

Vertical turning center







VERTOR C & VERTOR M

The machines of the Vertor C and M series are ideally suited for wet and dry machining of all common rotation-symmetrical workpieces with the highest precision, availability and continuous accuracy. The machines have very good accessibility with minimum space requirements and also offer the option for two or four axes. Technology integration of innovative processes such as out-of-round turning, hard turning, grinding, drilling or milling result in a significant reduction of in-house logistics processes and create high-precision machining results. The multifunctional vertical turning machines are among the world's best machine tools in their class in terms of operating speed, availability, stability and reliability.

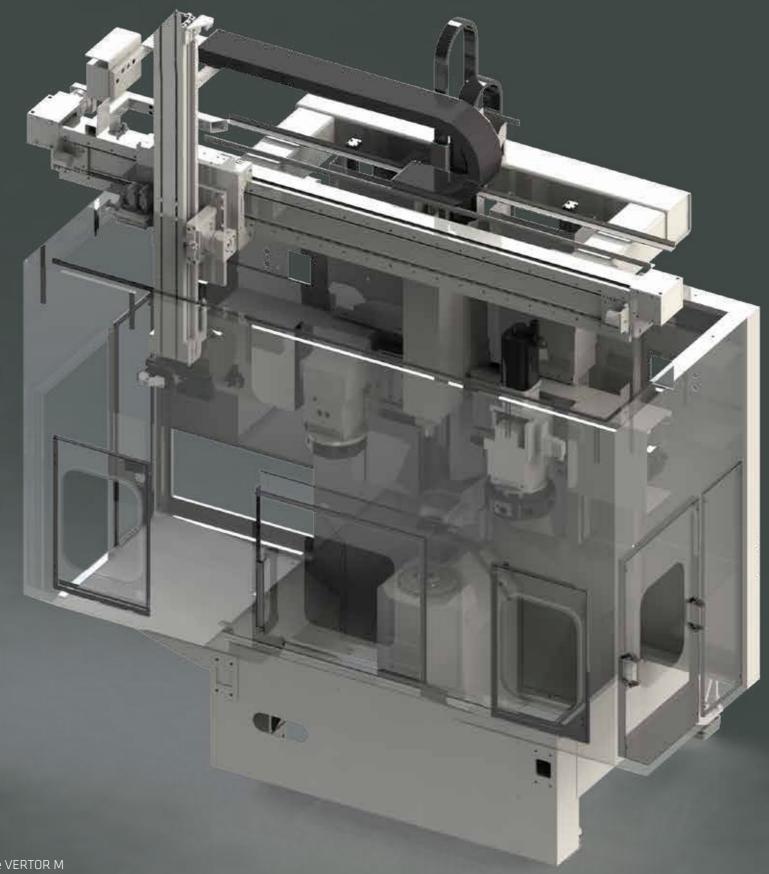




Conceptional advantages VERTOR C & M

- Extremely high rigidity and thermal stability
- Large working volumes with compact outer dimensions of the machine
- Direct drives
- Linear path measuring systems in horizontal and vertical direction
- Maintenance-free three-phase servo drives
- Machining of chuck turned parts or shafts with tailstock and steady
- 4-axis design for reduced Machining times
- Driven tools

Design VERTOR*



Base machine

Monobloc machine structure made of high quality cast iron. Heavily ribbed machine base.

Main spindle

Motor spindle with 35/40 kW power at 100/40%. ED with water cooling, maintenance-free spindle motor in digital drive technology.

- Spindle bearing Ø: 90 mm / 150 mm
- Spindle flange: A6 / A8 according to DIN 55026
- Speed limit: 3.500 min⁻¹
- Rated speed: 780 min⁻¹

Tool turret

- 8/12-station with electric drive
- VDI 40 interface
- (further tool interfaces possible)
- Optionally with driven tools

Gantry loading

Technical extensions

- Tailstock
- Counter spindle
- Steady rest
- HOT unit
- Grinding spindle



Bringing the application advance to the road...

Differential housings, brake discs, pistons: components manufactured on WEISSER machines can be found in countless vehicles. Intelligent production processes require innovative technologies and reliable, highly accurate machining centers designed for high-performance use. Therefore, WEISSER's precision turning machines and multifunctional turning centers are built with the highest level of technical maturity and high accuracy. This gives customers the assurance that nothing stands in the way of their production of safety-relevant components.





Transport systems

The automation options with different transport systems (e.g. pallet conveyor, drag frame, friction roller conveyor, etc.) offer highly variable application possibilities. Depending on the design, they can be adapted to the shape and weight of the workpieces to be transported. A variety of linking tasks, maximum flexibility and easy maintenance are part of the countless advantages offered by these customized automation solutions.

Robot automation

Robot automation offers a highly flexible loading and unloading method for your machine. Machining solutions with robot automation are configured according to the customer's requirements, so that related processes (e.g. measuring, signing, aligning) can also be operated in a space-saving manner and offer maximum availability.



Technical highlights

Original WEISSER synchronous motor spindle with direct drive technology

More than 160 years of experience in development, especially when it comes to: design and own production of motor spindles carried • Process safety out an unmatched competence potential, which is be- • High technical availability neficial for WEISSER customers,

- Maximum productivity
- Excellent manufacturing quality

Highest precision and accuracy

Measuring of all components and units relevant for the accuracy - despite high basic accuracies the individual components are "finely assembled". As a result, mechanical deviations during assembly are minimized and wear is reduced. This ensures a high long-term stability of the complete machine system.





