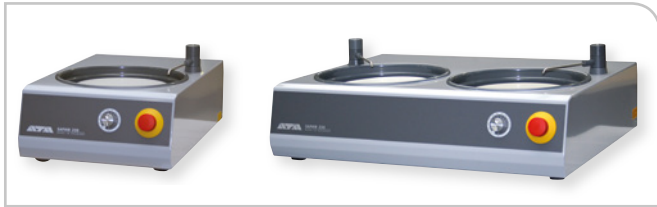




Jade 700

Saphir 375

Saphir 300



Saphir 320

Saphir 330



Saphir 350

Saphir 360

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Saphir 520

Saphir 530 with Rubin 500

Topas 130

Systemautomat (example 5 stations)



Saphir 550 with Rubin 520

Saphir 550 with Rubin 540

Saphir 560 with Rubin 520

Kristall 620

Kristall 650



**EQUIPMENT**

The complete device consists of a basic module and its equipment. When compiling a complete unit, the selection of the respective equipment is required. A device thus consists of several article numbers. The numbering in the ‚Specifications‘ correspond to the equipment.

**OPTION**

Options if desired, have to be selected in ordering equipment. They can not be easily retrofitted.

**ACCESSORIES**

Accessories can be selected independently of the ordering equipment.

**ARTICLE****FUNCTIONING****E-LAB**

An e-Lab-ready device can be connected to a PC with a network. Preparation procedures are thus reproducible and interchangeable.

**INFO**

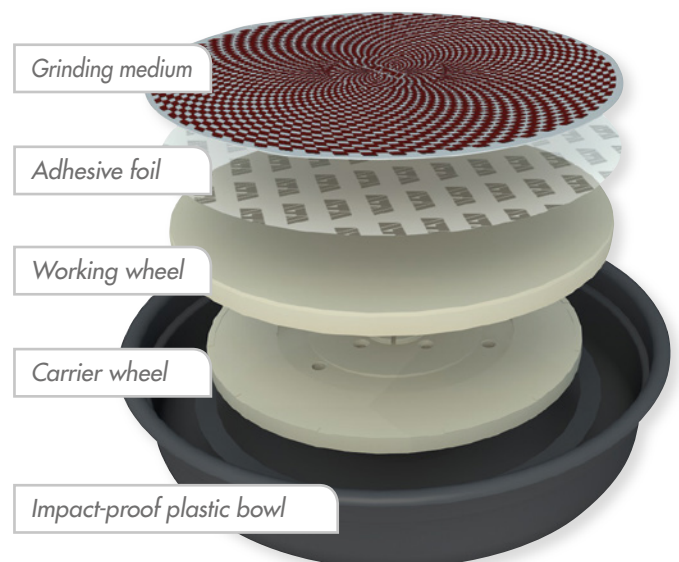
Supplementary product information

**MADE IN GERMANY**

All components used by us, as well as the construction design correspond to the normal device requirements for industry in Germany and EC Safety Regulations.

The units are finished in service friendly modular construction.

Technical changes reserved.





### EASY BELT EXCHANGE

Both shroud covers are made of stainless steel and are simply opened backwards. This allows free access to the individual belts.

Rotate the front tension wheel to loosen the belt which can then be removed from the side.

Similarly, by rotating the adjustment wheel, the new belt can be centred onto the middle of the working surface.



## JADE 700

The JADE 700 is a stable wet double-belt grinder for deburring and pre-grinding of samples or other materials.

It is possible to use belts with 2 different grain sizes simultaneously.



### DRIVE

A powerful motor drives both belts at the same time. The rubber coated drive wheels, which are fitted with a special tread, prevent the belt from slipping.

### WATER-COOLING

A water film is created over the whole width of the front end of the belt. Waste material generated is carried to the back with the water and both are drained-off into the machine. Drain-offs are separated, one to the left, one to the right.

## BASIC MODULE



## JADE 700



Order No.: M6000010

- » two grinding belts
- » water cooling
- » manual belt centering
- » water regulating valve left/right
- » aluminium design, powder coated
- » stainless steel cover

## EQUIPMENT

## POWER SUPPLY



Equipment 1

400 V/50 Hz (3Ph/N/PE)

Order No.: A6000001

Equipment 2

480 V/60 Hz (3Ph/PE)

Order No.: A6000002

Equipment 3

220 V/60 Hz (3Ph/PE)

Order No.: A6000003

## ACCESSORIES

## SETTLING TANK



» 2-chamber-compartment, 45 ltr.

for System lab cabinet  
(insertion mechanism)

referring height of System cabinet

H 800 mm      Order No.: A5810261

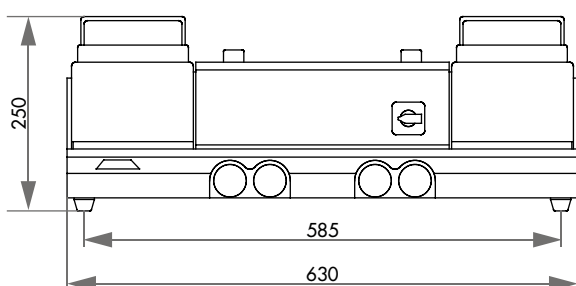
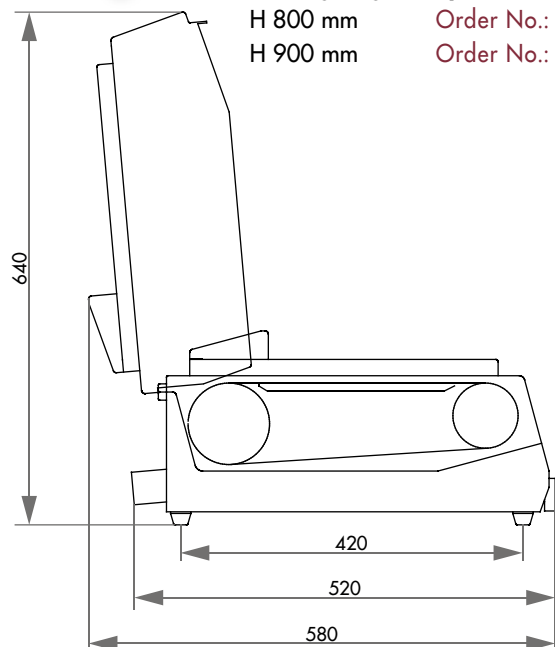
H 900 mm      Order No.: A5810237

» inlet sieve and filter bag

mobile



Order No.: A5800496



## CONNECTION SET



Order No.: Z5600008

- |                 |                |
|-----------------|----------------|
| 1 drain tube    | Ø 40 mm; 1.5 m |
| 1 pressure tube | R 1/2"; 2 m    |

## SPECIFICATIONS

Connected load	1.4 kVA
Belt speed	7 m/sec.
Grinding belts	100 x 920 mm 100 x 915 mm
Water connection	drain 1x R1/2" valve right and left, each Ø 40mm
WxHxD approx.	630 x 250 x 520 mm
Weight	55 kg

**TOUCH-SCREEN-OPERATION**

All relevant parameters are clearly shown on the large 8.4" touch display during the grinding process.

The grinding process can be easily programmed by tapping the different colored icons. Created processes can be password protected and stored with individual information.

The Saphir 375 is equipped with an USB port for fast data transfer, program backups, and updates. Remote maintenance can be enabled via an Ethernet interface.

**Saphir 375**

The System Grinder SAPHIR 375 is a solid free-standing unit for effective, plane grinding with a stone.

The grinding head with central pressure is equipped for clockwise or counter-clockwise rotation, and optimally adjustable with variable speed and pressure.

Automatic material removal monitors the removal rate and controls the dressing process. All relevant parameters can be displayed, adjusted and saved via the clear touch-screen interface. A recirculating coolant system is integrated into the modular type aluminium construction.

**MATERIAL REMOVAL MEASUREMENT**

The removal height can be programmed within 0.1 mm accuracy.

In fully automatic mode, the stone's dressing frequency is determined and controlled automatically during the grinding process. Stones may also be dressed at predetermined intervals as well as manually.

Initial dressing occurs automatically when setting up a new stone. Remaining stone usage and processes are dynamically displayed on the screen.

**SAFETY CONCEPT**

The grinding process is activated with Two-Handed Control. The abrasive stone is fully enclosed during the grinding cycle. A safety sensor prevents grinding to occur without grinding stone cover.

The grinding process cannot be started before setting up the stone.



*System lab construction enables variable combinations*

## BASIC MODULE



## SAPHIR 375



Order No.: A5810290

- » free standing grinder with powerful drive
- » central pressure
- » grinding head Rubin 530 with variable speed
- » intuitive operation via Touch-Screen
- » controlled removal
- » automatic, interval controlled dressing
- » grinding disc fully enclosed during grinding
- » integrated in System Lab cabinet made of aluminium, powder coated

## EQUIPMENT

## POWER SUPPLY



Equipment 1

**400 V/50 Hz (3Ph/N/PE)**

Order No.: A5810287

Equipment 2

**480 V/60 Hz (3Ph/PE)**

Order No.: A5810288

Equipment 3

**220 V/60 Hz (3Ph/PE)**

Order No.: A5810289



## ADAPTION FOR GRINDING STONE



Equipment1

Order No.: A5810291

- » adaption for ATM standard grinding stone (glued carrier plate)

## ACCESSORIES

## RECIRCULATION COOLING SYSTEM WITH INSERTION MECHANISM



- » 2-chamber-pvc-compartment 45 ltr.
- » controlled by grinder

**400 V/50 Hz (3Ph/N/PE)**

Order No.: A5800484

**480 V/60 Hz (3Ph/PE)**

Order No.: A5800485

**220 V/60 Hz (3Ph/PE)**

Order No.: A5800486



## BELT FILTER SYSTEM 130



- » for high grinding volume
- » incl. filter roll

**400 V/50 Hz (3Ph/PE)**

Order No.: A6501009

**480 V/60 Hz (3Ph/PE)**

Order No.: A6501011

**220 V/60 Hz (3Ph/PE)**

Order No.: A6501010

Tank	130 ltr.
Filter capacity	30 ltr./min (referring emulsion)
Pump	15 ltr./min
WxHxD	607x632x1308 mm
Weight approx.	90 kg

- » for belt filter system please order connection-set

Order No.: Z6501005

## SPECIFICATIONS

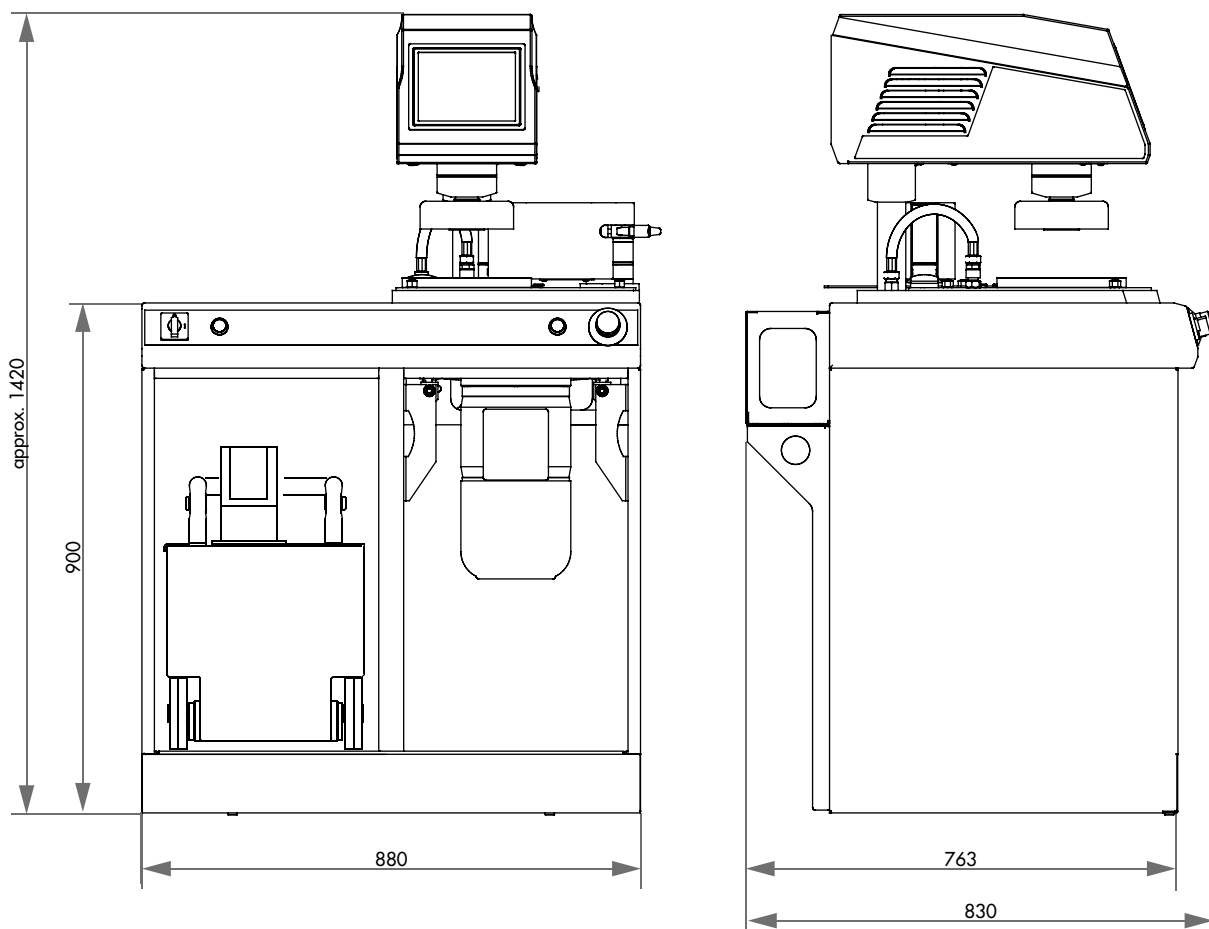
Connected load	7 kVA	
Power supply	1	400 V/50 Hz (3Ph/N/PE)
	2	480 V/60 Hz (3Ph/PE)
	3	220 V/60 Hz (3Ph/PE)
GRINDING MODULE		
Speed*	1	1390 rpm
	2	1700 rpm
	3	1695 rpm
Grinding stone	Ø 350 mm	
Usable coating	30 mm	

## GRINDING HEAD RUBIN 530

Central pressure	sample holder Ø 160 – 204 mm
Variable speed	30 – 150 rpm
Variable pressure	50 – 400 N
Controlled removal	0.1 mm display precision

WxHxD approx.	880 x 1420 x 830 mm
Weight	230 kg

\* depending on power supply (equipment)



Our laboratory furniture system couples functionality with a sleek, customized look. With our 3D design software you can visit your requested laboratory virtually and all data referring connections, local conditions and offer are already stored.



