



ADVANCED MATERIALOGRAPHY

General Catalogue

Cutting | Mounting | Grinding, Polishing, Etching | Analysis



ATM – Machines Are Our Passion

Machines and equipment for the materialographic laboratory “Made in Germany”

Whatever you need for quality testing and material analysis, ATM has it all: As a manufacturer of high-quality machines for materialography (metallography), we offer the most comprehensive solution for your needs. We not only supply a wide range of instruments but also accessories, consumables, complete laboratories and tailor-made special-purpose solutions.

Our innovative cut-off machines, mounting presses, grinders, polishers/electrolytic etchers, as well as hardness testers and analysis systems provide maximum reliability and flexibility. Thanks to the most advanced engineering technologies and manufacture of components in our own factory, we are able to fulfill individual customer requirements by adapting our instruments to their needs.

Our R&D department for hard- and software works in close cooperation with our customers to ensure continuous optimization of our products. Customers in more than 30 countries appreciate our comprehensive sales and service network as well as direct communication with our experts.

To provide you with solutions of consistently high-quality we rely on the expertise and creativity of our qualified and dedicated long-standing employees.

ATM offers:

- **Modern production engineering and high vertical integration:**
Optimum control of every single component of our machines guarantees reliable ATM product quality “made in Germany”.
- **Application consultation and end-user seminars with individual focus:**
Our application experts ascertain parameters and equipment configurations best suited for your sample preparation process.
- **In-house hardware and software development:**
ATM hosts the complete R&D process in-house to be able to offer customer-specific solutions. Tailor-made solutions to meet individual requirements are our strength.

www.atm-m.com

PREMIUM QUALITY



MADE IN GERMANY



**1 CUTTING**

Precision cut-off machines, desktop devices, floor standing devices, industrial cut-off machines accessories, Easy-clamping system, clamping tools

**2 MOUNTING**

Hot mounting presses and accessories

**3 GRINDING, POLISHING AND ETCHING****ETCHING ▶**

Pre-grinders
Manual and automatic grinders and polishers
Sample holders and accessories
System automat
Electrolytic polishers and etchers

**4 MICROSCOPY**

Leica-microscopes and accessories

**5 ANALYSIS****HARDNESS TESTING ▶**

Micro-hardness testing and optical evaluation

**6 VARIOUS**

Heavy duty furniture, acid-bases-cabinet, safety cabinet, lab fume cupboard
Complementing devices: engraver, compressor, sample dryer, pressure appliance, infiltration set, infiltration unit, ultrasonic cleaners







Brillant 220



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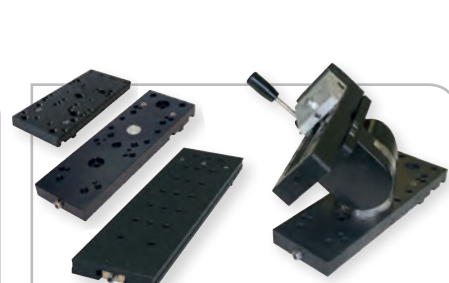
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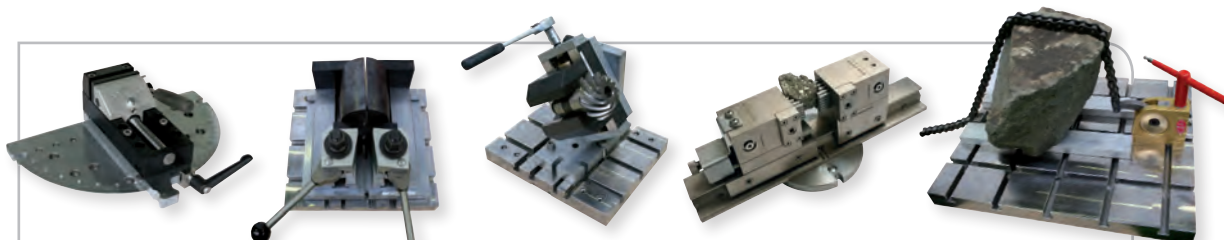
Brillant 3D

Brillant 285

Brillant 2000



Easy-clamping bases, -clamping modules



Fast lock vice

Cross vice

Angle vice

Clamping systems

Universal vice



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

FUNCTION



EASY-NUT

Due to the Easy-nut the cut-off wheel can be changed quickly and easily. For the big cut-off machines Brillant 275, 285 and 2000 the nut can be tensioned with less effort. A facilitation, which can also be retrofitted.



WEAR RING

The wear ring protects the arbour and can be replaced if necessary.



E-LAB

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

EQUIPMENT



EASY-CLAMPING SYSTEM

Clamping tools with this logo can be used in combination with our Easy-clamping system. Where appropriate, the suitable Easy-clamping base M, L or XL is specified.



PREREQUISITES

For certain specified functions, automatic axes must be present.



INFO

Supplementary product information

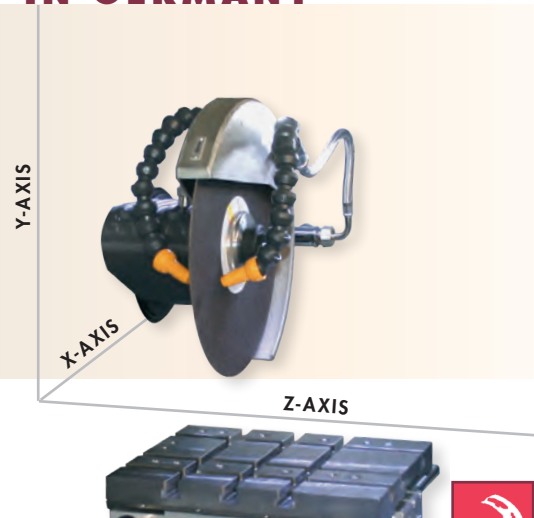


NO DRIPPING SLIDING DOOR

No dripping of coolant during set-up of machine.

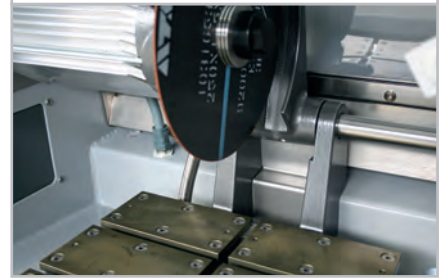
MADE IN GERMANY

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.



**SAFETY**

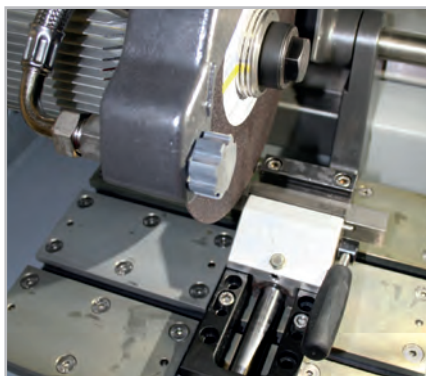
The integrated standstill monitoring allows opening only when the cutting wheel is not rotating.

**BRILLANT 200**

The BRILLANT 200 is an especially user-friendly wet abrasive cut-off machine with manual cut-off. Opening the machine folds away the hood to the inside so that the whole cutting chamber is easily accessible. The round window opens a wide field of view during the cutting process.

The cutting wheel cooling is integrated directly into the wheel guarding cover. The large, stainless table is equipped with replaceable wearing plates.

Transverse grooves allow optimized alignment of clamping vices (e. g. clamping vice 80).

**FINE DYNAMIC CUT-OFF**

The manual cutting movement of the Y-axis is executed precisely and jerk-free via lever. Length and angle of the lever are adjustable. Further, the cutting depth can easily be adjusted by using a limiter.

**ILLUMINATION**

Through the large rounded window, the cutting chamber is comfortably visible. For direct lighting, the Brillant 200 can be equipped with a flexible LED light.

BASIC MODULE



BRILLANT 200



Order No.: M1880000

- » manual vertical movement
- » simple operation
- » opening on left- and righthand side for continuous long materials
- » large table with replaceable wearing plates
- » large hood for optimal accessibility
- » latest safety standard with door interlocking system
- » solid aluminium design, powder coated
- » optional LED lamp
- » Easy-nut

EQUIPMENT



POWER SUPPLY

Equipment 1

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

Order No.: A1880000

Equipment 2

480 V/60 Hz (3Ph/PE)

Order No.: A1880001

Equipment 3

220 V/60 Hz (3Ph/PE)

Order No.: A1880002

OPTION



LED FLEX-LIGHT

Order No.: A1880003

- » flexible LED light

ACCESSORIES



RECIRCULATION COOLING SYSTEM

- » 2-chamber-pvc-compartment 45 Ltr.
- » inlet sieve and filter bag

- » incl. connection set
- » controlled by cut-off machine



Mobile, with insertion mechanism for System Lab cabinets

400 V/50 Hz (3Ph/PE)

Order No.: A5800484

480 V/60 Hz (3Ph/PE)

Order No.: A5800485

220 V/60 Hz (3Ph/PE)

Order No.: A5800486

WxHxD

366x540(640)
x610 mm

Mobile

400 V/50 Hz (3Ph/PE)

Order No.: A5800487

480 V/60 Hz (3Ph/PE)

Order No.: A5800488

220 V/60 Hz (3Ph/PE)

Order No.: A5800489

WxHxD

366x550x600mm

ACCESSORIES

CENTRIFUGAL SEPARATOR



- » to remove coolant mist
- » increases quality of illumination
- » exhauster power 180 or 215 m³/h (depends on power supply)

400 V/50 Hz (3Ph/PE)

Order No.: Z1820009

480 V/60 Hz (3Ph/PE)

Order No.: Z1820012

220 V/60 Hz (3Ph/PE)

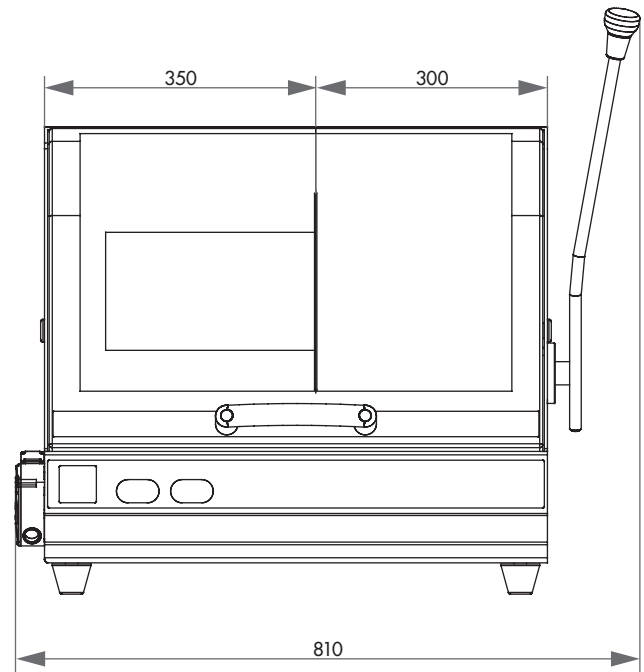
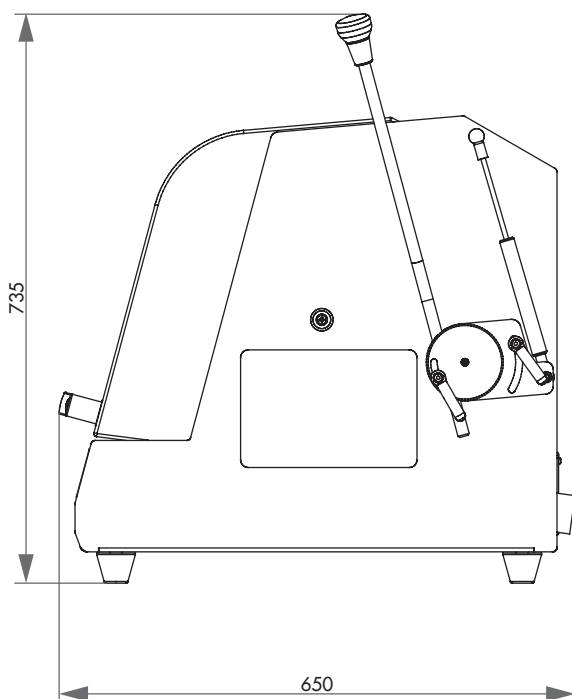
Order No.: Z1820011

SPECIFICATIONS

Cutting capacity	Ø 90 mm - 25 mm long parts Ø 55 mm for continuous long parts
Cut-off wheel	Ø 254 mm/10"
Arbour size	Ø 32 mm
Vertical movement ~	155 mm (depends on cut-off wheel)
Table WxD	350 x 288 mm
T-slot	12 mm

Speed	50 Hz / 2850 rpm 60 Hz / 3420 rpm
Motor cut-off wheel	3 kW, S6-mode
Connected load	4.5 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)

WxHxD ~	810 x 735 x 650 mm
Weight ~	75 kg





CONTROL

All axes can be controlled with a joystick. The built-in electronic control with its simple and clearly defined touch screen display enables easy programming, storage and loading. During the automatic cutting process all parameters such as feed speed, cutting force etc. can be monitored and modified.



BRILLANT 220

The BRILLANT 220 is a compact, user-friendly precision wet abrasive cut-off machine. It can be fitted with up to three automatic axes (X, Y, Z) and several cutting modes for maximum flexibility and ideal use of space.

With its modular construction and different options and clamping tools the Brillant 220 can be easily equipped for specific applications.



CONSTRUCTION

Openings on both sides of the solid aluminium construction allow sectioning of long or continuous parts up to $\varnothing 70$ mm. The cutting chamber which is illuminated by energy-saving LED is easily accessible through a sliding front door and the side door with safety interlock. The cutting wheel is water cooled by versatile jointed hoses on both sides.



AXES

The Brillant 220 is standardly equipped with automatic vertical cut-off (Y-axis, 80 mm) and definable regulated travel for large cutting wheels. The horizontal movement (X-axis, 210 mm) is available in automatic or manual mode. In combination with optional cross-feed (Z-axis, 80 mm) it allows maximum flexibility for precise, soft touch cutting.

CUTTING MODES

Step and diagonal cut optimize the operating angle for gently cutting.

The step cut divides the sample in layers and is especially suited for large parts and bulky materials.

The diagonal cut is recommended for asymmetrical specimens; this is done by combining vertical and horizontal cut modes.



FEED CONTROL

The feed adjusts automatically to different thickness and hardness of materials. The feed speed is variable.

PULSED CUTTING

In pulsed cutting mode the feed speed is interrupted and continued in opposite direction periodically.

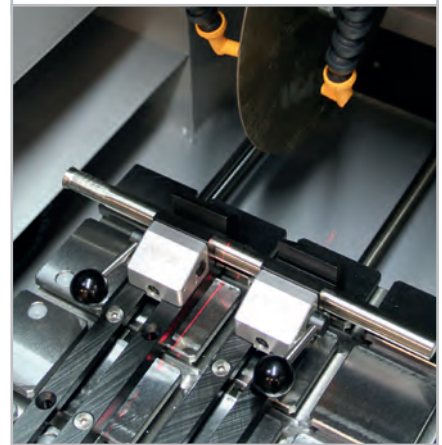
This helps the wheel stay sharp and allows coolant to flush the point of contact, clearing debris and keeping the material cool.

The characteristic, pulsed cutting in definable intervals can be switched on to every cutting mode.

LASER

With line laser you can display the scheduled cut on the sample.

This helps to define the exact cutting position.

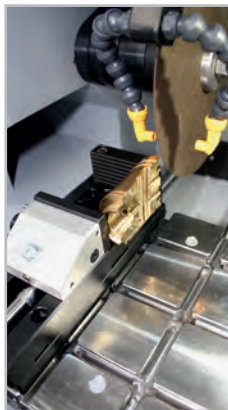


PRECISION CROSS FEED

The automatic cross feed with serial cutting function produces precise parallel cuts of 1 μm (0.001 mm) in equal or varied sizes.

The preselected cut-off wheel thickness is automatically included in the process.

The integrated Z-axis can also be used as a precision cross feed for pot wheels (thin cuts).



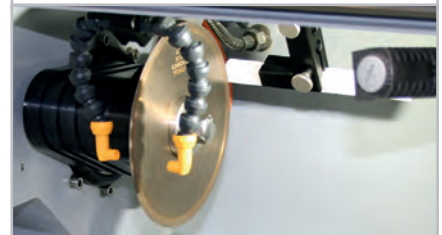
CLAMPING TOOLS

The Brillant 220 is equipped with the innovative ATM-easy-clamping system. This makes changing and adjusting of clamping tools very easy and supersedes fixing by T-slots.

All clamping tools, e.g. Fast Lock Vice 50, 60, 80, X-Clamp, Vacuum Vice and Rotavice can be fitted with the Easy-clamping system.

SHARPENING DEVICE

Diamond cutting wheels and pot wheels can be dressed easily with the sharpening device. It is manually operated by a lever from outside and during the operation sequence.



BASIC MODULE

BRILLANT 220



Order No.: M1890000

- » automatic Y-axis
- » openings on the left and right for continuous long parts
- » sliding door
- » table made of stainless steel
- » electronic control with clear LCD
- » electronic travel measuring
- » cutting force dependent feed-control
- » automatic pulsed cutting
- » step cut, diagonal cut
- » program storage
- » direct positioning via joystick (all automatic axes)
- » current safety standard with door interlock (safety protection)
- » optimal cutting chamber with LED illumination
- » solid aluminium construction, powder coated
- » e-Lab-ready



EQUIPMENT

POWER SUPPLY



Equipment 1

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

Order No.: A1890000

Equipment 2

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

Order No.: A1890001

ARBOUR SIZE



Equipment 1

Fixed shaft fitting

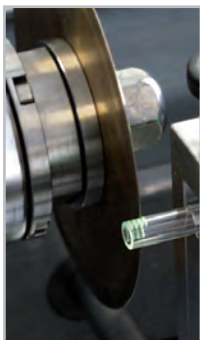
Arbour size \varnothing 12.7 mm

Order No.: A1890002

Equipment 2

Quick-change system

» on request



Serial cuts with Z-axis

TABLE DRIVE



Equipment 1

X-axis manual (handle)

Order No.: A1890004

Travel X-axis 210 mm

Precision 0.1 mm

Equipment 2

X-Axis automatic

Order No.: A1890005

Travel X-axis 210 mm

Precision 0.1 mm

CROSS FEED Z-AXIS



Equipment 1

without Z-axis

Order No.: A1890008

Equipment 2

Z-axis manual (handle)

Order No.: A1890009

Travel Z-axis 80 mm

Precision 0.1 mm

Equipment 3

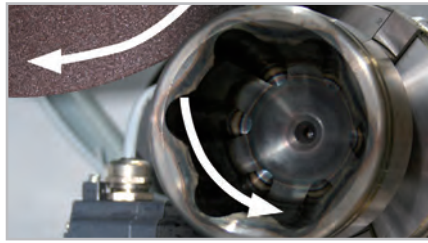
Z-axis automatic

Order No.: A1890010

Travel Z-axis 80 mm

Precision 0.001 mm





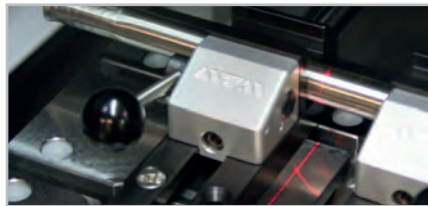
ROTATION TOOL

OPTION



or request

- » tool with vertical rotary feed, parallel to wheel
- » angle input via software control



LASER ALIGNMENT AID



Order No.: A1890011

- » laser line to visualize the cutting line
- » laser class 1

ACCESSORIES

RECIRCULATION COOLING SYSTEM



- » no voltage selection required

- » controlled by cut-off machine

Order No.: A1800160

Tank	15 ltr.
Pump	8 ltr./min, 24 V
WxHxD	400x220x300 mm
Height incl. pump	~ 350 mm



Mobile with insertion mechanism für System Lab cabinets

- » 2-chamber-pvc-compartment 45 Ltr.
- » inlet sieve and filter bag

Order No.: A5800494

Tank	45 ltr.
Pump	8 ltr./min, 24 V
WxHxD	366x540(640) x610 mm



CENTRIFUGAL SEPARATOR



- » to remove coolant mist
- » increases quality of illumination
- » exhauster power 180 or 215 m³/h, depends on power supply

400 V/50 Hz (3Ph/PE)

Order No.: Z1820009

480 V/60 Hz (3Ph/PE)

Order No.: Z1820012

220 V/60 Hz (3Ph/PE)

Order No.: Z1820011

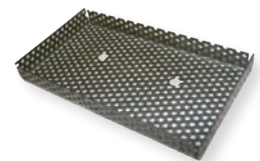


SAMPLE COLLECTOR



Order No.: Z1800002

- » stainless steel, incl. fixing screws



SHARPENING DEVICE



Order No.: A1890012

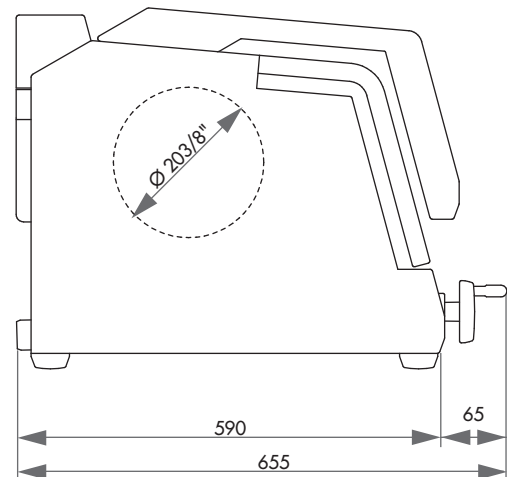
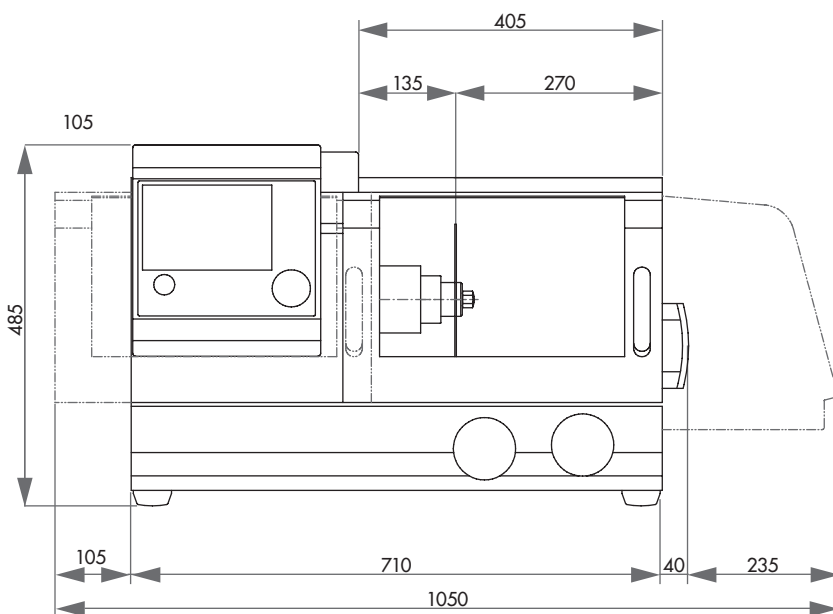
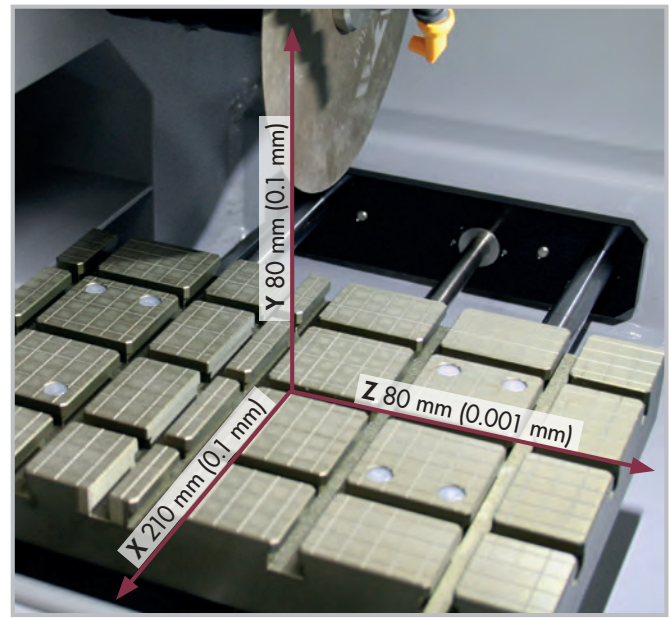
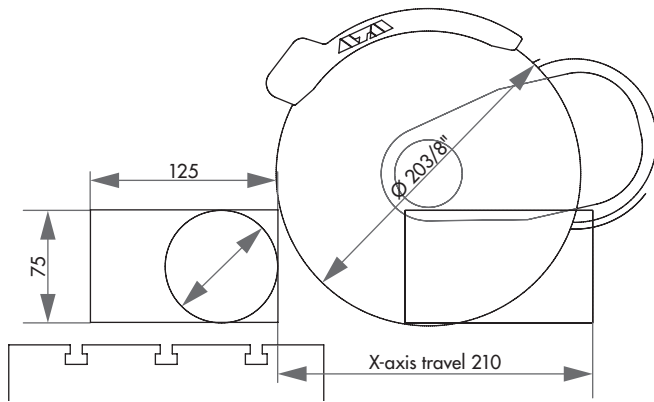
- » for dressing diamond and pot wheel



SPECIFICATIONS

Max. cutting capacity \varnothing 75 mm (depends on cut-off wheel)	
Cut-off wheel	75 – 203 mm/8"
Arbour size	\varnothing 12.7 mm
VERTICAL / HORIZONTAL MOVEMENT (X-/Y-AXIS)	
Table WxD	300 x 210 mm (8 mm T-slot)
Feed	0.005 – 3 mm/sec
Precision	0.1 mm
Vertical movement (Y-axis)	80 mm
Horizontal movement (X-axis)	210 mm
CROSS FEED (Z-AXIS)	
Table WxD	280 x 210 mm (8 mm T-slot)
Feed	80 mm
Precision	0.001 mm (1 μ m)

Variable speed	300 – 5000 rpm in steps of 100 rpm
Motor cut-off wheel	0.75 kW, S1-mode
Connected load	2.3 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE) 2 110 V/60 Hz (1Ph/N/PE)
WxHxD	710 x 570 x 485 mm
Cutting chamber WxD	405 x 500 mm
Weight ~	82 kg





BRILLANT 230

The BRILLANT 230 is a wet abrasive cut-off machine with fine dynamic, manual wheel movement into samples up to \varnothing 110 mm.

The spacious cutting chamber allows various clamping variations. The solid aluminium design comes with openings on the right and left hand side for cutting continuous long parts.



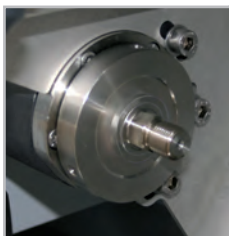
FINE DYNAMIC CUT-OFF

With the manual cutting movement, the cutting force is regulated through a set of gears. The cut is thereby jerk-free and more precise.



MANUAL HORIZONTAL MOVEMENT

The manual horizontal movement allows cutting long parts longitudinally and easy positioning of the sample below the cut-off wheel.



INNOVATIVE DETAILS

The sliding front door and the side door with safety interlock allow easy and optimal access to the cutter chamber. Further, the LED cutting chamber illumination is energy-saving. The arbour is protected against wearing by an interchangeable ring.

Z-AXIS

The manual Z-axis can be adjusted with 0.1 mm precision for parallel cuts.

BASIC MODULE



BRILLANT 230

Order No.: M1820000

- » precise manual vertical movement with angle adjustable lever
- » table adjustable in x-direction
- » sliding door and side door with door interlock
- » T-slot table, stainless steel
- » opening on left- and righthand side for continuous long materials
- » chamber illumination with LED, arbour with protector
- » Easy-nut – for easy change of cut-off wheel
- » solid aluminium design, powder coated

EQUIPMENT



POWER SUPPLY

Equipment 1

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

Order No.: A1820015

Equipment 2

480 V/60 Hz (3Ph/PE)

Order No.: A1820016

Equipment 3

220 V/60 Hz (3Ph/PE)

Order No.: A1820017

WHEEL GUARD



Equipment 1

Cut-off wheel Ø 254/10"

Order No.: A1820013

Max. cutting capacity Ø 85 mm

Equipment 2

Cut-off wheel Ø 305/12"

Order No.: A1820014

Max. cutting capacity Ø 110 mm



Manual Z-axis

TABLE DRIVE



Equipment 1

without (without X-axis, without Z-axis)

Order No.: A1820028

Equipment 2

X-axis manual (without Z-axis)

Order No.: A1820029

Equipment 3

Z-axis manual (without X-axis)

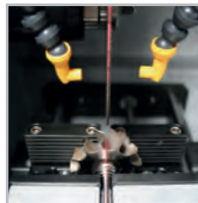
Order No.: A1820030

Equipment 4

X-axis manual/Z-axis manual

Order No.: A1820031

OPTION



LASER ALIGNMENT AID

Order No.: A1820027

- » laser line to visualize the cutting line
- » laser class 1

ACCESSORIES

RECIRCULATION COOLING SYSTEM



- » 2-chamber-pvc-compartment 45 ltr.
- » inlet sieve and filter bag

- » incl. connection set
- » controlled by cut-off machine

**Mobile with insertion mechanism for System Lab cabinets**

400 V/50 Hz (3Ph/PE)

Order No.: A5800484

480 V/60 Hz (3Ph/PE)

Order No.: A5800485

220 V/60 Hz (3Ph/PE)

Order No.: A5800486

WxHxD	366x540(640) x610 mm
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**Mobile**

400 V/50 Hz (3Ph/PE)

Order No.: A5800487

480 V/60 Hz (3Ph/PE)

Order No.: A5800488

220 V/60 Hz (3Ph/PE)

Order No.: A5800489

WxHxD	366x550x600mm
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BELT FILTER SYSTEM 130

**Belt filter system 130**

400 V/50 Hz (3Ph/PE)

Order No.: A6501009

480 V/60 Hz (3Ph/PE)

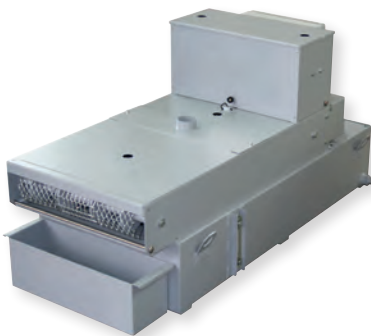
Order No.: A6501011

220 V/60 Hz (3Ph/PE)

Order No.: A6501010

- » incl. filter roll

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

**Connection set 230/250**

Order No.: Z6501004

- » for belt filter system please order connection set

CENTRIFUGAL SEPARATOR



- » to remove coolant mist
- » increases quality of illumination
- » exhauster power 180 or 215 m³/h depends on power supply

400 V/50 Hz (3Ph/PE)

Order No.: Z1820009

480 V/60 Hz (3Ph/PE)

Order No.: Z1820012

220 V/60 Hz (3Ph/PE)

Order No.: Z1820011



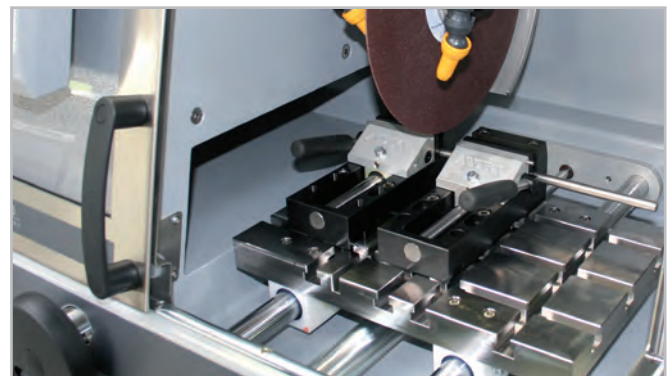
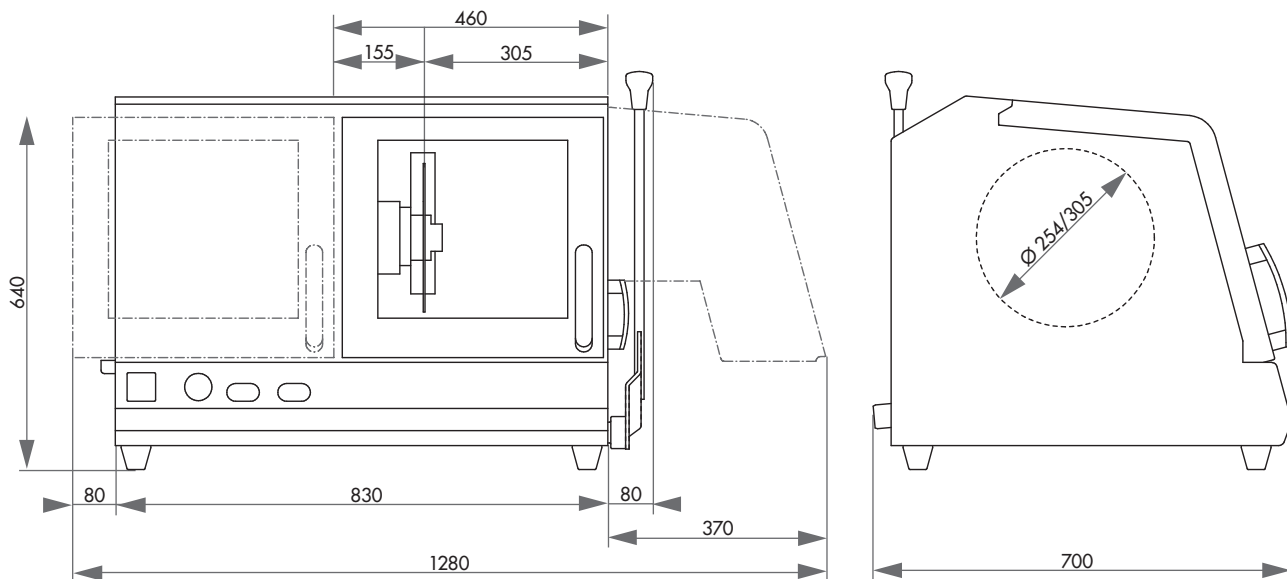
SPECIFICATIONS

Max. cutting capacity	1	Ø 85 mm (Ø 254 mm cut-off wheel)
	2	Ø 110 mm (Ø 305 mm cut-off wheel)
Cut-off wheel	1	Ø 254 mm/10"
	2	Ø 305 mm/12"
Arbour size	Ø 32 mm	
Vertical movement	125 mm	

Speed	2750 rpm	
Motor cut-off wheel	4 kW, S1-mode	
Connected load	6 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)

Table WxD	1	380x250 mm (without Z-axis)
	2	300x250 mm (with Z-axis)
T-slot	12 mm	

WxD	830 x 640 x 670 mm	
Weight ~	130 kg	



Clamping example



INTUITIVE CONTROL SOFTWARE

The new control software with integrated, extensive maintenance menu makes the operation simple and comfortable.



BRILLANT 240

The BRILLANT 240 is a wet abrasive cut-off machine with fine dynamic and manual vertical wheel movement (chop cut) for samples up to \varnothing 95 mm and electromechanical lever brake. The automatic X-axis allows a precise pulsed cut and oscillation

cut while the spacious cutting chamber gives various clamping variations.

The solid aluminum design comes with openings on the right and left hand side for cutting long parts.

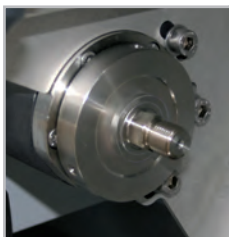
HORIZONTAL MOVEMENT

The manual horizontal or automatic movement allows cutting long parts longitudinally and easy positioning of the sample below the cut-off wheel. In pulsed cutting mode the sample material is cut particularly gently.



FINE DYNAMIC CUT-OFF

With the manual cutting movement, the cutting force is regulated through a set of gears. The cut is thereby jerk-free and more precise. The easy-to-use lever brake fixes the cutting disc in any position.



INNOVATIVE DETAILS

The sliding front door and the side door with safety interlock allow easy and optimal access to the cutting chamber, which is optimal illuminated by a LED lamp. The Quick-Change-System makes change of the cutting wheel quick and easy and simplifies maintenance.

AUTOMATIC CROSS TRAVEL

The automatic Z-axis can be adjusted with 0.1 mm precision for parallel cuts.



