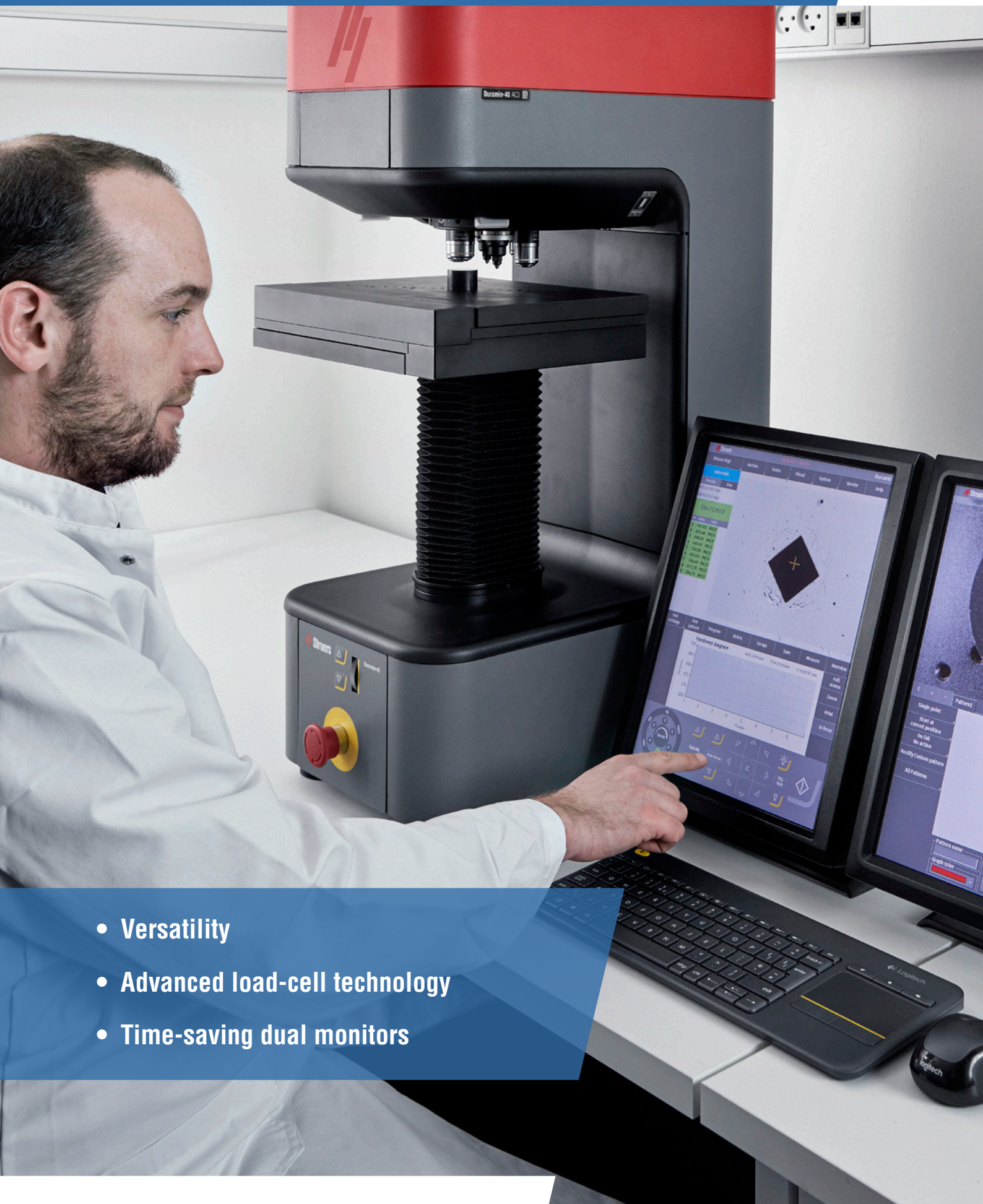
