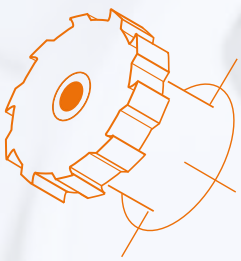
VOLLMER



VGrind 360

////////// ROTARY TOOLS //

Grinding machine for the complete machining of carbide tools up to 100 mm diameter

OPENING NEW PATHS TO PRECISION: ONWARDS AND UPWARDS.

WITH THE INTRODUCTION OF THE **V*Grind* 360**, VOLLMER HAS LAUNCHED A FIVE-AXIS GRINDING MACHINE FOR THE PRODUCTION OF CARBIDE TOOLS UP TO 100 MM IN DIAMETER – IN CONJUNCTION WITH MULTI-LAYER MACHINING.

THE PRINCIPLE: THE WORKPIECES CAN BE MACHINED ON TWO VERTICALLY CONFIGURED GRINDING SPINDLES – AT THE OPTIMUM C-AXIS PIVOT POINT.

THE RESULT: HIGH-LEVEL PRODUCTIVITY AND PRECISION. CHARACTERISTICALLY VOLLMER.

V*Grind* 360 – EFFICIENCY SQUARED

V*Grind* 360 – STANDS FOR EFFICIENCY AND PRECISION

//// 1 NEW WALL CONCEPT

Very rigid, compact construction with optimal accessibility and overview for the operator.

//// 2 MULTI-LAYER MACHINING

Two vertical grinding spindles with the grinding wheel set in the C-axis pivot point.
Reduced machining times thanks to shorter linear-axis travel distances.

//// 3 MODERN CONTROL-PANEL CONCEPT

Height-adjustable, with touchscreen, 19" diagonal screen size and optimum view into the machining chambers.

//// 4 NUMROTO*plus*®

The reliable, intuitively operated software with 3D workpiece and machine simulation, combined with collision monitoring.

//// 5 TOOL AUTOMATION

Even more flexibility for your manufacturing processes – with eight HSK-50 tool positions for the grinding wheel sets. Both grinding spindles can be loaded with complete flexibility.

//// 6 WORKPIECE AUTOMATION

Such as with the VOLLMER HP 160 pallet magazine, the HC 4 chain magazine or the HPR 250 free-arm robot for increased capacity and flexibility.

/// THE MACHINE CONCEPT

Precision and efficiency squared. As the world's first grinding machine with two vertically configured grinding spindles, the **V***Grind* 360 is setting new standards

/// Five-axis CNC grinding machine with innovative kinematics. Short linear-axis travel distances and swivel ranges for increased efficiency and precision in Production

/// Two grinding spindles situated one above the other, with a grinding wheel set positioned in the C-axis pivot point, provide highly precise grinding results

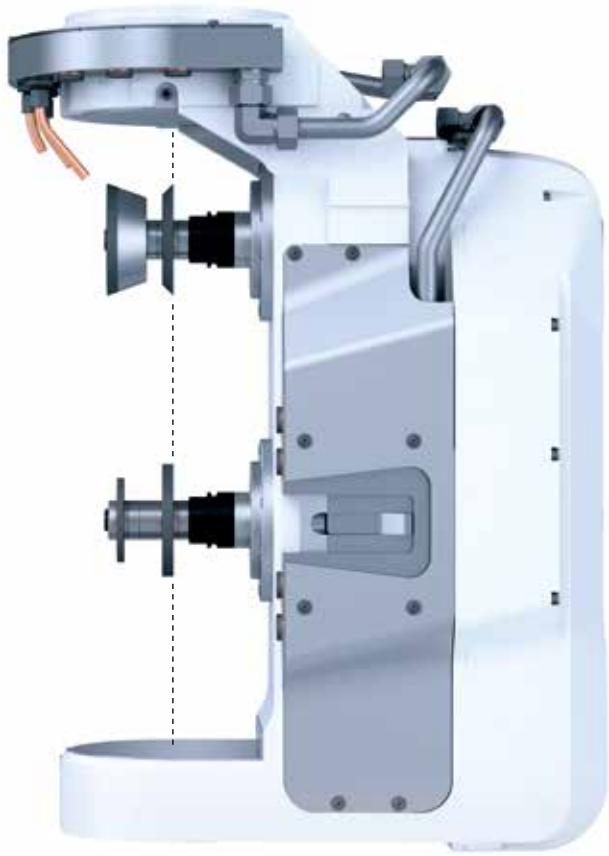
//// **V***Grind* 360
with a new and innovative machine concept

