

ShaftGrind S

Compact and extremely versatile



Key data

The ShaftGrind S allows you to grind shaft-type workpieces with a length of up to 650 mm. This small, versatile grinding machine guarantees high-precision grinding results in cylindrical grinding.

Schautd Mikrosa GmbH

Schautd Mikrosa GmbH is synonymous worldwide for premium technology in cylindrical, noncircular, and universal grinding between centers, as well as in centerless external cylindrical grinding. Since 2009, the company combines the two long-established brands SCHAUDT and MIKROSA in a modern factory in Leipzig.

Our special strength lies in the high customer-individuality of our machines and the connection of units, automation components and process engineering to a highly productive grinding system.

Here, SCHAUDT is the brand for the automotive industry and its suppliers. It offers sophisticated technological solutions for cylindrical, noncircular and eccentric grinding. Our highly experienced experts also have unparalleled expertise in the high-precision grinding of long and heavy workpieces like rollers and turbine shafts. Within this broad application range, you obtain everything from a single source – application development, technology, assembly, and sales.

MIKROSA sets the standards in centerless external cylindrical grinding of rotationally symmetrical parts. The modular machine design means that you obtain a solution with handling and automation individually tailored to your grinding task. The technology spectrum extends from precision infeed grinding in many different variations to super productive throughfeed grinding. This allows you to machine a very large variety of workpieces, from small jet needles through to large shafts.

Schautd Mikrosa GmbH is part of the UNITED GRINDING group, one of the leading suppliers of machines, applications, and services for hard-fine machining worldwide. The group comprises eight strong brands with own subsidiaries and sales partners around the world to be a strong partner for our customers.

ShaftGrind S

Versatile production machine · Compact cross slide design · High efficiency and maximum precision · Patented swivel-in spindle technology · Robot automation · User-friendly WOP-G programming system

Features

Dimension

- Grinding length 650 mm
- Height of centers 175 mm
- Max. grinding wheel dimension 480 x 250 mm, further variants depending on configuration
- Max. workpiece weight 50 kg

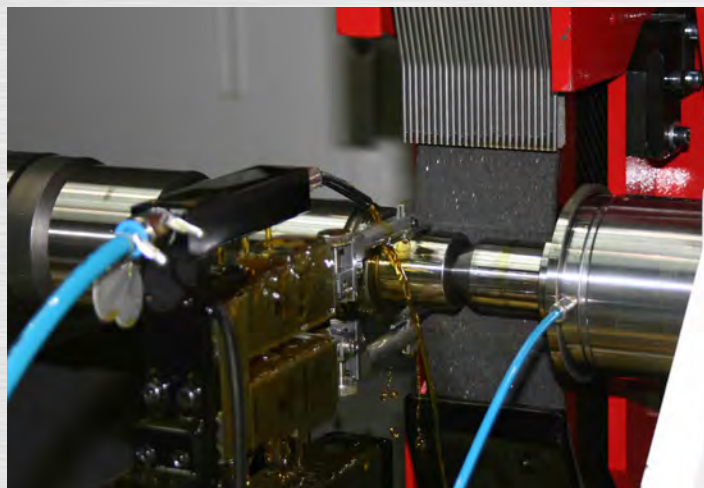
Hardware

- Small, compact cross slide machine
- Granitan® machine base
- Single-slide machine with max. 2 grinding wheels
- Patented swivel-in spindle technology
- Optional: automation with robot



