

# BSB

UNIVERSAL CYLINDRICAL GRINDING MACHINE

BSB 300

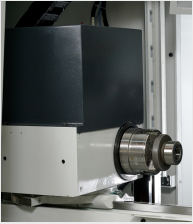
BSB 500



**GRINDEX**

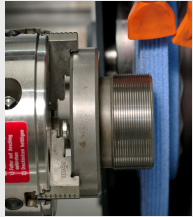
# BSB

IDEAL FOR HIGH VOLUME AND HIGHLY FLEXIBLE  
PRODUCTION OF WORKPIECES UP TO 500 MM IN LENGTH



## UNIVERSAL WORKHEAD

- Live and dead center base
- Speed range 0,1-800 RPM
- Roundness accuracy 0,5  $\mu\text{m}$



## DISTANCE BETWEEN CENTERS

- 300/500 mm



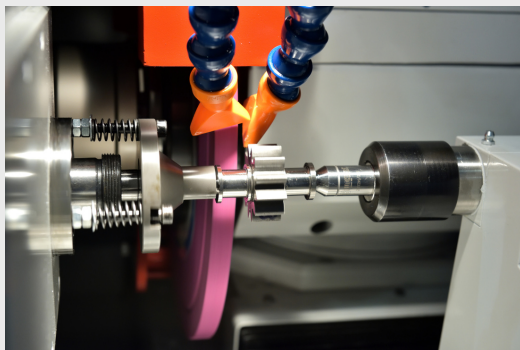
## LOAD

- Between centers 25 kg
- Chuked 10 kg



## TAILSTOCK

- Fitting taper MT2
- Retraction of sleeve 20 mm
- Micro-adjustment  $\pm 0,1$  mm

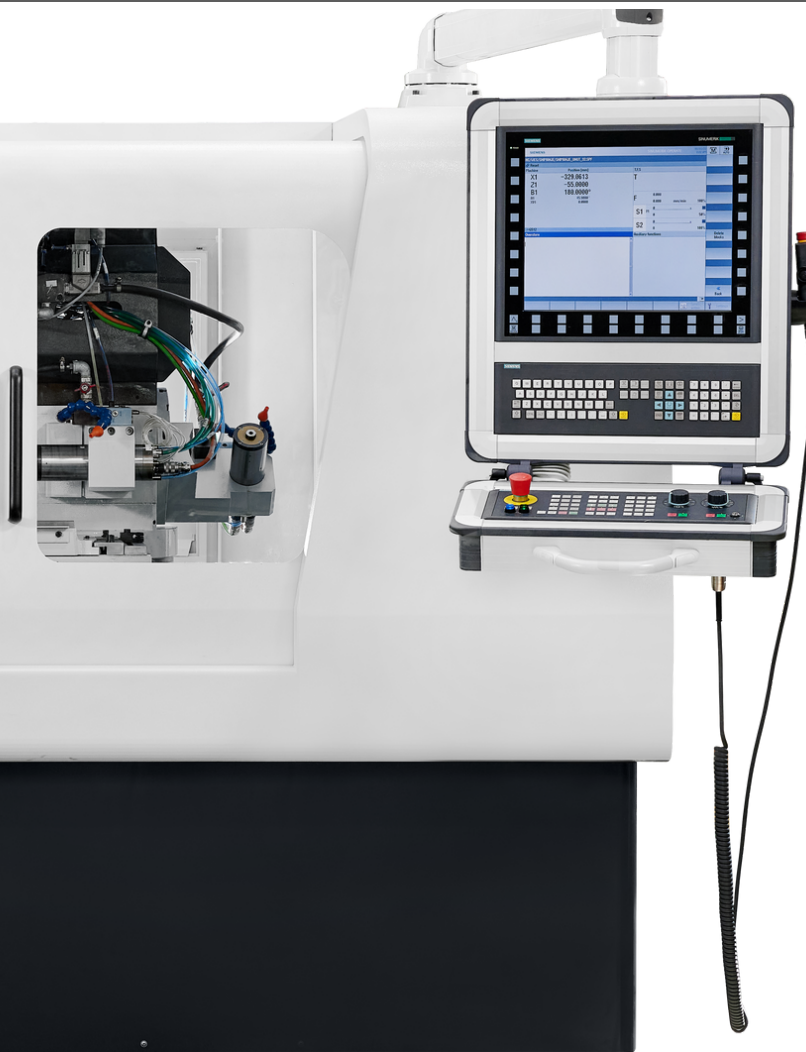


## MACHINE BED

Machine bed made of grey cast iron. Very massive, solid, specially ribbed, naturally aged ensures thermal stability for a long life and complete stability of the process. Flat and "V" guideways hand scraped and coated with antifriction material to ensure continuous movement, high accuracy, positioning and repeatability.

