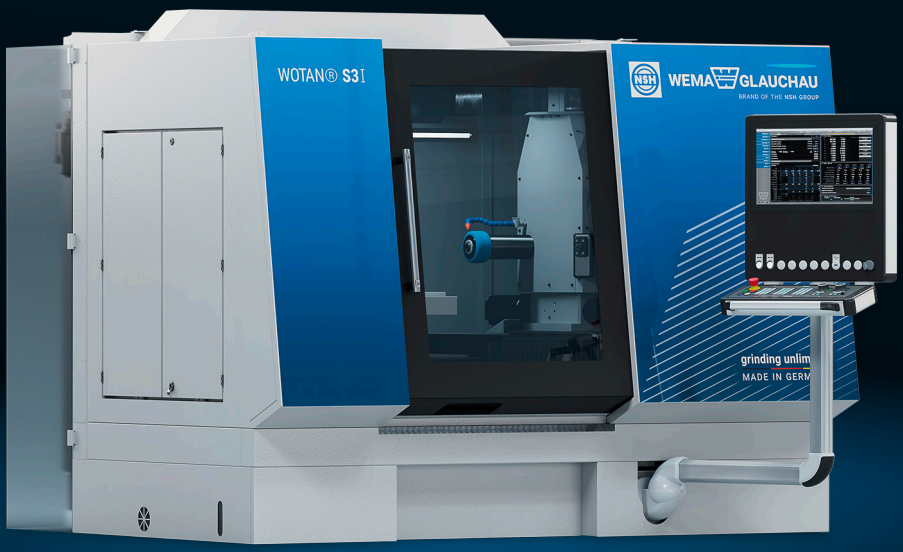
WEMA GLAUCHAU

WOTAN® S3I

INTERNAL CYLINDRICAL GRINDING MACHINE

with compact design, flexible and
precise like the ›big ones‹,
for light and small components



