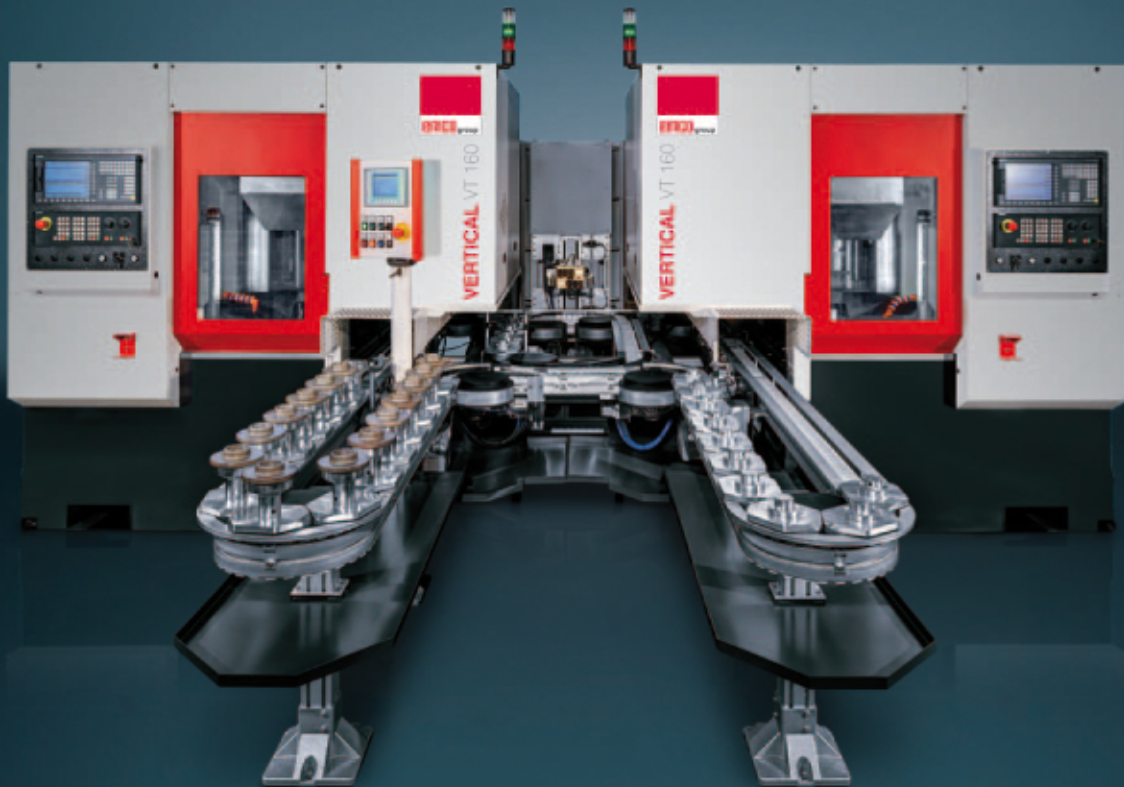


**emco**group

Designed for your profit



**VT 400 - VT 260 - VT 160**

Vertical turning machines  
with integrated automation

**TURNING**  
EMCO-WORLD.COM

# EMCO VERT

## 1 MAIN SPINDLE AND DRIVE UNIT

- Highly dynamic main spindle up to 7000 rpm and Sinamic drive unit
- Energy-efficient modular design

## 2 WORK AREA

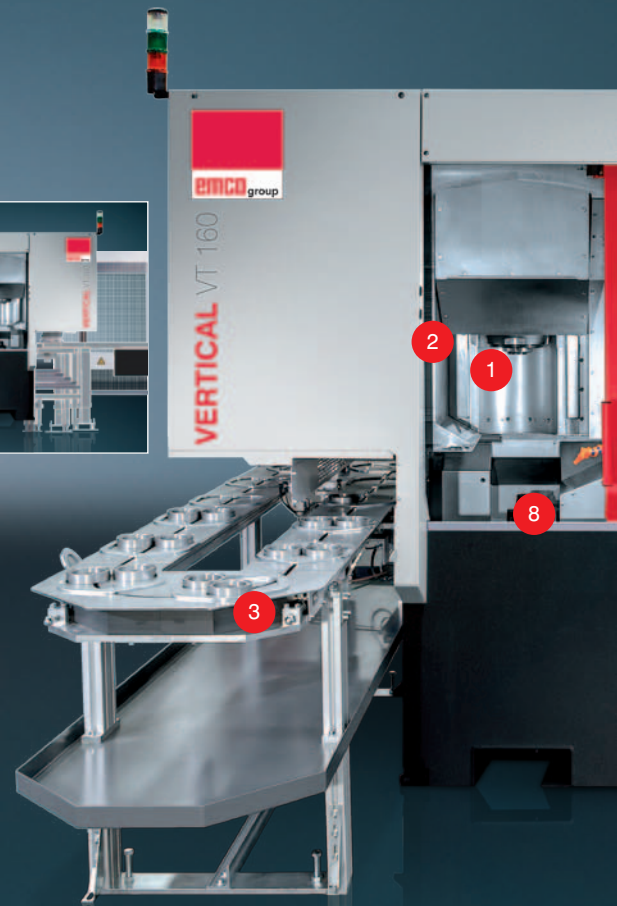
- User-friendly work area
- Optimized access to the clamping equipment, workpiece and tools

## 3 AUTOMATION

- Two-track loading, good parts supply and short cycle times
- Individual customer requests, such as pallet belts, towing frame, chain timing belts and the integration of feed systems can be implemented quickly and easily

## 4 RIGHT-HAND MACHINE

- Mirror image version



V-belt pulley  
(steel)

# ICAL VT 160



The VT 160 is equipped with a highly dynamic drive unit and high-performance main spindle. The integrated pick-up system with „two track loading“ makes for a good supply of parts and short cycle times. This guarantees short chip-to-chip times (up to 5.5 seconds in the case of two track loading) and optimized productivity.



## 5 CONTROL

- Simple programming and operation thanks to the state-of-the-art control technology
- Sinumerik 828D with Shopturn dialog programming and Sinamics drives

## 6 CHIP CONVEYOR

- Guarantees optimized chip removal
- Chip conveyor (hinge type belt) with integrated coolant device as standard

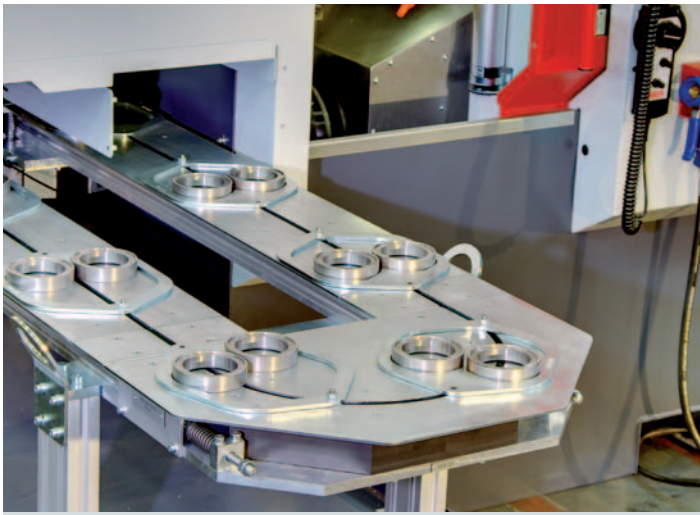
## 7 MACHINE STAND

- An enclosed, compact system with an extremely small footprint: 8,5 m<sup>2</sup>
- Quick and easy to set up by means of the crane-hook principle

## 8 TOOL TURRET

- VDI30 12-position turret with and without a milling drive
- Multifunctional plate for stationary boring tools, milling unit and special tools

Machine with optional equipment



VT 160 with two track loading. Two track loading is possible up to a part diameter of 100 mm.  
The benefits for you: good parts supply, short chip-to-chip times up to 5.5 seconds.



Complete machining without compromises: The large stroke of the Y axis satisfies every wish during complete machining.

