



# 2023 Product Catalog

[www.buehler.com](http://www.buehler.com)

# Trusted Partner, Reliable Solutions

Buehler is a division of Illinois Tool Works (ITW) and is based in Lake Bluff, Illinois. Our company's legacy comprises **groundbreaking designs** including the first commercially available mounting press, the first Rockwell hardness tester and we were the first to automate polishing. This same forward-looking spirit, combined with a **strong understanding of lab priorities**, continues to inform how we serve our customers world-wide. Today's materials labs face many challenges. There are new materials to test, deadlines to meet, and a strong requirement to process and analyze samples right the first time-every time. **Taking complexity out of the preparation and analysis process** is key to meeting those challenges and is a core strength for Buehler.



We use our knowledge and expertise to provide products and support that minimize training, and rework. Buehler employees are **trusted for their expert service** and for uncovering the best solutions for each unique customer. With offices in seven countries, sales distribution in over 100 counties, Buehler is a trusted expert delivering simplified solutions and reliable results.

Proud to be an **ITW** Company

ITW (NYSE: ITW) is a Fortune 200 global industrial company built around a differentiated and proprietary business model. The company's seven industry-leading segments leverage the unique ITW Business Model to serve markets where highly innovative, customer-focused solutions are required. ITW consistently delivers superior performance and value to its customers.

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## Partner with Buehler for Your Success

Buehler's Material Scientists are experts in listening. Our team takes a consultative approach to address specific goals for the materials lab including minimizing training time, minimizing rework, or minimizing the total cost/number of steps in a process. Our applications experts frequently process samples in our labs giving them first-hand knowledge of not only the science but also the day-to-day challenges that materials labs can face. Our solutions strive to remove complexity from the preparation and analysis process making improvements easier to implement and easier to maintain.



Click [Here](#) to contact our Lab Specialists

## Online Media Resources

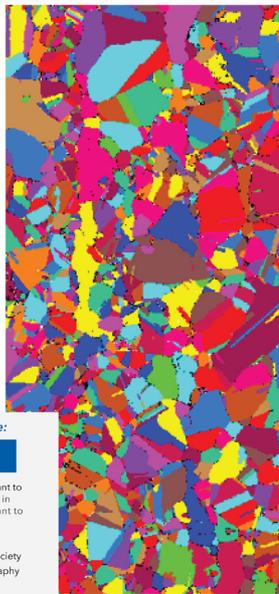
In addition, we have many on-line resources available to quickly find information. This includes our library of videos, monthly webinars, SDS and technical notes.

**2022 Microstructure & Analysis Webinar Series**

You are invited to Buehler's new webinar. This webinar will discuss the preparation of materials for both Electron Back-Scatter Diffraction and Nano-Indentation. Examples of preparation routes, for a wide variety of materials, will be demonstrated.

**EBSD & Nano-Indentation**

**June 8, 2022 | 12:00pm cdt**



*EBSD and Nano-Indentation Host will be:*  
**George Vander Voort**  
Principal of Vander Voort Consulting LLC and consultant to Buehler Ltd. With more than 50 years of experience in metallography, George is now an exclusive consultant to Buehler.

- 29 years' experience in the steel industry
- Past president of the International Metallographic Society
- Past chairman of ASTM Committee E-4 on Metallography



Click [Here](#) to register for our webinars



Click [Here](#) to view our videos





## Quick Response Time



Buehler is committed to excellent customer support before, during and after your purchase. Our customer care team is dedicated to making it easy for our customers to get the support they need when they need it. We recognize the importance of having the right supplies on our shelves, therefore we invest in inventory to keep our customer's operations running smoothly.



## Committed to Quality

Buehler employees and operations are committed to delivering quality and environmentally responsible products guided by ISO 9001 Quality Management Principles and ISO 14001 Environmental Managements Systems. Buehler innovates solutions and offers expert service and support throughout the materials preparation and analysis market. Buehler adheres to ASTM, NVLAP, A2LA, NADCAP, DIN, ISO, MIL and JIS standards

## Global Associates and Partners Ready to Assist You

No matter where you are located, Buehler has associates or partners ready to handle your inquiry. We have improved our response times through an online submission format.

Visit [www.buehler.com/contact-buehler.php](http://www.buehler.com/contact-buehler.php) for prompt attention to your request for a quotation, lab solutions, service support, customer service or general feedback.

To reach our regional offices for general information contact:

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## Our Global Service Teams are Committed to You

As a valued customer, we appreciate your partnership and are here to support you with repair services and spare parts under warranty and beyond.



## Buehler Equipment Service Plans



### Convenient Repair Services

#### Maximize Productivity

We are dedicated to maximizing your productivity and providing a world-class service experience. Buying Buehler products gives you access to our expert technicians who can quickly diagnose and repair your equipment using genuine Buehler parts.



### Ensure Consistent Results

#### Experienced Technicians

Technicians have collectively over 100 years of experience with average tenure of 10+ years with Buehler.

#### Compliance

Calibration services for hardness testers & microscopes according to ISO 17025. Accredited for direct or indirect verification.



### Protect Your Investment

#### Preventative Maintenance

Ensure consistent performance of equipment, minimize production downtime and reduce the likelihood of costly repairs with Buehler preventative maintenance services.



Click [Here](#) to learn more about Buehler Service



## Social Responsibility

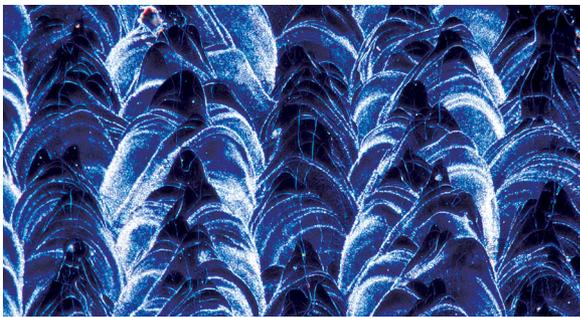
Social Responsibility-Buehler has adopted the Corporate Social Responsibility vision of our parent company ITW



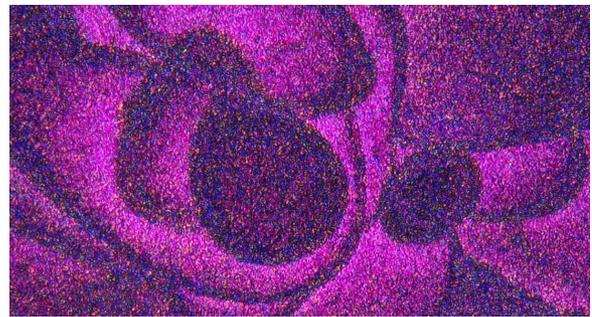
Click [Here](#) to learn more about our Social Responsibilities

## Enter Buehler's Annual Calendar Contest

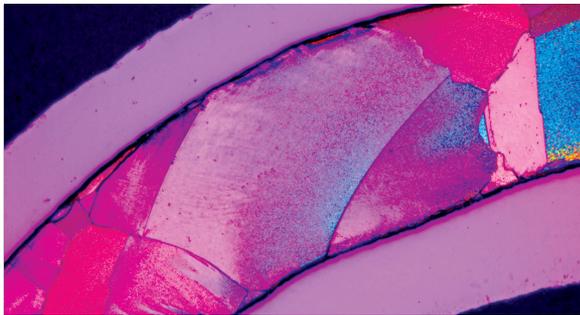
Demonstrate your technical expertise and artistic talents by submitting entries to our annual calendar contest. If your entry is selected to be published, you will receive an honorarium of \$200.00 (USD) per image and the privilege of having your work displayed world-wide. Anyone can participate. See the code below for details on how to submit images.



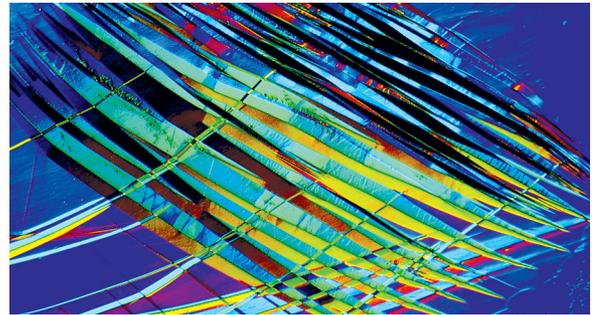
Additively manufactured titanium alloy (Ti-42Nb), viewed in darkfield illumination at 500x magnification  
~ Dennis Pede; Institute for Materials and Application Technology (IWAT), Germany



Additively manufactured AlSi10Mg electrolytically etched with Barker's reagent. Viewed under polarised light at 800x magnification  
~ Achim Conzelmann; Institute for Materials and Application Technology (IWAT), Germany



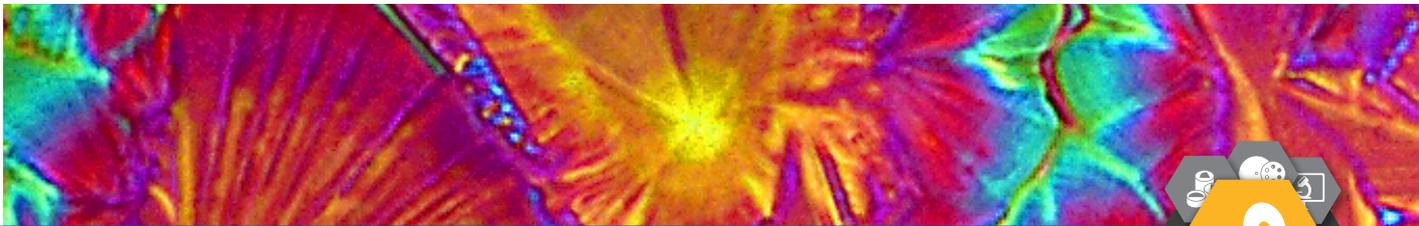
Copper core in spark plug electrode, etched with modified Adler's reagent. Viewed under polarised light at 50x magnification  
~ Andrea Schmidt; Institute of Joining and Welding Braunschweig Technical University, Germany



Cobalt-Nickel, viewed under polarised light at 80x magnification  
~ Bettina, Hannover University, Germany

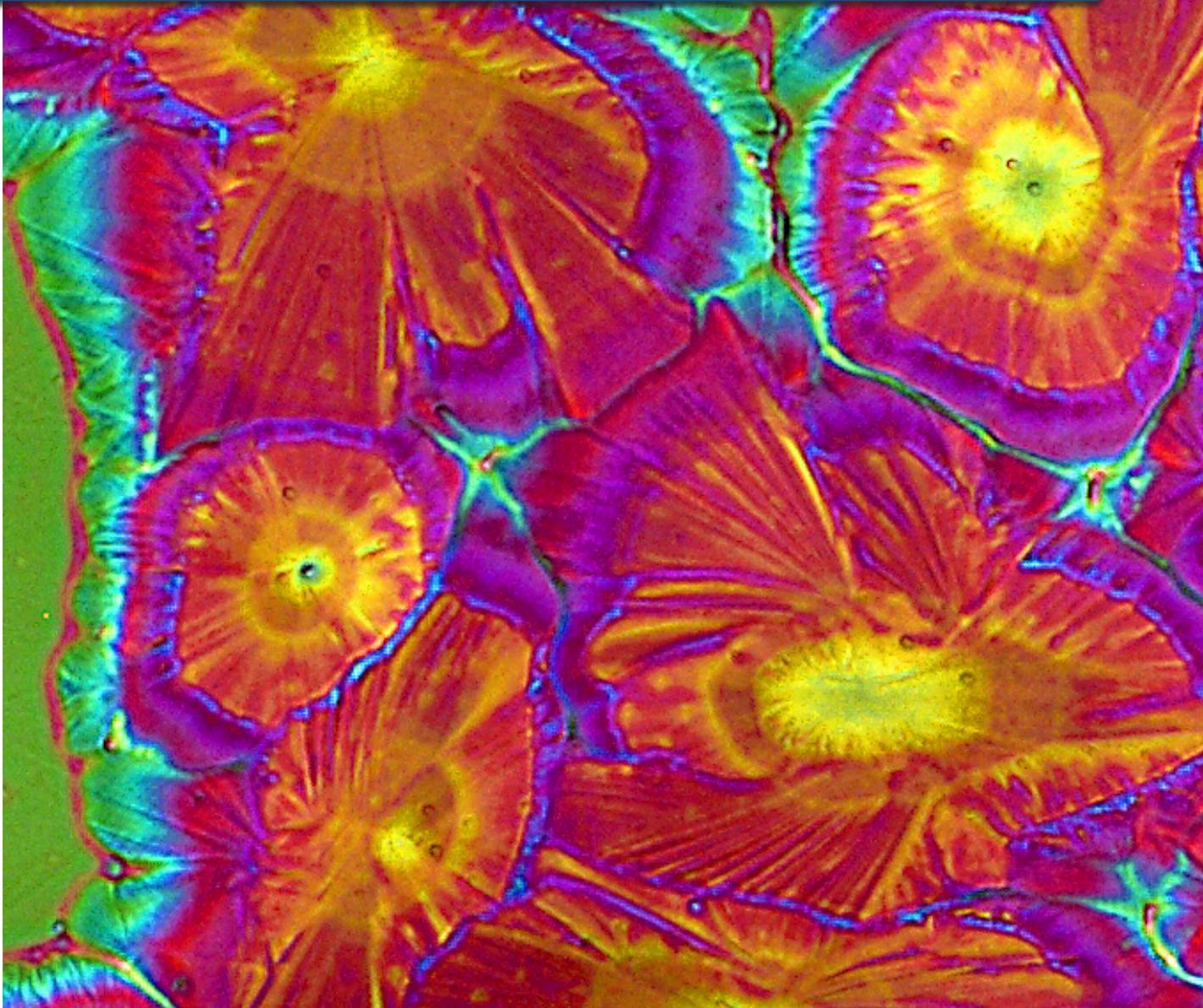


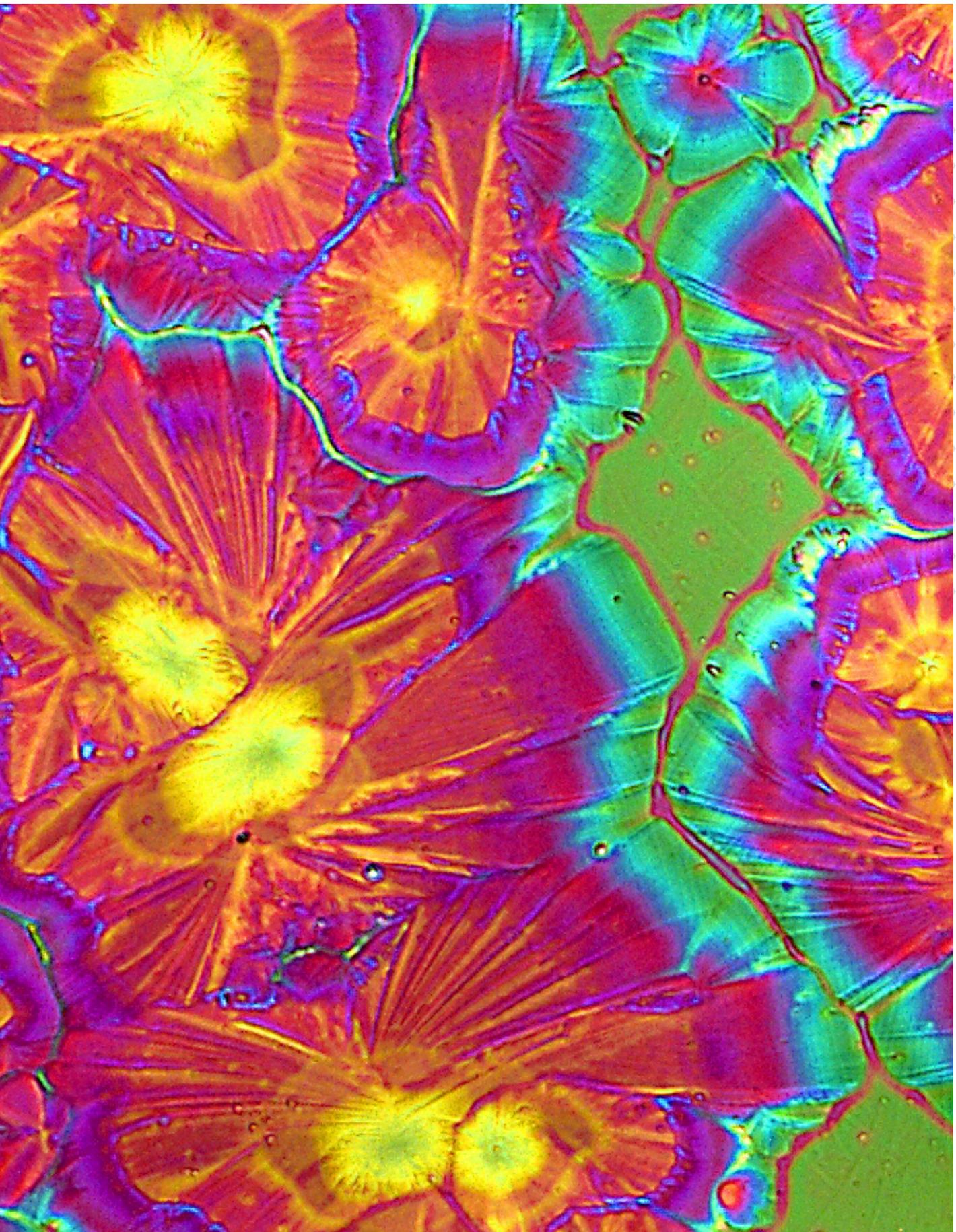
Click [Here](#) to learn more about our calendar contest



# SECTIONING

Simple set up and time saving conveniences are core to Buehler's sectioning products. Achieve high-quality cuts for any material.





## Abrasive Cutters

|                              | AbrasiMet® M                           | AbrasiMatic® 300                      | AbrasiMet® XL Pro                            |
|------------------------------|--|---------------------------------------|--|
| Wheel Diameter               | 10in [254mm]<br>12in [305mm]           | 12in [305mm]                          | 14in [356mm]<br>16in [406mm]<br>18in [457mm] |
| Motor Power                  | 5.5Hp [4kW]                            | 5.5Hp [4kW]                           | 13.4Hp [10kW]                                |
| Cut Types                    | Chop                                   | Chop, Y-Feed, Pulsing                 | Chop, Y-feed, Planar, Pulsing                |
| Manual Movement              | Z-axis                                 | X-axis*, Y-axis, Z-axis               | X-axis, Y-axis, Z-axis                       |
| Automated Movement           |  | Y-axis                                | X-axis, Y-axis, Z-axis                       |
| Vising Table Size            | 12 x 9.8in<br>[305 x 250mm]            | 14.4 x 10in<br>[365 x 254mm]          | 19.9 x 11.8in<br>[505 x 300mm]               |
| Maximum Part Size in Chamber | 25 x 13 x 4.3in<br>[636 x 330 x 109mm] | 16 x 6 x 3.75in<br>[406 x 152 x 95mm] | 49 x 24 x 7in<br>[1245 x 610 x 178mm]        |
| Cutting Capacity**           | 4.3in [109mm]                          | 3.75in [95mm]                         | 7in [178mm]                                  |

*\*Optional Items \*\*Maximum cutting capacity assumes largest size blade with smallest flange.*

## Precision Cutters

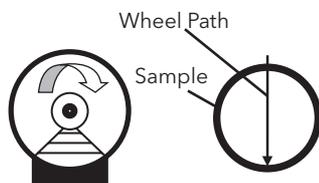
|                            | IsoMet®<br>Low Speed | IsoMet®<br>1000 | IsoMet®<br>High Speed                               | IsoMet®<br>High Speed Pro                           | PetroThin® Thin<br>Sectioning System  |
|----------------------------|----------------------|-----------------|---|---|---|
| Maximum Wheel Diameter     | 5in [127mm]          | 7in [178mm]     | 8in [203mm]   | 8in [203mm]   | 8in [203mm]   |
| Cut Style                  | Gravity Fed          | Gravity Fed     | Y-Feed  | Y-Feed  | Manual  |
| Sample Movement            | X-axis, Z-axis       | X-axis, Z-axis  |   |   | X-axis, Z-axis  |
| Wheel Movement             |                      |                 | X-axis, Y-axis                                      | X-axis, Y-axis and Z-axis                           |   |
| Maximum Cutting Capacity** | 1.77in [45mm]        | 2.5in [64mm]    | 2.8in [71mm];<br>2 x 6.5 x 1in<br>[51 x 165 x 25mm] | 2.8in [71mm];<br>2 x 6.5 x 1in<br>[51 x 165 x 25mm] | Petrographic Glass Slides: 1.06 x 1.81in [27x46mm],<br>3 x 1in [76 x25mm] or<br>3 x 2in [76 x 51mm] |

*\*\*Maximum cutting capacity assumes largest size blade with smallest flange.*

## Cutting Style and Wheel Path

### Chop Cutting

The traditional form of machine operation. Wheel contact arc is governed by sample depth. Can sometimes have limited ability with large/difficult parts.



