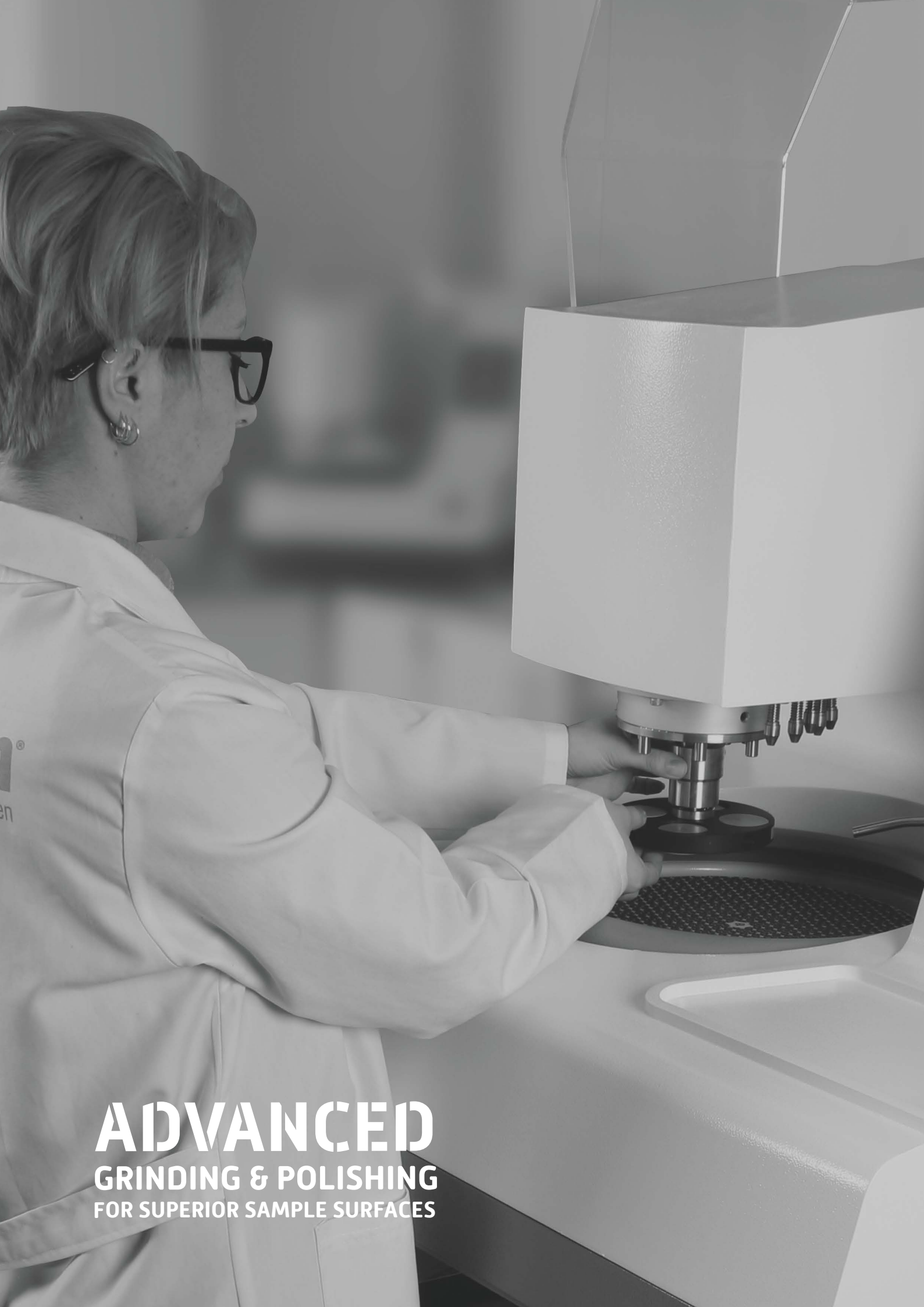


GRINDING & POLISHING

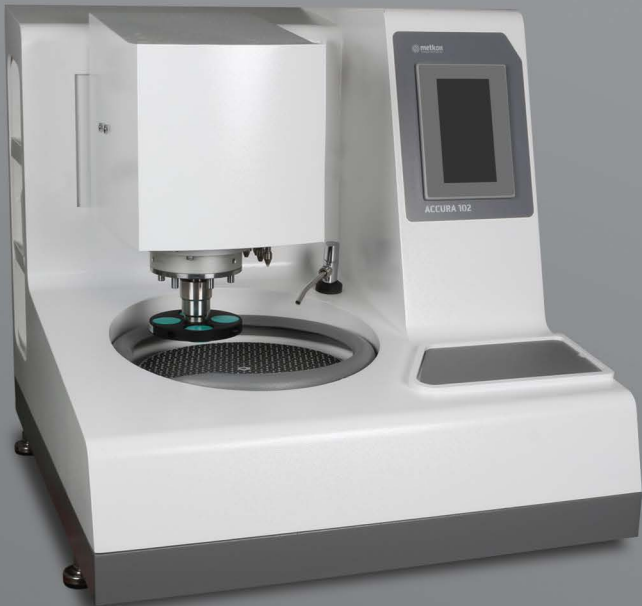
# ACCURA 102



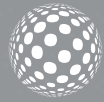
QUARTER CENTURY OF  
EXPERIENCE



**ADVANCED**  
**GRINDING & POLISHING**  
**FOR SUPERIOR SAMPLE SURFACES**



# ACCURA 102



ACCURA 102 Advanced high end grinding and polishing system, robust construction on dual columns for applications requiring extremely flat specimen surfaces. Suitable for both 250 mm and 300 mm applications. Motorized positioning of the Head in vertical (Z) and horizontal (X) axes with memory function. Precise control of the force applied. Combined Z-axis material removal control system. Ability to store and recall preparation programs on the LCD screen. Efficient control of consumable consumption by integrated Peristaltic Dispensing Unit. Transparent cover for improved safety and working area.

## DESIGN

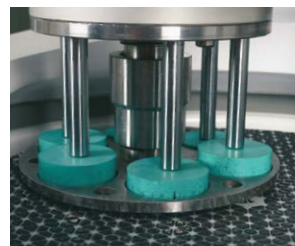
ACCURA 102 can accommodate 250 mm diameter wheel as well as 300 mm diameter wheels. The robust construction on dual columns ensures extremely flat surfaces. The working wheel is powered by a high torque 1,5 HP electric motor. The state of the art frequency converter allows smooth speed variation (50-750 rpm) of the grinding wheel with soft start and soft stop. Powerful enough to planar grinding of large and multiple specimens. Suitable for a very wide range of applications from very coarse grinding to very fine grinding and polishing. Automatic disc cleaning & drying function can be activated with a single button to obtain perfectly cleaned disc surfaces in seconds. The specimen holder is equipped with variable speed 50-150 rpm as well.

The stylish and functional housing is corrosion free and easy to clean. Molded wheel bowls and drains eliminate leaks and the build-up of residue is prevented by constant flushing of the bowl. The drive elements are fixed on heavy duty aluminum alloy casting. The wheels are mounted on ball bearings allowing the application of high pressures to prepare even large specimens. Ball bearings used provide quiet and vibration free operation. When required, the base unit can be operated in manual mode, as well.

