

CamGrind S

Small and versatile



Key data

The CamGrind 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 and noncircular 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.

CamGrind 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 80 mm, further variants depending on configuration
- Max. workpiece weight 50 kg

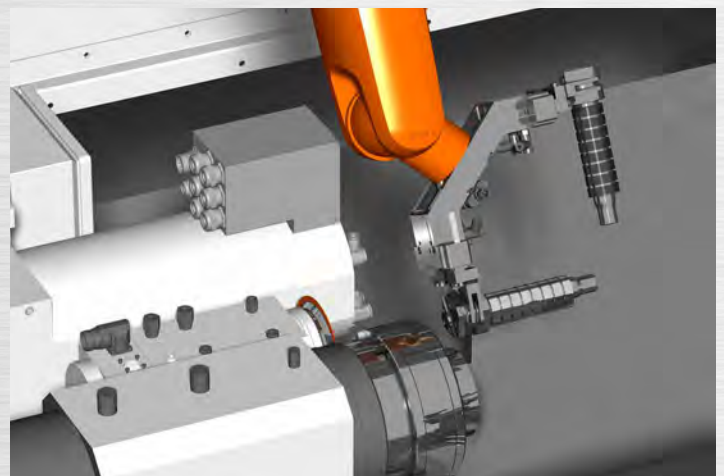
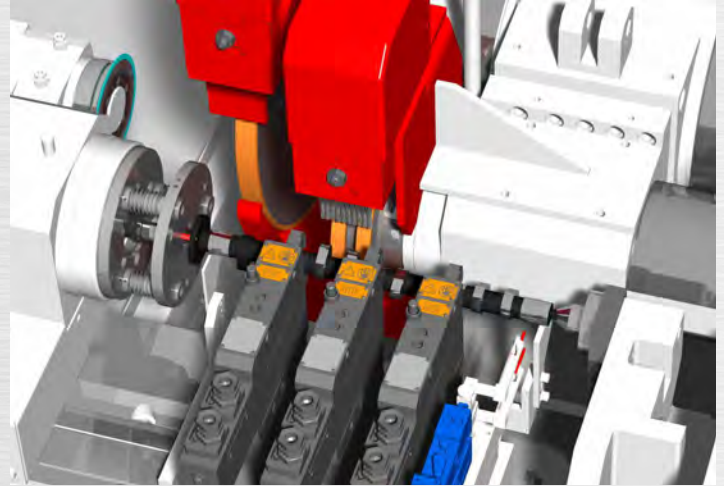
Hardware

- 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

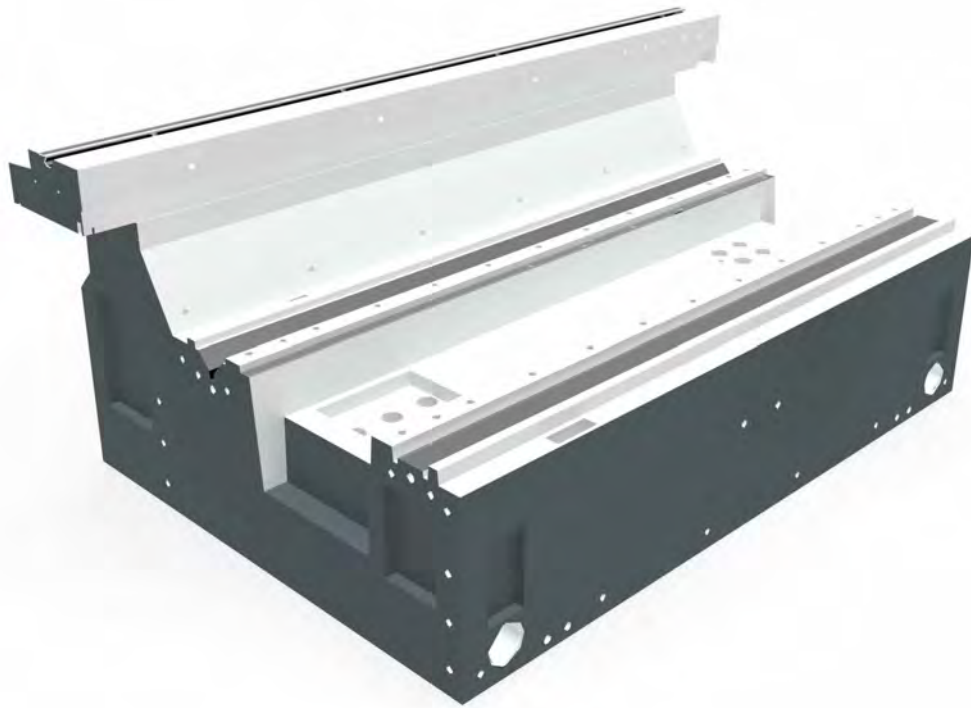
- Service-friendly SIEMENS SINUMERIK 840D sl control system
- Proven WOP-G programming software for grinding cylindrical and noncircular workpiece contours with user-oriented set-up interface
- Standardized interfaces for loader and peripheral devices



