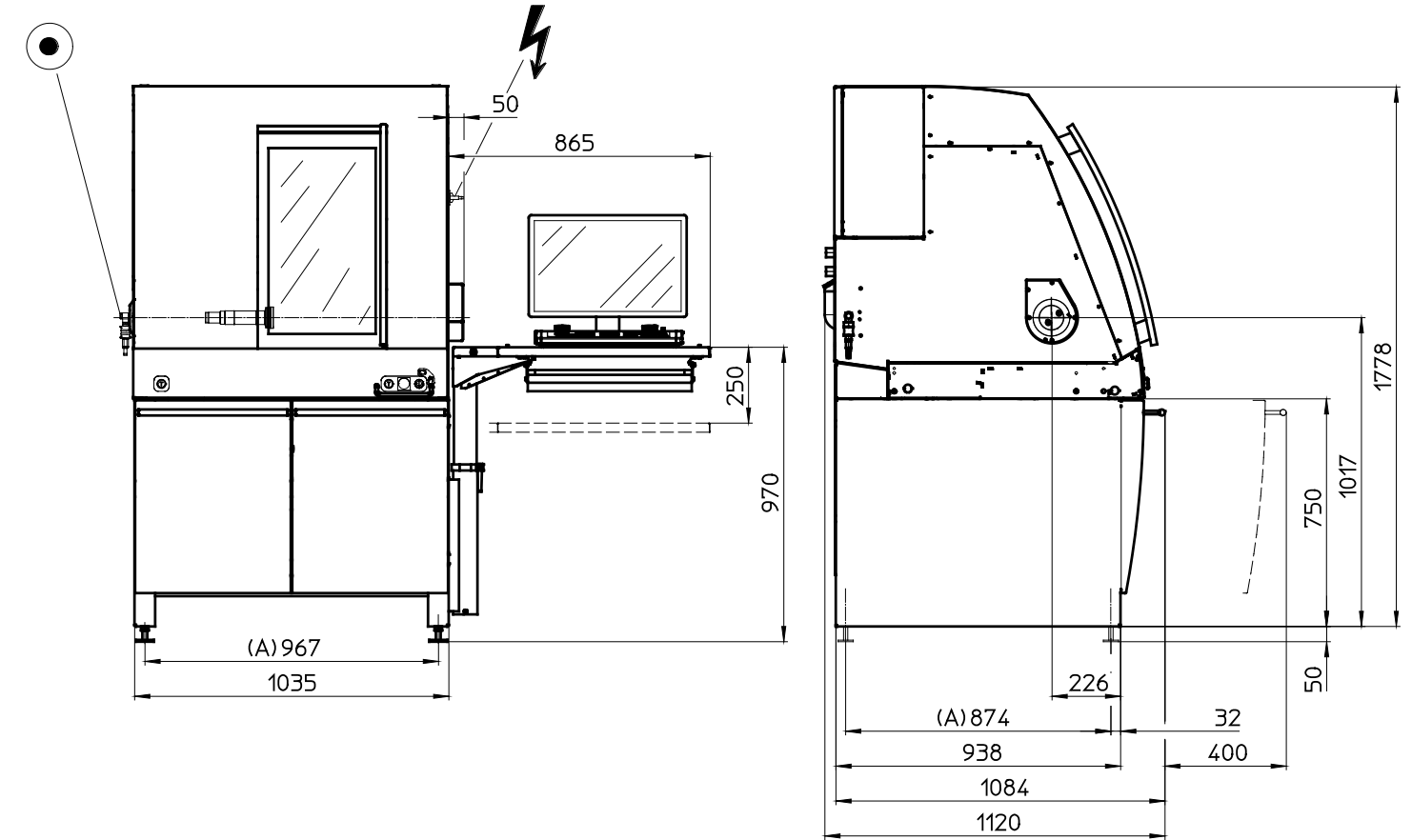
## HIGHLIGHTS

- / Stable, gray cast-iron inclined-bed construction
- / Three-point support for machine bed
- / Hardened guideways
- / Central lubrication system
- / 8-station tool changer
- / Fully enclosed work area
- / Made in the Heart of Europe

## OPTIONS

- / Extensive tool range
- / Pneumatic tailstock
- / Easy2Operate
- / Robotics and DNC interface and OPC UA UMATI interface
- / Automatic clamping device
- / Minimum quantity lubrication
- / Coolant system
- / Machine base with swivel table

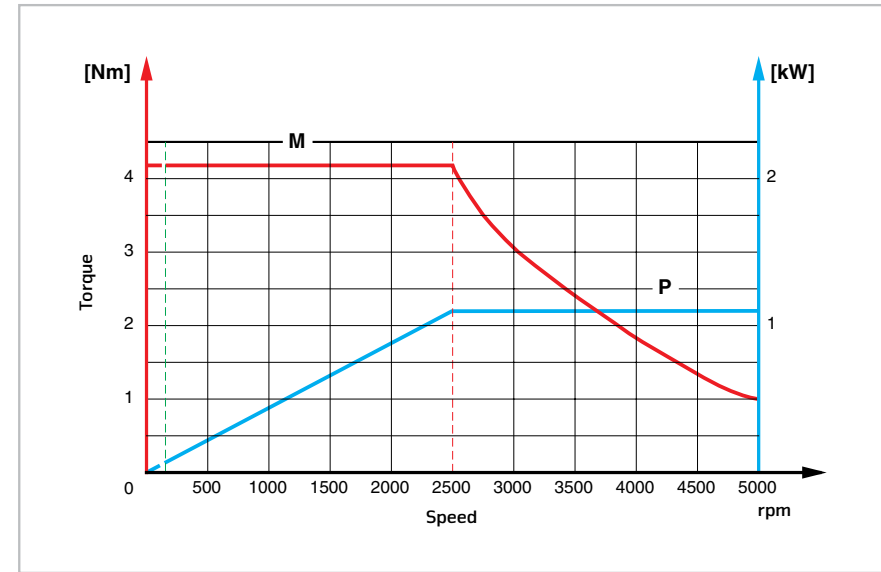
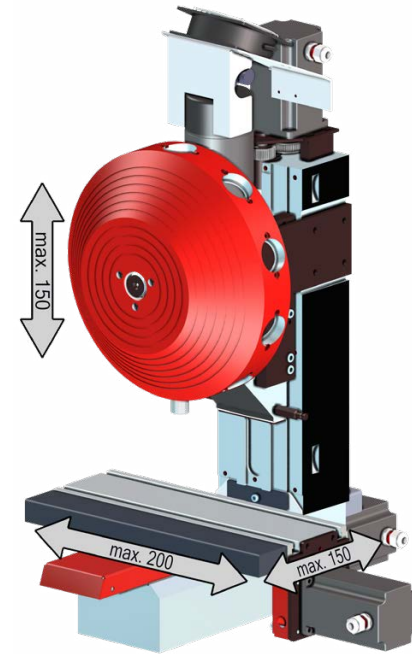
# MACHINE LAYOUT