ACCURA 102 has advanced techniques and software with programmable coloured HMI touch screen controls increasing the productivity, sample consistency and operator comfort. It is used to prepare high volumes of metallographic, ceramic and mineralogical specimens with consistent reproducible quality. Both "Central" and /or "Individual" forces can be applied and single samples as well as multi – samples can be accommodated. Thus, offering a perfect solution for all levels of sample throughput requirements. The specimen mover head has motorized positioning in horizontal and vertical directions with memory function. The force on the specimen 'individual' or 'central' is pneumatically controlled by a pressure transducer. Optional grinding depth measurement system allows you to measure the amount of material removed from the surface. The desired grinding depth can be set to grind different type of samples and also for applications that need special accuracy.



Ergonomic operation



Individual Force Application



Central Force Application

The "soft start and stop" feature automatically starts the sequence with a low initial force which is then increased to the preset. Towards the end of the cycle the force is automatically reduced to 75 % of the setting to prevent scratching. A variety of sample holders for individual or central force applications are available for different sample sizes. Both individual and central force specimen holders can be removed and inserted easily with the help of quick release chuck. By holding the head button on the software, the specimen holder will rotate for easy insertion and removal of the specimens.

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HMI touch screen controls increasing the productivity, sample consistency

All preparation parameters can be stored in memory under a specific program number. Each program can be saved for a material specific name such as "Cast Iron, Bronze, A-Si Alloy, etc." The parameters which can be saved are; Force, Cycle time, Wheel speed and direction, Mode of operation (individual or central pressure). Dispensing frequency can also be saved. These parameters are entered and stored in memory and displayed on the LCD screen as preset values. All the operator needs to do is to select the mode of operation (individual or central pressure), call up a specific program and press the "Start" button. It is possible to transfer parameters from an USB memory stick (export or import programs).