## JUST MORE THAN A CABINET

With our laboratory system an ideal machine substructure can be assembled, which perfectly fits into the laboratory line.

Cooling device and connections disappear in the modular aluminum housing.



*Storage for storing grinding paper and polishing cloths*



*Storage for grinding and polishing discs*







**SIMPLE OPERATION**

Speed is shown on the display.  
The motor is switched ON/OFF by the jog control switch on the hand piece.

**SPEED**

The pressure applied is registered by a micro-computer and the speed is kept constant.  
The speed is infinitely adjustable from 1,000 - 40,000 rpm.



**Saphir 300**

The SAPHIR 300 is a transportable grinder and polisher designed for manual operation.

**ACCESSORIES**

The torque can be greatly increased by using an additional reduction gear unit.  
Grinding and polishing cloths can be attached at right angles or at 45° angles with the use of rubber carriers with Velcro fastenings.



**BASIC MODULE**

**ELECTRONIC CONTROL UNIT**



Order No.: 95004841

» connector for 2 micromotors

Power supply 230 V / 50 - 60 Hz

WxHxD approx. 130 x 97 x 254

Weight 2.3 kg



ACCESSORIES

MICRO MOTOR



**ENK-250 T**  
Order No.: 95005506

Speed 1,000 – 25,000 rpm



**ENK-410 S**  
Order No.: 95004842

Speed 1,000 – 40,000 rpm



REDUCTION GEAR

**01**  
Order No.: 92004479  
» increasing of torque 4x  
» speed reduced to 1/4

**02**  
Order No.: 92004480  
» increasing of torque 15x  
» speed reduced to 1/15



ANGLE PARTS



Fixing system Ø 3 mm  
Weight 0.042 kg

**45°**  
Order No.: 92004481



**90°**  
Order No.: 92004482



STRAIGHT HANDLE



Order No.: 92004483  
» for coarse pre-grinding  
» rubber coating for ideal grip

Fixing system Ø 6 mm  
Weight 0.15 kg



PEDAL SWITCH

Order No.: 92004484



RUBBER CARRIER

**3/30 GTH**  
Order No.: 92004284  
» for grinding papers and polishing cloths with Velcro fastening

Shaft Ø 3 mm



**3/60 GTH**  
Order No.: 92004297  
» for grinding papers and polishing cloths with Velcro fastening

Shaft Ø 6 mm



**3/30 GTK**  
Order No.: 92005551  
» for grinding papers and polishing cloths with PSA

Shaft Ø 3 mm



**VARIABLE SPEED**

The variable speed is determinable through a rotating switch. The speed can also be changed during the working cycle. The high torque stays constant through the whole speed range.

**WATER**

The water supply is switched manually. The rinsing tap can be pulled out for cleaning the basin with the hose extension.

Optimum distribution of water can be reached by swinging the tap left and right across the diameter of the working wheel.



## Saphir 320

The SAPHIR 320 is a single wheel grinder and polisher for working wheels  $\varnothing$  200 - 250 mm.

The especially strong, speed-controlled drive allows application for all working steps.

The shock-resistant plastic basin, powder-coated aluminium housing and high standard of technology inside the unit lend the requisites for quiet and smooth running.

**BASIC MODULE****SAPHIR 320**

Order No.: M5630010

- » single wheel grinder/polisher
- » variable speed
- » aluminium case, powder coated
- » impact-proof plastic bowl
- » schlagfeste Kunststoffwanne
- » manual water solenoid
- » basin rinsing
- » incl. splashing ring and cover

**EQUIPMENT****POWER SUPPLY**

Equipment 1

**230 V/50 Hz (1Ph/N/PE)**

Order No.: A5630001

Equipment 2

**110 V/60 Hz (1Ph/N/PE)**

Order No.: A5630002



## ACCESSORIES

## SETTLING TANK



» 2-chamber-compartment, 45 ltr.

» inlet sieve and filter bag

**for System lab cabinet  
(insertion mechanism)****referring height of System cabinet**

H 800 mm      Order No.: A5810261

H 900 mm      Order No.: A5810237

**mobile**

Order No.: A5800496

## CONNECTION SET



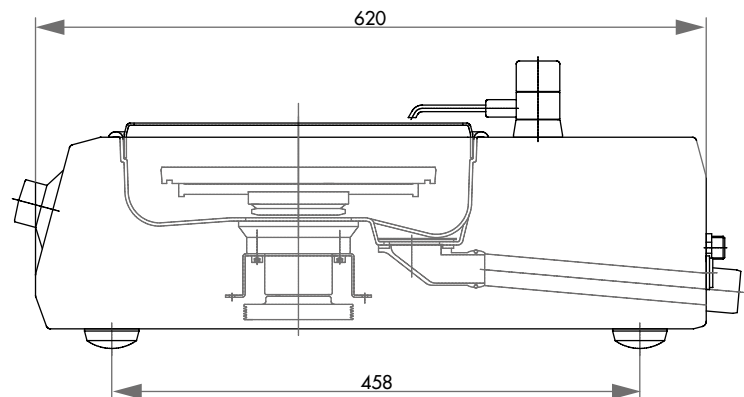
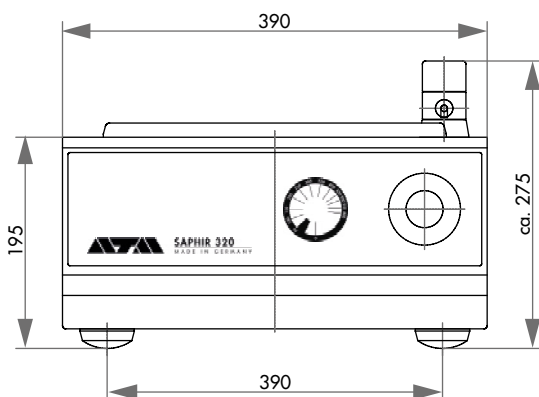
Order No.: Z5600008

1 drain tube      Ø 40 mm; 1.5 m

1 pressure tube    R 1/2"; 2 m

## SPECIFICATIONS

Working wheel	Ø 200 - 250 mm	Speed	50 - 600 rpm
Connected load	1.5 kVA	WxHxD approx.	390 x 195 x 620 mm
Power supply	1 230 V/50 Hz (1Ph/N/PE)	Weight	22 kg
	2 110 V/60 Hz (1Ph/N/PE)		



**VARIABLE SPEED**

The variable speed is determinable through a rotating switch. The speed can also be changed during the working cycle. The high torque stays constant through the whole speed range.

**WATER**

The water supply is switched manually. The rinsing tap can be pulled out for cleaning the basin with the hose extension. Optimum distribution of water can be reached by swinging the tap left and right across the diameter of the working wheel.

**Saphir 330**

The SAPHIR 330 is a single wheel grinder and polisher for working wheels  $\varnothing$  200 - 250 mm.

The especially strong, speed-controlled drive allows application for all working steps.

The shock-resistant plastic basin, powder-coated aluminium housing and high standard of technology inside the unit lend the requisites for quiet and smooth running.

**BASIC MODULE****SAPHIR 330**

- Order No.: M5630020
- » twin wheel grinder/polisher
  - » variable speed
  - » aluminium case, powder coated
  - » impact-proof plastic bowl
  - » manual water valve
  - » basin rinsing
  - » incl. splashing ring and cover

**EQUIPMENT****POWER SUPPLY**

Equipment 1

**230 V/50 Hz (1Ph/N/PE)**

Order No.: A5630003

Equipment 2

**110 V/60 Hz (1Ph/N/PE)**

Order No.: A5630004



## ACCESSORIES

## SETTLING TANK



» 2-chamber-compartment, 45 ltr.

» inlet sieve and filter bag

**for System lab cabinet  
(insertion mechanism)****referring height of System cabinet**

H 800 mm      Order No.: A5810261

H 900 mm      Order No.: A5810237

**mobile**

Order No.: A5800496

## CONNECTION SET



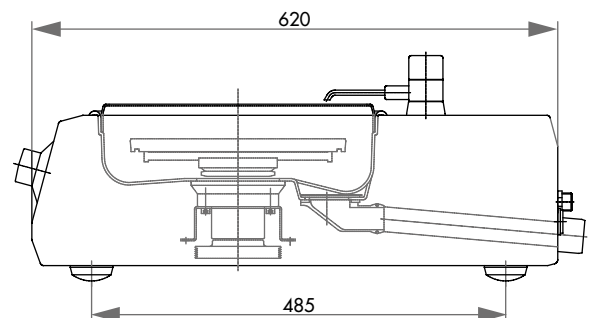
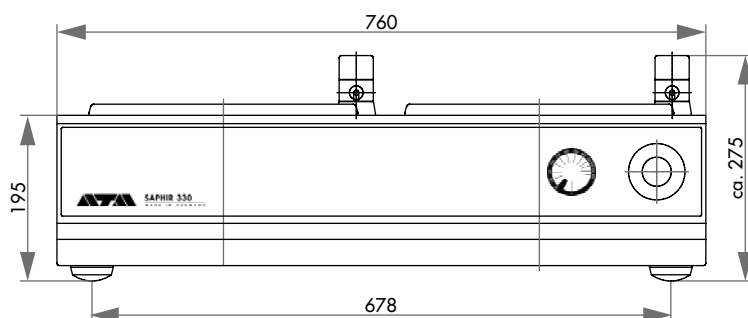
Order No.: Z5600008

1 drain tube      Ø 40 mm; 1.5 m

1 pressure tube    R 1/2"; 2 m

## SPECIFICATIONS

Working wheel	Ø 200 - 250 mm	Speed	50 - 600 rpm
Connected load	1.5 kVA	WxHxD approx.	760 x 195 x 620 mm
Power supply	1 230 V/50 Hz (1Ph/N/PE)	Weight	44 kg
	2 110 V/60 Hz (1Ph/N/PE)		



**VARIABLE SPEED**

The speed is shown digitally on the display.  
The speeds are divided into 50, 150, 300 and 450 rpm.  
They can also be changed during the working cycle.

**WATER**

The automatically switched integrated basin rinsing is cooling the working wheel and cleaning the basin during th entire working process.  
The rinsing tap can be pulled out with the hose extension.  
Optimum distribution of water can be reached by swinging the tap left and right across the diameter of the working wheel.



## Saphir 350

The SAPHIR 350 is a single wheel grinder and polisher for working wheels Ø 200 - 300 mm.

The especially strong, speed controlled drive allows the strongest pressures. The clearly arranged and robust menu display enables

user friendly operation.

The shock-resistant plastic basin, powder coated Aluminium

housing and high standard of technology inside the unit lend the requisites for quiet and smooth running.

**BASIC MODULE****SAPHIR 350**

Order No.: M5600110

- » single wheel grinder/polisher
- » aluminium case, powder coated
- » impact proof plastic bowl
- » variable speed
- » LED display
- » automatic water solenoid
- » integrated basin rinsing with cleaning and cooling function
- » automatic water valve
- » incl. splashing ring and cover

**EQUIPMENT****POWER SUPPLY**

Equipment 1

**230 V/50 Hz (1Ph/N/PE)**

Order No.: A5600035

Equipment 2

**110 V/60 Hz (1Ph/N/PE)**

Order No.: A5600036



## ACCESSORIES

## SETTLING TANK



» 2-chamber-compartment, 45 ltr.