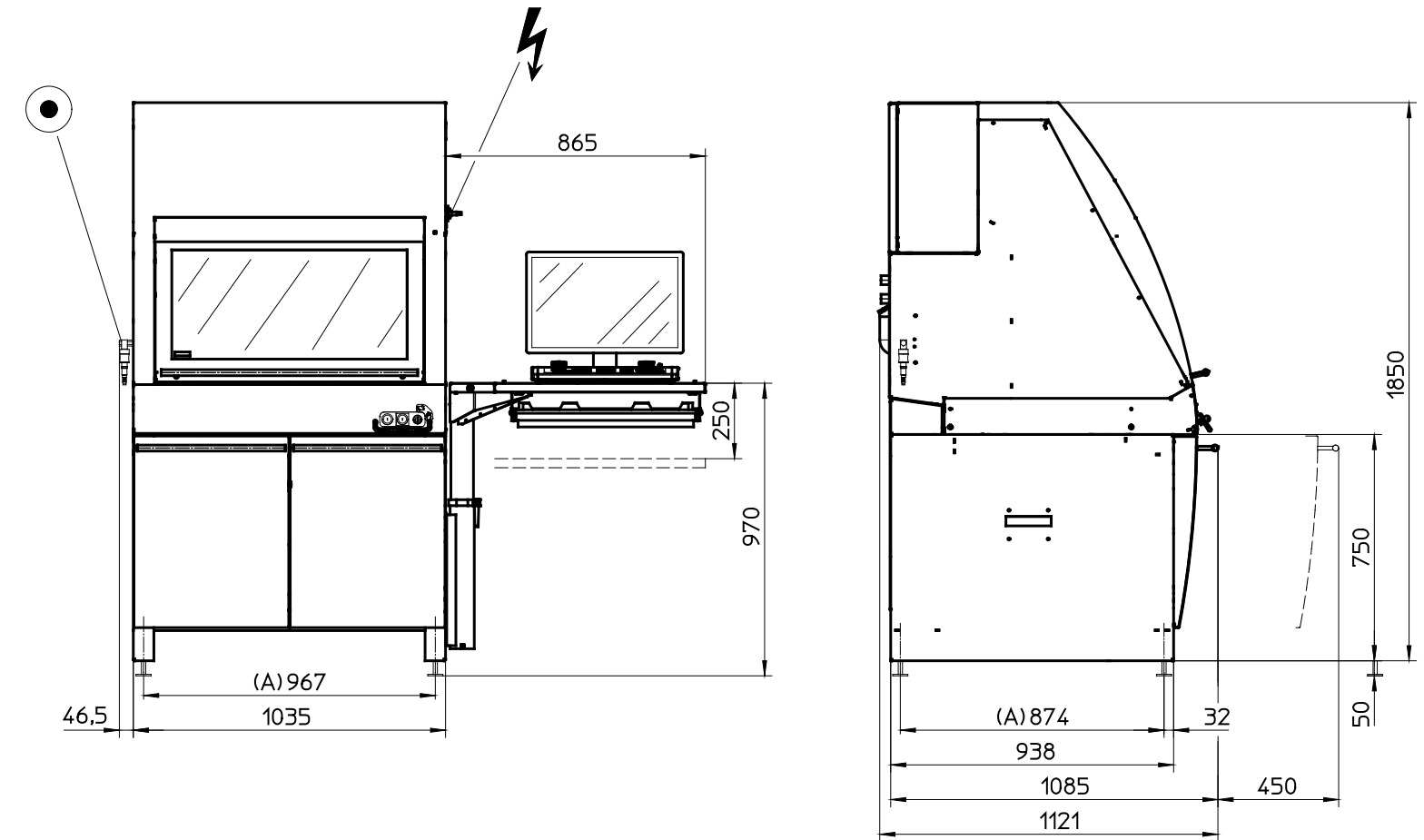
Indications in millimeters



# WORK AREA AND TORQUE CONCEPT MILL 105



# MACHINE LAYOUT



## HIGHLIGHTS

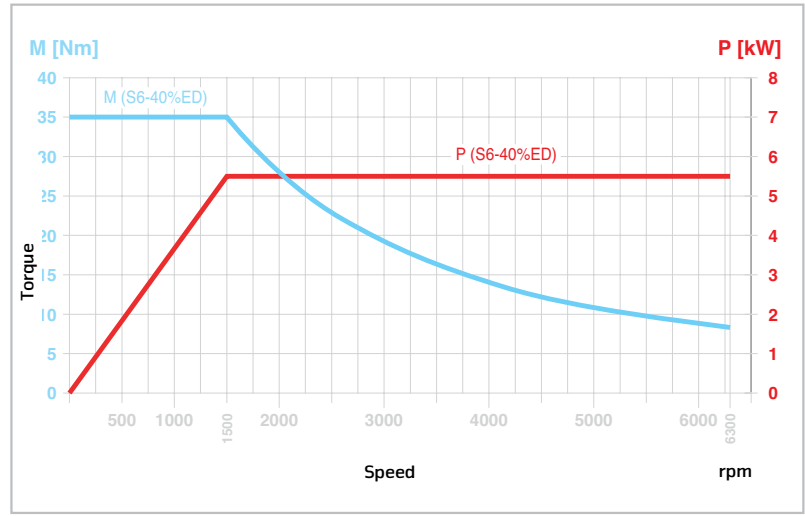
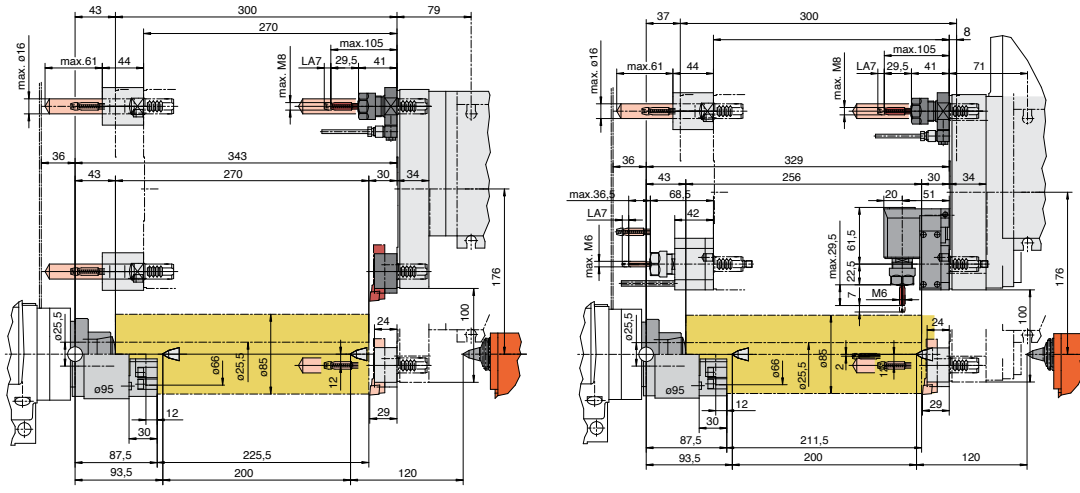
- / Stable, gray cast-iron construction, suitable for industrial use
- / 10-station tool changer with directional logic
- / Backlash-free bearings for working spindle in precision, lifetime-lubricated, angular ball bearings
- / Infinitely variable main and feed drives
- / Realistic execution of all essential milling operations
- / Made in the Heart of Europe