BASIC MODULE



BRILLANT 240



Order No.: M1822000

- » manual Y-axis with electromechanical lever brake
- » 7" Touch-Screen user interface with intuitive ATM user software
- » automatic X-axis - manual travel via hand wheel
- » cutting-force dependent feed control (X-axis)
- » superior LED illumination of cutting chamber
- » parallel setting of wheel guard during cutting sequences increases cutting capacity
- » opening on both sides for long parts

EQUIPMENT

POWER SUPPLY



Equipment 1

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

Order No.: A1822001

Equipment 2

480 V/60 Hz (3Ph/PE)

Order No.: A1822002

Equipment 3

220 V/60 Hz (3Ph/PE)

Order No.: A1822003



TABLE DRIVE



Equipment 1

X-axis automatic/manual
(without Z-axis)

Order No.: A1822004

Equipment 2

**X-axis automatic/manual and
Z-axis (cross feed) automatic**

Order No.: A1822005

OPTION



LASER ALIGNMENT AID



Order No.: A1822006

- » laser line to visualize the cutting line
- » laser class 1

ACCESSORIES

RECIRCULATION COOLING SYSTEM



- » 2-chamber-pvc-compartment 45 ltr.
- » inlet sieve and filter bag

- » incl. connection set
- » controlled by cut-off machine

**Mobile with insertion mechanism for System Lab cabinets**

400 V/50 Hz (3Ph/PE)

Order No.: A5800484

480 V/60 Hz (3Ph/PE)

Order No.: A5800485

220 V/60 Hz (3Ph/PE)

Order No.: A5800486

WxHxD 366x540 (640)
x610 mm**Mobile**

400 V/50 Hz (3Ph/PE)

Order No.: A5800487

480 V/60 Hz (3Ph/PE)

Order No.: A5800488

220 V/60 Hz (3Ph/PE)

Order No.: A5800489

WxHxD 366x550x600mm

BELT FILTER SYSTEM 130



- » incl. filter roll

400 V/50 Hz (3Ph/PE)

Order No.: A6501009

480 V/60 Hz (3Ph/PE)

Order No.: A6501011

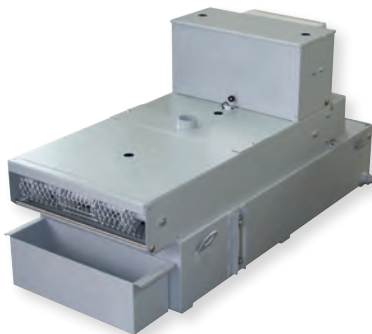
220 V/60 Hz (3Ph/PE)

Order No.: A6501010

Connection set 230/250

Order No.: Z6501004

- » connection tubing for belt filter system 130



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

CENTRIFUGAL SEPARATOR



- » removes coolant mist
- » purifies the air and increases visibility
- » exhaust power 180 m³/h

400 V/50 Hz (3Ph/PE) oder 480 V/60 Hz (3Ph/PE)

Order No.: A1822007

220 V/60 Hz (3Ph/PE)

Order No.: A1822008



SPECIFICATIONS

Max. theoretical cutting capacity	Ø 95 mm
Cut-off wheel	Ø 254 mm/10"
Arbour size	Ø 32 mm
Horizontal movement	225 mm
Vertical movement	170 mm
Cross feed	120 mm

Table WxD	1	380x270 mm (without Z-axis)
	2	300x270 mm (with Z-axis)
T-slot	12 mm	

Speed	3015 rpm (50 Hz)	
	3100 rpm (60 Hz)	
Motor cut-off wheel	3 kW, S1-mode	
Connected load	5.5 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)

WxHxD ~	925 x 676 x 756 mm
Weight ~	130 kg

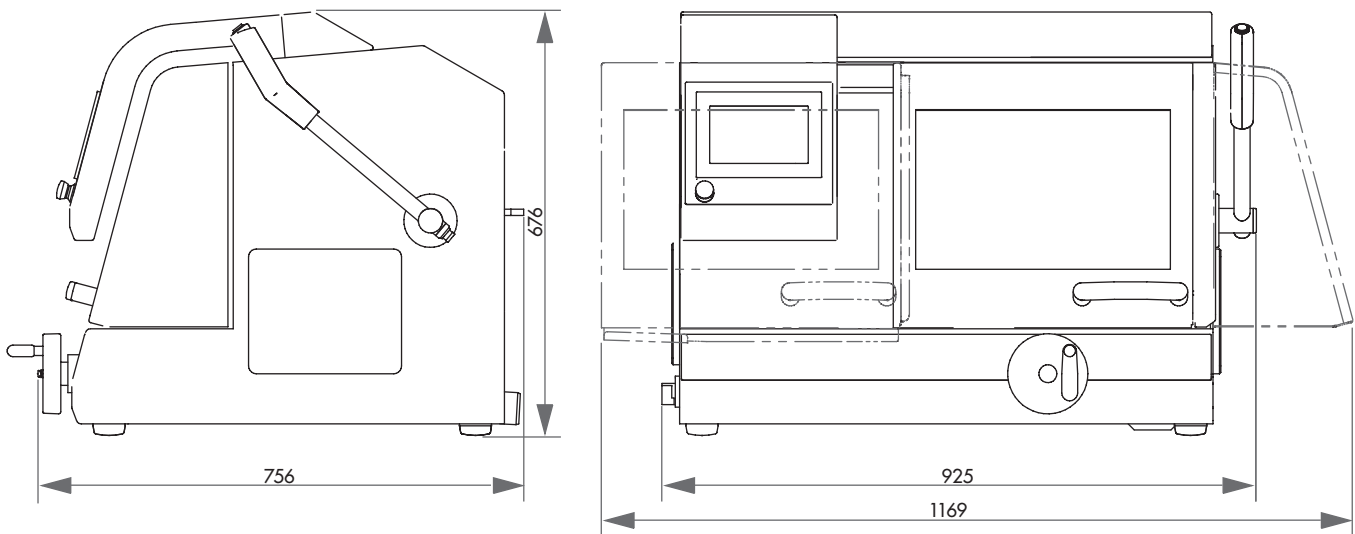


Illustration: Basic unit without equipment, options and accessories. Further information is available on request.



Clamping example

ELECTRONIC PERFORMANCE CONTROL

The feed rate is reduced upon reaching the preset maximum power. This protects the machine and its cutting components from overloading.

**ELECTRONIC CONTROL**

Cutting parameters for the automatic traverse cuts can be saved in the electronic control, and then loaded later. The position of the manual traverse cut is also shown on the display.

All parameters such as feed rate, travel and cutting force can be altered during automatic cycles.

**MULTI-POSITION PROCESS MPP**

With the "Multi-Position-Process" (MPP) you can place multiple specimens on the table and cut them in one sequence.

The teach-in function enables a simple and user-friendly setting of various cutting positions.

**BRILLANT 250**

The BRILLANT 250 is an automatic wet abrasive cut-off machine for samples up to max. Ø 135 mm.

It cuts gently with low contact cutting (lcc) different type of samples in various geometries, sizes and materials.

The machine is commonly used in Materialography, Mineralogy, as well as for cutting of composite materials (CFC/PMC/MMC)

or electronic devices such as PCB's. The large scale cutting chamber, the stainless steel table as well as other software based functions of the large abrasive machines such as automatic touch detection, MPP and parallel setting of the wheel guard during vertical cutting, make operation comfortable and processes reproducible and flexible.

PULSED CUTTING

In cases where there are heavy sections and materials which are difficult to cut, the variable pulsed cutting system gives decisive advantages.

**AUTOMATIC TOUCH DETECTION**

After automatic start of the cutting process the sample is approached in rapid run. By touching the cut-off wheel the sample is cut efficiently and safely with preset cutting parameters.

**NEW DIMENSIONS**

The enlarged cutting chamber and worktable combined with parallel setting of wheel guard increases cutting capacity and travel for all axes. The side door ensures optimum access to the cutting chamber and the additional opening for supplying long sample parts opens up much possibilities.

PRECISION CROSS FEED

The optional, automatic cross-feed with series cut function is suitable for exact parallel cuts. Operational handling takes place via electronic control. The electronic cross-feed can also be applied as feeder axis when working with pot wheel.



with automatic traverse cut

with automatic cross-feed



BASIC MODULE

BRILLANT 250



Order No.: M1821001

» automatic table (X-axis)



» cutting wheel movement (Y-axis)



» equipment: automatic cross feed (Z-axis) - note equipment version

» manual control of X-/Y-/Z-axis via an industrial joystick

» high dynamic drive up to 40 mm/sec.

» automatic touch detection



» parallel setting of wheel guard during vertical cutting sequences increases cutting capacity

» variable speed

» incl. cutting wheel arbour with wear ring

» Easy-nut – for easy change of cutting wheel

» Touch-Screen display and ATM-Software control

» optical menu navigation for drawing up precise program sequences with position steps and cutting modes (horizontal, vertical, diagonal and step cut)

» variable pulsed cutting

» storage of programs with password; update and backup via USB

» remote service/support is available via controller

» robust aluminium construction, powder-coated

» large sliding and side door for optimal access to cutting chamber; with safety lock when machine is running

» sliding door with large window

» optimal chamber illumination

» options: laser alignment aid, centrifugal separator



EQUIPMENT

POWER SUPPLY



Equipment 1

400 V/50 Hz (3Ph/PE)

Order No.: A1821015

Equipment 2

480 V/60 Hz (3Ph/PE)

Order No.: A1821016

Equipment 3

220 V/60 Hz (3Ph/PE)

Order No.: A1821017

WHEEL GUARD



Equipment 1

Cut-off wheel Ø 305/12"

Order No.: A1821018

Max. cutting capacity Ø 110 mm

Equipment 2

Cut-off wheel Ø 356/14"

Order No.: A1821019

Max. cutting capacity Ø 135 mm



EQUIPMENT

CROSS-FEED AXIS

Equipment 1
without Z-axis
Order No.: A1821020

Equipment 2
Z-axis manual (handle)
Order No.: A1821021

Equipment 3
Z-axis automatic
Order No.: A1821022

Travel	140 mm
Precision	0.1 mm

Travel	140 mm
Precision	0.1 mm



ROTATION TOOL

on request

- » tool with vertical rotary feed, parallel to wheel
- » angle input via software control



LASER ALIGNMENT AID



- Order No.: A1821023
- » laser line to visualize the cutting line
 - » laser class 1

CENTRIFUGAL SEPARATOR



Order No: A1821024

- » to remove coolant mist
- » increases quality of illumination
- » exhauster power 180 or 215 m³/h depends on power supply

ACCESSORIES

RECIRCULATION COOLING SYSTEM



- » 2-chamber-pvc-compartment 45 ltr.
- » inlet sieve and filter bag

- » incl. connection set
- » controlled by cut-off machine



Mobile with insertion mechanism for
System Lab cabinets

Order No.: A5800507

WxHxD	366x540 (640) x610 mm
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Mobile

Order No.: A5800508

WxHxD	366x550x600mm
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BELT FILTER SYSTEM 130



- » Incl. filter roll
- Order No.: A6501016

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

Connection set 230/250
Order No.: Z6501004

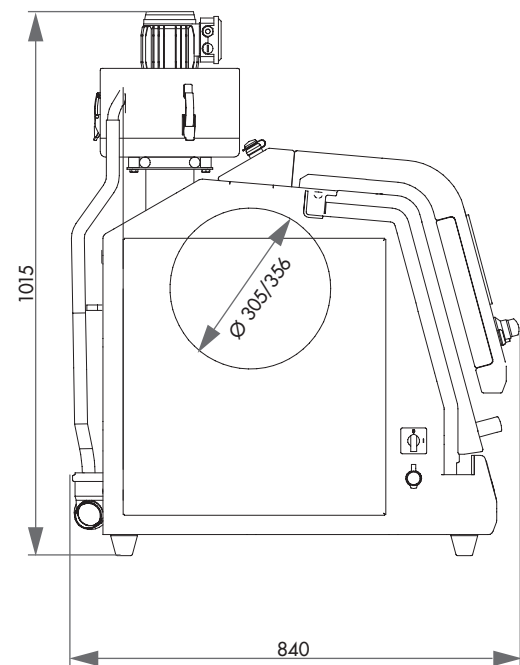
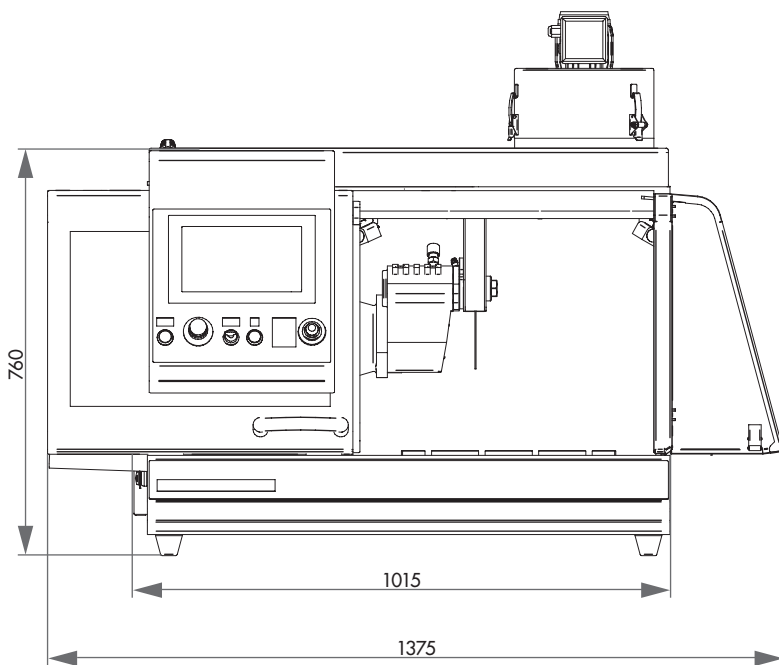
- » for belt filter system please order connection set



SPECIFICATIONS

Max. cutting capacity	1	Ø 110 mm (Ø 305 mm cut-off wheel)
	2	Ø 135 mm (Ø 356 mm cut-off wheel)
Cut-off wheel	1	Ø 305 mm/12"
	2	Ø 356 mm/14"
Arbour size	Ø 32 mm	
Y-axis automatic	180 mm	
Z-axis automatic (parallel cut) (option)	140 mm	
X-axis automatic	260 mm	
Feed rate	0.001 – 40 mm/sec	
Table WxD	1	400x300 mm (with Z-axis)
	2	500x300 mm (without Z-axis)
T-slot	12 mm	

Motor cut-off wheel	4 kW (S1), 5.5 kW (S3)
Connected load	9.5 kVA
Power supply	variable speed 800-3400 rpm
	1 400 V/50 Hz (3/PE)
	2 480 V/60 Hz (3/PE)
3	220 V/60 Hz (3/PE)
WxHxD ~	1,015 x 760 x 810 mm
Weight ~	200 kg





MANUAL VERTICAL MOVEMENT

Cutting force can be regulated precisely and with little effort by using the wheel spider. The wheel height can be locked at each point of the wheel spider rotation.

MANUAL HORIZONTAL MOVEMENT

The manual horizontal movement allows cutting long parts longitudinally.

BRILLANT 255

The universal wet abrasive cut off machine BRILLANT 255 with manual travel and fine dynamic cutting allows precise, soft touch cutting with 2 axes in arbitrary directions (Y/X axis) and can be equipped with a manual Z-axis for parallel serial cuts (option). Side openings allow cutting continuous long parts in the spacious cutting chamber of this solid and powder-coated aluminium construction.

Complex geometric shaped samples can be fixed securely on the T-slot table using our reliable clamping systems.

The vibration reducing design of the cutting arm allows a low noise cutting process.

Our approved LED cutting chamber illumination is energy saving, damage resistant and guarantees optimum illumination of the cutting chamber.



MANUAL CROSS FEED

The Z-axis is integrated in the table, and a measured parallel slice can be set using the hand wheel with scale. The height of the cutting wheel does not need to be altered when setting the Z-axis dimension.

SAFETY

Integrated safety protection only allows the automatic doors to be opened when the cutting wheel has stopped rotating.

LASER ALIGNMENT

With line laser you can display the scheduled cut on the sample. This helps to define the exact cutting position.



BASIC MODULE



BRILLANT 255



Order No.: M1841001

- » manual horizontal movement with handle
- » manual, fine dynamic cut-off with lateral wheel spider
- » spacious cutting chamber with large T-slot table
- » openings on the left and right for continuous long parts
- » sliding door
- » current safety standard with door interlock (safety protection)
- » cutting wheel arbour with wear ring
- » optimum cutting chamber illumination with LED
- » solid aluminium construction, powder coated
- » Easy-nut for quick and easy exchange of cutting wheels



EQUIPMENT

POWER SUPPLY



Equipment 1
Fixed speed 1950 rpm

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

Order No.: A1841020

Equipment 2
Fixed speed 1950 rpm

480 V/60 Hz (3Ph/PE)

Order No.: A1841021

Equipment 3
Fixed speed 1950 rpm

220 V/60 Hz (3Ph/PE)

Order No.: A1841022

TISCHANTRIEB



Equipment 1
Without Z-axis
Order No.: A1841023
» made of stainless steel

Equipment 2
Z-axis m manual (handle)
Order No.: A1841024
» made of stainless steel

Travel Z-axis 150 mm

Precision 0.1 mm

WHEEL GUARD



Equipment 1
Cut-off wheel Ø 350 mm/14"
Order No.: A1841009

Max. cutting capacity Ø 130 mm

Equipment 2
Cut-off wheel Ø 400 mm/16"
Order No.: A1841010

Max. cutting capacity Ø 150 mm



EQUIPMENT



COOLING AND FILTER SYSTEMS

Equipment 1

Recirculation cooling systems

400 V/50 Hz (3Ph/PE)

Order No.: A1841011

480 V/60 Hz (3Ph/PE)

Order No.: A1841012

220 V/60 Hz (3Ph/PE)

Order No.: A1841013

Tank ~ 130 ltr.

Pump ~ 100 ltr./min

WxHxD 755x663x921 mm

» integrated

» inlet sieve with filter bag
(see consumables)

Equipment 2

Belt filter system 285

400 V/50 Hz (3Ph/PE)

Order No.: A6501000

480 V/60 Hz (3Ph/PE)

Order No.: A6501002

220 V/60 Hz (3Ph/PE)

Order No.: A6501001

Tank 285 ltr.

Filtering capacity 100 ltr./min
(referring emulsion)

Pump 100 ltr./min

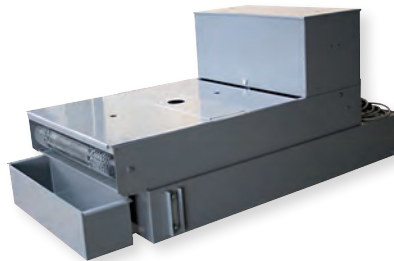
Filter area 0.85 m²

Filter fleece width 710 mm

WxHxD 929x790x1745 mm

Weight ~ 120 kg

» incl. filter roll



Connection set 255/265

Order No.: Z6501003

» for belt filter system please order
connection set

OPTION

CENTRIFUGAL SEPARATOR



- » to remove coolant mist
- » increases quality of illumination
- » exhauster power 425 or 500 m³/h depends on power supply

400 V/50 Hz (3Ph/PE)

Order No.: A1841029

480 V/60 Hz (3Ph/PE)

Order No.: A1841030

220 V/60 Hz (3Ph/PE)

Order No.: A1841031



LASER ALIGNMENT AID

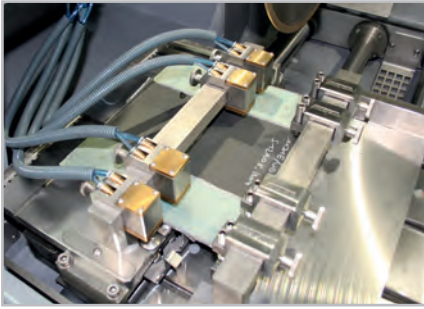


Order No.: A1841032

- » laser line to visualize the cutting line
- » laser class 1



OPTION



PULSED CLAMPING SYSTEM FOR BRILLANT 255/265

- » parallel, continuous serial cuts of 5–130 mm width
- » clamping and adjusting of sheet material up to 20 mm thickness in Z-direction
- » max. material width (cutting length) 300 mm with cut-off wheel \varnothing 350 mm

manual

Order No.: Z1841010

- » for manual Z-axis

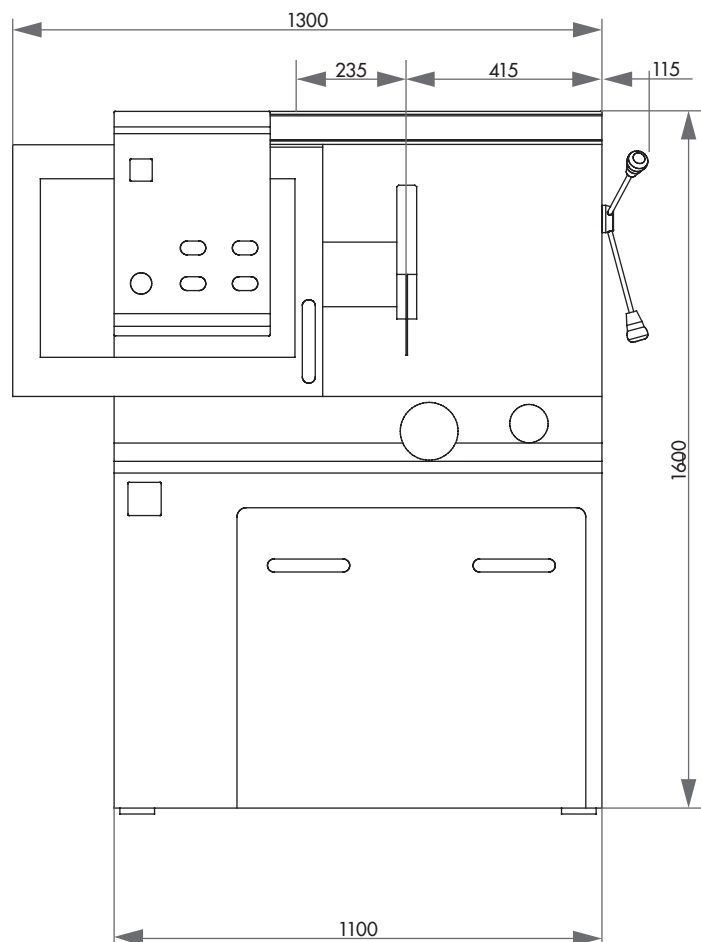
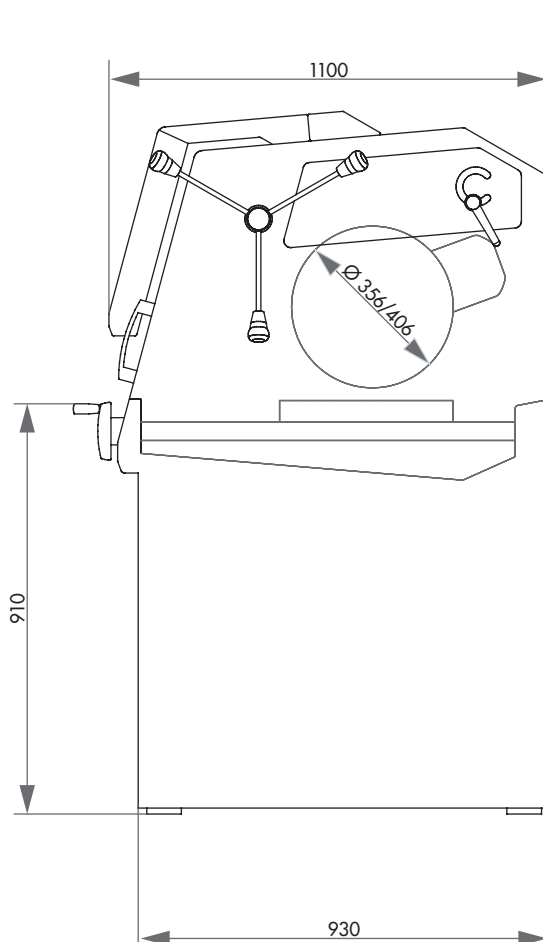
SPECIFICATIONS

Max. cutting capacity	\varnothing 150 mm (depends on cut-off wheel)
Cut-off wheel	1 \varnothing 356/15" mm
	2 \varnothing 406/16" mm
Arbour size	\varnothing 32 mm
Vertical movement	170 mm (depends on cut-off wheel)

Horizontal movement	365 mm
Table WxD	1 550x375 mm (without Z-axis)
	2 420x375 mm (with Z-axis)
T-slot	12 mm

Motor cut-off wheel	7 kW, S1-mode
Connected load	12.5 kVA
Power supply	fixed speed 1950 rpm
	1 400 V/50 Hz (3Ph/N/PE)
	2 480 V/60 Hz (3Ph/PE)
	3 220 V/60 Hz (3Ph/PE)

WxD ~	1100x1600x930 mm
Weight ~	450 kg (depends on equipment)





ELECTRONIC CONTROL

With the electronic control, all cutting parameters can be saved and loaded again. Maintenance tasks can also be stored in a customer-specific manner. During the automatic cutting process, all parameters such as feed speed, cutting force etc. can be modified.

PROGRAM CYCLE

By pressing the start button, the main motor and the feed are activated. The integrated cut detection ensures a constant cutting behavior, even when the cutting disk wears during sectioning. The feed speed is automatically decreased when an overload occurs during the cutting process.



BRILLANT 265

The universal wet-abrasive cut-off machine BRILLANT 265 with automatic travel and cut-off allows precise, soft touch cutting with 2 axes in arbitrary directions (Y/X axis) and can be equipped with an automatic or manual Z-axis for parallel serial-cuts (option).

The newly developed intuitive user software with graphical LCD interface makes the automatic process sequence easy and clear.

The large cutting chamber of solid, powder coated aluminum

construction is easily accessible through sliding door and side doors. Complex geometric shaped samples can be fixed securely on the T-slot table using our reliable clamping systems.

The innovative Quick-Change system facilitates maintenance and replacement of the cutting disc.

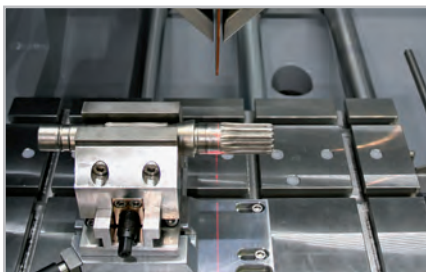
Our approved LED illumination of the cutting chamber is energy saving, damage resistant and guarantees optimum illumination of the cutting chamber.

PULSED CUTTING

Especially when the material is thick and difficult to cut, the adjustable automatic pulsed-cut offers advantages such as gentle cutting and optimal cooling of the intersection area.

CUTTING FORCE DEPENDENT FEED CONTROL

The feed speed automatically decreases when the cutting force reaches a pre-defined limit. This protects the machine, sample and clamping tools from over-loading.



PRECISION CROSS FEED

The Z-axis is integrated in the table. This allows keeping the cutting height at the same level. The automatic cross feed with serial cutting function produces precise parallel cuts.

JOYSTICK CONTROL

To reduce times for setting up, all axes can be controlled with a joystick.



SAFETY

Integrated safety protection only allows the automatic doors to be opened when the cutting wheel has stopped rotating.



LASER ALIGNMENT

With the optional line laser the cutting line can be projected on the sample. This helps to define the exact cutting position.



BASIC MODULE

BRILLANT 265



Order No.: M1842000

» automatic horizontal and vertical movement (X- and Y-axis)



» variable speed

» 10.1" Touch-Screen user interface with intuitive ATM user software



» superior LED illumination of cutting chamber

» parallel setting of wheel guard during cutting sequences increases cutting capacity



» opening on the right for long parts

» automatic touch detection

» cutting-force dependent feed control (X- and Y-axis)

» 200 customized programs storable

EQUIPMENT

POWER SUPPLY

Equipment 1
Variable speed
Order No.: A1842000

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

Equipment 2
Variable speed
Order No.: A1842001

480 V/60 Hz (3Ph/PE)

Equipment 3
Variable speed
Order No.: A1842002

220 V/60 Hz (3Ph/PE)



EQUIPMENT

TABLE DRIVE

Equipment 1
X-axis automatic (without Z-axis)

Order No.: A1842003

» included in basic unit

Equipment 2
X-axis automatic
Z-axis (cross feed) manual (hand wheel)
Order No.: A1842004

» made of stainless steel

Travel Z-axis 150 mm

Precision 0.1 mm

Equipment 3
X-axis automatic
Z-axis (cross feed) automatic
Order No.: A1842005

» made of stainless steel

Travel Z-axis 150 mm

Precision 0.1 mm



EQUIPMENT

COOLING AND FILTER SYSTEMS

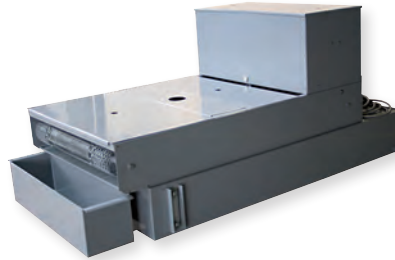
Equipment 1

Recirculation cooling unit

Order No.: A1842008

Tank	appr. 130 ltr.
Pump	appr. 100 ltr./min
WxHxD	625x608x810 mm

- » integrated, mobile
- » multi-chamber filtration
- » inlet sieve with filter bag
(see consumables)



Equipment 2

Belt filter system 285

Order No.: A1842011

Tank	285 ltr.
Filtering capacity	100 ltr./min (referring emulsion)
Pump	100 ltr./min
Filter area	0.85 m ²
Filter fleece width	710 mm
WxHxD	929x790x1745 mm
Weight approx.	120 kg

- » incl. filter roll
- » for belt filter system please order connection set

Connection set**for belt filter system 285**

Order No.: Z6501003



OPTION

**LASER ALIGNMENT AID**

Order No.: A1842009

- » laser line to visualize the cutting line
- » laser class 1

CENTRIFUGAL SEPARATOR

Order No.: A1842010

- » removes coolant mist
- » purifies the air and increases visibility
- » exhaust power 425 m³/h

**ROTATION TOOL***on request*

- » tool with vertical rotary feed, parallel to wheel
- » angle input via software control



OPTION

**PULSED CLAMPING SYSTEM FOR BRILLANT 255/265**

- » parallel, continuous serial cuts of 5–130 mm width
- » clamping and adjusting of sheet material up to 10 mm thickness in Z-direction
- » max. material width (cutting length) 300 mm with cut-off wheel Ø 350 mm

Manual

Order No.: Z1841010

- » for manual Z-axis

Automatic

Order No.: Z1841011

- » for automatic Z-axis

SPECIFICATIONS

Max. theoretical cutting capacity	Ø 150 mm
Cut-off wheel	Ø 406/16" mm
Arbour size	Ø 32 mm
Horizontal movement	345 mm
Vertical movement	200 mm
Cross feed	150 mm
Feed rate	0.001-40 mm/sec
Table WxD	1 550x375 mm (without Z-axis)
	2 420x375 mm (with Z-axis)
	3 420x375 mm (with Z-axis)
T-slot	12 mm

Motor cut-off wheel	7 kW, S1-mode
Connected load	17 kVA
Power supply	variable speed
	2 400 V/50 Hz (3Ph/N/PE)
	2 480 V/60 Hz (3Ph/PE)
	3 220 V/60 Hz (3Ph/PE)
WxHxD ~	1134x1610x930 mm
Weight ~	480 kg (depends on equipment)

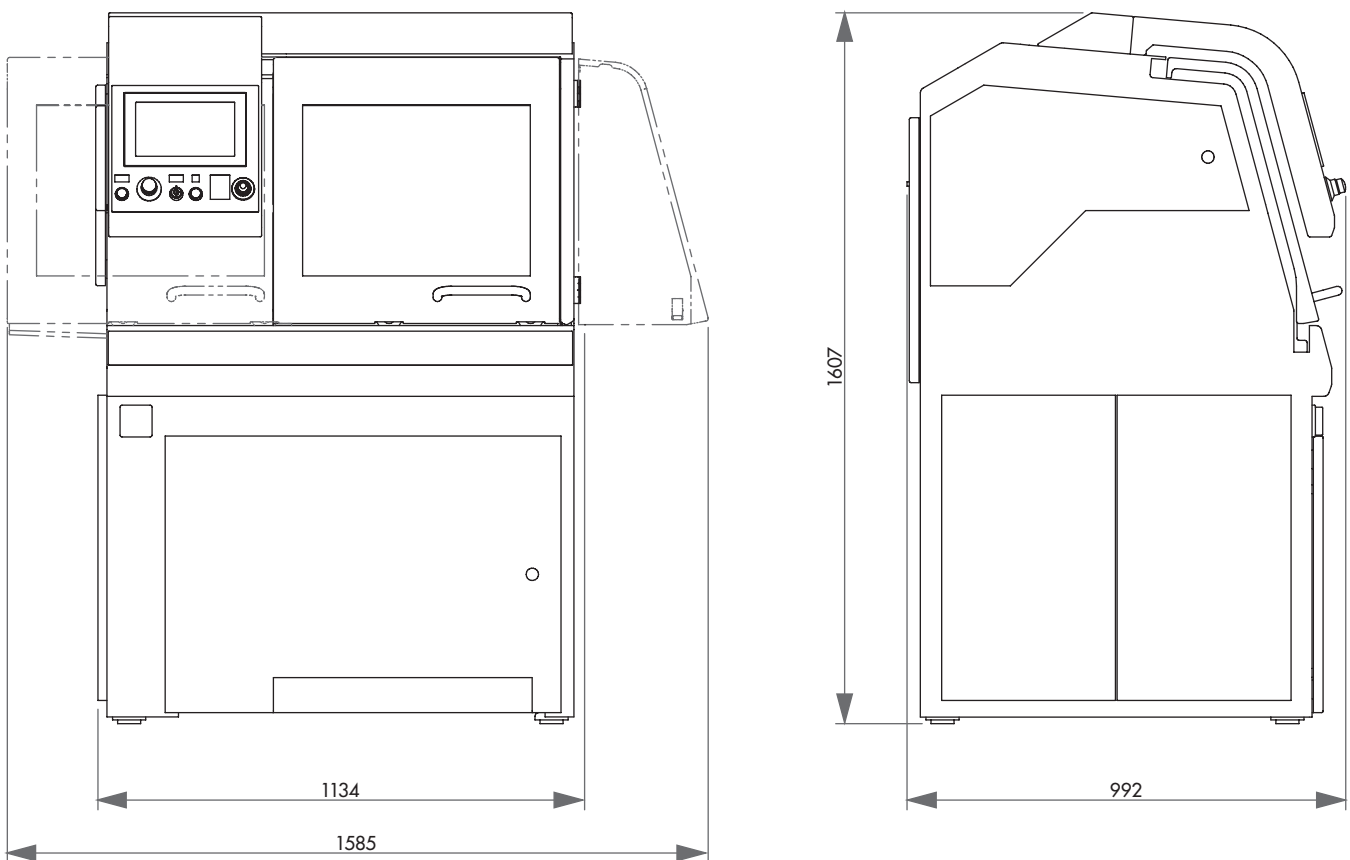


Illustration: Basic unit without equipment, options and accessories. Further information is available on request.



OPERATION

Touch-Screen display for the ATM-Software control is easy to read thanks to smart phone technology and even easier to operate. Compact program sequences are easy to compile and therefore enable automated, password-secured program sequences. Update and back-up possible via USB.

CUT OPTIMIZATION

In addition to the type of cut, variable pulse-cut feed can also be selected. Rhythmic **pulsed feed** ensures regular cooling and removal of cutting debris from the sample.

REMOTE MAINTENANCE

Using your existing broadband Internet connection, ATM provides an online fault diagnosis and operator support.

BRILLANT 275

The universal wet cut-off machine BRILLANT 275 meets the highest of demands on space available and possibilities for cutting with its innovative concept for design, construction and operation.

The automatic horizontal table (X-axis) and cutting wheel movement (Y-axis) can reach up to 80 mm/sec. through highly dynamic axis drives in rapid-run.

Parallel setting of the wheel guard during vertical cutting sequences increases the cutting capacity considerably. The large front and hinged door with safety lock enable access to the machine table with longitudinal and cross T-slots. Recirculating cooling and automatic central lubrication systems are integrated into the robust aluminum construction body of the machine.

CONTROL

A wide range of cutting procedures is at your disposal for the very best cutting results. Through the combination of this **unlimited range of positions**, series cuts or differing cut sequences can be made into reality - all made possible by such a large variety of positions. The cutting process is rightly supported by **controlled cut-off wheel revolutions**. **Control of the cutting speed** and a **soft start control** serve additionally for an economical cutting feed. Manual control commands in the X-/Z-/Y-axes are also possible using an industrial joystick.

LASER ALIGNMENT AID

With line laser you can display the scheduled cut on the sample. This helps to define the exact cutting position.



MULTI-POSITION PROCESS MPP

With the "Multi-Position-Process" (MPP) you can place multiple specimens on the table and cut them in one sequence. The teach-in function enables a simple and user-friendly setting of various cutting positions.

TYPES OF CUT

Travel and cutting wheel offer a wide-ranging repertoire of types of cut through different combinations. In addition to the linear **diagonal cut**, the layer and segment-cuts are recommended for gentle cuts. The **layer-cut** is well-suited for cutting taller and longer objects as well as solid material. The **segment-cut** is especially suitable for large objects and hard materials.

