



DuraScan G5

Pinpoint precision – Maximum efficiency

0.00025-62.5 kgf
Vickers
Knoop
Brinell

The right device for every application.

In the load range from 0.25 gf to 62.5 kgf.



DuraScan 10 G5

- Controlled by touchscreen
- 3-fold measurement turret - manual



DuraScan 20 G5

- Controlled by touchscreen
- 3-fold measurement turret - manual
- Manual cross slide

SEMI AUTOMATIC



DuraScan 50 G5

- PC controlled
- 6-fold measurement turret - automatic
- Linear table



DuraScan 70 G5

- PC controlled
- 6-fold measurement turret - automatic
- Linear table
- Overview camera



DuraScan 80 G5

- PC controlled
- 6-fold measurement turret - automatic
- Large linear table
- Overview camera

FULLY AUTOMATIC



Vickers

According to ISO 6507, ASTM E384, ASTM E92

HV 0.00025	HV 0.0005	HV 0.001	HV 0.002
HV 0.003	HV 0.005	HV 0.01	HV 0.015
HV 0.02	HV 0.025	HV 0.05	HV 0.1
HV 0.2	HV 0.3	HV 0.5	HV 1
HV 2	HV 2.5	HV 3	HV 5
HV 10	HV 20	HV 30	HV 50
HV 60			

Conversion to DIN EN 50150, ISO 18265, ASTM E140



Knoop

According to ISO 4545, ASTM E384, ASTM E92

HK 0.00025	HK 0.0005	HK 0.001	HK 0.002
HK 0.003	HK 0.005	HK 0.01	HK 0.015
HK 0.02	HK 0.025	HK 0.05	HK 0.1
HK 0.2	HK 0.3	HK 0.5	HK 1
HK 2			



Brinell

According to ISO 6506, ASTM E10

1/1	1/2.5	1/5	1/10
1/30	2.5/6.25	2.5/15.6	2.5/31.25
2.5/62.5	5/25	5/62.5	

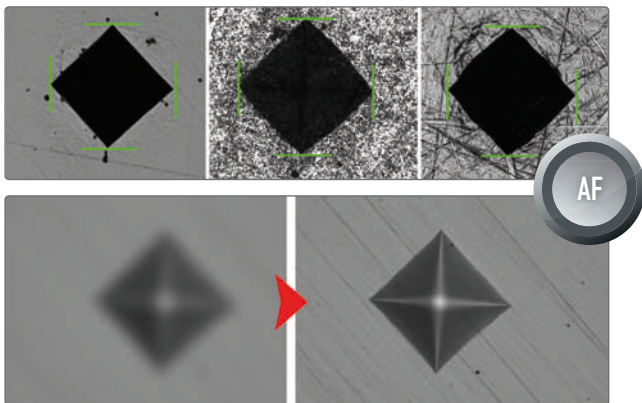
■ With optional load expansion above 0.25 gf

The DuraScan G5 series.

High-tech for your laboratory.



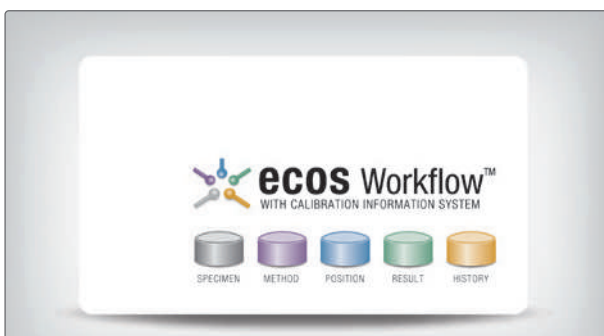
Force application via closed-loop control system



Autofocus and automatic brightness control



Patented height adjustment with rapid traverse



Precision and a broad spectrum of applications

The pioneering standard load range of the DuraScan G5 from 10 gf to 62.5 kgf expands the application range of the hardness tester enormously. This can be extended optionally to the range from 0.25 gf to 62.5 kgf – even subsequently at any time! The force is thereby continuously and precisely monitored electronically using a series of electronic force measuring sensors.

12.0 MEGA
PIXELS
CMOS

Innovation in image evaluation

The 12 Mpix camera employed in all devices of the DuraScan G5 series sets new standards in image quality. The intelligent use of the high-resolution camera chip allows a 4x zoom without having to accept any loss in quality due to interpolation. This innovative solution allows a broad range of applications to be covered with a small number of lenses. In order to make full use of this potential, the DuraScan G5 uses only lenses that offer maximum optical resolution. The proven fully automatic evaluation reliably regulates the brightness of the image and automatically evaluates the indentation.

Accelerate your processes

The innovative solutions of the DuraScan G5 series help to save time. Thanks to the new and patented rapid traverse for the height adjustment, the height of the test head can be adjusted at 10x speed. That saves precious time when adjusting to different specimen heights.

The xCHANGE interface included as standard and well documented in all DuraScan G5 devices allows the import and export of test parameters and results to be easily automated and hence accelerated.

Intuitive software with calibration assistant

The **ecOS** Workflow software package from EMCO-TEST provides an efficient, intelligent solution for all conventional hardness testing tasks. The user is guided step-by-step through the measuring process all the way to data back-up. The intuitive user interface shortens the familiarisation time and reduces operating errors. A special feature of **ecOS** Workflow is the integrated calibration assistant that monitors all calibrated methods and greatly simplifies the inspection of the hardness tester required by standards. The assistant indicates when periodic and indirect inspections to ISO and ASTM standards are due, it guides the user through the inspection process and ensures documentation compliant with standards.

DuraScan 10 G5 und 20 G5 – semi-automatic.

Very simple operation for basic tasks.



pic.: DuraScan 20 G5

Fast height adjustment

The proven height adjustment of the test head allows a constant and ergonomic working height. The rapid traverse helps to significantly accelerate the adjustment to different test specimen heights. The scanning function ensures automatic positioning of the test head to the perfect working distance – the camera image is immediately sharp.



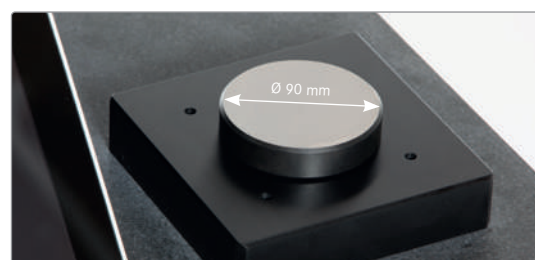
Modern display

The machine is operated via a modern capacitive 10" touch-screen with brilliant image reproduction. The surface made from mineral glass is significantly more resistant to scratches than plastic surfaces.

It goes without saying that only components are employed that have been developed for use in an industrial environment.

XY table or test anvil

The basic version provides a plane anvil with all the requirements for quick and easy individual tests. The DuraScan 20 series expanded to include a manual XY-cross slide enabling reliable series measurement. Optional digital spindles are also available.



