



VICKERS / KNOOP / BRINELL / ROCKWELL MICRO HARDNESS TESTER

QNESS 10 / 60 M

qatm.com/products/hardness-testing/micro-hardness-tester/qness-10-60-m/

QNESS 10 / 60 M**VICKERS / KNOOP / BRINELL / ROCKWELL
MICRO HARDNESS TESTER**

The Vickers / Knoop / Brinell / Rockwell hardness tester series Qness 10 / 60 takes micro hardness testing to a whole new level: The high-end laboratory devices of the latest generation combine the best of both worlds – hardness testing and microscopy without compromise and with maximum operating convenience.

The revolutionary optical system with color camera provides reproducible and reliable results every time.

The classic “Qness 10 / 60 M” model of this Vickers / Knoop / Brinell / Rockwell hardness tester promises perfect semi-automatic operation and high precise positioning control of the Z axis. The combination of micro hardness tester and microscope makes this entry-level model a convincing solution for the laboratory.

QATM micro hardness testers seamlessly integrate with the Verder Scientific IoT platform, featuring remote real-time monitoring, live notifications, effortless backups and automatic software updates.



QNESS 10 / 60 M

PRODUCT ADVANTAGES

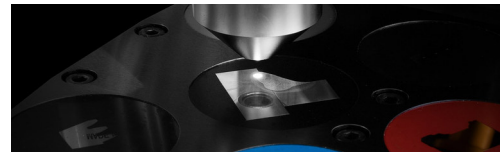
- | Semi-automated
- | Wide test force range (0.25 g – 62.5 kg)
- | Ready to Test package, includes:
ASTM+DAkkS certified Vickers diamond,
5x / 50x lenses
- | Dynamic test turret with 8-position tool
changer
- | Qpix Control2 M Software including
INSPECT microscopy features
- | Digital XY cross slide with data feedback
- | Controlled automatic Z axis

QNESS 10 / 60 M

REVOLUTIONARY OPTIC SYSTEM

The QATM-developed, in-house manufactured lens system sets new standards. As well as providing crystal clear image quality for hardness testing, Koehler illumination uses white LED light and motor-operated aperture shuttering to produce ideal contrast, even for high magnification images.

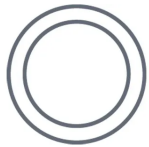
Experienced metallurgists agree the image quality provided by the Qness 10 / 60 A+ is comparable in all aspects with that of established sophisticated microscopes. The up-to-date concept and new lenses in the optic system enable the device to completely meet even the strictest physical 'test system definition' requirements in compliance with DIN EN ISO6507-1/2:2018.



QNESS 10 / 60 M

TEST METHODS & FORCE RANGE

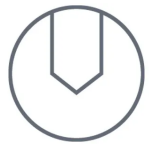
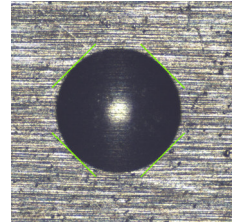
QATM hardness testers accurately analyze according to all standard test methods and cover a wide spectrum. The electronically controlled, fully automated test cycles ensure fast, precise hardness testing, as well as fast method changes and automatic detection of the focal plane. With the Ready to Test package all Vickers test methods are possible with the standard scope of delivery.

**BRINELL**

DIN EN ISO 6506, ASTM E-10

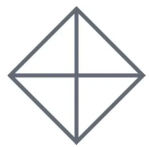
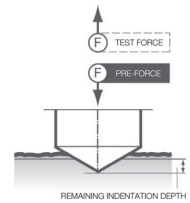
HBW 1/1 · HBW 1/2.5 · HBW 1/5 · HBW 1/10 · HBW 1/30

HBW 2.5/6.25 · HBW 2.5/31.25 · HBW 2.5/62.5 · HBW 5/25 · HBW 5/62.5

**ROCKWELL**

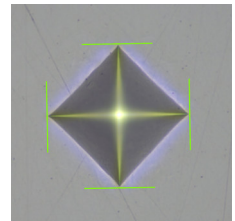
DIN EN ISO 6508, ASTM E-18

HRA · HRF · HR15-N/T · HR30-N/T · HR45-N/T

**VICKERS**

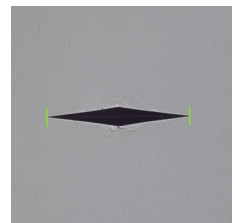
DIN EN ISO 6507, ASTM E-92, ASTM E-384

HV 0.00025* · 0.0005* · 0.001 · 0.002 · 0.003 · 0.005 · 0.01 · 0.02 · 0.025 · 0.05 · 0.1 · 0.2 · 0.3 · 0.5 · 1 · 2 · 2.5 · 3 · 5 · 10 · 20 · 30 · 50 · 60