» inlet sieve and filter bag

**for System lab cabinet  
(insertion mechanism)****referring height of System cabinet**

H 800 mm      Order No.: A5810261

H 900 mm      Order No.: A5810237

**mobile**

Order No.: A5800496

## CONNECTION SET



Order No.: Z5600008

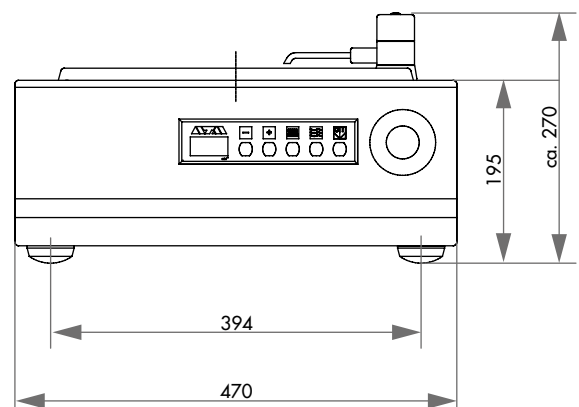
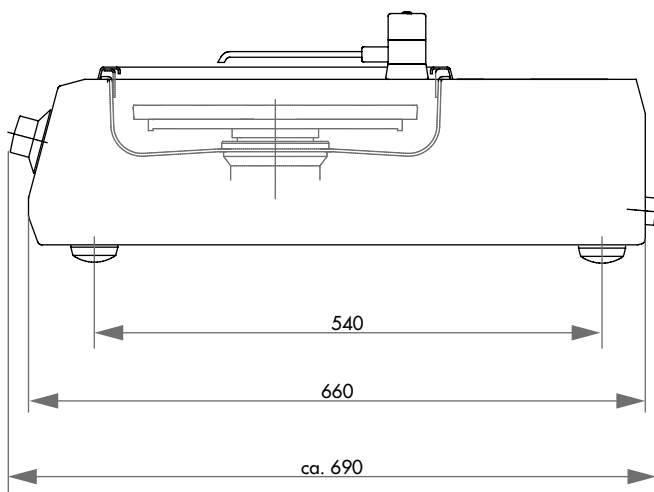
1 drain tube      Ø 40 mm; 1.5 m

1 pressure tube    R 1/2"; 2 m

## SPECIFICATIONS

Working wheel	Ø 200 – 300 mm
Connected load	2.3 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)

Speed	50 – 600 rpm
WxHxD approx.	470 x 195 x 660 mm
Weight	30 kg





**VARIABLE SPEED**

The speed is shown digitally on the display.  
The speeds are divided into 50, 150, 300 and 450 rpm.  
They can also be changed during the working cycle.

**WATER**

The automatically switched integrated basin rinsing is cooling the working wheel and cleaning the basin during the entire working process. The rinsing tap can be pulled out with the hose extension. Optimum distribution of water can be reached by swinging the tap left and right across the diameter of the working wheel.



## Saphir 360

The SAPHIR 360 is a twin wheel grinder and polisher for working wheels  $\varnothing$  200 - 300 mm.

The especially strong, speed controlled drive allows the strongest pressures. The clearly arranged and robust menu display enables

user friendly operation.

The shock-resistant plastic basin, powder coated Aluminium housing and high standard of technology inside the unit lend the requisites for quiet and smooth running.

**SAPHIR 360**

- Order No.: M5600120
- » twin wheel grinder/polisher
  - » aluminium case, powder coated
  - » impact-proof plastic bowl
  - » variable speed
  - » LED display
  - » automatic water solenoid
  - » integrated basin rinsing with cleaning and cooling function
  - » automatic water valve
  - » incl. splashing ring and cover

**BASIC MODULE****POWER SUPPLY**

Equipment 1

**230 V/50 Hz (1Ph/N/PE)**

Order No.: A5600037

Equipment 2

**110 V/60 Hz (1Ph/N/PE)**

Order No.: A5600038

**EQUIPMENT**

## ACCESSORIES

## SETTLING TANK



» 2-chamber-compartment, 45 ltr.

» inlet sieve and filter bag

**for System lab cabinet  
(insertion mechanism)****referring height of System cabinet**

H 800 mm      Order No.: A5810261

H 900 mm      Order No.: A5810237

**mobile**

Order No.: A5800496

## CONNECTION SET



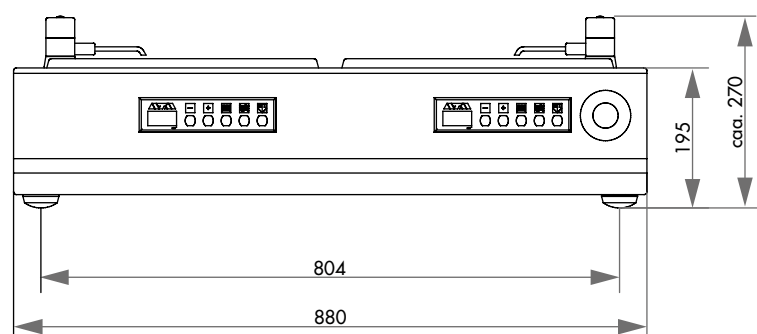
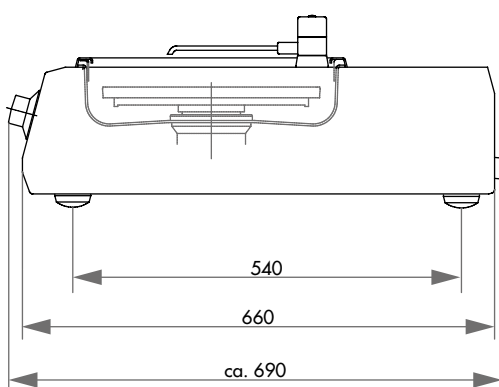
Order No.: Z5600008

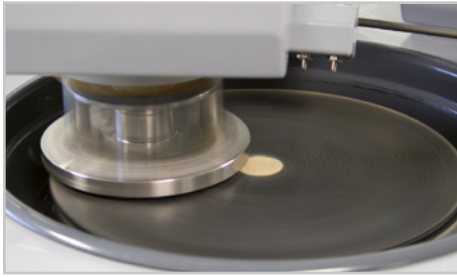
1 drain tube      Ø 40 mm; 1.5 m

1 pressure tube    R 1/2"; 2 m

## SPECIFICATIONS

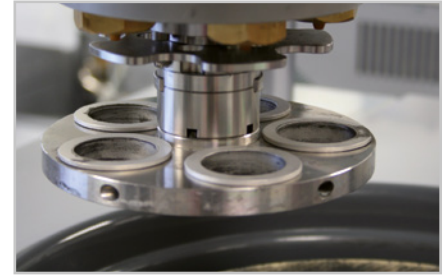
Working wheel	Ø 200 – 300 mm	Speed	50 – 600 U/min
Connected load	4.6 kVA	WxHxD approx.	880 x 195 x 660 mm
Power supply	1 230 V/50 Hz (1Ph/N/PE)	Weight	57 kg
	2 110 V/60 Hz (1Ph/N/PE)		



**VARIABLE SPEED**

The variable speed of the working wheel is set at the control panel of the grinding and polishing head Rubin 500.

The speed can also be changed during the working sequence.

**ELECTRONIC CONTROL**

The control panel is designed to be especially robust. All parameters can be changed at the control knob.

The logical design makes operation easy.



## Saphir 520

The SAPHIR 520 is a single wheel grinder and polisher with top-mounted grinding and polishing head Rubin 500 for working wheels Ø 200 - 250 mm.

This unit will convince you best of all through its easy operation and wide range of possibilities. Sequence time, down-pressure,

speed control, rotational direction, pneumatic lowering, single and central pressure as well as program saving and a few things more are all available.

Additionally, there are all the advantages of the Saphir 320, a machine with impressive characteristics.

**WATER**

The water supply is switched manually. The rinsing tap can be pulled out for cleaning the basin with the hose extension.

Optimum distribution of water can be reached by swinging the tap left and right across the diameter of the working wheel.



**SAPHIR 520****BASIC MODULE**

Order No.: M5630030

- » single wheel grinder/polisher with Rubin 500 head
- » single and central pressure
- » variable speed
- » electronic control with LC-Display
- » programmable memory
- » polishing head: clockwise/anti-clockwise rotation
- » pneumatic height adjustment
- » manual swivelling sideways
- » automatic water solenoid
- » basin rinsing
- » incl. splashing ring and cover
- » aluminium case, powder coated
- » impact-proof plastic bowl
- » e-Lab ready

**EQUIPMENT****POWER SUPPLY**

Equipment 1

Equipment 2

**230 V/50 Hz (1Ph/N/PE)****110 V/60 Hz (1Ph/N/PE)**

Order No.: A5630005

Order No.: A5630006

**ACCESSORIES****DOSING UNIT TOPAS 130**

Order No.: M6300040

- » automatic dosing unit for 3x diamond suspension and 1x lubricant
- » variable dosing
- » reverse rinsing function
- » manual or automatic function

WxHxD approx. 180x240x195 mm

**POWER SUPPLY**

Equipment 1

Equipment 2

**230 V/50 Hz (1Ph/N/PE)****110 V/60 Hz (1Ph/N/PE)**

Order No.: A6300001

Order No.: A6300002

**HOLDER FOR DOSING NOZZLES**

Order No.: A6300003

- » for automatic mode with Topas 130



## ACCESSORIES

## SETTLING TANK



» 2-chamber-compartment, 45 ltr.

» inlet sieve and filter bag

**for System lab cabinet  
(insertion mechanism)****referring height of System cabinet**

H 800 mm      Order No.: A5810261

H 900 mm      Order No.: A5810237

**mobile**

Order No.: A5800496

## CONNECTION SET



Order No.: Z5600009

1 drain tube	Ø 40 mm; 1.5 m
1 pressure tube	R 1/2"; 2 m
1 pressure tube	R 3/8" coupling and screw thread; 3 m

## SPECIFICATIONS

Connected load	1.8 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)

SAPHIR 520

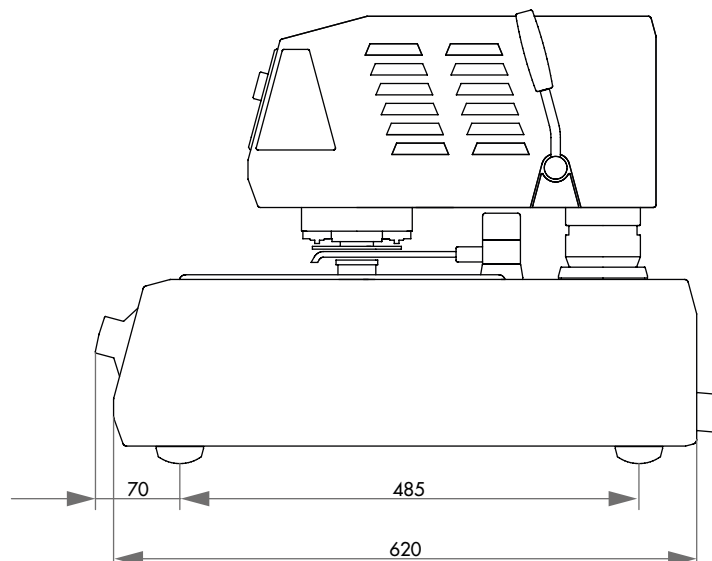
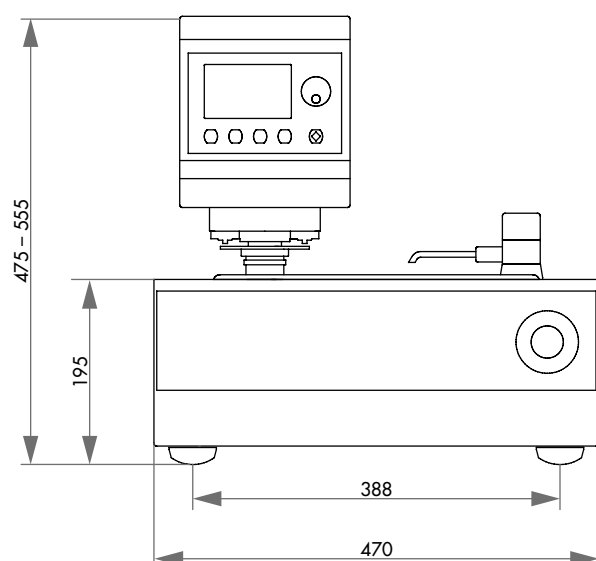
Working wheel	Ø 200 – 250 mm
Speed	50 – 600 rpm

RUBIN 500

Single pressure	1 – 5 samples, Ø 40 mm
Central pressure	depends on sample holder
Speed	140 rpm

Pressure	variable
Single pressure	5 – 100 N
Central pressure	20 – 350 N

WxHxD approx.	470 x 475 – 555 x 620 mm
Weight	52 kg

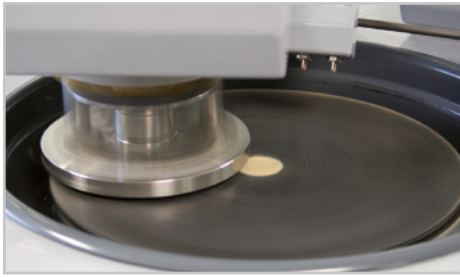




## SPECIAL SOLUTION

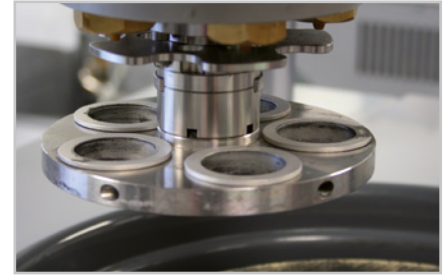
The operation of the Saphir 520 was outsourced to a separate operating unit; entirely made of stainless steel the device can be used , e.g. with external control in a hot cell.



