QATM
QUALITY ASSURED

GRINDING & POLISHING AUTOMAT

QPOL 300 BOT

part of VERDER scientific

GRINDING & POLISHING AUTOMAT

QPOL 300 BOT

8 stations

Designed and developed by QATM, the compact Qpol 300 BOT completely automates the grinding and polishing aspects of the specimen preparation process, including cleaning and drying.
Simple touch-screen controls access all parameters and procedures. The Qpol 300 BOT ensures that each specimen is properly processed and guarantees reproducible results and, in addition more space for sample analysis.

MODULAR CONSTRUCTION

Elements for the Qpol 300 BOT 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 Qpol 300 BOT 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 Qpol 300 BOT 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.

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 Qpol 300 BOT when preparing multiple specimen holders.

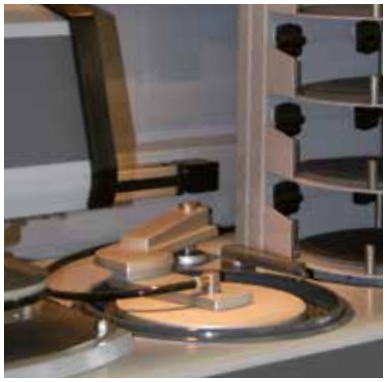
SAMPLE HOLDER STACK

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.

4 stations

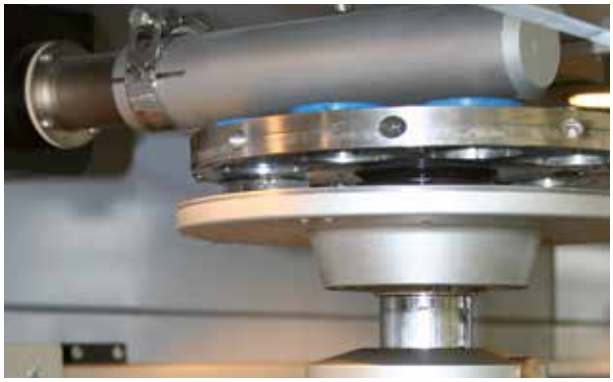
FOIL CHANGER

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.

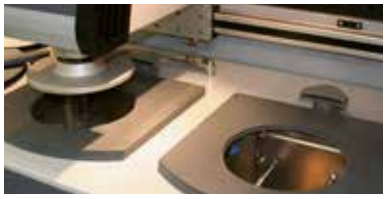


ULTRASONIC CLEANING STATION

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.



7 stations

SURFACE GRINDING STATION

The high speed grinding station planes the surface of the sample very quickly using an abrasive stone. The fully enclosed stone has an integrated recirculation coolant system in the cabinet. SiC and Al_2O_3 grinding stones are kept flat by an automatic diamond dressing device with adjustable dressing depths and intervals.

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

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

TOUCH SCREEN CONTROL

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

DATA TRANSFER

The QATM 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.

5 stations

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

SPECIFICATIONS	
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

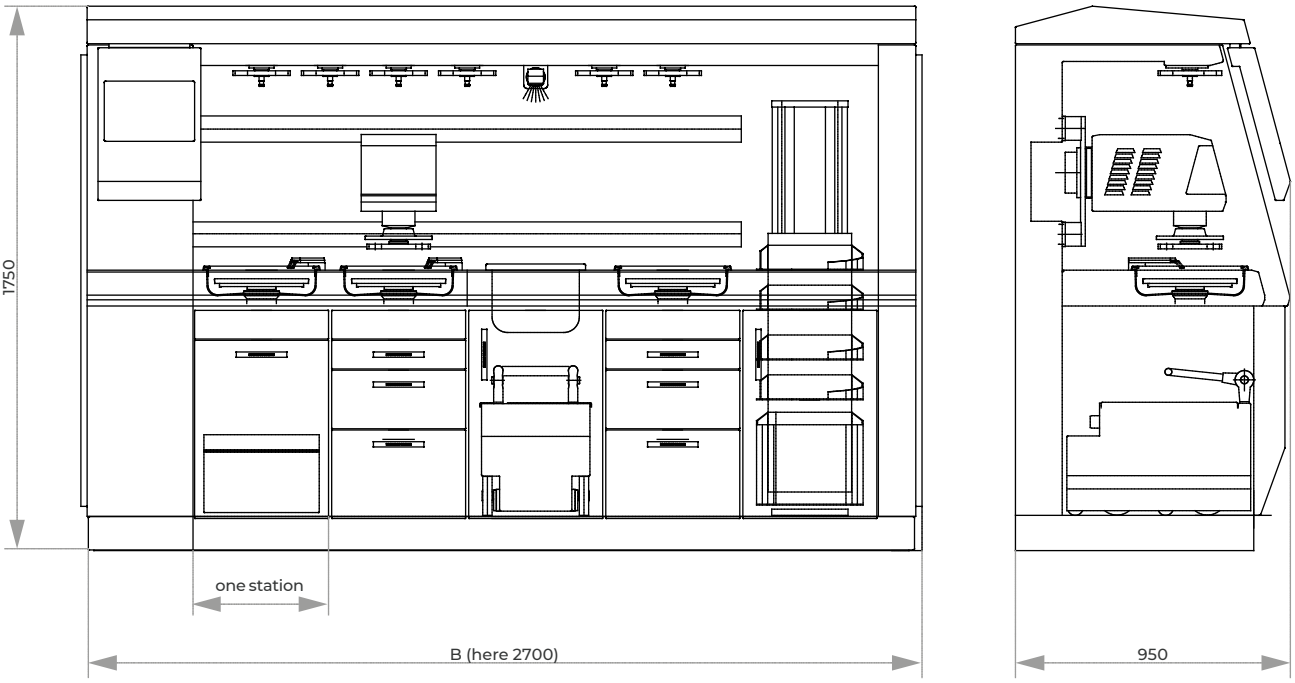
FOIL CHANGER

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	1750 x 950 mm				



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