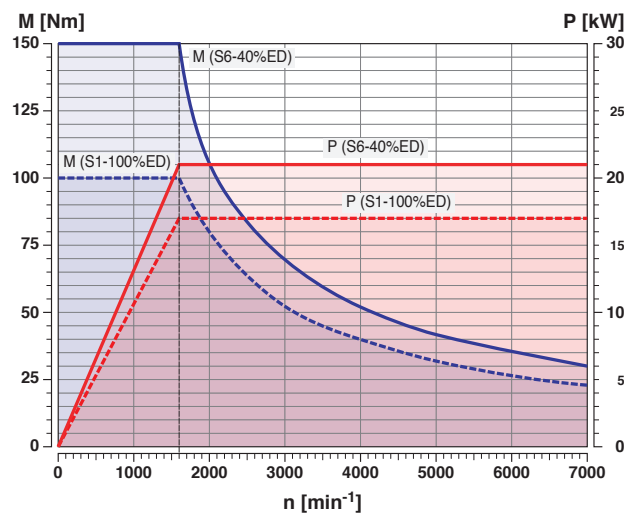
VT 400: Y-axis +/- 90 mm  
VT 260: Y axis +70/-90 mm  
VT 160: Y axis +/- 65 mm

## Options

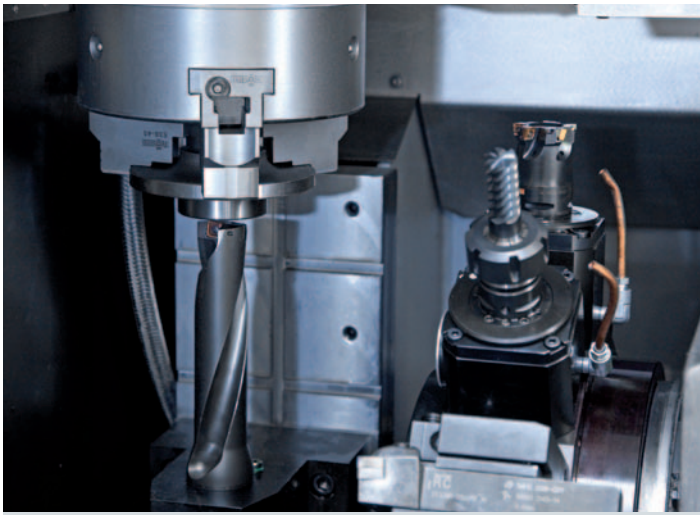
- Workpiece gauges
- Holder for the 13th tool on a multifunction front panel
- Process monitoring
- Switchgear cabi net cooling
- Linear measuring systems
- Oil mist separator

EMCO VERTICAL VT 160  
**Technical**

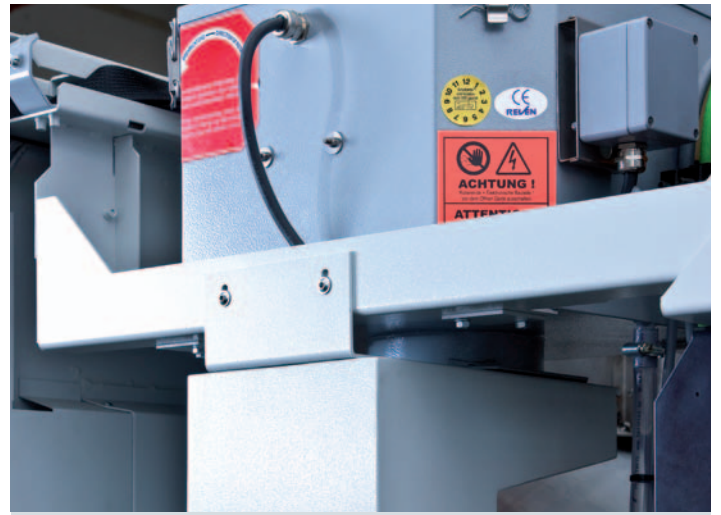
## Performance and torque curve



Motor characteristics for hollow spindle motor



Very stable multifunctional plate. In the version without a Y axis, it also supports the use of long drilling tools.

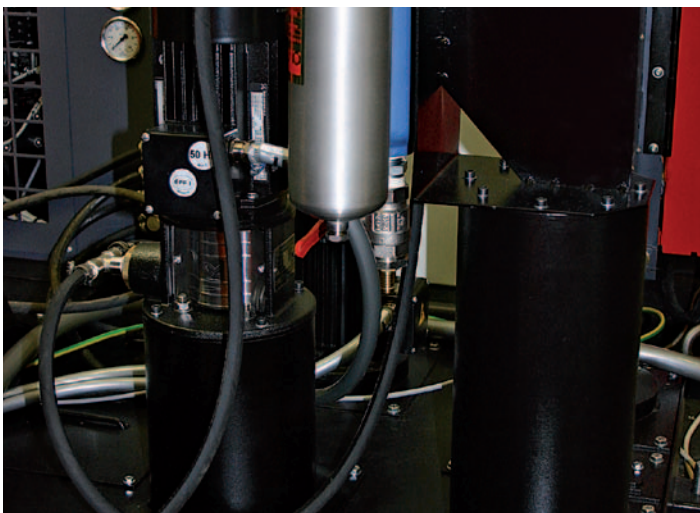


Because of the completely closed work area it is possible to integrate an exhaust system. With these measures the machine is much more environmentally friendly in its operation. The oil vapors are filtered out of the working area and only clean air escapes from the machines.

# Highlights

## Highlights

- Highly dynamic drive unit
- Two track loading, quick and flexible automation with short cycle times
- Chip-to-chip times up to 5.5 sec.
- Small footprint
- Strong guide rail concept for maximum stability / size 45
- Driven tools and Y axis +/- 65 mm
- Siemens control unit 828D
- Made in the Heart of Europe



The standard coolant system contains a 14 bar pump which delivers the coolant to the tool tip via the tool turret. It optionally comes with a chip flushing system for cleaning the inside of the machines of chips; a coolant pistol or coolant through the spindle can be added.



The machines can be equipped with different conveyer belts. One possibility is the standard linking system from pallet belts with spring-operated pick up stations, including 20 workpiece carriers. The feed direction is clockwise. The belt is placed completely under the machines.

# EMCO VERT

## 1 MAIN SPINDLE AND DRIVE UNITS

- Powerful main spindle with a high torque for short cycle times

## 2 WORK AREA

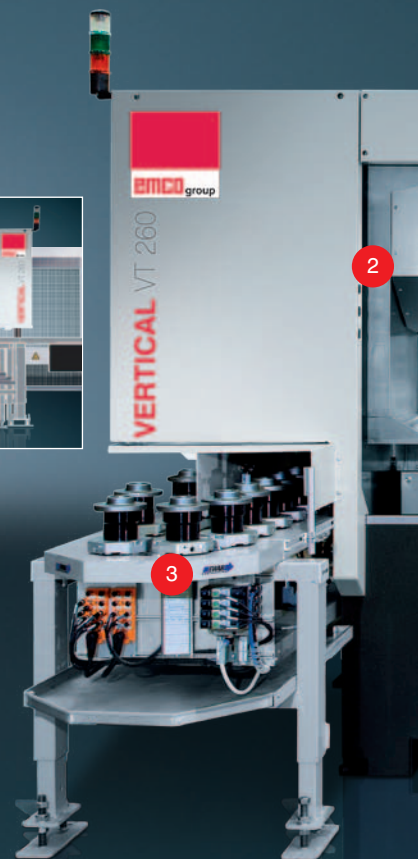
- Optimized access to the work area
- Best ergonomics for operators

## 3 AUTOMATION

- Fast loading of up to 24 workpieces because the blank is picked up directly from the conveyor via the spindle (Pick-up-concept)
- Variable automation possible: The conveyor belt is not permanently integrated in the machine.

## 4 RIGHT-HAND MACHINE

- Mirror image version



Wheel hub  
(steel)

# ICAL VT 260

Designed for heavy-duty machining, the VT 260 is equipped with an integrated self-loading system, yet it gets by with a small foot print. High productivity, high repeat accuracy and good operability are the impressive product features that characterize this machine.

The turning machine has an integrated pick-up system and self-loads chuck parts with a diameter of up to 260 mm, thus saving the user the additional costs and programming time involved with the use of an automated unit. The VT260 has the Siemens 828 control in the standard design and can optionally be equipped with Fanuc 31i or Siemens 840Dsl. So it provides three cutting-edge controls which convince with their easy operability and programmability.