**VARIABLE SPEED**

The variable speed of the working wheel is set at the control panel of the grinding and polishing head Rubin 500.

The speed can also be changed during the working sequence.

**ELECTRONIC CONTROL**

The control panel is designed to be especially robust. All parameters can be changed at the control knob.

The logical design makes operation easy.



## Saphir 530

The SAPHIR 530 is a twin wheel grinder and polisher with top-mounted grinding and polishing head Rubin 500 for working wheels  $\varnothing$  200 - 250 mm.

This unit will convince you best of all through its easy operation and wide range of possibilities. Sequence time, down-pressure,

controlled speed, rotational direction, pneumatic lowering, single and central pressure as well as program saving and a few things more are all available.

Additionally, there are all the advantages of the Saphir 330, a machine with impressive characteristics.

**WATER**

The water supply is switched manually. The rinsing tap can be pulled out for cleaning the basin with the hose extension.

Optimum distribution of water can be reached by swinging the tap left and right across the diameter of the working wheel.



## BASIC MODULE

## SAPHIR 530



Order No.: M5630040

- » twin wheel grinder/polisher with Rubin 500 head
- » single and central pressure
- » variable speed
- » electronic control with LC display
- » programmable memory
- » polishing head: clockwise/anti-clockwise rotation
- » pneumatic height adjustment
- » manual swivelling sideways
- » automatic water solenoid
- » basin rinsing
- » incl. splashing ring and cover
- » aluminium case, powder coated
- » impact proof plastic bowl
- » e-Lab ready

## EQUIPMENT

## POWER SUPPLY



Equipment 1

Equipment 2

230 V/50 Hz (1Ph/N/PE)

110 V/60 Hz (1Ph/N/PE)

Order No.: A5630007

Order No.: A5630008

## ACCESSORIES

## DOSING UNIT TOPAS 130



Order No.: M6300040

- » automatic dosing unit for 3x diamond suspension and 1x lubricant
- » variable dosing
- » reverse rinsing function
- » manual or automatic function

WxHxD approx. 180x240x195 mm

## POWER SUPPLY



Equipment 1

Equipment 2

230 V/50 Hz (1Ph/N/PE)

110 V/60 Hz (1Ph/N/PE)

Order No.: A6300001

Order No.: A6300002

## HOLDER FOR DOSING NOZZLES



Order No.: A6300003

- » for automatic mode with Topas 130



## ACCESSORIES

## SETTLING TANK



» 2-chamber-compartment, 45 ltr.

» inlet sieve and filter bag

**for System lab cabinet  
(insertion mechanism)****referring height of System cabinet**

H 800 mm      Order No.: A5810261

H 900 mm      Order No.: A5810237

**mobile**

Order No.: A5800496

## CONNECTION SET



Order No.: Z5600009

1 drain tube	Ø 40 mm; 1.5 m
1 pressure tube	R 1/2"; 2 m
1 pressure tube	R 3/8" coupling and screw thread; 3 m

## SPECIFICATIONS

Connected load	1.8 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)

Pressure	variable
Single pressure	5 – 100 N
Central pressure	20 – 350 N

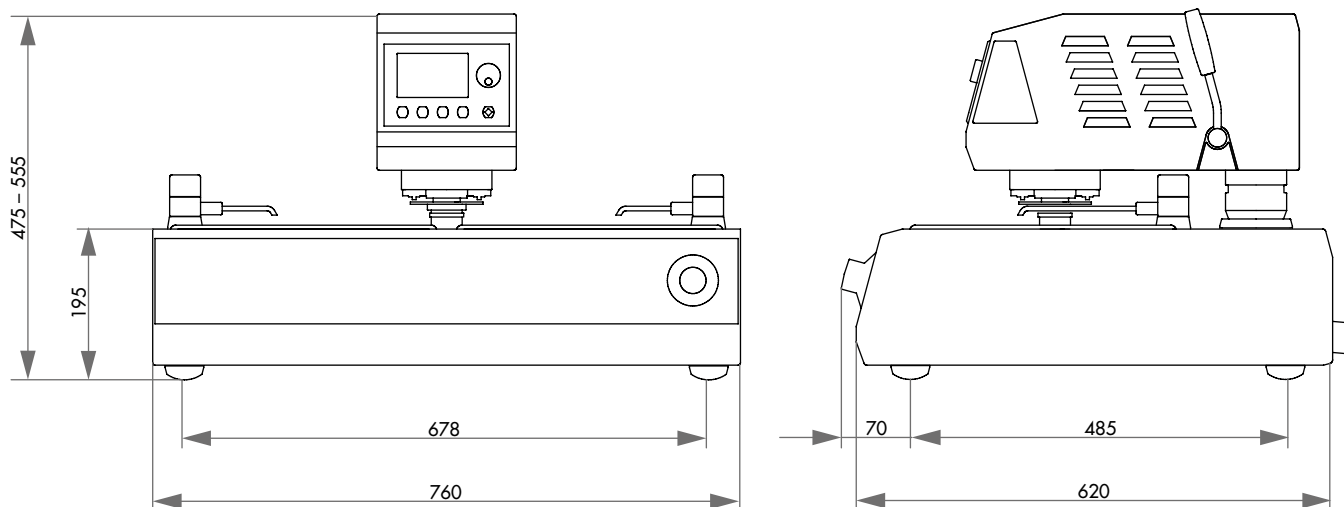
## SAPHIR 530

Working wheel	Ø 200 – 250 mm
Speed	50 – 600 rpm

WxHxD approx.	760 x 475 – 555 x 620 mm
Weight	67 kg

## RUBIN 500

Single pressure	1 – 5 samples, Ø 40 mm
Central pressure	depends on sample holder
Speed	140 rpm



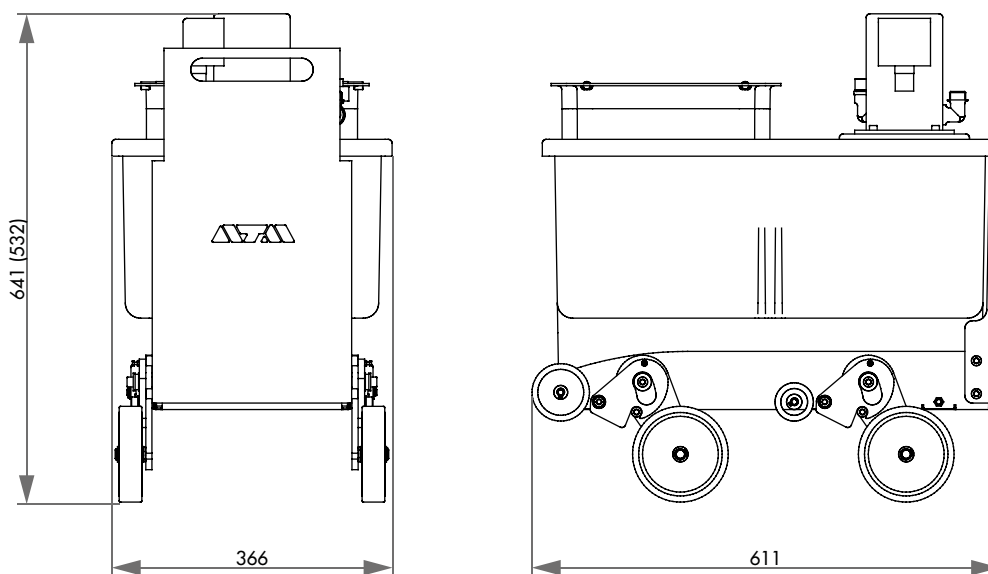
Settling tank with insertion mechanism for System lab cabinets of height 800 or 900 mm

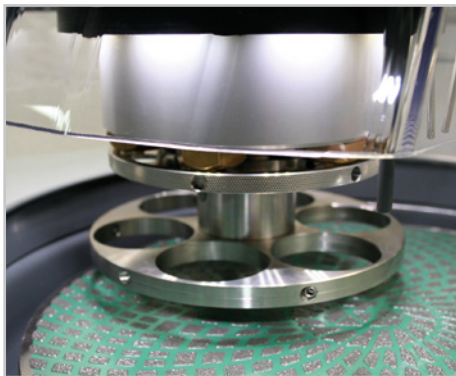


## SYSTEM-INTEGRATION

The insertion mechanism retracts the wheels mechanically when sliding in and out the Lab system cabinet, so that the sedimentation tank or the recirculation cooling does not need to be lifted, especially when filled.

The tank with its connections disappears completely in the system cabinet. The System settling tank without insertion mechanism is mobile as well.





#### GRINDING AND POLISHING HEAD

Through the individual pressure of the Rubin 520, samples with different diameter and materials can be worked at the same time. It also has a memory function for the side and height setting. The grinding and polishing head Rubin 520 is operated via a clearly laid out touch-display. Programs can be compiled here and then saved.

Furthermore it is fitted with a quick-change function for the sample holders and clockwise and anticlockwise running directions.

#### VARIABLE SPEED

The display on the grinder and polisher shows the speed digitally. The base speed can be infinitely adjusted between 50 and 450 rpm. The head speed is separately adjustable between 30 and 150 rpm.

The speed can also be changed during the working sequence.



#### MATERIAL REMOVED MEASUREMENT

The removal height can be pre-determined with 0.01 mm accuracy. The material removed measurement takes place automatically. After reaching the preset value, the machine switches off.

## Saphir 550 | Rubin 520

The SAPHIR 550 WITH RUBIN 520 is a single wheel grinder and polisher of recent generation with an innovative grinding and polishing head for working wheels  $\varnothing$  250 - 300 mm.

The head RUBIN 520 is equipped with an automatic protective hood and sets a new standard for operational safety.

Single and central pressure, memory function, integrated dosing system, material removed measurement are only a few of the possibilities. Motor-driven height setting with pneumatic clamping and all characteristics of the basic unit Saphir 350 meet the highest demands.

#### WATER

The automatically switched integrated basin rinsing is cooling the working wheel and cleaning the basin during the entire working process. The rinsing tap can be pulled out with the hose extension.

Optimum distribution of water can be reached by swinging the tap left and right across the diameter of the working wheel.



#### SAFETY

The preparation only starts when the transparent protective hood is extended.

The working area is illuminated by energy-saving LEDs.

Data safety is secured by enabling password protection for each individual program.



## BASIC MODULE

## SAPHIR 550 | RUBIN 520



## Order No.: M5600130

- » single wheel grinder/polisher with Rubin 520 head
- » single and central pressure
- » variable speed
- » electronic control with touch display
- » programmable memory
- » polishing head: clockwise/anti-clockwise rotation
- » memory function for side and height adjustment
- » automatic protective hood
- » energy saving LED illumination of working area
- » integrated basin rinsing with cleaning and cooling function
- » automatic water solenoid
- » basin rinsing
- » incl. splashing ring and cover
- » aluminium case, powder coated
- » impact-proof plastic bowl
- » e-Lab-ready

## EQUIPMENT

## POWER SUPPLY



Equipment 1

**230 V/50 Hz (1Ph/N/PE)**

Order No.: A5600043

Equipment 2

**110 V/60 Hz (1Ph/N/PE)**

Order No.: A5600044

## CONTROLLED REMOVAL

Equipment 1

**without controlled removal**

Order No.: A5600053

Equipment 2

**with controlled removal**

Order No.: A5600054

## OPTION

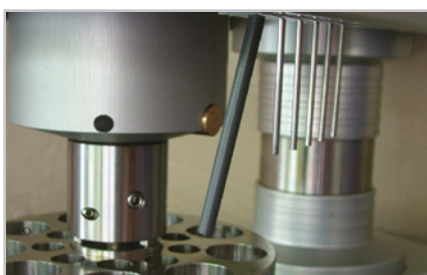
## DOSING UNIT



## for Rubin 520

Order No.: A5400001

- » integrated dosing nozzles
- » controllable via touch display, incl. memory function
- » 4x diamond suspension dosing
- » 1x lubricant dosing
- » 1x oxide polishing dosing



## ACCESSORIES

## BOTTLE HOLDER FOR DIAMOND SUSPENSION



## for Rubin 520

Order No.: Z5410006

- » aluminium, powder coated



WxHxD

290x120x185 mm



ACCESSORIES

SETTLING TANK



» 2-chamber-compartment, 45 ltr.