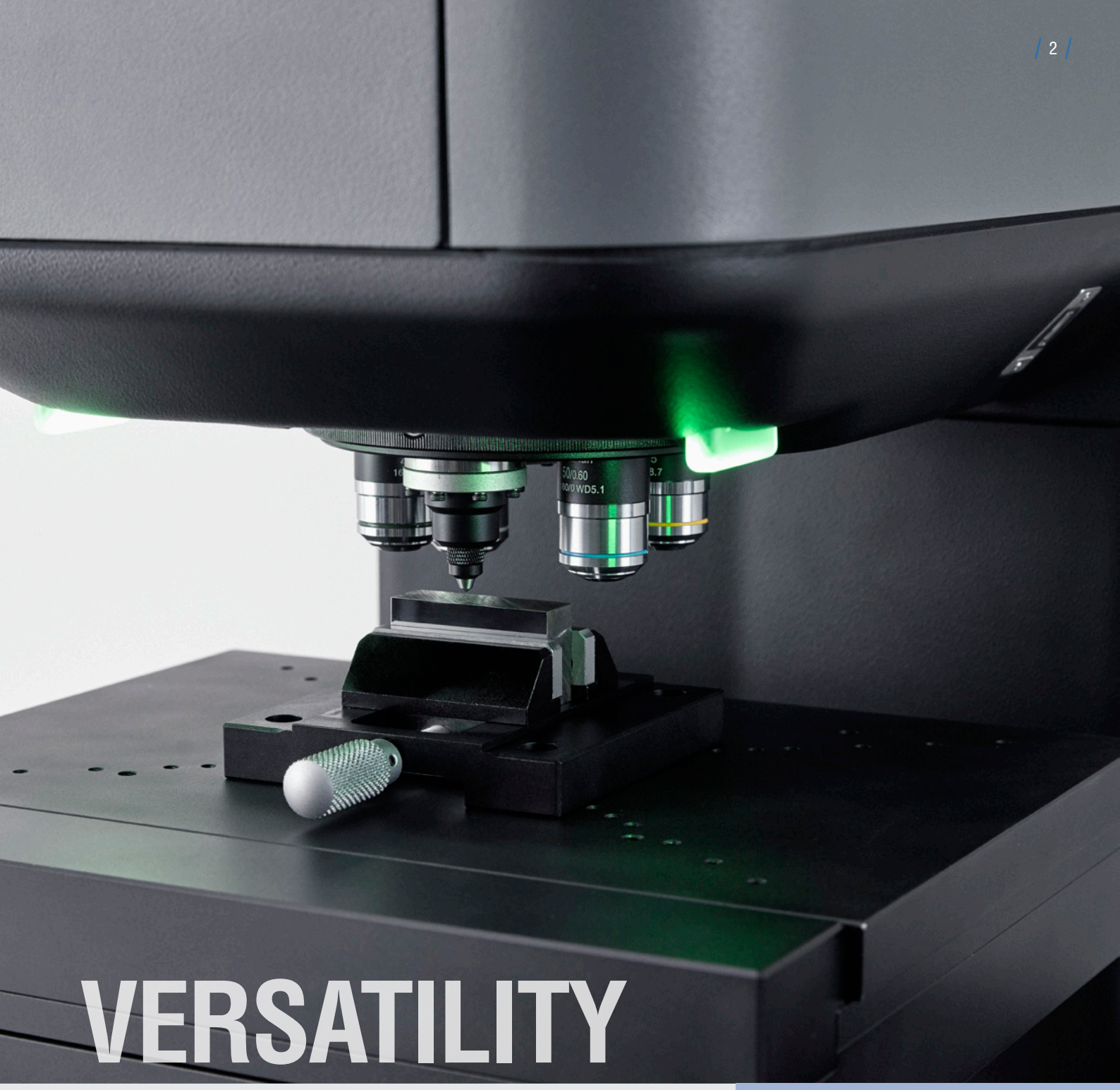
Struers
Ensuring Certainty