The CamGrind S is the smallest machine in the SCHAUDT CamGrind series. Camshafts, single cam packages, cam units and other shaft-type workpieces are machined with high efficiency on this compact cross slide machine. Circular and noncircular surface contours such as polygons, ellipses, eccentrics and free profiles can be generated quickly and easily with the proven WOP-G programming software. Variable speed profiles are created, which can be processed directly in the SIEMENS SINUMERIK 840D sl control system. This data is saved in an internal database and can be called up again at any time.

The CamGrind 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. By using small grinding wheels with min. 70 mm diameter on the patented swivel-in spindle, cam forms with minimal concave radii can also be machined. The auxiliary times are very short. The Granitan[®] machine bed possesses optimal damping characteristics and maximum temperature stability.

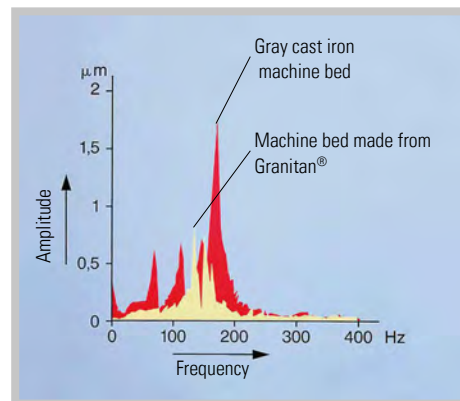
Machine base



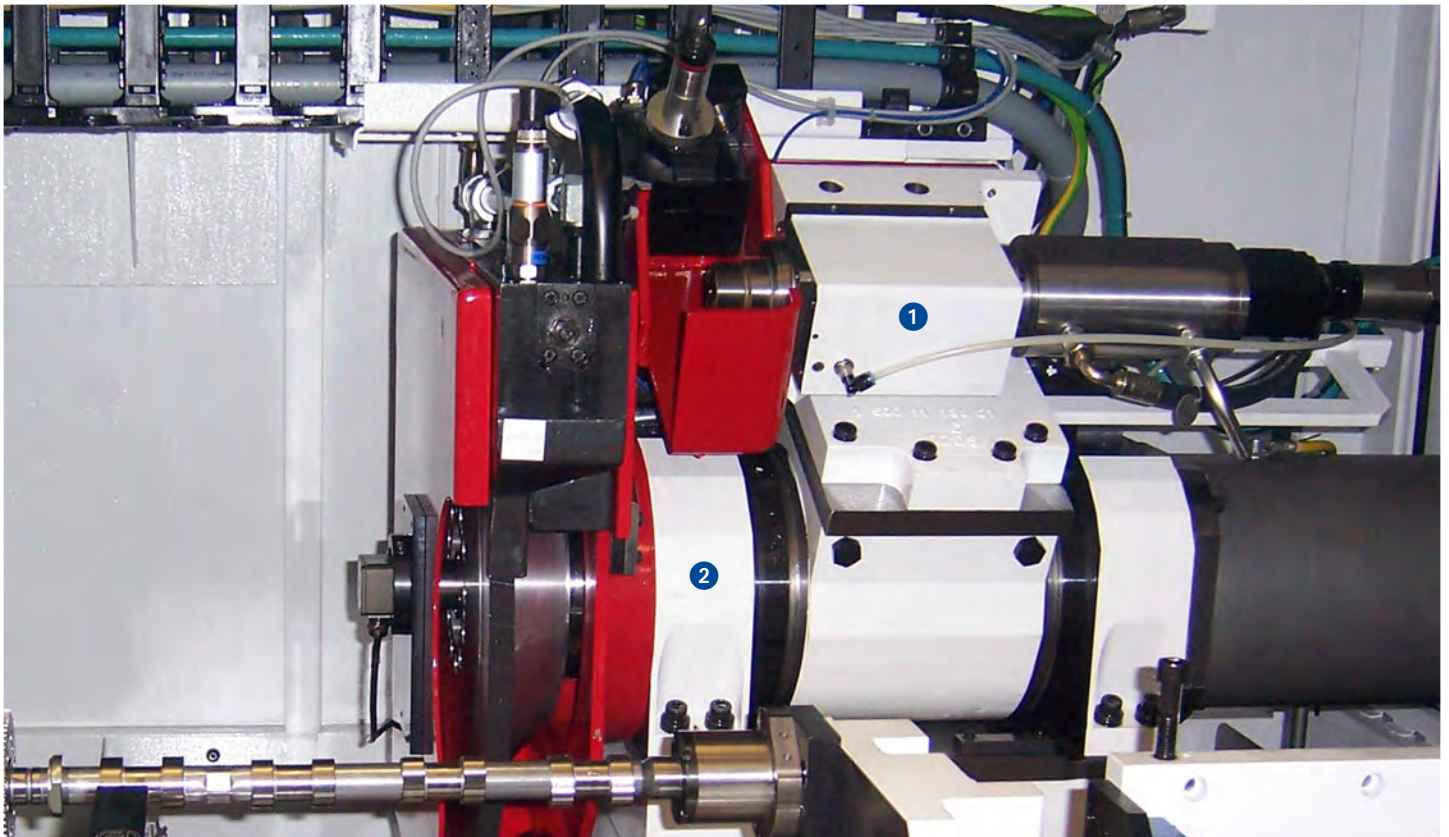
Your advantages

- Vibration-damping
