

SAMPLE PREPARATION

# SPECTRAL AG 102





en  
specimen

metkon



SPECTRAL AG 102

EMERGENCY  
STOP

# AUTOMATIC CUP GRINDING FOR IRON & STEEL



# SPECTRAL AG 102



Sample preparation of metals and materials have become more and more important because of the rapid development and improvement of both software as well as OES and XRF-devices during the past few years that shifts the detection limit for trace analyses. It is crucial to have the sample properly prepared. The sample needs to be both representative, homogeneous and with an even surface in order to eliminate factors that can influence the results.

## SPECTRAL AG 102

SPECTRAL AG 102 is an automatic cup grinder for spectroscopic sample preparation of iron and steel samples.

Heavy duty cast aluminum base with motorized vertical drive provides accurate control. High-torque grinding motor rotating at 2800 rpm guarantees high material removal rate. SPECTRAL AG 102 is equipped with automatic sample feed with fine speed control. Fast advance and reverse are available. Automatic cup wheel positioning is done with a high precision measurement system. This ensures extremely precise positioning with shorter times. All important parameters of the grinding process like feedrate and grinding depth are adjustable on the touch screen LCD. Pneumatic Clamping Device, Electromagnetic clamping device and T-slotted table are offered as optional accessories.

Air cooling unit is strongly recommended so that the surface temperature of the sample is kept at an optimum. The entire working area is totally enclosed. Electronic brake is integrated to the system for a rapid stop of the grinding stone. The interlocking safety device does not allow the hood to be opened before the grinding motor is stopped.

The front sliding door can be completely opened for easy access and handling. A large window of Lexan and a sealed LED lamp in the grinding chamber allow precise observation of the cutting process at an optimum degree of safety.

Spectral AG 102 can be equipped with automatic Sample Height Measurement System with automatic dressing of cup grinding stone for full cyclic operation.

### Automatic Dressing

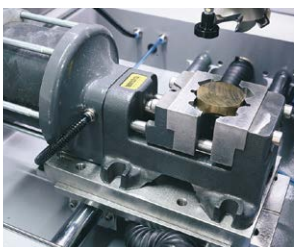
An automatic diamond dresser keeps the grinding stone plane and sharp for optimum performance and precise results. The multi-pass grinding depth is monitored accurately with material height measurement system. Instead of relying on preparation time, the necessary amount of material to be removed can be specified with the shortest possible grinding time.



SPECTRAL AG 102 with cabinet

### Safety

SPECTRAL AG 102 automatic grinding machine has the highest safety standards. The interlocking safety device does not allow the motor to be started unless the sliding door is closed. The sliding door cannot be opened before the grinding motor is stopped. The electronic brake system, which is a standard feature, brings the grinder to a quick full stop in seconds after it has been switched off.



Pneumatic Clamping Device



Electromagnetic Clamping Device



Automatic Dressing



Air Colling System

# AUTOMATIC OPERATION

## Automatic Operation

SPECTRAL AG 102 has advanced techniques and software with programmable HMI touch screen controls increasing the productivity, sample consistency and operator comfort.

## Controlled Material Removal

SPECTRAL AG 102 allows you to preset the amount of material to be removed very accurately. The vertical movement of the grinding head is motorized with digital positioning and display on the touch screen LCD. The robust design of the column guarantees high reproducibility. The material to be removed from the specimen can be preset in increments of 10 microns

## Grinding Parameters

The preselection of the grinding feed rate is possible from the touch screen LCD. The feed rate is automatically adjusted, if needed reduced, resulting in perfect surfaces and eliminating sample and machine damage.

## Multi-pass Grinding

SPECTRAL AG 102 can be programmed to make multi-pass plane parallel grinding operations. It is possible to set the number of passes and the grinding depth of each pass which can be stored under a program number or name.

## Programmable Return Positions

SPECTRAL AG 102 has 3 different stop modes:

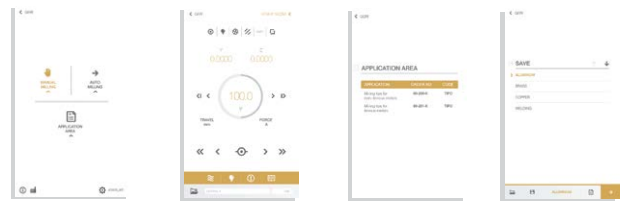
**Auto stop:** Stops when the specimen has been through.