## OPTIONS

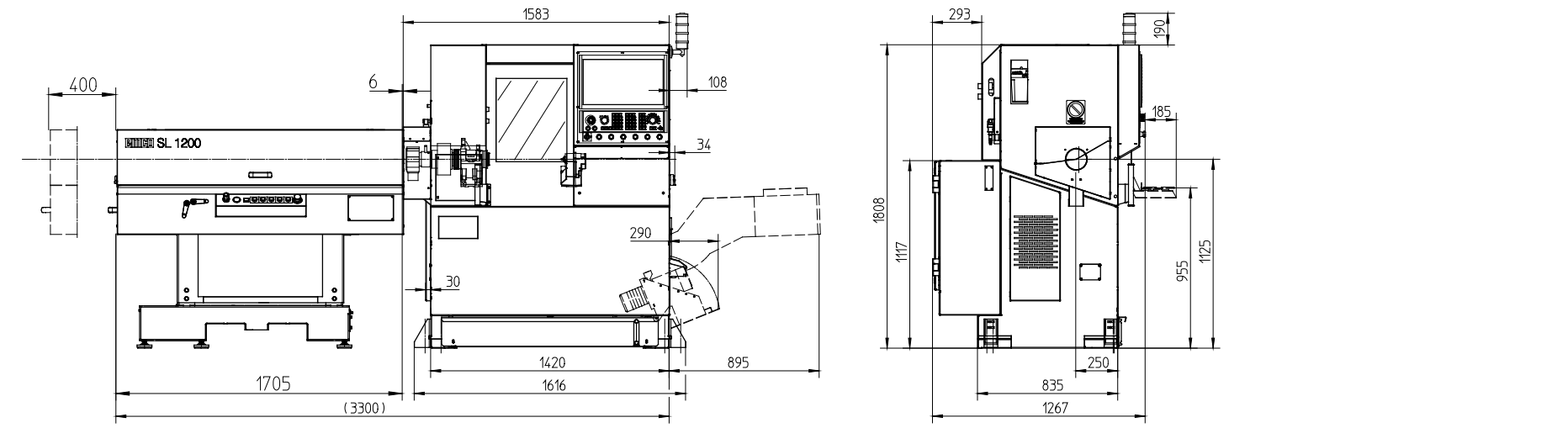
- / NC indexing device (fully functioning fourth axis) with tailstock, three-jaw chuck and live center
- / Engraving spindle attachment
- / Robotics and DNC interface and OPC UA UMATI interface
- / Automatic clamping device
- / Electronic handwheel
- / Coolant system
- / Minimum quantity lubrication
- / Machine base with swivel table
- / Easy2operate

Indications in millimeters

# WORK AREA AND TORQUE CONCEPT TURN 260



# MACHINE LAYOUT

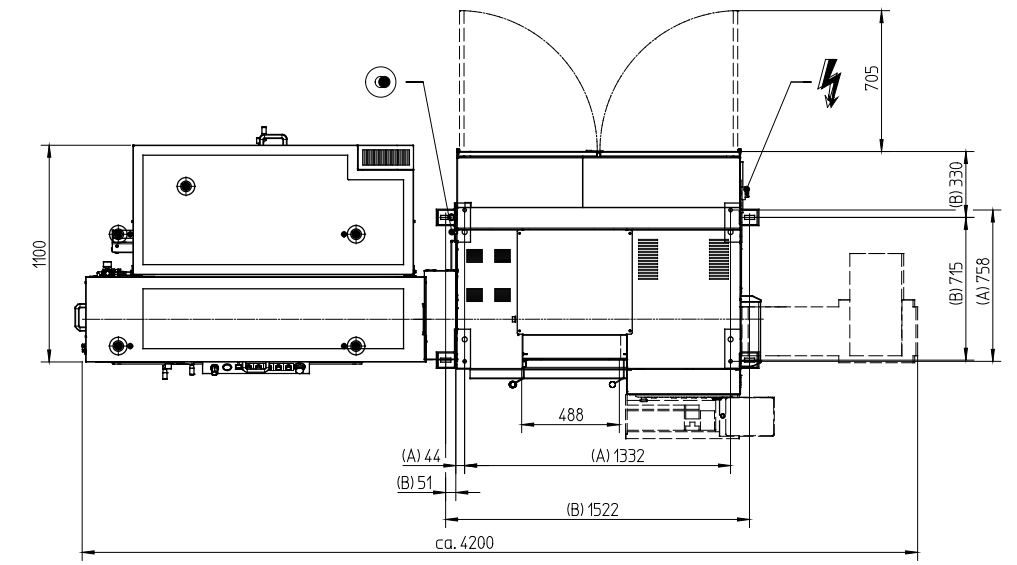


## HIGHLIGHTS

- / PC-controlled CNC turning machine
- / Extremely solid machine base, top thermostability
- / Highest precision
- / Compact construction
- / USB and ethernet interface integrated
- / Servo-motor technology in all axes
- / New drive generation from Siemens
- / Siemens Safety Integrated
- / Absolute encoder (no referencing necessary)
- / Field bus system integrated with profinet
- / Made in the Heart of Europe

## OPTIONS

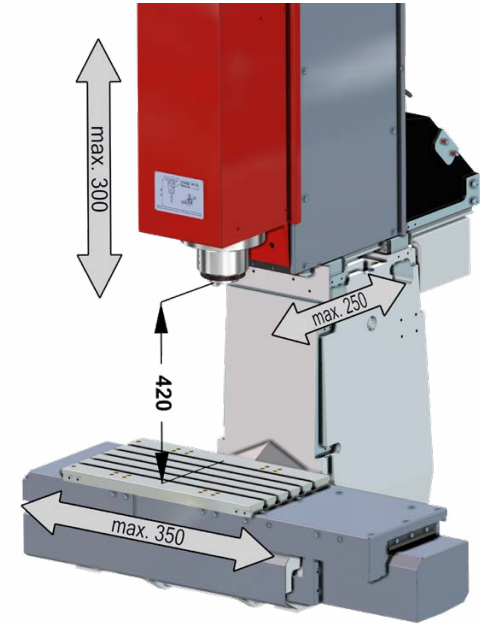
- / Chip conveyor
- / 3-jaw chuck Ø 95 mm (3.7")
- / Collet chuck 385 E
- / Automatic door
- / Robotics and DNC interface and OPC UA UMATI interface
- / Attractive tool packages for the TC and TCM versions
- / Coolant equipment
- / Bar loader