- Thermally stable
- High dimensional stability

The CamGrind 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

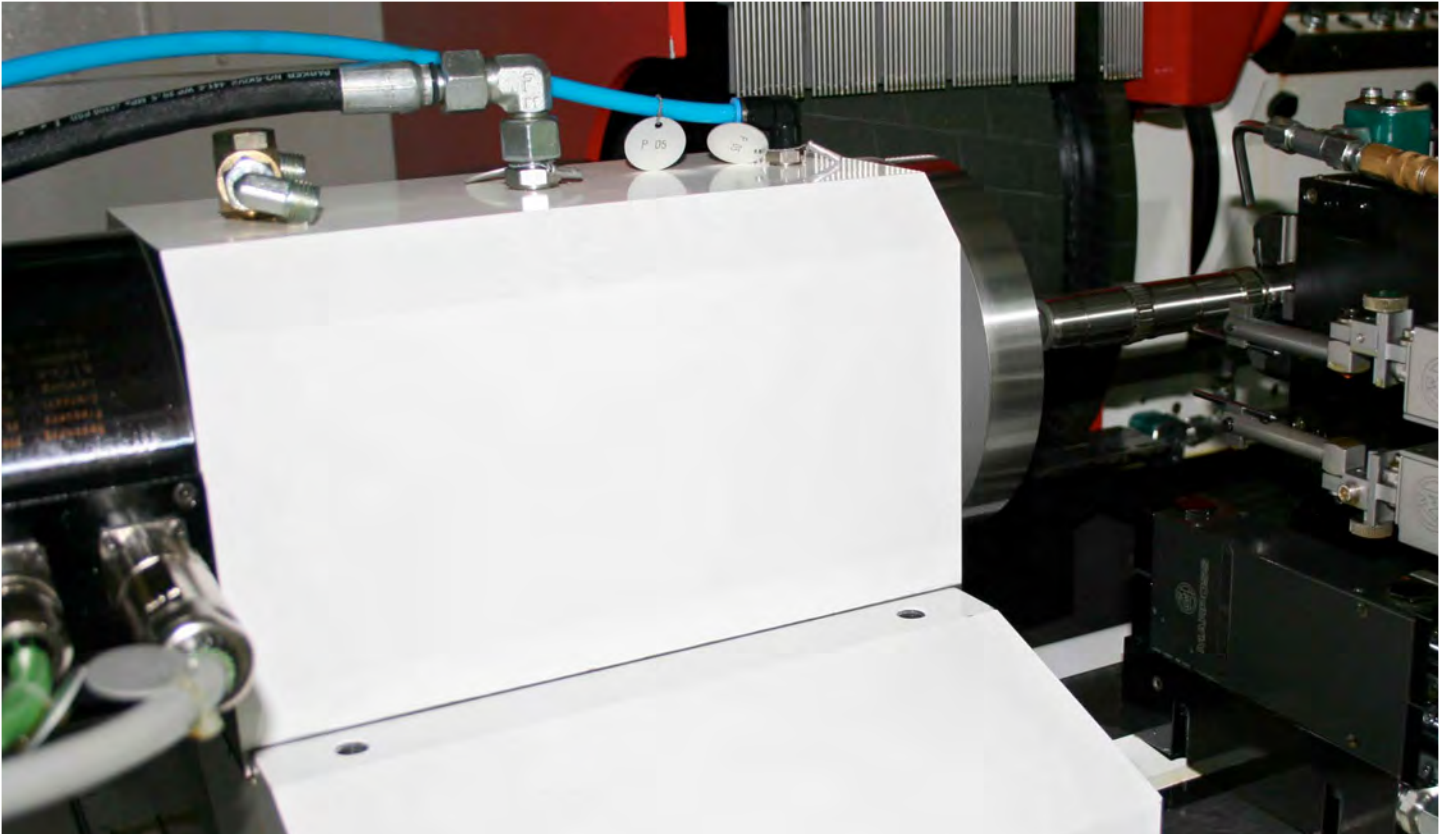
- Great machining flexibility
- Max. spindle power 30 kW
- Machining of the smallest concave radii

Thanks to SCHAUDT's patented swivel-in spindle, the CamGrind 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. A wide variety of concave contours can thus be machined with the swivel-in spindle. The high metal removal rate of the main spindle is utilized simultaneously.

