WEMA GLAUCHAU

WOTAN® S6A

EXTERNAL CYLINDRICAL GRINDING MACHINE

for highly precise machining
of long and heavy parts

THE NSH GROUP

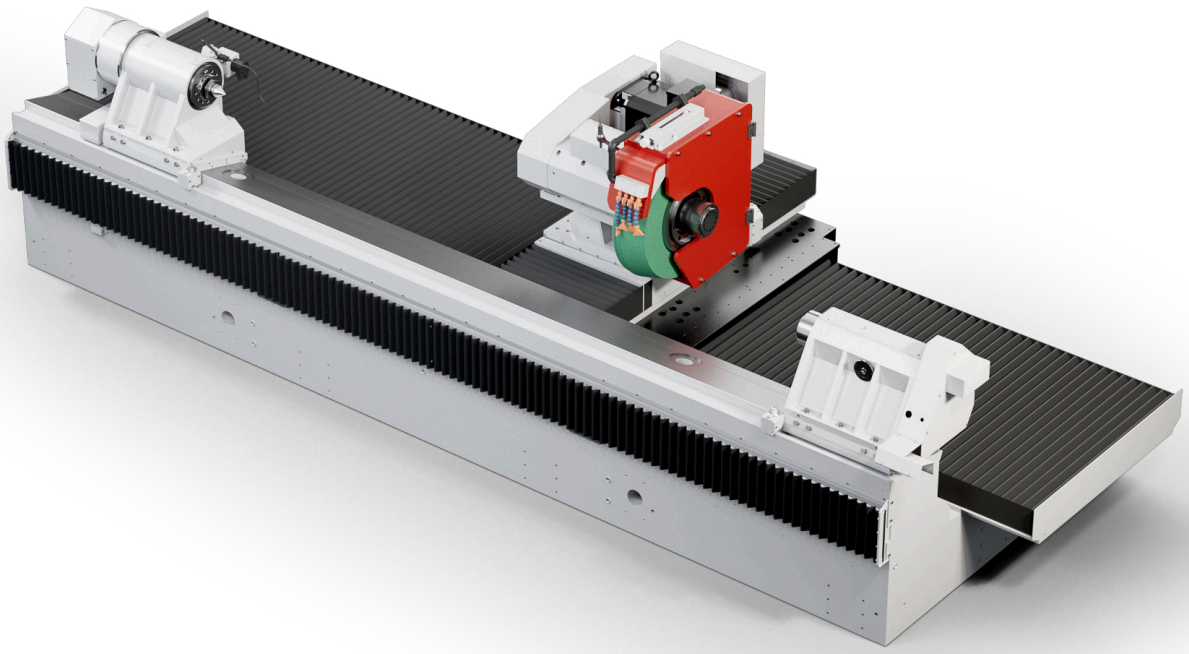
WOTAN® S6A INFO

Maximum flexibility for big challenges

Grind even particularly long and heavy parts with maximum precision using our WOTAN® S6A external cylindrical grinding machine. The workpiece spindle can handle loads of up to 1,500 kg and more. Our flexible machine concept allows us to optimize each machine for your specific grinding tasks.

The center height of the machine is 350 mm. According to the length of your workpieces you can choose 3.000 or 5.000 mm distance between centers.

The available expansion options enable numerous forms of closed-door machining for maximum precision in a single clamping setup, including internal grinding with an optional internal grinding spindle. The WOTAN® S6A series thus offers an optimal combination of flexibility and economic efficiency.



ONE MACHINE COVERING EVERYTHING

- Chuck parts
- Parts to be ground between centers
- Shaft parts
- Truck axles
- Railway axles
- Rotor shafts
- Rolls
- … and much more

You need to have external diameters and external plane surfaces?
No problem – the **S6**A offers the ideal solution.

Do you need internal machining in addition to external machining? This machine is the perfect solution as well.

Our modular and flexible machine design makes it possible to accomplish the most diverse processing jobs without long set-up times.