Software

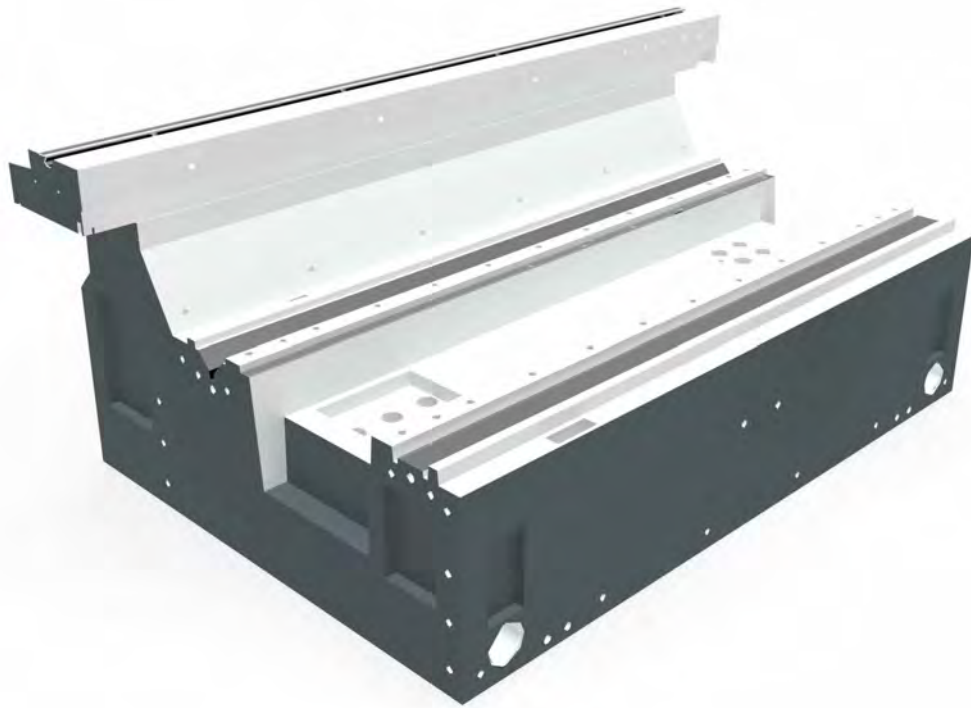
- Service-friendly SIEMENS SINUMERIK 840D sl control system
- Proven WOP-G programming software with user-oriented set-up interface
- Standardized interfaces for loader and peripheral devices



The ShaftGrind S is the smallest machine in the SCHAUDT ShaftGrind series. Shaft-type components are machined highly efficiently on this compact cross slide machine.

The ShaftGrind S can be used very flexibly, thanks to its versatile design. This machine is designed for grinding with CBN wheels and can be operated with emulsion or oil as cooling lubricant. A maximum grinding wheel diameter of 480 mm guarantees a long tool service life. The auxiliary times are very short. The Granitan[®] machine bed possesses optimal damping characteristics and maximum temperature stability.