Indications in millimeters

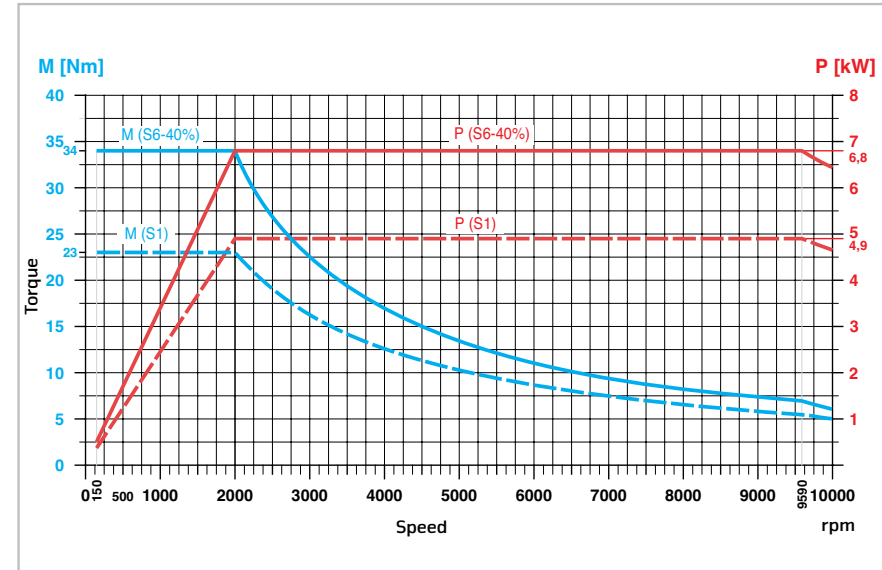


# WORK AREA AND TORQUE CONCEPT MILL 260



## HIGHLIGHTS

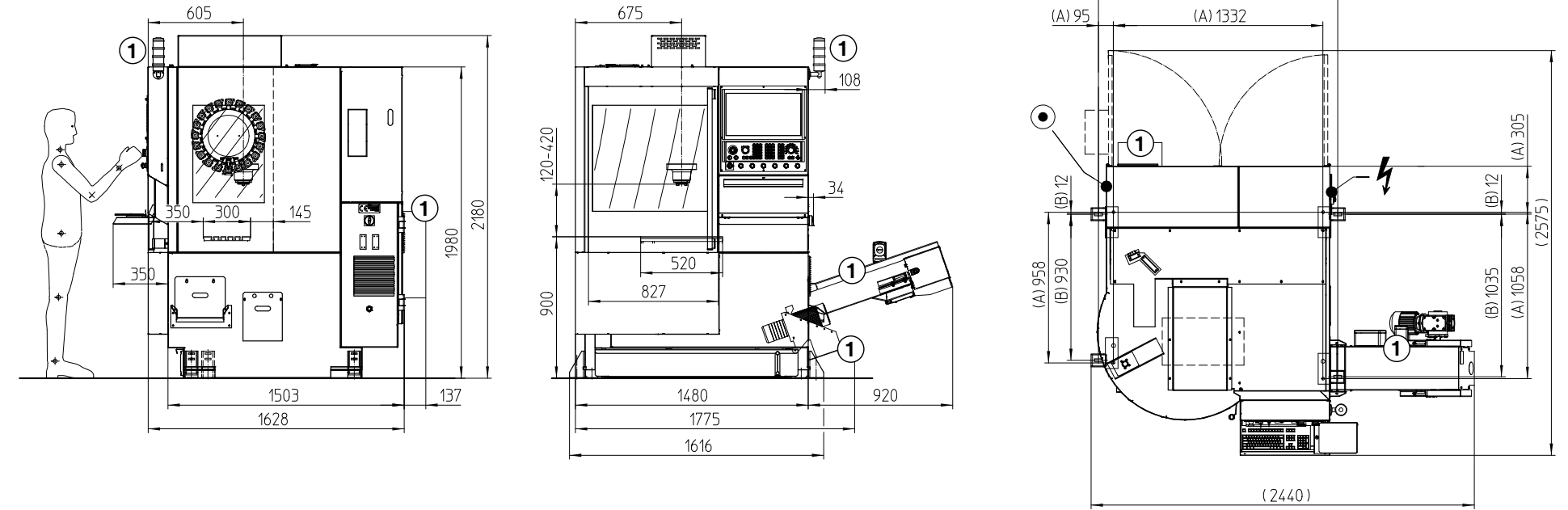
- / High drive speed
- / 20-tool magazine
- / Tool taper SK30 according DIN 69871
- / Stable and compact machine construction
- / Best view when fully enclosed
- / Servo motor technology in all axes
- / USB and Ethernet interface integrated
- / Made in the Heart of Europe



## OPTIONS

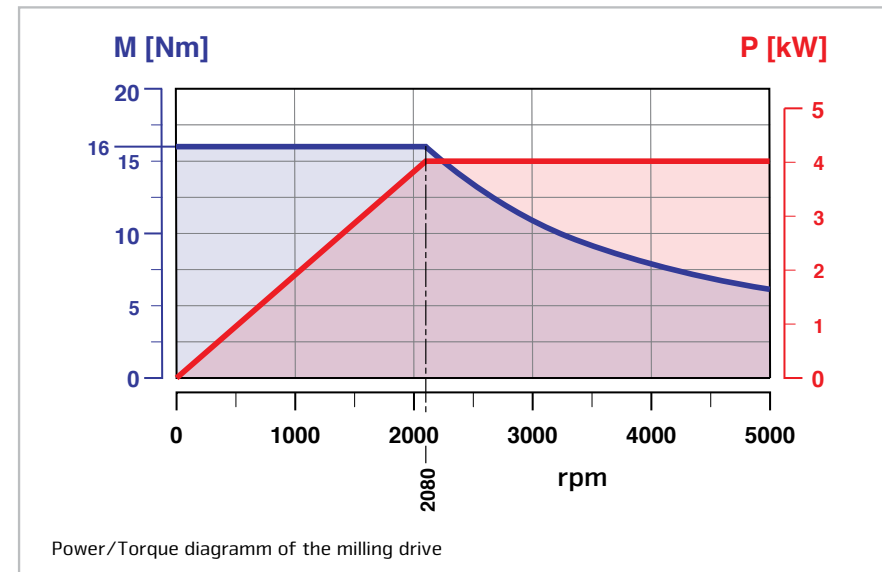
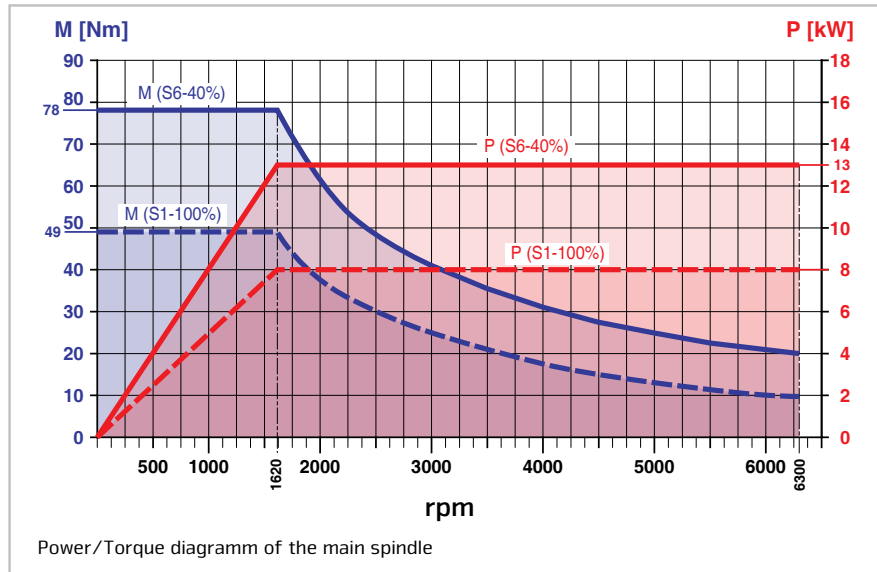
- / Turning-tilting table (4th/5th axis)
- / Large number of automation possibilities
- / Chip conveyor
- / Coolant system
- / Automatic door
- / Robotics and DNC interface and OPC UA UMATI interface