BASIC MODULE

BRILLANT 275



Order No.: M1832000



» automatic table (X-axis) and cutting wheel movement (Y-axis) can reach up to 80 mm/sec. through highly dynamic axis drive in rapid-run



» equipment: automatic cross feed (Z-axis)

» automatic touch detection

» spacious cutting chamber with large T-slot table

» machine table made of stainless steel with longitudinal and cross T-slots

» parallel setting of wheel guard during vertical cutting sequences increases cutting capacity



» Multi-position process MPP allows positioning of different components on the table simultaneously and adding into an automatic cutting process

» economical cutting feed by control of the cutting speed and soft start control

» variable speed

» manual control of X-/Y-/Z-axis via an industrial joystick

» Touch-Screen display and ATM-Software control

» smart phone optics for easy compilation of compact program sequences with position steps and cutting modes (travel-, cut-off-, diagonal-, step- and segment cut)

» an unlimited number of password-secured program sequences can be stored and updated; file exchange and backup via USB

» ATM online-diagnostics and user support available

» easy access to cutting chamber by large sliding and side door (with safety lock during wheel movement)

» sliding door with large window made of scratchproof safety glass

» options: laser alignment aid, centrifugal separator

» incl. cutting wheel arbour with wear ring and optimum cutting chamber illumination

» automatic central lubrication (6 bar compressed air required)

» robust powder-coated aluminum construction body of machine

» Easy-nut – for easy change of cutting wheel

» e-Lab-ready



EQUIPMENT

POWER SUPPLY



Equipment 1

Equipment 2

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

480 V/60 Hz (3Ph/PE)

Order No.: A1832000

Order No.: A1832002



Clamping example

TABLE DRIVE



Equipment 1

Equipment 2

Table with X-axis

Table with X/Z-axis

Order No.: A1832008

Order No.: A1832011

» made of stainless steel

» made of stainless steel

Travel X-axis 420 mm

Travel X-axis 420 mm

Precision 0.1 mm

Travel Z-axis 200 mm

Precision 0.1 mm



EQUIPMENT

WHEEL GUARD

Equipment 1
Cut-off wheel Ø 432 mm/17"
 Order No.: A1832001

Equipment 2
Cut-off wheel Ø 508 mm/20"
 Order No.: A1832010



COOLING AND FILTER SYSTEMS

Equipment 1
Recirculation cooling unit

400 V/50 Hz (3Ph/PE)

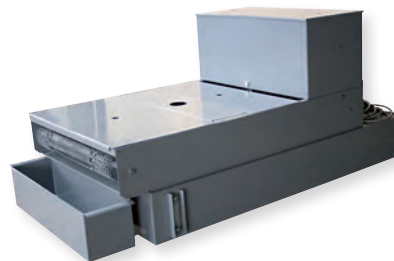
Order No.: A1832005

480 V/60 Hz (3Ph/PE)

Order No.: A1832006

Tank approx.	200 ltr.
Pump approx.	100 ltr./min
WxHxD	810x608x1008 mm

- » integrated, mobile
- » multi chamber filtration
(see consumables)



Equipment 2
Belt filter system 285

400 V/50 Hz (3Ph/PE)

Order No.: A6501000

480 V/60 Hz (3Ph/PE)

Order No.: A6501002

Tank	285 ltr.
Filter capacity	100 ltr./min (referring emulsion)
Pump	100 ltr./min
Filter area	0.85 m ²
Filter fleece width	710 mm
WxHxD	929x790x1745 mm
Weight approx.	120 kg

- » incl. filter roll

Connection set 275

Order No.: Z6501000

- » for belt filter system please order connection set



OPTION

CENTRIFUGAL SEPARATOR



- » to remove coolant mist
- » increases quality of illumination
- » suction output 425 or 500 m³/h depends on power supply

400 V/50 Hz (3Ph/PE)

Order No.: A1832007

480 V/60 Hz (3Ph/PE)

Order No.: A1832009

LASER ALIGNMENT AID



Order No.: A1832004

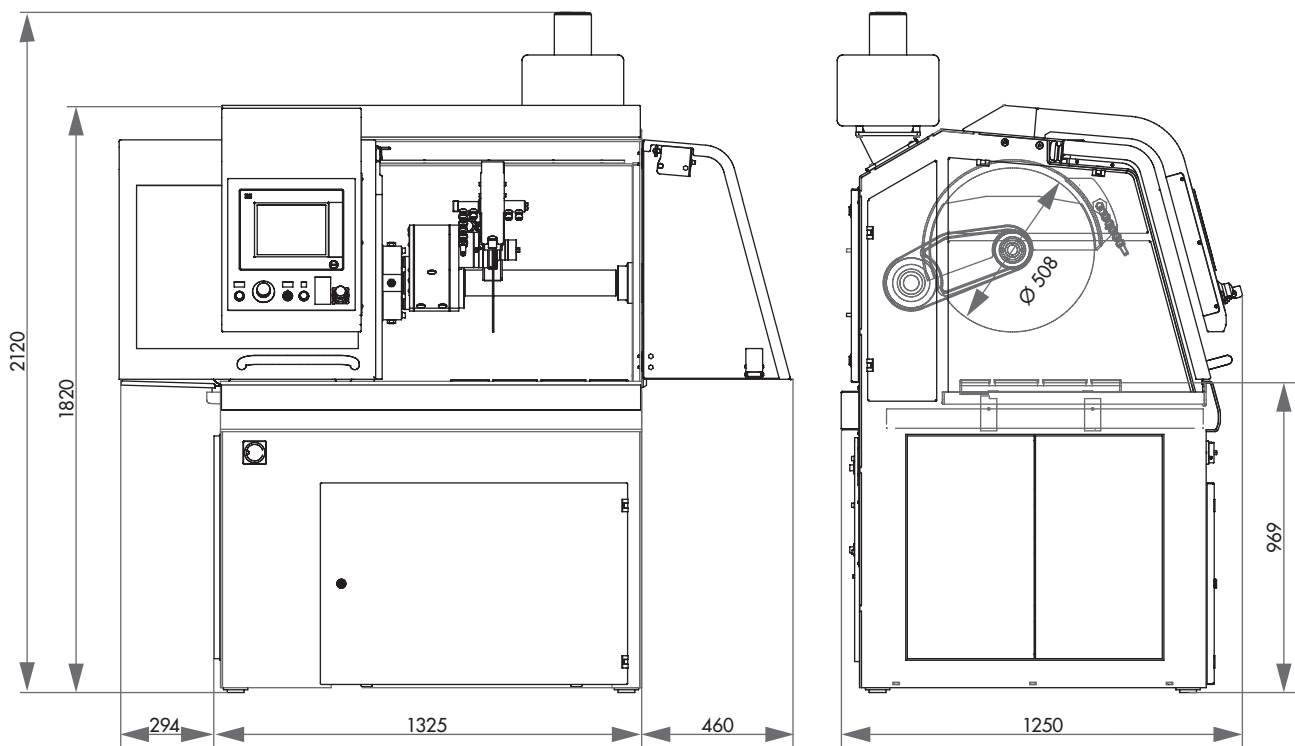
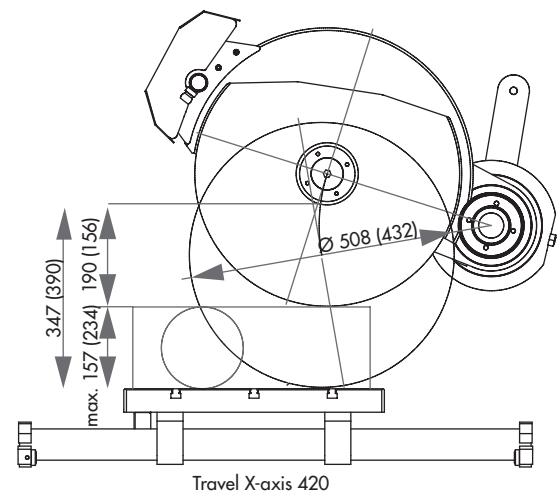
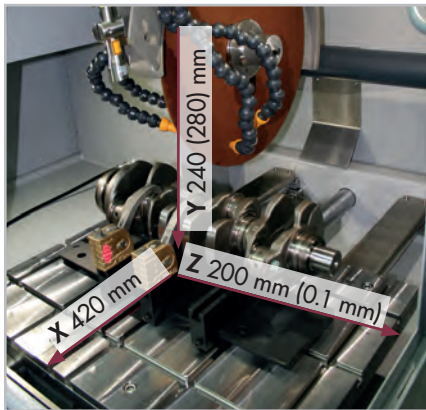
- » laser line to visualize the cutting line
- » laser class 1

SPECIFICATIONS

Cut-off wheel	1	Ø 432 mm/17" *
	2	Ø 508 mm/20" **
Max. sample size	Ø 156 mm* / Ø 190 mm**	
Arbour size	Ø 32 + 40 mm	
Vertical movement	280*/240** mm	
Horizontal movement	420 mm	
Feed rate	0.001–50 mm/sec	
Z-axis automat.	200 mm (equipment)	
Precision	0.1 mm	
Table WxD	550 x 500 mm (with Z-axis)	
	700 x 500 mm (without Z-axis)	
T-slot	12 mm	

Motor cut-off wheel	15 kW, S1-mode
Connected load	30 kVA
Variable speed	1000-2800 rpm*
	1000-2400 rpm**
Power supply	1 400 V 50 Hz (3/N/PE)
	2 480 V 60 Hz (3/PE)
WxHxD ~	1300 x 1820 x 1250 mm
Weight ~	1000 kg (depends on equipment)

use with cut-off wheel * Ø 432 mm or ** Ø 508 mm





OPERATION

Touch-Screen display for the ATM-Software control is easy to read thanks to smart phone technology and even easier to operate. Compact program sequences are easy to compile and therefore enable automated program sequences. Update and backed-up possible via USB.

MULTI-POSITION PROCESS MPP

With the "Multi-Position-Process" (MPP) you can place multiple specimens on the table and cut them in one sequence. The teach-in function enables a simple and user-friendly setting of various cutting positions.

BRILLANT 3D

The 5-axis cutting robot Brilliant 3D has 2 additional axes (D, E-axis). This allows the specimen to be positioned and cut automatically in a single operation in nearly any position to the cutting wheel.

The device has all the features of the proven Brilliant 275 universal wet abrasive cut-off machine and meets the highest demands on space available and cutting

operations.

The cuts can be precisely positioned without reclamping, so complicated instructions for cutting as well as the number of clamping tools and cutting failures are minimized. Full automation makes the entire process effectively and efficiently.



REMOTE MAINTENANCE

Using your existing broadband Internet connection, ATM provides an online fault diagnosis and operator support.

CUT OPTIMIZATION

In addition to the type of cut, variable pulse-cut feed can also be selected. Rhythmic **pulsed feed** ensures regular cooling and removal of cutting debris from the sample.



BASIC MODULE

BRILLANT 3D



Order No.: M1832001

- » automatic table (X-axis) - note equipment variation
- » automatic cutting wheel movement (Y-axis)
- » automatic touchdetection
- » equipment: automatic cross feed (Z-axis) - note equipment variation
- » highly dynamic drive up to 80 mm/sec.
- » parallel setting of wheel guard during vertical cutting sequences increases cutting capacity
- » economical cutting feed by control of the cutting speed and soft start control
- » variable pulse-cut feed
- » variable speed
- » incl. cutting wheel arbour with wear ring
- » optimal chamber illumination
- » manual control of X-/Y-/Z-axis via an industrial joystick
- » automatic central lubrication (6 bar compressed air required)
- » Touch-Screen display and ATM-Software control
- » optical menu navigation for drawing up precise program sequences with position steps and cutting modes (horizontal, vertical, diagonal, step and segment cut)
- » storage of programs with password; update and backup via USB
- » remote service/support is available via controller
- » large sliding and side door for optimal access to cutting chamber; with safety lock when machine is running
- » Easy-nut – for easy change of cutting wheel
- » sliding door with large window made of scratchproof safety glass
- » options: laser alignment aid, centrifugal separator
- » robust aluminium construction, powder-coated

EQUIPMENT

POWER SUPPLY



Equipment 1

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

Order No.: A1832000

Equipment 2

480 V/60 Hz (3Ph/PE)

Order No.: A1832002

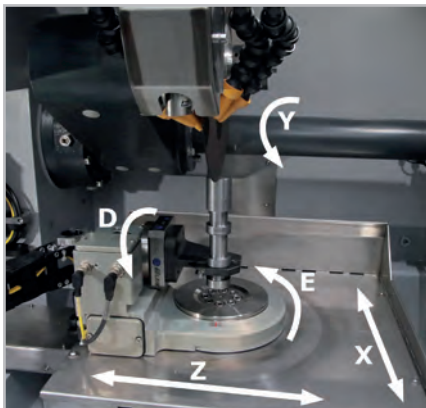


TABLE DRIVE



- » all axis integrated in machine control
- » innovative operation with teach-in programming
- » made of stainless steel

Equipment 1

Table with X/Z/E-axis

Order No.: A1832012

Travel X-axis	420 mm
Travel Z-Achse	200 mm
Precision	0.1 mm
Swivel range E-axis	200°

Equipment 2

Table with X/Z/E/D-axis

Order No.: A1832013

Travel X-axis	420 mm
Travel Z-axis	200 mm
Precision.	0.1 mm
Swivel range E-axis	200°
Swivel range D-axis	360°



EQUIPMENT

WHEEL GUARD



Equipment 1
Cut-off wheel Ø 432 mm/17"
 Order No.: A1832001

Equipment 2
Cut-off wheel Ø 508 mm/20"
 Order No.: A1832010



AUTOMATIC WHEEL MEASUREMENT - LASER



Order No.: A1832014

- » determination of cut-off wheel diameter before each cutting process with a laser
- » automatic control of cutting speed and cutting depth

COOLING AND FILTER SYSTEMS



Equipment 1
Recirculation cooling unit

400 V/50 Hz (3Ph/PE)

Order No.: A1832005

480 V/60 Hz (3Ph/PE)

Order No.: A1832006

Tank ~	200 ltr.
Pump ~	100 ltr./min
WxHxD	810x608x1008 mm

- » integrated, mobile
- » multi chamber filtration
(see consumables)



Equipment 2
Belt filter system 285

400 V/50 Hz (3Ph/PE)

Order No.: A6501000

480 V/60 Hz (3Ph/PE)

Order No.: A6501002

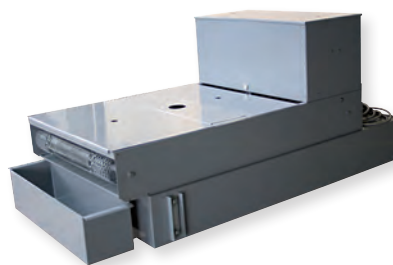
Tank	285 ltr.
Filter capacity	100 ltr./min (referring emulsion)
Pump	100 ltr./min
Filter area	0.85 m ²
Filter fleece width	710 mm
WxHxD	929x790x1745 mm
Weight ~	120 kg

- » incl. filter roll

Connection set 275

Order No.: Z6501000

- » for belt filter system please order connection set



CENTRIFUGAL SEPARATOR

OPTION



- » to remove coolant mist
- » increases quality of illumination
- » suction output 425 or 500 m³/h depends on power supply

400 V/50 Hz (3Ph/PE)

Order No.: A1832007

480 V/60 Hz (3Ph/PE)

Order No.: A1832009



LASER ALIGNMENT AID



Order No.: A1832004

- » laser line to visualize the cutting line
- » laser class 1

SPECIFICATIONS

Cut-off wheel	Ø 508 mm/20"
Max. sample size	Ø 190 mm
Arbour size	Ø 32 + 40 mm
Vertical movement	280 mm

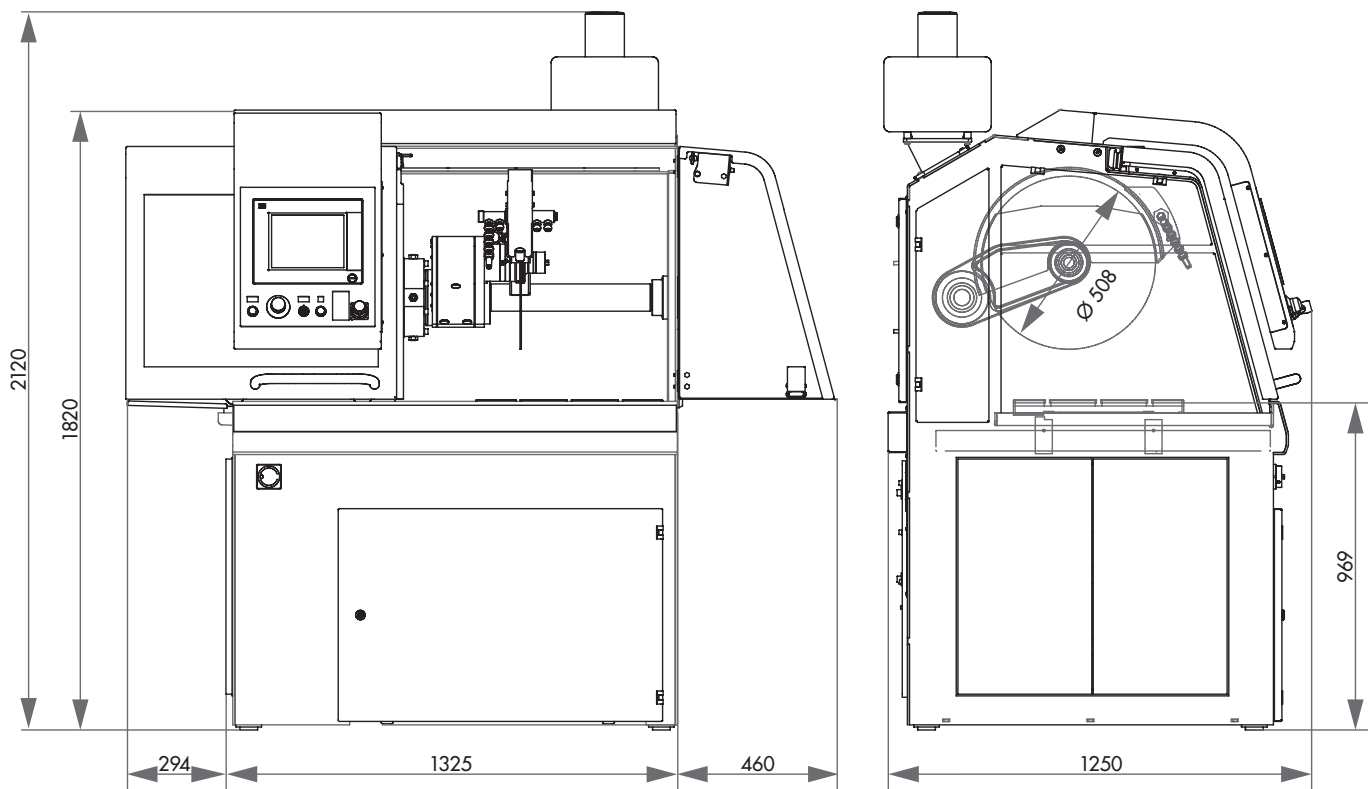
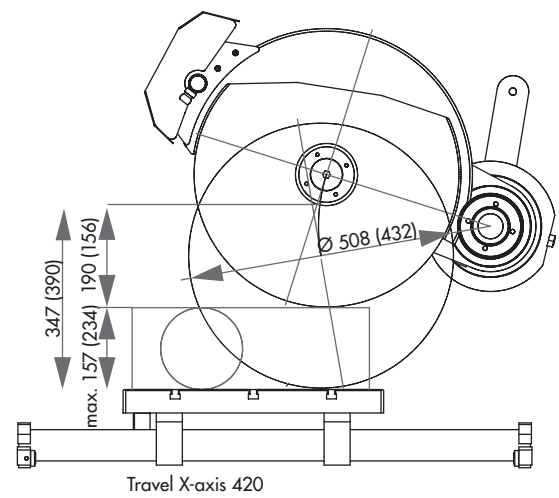
X-axis automat. (horiz. movement)	420 mm
Y-axis automat. (vertical cut)	280 mm
Z-axis automat. (parallel cut) (Option)	200 mm
D-axis automat. (option)	360°
E-axis automat.	200°

Precision	0.1 mm / 0.1°
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Table WxD	550 x 500 mm (with Z-axis)
T-slot	12 mm

Motor cut-off wheel	15 kW, S1-mode
Connected load	30 kVA
Variable sped	1000-2400 rpm
Power supply	1 400 V 50 Hz (3/N/PE)
	2 480 V 60 Hz (3/PE)

WxHxD ~	1350 x 1820 x 1240 mm
Weight ~	1000 kg (depends on equipment)



OPERATION

Touch-Screen display for the ATM-Software control is easy to read thanks to smart phone technology and even easier to operate. Compact program sequences are easy to compile and therefore enable automated program sequences. An unlimited number of password-secured program sequences can be updated and backed-up via USB.

**BRILLANT 285**

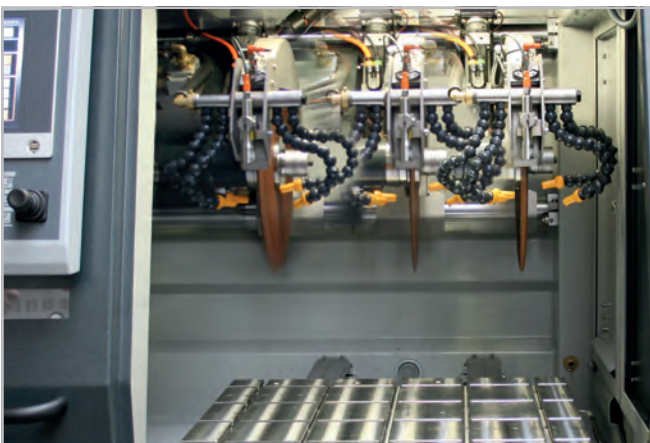
The industrial wet cut-off machine BRILLANT 285 meets the highest of demands on space available and possibilities for cutting with its innovative concept for design, construction and operation.

A water-cooled 15 kW main motor is integrated into the swing arm and the automatic horizontal table (X-axis) and cutting wheel movement (Y-axis) can reach up to 80 mm/sec. through highly dynamic axis drives in rapid-run. With a totally new approach with the automatic cross-feed movement (Z-axis)

through the swing arm, the cutting chamber is ideally put to use.

Parallel setting of the wheel guard during vertical cutting sequences increases the cutting capacity considerably.

The large front and hinged door with safety lock enable access to the machine table with longitudinal and cross T-slots. The side door allows easy and convenient change of the cut-off wheel if Z-axis is set on the hard right position. Recirculating cooling and automatic central lubrication systems are integrated into the robust welded steel construction body of the machine.

**CONTROL**

A wide range of cutting procedures is at your disposal for the very best cutting results. Through the combination of this **unlimited range of positions**, series cuts or differing cut sequences can be made into reality. The cutting process is rightly supported by **controlled cut-off wheel revolutions** which can be held constant through an optional **wheel measurement facility**. **Control of the cutting speed** and a **soft start control** serve additionally for an economical cutting feed. Manual control commands in the X-/Z-/Y-axes are also possible using an industrial joystick.

The operator console can be slid either to left or the right.

TYPES OF CUT

Travel and cutting wheel offer a wide-ranging repertoire of types of cut through different combinations. In addition to the linear **diagonal cut**, the **layer** and **segment-cuts** are recommended for gentle cuts.

The **layer-cut** is well-suited for cutting taller and longer objects as well as solid material.

The **segment-cut** is especially suitable for large objects and hard materials.

CUT OPTIMIZATION

In addition to the type of cut, variable pulse-cut feed can also be selected.

Rhythmic **pulsed feed** ensures regular cooling and removal of cutting debris from the sample.

MULTI-POSITION PROCESS MPP

With the "Multi-Position-Process" (MPP) you can place multiple specimens on the table and cut them in one sequence.

The teach-in function enables a simple and user-friendly setting of various cutting positions.

REMOTE MAINTENANCE

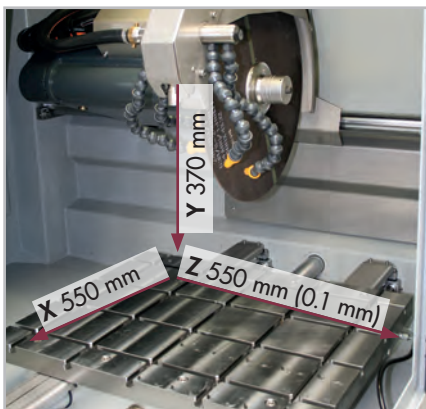
Using your existing broadband Internet connection, ATM provides an online fault diagnosis and operator support.

LASER ALIGNMENT AID

With line laser you can display the scheduled cut on the sample. This helps to define the exact cutting position.

**BASIC MODULE****BRILLANT 285****Order No.: M1831000**

- » automatic table (X-axis) and cutting wheel movement (Y-axis) can reach up to 80 mm/sec. through highly dynamic axis drive in rapid-run
- » automatic cross feed (Z-axis)
- » automatic touch detection
- » parallel setting of wheel guard during vertical cutting sequences increases cutting capacity
- » large cutting chamber with large T-slot table
- » machine table made of stainless steel with longitudinal and cross T-slots
- » Multi-position process MPP allows positioning of different components on the table simultaneously and adding into an automatic cutting process
- » easy access to cutting chamber by large sliding and side door (with safety lock during wheel movement)
- » changing of cut-off wheel through side door
- » sliding door with large window made of scratchproof safety glass
- » Touch-Screen display with smart-phone technology and ATM-Software control
- » an unlimited number of password-secured program sequences can be stored and updated; file exchange and backup via USB
- » ATM online-diagnostics and user support available
- » smart phone optics for easy compilation of compact program sequences with position steps and cutting modes (travel-, cut-off-, diagonal-, layer- and segment cut)
- » through the combination of an arbitrary range of cutting positions, series cuts of differing cut-sequences can be made into reality
- » variable pulse-cut feed
- » economical cutting feed by control of the cutting speed and soft start control
- » variable speed
- » manual control of X-/Y-/Z-axis via an industrial joystick
- » incl. cutting wheel arbour with wear ring and optimum chamber illumination
- » automatic central lubrication (6 bar compressed air required)
- » water-cooled 15 kW-main motor integrated into the swivel arm
- » robust welded steel construction body of machine, powder-coated
- » Easy-nut – for easy change of cut-off wheel
- » e-Lab-ready



EQUIPMENT

POWER SUPPLY

Equipment 1

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

Order No.: A1831000

Equipment 2

480 V/60 Hz (3Ph/PE)

Order No.: A1831002

WHEEL GUARD

Equipment 1

Cut-off wheel Ø 508 mm/20"

Order No.: A1831001

Equipment 2

Cut-off wheel Ø 610 mm/24"

Order No.: A1831010

COOLING AND FILTER SYSTEMS

Equipment 1

Recirculation cooling unit

400 V/50 Hz (3Ph/PE)

Order No.: A1831005

480 V/60 Hz (3Ph/PE)

Order No.: A1831006

Tank approx. 170 ltr.

Pump approx. 100 ltr./min

WxHxD 810x528x1113 mm

- » integrated, mobile
- » multi chamber filtration
- » exchangeable filter fleece, filter performance up to 90% (see consumables)



Equipment 2

Belt filter system 285

400 V/50 Hz (3Ph/PE)

Order No.: A6501000

480 V/60 Hz (3Ph/PE)

Order No.: A6501002

Tank 285 ltr.

Filter capacity 100 ltr./min (referring emulsion)

Pump 100 ltr./min

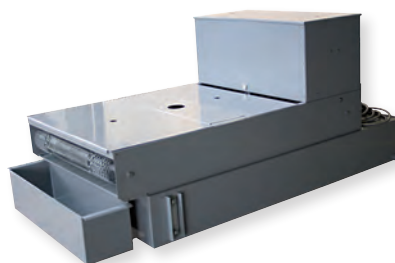
Filter area 0.85 m²

Filter fleece width 710 mm

WxHxD 929x790x1745 mm

Weight approx. 120 kg

- » incl. filter roll



Connection set 285

Order No.: Z6501007

- » for belt filter systems please order connection set

OPTION

CENTRIFUGAL SEPARATOR

- » to remove coolant mist
- » increases quality of illumination
- » exhauster power 425 or 500 m³/h, depends on power supply

400 V/50 Hz (3Ph/PE)

Best.Nr.: A1832007

480 V/60 Hz (3Ph/PE)

Order No.: A1832009



OPTION



ROTATING TOOL

- on request*
- » tool with vertical rotary feed, parallel to wheel
- » angle input via software control



LASER ALIGNMENT AID



- Order No.: A1831004
- » laser line to visualize the cutting line
- » laser class 1

SPECIFICATIONS

Cut-off wheel	1	Ø 508 mm/20" *
	2	Ø 610 mm/24" **
Max. cutting capacity	Ø 194 mm* / Ø 244 mm**	
Arbour size	Ø 32 + 40 mm	
Y-axis automatic	360 mm	

X-axis automatic	550 mm
Speed rate	0.001–50 mm/sec

Z-axis automatic	550 mm
Precision	0.1 mm

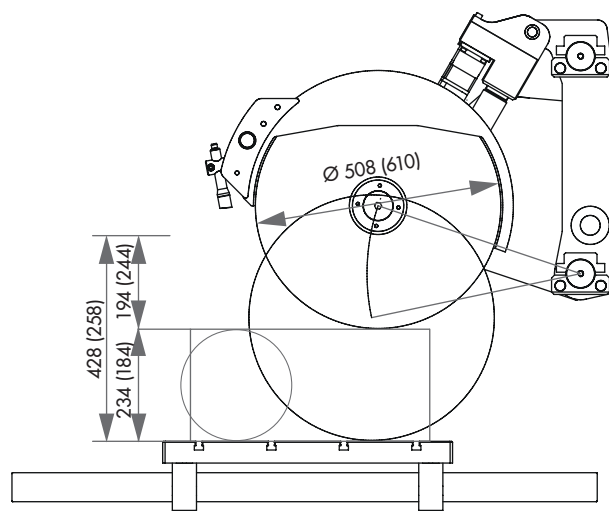
Table WxD	750 x 600 mm
T-slot	12 mm

Motor cut-off wheel	15 kW, S1-mode
Connected load	30 kVA
Variable speed	1000-2400 rpm *
	1000-2000 rpm **

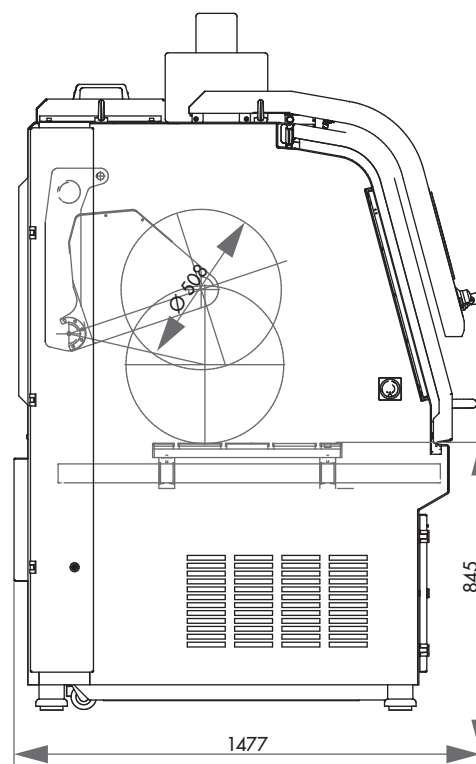
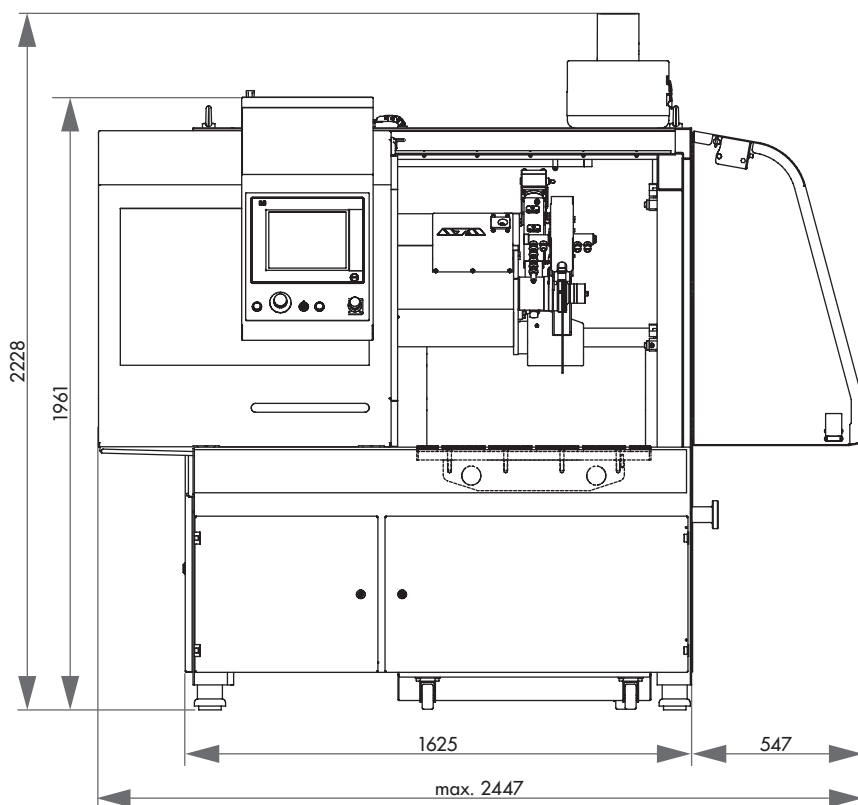
Power supply	1	400 V/50 Hz (3Ph/N/PE)
	2	480 V/60 Hz (3Ph/PE)

WxHxD ~	1488 x 1960 x 1477 mm
Weight ~	1600 kg (depends on equipment)

use with cut-off wheel * Ø 508 mm or ** Ø 610 mm



Travel X-axis 550





OPERATION

Touch-Screen display for the ATM-Software control is easy to read thanks to smart phone technology and even easier to operate.

Compact program sequences are easy to compile and therefore enable automated program sequences.

An unlimited number of password-secured program sequences can be updated and backed-up via USB.



BRILLANT 2000

The industrial wet cut-off machine BRILLANT 2000 meets the highest of demands on space available and possibilities for cutting with its innovative concept for design, construction and operation. A water-cooled 30 kW main motor is integrated into the swing arm and the automatic horizontal table (X-axis) and cutting wheel movement (Y-axis) can reach up to 100 mm/sec. through highly dynamic axis drives in rapid-run.

With a totally new approach with the automatic cross-feed movement (Z-axis) through the swing arm, the cutting chamber is

ideally put to use. Parallel setting of the wheel guard during vertical cutting sequences increases the cutting capacity considerably. The large front and hinged door with safety lock enable access to the machine table with longitudinal and cross T-slots. The side door allows easy and convenient change of the cut-off wheel if Z-axis is set on the hard right position.

Recirculating cooling and automatic central lubrication systems are integrated into the robust welded steel construction body of the machine.



CONTROL

A wide range of cutting procedures is at your disposal for the very best cutting results. Through the combination of this **unlimited range of positions**, series cuts or differing cut sequences can be made into reality. The cutting process is rightly supported by **controlled cut-off wheel revolutions** which can be held constant through an optional **wheel measurement facility**. **Control of the cutting speed** and a **soft start control** serve additionally for an economical cutting feed. Manual control commands in the X-/Z-/Y-axes are also possible using an industrial joystick. The operator console can be slid either to left or the right.

TYPES OF CUT

Travel and cutting wheel offer a wide-ranging repertoire of types of cut through different combinations. In addition to the linear **diagonal cut**, the layer and segment-cuts are recommended for gentle cuts.

The **layer-cut** is well-suited for cutting taller and longer objects as well as solid material.

The **segment-cut** is especially suitable for large objects and hard materials.

CUT OPTIMIZATION

In addition to the type of cut, variable pulse-cut feed can also be selected.

Rhythmic **pulsed feed** ensures regular cooling and removal of cutting debris from the sample.

MULTI-POSITION PROCESS MPP

With the "Multi-Position-Process" (MPP) you can place multiple specimens on the table and cut them in one sequence.

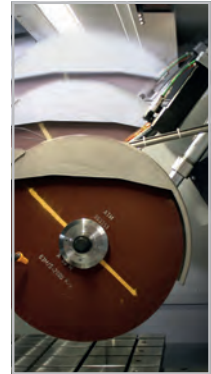
The teach-in function enables a simple and user-friendly setting of various cutting positions.

REMOTE MAINTENANCE

Using your existing broadband Internet connection, ATM provides an online fault diagnosis and operator support.

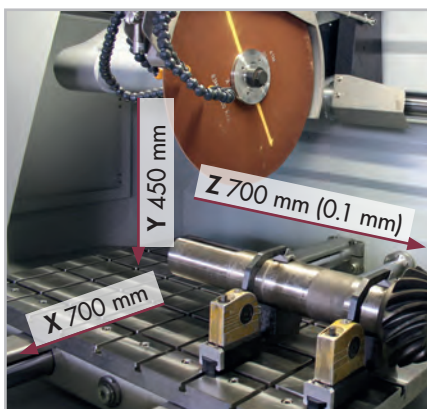
LASER ALIGNMENT AID

With line laser you can display the scheduled cut on the sample. This helps to define the exact cutting position.

**BASIC MODULE****BRILLANT 2000**

Order No.: M3510000

- » automatic table (X-axis) and cutting wheel movement (Y-axis) can reach up to 100 mm/sec. through highly dynamic axis drive in rapid-run
- » automatic cross feed (Z-axis)
- » parallel setting of wheel guard during vertical cutting sequences increases cutting capacity
- » large cutting chamber with large T-slot table
- » machine table made of stainless steel with longitudinal and cross T-slots
- » Multi-position process MPP allows positioning of different components on the table simultaneously and adding into an automatic cutting process
- » easy access to cutting chamber by large sliding and side door (with safety lock during wheel movement)
- » changing of cut-off wheel through side door
- » sliding door with large window made of scratchproof safety glass
- » Touch-Screen display with smart-phone technology and ATM-Software control
- » an unlimited number of password-secured program sequences can be stored and updated; file exchange and backup via USB
- » ATM online-diagnostics and user support available
- » smart phone optics for easy compilation of compact program sequences with position steps and cutting modes (travel-, cut-off-, diagonal-, layer- and segment cut)
- » through the combination of an arbitrary range of cutting positions, series cuts of differing cut-sequences can be made into reality
- » variable pulse-cut feed
- » economical cutting feed by control of the cutting speed and soft start control
- » variable speed
- » manual control of X-/Y-/Z-axis via an industrial joystick
- » incl. cutting wheel arbour with wear ring and optimum chamber illumination
- » automatic central lubrication (6 bar compressed air required)
- » water-cooled 30 kW-main motor integrated into the swivel arm
- » robust welded steel construction body of machine, powder-coated
- » Easy-nut – for easy change of cut-off wheel
- » e-Lab-ready



EQUIPMENT

POWER SUPPLY

Equipment 1

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

Order No.: A3510000

Equipment 2

480 V/60 Hz (3Ph/PE)

Order No.: A3510002



WHEEL GUARD

Equipment 1

Cut-off wheel Ø 610 mm/24"

Order No.: A3510001

Equipment 2

Cut-off wheel Ø 813 mm/32"

on request



COOLING AND FILTER SYSTEMS

Equipment 1

Recirculation cooling unit

400 V/50 Hz (3Ph/PE)

Order No.: A3510005

480 V/60 Hz (3Ph/PE)

Order No.: A3510006

Tank ~ 220 ltr.