» inlet sieve and filter bag



for System lab cabinet  
(insertion mechanism)

referring height of System cabinet

H 800 mm      Order No.: A5810261

H 900 mm      Order No.: A5810237



mobile

Order No.: A5800496

CONNECTION SET



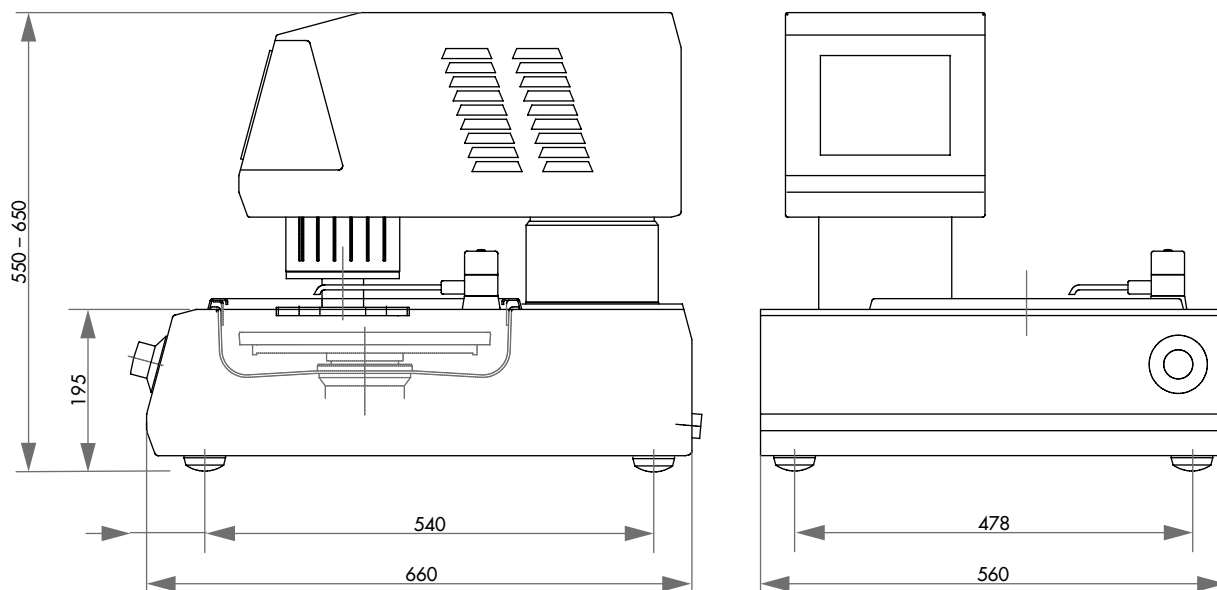
Order No.: Z5600009

1 drain tube	Ø 40 mm; 1.5 m
1 pressure tube	R 1/2"; 2 m
1 pressure tube	R 3/8" coupling and screw thread; 3 m

SPECIFICATIONS

Connected load	3.2 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)
SAPHIR 550	
Working wheel	Ø 200 – 300 mm
Variable speed	50 – 600 rpm
RUBIN 520	
Single pressure	1 – 6 samples, Ø 50 mm
Central pressure	depends on sample holder

Variable speed	30 – 150 rpm
Pressure	variable
Single pressure	5 – 100 N
Central pressure	20 – 400 N
WxHxD approx.	560x 550 – 650 x 660 mm
Weight	85 kg



**VARIABLE SPEED**

The speed is shown digitally on the display. The base speed can be infinitely adjusted between 50 and 600 rpm. The speed can also be changed during the working cycle.

**WATER**

The automatically switched basin rinsing is cooling the working wheel and cleaning the basin during the entire working process.

The rinsing tap can be pulled out with the hose extension. Optimum distribution of water can be reached by swinging the tap left and right across the diameter of the working wheel.

**Saphir 550 | Rubin 540**

The SAPHIR 550 with RUBIN 540 is a single wheel grinder and polisher for working wheels Ø 200–300 mm. The especially strong, speed controlled drive allows the strongest pressures. The clearly arranged and robust menu display enables user friendly operation. The parallel grinding unit of the Rubin 540 moves the exposed sample holder in clockwise/anticlockwise rotation

with variable speed across the working area. Pressing down the samples just by their own weight ensures a gentle preparation of pressure-sensitive and delicate specimen.

The shock-resistant plastic basin, powder coated Aluminium housing and high standard of technology inside the unit lend the requisites for quiet and smooth running.

**BASIC MODULE****SAPHIR 550 | RUBIN 540****Order No.: M5600150**

- » single wheel grinder/polisher with Rubin 540 head
- » variable speed
- » polishing head: clockwise/anti-clockwise rotation
- » individual sample holder design
- » cooling of working wheel and basin rinsing with interval
- » automatic water solenoid
- » basin rinsing
- » incl. splashing ring and cover
- » aluminium case, powder coated
- » impact-proof plastic bowl



Example with sample holder (accessories)



## EQUIPMENT

## POWER SUPPLY

Equipment 1

**230 V/50 Hz (1Ph/N/PE)**

Order No.: A5600047

Equipment 2

**110 V/60 Hz (1Ph/N/PE)**

Order No.: A5600048



## ACCESSORIES

## SAMPLE HOLDER



- » preparation of pressure-sensitive samples, down-pressure by own weight
- » fitting sample holder on request

## PARALLEL-GRINDING UNIT



Order No.: Z5442007

- » clamped workpiece is held parallel to the rotating grinding disc during the whole working process
- » combination also suitable for target preparation of microelectronic components (e.g. circuit-boards for general purpose)



Use with duo-sample holder/  
Easy-clamping system

## DOSING UNIT TOPAS 130



Order No.: M6300040

- » automatic dosing unit for 3x diamond suspension and 1x lubricant
- » variable dosing
- » reverse rinsing function
- » manual or automatic function

WxHxD approx. 180x240x195 mm



## POWER SUPPLY

Equipment 1

**230 V/50 Hz (1Ph/N/PE)**

Order No.: A6300001

Equipment 2

**110 V/60 Hz (1Ph/N/PE)**

Order No.: A6300002



## HOLDER FOR DOSING NOZZLES

Order No.: A6300004

- » for manual mode with Topas 130



## ACCESSORIES

## SETTLING TANK



» 2-chamber-compartment, 45 ltr.

» inlet sieve and filter bag

**for System lab cabinet  
(insertion mechanism)****referring height of System cabinet**

H 800 mm      Order No.: A5810261

H 900 mm      Order No.: A5810237

**mobile**

Order No.: A5800496

## CONNECTION SET



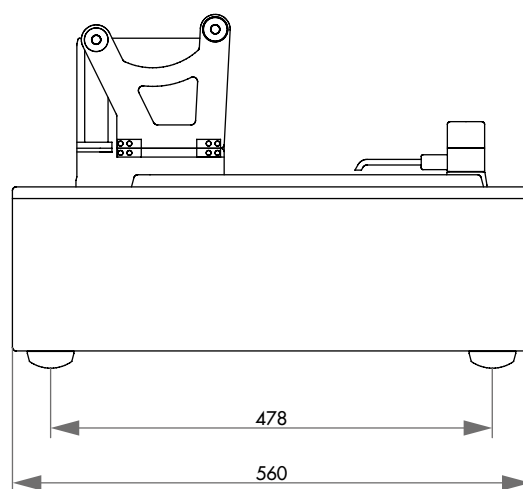
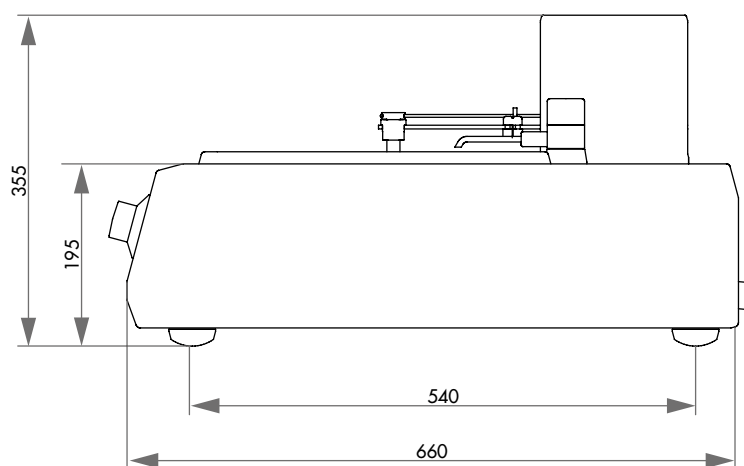
Order No.: Z5600009

1 drain tube	Ø 40 mm; 1.5 m
1 pressure tube	R 1/2"; 2 m
1 pressure tube	R 3/8" coupling and screw thread; 3 m

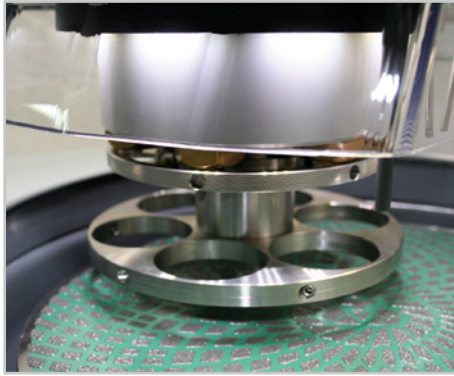
## SPECIFICATIONS

Connected load	2.3 kVA	
Power supply	1	230 V/50 Hz (1Ph/N/PE)
	2	110 V/60 Hz (1Ph/N/PE)
SAPHIR 550		
Working wheel	Ø 200 – 300 mm	
Speed base	50 – 600 rpm	

RUBIN 540	
Pressure	weight
Speed sample holder 15 – 40 rpm	
WxHxD approx.	560x 355 x 660 mm
Weight	37 kg







### GRINDING AND POLISHING HEAD

Through the individual pressure of the Rubin 520, samples with different diameter and materials can be worked at the same time. It also has a memory function for the side and height setting. The grinding and polishing head Rubin 520 is operated via a clearly laid out touch-display. Programs can be compiled here and then saved. Furthermore it is fitted with a quick-change function for the sample holders and clockwise and anticlockwise running directions.

### VARIABLE SPEED

The display on the grinder and polisher shows the speed digitally. The base speed can be infinitely adjusted between 50 and 450 rpm. The head speed is separately adjustable between 30 and 150 rpm. The speed can also be changed during the working sequence.



### MATERIAL REMOVED MEASUREMENT

The removal height can be pre-determined with 0.01 mm accuracy. The material removed measurement takes place automatically. After reaching the preset value, the machine switches off.

## Saphir 560 | Rubin 520

The SAPHIR 560 WITH RUBIN 520 is a twin wheel grinder and polisher of recent generation with an innovative grinding and polishing head for working wheels  $\varnothing$  250 - 300 mm. The grinding and polishing head 520 is equipped with an automatic protective hood and sets a new standard for

operational safety. Single and central pressure, memory function, integrated dosing system, material removed measurement are only a few of the possibilities. Motor-driven height setting with pneumatic clamping and all characteristics of the basic unit Saphir 350 meet the highest demands.

### WATER

The automatically switched integrated basin rinsing is cooling the working wheel and cleaning the basin during the entire working process. The rinsing tap can be pulled out with the hose extension.

Optimum distribution of water can be reached by swinging the tap left and right across the diameter of the working wheel.



### SAFETY

The preparation only starts when the transparent protective hood is extended. The working area is illuminated by energy-saving LEDs. Data safety is secured by enabling password protection for each individual program.

## BASIC MODULE

## SAPHIR 560 | RUBIN 520



## Order No.: M5600160

- » double wheel grinder/polisher with Rubin 520 head
- » single and central pressure
- » variable speed of base and head
- » elektronik control with touch display
- » programmable memory
- » polishing Head: clockwise/anti-clockwise rotation
- » memory function for side and height adjustment
- » automatic protective hood
- » energy saving LED illumination of working area
- » integrated basin rinsing with cleaning and cooling function
- » automatic water solenoid
- » aluminium case, powder coated
- » impact-proof plastic bowl
- » incl. splashing ring and cover
- » e-Lab-ready

## EQUIPMENT

## POWER SUPPLY



Equipment 1

Equipment 2

**230 V/50 Hz (1Ph/N/PE)****110 V/60 Hz (1Ph/N/PE)**

Order No.: A5600055

Order No.: A5600056

## CONTROLLED REMOVAL



Equipment 1

Equipment 2

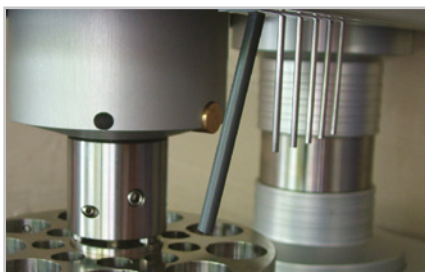
**without controlled removal****with controlled removal**

Order No.: A5600053

Order No.: A5600054

## OPTION

## DOSING UNIT

**for Rubin 520**

Order No.: A5400001

- » integrated dosing nozzles
- » controllable via touch screen, incl. memory function
- » 4x diamond suspension dosing
- » 1x lubricant dosing
- » 1x oxide polishing dosing





ACCESSORIES

BOTTLE HOLDER FOR DIAMOND SUSPENSION



for Rubin 520

Order No.: Z5410006

» aluminium, powder coated

WxHxD 290x185x120 mm

SETTLING TANK



» 2-chamber-compartment, 45 ltr.

