OmniMet™ MHT
Automated Microindentation Hardness Testing Systems
OmniMet™ MHT software delivers Automated Microindentation Hardness Testing solutions. The package is a comprehensive, flexible, and customizable solution for hardness metrology. The amount of automation may be defined by the customer with standard options for manual, semi-automated and fully automated modes of operation. Providing intuitive push-button operation for measuring samples, defining measurement patterns, performing multiple trace measurements the product is simply easy-to-use delivering an unrivalled hardness testing user experience. Seamlessly integrating the hardness tester, automation accessories such as stages and focusing mechanisms, and analytic software tools the OmniMet MHT system is a complete hardness testing package. From working with single indents, to tracing the outline of complex parts, to performing multi-indent measurements such as case depth hardening profiles, OmniMet MHT handles all measurement processes with ease. The software has an integrated database to archive data for record keeping and allows push-button creation of automated reports.

OmniMet MHT-F – Fully Automated Microindentation Hardness Testing
Fully automated hardness testing solution that integrates the motorized turret, XY Stage, Z-axis focusing, and analytical software tools to completely automate the hardness testing process. Multi-indent traces can be defined and measurements proceed in automatic mode without need for any further input from the operator. System 88-1-0000. Software Only 88-1-0001.

OmniMet MHT-S – Semi-Automated Microindentation Hardness Testing
A semi-automated hardness testing solution requires operator involvement to focus the optics during the measurement process. The software drives the motorized turret, and XY stage as required. System 88-1-0002. Software Only 88-1-0003.

OmniMet MHT-M – Manual Microindentation Hardness Testing
Designed to enhance the capabilities of a standalone tester with manual XY stage and Z-axis control a manual hardness testing solution delivers automated indent detection, measurement, and archiving options. System 88-1-0004. Software Only 88-1-0005.

- Tukon™ 1102 & 1202 are compatible with OmniMet MHT-F, MHT-S, and MHT-M.
- Systems include all hardware and software required for automating a Tukon 1102 or 1202 hardness tester. Software only includes software, license and security devices only.
The OmniMet™ MHT Graphical User Interface (GUI) is designed for ease-of-use - with good workflow using a few simple-to-understand icons to run the hardness test. Here the GUI is shown with the alignment tool for setting the direction of a profile perpendicular to the specimen surface.

OmniMet MHT’s indent measurement algorithms detect indents and automatically measure the Vickers or Knoop hardness of the specimen. Additionally, conversions into Rockwell B or C scales is also supported. Measurement of a Vickers indent is depicted above.

Image of a gear mechanism as viewed through the hardness tester. Tracing algorithms in OmniMet MHT allow the operator to trace a line around the surface of the specimen to enable precise positioning of measurement locations or test profiles.

Hardness profiles may be measured and graphed. The hardness profile shown above is typical for case hardened specimens. As hardness is measured from the surface to the inner bulk of the material the hardness value reduces dramatically.

Once the outline of a specimen is traced it can be viewed in the Stage Overview window. This offers precision control of stage positioning to increase efficiency and productivity when identifying suitable measurement locations. The yellow and red lines in the window represent locations where multi-indent hardness profiles will be measured.

OmniMet MHT has an integrated database that archives all measurements. Data may be retrieved at any time, reviewed, or sent to automatically generated reports as shown above. Report templates are completely customizable by the operator to suit the measurements being undertaken.
**Tukon™ 1102 & 1202 Hardness Testers**