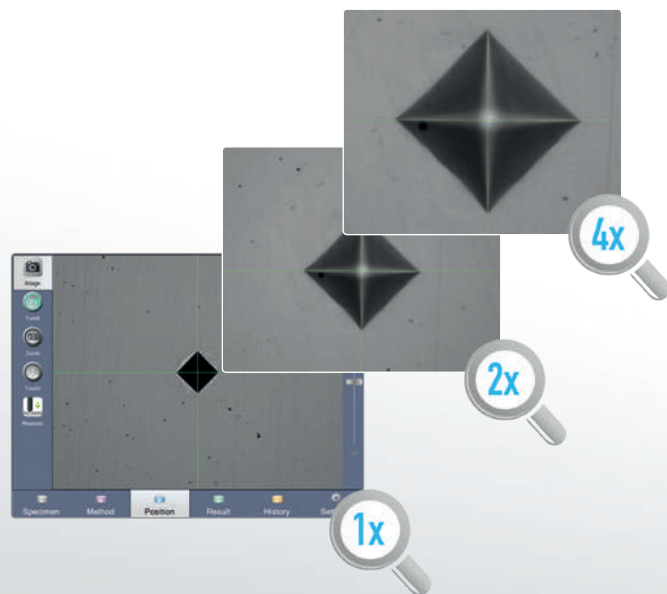
Test anvil DuraScan 10 G5

Important functions at a glance.

User friendliness and efficiency are of the highest priority.

Maximum working range per lens

Only lenses of the highest quality and with a large field of view are employed in the DuraScan G5. Perfect use can be made of these thanks to the use of a 12 Mpix camera. Flexible use of the camera sensor thus allows even more zoom levels per lens. The investment and tooling costs are reduced.



Simple management of user rights

The **ecos** Workflow operating software offers the possibility of selectively and individually controlling user rights by means of user levels. Any number of user levels with different rights can be created and changed at any time. All available rights can be very easily assigned to the desired user level with the help of a rights editor. The users are then assigned to the user level that can, if necessary, be additionally protected by means of a password. This ensures that only authorised users can perform a measurement with the required test method or can change machine settings.



Data management / Template function

A measurement data group can be created and selected before the test. All test results are collected in separate lists, allowing them to be represented clearly, exported or saved as a report at any time. Use grouped measurement data management to assign test data to individual users or user groups, components, batches or departments. In addition, frequently used test parameters can be assigned to the measurement data group in the form of templates (method, conversion, geometric correction). This significantly reduces the amount of work for the operator and the possibility of incorrect operation.

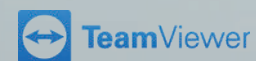
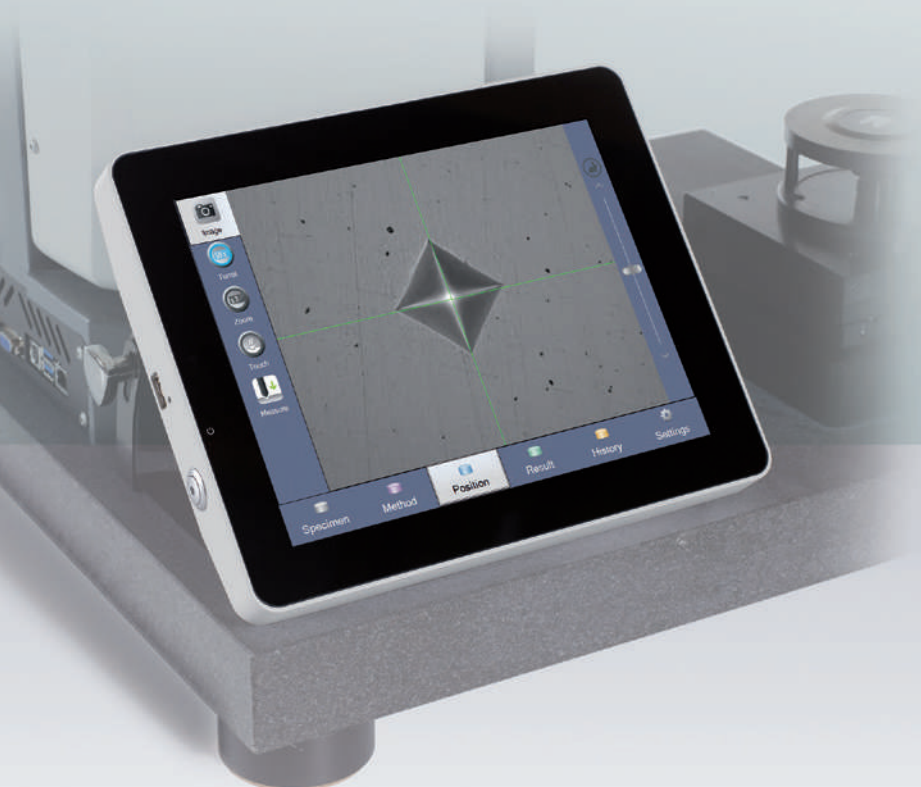


The pioneering hardness testing software.

ecos Workflow Touch

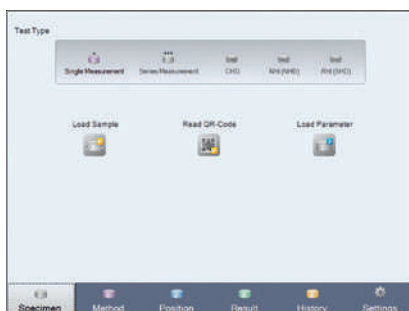
The workflow in five steps

Specimen, method, position, result and history are the five steps provided by the intuitive **ecos** Workflow operating software. Logic, transparency and very simple operation are the key factors in the workflow for efficient and convenient hardness testing. Available as standard in 13 languages.



1 Specimen

Select a type of test. On top of single measurement, from the DuraScan 20, it is also possible to conduct serial measurement, CHD, Rht or Nht runs.



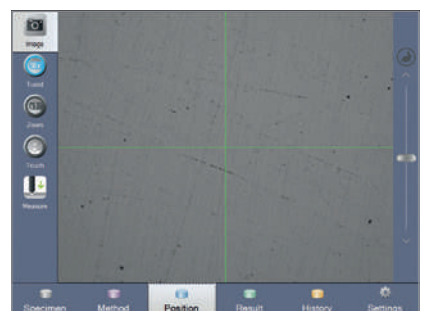
2 Method

Select a measurement type, lens, test method and zoom level; and if required conversions, hardness limits and standardised device corrections.



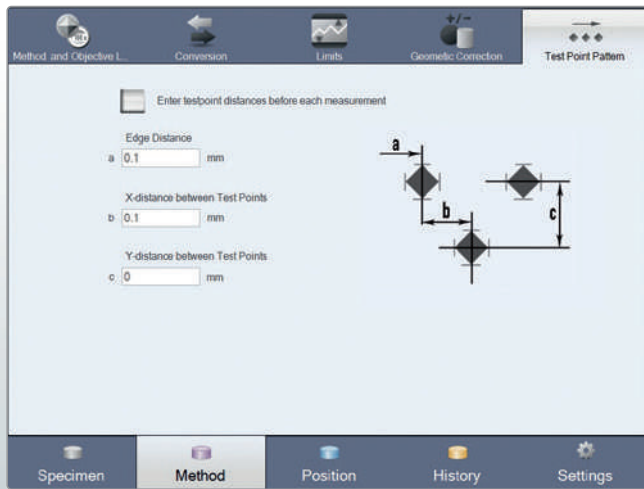
3 Position

Position your test point on the work piece. Using the tools provided it's childsplay. Then start the test.



Serial measurement

A test point wizard is available for serial, CHD, Nht or Rht testing. The wizard supports you at the creation of test point patterns when carrying out standardised serial tests (EN ISO 2639, 10328, 50190).