Pump ~ 100 ltr./min

WxHxD 1006x528
x1253 mm

- » integrated, mobile
- » multi chamber filtration
- » exchangeable filter fleece, filter performance up to 90% (see consumables)



Equipment 2

Belt filter system 285

400 V/50 Hz (3Ph/PE)

Order No.: A6501006

480 V/60 Hz (3Ph/PE)

Order No.: A6501007

Tank 285 ltr.

Filter capacity 100 ltr./min (referring emulsion)

Pump 100 ltr./min

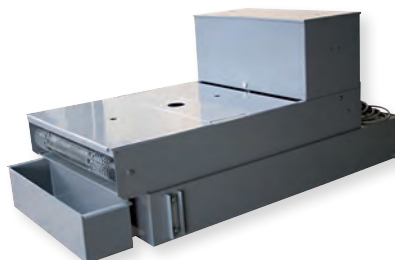
Filter area 0.85 m²

Filter fleece width 710 mm

WxHxD ~ 929x790x1745 mm

Weight ~ 120 kg

- » incl. filter roll



Connection set 285

Order No.: Z6501007

- » for belt filter system please order connection set



OPTION

CENTRIFUGAL SEPARATOR



- » to remove coolant mist
- » Increases quality of illumination
- » exhauster power 425 or 500 m³/h, depends on power supply

400 V/50 Hz (3Ph/PE)

Order No.: A1832007

480 V/60 Hz (3Ph/PE)

Order No.: A1832009



OPTION



ROTATING TOOL

on request

- » tool with vertical rotary feed, parallel to wheel
- » angle input via software control



LASER ALIGNMENT AID



Order No.: A3510004

- » laser line to visualize the cutting line
- » laser class 1

SPECIFICATIONS

Cut-off wheel	1	Ø 610 mm/24" *
	2	Ø 813 mm/32" **
Max. cutting capacity	Ø 225 mm*/Ø 295 mm**	
Arbour size	Ø 32 + 40 mm	
Vertical movement	450 mm	

Horizontal movement	700 mm
Speed rate	0.001–50 mm/sec
Z-axis automatic	700 mm
Precision	0.1 mm

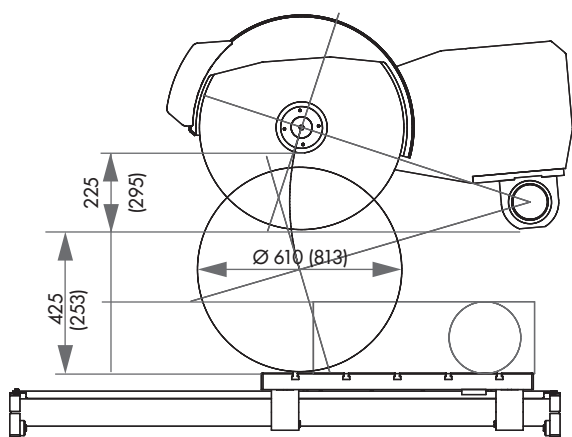
Table WxD	1150 x 800 mm
T-slot	12 mm

Motor cut-off wheel	30 kW, S1-mode
Connected load	50 kVA
Variable speed	1000-2000 rpm*
	1000-1500 rpm**

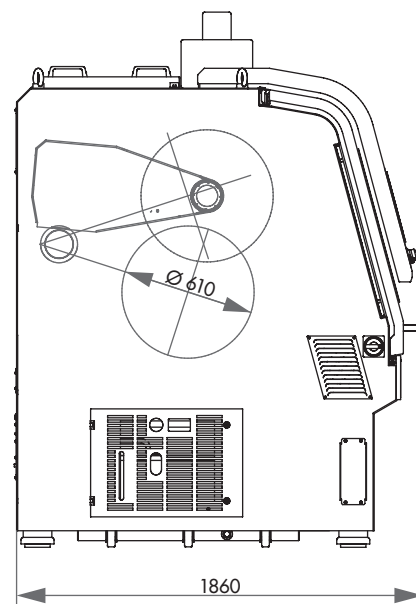
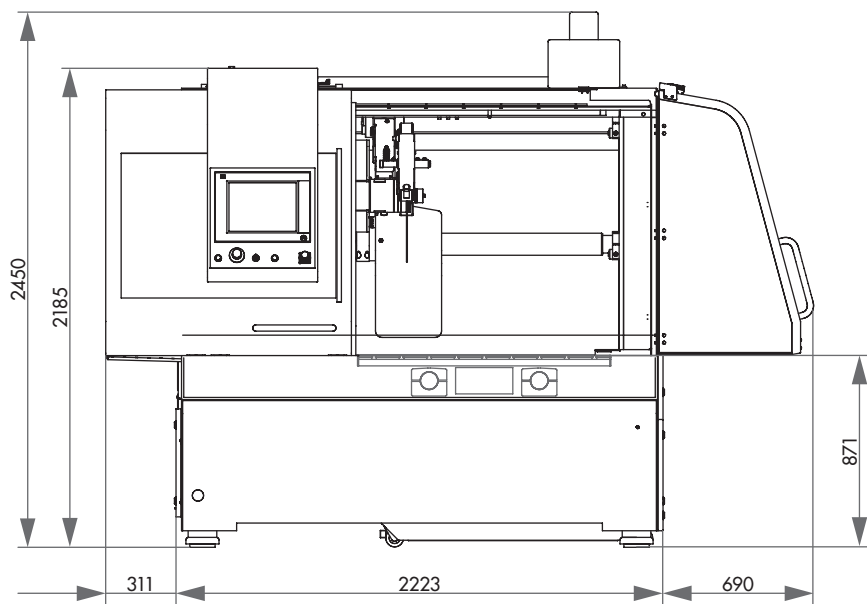
Power supply	1	400 V/50 Hz (3Ph/N/PE)
	2	480 V/60 Hz (3Ph/PE)

WxHxD ~	2200 x 2185 x 1860 mm
Weight ~	3500 kg (depends on equipment)

use with cut-off wheel * Ø 610 mm or ** Ø 813 mm



Verfahrweg X-Achse 700



BENEFITS

- » quick adaption
- » modular clamping system for various combinations
- » use with standard clamping systems



Easy-clamping base M



Easy-clamping base L



Easy-clamping base XL

QUICK, FLEXIBLE AND COPLANAR

The unique Easy-clamping base serves as a quick clamping station for a variety of vices and extensions blocks.

Fixing, adjusting and removing to machine tables with t-slots is done in a few seconds by turning just a single screw.

**MATCHING EASY-CLAMPING BASE**

BRILLANT	M	L	XL
200			
220			
240			
230/250			
255/265			
275			
285			
2000		*	

* only conditionally recommended



Change of preassembled
Easy-clamping bases



Flexible by rotating and clamping elements

MACHINE TABLE

All recent ATM machine tables are standardly equipped with t-slots (retrofitting possible).

OPERATION

The flexible modular system of combining rotating and clamping with standard clamping elements saves from difficult and painstaking mounting of clamping tools into t-slots. Therefore the Easy-clamping system is a great benefit for your everyday work.

BRILLANT	220	230	240	250
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**EASY-CLAMPING BASE M**

Order No.: Z2236008

- » for machine tables with T-slots
- » incl. clamping key

WxHxD	15x80x200 mm
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**DIRECT ADAPTION**

- » fast lock vice 50
 - » fast lock vice 60
 - » fast lock vice 80*
 - » clamping system X-Clamp 3858
- *not suitable for Brillant 220*

MATCHING MODULES

- » rotatable plate (base for headpieces and rotatable modules)
- » head piece 1 (base for vacuum- and duo sample holder)
- » head piece 2 (base for fast lock vice 50)
- » head piece 3 (intermediate module for rotating plates)
- » head piece 4 (base for fast lock vice 60)

BRILLANT	200	230	250	255	265	275	285	2000*
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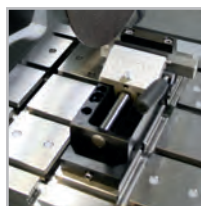
* only conditionally recommended

**EASY-CLAMPING BASE L**

Order No.: Z2236011

- » for machine tables with T-slots
- » incl. clamping key

WxHxD	20x80x245mm
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**DIRECT ADAPTION**

- » fast lock vice 60
- » fast lock vice 80
- » adapter for universal vices:
V-block plate,
system height adapter,
guide bar with sliding carriage and
V-groove block

MATCHING MODULES

- » rotatable plate (base for headpieces and rotatable modules)
- » head piece 1 (base for vacuum- and duo sample holder)
- » head piece 2 (base for fast lock vice 50)
- » head piece 3 (intermediate module for rotating plates)
- » head piece 4 (base for fast lock vice 60)

BRILLANT	275	285	2000
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**EASY-CLAMPING BASE XL**

Order No.: Z2236026

- » for machine tables with T-slots
- » incl. clamping key

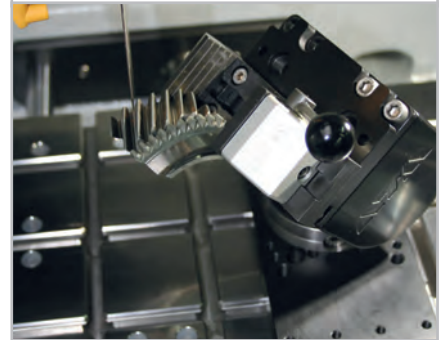
WxHxD	20x100x400 mm
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DIRECT ADAPTION

- » guide bar with sliding carriage 400 set
(base for universal vice Mono 132 and chain clamping vice)
- » universal power clamp 100/380

**ROTATABLE PLATE**

The rotatable plate is an intermediate module for angle adjustment with 15°-increments and a precision of 1/2°. The fitting head piece is easily to adapt to the clamping element by a quick holding fixture.



Extension of the pivotal dimension by several rotatable plates

SWIVELING, ROTATING, CLAMPING

Various Easy-clamping modules are a great benefit for your everyday work. The proved fast lock vices combined with the Easy-clamping modules serve as a quick clamping station for a variety of vices and extensions blocks.

Changing of configured clamping vices with Easy-clamping bases is as fast than ever.



Product video: <https://www.youtube.com - enter ,atm, easy/>.

CLAMPING MODULES XL

Clamping of large components in large machines requires a very firm clamping tool. Therefore, the modules for the Easy-clamping system XL are a particularly strong. They can be built up only with power clamp 100/380 and the guide bar for universal vice Mono 132 and chain clamping vice.



Guide bar with universal vice



Guide bar with chain clamping vice



Universal power clamp 100/380

MODULES FOR EASY-CLAMPING BASE M AND L
ROTATABLE PLATE


Order No.: Z2236005

- » quick holding fixture for quick and easy changing the head piece
- » incl. clamping key

Angle precision	1/2°
Increments	15°

MATCHING MODULES

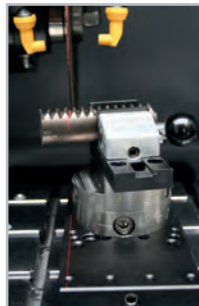

- » Head piece 1 (base for vacuum- und Duo-sample holder)
- » Head piece 2 (base for fast lock vice 50)
- » Head piece 3 (intermediate module for rotatable plates)
- » Head piece 4 (base for fast lock vice60)
- » Swiveling prism 60 and 100


*Vacuum-
sample holder*

Duo-sample holder
HEAD PIECE 1

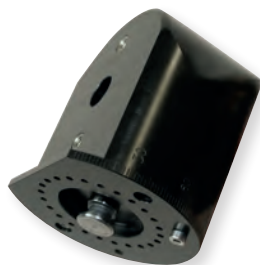
Order No.: Z2236006

- » base for vacuum-/Duo-sample holder


Fast lock vice 50
HEAD PIECE 2

Order No.: Z2236007

- » base for fast lock vice 50 and customized solutions


*Swivel unit with
fast lock vice 50*
HEAD PIECE 3

Order No.: Z2236016

- » intermediate module with angle 90° for adapting an additional rotatable plate
- » with additional rotatable plate adaption for swiveling unit with fast lock vice 50 and 60

**HEAD PIECE 4**


Order No.: Z2236025

» base for fast lock vice 60 and customized solutions



Swiveling prism 60



Swiveling prism 100

SWIVELING PRISM


» for cylindrical samples \varnothing 4-20 mm
 » swivel range adjustable 0-90°

Swiveling prism 60

Order No.: Z2236021

Swiveling prism 100

Order No.: Z2236023

**VACUUM SAMPLE HOLDER**


Order No.: Z2236002

» for thin section and unclampable samples

For microscope slide 28 x 48 mm

Vacuum pump

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

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

Order No.: Z1304600

Order No.: Z1304634

**CLAMPING ELEMENT FOR HEADPIECE 1 | ROTATABLE PLATE****DUO SAMPLE HOLDER**


Order No.: Z2236003

» for thin section and target preparations
 » clampable with quick holding fixture to parallel-grinding unit of Rubin 540
 » 4 ball head screws

Max. sample size 30 x 55 mm



*Cutting and
 grinding with just
 one mounting*



Swivel unit for fast lock vice 50

Swivel unit for fast lock vice 60



CLAMPING ELEMENT FOR HEADPIECE 3 | 2 ROTATABLE PLATES

SWIVEL UNIT VICE



Base for fast lock vice 50

Order No.: Z2236017

Base for fast lock vice 60

Order No.: Z2236018

MODULES FOR EASY-CLAMPING BASE L

SYSTEM-HEIGHT ADAPTER 50



Order No.: Z1304631

- » multiple mountable
- » base for fast lock vice 80
- » extension with V-block plate 40 for universal vices
- » incl. set of center bolts

Construction height 50 mm



Mounting example

V-BLOCK PLATE 40

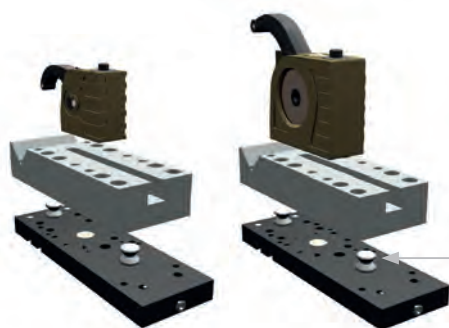


Order No.: Z1304624

- » base for universal vices
- » for Easy-clamping base L (please order set of center bolts)
- » also usable without Easy-clamping base, incl. fasteners

Construction height 40 mm

T-slot 12 mm



Universal vice Piccolo

Universal vice Mono

center bolts

ACCESSORIES

SET OF CENTER BOLTS



Order No.: Z2236013

- » for mounting to Easy-clamping base or height-adapter





without Universal vice

GUIDE BAR WITH SLIDING CARRIAGE AND V-GROOVE BLOCK

Order No.: Z1350001

- » base for Universal vices Mono
- » for clamping crankshafts, camshafts
- » bar 280 mm, with sliding carriage, V-groove block
- » incl. fasteners for T-slot 12 mm


VERTICAL VICE SINGLE
Order No.: Z2236009

- » with Easy-clamping base M

Order No.: Z2236019

- » with Easy-clamping base L


VERTICAL VICE



- » for clamping of delicate, thin specimens
- » integrated Easy-clamping base M or L
- » incl. adjustable stop


VERTICAL VICE DOUBLE

- » detached segment is still clamped after cutting

Order No.: Z2236010

- » with Easy-clamping base M

Order No.: Z2236020

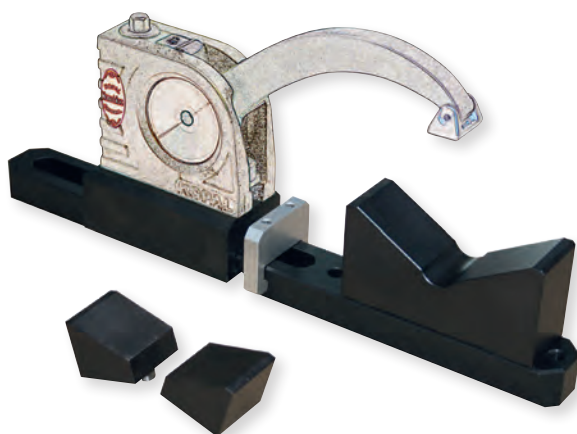
- » with Easy-clamping base L

BRILLANT

275

285

2000


GUIDE BAR 400 SET

Order No.: Z1350024

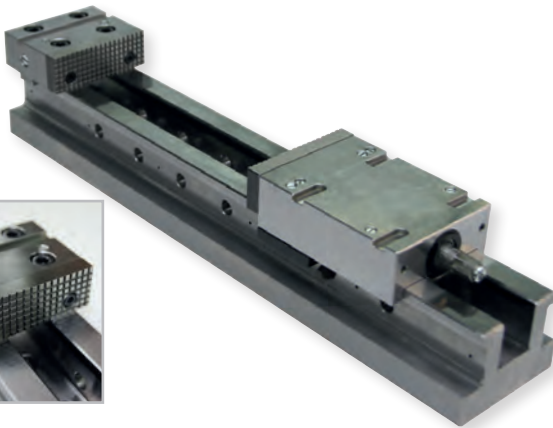
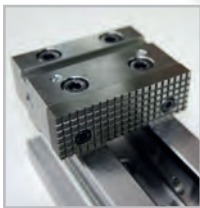
- » base for Universal vices Mono, Duo, chain clamping unit
- » for clamping crankshafts, camshafts
- » bar 400 mm, standard sliding carriage
- » 1x V-groove block 120°
- » 2x slanted resting blocks
- » incl. fasteners for T-slot 12 mm


UNIVERSAL-POWER CLAMPING SYSTEM 100/380

Order N.: Z2234015

- » integrated mechanical-hydraulic power
- » with standard clamping jaws plane/grooved, h 34 mm
- » incl. fasteners for T-slot nuts 12 mm and hand crank

Clamping width	0 – 205 mm
Max. clamp force	25 kN
Weight	18.5 kg
WxHxD	100x104x466 mm


UNIVERSAL-POWER CLAMPING SYSTEM 100/540
Order N.: Z2234016

- » integrated mechanical-hydraulic power
- » incl. fasteners for T-slot nuts 12 mm

Clamping width	0 – 365 mm
Max. clamp force	25 kN
Weight	26.3 kg
WxHxD	100x104x625 mm


V-Groove jaw
Order N.: Z2234018

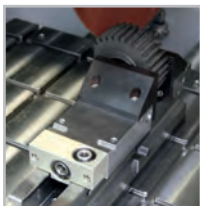
- » horizontal V-groove
- » combinable with flat jaw h 80 mm
- » incl. fixing screws



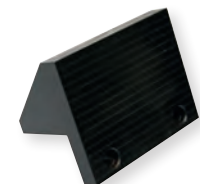
WxH	100x80 mm
for clamping round material	Ø 10 – 100 mm


Angle drive
Order N.: Z2234019

- » crank with top operation


Flat jaw/h 80 mm
Order N.: Z2234017

- » grooved tightening surface
- » for clamping parallel specimens
- » combinable with V-groove jaw
- » incl. fixing screws



WxH	100x80 mm
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BRILLANT

220



FAST LOCK VICE 50

» with manual force amplification

Jaws WxH	35x25 mm
Incl. accessories	Nutbreite 8 mm

Clamping range 50 mm

Order No.: Z2270002

» lever left

Order No.: Z2270000

» lever right

Clamping range 100 mm

Order No.: Z2270003

» lever left

Order No.: Z2270001

» lever right

M direct adaption
head piece 2
swifel unit

L head piece 2
swifel unit

V-groove jaw

Order No.: 02270011

round materials \varnothing 1-35 mm

BRILLANT

220

230

240

250

255

265



FAST LOCK VICE 60

» with force memory system
» horizontal fixation of round materials

Jaws WxH	60x32 mm
HxD	54x195 mm

Clamping range 120 mm

Order No.: Z2235002

» lever left

Order No.: Z2235001

» lever right

M direct adaption
head piece 4
swifel unit

L direct adaption
head piece 4
swifel unit

V-groove jaw

Order No.: 02235013

round materials \varnothing 2-35 mm

BRILLANT	200	230	240	250	255	265	275	285	2000
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FAST LOCK VICE 80

- » with force memory system
- » horizontal fixation of round materials

M direct adaption
L direct adaption
 height adapt. 50

Jaws WxH	80x35 mm
HxD	71x203 mm

HxD	71x253 mm
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HxD	71x353 mm
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Clamping range 100 mm

Order No.: Z2231001

- » lever left

Clamping range 150 mm

Order No.: Z2231002

- » lever left

» for Brillant 255, 265, 275, 285, 2000

Clamping range 250 mm

Order No.: Z2231020

- » lever left

Order No.: Z2231003

- » lever right

Order No.: Z2231004

- » lever right

Order No.: Z2231021

- » lever right



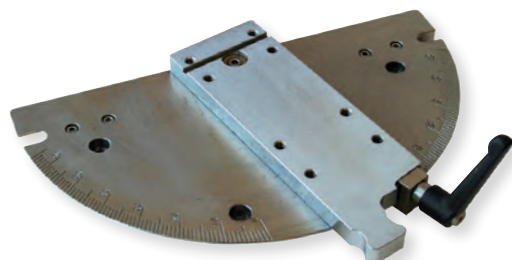
V-groove jaw

Order No.: 02231016



round materials Ø 2-40 mm

BRILLANT	265	275	285	2000
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Rotating plate 2x 60°

Order No.: Z1304560



- » manual rotation of clamping tool
- » manual horizontal move on machine table

Clamping range 100 mm

Swivel range +/- 60°



**CROSS VICE**

- » especially suitable for samples which contract during cutting process by material tension: the samples are pulled apart by the transversely exciting jaws
- » for parallel clamping of round and rectangular samples, particular for longitudinal cutting through hardened materials
- » excentric clamping arrangement allows rapid changing of samples



BRILLANT	200	230	240	250	255	265
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**CROSS VICE 50/100**

Order No.: Z1340010

» counter holder adjustable

WxH	50 x 50 mm
Round materials	Ø max. 60 mm
Clamping range	max. 100 mm
Incl. accessories	T-slot 12 mm

BRILLANT	255*	265	275	285	2000
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* on request

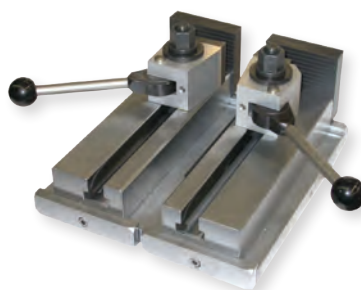
**CROSS VICE 80/100**

Order No.: Z1340000

» counter holder adjustable

WxH	80 x 50 mm
Round materials	Ø max. 90 mm
Clamping range	max. 100 mm
Incl. accessories	T-slot 12 mm

BRILLANT	275	285	2000
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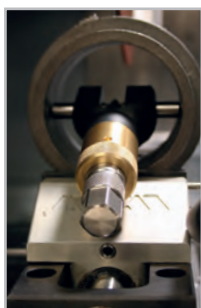
**CROSS VICE 80/150**

Order No.: Z1340001

» counter holder adjustable

WxH	80 x 50 mm
Round materials	Ø max. 90 mm
Clamping range	max. 150 mm
Incl. accessories	Nutbreite 12 mm

BRILLANT	255	265	275	285	2000
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**EXPANSION CLAMPING DEVICE**

Order No.: Z1304636

» to release material tension of cylindrical, hollow workpieces

Inner sample-Ø	55 – 120 mm
Adjustment*	ca. 10 mm

* extendable by exchange of cylindrical pins



BRILLANT	230	240	250	255	265	275	285	2000
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**ANGLE VICE 60**

Order No.: Z1304001
 » vertically centered, stainless
 » 2x plain jaws

Sample-Ø	max. 60 mm
V-groove jaw	
Clamping range	55 mm
Rotatable	270°
Incl. accessories	T-slot 12 mm

V-groove jaw

Order No.: 01304008



Round materials Ø 10-60 mm

BRILLANT	255	265	275	285	2000
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**ANGLE VICE 80**

Order No.: Z1302000
 » vertically centered, stainless
 » 2x plain jaws

Sample-Ø	max. 60 mm
V-groove jaw	
Clamping range	70 mm
Rotatable	270°
Incl. accessories	T-slot 12 mm

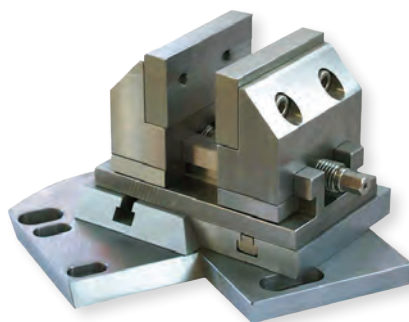
V-groove jaw

Order No.: 01302016



Round materials Ø 10-60 mm

BRILLANT	230	240	250	255	265	275	285	2000
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**ROTATING VICE 60**

Order No.: Z1304002
 » vertically centered, stainless
 » 2x plain jaws

Sample-Ø	max. 60 mm
V-groove jaw	
Clamping range	max. 55 mm
Sample-Ø	Ø 60 mm
Swivel range	90°
Incl. accessories	T-slot 12 mm

V-groove jaw

Order No.: 01304008



Round materials Ø 10-60 mm

BASIC MODULE

BRILLANT	255	265	275	285	2000
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UNIVERSAL POWER CLAMPING SYSTEM LC 90



Order No.: Z2234001

- » easy and safe clamping of various workpieces
- » various clamping jaws available
- » up to 28 kN tension with modest effort through mechanical power transmission
- » adjustable clamping force (11 settings)
- » incl. fasteners for t-slot nuts 12 mm and hand crank

ACCESSORIES



CLAMPING JAWS



Carrier jaws LC 90

Order No.: Z2234003

- » 1 pair, base for V-groove jaw and flat jaw 100
- » easy fastening with just one screw
- » made of high-strength aluminium with ceramic coating



V-groove jaw 100

Order No.: Z2234004

- » 1 piece, combinable with flat jaw 100
- » rotatable jaw (case-hardened steel)
- » jaw size (WxH) 100 x 70 mm
- » two horizontal V-grooves
- » for clamping round material between $\varnothing 10$ and 100 mm
- » incl. fixing screw

Flat jaw 100

Order No.: Z2234005

- » 1 piece, combinable with flat jaw 100
- » rotatable jaw (case-hardened steel)
- » jaw size (WxH) 100 x 70 mm
- » flat tightening surface
- » for clamping parallel specimens
- » incl. fixing screw

QUICK-CHANGING DEVICE

Order No.: Z2234009

- » 1 pair
- » quick and easy connection of modules by using pull-down-studs
- » for fixation of

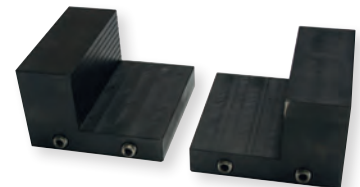
step jaw 100
clamping system X-Clamp 100
customized clamping solutions



STEP JAW 100

Order No.: Z2234008

- » 1 pair
- » clamping of parallel workpieces
- » application of clamping force via basic module LC 90
- » 180° rotatable
- » use only with quick changing device



CLAMPING SYSTEM X-CLAMP 100



Order No.: Z2234002

- » 1 pair
- » individual and safe clamping of various specimen shapes and sizes with spring suspended stainless steel plungers
- » perfect form fit with minimal effort
- » time-saving
- » use only with quick-changing device
- » incl. torque wrench and fixing screws



**BASE 90°**

Order No.: Z2234006

- » for installing the basic module LC 90 in side position 90°
- » incl. fixing material for T-slot nut DIN 650 12 mm

SUPPORT MODULE

Order No.: Z1350023

- » 1 piece
- » for supporting long workpieces
- » reducing of vibrations
- » spring suspended plungers fit tightly to the specimen
- » fixation of plungers
- » supplementary fixation of workpiece from above possible with universal vice
- » quick and easy connection of modules by using pull-down studs

**CUSTOMIZED CLAMPING JAWS**

- » ATM-service: send us your drawing (DXF or DWG-file) or fotos of your workpiece. We will design your individually optimized clamping vice.



BRILLANT

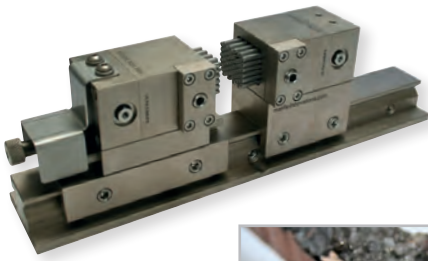
200

220

230

240

250



BASIC MODULE

CLAMPING SYSTEM X-CLAMP 3858



M direct adaption

Order No.: Z2234010

- » individual and safe clamping of various smaller specimen shapes and sizes with spring suspended stainless steel plungers
- » perfect form fit with minimal effort
- » time-saving
- » incl. torque wrench

Plunger area WxH 23x20 mm

Plunger stroke 12 mm

Max.
clamping width 118 mm

ACCESSORIES

BASE FOR CLAMPING SYSTEM X-CLAMP 3858



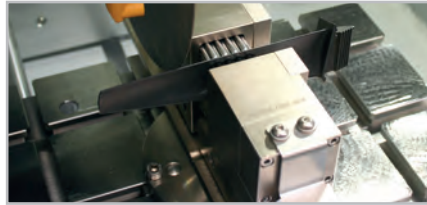
- » incl. fixing material

Order No.: Z2234012

- » for fixation with T-slot nut 8 mm

Order No.: Z2234011

- » for fixation with T-slot nut 12 mm



BRILLANT	200	220	230	240	250
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L high adapter 50
V-block plate 40

UNIVERSAL VICE PICCOLO 54

Order No.: Z1350008
» incl. handle

Working radius	54 mm
Clamping height	- 15 - 58 mm
Clamping force	6,5 kN
Fixing screws	M 8 x 25
T-slot nut stainless	M 8 x 12

UNIVERSAL VICE PICCOLO 100

Order No.: Z1350012
» incl. handle

Working radius	100 mm
Clamping height	- 40 - 90 mm
Clamping force	4,2 kN
Fixing screw	M 8 x 25
T-slot nut stainless	M 8 x 12

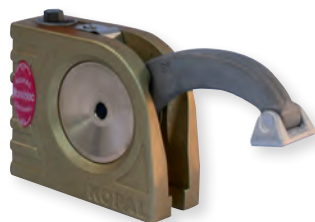
SUITCASE SET

UNIVERSAL VICE PICCOLO 54

Order No.: Z1350010
 » 2x universal vice Piccolo 54
 » 2x height adapter Piccolo
 » 1x handle Piccolo
 » 1x clamping arm extension
 » 3x standard clamping shoe
 » 1x piece clamping shoe traverse bridge
 » 1x clamping shoe longitudinal bridge
 » 1x clamping shoe traverse V-shoe
 » 1x clamping shoe longitudinal V-shoe
 » 4x T-slot nuts stainless M 8 x 12
 » 4x fixing screws M 8 x 25



BRILLANT	200	230	240	250	255	265	275	285	2000
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L high adapter 50
guide bar
V-block plate 40

UNIVERSAL VICE MONO 61

Order No.: Z1350002
» incl. handle

Working radius	61 mm
Clamping height	- 8 - 102 mm
Clamping force	12 kN
Fixing screw	M 10 x 32
T-slot nut stainless	M 10 x 12

UNIVERSAL VICE MONO 132

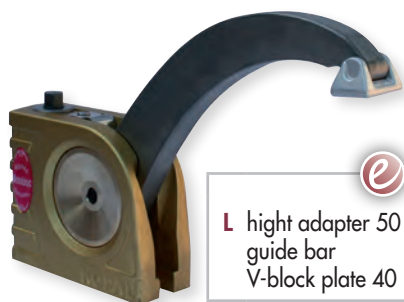
Order No.: Z1350011
» incl. handle

Working radius	132 mm
Clamping height	- 43 - 155 mm
Clamping force	8 kN
Fixing screw	M 10 x 32
T-slot nut stainless	M 10 x 12

SUITCASE SET

UNIVERSAL VICE MONO 61

Order No.: Z1350004
 » 2x universal vice Mono 61
 » 2x height adapter Mono
 » 1x handle Mono
 » 1x clamping arm extension
 » 3x standard clamping shoe
 » 1x clamping shoe traverse bridge
 » 1x clamping shoe longitudinal bridge
 » 1x clamping shoe traverse V-shoe
 » 1x clamping shoe longitudinal V-shoe
 » 4x T-slot nuts stainless M 8 x 12
 » 4x fixing screws M 8 x 25



L high adapter 50
guide bar
V-block plate 40
XL guide bar 400



BRILLANT	200	230	240	250	255	265	275	285	2000
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 XL guide bar 400

UNIVERSAL VICE DUO

Order No.: Z1350005
 » for clamping and lifting
 » with 2 changeable clamping arms
 » incl. handle

Working radius	46 - 91 mm
Clamping height	0 - 129 mm
Lifting height	4 - 142 mm
Clamping force	11 kN
Fixing screw	M 10 x 32
T-slot nut stainless	M 10 x 12

BRILLANT	200	230	240	250	255	265	275	285	2000
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 XL guide bar 400

CHAIN CLAMPING VICE

Order No.: Z1350006
 » for clamping of big parts
 » 1x universal vice Mono
 » 1x chain (length 1m)
 » 1x hooking block for chain
 » incl. handle

Clamping force	16 kN
Fixing screw	M 10 x 32
Fixing screw	M 10 x 25
DIN 912	
2x T-slot nut stainless	M 10 x 12

ACCESSORIES

CLAMPING SHOES



» for all universal vices
Longitudinal V-shoe
 Order No.: 92005796

Traverse V-shoe
 Order No.: 92005797

Longitudinal bridge
 Order No.: 92005799

Traverse bridge
 Order No.: 92005800

Standard clamping shoe
 Order No.: 92005798



ACCESSORIES

FIXATION

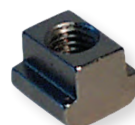


Fixing screw
 » for universal vice Piccolo
 M 6 x 25 Order No.: Z1304591
 M 8 x 25 Order No.: 95003169
 M 10 x 25 Order No.: 95003170

» for universal vice Mono, Duo,
 chain clamping system
 M 10 x 32 Order No.: 95003168

T-slot nut stainless*
 M 6 x 8 Order No.: 91001157
 M 8 x 10 Order No.: 91001161
 M 8 x 12 Order No.: 91001159
 M 10 x 12 Order No.: 91001158

*other sizes on request





ACCESSORIES

HEIGHT ADAPTER PICCOLO



Order No.: Z1350007

Construction height	60 mm
Fixing screw	M 8 x 25
T-slot nut, stainless	M 8 x 12



ACCESSORIES

HEIGHT ADAPTER MONO



Order No.: Z1350003

Construction height	74 mm
Fixing screw	M 10 x 32
T-slot nut, stainless	M 10 x 12



without universal vice

ACCESSORIES

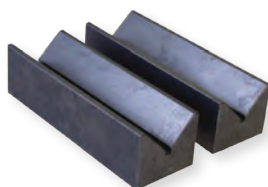
CLAMPING ARM EXTENSION



Order No.: 95003172

» for Piccolo 54 and Mono 61

Extension	90 mm
Clamping shoe	Standard



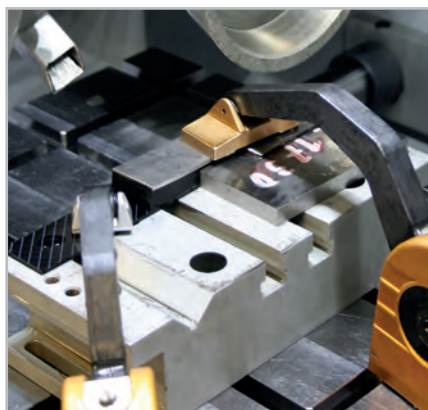
PAIR OF V-BLOCKS

Order No.: 92005805

Angle	90°
for samples	Ø 5 - 50 mm
D x W	50 x 150 mm

ADAPTABLE TO
UNIVERSAL VICE MONO:

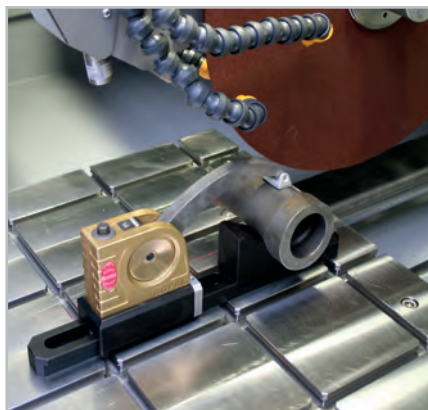
» see at Easy-clamping modules for
Easy-clamping base L



V-block plate 40

Guide bar with sliding carriage and
V-groove block

» see at Easy-clamping modules for
Easy-clamping base XL
» direct adaption: Brillant 275, 285
and 2000



Guide bar 400 set

CUSTOMIZED CLAMPING TOOLS

Different types of tasks and conditions constitute diverse demands on clamping tools and cutting equipment. The construction of our machines gives us the opportunity to design and manufacture custom-made solutions for special dimensions. ATM has already successfully developed special clamping tools for complicated cutting movements or geometries.





Opal 410



Opal 460



Opal 480

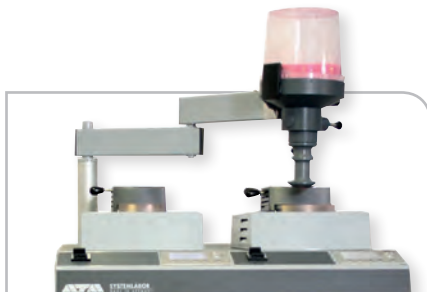
CONTENT

HOT MOUNTING PRESSES

OPAL 410	2,71 – 2,73
OPAL 460	2,75 – 2,77
OPAL 480	2,79 – 2,81

SYSTEM LAB

INFO System hot mounting presses	2,74
INFO Dosing system	2,78



Dosing system



System lab combinations





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

FUNCTION



ECO FUNCTION

The device is supported by an Eco function, such as to reduce water consumption.