**Relative Stop:** Stops when it has returned to its starting point.

**Absolute Stop:** Stops when the ultimate reset point in all axes has been reached.



HMI touch screen controls with various grinding methods and database with grinding programs and maintenance monitoring



## Database

A library of 99 different grinding programs with related specimen name or number can be saved with all grinding parameters which can be recalled at any time. Data with Metkon grinding cups is also listed for easy selection.





### Sample Preparation for Spectroscopy

Optical emission spectrometry (OES) and X-Ray fluorescence are most commonly used techniques for the analysis of metals and solid samples.

Sample preparation of metals and materials have become more and more important because of the rapid development and improvement of both software as well as OES and XRF-devices during the past few years that shifts the detection limit for trace analyses. It is crucial to have the sample properly prepared.

The sample needs to be both representative, homogeneous and with an even surface in order to eliminate factors that can influence the results. For the preparation of solid metal samples METKON offers manual and automatic sample preparation machines - from the small table-top disc surface grinder to automatic milling machine. With METKON Sample Preparation Machines, you feel yourself ready for the analysis.



## SPECIFICATIONS

ORDER NO	81 05
MODEL NO	AG 102
Grinding motor power, Kw, (S1)	3
Grinding wheel Speed, (rpm)	2800
Cup wheel Diameter, (mm)	150
Radius of arc	-
Travel, mm	-
Table Feedrate, (mm/sn)	10-250
Y-Axis Stroke, (mm)	210
Z-Axis Stroke, (mm)	60
Operation	Automatic
HMI Touch Screen	7"
Program Memory	99
Grinding Depth Accuracy, (μ)	10
Dimensions, WxDxH, (cm)	94 x 83 x 97
Dimensions, WxDxH, (cm),with cabinet	94 x 83 x 175
Weight, (kgs)	300
Weight, (kgs),with cabinet	385

### 81 05

#### — SPECTRAL AG 102

Automatic Grinding Machine for fast spectroscopic sample preparation of iron and steel samples, bench top compact design, Programmable with colored 7" HMI touch screen control, with Siemens PLC control unit, accurate and motorized positioning in Y and Z axis, closed housing, max. safety provided with interlocking switch, large working space with LED lighting, extraordinary access for easy handling with sliding door, automatic sample feeding with adjustable fine speed, controlled material removal from the specimen with accuracy of 0.01 mm grinding depth, high torque 3 kW grinding motor, with electronic brake system and overload protection, with 2800 rpm speed to obtain optimum surfaces on different materials, all parameters on colored LCD display, sample cooling available with water cooling and/or compressed air, ready for operation. Without clamping devices. Without cooling tank. 400V, 3-phase, 50Hz.

#### Accessories for Spectral AG 102

- GR 1819** — Pneumatic Clamping Device with 3-Jaws (To be ordered simultaneously together with the machine order)
- GR 1958** — Electromagnetic clamping plate (To be ordered simultaneously together with the machine order)
- GR 1922** — Automatic Sample Height Measurement System for full cyclic operation, with automatic dressing of cup grinding stone. (To be ordered simultaneously together with the machine order)
- GR 1842** — Automation Software for full cyclic operation. (To be ordered simultaneously together with GR 1828)
- GR 1816** — T-slotted table
- GR 1945** — Recirculating coolant tank, stainless steel, 55 lt. capacity, with pump, hoses etc.
- YM 8813** — Fine filter sheets for recirculation cooling tank (GR 1945), 10 pcs
- GR 1540** — Magnetic collector rod for recirculation cooling tank
- GR 1907** — Floor Cabinet for FORCIPLAN 52/SPECTRAL MM/PG/AG 102
- GR 1397-00** — Water Filtering and Pressure Regulator System for city water inlet. Keeps the water pressure at the appropriate level and protects from sudden pressure spikes. Filtering out impurities in the water and prevents calcification.
- YM 3824-00** — Spare Siliphos Cartridge Filter (for Water Filtering and Pressure Regulator System (GR 1397-00))
- GR 1927** — Spare Part Kit for SPECTRAL AG 102 Recommended Set of Spare Parts, SPC AG 102
- Installation, Operator Training and Limited Service Training for Spectral MM 102 / AG 102**
- HIZ 014** — "Installation, Operator Training and Limited Service Training" at customer site by Metkon Service Engineer for products Spectral MM 102 / AG 102. (Travel and living expenses are to be charged at actual cost additionally)

\* Other voltages and frequencies available upon request. Please state when ordering. All specifications are subject to change without notice.