/// Innovative wall concept with the highest possible rigidity and outstanding damping thanks to polymer concrete

/// The vertical spindle arrangement solves the well-known problems related to fixed and floating bearings

/// Effective motor and spindle cooling concept for higher thermal stability and lasting power and precision

/// Both grinding spindles can be fitted with various different tools. The automation option ensures incident-free retooling for both spindles



//// **PIVOT POINT FOR GRINDING WHEEL SETS**
located in the centre of the C-axis

/...// THE MACHINE CONCEPT

OPTIONAL EQUIPMENT

/// Flexible automation options for the tool supply and tool automation of both grinding spindles

/// Grinding spindle available with a direct motor or belt drive

/// Automatic changing of grinding wheel sets including coolant supply for optimum productivity

/// Linear scales: Even greater precision thanks to determining the position of the axes

/// Stable, flexibly adjustable steady rest with automatic stroke ensures optimal grinding results for longer workpieces

//// **COOLANT NOZZLES**
for optimum coolant supply

//// **STEADY REST**
for precisely metered counterpressure for tool grinding

/// Disc probe: Tool measurement and wear control within the machine

/// Automated changing of intermediate sleeves with bayonet

/// High-frequency spindle with an automatic tool changer for optimal machining of pocket grinding for PCD segments

/// Automatic roughening unit enables the abrasive wheel to be opened during production

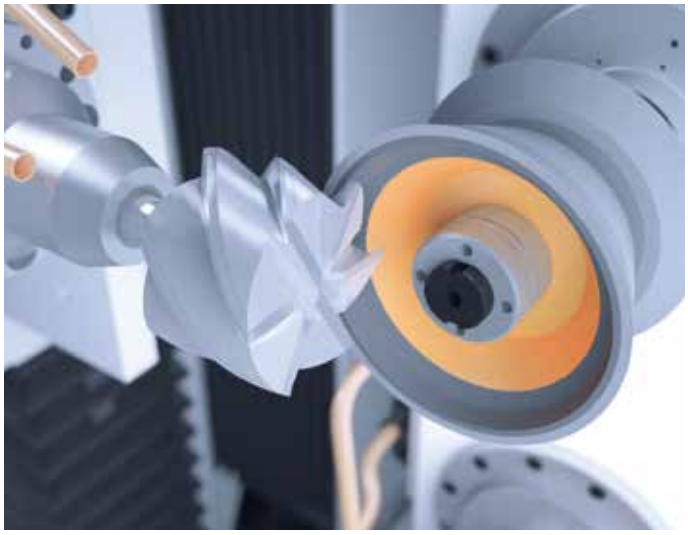
//// **HIGH-FREQUENCY SPINDLE**
for precise pocket grinding