E-LAB

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

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. Molds are also available in inch sizes.



INFO

Supplementary product information



**SIMPLE OPERATION**

The bayonet connection enables easy loosening and swinging to the side.

Externally accessible closure components are PTFE-coated. After pressing the start key, the fully automatic program is executed with the preselected parameters.

The parameters can be changed and adjusted during the mounting process.

**MOULD ASSEMBLIES**

Our comprehensive selection of mould assemblies from Ø 25.2 - 40 mm enables optimum mounting of your sample.

Two mounts can be produced simultaneously with the use of a spacer.

ELECTRONIC CONTROL

With its clear LCD operation panel you can easily control the hot mounting press.

**OPAL 410**

The OPAL 410 is a fully hydraulic, water cooled hot mounting press for mounting samples before polishing.

The process sequence is executed automatically.

Mould assemblies can be exchanged quickly and without tools.

The robust aluminium construction is powder coated.

With its solid construction and ATM hydraulic system, the operating noise of the machine is minimized.

HEATING

Our high-power heating system gives a very short warm-up time.

COOLING WITH WATER-SAVINGFUNCTION

The mounting process is either cooled with continuous or pulsed water flow. Thereby, a considerably lower water consumption can be achieved by pulsed cooling.

PRESSURE CONTROL

Besides the standard operation, you can choose between six pressures depending on sample diameter.



BASIC MODULE



OPAL 410



Order No.: M0770000

- » automatic hot mounting press
- » fully hydraulic operation with automatic water cooling (with water saving function)
- » bayonet closure system
- » computer controlled
- » easy change of mould assemblies
- » aluminium case, powder coated



EQUIPMENT



POWER SUPPLY

Equipment 1

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

Order No.: A0770000

Equipment 2

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

Order No.: A0770001

ACCESSORIES



COOLING UNIT

Recirculation unit

- » extern

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

Order No.: Z0730007

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

Order No.: Z0730008

Cooling	0.81 kW
Motor	0.6 kW
Flow pressure	2.8 bar
Tank	6 ltr.
WxHxD	440x345x565mm



System cooling unit

- » integrated in drawer

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

Order No.: A5810171

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

Order No.: A5810172

Cooling	0.81 kW
Motor	0.6 kW
Flow pressure	2.8 bar
Tank	6 ltr.



INSERTS

Mould assemblies

- » cylinder, upper and lower ram

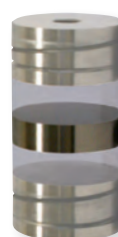
	Order No.:
Ø 25.2 mm (appr. 1")	Z0770101
Ø 30 mm	Z0770102
Ø 32 mm	Z0770103
Ø 31.75 mm (1¼")	Z0770104
Ø 38 mm (appr. 1½")	Z0770105
Ø 40 mm	Z0770106



Spacer

- » for double mounts

	Order No.:
Ø 25.2 mm (appr. 1")	00702113
Ø 30 mm	00702114
Ø 32 mm	00702115
Ø 31.75 mm (1¼")	00702141
Ø 38 mm (appr. 1½")	00702116
Ø 40 mm	00702117



CONNECTION SET



Order No.: Z0730003

2x pressure tube	R 1/2"; 2 m long
Adapter	for 3/4"

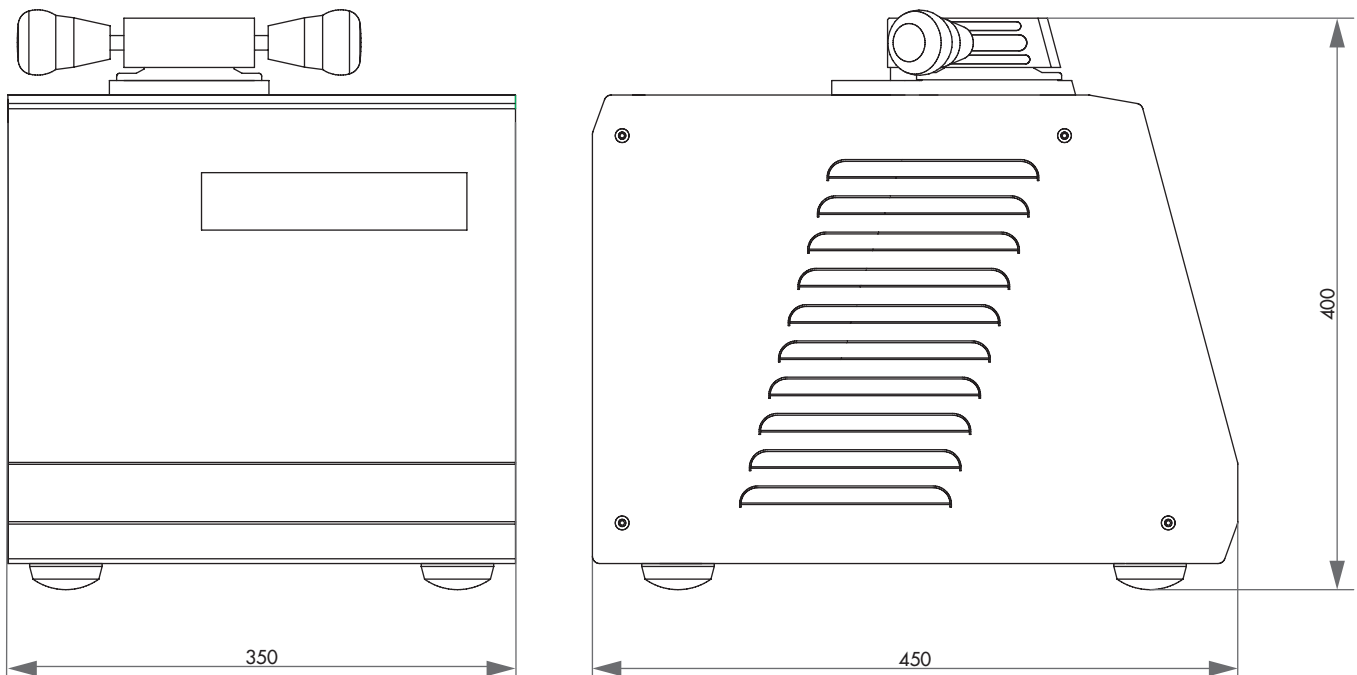
SPECIFICATIONS

Mould	Ø 25.2 - 40 mm
Connected load	3.1 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)

Heating	4 x 500 Watt
Temperature range	0 - 200 °C
Heating time	variable / 0 - 30 min
Cooling time	variable / 0 - 30 min

Max. pressure	up to 450 bar depending on mould
---------------	-------------------------------------

WxHxD	350 x 400 x 450 mm
Weight	40 kg





Combination for 2-lines

SYSTEM-INTEGRATION

The Opal 460 and 480 are available not only as single units but also as a bench standing unit. By integrating the mounting presses into our System, we produce a comfortable working height.

Optionally, the SYSTEM-MOUNTING PRESS can be equipped with a closed cooling water system, so it becomes independent

from any mains water supply. In addition, the water consumption is reduced to a single filling (6 litres).

The system-mounting presses are available as twin- or triple powder-coated aluminum units and fit perfectly into our ATM System Lab.



SYSTEM-HOT MOUNTING PRESS



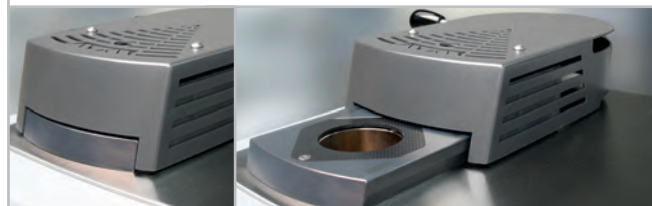
- » automatic hot mounting press in System Lab design, optionally available with Opal 460, 480 and HPL-tabletop
- » every mounting press operates independently
- » automatic water cooling (with water-miser function)
- » automatic sliding closure system
- » fully hydraulic operation
- » computer controlled with automatic cycle system
- » three different pressure modes
- » easy change of mould assemblies
- » made of powder-coated aluminium
- » e-Lab ready

2-lines WxHxD	88x110x80 cm
3-lines WxHxD	132x110x80 cm



SLIDING CLOSURE

The new sliding closure is a unique innovation and allows quick and easy opening/closing of the mould assembly. By actuating the lever, the closure slides to the correct position. After initiating the cycle the mould closes and reopens automatically on completion.



SIMPLE OPERATION

After pressing the start key, the fully automatic program sequence is executed with the preselected parameters. The parameters can be changed and adjusted during the mounting process.

OPAL 460

The OPAL 460 is a fully hydraulic, water cooled hot mounting press for mounting samples before polishing.

The process sequence is executed automatically.

The fully automatic sliding closure allows quick and easy opening/closing of the mould assembly.

Mould assemblies can be exchanged quickly and without tools.

The robust aluminium construction is powder coated.

With its solid construction and ATM hydraulic system, the operating noise of the machine is minimized.

PRESSURE MODE

Besides the standard operation, you can choose between different pressure methods:

- » pressure increases parallel with the pre-heating phase (ideal for hollow specimens, e.g. rings).
- » pressure increases after the preset temperature is reached to produce mounts as gap free as possible (ideal for complex geometries).

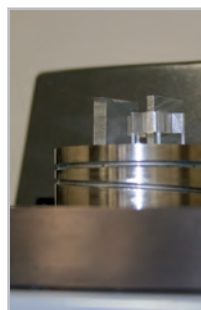
HEATING

Our high-power heating system gives a very short warm-up time. For delicate samples the machine can infinitely adjust the heating curve.



ELECTRONIC CONTROL

With its clear LCD operation panel you can easily control the hot mounting press. You can load and save eighteen different mounting processes.



MOULD ASSEMBLIES

Our comprehensive selection of mould assemblies from Ø 25.2 - 50 mm enables optimum mounting of your sample. Two mounts can be produced simultaneously with the use of a spacer.



OPAL 460

BASIC MODULE



Order No.: M0780005

- » automatic hot mounting press
- » fully hydraulic operation with automatic water cooling (with water saving function)
- » completely new and easy automatic closure system
- » computer controlled with automatic cycle system
- » four different pressure modes
- » easy change of mould assemblies
- » aluminium case, powder coated

EQUIPMENT



POWER SUPPLY

Equipment 1

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

Order No.: A0780005

Equipment 2

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

Order No.: A0780006

ACCESSORIES



COOLING UNIT

Recirculation unit

- » extern

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

Order No.: Z0730007

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

Order No.: Z0730008

Cooling	0.81 kW
Motor	0.6 kW
Flow pressure	2.8 bar
Tank	6 ltr.
WxHxD	440x345x565mm



System cooling unit

- » integrated in drawer

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

Order No.: A5810171

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

Order No.: A5810172

Cooling	0.81 kW
Motor	0.6 kW
Flow pressure	2.8 bar
Tank	6 ltr.



INSERTS

Mould assemblies

- » cylinder, upper and lower ram

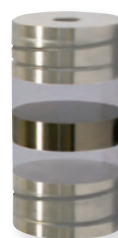
	Order No.:
Ø 25.2 mm (appr. 1")	Z0780101
Ø 30 mm	Z0780102
Ø 32 mm	Z0780103
Ø 31.75 mm (1¼")	Z0780104
Ø 38 mm (appr. 1½")	Z0780105
Ø 40 mm	Z0780106
Ø 50 mm	Z0780107



Spacer

- » for double mounts

	Order No.:
Ø 25.2 mm (appr. 1")	00702113
Ø 30 mm	00702114
Ø 32 mm	00702115
Ø 31.75 mm (1¼")	00702141
Ø 38 mm (appr. 1½")	00702116
Ø 40 mm	00702117
Ø 50 mm	00702118



ACCESSORIES

CONNECTION SET



Order No.: Z0730003

2x pressure tube	R 1/2"; 2 m long
Adapter	for 3/4"

Order No: Z0730004

» connection set for two Opal presses

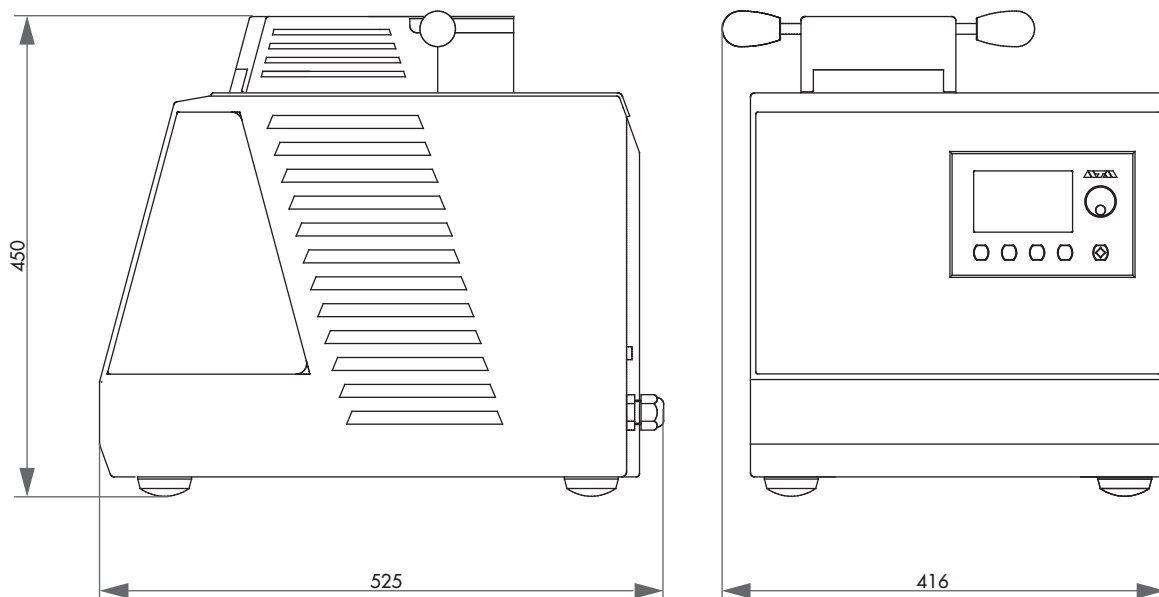
SPECIFICATIONS

Mould	Ø 25.2 - 50 mm
Connected load	3.1 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)

Heating time	variable / 0 - 30 min
Cooling time	variable / 0 - 30 min
Max. pressure	up to 250 bar depending on mould

Heating	4 x 500 Watt
Temperature range	0 - 200 °C

WxHxD	390x450x500 mm
Weight	62 kg





Adaption for 5-liter-bucket



HEAVY DUTY MOUNTING

High demands of samples and therefore consumption of a lot of mounting material recommend the ATM-DOSING SYSTEM.

The swivel arm is either fixable at the media rail of system lab cabinets or on the wall for use with table devices.

The dosing unit is equipped with an adapter for 5-liter-buckets and can be taken out completely.

The dosing flask portions the mounting material adjustable from 10–30 cm³.

The dosing head can be directly attached on the feeder chute of the mounting press. This minimizes soiling of the mounting mould by mounting material dust.

A double dosing system is available for using different mounting materials.

BASIC MODULE

DOSING SYSTEM FOR HOT MOUNTING MATERIALS

- » for portioning hot mounting material (adjustable 10–30 cm³)
 - » dosing unit can be taken out completely
 - » adapter system for 5-liter-bucket
- Order No.: A5800439



EQUIPMENT

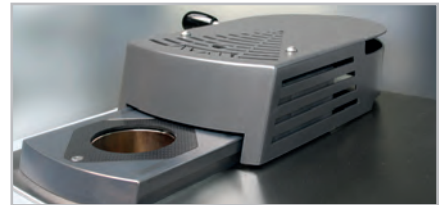
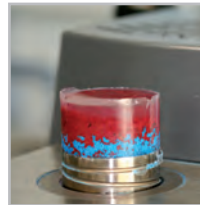
SWIVEL SYSTEM

- » fixing on media rail of system lab cabinet
 - » wall fixing
- Order No.: A0707000 Order No.: A0707001



SLIDING CLOSURE

The new sliding closure is a unique innovation and allows quick and easy opening/closing of the mould assembly. By actuating the lever, the closure slides to the correct position. After initiating the cycle the mould closes and reopens automatically on completion.



OPAL 480

The OPAL 480 is a fully hydraulic, water cooled hot mounting press for mounting samples before polishing.

The process sequence is executed automatically.

The fully automatic sliding closure allows quick and easy opening/closing of the mould assembly.

Mould assemblies can be exchanged quickly and without tools.

Also rectangular moulds can be produced.

The robust aluminium construction is powder coated.

With its solid construction and ATM hydraulic system, the operating noise of the machine is minimized.

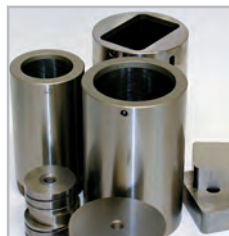
SIMPLE OPERATION

After pressing the start key, the fully automatic program sequence is executed with the preselected parameters. The parameters can be changed and adjusted during the mounting process.



ELECTRONIC CONTROL

With its clear LCD operation panel you can easily control the hot mounting press. You can load and save eighteen different mounting processes.



MOULD ASSEMBLIES

Our comprehensive selection of mould assemblies from \varnothing 50 - 70 mm resp. 30x60/40x60 mm (rectangular form) enables optimum mounting of your sample. Two mounts can be produced simultaneously with the use of a spacer.

PRESSURE MODE

Besides the standard operation, you can choose between different pressure methods:

- » pressure increases parallel with the pre-heating phase (ideal for hollow specimens, e.g. rings).
- » pressure increases after the preset temperature is reached to produce mounts as gap free as possible (ideal for complex geometries).

COOLING

Not only the cooling time, but also the resulting cooling curve can be adjusted infinitely according to the mounting requirements. Thereby, a considerably lower water consumption is achieved for longer cooling times.

HEATING

Our high-power heating system gives a very short warm-up time. For delicate samples the machine can adjust the heating curve infinitely.

**OPAL 480****BASIC MODULE**

Order No.: M0790000

- » automatic hot mounting press
- » fully hydraulic operation with automatic water cooling (with water saving function)
- » completely new and simple automatic closure system
- » computer controlled with automatic cycle processing
- » four different pressure modes
- » rectangular moulds
- » easy change of mould assemblies
- » aluminium case, powder coated

EQUIPMENT**POWER SUPPLY**

Equipment 1

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

Order No.: A0790000

Equipment 2

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

Order No.: A0790001

ACCESSORIES**COOLING UNIT****Recirculation unit**

- » extern

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

Order No.: Z0730007

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

Order No.: Z0730008

Cooling	0.81 kW
Motor	0.6 kW
Flow pressure	2.8 bar
Tank	6 ltr.
WxHxD	440x345x565 mm

System cooling unit

- » integrated in drawe

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

Order No.: A5810171

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

Order No.: A5810172

Cooling	0.81 kW
Motor	0.6 kW
Flow pressure	2.8 bar
Tank	6 Ltr.



ACCESSORIES

INSETS

**Mould assemblies**

» cylinder, upper and lower ram

	Order No.:
Ø 50 mm	Z0790000
Ø 60 mm	Z0790001
Ø 70 mm	Z0790002
□ 30x60 mm	Z0790003
□ 40x60 mm	Z0790004

**Spacer**

» for double mounts

	Order No.:
Ø 50 mm	00702118
Ø 60 mm	00702025
Ø 70 mm	00702026

CONNECTION SET

Order No.: Z0730003

2x pressure tube	R 1/2"; 2 m long
Adapter	for 3/4"

Order No.: Z0730004

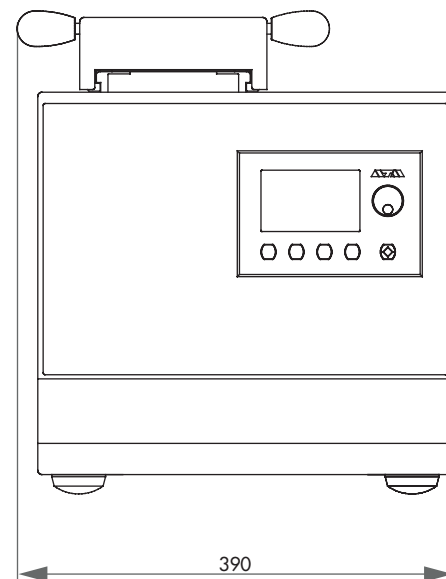
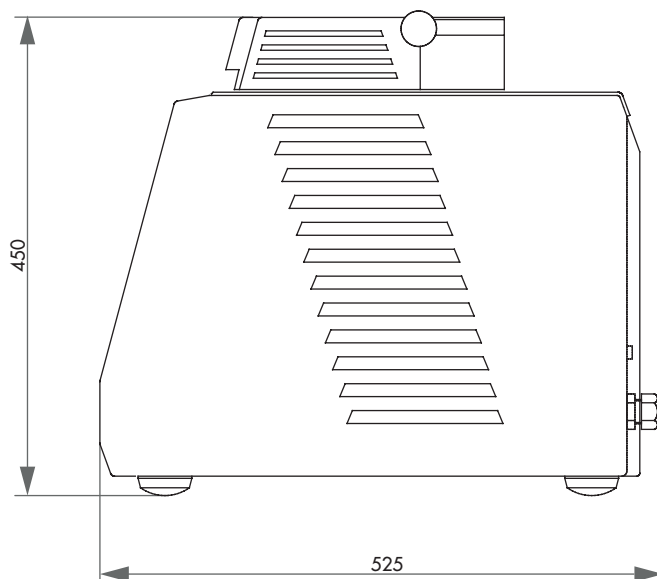
» connection set for two Opal presses

SPECIFICATIONS

Mould	Ø 50 - 70 mm
Mould (rectangular)	30x60 / 40x60 mm
Connected load	3.6 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)
Heating	4 x 630 Watt
Temperature range	0 - 200 °C

Heating time	variable / 0 - 30 min
Cooling time	variable / 0 - 30 min
Max. pressure	up to 310 bar depending on mould

WxHxD	390x450x500 mm
Weight	68 kg



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





Jade 700



Saphir 375



Saphir 300



Saphir Vibro



Saphir 320

Saphir 330



Saphir 350

Saphir 360

CONTENT

PRE-GRINDING

- JADE 700** Belt grinder 3,85 – 3,86
- SAPHIR 375** System-Grinder 3,87 – 3,89

GRINDERS AND POLISHERS WITHOUT HEAD

- SAPHIR 300** Mobile Grinder/Polisher 3,90 – 3,91
- SAPHIR VIBRO** Vibratory Polishing Device · 3,92 – 3,94
- SAPHIR 320** 3,96 – 3,97
- SAPHIR 330** 3,98 – 3,99
- SAPHIR 350** 3,100 – 3,101
- SAPHIR 360** 3,102 – 3,103

GRINDERS AND POLISHERS WITH HEAD

- SAPHIR 520** WITH RUBIN 500 3,104 – 3,106
- SAPHIR 530** WITH RUBIN 500 3,107 – 3,109
- SAPHIR 550** WITH RUBIN 520 3,110 – 3,112
- SAPHIR 550** WITH RUBIN 540 3,113 – 3,115
- SAPHIR 560** WITH RUBIN 520 3,116 – 3,118

ACCESSORIES FOR GRINDERS AND POLISHERS

- INFO** Special sample holder 3,119
- Working wheels** 3,120
- Sample holder** 3,121 – 3,122
- Levelling plate, levelling device** 3,123
- TOPAS 130** Dosing unit 3,124 – 3,125

SYSTEM LAB

- SAPHIR X-CHANGE** 3,126 – 3,128
- SYSTEMAUTOMAT** 3,129 – 3,132
- INFO** System furniture 3,82
- INFO** Settling tank 3,95

ELECTROLYTIC POLISHING AND ETCHING

- KRISTALL 680** 3,133 – 3,136
- KRISTALL 650** 3,137 – 3,139



Saphir 520

Saphir 530
with Rubin 500



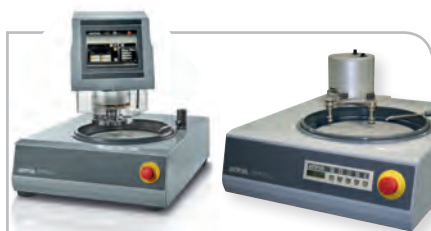
Topas 130



Saphir X-Change



Systemautomat (example 5 stations)



Saphir 550
with Rubin 520

Saphir 550
with Rubin 540



Saphir 560 with Rubin 520



Kristall 680

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**FUNCTION****E-LAB**

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

**INFO**

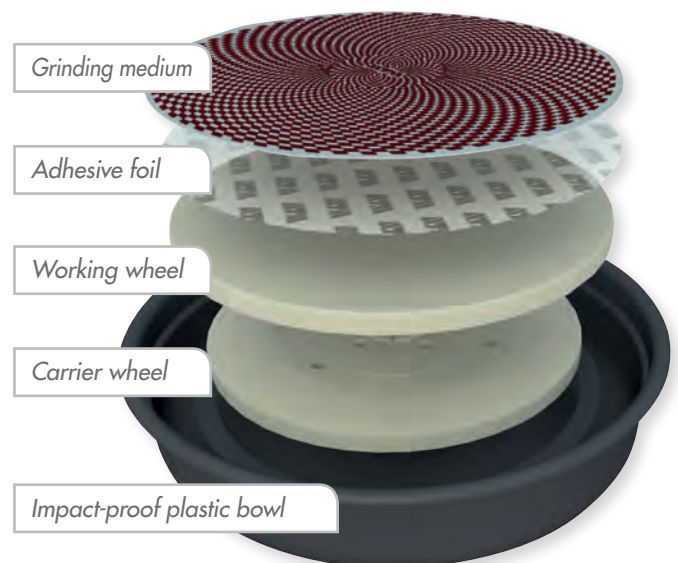
Supplementary product information

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

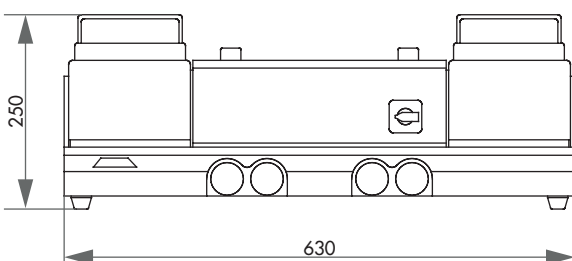
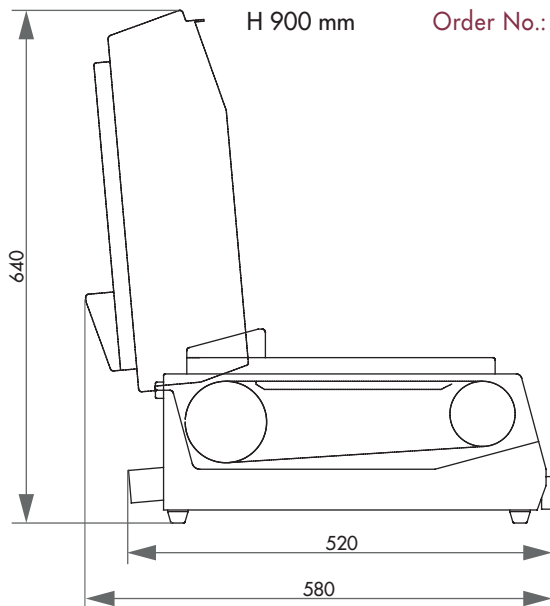
H 900 mm Order No.: A5810237

» 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 1 x R1/2"
valve right and left, each Ø 40mm

WxHxD ~ 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 depth can be programmed from 0.01 – 5.00 mm with a stock removal accuracy of 0.1 mm.

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)

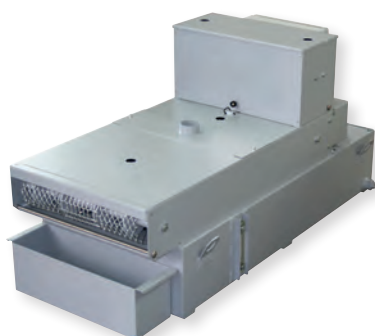
Order No.: A5800484

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 ~ 90 kg

- » for belt filter system please order connection-set

Order No.: Z6501005

3,88

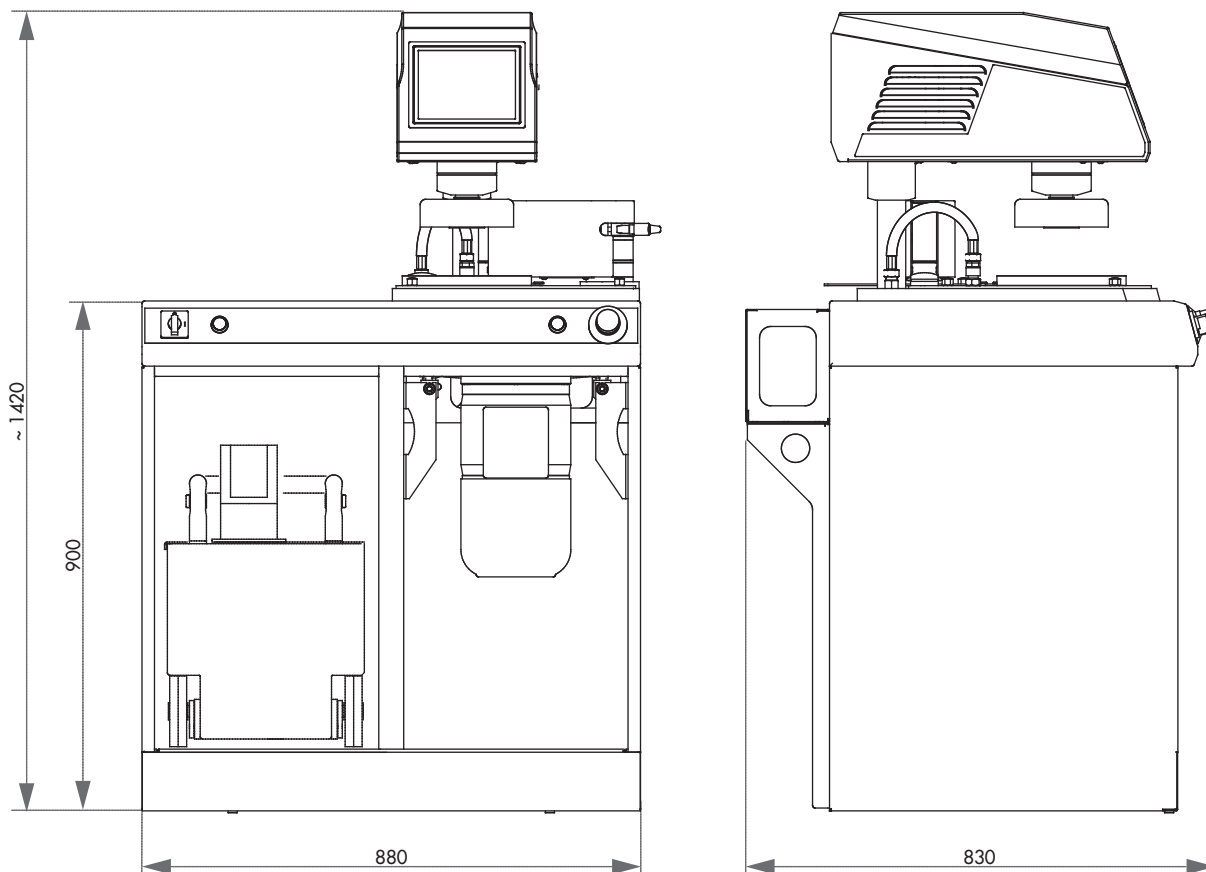
SPECIFICATIONS

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
Stock removal depth	0.01 – 5.00 mm
Stock removal accuracy	0.1 mm
WxHxD ~	880 x 1420 x 830 mm
Weight	230 kg

* depending on power supply (equipment)





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 ~	130 x 97 x 254 mm
Weight	2.3 kg



ACCESSORIES

MICRO MOTOR



ENK-250 T
Order No.: 95005506

Speed	1,000 – 25,000 rpm
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ENK-410 S
Order No.: 95004842

Speed	1,000 – 40,000 rpm
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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
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3/60 GTH
Order No.: 92004297
» for grinding papers and polishing cloths with Velcro fastening

Shaft	Ø 6 mm
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3/30 GTK
Order No.: 92005551
» for grinding papers and polishing cloths with PSA

Shaft	Ø 3 mm
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**BENUTZEROBERFLÄCHE**

The innovative design of the Saphir Vibro software provides intuitive and user-friendly operation. 15 preparation methods for various materials are pre-installed, together with the appropriate consumables. The Saphir Vibro offers storage of up to 200 customized methods both on the device or on USB, allowing a transfer of methods from one device to another. These may be programmed without any restriction in duration or in vibration intensity.

Saphir Vibro

The vibratory polishing device Saphir Vibro is designed for the virtually deformation-free preparation of specimen surfaces (specimens surfaces for polishing steps <math>< 1\mu\text{m}</math>). It is ideal for further characterizations, e.g. EBSD (electron backscatter diffraction), AFM analysis and nanoindentation or

micro hardness testing.

The device is applicable for soft and ductile materials, like titanium-aluminum, pure copper and copper alloys, aluminum alloys, steel and nickel based alloys and may be operated in manual or automatic mode.

**PLUGS**

Connection to an exhaust air system improves health and safety conditions for the operator. Ethernet plug for remote control and service applications and USB plug to save and exchange data is integrated.

POLISHING BOWL

With a diameter of $\varnothing = 308$ mm the large bowl provides sufficient space for polishing of completely filled sample holders, large specimens, as well as for simultaneously polishing up to 21 specimens. Held by strong magnets the polishing bowl can be easily removed by pressing a button and exchanged by simply putting it back into the device. The clamping ring protects the edge of the polishing cloth to ensure a long service life. The bowl is designed for the use of polishing cloths on magnetic systems. Consequently, the cloth is quickly and easily removed.

SURFACE-GUARD

The Surface-Guard (movement interval) offers advantages for corrosion-sensitive materials like cast iron and preserves the quality of the polished surface after a program has finished.

BASIC MODULE

SAPHIR VIBRO



Order No.: M5651000

- » applicable for soft and ductile materials, like titanium-aluminum, pure copper and copper alloys, aluminum alloys, steel and nickel based alloys
- » large bowl with $\varnothing=308\text{mm}$ for polishing large specimens, filled sample holders, and for simultaneous polishing of up to 21 specimens ($\varnothing=30\text{mm}$, 1 1/4")
- » rapid changeable polishing bowl with magnetic system
- » Surface-Guard: protects the quality of the polished surface after running a preparation program
- » automatic frequency control from 60-120Hz, e.g. for mass variation
- » clearly ATM-User interface and touch screen
- » pre-installed preparation methods and consumables for various materials
- » programmable and storable polishing recipes on the device or on USB
- » manual and automatic operation modus
- » alert function (timer) indicating the finish of a program
- » low-noise operation, almost indefinite polishing time without supervision
- » vibrational motor with oscillation compensation
- » exhaust connection plug (exhaust connection for enhanced user-friendliness and safety)
- » soft closing clear-sighted hood protecting polishing cloth and specimens for contamination
- » vibration adsorbing construction
- » weight of 45 kg suitable as benchtop device

EQUIPMENT

POWER SUPPLY



Equipment 1

Equipment 2

220-240 V 50/60 Hz (1Ph/N/PE)**100-120 V 50/60 Hz (1Ph/N/PE)**

Order No.: A5651001

Order No.: A5651002

ACCESSORIES

POLISHING BOWL (ADDITIONAL)



Order No.: Z5651000

- » large bowl with $\varnothing=308\text{mm}$ (inner diameter) for polishing large specimens, filled sample holders and for simultaneous polishing of up to 21 specimens ($\varnothing=30\text{mm}$, 1 1/4")
- » ergonomic carrying handle for easy handling
- » fast and easy change of the bowl due to release button and magnetic system
- » specially designed for polishing cloths of magnetic system
- » easy cleaning of bowl
- » polishing cloth meter: 300/305 mm (12")
- » lid protects cloth and suspension from contamination



ACCESSORIES

SAMPLE HOLDER SAPHIR VIBRO



- » for clamping of mounted samples
- » adding additional weights possible to increase surface pressure
- » specimen height max. 30 mm
- » slip ring of sample holder suppresses interactions with other sample holders in bowl



Order No.: Z5651008

- » Sample Ø 25 mm (1")
- » Weight 300 g, additional weight 90 g

Order No.: Z5651009

- » Sample Ø 30/32 mm (1 1/4")
- » Weight 220 g, additional weight 90 g

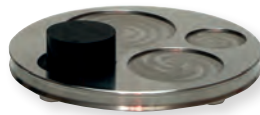
Order No.: Z5651011

- » Sample Ø 38/40 mm (1 1/2")
- » Weight 550 g, additional weight 190 g

Order No.: Z5651012

- » Sample Ø 50 mm (2")
- » Weight 360 g, additional weight 190 g

LEVELLING PLATE SAPHIR VIBRO



Order No.: Z5651013

- » for levelling of mounted specimens
- » suitable for samples with diameter 25-50 mm (1"-2")

SPECIFICATIONS

Connected load	0,25 kVA
Drive power	135 VA
Power supply	1 220-240 V 50/60 Hz (1Ph/N/PE)
	2 100-120 V 50/60 Hz (1Ph/N/PE)

Plugs	USB, Ethernet
Exhaust connection plug	Ø 40 mm
Ambient temperature	10-40 °C
IP Code	IP 22

POLISHING BOWL

Inner diameter	Ø 308 mm
Polishing cloth	Ø 300/305 mm (12")

WxHxD ~	510 x 300 x 590 mm
Weight ~	45 kg

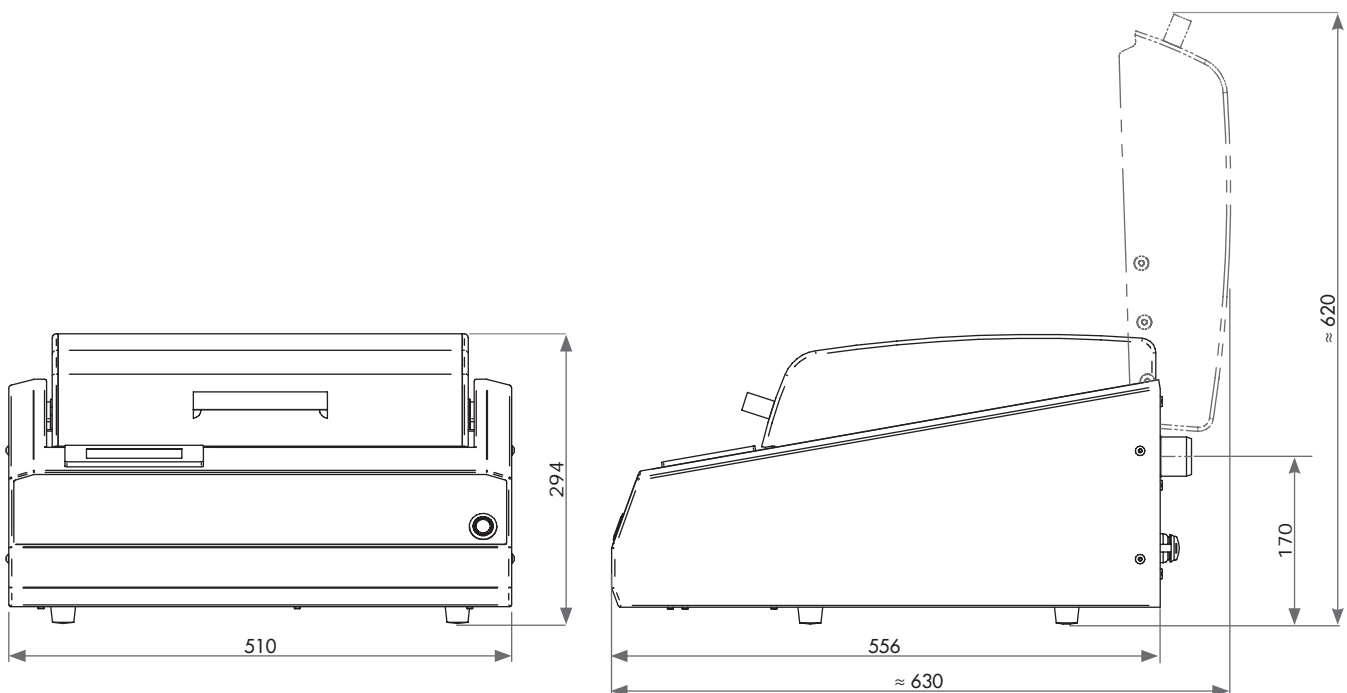


Figure: Basic unit without equipment, option and accessories. Further information on request.