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

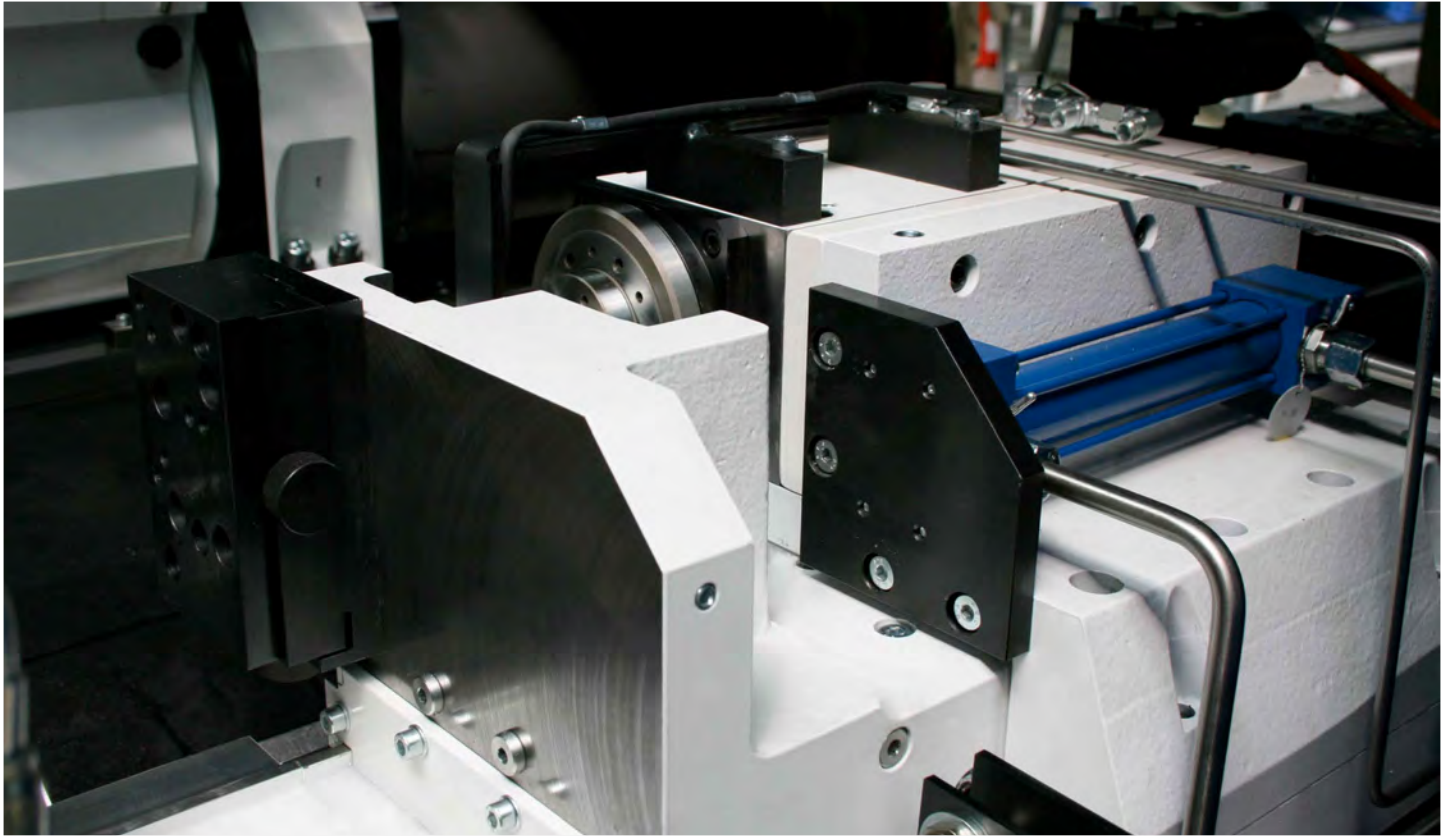


Your advantages

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

The CamGrind 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, so that highly complex noncircular forms can also be machined without problem. 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

- Great versatility
- Pressure changeover (optional)
- Positioning capability (optional)

The hydraulically actuated slide tailstock of the CamGrind S has a stroke of 150 mm. 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 CamGrind 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. Measurement is also possible if only noncircular profiles are machined on the machine. The measurement occurs post-process in parallel with machining the next noncircular profile.

