

# BUEHLER® OmniMet® MHT MOTORIZED HARDNESS TESTING SYSTEM

- Fully or Semi-Automated Indentation Hardness Testing Systems
- Micro or Semi-Macro/ Macro Indentation Hardness Testing
- Supplied Complete with a Hardness Tester or as a Retrofit Kit to an Existing Supported Tester
- Provides Faster Answers to Routine Tasks Such As Effective Case Depth and Weld Profile Assessment



**BUEHLER**



**PRELIMINARY DRAFT**

  
**EMERSON**  
Industrial Automation

# Automated Hardness Testing System Solutions



*OmniMet® MHT shown here with twin indenter MicroMet® 5104 and 200mm x 80mm stage*

## **Fully Automated OmniMet® MHT**

OmniMet MHT provides full automation of the hardness testing process on supported testers with minimal operator involvement for improved productivity.

Using Buehler microindentation hardness tester models MicroMet® 2104 or MicroMet® 5104, which offer a high degree of motorization, the operator has only to load the specimen, select the required profile of indentation pattern and initiate the test. The automated operation leaves the user free to undertake other work. Upon starting the test, all operations are automated, including rotation of the motorized turret from the objective to the selected

indenter, moving the motorized stage to the indent positions, initiating the indent cycle for each indent, rotating the turret back to the measuring objective, focusing and measuring all of the indents, and finally, providing a report of the hardness profile with a determination of the case hardness depth if required. Following this automated operation, the test data may be saved to the MHT database for future review or shared with co-workers using the supplied sample data viewer software.

## **Semi-Automated OmniMet® MHT**

When used on testers with less motorization, such as the MicroMet® 2103, MicroMet® 5103 or the

Buehler semi macro and macro Vickers tester models, the OmniMet MHT may be used in a semi-automated mode with operator involvement to turn a non-motorized turret or to focus the indentations during the measurement process.

## **Retrofitting to an Existing Tester**

The OmniMet MHT system may be supplied complete with a pre-configured tester or as a retrofit kit to an existing tester that is supported.\*

\* Please contact your Buehler Sales Engineer for the current description, system specification and complete listing of supported accessory options, and hardness testers.

# For Micro and Macro Indentation Needs



MicroMet 5104 tester with added motorized stage, automated focus and joystick control for use with the OmniMet MHT Fully Automated Microindentation Hardness Testing System.



MacroVickers model 1900-5114 with motorized stage and joystick control for semi-automated operation.

## Automated Microindentation Hardness Testing

The OmniMet MHT can be supplied for fully automated operation with a single indenter and two objectives or with three objectives and dual indenters for the added advantage of being able to switch quickly between Vickers and Knoop as well as having an intermediate magnification available for larger indents in softer materials.

With the motorized turret and focusing available on these testers, the whole indentation and hardness reading operation is automated. Microindentation hardness tester model MicroMet 5104 is available with the OmniMet MHT as a complete system for fully automated operation.

For semi-automated operation, the MHT system can be supplied with microindentation hardness tester model MicroMet 5103. In the semi automated mode, the user is prompted to turn the non-motorized turret and manually set the focus, all other functions remain automated. A number of additional microindentation

testers\* are supported by OmniMet MHT for retrofitting for semi-automated operation.

## Semi-Automated Macroindentation Hardness Testing

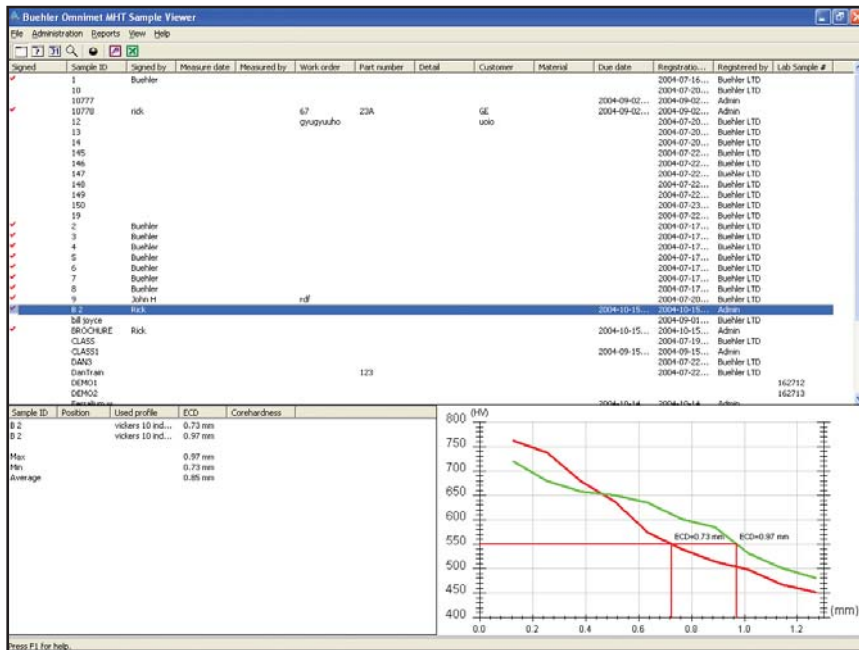
For applications demanding higher test loads, the OmniMet MHT can be supplied complete with a 5112 model semi-macro or 5114 model macro Vickers hardness tester. While most of the hardness testing operation can be automated with these testers, the user is prompted to set the focus manually for semi-automated operation.

A customer's existing macro Vickers or semi-macro Vickers tester that is supported\* may be retrofitted with the OmniMet MHT automation package, with the degree of automation being dependent on the model of the tester.