**KNOOP**

DIN EN ISO 4545, ASTM E-92, ASTM E-384

HK 0.001 · 0.002 · 0.005 · 0.01 · 0.015 · 0.02 · 0.025 · 0.05 · 0.1 · 0.2 · 0.3 · 0.5 · 11 · 2



Integrated conversions: DIN EN ISO 18265, DIN EN ISO 50150, ASTM E-140. Qness 60 M/A+: all Vickers test methods possible with standard scope of delivery. Qness 10 M/A+: HV0.02 to HV10 with standard scope of delivery. * Not according to standards.

QNESS 10 / 60 M

MICROSCOPY & ANALYSIS WITH QPIX INSPECT

PHASE ANALYSIS

DIN 9042, ASTM E-562, ASTM E-1245

- | Automatic image object dimensioning
- | Provides analysis results as percentage proportions of a surface or as nominal surface values as tables or diagrams



PARTICLE SIZE DETERMINATION

DIN EN ISO 643, ASTM E-112

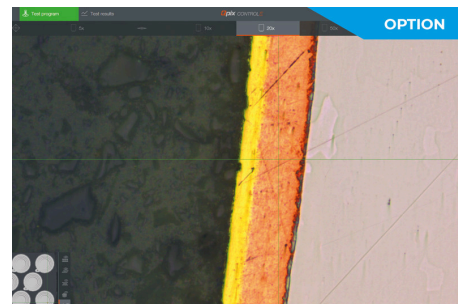
- | Particle size determined via linear or circular section method
- | Results of the analysis provided as tables or diagrams
- | Abrams Circles, Heyn Lines, Snyder-Graff Line



LAYER THICKNESS MEASUREMENT

DIN EN ISO 1463

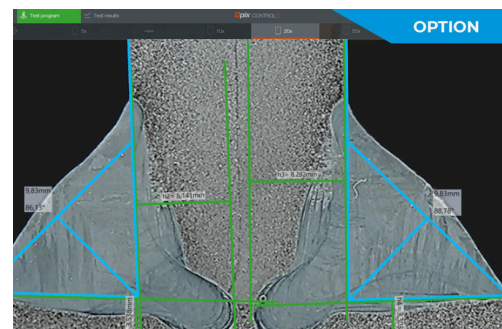
- | Determination of layer thickness
- | Semi-automated gauging of horizontal, vertical and radial layers



WELD SEAM MEASUREMENT

DIN EN ISO 5817

- | Standardised measurement and evaluation of weld seams
- | Prefabricated templates with all relevant measuring tools such as throat thickness, weld reinforcement, penetration depth, etc.
- | Automatic good/bad evaluation and report generation



QNESS 10 / 60 M

INNOVATIVE OPERATION

**TEST SPACE LIGHTNING**

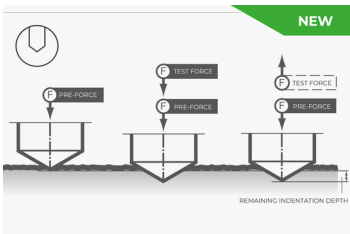
All devices are equipped with the new LED work space lighting: Simplified positioning of samples for single-piece tests.

**VERTICAL CONCEPT WITH 2 Z-AXES**

Via the first Z-axis there is dynamic motion control, allowing the indenter to be positioned towards the test surface quickly and conveniently at up to 30mm/s. The second Z-axis offers high-resolution positioning for greater precision in force application and focusing.

**8-POSITION TOOL CHANGER**

Up to 8 different test diamonds or lenses can be mounted to the turret. Angled at 20° for excellent test room visibility. Modular indenter holders enable plug-and-play retrofitting of Brinell and Knoop test equipment after delivery.