» inlet sieve and filter bag



for System lab cabinet  
(insertion mechanism)

referring height of System cabinet

H 800 mm Order No.: A5810261  
H 900 mm Order No.: A5810237



mobile

Order No.: A5800496

CONNECTION SET



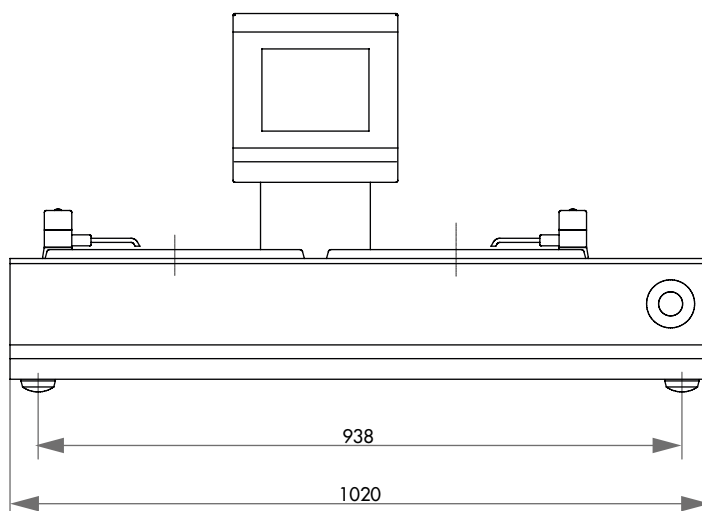
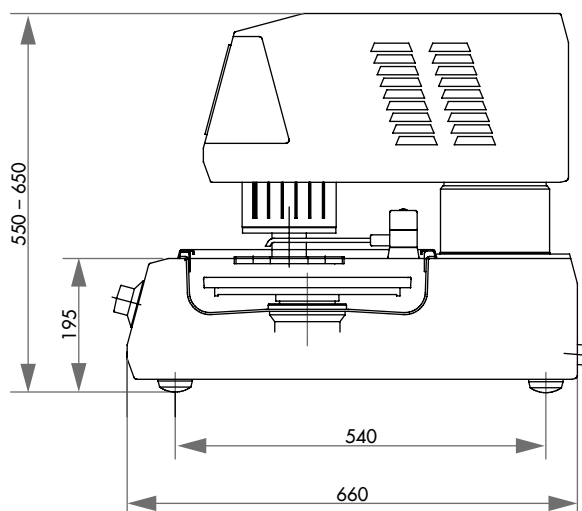
Order No.: Z5600009

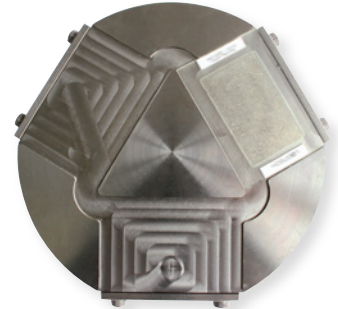
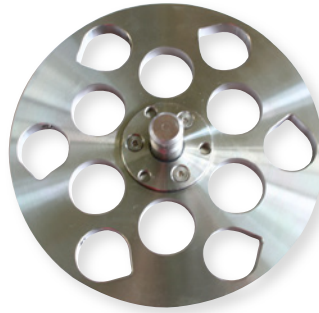
1 drain tube	Ø 40 mm; 1.5 m
1 pressure tube	R 1/2"; 2 m
1 pressure tube	R 3/8" coupling and screw thread; 3 m

SPECIFICATIONS

Connected load	5.5 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)
SAPHIR 560	
Working wheel	Ø 200 – 300 mm
Variable speed	50 – 600 rpm
RUBIN 520	
Single pressure	1 – 6 samples, Ø 50 mm
Central pressure	depends on sample holder

Variable speed	30 – 150 rpm
Pressure	variable
Single pressure	5 – 100 N
Central pressure	20 – 400 N
WxHxD approx.	1020x 550 – 650 x 660 mm
Weight approx.	110 kg

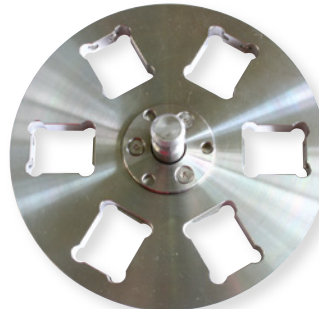




## SPECIAL SAMPLE HOLDERS

The problem of clamping samples with special dimensions can be solved with special sample holders, e.g. vacuum sample holders for thin sections.

And of course, standard sample holders with  $\varnothing$  185 and  $\varnothing$  204 mm are available.



ACCESSORIES



WORKING WHEELS



» aluminium anodized

Ø 200 mm	Order No.: Z5610034
Ø 230 mm	Order No.: Z5610030
Ø 250 mm	Order No.: Z5610031
Ø 300 mm	Order No.: Z5610032

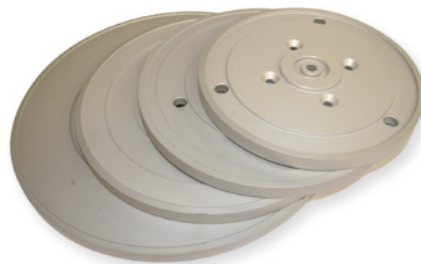


CLAMPING RINGS



» plastic

Ø 200 mm	Order No.: 05610228
Ø 230 mm	Order No.: 05610227
Ø 250 mm	Order No.: 05610226
Ø 300 mm	Order No.: 05610225

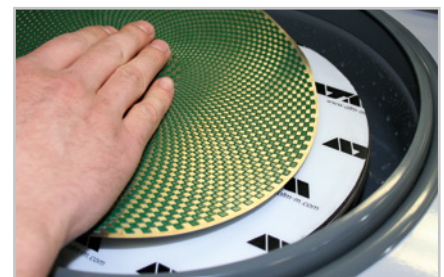


CARRIER WHEELS



» for other brands on request

Ø 200 mm	Order No.: 05610037
Ø 230 mm	Order No.: 05610058
Ø 250 mm	Order No.: 05610057
Ø 300 mm	Order No.: 05610059



Working wheel with adhesive foil

FIXING SYSTEM

CONSUMABLES	WORKING WHEEL	MAGNET*
Diamond grinding foil	√	magnet foil
SiC-paper	clamping ring	magnet foil
SiC-paper, PSA back	√	magnet foil
SiC-foil	adhesive foil	magnet foil
Polishing cloth, PSA back	√	magnet foil

\* It is possible to fix magnetic foil at polishing cloth carrier.





**SINGLE PRESSURE**  
**SAMPLE HOLDER**

**for Rubin 500**  
Order No.: Z5400336  
» made of stainless steel  
» incl. adaption

Samples	5x Ø 40 mm
Dimension	Ø 130 mm



Insert suitable distance rings



**SINGLE PRESSURE**  
**SAMPLE HOLDER**

**for Rubin 520**  
Order No.: Z5400087  
» made of stainless steel  
» incl. adaption

Samples	6x Ø 50 mm
Dimension	Ø 160 mm

**ACCESSORIES**

**DISTANCE RINGS**



» made of aluminium

1 set	5 pcs. je Ø
Ø 25 mm	OrderNo. 05400304
Ø 1"	OrderNo. 05441018
Ø 30 mm	OrderNo. 05400303
Ø 1¼"	OrderNo. 05441019
Ø 32 mm	OrderNo. 05400302
Ø 38 mm/1½"	OrderNo. 05400301

**ACCESSORIES**

**DISTANCE RINGS**



» made of aluminium

1 set	6 pcs. je Ø
Ø 25 mm	OrderNo. 05400086
Ø 1"	OrderNo. 05440138
Ø 30 mm	OrderNo. 05400085
Ø 1¼"	OrderNo. 05440139
Ø 32 mm	OrderNo. 05400084
Ø 38 mm/1½"	OrderNo. 05400083
Ø 40 mm	OrderNo. 05400082

**CENTRAL PRESSURE**

**SAMPLE HOLDER (TEAR SHAPE)**

**for Rubin 500**  
Order No.: Z5400341  
» made of stainless steel  
» incl. adaption

Samples	5x Ø 20 – 40 mm
Dimension	Ø 130 mm

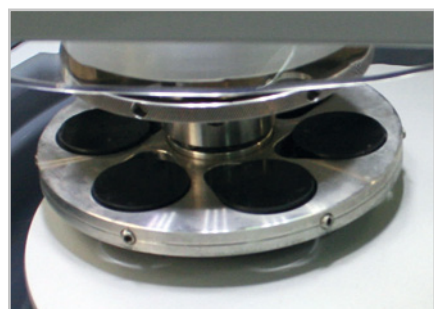


**CENTRAL PRESSURE**

**SAMPLE HOLDER (TEAR SHAPE)**

**for Rubin 520**  
Order No.: Z5400081  
» made of stainless steel  
» incl. adaption

Samples	6x Ø 20 – 40 mm
Dimension	Ø 160 mm



Central pressure requires nivelled samples



**CENTRAL PRESSURE**

**CENTRAL PRESSURE**

**SAMPLE HOLDERS (3-POINT-FIXATION)**

**SAMPLE HOLDERS (3-POINT-FIXATION)**

**for Rubin 500**

- » especially suitable for hot mounted samples
- » made of stainless steel
- » incl. adaption

**for Rubin 520, 530 (System)**

- » especially suitable for hot mounted samples
- » made of stainless steel
- » incl. adaption

Dimensions	Ø 130 mm
12 x Ø 20 mm	Order No.: Z5400363
9 x Ø 25 mm / 1"	Order No.: Z5400362
8 x Ø 30 mm	Order No.: Z5400361
8 x Ø 32 mm / 1¼"	Order No.: Z5400360
6 x Ø 38 mm / 1½"	Order No.: Z5400359
5 x Ø 40 mm	Order No.: Z5400358

Dimensions	Ø 160 mm
12 x Ø 25 mm / 1"	Order No.: Z5400161
9 x Ø 30 mm	Order No.: Z5400160
9 x Ø 32 mm / 1¼"	Order No.: Z5400159
6 x Ø 38 mm / 1½"	Order No.: Z5400158
6 x Ø 40 mm	Order No.: Z5400157
5 x Ø 50 mm / 2"	Order No.: Z5400156



**CENTRAL PRESSURE**

**SAMPLE HOLDERS EASY-CLAMPING SYSTEM**

**for Rubin 520, 530 (System)**

- » less power required for fixation
- » made of stainless steel
- » incl. adaption

Dimensions	Ø 160 mm
8 x Ø 25 mm / 1"	Order No.: Z5400133
7 x Ø 30 mm	Order No.: Z5400129
7 x Ø 32 mm / 1¼"	Order No.: Z5400134
6 x Ø 38 mm / 1½"	Order No.: Z5400135
5 x Ø 40 mm	Order No.: Z5400125
5 x Ø 50 mm / 2"	Order No.: Z5400121

**CENTRAL PRESSURE**

**VARIO-SAMPLE HOLDER**

**for Rubin 520, 530 (System)**

- suitable sample holder on request*
- » fixing, grinding and polishing of samples with big dimensions or complicated geometries
  - » made of stainless steel
  - » incl. adaption



Examples for application

CENTRAL PRESSURE



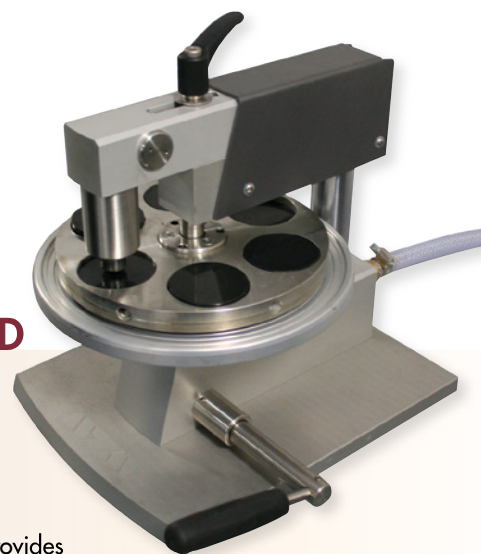
LEVELLING PLATE

sample holder	sample protruding	
Ø 130 mm	2 mm	OrderNo. 05400356
Ø 130 mm	4 mm	OrderNo. 05400372
Ø 160 mm	2 mm	OrderNo. 05400114
Ø 160 mm	4 mm	OrderNo. 05400246
Ø 185 mm	2 mm	OrderNo. 05400188
Ø 185 mm	4 mm	OrderNo. 05400260
Ø 204 mm	2 mm	OrderNo. 05400194
Ø 204 mm	4 mm	OrderNo. 05440021

## LEVELLING DEVICE WITH UNLOADING AID

The pneumatic fixation enables levelling of sample holders for central pressure quickly and effortlessly.

The sample distance is adjustable and universally suitable for all standard sample diameters.



The unloading aid provides gentle unloading of the prepared samples.

CENTRAL PRESSURE

LEVELLING DEVICE WITH UNLOADING AID



Order No.: M1320001  
 » » aid for plane-parallel sample fixation

Sample holder	Ø 160, 185, 204 mm
Sample distance	variable, 1 – 6 mm
Compressed air required	6 bar



Adjusting



Fixation

ACCESSORIES

CONNECTION SET



Order No.: Z1320000

1 pressure tube	3 m, with coupling and connection thread R 3/8"
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Unloading







**HOLDER FOR DOSING NOZZLES**

The holder for dosing nozzles for manual operation can be positioned anywhere on the device. For automatic operation with the Rubin 500 the nozzles are fastened directly to the grinding head.



**Topas 130**

The dosing unit for diamond suspensions and lubricants can be used universally.

The dosing interval is adjustable.

In automatic mode (Rubin 500), the dosage is automatically switched on and off in the process.