Duramin-40

Automatic Micro/Macro Hardness Tester



- Versatility
- Advanced load-cell technology
- Time-saving dual monitors



VERSATILITY

Duramin-40 semi-automatic and fully automatic micro/macro testers are designed for fast, accurate and repeatable Vickers, Knoop and Brinell hardness testing in the laboratory. The wide test load range means you can use a single hardness tester for multiple applications, and full automation of the test procedure means extremely short turn-around times.

Did you know...

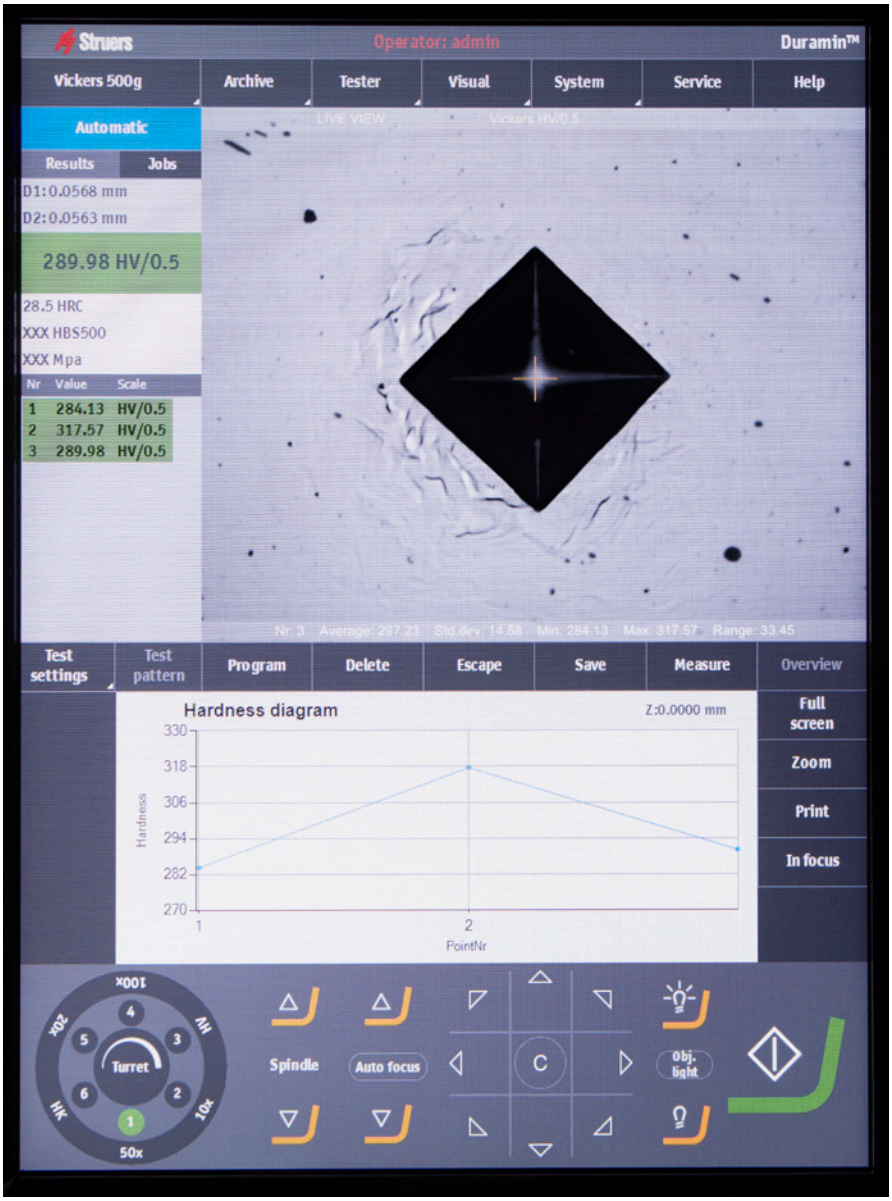
The new Duramin range represents the latest generation of highly successful hardness testers.
With 30 years' of experience within hardness testing Struers is committed to constant improvement by listening to our customers and understanding their evolving needs.

Versatile hardness testing that ensures repeatability over a wide load range

Versatility
The wide test load range from 1 gf to 62.5 kgf means that the Duramin-40 can be used for many different applications that previously required both a micro and a macro indentation hardness tester.

Advanced load-cell technology
The Duramin-40 conforms to all operating standards while ensuring repeatability throughout the entire load range, thanks to cutting-edge load-cell technology.

Time-saving dual monitors
The optional dual monitor solution enables the general measurement data and macro overview image to be viewed on two different monitors. This eases set up and saves time when executing the advanced test series.



Application-specific software modules
A number of software modules are available to match particular applications. These include modules covering weld measurement, surface mapping, edge detection and Kc fracture toughness calculation.

Duramin-40 M1/2/3

Hardness testing made easy

Intuitive software guarantees ease of use. Auto focus and automatic hardness evaluation adds accuracy and repeatability to these semi-automatic testers.