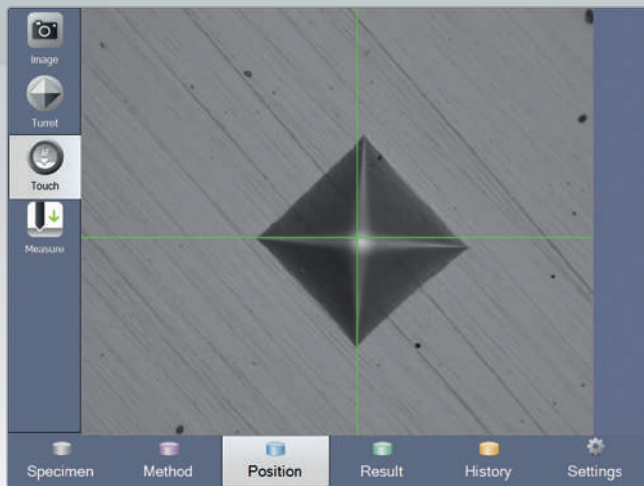
Intuitive control

Intuitive control provides an overview of which lens and indenter are currently in position. The 6-fold turret option allows selection to be made via display and mouse click.



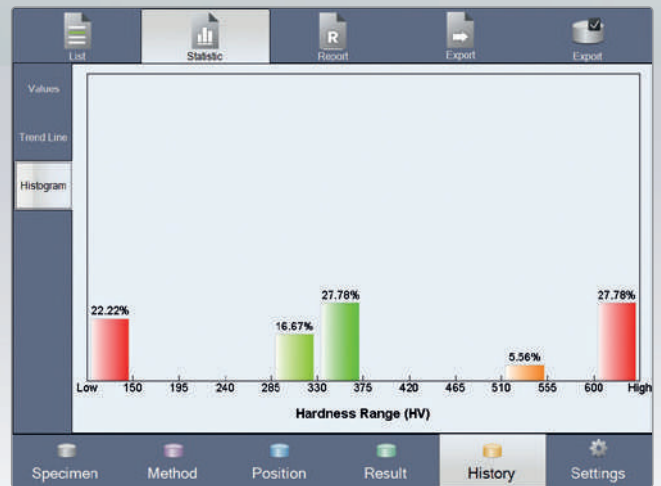
Autofocus

Automatic test specimen height recognition triggers automatic focussing.



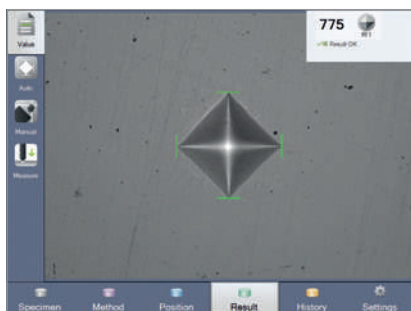
Figures and diagrams

Test values are converted to visuals in the form of figures or diagrams.



4 Result

The result is displayed clearly and is available for further uses. If necessary there is also the option of re-measuring either automatically or manually.



5 History

All results are stored permanently in a clear form. The data can be archived in your network, in other systems and used to print out a report with any installed printer.

No.	Method	Magnification	Depth	Force	Indenter	Date
1	100x	100x	100x	100x	100x	100x
2	100x	100x	100x	100x	100x	100x
3	100x	100x	100x	100x	100x	100x
4	100x	100x	100x	100x	100x	100x
5	100x	100x	100x	100x	100x	100x
6	100x	100x	100x	100x	100x	100x
7	100x	100x	100x	100x	100x	100x
8	100x	100x	100x	100x	100x	100x
9	100x	100x	100x	100x	100x	100x
10	100x	100x	100x	100x	100x	100x
11	100x	100x	100x	100x	100x	100x
12	100x	100x	100x	100x	100x	100x
13	100x	100x	100x	100x	100x	100x
14	100x	100x	100x	100x	100x	100x
15	100x	100x	100x	100x	100x	100x
16	100x	100x	100x	100x	100x	100x
17	100x	100x	100x	100x	100x	100x
18	100x	100x	100x	100x	100x	100x
19	100x	100x	100x	100x	100x	100x
20	100x	100x	100x	100x	100x	100x



DuraScan 50 G5, 70 G5 und 80 G5 – fully-automatic.

Highest efficiency for complex tasks.



pic.: DuraScan 70 G5

Innovative axes arrangement

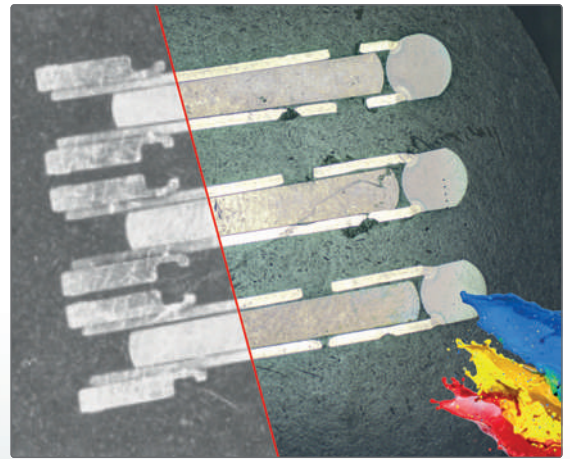
The patented arrangement of the Z-axis as well as the Y-axis at the test head allows for a large test space and compact dimensions of the machine. Moreover, this design leads to optimal ergonomics for the user, which can be achieved thanks to the constant working height.

Highest positioning accuracy

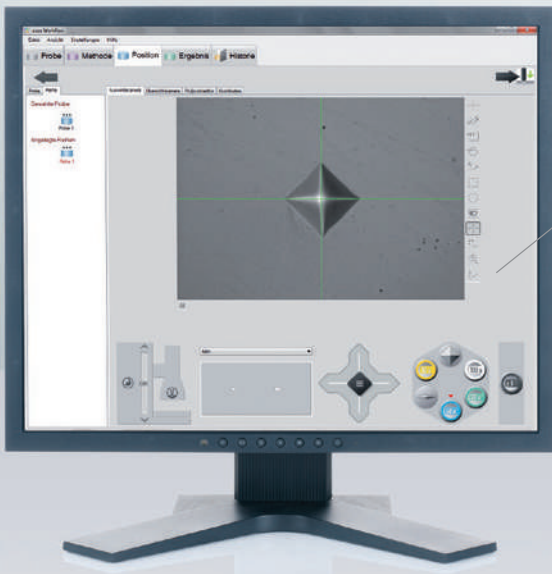
The use of backlash-free spindles and a high digital resolution of the automatic axes enable a repeatability of under $3\ \mu\text{m}$ to be achieved. The use of glass scales in the X/Y-axis enables an absolute positioning accuracy of under $0.25\ \mu\text{m}$ (optional) to be achieved.

Overview camera (DuraScan 70 G5, 80 G5)

With this overview colour camera, you can keep an eye on everything, even in complicated inspection processes with several inspection points and progression series. The 12 Mpix overview colour camera with active LED coaxial lighting provides fundamentally new visual impressions and thus makes orientation on test parts much easier. It ensures uniform illumination and reduces the influence of ambient light. This is a huge advantage, especially at workplaces with difficult lighting conditions. With the high-resolution colour rendering, even the smallest details become visible, decisively improving your work process. Compare different image displays (ambient light, coaxial illumination and HDR view) and select the optimum reproduction for your specific sample.



Comparison black and white camera / colour camera



Intuitive operation

The hardness tester is controlled via the software **ecos** Workflow on an external PC.



DuraScan 80 G5 with large testing table

The DuraScan 80 G5 variant has a significantly larger test area. With the 300 mm travel distance of its X-axis, up to 12 specimens in two specimen holders can be positioned and processed at the same time. The useful working area is increased to 300 x 150 mm. The base for this device is a solid granite slab measuring 700 x 450 mm.