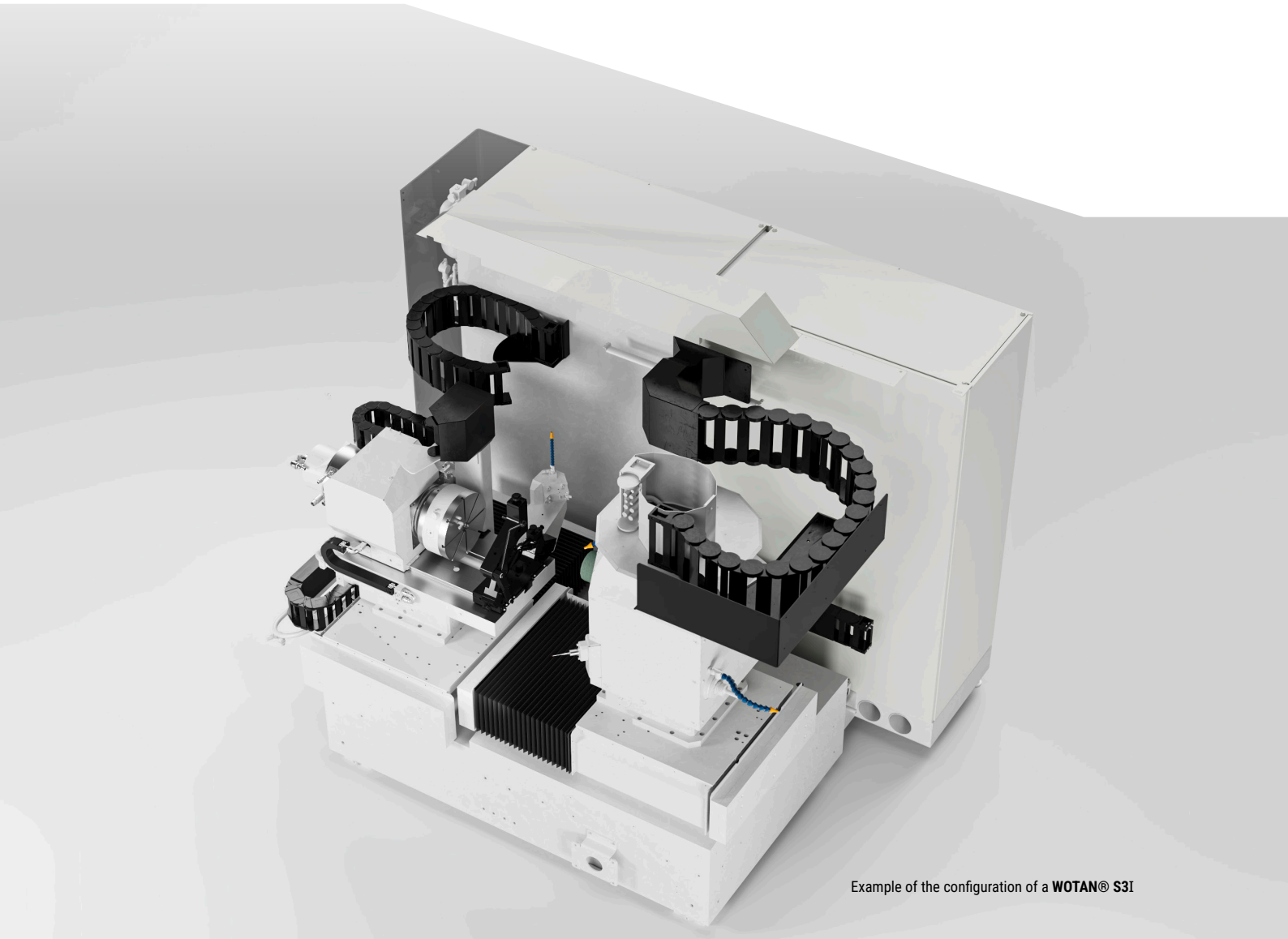
THE NSH GROUP

WOTAN® S3I INFO

The small machine with lots of options...

Internal cylindrical grinding machines of the WOTAN® S3I series are designed for processing small workpieces. The workpiece spindle can hold loads of up to 400 kg. Our flexible machine design enables us to optimize each machine for your specific grinding jobs.

The **WOTAN® S3I** is designed for high-precision cylindrical grinding in bore machining of workpieces with a swing diameter of up to 400 mm and a workpiece length of up to 400 mm, especially for grinding internal front surfaces, internal tapers and internal diameters.



Example of the configuration of a **WOTAN® S3I**

...for internal cylindrical grinding and much more.

A MACHINE COVERING EVERYTHING:

- chuck parts
- shaft-type parts with optional steady rest
- and much more.

WORKPIECE SPINDLE

On the workpiece side, the WOTAN® S3I is equipped with a continuously swivelling rotary table (B1 axis) for swivelling the workpiece spindle, thus enabling optimum taper grinding.

LARGE SELECTION OF SPINDLES

Depending on the accuracy requirements, the workpiece spindle can be designed as a belt-driven or directly driven spindle, or as a spindle with hydrostatic bearings. If the workpiece spindle is equipped with a measuring system (C axis), you can perform high-precision non-round grinding operations in various applications on a cylindrical grinding machine.

The machine is equipped with a Z-axis and an X-axis. The grinding unit is mounted on the Z-axis, which is positioned on the right-hand side of the machine bed. Up to four grinding spindles – designed as belt-driven and/or motor spindles – can be mounted on a grinding spindle rotary table, enabling components to be ground economically and efficiently in a single setup.

More flexibility through intuitive WOP™ interface

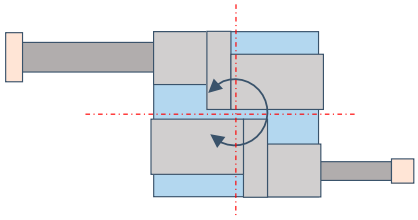
FLEXIBLE GRINDING SPINDLE ROTARY TABLE

The optional use of a grinding spindle rotary table (B2 axis) with 2 to a maximum of 4 grinding spindles significantly increases flexibility and versatility – without any spindle changeover. Depending on the application, belt-driven grinding spindles and/or high-frequency grinding spindles can be used. Belt-driven spindles can be exchanged manually, which further increases variability.

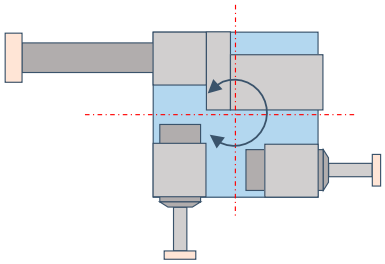
EXTERNAL AND FACE GRINDING IS ALSO POSSIBLE

Additional external and face grinding of short seating surfaces can also be covered. For this purpose, a belt-driven grinding spindle equipped with a double-sided profiled external and face grinding wheel (›vector wheel‹) is positioned on the grinding spindle rotary table (B2 axis). Further internal grinding operations can be carried out using additional grinding spindles positioned on the grinding spindle rotary table.