Fully automatic 6-position turret



Increases automation and minimizes the need for calibration

Manual XY-stage

Available with manual or digital micrometer spindles with different strokes.

Built-in PC

The built-in PC offers connections for data export and service.

Mouse or touch screen operated

15” color touch screen.

Perfect indent reading

Due to advanced software algorithms and camera technology Duramin-40 automatically reads indents on even rough surfaces.

Flexible test load range

The unique test load range, from 0.00981 N to 612.9 N, can cover many applications that usually require both a micro- and a macro indentation hardness tester. Duramin-40 covers a wide range of Brinell, Vickers and Knoop test methods and can automatically convert hardness values according to current standards.

Motorized Z-axis

Duramin-40 is equipped with a motorized Z-axis as standard. This eliminates the task of manually adjusting the testing height.

Duramin-40 A1/2/3 & AC1/2/3

Automatic functions – advanced test runs, fast and easy

A range of advanced automatic functions and intuitive software makes execution of high volume or advanced test patterns quick and easy.

Fully automatic 6-position turret



Increases automation and minimizes the need for calibration.

Motorized X- and Y-movement

Improved accuracy and repeatability during series measurements.

2nd overview (macro) camera

Shorter set-up time and inclusion of overview image in the test report. (Duramin-40 AC1/2/3).



Operated via touch screen or by mouse

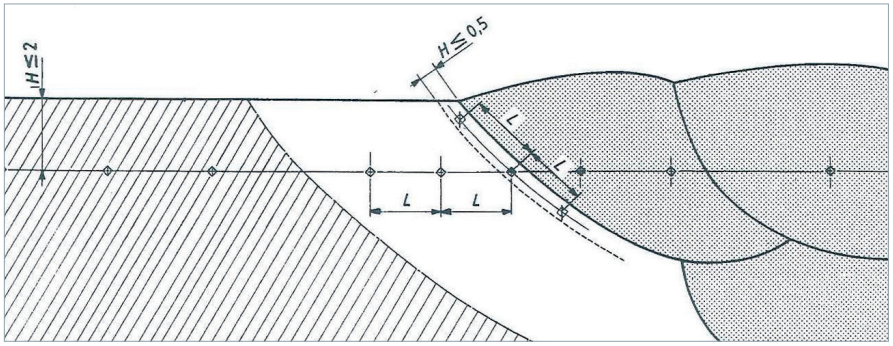
Overview camera

The optional overview camera makes it easy to position the test point series across a sample and execute with a few mouse clicks. This feature ensures simplified execution and set-up, and is helpful when performing repetitive or high volume CHD-measurements.

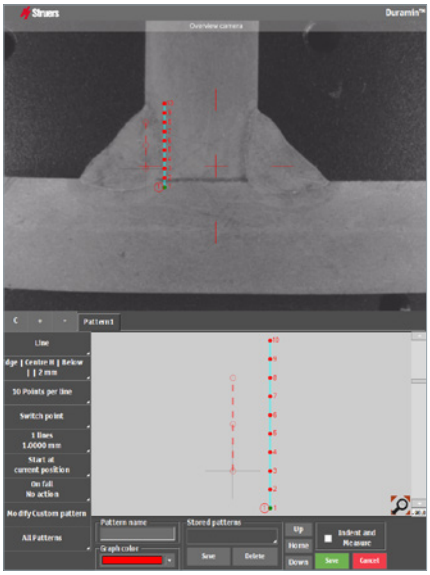
Automatic turret

Human and calibration errors can be avoided with the Duramin-40's automatic turret. It is available with a six or seven-position automatic turret facilitating exchange of up to two indenters and four objective lenses plus an overview camera. The exchange of indenter and lens runs fully automatically in every model.

Case depth measurement and weld testing



With the overview camera you can analyse the entire specimen in a low magnification macro view, easily enabling you to position and place the test points. This is particularly useful for testing large specimens, multiple specimens and welds.



Various application specific software modules are available to suit the specific need of the customer. Duramin-40 is second to none when it comes to automatic case hardness depth measuring (CHD) and weld testing. Duramin-40 lets you perform reliable case depth evaluations and hardness testing of welds faster than other testers in its class.