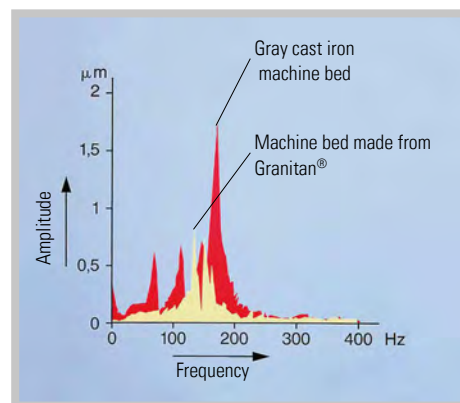
Machine bed



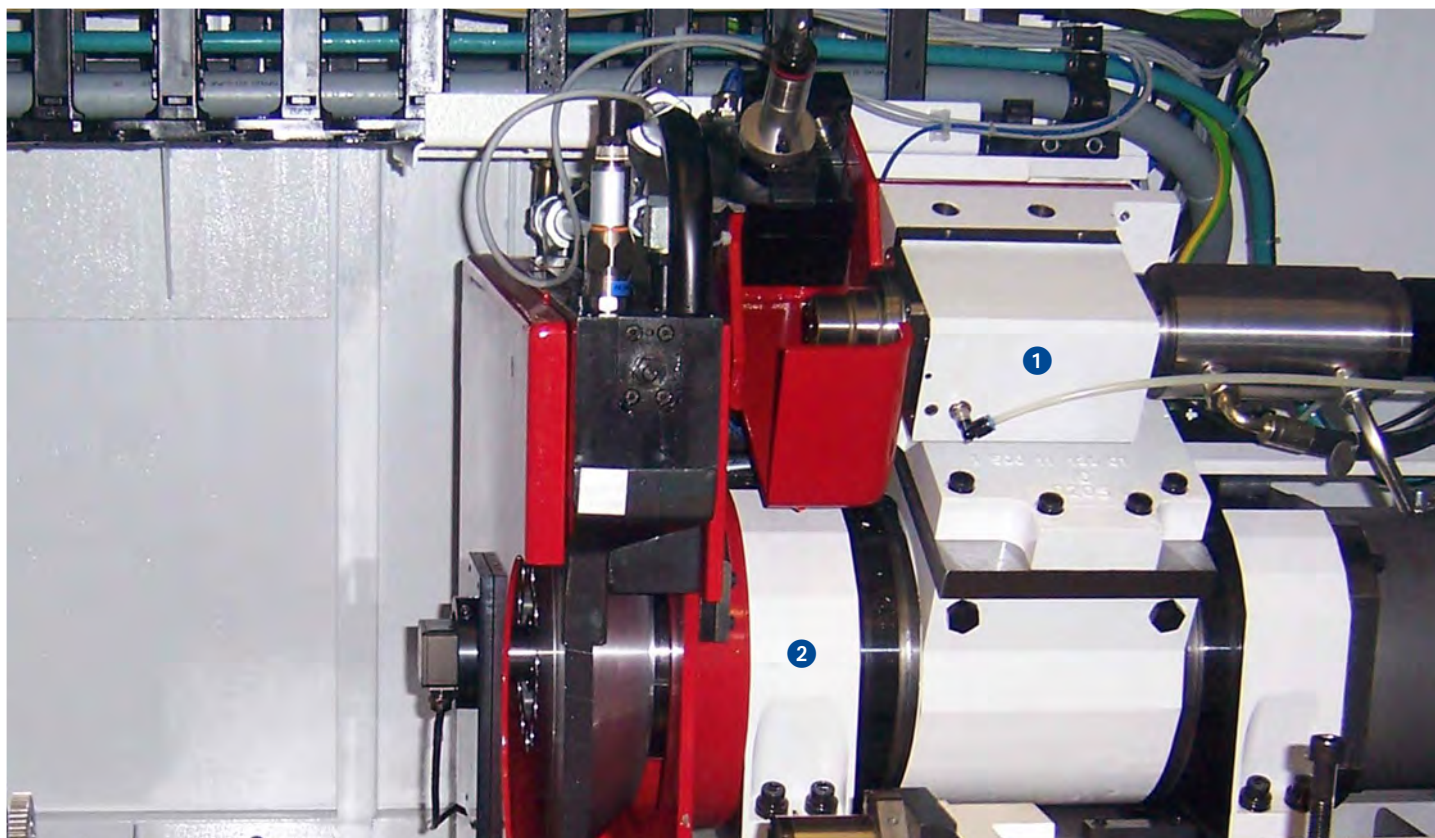
Your advantages

- Vibration-damping
- Thermally stable
- High dimensional stability

The ShaftGrind S has a proven Granitan® machine bed. This material possesses excellent damping characteristics and high thermal stability. This is a big advantage when machining workpieces with high quality requirements. Temporary temperature fluctuations are extensively compensated and a high tolerance holding capacity can be guaranteed throughout the day. The guide system for the machine's flexible cross slide is formed directly in the machine bed. The guideways offer the highest possible accuracy through the entire speed range with high load capacity and cushioning levels. No additional special foundation is required, thanks to the high rigidity of the machine bed.