//// **ROUGHENING UNIT**
for opening the abrasive wheel

/// APPLICATION

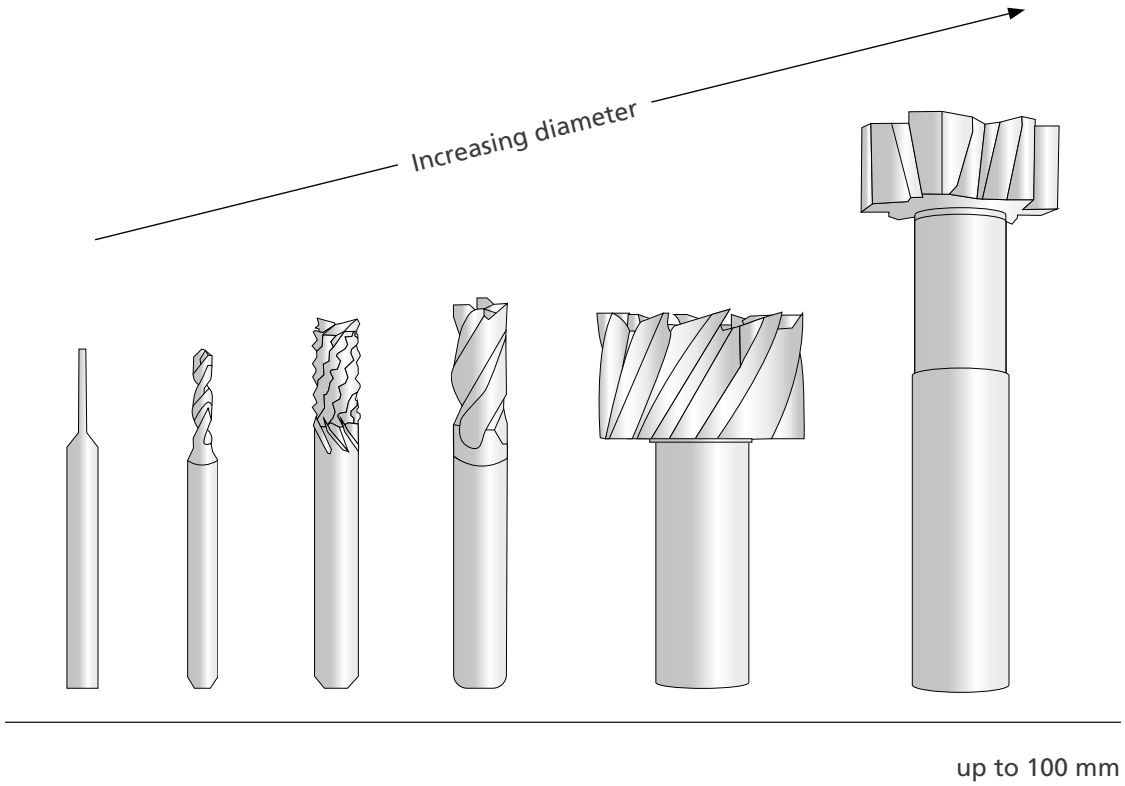
The **V***Grind* 360 was designed to produce carbide drills and cutters of up to 100 mm diameter.

The high flexibility provided by the possibility to change both grinding wheel packages, the reduced changing times thanks to the positively guided system and the meaningful automation options provide the best prerequisites for efficient and high-quality manufacturing.