Duramin-40 offers you significant productivity and quality gains with the following time-saving features like easy test point editor, automatic stop at defined hardness limit (for CHD), automatic indent spacing and graphical projection of case depth evaluation.

QR-codes

The Duramin hardness testers are equipped with a QR-code tag connecting you to the dynamic world of Struers. Remember to read the code for information on relevant campaigns or events.



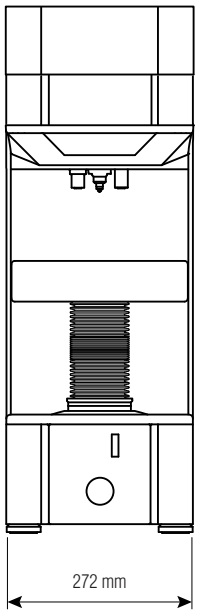

Duramin-40 M1
Struers
Duramin-40
Hardness diagram

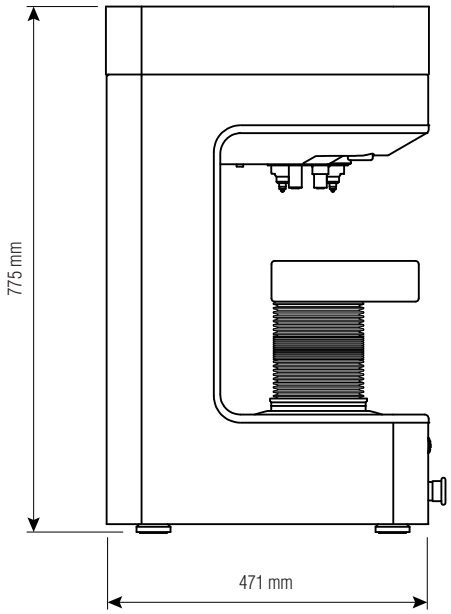



LMPlan
50/0.60
WD5.1



Technical data



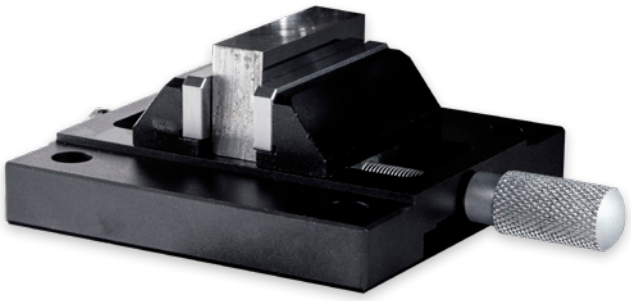


	Duramin-40 M1/M2/M3			Duramin-40 A1/A2/A3			Duramin-40 AC1/AC2/AC3		
LOADS AND APPLICATIONS									
Model	**M1**	**M2**	**M3**	**A1**	**A2**	**A3**	**AC1**	**AC2**	**AC3**
Load range (main loads)	10 gf - 10 kgf	10 gf - 31.25 kgf	1 gf - 62.5 kgf	10 gf - 10 kgf	10 gf - 31.25 kgf	1 gf - 62.5 kgf	10 gf - 10 kgf	10 gf - 31.25 kgf	1 gf - 62.5 kgf
Vickers capability		Yes			Yes			Yes	
Knoop capability		Yes			Yes			Yes	
Brinell capabilty		Yes			Yes			Yes	
STAGES AND TURRETS									
XY-stage		Manual			Automatic			Automatic	
XY-stage or anvil size (mm)		90x90			350x225			350x225	
XY-stage stroke, max (mm)		25x25			220x120			220x120	
Vertical capacity (mm)		172			148			148	
Throat depth (mm)		170			170			170	
Motorized Z-axis		Yes			Yes			Yes	
Motorized turret		Yes			Yes			Yes	
Turret positions		6			6			7	
Anti-collision protection		Yes			Yes			Yes	
Machine weight		75 kg			80 kg			80 kg	
CAMERAS AND OPTICS									
Overview camera		No			No			Yes	
Overview cam FOV		-			-			200x160	
Overview camera resolution		-			-			5 MP	
Evaluation camera resolution		18 MP			18 MP			18 MP	
Auto illumination		Yes			Yes			Yes	
Stage illumination		Yes			Yes			Yes	
Laser or LED guider		Yes			Yes			Yes	
Dual view		No			Optional			Optional	
SOFTWARE AND MODULES									
CHD measurement		Optional			Yes			Yes	
Edge detection		No			Optional			Optional	
Mapping module		No			Optional			Optional	
Welding module		No			Optional			Optional	
Kc fracture measurement		Optional			Optional			Optional	
Report editor		Yes			Yes			Yes	
Data export		Yes			Yes			Yes	
INTERFACES AND CONNECTIVITY									
Operation				Embedded Windows 10 PC with 15" touch screen. Mouse and keyboard operation is optional.					
Communication Ports				HDMI, VGA, RJ45, WLAN, USB, RS232					
WiFi		Yes			Yes			Yes	
Blue tooth		Optional			Optional			Optional	