Swivel-in spindle



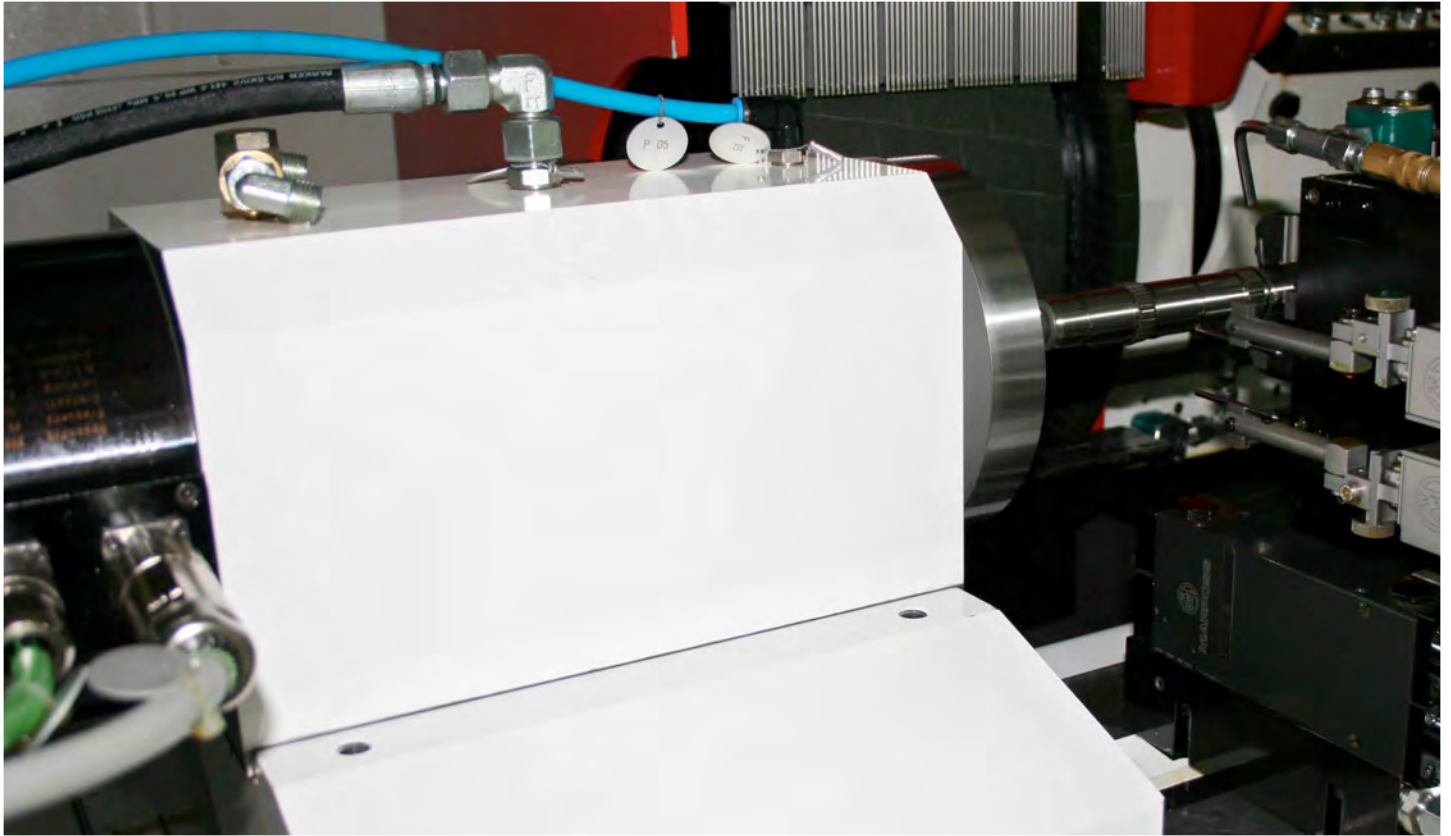
Your advantages

- Great machining flexibility
- Max. spindle power 30 kW

Thanks to SCHAUDT's patented swivel-in spindle, the ShaftGrind S can be additionally equipped with a second grinding wheel. This significantly increases the machine's productivity and flexibility. The spindle is mainly equipped with ceramic CBN wheels. Electroplated or metal-bonded tools can also be used.

The spindle power varies from 6 to 30 kW, depending on the grinding task. The chip-to-chip time is 3 seconds when changing from main to swivel-in spindle. Balancing occurs fully or semi-automatically, depending on the spindle type.