//// MACHINING CARBIDE CUTTERS

//// MACHINING CARBIDE DRILLS

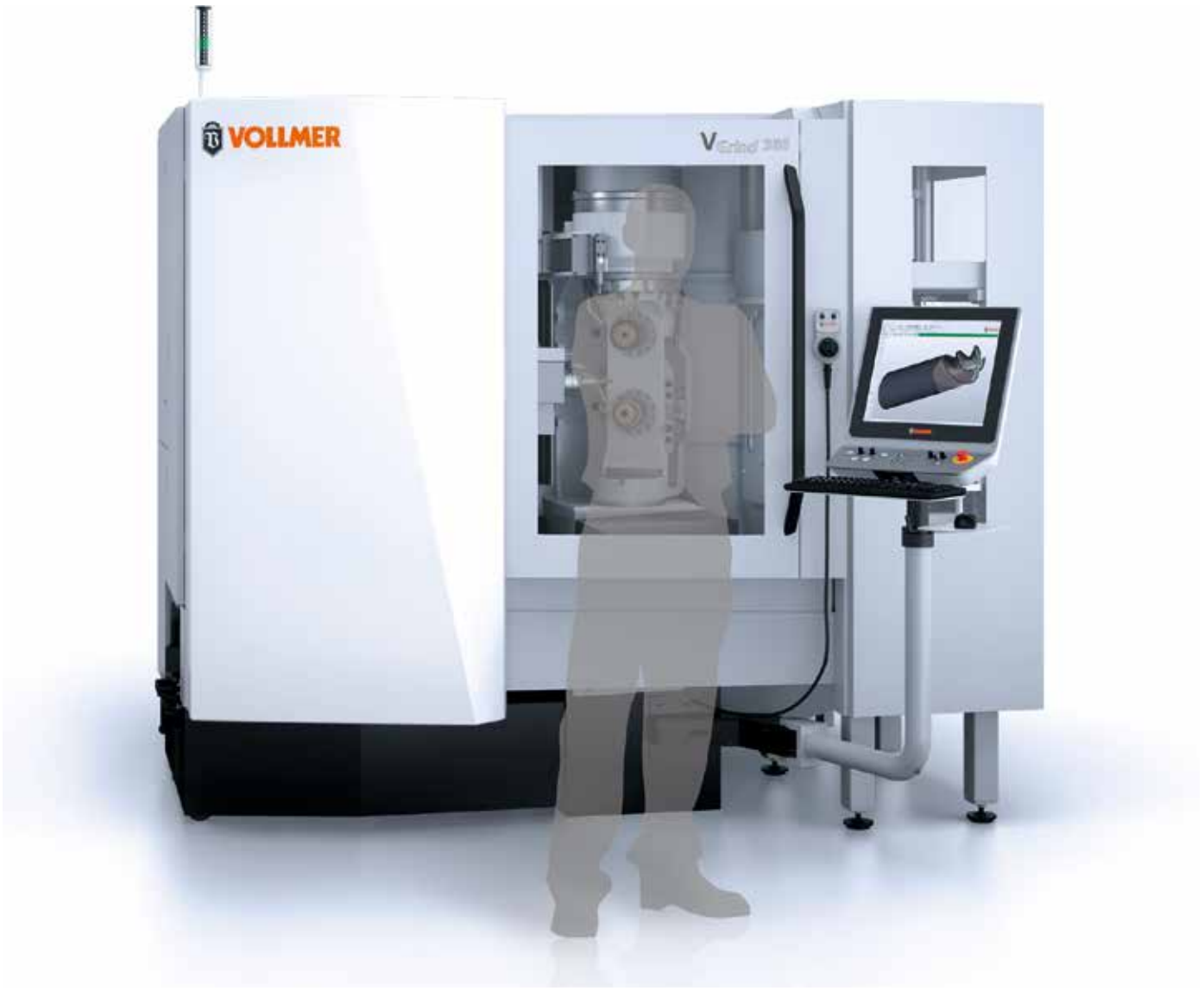


//// **SIZES AND SHAPES**
up to 100 mm in diameter in a wide range of geometries

/// THE OPERATING CONCEPT

When developing the **V***Grind* 360, we focussed on high user-friendliness. The new VOLLMER control panel is positioned so that you not only always have the LCD display in full view, but also the work area. Operation via touchscreen or keyboard is simple, intuitive and precise.

The multifunction handwheel is another new component, which ensures even more flexibility: It can be freely positioned on the enclosure and is designed for setting a required axis – without using the control panel. In short: Good ideas for simple, intuitive and precise operation.



//// **ERGONOMIC OPERATION**
Flexibly height-adjustable, swivelling control panel, variable multifunction handwheel, optimal view into the machine, simple access to grinding spindles

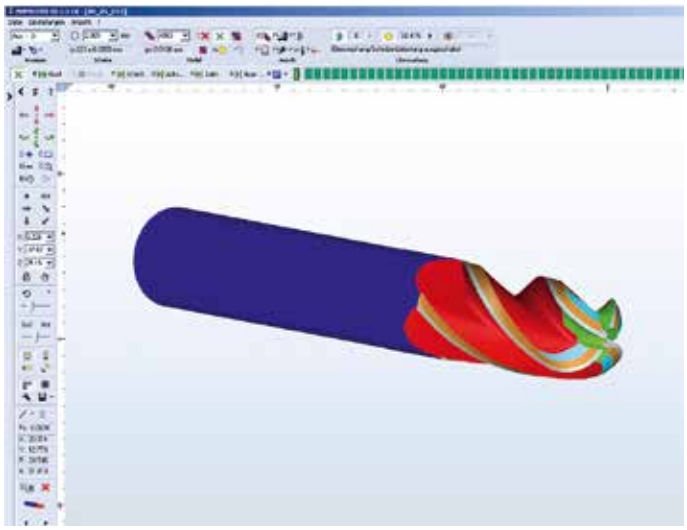
/// SOFTWARE NUMROTO*plus*®

VOLLMER consciously opted for a mature system that is already established on the market. The logically structured interface guarantees intuitive handling. With established programming systems, a huge variety of tools can be manufactured and resharpened. As a result, every detail on individual tools can be altered and adapted to individual needs.