# MACHINE LAYOUT

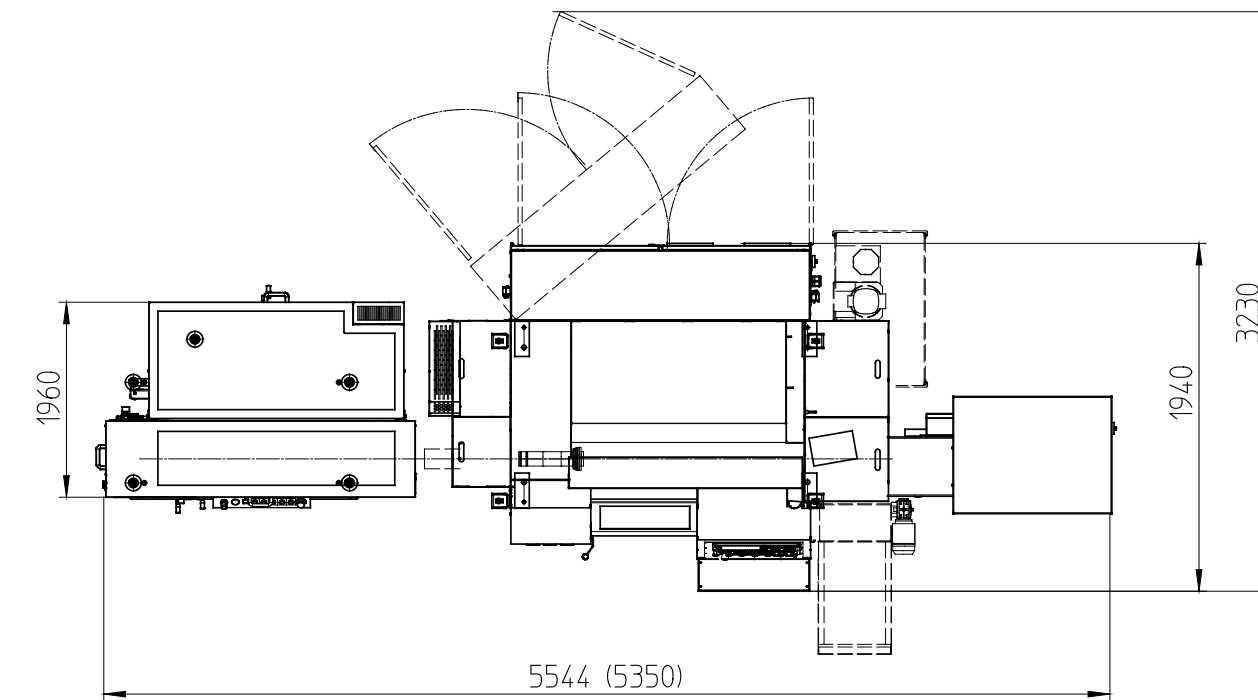


Indications in millimeters

# WORK AREA AND TORQUE CONCEPT TURN 460



# MACHINE LAYOUT



## HIGHLIGHTS

- / Universal applications
- / Digital drive engineering
- / Hydraulically actuated, programmable tailstock
- / Extraordinary dynamics
- / Optimal thermostability
- / High processing accuracy
- / Compact machine assembly
- / Made in the Heart of Europe

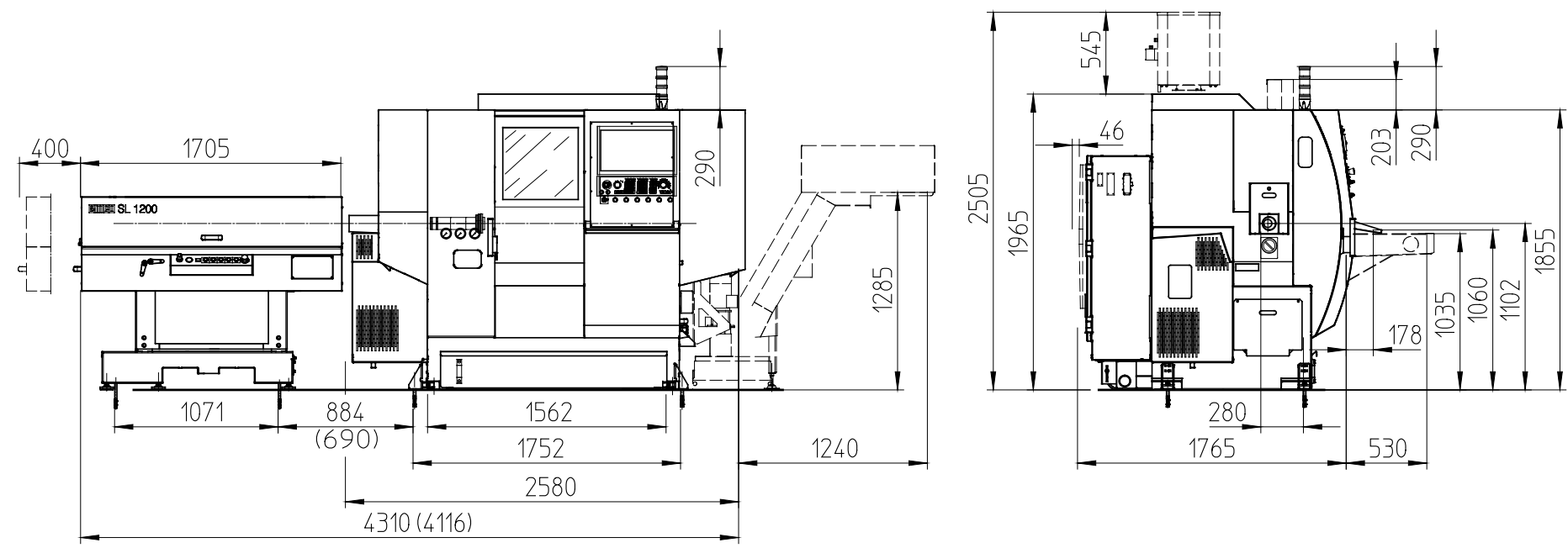
## OPTIONS

- / Chip conveyor
- / 3 jaw chuck - 170 mm
- / Collet chuck 173 E
- / Automatic door
- / Robotics and DNC interface and OPC UA UMATI interface
- / Attractive tool package
- / Part collecting device
- / Driven tools
- / Bar loader