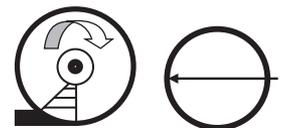
### Chop Cutting with Pulsing

Wheel contact still governed by sample depth. The pulsing action pauses the feed rate in short intervals enabling coolant to wash away swarf and dissipate heat, resulting in a better surface quality.



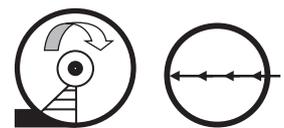
### Y-Feed Cut

The abrasive wheel is stationary and the cutting table moves forward completing a one time cut into the sample. Wheel contact arc is governed by sample height.



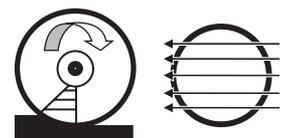
### Y-Feed Cut with Pulsing

Wheel Contact arc is still governed by sample height. The pulsing action pauses the feed rate in short intervals enabling coolant to wash away swarf and dissipate heat, resulting in a better surface quality.



### Planar Cut

In Planar mode, a Y-feed cut is completed in successive vertical steps. Wheel contact arc is governed by the height of each step rather than the height of the sample.



## Simple Setup for Efficient Cuts

The AbrasiMet M is an easy to use, manual, tabletop cutter that provides excellent cutting results.

# AbrasiMet® M

The AbrasiMet M is a benchtop manual cutting machine for 10in [254mm] and 12in [305mm] blades that provides consistent sectioning results.

### Easy to Cut and Maintain

- No tools required to change blades
- Adjustable cutting arm to maximize ergonomics
- Recirculation tank with filter minimizes the frequency and time required to clean

### Durable Machine with Versatile Performance

- Powerful motor cuts through materials with ease
- Dual blade feature performs two cuts in a single cycle

| Part Number   | Voltage/Frequency       |
|---------------|-------------------------|
| 10-10107-200  | 200 - 240VAC, 50-60Hz   |
| 10-10107-400  | 380 - 460VAC, 50-60Hz   |
| 10-10107-200C | CSA 200-240VAC, 50-60Hz |

### Recirculation Tank (Required)

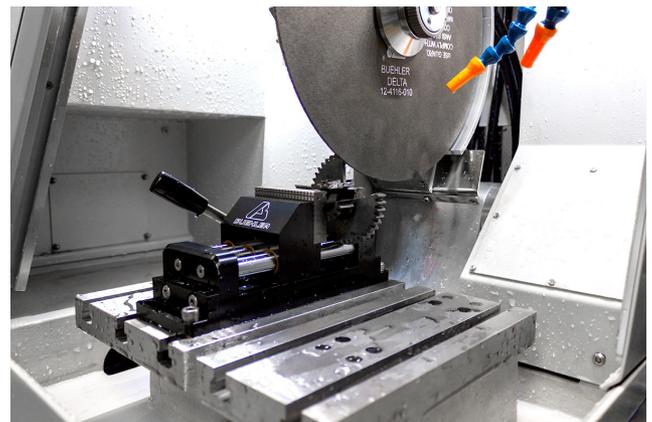
The Advanced Recirculation tank features a dual tank design that makes regular debris removal fast and simple, extending the time in between emptying the 19gal [70L] reservoir. See also on page 13.

10-2167-200 Advanced Recirculation Tank 200-240VAC, 50/60Hz

10-2167-400 Advanced Recirculation Tank 380-460VAC, 50/60Hz



**Dimensions:** 31.1in [791mm] W x 27.3in [694mm] D x 36.2in [979mm] H open  
 25.7in [653mm] H closed  
**Weight:** 309 lb [140 kg]



## Highly Reproducible Results

Our line of abrasive cutters are built for high volume environments. Our cutters combine speed and advanced features without compromising cut quality.

### AbrasiMatic® 300

The AbrasiMatic 300 is a benchtop cutting machine for 12in [305mm] blades that provides both manual and automatic cutting capabilities. These capabilities provide versatility in sectioning to suit a wide variety of needs. All configurations come with movement in the Y and Z directions, but X movement is an additional option.

#### Y and Z axis cutting only

| Part Number | Voltage          |
|-------------|------------------|
| 10-2190-260 | 200-240VAC, 60Hz |
| 10-2190-460 | 440-480VAC, 60Hz |
| 10-2190-250 | 200-240VAC, 50Hz |
| 10-2190-400 | 380-400VAC, 50Hz |

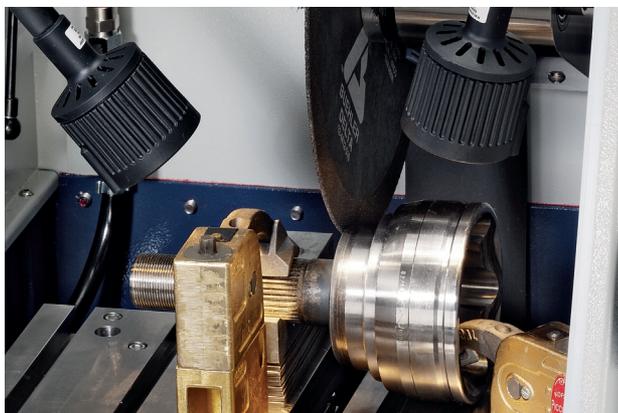
#### Additional X Axis cutting

| Part Number | Voltage          |
|-------------|------------------|
| 10-2193-260 | 200-240VAC, 60Hz |
| 10-2193-460 | 440-480VAC, 60Hz |
| 10-2193-250 | 200-240VAC, 50Hz |
| 10-2193-400 | 380-400VAC, 50Hz |



Dimensions: 34in [864mm] x 27in [686mm] x 41in [1041mm] open  
24in [610mm] closed  
Weight: 350lb [165kg]

\*Requires recirculation system, see page 13



# Robust Machine with Intuitive Features

## AbrasiMet® XL Pro

The AbrasiMet® XL Pro is a floor standing automatic abrasive cutting machine for 14in [356mm] to 18in [457mm] blades that provides consistent and repeatable cut quality for large samples.

### Intuitive and Quick to Operate

- Quickly set up for a cut by positioning the blade and table with the joystick and laser alignment
- Save cutting methods to ensure repeatability and consistency
- Filtration recirculation tank with vibration motor continuously filters and compacts the debris to minimize cleaning frequency and time.

### Powerful Machine for Demanding Environments

- Ideal for heavy duty, repetitive use in the toughest environments
- Efficiently and quickly cut through difficult materials with the powerful 13.4hp [10kW] motor
- Choose between multiple cutting modes like Chop, Y-feed, Planar, and Manual to section parts
- Use Buehler's exclusive feature Variable SmartCut to maximize speed and cut quality

| Part Number | Voltage/Frequency   |
|-------------|---------------------|
| 10-2320-400 | 380-480VAC, 50/60Hz |

See page 9 for vise with 12mm T-nuts  
Advanced Recirculation System included



Dimensions: 54in [1372mm] W x 50.7in [1288mm] D x 75in [1905mm] H  
Weight: 1750 lb [800 kg]

### Accessories

#### Mist Extractor

It is highly recommended to use the mist extractor listed below or connect the machine to a facility exhaust system  
10-2343-400 Mist Extractor



## Single Piece Sliding Vises

### Speed Clamping Vise



**Size:** Medium  
**Part Numbers:** Left: 10-3544  
 Right: 10-3545  
**Max Opening:** 2.75" [70mm]  
**Clamping Plate:** 3.2" x 1.4"  
 [80 x 35mm]  
**T-Nuts:** 12mm or 14mm



**Size:** Large  
**Part Numbers:** Left: 10-3546  
 Right: 10-3547  
**Max Opening:** 7.3" [185mm]  
**Clamping Plate:** 3.1" x 3.5"  
 [78 x 89mm]  
**T-Nuts:** 12mm or 14mm

### MetKlamp VIII S

*Ideal for AbrasiMet M*



**Part Numbers:** Left: 95-C1821S  
 Right: 95-C1822S  
**Max Opening:** 2.08" [53mm]  
**Clamping Plate:** 1.75" x 2.25"  
 [45 x 58mm]  
**T-Nuts:** 12mm

### MetKlamp VIII



**Part Numbers:** Left: 95-C1821  
 Right: 95-C1822  
**Max Opening:** 3.125" [80mm]  
**Clamping Plate:** 1.75" x 2.25"  
 [45 x 58mm]  
**T-Nuts:** 12mm

## Two Piece Sliding Vises

### Sliding Vise Kit



**Size:** Medium  
**Part Numbers:** Left: 10-3540  
 Right: 10-3541  
**Clamping Plate:** 2.36" x 3"  
 [60x76 mm]  
**T-Nuts:** 12mm\*

**Size:** Large  
**Part Numbers:** Left: 10-3542  
 Right: 10-3543  
**Clamping Plate:** 2.95" x 4.23"  
 [74 x 107mm]  
**T-Nuts:** 12mm\*  
 \*14mm conversion kits are available  
 Medium: 10-3548  
 Large: 10-3549

## Specialty Vises

### Chain Clamping Kit



**Application:** For clamping very large or irregularly shaped samples  
**Part Number:** 46-0030

### Fastener Vise



**Application:** For longitudinal sectioning of fasteners. Must be held with either Single Piece (recommended) or Two Piece Left Hand Vising.  
**Max Opening:** 1.6" [40.6mm]  
**Part Number:** 95-C1702

## Vertical Clamping Vises

### Vertical Clamping Kit



*Includes 2 clamping systems*

**Size:** Small  
**Part Numbers:** 10-3531  
**Clamping Height:** 2.3" [58mm]  
**Reach:** 2.1" [54mm]  
**T-Nuts:** 12mm

**Size:** Large  
**Part Numbers:** 10-3523  
**Clamping Height:** 4" [102mm]  
**Reach:** 2.4" [61mm] + 3.5" [90mm]  
 with extension (included)  
**T-Nuts:** 12mm and 14mm

### Riser Blocks

Small: 10-3532; 2.4" [60mm]  
 Large: 10-3528; 2.9" [74mm]



### Vee Block Clamp Kit

**T-Nuts:** 12mm and 14mm  
**Part Number:** 10-3527



### Horizontal Clamp

**T-Nuts:** 12mm and 14mm  
**Part Number:** 10-3526



### Adjustable Vee Blocks

**T-Nuts:** 12mm and 14mm  
**Part Number:** 10-3525



## Recirculating Systems for Abrasive Sectioning

### For AbrasiMet® M



#### Advanced Recirculating System 19 gal [70L]

24.5 W x 16.5 D x 24.5in H  
620 W x 420 D x 620mm H  
10-2167-200 [200-240VAC, 50/60Hz]  
10-2167-400 [380-460VAC, 50/60Hz]

### For AbrasiMatic® 300



#### Recirculating System 22 gal [85L]

26.5 W x 18.25 D x 26.5in H  
674 W x 464 D x 674mm H  
(22.5in [572mm]H w/o wheels)  
10-2332-260 [200-240VAC, 60Hz]  
10-2332-460 [440-480VAC, 60Hz]  
10-2332-250 [200-240VAC, 50Hz]  
10-2332-400 [380-400VAC, 50Hz]

| Part Numbers | Description   |
|--------------|---|
| 10-2431-400  | 42 gal [160L] with sloped filter for AbrasiMatic 300 and Delta<br>30 W x 25.5 D x 24in H<br>762 W x 648 D x 610mm H |

## Additional Abrasive Accessories



#### Cool 3 Fluid

Water miscible fluid concentrate recommended for abrasive cutting. Dilute coolant to 1:25 to 2:25, with water.

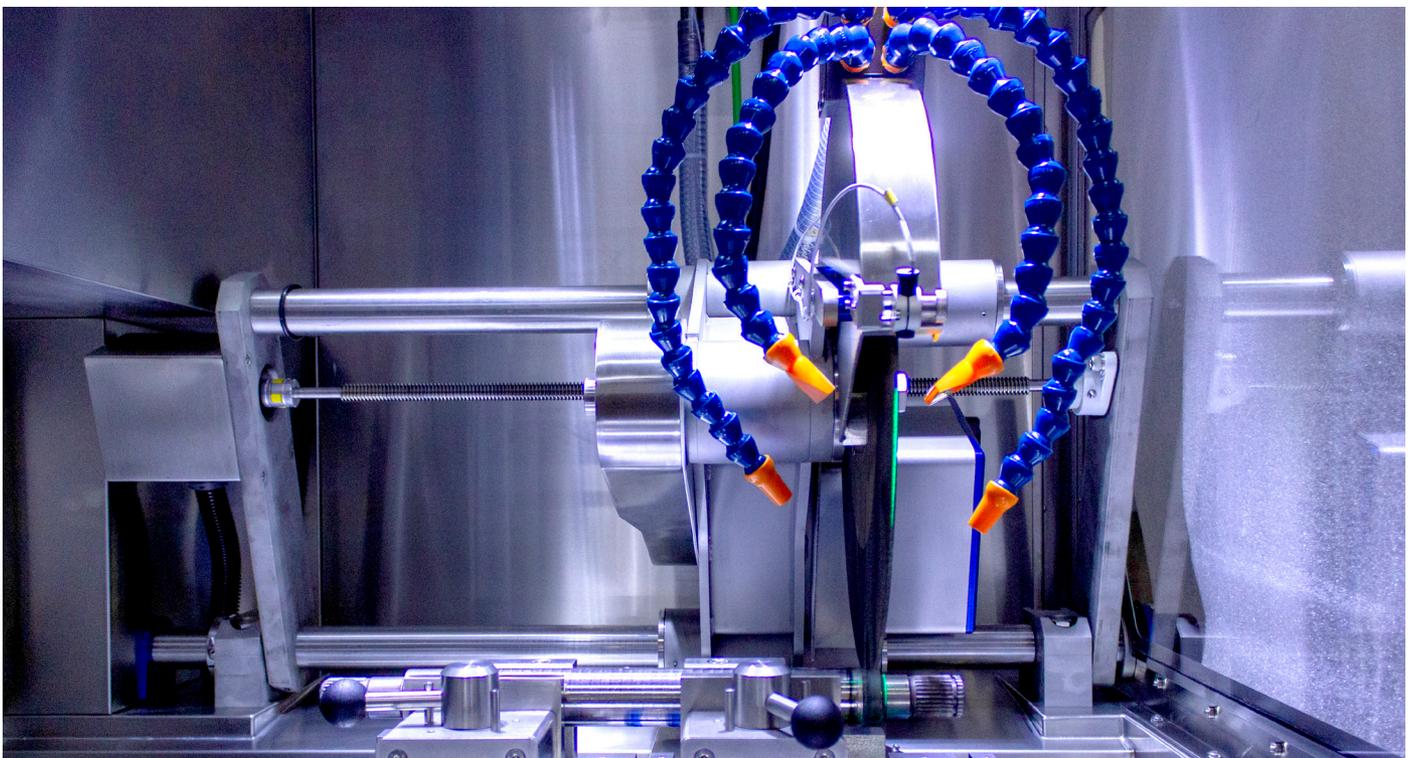
10-6001 33.8oz [1L]  
10-6004 1gal [4L]  
10-6010 2.6gal [10L]



#### Base Cabinet

For AbrasiMet M and AbrasiMatic 300  
36 W x 30 D x 36in H  
[910 W x 760 D x 910mm H]

80-10001





## Abrasive Blades

Buehler's Abrasive Blades are designed to provide high quality sectioning results with no burning and minimal surface deformation. This can reduce the amount of grinding & polishing required later in the preparation process.

### Efficient Cutting with Extended Life

An abrasive blade wears down during cutting to expose new abrasive particles and maintain efficient cutting. However, too fast of a wear rate leads to shortened blade life. Buehler's blades have been designed to balance this wear rate to maintain efficient cutting while extending blade life.

### Resin Bond vs Rubber Bond

Buehler's line of abrasive blades includes both rubber bonded and resin bonded blades. While both provide high quality cutting, there are some differences between them. Rubber bonded blades may be thinner for some applications, but emit a burnt rubber odor while cutting. Resin bonded blades offer similar performance with a reduced odor.

## Abrasive Blades Selection, 1.25in [32mm] Arbor (Qty 10)

[Blade Thickness is listed under Part Number] **Rubber Bond** =  **Resin Bond** =

**SiC Cutting Particle** =  **Al<sub>2</sub>O<sub>3</sub> Cutting Particle** =

[Click Here](#) to shop Abrasive Blades

| Recommended Use  | 10in [254mm]<br>Chop/Linear                                 | 12in [305mm]<br>Chop/Linear                                | 14in [356mm]<br>Chop/Linear                                  | 16in [406mm]<br>Chop/Linear    |
|--|---|--|--|--------------------------------|
| Superalloys, General Steel,<br>Non-Ferrous   | 12-4205-010<br>0.051in [1.3mm]                              | 12-4405-010<br>0.055in [1.4mm]                             | 12-4305-010<br>0.063in [1.6mm]                               | 10-31605-010<br>0.125in [3mm]  |
|  |   | 10-31205-010<br>0.08in [2mm]                               | 10-31405-010<br>0.10in [2.5mm]                               | 12-5605-010<br>0.075in [1.9mm] |
| Ferrous materials<br>>HRC60  | 10-4210-010<br>0.083in [2.1mm]                              | 12-4110-010<br>0.09in [2.3mm]                              | 10-4310-010<br>0.075in [1.9mm]                               | 10-31610-010<br>0.125in [3mm]  |
|  | 102509P<br>0.06in [1.5mm]                                   | 103009P<br>0.08in [2mm]<br>10-31218-010<br>0.08in [2mm]    | 103509P<br>0.098in [2.5mm]                                   |                                |
| Ferrous materials<br>HRC50-60  | 10-4212-010<br>0.083in [2.1mm]                              | 10-4412-010<br>0.105in [2.7mm]                             | 10-4312-010<br>0.09in [2.3mm]                                | 10-31612-010<br>0.125in [3mm]  |
|  | 10-31014-010<br>0.06in [1.5mm]                              | 10-31212-010<br>0.08in [2mm]                               | 103509P<br>0.098in [2.5mm]<br>10-31412-010<br>0.10in [2.5mm] |                                |
| Ferrous materials<br>HRC35-50  | 10-4216-010<br>0.083in [2.1mm]                              | 12-4116-010<br>0.105in [2.7mm]                             | 12-4305-010<br>0.063in [1.6mm]                               | 10-31616-010<br>0.125in [3mm]  |
|  | 102510P<br>0.06in [1.5mm]<br>10-31014-010<br>0.06in [1.5mm] | 103010P<br>0.083in [2.1mm]<br>10-31218-010<br>0.08in [2mm] | 103510P<br>0.098in [2.5mm]<br>10-31416-010<br>0.10in [2.5mm] |                                |
| Ferrous materials<br>HRC15-35  | 10-4220-010<br>0.067in [1.7mm]                              | 12-4120-010<br>0.105in [2.7mm]                             | 12-4305-010<br>0.063in [1.6mm]                               |                                |
|  | 102511P<br>0.06in [1.5mm]                                   | 103011P<br>0.079in [2mm]                                   |  |                                |
| High Speed Steel,<br>Stainless Steel,<br>Carburized Steel                          | 102508P<br>0.063in [1.6mm]                                  | 103008P<br>0.079in [2mm]                                   | 103508P<br>0.102in [2.6mm]                                   |                                |
| Delicate Cutting   | 10-4227-010<br>0.032in [0.8mm]                              |  |  |                                |
| Titanium Alloys,<br>Zirconium Alloys,<br>Ductile Materials                         | 10-4245-010<br>0.063in [1.6mm]                              | 12-4145-010<br>0.087in [2.2mm]                             | 10-4345-010<br>0.063in [1.6mm]                               |                                |
|  | 102507P<br>0.06in [1.5mm]                                   | 103007P<br>0.079in [2mm]                                   | 103507P<br>0.098in [2.5mm]                                   |                                |
| Non-Ferrous Materials<br>(Aluminum, Copper, Brass),<br>Very Soft Ferrous Materials | 10-4250-010<br>0.063in [1.6mm]                              | 103012P<br>0.079in [2mm]                                   | 10-4350-010<br>0.087in [2.2mm]                               | 10-31650-010<br>0.125in [3mm]  |
|  | 102512P<br>0.06in [1.5mm]                                   |  |  |                                |

