QUALITY ASSURED

Qgrind XL

RELIABLE, ROBUST AND EFFICIENT

POWERFUL PLANAR GRINDING MACHINE FOR HIGH SAMPLE THROUGHPUT

part of VERDER scientific

Qgrind XL

ADVANCED TECHNOLOGY AND MEASUREMENT SYSTEM

The grinding head and diamond dresser are equipped with a robust ForceControl system and enable reproducible and high grinding forces. The integrated load cells and the innovative motorized force control ensure defined material removal and maximum process reliability.

INNOVATIVE SOLUTIONS

REPRODUCIBLE PREPARATION RESULTS GUARANTEED

The particularly robust and powerful design of the Qgrind XL planar grinding machine allows for maximum material removal with high precision.

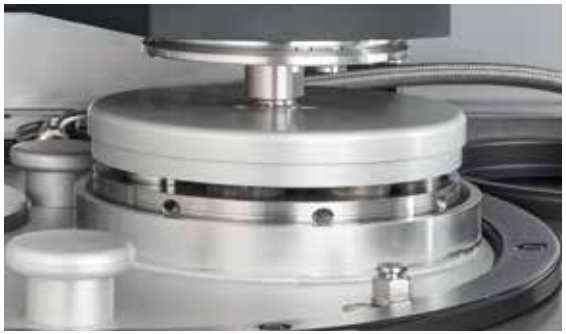
The **ForceControl function** ensures reproducible grinding results with the integrated electronic measuring systems. By selecting and combining different grinding modes, both maximum material removal rates (roughing) and excellent sample surfaces (finishing) are achieved. With **the SmartGrind software function**, the grinding process can be continuously monitored and made particularly efficient by means of fully automatic determination of dressing intervals. The integration of a cleaning station and the intuitive software interface set new standards in convenience and user-friendliness.

FULLY AUTOMATIC DIAMOND DRESSER

In the fully automatic mode (Smartgrind), the grinding process is continuously evaluated and the grinding requirement of the stone is automatically determined and efficiently controlled. Stones may also be dressed at predetermined intervals as well as manually. The remaining stone height, the wear of the dressing diamond and the process flow are shown dynamically on the display.

DIFFERENT GRINDING MODES

When planar grinding metallographic samples, both high removal rates and flat samples with high surface quality are the goals. In the „roughing“ grinding mode, material removal can be increased by up to 20% compared to conventional processes, thus significantly reducing process times. In „Finishing“ mode the surface quality is improved by up to 15%. The combination of different modes produces optimal grinding results with maximum efficiency.



REMOVAL MEASUREMENT

The QATM Qgrind XL comes with a system for precise measurement of material removal – regardless of operating time, sample type, material and hardness, you can easily monitor the material height already removed.

CLEANING STATION (OPTIONAL)

In the cleaning station specimens are automatically cleaned with water, ethanol and air and by spin cycling at up to 800 rpm (adjustable). Thus, each preparation step is finalized with a cleaning step.

VERY USER FRIENDLY

EASY AND QUICK CHANGE OF THE GRINDING STONE

ABSOLUTELY INTUITIVE AND SMART

WELL THOUGHT OUT IN EVERY DETAIL

MAXIMUM SAFETY

The motorized acryl glass safety hood protects the working area of the machine. The transparent hood is equipped with a safety switch and opens automatically when the program is finished. For easy cleaning the hood can simply be unhinged.

ROBUST ENGINEERING – FUNCTIONAL DESIGN

The basic requirements when developing the automatic grinder Qgrind XL were a corpus and polishing head of utmost stability. These requirements form the basis for a low-vibration and robust grinding process. A solid steel construction, powder-coated and a working area lined with stainless steel emphasize the sustainable, and at the same time modern and compact, machine design – made in Germany.

CONVINCING PERFORMANCE DATA

A 4 kW drive motor drives the grinding stone of the Qgrind XL and ensures high material removal and rotational speeds of up to 2000 rpm. The sample holder is driven in the grinding head with up to 1.1 kW, which means that grinding forces of up to 750 N can be achieved. The speed of both systems can be variably controlled.

CONVENIENT OPERATION

The modern design of the proven QATM control software enables intuitive and user-friendly operation. All process parameters are clearly displayed and can be easily set by touch.

Features:

- 7" touch screen
- Status display and acoustic signal
- Removal measurement with graphic display
- Automatic referencing and wear indicator for grinding stone and dressing diamond
- User Account Management with variable user rights
- USB / Ethernet interface for remote maintenance and data transfer

The grinding process is continuously monitored and graphically displayed using the SmartGrind software function.

SENSATIONALLY VERSATILE

FEATURES AND EQUIPMENT VARIANTS

MANUAL CLEANING

An integrated rinsing hose allows for manual cleaning of the working area.

COOLING

A circulation cooling tank can be seamlessly integrated into the machine base and is easily accessible via push-to-open door. Lateral guidance of the extendible and rollable unit via slide rails. During the grinding process, the flow and temperature of the coolant are monitored in the software. Depending on the application, different circulation cooling systems can be used with the Qgrind XL.

TOOL COMPARTMENT

The tool compartment integrated in the machine housing is particularly practical. This means you always have easy access to all tools.

PREPARATION FOR EXTERNAL SUCTION

Direct suction of vapor from the working area through suction nozzle.

SIGNAL LAMP

The optional signal lamp allows monitoring of your Qgrind XL from a distance: The red/yellow/green lights show the current state of the machine at a glance.

GRINDING STONES AND DIAMOND GRINDING WHEELS

High-quality aluminum oxide or silicon carbide grinding stones are available for the various applications. Synthetic resin-bonded diamond grinding wheels can be used for planar grinding ceramic materials and hard metals. The grinding media, specially optimized for materialographic grinding processes, are designed for high removal rates, surface qualities and flatness. The QATM grinding media are approved for rotational speeds of up to 2000 rpm as standard.

ACCESSORIES

QATM offers a wide selection of standard sample holders with different diameters and for a variety of applications and machines. Clamping of samples with unusual dimensions can be realized with special sample holders.

Qgrind XL

Application	automated planar grinding of materialographic specimens
Fields of application	preparation of specimen surfaces for materialographic analysis
Grinding stone	Ø max. 356 mm
Speed of grinding stone	variable (1000 – 2000 rpm)
Sample holder	Ø 160 - 204 mm
Speed of sample holder	variable (30 – 160 rpm)
Running direction of sample holder	clockwise/counterclockwise
Pressing system	central pressing force, electromotive force control
Sample holder pressing force (central)	50 – 750 N
Removal measurement	±0.1 mm display accuracy at 1 mm removal
Removal range	0.1 mm - 10 mm
Drive power grinding stone	4 kW (S1 operation)
Drive power sample holder	0.75 kW (S1 operation)
Connection power	9 kVA
Power supply	400 V / 50 Hz (3Ph / N / PE), 480 V / 60 Hz (3Ph / N / PE), 220 V / 60 Hz (3Ph / N / PE)
Weight (depending on configuration)	approx. 433 kg

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VERDER scientific

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SCIENCE FOR SOLIDS

Verder Scientific is a business field belonging to the Verder Group and sets standards in the development, manufacture and sale of laboratory and analytics devices. Used in quality control, research and development for test-piece preparation and the analysis of solids.

For several decades our companies have supplied production plants and research institutes, laboratories for quality testing and analytics, all kinds of technical specialists and scientists with modern, reliable devices to solve the many and varied challenges they face.

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