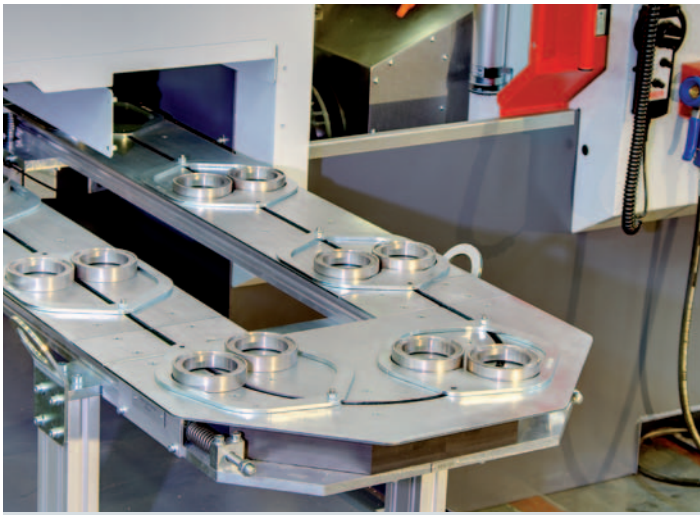
Machine with optional equipment

## 5 CONTROL

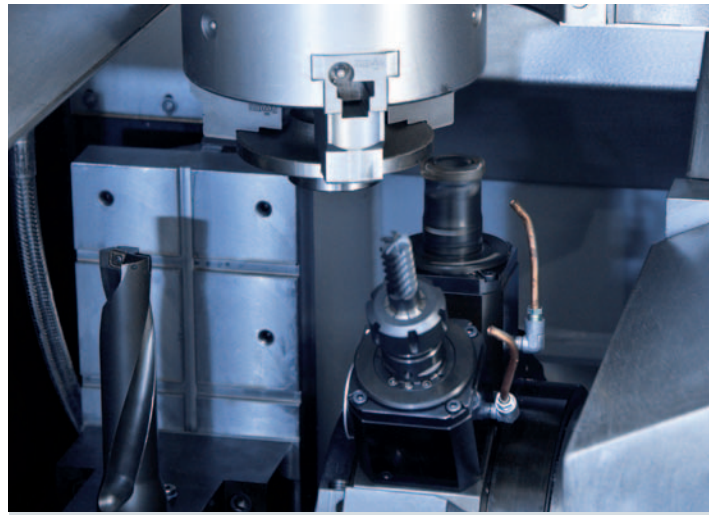
- Optionally with Siemens 828D or 840D sl or new with Fanuc 31i
- Simple programming and operation thanks to the state-of-the-art control technology

## 8 TOOL TURRET

- 2 independent tool systems:
- VDI40 12-position turret with and without a milling drive
- Multifunctional plate for stationary boring tools, special tools in the VT 260, VT 260 M and VT 260 M (ISM)



VT 260 with two track loading. Two track loading is possible up to a part diameter of 100 mm.  
The benefits for you: good parts supply, short chip-to-chip times up to 5.5 seconds.



Complete machining without compromises: The large stroke of the Y axis satisfies every wish during complete machining.

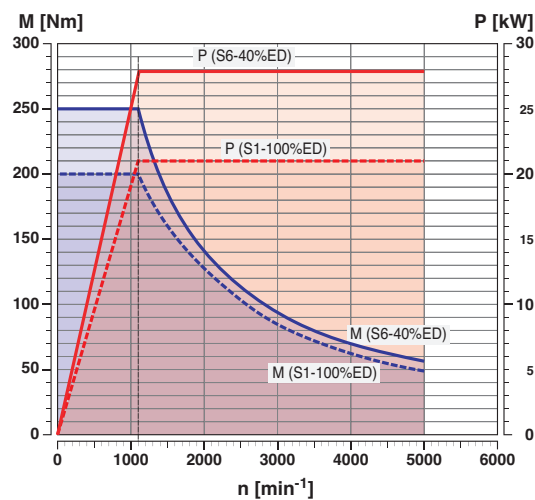
VT 400: Y-axis +/- 90 mm  
VT 260: Y axis +70/-90 mm  
VT 160: Y axis +/- 65 mm

## Options

- Workpiece measurement
- Machine status lamp
- Coolant pistol
- Oil mist separator
- Electric cabinet air conditioning system
- Linear scales
- NC control Siemens 840D sl
- NC control Fanuc 31i-B with chip conveyor at the rear side

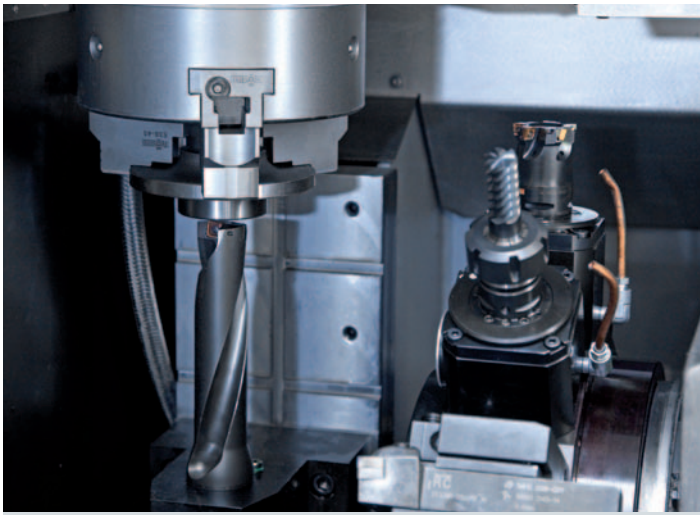
## EMCO VERTICAL VT 260 Technical

### Performance and torque curve

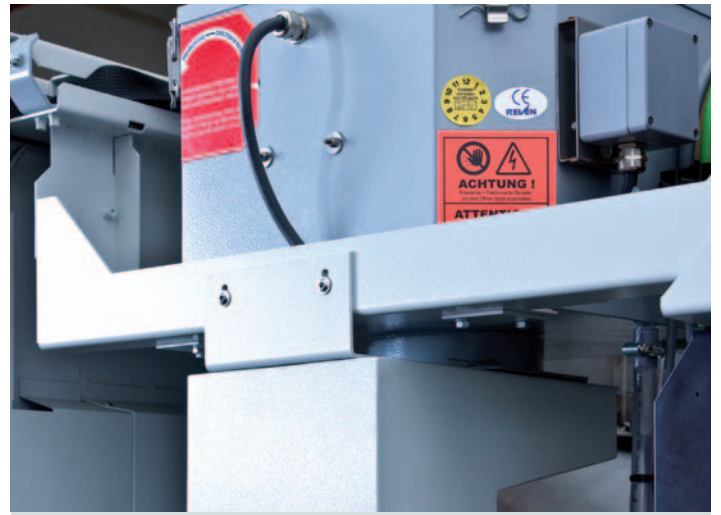


Motor characteristics for hollow spindle motor





Very stable multifunctional plate. In the version without a Y axis, it also supports the use of long drilling tools.

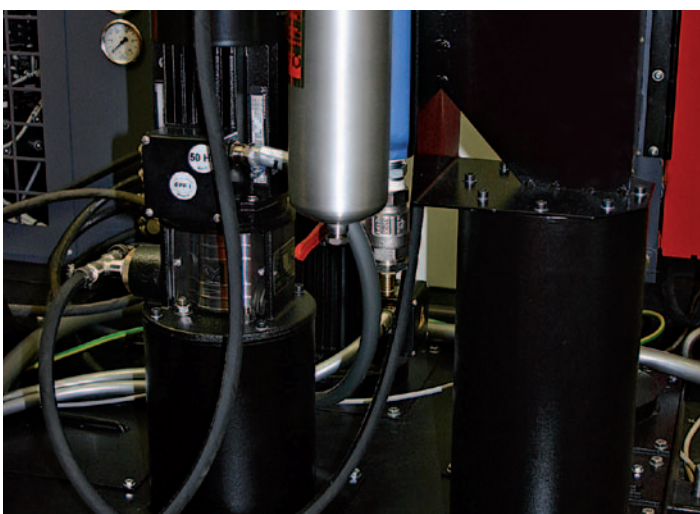


Because of the completely closed work area it is possible to integrate an exhaust system. With these measures the machine is much more environmentally friendly in its operation. The oil vapors are filtered out of the working area and only clean air escapes from the machines.

# Highlights

## Highlights

- Designed for heavy-duty machining
- Small footprint
- Integrated self-loading system
- Right and left machine available
- Latest Siemens control unit
- Straight chip fall
- Optional driven tools and Y axis
- Made in the Heart of Europe



The standard coolant system contains a 14 bar pump which delivers the coolant to the tool tip via the tool turret. It optionally comes with a chip flushing system for cleaning the inside of the machines of chips; a coolant pistol or coolant through the spindle can be added.



The machines can be equipped with different conveyer belts. One possibility is the standard linking system from pallet belts with spring-operated pick up stations, including 20 workpiece carriers. The feed direction is clockwise. The belt is placed completely under the machines.