## AcuThin™ Blades (Qty 10)



For certain applications, it is important to minimize the amount of damage done to the sample during sectioning. The AcuThin series offers thin blades that have been developed to minimize the area of cutting thus reducing the amount of damage to the sample. These blades utilize a rubber bond and allow for precise, delicate abrasive sectioning with minimal surface damage. [Blade Thickness is listed under Part Number]

| Recommended Use          | 9in [230mm]                      | 10in [254mm]                     | 12in [305mm]<br>Chop             | 14in [356mm]<br>Chop       |
|--------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------|
| General Use <HRC45       | 102301<br>0.032in [0.8mm]        | 102501<br>0.04in [1mm]           | 10-4360-010<br>0.032in [0.8mm]   | 10-3501<br>0.063in [1.6mm] |
| Ferrous Materials >HRC45 | 10-4161-010<br>0.025in [0.635mm] | 10-4261-010<br>0.025in [0.635mm] | 10-4361-010<br>0.025in [0.635mm] | 103502<br>0.105in [2.7mm]  |

## Orbital Abrasive Blades Selection, 1.25in [32mm] Arbor (Qty 10)

[Blade Thickness is listed under Part Number] Rubber Bond =  Resin Bond =

Click [Here](#) to shop Abrasive Blades

SiC Cutting Particle =  Al<sub>2</sub>O<sub>3</sub> Cutting Particle =

| Recommended Use                                      | 12in [305mm]<br>Orbital        | 14in [356mm]<br>Orbital        | 16in [406mm]<br>Orbital        | 18in [457mm]<br>Orbital        |
|--|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Superalloys, General Steel, Non-Ferrous              | 12-4405-010<br>0.055in [1.4mm] | 12-4305-010<br>0.063in [1.6mm] | 12-5605-010<br>0.075in [1.9mm] | 12-5805-010<br>0.1in [2.5mm]   |
| Ferrous materials >HRC60                             | 12-4410-010<br>0.105in [2.7mm] | 12-4310-010<br>0.105in [2.7mm] | 12-5610-010<br>0.125in [3mm]   | 12-5810-010<br>0.153in [3.8mm] |
| Ferrous materials HRC50-60                           | 12-4410-010<br>0.105in [2.7mm] | 12-4310-010<br>0.105in [2.7mm] | 12-5612-010<br>0.125in [3mm]   | 12-5816-010<br>0.153in [3.8mm] |
| Ferrous materials HRC35-50                           | 12-4416-010<br>0.105in [2.7mm] | 12-4316-010<br>0.105in [2.7mm] | 12-5616-010<br>0.125in [3mm]   | 12-5816-010<br>0.153in [3.8mm] |
| Ferrous materials HRC15-35                           | 12-4420-010<br>0.105in [2.7mm] | 12-4320-010<br>0.087in [2.2mm] | 12-5616-010<br>0.125in [3mm]   | 12-5816-010<br>0.153in [3.8mm] |
| Titanium Alloys, Zirconium Alloys, Ductile Materials |                                |                                | 12-5645-010<br>0.075in [1.9mm] |                                |

## Diamond & CBN Blades for Abrasive Cutters

[Blade Thickness is listed under Part Number] 1.25in [32mm] Arbor (Qty 1)



| Recommended Use                           | Blade Type | 10in [250mm]               | 12in [300mm]              | 14in [350mm]               |
|---|------------|----------------------------|---------------------------|----------------------------|
| General Use                               | Diamond    | 114610E<br>0.051in [1.3mm] |                           |                            |
| Hard Materials                            | Diamond    | 114810E<br>0.047in [1.2mm] | 103056<br>0.055in [1.4mm] | 114814E<br>0.059in [1.5mm] |
| Ceramic and Petrographic samples          | Diamond    | 114710E<br>0.047in [1.2mm] | 103053<br>0.087in [2.2mm] | 114714E<br>0.059in [1.5mm] |
| Plastics and Polymers                     | Diamond    | 102557<br>0.049in [1.25mm] |                           |                            |
| General use, hardened steel, HRC55 and Up | CBN        |                            |                           | 103551<br>0.079in [2mm]    |

## Excellent Cut Quality for Delicate Samples

Sectioning tools capable of cutting virtually any material including metals, composites, cements, laminates, plastics, electronic devices and biomaterials.

### IsoMet® High Speed

The IsoMet High Speed and IsoMet High Speed Pro are benchtop precision cutters. These machines enable variety in sample preparation to best fit each sample process with automatic cutting capabilities. Quick sample placement or adjustments are achieved in seconds with the rapid rail and tool-less vising system. Sample capacity is 2.8in [71mm] diameter with blade speeds of 200-5000 RPM.

#### Automatic Dressing System

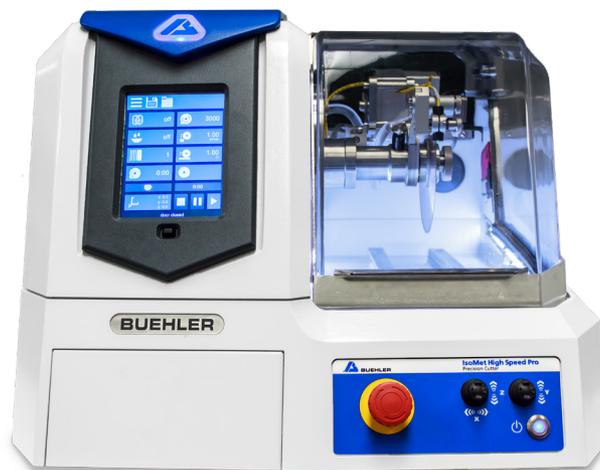
- Maintain consistent cut quality between and during cutting with the automatic dressing system.

#### Rapid Alignment Laser

- Minimize setup time by rapid visual alignment with the IsoMet High Speed Laser.

#### Precise Cut Alignment [Z-Axis]

- Align precise cuts quickly by using the 3 axis variable movement of the blade.



**Dimensions:** 24in [609.6mm]W x 30in [762mm]D x 36in [914.4mm]H open  
19in [482.6mm]H closed  
**Weight:** 157lbs [71kg]

| Model                  | Part Number | Voltage/Frequency     |
|------------------------|-------------|-----------------------|
| IsoMet® High Speed Pro | 11-2700     | 100 - 240VAC, 50-60Hz |
| IsoMet® High Speed     | 11-2600     | 100 - 240VAC, 50-60Hz |

#### Accessories

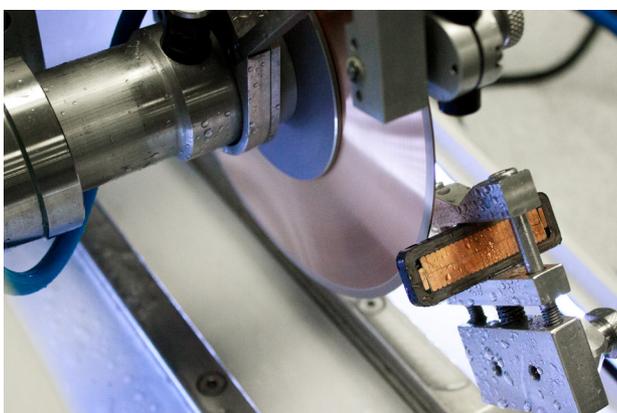
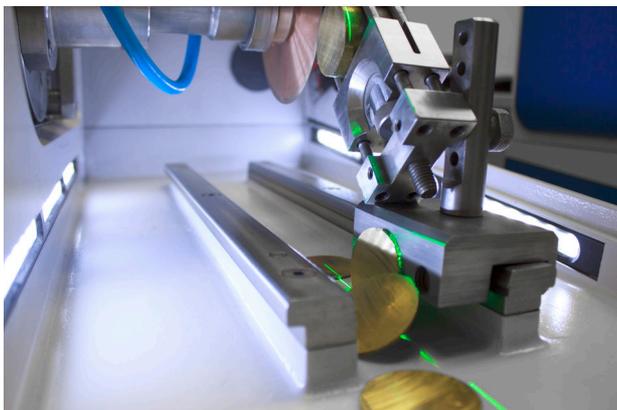
##### Table Attachment

Add a 12mm T-slot table to use Buehler's abrasive vising on this machine

11-2707 12mm T-slot table

##### Abrasive Vising

The MetKlamp VIII S (95C1821S/22S) and Medium sliding Vises (103540/41) are compatible with the IsoMet High Speed equipped with 12mm T-slot table (112707)



## IsoMet® High Speed Cutter Accessories

### Single Saddle Chuck



Large Single Saddle Chuck holds specimens up to 1.5in [38mm]

11-2661

### Double Saddle Chuck



Securely holds specimens up to 1.5in [38mm] from 2 points when extra support is needed

11-2662

### Mount Chuck



Stainless steel chuck holds mounted samples

11-2666 1.25in [30mm]  
11-2667 1.5in [40mm]

### Fastener Chuck



Holds specimens from 0.04in [1mm] to 2in [50mm] for longitudinal sectioning

11-2687

### Large Bone Chuck



Ideal for clamping bone, plastics, or other semi-rigid specimens up to 2in [50mm] in diameter

11-2494

### T-Slot Bed



Additional T-slot for positioning vises

11-2707

### Sliding Vise



6in [152mm] maximum opening, use requires flange to be 2in [50mm] or less, requires T-slot bed

11-2669

### Rapid Rail Post



Use with Rapid Rail

11-2660

### Small Vertical Clamp



Clamps specimens up to 2.28in [58mm] in height

460022

### Irregular Specimen Chuck



Adjusts to hold irregular shaped specimens up to 1in [25mm] in diameter

11-1185

### Recirculating System 7gal [27L]



Increases cutting fluid capacity to 7gal [27L] at 1.25gal/min [4.7L/min]  
16in [406mm]W x 20in [508mm]D x 15in [381mm]H

11-2640

## IsoMet® Precision Cutter Flanges

### Aluminum Flange Set



11-1192 1.38in [35mm]  
11-1191 1.75in [44mm]  
11-2679 2.5in [64mm]  
11-2282 3in [76mm]  
11-2283 4in [102mm]  
11-2284 5in [127mm]

### Stainless Steel Flange Set



11-2688\* 3in [76mm]  
11-2689\* 4in [102mm]  
*\*Recommended for the IsoMet High Speed*

## Precision with Flexibility

The gravity-fed machines in the IsoMet family provide great versatility in holding all types of sample shapes and configurations.

### IsoMet® 1000

The IsoMet 1000 is a precision sectioning saw designed for cutting various types of materials with minimal deformation. Targeted for delicate parts by only using gravity fed force.

*\*Includes 6in 15LC diamond blade, 3in aluminum flanges and the following chucks: Single Saddle, Bar & Tube, Wafer and Irregular Specimen*

| Part Number | Voltage            |
|-------------|--------------------|
| 11-2180     | 85-264VAC, 50/60Hz |

#### Accessories

##### Table Saw Attachment

Transform the machine into a manual table saw, ideal for electronics and other planar cutting applications

11-2182 Table Saw Attachment



**Dimensions:** 15.5in [394mm]W x 20.25in [514mm]D x 24.5in [622mm]H open  
12in [305mm]H closed

**Weight:** 56lbs [25kg]

### IsoMet® Low Speed

The IsoMet Low Speed is a precision sectioning saw designed for cutting various types of materials with minimal deformation. Targeted for delicate parts by only using gravity fed force.

*Includes 4in IsoMet Blade, assorted weights, dressing stick, flanges and the following chucks: single saddle, irregular specimen and wafer*

| Part Number | Voltage         | Units       |
|-------------|-----------------|-------------|
| 11-1280-160 | 115VAC, 50/60Hz | Inches      |
| 11-1280-170 | 115VAC, 50/60Hz | Millimeters |
| 11-1280-250 | 230VAC, 50/60Hz | Millimeters |



**Dimensions:** 10.5in [267mm]W x 12in [305mm]D x 13in [330mm]H  
**Weight:** 25lbs [11.3kg]

## Tips, Tricks & Techniques



For the best performance from your Precision Cutter System:

- Always tightly clamp your sample
- Use double saddle chucks for long parts such as rods
- Do not hand dress blades
- Mount spheres, unusual shapes and friable materials
- Use the largest flange for your blade and specimen
- Soft, gummy materials can build up on the blade during the cut and may require dressing while sectioning these materials.

## IsoMet® Low Speed Cutter Accessories

### Goniometer



Positions specimen along 3 axis

[11-2381](#)

### Manual Feed Control Dressing Chuck



Enables blade dressing without removing the sample fixture

[11-1196](#)

### Splash Guard Kit



Prevents lubricant from splashing out of saw

[11-1199](#)

## IsoMet® Low Speed Cutter & 1000 Accessories

### Swivel Arm Assembly



Swivels to position specimen cutting surface perpendicular to blade (replaces support arm provided with cutter)

[11-1181](#)

### Bar & Tube Chuck



Securely holds end of a bar tube up to 2in [50mm] long and 0.5in [13mm] in diameter

[11-1184](#)

### Wafer Chuck



Use mounting wax, 40-8150 or 40-8145 to glue specimens to wafer chuck  
1.125 x 2in [29 x 51mm]

[11-1186](#)

### Vacuum Chuck



Holds specimens mounted to glass slides to chuck with vacuum force

[11-1188](#)

### Small Bone Chuck



Ideal for clamping bone, plastics, or other semi-rigid solids up to 1.5in [32mm] in diameter

[11-1194](#)

### Double Saddle Chuck



Small Double Saddle Chuck that securely holds specimen up to 0.875in [22mm] from 2 points

[11-1183](#)

### Irregular Specimen Chuck



Adjusts to hold irregular shaped specimens up to 1in [25mm] in diameter

[11-1185](#)

### Single Saddle Chuck



Holds specimens up to 0.75in [19mm] in diameter

[11-1187](#)

### Mount Chuck



Aluminum chuck holds mounted samples  
1-1.25in [25-32mm]

[11-1189](#)

## IsoMet® 1000 Accessories

### Table Saw Splash Guard



Catches splashing lubricant when used in conjunction with the Table Saw Attachment (11-2182)

11-2186

### Table Saw Attachment



Transforms gravity fed IsoMet 1000 into convenient table saw

11-2182

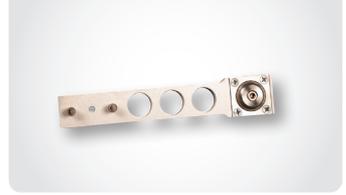
### 800 gram Weight Set



Additional weights for gravity fed saws

11-2183

### Swivel Arm Accessory



Swivels to position specimen cutting surface perpendicular to blade (*replaces provided support arm*)

11-2184

### Mount Chuck



Holds mounted samples 1.5in [40mm]

11-2489

### Fastener Chuck



Holds specimen from 0.96in [24.5mm] to 2in [50mm] for longitudinal sectioning

11-2482

### Single Saddle Chuck



Medium Single Saddle Chuck holds up to 1in [25mm] specimen

11-2487

### Double Saddle Chuck



Large Double Saddle Chuck that securely holds specimen up to 1.5in [38mm] from 2 points

11-2483

### Small Glass Slide Chuck



Holds 27 x 46mm, 1 x 2in, or 1 x 3in glass slides

11-2484

### Large Glass Slide Chuck



Holds 2 x 3in glass slides

11-2488

### Wafer Chuck



Use mounting wax (40-8150) to adhere specimens to wafer chuck 1.75 x 2.5in [44 x 64mm]

11-2486



## Precision Sectioning Blades for IsoMet® Cutters, 0.5in [12.7mm] Arbor (Qty 1)

[Blade Thickness is listed under Part Number]

Click [Here](#) to shop Precision Blades

| Recommended Use   | 3in [76mm]                  | 4in [102mm]                | 5in [127mm]                 | 6in [152mm]               |
|---|-----------------------------|----------------------------|-----------------------------|---------------------------|
| Use with Saws   | All                         | All                        | All                         | 1000<br>IsoMet High Speed |
| <b>IsoMet 30HC</b> - Polymers Rubber, Soft Gummy Materials, epoxies   |                             |                            | 11-4239<br>0.030in [0.76mm] |                           |
| <b>IsoMet 20HC</b> - Aggressive general sectioning of non-ferrous materials   |                             |                            | 11-4215<br>0.020in [0.5mm]  |                           |
| <b>IsoMet 15HC</b> - Blades for routine use, metal matrix composites, PC boards, bone, titanium, thermal spray coatings, otoliths     | 11-4243<br>0.006in [0.15mm] | 11-4244<br>0.012in [0.3mm] | 11-4245<br>0.015in [0.4mm]  | 11-4246<br>0.02in [0.5mm] |
| <b>IsoMet 20LC</b> - Hard tough materials, structural ceramics, boron nitride, silicon nitride  |                             |                            | 11-4225<br>0.02in [0.5mm]   |                           |
| <b>IsoMet 15LC</b> - Hard and brittle materials, structural ceramics, glass, electronic substrates, alumina, zirconia, concrete       | 11-4253<br>0.006in [0.15mm] | 11-4254<br>0.012in [0.3mm] | 11-4255<br>0.015in [0.4mm]  | 11-4276<br>0.02in [0.5mm] |
| <b>IsoMet 10LC</b> - Medium to Soft Ceramics, Glass Fiber Reinforced Composites   | 11-4283<br>0.006in [0.15mm] |                            | 11-4285<br>0.015in [0.4mm]  |                           |
| <b>IsoMet 5LC</b> - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF <sub>2</sub> , MgF <sub>2</sub> , Carbon Composites | 11-4293<br>0.006in [0.15mm] |                            | 11-4295<br>0.015in [0.4mm]  |                           |
| <b>IsoCut CBN</b> - Ferrous materials, nickel, cobalt, lead-based alloys and super alloys   | 11-4263<br>0.006in [0.15mm] | 11-5264<br>0.012in [0.3mm] | 11-5265<br>0.015in [0.4mm]  | 11-5266<br>0.02in [0.5mm] |
| Cup Grinder for Ceramic & Geological Materials  |                             |                            | 11-2740                     |                           |

| Recommended Use   | 7in [178mm]                | 8in [203mm]                | Dressing Stick*             |
|---|----------------------------|----------------------------|-----------------------------|
| Use with Saws   | 1000<br>IsoMet High Speed  | IsoMet High Speed Pro only |                             |
| <b>IsoMet 30HC*</b> - Polymers Rubber, Soft Gummy Materials   | 11-4241<br>0.03in [0.76mm] | 11-4242<br>0.035in [0.9mm] | Blade should not be dressed |
| <b>IsoMet 20HC</b> - Aggressive general sectioning of non-ferrous materials   | 11-4237<br>0.025in [0.6mm] | 11-4238<br>0.035in [0.9mm] | 11-1190<br>11-2490          |
| <b>IsoMet 15HC</b> - Blades for routine use, metal matrix composites, PC boards, bone, titanium, thermal spray coatings               | 11-4247<br>0.025in [0.6mm] | 11-4248<br>0.035in [0.9mm] | 11-1190<br>11-2490          |
| <b>IsoMet 20LC</b> - Hard tough materials, structural ceramics, boron nitride, silicon nitride  | 11-4227<br>0.025in [0.6mm] | 11-4228<br>0.035in [0.9mm] | 11-1190<br>11-2490          |
| <b>IsoMet 15LC</b> - Hard Brittle Materials, Glass, Al <sub>2</sub> O <sub>3</sub> , ZrO <sub>3</sub> , Concrete                      | 11-4277<br>0.025in [0.6mm] | 11-4279<br>0.045in [1.1mm] | 11-1190<br>11-2490          |
| <b>IsoMet 10LC</b> - Medium to Soft Ceramics, Glass Fiber Reinforced Composites   | 11-4287<br>0.02in [0.5mm]  | 11-4288<br>0.045in [1.1mm] | 11-1290                     |
| <b>IsoMet 5LC</b> - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF <sub>2</sub> , MgF <sub>2</sub> , Carbon Composites |                            |                            | 11-1290                     |
| <b>IsoCut CBN</b> - Ferrous materials, nickel, cobalt, lead-based alloys and super alloys   | 11-5267<br>0.025in [0.6mm] | 11-5268<br>0.035in [0.9mm] | 11-1190<br>11-2490          |

All Blades (Except 30HC) come with a Dressing Stick included. The Part Numbers shown in the table can be used for re-ordering the Dressing Sticks.