Accessories

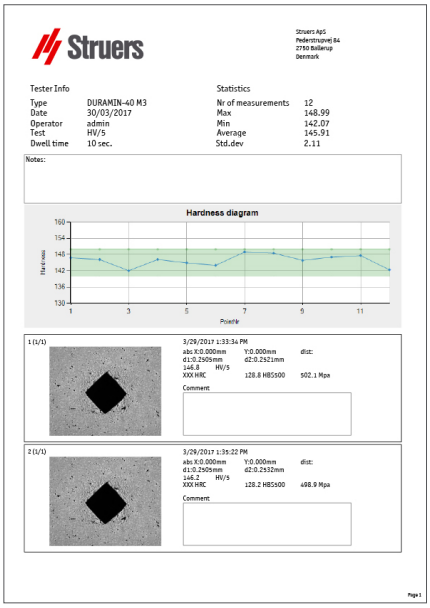
Duramin-40 comes with a wide selection of accessories, including a broad range of indenters, objective lenses and holders in various sizes and shapes, designed to help you with your particular hardness testing operations.

Find out more at www.struers.com



Customizable Test Reports

Test reports can be easily generated and measurement data exported. Report templates are customizable via an easy report editor.



Struers
Ensuring Certainty

Service Guard

Struers Support Commitment

Struers is committed to helping you achieve maximum performance from your Struers equipment. Based on a wide range of knowledge and support services, the Struers Support Commitment applies to all Struers customers anywhere in the world.

- Global hotline support
- Global network of certified field service engineers
- Global network of materialographic specialists
- Documentation support online
- Annual service review
- Access to complete range of performance enhancing services
- All critical parts on stock for immediate shipping



Struers
Ensuring Certainty

Struers ApS
Pederstrupvej 84
DK-2750 Ballerup, Denmark

Phone +45 44 600 800
Fax +45 44 600 801
struers@struers.dk
www.struers.com

AUSTRALIA & NEW ZEALAND
Struers Australia
27 Mayneview Street
Milton QLD 4064
Australia
Tel.: +61 7 3512 9600
Fax: +61 7 3369 8200
info.au@struers.dk

BELGIUM (Wallonie)
Struers S.A.S.
370, rue du Marché Rollay
F- 94507 Champigny
sur Marne Cedex
Tel.: +33 1 5509 1430
Fax: +33 1 5509 1449
struers@struers.fr

BELGIUM (Flanders)
Struers GmbH Nederland
Zomerdijk 34 A
3143 CT Maassluis
Tel.: +31 (10) 599 7209
Fax: +31 (10) 5997201
netherlands@struers.de

CANADA
Struers Ltd.
7275 West Credit Avenue
Mississauga, Ontario L5N 5M9
Tel.: +1 905-814-8855
Fax: +1 905-814-1440
info@struers.com

CHINA
Struers Ltd.
No. 1696 Zhang Heng Road
Zhang Jiang Hi-Tech Park
Shanghai 201203, P.R. China
Tel.: +86 (21) 6035 3900
Fax: +86 (21) 6035 3999
struers@struers.cn

CZECH REPUBLIC & SLOVAKIA
Struers GmbH Organizační složka
vědeckotechnický park
Přílepská 1920,
CZ-252 63 Roztoky u Prahy
Tel.: +420 233 312 625
Fax: +420 233 312 640
czechrepublic@struers.de
slovakia@struers.de

GERMANY
Struers GmbH
Carl-Friedrich-Benz-Straße 5
D- 47877 Willich
Tel.: +49 (0) 2154 486-0
Fax: +49 (0) 2154 486-222
infoservice@struers.de