## TABLE/SLIDE

X- and Z- slides driven by ball screw spindles and AC servo motors. High resolution linear scales to control the position of X- and Z- axes. Swiveling possibility with the workhead, upper table and wheel slide.



## CNC OR NC CONTROLLER

User friendly, with flexible programming options and graphical interface. Availability of input data for analysis and process improvement.

Ergonomic control panel, with touch screen, standard keyboard, USB ports.

Thin Client Operator Panel 22", widescreen TFT display, capacitive touch sensor.

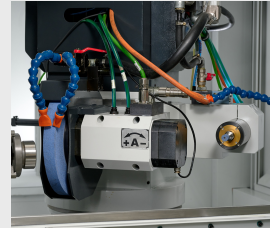
Supported protocols: RDP, VNC, Smart Server, HTML5, etc., neutral design, Built-in unit.

Alpha numeric key-board and command panel MCP 398C + EM.

Protection class IP65 (Front side).

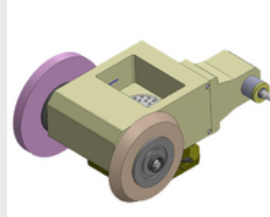
Hand terminal with 10" multi-touch display (Screen ratio 16:10).

System set-up through Dialogs and Menu, NC programming not required.



## WHEELHEAD

- Grinding head for external cylindrical, internal cylindrical, taper, face and complex profile grinding

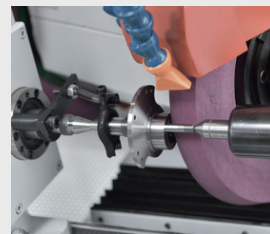


- HF internal grinding spindle

- Wheel spindle can be left or right, or fixed for a specific angle. Automatic dynamic system for balancing for wheels with diameters  $\varnothing 250$  mm and bigger



- Combination of grinding spindles for external, internal, taper, face, complex profile grinding. Up to four grinding wheels.

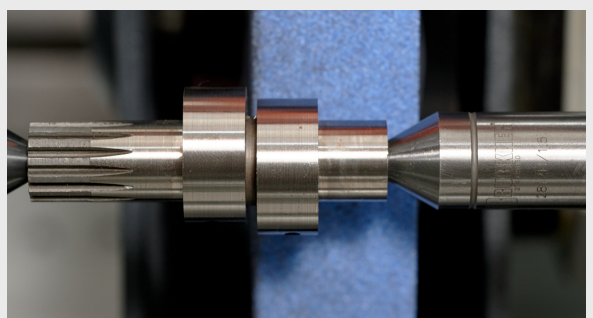


- Max. wheel diameter  $\varnothing 400 \times 80 \times \varnothing 127$  mm

- Continuous indexing function on wheelhead



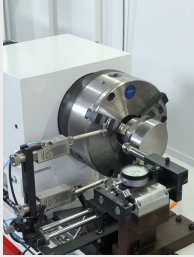
- Thermal stability - water cooled motor and optimized permanently lubricated bearings





## SLIDES

- More robust wheelhead and extended max. slide travel
- X-axis travel driven by linear motor with linear guides



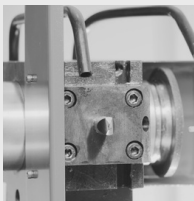
## WORKHEAD

- C-axis rotation control
- Hydrodynamic bearing
- Hydrostatic bearings
- Pneumatic or hydraulic clamping
- Custom tooling for clamping