A reverse rinsing function keeps the hoses clean.

**FUNCTION WITH SAPHIR DEVICES**

SAPHIR	manual mode	automatic mode
320		
330		
350		
360		
520/Rubin 500		
530/Rubin 500		
550/Rubin 520	*	
550/Rubin 540		
560/Rubin 520	*	

\* recommended only without dosing unit for RubIn 520



BASIC MODULE

TOPAS 130



Order No.: A6300040

- » automatic dosing unit (also other brands)
- » manual or automatic function
- » variable dosing, reverse rinsing function

Diamond suspension	3x
Lubricant	1x
WxHxD	180x240x195 mm
Weight	2 kg

EQUIPMENT



POWER SUPPLY

Equipment 1  
230 V/50 Hz (1Ph/N/PE)

Order No.: A6300001

Equipment 2  
110 V/60 Hz (1Ph/N/PE)

Order No.: A6300002

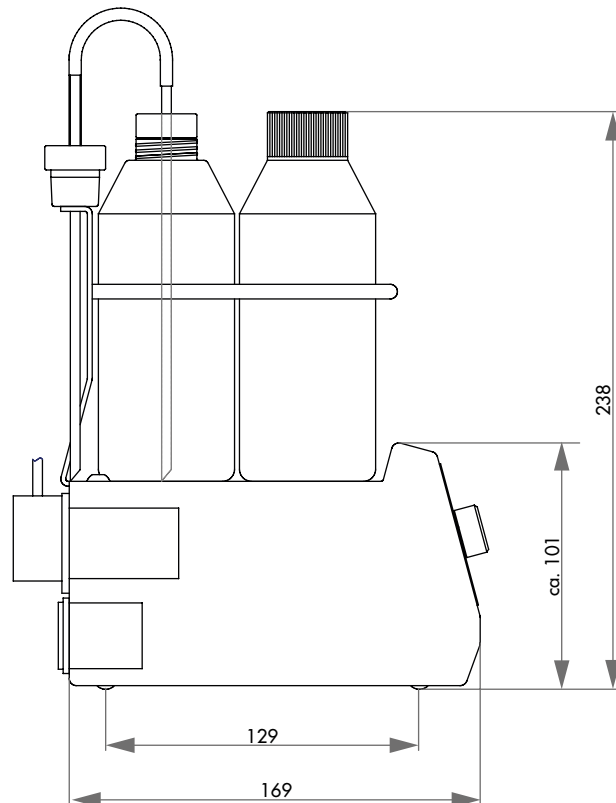
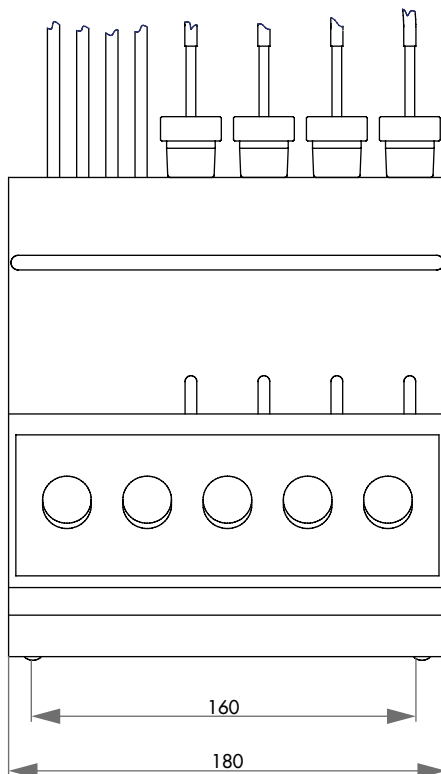
HOLDER FOR DOSING NOZZLES



Equipment 1  
**automatic mode**  
Order No.: A6300003



Equipment 2  
**manual mode**  
Order No.: A6300004



**MODULAR CONSTRUCTION**

Elements for the Systemautomat come from the System Lab cabinets and equipment. Within the sturdy aluminium housing, it is possible to install 4 to 8 system work stations. Up to 11 different operations can be programmed and sequenced for a particular application. Options include pre-grinding, grinding and polishing as well as cleaning and drying in any combination.

The Systemautomat automatically proceeds from one step to the next, eliminating the manual, time-consuming task of cleaning each sample holder between steps.

**GRINDING AND POLISHING STATIONS**

The Systemautomat is constructed with stations for complete materialographic operations from planar grinding through intermediate steps and final polishing. All stations are integrated into the system.

The grinding and polishing discs are fixed onto the working wheels by using a vacuum (Vacu-Jet System) or magnetic disc system.

Each station can be configured for specific abrasive requirements. Water, diamond suspensions, diamond lubricant and oxide dispensing are fully integrated and controlled via programming. Grinding and polishing stations can also include fully automatic protective covers to maintain a clean work environment.



8 stations

**SYSTEMAUTOMAT**

Designed and developed by ATM, the compact

SYSTEMAUTOMAT completely automates the grinding and polishing aspects of the specimen preparation process.

Simple touch-screen controls access all parameters and

procedures.

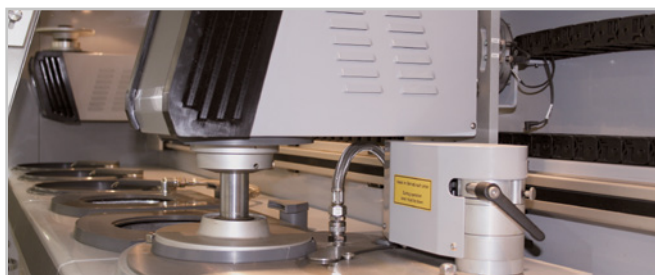
The Systemautomat ensures that each specimen is properly processed and guarantees reproducible results and, in addition more space for sample analysis.

**GRINDING AND POLISHING HEAD**

The grinding and polishing head picks up a sample holder from the stack and travels to individual work stations to perform each cycle in the proper sequence. Upon completion, the head returns the holder to the stack. The use of two heads allows simultaneous grinding and polishing and optimizes the Systemautomat when preparing multiple specimen holders.

**SAMPLE HOLDER STACK**

The sample holder racking system holds up to 12 sample holders. After starting the machine, the holders are taken out automatically for processing. After processing, the completed sample holders are returned to their original position with the polished surface facing upwards.





#### FOIL CHANGER

In the storage elevator, there are four compartments for disposable grinding discs, such as SiC paper.

The vacuum exchange arm grips the pre-selected SiC paper and places it onto the wheel.

The Vacu-Jet system then operates immediately, securing the disc to the plate automatically.

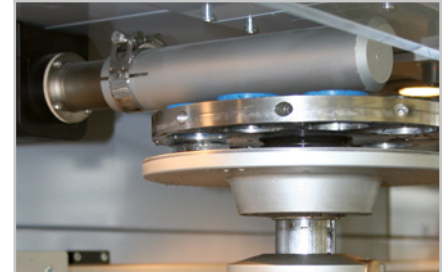
When finished, the used grinding paper is discarded.

#### WARM AIR DRYING

After final cleaning, a programmable warm air blower dries the samples with the polished side upwards.

Then the dry samples are stored in the sample stack.

The drying time is programmable.



4 stations



7 stations



#### ULTRASONIC CLEANING STATION

The ultrasonic cleaning station provides intermediate or final cleaning.

Cleaning time and sequence is easily programmable.

The cleaning tank includes heating with variable temperature control. A recirculation filter system, which lengthens the useful life of the cleaning fluid and optimizes the final result, is also available.

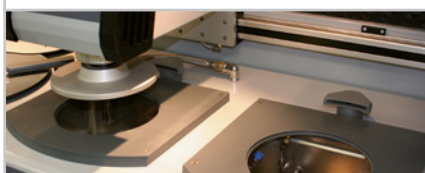


#### HIGH SPEED CLEANING STATION

The cleaning station enables a fully automatic cleaning of the sample.

The multi-step cleaning is carried out with water, air and alcohol.

Cleaning times and steps are completely adjustable as needed.



#### SURFACE GRINDING STATION

The high speed grinding station planes the surface of the sample very quickly using an abrasive stone.

The fully enclosed stone has an integrated recirculation coolant system in the cabinet.

SiC and Al<sub>2</sub>O<sub>3</sub> grinding stones are kept flat by an automatic diamond dressing device with adjustable dressing depths and intervals.

The wearing surface of our standard grinding stone with glued carrier plate is 30 mm.

For diamond grinding disc applications, a cup-wheel with sample holder adaption is available for dressing the diamond surface in freely configurable intervals.





### TOUCH SCREEN CONTROL

Simple operation with drag-and-drop graphical touch-screen controls at the central panel that can slide to any work station. For each step, the screen shows a graphical representation of the working position. It is possible to follow the processing sequence in real time. The process sequence can be stored and then recalled as a complete program. A large number of programs can be stored and then recalled as needed. As standard equipment, there is a LAN connection for remote maintenance and monitoring by your facility or by ATM. This enables the recognition and removal of faults/errors or downloading of updates and procedures.



### DATA TRANSFER

The ATM central lab is always looking for solutions for your problems. We can develop an optimum procedure for a particular sample and send it to you via data transfer. Acquired data can also be exchanged via an internal network. This enables reproducibility and comparison of procedures and parameters anywhere, anytime.



- ① Movable control panel (sideway) with touch screen control; individually programmed preparation cycles can be saved
- ② Polishing head: clockwise/anti-clockwise rotation
- ③ Holder stack for six sample holders
- ④ Two grinding and polishing stations with variable speed of working wheels
- ⑤ Fully-automatic sample cleaning with water, Ethanol, air
- ⑥ Warm air dryer with timer
- ⑦ Grinding station with four different grinding media/grains stored in foil changer
- ⑧ Dosing drawer for storing of polishing suspensions
- ⑨ Settling tank

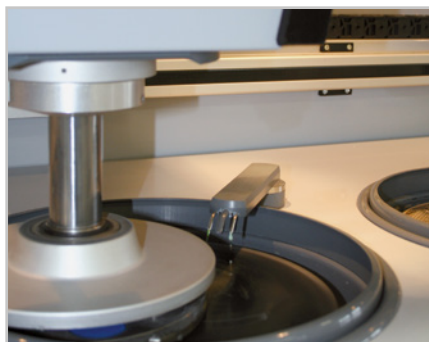
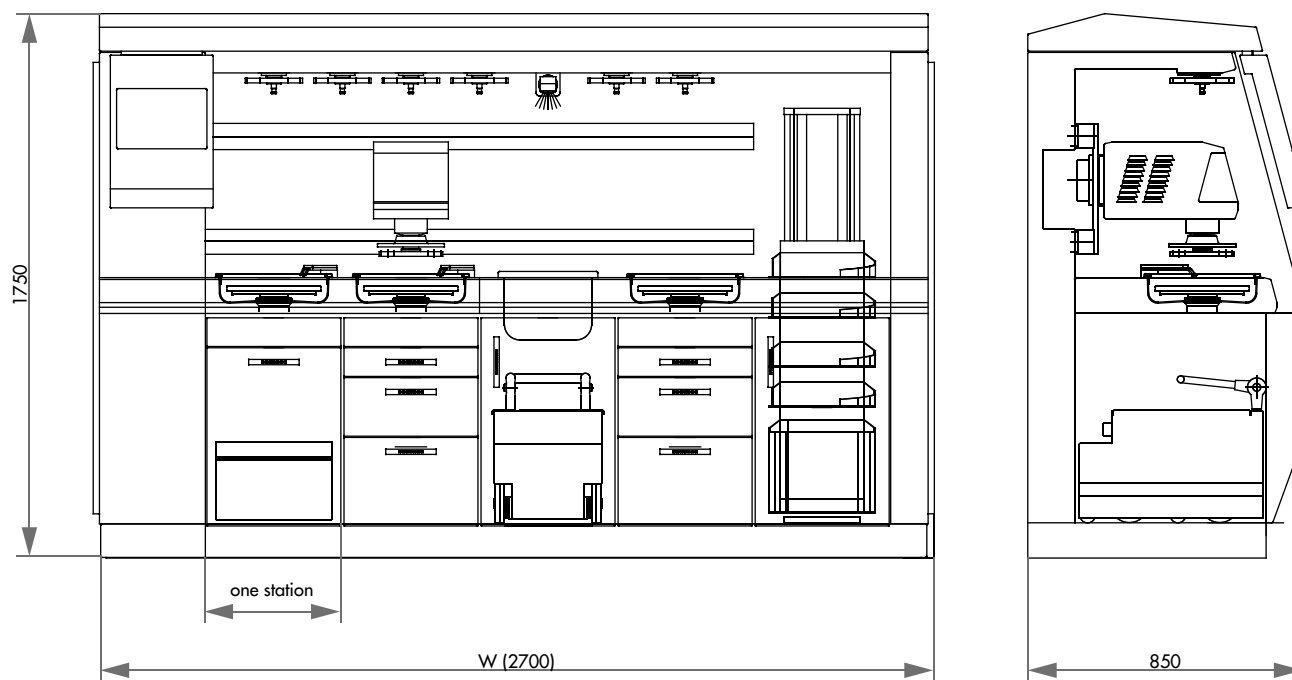
## TECHNISCHE DATEN

Connected load	depends on equipment: 4.3 – 15.6 kVA
Power supply	400 V/50 Hz
GRINDING AND POLISHING STATION	
Working wheels	up to Ø 300 mm
Speed	50 – 600 rpm
Stations	1
GRINDING STATION	
Grinding stone	Ø 350 mm
Speed	50 – 600 rpm
Lines	1
CLEANING STATION	
Cleaning media	air, water, ethanol (option)
Process	time and steps can be set as needed
Stations	1
ULTRASONIC CLEANER	
Volume	6.5 ltr.
HF-power	400 W
Stations	1

## FOIL CHANGER

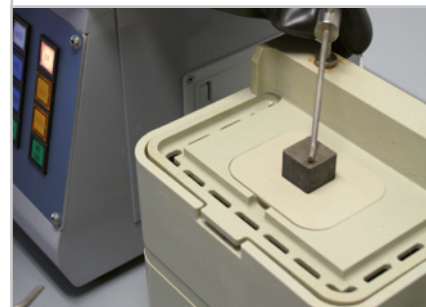
Storage	4 different grinding media
Grinding paper	Ø 300 mm
Stations	2
GRINDING AND POLISHING HEAD	
Central pressure	50 – 450 N, variable
Speed	20 – 120 rpm, clockwise/anti-clockwise
Pressure	variable
Controlled removal	automatic
Sample holder	Ø 160/185/204 mm
Weight	117 kg

Stations	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Dimension W	2260	2700	3140	3580	4020
HxD	1750x850 mm				



**ETCHING UNIT**

The electrolytic cell made of PP is equipped with drain pipe and cooling facility. The cathode and anode are titanium coated.