Upon completion of the cycle, an acoustic signal lets the operator know that the cycle is over and the samples are ready for the next step. When required, it is also possible to intervene in the program and change the parameters without stopping the instrument

### ENVIRO Recirculating Filtering System

Enviro Filter Unit is a closed loop recirculating filter system which is optionally available. It has a 20 lt reservoir capacity with 1 micron filter entering the grinder / polisher intake. Enviro can also be coupled with city water and 80 micron filtering system for disposal.

### Special Plexyglass Protection Unit

Optional Special Plexyglass Protection Unit encloses the complete preparation area for improved safety. The operator cannot contact to the rotating parts during operation. The ACCURA 102 will not get started unless the protection unit is closed. Also the ACCURA 102 will immediately stop as soon as the protection unit is opened.

### Barcode Scanner

Optional Barcode Scanner allows easy and quickly loading of correct parameters for different samples. This will eliminate the risk of loading wrong programs due to operator error and increases efficiency. You can simply develop a barcode system for your each specimen on your laboratory to enable fast data entry with less errors.



LED lighting to illuminate the working area



Retractable water hose for easy cleaning



Special plexyglass protection unit



Simple exchange of working discs



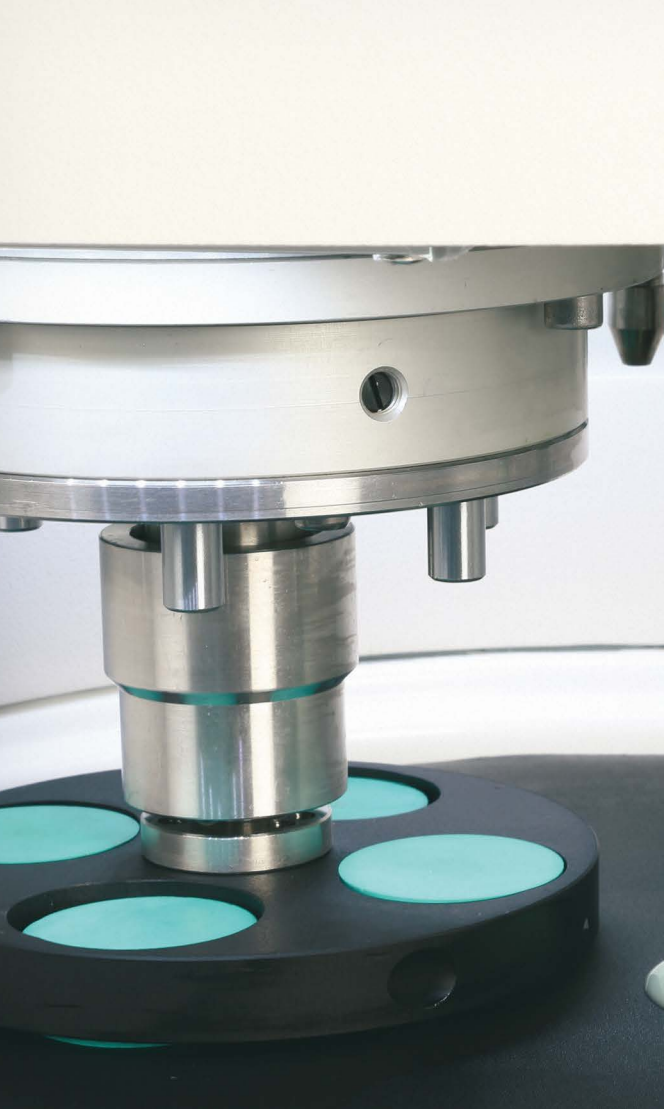
Enviro recirculating filtering unit [1 micron]

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## Peristaltic Dispenser

Two different dosing systems are available for ACCURA 102 with 4 peristaltic pumps (3 for diamond suspensions/lubricant and 1 for aluminum oxide suspensions) or with 6 peristaltic pumps (5 for diamond suspensions/lubricant and 1 for aluminum oxide suspensions).

Optional Peristaltic Dispenser is located just behind the automatic head which allows you to save space. The optional automatic fluid dispenser used in combination to obtain consistent specimens and to save time and consumables. Both diamond suspensions/lubricants and aluminum oxide suspensions can be fed. Dispensing parameters like; frequency, fluid selection etc. are controlled through the LCD screen of the ACCURA 102. High quality peristaltic pumps guarantee exactly the same dosing every time.