Workhead



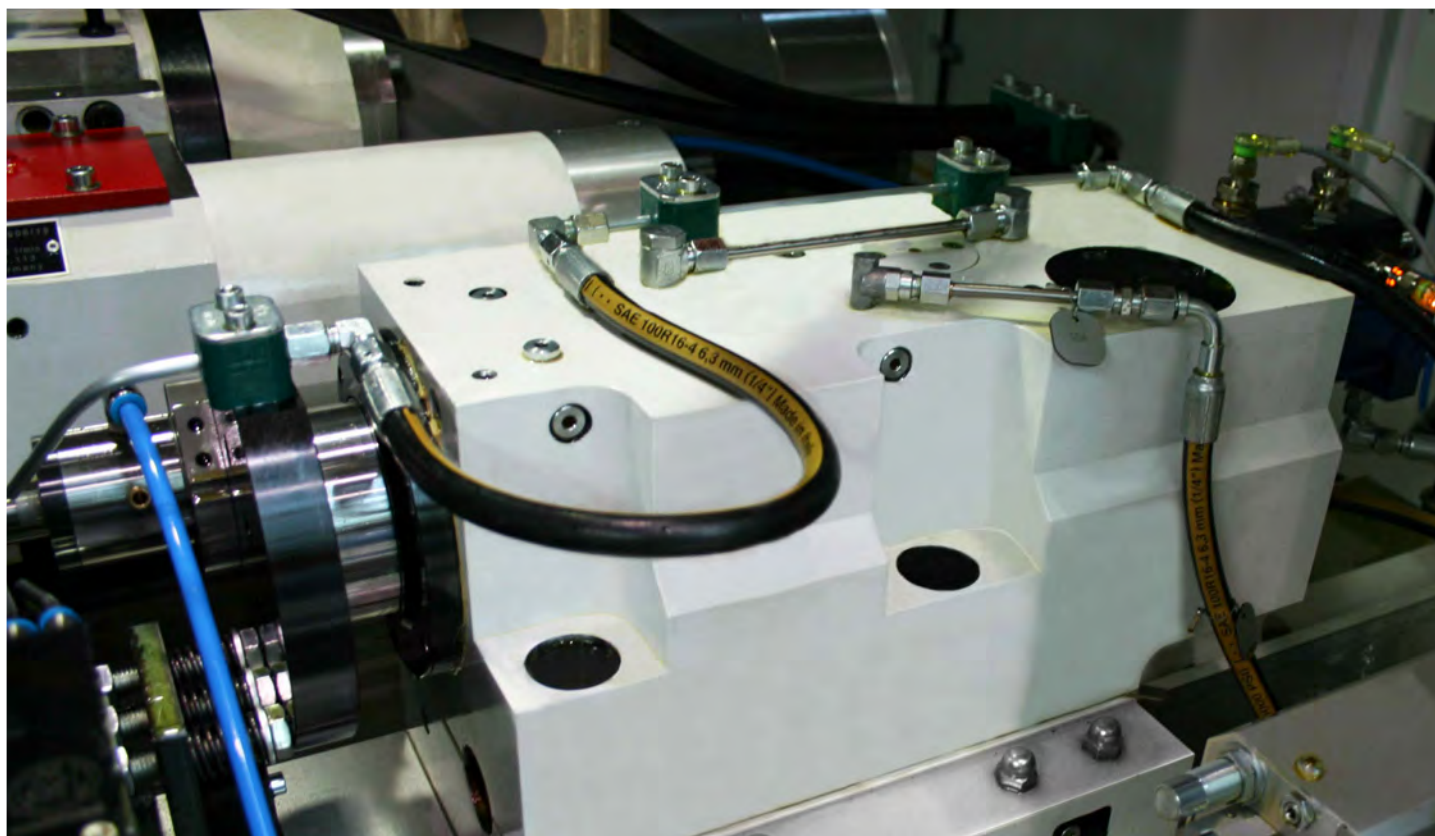
Your advantages

- Excellent runout characteristics
- High rigidity
- Good torque curve
- High dynamics

The ShaftGrind S features a high-precision, directly powered workhead with excellent runout characteristics.

In C-axis mode the headstock is distinguished by an outstanding torque curve and extremely high dynamics. The rigid design of the directly powered spindle makes the headstock suitable for clamping with MK4 center points as well as for chuck operation.

Tailstock



Your advantages

- Barrel tailstock for increased rigidity
- Manual cylinder error correction
- Pressure changeover (optional)
- Positioning capability (optional)

The ShaftGrind S is equipped with a barrel tailstock mounted on plain bearings, which is characterized by its high rigidity. It has a hydraulic drive for clamping and unclamping and a stroke of 75 mm. Manual cylinder error correction is possible. The position monitoring is performed by initiators. For greater flexibility these can be optionally positioned by means of a measuring system. The cylindrical center point mounting with a diameter of 15 mm is suitable for both fixed and rotating centers with high-precision running characteristics and different block dimensions.

Alternatively the machine can be equipped with a hydraulically operated slide tailstock with a 150 mm stroke. The tailstock can therefore be used for several workpieces without any set-up time. Monitoring of several clamping positions is also possible. The clamping pressure can be continuously adjusted manually. It is also possible to switch between two values. Optional positioning via a length measuring system further increases flexibility. The tailstock has a mounting surface for mounting a rotating dressing tool.

In-process gauging



Your advantages

- Higher accuracies
- Lower reject rate
- Automatic operation possible without manual corrections

High-precision in-process measuring heads can be used without problem in the ShaftGrind S. Measurement occurs during the grinding process and eliminates the need for manual corrections by the machine operator. As a result auxiliary times are shortened significantly, and cycle times are reduced accordingly.

A measuring head can be used to measure the bearings of a shaft, for example. The diameter range depends on the workpiece to be ground and is between 5 and 120 mm. The in-process measuring head delivers high precision even under production conditions and guarantees excellent thermal stability over long periods of time.

