

TECHNICAL DATASHEET

CNC – HIGH PRECISION FALT AND PROFILE GRINDER

Manufacturer	ABA
Type	Powerline 1006 CNC
Control	Siemens SINUMERK 840 D
Built Retrofit	2001 2023



Grinding area

Grinding area max.	1.000 x 600	mm
Cross Travel (Z-axis)	540	mm
Distance table surface – grinding spindle center	600	mm Max.
Vertical Travel (Y-axis)	500	mm
Max. working height on new grinding wheel	400	mm

Workpiece table

Electro Permanent magnetic clamping plate	800 x 500	mm
Pole pitch	18	mm
Clamping force control	8	steps

Table drive (X-Axis)

Incremental encoder in the longitudinal axis (X axis)

Table speed 2-35.000 mm/min

Electromechanical longitudinal movement by means of digital servo motor, toothed belt and ball screw. Preloaded precision rolling guide size 35

Central grease lubrication

Automatic vertical feed (Y-Achse)

Smallest feed size 0,001 mm

Measuring system Glass scale

Max. distance spindle centre - table 700 mm

Grinding head vertical travel 550 mm

Electromechanical vertical movement by means of digital servo motor, backlash-free worm gear and ball screw. Preloaded precision roller guide size 45

Central grease lubrication

Cross feed (Z-Axis)

Smallest feed size 0,001 mm

Measuring system Glass scale

Column Cross travel max. 600 mm

Cross movement, continuous 5-5.000 mm/min

Cross movement, intermittent 1-95 mm/Impuls

Electromechanical transverse movement by means of digital servo motor, toothed belt and ball screw. Preloaded precision rolling guide size 45

Central grease lubrication

Grinding spindle

Motor - Version AC - motor adjustable

Power 18,5 kW bei 1.500 min-1

Adjustable grinding spindle speed 1.000 – 2.600 min-1

Spindle bearings Axial and radial backlash-free

Spindle Ø in front bearing 80 mm

Grinding wheel dimension max. 420 x 100 x 127 mm

Grinding spindle with anti-friction bearings in block design with preloaded high-precision spindle bearings and grease permanent lubrication, spindle preloaded axially and radially without backlash.

Grinding wheel peripheral speed max. 35 m/s

Dynamic, automatic grinding wheel balancing system Fa. MPM, Typ AB 100

Control

SIEMENS SINUMERIK 840 D

With TFT colour monitor

MS-Windows user interface module PCU 50 with graphic user guidance

- With digital drives and integrated adaptation control
- CNC user memory 1.5 Mbyte for programs and data
- Main memory 256 Mbyte SDRAM
- Hard disk 40 GByte, of which 3 Gbyte are freely available for user programs
- MPI interface, USB V 1.1 (1 x external, 1 x internal), Ethernet 10/100 Mbit/s
- Floppy disk drive interface
- User-friendly manual grinding and automatic grinding sequences
- Digital position displays with large color screen
- Graphic-supported input of workpiece data
- Infeed in automatic mode is selectable on one or both sides
- Constant cutting speed control, error messages in clear text

Program overview

- Surface grinding
- Plunge grinding
- Profile grinding
- Automatic program sequence with roughing, finishing, fine finishing and burnout
- Multiple plunge-cut grinding for economical production
- Surface grinding with continuous, infinitely programmable cross feed
- Calibration of the grinding wheel (calibrate, backfeed, round corners)
- Face grinding with back pull dressing
- Dressing in grinding cycle with lift-off amount
- Fully automatic compensation of dressing amounts
- Tool management

Dressing technology

Table dresser -straight- TAG:

Dresser fixed on the machine table, roughing and finishing station with dressing tiles are arranged one behind the other, cylindrical dressing of grinding wheels for surface and plunge grinding, suitable for corundum and silicon carbide grinding wheels, cycle software with input menu

Pre-profiler VPG-150:

incl. diamond roughing wheel width 1.5 mm

For economical pre-profiling (roughing out) of the grinding wheel, profiling unit firmly mounted on the table, suitable for corundum and silicon carbide grinding wheels, CNC dressing cycle for pre-profiling

Table profile dresser TAD:

Suitable for diamond wheel DFR, D = 120, tip radius r = 0.1 - 1mm, flank angle 28°, 40°, 60°. Profile depth max. 20 mm, contour accuracy +/- 0.0025 mm, swivel angle +/- 70°, profiling in the program by means of graphical operator guidance in 3-D interpolation

Connection data

Operating voltage	3~ 400/230 V
Frequency	50 Hz
Connecting value	50 kVA
Nominal current ca.	70 A
Backup fuse ca.	100 A
Space requirement l x b x h ca.	4.000 x 3.000 mm, Höhe 2.900 mm
Weight ca.	6.000 kg

Equipment and accessories

- Linear measuring systems in Y- and Z-axis
- All linear axes with digital servo motors and ball screw drive
- Belt filter system with paper belt filter, tank capacity 640 l, coolant pump 200 l/min/4 bar
- Manual coolant nozzles - adjustable
- Automatic working chamber door pneumatically controlled
- Electro-permanent magnetic plate 800 x 500 mm, pendulum pole pitch 18 mm
- Automatic grinding wheel balancing device by MPM
- Full enclosure of the working area in stainless steel partial execution with LED working area lighting
- Manually operated door, safety interlock in automatic mode
- Portable electronic handwheel in automatic and manual mode for all axes
- Three-color signal light
- Electrical equipment 400V/50Hz
- Switch cabinet cooling unit
- Machine feet
- Painting RAL 9002 (grey white), RAL 5010 (gentian blue)
- Rinsing gun with hose and holder in the operating area
- Approx. 5 pcs. grinding wheel flanges

*** Machine prepared for oil mist suction unit***