Pre-dosing function lubricates the polishing cloth before each operation to increase the life of polishing cloth and obtain perfectly polished specimen surfaces. The suspensions and lubricants that are remained in the dosing tubes are retract back at the end of every step to eliminate the risk of contamination from coarse abrasive on a finer grain size with auto retract function.

Automatic Liquid Level Calculation of suspensions and lubricants also available and can be monitored through the LCD screen of the Accura 102. The calibration can be carried out when a lubricant or suspension is filled. The operator will be informed to refill the bottle when the suspension/lubricant level is below the critical value



Automatic Fluid Dispenser



Barcode Scanner

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# SPECIFICATIONS

ORDER NO	45 00
MODEL NO	ACCURA 102
Application of Force	Individual + Central
Individual Force, [N]	5-100
Central Force, [N]	30-500
Head Motor, W	100
Motor Power, HP	1,5
Wheel Diameter, [mm]	250/300
Head Rotation Direction	CW/CCW
Wheel Rotation Direction	CW/CCW
HMI Touch Screen, [inch]	7"
Program Memory	30
Peristaltic Dispenser	Optional
"Grinding Depth Measurement [Z Axis]"	Optional
"Grinding Depth Measurement Accuracy [ $\mu$ ]"	10
Horizontal Positioning	Yes
Horizontal Positioning,mm	50
Dimensions, W x D x H, [cm]	73 x 79 x 73
Weight, [kgs]	200

## 45 00-250 — Accura 102

Powerful Preparation System with solid frame design on two columns, for superior surfaces, for a very wide range of applications from very coarse grinding to very fine grinding and polishing, suitable for 250 mm as well as 300 mm dia. applications, programmable sample preparation with colored 7" HMI touch screen control, with Siemens PLC control unit. Base Unit with large 1.5 HP motor, with overload protection, variable wheel speed from 50 to 750 rpm, quiet belt drive, vibration-free and robust construction, Soft Start/Stop, planar grinding feature, Complementary or Contra rotational direction, retractable water hose, water supply and drain tubes. Motorized positioning of the Head Unit in Z and X axis, pneumatically adjustable central and/or individual force loading system, quick replacement system for both central and individual specimen holders, half-round rotation feature for easy insertion and removal of single specimens, with variable specimen holder speed 50-150 rpm, 100 Watt DC motor, automatic disc cleaning & drying function with single button, LED lighting, audible warning signal, air supply tubes. Complete and ready for operation. Without Specimen Holders. 230 V, 1-phase, 50/60 Hz.

### Includes the following standard set of consumables;

- Special Magnetic Foil,  $\varnothing$  250 mm.
- Thin Metal Plate(1 pcs),  $\varnothing$  250 mm
- Magneto grinding disc 18 mic., 250 mm dia.
- An assortment of 5 polishing cloths 250 mm dia.
- Diamond suspensions one of each of 6 mic. and 1 mic., plus lubricant

## ACCURA 102

45 00-300 — As above, but consumable kits for 300 mm dia. application.

## GR 0875 — Dosing Modules for ACCURA 102

Automatic Fluid Dispenser, programmable and controllable from the touch screen of ACCURA 102, with pre-dosing function, with 4 micro peristaltic pumps (3 for diamond suspensions/lubricant and 1 for alumina suspensions) with automatic liquid level calculation, with automatic retract function at the end of every step to prevent contamination (To be ordered simultaneously together with the machine order)

## GR 0876

Automatic Fluid Dispenser, programmable and controllable from the touch screen of ACCURA 102, with pre-dosing function, with 6 micro peristaltic pumps (5 for diamond suspensions/lubricant and 1 for alumina suspensions) with automatic liquid level calculation, with automatic retract function at the end of every step to prevent contamination (To be ordered simultaneously together with the machine order)

### Operational Accessories for ACCURA 102

#### 250 mm application

- 31 21 — PVC wheel, 250 mm
- 31 42 — Aluminum wheel, 250 mm
- 31 65 — Splash guard, 250 mm

#### 300 mm application

- 31 31 — PVC wheel, 300 mm
- 31 52 — Aluminum wheel, 300 mm
- 31 75 — Splash guard, 300 mm

### Accessories for ACCURA 102

- GR 0872 — Z-axis material removal with depth control, for ACCURA 102 (To be ordered simultaneously together with the machine order)
- GR 0665 — Barcode Scanner for easy loading correct programs for different samples
- 31 14 — Special Protection Cover, to be used with ACCURA 102 (To be ordered simultaneously together with the machine order)
- GR 1693 — Cabinet for ACCURA 102
- GR 0440 — Air filtering and lubricating unit.