# EMCO VERT

## 1 MAIN SPINDLE

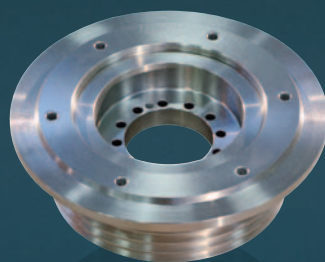
- Powerful, high-torque synchronous spindle
- Thermally symmetrical headstock design for high-quality precision machining with a high degree of process reliability

## 2 WORK AREA

- Generously sized machining compartment
- Easy to change over and user-friendly
- Optimum access to the clamping device tools and workpieces

## 3 AUTOMATION SOLUTIONS

- Simple automation solutions that are easy to change over
- Moving frame, pallet conveyors, chain conveyor belts, etc.
- Pick-up system for the parts



Belt pulley  
(steel)

# ICAL VT 400



The new VT 400 for chuck parts up to 400 mm completes the series of EMCO vertical lathes. This compact and robust vertical machine has all the features of a modern production lathe. It comes, for instance, with a compact guideway concept, a linear measuring system and digital drive technology, which enables high-quality parts to be machined.

The VT 400 is used in the light truck or utility vehicle industry, in the manufacture of gearboxes, and in the production of brake disks and hubs. With its +/- 90 mm Y axis and its high-performance driven tools combined with the multifunctional plate, this machine is designed for the complete machining of large and heavy parts. This machine concept allows very efficient handling times to be achieved.



## 5 CONTROL SYSTEM

- Easy programming and operation thanks to modern control technology
- Sinumerik 828D including ShopTurn interactive programming and Sinamics drives

## 6 CHIP CONVEYOR

- Optimum chip outfeed guaranteed
- Chip conveyor (hinged belt) with integrated coolant system included in the basic machine

## 8 TOOL SYSTEM

- 12-position tool turret with VDI40, with or without driven tools
- Drilling and milling units can be loaded on all 12 stations
- Use of the multifunctional plate for additional tools

Machine with optional equipment

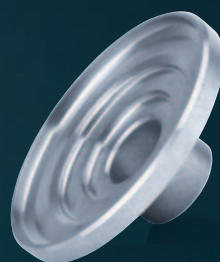


Plate flange  
(steel)



The pallet system of the VT400 is designed to hold up to 15 parts with a diameter of 50 – 320 mm. As an alternative, a conveyor belt with carrier-prism can be offered. This can hold 12 parts with a diameter of 200 – 320 mm.



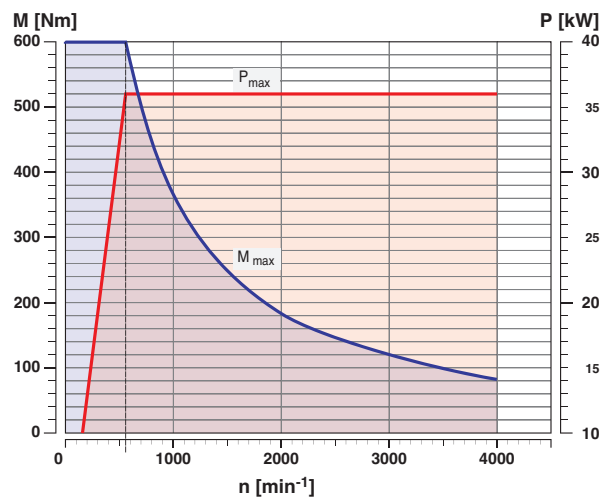
The state-of-the-art 828D control contains the latest functions from the Siemens „Operate“ controller interface. Based on „solution line technology“, the 828D is an ideal solution for single-channel machines like the VT 400, VT 260 and the VT 160. The communication with the controller is possible via a USB or ethernet-interface or CF-card in the front of the controller.

## Options

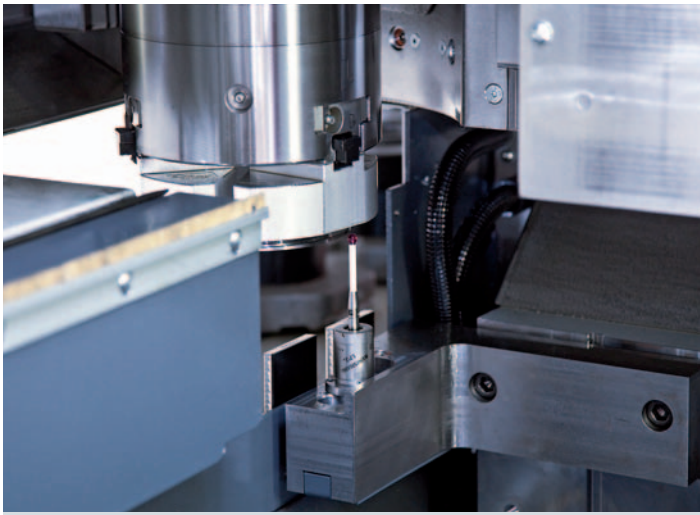
- Workpiece measurement
- Process monitoring
- Multifunctional plate for complete machining
- Linear scales
- Oil mist separator
- Automation is possible till DM 400 mm
- NC control Siemens 840D sl

## EMCO VERTICAL VT 400 Technical

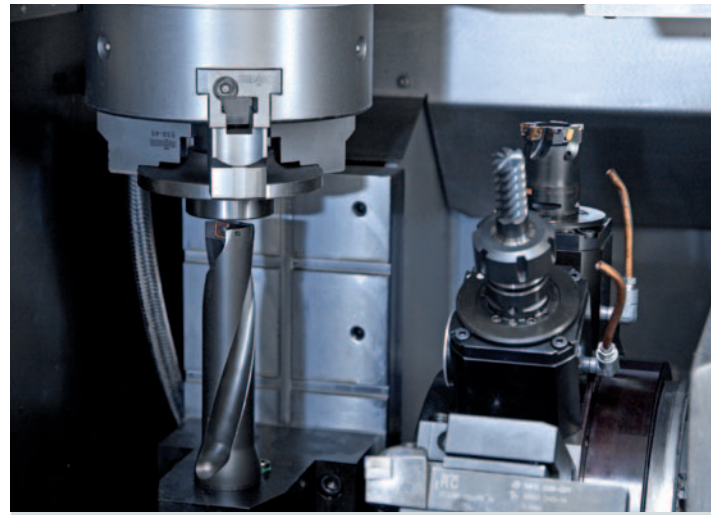
### Performance and torque curve



Motor characteristics for hollow spindle motor



Integrated work piece measuring device: With the touch probe mounted between the work area and the loading position it is possible to gauge the work piece. During machining, the probe will be completely covered and protected from chips and coolant.

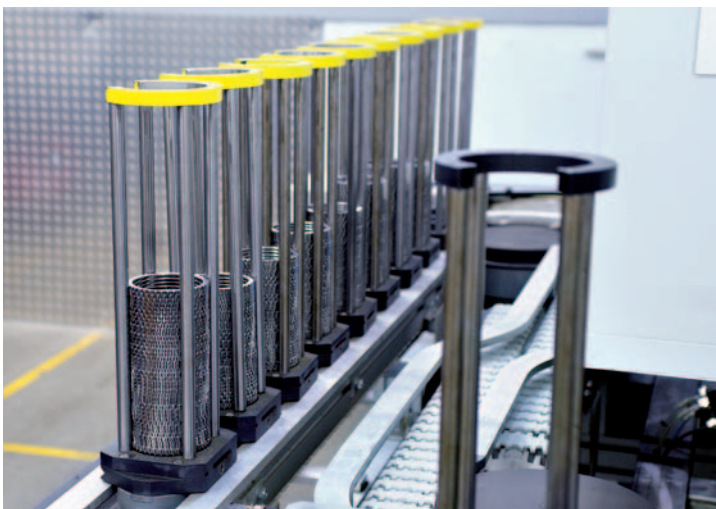


Very stable multifunctional plate. In the version without a Y axis, it also supports the use of long drilling tools.

# Highlights

## Highlights

- Robust, thermally stable machine concept
- Latest drive technology from Siemens
- Integrated spindle motor with 600 Nm
- Linear guides size 55/45 for maximum stability
- Digital drive technology and high traverse speeds to reduce main and ancillary times
- Machining compartment that is easy to change over and easily accessible
- +/- 90 mm Y axis
- Multiple automation options  
Automation designed for diameters up to 400 mm



Stackable tool magazines for line production are the preferred solution for vertical machines alongside drag conveyors and pallet systems. This magazine with 10 individual stackable magazines is ideal for circular parts such as clutch plates, synchroniser rings, etc. Each magazine shaft can stack up to 60 parts, transporting 600 parts to the VT 160 vertical machine.