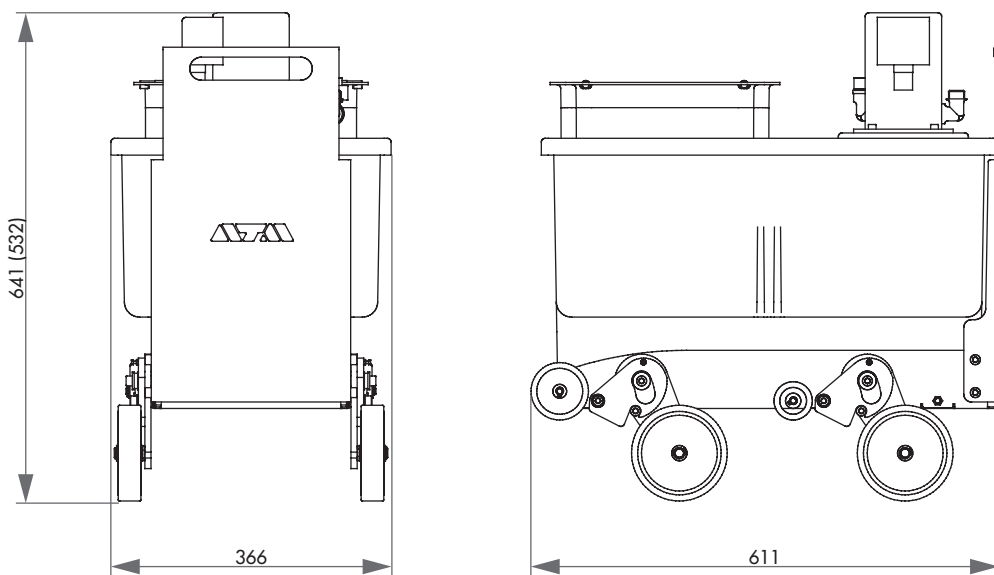
Settling tank with insertion mechanism for System lab cabinets of height 800 or 900 mm



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.



**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 Ø 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
- » 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



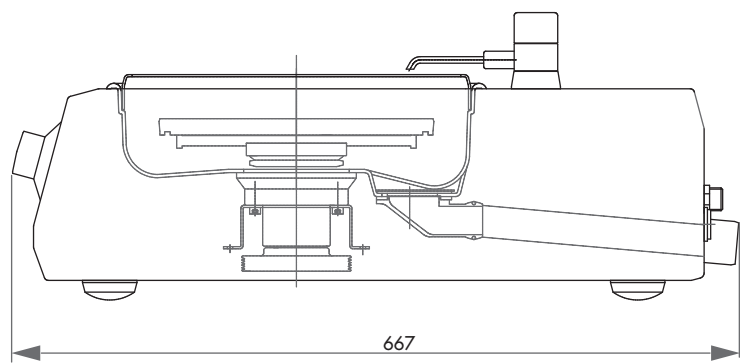
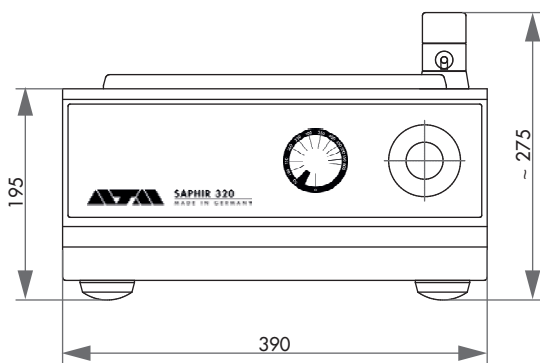
Order No.: Z5600008

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

SPECIFICATIONS

Working wheel	Ø 200 - 250 mm
Connected load	1.5 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)

Speed	50 - 600 rpm
WxHxD ~	390 x 195 x 620 mm
Weight	22 kg



**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 twin 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

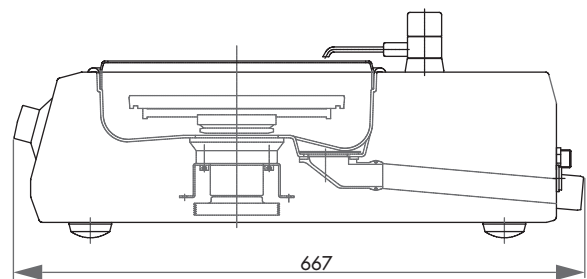
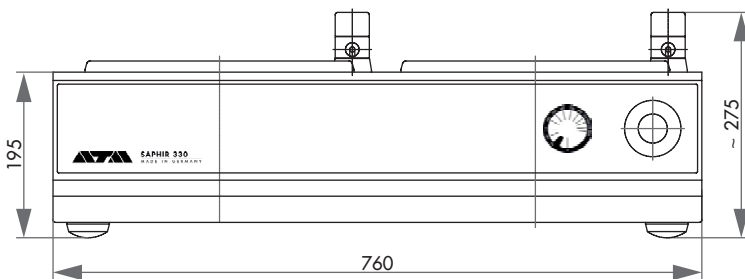
1 drain tube Ø 40 mm; 1.5 m

1 pressure tube R 1/2"; 2 m

SPECIFICATIONS

Working wheel	Ø 200 - 250 mm
Connected load	1.5 kVA
Power supply	1 230 V/50 Hz (1Ph/N/PE)
	2 110 V/60 Hz (1Ph/N/PE)

Speed	50 - 600 rpm
WxHxD ~	760 x 195 x 620 mm
Weight	44 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 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



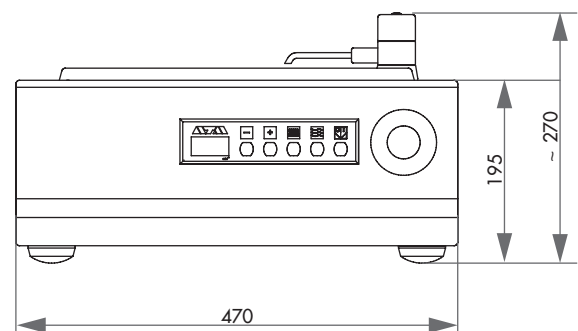
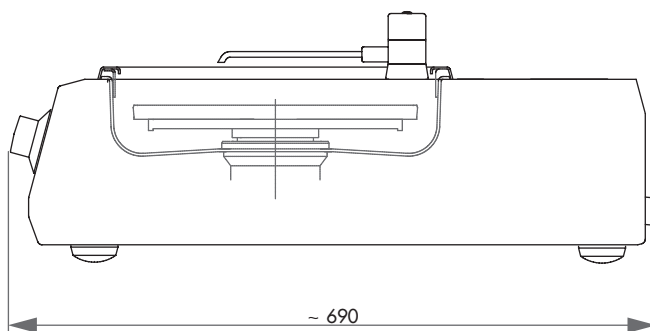
Order No.: Z5600008

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 ~	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.

BASIC MODULE**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

EQUIPMENT**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



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

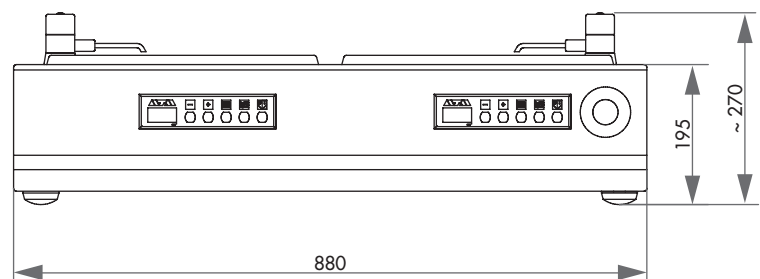
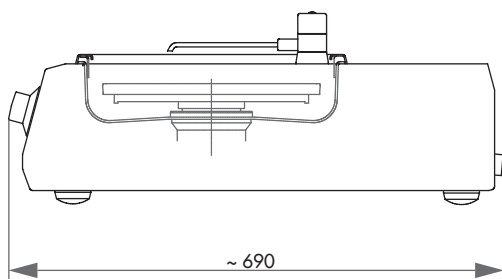


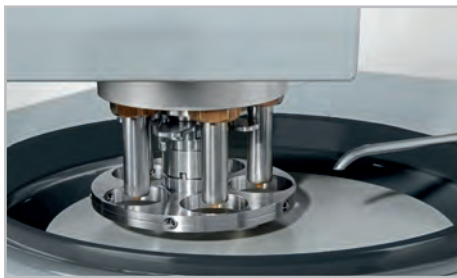
Order No.: Z5600008

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 rpm
Connected load	4.6 kVA	WxHxD ~	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.



BASIC MODULE



SAPHIR 520



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 ~ 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.

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

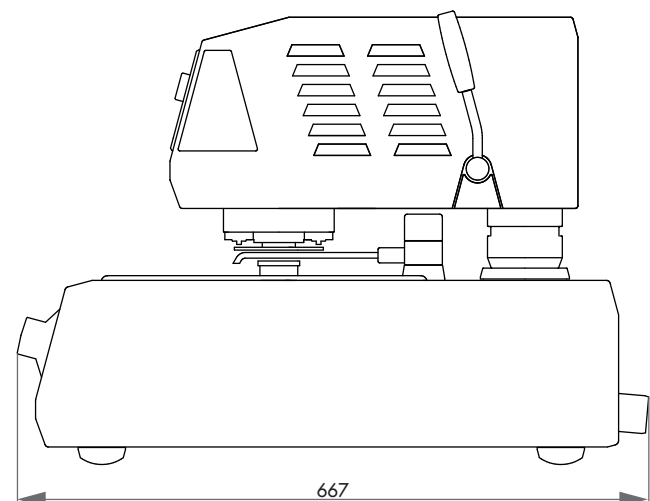
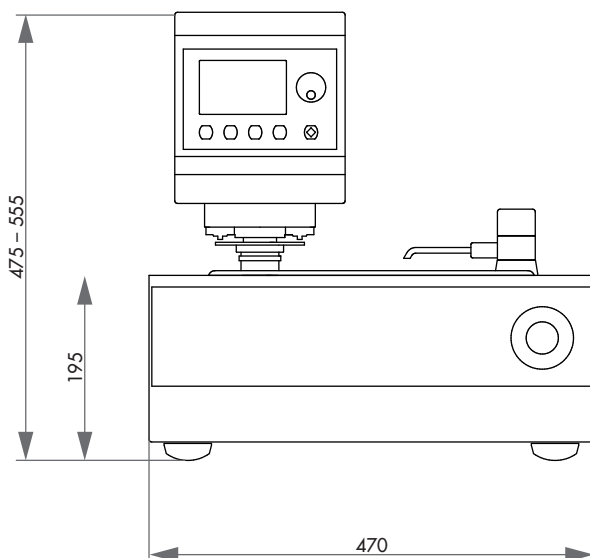
Order No.: Z5600009

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 ~	
	470 x 475 – 555 x 620 mm
Weight	52 kg



**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 ~ 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



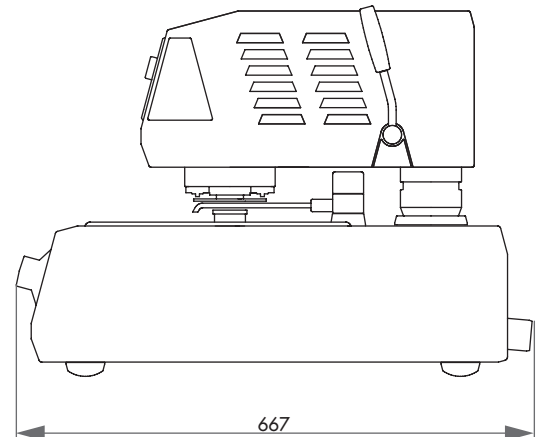
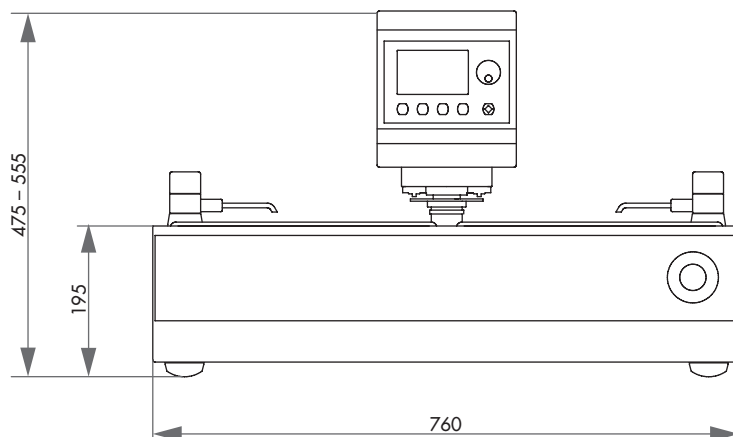
Order No.: Z5600009

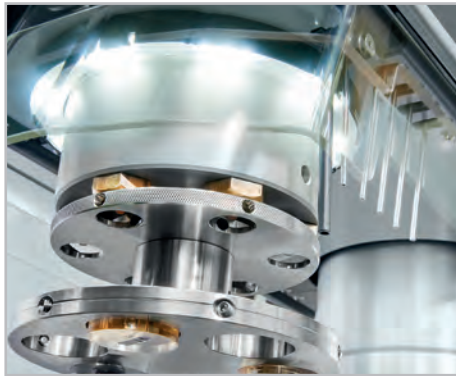
1 drain tube	Ø 40 mm; 1.5 m
1 pressure tube	R 1/2"; 2 m
1 pressure tube	R 3/8" coupling and screw thread; 3 m

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 530	
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 ~	
	760 x 475 – 555 x 620 mm
Weight	67 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 600 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.

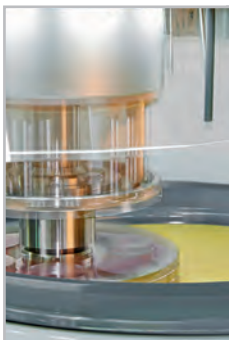
The head RUBIN 520 is equipped with an automatic protective hood and sets a new standard for operational safety.

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

Equipment 2

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

Order No.: A5600043

Order No.: A5600044

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 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



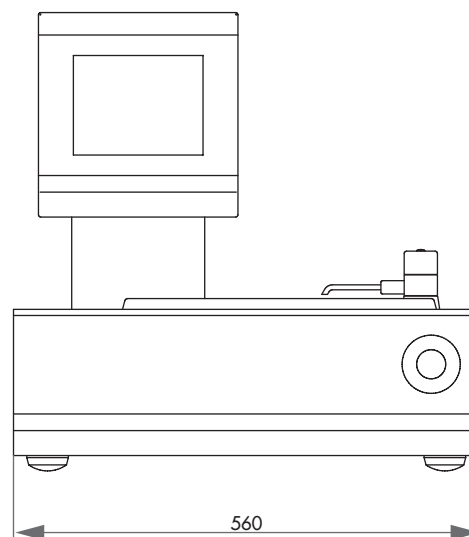
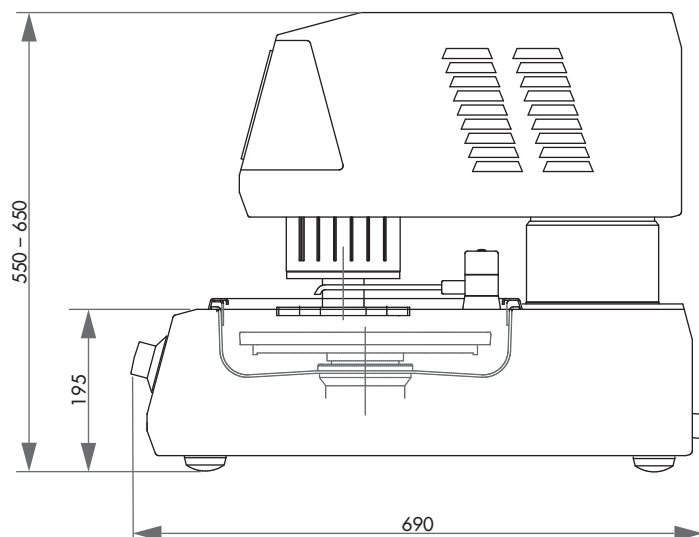
Order No.: Z5600009

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 ~	
	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



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 ~ 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

3,114

www.atm-m.com

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



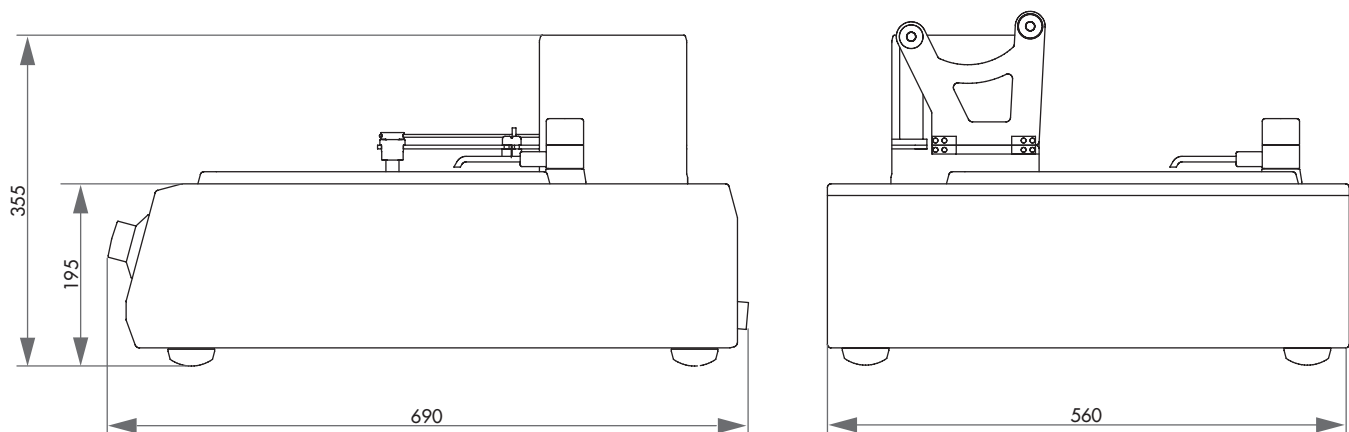
Order No.: Z5600009

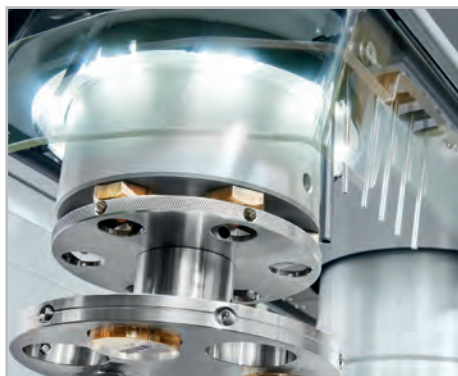
1 drain tube	Ø 40 mm; 1.5 m
1 pressure tube	R 1/2"; 2 m
1 pressure tube	R 3/8" coupling and screw thread; 3 m

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 ~	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.

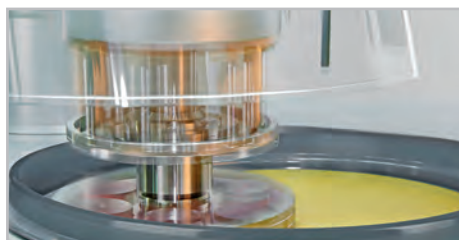
Saphir 560 | Rubin 520

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



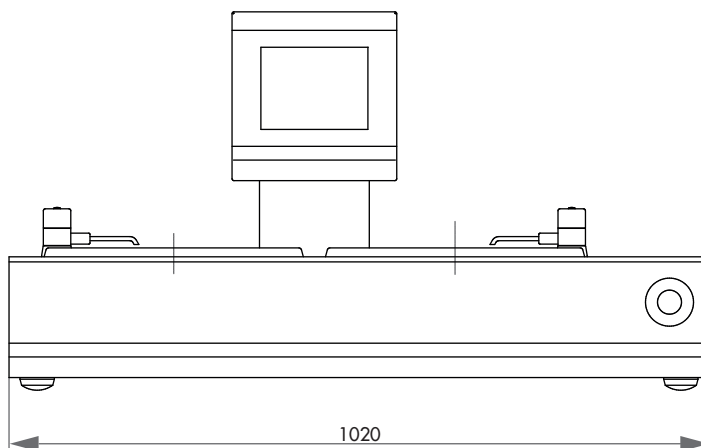
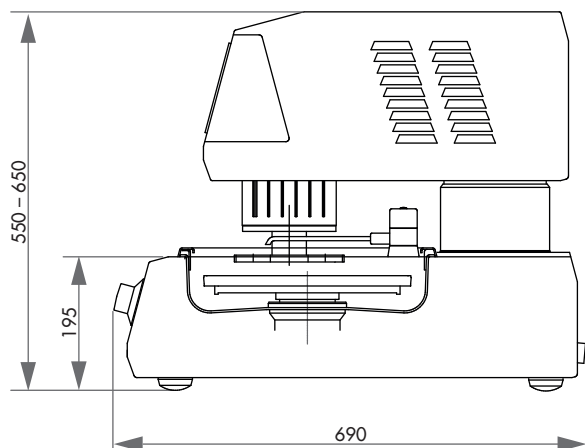
Order No.: Z5600009

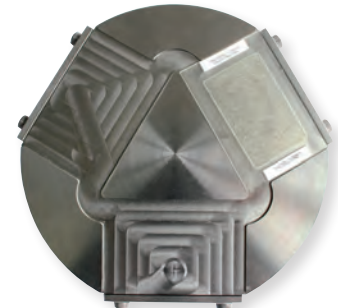
1 drain tube	Ø 40 mm; 1.5 m
1 pressure tube	R 1/2"; 2 m
1 pressure tube	R 3/8" coupling and screw thread; 3 m

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 ~	1020x 550 – 650 x 660 mm
Weight ~	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

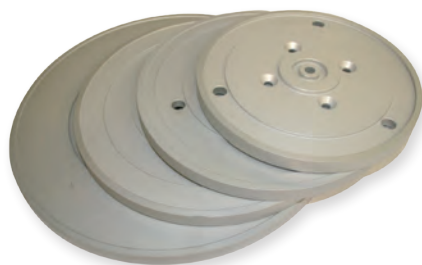


CLAMPING RINGS



» 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

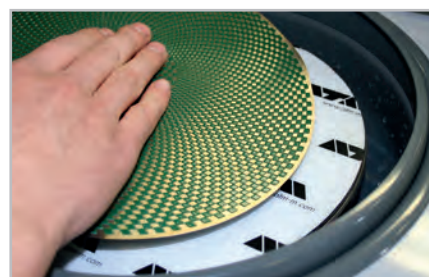


CARRIER WHEELS



» 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.

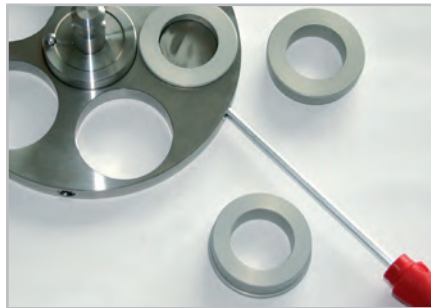




SINGLE PRESSURE
SAMPLE HOLDER

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. / 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. / 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 levelled samples



CENTRAL PRESSURE

SAMPLE HOLDERS (3-POINT-FIXATION)

for Rubin 500

- » 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



CENTRAL PRESSURE

SAMPLE HOLDERS (3-POINT-FIXATION)

for Rubin 520, 530 (System)

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

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 non-corrosive material
- » 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 anodized aluminium
- » incl. adaption



Examples for application



CENTRAL PRESSURE



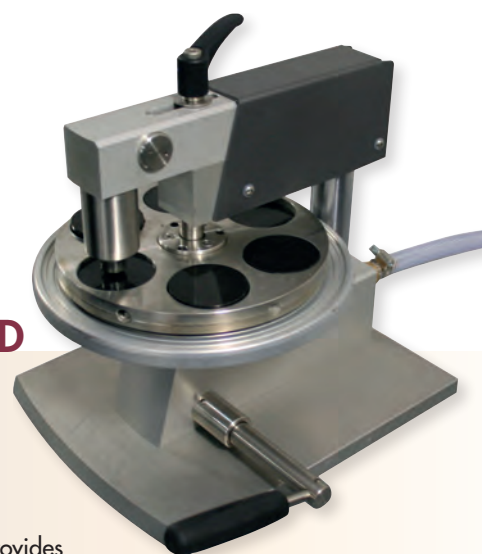
LEVELLING PLATE

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



plan und einfach fixieren

ACCESSORIES

CONNECTION SET



Order No.: Z1320000

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





HOLER 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.: M6300040

- » 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)	Equipment 2 110 V/60 Hz (1Ph/N/PE)
Order No.: A6300001	Order No.: A6300002

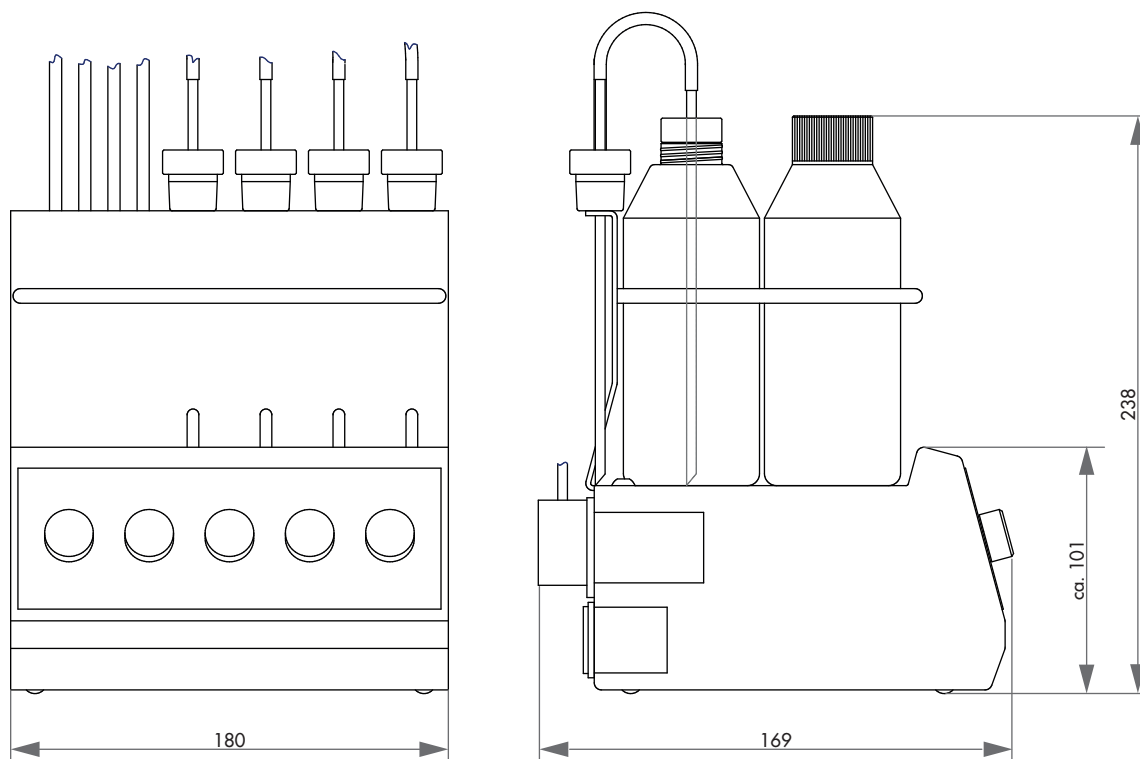
HOLDER FOR DOSING NOZZLES



Equipment 1
automatic mode
Order No.: A6300003



Equipment 2
manual mode
Order No.: A6300004





DOSING UNIT

Dosing and bottles depot are easily accessible and clearly arranged in the cabinet.



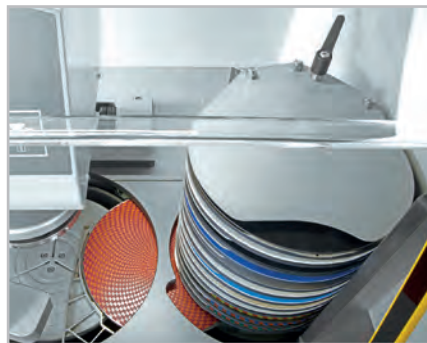
SAPHIR X-CHANGE

The compact fully automatic grinding and polishing robot SAPHIR X-CHANGE combines the complete grinding and polishing process, including ultrasonic cleaning in one machine. 16x disc changer, 6x dosing unit and an integrable sedimentation tank fits perfectly into the System lab.

Intuitive user interface via touch screen and a user friendly fixation system for central force sample holder enable preparation results in shortest time. All parameters can be adjusted during the automatic process.

SETTLING TANK

The insertible settling tank is invisibly integrated into the cabinet with all its connections (option).



DISC CHANGER

The storage elevator contains up to 16 different grinding discs, such as SiC paper or Galaxy discs. During cleaning the sample, the foil changer replaces the grinding media and fixes it with the Vacu-Jet system automatically.



CLEANING STATION

The cleaning station enables a fully automatic multi-step cleaning of the sample with water, air and alcohol. Cleaning times and steps are completely adjustable as needed. The ultrasonic cleaning station provides intermediate or final cleaning.



BASIC MODULE

SAPHIR X-CHANGE GRINDING & POLSHING ROBOT



Order No. M5805000

- » grinding- and polishing robot with central pressure
- » intuitive operation via ATM touchscreen surface
- » variable speed control of working wheel and polishing head
- » same & counter direction grinding
- » stock removal measurement
- » automatic abrasive changer (16-fold)
- » abrasive carrier fastening by VacuJet
- » working wheel cooling / bowl rinsing with interval switching
- » cleaning station with water, air and ethanol
- » ultrasonic cleaner
- » 6-fold dosing unit (4x diamond suspension, 1x lubricant, 1x fine polishing suspension)
- » level indicator for dosing system (optional)
- » storage drawer for abrasives (optional)
- » settling tank 45L (optional)
- » aluminium case, powder-coated
- » safety light barrier
- » LED working space lighting
- » preparation for air extraction
- » up to 200 programs with all parameters storable, protected per password
- » USB interface for creating program backup
- » 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.: A5805003

Order No.: A5805004

ACCESSORIES

SETTLING TANK



Order No.: A5810237

- » PVC tank 45 liter
- » removable separating slide
- » inlet sieve with filter bag and overflow
- » mobile, with insertion mechanism for System Lab cabinets
- » automatic drain latch while moving in/out System Lab cabinets
- » for base corpus 900



ACCESSORIES

CONNECTION SET



Order No.: Z5805001

- | | |
|-----------------|---------------------------------------|
| 1 drain tube | Ø 50 mm; 1.5 m long |
| 1 armored tube | R 1/2"; 2 m long |
| 1 pressure tube | R 3/8" coupling and screw thread; 3 m |



SPECIFICATIONS

Connected load	3.7 kVA
Power supply	220 – 230 V 50/60 Hz (1PH/N/PE)
GRINDING STATION	
Working wheel-Ø	250 mm
Working wheel speed	50 – 600 rpm
CLEANING STATION	
Cleaning media	air, water, ethanol
ULTRASONIC CLEANING STATION	
Capacity	2 L
HF-power	50 W
Frequency	40 kHz

ABRASIVE CHANGER

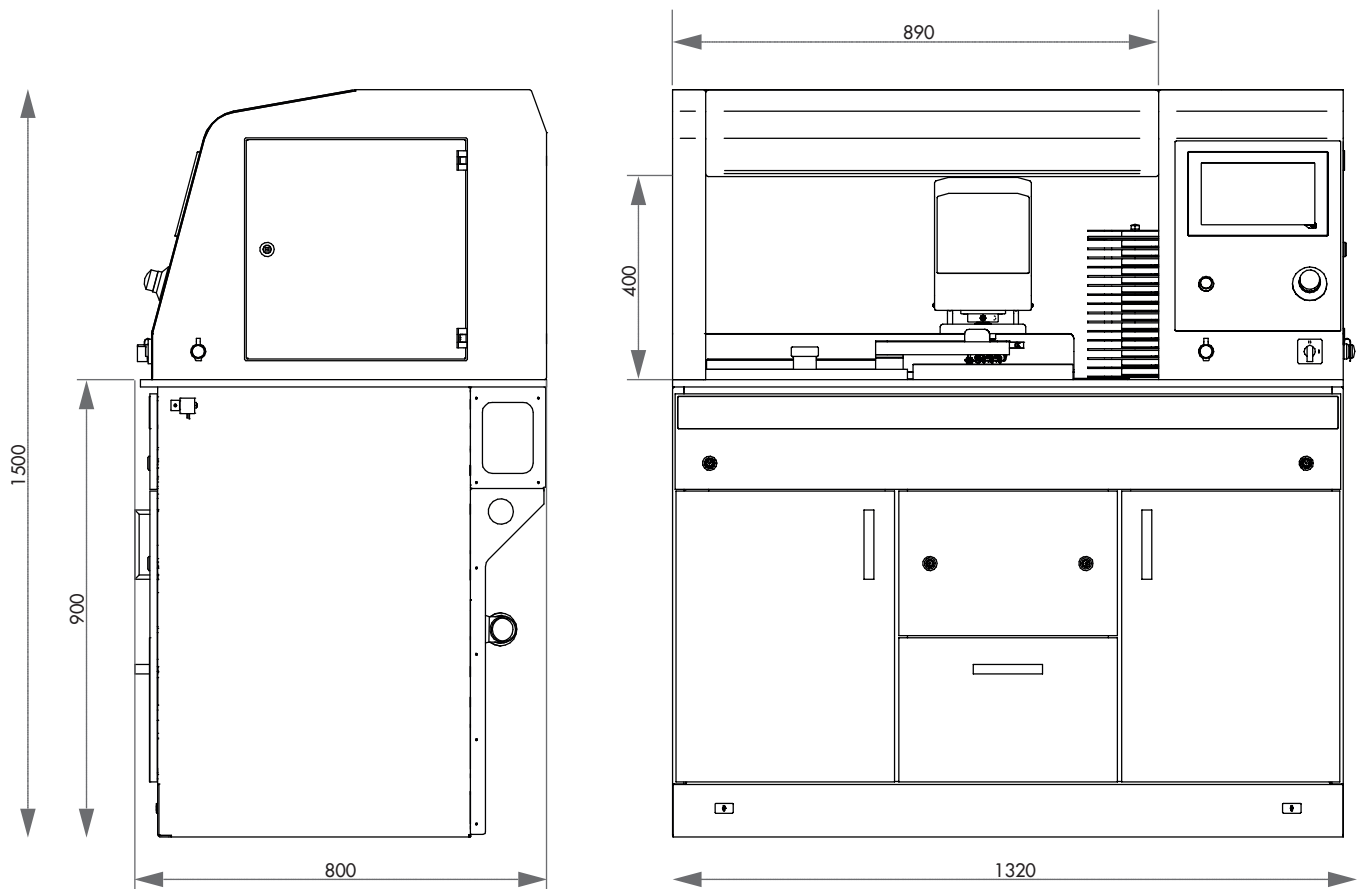
Storage	16 different grinding media
abrasive-Ø	250 mm

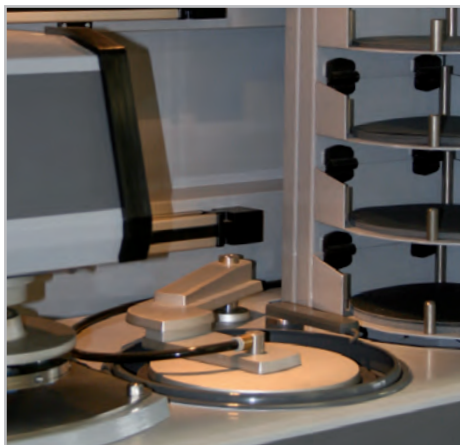
GRINDING AND POLISHING HEAD

Speed	30 – 150 rpm, clockwise/anti-clockwise
Pressure	20 – 400 N

Controlled removal	automatic; 0.1 mm display accuracy
--------------------	---------------------------------------

Sample holder	Ø 160 mm
WxHxD	1320 x 1500 x 800 mm
Weight	~ 250 kg





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.