## SPECIFICATIONS

### Specimen Holders for Individual Force Application [for FORCIMAT 52/102/TS, ACCURA 102, VELOX 402]

- 33 31** — Individual force specimen holder, Ø145mm, for 6 x Ø25 mm specimens.
- 33 32** — Individual force specimen holder, Ø145mm, for 6 x Ø30 mm specimens.
- 33 33** — Individual force specimen holder, Ø145mm, for 6 x Ø40 mm specimens.
- 33 34** — Individual force specimen holder, Ø145mm, for 3 x Ø50 mm specimens.
- 33 35** — Individual force specimen holder, Ø145mm, for 6 x Ø1" specimens.
- 33 36** — Individual force specimen holder, Ø145mm, for 6 x Ø1 1/4" specimens.
- 33 37** — Individual force specimen holder, Ø145mm, for 6 x Ø1 1/2" specimens.
- 33 38** — Individual force specimen holder, Ø145mm, for 3 x Ø2" specimens.
- 33 39** — Individual force specimen holder, Ø145mm, Blank.
- 33 02** — Set of insert rings for Ø30 mm (to be used with 33 33)
- 33 03** — Set of insert rings for Ø25 mm or Ø1" (to be used with 33 33)
- 33 04** — Set of insert rings for Ø1 1/4" (to be used with 33 33)
- 33 05** — Set of insert rings for Ø1 1/2" (to be used with 33 33)

### Accessories for Specimen Loading

- 45 60** — LEVOMAT  
Specimen Loading Fixture, to level the specimens within the central force specimen holders, without specimen loading plate.

### Specimen Loading Plates

- 45 10** — Specimen Loading Plate Ø 130 mm
- 45 50** — Specimen Loading Plate Ø 160 mm

### ENVIRO Recirculating Filtering System

- GR 0865** — ENVIRO Recirculating Filtering System, Closed loop 1 micron filtering system with 20 lt. recirculating water tank, suitable to operate with line water on 80 micron filter as well. Requires 4 bar compressed air. Ready for operation with all Metkon Grinder/Polishers

- YM 6214-00** — Filter, 10 inches 1 Micron

### Specimen Holders for Central Force Application [for FORCIMAT 102, ACCURA 102, VELOX 402]

- 46 81** — Clamp type specimen holder, Ø130mm, 6 specimens with Ø25 mm.
- 46 82** — Clamp type specimen holder, Ø130mm, 6 specimens with Ø30 mm.
- 46 83** — Clamp type specimen holder, Ø130mm, 4 specimens with Ø40 mm.
- 46 84** — Clamp type specimen holder, Ø130mm, 6 specimens with Ø1"
- 46 85** — Clamp type specimen holder, Ø130mm, 6 specimens with Ø1 1/4"
- 46 86** — Clamp type specimen holder, Ø130mm, 4 specimens with Ø1 1/2"
- 46 88** — Teardrop specimen holder, Ø130 mm, 6 specimen x 10 - 32 mm.
- 46 89** — Teardrop specimen holder, Ø130 mm, 4 specimen x 10 - 42 mm.
- 46 44** — Clamp type specimen holder, Ø 130 mm for 4 rectangular specimen 25 X 32 mm.
- 46 46** — Clamp type specimen holder, Ø 160 mm for 3 rectangular specimen 40 x 70 mm.
- 46 91** — Clamp type specimen holder, Ø160mm, 10 specimens with Ø25 mm.
- 46 92** — Clamp type specimen holder, Ø160mm, 8 specimens with Ø30 mm.
- 46 93** — Clamp type specimen holder, Ø160mm, 6 specimens with Ø40 mm.
- 46 94** — Clamp type specimen holder, Ø160mm, 4 specimens with Ø50 mm.
- 46 95** — Clamp type specimen holder, Ø160mm, 10 specimens with Ø1"
- 46 96** — Clamp type specimen holder, Ø160mm, 8 specimens with Ø1 1/4"
- 46 97** — Clamp type specimen holder, Ø160mm, 6 specimens with Ø1 1/2"
- 46 98** — Clamp type specimen holder, Ø160mm, 4 specimens with Ø2"
- 46 39** — Clamp type specimen holder, Ø220mm, 3 specimens for irregular shaped samples

[Specimen holders with Ø160mm can only be used with 300 mm wheels]

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

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