



8 STATIONS

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.



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.

The Systemautomat has a price-to-performance ratio that makes it a cost effective system, even for lower volume labs.

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.

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.



4 STATIONS



5 STATIONS



7 STATIONS

The pictures show examples of Systemautomat combinations. The stations and their options can be arranged individually. Please ask for advice.





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.



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 platen automatically. When finished, the used grinding paper is discarded.

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. For diamond grinding disc applications, a cup-wheel is available for dressing the diamond surface.

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.

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.



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.





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.

COMBINATION EXAMPLE

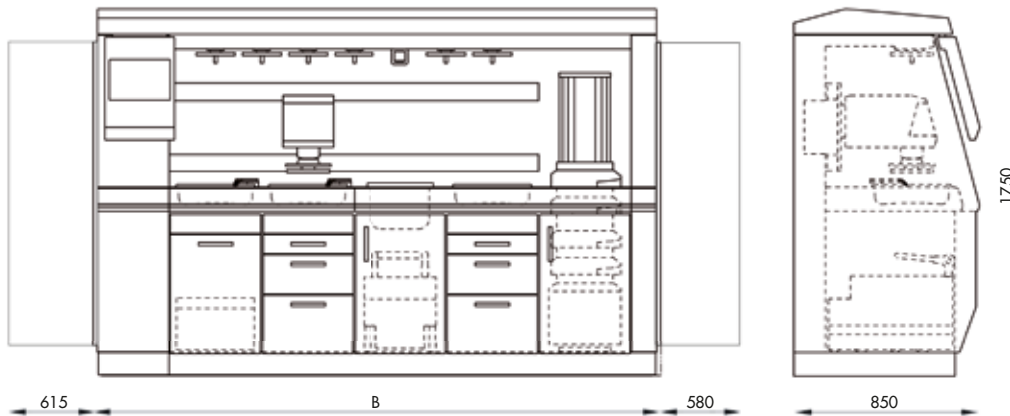
5-line Systemgrinder and polisher automation with polishing head



- 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
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



SPECIFICATIONS COMBINATION EXAMPLE



Station lines	4	5	6	7	8
W	2260	2700	3140	3580	4020
xHxD	1750 x 850 mm				
Motor	Depending on equipment 4 - 12.5 kW				
Power supply	400 V / 50 kW				

GRINDING AND POLISHING STATION

Working wheels	Ø 300 mm
Speed	50 - 600 rpm
Lines	one line

GRINDING STATION

Working wheels	Ø 300 mm
Speed	50 - 600 rpm
Lines	one line

CLEANING STATION

Cleaning media	Air, water, Ethanol (option)
Process	Time and steps can be set as needed
Lines	one line

ULTRASONIC CLEANER

Volume	9.7 Ltr.
HF-power	400 W
Lines	one line

FOIL CHANGER

Storage	4 different grinding media
Grinding paper	Ø 300 mm
Lines	two lines

GRINDING AND POLISHING HEAD

Central pressure	50 - 450 N, variable
Speed	20 - 120 rpm, clockwise/anti-clockwise
Controlled removal	automatic
Sample holder	Ø 160/185/204 mm