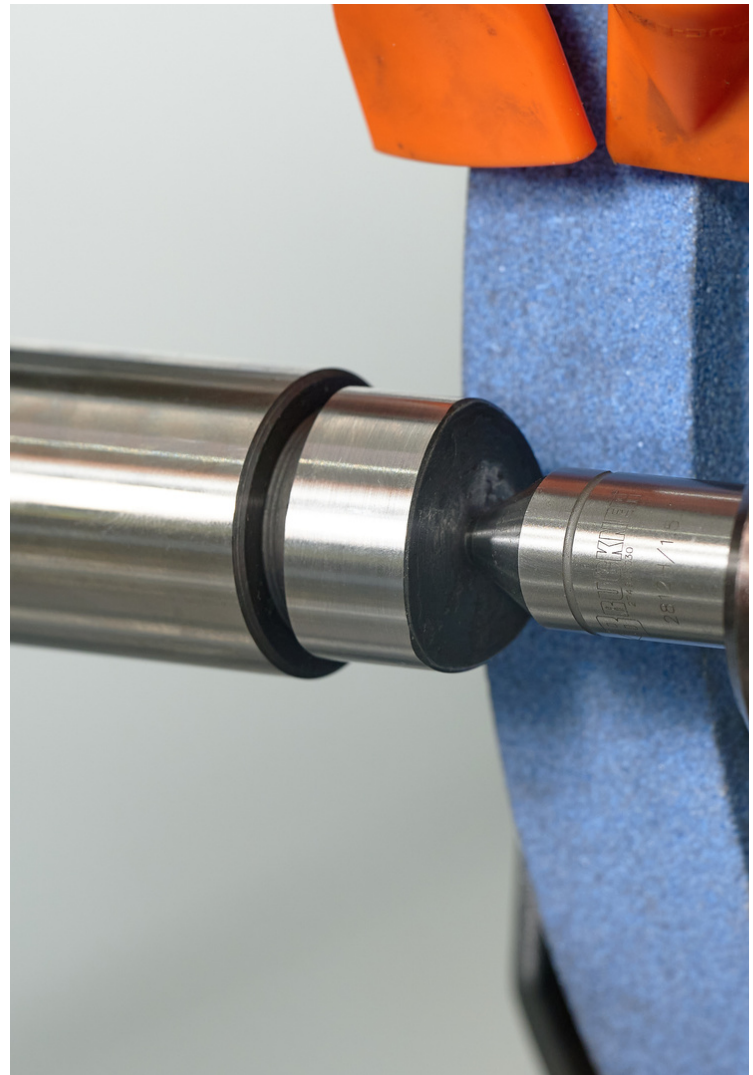
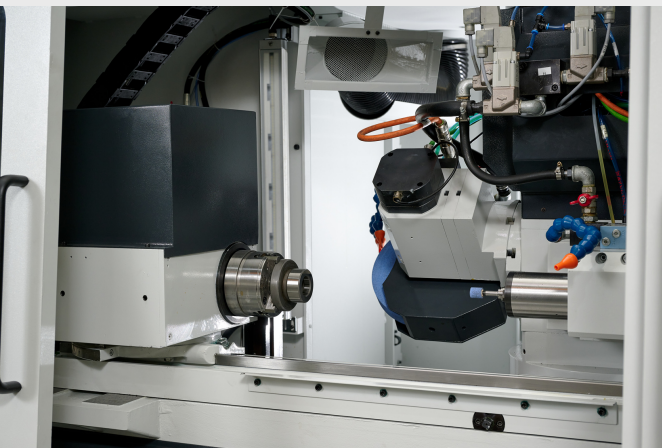
## WHEELHEAD

- Hydrodynamic, hydrostatic, hybrid ceramic bearing
- Turret wheel head (B-axis)
- Ceramic, CBN, Diamond grinding wheel



## WHEEL DRESSING

- Single point diamond
- Diamond roll/disc
- CNC wheel dresser



## C AXIS

The option for non-round applications. Interpolating the transverse X- and part rotation C-axes provides possibility to grind non-round applications such as polygons or eccentric forms.

## ADVANTEGES OF LINEAR DRIVE

The option of X-axis travel driven by linear motor. Less wear and minimal maintainance. Extremely high accuracy, positioning and repeatability. Shortened cycle time, superior surface quality, unbeatable grinding accuracy.

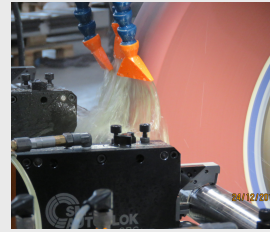


## IN-PROCESS DIAMETER GAUGING SYSTEM

The system of measuring in-time significantly improve cycle time, keep the dimensional and geometrical process stability within very narrow tolerance ranges. The machine collects data in real time so it has possibility to correct even smallest deviation immediately.

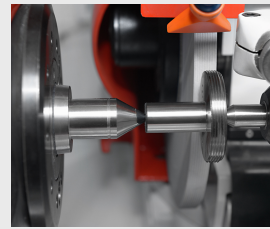
## AUTOMATIC WORKPIECE LOADING/UNLOADING SYSTEM

Requirements of completely automated manufacturing processes are fulfilled with the incorporation of customised Grindex automatic loading systems e.g. integrated gantry or robot solutions or custom tailored systems. Grindex offers both internal and external loading systems.