\* Use an IsoMet 30HC blade for cutting a PWB when using Table Saw Attachment



## AcuThin™ Abrasive Blades for IsoMet® Precision Cutters, 0.5in [12.7mm] Arbor (Qty 10)

[Blade Thickness is listed under Part Number]

| Recommended Use                           | 5in [127mm]                     | 7in [178mm]                     | 150mm           | 200mm              |
|---|---------------------------------|---------------------------------|-----------------|--------------------|
| Tool Steel, hard steel,<br>HRC45 & Up     | 10-4060-010<br>0.019in [0.48mm] |                                 |                 |                    |
| Medium hard, soft steel,<br>HRC45 & Below | 10-4061-010<br>0.019in [0.48mm] |                                 |                 |                    |
| Steel, Stainless Steel                    |                                 | 11-4207-010<br>0.030in [0.76mm] |                 |                    |
| Hard, soft non-ferrous materials          |                                 | 11-4217-010<br>0.030in [0.76mm] |                 |                    |
| Tough materials and general<br>use        |                                 |                                 | 1015998E<br>1mm | 1020998E*<br>1.5mm |

*\*IsoMet High Speed Pro Only*

## Additional Precision Cutting Consumables



**IsoCut® Fluid**

Oil based coolant only for use with the IsoMet Low Speed Saw or any saw with a maximum speed of 500rpm

11-1193-032 1qt [0.95L]  
11-1193-128 1gal [3.8L]



**Glossy**

Clear paste for keeping cutter windows clear

109003 2oz [60mL]



**Cool 3 Fluid**

Water miscible fluid concentrate. Dilute coolant to 1:25 to 2:25, with water.

10-6001 33.8oz [1L]  
10-6004 1gal [4L]  
10-6010 2.6gal [10L]



**Dressing Wheel**

For IsoMet High Speed and High Speed Pro  
11-2655 20 HC, 15HC, 20LC, 15LC, CBN HC, and CBN LC blades

11-2656 10 LC and 5LC blades



**Dressing Sticks**

11-1190 3 x 0.5 x 0.5in [76 x 13 x 13mm] for 20HC, 15HC, 20LC, 15LC, CBN LC and CBN HC precision blades

11-2490 3 x 1 x 1in [76 x 25 x 25mm] for 20HC, 15HC, 20LC, 15LC, CBN LC and CBN HC precision blades

11-1290 3 x 0.5 x 0.5in [76 x 13 x 13mm] for 10LC and 5LC precision blades

## Excellent cut quality for delicate samples

Buehler offers a complete solution for preparation of thin sections, bulk mounts, or as a powder such as mineral tailings. Each preparation method is dependent on the type of material and the examination method, and starts with proper sample sectioning and mounting.

### PetroThin®

The PetroThin Thin Sectioning System is a precise, easy-to-use instrument for re-sectioning and thinning a wide variety of samples, such as rocks and minerals, ceramics, concrete, bone, and teeth for performing materials characterization.

#### Precise Cut Location Control

- Two precision micrometers are used for controlling re-sectioning and thinning
- Precision of resections and grinds material within  $\pm 5\mu\text{m}$

#### Increase Accuracy and Parallelism of Samples

- Single spindle design ensures parallelism of sample by eliminating the need to remove the glass slide between diamond cutting blade and diamond grinding cup steps

*\*8in diamond blade and an 8in diamond grinding cup included*



Dimensions: 23.5in [597mm] x 19in [483mm] x 16in [406mm]  
Weight: 94lbs [43kg]

| Part Number | Voltage/Frequency |
|-------------|-------------------|
| 38-1450-160 | 115VAC, 60Hz      |
| 38-1450-250 | 220VAC, 50Hz      |

## Petrography Accessories



#### PetroBond™

Thin section bonding fixture assists in bonding specimens to glass slides, accurately controlling the thickness of the bonding media. Applies continuous pressure until sample has completely cured. Controls adhesive thickness by evenly distributing adhesive. Can hold up to 12 slides.

38-1490



#### PetroVue™

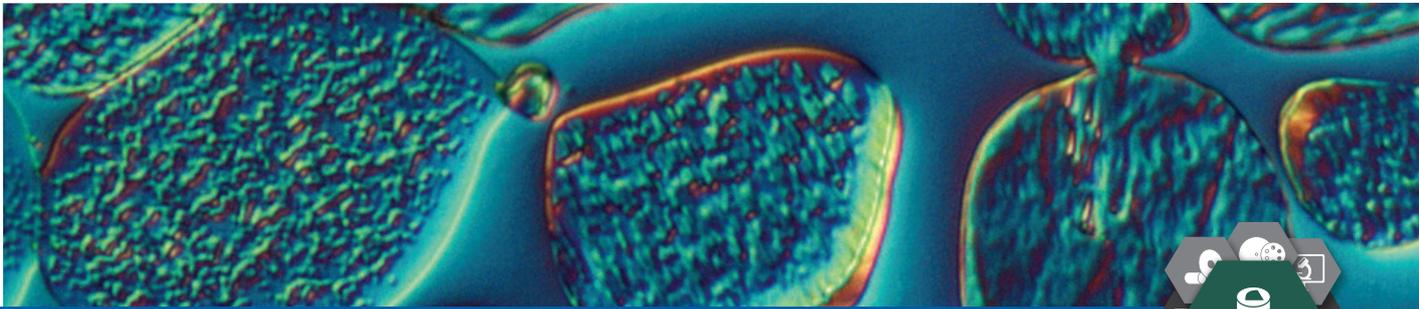
Thin Section Viewer  
Polarized light allows monitoring of thickness & uniformity of the specimen.

30-8050-220 220VAC, 50/60Hz

## PetroThin Consumables

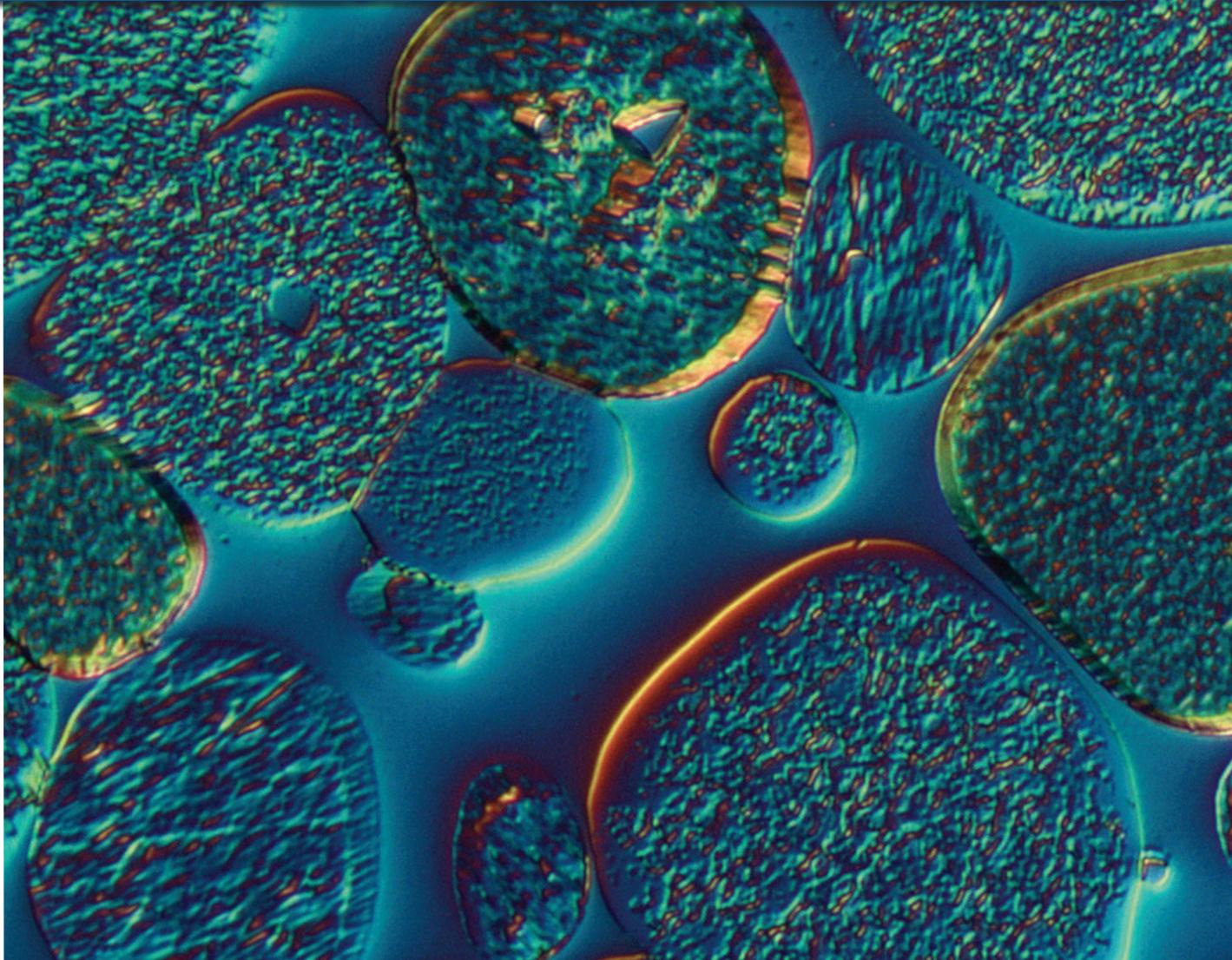


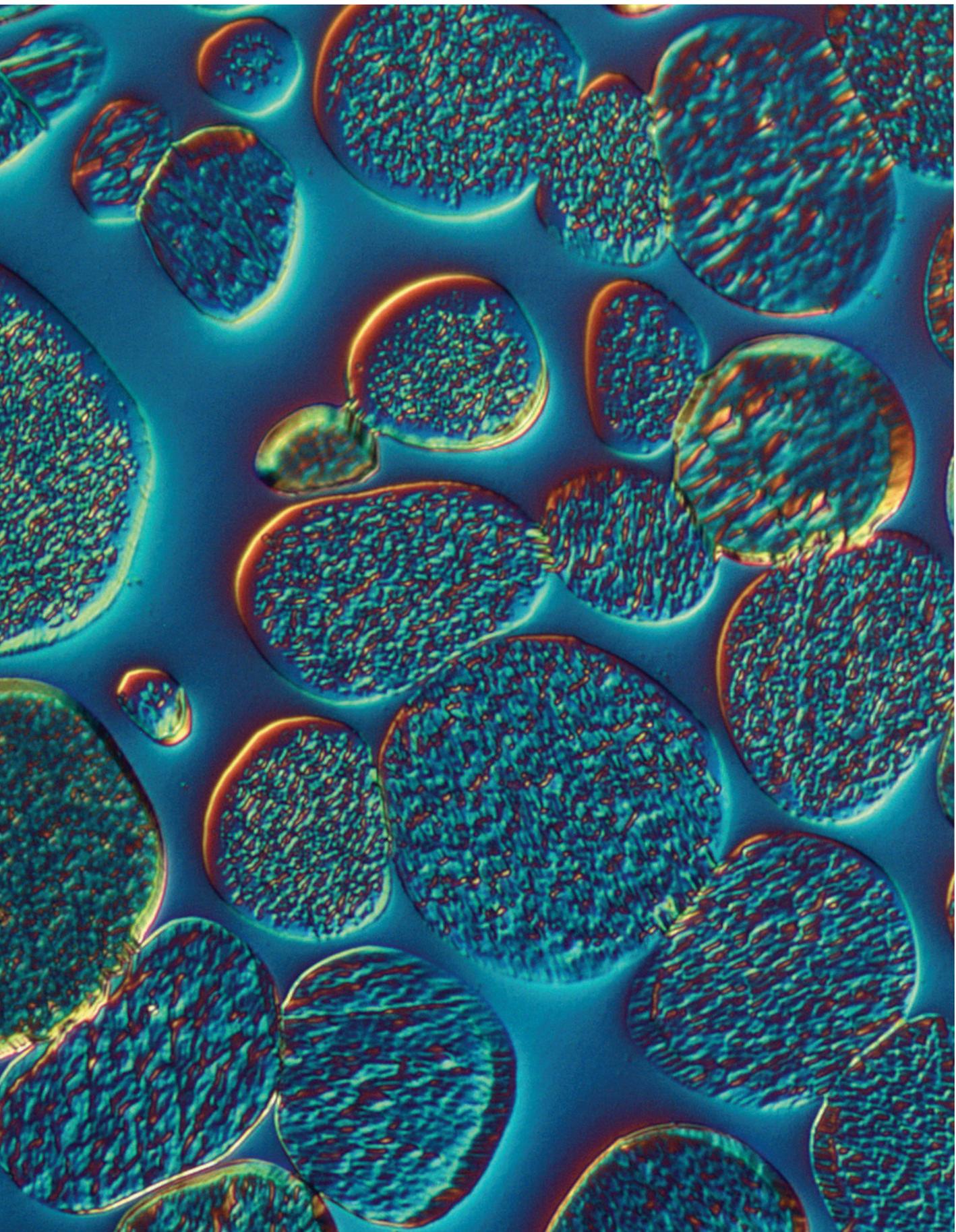
| Part Number | Description  |
|-------------|--|
| 11-4278     | Continuous Rim Diamond Blade, 8 x 0.045 x 1in [203 x 1 x 25mm] |
| 40-4508     | Diamond Cup Grinding Wheel, 8 x 0.25 x 1in [203 x 6 x 25mm]    |
| 40-4510     | Dressing Stick, 0.5 x 0.5 x 4in [13 x 13 x 102mm]              |



# MOUNTING

Get the most from your mounting step with straightforward solutions for a variety of lab requirements.





## High Performance Choices

Buehler epoxies are formulated to excel in a wide variety of applications. Whether the priority is speed, pore penetration, or low curing temperature, there is a Buehler epoxy suited for every sample type.

### EpoKwick® FC



**Spend less time preparing and more time analyzing.**

- Combines very low viscosity and extremely low shrinkage with good hardness and a fast cure.
- Obtain the best sample prep quality even with highly porous samples.
- Recommended for aerospace coatings and other porous samples insensitive to heat.

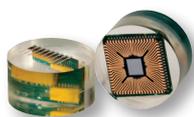
### EpoThin™ 2



**Protect samples with this gentle low cure temperature epoxy**

- Combines low viscosity and low cure temperature
- Provides strong adherence and good pore penetration.

### EpoxiCure® 2



**General purpose epoxy system optimized for routine application**

- A balanced formula providing good hardness and low shrinkage
- Can be used with larger mounting cups
- Recommended for heat sensitive materials

### EpoHeat® CLR



**Save time with long pot life**

- Can remain mixed at room temperature for 3 hours and cures in 60 minutes in the oven.
- Water-like viscosity when heated
- Recommended for samples requiring maximum pore penetration.
- Use when mixing and pouring a high volume of media.

## Product Specifications

| Material     | Cure Time                | Viscosity* | Shrinkage* | Shore D Hardness | Peak Exotherm* |
|--------------|--------------------------|------------|------------|------------------|----------------|
| EpoKwick® FC | 2hrs @ room temperature  | Best       | Best       | ~82              | 250°F [121°C]  |
| EpoThin™ 2   | 9hrs @ room temperature  | Better     | Better     | ~78              | 149°F [65°C]   |
| EpoxiCure® 2 | 6hrs @ room temperatures | Good       | Better     | ~80              | 104°F [40°C]   |
| EpoHeat® CLR | 1hr @ 149° F(65°C)       | Best       | Good       | ~82              | 324°F [162°C]  |

\*values compared with other epoxies

\*Peak exotherm is for 20g cured at 70° F

## Ordering Information

| Material                                   | Small Resin & Hardener      |                             | Large Resin & Hardener      |                             |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|  | Resin                       | Hardener†                   | Resin                       | Hardener†                   |
| EpoKwick® FC<br>mix ratio<br>4:1 by volume |                             |                             | 20-3453-128<br>128oz [3.8L] | 20-3453-032<br>32oz [0.95L] |
| EpoThin™ 2<br>mix ratio<br>2:1 by volume   | 20-3440-032<br>32oz [0.95L] | 20-3442-016<br>16oz [0.48L] | 20-3440-128<br>128oz [3.8L] | 20-3442-064<br>64oz [1.9L]  |
| EpoxiCure® 2<br>mix ratio<br>4:1 by volume | 20-3430-064<br>64oz [1.9L]  | 20-3432-016<br>16oz [0.48L] | 20-3430-128<br>128oz [3.8L] | 20-3432-032<br>32oz [0.95L] |
| EpoHeat® CLR<br>mix ratio<br>4:1 by volume | 20-3423-064<br>64oz [1.9L]  | 20-3424-016<br>16oz [0.48L] |                             |                             |

† Restricted article, requires special packaging

## Increased Mounting Throughput

With cure times as low as 5 minutes, our line of acrylics is designed to increase throughput in your mounting process while providing consistent results.

### SamplKwick®



SamplKwick offers quick cure times and excellent wetting characteristics making it ideal for electronics and PWB applications.

### VariKleer™



VariKleer produces a crystal clear mount when cured under pressure making it ideal for applications where clarity is required.

### VariDur™ 10



VariDur 10 is a general purpose acrylic system offering a semi-transparent mount with a reduced odor while curing.

### VariDur™ 200



VariDur 200 is a quick curing acrylic with good edge retention that is ideal for mounting hard materials.

### VariDur™ 3003



VariDur 3003 is a three-part acrylic with minimal shrinkage and high hardness making it ideal for edge retention applications.

## Product Specifications

| Material      | Cure Time                   | Viscosity* | Shrinkage* | Shore D Hardness | Peak Exotherm* |
|---------------|-----------------------------|------------|------------|------------------|----------------|
| SamplKwick®   | 5-8min @ room temperature   | Better     | Good       | ~85              | ~179°F [81°C]  |
| VariKleer™    | 5-15min @ room temperature  | Better     | Good       | ~84              | ~212°F [100°C] |
| VariDur™ 10   | 8min @ room temperature     | Good       | Good       | ~80              | ~212°F [100°C] |
| VariDur™ 200  | 5-8min @ room temperature   | Good       | Better     | ~85              | ~212°F [100°C] |
| VariDur™ 3003 | 15-30min @ room temperature | Good       | Best       | ~90              | ~252°F [122°C] |

\*values compared with other acrylics

\*Peak exotherm is for 20g cured at 70° F

## Ordering Information

| Material                       | Powder      |                  | Liquid†     |  |
|--------------------------------|-------------|------------------|-------------|--|
|                                | Part Number | Size             | Part Number | Size   |
| SamplKwick®                    | 20-3562     | 1 lb [0.45kg]    | 20-3564     | 12oz [0.36L]   |
|                                | 20-3566     | 5 lbs [2.3kg]    | 20-3568     | 64oz [1.9L]  |
|                                | 20-3562-025 | 25 lbs [11.3kg]  | 20-3564-320 | 2.5gal [9.5L]  |
|                                | 20-3562-100 | 100 lb [45kg]    | 20-3564-640 | 5gal [19L]   |
| VariKleer™                     | 20-3591     | 2.2 lbs [1kg]    | 20-3592     | 16.9oz [500mL]   |
|                                | 20-3591-002 | 4.4 lbs [2kg]    | 20-3592-001 | 33.8oz [1L]  |
|                                | 20-3591-010 | 22 lbs [10kg]    | 20-3592-005 | 1.3gal [5L]  |
| VariDur™ 10                    | 11-1027     | 2.2 lbs [1kg]    | 11-1029     | 16.9oz [500mL]   |
|                                | 11-1031     | 22 lbs [10kg]    | 11-1033     | 1.3gal [5L]  |
| VariDur™ 200                   | 11-1030     | 2.2 lbs [1kg]    | 11-1029     | 16.9oz [500mL]   |
|                                | 11-1034     | 22 lbs [10kg]    | 11-1033     | 1.3gal [5L]  |
| VariDur™ 3003<br>3-part system | 20-3531     | 3.3 lbs [1.5kg]  | 20-3535     | .65gal [2.5L] Liquid 1   |
|                                | 20-3534     | 16.5 lbs [7.5kg] | 20-3536     | 1.3gal [5L] Liquid 2   |
|                                |             |                  | 20-3532     | Kit Contains:<br>16.9oz [500mL] Liquid 1<br>33.8oz [1L] Liquid 2 |

† Restricted article, requires special packaging

See page 32 for castable mounting tips

## SimpliVac™

Our new vacuum system with unique multi-cycle capabilities, offers excellent pore impregnation in a compact format. Using your compressed air source, this system quickly and efficiently pulls a vacuum to evacuate trapped air from any porous samples, resulting in optimized edge retention and additional support for processing delicate samples.