Fully informed: Thanks to a perfect 3D diagram of the tool and machine. And with collision monitoring, you can always stay on the safe side.

/// Develop
/// Simulate
/// Monitor
/// Produce
/// Measure
/// Resharpen
/// Document

//// **PROVEN SOFTWARE SYSTEM**
NUMROTO*plus*®



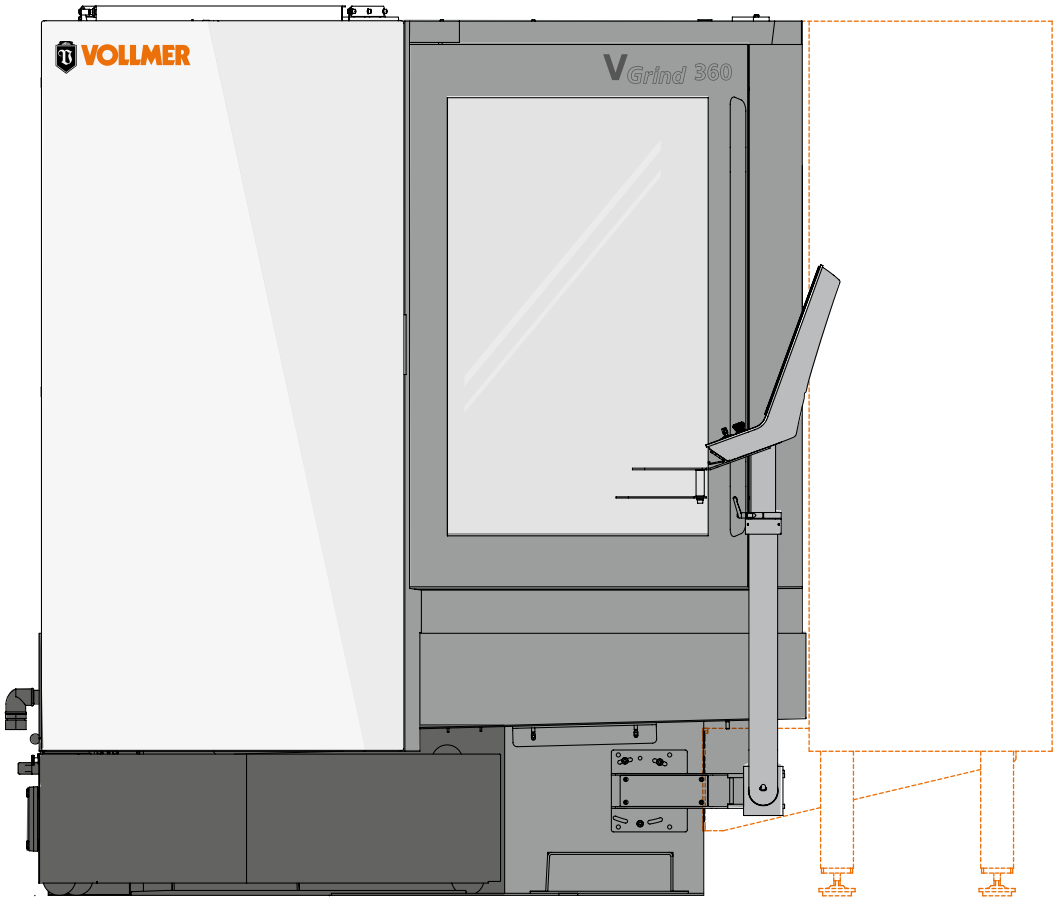
//// **PROGRAMMING**
of profile tools

/// THE AUTOMATION

One of the key factors in modern tool production is automating the work processes. When developing the **V***Grind* 360, VOLLMER took this into consideration and offers meaningful equipment options, which ensure your manufacturing process is faster, safer and more precise.

/// WORKPIECE AUTOMATION

In terms of workpiece automation, the **V***Grind* 360 is very flexible and can be adapted to meet your needs thanks to its compact construction. Thanks to the machine concept, the most varied automation solutions can be combined together, which has a clear positive effect on productivity.