EXAMPLE OF THE CONFIGURATION FOR THE B2 AXIS



2 belt-driven spindles

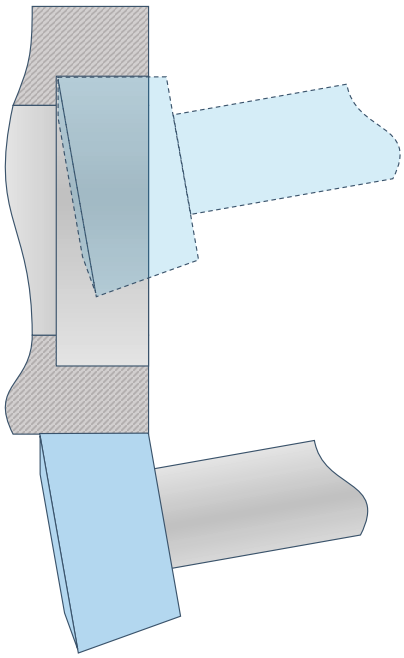


1 belt-driven spindle +

2 high-frequency spindles

VECTOR WHEELS

allow the grinding of internal front surfaces and internal diameters as well as external front surfaces and external diameters.



...parameterize instead of programming

VARIOUS DRESSERS CAN BE SELECTED

The dressing unit can be equipped with stationary and driven dressing tools, enabling the use of not only conventional corundum grinding wheels but also cubic boron nitride (CBN) grinding wheels.

NUMEROUS OPTIONS AVAILABLE

Depending on the grinding task, we also integrate spark-in/cutting-in detection via fluid sensor technology, additional measuring systems, tool and/or workpiece changing systems, and much more.

MODERN CONTROL AND EASY USER INTERFACE

The drive package is based on a SINUMERIK ONE control with the corresponding drives and motors from SIEMENS.

In addition to the standard SIEMENS user interface, all machines are equipped with our own user-friendly WOP™ Touch operator interface for workshop-oriented programming, which allows simple, menu-guided operation and programming without any CNC knowledge. All functions required for the process ensure continuous handling of the machine, regardless of its operating status.

WOTAN® S3I at a glance:

	WOTAN® S3I
Dimensions / Weight	
machine dimensions without coolant system, etc. (WxDxH)	2680 x 2320 x 2500 mm
machine weight at the installation site with workpiece, etc.	approx. 9000 kg
Work area of the machine	
swing diameter	400 mm
max. workpiece diameter	400 mm
max. workpiece diameter with steady rest	200 mm
workpiece weight including clamping device	400 kg
Internal grinding depth, current	300 mm (more on request)
grinding diameter for external/surface grinding	on request
grinding length for external/surface grinding	on request
internal grinding diameter	380 mm
Workpiece spindle headstock	
workpiece spindle	
› belt-driven	standard
› directly driven	option
› with hydrostatic bearing	option
automatic angle adjustment via B1 axis (CNC)	standard
› swiveling range	+90° / −30°
C axis for out-of-round grinding	option
adjustment of the workpiece spindle headstock in Z-direction	470 mm
option to use steady rests	standard
coolant flow in through the workpiece spindle	option
incision detection/spark-in control via the fluid sensor system when grinding	option
Z-axis (CNC) tool side	
guidance system	hydrostatic
driving system	directly driven
axis travel	450 mm
speed	20 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 (CNC) on the workpiece side	
guidance system	hydrostatic
driving system	directly driven
axis travel	450 mm
speed	20 m/min
resolution of the scale	0.000 01 mm
calculation accuracy in the control system	0.0001 mm
minimum adjusting increment (on radius)	0.0005 mm

	WOTAN® S3I
Grinding unit	
number of possible grinding tools	up to 4
continuously variable speed adjustment	standard
driving power	customized
processing with Corundum grinding wheels or CBN-grinding wheels	standard
grinding spindle turret (externally driven rotary table)	option
› swiveling range	270°
› calculation accuracy in the control system	0.000 1°
external grinding	option
Dressing unit	
designed to operate with stationary dressing tools	standard
designed to operate with driven dressing tools	option
spark-in control via acoustic emission (AE) sensors during dressing	option
Measuring instruments	
measurement sensor for zero point detection	option
further measuring equipment	on request
Machine control & operation	
SIEMENS control SINUMERIK ONE	standard
proprietary operator interface WOP™ Touch	standard
option of remote diagnosis	standard
CNC knowledge required to operate the machine	none
Other items	
spark-in control	
› spark-in control via power shut-down	standard
› spark-in control via acoustic emission	option
steady rest	option
automation / loading portal	option
laser measurement of the machine in the factory	option
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 provided for guidance only. If you have customized 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.

NSH TECHNOLOGY GmbH
Branch Glauchau

Dieselstrasse 2
08371 Glauchau
Germany

+49 3763 61-0

wema-glauchau@nshgroup.com
WEMA-GLAUCHAU.DE

THE NSH GROUP

›WEMA GLAUCHAU