Indications in millimeters

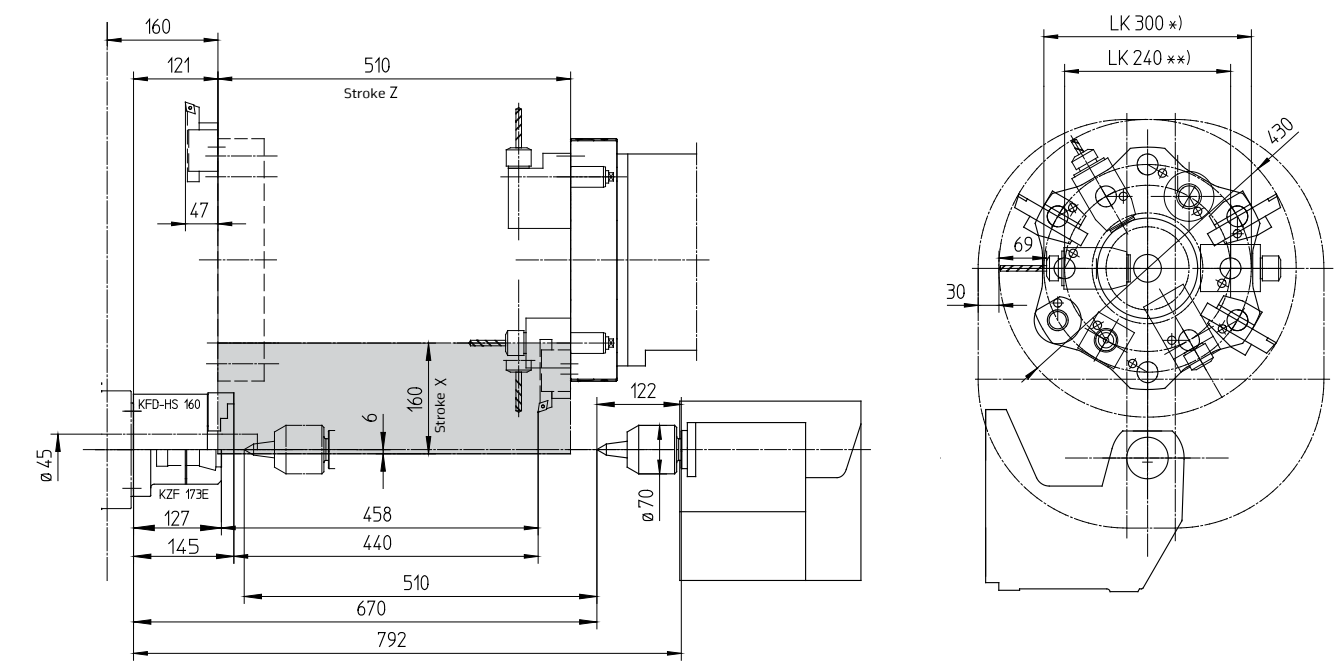


# MACHINE LAYOUT CONCEPT TURN 460



Indications in millimeters

# WORK AREA



\*) without driven tools - version TC  
 \*\*) with driven tools - version TCM

Indications in millimeters

# EMCO'S TRAINING CONCEPT

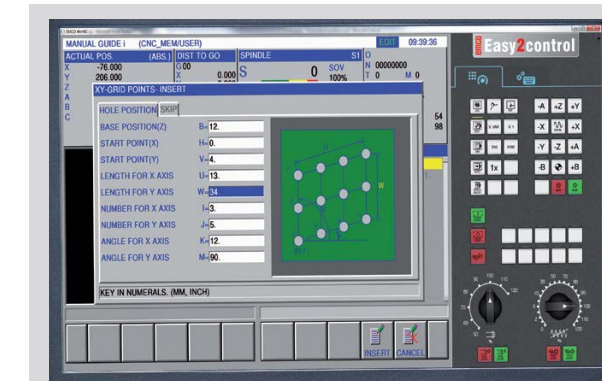
The concept of an exchangeable control unit that works with all Concept machines is unique. A single machine is all it takes to train the user in the handling of all industrial CNC controls commonly available on the market. The result: CNC technicians who can be flexibly deployed, which is a decisive advantage for both the company and its skilled workers.

## Machines

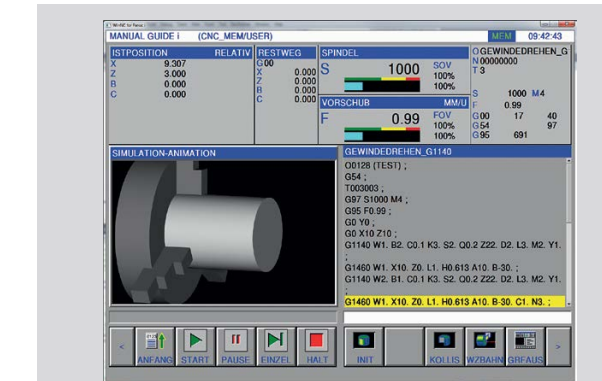
/ Concept machines / Conventional turning and milling machines / Industrial machines



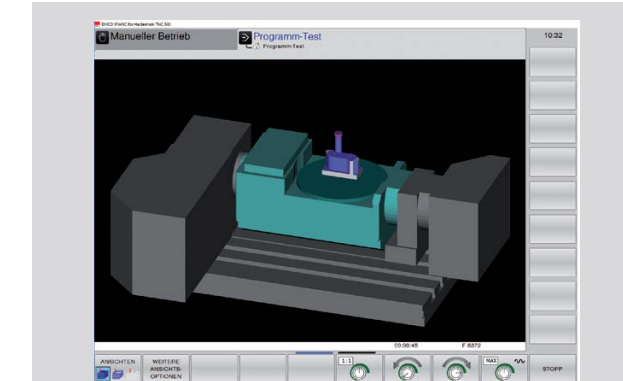
## THE INTERCHANGEABLE CONTROL WinNC



The change to a different control system is carried out within a minute by calling up the respective software.



WinNC for Fanuc 31i including Manual Guide i



Simulation suitable for training using Win3D View

## BASIC EQUIPMENT

- / Possibility to train the use of several control units on one machine
- / New controls can easily be installed on the machine by means of a software upgrade. It is not necessary to switch machines or take any retrofitting measures.
- / The programming stations are identical with the machine software
- / Straightforward networking and free of charge remote access thanks to the use of standard Windows apps
- / Download of a free 30 days demo version from EMCO's website [www.emco-world.com](http://www.emco-world.com)
- / Attractive homeschooling licenses for distance learning

## CONTROL TURNING

- / Sinumerik Operate 840D sl / 828D
- / Fanuc 31i
- / Fagor 8055

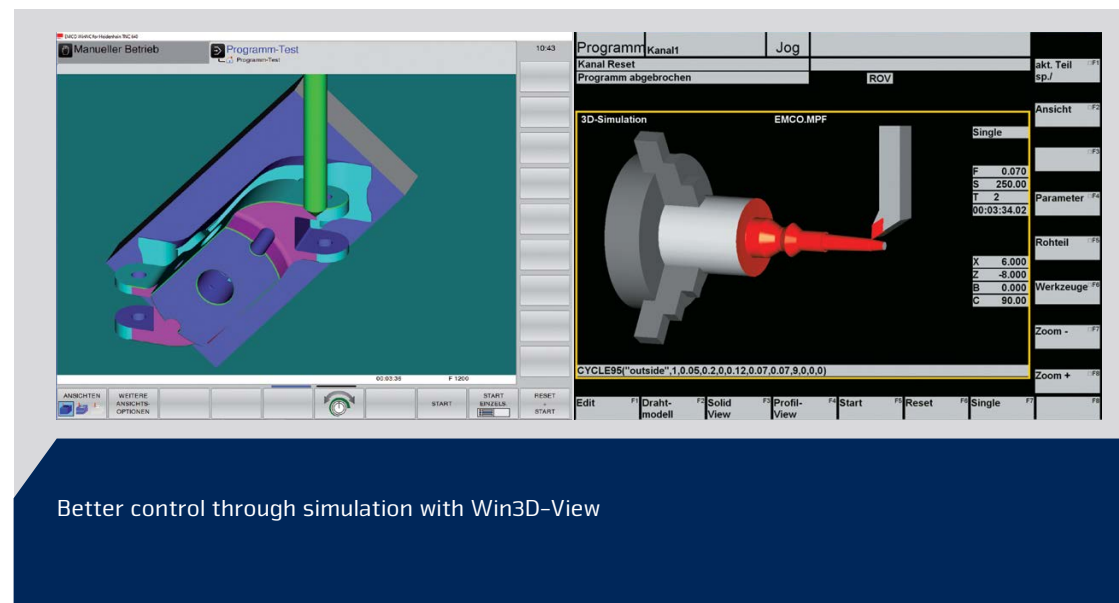
## CONTROL MILLING

- / Sinumerik Operate 840D sl / 828D
- / Heidenhain 426/430
- / Heidenhain 620/640
- / Fanuc 31i
- / Fagor 8055

## Win3DView

A 3D simulation for turning and milling operations, Win3D-View is available as an option in addition to WinNC. This tool makes it possible to understand and control the production processes already on the screen.