As simple as possible.

ecos Workflow Pro

Hardness testing software that shows the way **ecos** Workflow technology shows the way ahead. Simple operation of even the most complex automation tasks is becoming increasingly important in the realm of hardness testing. The software takes over the task of directing the increasingly broad range of testing requirements and guarantees simple test object administration and lasting data security. The large proportion of software in the testing equipment allows **ecos** Workflow to make a decisive contribution to the performance capacity and quality of the overall product.

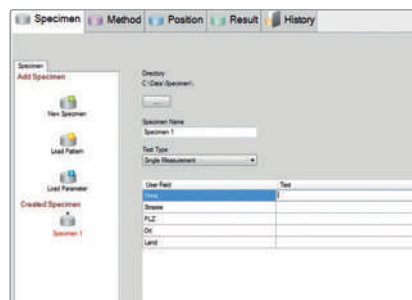
Workflow in five steps

Specimen, method, position, result and history are the five steps of the intuitive operator software **ecos** Workflow.



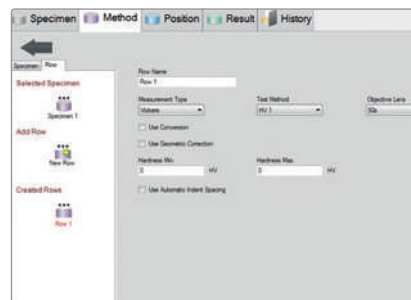
1 Specimen

Select a type of test. Single measurements, row testing, CHD, Rht and Nht are all available options.



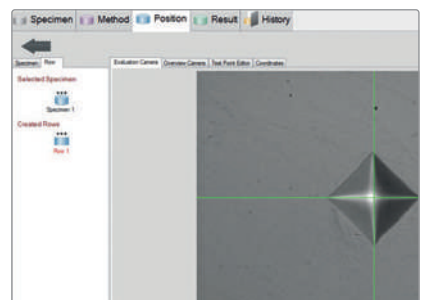
2 Method

Select a testing procedure, lens, test method and zoom level; and if required conversions, hardness limits and standardised device corrections.



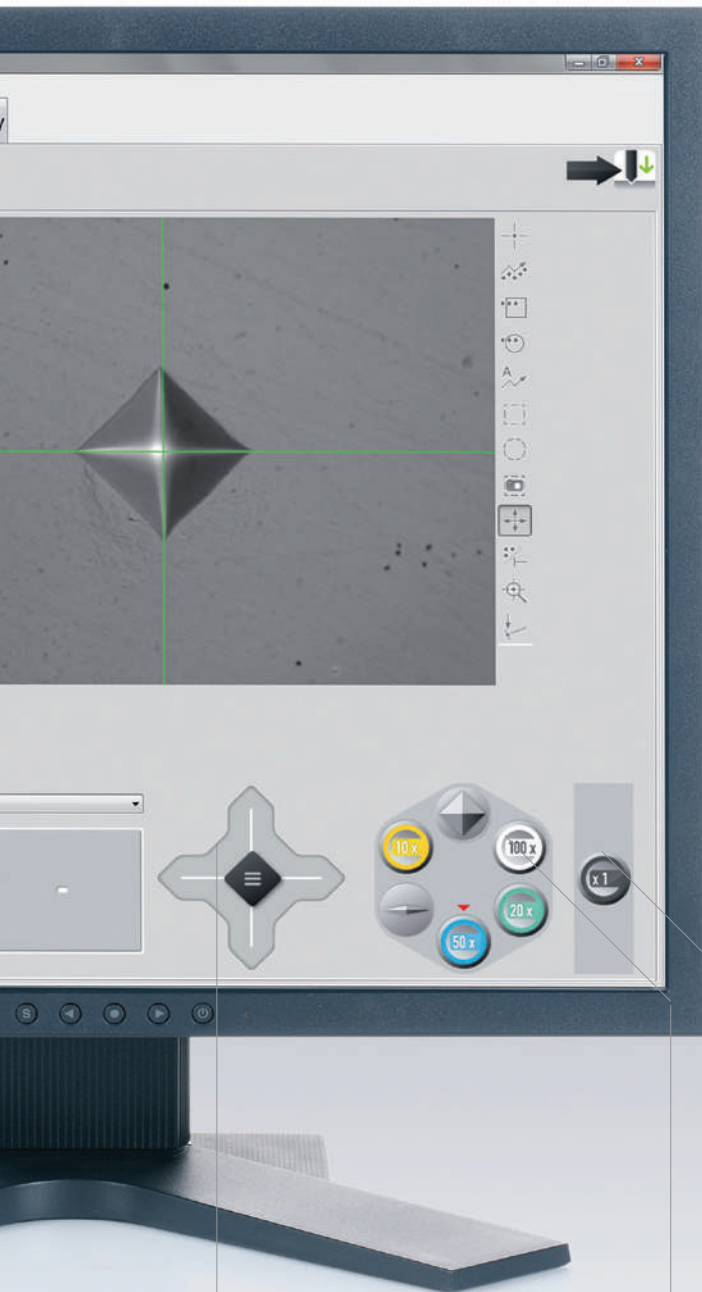
3 Position

Position your test point or line on the work piece. Using the tools provided it's childsplay. Then start the test.



Z-axis control with autofocus

A clear overview of test magazines can be seen on the test anvil. One click on the graphic display sends the device to the correct position.



XY-axis control
for positioning

6-fold measurement turret
with placement info

Single measurement

This function allows you to set individual test points wherever you like. The test measurement can be started using the surface view or the overview.

Serial measurement

One or more test rows with positioning coordinates can be recorded. The measuring process can be started in the surface view or the overview.

CHD/Nht/Rht measurement

For the performance of test series for CHD/Nht/Rht data of specimen according to standard. The test can be started directly from the surface view or from the overview. Additional core points of hardness can be defined separately for Nht measurements.



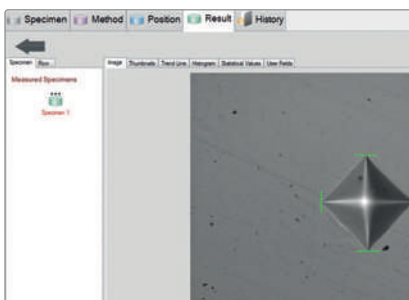
Ready for



4-step zoom
displays the current zoom level

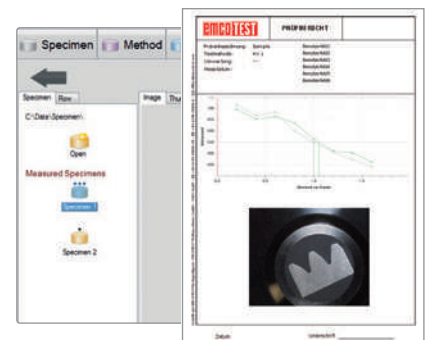
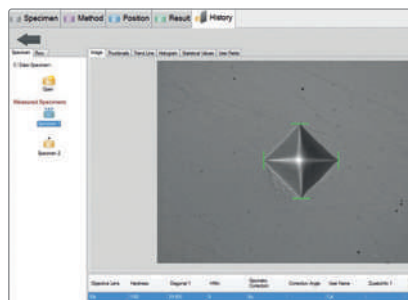
4 Result