Swivel-in measuring probe

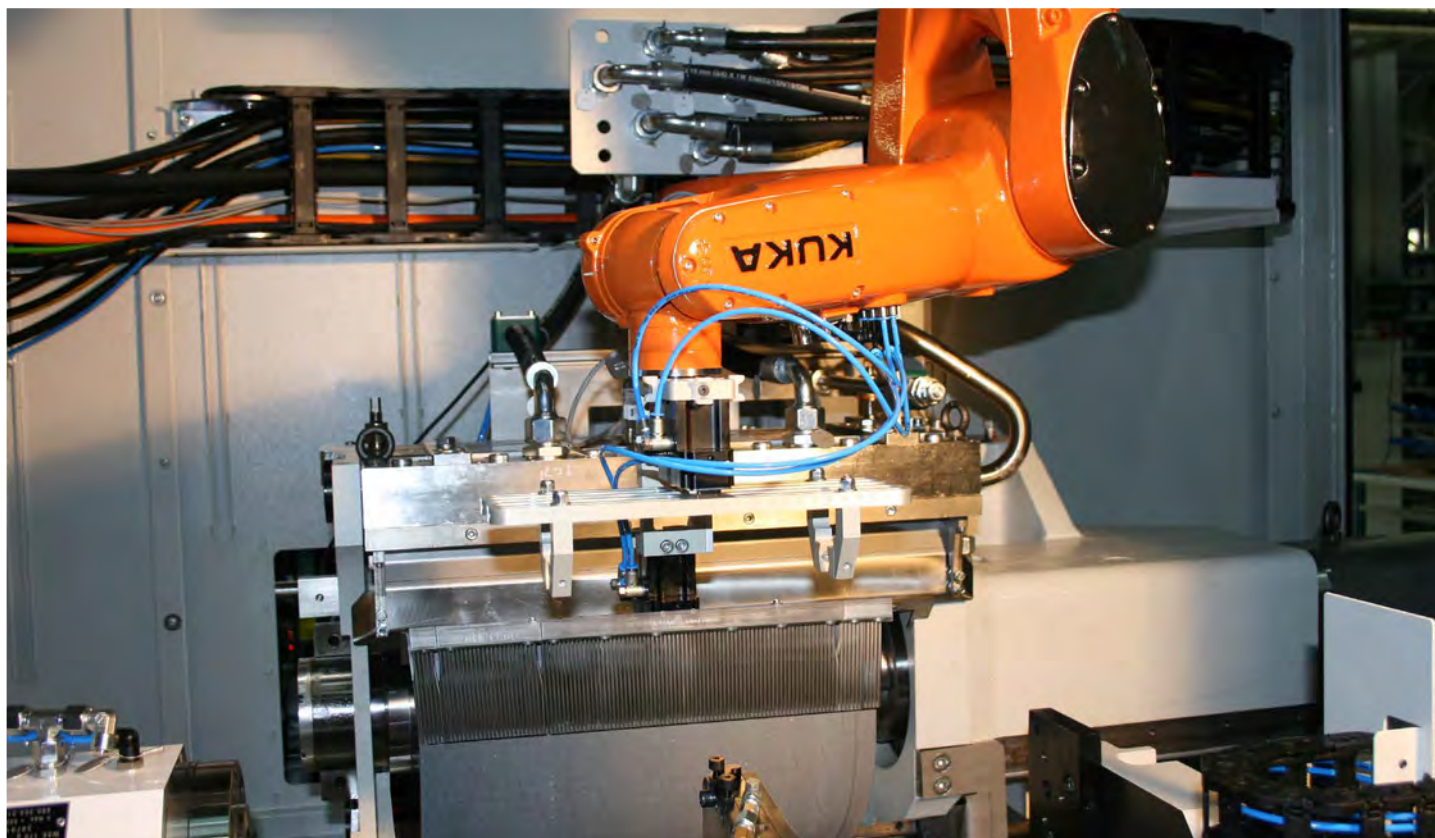


Your advantages

- Flexible
- No set-up required
- User-friendly

The ShaftGrind S is optionally equipped with a swivel-in measuring probe. This is mounted on the cross slide, which results in tremendous flexibility without additional set-up. The swivel-in process occurs pneumatically. The measuring probe can be used to determine the longitudinal position. Measurement of lengths is also possible.

