



PLANAR GRINDING MACHINE

QGRIND XL

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.



[Click to view video](#)

Product Video

PRODUCT ADVANTAGES

- | Robust design and powerful drives for very fast preparation results - also for high sample throughput
- | Precise and reproducible results thanks to electronic force measuring system and automatic removal measurement
- | Automatic diamond dresser and optional cleaning station
- | Intuitive user interface

PLANAR GRINDING MACHINE QGRIND XL

REPRODUCIBLE PREPARATION RESULTS GUARANTEED



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.



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 metallographic 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.



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.



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.

EASY AND
QUICK
CHANGE OF
THE
GRINDING
STONE



ABSOLUTELY INTUITIVE AND SMART
WELL THOUGHT IN EVERY DETAIL



**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.



MAXIMUM SAFETY

The motorized acrylic 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.

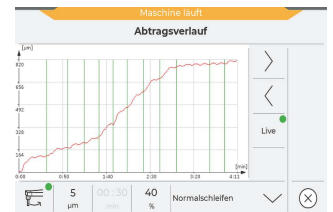
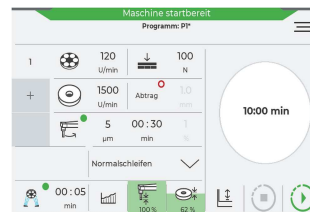
QGRIND XL CONTROL SOFTWARE

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

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



SENSATIONALLY VERSATILE

FEATURES AND EQUIPMENT VARIANTS



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.



MANUAL CLEANING

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



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.

PERFECT GRINDING - CONSUMABLES BY QATM

Grinding is more reliable, safe and efficient when processed with the right ingredients: knowledge, care and the right choice of consumables and instruments.



PLANAR GRINDING MACHINE QGRIND XL

TECHNICAL DATA



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 / PE), 480 V / 60 Hz (3Ph / PE), 220 V / 60 Hz (3Ph / PE)

www.qatm.com/qgrind-xl

ORDER DATA

BASIC EQUIPMENT

MACHINE (1 ITEM REQUIRED)

M5700110  Qgrind XL Base machine 400V/50Hz (3Ph/PE)

M5700120 Qgrind XL Base machine 480V/60Hz (3Ph/PE)

M5700130 Qgrind XL Base machine 220V/60Hz (3Ph/PE)

MEDIA CONNECTION (1 ITEM REQUIRED)

A5700111 Media connections back side

A5700112 Media connections right-hand side

CLEANING (1 ITEM REQUIRED)

A5700121 Without cleaning station

A5700122 Cleaning station

EQUIPMENT (1 ITEM REQUIRED)

A5700141 Equipment grinding stone

A5700142 Equipment diamond grinding disc

COOLING (1 ITEM REQUIRED)

A5700131 Recirculation system 45 L

A5700132 Belt filter 130 L, 400V/50Hz

A5700133 Belt filter 130 L, 480V/60Hz

A5700134 Belt filter 130 L, 220V/60Hz

A5700135 External cooling

SIGNAL LIGHT (TO BE ORDERED WITH THE MACHINE)

A5700051 Signal light

OPTIONS (CAN BE ORDERED SEPARATELY)

Z5446030	Sample holder L-160-12-Ø-25 central pressure
Z5446031	Sample holder L-160-8-Ø-30 central pressure
Z5446034	Sample holder L-160-6-Ø-40 central pressure
Z5446035	Sample holder L-160-5-Ø-50 central pressure
Z5446042	Sample holder L-185-3-Ø-60 central pressure
Z5446044	Sample holder L-204-5-Ø-70 central pressure
Z5446030	Sample holder L-160-12-Ø-1" central pressure
Z5446032	Sample holder L-160-8-Ø-1 1/4" central pressure
Z5446033	Sample holder L-160-6-Ø-1 1/2" central pressure
Z5446035	Sample holder L-160-5-Ø-2" central pressure
Z5446036	Sample holder L-160-3-RE-55x30 central pressure
Z5446037	Sample holder L-160-3-RE-60x40 central pressure
Z5446043	Sample holder L-185-3-RE-70x40 central pressure
Z5446045	Sample holder L-204-3-RE-100x50 central pressure
Z5446038	Sample holder L-160-6-Ø-20-40 central pressure
05400260	Levelling plate Ø 185 mm 4 mm
05440021	Levelling plate Ø 204 mm 4 mm
Z5700002	Connection-Set