Hard turning

Hard turning describes the turning of steel with a 3 times capacity with WEISSER HOT system for shorhardness of more than 45 HRC. It is an efficient alternative for grinding hardened workpieces. The advantages of this process are shorter cycle, set-up and tooling times as well as the relatively lower investment costs and the options of wet and dry machining.

Out-of-round turning

ter piece times and lower piece costs. The technology enables the highly productive machining of a wide range of workpieces, such as pistons for combustion engines, camshafts, polygonal profiles or the production of polygon shapes (shaft-hub connections) with process-oriented perfection.

Highly productive 4-axes simultaneous machining

Highly productive simultaneous machining in one machine with two powerful disk turrets (4-axes). Intelligent technology processes and the combination of different machining steps offer high savings potential. Working with two tools simultaneously shortens the machining times of the workpiece and thus reduces the cost per part.







Intelligent technology processes and complete Turnkey systems

WEISSER machining centers with integrated technology concepts are the solution to demands for shorter process times, productivity and process safety. Shorter cycle times and the associated lower unit costs are decisive competitive factors, especially when manufacturing high quantities. WEISSER turnkey solutions cost transparency and helps you to solve complex not only score at high quantities but also at small quantities with high set-up flexibility. We pass this WEISSER Turnkey. competitive advantage on to our customers. With the

experience of more than 160 years of development, construction and realization of customized machines, our engineers develop today the most economical solution upon your requirements. The development of the complete production process provides you full tasks in an optimal way. With three steps to success.

Typical, machine-specific workpieces with cycle time and technical challenges.

OFFER PHASE AND PLANNING PHASE

- Process requirements
- Production boundary conditions
- Machine requirements &
- Workpiece clamping / Tools
- MFU features
- Terms of acceptance
- Delivery instructions
- Processing strategy
- Inspection of critical MFU characteristics
- Number of fixings
- Number of spindles
- Design of the machine system
- Workpiece loading and
- Clamping device

IMPLEMENTATION PHASE

- Approval process of the tooling
- - acceptance at WEISSER

PHASE

TARGET



Out-of-round machining

Processing of workpieces with different profiles

- Out-of-round turning (HOT) inside and outside
- Manufacturing of shafthub connections
- Out-of-round machining Piston
- Cycle time: Depending on the task

Machining Diameter and end face

Balance shaft

- Clamping technology shaft chuck
- Turning all functional surfaces
- 4-axes machining • Cycle time: approx.
- 60 seconds



Cylinder liner

Complete machining in three clampings

- Individual clamping technology
- Turning off the casting skin outside
- Turning of the casting skin inside and finish machining
- Drilling
- Finish machining outer
- Cycle time: 60 120 seconds depending on the part dimensions

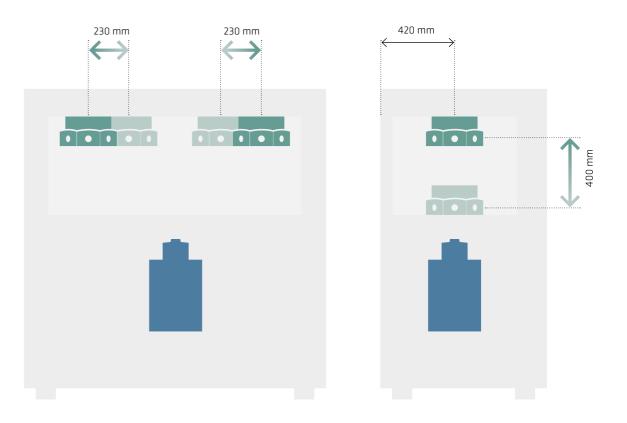


Steel piston

Processing in several processing steps

- Grooving grooves
- Oil holes drilling
- Finish turning of groove flanks
- Oval turning (pre- and finish turning)
- Line cycle: 30 seconds





Max. Turning diameter	mm	450		Tailstock		
Max. Chuck diameter	mm	600		Working stroke	mm	200
Max. Feed force X/Z (40 % CDF)	kN	9 / 9		Spindle bearing	mm	Rigid, without bearing
Working stroke X/Z-axis	mm	230 / 280 (280 / 400)		Max. peak distance	mm	639
Max. Process speed X/Z	m/min	30 / 30		Pressing force	daN	850
Ball screw diameter X1/Z1	mm	40 / 40		Center point adapter	MK	MK4
Number of tools		12 (2 x 12)		Max. Speed	rpm	-
Tool holder		VDI40 / 50		Dimensions (2-axes)		
Tool flight circle	mm	620		Dimensions basic machine (LxWxH)	mm	1.900 x 1.900 x 2.600
Main spindle			Weight	kg	9.000	
		VERTOR C	VERTOR M	Dimensions (4-axes)		
Spindle bearing diameter	mm	90	150	Dimensions basic machine (LxWxH)	mm	3.000 x 1.900 x 2.600
Spindle flange	DIN55026	A6	A8	Weight	kg	11.000
Drive power 100 % CDF	kW	18	52			
Drive power 40 % CDF	kW	23	67			
Rated speed	rpm	1.500	1.100			
Max. Speed	rpm	6.000	3.500			
Torque 100 % CDF	Nm	115	580			
Torque 40 % CDF	Nm	146	450			







Johann-Georg-Weisser-Straße 1 78112 St. Georgen T +49 7724 881-0 www.weisser-web.com

WEISSER Präzisionstechnik

Johann-Georg-Weisser-Straße 1 78112 St.Georgen T +49 7724 881-590 www.weisser-pt.com

WEISSER Maschinenzentrum Schwenningen

Albertistraße 16 78056 Villingen-Schwenningen T +49 7720 60900-41 www.weisser-web.com/service