# DUOZELLE VT

## 1 MAIN SPINDLE

- Powerful main spindle with a high torque for short cycle times

## 2 WORK AREA

- Optimized access to the work area
- Best ergonomics for operators



# 160 and VT 260

For more productivity: both the purchasing price and the performance values, such as the cycle time, use of manpower, etc., show the great efficiency of this right-hand and left-hand vertical turning machine in their interplay. Workpieces can be fully machined, independently of one another in the two separate workspaces – in other words, identical and different production processes are possible. The two machines are connected by a turning station. The two separate workspaces offer greater flexibility and safety in production processes. The Y axis, driven tools and multifunctional plate offer ideal preconditions for complete machining without any compromises.

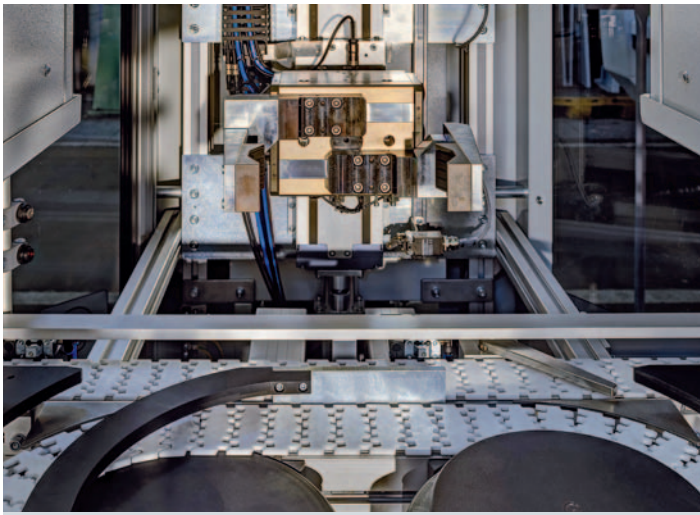


### 3 TOOL TURRET

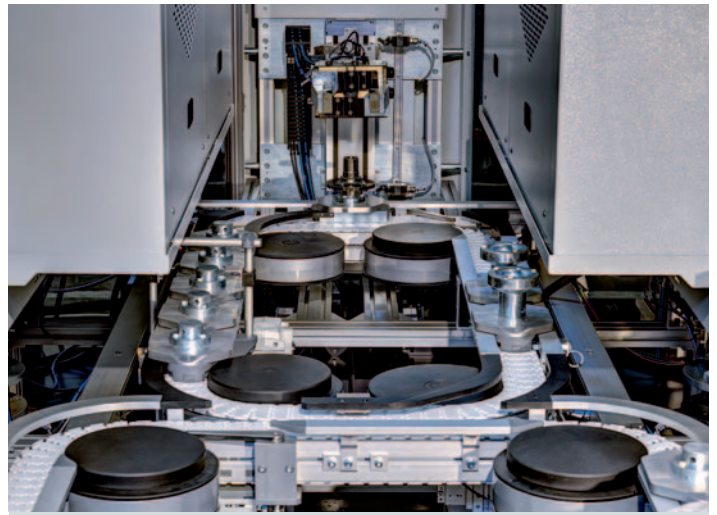
Turret equipped with 12 tool holder fixtures (stationary and driven tools available)  
Multifunctional plate for stationary boring tools, milling unit and special tools in the model range of VT-machines

### 4 CONTROL

- Simple programming and operation thanks to the state-of-the-art control technology
- Sinumerik 828D with Shopturn dialog programming and Sinamics drives



180° workpiece turner with workpiece switch for pallet 1 and pallet 2.



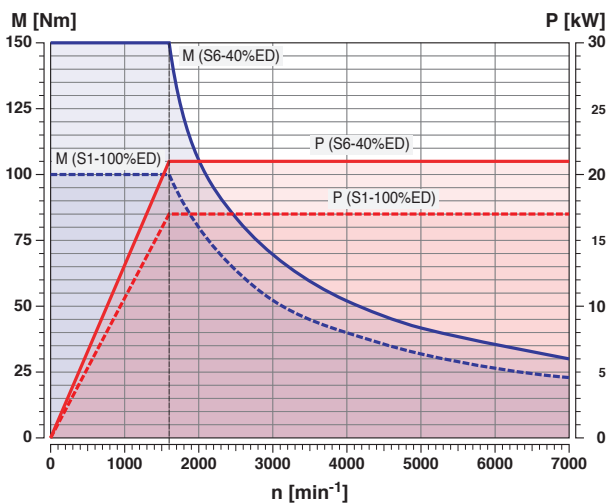
An integrated bypass line allows both a simultaneous production of different workpieces, as well as a different voltage at OP 10 and OP 20.



The DUO VT is available as a meander design, which is equipped with a 180° turner and an optional switch. Up to 25 pallets can be used per operation. Separate controls exist for different operating modes (manual, setup, automatic).

# Duozelle VT 160/260 Technical

## Performance

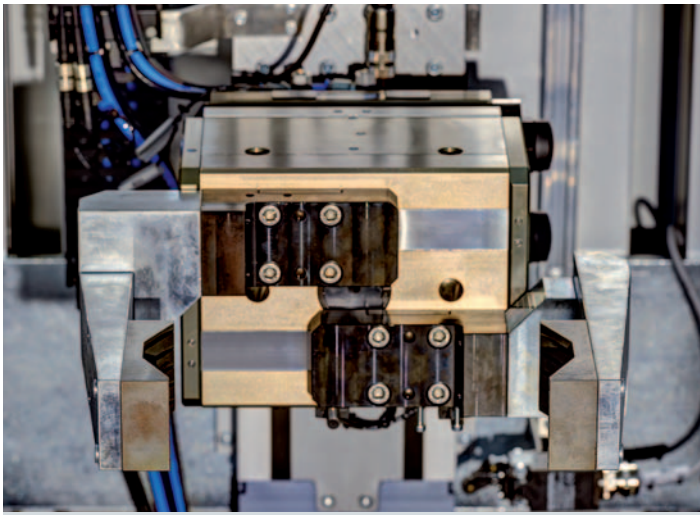


Motor characteristics for hollow spindle motor

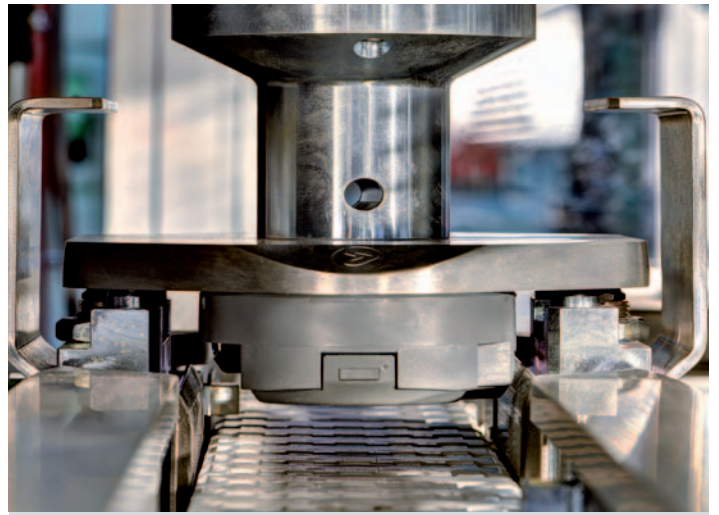


Changes and enhancements are possible thanks to requirements-driven configuration options in terms of the production environment, line layout and automation with extremely simple handling. A footprint of 21  $\text{m}^2$  is sufficient for this.





The machine is equipped with a 180° workpiece turner and a lifting station (lift height 300 mm). It can be operated pneumatically by a fixed stop or electrically by a NC axis. The gripper stroke is designed for diameters up to 220 mm. The turning station has a pneumatic drive.



The pick-up station for the blank is designed with gimbal suspension and drive-over protection.