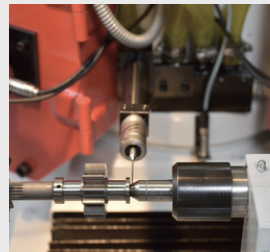
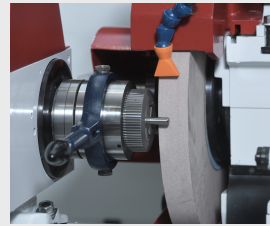
## STEADY REST

- Fine adjustment grinding steady rest ideal for follow down grinding
- Self-centering steady rest
- Commercial and Grindex steady rest



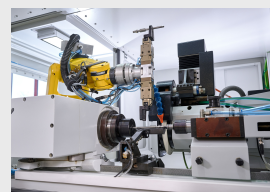
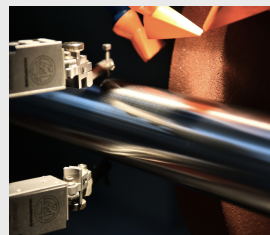
## CLAMPING SYSTEM

- Between centers
- Chuck clamping
- Face driver
- Power actuated clamping system
- Collet chuck
- Custom tooling



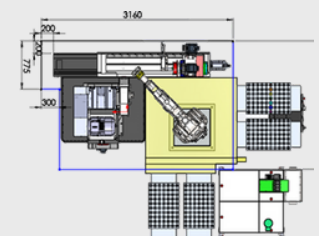
## GAUGING AND CONTROL

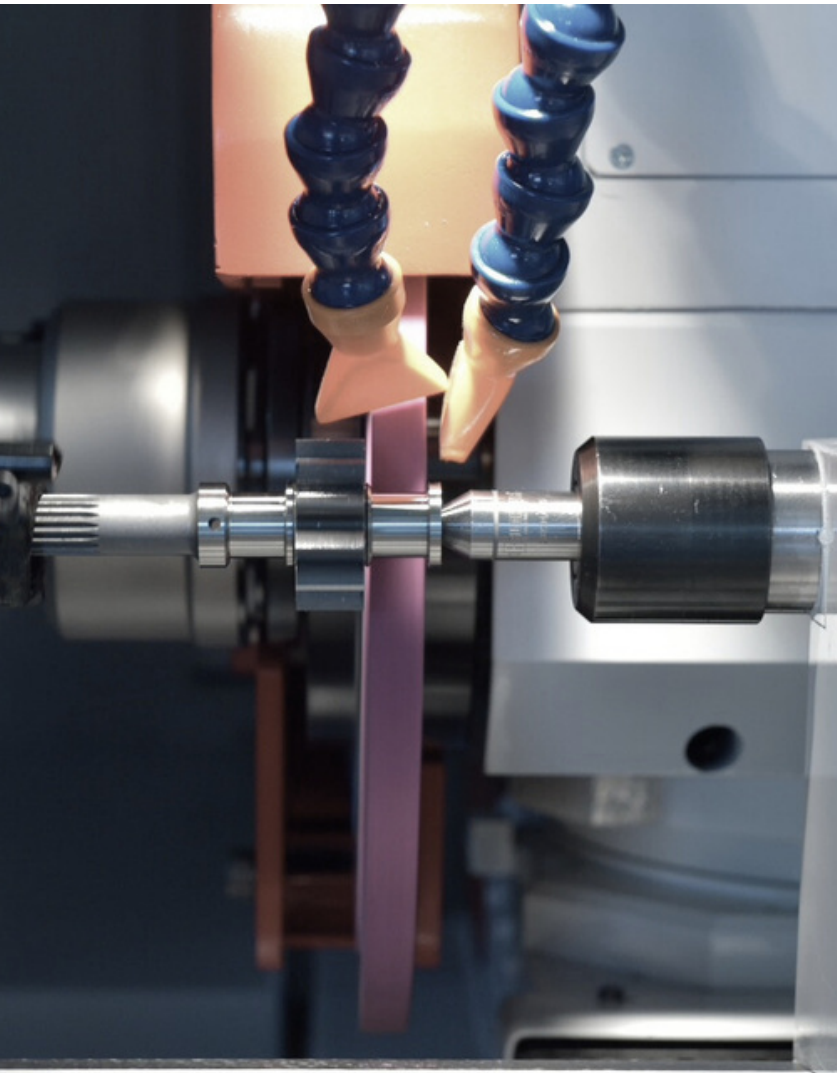
- In-process and post-process gauging system
- Touch probe for workpiece axial positioning
- Gap-crash - gap, crash, dressing and position control for grinding wheel