**NEW ROCKWELL TEST METHOD**

In addition to the Vickers, Knoop and Brinell optical methods, Rockwell measurements can now also be carried out with the new micro hardness testers. A special Rockwell test module has been developed for this purpose.

**CAS TECHNOLOGY**

Innovative Collision Avoiding System (CAS) technology protects the mechanical parts in the device using predictive 3D motion calculations to visualize the effects of collisions and operation errors.

**DIGITAL CALIPER**

The digital caliper is compatible with Qpix Control2 and reads dimensions, height and diameter wirelessly at the push of a button. The A+ test head height control can reach test height automatically without manual input.

QNESS 10 / 60 M

PIONEERING TECHNOLOGY – UNIQUE IMPLEMENTATION



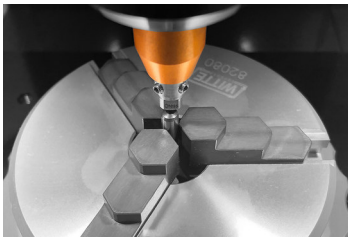
QPIX CONTROL2M SOFTWARE

The intuitively-operated M-Version is included with Qness 10/60 M. It offers batch management, templates for testing projects, test-result structuring and background project information including test patterns, methods, item names and user fields.



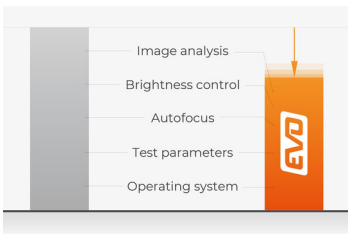
DIGITAL CROSS SLIDE WITH DATA FEEDBACK

Enables serial predefinition of test programs with fixed numbers of test points. If required, also with a manual slide, digital micrometer spindle and positional return – as used for manual CHD progressions.



MAXIMUM VERSATILITY

Unsurpassed in single-piece testing and limited series tests on items of all sizes: Simple operability and optional additions for microscopy make QATM Qness 10/60 M a unique, high-quality, all-round package.



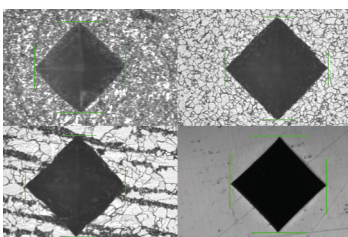
OPTIMIZED PERFORMANCE AND SILENCED DESIGN

Optimized testing parameters and shorter intervals for serial autofocus, brightness regulation and image analysis facilitate fast cycle times. Reduced noise emissions in operation and motion make the machine suitable for laboratory work.



COMPREHENSIVE RANGE OF BASIC FUNCTIONS

Optimized autofocus system; automatic brightness regulation; automatic image evaluation for hardness testing with multiple evaluation modes; built-in protocol generator.



SURFACE INDENTATION RECOGNITION

Adjustable surface indentation recognition reduces sample preparation effort for non-optimum surfaces. Automatic recognition is also possible on critical surfaces (etching, grinding...).

QNESS 10 / 60 M

SAMPLE HANDLING FOR INDIVIDUAL & SERIES TESTING



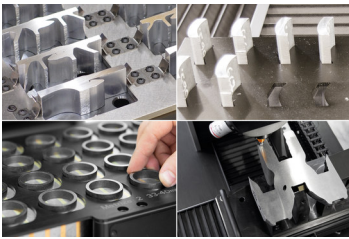
EMBEDDED SAMPLES

A redesigned holder with built-in clamping force limiter simplifies sample centering and positioning. A ball-joint plate clamps specimens that cannot be held flat. Available with 1, 4 or 8 positions and adapter rings for metric and imperial diameters.



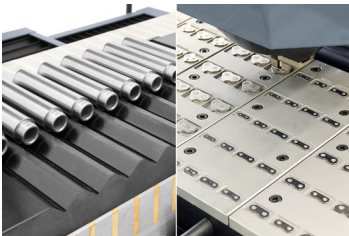
NON-EMBEDDED SAMPLES

Components of almost all geometrical shapes can be fitted into the universal sample holder. Four clamping bolts can be set variably in various T-slots.



SPECIAL CLAMPING DEVICES

QATM can advise, devise, customize and implement a solution for complex requirements and clamping devices. The right component clamping solution helps guarantee reliable results.