# Highlights

## Highlights

- Right- and left-hand machines
- Complete machining (OP 10+OP 20) for maximum flexibility
- Tooling-friendly workspaces
- Stable guideway concept (BG 45) on the X and Z axis
- 12 station turret with driven tools
- Transfer unit with 180° turning device

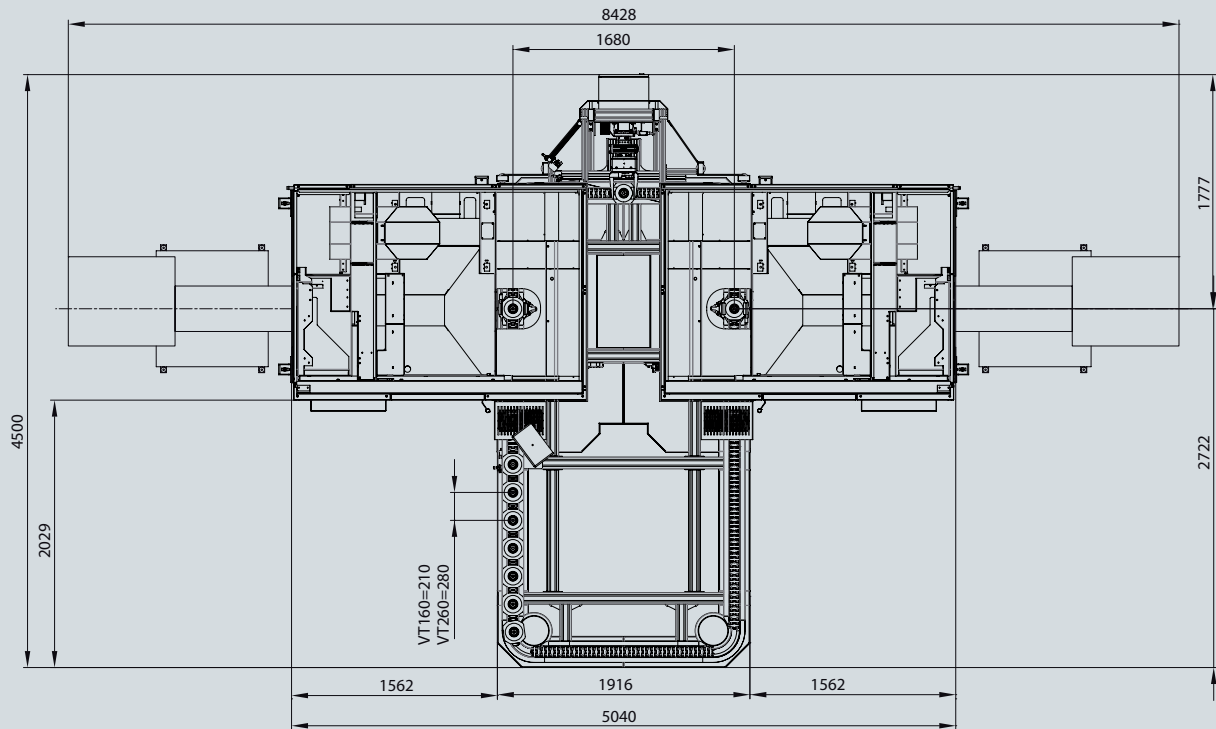


180° turning station with transport chain and workpiece carrier for the OP 20.



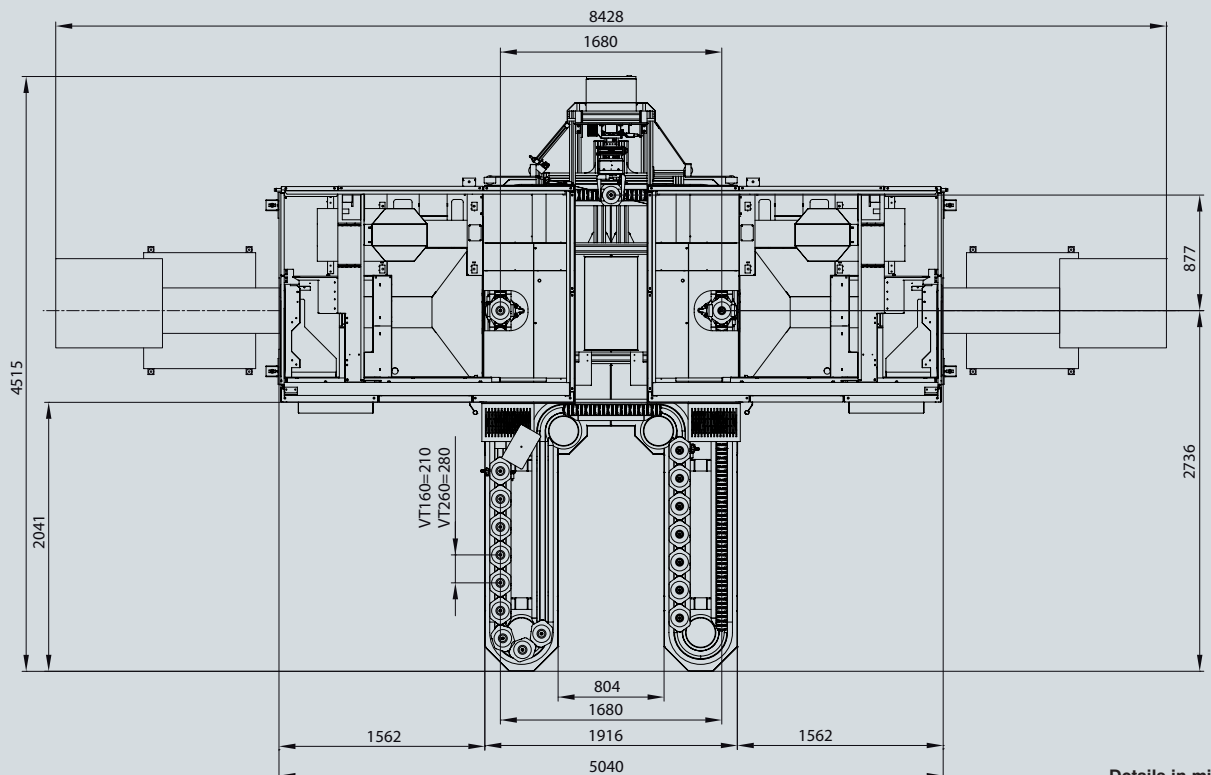
180° turning station, turning process completed: Workpiece carrier for the OP 10 without a workpiece moves back via a switch for loading with blanks. Workpiece carrier for the OP 20 with workpiece moves to processing of the second operation.