- / Collision control
- / Realistic illustration of the work area including blank, tool and clamping device
- / Section display, views, scaling
- / Tools are illustrated as solid or wireframe models
- / Integrated tool library
- / Download of a free 30 days demo version from EMC0's website [www.emco-world.com](http://www.emco-world.com)



Better control through simulation with Win3D-View

## Easy2Control

Easy2Control is a virtual on-screen keyboard suitable for mouse or touchscreen operation.

- / On-screen illustration of the control and machine keyboards - virtual machine control panel
- / Different control panels for machine, control and quick accesses switchable via tabs
- / Wide range of keyboard and configuration possibilities
- / Allows for realistic training at programming stations



## Easy2Operate

Easy2Operate is a hardware operator panel for machines of the Concept 55/60/105 series and programming stations.

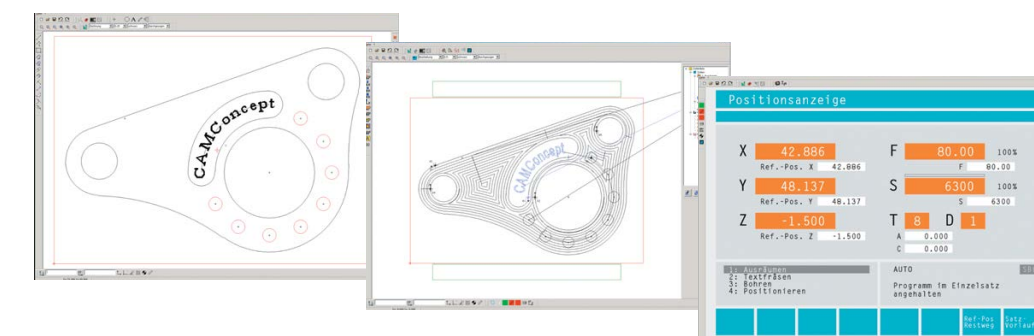
- / Clearly arranged control elements, as is the case with industrial machines
- / Separate feed override controller with zero dead stop
- / Multifunctional controller with selectable functions (electronic handwheel, speed override etc.)
- / Including Easy2Control



## CAMConcept

CAMConcept is an innovative software for full CAD/CAM and CNC training - from construction to production. All core functions of CAD programs are available. Clear CNC cycle graphics enable quick programming, whereas simulations and collision checks ensure safe programming control. Straightforward and low-threshold operating procedures ensure quick learning successes. CAMConcept consists of a CAD part, a CAM part and a CNC part.

- / Icon-based operator guidance
- / 3D machining simulation
- / Text milling
- / Editable tool library
- / Context-dependant help
- / Direct activation of the Concept 55/60/105 series
- / Export by post-processors (available as an option)
- / DXF interface
- / Network capability
- / Download of a free 30 days demo version from EMC0's website [www.emco-world.com](http://www.emco-world.com)





# TECHNICAL DATA CONCEPT TURN 60

## Work area

Swing over bed	∅ 130 mm
Swing over cross slide	∅ 60 mm
Max. machining length	215 mm

## Travel

Travel in X	60 mm
Travel in Z	280 mm

## Main spindle

Spindle bore	∅ 16 mm
Speed range	300 - 4200 rpm
Max. torque	10 Nm
Front bearing diameter	∅ 30 mm

## Main power

Power (3 phase asynchronous motor)	1,1 kW
------------------------------------	--------

## Tool turret

Number of tool stations	8
Tool section for square tools	12 x 12 mm
Shank diameter for boring bars	∅ 10 mm

## Feed drives

Rapid traverse in X / Z	3 m/min
Feed thrust in X / Z (stepless)	0-2 m/min
Feed power in X / Z	1000 N
Positioning variation according VDI 3441 in X	0,008 mm
Positioning variation according VDI 3441 in Z	0,008 mm

## Tailstock

Quill stroke	35 mm
Quill diameter	∅ 22 mm

## General data

Height of the center line over the machine bottom	325 mm
Total height	550 mm
Floor space (L x W)	895 x 745 mm
Total weight	ca. 150 kg

# TECHNICAL DATA CONCEPT TURN 105

## Work area

Swing over bed	∅ 180 mm
Swing over cross slide	∅ 75 mm
Max. part length	121 mm

## Travel

Travel in X	55 mm
Travel in Z	172 mm

## Main spindle

Spindle bore	∅ 20,5 mm
Range of spindle speed (stepless)	150 - 4000 rpm
Max. torque (60% duty cycle)	14 Nm
Front bearing diameter	∅ 45 mm

## Main motor

AC motor, power	1,9 kW
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## Tool turret

Number of tool stations	8
Height and width of shank for external tools	12 x 12 mm
Bore for inner tools	∅ 16 mm

## Feed drives

Rapid traverse in X/Z	5 m/min
Feed rate in X/Z (stepless)	0 - 5 m/min
Max. feed force	2000 N
Positioning variation Ps (acc. VDI 3441) in X/Z	0,005/0,005 mm

## Tailstock (integrated rolling grains)

Quill stroke	120 mm
Quill diameter	∅ 35 mm

## Coolant system (option)

Max. coolant velocity	35 l
Flow volume	15 l/min
Max. coolant pressure	0,5 bar

## General data

Height of rotation axis above machine bottom	267 mm
Total height	1030 mm
Floor space (L x W)	1135 x 1100 mm
Total weight	350 kg

# TECHNICAL DATA CONCEPT TURN 260

## Work area

Swing over bed	Ø 250
Swing over cross-slide	Ø 85 mm
Max. machining length	270 / 255 mm

## Travel

Travel in X	100 mm
Travel in Z	300 mm

## Main spindle

Spindle bore	Ø 30 mm
Speed range	60 – 6300 rpm
Spindle torque	35 Nm
Spindle bearing inner diameter	Ø 50 mm

## C-axis (option)

Circular axis resolution	0,001°
Rapid speed	100 rpm

## Main motor

Drive performance	5,5 kW
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## Tool turret

Number of tool stations	12
Quick change tool shank according to DIN 69880	16
Shank height for square tools	12 x 12 mm
Shank diameter for boring bars	Ø 16 mm

## Driven tools (option)

Speed range	200 – 6000 rpm
Torque	4 Nm
Power	1,2 kW
Number of tool stations	6

## Feed drives

Rapid speed X / Z	15 / 24 m/min
Feed force in the X-axis	3000 N
Feed force in the Z-axis	3500 N
Position variation Ps (according to VDI 3441) X / Z	0,003 / 0,004 mm

## Tailstock

Quill stroke	120 mm
Quill diameter (live center integrated)	Ø 35 mm
Quill thrust	800 – 2500 N

## Coolant system (option)

Tank volume	140 l
Coolant pump	0,57 kW
Coolant delivery 3,5 bar / 1 bar	15/65 l/min

## General data

Height of centres above floor	1131 mm
Machine height	1820 mm
Machine installation area (L x W)	1700 x 1270 mm
Total weight	1100 kg

# TECHNICAL DATA CONCEPT TURN 460

## Work area

Swing over bed	Ø 430 mm
Swing over cross slides	Ø 300 mm
Max. machining length	510 mm