Highly productive machining solutions



Your advantages

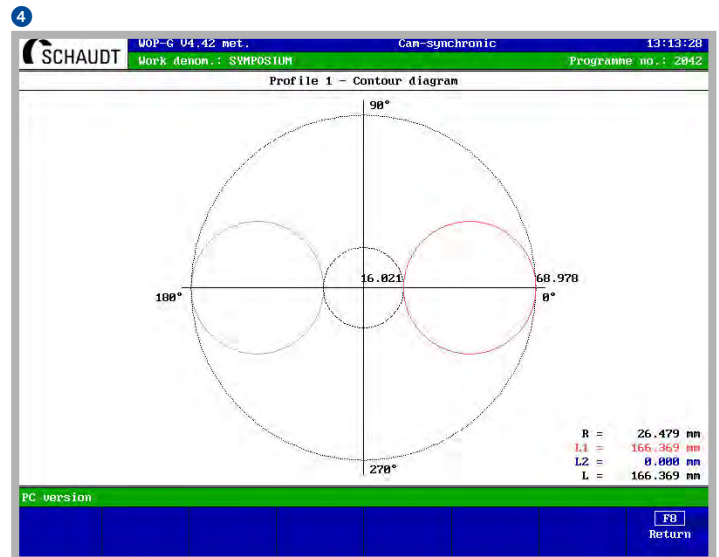
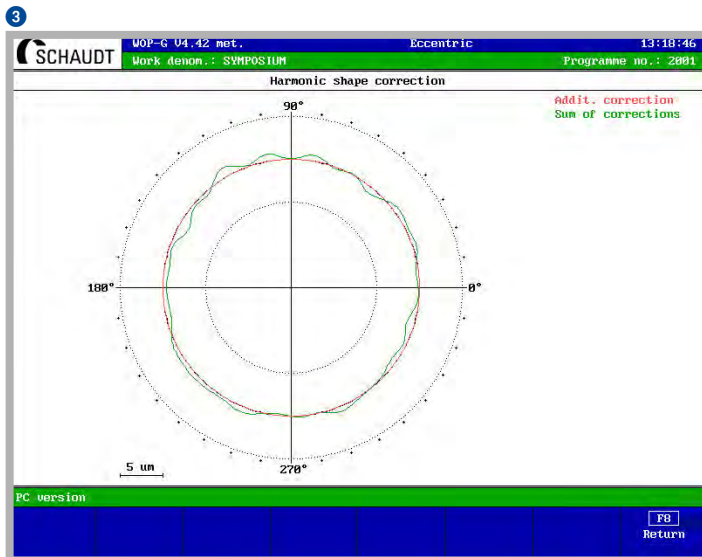
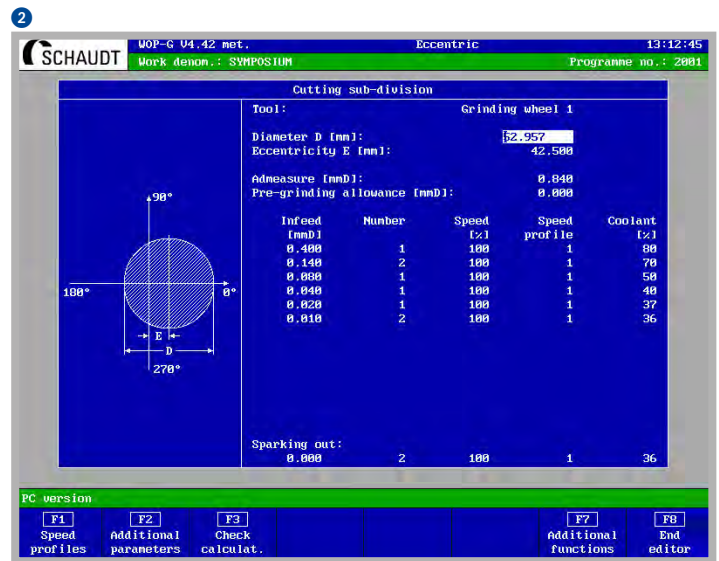
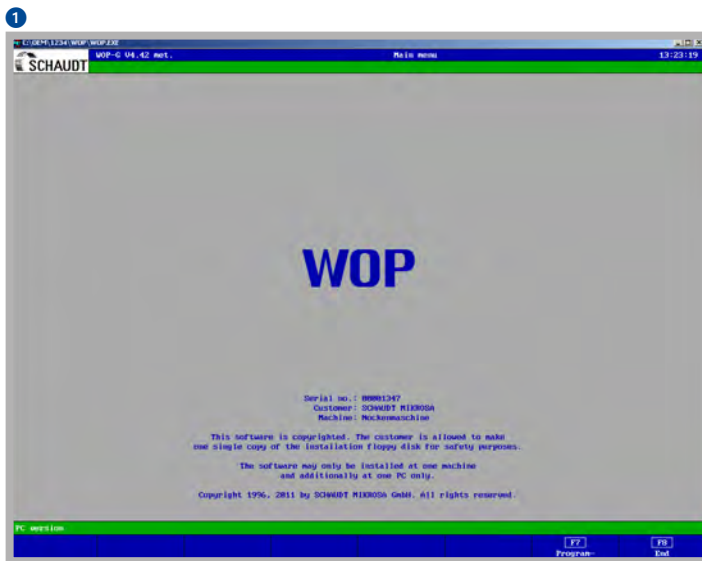
- Very short cycle times
- Integrated KUKA loading robot
- Integrated interface for machine control

For especially high-performance applications, a modern KUKA robot, protected against oil and water in accordance with IP 67, can be integrated into the ShaftGrind S. This enables a significant increase in the machine's productivity.