Swivel-in measuring probe

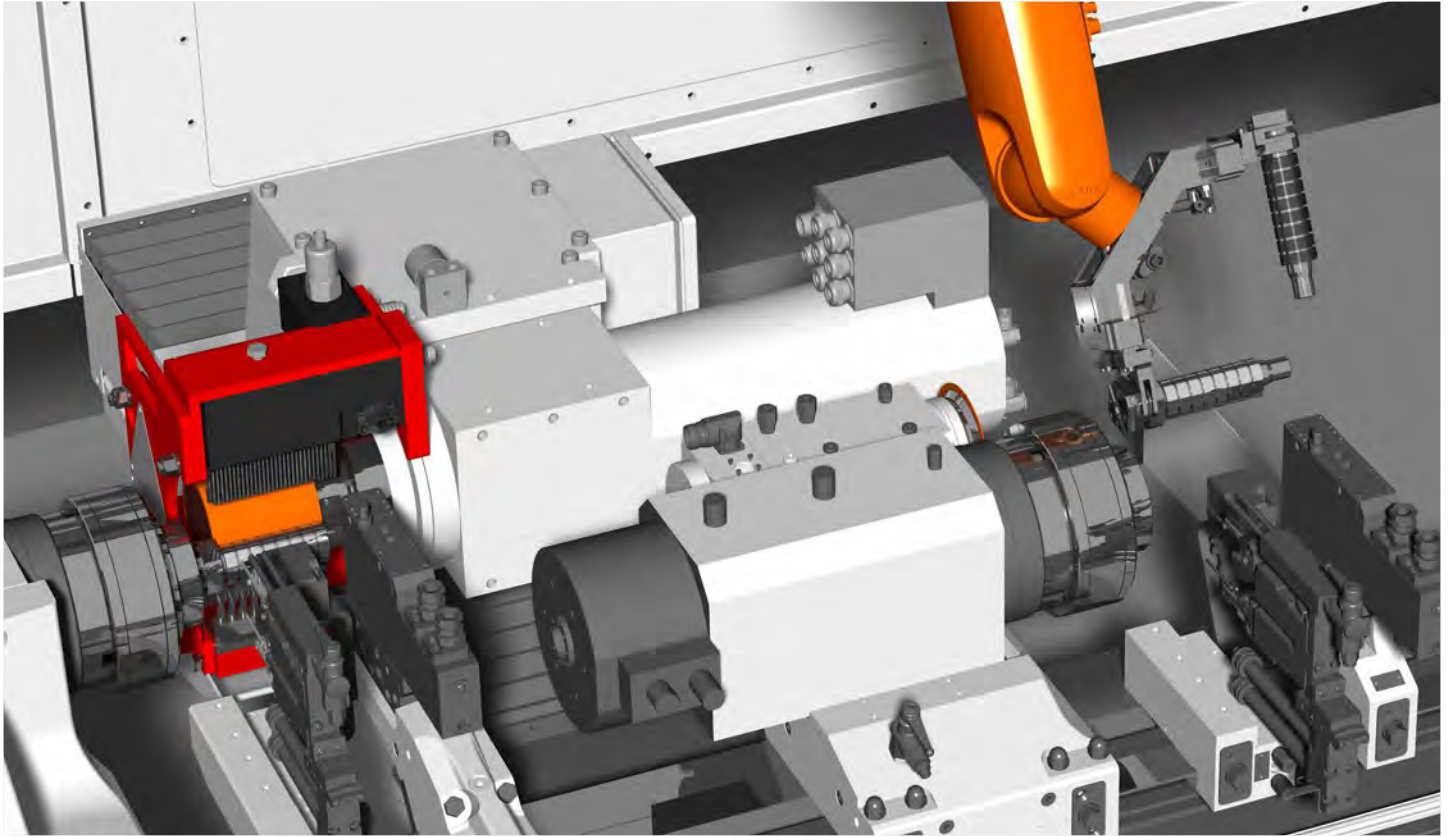


Your advantages

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

The CamGrind 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 both the longitudinal position and the angular position of a workpiece. Measurement of lengths is also possible.