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5 History

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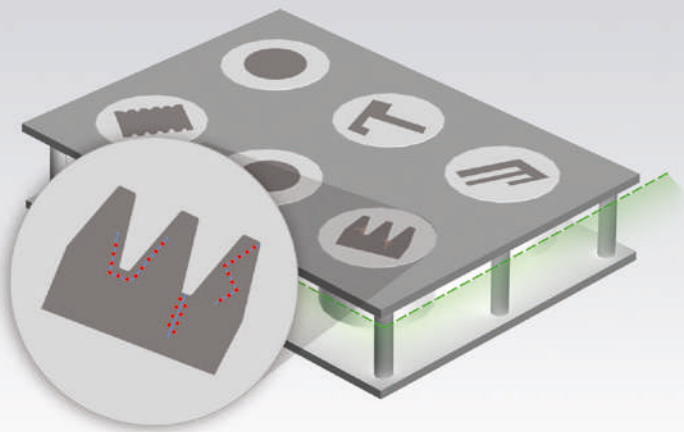
Important functions.

ecos Workflow Pro: The highlights



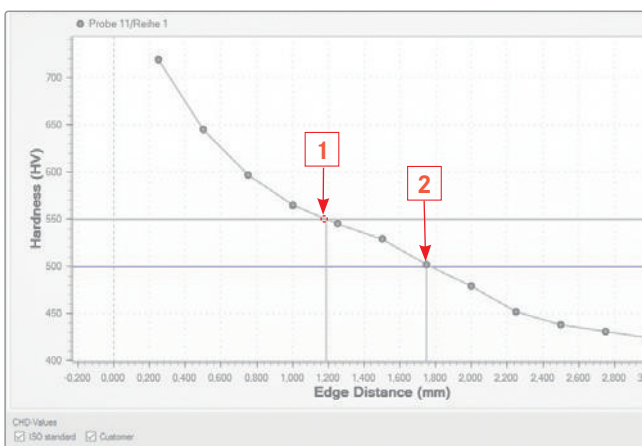
Easy generation of test series

The test point editor allows test points to be easily set up in a grid. It is also possible to set up each individual test point by entering coordinates. An even more elegant solution for serial measurement is provided by line and polygon line tools. Test series can be automatically adapted to suit work piece contours. Adherence to standard defined test distances (i.e. point distance = 3 x diagonal) can also be done with the integrated tool.



Single and multiple test samples

The standard version allows the specimen to be set up for several test series and be measured automatically. The functions required for this are clearly visible in a tool list. The integrated software module **ecos** Workflow multiple specimen allows several specimen (i.e. 12 bedded specimen in two 6-fold-sample holders) each with several test series to be tested fully automatically.



Optimise CHD-C⁺ serial testing

To ensure a maximum of accuracy with reduced testing time i.e. when determining hardness penetration depth (CHD, Nht, Rht), three features have been made standard for the software.

1. Automatic stop on reaching hardness limit

The limit is defined and the number of measuring is provided when the limit is reached. It is not necessary to know in advance how many indentations have to be made until the CHD is reached.

2. Subsequent addition of test points

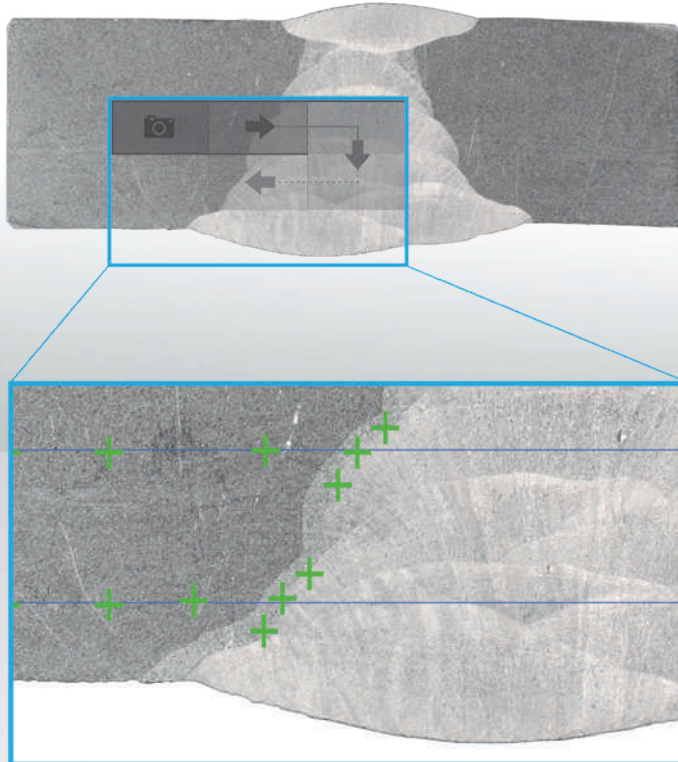
The CHD value determined by the hardness threshold can be determined more accurately the more test points have been set up in this range. Subsequent insertion of test points around the established CHD value allows the provision of a more accurate result within a shorter test time frame.

3. Definition of several hardness limits

It is possible to get up to three hardness depth per row, which can be labelled separately. With one row it is possible to determine up to three CHD (Nht/ Rht) values or other requirements.

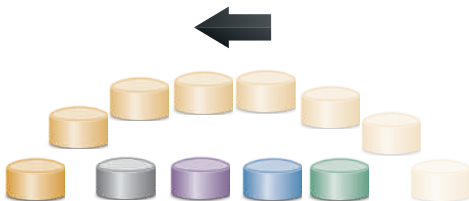
Positioning with **ecos** PANORAMA

ecos PANORAMA creates a panoramic view of your sample by taking photographs of the surface using the high precision evaluation lens and camera. The single photos are then stitched together to create an high resolution overview picture. Place test points, rows and lines directly by using this picture. The live image of the evaluation lens is shown as an overlay directly in the “off line” picture to allow high precision placement. Furthermore, this also ensures, that the specimen is still in place.



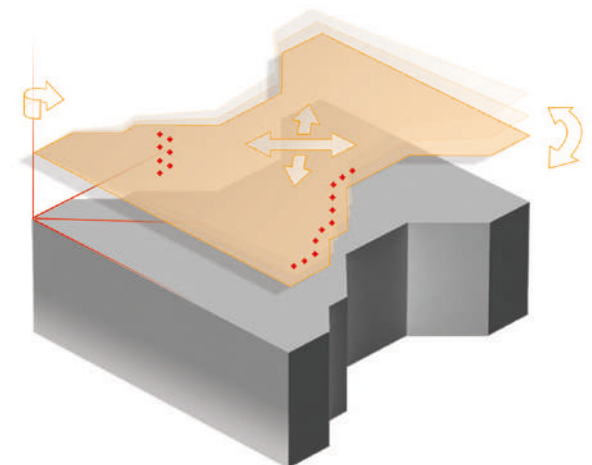
Time saving pattern mode

Specimen that have already been measured are used as a guideline containing certain elements and basic settings for new specimen. The settings from the basic guideline are automatically used for new specimen. Guidelines are automatically generated for each measurement and archived specimen. Operators are recommended to use guideline settings when testing a series of identical parts, or when frequently testing parts that always conform to certain parameters, tolerance levels, test methods etc., or continually exhibit the same pattern of test results, but have varying descriptions. Conduct complex testing tasks with very few clicks.



Already measured specimen can be used as templates for new measurements.

The rotation axis positions the test pattern on the work piece.



Modern data management with ecos Workflow.

Simple and safe handling of data.