# Layout pallet transport OVAL



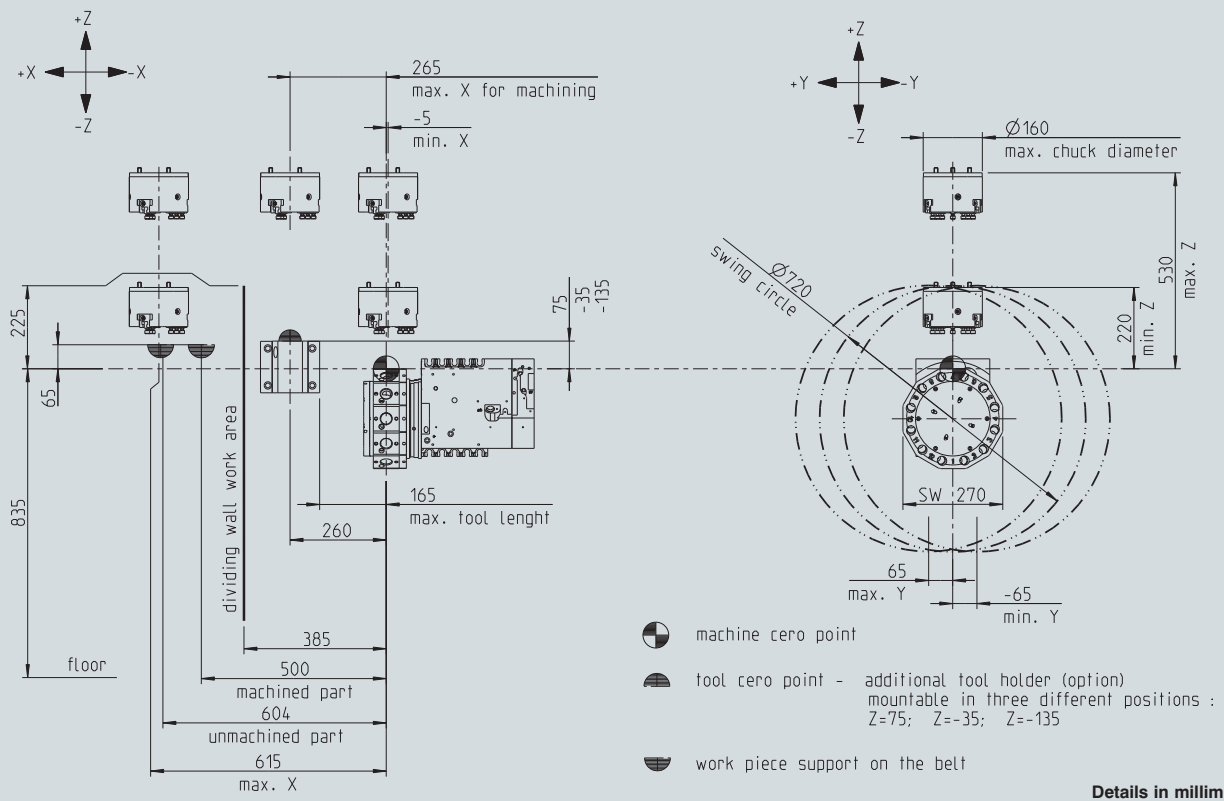
Details in millimeters

# Layout pallet transport MR and MRW

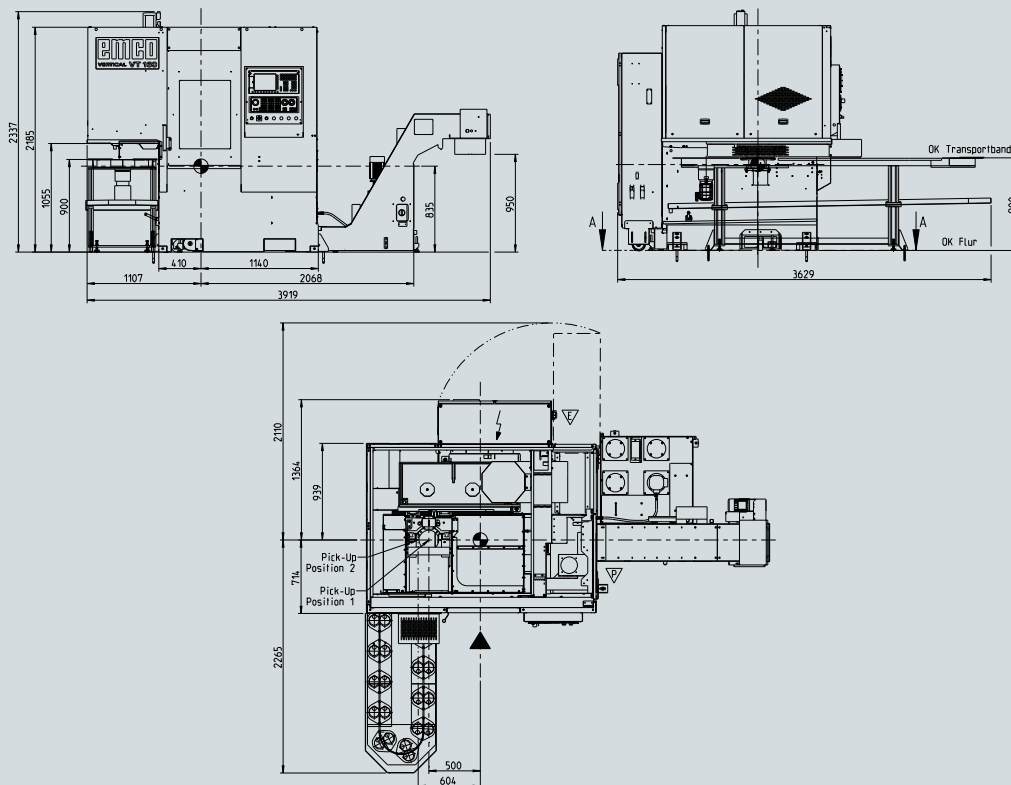


Details in millimeters

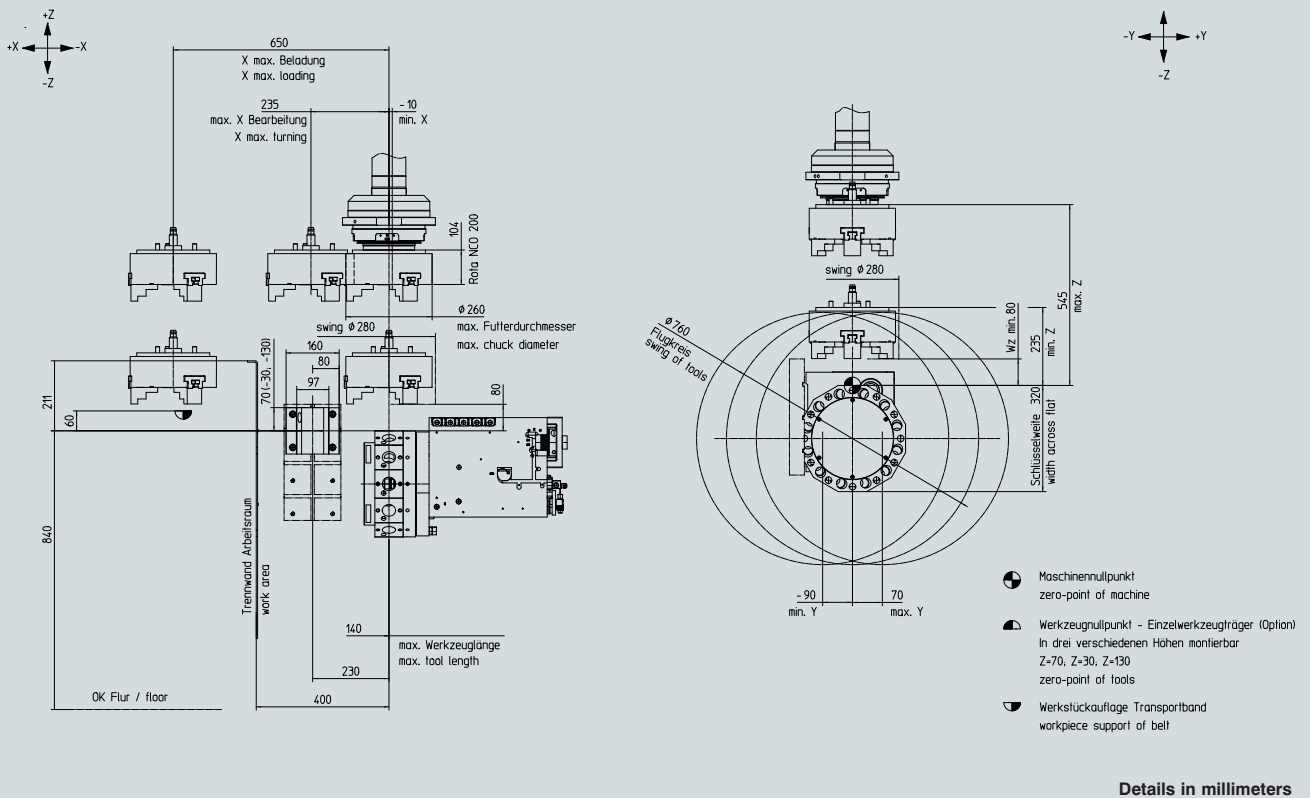
# Workspace VT 160



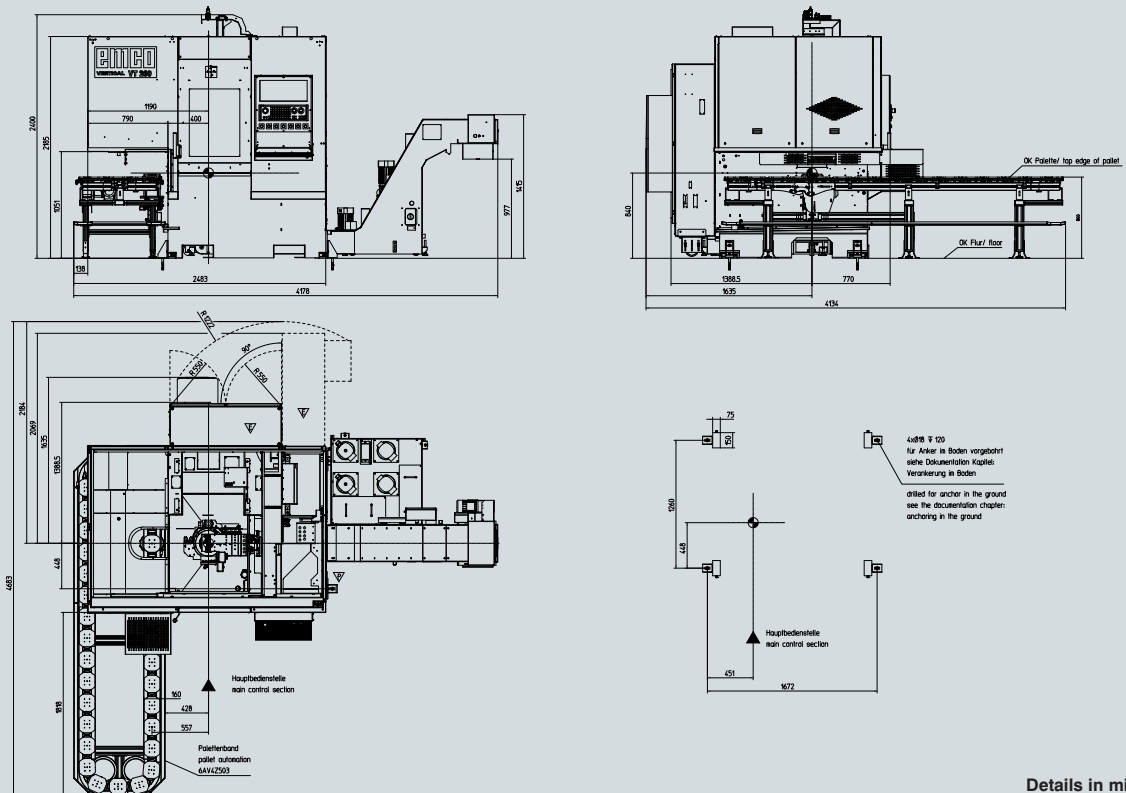
# Installation plan VT 160



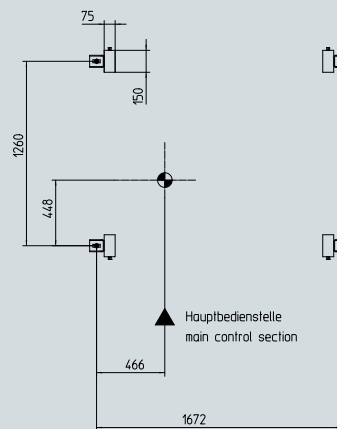
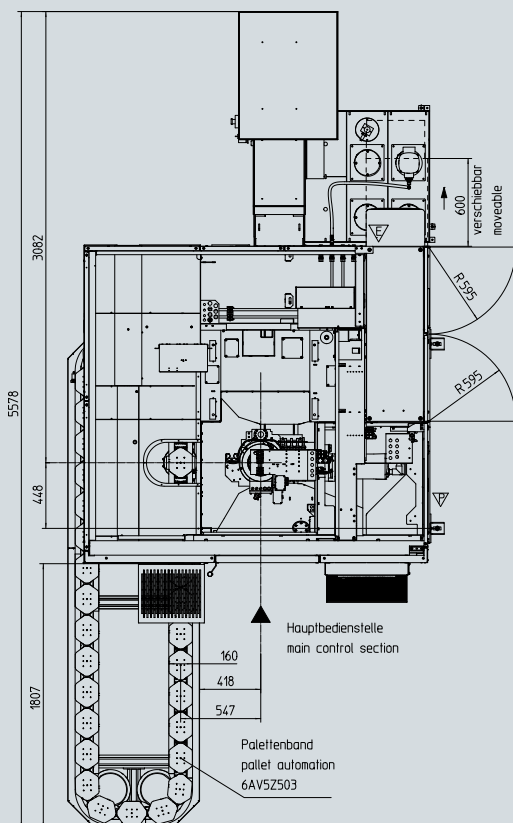
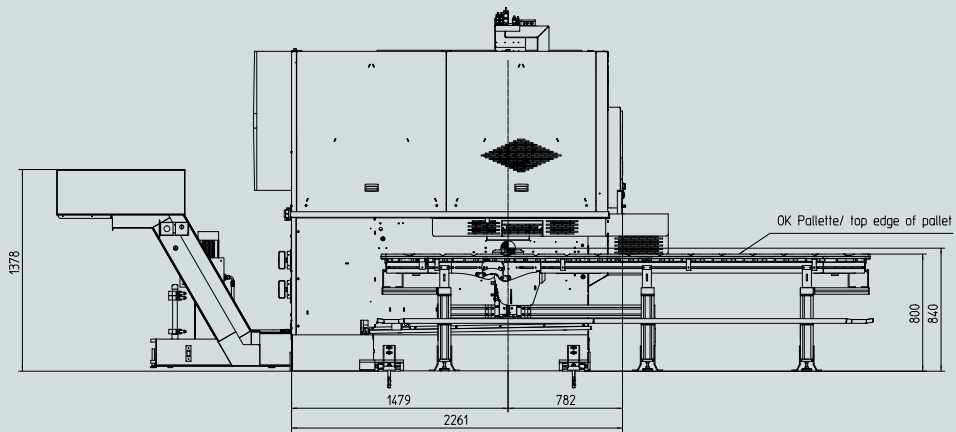
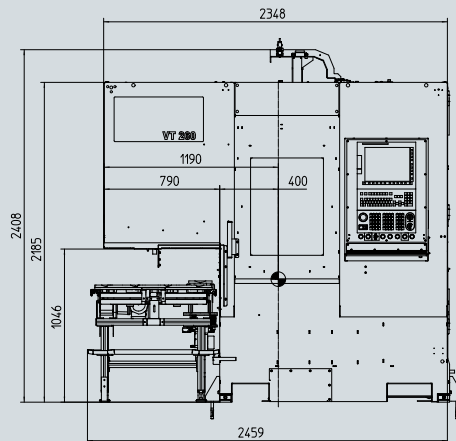
# Workspace VT 260



# Installation plan VT 260 with Siemens control



# Installation plan VT 260 with Fanuc control



4x Ø18 ∇ 120  
für Anker im Boden vorgebohrt  
siehe Dokumentation Kapitel:  
Verankerung im Boden

drilled for anchors in the ground  
see the documentation chapter:  
anchoring in the ground

Hauptbedienstelle  
main control section



# EMCO VERTICAL VT 400/260/160

## Technical data

Work area	EMCO VERTICAL VT 400	EMCO VERTICAL VT 260	EMCO VERTICAL VT 160
Chuck size	400 mm	260 mm	160 mm
Maximum work piece diameter	400 mm	260 mm	160 mm
Maximum work piece length	200 mm	180 mm	150 mm

### Travel

Travel X / Y / Z axis	960 / +- 90 / 400 mm	660 / +70 -90 / 310 mm	620 / +- 65 / 310 mm
Rapid motion speed X / Y / Z	45 / 15 / 30 m/min	60 / 15 / 30 m/min	60 / 15 / 30 m/min

### Main spindle - ISM

Speed range	0 – 4000 rpm	0 – 5000 rpm	0 – 7000 rpm
Drive power	36 kW (48.3 hp)	29 kW (38.9 hp)	21 kW (28.2 hp)
Torque	600 Nm (442 ft-lbs)	280 Nm (207.2 ft-lbs)	150 Nm (36.8 ft-lbs)
Spindle nose / DIN 55026	A2-11	A2-6	A2-5

### Tool turret

Number of tool holders	12	12	12
Tool shaft according VDI (DIN 69880)	VDI40	VDI40	VDI30