<table>
<thead>
<tr>
<th>Product</th>
<th>Part-Number</th>
<th>Load</th>
<th>Turret Capacity</th>
<th>Indent. Incl.</th>
<th>Optics Incl.</th>
<th>XY Stage</th>
<th>Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tukon 1102</td>
<td>1600-1-6010</td>
<td>0.01-1kg</td>
<td>3 (1I, 2O)</td>
<td>Vickers</td>
<td>10,50 (R)</td>
<td>Analog</td>
<td>Not Possible</td>
</tr>
<tr>
<td>Tukon 1102</td>
<td>1600-1-6020</td>
<td>0.01-1kg</td>
<td>3 (1I, 2O)</td>
<td>Vickers</td>
<td>10,50 (R)</td>
<td>Analog</td>
<td>Possible</td>
</tr>
<tr>
<td>Tukon 1102</td>
<td>1600-1-6021</td>
<td>0.01-1kg</td>
<td>3 (1I, 2O)</td>
<td>Knoop</td>
<td>10,50 (R)</td>
<td>Analog</td>
<td>Possible</td>
</tr>
<tr>
<td>Tukon 1102</td>
<td>1600-1-6030</td>
<td>0.01-1kg</td>
<td>4 (1I, 3O)</td>
<td>Vickers</td>
<td>5,10,50 (R)</td>
<td>Digital</td>
<td>Possible</td>
</tr>
<tr>
<td>Tukon 1102</td>
<td>1600-1-6031</td>
<td>0.01-1kg</td>
<td>4 (1I, 3O)</td>
<td>Knoop</td>
<td>5,10,50 (R)</td>
<td>Digital</td>
<td>Possible</td>
</tr>
<tr>
<td>Tukon 1102*</td>
<td>1600-1-6032</td>
<td>0.01-1kg</td>
<td>4 (1I, 3O)</td>
<td>Vickers</td>
<td>5,10,50 (R)</td>
<td>None</td>
<td>Possible</td>
</tr>
<tr>
<td>Tukon 1202</td>
<td>1600-1-6040</td>
<td>0.01-1kg</td>
<td>6 (2I, 4O)</td>
<td>V &amp; K</td>
<td>5,10,50 (L)</td>
<td>Digital</td>
<td>Possible</td>
</tr>
<tr>
<td>Tukon 1202*</td>
<td>1600-1-6041</td>
<td>0.01-1kg</td>
<td>6 (2I, 4O)</td>
<td>V &amp; K</td>
<td>5,10,50 (L)</td>
<td>None</td>
<td>Possible</td>
</tr>
</tbody>
</table>

* Packages do not have a manual stage

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**Automation System Kits**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>88-1-0000</td>
<td>Consists of the OmniMet™ MHT-F fully automated software, workstation (monitor not included), camera adapter, camera, cables, power distribution, motorized XY stage and Z-Axis.</td>
</tr>
<tr>
<td>88-1-0002</td>
<td>Consists of the OmniMet MHT-S semi-automated software, workstation (monitor not included), camera adapter, camera, cables, power distribution and motorized XY stage.</td>
</tr>
<tr>
<td>88-1-0004</td>
<td>Consists of the OmniMet MHT-M software, workstation, stage micrometer, camera adapter, camera, cables.</td>
</tr>
</tbody>
</table>

**Automation Software Kits**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>88-1-0001</td>
<td>Includes OmniMet MHT-F software, license and security device only.</td>
</tr>
<tr>
<td>88-1-0003</td>
<td>Includes OmniMet MHT-S software, license and security device only.</td>
</tr>
<tr>
<td>88-1-0005</td>
<td>Includes OmniMet MHT-M software, license and security device only.</td>
</tr>
</tbody>
</table>

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**Automation Accessories**

- 1600-1-0030 Camera Adapter for 6000 Series testers
- 1600-1-0031 Automation RS232-D89 Female Cable
- 1600-1-0032 Automation Power Distribution Kit
- 1600-1-0033 Motorized XY Stage Kit - 100 x 100mm travel
- 1600-1-0034 Z-axis Installation Kit
- 86-1-0006 Digital Camera, UI 1540LE-M-HQIR, 1.3MP
- 86-1-0007 Workstation with MS Windows® 7 and Office 2010 (Does not include monitor.)

**Hardness Testing Accessories**

- 1600-1-0001 Vickers indenter 136°, incl ASTM & ISO certificate
- 1600-1-0001 Knoop indenter 172°, incl ASTM & ISO certificate

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**Automation System Kits**

- Consists of the OmniMet™ MHT-F fully automated software, workstation (monitor not included), camera adapter, camera, cables, power distribution, motorized XY stage and Z-Axis.
- Consists of the OmniMet MHT-S semi-automated software, workstation (monitor not included), camera adapter, camera, cables, power distribution and motorized XY stage.
- Consists of the OmniMet MHT-M software, workstation, stage micrometer, camera adapter, camera, cables.

**Automation Software Kits**

- Includes OmniMet MHT-F software, license and security device only.
- Includes OmniMet MHT-S software, license and security device only.
- Includes OmniMet MHT-M software, license and security device only.

**Automation System Kits**

- Camera Adapter for 6000 Series testers
- Automation RS232-D89 Female Cable
- Automation Power Distribution Kit
- Motorized XY Stage Kit - 100 x 100mm travel
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For Tukon 1102 & 1202 Hardness Testers

OmniMet MHT-M requires 1600-1-0030
OmniMet MHT-S requires 1600-1-0030, 1600-1-0032 and 1600-1-0033
OmniMet MHT-F requires 1600-1-0030, 1600-1-0032, 1600-1-0033, 1600-1-0034

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For a complete listing of consumables, please refer to our Buehler Buyer’s Guide or contact your local Buehler Sales Engineer. Buehler continuously makes product improvements; therefore technical specifications are subject to change without notice.