### High efficiency

- Large chamber diameter allows for a high volume of samples to be processed, while the sample tray also provides ample room for larger samples to fit easily in the chamber.

### Simple Dispensing

- Use dispensing tubes and the built-in rotating turn table to dispense epoxy while under vacuum.

### Programmability

- Set the number of cycles, vacuum level and time under vacuum
- Allows for multiple cycles to run without user interference, creating consistency while reducing active user time to process samples



#### Vacuum Chamber

Dimensions: 12.8in (325 mm) H X 19.2in (488 mm) D X 18.6in (472 mm) W  
Weight: 51lb (23 kg)

### Accessories



Dispensing tubes  
(Qty 100)  
20-1551



Vacuum Bowl Liner  
(Qty 5)  
20-1553



Vacuum Tray Liner  
(Qty 100)  
20-1555

| Part Number | Voltage/Frequency                   |
|-------------|-------------------------------------|
| 20-1500     | 100-240 VAC/ 50-60 HZ, Single Phase |

Includes vacuum bowl liner and tray liner, no dispensing tubes included

## Ring Forms & Castable Molds



### Disposable Mounting Cups

Best for mounting low exotherm castable systems like EpoxiCure® 2 and EpoThin® 2. Also great for specimen storage (Qty 50)

|         |                |
|---------|----------------|
| 20-8280 | 1in x 1in H    |
| 20-8281 | 1.25in x 1in H |
| 20-8282 | 1.5in x 1in H  |



### Plastic Ring Forms

Provides a stronger fit of the castable mount to the sample holder for polishing in central force mode. (Qty 100)  
*\*Not recommended for acrylics*

|             |        |
|-------------|--------|
| 20-8151-100 | 1in    |
| 20-8152-100 | 1.25in |
| 20-8153-100 | 1.5in  |
| 20-8154-100 | 2in    |



### SamplKup™

Reusable with best dimensional stability and suitable for use with all Buehler castable systems. (Qty 12) *\*not for use in ovens*

|         |                |         |              |
|---------|----------------|---------|--------------|
| 20-9178 | 1in x 1in H    | 20-9177 | 25mm x 1in H |
| 20-8180 | 1.25in x 1in H | 20-9179 | 30mm x 1in H |
| 20-9181 | 1.5in x 1in H  | 20-9182 | 40mm x 1in H |
| 20-9184 | 2in x 1in H    | 20-9183 | 50mm x 1in H |



### EPDM Round & Rectangular Molds

Suitable for use with all Buehler castable systems. Best choice for large, rectangular mounts and for curing mounts in ovens

#### EPDM Round Molds (Qty 5)

|         |                      |
|---------|----------------------|
| 20-8181 | 1in dia x 5/8in H    |
| 20-8182 | 1.25in dia x 5/8in H |
| 20-8183 | 1.5in dia x 5/8in H  |
| 20-8184 | 2in dia x 1in H      |
| 20-7183 | 40mm dia x 31mm H    |
| 20-7184 | 50mm dia x 31mm H    |

#### EPDM Rectangular Molds (Qty 1)

|         |                                    |
|---------|------------------------------------|
| 20-7185 | 2.2 x 1.2 x 0.9in [55 x 30 x 22mm] |
| 20-6185 | 2.5 x 1.4 x 1.8in [63 x 25 x 46mm] |
| 20-7186 | 2.8 x 1.6 x 0.9in [70 x 40 x 22mm] |
| 20-6186 | 6 x 4 x 2in [150 x 100 x 50mm]     |
| 20-6187 | 6 x 3 x 1in [150 x 76 x 25mm]      |

## Mounting Consumables & Accessories

### Pigments



Use with castable resins for color coding or creating contrast

- 20-8505 Black, 1.5oz [45mL]
- 20-8506 Red, 1.5oz [45mL]
- 20-8507 Blue, 1.5oz [45mL]

### Release Agent



Liquid release agent for easier removal of mounts from castable molds or compression mounting presses

- 20-8186-004† 4oz [120mL]
- 20-8186-032† 32oz [950mL]

### Mold Release Spray



Less hazardous spray release agent for use on castable mounting molds

- 20-3050-008 8oz [0.24L]

### Mold Release Powder



Powder release agent for use on mounting presses

- 20-3048 2oz [45g]

### SamplKlip



Stainless Steel support clip for use with all mounting systems.\*

0.25 H x 0.550 W x 0.350 in L  
[6 x 14 x 9mm] 0.575g

- 20-4000-100 (Qty 100)

### SamplKlip I



Plastic support clip best for castable mounting systems.\*

0.25 H x 0.475 W x 0.3in L  
[~6 x 12 x 8mm] 0.230g

- 20-4100-100 (Qty 100)

0.25 H x 0.425 W x 0.25in L  
[~6 x 11 x 6mm] 0.230g

- 20-4100-100S (Qty 100)

### Specimen Support Clip



Plastic support clip best for castable mount systems.\*

0.25 H x 0.290 W x 0.375in L  
[6 x 7 x 9.5mm] 0.145g

- 20-4001-000 (Qty 1000)

### UniClip Support Clip



Plastic support clip for use with all mounting systems.

0.4 H x 0.360 W x 0.500in L  
[10 x 9 x 13mm] 0.290g

- 20-5100-100 Clear (Qty 100)
- 113043 Black (Qty 100)

### Plastic Mixing Cup



Graduated Plastic Mixing cup for mixing castable mounting systems. 8.5oz [250mL] (Qty 100)

- 20-8176-100

### Paper Mixing Cup



Non Graduated Paper Mixing cup for mixing castable mounting systems. 8oz [236mL] (Qty 100)

- 20-8178-100

### Stirring Sticks



For stirring castable mounting systems. (Qty 1000)

- 20-8175

### Conductive Filler



Nickel filler makes castable mounting systems conductive

- 20-8500 2 lb [0.9kg]

### Flat Edge Filler



Ceramic Powder enhances edge retention in castable mounting systems by increasing hardness of mount

- 20-8196 1 lb [0.45kg]

### Thermoplastic Cement



For adhering samples to glass slides or other specialty holders

- 40-8100 Use at 266° F [130°C] (Qty 12)

### Crystalbond Mounting Wax



For adhering samples to glass slides or other specialty holders

- 40-8150 Use at 257°F [125°C]
- 20-8145 Use at 127°F [53°C]

\* Compatible with specimens up to 0.200in [5mm] thick  
† Restricted article, requires special packaging

• Compatible with specimens between 0.0035 - 0.090in [0.9 - 2.3mm]

## Protect the integrity of your samples

Compression Mounting is the preferred method for optimal edge preservation and highest throughput. Buehler carries compression mounting systems and mounting compounds designed to fit the varying needs of different labs.

### SimpliMet® 4000

The fastest mounting press designed for 24/7 use. Eliminate bottlenecks at the mounting stage, rapidly transforming your cut samples to specimens ready for grinding and polishing.

#### High reliability in 24/7 use environments

The SimpliMet 4000 was tested in extreme conditions and simulated the duty cycle of the busiest labs in the world. This machine provides high reliability in continuous use environments.

#### Optimize productivity in your space

The SimpliMet 4000 packs fast mounting cycles into limited bench space, optimizing productivity. Fast duplex mounting allows two mounts to be made during the same cycle with minimal increase in cycle time.

#### Ease of use saves time and protects sample quality

The simple user interface makes the machine easy to use and helps the user protect the quality of sample prep. Everything the user needs is right on the front panel. Use the Simplimet 4000 out of the box without the wait.

#### Comfortable to use

The single handed closure mechanism engages quickly, moving you right into your next task



**Dimensions:** 12.25in [311mm]W x 26in [662mm]D x 20.62in [524mm] open  
12.25in [311mm]W x 26in [662mm]D x 19.62in [498mm] closed

**Voltage/Frequency:** 85-264VAC, 50/60Hz

**Weight:** 120lb [54kg]

| Part Number  | Mold Assembly    |
|--------------|------------------|
| 20-1011-5001 | with 1in Mold    |
| 20-1011-5025 | with 25mm Mold   |
| 20-1011-5125 | with 1.25in Mold |
| 20-1011-5030 | with 30mm Mold   |
| 20-1011-5150 | with 1.5in Mold  |
| 20-1011-5040 | with 40mm Mold   |
| 20-1011-5050 | with 50mm Mold   |

#### Chamfer Ram

Increase your grinding and polishing efficiency with a Chamfer Ram. Chamfer rams eliminate sharp edges by creating a beveled edge around the working face of the sample. This saves time and consumable costs during your grinding step.

| Part Number | Mold Assembly                 |
|-------------|-------------------------------|
| 2011122     | 1.25in Chamfer ram and spacer |
| 2011123     | 30mm Chamfer ram and spacer   |
| 2011124     | 1.5in Chamfer ram and spacer  |
| 2011125     | 40mm Chamfer ram and spacer   |
| 2011127     | 50mm Chamfer ram and spacer   |



Compression mounting compounds utilize heat and pressure to encapsulate a specimen. Buehler's compounds minimize shrinkage while protecting and preserving sample edges during the preparation process.

### Wide Portfolio for Every Application

The choice of a mounting compound depends on the goals of the lab and requirements of final analysis. See below for the many different compounds that are available to meet the needs of a lab.

### Excellent Edge Retention

EpoMet offers excellent edge retention making it ideal for processing harder materials. The fine particle size of EpoMet F is great for intricate structures and penetration while the granular size of EpoMet G optimizes ease of use.

### Quick Cycle Set-Up with No Mess

Save time and maximize cleanliness by eliminating the measuring and pouring of powder. Simply place a PhenoCure premold into the mounting chamber and the cycle is ready to begin.

| Material                           | Recommended Use   | Color             | Hardness (Shore D) | Edge Retention |
|------------------------------------|---|-------------------|--------------------|----------------|
| PhenoCure®                         | General purpose metallography   | Black, Red, Green | ~88                | Good           |
| PhenoCure® LP                      | General purpose metallography lower hazard level  | Black             | ~88                | Good           |
| Diallyl Phthalate - Mineral Filled | Moderately hard material  | Blue              | ~91                | Better         |
| Diallyl Phthalate - Glass Filled   | Moderately hard material for etching  | Blue              | ~91                | Better         |
| EpoMet® G (Granular)               | Very hard material  | Black             | ~94                | Best           |
| EpoMet® F (Fine)                   | Very hard material with complex geometries  | Black             | ~94                | Best           |
| TransOptic™                        | When transparency of the mount is useful  | Clear             | ~80                | Good           |
| ProbeMet®                          | Great for Electropolishing and electroetching. Can be used for SEM when copper is not of interest | Copper            | ~94                | Better         |
| KonductoMet®                       | SEM analysis when ProbeMet is not suitable  | Black             | ~88                | Good           |

## General Purpose Compounds



The PhenoCure and PhenoCure LP powders are wood-flour thermoset resins that provide good edge retention and moderate shrinkage. While the PhenoCure LP also provides a lower hazard level at the same performance.

### PhenoCure

| Size            | Black       | Red         | Green       |
|-----------------|-------------|-------------|-------------|
| 5 lbs [2.3kg]   | 20-3100-080 | 20-3200-080 | 20-3300-080 |
| 25 lbs [11.3kg] | 20-3100-400 | 20-3200-400 | 20-3300-400 |
| 40 lbs [18.1kg] | 20-3100-500 | 20-3200-500 | 20-3300-500 |

### PhenoCure LP

| Size            | Black       |
|-----------------|-------------|
| 5 lbs [2.3kg]   | 20-6100-080 |
| 25 lbs [11.3kg] | 20-6100-400 |
| 40 lbs [18.1kg] | 20-6100-500 |



Premolds reduce mess and save time. Simply place the premold over the specimen in the mold cylinder. Premolds are sold 500/pack.

| Size          | Black       | Red         | Green       |
|---------------|-------------|-------------|-------------|
| 1in [25mm]    | 20-3111-501 |             |             |
| 1.25in [32mm] | 20-3112-501 | 20-3212-501 | 20-3312-501 |
| 1.5in [38mm]  | 20-3113-501 | 20-3213-501 | 20-3313-501 |
| 1.75in [45mm] | 20-10090    |             |             |

[Click Here](#) to shop Specialty Compounds

## Specialty Compounds

Click [Here](#) to shop Specialty Compounds

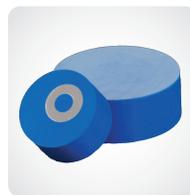


### EpoMet® G (Granular)

A mineral filled epoxy thermoset with excellent edge retention for mounting hard materials.

20-3380-064 4 lbs [1.8kg]  
 20-3380-160 10 lbs [4.5kg]  
 20-3380-400 25 lbs [11.3kg]  
 20-3380-500 40 lbs [18.1kg]

Black ●



### Diallyl Phthalate

A filled thermoset resin recommended for mounting moderately hard materials. Choose glass filled for etching or mineral filled for better abrasion resistance.

20-3330-080 Mineral Filled, 5 lbs [2.3kg]  
 20-3340-080 Glass Filled, 5 lbs [2.3kg]

Blue ●



### EpoMet® F (Fine)

A mineral filled epoxy thermoset with fine particles and excellent edge retention for mounting hard materials with complex geometries.

20-3381-070 4 lbs [1.8kg]  
 20-3381-160 10 lbs [4.5kg]  
 20-3381-400 25 lbs [11.3kg]

Black ●



### TransOptic

A transparent thermoplastic acrylic that allows the user to easily extract the specimen from the mount with reheating. Requires a special cooling cycle available on the SimpliMet® 4000.

20-3400-080 5 lbs [2.3kg]

Clear ○



### ProbeMet®

A copper and mineral filled phenolic thermoset recommended for SEM analysis of specimens when copper is not the object of analysis. *Note:* Can cause a Cu-Al galvanic corrosion on aluminum specimen.

20-3385-064 4 lbs [1.8kg]

Copper ●



### KonductoMet®

A graphite and mineral filled phenolic thermoset recommended for SEM analysis of specimens when ProbeMet is not suitable.

20-3375-016 1 lbs [0.45kg]  
 20-3375-400 25 lbs [11.3kg]

Black ●

## Compression Mounting Tips



You can minimize shrinkage and improve edge retention by cooling the mount to room temperature under pressure before removing it from the mounting press. This is done automatically on the SimpliMet 4000



Uncured mounts can be caused by excess moisture in the mounting compound. Make sure to properly close the container between uses.



Radial splitting of mounts is often caused by sharp edges on the sample, by samples that are too large for the mold or samples that are too close to the mold wall. Round off sharp corners and move the specimen farther from the edge of the mount.



Bulging or soft mounts are a result of insufficient cure times. Increase the cure time.

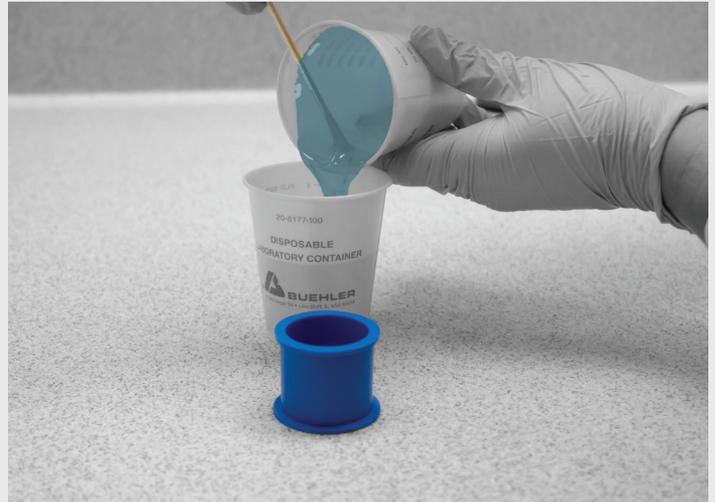


Unfused or frosted mounting compound is often a sign of insufficient molding temperatures or pressures. Ensure the temperature and pressure settings on the mounting press match the recommendations for the compression compound being using.

## Castable Mounting Tips

### Epoxy Tips

- Some epoxies can be cured more quickly by gently heating, typically at 30-40° C. Use caution as higher cure temperatures can cause excessive heating during curing.
- When mixing, tilt the cup containing the resin and hardener slightly and gently work the resin and hardener together using a lift and stir motion.
- To get the best results, use a vacuum system to evacuate air trapped in epoxy systems and samples. This helps wick epoxy into the the specimen to help support cracks, pores, and/or internal components.
- Epoxies are sensitive to the ratio of resin and hardener. Be sure to follow the recommended mass ratio for each product.

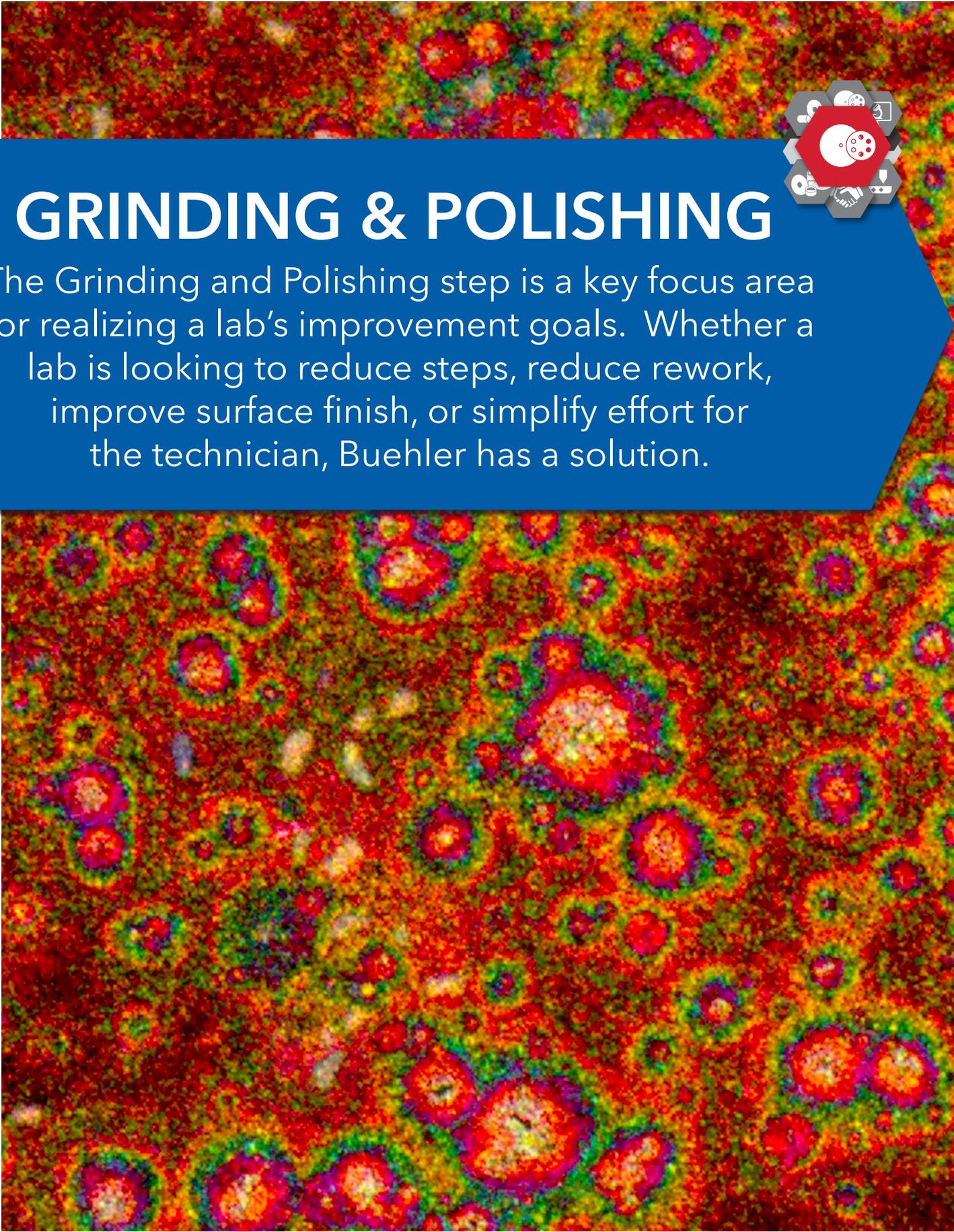


### Acrylic Tips

- Acrylics cure quickly so it is highly recommended to pour the mixture into the mold immediately after mixing to prevent "gelling".
- Acrylic systems are not for use with Vacuum Systems because the vapor released can eliminate the vacuum nor are they for use with Disposable Mounting Cups because the heat of the reaction will degrade the plastic cup and produce a bad mount edge.
- To improve edge retention for acrylic systems, coat the sample in the liquid hardener before pouring in mixed compound.