**Kristall 620**

The KRISTALL 620 is a fully automatic polisher and etcher.

Polishing and etching voltage as well as time are all variable.

If so required, the polishing voltage can be doubled. Optional selection between a polishing sequence i.e. polishing or etching/automatic polishing or etching.

The strength of the current can be restrained through the limit setting function. The speed of the amount to be pumped is also variable.

For special applications, there is the possibility for connecting an external etching unit.

**BASIC MODULE****KRISTALL 620**

Order No.: M6200060

- » fully automatic, electronic polisher/etcher
- » polishing or etching process
- » variable polishing time and current
- » automatic polishing/etching
- » additional doubling of polishing current
- » limitation of current
- » timer
- » external etching unit can be added

**EQUIPMENT****POWER SUPPLY**

Equipment 1  
**230 V/50 Hz (1Ph/N/PE)**  
 Order No.: A6200061

Equipment 2  
**110 V/60 Hz (1Ph/N/PE)**  
 Order No.: A6200002

EQUIPMENT

POWER SUPPLY

Equipment 1

**Electrolytic cell**

Order No.: A6200003

- » made of PP
- » with drain tube and preparation for cooling
- » platinum coated titanium cathode and anode
- » incl. wiring



Volume	1000 ml
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Equipment 2

**External etching unit**

Order No.: A6200005

- » etching pot made of stainless steel



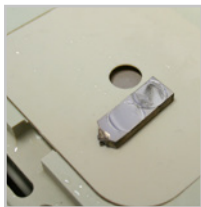
Ø	120 mm
Height	120 mm
Volume	1200 ml

ACCESSORIES

SET OF MASKS

Order No.: Z6200024

- » 1, 2, 10 cm<sup>2</sup>, blind mask



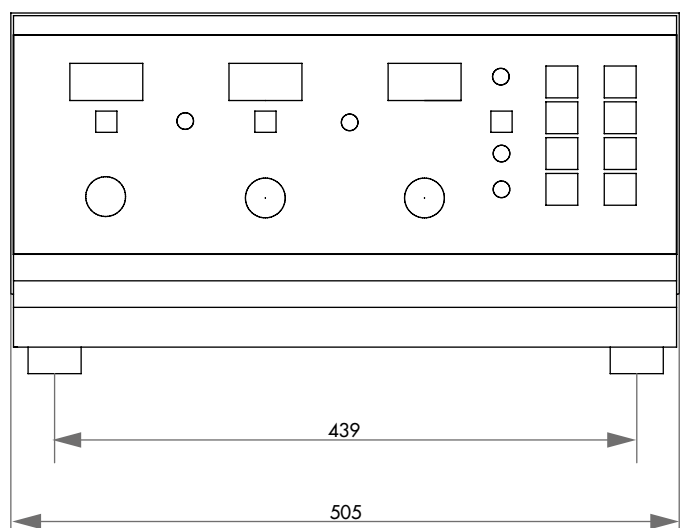
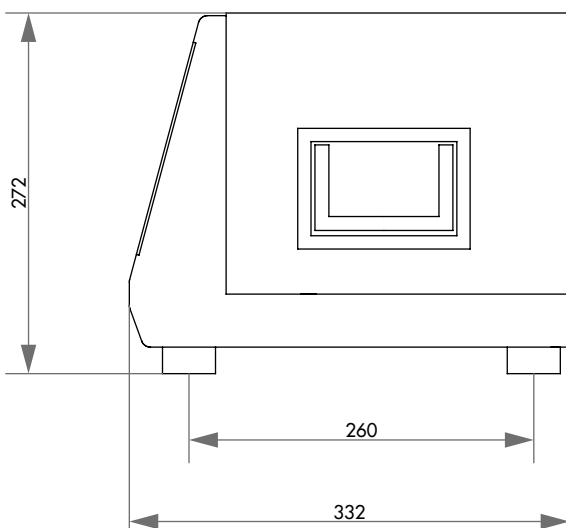
SPECIFICATIONS

Connected load	1.2 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)

Current	constantly self-adjusting
Etching	0–35 V, 0–5 A
Timer	0 – 60 sec.

Current	unregulated
Polishing	0–60 V, 0–20 A / 0–120 V, 0–10 A

WxHxD approx.	505 x 272 x 332 mm
Weight	19 kg







### POLISHING UNIT

The polishing head is integrated in the handle. Polishing and etching gets automatically ready by touching the piezo button in the handle. A multi-coloured LED on the handle indicates all program states. The operator can focus his attention completely to the checkpoint.

The handle is connected to the unit by a flexible hose.

For flat surfaces, the exchangeable sealing-lip ring is especially suitable. Complex surfaces (e.g. angled areas) can be examined by using an additional flexible end piece which can be cut to size individually.

The pump's adjustable performance allows an infinitely variable flow rate regulation of electrolyte.



## Kristall 650

The KRISTALL 650 is a mobile battery supplied electrolytic polisher and etcher.

It convinces by its compact and robust construction, ideal for use outside of the lab. The simple operation simultaneous with high functionality is matchless.

The epoxy-coated aluminium housing meets highest demands on functionality, stability and design.

All sensitive parts are well protected for transport and local operation. For maximum comfort the Kristall 650 is equipped with handle and carrying strap.

### CONTROL PANEL

The LC-display clearly shows all important parameters like current, voltage, time as well as the charge of battery.

All parameters can be adjusted via control panel during operation.

You can choose between constant current and constant voltage.

### INNOVATIVE DETAILS

Micro motor, straight handle and accessories of our mobile grinder Saphir 300 can optionally be connected directly to the controlling unit of the Kristall 650 (suitable storage area inside the case). The electrolyte tanks are replaceable and with screwed top for external storage. The integrated return-flow filter optimizes the life time of the electrolyte.



### BATTERY SUPPLIED OPERATION

The high capacity lithium battery allows with a single charge approximately 150 simple etching/polishing cycles including pre-grinding (state of charge display, charging and mains operation via external power supply). Up to 30 examinations are possible by using the mobile grinder at the same time.

### SAFETY FUNCTIONS

An additional locking valve allows the flow of the electrolyte only during the cycle.

## BASIC MODULE



## KRISTALL 650



Order No.: M6201000

- » mobile electrolytic polisher and etcher
- » fully automatic, microprocessor controlled programm sequence
- » battery supplied by high capacity lithium battery
- » operation and charging by external power supply
- » polishing head with automatic start-stop function and multicolour LED for displaying current operating states
- » infinitely variable flow rate regulation of electrolyte
- » additional locking valve to avoid leakage of electrolyte
- » control panel with clear LC display
- » variable power and voltage supply, adjustable time
- » return-flow filter (filter pads exchangeable without tool)
- » replaceable electrolyte tank
- » flexible, exchangeable sealing-lip ring for flat surfaces; additional end-piece which can be cut to size for examination of complex surfaces (e.g. angled areas)
- » solid epoxy-coated aluminium case with carrying-sling and handle
- » prepared for storing up and controlling manual grinder Saphir 300 (option)
- » incl. maintenance set

## EQUIPMENT

## POWER SUPPLY

Equipment 1  
**230 V/50 Hz (1Ph/N/PE)**  
 Order No.: A6201000

Equipment 2  
**110 V/60 Hz (1Ph/N/PE)**  
 Order No.: A6201001



## FACILITY FOR TRANSPORTABLE GRINDER AND POLISHER

Equipment 1  
**without facility**  
 Order No.: A6201004

Equipment 2  
**with facility**  
 Order No.: A6201005



## ACCESSORIES



## TRANSPORTABLE GRINDER AND POLISHER

Order No.: Z6201002

variable speed 1.000 – 14.000 rpm



## ACCESSORIES



## ACCESSORIES SET FOR KRISTALL 650 IN SUITCASE

Order No.: Z6201001

» set including:

5x V-ring	Order No.: 95003606
1x profile ring-material (approx. 150 mm)	Order No.: 06201052
1x flexible end piece for profile ring	Order No.: 06201051
1x tube cutter	Order No.: 95004030
10x filer pads (Ø 40.5 mm)	Order No.: 95003985
1x dolphin connector	Order No.: 82000374



## BOTTLE FOR ELECTROLYTE



Order No.: 95003955

» with screw top

Volume 1 Ltr.

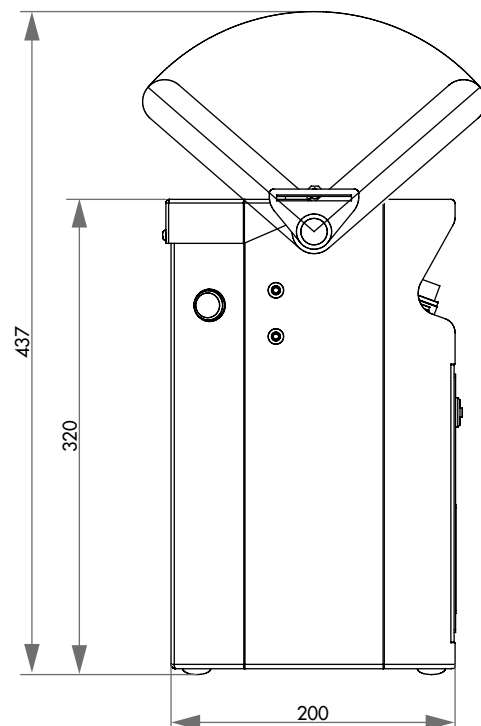
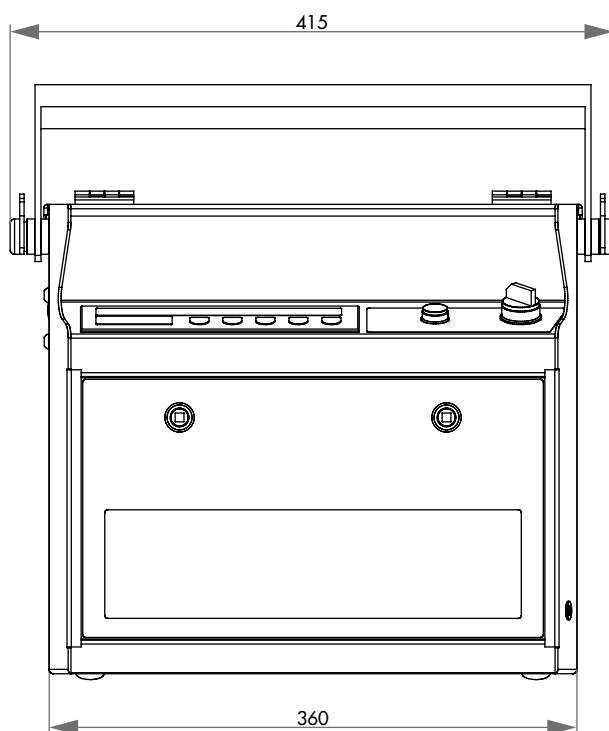
## SPECIFICATIONS

Power	160 W
Voltage	90 V DC
External power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)
Polishing area	approx. Ø 9 mm

WxHxD 415 x 400 x 200 mm

Weight approx. 8.5 kg\*

\* without electrolyte (approx. 1 ltr.)





Island-combination  
at our stand at Control fair 2014

## SYSTEM-INTEGRATION

Numerous combination options for grinding and polishing internals are possible thanks to the modular design of the system laboratories. Thus, sink and cleaning station can be added and sedimentation or disposal unit are integrable into the cabinets. The drawers can also be equipped with storage compartments

for grinding discs, foils or papers.

All connections disappear in the system cabinet and the electronics are accessible through a drawer front.

Under heavy load, the System automat is the next necessary step for automation.



Combination example 3-lines:  
2x grinding and polishing station accord to  
Saphir 550 with cleaning station