IDENTICAL SAMPLE TESTS

Test patterns, test methods and user fields can be activated via pre-defined sample magazines. QATM can provide clamping setups, matrices and cassette systems for each requirement.



PRISMS

QATM prisms also enable round components to be tested. Integration of the 3D model in the software automatically determines the center of the component and the highest point of each piece.



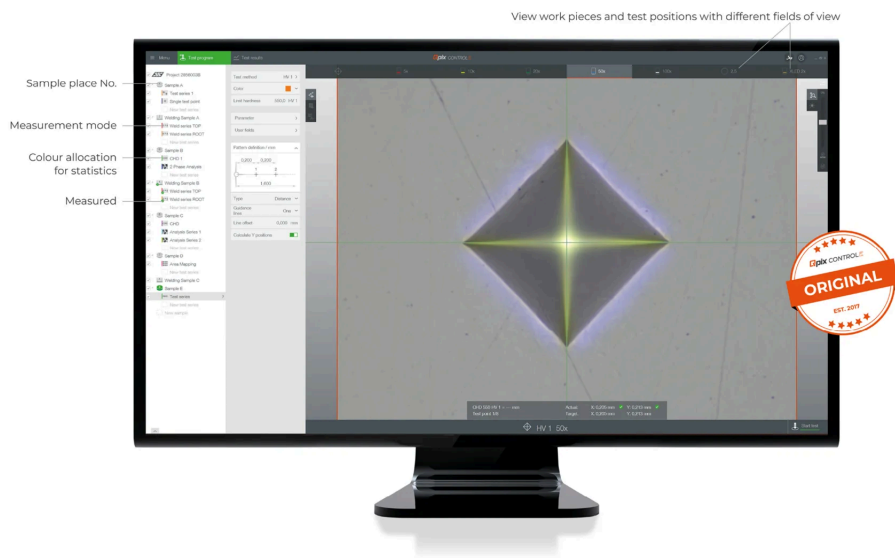
VICES

The large, robust test room accommodates conventional vices, reducing sample-preparation effort. QATM vices are available with extra templates for repeatable positioning.

REVOLUTIONARY 3D OPERATING CONCEPT

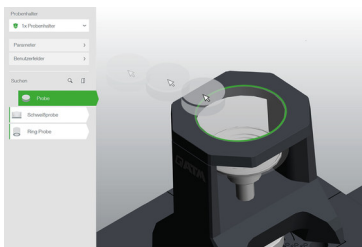
NEXT-GENERATION SOFTWARE FOR YOUR HARDNESS TESTER

The intuitive Qpix Control2 M-Version software is included with each Vickers / Knoop / Brinell / Rockwell hardness tester Qness 10 / 60 M. It provides sophisticated functionality tailored to semi-automatic hardness testing: batch management, templates, test result structuring and background project information.



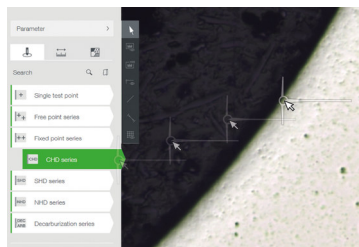
LOAD SAMPLES, LOAD ROW, START

3 STEPS TO THE RESULT



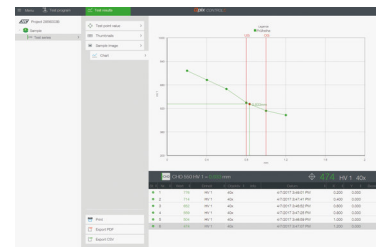
1 | LOAD SAMPLES

Machine moves automatically to sample holder height. Image of sample is taken automatically.



2 | LOAD ROW

Speedy row set-up: Drag the row of test points.



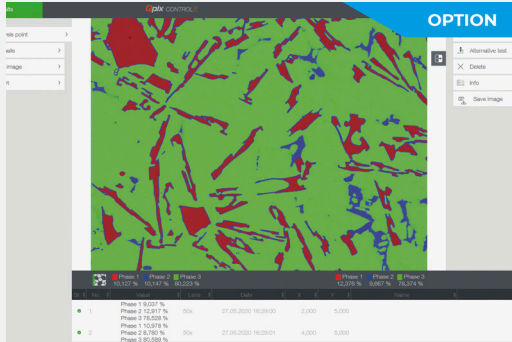
3 | START TEST SEQUENCE

Test sequence is executed according to applicable hardness testing standards.