## Travel

Travel in X	160 mm
Travel in Z	510 mm

## Main spindle

Spindle bore	Ø 45 / Ø 53 mm
Speed range	0 – 6300 rpm
Spindle torque	78 Nm
Spindle bearing inner diameter	Ø 80 mm

## C-axis

Resolution of the round axis	0,001°
Rapid motion speed	250 rpm

## Main motor

Main drive power 100/40% duty cycle	8/13 kW
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## Tool turret

Number of tool stations	12
Tool shank according VDI (DIN 69880)	VDI 30
Tool cross-section for square tools	20 x 20 mm
Shank diameter for boring bars	Ø 32 mm

## Driven tools DIN 5480 (option)

Speed range	0 – 5000 rpm
Torque	16 Nm
Max. power	4 kW
Number of stations	6

## Feed drives

Rapid speed X / Z	24 / 30 m/min
Feed force in the X-axis	4000 N
Feed force in the Z-axis	6000 N
Position variation Ps (according to VDI 3441) X / Z	0,003 / 0,003 mm

## Tailstock

Tailstock stroke	510 mm
Max. tailstock thrust	6000 N
Taper	MK 4

## Cooling equipment

Tank volume	250 l
Coolant pump at 3,5 bar (optional 14 bar)	0,57 (2,2) kW
Coolant delivery 3,5 bar / 1 bar	15/65 l/min
Coolant delivery 14 bar / 6 bar (optional)	10/60 l/min

## General data

Rotary axis height above the floor	1100 mm
Total height	1958 mm
Floor space (L x W)	2275 x 1790 mm
Total weight	3300 kg

# TECHNICAL DATA CONCEPT MILL 55

## Work area

Travel in X-axis	190 mm
Travel in Y-axis	140 mm
Travel in Z-axis	260 mm
Effective Z-stroke with / without tool changer	120 / 190 mm
Distance spindle nose - table	77 - 337 mm

## Table

Clamping area (L x W)	420 x 125 mm
Max. table load	10 kg
2 T-slots DIN 650	11 mm
T-slot spacing	90 mm

## Milling spindle drive

Asynchronous AC motor, power	0,75 kW
Speed range	150 - 3500 rpm
Max. torque	3,7 Nm
Speed per minute with option high speed spindle	14000 rpm

## Tool change (EXW)

Number of tool stations	8
Max. tool weight	1 kg
Max. tool diameter with / without turret	Ø 40 / 60 mm

## Feed drive

3 phase step motor in X-/Y-/Z-axis with resolution	0,5 µm
Rapid motion speed and feed rate X / Y / Z	0 - 2 m/min
Average positioning variation in VDI/DGQ 3441 in X / Y / Z	0,008 mm
Feed power X / Y / Z [N]"	800 / 1000 N

## Lubrication system

Guideways	Oil lubrication
Main spindle bearing service life	Grease lubrication

## General data

Total height	980 mm
Floor space (L x W)	960 x 1000 mm
Total weight incl. tool changer	220 kg

# TECHNICAL DATA CONCEPT MILL 105

## Work area

Travel in X-axis	200 mm
Travel in Y-axis	150 mm
Travel in Z-axis	250 mm
Effective Z-stroke (Z)	150 mm
Distance spindle nose - table	95 - 245 mm

## Table

Clamping surface (L x W)	420 x 125 mm
Max. table load	10 kg
2 T-slots according to DIN 650	11 mm
T-slots distance	90 mm

## Milling spindle

Asynchronous AC motor, power	1,1 kW
Speed range (stepless)	150 - 5000 rpm
Max. torque	4,2 Nm
Speed per minute with option high speed spindle	20000 rpm

## Tool change

Number of tool stations	10
Max. tool weight	0,7 kg
Max. tool diameter	Ø 55 mm

## Feed rate

Work feed	0 - 5 m/min
Rapid motion speed in X- / Y- / Z-axis	5 m/min
Middle positioning variation acc. to VDI 3441 in X / Y	0,005 mm
Middle positioning variation acc. to VDI 3441 in Z	0,005 mm

## Coolant system (option)

Tank capacity	35 l
Maximum pump capacity	15 l/min
Maximum coolant pressure at 50Hz	0,5 bar

## General data

Total height	1100 mm
Floor space (L x W)	1135 x 1100 mm
Machine weight without machine base	400 kg



# TECHNICAL DATA CONCEPT MILL 260

## Work area

Travel in X-axis	350 mm
Travel in Y-axis	250 mm
Travel in Z-axis	300 mm
Effective Z-stroke	300 mm
Distance spindle nose – table surface	120 – 420 mm

## Milling Table

Table dimensions (L x W)	520 x 300 mm
Max. table load	100 kg
5 T-slots according to DIN 650	12 mm
T-slots distance	45 mm

## Milling spindle

Speed range (stepless)	150 – 10000 rpm
Asynchronous AC-motor, power (100% / 40% duty cycle)	4,9 / 6,8 kW
Max. torque ( 100% / 40% duty cycle)	23 / 34 Nm

## Tool system

Tool magazine	Drum turret
Number of tool stations	20
Max. admissible tool weight	5 kg
Max. tool diameter (*free adjacent pockets)	63 (*80) mm
Max. tool length	200 mm
Max. tool length with 5th axis	170 mm

## Feed drives (Servo motors)

Rapid traverse in X-/Y-/Z-axis	24 m/min
Feed	0 – 10 m/min
Max. feed force	3000 N
Positioning variation according to VDI 3441 in X / Y	0,004 mm
Positioning variation according to VDI 3441 in Z	0,004 mm

## General data

Total length and total depth (L x W)	1600 x 1700 mm
Total height	2200 mm
Total weight	1970 kg

# OVERVIEW INDUSTRIAL TRAINING SOFTWARE

## WinNC

- / Interchangeable control for Concept machines and PC workstations
- / Various controls that are common on the market can be used and trained on one single machine
- / Reduced investment costs
- / Sustainable investment due to possibility of control upgrade on the machine
- / Simple and affordable networking and remote access
- / Easy change of various controls and key modules within 1 minute

## Win3D-View (option to WinNc)

- / Sectional view
- / Collision detection
- / A useful training tool
- / Tool and workpiece display
- / Library of tools
- / Displays work processes

## Easy2Control (option to WinNC on programming stations)

- / Virtual control panel
- / Operation with touch screen or PC mouse
- / Quick and easy configuration
- / Look-and-feel of the industrial control

## Easy2Operate (Hardware option for the 55/60/105 machines and programming stations)

- / Clear arrangement of controls as on an industrial machine
- / Separate feed-override controller with zero stop
- / Multifunctional controller with selectable functions (electronic handwheel, speed override, etc.)
- / Easy2Control integrated

## CamConcept

- / CAD part, CAM part, CNC part and work preparation from a single source
- / Symbol-controlled operator guidance, simple operation for training
- / 3D simulation of machining and text milling included
- / Direct control of the Concept series 55/60/105
- / Export by means of post-processors (option)

## License versions

The exchangeable control WinNC, Win3DView, Easy2Control and CAMConcept are available in different license versions.

### Machine license

One license of the corresponding software is required per machine for operation.

### Single license programming station

For the installation of the corresponding software on one workstation.

### Multiple license programming station

Cost-effective solution for institutes and training workshops. Allows unlimited number of installations within the site.

### Homeschooling license

Extension of the multiple license – allows the installation for any number of homeschooling participants even outside the institute's location with a practical term of 5 years.

**EMCO**



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