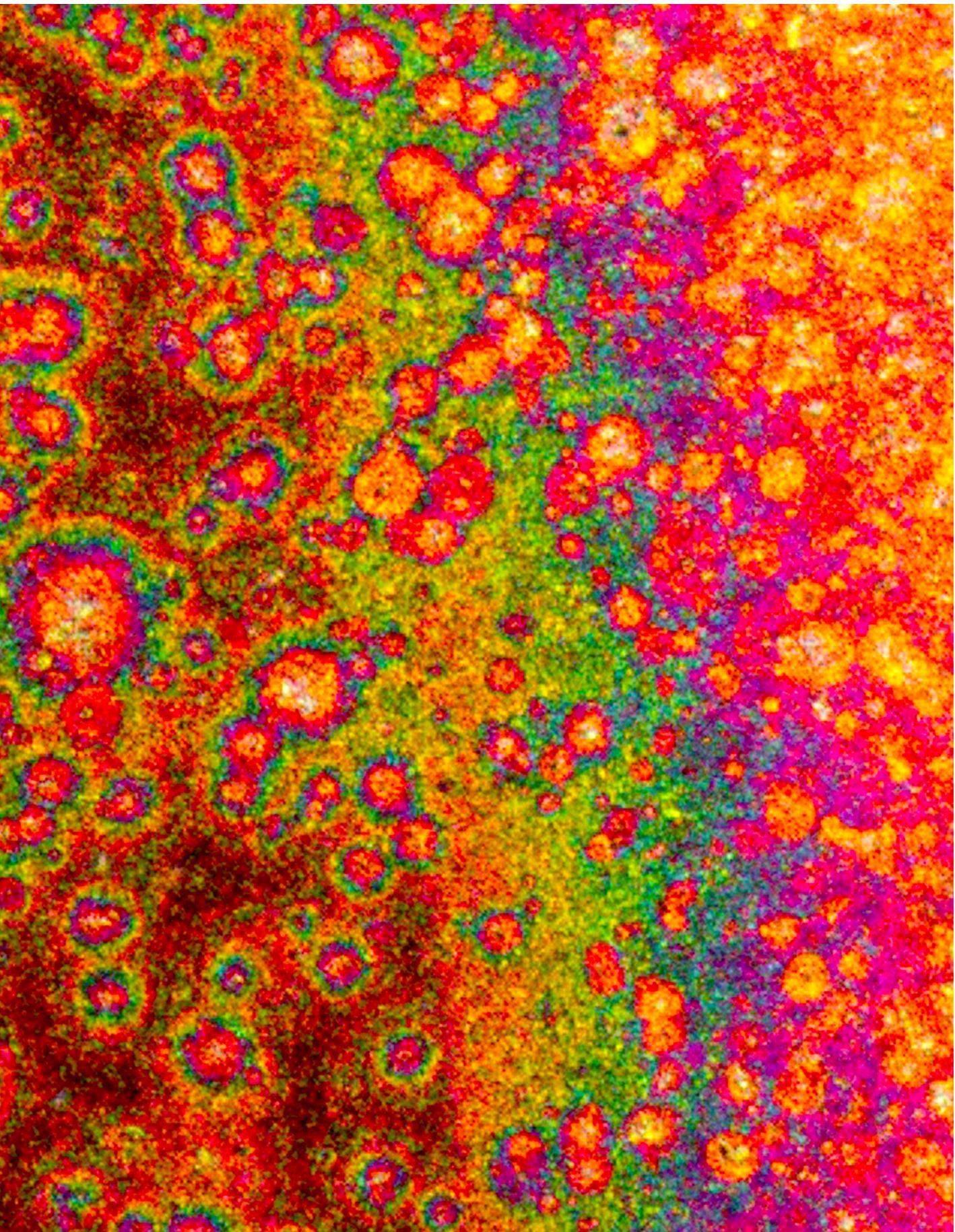


See Mounting Guide for More Information



# GRINDING & POLISHING

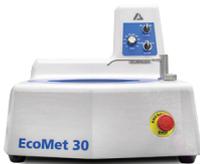
The Grinding and Polishing step is a key focus area for realizing a lab's improvement goals. Whether a lab is looking to reduce steps, reduce rework, improve surface finish, or simplify effort for the technician, Buehler has a solution.



## A Grinder-Polisher Solution for Any Lab

Buehler offers a full line of easy-to-use machines. Choose between the EcoMet 30 and AutoMet grinder polishers to provide the perfect solution for your lab.

### EcoMet® 30 Manual



EcoMet 30 Manual is a cost effective grinder-polisher with the essential functions. It has quick clean features to save time and effort, and is made from a durable metal casting for robustness and stability. It has an ergonomic splash ring for comfortable manual use. Available with single or twin platens

### EcoMet® 30 Semi-Auto



EcoMet 30 Semi-Auto is an entry level grinder-polisher with an emphasis on simplicity. All functions are quickly accessible on the easy to use touch screen interface. The EcoMet 30 is compatible with a dispensing system to go hands-free during the polishing process and improve repeatability.

### AutoMet® 250



AutoMet 250 is an advanced grinder-polisher with more power to accommodate a greater capacity for high volume environments. The easy to use controls remove complexity from the grinding and polishing process.

### AutoMet® 250 Pro



AutoMet 250 Pro has additional premium features. The enhanced programmability is highly intuitive with easy method storage. Improve repeatability with the automated dispensing system. The machine has Z axis removal capabilities for grinding and polishing by depth.

### AutoMet® 300 Pro



AutoMet 300 Pro is similar to the AutoMet 250 Pro, with an enhanced motor and larger platen size to accommodate larger samples. It's also compatible with accessories such as PC-Met and PWB Met for PCB grinding and polishing.



If you need further assistance in selecting the best Grinder-Polisher for your application, please reach out to your local Buehler Sales Engineer or visit [www.buehler.com](http://www.buehler.com)

|                            | EcoMet 30 Manual | EcoMet 30 Semi-Auto | AutoMet 250 | AutoMet 250 Pro    | AutoMet 300 Pro    |
|----------------------------|------------------|---------------------|-------------|--------------------|--------------------|
| Style                      | Manual           | Semi-Auto           | Semi-Auto   | Semi-Auto          | Semi-Auto          |
| Platen Count               | Single or Twin   | Single or Twin      | Single      | Single             | Single             |
| Platen Sizes               | 8", 10", or 12"  | 8", 10", or 12"     | 8" or 10"   | 8" or 10"          | 10" or 12"         |
| Controls                   | Knobs            | Touch screen        | Membrane    | Touch screen       | Touch screen       |
| Dispensing Capability      |                  | Dispensing (3 max)  |             | Dispensing (5 Max) | Dispensing (5 max) |
| Storage                    |                  | Steps               |             | Methods            | Methods            |
| Removal by Depth           |                  |                     |             | Z axis removal     | Z axis removal     |
| Rinse & Spin               |                  | X                   |             | X                  | X                  |
| Single Force Max Capacity  |                  | 4                   | 6           | 6                  | 6                  |
| Central Force Max Capacity |                  | 12                  | 12          | 12                 | 12                 |
| Specimen Max Size          |                  | 40mm                | 40mm        | 40mm               | 50mm               |

## Designed for Demanding Production Lab Environments

Easily accommodate many applications with this versatile line of Grinder-Polishers. All products have durable construction for reliability in high use environments, unique quick cleaning features, and plenty of enhancements for user friendly operation.

### AutoMet®

The AutoMet grinder-polisher is a high performance machine, designed for reliability, flexibility, and ease of use. Upgrade to a Pro model for intelligent programming with easy to use advanced features that create highly reproducible results.

#### AutoMet Features

- Built tough for high volume use.
- Save time with quick clean features including a retractable water hose, disposable bowl liner and integrated 360 degree bowl rinse.
- AutoMet 300 12" platen size provides a larger working area for faster grinding or to accommodate large samples.
- AutoMet 250 8" and 10" platen size choice optimizes the cost of paper and diamond when a larger unit isn't required.

#### AutoMet Pro Features

- Color touch screen controls add functionality needed for advanced methods, such as method creation/storage and Z-axis material removal by depth.
- Improve productivity and consistency by integrating with a Burst Dispensing System (see page 40).



| Model           | Part Number | Voltage/Frequency     |
|-----------------|-------------|-----------------------|
| AutoMet 250     | 49-7257     | 100 - 240VAC, 50-60Hz |
| AutoMet 250 Pro | 49-7258     | 100 - 240VAC, 50-60Hz |
| AutoMet 300 Pro | 49-7268     | 170-240VAC, 50-60Hz   |

**AutoMet 250 & 250 Pro:**  
 Dimensions: 27.5in H x 24.4" D x 20in W [699mm H x 620mm D x 508mm W]  
 Weight: 170lbs [77kg]

**AutoMet 300 Pro:**  
 Dimensions: 28.5in H x 28.6in D x 23in W [724mm H x 726mm D x 584mm W]  
 Weight: 219lbs [99kg]

### Accessories

#### AutoMet 250 & 250 Pro

- 40-4061 8in [203mm] Aluminum Platen
- 40-0500 10in [254mm] Aluminum Platen
- 60-9080 Disposable Bowl Liner (Qty 5)
- 49-1250 Splash Guard Kit for AutoMet 250
- 49-2250 Lid for AutoMet 250

#### AutoMet 300

- 40-0500 10in [254mm] Aluminum Platen
- 49-1777 12in [305mm] Aluminum Platen
- 60-9081 Disposable Bowl Liners (Qty 5)
- 4961-300 Splash guard for AutoMet 300
- 49-1300 Lid for AutoMet 300



## Grinding & Polishing Made Simple

The EcoMet 30 is an entry level grinder-polisher and an excellent choice for any lab that values simplicity. Best suited for low variety environments or those with a dedicated machine for each grinding-polishing step.

## EcoMet® 30 Semi-Automatic

The EcoMet 30 Semi-Automatic provides simple operation for routine grinding and polishing. The user-friendly touchscreen interface puts all regularly used functions on the front screen with no complicated menus that can add time to the process. Ideal for users who have a dedicated machine for each step in their process, the EcoMet 30 also helps to save time with advanced cleaning features. Durability tested over 2500 hours and compatible with 8in [203mm], 10in [254mm] and 12in [305mm] platens.

### Routine Grinding and Polishing Made Easy

- Intuitive touchscreen interface
- No complicated menus
- Focus on everyday use features
- Stored steps for quick setting recall

### Easy to Clean

- User selectable rinse and spin function
- Easy to remove platens
- Large straight path draining system

### Burst Dispensing

- The EcoMet 30 Semi-Automatic units can be connected to the Burst Dispensing System for increased throughput in the lab
- The Burst will automatically dispense during the cycle allowing a user to operate other machines during the polishing process

### Thoughtful Design Elements

- Touchscreen location and angle is easy to see and easy to reach for users of various heights
- All cast aluminum design adds stability and durability

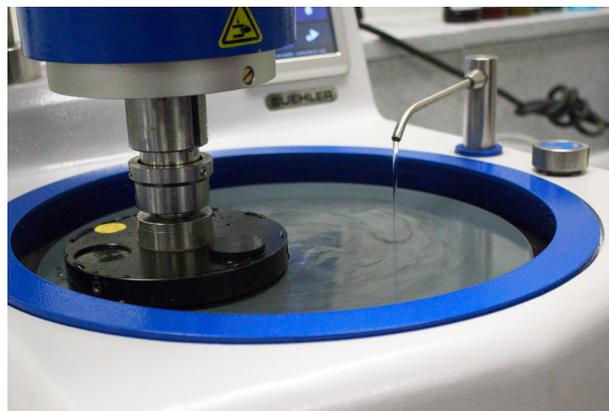
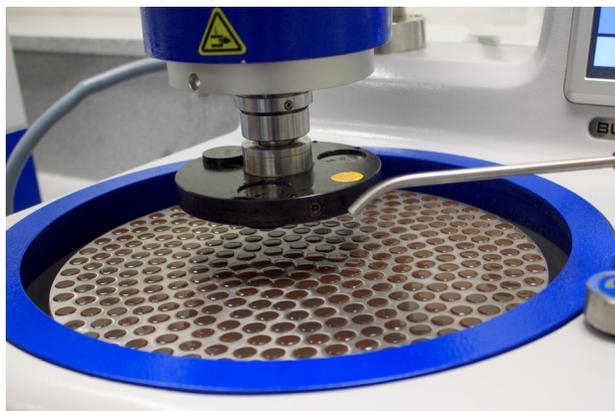


| Model  | Part Number | Voltage/Frequency  |
|--------|-------------|--------------------|
| Single | 49-10075    | 85-264VAC, 50/60Hz |
| Twin   | 49-10076    | 85-264VAC, 50/60Hz |

\* Platen Kit not included

**EcoMet 30 Semi Automatic Single**  
 Dimensions: 19.7" L x 25.6" D x 25.6" H [500 mm L x 650 mm D x 650 mm H]  
 Weight: 165lbs [75kg]

**EcoMet 30 Semi Automatic Twin**  
 Dimensions: 37.4" L x 26" D x 25.6" H [950 mm L x 660 mm D x 650 mm H]  
 Weight: 232lbs [105kg]



## Grinding & Polishing Made Simple

The EcoMet 30 is an entry level grinder-polisher and an excellent choice for any lab that values simplicity. Best suited for low variety environments or those with a dedicated machine for each grinding-polishing step.

### EcoMet® 30 Manual

The EcoMet 30 provides simple operation for manual grinding and polishing. The comfortable splash guard design allows for excellent control while holding a part. Easy to use and easy to clean. Durability tested over 2500 hours and compatible with 8in [203mm], 10in [254mm] and 12in [305mm] platens.

#### Ergonomic Manual Polish

- Large flat work space and ergonomic bowl height provides better control and more comfort
- Additional control improves sample quality and reduces grinding time

#### Easy to Clean

- Easy to remove platens allows for fast deep cleaning
- Large straight path draining system

| Model  | Part Number | Voltage/Frequency  |
|--------|-------------|--------------------|
| Single | 49-10070    | 85-264VAC, 50/60Hz |
| Twin   | 49-10072    | 85-264VAC, 50/60Hz |



#### Accessories

##### Platen Kit (Required)

Each Kit includes a platen, splash ring and cover

- 49-1008 8in [203mm] Aluminum Platen
- 49-1010 10in [254mm] Aluminum Platen
- 49-1012 12in [305mm] Aluminum Platen

##### Replacement Bowl Liners

All EcoMet 30's include one bowl liner per bowl. Remove and wash the liner for quick bowl cleaning.

- 49-1005 Qty 5

##### EcoMet 30 Single:

Dimensions: 19.7in [500mm] L x 25.6in [650mm] D x 17.7in [450mm] H

Weight: 102lbs [46kg]

##### EcoMet 30 Twin:

Dimensions: 37.4in [950mm] L x 26in [660mm] D x 17.7in [450mm] H

Weight: 154lbs [70kg]



## Burst Dispensing System

The Burst Dispensing System is a flexible, easy to operate dispensing system for all diamond and final polishing suspensions. This product improves both productivity and consistency by dispensing suspensions at fixed intervals and configurable rates.

### Choose from two different Burst Configurations

#### Fully Integrated

The Grinder-Polisher controls the start/stop function and the volume rate.

*(AutoMet 250 Pro shown with 5 burst modules and a stadium seating module.)*



Compatible with EcoMet 30, AutoMet 250 Pro, AutoMet 300 Pro

#### How to configure the fully integrated Burst system for AutoMet 250 and AutoMet 250 Pro:

Choose up to 5 Burst modules (Part Number 40-10005)  
includes a stir bar and 16oz bottle

- Add stadium seating module (Part Number 40-10004)
- Add dispensing arm (Part Number 40-10006)
- Add additional stir bar (Part Number 00-10100)

#### How to configure the fully integrated burst system with EcoMet 30:

- Choose up to 3 Burst modules (Part Number 40-10005)
- Add cable to control start/stop function (Part Number 40-2704)
- Add additional stir bar (Part Number 00-10100)

#### Accessories

- 40-10004 Stadium Seating Module**  
A compact and efficient method to hold up to 5 burst modules
- 40-10006 Dispensing Arm for AutoMet® 250/300**  
The dispensing arm attaches the AutoMet Pro Grinder-Polisher to the burst dispensing system. Outlet tubing from the burst system is secured neatly into the arm. Outlet nozzles dispense suspension on to the platen.
- 00-10100 Stir Bar**  
Magnetically driven stir bars prevent settling of suspension. Use one for each module.

#### Independent

The Burst Module Control Panel is used to control dispensing stop/start and volume rate.



Compatible with all Grinder-Polishers

#### How to configure independent Burst modules:

- Choose Burst module (Part Number 40-10005)
- Up to 5 modules can be connected to one electrical power source; requires cable for connecting module to module (Part Number 40-2832)
- Add additional stir bar (Part Number 00-10100)
- Add optional hand switch (Part Number 40-2823)

#### Accessories

- 40-2832 Cable for connecting module to module**  
For connecting more than 1 burst module in the independent configuration. Up to 5 modules can be connected together. Requires one cable for each module added to the first module.
- 40-2823 Hand Switch**  
Used to control the start/stop function.
- 00-10100 Stir Bar**  
Magnetically driven stir bars prevent settling of suspension. Use one for each module.
- 40-2704 Cable to Control Start/Stop Function**  
For controlling start/stop function of Burst from the AutoMet 250/300 & EcoMet 30

Sample holders are designed for use with Buehler's grinder-polishers to facilitate process automation and optimization. Many options for different sample sizes and shapes are available depending on the shapes, sizes, and capacities required.