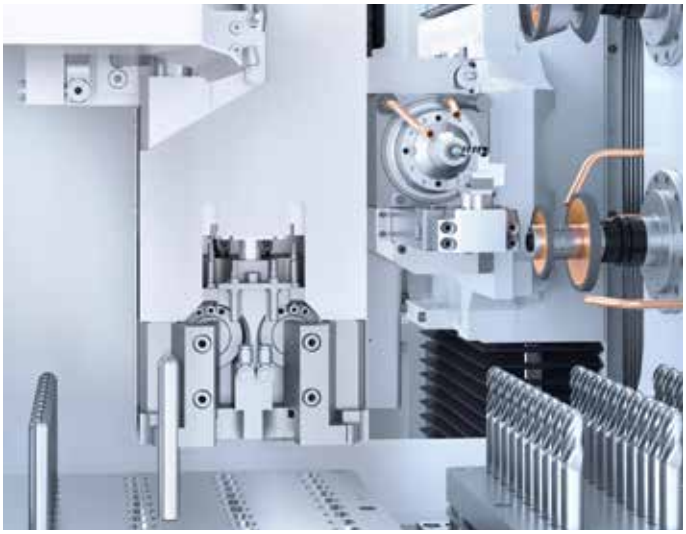


//// **WORKPIECE AUTOMATION**
an extremely wide variety of automation solutions can be fastened

To get the most out of your manufacturing process, the HP 160 pallet magazine enables up to 272 workpieces to be supplied – all while releasing your operating staff.
It is possible to load and unload the workpiece storage during normal operation.

The HPR 250 free-arm robot allows the automated machining of tools with different shaft diameters for the first time, while also tripling capacity.

The HC 4 chain magazine has space for 39 HSK-A63 workpieces in a compact design – or, optionally, up to 158 shaft workpieces.



//// **PALLET MAGAZINE HP 160**
for the quick supply of up to 272 workpieces

//// **HPR 250 FREE-ARM ROBOT**
for triple the capacity and even more flexibility

//// **HC 4 CHAIN MAGAZINE**
for HSK-A63 spaces or shaft workpieces

/...// THE AUTOMATION

/// TOOL MAGAZINE

Always the right tool – without needing manual intervention: The optional tool automation for eight tools changes the grinding wheels, including coolant nozzles, on both grinding spindles in the shortest possible time on request. This is a vital contribution to productivity within your manufacturing process.

//// **EIGHT-TOOL MAGAZINE**
for efficient tool changes and reduced non-productive time

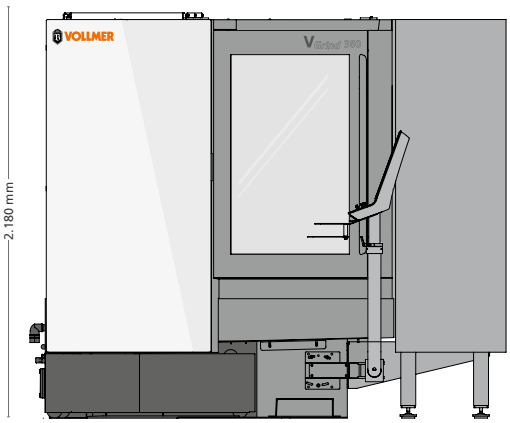
//// **EIGHT-TOOL MAGAZINE**
including coolant nozzles