Efficient data management

The vast number of measured values created during the course of comprehensive quality assurance demands highest levels of precision and availability from computerised QA systems.

In order to guarantee continuous documentation and reliable allocation of measured data to the respective workpiece, all DuraScan G5 models offer extensive possibilities for data output and backup.

In addition to storing of the test results directly at the hardness tester, all the data collected during the test can also be saved as files in .pdf, .csv, .xls (Excel) or .xml format. The output in .xml file format allows simple interfacing to Q-DAS systems. The integrated **Export Editor** offers extensive adaptation possibilities. In addition to the scope and sequence of the exported measurement data, a new file can also be generated automatically after each measurement, thus significantly simplifying the automatic further processing.



ecos xCHANGE

The xChange interface forms part of the standard configuration of all hardness testers of the DuraScan and DuraVision Series. This facilitates implementation of practically all customer-specific requirements for connecting the hardness tester to databases and data input devices, as well as fully automatic or unmanned operation. Since **ecos** xCHANGE is based on the established XML format, interaction with it is simple and structured.



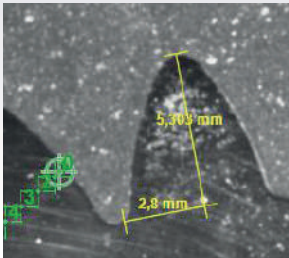
Create customized test reports

All DuraScan models come standard with the 'direct print' function. This function allows you to make an immediate print-out of a test report on a printer connected to the system. For the DuraScan models 70 and 80 the overview camera enables you to integrate also a picture of the specimen (see example below). Moreover, the flexible and convenient form and report generator provides the possibility to generate easily customized reports for the documentation of test results.

Inclusion of your corporate logo on the test report

Individual spaces for specimen description and test parameters

ecos CAPTURE generates pictures of your sample to be used in reports or to be stored separately. Choose if the picture should contain test points, row start points and reference points. With the additional module **ecos LINEplus**, you can do easy measurements on your part using the helpline function. The helplines and the measurement results can be shown in the picture as well.



LOGO
Report

Seriesname: Sample 3

Testmethod: HV 1

Conversion: ---

Userfield 1:

Userfield 2:

Userfield 3:

Userfield 4:

Userfield 5:

Userfield 6:

Userfield 7:

Userfield 8:

Userfield 9:

Userfield 10:

Date: _____

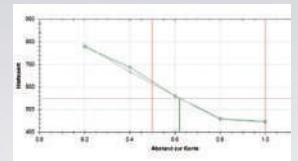
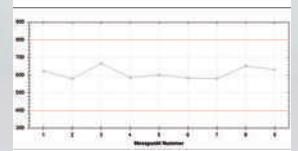
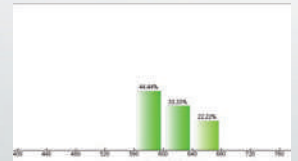
Signature: _____

Date: _____

Signature: _____

Other freely definable fields

Progression curves



Space for results tables, statistics, etc.

Specimen	Row	Testpoint	Hardness	Method	Lens	X-distance to start point
Specimen 1	Row 1	1	716	HV1	50x	0,200
		2	688	HV1	50x	0,400
		3	684	HV1	50x	0,600
		4	599	HV1	50x	0,800
		5	549	HV1	50x	1,000
		6	716	HV1	50x	1,200
		7	688	HV1	50x	1,400
		8	684	HV1	50x	1,600
		9	599	HV1	50x	1,800
		10	549	HV1	50x	2,000

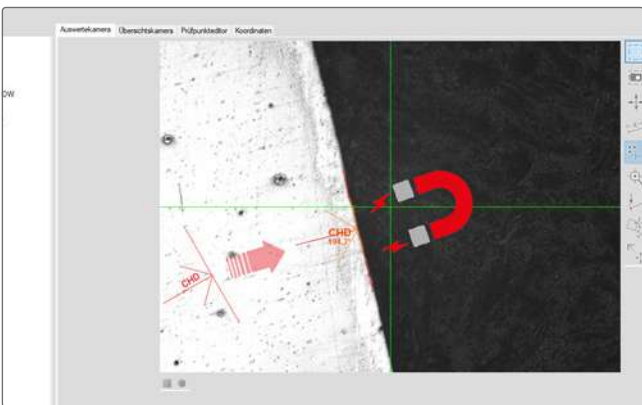
Options & accessories

Adapt the DuraScan G5 to your needs.



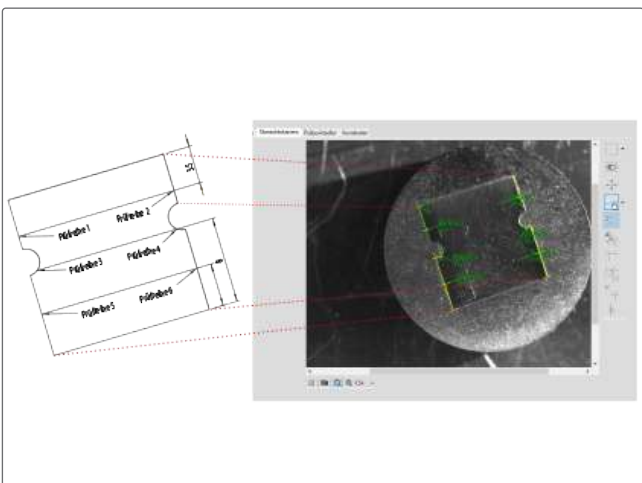
Optional load range from 0.25 gf

On all DuraScan G5 hardness testers, the total test load per indenter can be optionally extended to the range from 0.25 gf to 62.5 kgf. The load range below 10 g makes high technical demands on the design of the hardness tester as far as the accuracy of the application of these small forces is concerned. All DuraScan G5 devices therefore have a solid granite slab as base and legs with damping elements specially designed for the DuraScan G5 Series. These reduce the vibrations acting on the device by 50% compared with legs with conventional rubber dampers. In addition, EMCO-TEST provides precise information on the demands on the installation location with respect to vibrations.



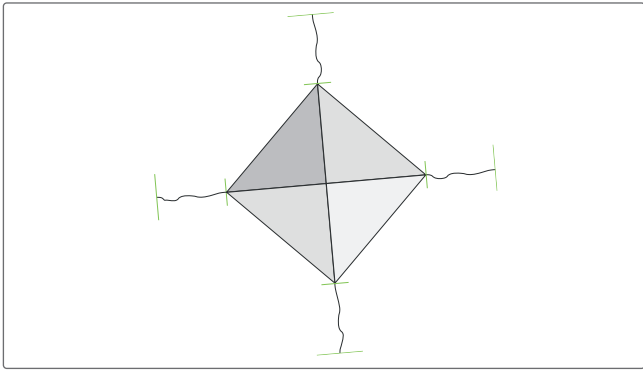
ecos AUTOROW

The optional **ecos** AUTOROW module increases the efficiency of your fully automatic hardness tester. It allows row start points pre-positioned in the overview camera to be placed automatically at the specimen edge. In this process, the specimen edge is detected automatically and precisely in the measuring camera image, the row is shifted according to its alignment and then aligned at right angles to the specimen edge. It makes no difference here whether the row has been positioned slightly outside or inside the specimen edge. The function is ideal for use in combination with predefined specimens (function "load sample"). Since all rows are predefined for your specimen, it only remains for the specimen to be aligned on the component using the specimen reference point in the live overview screen. Fine positioning is performed automatically by mouse click – with **ecos** AUTOROW.