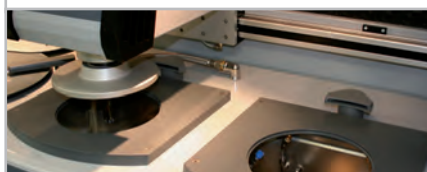


HIGH SPEED CLEANING STATION

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 Al₂O₃ 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.



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

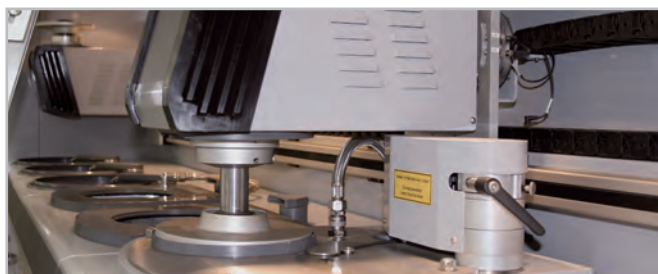
more space for sample analysis.

**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.





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.



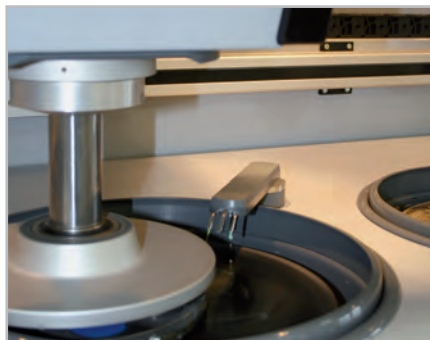
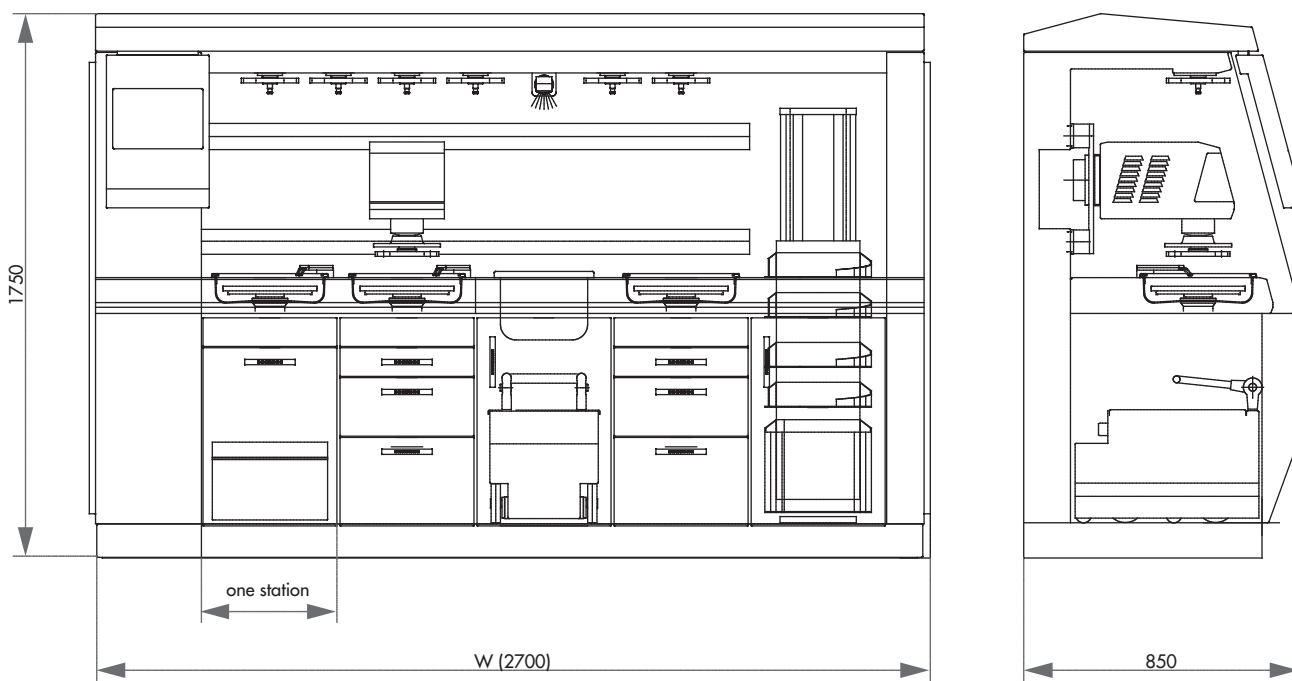
- ① Movable control panel (sideway) with touch screen control; individually programmed preparation cycles can be saved
- ② Polishing head: clockwise/anti-clockwise rotation
- ③ Holder stack for six sample holders
- ④ Two grinding and polishing stations with variable speed of working wheels
- ⑤ Fully-automatic 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	4	5	6	7	8
Dimension W	2260	2700	3140	3580	4020
HxD	1750x850 mm				



**TOUCHSCREEN-CONTROL**

The ATM touchscreen surface allows intuitive operation even with gloves. Up to 200 programs with all parameters can be stored and protected with password (incl. labelling field).

POLISHING AND ETCHING UNIT

The chemical resistant coated stainless steel housing has a large polishing table and can also be used separated from the control unit, e.g. in a lab-fume cabinet.

**Kristall 680**

The KRISTALL 680 is a fully automatic electrolytic polisher and etcher with intuitive touch-screen operation. Polishing and etching unit and control unit are separated, also the Kristall 680 can be used in the lab fume cabinet. A scan function displays the current voltage curve of a material and provides polishing results

quickly without structural changes. Handling of the polishing and etching unit was facilitated significantly by the interchangeable 1 Ltr. electrolytic tanks. Different electrolytes can be changed and easily stored with lid.

The unit is cleaned with water by a washing program.

BASIC MODULE**KRISTALL 680 CONTROL UNIT****Order No.: M6202000**

- » intuitive operation via ATM Touchscreen surface, even with gloves
- » up to 200 programs with all parameters storable, protected per password (incl. free labelling field)
- » current & voltage diagram in real time
- » scan function for displaying a current-voltage characteristic graph
- » USB interface for creating program backup
- » media preparation for connecting a polishing & etching unit and an external etching unit (optional: connection for 2nd polishing & etching unit)
- » variable output voltage and process duration
- » automatic cooling control for mains water or recooling (current supply via Kristall 680)
- » Aluminium housing, powder-coated
- » e-lab ready





KRISTALL 680

KRISTALL 680 provides maximum safety and flexibility for the user during the polishing&etching process by intuitive touchscreen-control. Separation of polishing&etching unit from control unit enables operation within a lab fume cupboard.

Option for connecting an additional and an external etching unit increases time saving applications. The chemical-resistant plastic vessels, also for storage of the electrolytes, are quick and easy to change.



Use with external etching unit



EQUIPMENT

POWER SUPPLY

Equipment 1

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

Order No.: A6202000

Equipment 2

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

Order No.: A6202001



POLISHING & ETCHING UNITS

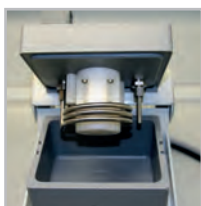


Equipment 1

Polishing & etching unit

Order No.: A6202003

- » large polishing table incl. set of masks (5 pcs.)
- » touch-free pump drive (magnetic clutch)
- » stainless steel start button with integrated LED status display
- » exchangeable 1 ltr. electrolyte tank made from chemical-resistant plastic (incl. lid)
- » max. standard sample height 50mm (higher samples with ext. anode via magnetic or croc. clips)
- » polishing & etching unit can be operated separately from control unit e.g. in lab fume cabine
- » housing made from rust-free stainless steel (chemical-resistant coating) with drip tray
- » incl. connection set (electricity/water)



Equipment 2

External etching unit

Order No.: A6202004

- » etching beaker made from stainless steel
- » volume 1200 ml



Automatic drive	0–60 V
ØxH ~	120 x 120 mm
Weight ~	0.5 kg

OPTION

SECOND POLISHING & ETCHING UNIT KRISTALL 680



Order No.: A6202005

- » extension for connection of second etching/polishing unit

ACCESSORIES

SET OF MASKS (5 PCS.)



Order No.: Z6202001

- » 0.5/1.5/2.5/5 cm²/blind mask



ACCESSORIES

ELECTROLYTE VESSEL



Order No.: Z6202002

- » volume 1 Ltr.
- » incl. cover
- » made from chemical-resistant plastic



CONNECTION SET KRISTALL 680



Order No.: Z6202003

2x pressure tubes R 1/2"; 2 m



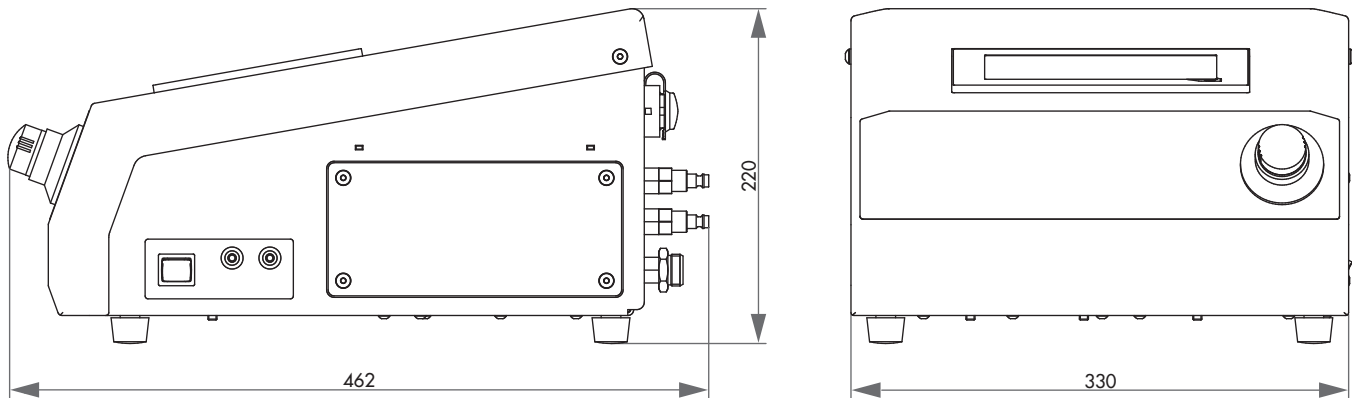
SPECIFICATIONS

CONTROL UNIT

Connected load	2 kVA	
Power supply	1	220–240 V / 50/60 Hz (1Ph/N/PE)
	2	110–120 V / 50/60 Hz (1Ph/N/PE)

Current	0–14 A
Working voltage	0–90 V \pm 0.1V regulated

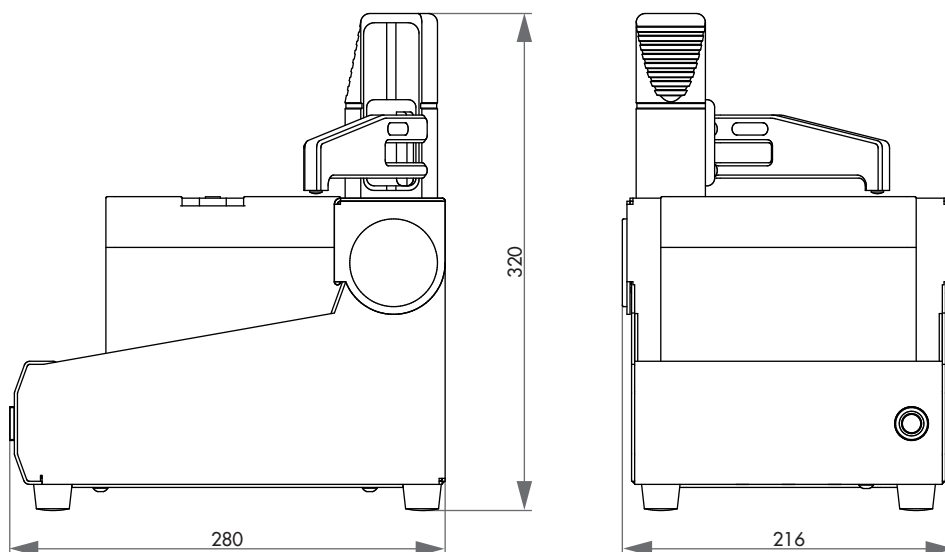
WxHxD ~	330 x 220 x 400 mm
Weight ~	7 kg



SPECIFICATIONS

POLISHING & ETCHING UNIT

Polishing duration	1 sec.- 25 min.
Etching duration	1 sec.- 5 min.
Automatic drive	0–90 V
Polishing desk ~	160 x 150 mm
WxHxD ~	216 x 320 x 280 mm
Weight ~	4 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
- 1x profile ring-material (~ 150 mm)
- 1x flexible end piece for profile ring
- 1x tube cutter
- 10x filter pads (Ø 40.5 mm)
- 1x dolphin connector

Order No.: 95003606

Order No.: 06201052

Order No.: 06201051

Order No.: 95004030

Order No.: 95003985

Order No.: 82000374



BOTTLE FOR ELECTROLYTE



Order No.: 95003955

» with screw top

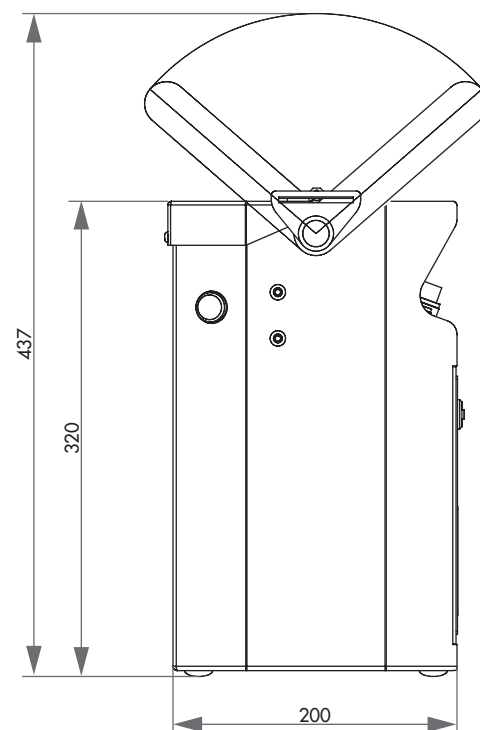
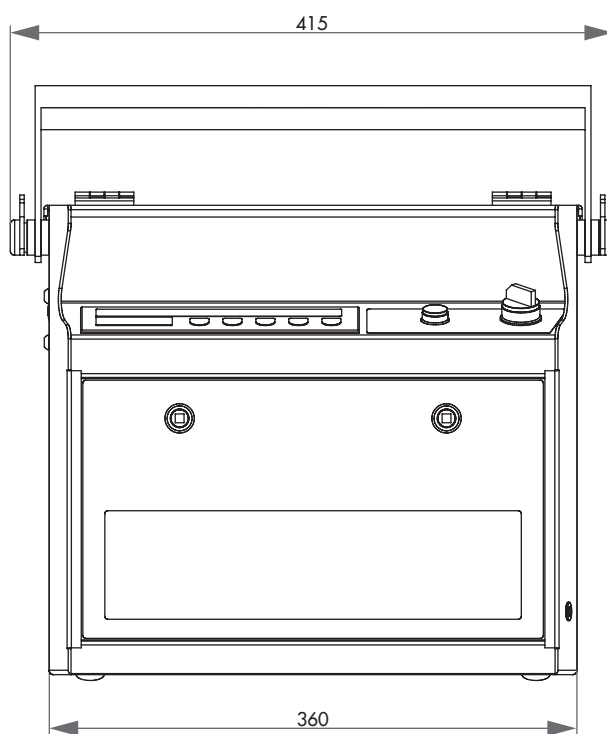
Volume 1 Ltr.

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	~ Ø 9 mm

WxHxD	415 x 400 x 200 mm
Weight ~	8.5 kg*

* without electrolyte (~ 1 ltr.)







DM 2700 M



Stereo microscope



DM 4000 M

DMi 5000 M

CONTENT

MICROSCOPES

DM 2700 M LED 4.143 – 4.144
DM 4000 M / DMi 5000 M 4.145 – 4.146
STEREO MICROSCOPE 4.147 – 4.150

SYSTEM LAB

INFO System lab furniture..... 4.142

Light microscopes from Leica for material analysis are characterized by high precision and optical quality. Optional accessories make ideal instruments for applications in industry or material analysis.

In collaboration with Leica our range is optimally designed for materialographic applications. Furthermore we assist you with the planning for customized uses.

Subject to technical changes.

Devices of other manufacturers on request.



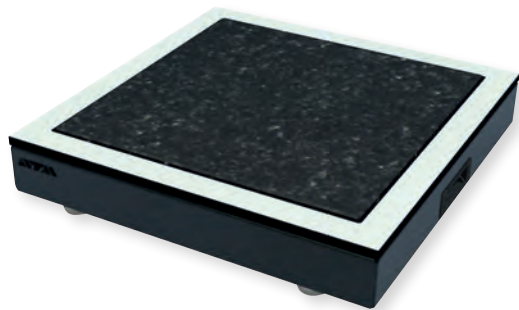
ATM specimen press



System lab table

System lab on-table base





SYSTEM-ON-TABLE-BASE

The granite plate is integrated in an independent stand. It can easily be placed on lab tables or cabinets. Basic requirement for the passive vibration cushioned hard rock plate is a stable foundation, such as the ATM system furniture.



SYSTEM-ON-TABLE-BASE

» vibration-cushioned
Order No.: A5810266

Hard rock plate	500x500 mm
WxDxH	600x60x140 mm

SHOCK-FREE WORK

Sensitive measuring devices e. g. microscopes, hardness testers, scales are very exacting regarding their environment.

The new passive vibration cushioned hard rock plate reduces external vibrations which could influence the measuring results.

EFFICIENCY

For optimization of vibration cushioning an isolated setup and no contact with other furniture is recommended.

SYSTEM-LAB TABLE

» extremely robust metal-/aluminium construction
» flat design creates large legroom
» plate made of high-quality HPL

Height adjustable	700-800 mm
Max. load table	up to 400 kg

1-fold
Order No.: A7500220

Hard rock plate	500x500 mm
Max. load plate	up to 80 kg
WxHxD	880x700-800 x800 mm

1½-fold
Order No.: A7500221

Hard rock plate	700x700 mm
Max. load plate	up to 120 kg
WxHxD	1320x700-800 x800 mm





DAZZLE/GLARE ASSISTANT

The combination of Leica's color coded objectives and the aperture diaphragm results in the Color Coded Diaphragm Assistant (CCDA). With it, the basic setting of resolution, contrast, and depth of field, it is simple and straightforward. Speed of working increases through coloured marking of the objective together with the colour-coding of the field and aperture dazzle setting (CDA).

INDUSTRIAL STANDARD

DM 2700 M is robust and solidly built, easy to handle and thereby fulfils all ergonomic demands. The surface of the industrial stage consists of a new ceramic which is especially hard.



FOCUS STOP

The integrated focus stop protects not only your samples also the front lens of the objective. For samples of the same height the focusing level is easier to determine.

DM 2700 M

The LEICA DM 2700 M is an upright materials microscope with universal white light (4500 K) illumination (LED).

With its modular design, it finds a multitude of uses from simple routine tasks in materials science up to complex materials research. In combination with high quality Leica optics provide the ideal inspection tool for Brightfield (BF), Darkfield (DF), Differential Interference Contrast (DIC), Polarization (PoL), and

Fluorescence (FLUO) applications. In addition to all incident light applications, the Leica DM 2700 M is available with transmitted light. It has a wide variety of characteristics which simply help the user for an easy and more comfortable job.

Modular design, stability, ergonomic and optical performance are the main practical features of the Leica DM 2700 M.

FLEXIBILITY

The stand is flexible and you can choose between two reflected light axes.

The 4x-reflected light axis is optimized for applications in bright fields (BF) and dark fields (DF), qualitative polarisation (POL) or fluorescence (FLUO). This tool is the ideal solution for industrial quality control or metallographic examinations. 2 object revolvers are available.

Samples up to a size of 100x100 mm, such as foils, wafers or PCBs, and up to a thickness of 80 mm, e.g. machine components can be evaluated with the varied and versatile stage program.





BASIC MODULE

DM 2700 M



Order No.: 95008209

- » upright brightfield
- » magnification: 50x, 100x, 200x, 500x, 1000x

OPTION

INTERFERENCE CONTRAST



Order No.: 92008379

- » depending on present objective-set an additional prism slide might be required

POLARISATION



Order No.: 92008380

FLUORESCENCE



Order No.: 92008381

- » depending on your application, additional filter-systems might be required

ACCESSORIES

C-MOUNT-ADAPTER



Order No.: 11541544

- » 0.55x HC
- » C-mount adapter for 1/2" and 1/3" TV-cameras



» other C-mount adapters on request



Order No.: 11541543

- » 0.7x HC
- » C-mount adapter for 2/3", 1/2" and 1/3" TV-cameras

SPECIFICATIONS

SPECIMEN PRESS

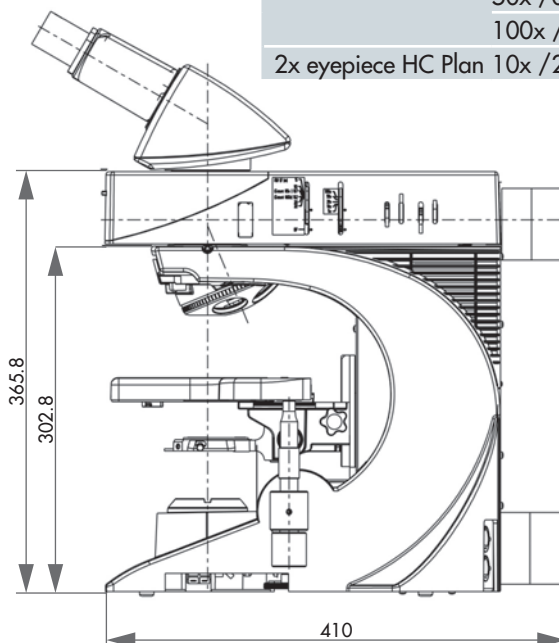
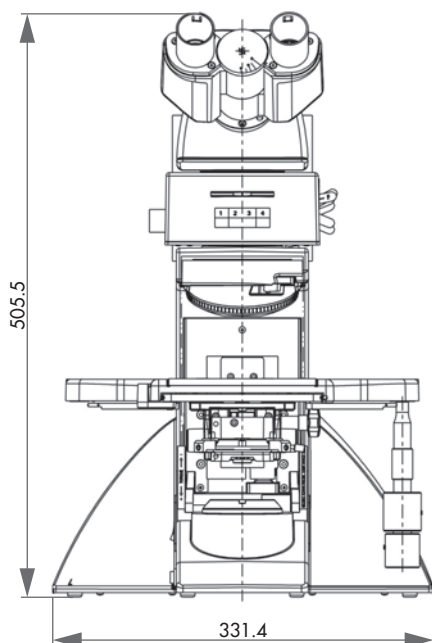


Order No.: M1321000

WxHxD ~ 90x205x130mm

Lamp house	LED
Photo tube	HC trinocular

Objective NPlan	5x /0.12
	10x /0.25
	20x /0.40
	50x /0.75
	100x /0.85
2x eyepiece HC Plan 10x /22 Br.M	





AUTOMATED CONTRAST AND LIGHT INTENSITY SETTING

The microscope can automatically detect the contrast method and objective that are currently in use. Manual diaphragm settings are a thing of the past; optimal values for aperture, field diaphragm, and light intensity are set automatically.

DIGITAL MICROSCOPE

The motorized incident light axis provides automatic contrast adjustment. DIC can be added for future work. Specific illumination and diaphragm settings are easily to configure at the touch of a button. The LED provides a constant color temperature at all contrasting methods and intensity levels.

DM 4000 M LED

The DM 4000 M LED comes up with a new LED illumination for all contrast methods and many other convenient features.

Routine functions such as adapting brightness and illumination dazzle to objective enlargement and preparation conditions are automated and thereby offer optimum working comfort.

DMI 5000 M

The DMI 5000 M is an inverse system microscope with fully automated lens change. The Parfocality Manager guarantees a sharp image at all times. With its new reflected-light axis the DMI 5000 M enables a flexible work in bright and dark field with DIC or with qualitative polarization.

APPLICATION

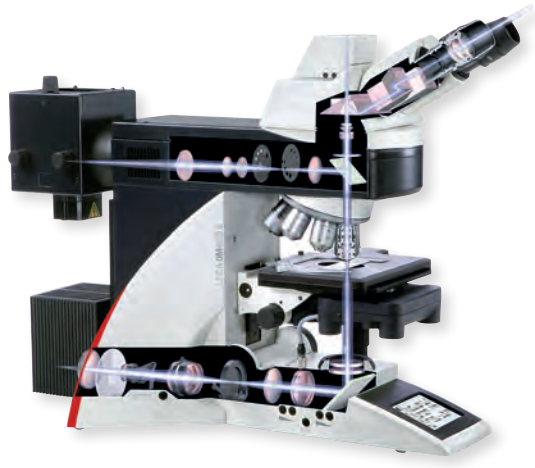
The Leica DM 4000 M LED and DMI 5000 M are modern system microscopes.

They find a multitude of use in materials research and science:

- » bright field
- » dark field
- » polarisation contrast
- » interference contrast (ICR)
- » fluorescence



BASIC MODULE



DM 4000 M LED



» magnification: 50x - 1000x

Order No.: 95008511

» upright brightfield microscope

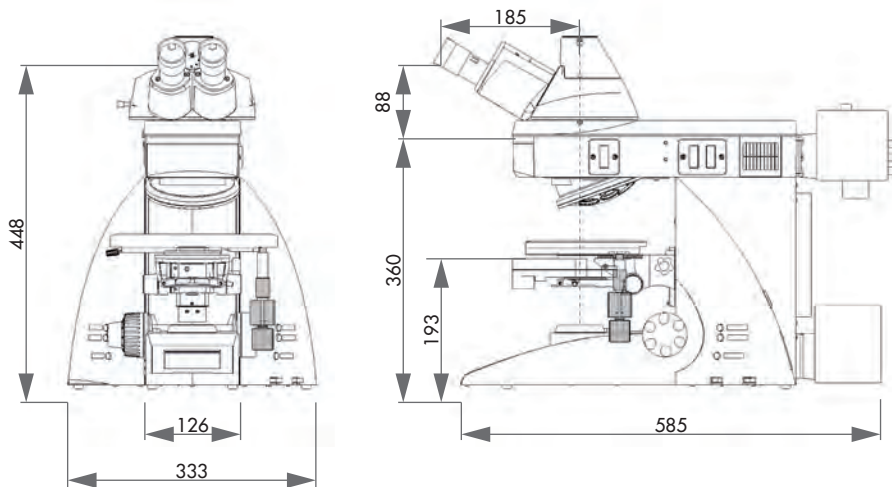
Order No.: 95009495

» upright light/darkfield microscope

SPECIFICATIONS

Lamp house	LED
Tube 25+	V100/50/0

Objective NPlan	5x /0.12
	10x /0.25
	20x /0.40
	50x /0.75
100x/0.90	
2x eyepieces HC Plan s	10x /25 Br.M



ACCESSORIES

SPECIMEN PRESS



Order No.: M1321000

WxHxD approx. 90x205x130 mm



BASIC MODULE

DMI 5000 M



» magnification: 50x, 100x, 200x, 500x, 1000x

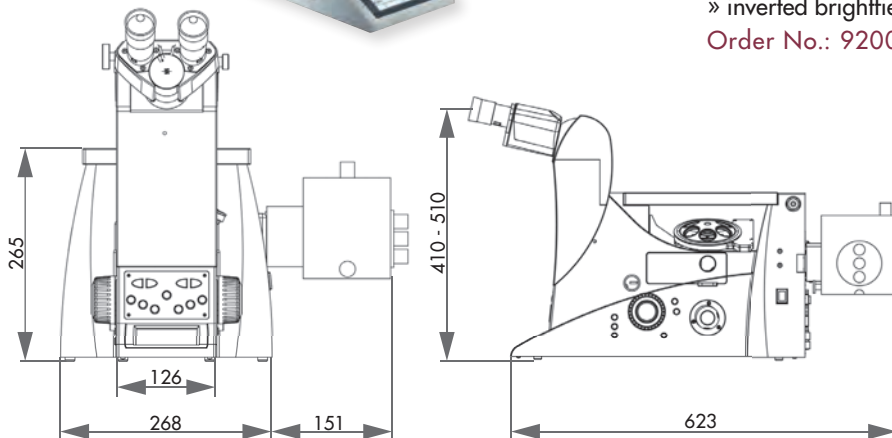
» inverted brightfield microscope

Order No.: 92008383

SPECIFICATIONS

Lamp house	12 V, 100 W
Ergo tube	Binocular

Objective NPlan	5x /0.12
	10x /0.25
	20x /0.40
	50x /0.75
100x/0.90	
2x eyepieces HC Plan s	10x /25 Br.M



**M 50**

» Zoom magnification changer 5:1, five pre-defined magnifications. One of the remarkable features of the M50 microscope is its high depth of focus for the examination of specimens with wide cubic expansion. A focus drive with integrated cable duct is also available.

M 60

» Zoom magnification changer 6:1, seven switchable snap-in positions. The microscope M60 is equipped with high depth of field for examination of tree-dimensional objects.

STEREO MICROSCOPES

High quality STEREO MICROSCOPES should deliver perfect image characteristics, high operating comfort and universal usage possibilities. The 3dimensional image, sharpness, contrast, resolution and colour fidelity must be optimum.

Additionally the ergonomic demands of the user must be fulfilled.

A wide ranging accessories program allows practice orientated organisation of the workplace and furthers the use of your stereo microscope.

M 80

» Zoom magnification changer 8:1, eight switchable snap-in positions. The optics has an excellent contrast for displaying a high level of details. A focus drive with integrated cable duct is also available.

**M 125**

» Zoom magnification changer 12.5:1, ten switchable snap-in positions. The optics guarantees a brilliant, highly detailed display of the specimen. A focus drive with integrated cable duct or fully integrated electronics is available.

M 205 C

» Zoom magnification changer 20.5:1, twelve switchable snap-in positions. Continuous electronic readout of the magnification. The microscope works on Fusion Optics: the right channel contains an image with very high resolution, while the left channel provides very high depth of field.





M 50



M 60



M 80

BASIC MODULE

M 50

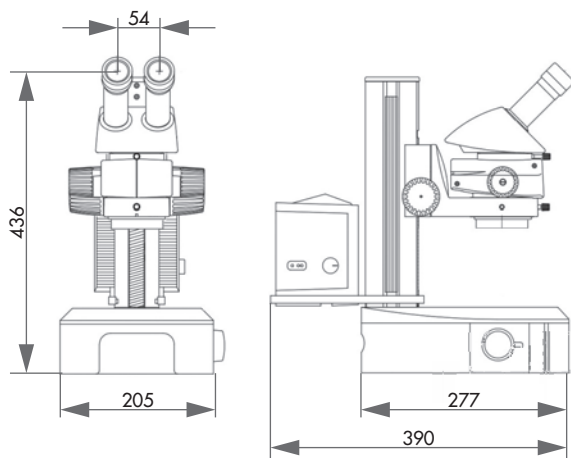


Order No.: 95006273

» stereo microscope with base

Magnification	6.3x – 40x
Objective achromat	1.0x
Binocular tube	45°
Adjustable eyepieces	10x/23 B

» with additional objectives total magnification from 2 – 80x



BASIC MODULE

M 60

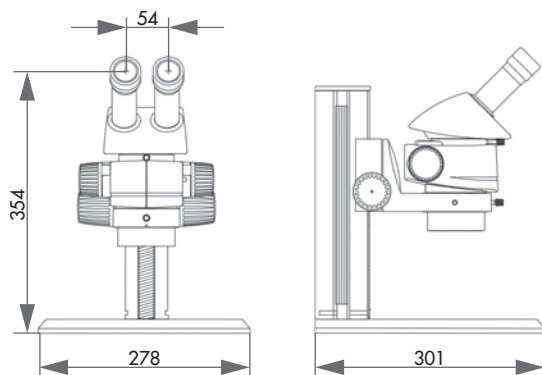


Order No.: 95006274

» stereo microscope with base

Zoom magnification	6.3x – 40x
Objective achromat	1.0x
Binocular tube	45°
Adjustable eyepieces	10x/23 B

» with additional objectives total magnification from 2 – 80x



BASIC MODULE

M 80

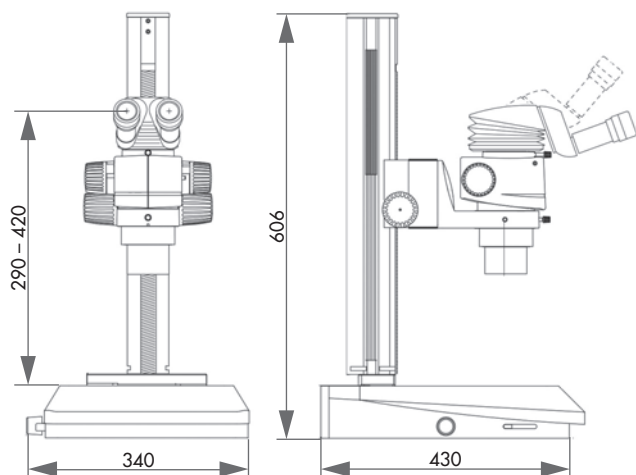


Order No.: 95002725

» stereo microscope with base

Zoom magnification	7.5 – 60x
Objective achromat	1.0x
Binocular tube	45°
Adjustable eyepieces	10x/23 B

» with additional objectives total magnification from 2,34 – 120x





M 125



M 205 C

BASIC MODULE

M 125



Order No.: 95002726

» stereo microscope with base

Zoom magnification	8 – 100x
Objective achromat	1.0x
Binocular tube	45°
Adjustable eyepieces	10x/23 B

» with additional objectives total magnification from 4 – 200x

BASIC MODULE

M 205 C



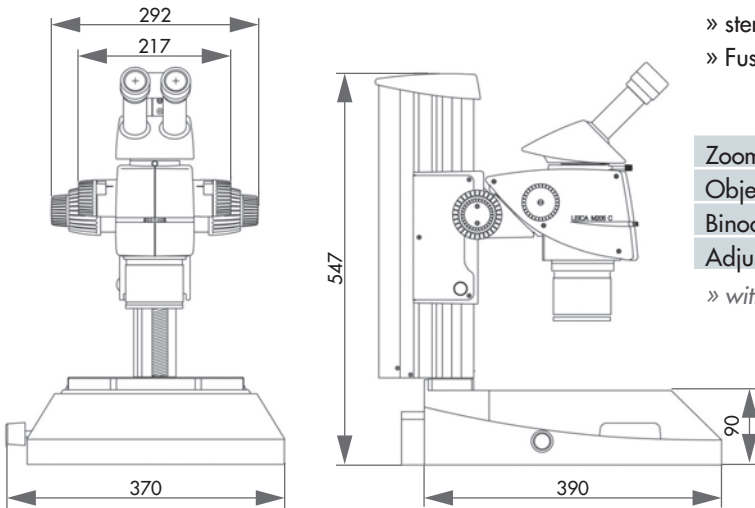
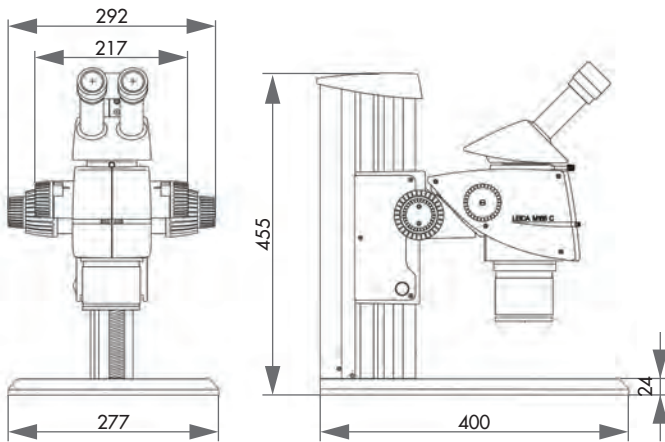
Order No.: 95004119

» stereo microscope with base

» Fusion Optics: right channel: very high resolution
left channel: very high depth of field

Zoom magnification	7.8 – 160x
Objectiv achromat	1.0x
Binocular tube	45°
Adjustable eyepiece	10x/23 B

» with additional objectives total magnification from 3,9 – 320x



DOCUMENTATION TUBE



Order No.: 10450301
» for M-series

LIGHT SOURCE



Order No.: 31150200
» Leica KL 1500 LCD

VIDEO-OBJECTIVE



0.5 x
Order No.: 10445929

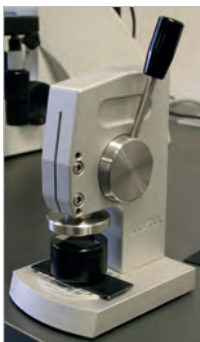
0.63 x
Order No.: 10447367

SPECIMEN PRESS



Order No.: M1321000
» parallel adjustment of samples on microscope slide with minimum force
» manufactured from solid anodised aluminium and stainless steel
» lever mountable left or right
» plunger travel adjustable
» including ready-installed counter weight

WxHxD approx. 90x205x130



SWANNECK LIGHT GUIDE



Order No.: 31154202
» 2-arms

Length	600 mm
Ø	4.5 mm

ANNULAR LAMP



Order No.: 31157410

Inner Ø	58 mm
Length	900 mm

Order No.: 31157420

Inner Ø	66 mm
Length	900 mm

LED-ANNULAR LAMP



Equipment 1: Comfort

Order No.: 95002721
» switchgear for segments
» control unit MC 1500

Ring illumination Ø	66 mm
Reducing adapter	58/66 mm

Equipment 2: Spot

Order No.: 95002722
» spot
» fixing arm



Equipment 3: Standard

Order No.: 95002723
» switchgear for segments
» control unit

Ring illumination Ø	66 mm
Reducing adapter	58/66 mm

Equipment 4: Standard

Order No.: 95002724
» control unit 750
» ring illumination

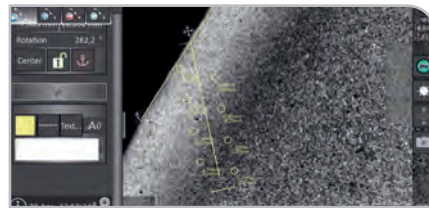
Reducing adapter	58/66 mm
------------------	----------

» 2 m EURO-cable





Carat 930



Carat-Software



Carat-Probenhalter



E-LAB

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

CONTENT

HARDNESS TESTING AND ANALYSIS

CARAT 930 / 950 5.152 – 5.159

FUNCTION

» workplace with passive vibration cushioned table see 4.142

ARTICLE



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.