Particularly advantageous is the fact that the robot can be directly controlled with the Sinumerik 840D sl via the Run MyRobot software interface. Machine and robot can be simply integrated into the machine process via a central control unit with a convenient operator interface.

The machine operator can program and configure the integrated robot entirely from the operating panel of the ShaftGrind S. The axis movements are represented in the X, Y and Z directions typical for machine tools. The operator is guided accurately through the input mask on the basis of the programming interface developed by Schaudt Mikrosa.

WOP-G programming interface



Your advantages

- User-friendly
- Easy creation of grinding programs
- Wide functional scope

The SCHAUDT WOP-G software is well known for being one of the most user-friendly and flexible grinding software systems in the area of high production CBN grinding machines.

The WOP-G programming system from SCHAUDT enables quick and easy programming of cylindrical workpiece contours. From just a few inputs WOP-G creates harmonic speed profiles, which can be variably adapted. WOP-G also enables reading in contour data via a data table. No special formatting is required. The input profiles are stored in a database and can be called up again at any time.

Special features include:

- Improved control of the coolant pressures and flow at the different stages in the cylindrical grinding process
- Increased flexibility of the grinding feeds and speeds via a larger number of grinding steps during one plunge
- New special grinding cycles for grinding shoulders, diameters and splines
- The possibility of using WOP-G on another external computer, which creates an additional external programming station and enables access to a common data pool

Customer Care

SCHAUDT grinding machines should fulfill the customer's requirements for as long as possible, work cost-effectively, function reliably and be available at all times. From "start up" through to "retrofit" – our Customer Care is there for you throughout the working life of your machine. 12 professional helplines and more than 60 service technicians are available in your area, wherever you are in the world.

- We will provide you with fast, uncomplicated support.
- We will help to increase your productivity.
- We work professionally, reliably and transparently.
- We will provide a professional solution to your problems.



Start up
Commissioning
Warranty extension



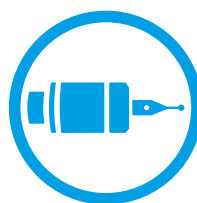
Qualification
Training
Production support



Prevention
Maintenance
Inspection



Service
Customer service
Customer consultation
HelpLine
Remote service



Material
Spare parts
Replacement parts
Accessories



Rebuild
Machine overhaul
Assembly overhaul



Retrofit
Modifications
Retrofits

Technical data

ShaftGrind S

Working range

Grinding length between centers, max.	mm	650
Height of centers	mm	175
Workpiece weight between centers, max.	kg	50

Wheelhead

X-axis guide	Anti-friction guideway	
Z-axis guide	Vee-flat guideway	
Swivel-in spindle: grinding wheel diameter	mm	70-205
B-axis	no	
Main spindle: grinding wheel diameter, max.*	mm	480
Main spindle: grinding wheel width, max.*	mm	250
Grinding wheel drive power, max.	kW	40
Grinding wheel peripheral speed, max.	m/s	125

Workhead

Number of revolutions, max.	rpm	1,000/500
Torque	Nm	50/25

Tailstock

Stroke, max.	mm	150/75
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SINUMERIK 840D sl control system

yes

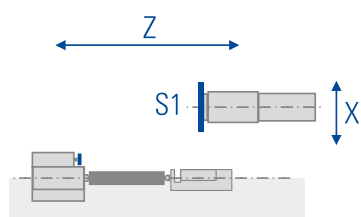
Dimensions

Machine weight	t	10/12
Height, max.	mm	2,408/2,630
Footprint	mm	4,459 x 3,000

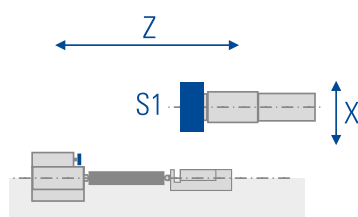
Variants

R01, R03

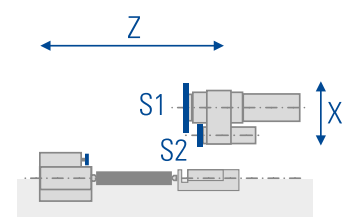
Headstock variants



R01



R01 M



R03



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