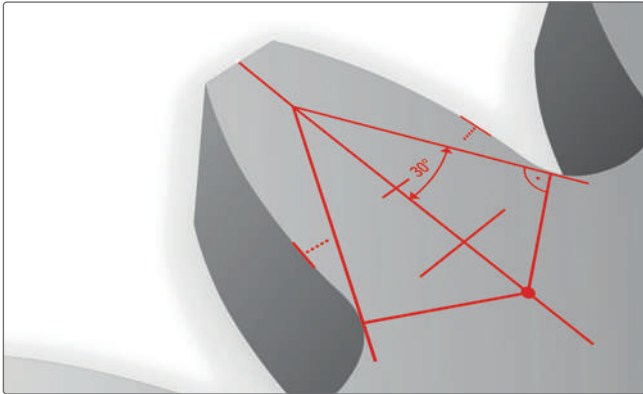
ecos LINEplus – your extensive toolbox

The optional **ecos** LINEplus module contains tools that help you place test points and rows precisely according to dimension specifications. The reference line functions for length and angle allow you to quickly and easily define the position of row starting points or test points on the workpiece. They can also measure lengths and angles on the workpiece. All starting points and end points have a snap function, which allows multiple reference lines to be concatenated. However, test points, row start points and polylines can also be placed precisely in this way, based on the polylines. The new polyline function allows test points to be distributed along a line. Multiple test point chains at different distances can be assigned to each polyline. Polylines and reference lines can always be edited at a later time and they can also be aligned on the component subsequently. This makes the efficient use of templates (samples) possible.



ecos FRACTURE

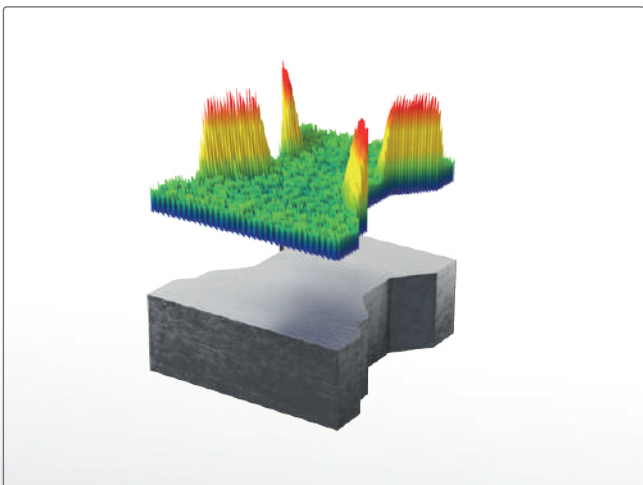
The optional module ecos FRACTURE enables a fast determination of the fracture toughness on carbide and ceramic material according to the Palmqvist (ISO 28079) and Niihara method (ISO 28079). To determine the fracture toughness, all four single cracks must be measured in the evaluation camera. The Determination of the fracture toughness is done automatically.



gearMASTER – On the tooth felt

This optional function for all DuraScan fully automatic machines enables the precise inspection of gear wheels. CHD-, Nht- and Rht-rows can be set on the tooth root, flanks and axis of the gear wheel. The basis of the line construction is the 30° tangent, starting from the tooth root. The core hardness point is placed exactly on the construction. When using the template function, testing can be done quickly, efficiently and reproducibly.

The tool complies with the current guidelines for the stress-appropriate testing gear wheel teeth and is available as a separate feature of the ecos Workflow software.



areaMaster

This software module is your convenient assistant when it comes to automated solutions for complex hardness testing tasks. It supports laboratory users wishing to position a large number of test points on a defined surface or along the edge of the specimen.

The integrated hardness map – a colour display of the hardness distribution on surfaces – ensures the optimum visualisation of your results. Even large volumes of information, such as hardness values and coordinates of the test points, are shown clearly because logic, transparency and very simple operation are hallmarks of all software developments from EMCO-TEST. The areaMASTER is integrated into the **ecos** Workflow operating software and guarantees ease of operation as well as offering extensive export possibilities. The software module is available for the EMCO-TEST devices DuraScan 50, 70 and 80 G5.



Brinell SmartLight

Developed by EMCO-TEST, the Brinell SmartLight solves a well-known problem in the evaluation of Brinell indentations. Particularly with soft materials, the edges of the indentation are not always immediately identifiable with conventional lenses due to considerable deformation (bulging). The frequently used ring light only solves the problem unsatisfactorily.

The Brinell SmartLight offers high image sharpness and is available as before with magnifications of 2.5x and 5x.

Complete accessories catalogue at www.emcotest.com

At www.emcotest.com you will find the whole range of accessories for the DuraScan G5 hardness testing machine, such as various indenters, special test tables, adapters for further indenters, lenses and much, much more.

LOOKING BACK ON OVER 65 YEARS OF COMPETENCE.

Competence and experience – hand-in-hand.

Our success is founded on the vision of Karl Maier to build hardness testing machines that «do everything simply, rather than simply everything». In the form of simple testing tools that implement the most complicated functions. This is why Salzburg businessman and mechanical engineer Maier decides to establish a hardness testing department in his company, Maier & Co Maschinenfabrik (later EMCO Maier GmbH), in 1954.

When Karl Maier dies in 1978, his innovative testing products have long since made a name for themselves. The founder's son, Ernst Alexander Maier, takes over the company, which under his leadership becomes a technological leader in the field of hardness testing, not only in Austria, but far beyond its borders. 1989 marks a milestone with invention of a closed-loop control system for load application in hardness testers. For the first time worldwide, it enables testing with all test methods and many load levels in a single universal hardness testing machine. Patent applications are submitted for this revolutionary invention not only in Europe, but also in

the USA and Japan, and it still represents the technological basis for all modern hardness testers. In 1996, the hardness testing department becomes a separate company and EMCO-TEST Prüfmaschinen GmbH is founded.

The death of Ernst Alexander Maier in the year 2001 is a grievous loss, because his extraordinarily visionary spirit has not only shaped the development of the company, but also its employees and milieu. His humanity and sense of responsibility with respect to the region and the environment are also sorely missed. The figures for themselves: Approximately 50 employees at the company headquarters in Kuchl subsidiary are responsible for our international commercial success. We are currently active in 44 countries – each in collaboration with exclusive distribution partners. Together with our motivated and talented team, we have turned Karl Maier's vision into a living reality – his idea has become our mission. Or to put it another way: «We don't make simply everything for hardness testing, but we do make everything in hardness testing simple.»



Premium quality with certified quality promise (ISO 9001)

In order to ensure that only perfect quality is supplied to you, every EMCO-TEST testing machine is thoroughly and stringently tested before delivery. The ease of service is taken into consideration right from the beginning in the design phase. The results are menu-driven fault detection, integrated self-diagnosis and modular exchange of electronic components that ensure the remedying of faults in a minimum of time. Software updates that take into consideration changes in standards or optimise future processes ensure high investment security for you.

Remote Support

The TeamViewer Client integrated as standard can be started directly from ecos Workflow and offers the optimum basis for perfect online support worldwide. This software allows remote maintenance as well as the sharing of the screen contents with other computers, e.g. for training purposes (internet connection required).

10 years spare parts availability

For EMCO-TEST hardness testing machines we guarantee spare parts availability of least 10 years after a product has been discontinued. To secure your investment in a EMCO-TEST testing machine, we extend this availability by several more years whenever possible, significantly exceeding standard industry requirements.