## Single Force Specimen Holders

 Round/Barrel

 Rectangle

 Slides

### EcoMet 30 Power Head *For use with 60-9005 Drive Adapter*

| Part Number | Style   | Size   | Capacity | Additional Accessories   |
|-------------|---|--------|----------|--|
| 60-10060    |  | 1in    | 4        | 63-1022 Retaining Rings (Qty 6pk)  |
| 60-10061    |  | 1.25in | 4        | 63-1023 Retaining Rings (Qty 6pk)  |
| 60-10062    |  | 1.5in  | 4        | 63-1024 Retaining Rings (Qty 3pk)<br>60-9150 27 x 46 mm Glass Slide Holder |
| 60-10063    |  | 25mm   | 4        | 63-1022 Retaining Rings (Qty 6pk)  |
| 60-10064    |  | 30mm   | 4        | 63-1023 Retaining Rings (Qty 6pk)  |
| 60-10065    |  | 40mm   | 4        | 63-1024 Retaining Rings (Qty 3pk)  |



### AutoMet® 250 Power Head *For use with 60-9005 Drive Adapter.*

| Part Number | Style   | Size   | Capacity | Additional Accessories  |
|-------------|---|--------|----------|---|
| 60-9010     |    | 1in    | 6        | 63-1022 Retaining Rings (Qty 6pk)<br>60-9120 1 x 3in Glass Slide Holder<br>60-9130 2 x 3in Glass Slide Holder |
| 60-9011     |   | 1.25in | 6        | 63-1023 Retaining Rings (Qty 6pk)   |
| 60-9012     |  | 1.5in  | 6        | 63-1024 Retaining Rings (Qty 3pk)   |
| 60-9020     |  | 25mm   | 6        | 63-1022 Retaining Rings (Qty 6pk)   |
| 60-9021     |  | 30mm   | 6        | 63-1023 Retaining Rings (Qty 6pk)   |
| 60-9022     |  | 40mm   | 6        | 63-1024 Retaining Rings (Qty 3pk)   |

### AutoMet® 300 Power Head *For use with 60-9005 Drive Adapter.*

| Part Number | Style   | Size   | Capacity | Additional Accessories  |
|-------------|---|--------|----------|---|
| 60-9060     |  | 1in    | 6        | 63-1022 Retaining Rings (Qty 6pk)<br>60-9120 1 x 3in Glass Slide Holder<br>60-9130 2 x 3in Glass Slide Holder |
| 60-9061     |  | 1.25in | 6        | 63-1023 Retaining Rings (Qty 6pk)   |
| 60-9062     |  | 1.5in  | 6        | 63-1024 Retaining Rings (Qty 3pk)   |
| 60-9063     |  | 2in    | 6        |   |
| 60-9070     |  | 25mm   | 6        | 63-1022 Retaining Rings   |
| 60-9071     |  | 30mm   | 6        | 63-1023 Retaining Rings   |
| 60-9072     |  | 40mm   | 6        | 63-1024 Retaining Rings   |
| 60-9073     |  | 50mm   | 6        |   |

## Central Force Specimen Holders

Round/Barrel    
 Rectangle    
 Teardrop

### AutoMet 300 Power Head

For use with 60-9000 Drive Adapter.  
 Uses Loading Plates 60-2412 or 60-2413  
 181mm diameter for 12" platens

| Part Number | Style | Size           | Capacity |
|-------------|-------|----------------|----------|
| 60-5281     |       | 1in            | 10       |
| 60-5282     |       | 1.25in         | 10       |
| 60-5252     |       | 1.25in or 30mm | 9        |
| 60-5287     |       | 30mm           | 10       |
| 60-5283     |       | 1.5in          | 6        |
| 60-5253     |       | 1.5in or 40mm  | 6        |
| 60-5288     |       | 40mm           | 6        |
| 60-5299     |       | 2in            | 5        |
| 60-5296     |       | 2in or 50mm    | 5        |
| 60-5297     |       | 55 x 30mm      | 5        |
| 60-5298     |       | 70 x 40mm      | 3        |

### AutoMet 250 and EcoMet 30 Power Heads

For use with 60-9000 Drive Adapters  
 Uses Loading Plates 60-2411 or 60-2413  
 130mm diameter for 8", 10" or 12" platens



| Part Number | Style | Size                        | Capacity |
|-------------|-------|-----------------------------|----------|
| 60-2482     |       | 1in                         | 6        |
| 60-2483     |       | 1.25in                      | 6        |
| 60-2422     |       | 1.25in [32mm]               | 6        |
| 60-2485     |       | 1.5in                       | 3        |
| 60-2486     |       | 30mm                        | 6        |
| 60-2487     |       | 40mm                        | 3        |
| 60-2409     |       | 1 x 1.25in [25.4 x 31.75mm] | 4        |

Uses loading plates 60-2411 or 60-2412 157mm diameter for 10" or 12" platens

|         |  |           |    |
|---------|--|-----------|----|
| 60-8240 |  | 18 - 51mm | 5  |
| 60-8210 |  | 12 - 40mm | 6  |
| 60-8262 |  | 10 - 25mm | 12 |
| 60-8254 |  | 55 x 30mm | 5  |
| 60-8255 |  | 70 x 40mm | 3  |

## Accessories for Specimen Holders

### Loading Fixtures and Plates



Used for loading Central Force Specimen Holders to ensure planar samples.

| Part Number | Description                                       |
|-------------|---|
| 60-2410     | Loading Fixture                                   |
| 60-2411     | Loading Plate for 5.1in [130mm] and 6.1in [157mm] |
| 60-2412     | Loading Plate for 6.1in [157mm] and 7.1in [181mm] |
| 60-2413     | Loading Plate for 5.1in [130mm] and 7.1in [181mm] |

### Drive Adapters



Pairs specimen holders to the chuck of the automatic head

| Part Number           | Compatible With                             |
|-----------------------|---|
| 60-9000 Central Force | AutoMet 250/300<br>PlanarMet 300, EcoMet 30 |
| 60-9005 Single Force  | AutoMet 250/300, EcoMet 30                  |

### Target Holders



Designed for precise material removal to specified depths. Includes one ceramic and one steel stop ring.

| Part Number | Description                                   |
|-------------|---|
| 60-8100     | For 28 x 48mm glass slide (histologic holder) |
| 60-8101     | For 1in [25mm] mounted specimens              |
| 60-8102     | For 1.25in [32mm] mounted specimens           |
| 60-8113     | For 40mm mounted specimens                    |

## Blank Specimen Holders For use with 60-9000 Drive Adapter.

| Part Number | Diameter                                     | Power Head                                 |
|-------------|--|--|
| 60-2408     | 5.12in [130mm]<br>for 8", 10" or 12" platens | AutoMet® 250<br>AutoMet® 300<br>EcoMet® 30 |
| 60-5254     | 7.12in [181mm]<br>for 12" platens only       | AutoMet 300<br>EcoMet® 30                  |



## Slide Holders & Glass Slides

| Glass Slide Size | Slide Holder                           | Single Force Specimen Holder                       | Glass Slides                                    |
|------------------|--|--|---|
| 1 x 3in          | 60-9120<br>(max 3 per specimen holder) | 60-9010 for AutoMet 250<br>60-9060 for AutoMet 300 |   |
| 2 x 3in          | 60-9130<br>(max 2 per specimen holder) | 60-9060 for AutoMet 300                            |   |
| 27 x 46mm        | 60-9100<br>(max 3 per specimen holder) | 60-9010 for AutoMet 250<br>60-9060 for AutoMet 300 | 40-8000-001 (Qty 144)<br>40-8000-010 (Qty 1440) |
| 27 x 46mm        | 30-8005<br>hand-held holder            |  | 40-8000-001 (Qty 144)<br>40-8000-010 (Qty 1440) |
| 28 x 48mm        | 60-9140<br>(max 3 per specimen holder) | 60-9010 for AutoMet 250<br>60-9060 for AutoMet 300 |   |

## PC-Met™ Precision High Volume Printed Wiring Board Accessory

- High volume printed wiring board preparation system
- Prepares up to 36 coupons simultaneously
- Prepares reproducible cross-sections of through-holes down to 0.008in
- For use with AutoMet 300

| Part Number | Contents   |
|-------------|--|
| 60-5090     | Indexing pins, carbide and diamond stops, pin loader, dial indicator, gauge blocks and wooden case |



### Accessories

|         |  |         |                                 |
|---------|--|---------|---------------------------------|
| 60-5053 | Coupon Pins 1.0625in [27mm] long (Qty 1000)      | 60-5055 | Dial Indicator                  |
| 60-5067 | Cup, Extended Upper Mold Plate, 0.8in (Qty 6)    | 60-5095 | Holder with diamond and carbide |
| 60-9000 | Central Force Drive Adapter for AutoMet® 250/300 | 60-5091 | Carbide stops (Qty 3)           |
| 60-5061 | Upper cup  | 60-5092 | Diamond stops (Qty 3)           |
| 60-5062 | Lower cup  |         |                                 |

## PWB Met™ Small Hole Accessory

- Higher precision PWB preparation system
- Prepares up to 18 coupons simultaneously
- Prepares reproducible cross-sections of through-holes down to 0.004in
- For use with AutoMet 300

| Part Number | Contents  |
|-------------|---|
| 60-5175     | Indexing pins, polycrystalline diamond stops, Pin loader, dial indicator calibration gauge, silicone mold release spray, gauge blocks, sample extractor and wooden case |



### Accessories

|         |  |
|---------|--|
| 60-5186 | PWB Met Short Pin Loader 0.375in [10mm] long     |
| 60-5084 | PWB Met Pins 0.375in [10mm] long (Qty 3000)      |
| 60-5091 | Long stop assembly                               |
| 60-5094 | Short stop assembly with polycrystalline diamond |
| 60-5097 | Holder with polycrystalline stops                |

## MiniMet® 1000

A low volume, single specimen machine capable of preparing a wide variety of materials. Space saving design employs geometric action, increasing specimen consistency.

### Easy to use

- Simple operations ideal for low volume applications

### Save space and lower costs

- Designed to use 2.875in [73mm] abrasive paper and polishing cloths



**Dimensions:** 7in [180mm]W x 16in [400mm]D x 8in [200mm]H  
**Weight:** 25 lbs [11 kg]

| Part Number | Voltage/Frequency  |
|-------------|--------------------|
| 69-1100     | 85-264VAC, 50/60Hz |

### Accessories

|         |  |         |  |
|---------|--|---------|--|
| 69-1111 | Caged Specimen Holder, for 1in [25mm] or 1.25in [32mm] Mounted Specimens     | 69-1581 | Thin Section Bowls, 4.75in [121mm] (1 each Black, White, Blue) |
| 69-1112 | Caged Specimen Holder, for 1.5in [38mm] Mounted Specimens                    | 69-1582 | Thin Section Glass Platen, 4in [100mm] (Qty 3) (replacement)   |
| 69-1500 | Polishing Bowls, 4in [100mm] Diameter (1 each Black, White, Blue)            | 69-1583 | MiniMet Thin Section Slide Holder, 46 x 27mm                   |
| 69-1562 | Glass Circular Slides, 0.5in [13mm] Diameter (Qty 50)                        | 69-1590 | MiniMet Wafer Polishing Attachment                             |
| 69-1566 | MiniMet 1000 Precision Thinning Attachment                                   | 69-1502 | Storage Caddie for MiniMet Bowls (Qty 3)                       |
| 69-1567 | Glass Disc, 2.145in [55mm] Diameter (Qty 5)                                  | 69-1510 | Glass Platen (Qty of 3)  |
| 69-1580 | MiniMet Thin Section Attachment (includes 3 bowls, glass and section holder) | 69-1550 | MiniMet Alignment Fixture with 3 Drill Bits                    |
|         |  | 69-1552 | Set of 3 Drill Bits (replacement)                              |

## Grinding & Polishing Consumables for MiniMet 1000

### Silicon Carbide Paper, PSA Backed, 2.875in [73mm] (Qty 100)

#### CarbiMet®

| Grit Size - ANSI [FEPA] | Micron | Part Number |
|-------------------------|--------|-------------|
| 120 [P120]              | 127    | 36-02-0120  |
| 180 [P180]              | 78     | 36-02-0180  |
| 240 [P280]              | 52     | 36-02-0240  |
| 320 [P400]              | 35     | 36-02-0320  |
| 400 [P800]              | 22     | 36-02-0400  |
| 600 [P1200]             | 15     | 36-02-0600  |

#### MicroCut®

| Grit Size - ANSI [FEPA] | Micron | Part Number |
|-------------------------|--------|-------------|
| 800 [P1500]             | 13     | 36-02-0800  |
| 1200 [P2500]            | 8      | 36-02-1200  |



### Premium Polishing Cloths, PSA Backed, 2.875in [73mm] (Qty 20)

| Cloth     | Stage        | Part Number |
|-----------|--------------|-------------|
| UltraPol™ | Coarse       | 40-7442     |
| Nylon     | Intermediate | 40-7052     |
| TexMet® C | Intermediate | 40-1102     |
| TriDent™  | Intermediate | 40-7502     |

| Cloth       | Stage | Part Number |
|-------------|-------|-------------|
| MicroCloth® | Fine  | 40-7212     |
| MasterTex®  | Fine  | 40-7702     |
| ChemoMet®   | Fine  | 40-7902     |



## VibroMet<sup>®</sup> 2

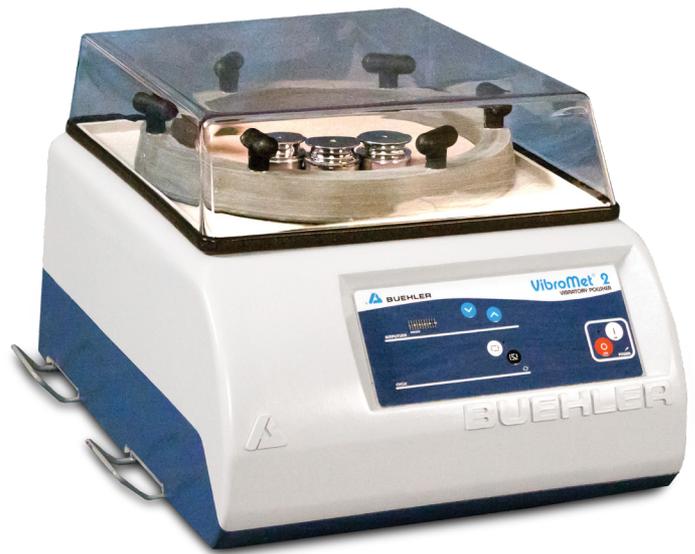
VibroMet 2 Vibratory Polisher is designed to prepare high quality polished surfaces on a wide variety of materials, including EBSD applications. The 7200 cycles per minute horizontal motion produces a very effective polishing action, providing superior results, exceptional flatness and less deformation.

### Safe and Effective Results

- Vibratory polisher removes minor deformation remaining after mechanical preparation, revealing the stress-free surface without need for the hazardous electrolytes required by electro-polishers.

### High Quality Surface Finish

- Combine the VibroMet 2 with MasterMet<sup>®</sup> Colloidal Silica to chemomechanically polish a specimen to a surface finish suitable for electron-backscatter diffraction (EBSD).



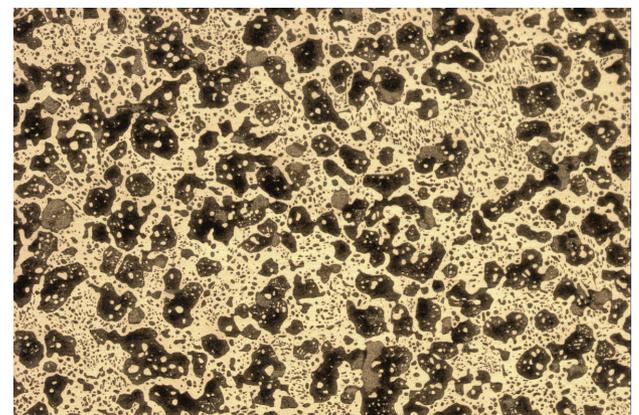
**Dimensions:** 21.5in [546mm]W x 23in [584mm]D x 14.5in [368mm]H  
**Weight:** 175lbs [80kg]

| Part Number | Voltage/Frequency |
|-------------|-------------------|
| 67-1635-160 | 115VAC, 60Hz      |
| 67-1635-250 | 220VAC, 50Hz      |

### Accessories

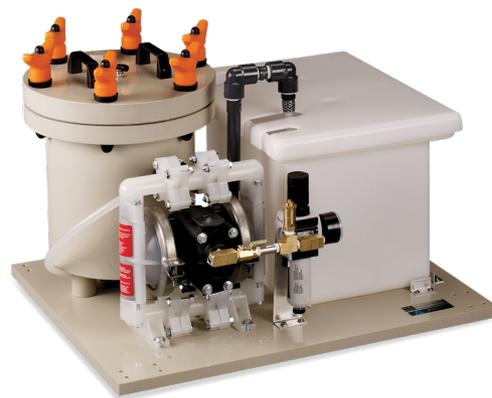


|         |  |
|---------|--|
| 67-1525 | Specimen Holder, 2in [50mm] (Qty 3)                      |
| 67-1526 | Specimen Holder, 1in [25mm] (Qty 3)                      |
| 67-1527 | Specimen Holder, 1.25in [32mm] (Qty 3)                   |
| 67-1528 | Specimen Holder, 1.5in [38mm] (Qty 3)                    |
| 67-1529 | Specimen Weights (Qty 9)                                 |
| 67-1530 | Polishing Bowl Accessory                                 |
| 67-1541 | Loading Fixture, 2in and 50mm                            |
| 67-1540 | Loading Fixture, 1in [25mm], 1.25in [32mm], 1.5in [38mm] |



## EnvironMet® System

Ideal for laboratories concerned with water regulation and conservation requirements and/or environmental issues. Designed for use with manual and semi-automatic grinder-polishers, the EnvironMet® Filter System uses fresh water for each step in preparation. The filtration rate allows up to two grinder-polishers to operate off of one system. The 49-2500 EnvironMet® System is designed to filter up to 1µm and then recirculate the water. The 49-2501 EnvironMet® System is designed to filter water up to 100µm and uses fresh water. Both EnvironMet® Systems are powered by compressed air and require no electrical connections. *\*Requires compressed air*



Dimensions: 25.5in [648mm]W x 20.5in [521mm]D x 16.8in [425mm]H

### Part Number

49-2500 Recirculating Filter System (1µm Filter)

49-2501 Filter System (100µm Filter)

### Accessories

49-2510 Replacement 1µm Filter Paper (Qty 100)  
 49-2520 Replacement 100 µm Swarf Bag  
 49-2530 Castor Kit

## Electropolishing & Etching Systems

The ElectroMet 4 and PoliMat 2 systems provide both electropolishing and etching capabilities to enable efficient sample preparation.

### ElectroMet® 4

ElectroMet 4 includes ElectroMet 4 Power Source, Polishing Cell and Etching Cell. *Products not available in Europe*

#### Part Number Voltage/Frequency

70-1830-115 115VAC, 60Hz

70-1830-220 220-240VAC, 50Hz

### Accessories

70-1832 ElectroMet 4 Polishing Cell  
 70-2015 Masks (Qty 5)  
 70-2100 Stainless Steel Cathodes  
 70-2105 Copper Cathode  
 70-3100 Etching Cell

Power Source

Polishing Cell

Etching Cell

Masks

Etching Cell



Dimensions: 13.125in [333mm]W x 18.5in [470mm]D x 9in [229mm]H

### PoliMat® 2

Includes controller, complete polishing cell and 4 masks  
*Product only available in Europe*

#### Part Number Voltage/Frequency

511000 230VAC, 50/60Hz

### Accessories

510010 Complete polishing cell  
 510100 Set of masks  
 (1cm<sup>2</sup>, 2cm<sup>2</sup>, 10cm<sup>2</sup>, and without hole)



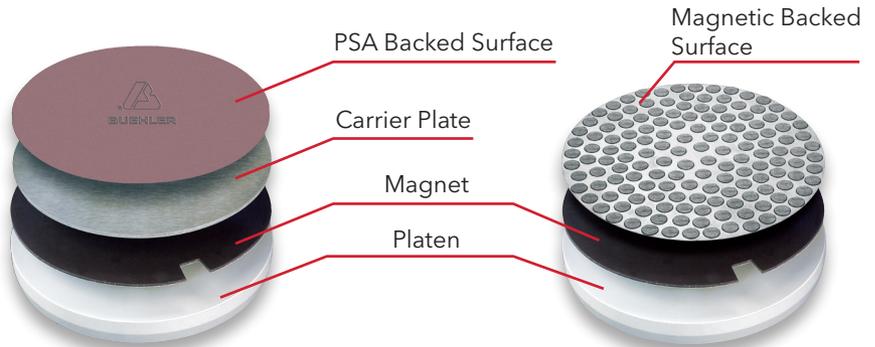
Dimensions: 19.7in [500mm]W x 11.8in [300mm]D x 9.8in [250mm]H

## Platen Systems

The choice of platen system depends on the goals of the lab and the products being used in the preparation process. The magnetic system can be adapted for use with nearly all products while the Apex S system provides the fastest solution for changing between grinding papers.

### Magnetic System

- Versatile system that allows easy removal and storage of grinding and polishing consumables
- First, adhere a PSA backed magnet to the aluminum platen.
- Directly apply magnetic backed surfaces or utilize a carrier plate for PSA backed surfaces.



**Magnet Selection** - to convert a standard platen to a magnetic platen

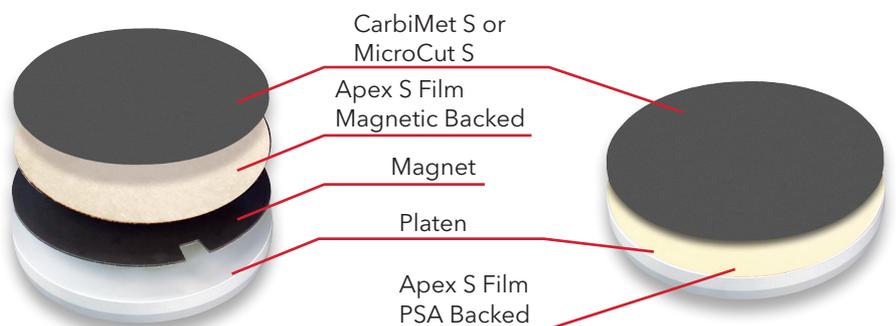
| Type                                  | Description                            | 8in [203mm]     | 10in [254mm]    | 12in [305mm]    |
|---------------------------------------|--|-----------------|-----------------|-----------------|
| Apex® M Magnet<br>PSA Backed (Qty 1)  | Contains tabs for easier plate removal | 41-2739-608-001 | 41-2739-610-001 | 41-2739-612-001 |
| MagnoFix Magnet<br>PSA Backed (Qty 1) | Standard magnet                        | 16-2070         | 16-2570         | 16-3070         |

### Carrier Plate Selection

| Type  | Description   | 8in [203mm]     | 10in [254mm]    | 12in [305mm]    |
|---|---|-----------------|-----------------|-----------------|
| MagnoPad Teflon Coated<br>Carrier Plate (Qty 5) | For easier removal of PSA surfaces,<br>ideal for polishing cloths   | 16-2073         | 16-2573         | 16-3073         |
| MagnoMet Carrier Plate (Qty 5)                  | Standard stainless steel carrier plate,<br>ideal for SiC paper  | 16-2072         | 16-2572         | 16-3072         |
| Apex B Carrier Plate (Qty 1)                    | Bimetallic disc for cloth or SiC paper.<br>Prevents adherence of magnetic<br>particles via bimetallic plate | 41-2739-208-001 | 41-2739-210-001 | 41-2739-212-001 |

### Apex® S System

- High friction backing system that is the ideal choice to reduce changeover times between grinding paper steps
- Choose the PSA backed film for use directly on aluminum platen or the magnetic backed film for use with a magnetic system.



| Type                                   | Description                        | 8in [203mm] | 10in [254mm] | 12in [305mm] |
|--|------------------------------------|-------------|--------------|--------------|
| Apex S Film<br>PSA backed (Qty 2)      | For application directly to platen | 16-2075     | 16-2575      | 16-3075      |
| Apex S Film<br>Magnetic backed (Qty 2) | For use with magnetic system       | 16-2074     | 16-2574      | 16-3074      |

## CarbiMet® & MicroCut® Silicon Carbide Grinding Papers

CarbiMet & MicroCut Silicon Carbide Grinding Papers are the premier line of grinding papers, offering efficient material removal and minimal surface damage. They are available in 3 different backing systems depending on the needs of a lab.