Driven tools	12	12	12
Speed range	0 – 4000 rpm	0 – 4000 rpm	0 – 5000 rpm
Drive power	8,5 kW (11.4 hp)	8.5 kW (11.4 hp)	6.7 kW (9.0 hp)
Torque	40 Nm (29.50 ft-lbs)	40 Nm (29.50 ft-lbs)	25 Nm (18.4 ft-lbs)

### Coolant system

Tank volume	320 litres (85 gal)	230 litres (60 gal)	230 litres (60 gal)
Coolant pressure standard / optional	3.7 / 14 bar (50 psi)	3.7 / 14 bar (50 psi)	3.7 / 14 bar (50 psi)

### Dimensions and weight

Overall height	2940 mm	2400 mm	2360 mm
Floor space L x D (w/o chip conveyor and part feeder)	3482 x 2511 mm	2350 x 2200	2240 x 2185 mm
Machine weight	8500 kg (18740 lb)	4000 kg (8818 lb)	3400 kg (7500 lb)

### Pallet transport Duo (Oval)

	VT160	VT260
Processing	OP10 / OP20	
Workpiece diameter	160 mm	260 mm
Workpiece height	150 mm	180 mm
Loading/pallet	8 kg (17.6 lb)	
Storage and buffering capacity	15 pallets / OP	
Workpiece turning device Vertical axis (Z)	adjustable fixed stop	
Control unit	Siemens	
Operation	6" Touch-Panel	

### Pallet transport Duo (MR)

Processing	OP10 / OP20	
Workpiece diameter	160 mm	260 mm
Workpiece height	150 mm	180 mm
Loading / pallet	8 kg (17.6 lb)	
Storage and buffering capacity	25 pallets / OP	

### Pallet transport Duo (MR)

Workpiece turning device Vertical axis (Z)	adjustable fixed stop
Control unit	Siemens
Operation	6" Touch-Panel

### Pallet transport (MRW)

Processing	OP10 / OP20 part A and B	
Workpiece diameter	160 mm	260 mm
Workpiece height	150 mm	180 mm
Loading/pallet	8 kg (17.6 lb)	
Storage and buffering capacity	25 pallets / OP	
Workpiece turning device Vertical axis (Z)	NC axis	
Control unit	Siemens	
Operation	6" Touch-Panel	