Highly productive machining solutions



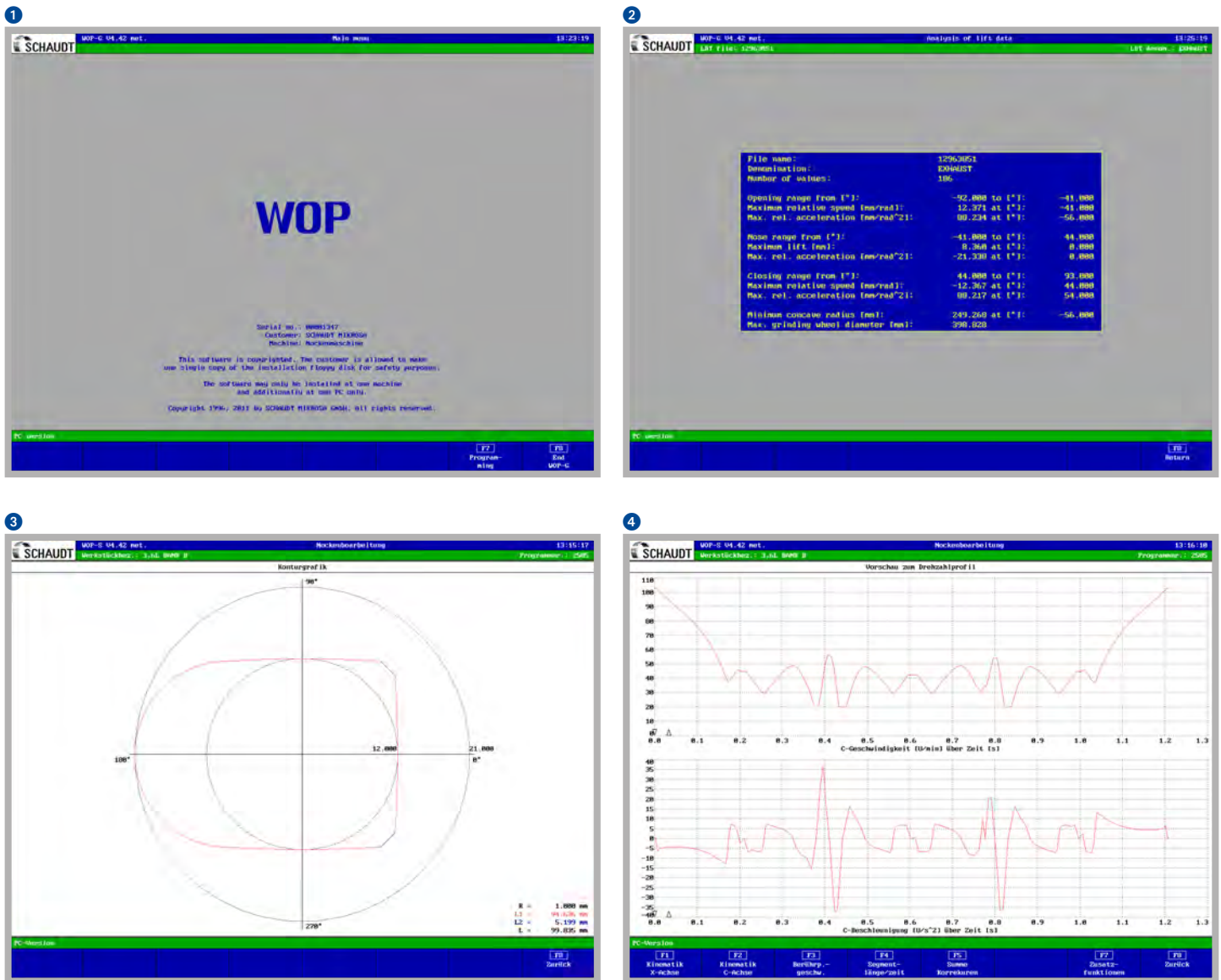
Your advantages

- Very short cycle times
- Two workheads for highly productive output
- Integrated KUKA loading robot
- Integrated interface for machine control

For especially high-performance applications such as the grinding of cam units, the CamGrind S can be equipped with two grinding stations. These are supplied with workpieces in staggered cycles by a compact KUKA robot, which is protected against oil and water in accordance with IP 67. 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 CamGrind 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 WOP-G programming system from SCHAUDT enables quick and easy programming of cylindrical and noncircular workpiece contours. From just a few inputs WOP-G creates harmonic speed profiles, which can be variably adapted. This enables combination machining of concave and convex profiles in a single clamping with the highest precision. The contour data are read in 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. A shape analysis of the contour can be performed in respect of concavity and relevant maximum values, based on the read-in table.

The WOP-G programming software can also be used on another external computer, creating an additional external programming station. If the machine also has network access, a common data pool can be accessed via both the control system and the external programming station.