## AUTOMATION SYSTEM

- Robot
- Gantry loader

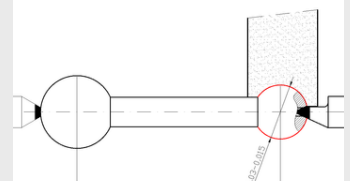
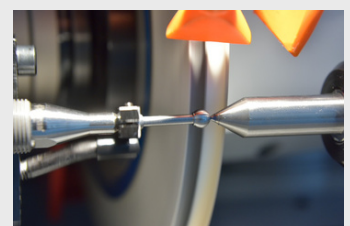
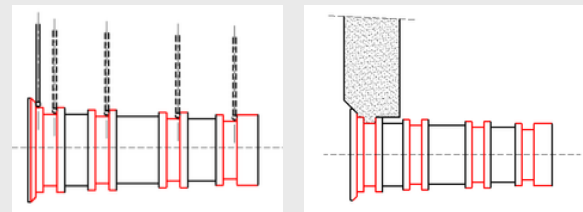
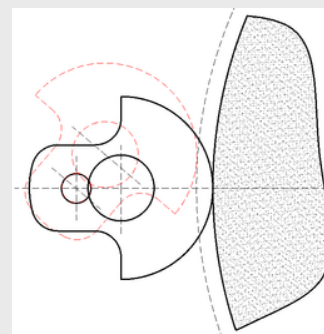
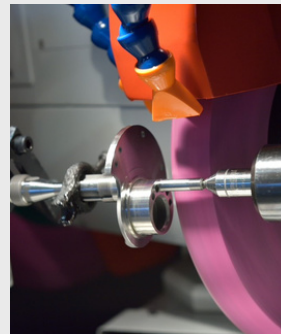
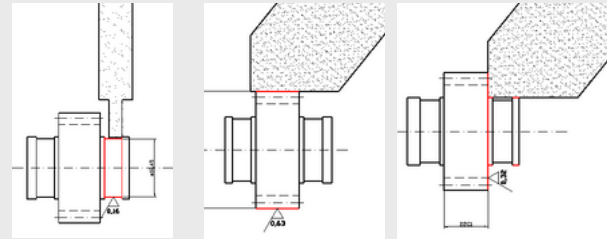
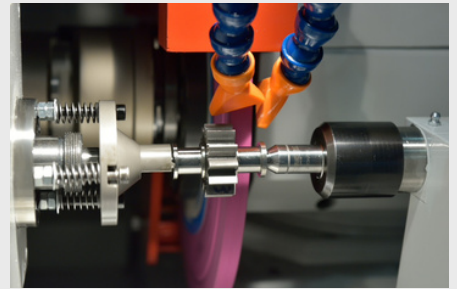




## TECHNOLOGICAL EXPERTISE

We strive to talk to the customer. Our engineers and technicians cooperate with customer in order to supply perfect machine. Grindex provides technological expertise with flow of operations, grinding and dressing method, chuck system proposal, control/gauging system proposal, automation system proposal etc. with priority to reduce cycle time and achieve the best possible workpiece quality.

## MACHINING EXAMPLES



# TECHNICAL DATA

Main data	
· Distance between centers	300/500 mm
· Center height	135 mm
· Max. workpiece dimensions	ø270x300/ø270x500 mm
· Max. workpiece weight (between centers/chuck)	25/10 kg
Wheelslide X-axis	
· Travel	80/250/400 mm
· Max. speed	up to 10000 mm/min
· Resolution	0,0001 mm
Work table Z-axis	
· Travel	350/550 mm
· Max. speed	up to 10000 mm/min
· Resolution	0,0001 mm
Wheelhead	
· Motor power	3/7,4 kW
· Peripheral speed	50 m/s
· Max. grinding wheel dimensions	ø400 x 80 x ø127 mm
B-axis	
· Swivel range	-30° /+210 °
· Resolution	1"
· Max. speed	3 600 °/min
Internal grinding attachment	
· Speed range	45000-120000 rpm
Workhead	
· Rotation speed	0,1-800 rpm
· Motor power	0,75/2,3 kW
· Interface	A3 DIN 55026/MT4
· C-axis resolution	20"
Tailstock	
· Fitting taper	MT2
· Micro adjustment	±0,1 mm
· Controller	Siemens Sinumerik One, Siemens Simatic, NUM

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