STRUCTURAL ANALYSIS MADE EASY

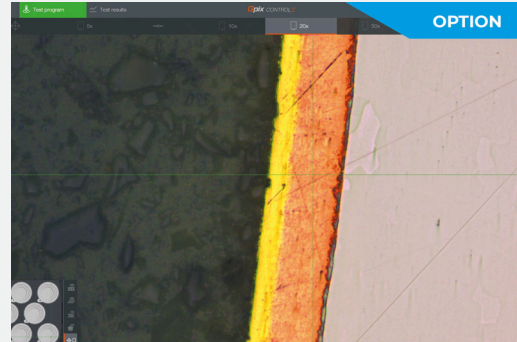
QPIX INSPECT FOR MICROSCOPIC EVALUATIONS

The intuitive and user-friendly Qpix INSPECT software functionality provides a comprehensive toolbox for microscopic evaluations and result documentation. The multifunctional software can be customized for customer-specific measuring tasks and complemented with add-on modules.



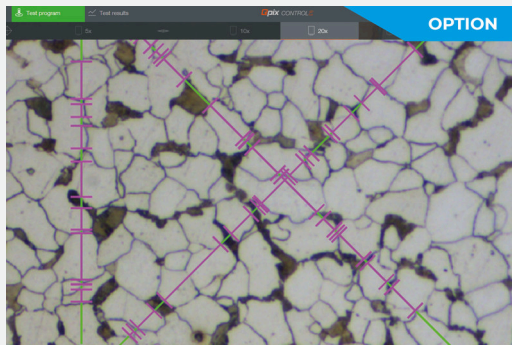
INSPECT PHASE ANALYSIS

- Automatic image object dimensioning
- Evaluation of phase fractions according to DIN 9042, ASTM E-562 and ASTM E-1245
- Results as surface percentages or nominal values, tables or diagrams



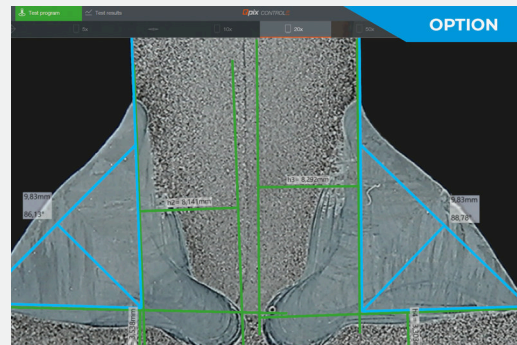
INSPECT LAYER THICKNESS MEASUREMENT

- Determination according to DIN EN ISO 1463
- Semi-automated gauging of horizontal, vertical and radial layers
- Statistical layer-thickness values as tables or diagrams



INSPECT PARTICLE SIZE DETERMINATION

- DIN EN ISO 643 and ASTM E-112, linear or circular section
- Analysis results as tables or diagrams
- Statistical characteristics of particle size and segment lengths



INSPECT WELD SEAM MEASUREMENT

- Standardised measurement and evaluation of weld seams
- Templates for throat thickness, weld reinforcement and penetration depth
- Automatic good/bad evaluation and report generation

IOT – INTERNET OF THINGS

THE PLATFORM FOR REMOTE ACCESS TO YOUR DEVICES

All QATM hardness testers with QpixControl2 and QpixT2 software seamlessly integrate into the Verder Scientific IoT platform, providing enhanced functionality and seamless connectivity.

- | **Real-time Monitoring:** Monitor your machinery in real time, from anywhere in the world.
- | **Live Notifications:** Receive immediate alerts and updates about equipment performance.
- | **Effortless Backup:** Back up a single device or an entire fleet.
- | **Automatic & Free Software Updates:** Keep machines equipped with the latest software.

LEARN MORE →

verder-scientific.com/products/iot/



INDUSTRY 4.0

QCONNECT FOR CONNECTED TOMORROWS

Qconnect is the interface in QATM Qpix Control2 software, providing customers with a full portfolio of inter-device connectivity – from serial production, open XML interfaces (bi-directional) and pre-specified plug-in solutions, such as the QDAS Plug-In+, through to customer-specific connectivity solutions implemented completely by QATM.