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



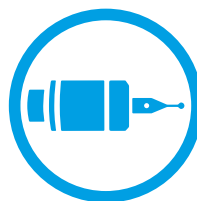
Qualification
Training
Production support



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

CamGrind 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	80
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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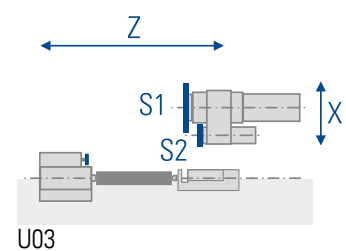
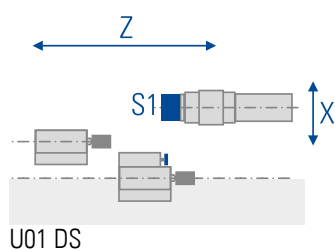
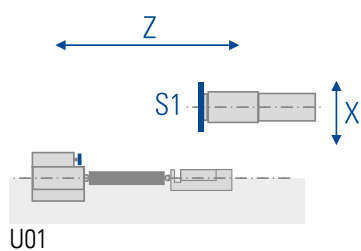
SINUMERIK 840D sl control system	yes
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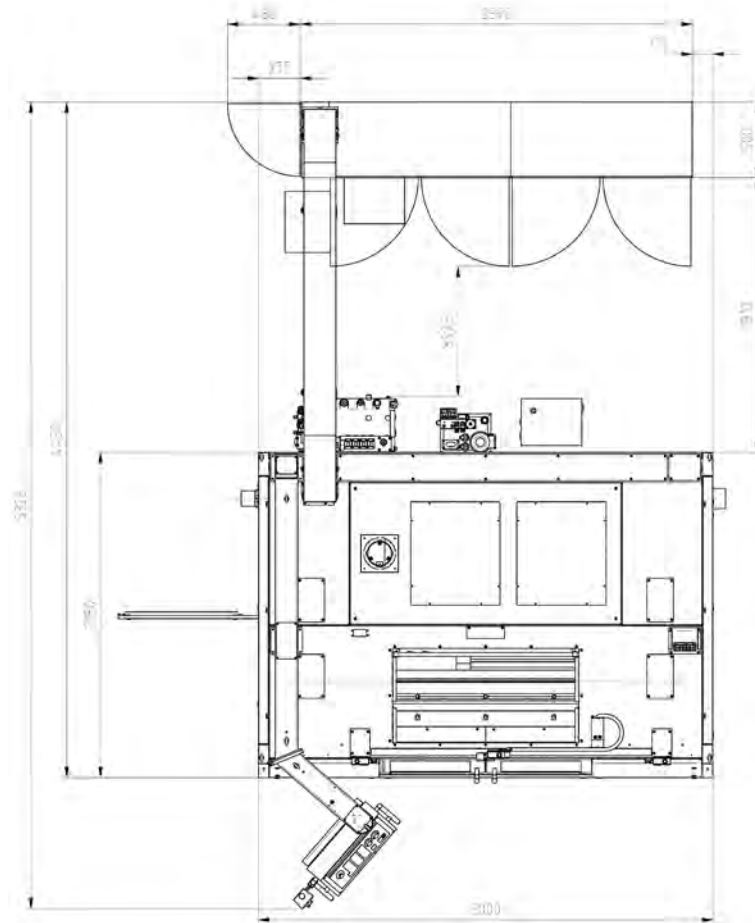
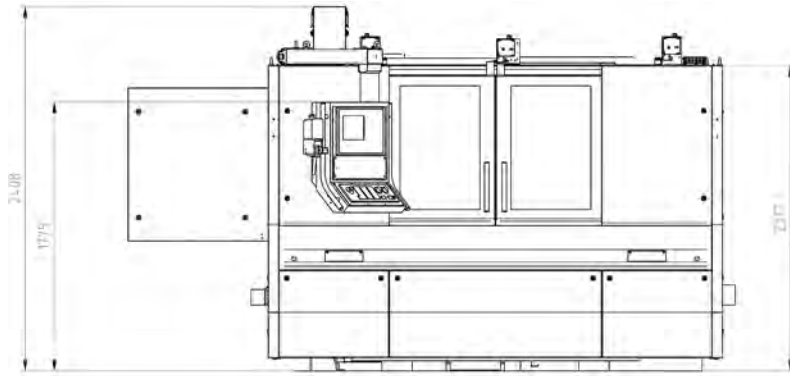
Dimensions

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

Variants	U01, U03
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Headstock variants







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