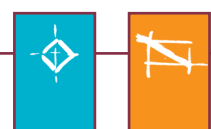
ACCESSORIES

Accessories can be selected independently of the ordering equipment.

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.

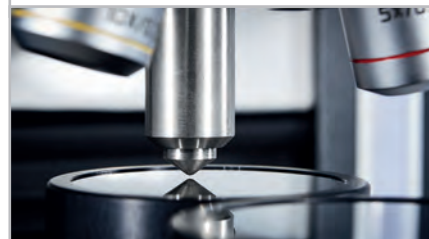
The units are finished in service friendly modular construction. Technical changes reserved.





STABLE CONSTRUCTION

The vibration-damped cast aluminum body comprises a robust basis for the high load-bearing Carat table with automatic X/Y axis and automatic Z axis with 8-times objective revolver (LED illumination). Plane parallel samples in the Carat sample clamping system and the fast lock vice 50 can be changed quickly and precisely using the “easy-clamp function”.



CARAT 930/950

The latest technology and intuitive application make the CARAT 930/950 an extraordinary product for micro-hardness testing and optical evaluation. Our robust basic unit, which executes measurements very precisely, can be suited to your

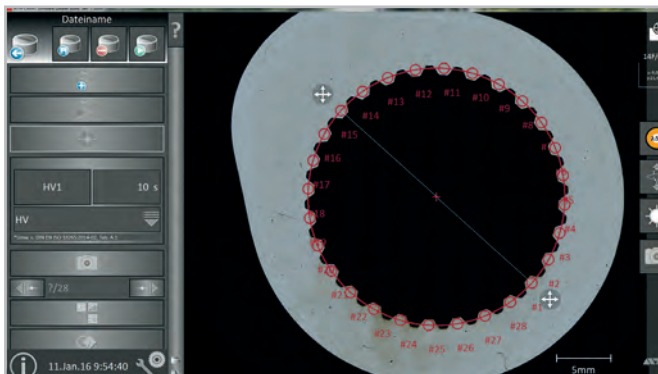
requirements with our own in-house software modules and the CARAT sample clamping system can be applied to meet various custom needs.

INTUITIVE OPERATION

Software has been developed to accommodate either touch or mouse in a 64-bit-Version (WIN 7/8/10). All axes can be travelled via control module at the basic unit. Even the X & Y axes are controllable per joystick, adapting their speed to the individual objective. A scrolling wheel facilitates the especially fine dynamic travel of the Z axis. A button is available for rapid scroll.

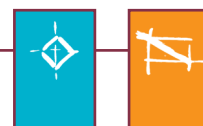
FULLY AUTOMATIC HARDNESS TESTING

Automated hardness tests according to Vickers or Knoop can be parametrized according to standards. In addition, it is possible to position individual projects on different samples and process them successively in succession. The report template linked to the project displays the results in tabular and/or graphical form; the output is made individually with values tables and hardness curves in the dynamic report generator.



SOFTWARE

The dynamic live image presents a clearly arranged and flexible image of the sample via objective-independent image-in-image function and periphery-scan. The automatic brightness regulation and auto-focus support a rapid image result which can be accelerated even more by the automatic level recognition with automatic quick-focusing. In case of unevenness, focus on the sample can be reconstructed through planar scan. For optimum image quality the device is equipped with **Köhler Illumination**.





HARDNESS TESTER CARAT



CARAT 930 Order No.: M0600000 **CARAT 950*** Order No.: M0600005

- » basic equipment for hardness testing and optical appraisal
- » automatic Z axis
- » integrated joystick with dynamic speed control for X-/Y-axis with high-speed switches and fine dynamic scroll wheel for the Z-axis
- » cast-Aluminium body
- » safety concept
- » integrated levelling & transport assistant
- » force transducer with microprocessor-controlled force regulation for total load ranges 0.0098 - 294.20 N or 0.0098 - 490.33 N*
- » test method HV 0.05 - HV 50 or HK 0.05 - HK 2
- » including Vickers indenter HV 0.2 - HV 50 (with Dakks-certificate), Micro-Vickers on request



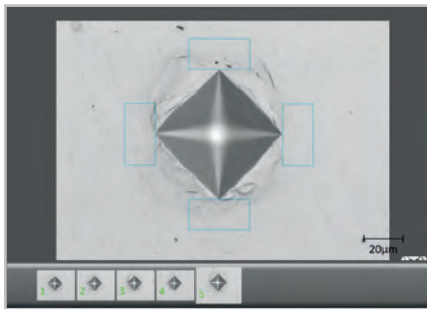
- » Optics
 - motor-driven Carat-8x objective revolver
 - up to 6 objectives in the objective revolver
 - Köhler LED illumination
 - homogeneously illuminated image field
 - contrasty image by reducing of glare and scattered light
 - aperture for individual adjustment of relationship contrast/depth of field
 - overview optics integrated in the objective revolver (5 MP)*
 - size of overview image 42 x 42 mm*
 - USB 3.0 CMOS camera (to be ordered separately)

SOFTWARE (included in basic module)

- » Win 7/8/10 (64-bit)
- » intuitive operation with touch & mouse function
- » force transducer with microprocessor-controlled
- » fully-automatic and manual image appraisal and hardness calculation acc. to Vickers or Knoop* (DIN EN ISO 6507, DIN EN ISO 4545, ASTM E-384)
- » automatic brightness control
- » automatic focus
- » multifocus with sharper construction
- » periphery scan for overview images (dynamic real-time frame is integrated)
- » dynamic live screen with image-in-image function independent of objective
- » overview scan with semiautomatic contour detection
- » brightness correction of the partial images of the overview scans
- » live image acquisition (image saved and pasted into clipboard), images loaded default image formats: jpg, png, tif etc.
- » correcting the tilt of a sample by scanning and focusing of several measuring points
- » creating, saving and loading individual test programs
- » freely configurable sample places (size, number, position) in the table menu with large overview image
- » use of remote diagnostics and online operator-support (assuming Internet access)

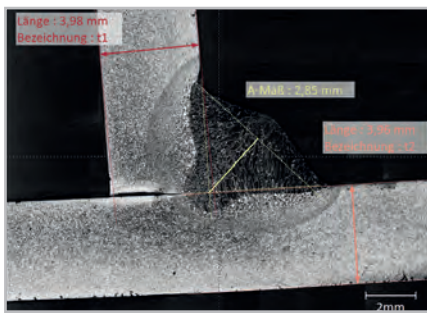


SOFTWARE (included in basic module)



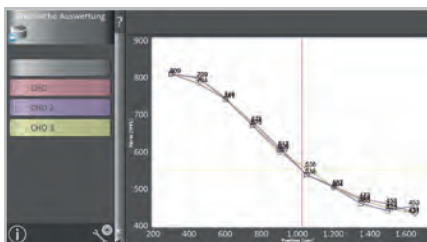
Planning objects for hardness testing

- compilation of single measurement points and definable measurement series
- align of test objects visually or parametrically
- angle handles for easy rotating of the CHD, NHD or SHD measurement series
- single measurement points can be attributed to different status (planned, indented, ignored)
- saving and uploading of configured measurement series
- CHD-SHD or NHD measurement series: points offset defined single or double row
- define tolerance band for hardness curve
- circle or circle segment with concentric auxiliary circuits
- point group
- grid function for surface analysis (max. 6000 points)
- sinter measurement series
- hardness curve along a free setted polyline (distance and offset adjustable)
- display of hardness ranges in color in overview image



Measurement capabilities

- measurement functions: distance, angle, areas, circles, polygon with dimensioning
- define grid pattern
- lock individual metrics
- magnetic reference points and lines
- define zero point of coordinates
- align measuring elements using coordinates
- add movement coordinates with „Enter“ gradually repeated
- edit color and font of the measuring objects
- image analysis Software add-ons orderable



Presentation and output of measuring results

- report generator
- output of overview images, value tables and diagrams
- dynamic overview screen, e.g. when changing the live image section
- update all items in the report for changes in the program
- selection of parameters of a table and different compilation for multiple tables in a report
- templates for hardness testing report acc. DIN EN ISO 6507
- insert character elements such as rectangles and lines
- define form fields
- output format: PDF, EXCEL and clipboard
- optional interface modules: Q DAS, ODBC/SQL
- laying existing forms in the background



EQUIPMENT



CARAT TABLE



» highly load bearing Carat-table with automatic X-/Y-axis

Equipment 1

Order No.: A0600031

» for max. 3 Carat-clamping plates 25-50

X-axis	160 mm
Y-axis	100 mm
max. load	80 kg

Equipment 2

Order No.: A0600032

» for max. 4 Carat-clamping plates 25-50

X-axis	250 mm
Y-axis	100 mm
max. load	80 kg

PC



Equipment 1

without PC

Order No.: A0600004

Equipment 2

PC

Order No.: A0600006

» Micro-PC-System mit Touch-LED-TFT inkl. Maus/Tastatur

CAMERA



Equipment 1

Standard USB-camera

Order No.: A0600017

1280 x 1024 px

Equipment 2

High resolution USB-camera

Order No.: A0600018

2560 x 1920 px

OPTION

AUTOMATIC CARAT-LEVEL RECOGNITION



Order No.: A0600015

» for Carat 930

» fully-automatic rapid focus

» hardness test blocks and micrometers for calibration on request



SOFTWARE (WIN7/8/10, 64 **ATM CARAT SOFTWARE UPDATE** 

Order No.: A0600025

- » ATM Carat software update to latest version

**WELD MODULE** 

Order No.: A0600027

- » series of measurements for testing of welds for butt-, fillet- and double fillet weld
- » setting of the 5 zones of inspection: number of points, length and orientation (left, right, center)
- » display of standard tolerance of the edge distance with edge helpline
- » exterior angle changeable in fillet weld tool
- » output of results with zones in the evaluation

ATM SOFTWARE MODULE ODBC INTERFACE 

Order No.: A0600029

- » direct connection to database by ODBC
- » requires customer supply of data base structure information
- » incl. 5 hours order discussion/IBN

QDAS CONNECTION 

Order No.: A0600023

- » QDAS interface
- » connection of QDAS-interface to company's network/QDAS-data base
- » incl. 5 hours requirement information/start-up
- » further services are charged according to timesheet

CARAT SOFTWARE MODULE AMS INTERFACE 

Order No.: A0600036

- » requires AMS testing software
- » reads AMS input files from user-defined folder
- » takes testing parameters from input files automatically
- » processing input data in report possible
- » output of measurements to user-defined folder for further processing by AMS
- » transfer files archived automatically



SOFTWARE (WIN7/8/10, 64 BIT)

BARCODE SCANNER



Order No.: A0600030

- » to capture barcodes on accompanying documents
- » gives the opportunity to import batch numbers of accompanying documents and to load a test sample template via QDAS file

CARAT INSPECT

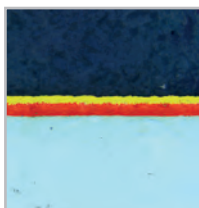


- » Live image capturing / loading and recalibration of stored images (PNG, JPG, TIFF, BMP)
- » Preprocessing filters (e.g. Blurring, Sharpen, Normalize)
- » Object definition by grey and color thresholding
- » Morphological filters
- » Selection of image objects by predefined measures

Carat Inspect Thickness Measurement

Order No.: A0600033

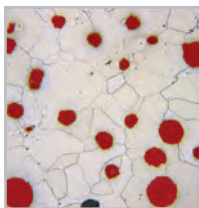
- » measurement of layer thickness according to DIN EN ISO 1463
- » semi-automatic measurement of horizontally and vertically aligned coatings and curved layers
- » output of the layer thickness in terms of statistical quantities (e.g. mean, standard deviation, median, minimum, maximum) in tabular or graphical fashion
- » two preinstalled layer thickness measurements as favorites



Carat Inspect Phase Analysis

Order No.: A0600034

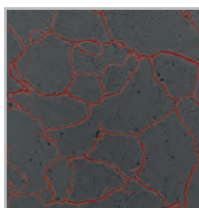
- » automatized image object measurement
- » measurement of phase fractions according to ISO 9042 and ASTM E562-11
- » output of analysis results in terms of the relative/absolute area in tables or graphs
- » statistical quantities (e.g. mean, standard deviation, median, minimum, maximum)
- » preinstalled phase analysis as favorite



Carat Inspect Grain Size Analysis

Order No.: A0600035

- » measurement of the grain size according to DIN EN ISO 643 and ASTM E112-13 including lineal and circular intercept procedures as well as the planimetric procedure
- » output of analysis results in terms of tables and graphs
- » acquisition of statistical quantities of the grain size as well as of the grain intercept lengths (e.g. mean, standard deviation, median, minimum, maximum)
- » two preinstalled grain size analyses as favorites



OBJECTIVES



Overview objective	2.5x	5x	10x	20x	40x	50x	100x
N Plan	Z0600012	Z0600013	Z0600014	Z0600015	Z0600016	Z0600017	Z0600018

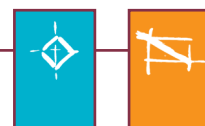
INDENTER (spare part)



Load A ≥ HV 0,01
Order No.: Z0600020

Load B ≥ HV 0,2
Order No.: Z0600021

Load C ≥ HV 5
Order No.: Z0600022



CARAT CLAMPING SYSTEM 25-50

Carat clamping plate

» base plate for Carat table with Easy-clamping function



25-50

Order No.: Z0600030



CARAT CLAMPING SYSTEM 50-70

50-70

Order No.: Z0600040



Carat sample clamping device

* please order required sample clamping devices and clamping rings separately

25-50

Order No.: Z0600031

» up to 2 Carat sample clamps*



50-70

Order No.: Z0600041

» 1 Carat sample clamp*



Carat clamping rings



Ø 25,5 mm
Order No.: Z0600032

Ø 30 mm
Order No.: Z0600036

Ø 32 mm
Order No.: Z0600033

Ø 50 mm
Order No.: Z0600043

Ø 60 mm
Order No.: Z0600044

Ø 70 mm
Order No.: Z0600045

Ø 38 mm
Order No.: Z0600038

Ø 40 mm
Order No.: Z0600034

Ø 50 mm
Order No.: Z0600035

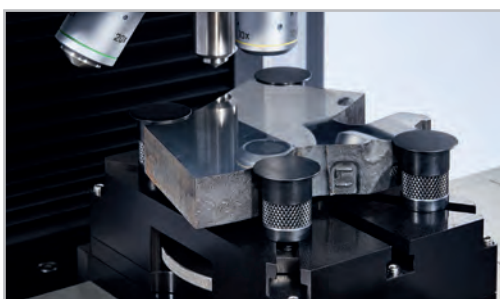
» other sizes on request

Ø 1"
Order No.: Z0600046

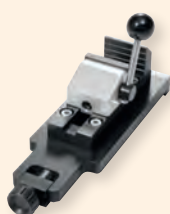
Ø 1,25"
Order No.: Z0600047

Ø 1,5"
Order No.: Z0600048

Ø 2"
Order No.: Z0600049



Fast lock vice 50



Clamping range 50 mm

Order No.: Z2270002 (lever left)
Order No.: Z2270000 (lever right)

Clamping range 100 mm

Order No.: Z2270003 (lever left)
Order No.: Z2270001 (lever right)

Universal clamping device

Order No.: Z0600050

» for unmounted, rectangular or rectangular mounted samples (15x27-48x75 mm)

» for circular or circular mounted samples (Ø 35-95 mm)

» max. sample height 21 mm



SPECIFICATIONS

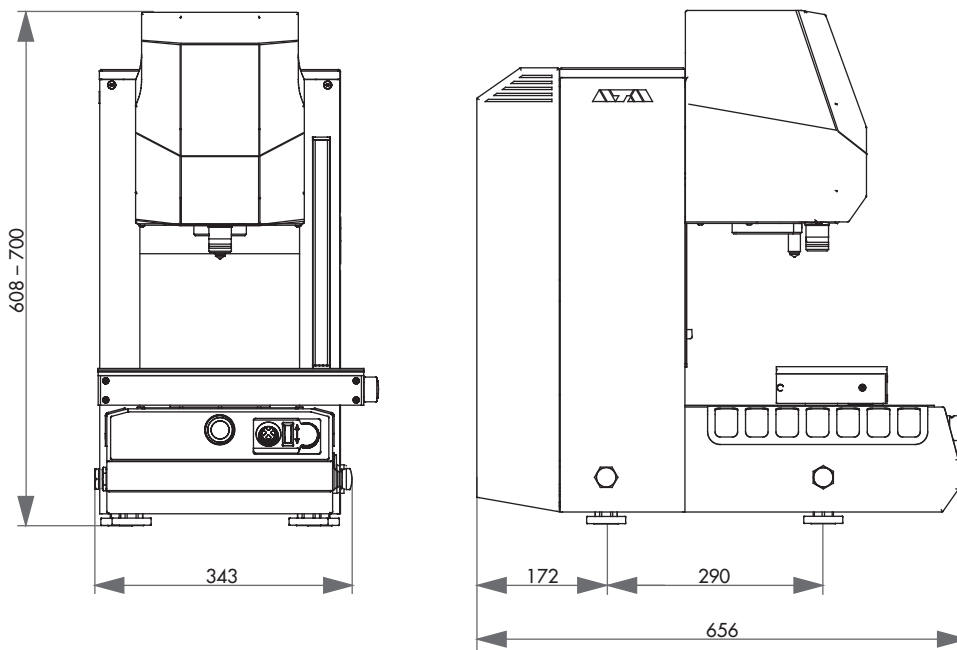
CARAT 930/950*

Test method (DIN EN ISO 6507, Vickers HV 0,05 - HV 30 DIN EN ISO 4545, Vickers HV 0,05 - HV 50* ASTM E-384) Knoop HK 0,05 - HK 2
Total load range 0.0098 - 294.20 N (1 gf - 30 kgf) 0.0098 - 490.33 N (1 gf - 50 kgf)*

CARAT TABLE

X-axis	1 160 mm
	2 250 mm - Observe the equipment variant
Y-axis	100 mm
max. load	80 kg
Z-axis	150 mm
Power supply	100 - 240 V 50/60 Hz (1 Ph/N/PE)
WxHxD ~	375 x 650 x 670 mm
Weight ~	65 kg

* Information valid for Carat 950





Engraver



Compressor



Sample Dryer



Ultrasonic cleaners



Pressure appliance



Infiltration set



Infiltration unit

CONTENT

SYSTEM LAB

Heavy duty furniture	6,161 – 6,162
Acid-bases cabinet/safety cabinet	6,163 – 6,164
Lab fume	6,165 – 6,167

COMPLEMENTING DEVICES

Engraver, compressor, sample dryer	6,168
Pressure appliance	6,169
Infiltration set, infiltration unit	6,169
Ultrasonic cleaners	6,170 – 6,171



Heavy duty furniture



Lab cabinet with acid-bases compartment



Lab fume

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.



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.



**FLEXIBLE COMPARTMENTS**

The compartment size is coordinated to KLT system boxes according to DIN 30820 to provide optimum space utilization.

Various high-quality, stackable storage boxes are available from ATM.

**ROBUST CONSTRUCTION**

The body and if necessary, the lockable hinged doors are made of aluminum, 5 shelves are made of powder coated steel. The lower three shelves are extendable (full extension) and equipped with mechanical interlock system, ie it can always be pulled out only one shelf. The maximum load capacity for each shelf is 120 kg.

The system storage furniture are available in two heights.

SHELVES AND CABINETS FOR HEAVY LOADS

The SYSTEM HEAVY DUTY CABINETS are a very useful addition for our cutting machines. Because of the high load capacity and the extremely robust construction they are a safe storing location especially for heavy samples and clamping elements.

A selectable tilt protection allows upsetting either free-standing with counterweight, wall mount or two cabinets back to back.

The system design also allows installation on site.



BASIC MODULE

HEAVY DUTY CUPBOARD



- » frame made of powder-coated aluminium
- » shelves made of steel, each with a max. load capacity of 120 kg
- » 3 pull-out shelves with mechanical interlock system
- » compartment size coordinated to KLT-System boxes
- » adjustable feet in the base
- » cupboard with lockable doors made of powder-coated aluminium

small

WxDxH 950x1600x650 mm

Heavy duty rack

Order No.: M7501101

Heavy duty cupboard

Order No.: M7501102

large

WxDxH 950x1950x650 mm

Heavy duty rack

Order No.: M7501103

Heavy duty cupboard

Order No.: M7501100

EQUIPMENT



TILT PROTECTION

Equipment 1

Counterweight

Order No.: A7501015

- » for freestanding installation:
counterweight plate 50 kg
with fixing material

Equipment 2

Wall fixation

Order No.: A7501016

- » for wall fixation:
2 fixing brackets with screws

Equipment 3

Connection plate

Order No.: A7501017

- » for installation back to back:
2 straps with fixing screws

ACCESSORIES

LOAD DISTRIBUTION PLATE

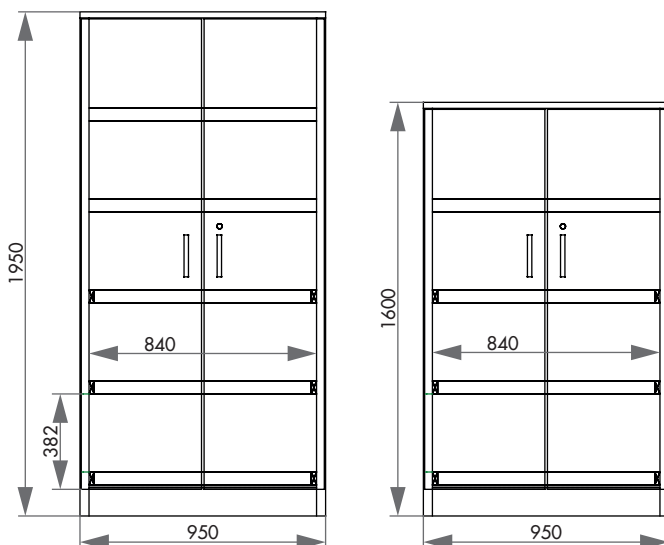


Order No.: A7501018

- » 3 mm stainless steel plate to reduce floor load by
adjustable feet

SPECIFICATIONS

Load capacity/shelf	120 kg	
	SMALL	LARGE
Shelves	4	5
Weight rack	110 kg	130 kg
Weight cabinet	120 kg	140 kg



AIR FLOW MONITORING

Air flow monitoring is controlled by an integrated pressure sensor. The cabinet is ventilated by connection piece (DN75) on the backside.

**HANDLES**

The handles fulfil highest demands on ergonomics and design and are supplementary equipped with an antibacterial coating.

OPERATION

The cabinet consists of two compartments for storing acids and bases, which can be used and closed separately from each other. Each of both compartments is equipped with two removable PP trays on a sliding shelf.



Acid-bases cabinet

STORAGE OF CHEMICALS

The System lab cabinet with acid-bases compartment and air flow monitoring is designed for lab-use and an essential element of lab equipment. The cabinet serves as safe and correct

storage for acids and bases in workrooms.

The safety cabinet is specially suitable for the storage of flammable liquids.



Safety cabinet

LAB QUALITY

The outer frame is made of powder-coated aluminium, the inner frame consists of melamin-coated HPL composite panel. Doors and sliding shelves are manufactured of resistant HPL solid material.

To be protected from aggressive chemical fume, hinges are attached outside.

The safety cabinets are designed for storage of flammable liquids in the workplace according to EN14470-1 20 (Annex L). In case of fire, the doors seal automatically. A combination of two cabinet variants is possible.



for 2-line-body H 800 mm

ACID-BASES CABINET

System lab cabinet with acid-bases-compartment and air flow monitoring

- » outer body made of powder-coated aluminium
- » inner frame made of melamin coated HPL composite panel
- » doors and sliding shelves made of resistant HPL solid material
- » removable Polypropylene (PP) trays on each sliding e
- » both doors (opening angle approx. 100°) separately operate and lockable
- » hinges outside to be protected against aggressive chemical fume
- » ventilation by connection piece (DN75) on backside



for 2-line-body H 800 mm



for 3-line-body H 800 mm



for 2-line-body H 800 mm

SAFETY CABINET

System lab cabinet for storing flammable liquids with air flow monitoring

- » outer body made of powder-coated aluminium
- » inner body corresponds to the fire resistance class F90 according to DIN 4102
- » safety in case of fire: self-closing drawers and doors by the integrated thermal release
- » doors and drawers separately operable and lockable
- » doors lockable in any position (approx. 135 ° opening angle)
- » cabinet interior completely visible
- » insert trays of PE or PP, increased protection against corrosion; removable for easy cleaning
- » ventilation by connection piece (DN75) on backside



for 3-line-body H 800 mm

SYSTEM-LAB CABINET

The modules can be combined with the elements of the laboratory system according to the requirements and, for example be supplemented with shelves.

All inserts are available for 800 and 900 cabinet height.

COMBINATION OF ACID-BASES AND SAFETY CABINET



The SYSTEM LAB FUME CUPBOARD is conceived to meet the requirements of materialographic laboratories.

The color scheme perfectly matches our laboratory furniture and all ATM machines. The epoxy powder coated solid

SASH

The electronic control of the sash shuts down automatically.

In case of deviation from the stipulated airflow, the digital airflow monitoring system warns with acoustic and optic signals.

The fume cupboard comes with a movement sensor for improved safety.



SYSTEM LAB FUME CUPBOARD

aluminum cabinet is largely chemical resistant and guarantees a long operating life. The modular designed System Lab fume cupboard corresponds to the DIN EN 14175 safety regulations and is therefore also suitable for other applications.



WORK TOP

The ceramic working top with sink, available in different sizes, will meet highest demands.

INSTALLATION ADVANCE

The fume cupboard is shipped in two parts and can be transported through all common doors. Installing the unit takes only short time.

FUNCTIONS

The two integrated sockets in the inside can be switched on and off from the outside. The workspace is equipped with a shock wave safety relief.

In addition to the water connection, a gas and compressed air tap can be integrated (option). Access-points are provided for other supply lines.

BASE CUPBOARD

Different accessories as for example a cabinet for acids and bases can be integrated in the base cupboard.





BASIC MODULE

SYSTEM LAB FUME CUPBOARD



Order No.: M7510000

- » tested according to DIN EN 14175
- » closed system with digital air-flow monitoring
- » single piece sash made of compound glass with automatic closure
- » integrated control panel at eye level
- » two integrated sockets switchable from outside
- » illumination module with shock wave safety relief
- » aluminium case, powder coated

EQUIPMENT

POWER SUPPLY



Equipment 1

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

Order No.: A7510001

Equipment 2

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

Order No.: A7510002

CONTROL SYSTEM



Equipment 1

Air flow monitoring

Order No.: A7510010

- » digital air-flow monitoring with optic and acoustic signal

Equipment 2

Automatic air flow control

Order No.: A7510011

- » digital air-flow monitoring with optical and acoustic signal and automatic control

SASH TYPE



Equipment 1

Manual sash

Order No.: A7510015

Equipment 2

Electronic controlled sash

Order No.: A7510016

WORK SURFACE



Equipment 1

Ceramic worktop with sink

Order No.: A7510022

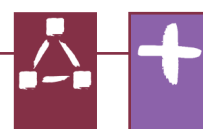
Equipment 2

Worktop with large sink*

Order No.: A7510050

Sink WxHxD 360x250x360 mm

* only combinable with article A7510033 or A7510034



BASE CUPBOARD

Equipment 1
Cupboard

Order No.: A7510031
» 2 storages per chamber

Equipment 2
Cupboard for large sink

Order No.: A7510034

Equipment 3
Acid/base cupboard

Order No.: A7510032
» 2 storages per chamber
» 2 PVC collecting trays
» with exhaust air piping

Equipment 4
Acid/base cupboard for large sink

Order No.: A7510033

Equipment 5
Safety cupboard

Order No.: A7510036
» for the storage of flammable liquids



MEDIA RAIL

» Integrated taps
Equipment 1

Water
Order No.: A7510040

Equipment 2
Compressed air

Order No.: A7510041

Equipment 3
Gas

Order No.: A7510042

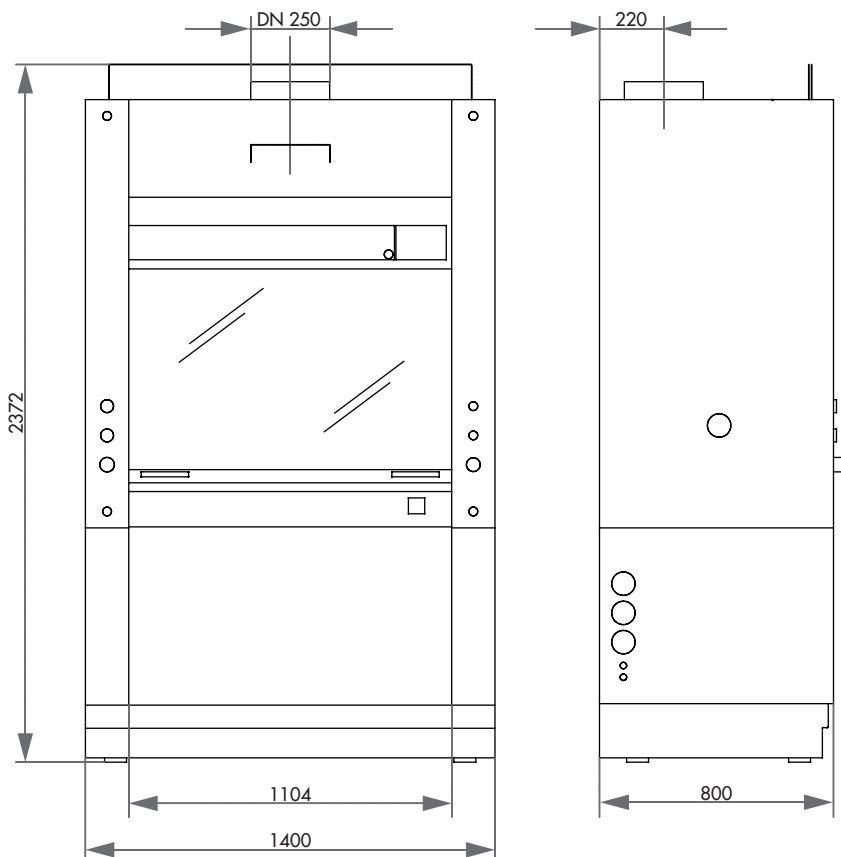


SPECIFICATIONS

SASH

Sash opening	500 mm
Max. sash opening	650 mm

Workspace WxHxD	1300x700x630 mm
WxHxD	1400x2372x800 mm
Min. ceiling height	2500 mm
Weight ~	280 kg





ELECTRIC ENGRAVER

Order No.: 95006339
 » engraver to label metal, glass and plastic;
 with 6 different points

ACCESSORIES

SET OF SPARE POINTS



Order No.: Z5690032



COMPRESSOR FLÜSTERLEISE

» very low noise emission
 » incl. pressure reduction filter
 » suitable for providing compressed air to ATM machines

Max. pressure	8 bar
Tank	4 ltr.
WxHxD	420x300x310 mm
Weight	21 kg

» 230 V/50 Hz **small** **large**
 Order No.: 92007465 92007464

» 110 V/60 Hz **small** **large**
 Order No.: 92007467 92007466

Capacity	17 ltr./min	50 ltr./min
Motor	0.13 kW	0,34 kW
Sound pressure level	35 dB[A] 1 m	45 dB[A] 1 m

SAMPLE DRYER

» hot air fan with pressure sensor
 » stand made of HPL solid material
 » perforated stainless steel bowl to place the samples to be dried
 » water protective mat below stainless steel bowl



Stainless steel bowl	300x150x40 mm
WxHxD	350x670x370 mm

Power 2200W
 » 230 V/50 Hz
 Order No.: A5810355

» 110 V/60 Hz
 Order No.: A5810356





PRESSURE APPLIANCE

Order No.: 92002281

- » for bubble free hardening of methacrylates, eg. Technovit 4004, KEM 20
- » compressed air required

WxHxD 340x340x255 mm



INFILTRATION SET

Order No.: Z6510000

- » for cold mounting in vacuum
- » desiccator incl. non-return valve, vacuum pump, hose and pressure gauge

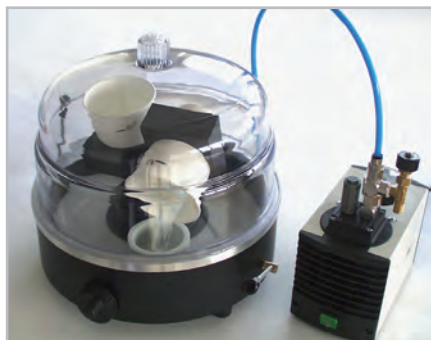


INFILTRATION UNIT

Order No.: M6500001

- » for cold mounting in vacuum
- » desiccator with mechanic dosing and vacuum pump
- » rotating disc

for	8 cups Ø 50 mm
PTFE-mounting cups	9 cups Ø 40 mm
Vacuum pressure	0.8 bar
Power supply*	230 V/50 Hz (1 Ph)
Power	60 W
WxHxD	330x270x300 mm





US 52



US 52H

ULTRASONIC CLEANER 52

» US 52, rotary button operation
Order No.: 92002607

» US 52H, rotary button operation,
140 W-Heizung
Order No.: 92008790

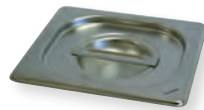
» DT 52, digital rotary button operation
Order No.: 92008792

» DT 52H, digital rotary button
operation, 140 W heating
Order No.: 92008793

Inside ~ WxHxD	150x140x100 mm
Content	1.8 Ltr.
HF power	60 W
Power	230 V/50 Hz (1 Ph/N/PE)

ACCESSORIES

» perforated insert basket
Order no.: 92002608
» cover VA
Prder No.: 92002631



Deckel



DT 52



DT 52H



US 100



US 100H

ULTRASONIC CLEANER 100

» US 100, rotary button operation
Order No.: 92002613

» US 100H, rotary button operation,
140 W heating
Order No.: 92002610

» DT 100, digital rotary button operation
Order No.: 92008794

» DT 100H, digital rotary button
operation, 140 W heating
Order No.: 92008795

Inside ~ WxHxD	240x140x100 mm
Capacity	3 Ltr.
HF-power	80 W
Power supply	230 V/50 Hz (1 Ph/N/PE)

ACCESSORIES

» perforated insert basket
Order No.: 92002609
» cover VA
Order No.: 92002632



Insert



Cover



DT 100



DT 100H





US 255



US 255H

ULTRASONIC CLEANER 255

» US 255, rotary button operation
Order No.: 92008791

» US 255H, rotary button operation,
280 W heating
Order No.: 92002611

» DT 255, digital button operation
Order No.: 92008797

» DT 255H, digital button operation
280 W heating
Order No.: 92008796

Inside ~ WxHxD	300x150x150 mm
Capacity	5.4 Ltr.
HF-power	160 W
Power supply	230 V/50 Hz (1 Ph/N/PE)

ACCESSORIES

» perforated insert basket
Order No.: 92002612
» cover VA
Order No.: 92002633



DT 255



DT 255H



RK 106



DT 106

ULTRASONIC CLEANER 106

» RK 106, digital rotary button operation
Order No.: 92005839

Inside Ø/H	240/130 mm
Capacity	5.6 Ltr.
HF-power	120 W
Power	230 V/50 Hz (1 Ph/N/PE)

» DT 106, digital rotary button operation
Order No.: 95001285

ACCESSORIES

» perforated insert basket
Order No.: 92005840
» cover VA
Order No.: 92005841



insert basket



cover





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