Technical data – DuraScan 10 G5 and 20 G5



DuraScan 10 G5

SEMI-AUTOMATIC

Methods and load range	
Load range 0.098 – 612.9 N (0.01 – 62.5 kgf) – electronically controlled	•
Load range 0.002452 – 612.9 N (0.00025 – 62.5 kg) – electronically controlled	optional (per indenter)
Vickers (ISO 6507, ASTM E384, E92)	•
Knoop (ISO 4545, ASTM E384, E92)	•
Brinell (ISO 6506, ASTM E10)	•
Configuration	
10" capacity colour display (800 x 600 pixels), tiltable	•
ecos Workflow Touch operating software touch	•
Automatic test cycle with brightness control and evaluation	•
3 step zoom	•
12 Mpix evaluation camera with CMOS sensor	•
Baseplate of polished granite	•
Legs with integrated damping elements	•
Machine control via integrated PLC	•
Motorised height adjustment of the test unit with rapid traverse	•
Manual 3x measuring turret	•
Automatic 6x measuring turret	optional
Brinell SmartLight	optional
Test table	Ø 90 mm
Manual cross table with 25 mm travel distance and analogue micrometer spindles	optional
Manual cross table with 50 mm travel distance and analogue micrometer spindles	optional
Digital micrometer spindles	optional
Operating system Windows 10/64 bit	•
Software functions	
Module for serial measurements	optional
Data management / Template function	•
QR code function	•
Calibration Information System with Calibration Assistant	•
ecos xCHANGE (XML-based interface for data links)	•
Integrated TeamViewer client	•
Adjustable User Rights	•
Interfaces	
Network interface	2x RJ45
USB interface 3.0	4 x
HDMI	1 x
Display Port	1 x
Integrated memory (SSD)	128 GB



DuraScan 20 G5

optional (per indenter)

135 mm x 135 mm

2x RJ45

4 x

1 x

1 x

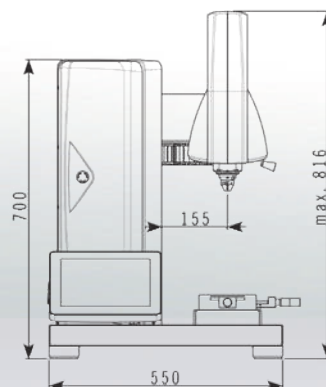
128 GB

Functional dimensions:

Space requirement (W x D)	700 x 600 (mm)
Max. workpiece weight	50 kg
Positioning accuracy with manual spindles	0.01 mm
Test force application resolution	24 bit
Max. test height DuraScan 10 G5	260 mm
Max. test height DuraScan 20 G5	235 mm
Z-axis resolution	2.6 nm
Max. speed on Z-axis	1.2 mm/sec. bis 20 mm/sec.

Machine data:

Weight of basic unit	85 kg
Dimensions (W x H x D)	550 x 700 x 450 (mm)
Protection class to EN 60529	IP20
Power consumption (max./standby)	120 W/50 W
Max. voltage fluctuations	± 10%
Main fuse (110/230V)	T6.3A
Room temperature (to ISO/ASTM)	23 (± 5)°C
Humidity	max. 70% (non-condensing)



Technical data – DuraScan 50 G5, 70 G5 and 80 G5



DuraScan 50 G5

FULLY-AUTOMATIC

Methods and load range	
Load range 0.098 – 6 12.9 N (0.01 – 62.5 kgf) – electronically controlled	•
Load range 0.002452 – 6 12.9 N (0.00025 – 62.5 kg) – electronically controlled	optional (per indenter)
Vickers (ISO 6507, ASTM E384, E92)	•
Knoop (ISO 4545, ASTM E384, E92)	•
Brinell (ISO 6506, ASTM E10)	•
Configuration	
Fully automated linear tables for positioning of the specimens	•
ecos Workflow Pro operating software (for Windows 7, Windows 8, Windows 10)	•
Control via interfaced PC system	•
Automatic test cycle with brightness control and evaluation	•
3 step zoom	•
12 Mpix evaluation camera with CMOS sensor	•
Baseplate of polished granite	•
Legs with integrated damping elements	•
Machine control via integrated PLC	•
Motorised height adjustment of the test unit with rapid traverse	•
Automatic 6x measuring turret	•
12 Mpix overview colour camera (field of view 65 x 50mm) with active LED-coaxial lighting	-
Test table (W x L)	150 x 200 mm
Traverse path of the axes (X/Y)	150 x 150 mm
Glass scales for X-Y axes to increase the absolute positioning accuracy to < 1 µm	optional
Brinell SmartLight	optional
Software functions	
Template mode	•
CHD, NHD, SHD and serial measurements	•
Calibration Information System with Calibration Assistant	•
ecos xCHANGE (XML-based interface for data links)	•
Multiple specimen module for testing several specimens in one work cycle	•
Integrated TeamViewer client	•
Adjustable User Rights	•
ecos Panorama	•
ecos AUTOROW	optional
ecos LINEplus	optional
areaMASTER	optional
Interfaces	
Interfaces for PC connection	1 x USB 3.0, 1 x RJ45

Technical and design modifications as well as printing and typesetting errors reserved. Deviations from the illustrations in colour or described include special options that are available only at additional charge. The equipment scopes and configuration possibilities and special options for individual machines may differ from country to country. Please check out the standard equipment and special options in advance. Please note at all times: The systems function only within the system limits and support the customer in hardness testing. The responsibility remains with the operator of the hardness testing machine.



DuraScan 70 G5



DuraScan 80 G5

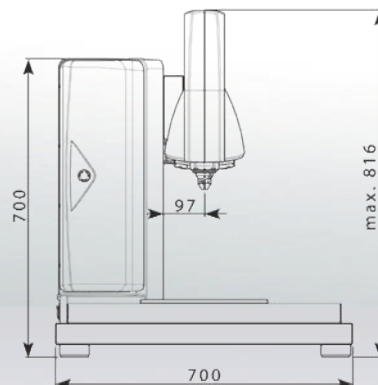
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1 x USB 3.0, 1 x RJ45	1 x USB 3.0, 1 x RJ45

Functional dimensions:

Space requirement (W x D) DuraScan 50 G5/70 G5	700 x 600 (mm)
Space requirement (W x D) DuraScan 80	850 x 600 (mm)
Max. workpiece weight	50 kg
Positioning accuracy	± 0.0035 mm
Positioning accuracy with glass scale	< 0.25 μm
Test force application resolution	24 bit
Max. test height	260 mm
Z-axis resolution	2.6 nm
Max. speed on Z-axis	1.2 mm/sec. bis 20 mm/sec.

Machine data:

Weight of basic unit (DuraScan 50 G5/70 G5)	87 kg
Weight of basic unit (DuraScan 80 G5)	98 kg
Dimensions (W x H x D) DuraScan 50 G5/70 G5	550 x 700 x 450 (mm)
Dimensions (W x H x D) DuraScan 80 G5	700 x 700 x 450 (mm)
Protection class to EN 60529	IP20
Power consumption (max./standby)	120 W/50 W
Max. voltage fluctuations	± 10%
Main fuse (110/230V)	T6.3A
Room temperature (to ISO/ASTM)	23 (± 5) °C



ur and form reserved. In some cases the machines/equipment illustrated abilities described in this brochure with respect to the standard equipment special options available in your country with your local EMCO-TEST dealer listing. The responsibility for compliance with national standards and laws

Benefit from our global sales and service network!

You can find your local dealer on our website www.emcotest.com.



• Austrian head office

More on emcotest.com

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