FRANCE
Struers S.A.S.
370, rue du Marché Rollay
F-94507 Champigny
sur Marne Cedex
Tel.: +33 1 5509 1430
Fax: +33 1 5509 1449
struers@struers.fr

HUNGARY
Struers GmbH
Magyarországi Fióktelep
2040 Budaörs
Szabadság utca 117
Phone +36 (23) 80 60 90
Fax +36 (23) 80 90 91
hungary@struers.de

IRELAND
Struers Ltd.
Unit 11 Evolution@ AMP
Whittle Way, Catcliffe
Rotherham S60 5BL
Tel.: +44 0845 604 6664
Fax: +44 0845 604 6651
info@struers.co.uk

ITALY
Struers Italia
Via Monte Grappa 80/4
20020 Arese (MI)
Tel.: +39-02/38236281
Fax: +39-02/38236274
struers.it@struers.it

JAPAN
Struers K.K
Takanawa Muse Bldg. 1F
3-14-13 Higashi-Gotanda,
Shinagawa
Tokyo
141-0022 Japan
Tel.: +81 3 5488 6207
Fax: +81 3 5488 6237
struers@struers.co.jp

NETHERLANDS
Struers GmbH Nederland
Zomerdijk 34 A
3143 CT Maassluis
Tel.: +31 (10) 599 7209
Fax: +31 (10) 5997201
netherlands@struers.de

NORWAY
Struers ApS, Norge
Sjøskogenveien 44C
1407 Vinterbro
Tel.: +47 970 94 285
info@struers.no

AUSTRIA
Struers GmbH
Zweigniederlassung Österreich
Betriebsgebiet Puch Nord 7
5412 Puch
Tel.: +43 6245 70567
austria@struers.de

POLAND
Struers Sp. z o.o.
Oddział w Polsce
ul. Jasnogórska 44
31-358 Kraków
Tel.: +48 12 661 20 60
Fax: +48 12 626 01 46
poland@struers.de

ROMANIA
Struers GmbH, Sucursala Bucuresti
Str. Preciziei nr. 6R
062203 sector 6, Bucuresti
Tel.: +40 (31) 101 9548
Fax: +40 (31) 101 9549
romania@struers.de

SWITZERLAND
Struers GmbH
Zweigniederlassung Schweiz
Weissenbrunnenstraße 41
CH-8903 Birmensdorf
Tel.: +41 44 777 63 07
Fax: +41 44 777 63 09
switzerland@struers.de

SINGAPORE
Struers Singapore
627A Aljunied Road,
#07-08 BizTech Centre
Singapore 389842
Tel.: +65 6299 2268
Fax: +65 6299 2661
struers.sg@struers.dk

SPAIN
Struers España
Camino Cerro de los Gamos 1
Building 1 - Pozuelo de Alarcón
CP 28224 Madrid
Tel.: +34 917 901 204
Fax: +34 917 901 112
struers.es@struers.es

FINLAND
Struers ApS Suomi
Sahaajankatu 20-22 A6
00880 Helsinki
Tel.: +358 (0)207 919 430
finland@struers.fi

SWEDEN
Struers Sverige
Box 20038
161 02 Bromma
Tel.: +46 (0)8 447 53 90
Fax: +46 (0)8 447 53 99
info@struers.se

UNITED KINGDOM
Struers Ltd.
Unit 11 Evolution @ AMP
Whittle Way, Catcliffe
Rotherham S60 5BL
Tel.: +44 0845 604 6664
Fax: +44 0845 604 6651
info@struers.co.uk

USA
Struers Inc.
24766 Detroit Road
Westlake, OH 44145-1598
Tel.: +1 440 871 0071
Fax: +1 440 871 8188
info@struers.com

Ensuring Certainty

With offices and affiliates in 24 countries and a presence in more than 50 countries worldwide, Struers is the world's leading materialographic solution supplier. We are dedicated to enabling our customers to ensure certainty in all aspects of materialographic preparation and testing as well as material hardness testing - wherever they are in the world. Struers offers a complete range of equipment, consumables, service and training programmes – all supported by the most comprehensive knowledge base, global applications support and a certified global service set-up.

Learn more

Contact a Struers sales representative today or visit www.struers.com

e-Shop

Buy your consumables in Struers e-Shop!
e-shop.struers.com

30.01.2020 / 62140651