The machine's basic configuration consists of two CNC-controlled linear axes. The Z- and X-axes are guided by a rail-carriage system and are driven directly by linear motors. These components enable highly precise movements. Thanks to the guide and drive concept, and the reduced number of mechanical components, axis wear is minimized.

In addition to the workpiece spindle, further components such as the tailstock, steady rests and optional measuring systems are mounted on the fixed machine table.

The Z- and X-axes are arranged in the proven cross-slide design. The grinding unit is assembled on the X-axis and can be adapted to the individual processing job.

WORKPIECE SPINDLE

The workpiece spindle is designed as a direct-driven spindle and can be positioned individually on the machine table. Thanks to an integrated measuring system, the workpiece spindle functions as a fully-fledged C-axis and can therefore also be used for non-round and surface grinding in a wide variety of applications.

TAILSTOCK

The tailstock can also be freely positioned on the machine table. Thanks to the high-precision internal support of the tailstock quill, a live center is available for every machining task. The hydraulic clamping pressure of the quill is adjustable depending on the machining task.

WITH OR WITHOUT GRINDING SPINDLE TURRET

In its basic version, the grinding unit can be equipped with a single grinding tool, without a swivelling spindle revolver.

Efficiency and productivity increase significantly when a continuously swivelling spindle revolver (externally driven rotary table) is mounted on the X-axis and equipped with up to three grinding tools. The ratio and number of external and internal grinding wheels can be selected entirely according to your current and future requirements.

SPINDLES ACCORDING TO YOUR REQUIREMENTS

Flexibility also applies to the grinding spindles. Depending on the grinding task, you can choose for each spindle individually between a direct-driven and a belt-driven grinding spindle.

DRESSING OPTIONS

We offer various dressing technologies to match the grinding wheel required for your application.

For conventional grinding wheels, our fixed dressing tools quickly restore the wheel profile.

We also offer a dressing spindle with a driven dressing tool, for example to re-sharpen your CBN grinding wheels.

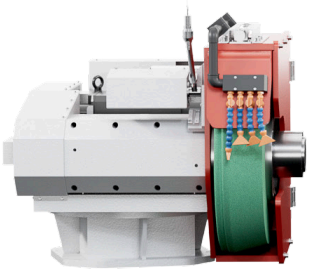
MANY OPTIONS AVAILABLE

For further optimization you can add a wide range of options to your individual configuration.

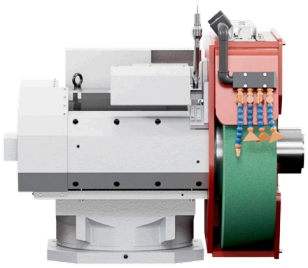
- Scanning measurement sensor (for external thread regrinding)
- In-process measuring unit
- Automatic workpiece change system
- Contact detection during grinding and dressing (e.g. via AE sensors)
- Superfinish unit
- A second, completely independent grinding support (with a second Z-axis and a second X-axis)

Determine your production task and we will work with you to configure your individual optimum solution. Alternatively, you can request a quotation for your specific planned setup.

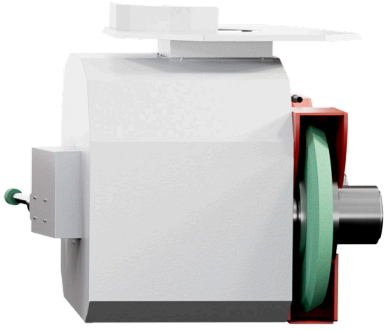
Example configuration of a **WOTAN® S6**A grinding unit



- 1 × external grinding wheel
- fixed



- 1 × external grinding wheel
- oscillating and swivelling



- 1 × external grinding wheel
- 1 × internal grinding spindle
- swivelling

WOTAN® S6A at a glance:

	WOTAN® S6A
Dimensions / Weight	
Machine dimensions without coolant system, etc. (WxDxH)	7.000 | 9.000 × 3.300 × 2.620 mm
Machine weight at the installation site with workpiece, etc.	ca. 33.000 | 55.000 kg
Work area of the machine	
Distance between centers	3.000 | 5.000 mm
Center height	350 mm
Workpiece weight	1.500 kg
	more on request
Workpiece spindle headstock	
Directly driven	
› concentric run-out external taper	2 µm
› concentric run-out plane surface	10 µm (more precise on request)
› concentric run-out internal cone	2 µm
› speed	288 rpm
› measuring system (C-axis)	integrated
› spindle nose	DIN ISO 702-1, form A2, size 8
› internal cone of the spindle	MK 6
› maximum drive power	≈ 31,2 kW
› rated torque	449 Nm
Tailstock	
Hydraulically advanced and retracted	standard
Cylinder correction	±0.080 mm
Sleeve travel	150 mm
Sleeve diameter	180 mm
Tailstock internal taper	MK 6

	WOTAN® S6A
Z-axis (workpiece)	
Guidance system	rail-car-system
Driving system	directly driven
Axis travel with one support	4.000 | 6.000 mm
Axis travel with two supports	3.000 | 5.000 mm
Speed	15 m/min
Resolution of the scale	0.000 01 mm
Calculation accuracy in the control system	0.0001 mm
Minimum infeed increment	0.001 mm
X-axis (grinding unit)	
Guidance system	rail-car-system
Driving system	directly driven
Axis travel	600 mm
Speed	15 m/min
Resolution of the scale	0.000 01 mm
Calculation accuracy in the control system	0.0001 mm
Minimum infeed increment	0.0005 mm

	WOTAN® S6A
Grinding unit	
number of possible grinding tools, per grinding support	up to 3
continuously variable speed adjustment	standard
Processing with Corundum or CBN-grinding wheels	standard
Scanning measurement sensor (for external thread regrinding)	option
Grinding spindle revolver (externally driven round table)	option
Swiveling range	270°
Calculation accuracy in the control system	0.000 1°
Direct-driven external grinding spindle	40 kW
External grinding	
Taper mount of the external grinding spindles	1:10
Driving power	
› belt-driven external grinding spindle	25 / 40 kW
› direct-driven external grinding spindle	40 kW
› further versions on request	
Grinding wheel dimensions	
› 45 m/s	Ø 760 x 250 x Ø 304,8 mm
› 63 m/s	Ø 760 x 200 x Ø 304,8 mm
The retention effect of the wheel burst protection depends on many factors, such as the density/weight of the grinding wheel, countersinks, etc. Please do not hesitate to contact us if your grinding wheel type is not listed.	
Automatic balancing system	standard
Internal grinding	
› internal grinding depth	on request
› spindle type	directly driven / belt-driven
The internal grinding diameter and depth depend on the component wall thickness and the dresser. Please do not hesitate to contact us.	
Machine control & operation	
SIEMENS control SINUMERIK ONE	standard
Proprietary operating interface WOP™ Touch	standard
Remote diagnosis capability	standard
CNC knowledge required for machine operation	none
Other items	
Spark-in control	
› spark-in control via power shut-down	standard
› spark-in control via acoustic emission / structure-borne sound	option
In-process measuring system	option
Steady rest	option
Superfinish unit	option
Automation / loading portal	option
Laser measurement of the machine in the factory	standard
Laser measurement at the customer's site	option
Maintenance contract	option
Spare and wear part package	option
Operator training / production support	option

All data are intended as guideline values. If you have any special requirements, please do not hesitate to contact us.

WOTAN®-I
INTERNAL GRINDING

WOTAN®-U
UNIVERSAL GRINDING

WOTAN®-A
EXTERNAL GRINDING

WOTAN®-W
ROLLING BEARING

Special Solutions
TAILORED PRODUCTS

Our experts will accompany you on the way from the first inquiry to the after-sales service thus ensuring the daily operations of your machine, so that you will get an optimal grinding machine from us.

- exact agreement of the requirements
- individual offer for a grinding machine
- individual design
- production
- quality assurance
- test grinding
- pre-acceptance of the machine
- delivery & installation
- training & familiarization
- after-sales service

We will be pleased to demonstrate the potential of all our WOTAN® machines at our headquarters in Glauchau, where we also accept grinding jobs for test purposes and on a contract basis.

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