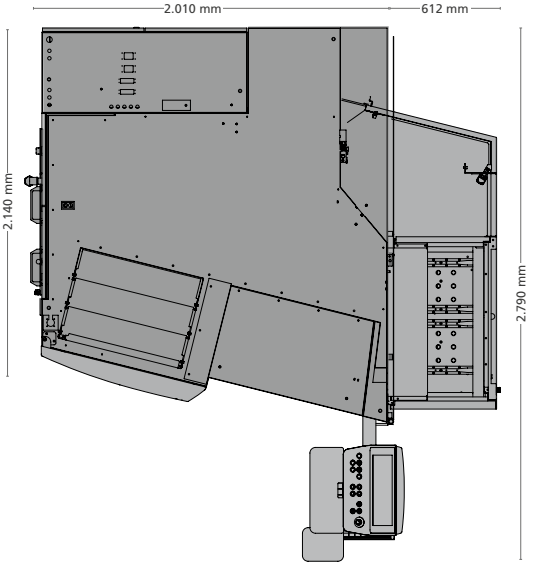
/// SPECIFICATIONS

Workpiece		
Outside diameter	up to 100 mm*	
Workpiece length	up to 360 mm**	
Tool		
Grinding wheel diameter	max. 150 mm***	
Grinding spindles		
	Belt spindle	Motor spindle
Speed	8,500 rpm	15,000 rpm
Driving power 100% ED	11 kW	10 kW
Peak power	23 kW	21 kW
Spindle adaption	HSK50 ****	HSK50 ****

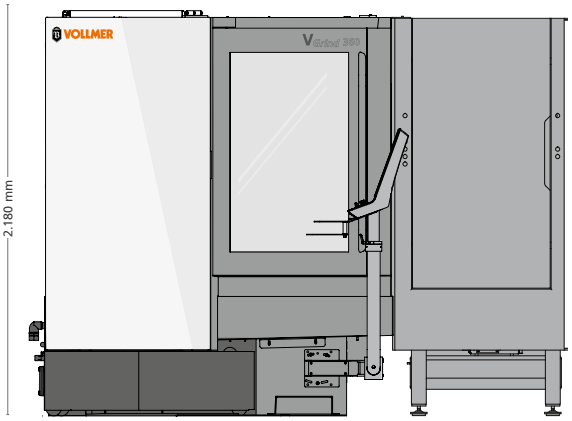
Traverse ranges	
Axis X1	350 mm
Axis Y1	450 mm
Axis Z1	500 mm
Axis A1	360°, 450 rpm optionally 1,000 rpm
Axis C1	+15° to -200°
Connected load	approx. 18 kVA
Weight	approx. 4,900 kg net

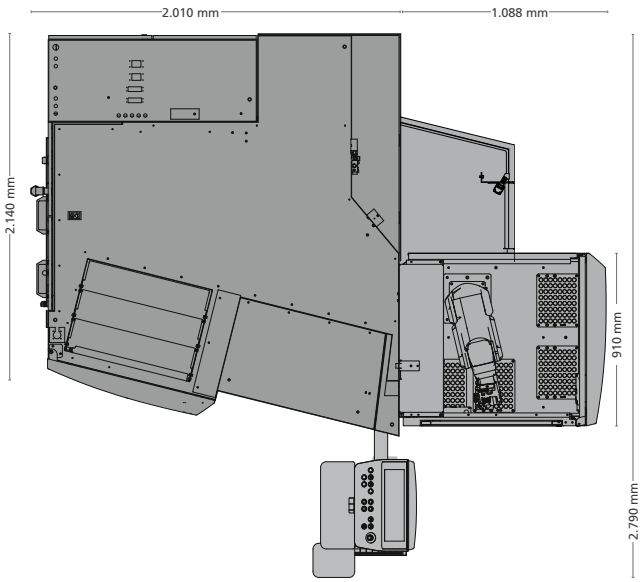
* Depending on the tipping, the machine kinematics also allow for larger diameters.
** From the front edge of the workpiece carrier, without measuring the cooling channel.
***Max. 125 mm with supporting device.
****Up to three grinding wheels per spindle end.





//// MACHINE DIMENSIONS
V*Grind* **360** with HP 160





//// MACHINE DIMENSIONS
V*Grind* **360** with HPR 250

VOLLMER

*V*Grind 360 – THE MAIN ADVANTAGES AT A GLANCE:

/// INCREASED PRECISION
Innovative kinematics with multi-layer machining for maximum quality of results.
Impress with uncompromising precision.

/// INCREASED EFFICIENCY
Shorter non-productive times thanks to intelligent and flexible automation.
Experience productivity on a new level.

/// INCREASED USER CONVENIENCE
Good accessibility, ergonomic, intuitively operated control panel and proven software.
Make your work easier.

/// INCREASED FLEXIBILITY
Efficient machining of carbide tools up to 100 mm in diameter.
For precision in the format of your choice.

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