Available functionalities & formats: REPORT, PRINT, PDF, XML IE, CSV, TXT, WORD, EXCEL, AUTO EXPORTER, MAIL, Q-DAS, AMS IE, IOT, LIMS, OPCUA, PCI IE (ERP, BABTEC, ORACLE, SAP)

APPROVED QUALITY

CALIBRATION & MONITORING



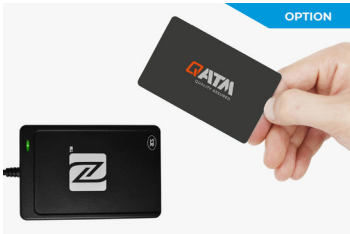
CALIBRATION MANAGER

The QATM Calibration Manager reminds operators of necessary tests at freely definable intervals. Test results are added to the ongoing statistical record at the push of a button.



PREMIUM HARDNESS TEST BLOCKS

Premium quality in comprehensive variety. Independent DAkkS (ISO/IEC 17025) calibration according to DIN EN ISO and ASTM including software for periodic norm-compliant tests.



LOGIN VIA NFC

Qpix Control2 supports user login using an external NFC reader. Depending on the NFC tag/card, existing customer access cards can also be programmed in.

QNESS 10 / 60 M

PERFECTION IN SEMI AUTOMATION

QATM sample holders are designed to ensure accuracy and repeatability. In combination with the digital slide and data feedback, the machine produces perfect measurement readings.

BRINGS LIGHT INTO THE DARK

The illuminated QATM logo displays the current device status at a glance. LED test space lighting, installed as standard, allows samples and sample holders to be set up correctly.



QNESS 10 / 60 M

TECHNICAL DATA

Test force range	Qness 10 M: 20 gf - 10 kgf (0.196 - 98.07 N) Qness 60 M: 0.25 gf - 62.5 kgf (0.00245 - 612.92 N)
Test method	Vickers, Knoop, Brinell, Rockwell (option)
Test sequence	Fully automated / electronic force application
Z-axis	Dynamic, automated (CAS-Technic)
Z-axis travelling distance	150 mm (5.91"); Option: 260 mm (10,2")
Throat depth	170 mm (6.69")
Tool positions	8-fold motorized tool changer max. 3 hardness testing modules, max. 7 lenses
Camera system	5 Mpixel - CMOS color, USB3.0
Optical system	Upright microscope with Koehler lighting
Aperture diaphragm	motorized
Lenses	XLED 2x, 2.5x, 5x, 10x, 20x, 50x, 100x
Lens types	Standard (Achromat) and High Quality (Semi-apochromat) for hardness testing and microscopy XLED for optimised Brinell hardness testing
Field of view (acc. to equipment)	0.074x0.055 mm (100x) to 2.80x2.10 mm (XLED 2)
Test anvil / XY cross slide	Option: manual cross slide; Reduces test height by 26 mm
Table size	Ø 100 mm (3.94") (cross slide: 135 x 135 mm)
Traverse path at cross slide	X 25, Y 25 mm (0.98 x 0.98"); Option X 50 x Y 50 mm (1.97 x 1.97")
Control elements	Emergency stop, Start button, Joystick Z-axis
Software	Qpix Control2 "M"
Max. workpiece weight	50 kg (110 lbs)
Weight of basic device	55 kg (121.3 lbs)
Included basic equipment	Indenter Vickers ASTM + DAkkS; Lens 5x, 50x
Interfaces	1 x USB 3.0
Power connection	100 – 240 V ~1/N/PE, 45-65 Hz

QNESS 10 / 60 M

CONTACT US

qatm.com/contact/contact-form/?prefilltext=contact_form.request&product=Q01QA0201B

REQUEST A QUOTE / CONFIGURATOR

qatm.com/products/hardness-testing/micro-hardness-tester/configurator/

PRODUCT DATA SHEET →

qatm.com/files/450103/product-data-sheet-qness-10-60-m.pdf



qatm.com/products/hardness-testing/micro-hardness-tester/qness-10-60-m/

© QATM – qatm.com / Content may be subject to modifications or corrections