\* Please contact your Buehler Sales Engineer for the current description, system specification and complete listing of supported accessory options, and hardness testers.



# Secure Data, Easily Retrieved and Exported



Each OmniMet MHT, fully or semi-automated, comes - complete with an OmniMet MHT sample data viewer application. This allows viewing and report generation for the hardness data of any specimen previously stored in the database. The viewer application may be used on the local PC of the OmniMet MHT or on any LAN PC, when the MHT is connected to a network .

Shown at left is a typical view of a populated OmniMet MHT database using the viewer application. The displayed hardness profile graph is from the highlighted data entry for the sample.

Records may be displayed for the whole database, the last months data, or for the last 7 days. Data can also be displayed according to the sample name using the included search tool.

A full report for the highlighted entry may be generated according to various international standards from a choice of supplied templates in Microsoft® Access.

Alternatively, the data from the highlighted sample may be exported to Microsoft Excel for the users own data analysis (shown at left).

Sample ID	Profile no	Used profile	Depth	D1	D2	Testload	Hardness
B 2	1	vickers 10 indent	0.1	35.3	34.5	500	761.5
B 2	1	vickers 10 indent	0.3	35.8	35.2	500	737.1
B 2	1	vickers 10 indent	0.4	37.6	36.3	500	678.8
B 2	1	vickers 10 indent	0.5	38.5	37.7	500	638.5
B 2	1	vickers 10 indent	0.6	39.9	40.5	500	574.5
B 2	1	vickers 10 indent	0.8	42.4	40.5	500	540.0
B 2	1	vickers 10 indent	0.9	42.2	42.8	500	514.0
B 2	1	vickers 10 indent	1.0	42.6	43.7	500	497.8
B 2	1	vickers 10 indent	1.1	44.5	44.6	500	467.5
B 2	1	vickers 10 indent	1.3	45.4	45.3	500	451.0
B 2	2	vickers 10 indent	0.1	34.6	37.2	500	718.2
B 2	2	vickers 10 indent	0.3	36.7	37.2	500	678.7
B 2	2	vickers 10 indent	0.4	38.5	36.6	500	658.2
B 2	2	vickers 10 indent	0.5	38.5	37.0	500	650.2
B 2	2	vickers 10 indent	0.6	36.9	39.5	500	634.6
B 2	2	vickers 10 indent	0.8	39.0	39.5	500	601.7
B 2	2	vickers 10 indent	0.9	39.9	39.8	500	584.5
B 2	2	vickers 10 indent	1.0	41.5	42.1	500	531.1
B 2	2	vickers 10 indent	1.1	42.2	43.9	500	500.4
B 2	2	vickers 10 indent	1.3	44.9	43.0	500	479.8

## Automated Hardness System Models and Options

### Models:

**88-7000 OmniMet MHT Fully Automated Microindentation Hardness Testing System.** Consisting of an OmniMet PC automation package with choice of: motorized stage and focus, PC accessories, microindentation hardness tester, automated focusing accessory, motorized stage and sample vise.

**88-7500 OmniMet MHT Semi-Automated Indentation Hardness Testing System.** Consisting of an OmniMet PC semi-automation package with choice of: motorized stage, PC accessories, microindentation hardness tester or macro/semi-macro Vickers hardness tester, motorized stage and sample vise.

### PC Accessories:

**86-1100** Memory Upgrade

**86-0160** CD R/W Drive

**86-0180** DVD R/W Drive

**85-0140** 22" Monitor

**85-0141** 19" Monitor

**85-0142** 20" Flat Screen LCD Monitor

**85-6010-160** Laser Printer (Monochrome)

**85-6020-160** Inkjet Printer

**85-6030-160** Laser Printer (Color)

### Tester Choice for 88-7000:

**1600-5122VAMHT\*** MicroMet 5104 with Vickers indenter

**1600-5122KAMHT\*** MicroMet 5104 with Knoop indenter

**1600-5122VKAMHT\*** MicroMet 5104 with Vickers and Knoop indenters

### Tester Choice for 88-7500 (Microindentation):

**1600-5112VA\*** MicroMet 5103 with Vickers indenter

**1600-5112KA\*** MicroMet 5103 with Knoop indenter

**1600-5112VKA\*** MicroMet 5103 with Vickers and Knoop

indenters

### Tester Choice for 88-7500 (Macro/Semi-Macro):

**1900-5112A\*** Semi-Macro Vickers

**1900-5114A\*** Macro Vickers

### Motorized Stage Choice for 88-7000 and 88-7500 Systems:

**88-7050** Motorized stage with 50mm x 50mm travel

**88-7100** Motorized stage with 100mm x 80mm travel

**88-7200** Motorized stage with 200mm x 80mm travel

### Add-On to OmniMet Imaging System Options:

**88-7001** OmniMet® Enterprise

**88-7002** OmniMet® Image Capture and Report System

**88-7003** OmniMet® Express

**88-7004** OmniMet® Archive

\*"A" in the catalog number denotes 110V. For 220V, substitute A with D. For 240V, substitute A with E.

## System Specifications

**88-7000 OmniMet MHT Fully Automated Microindentation Hardness Testing System and 88-7500 OmniMet Semi-Automated Indentation Hardness Testing System** - Please contact your Buehler Sales Engineer for the current description, system specification and complete listing of supported accessory options and hardness testers.

*Buehler continuously makes product improvements; therefore, technical specifications are subject to change without notice. For a complete listing of Buehler equipment and consumables please refer to our Buehler Consumables and Equipment Buyers Guides.*



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