### High Material Removal with Superior Surface Finish

CarbiMet offers quick grinding times with minimal surface damage during the grinding process. Since there is less damage to remove, the amount of subsequent processing may be reduced, saving valuable time in the preparation process.

### Quick Change-Overs

Apex S backing allows for fast changeovers between CarbiMet steps. Simply remove the previous paper and apply the next stage without needing to remove any backings or liners.

### Delicate Preparation

MicroCut papers provide gentle material removal with superior surface finish, which is ideal for processing delicate or sensitive materials.

## Apex® S Backed

High friction backing allows for easy & fast changeovers between grinding steps. Use with Apex S carrier film. Qty 100

[Click Here](#) to shop CarbiMet Papers

|              | Grit Size<br>ANSI [FEPA] | Approx.<br>Micron Size | 8in [203mm] | 10in [254mm] | 12in [305mm] |
|--------------|--------------------------|------------------------|-------------|--------------|--------------|
| CarbiMet     | 60 [P60]                 | 260                    | 16-08-0060* | 16-10-0060*  | 16-12-0060*  |
|              | 80 [P80]                 | 188                    | 16-08-0080  | 16-10-0080   | 16-12-0080   |
|              | 120 [P120]               | 127                    | 16-08-0120  | 16-10-0120   | 16-12-0120   |
|              | 180 [P180]               | 78                     | 16-08-0180  | 16-10-0180   | 16-12-0180   |
|              | 220 [P240]               | 58                     | 16-08-0220  | 16-10-0220   | 16-12-0220   |
|              | 240 [P280]               | 52                     | 16-08-0240  | 16-10-0240   | 16-12-0240   |
|              | 280 [P320]               | 46                     | 16-08-0280  | 16-10-0280   | 16-12-0280   |
|              | 320 [P400]               | 35                     | 16-08-0320  | 16-10-0320   | 16-12-0320   |
|              | 360 [P600]               | 26                     | 16-08-0360  | 16-10-0360   | 16-12-0360   |
|              | 400 [P800]               | 22                     | 16-08-0400  | 16-10-0400   | 16-12-0400   |
|              | 500 [P1000]              | 18                     | 16-08-0500  | 16-10-0500   | 16-12-0500   |
| 600 [P1200]  | 15                       | 16-08-0600             | 16-10-0600  | 16-12-0600   |              |
| 1000 [P2500] | 8.4                      | 16-08-1000             | 16-10-1000  | 16-12-1000   |              |
| MicroCut     | 800 [P1500]              | 13                     | 16-08-0800  | 16-10-0800   | 16-12-0800   |
|              | 1200 [P2500]             | 8                      | 16-08-1200  | 16-10-1200   | 16-12-1200   |
|              | P4000                    | 5                      | 16-08-4000  | 16-10-4000   | 16-12-4000   |

\*Contains 50 pcs



### CarbiMet and MicroCut Accessories

- Apex S film is applied to a platen for use with CarbiMet S or MicroCut S
- MetGrip liners are used with plain backed CarbiMet or MicroCut when paper holding bands are not used

| Description                                 | 8in [203mm] | 10in [254mm] | 12in [305mm] |
|---|-------------|--------------|--------------|
| Apex S Carrier Film magnetic backed (Qty 2) | 16-2074     | 16-2574      | 16-3074      |
| Apex S Carrier Film PSA backed (Qty 2)      | 16-2075     | 16-2575      | 16-3075      |
| MetGrip® Liners (Qty 10)                    | 30-8508     | 30-8510      | 30-8512      |
| Paper Holding Bands                         | 30-2008     | 95-2825      | 46-2013      |

## PSA Backed

[Click Here](#) to shop CarbiMet Papers

Pressure sensitive adhesive (PSA) backing for easy application directly to platen. Qty 100

|          | Grit Size - ANSI [FEPA] | Approx. Micron Size | 8in [203mm] | 10in [254mm] | 12in [305mm] |
|----------|-------------------------|---------------------|-------------|--------------|--------------|
| CarbiMet | 60 [P60]                | 260                 | 36-08-0060* | 36-10-0060*  | 36-12-0060*  |
|          | 80 [P80]                | 188                 | 36-08-0080  | 36-10-0080   | 36-12-0080   |
|          | 120 [P120]              | 127                 | 36-08-0120  | 36-10-0120   | 36-12-0120   |
|          | 180 [P180]              | 78                  | 36-08-0180  | 36-10-0180   | 36-12-0180   |
|          | 220 [P240]              | 58                  | 36-08-0220  | 36-10-0220   | 36-12-0220   |
|          | 240 [P280]              | 52                  | 36-08-0240  | 36-10-0240   | 36-12-0240   |
|          | 280 [P320]              | 46                  | 36-08-0280  | 36-10-0280   | 36-12-0280   |
|          | 320 [P400]              | 35                  | 36-08-0320  | 36-10-0320   | 36-12-0320   |
|          | 360 [P600]              | 26                  | 36-08-0360  | 36-10-0360   | 36-12-0360   |
|          | 400 [P800]              | 22                  | 36-08-0400  | 36-10-0400   | 36-12-0400   |
|          | 500 [P1000]             | 18                  | 36-08-0500  | 36-10-0500   | 36-12-0500   |
|          | 600 [P1200]             | 15                  | 36-08-0600  | 36-10-0600   | 36-12-0600   |
|          | 1000 [P2500]            | 8.4                 | 36-08-1000  | 36-10-1000   | 36-12-1000   |
| MicroCut | 800 [P1500]             | 13                  | 36-08-0800  | 36-10-0800   | 36-12-0800   |
|          | 1200 [P2500]            | 8                   | 36-08-1200  | 36-10-1200   | 36-12-1200   |
|          | P4000                   | 5                   | 36-08-4000  | 36-10-4000   | 36-12-4000   |

\*Contains 50 pcs

## Plain Backed

[Click Here](#) to shop CarbiMet Papers

Plain backing requires the use of an adhesive liner or holding band. Qty 100

|          | Grit Size - ANSI [FEPA] | Approx. Micron Size | 8in [200mm] | 10in [250mm] | 12in [300mm] |
|----------|-------------------------|---------------------|-------------|--------------|--------------|
| CarbiMet | 60 [P60]                | 260                 | 30-08-0060* | 30-10-0060*  | 30-12-0060*  |
|          | 80 [P80]                | 188                 | 30-08-0080  | 30-10-0080   | 30-12-0080   |
|          | 120 [P120]              | 127                 | 30-08-0120  | 30-10-0120   | 30-12-0120   |
|          | 180 [P180]              | 78                  | 30-08-0180  | 30-10-0180   | 30-12-0180   |
|          | 220 [P240]              | 58                  | 30-08-0220  | 30-10-0220   | 30-12-0220   |
|          | 240 [P280]              | 52                  | 30-08-0240  | 30-10-0240   | 30-12-0240   |
|          | 280 [P320]              | 46                  | 30-08-0280  | 30-10-0280   | 30-12-0280   |
|          | 320 [P400]              | 35                  | 30-08-0320  | 30-10-0320   | 30-12-0320   |
|          | 360 [P600]              | 26                  | 30-08-0360  | 30-10-0360   | 30-12-0360   |
|          | 400 [P800]              | 22                  | 30-08-0400  | 30-10-0400   | 30-12-0400   |
|          | 500 [P1000]             | 18                  | 30-08-0500  | 30-10-0500   | 30-12-0500   |
|          | 600 [P1200]             | 15                  | 30-08-0600  | 30-10-0600   | 30-12-0600   |
|          | 1000 [P2500]            | 8.4                 | 30-08-1000  | 30-10-1000   | 30-12-1000   |
| MicroCut | 800 [P1500]             | 13                  | 30-08-0800  | 30-10-0800   | 30-12-0800   |
|          | 1200 [P2500]            | 8                   | 30-08-1200  | 30-10-1200   | 30-12-1200   |
|          | P4000                   | 5                   | 30-08-4000  | 30-10-4000   | 30-12-4000   |

\*Contains 50 pcs

## Diamond Grinding Discs

Diamond Grinding Discs are ideally used as a substitute for SiC paper or other grinding media. Long-life, fixed abrasive provides high removal rates with superb edge retention and flatness. This versatile system works on a wide range of materials such as hard materials, ferrous materials, aluminum, ceramics, glass, thermal spray coatings and more. The surface is durable enough for unmounted specimens. Like your Silicon Carbide papers, just use water for the preparation process (dressing is required with some materials).

### Long Life with Consistent Results

Fixed diamond particles provide consistent removal rates and extended lifetime with only an occasional dressing to maintain the surface.

### Ideal Solution for Automation

Diamond Grinding Discs offer superb edge retention and excellent flatness making them the perfect choice for controlled material removal on automated systems.

### Process a Variety of Materials

Grinding hard materials requires a different type of surface than grinding softer materials. Buehler's Diamond Grinding Discs offer customized solutions for different material types to ensure efficient and consistent grinding.

## DGD Color

Our most versatile diamond grinding disc, the unique characteristics of the resin bond used provides long life and high removal rates on most materials, including softer materials such as brass and copper. Just add water and use

- Utilize a specially formulated resin bond for consistent material removal
- Ideal for most engineering metals
- Available with PSA or Magnetic backing

| Color    | Micron | 8in [203mm] |          | 10in [254mm] |          | 12in [305mm] |          |
|----------|--------|-------------|----------|--------------|----------|--------------|----------|
|          |        | PSA         | Magnetic | PSA          | Magnetic | PSA          | Magnetic |
| ● Green  | 240µm  | 41-3308     | 414308D  | 41-3310      | 414310D  | 41-3312      | 414312D  |
| ● Black  | 125µm  | 41-3408     | 414408D  | 41-3410      | 414410D  | 41-3412      | 414412D  |
| ● Red    | 75µm   | 41-3508     | 414508D  | 41-3510      | 414510D  | 41-3512      | 414512D  |
| ● Purple | 55µm   | 41-3608     | 414608D  | 41-3610      | 414610D  | 41-3612      | 414612D  |
| ● Yellow | 35µm   | 41-3708     | 414708D  | 41-3710      | 414710D  | 41-3712      | 414712D  |
| ○ White  | 15µm   | 41-3808     | 414808D  | 41-3810      | 414810D  | 41-3812      | 414812D  |
| ● Blue   | 8µm    | 41-3908     | 414908D  | 41-3910      | 414910D  | 41-3912      | 414912D  |



## DGD Terra

Resin-bonded, fixed abrasive surfaces, excellent for hard materials, ceramic, glass, TSC. These discs provide superb edge retention and flatness. Just add water and use.

- Provides consistent material removal with excellent flatness
- Ideal for brittle and hard materials such as ceramics and glass
- Available with PSA or Magnetic backing

| Micron | 8in [203mm] |          | 10in [254mm] |          | 12in [305mm] |          |
|--------|-------------|----------|--------------|----------|--------------|----------|
|        | PSA         | Magnetic | PSA          | Magnetic | PSA          | Magnetic |
| 165µm  | 41-5008     | 416008D  | 41-5010      | 416010D  | 41-5012      | 416012D  |
| 125µm  | 41-5108     | 416108D  | 41-5110      | 416110D  | 41-5112      | 416112D  |
| 70µm   | 41-5208     | 416208D  | 41-5210      | 416210D  | 41-5212      | 416212D  |
| 45µm   | 41-5308     | 416308D  | 41-5310      | 416310D  | 41-5312      | 416312D  |
| 30µm   | 41-5408     | 416408D  | 41-5410      | 416410D  | 41-5412      | 416412D  |
| 15µm   | 41-5508     | 416508D  | 41-5510      | 416510D  | 41-5512      | 416512D  |
| 9µm    | 41-5608     | 416608D  | 41-5610      | 416610D  | 41-5612      | 416612D  |
| 6µm    | 41-5708     | 416708D  | 41-5710      | 416710D  | 41-5712      | 416712D  |
| 3µm    | 41-5808     | 416808D  | 41-5810      | 416810D  | 41-5812      | 416812D  |
| 0.5µm  | 41-5908     | 416908D  | 41-5910      | 416910D  | 41-5912      | 416912D  |



## DGD Ultra

- Designed for initial grinding steps of mixed hardness materials
- Available with PSA backing

| Color    | Micron | 8in [203mm] | 10in [254mm] | 12in [305mm] |
|----------|--------|-------------|--------------|--------------|
| ● Black  | 125µm  | 15-6199     | 14-2581      | 15-6299      |
| ● Red    | 70µm   | 15-6170     | 14-2582      | 15-6270      |
| ● Yellow | 45µm   | 15-6145     | 14-2583      | 15-6245      |
| ○ White  | 15µm   | 15-6115     | 14-2585      | 15-6215      |
| ● Blue   | 9µm    | 15-6109     |              | 15-6209      |
| ● Purple | 6µm    | 15-6106     |              | 15-6206      |



## DGD Mosaic®

- Combines high material removal rate with good recovery to reduce prep time
- Optimized for fastest material removal on ferrous materials
- Magnetic backing for fast & easy set up on machine

| Grit Size<br>ANSI [FEPA] | Approx.<br>Micron Size | 8in [203mm] | 10in [254mm] | 12in [305mm] |
|--------------------------|------------------------|-------------|--------------|--------------|
| 120 [P120]               | 125µm                  | 41-708-0120 | 41-710-0120  | 41-712-0120  |
| 220 [P240]               | 60µm                   | 41-708-0220 | 41-710-0220  | 41-712-0220  |
| 320 [P400]               | 40µm                   | 41-708-0320 | 41-710-0320  | 41-712-0320  |
| 400 [P800]               | 30µm                   | 41-708-0400 | 41-710-0400  | 41-712-0400  |
| 1000 [P2500]             | 10µm                   | 41-708-1000 | 41-710-1000  | 41-712-1000  |

\*All DGD Mosaic discs include dressing stick 11-1190 (Requires dressing before initial use)



## Accessories



Dressing Stick for Diamond Grinding Discs  
1 x 1 x 6in  
15-6190



Dressing Stick for Diamond Grinding Discs  
0.5 x 0.5 x 3 in  
11-1190

## Premium Polishing Cloths

Buehler's premium performance cloths are for all material applications and are engineered for long life & superior surface finish.

### Easy to Use Magnetic Backing

Utilize the magnetic backing for an efficient and easy-to-use solution. The durable magnetic backed cloth provides consistent polishing results while reducing the change-over time between cloths.

### A Cloth for Every Application

The type of cloth used depends heavily on the material being processed and the requirements for the final analysis. With a variety of fabrics, weaves and naps, there is a cloth to fit every application.

### Reliable Preparation Results

Buehler's cloths are thoroughly tested and developed with MetaDi Diamond to provide a complete solution that delivers reliable results for each sample processed.

### Polishing Cloth Selection Guide

|              | Cloth       | Backing  | Quantity | 8in [203mm] | 10in [254mm] | 12in [305mm]                                 | Description                              |
|--------------|-------------|----------|----------|-------------|--------------|--|--|
| COARSE       | UltraPad®   | PSA      | 10       | 40-7118     | 40-7120      | 40-7122                                      | Hard woven, no nap                       |
|              |             | Magnetic | 5        | 42-3008     | 42-3010      | 42-3012                                      |  |
|              | UltraPol®   | PSA      | 10       | 40-7448     | 40-7450      | 40-7452                                      | Hard woven, non-aggressive silk          |
|              | TexMet® P   | PSA      | 5        | 40-7638     | 40-7640      | 40-7642                                      | Hard non-woven, perforated               |
| INTERMEDIATE | Nylon       | PSA      | 10       | 40-7068     | 40-7070      | 40-7072                                      | Medium hard woven, oil resistant, no nap |
|              |             | Magnetic | 5        | 42-3108     | 42-3110      | 42-3112                                      |  |
|              | TexMet® C   | PSA      | 10       | 40-1108     | 40-1110      | 40-1112                                      | Non-woven, pressed                       |
|              |             | Magnetic | 5        | 42-3208     | 42-3210      | 42-3212                                      |  |
|              | TriDent®    | PSA      | 10       | 40-7518     | 40-7520      | 40-7522                                      | Soft woven synthetic, no nap             |
|              |             | Magnetic | 5        | 42-3308     | 42-3310      | 42-3312                                      |  |
|              | VerduTex®   | PSA      | 10       | 40-8018     | 40-8020      | 40-8022                                      | Medium hard, synthetic silk              |
|              |             | Magnetic | 5        | 42-3408     | 42-3410      | 42-3412                                      |  |
|              | VelTex®     | PSA      | 10       | 40-8218     | 40-8220      | 40-8222                                      | Short nap, synthetic velvet              |
|              |             | Magnetic | 5        | 42-3508     | 42-3510      | 42-3512                                      |  |
| WhiteFelt™   | PSA         | 5        | 16-2002  | 16-2502     | 16-3002      | Soft, durable, matted wool                   |  |
| PoliCloth™   | PSA         | 10       | 40-8418  | 40-8420     | 40-8422      | Medium hard, woven wool                      |  |
|              | Magnetic    | 5        | 42-3608  | 42-3610     | 42-3612      |  |  |
| FINE         | MicroCloth® | PSA      | 10       | 40-7218     | 40-7220      | 40-7222                                      | Soft synthetic rayon, long nap           |
|              |             | Magnetic | 5        | 42-3708     | 42-3710      | 42-3712                                      |  |
|              | MicroFloc™  | PSA      | 10       | 40-8318     | 40-8320      | 40-8322                                      | Soft, long nap                           |
|              |             | Magnetic | 5        | 42-3808     | 42-3810      | 42-3812                                      |  |
|              | MasterTex®  | PSA      | 10       | 40-7738     | 40-7740      | 40-7742                                      | Soft synthetic velvet, low nap           |
| Magnetic     |             | 5        | 42-3908  | 42-3910     | 42-3912      |  |  |
| ChemoMet®    | PSA         | 10       | 40-7918  | 40-7920     | 40-7922      | Soft synthetic, porous, chemically resistant |  |
|              | Magnetic    | 5        | 42-4008  | 42-4010     | 42-4012      |  |  |



UltraPad™



TexMet® P



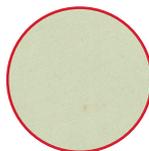
TriDent™



VerduTex®



UltraPol™



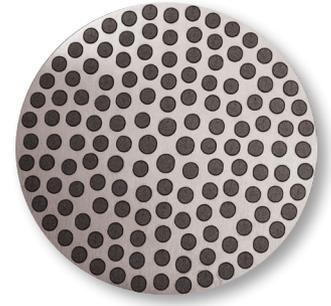
Nylon



TexMet® C

## Apex<sup>®</sup> Hercules

- Magnetic backed resin surface that provides excellent flatness and edge retention
- Use with MetaDi<sup>®</sup> Diamond Suspension



| Type   | 8in [203mm]     | 10in [254mm]    | 12in [305mm]    |
|--|-----------------|-----------------|-----------------|
| <b>Apex Hercules H</b><br>Fine grinding disc for hard ferrous and non-ferrous material (> HRC 20/HV 236) | 41-2740-308-001 | 41-2740-310-001 | 41-2740-312-001 |
| <b>Apex Hercules S</b><br>Fine Grinding Disc for soft ferrous and non-ferrous material (<HRC 20/HV 236)  | 41-2740-408-001 | 41-2740-410-001 | 41-2740-412-001 |

| Recommended Micron Size | Abrasive Type  | Applications   |
|-------------------------|--|--|
| 6µm & Up                | Diamond  | Ferrous materials and thermal spray coatings   |
| 6µm & Up                | Diamond  | Minerals, coals, ceramics, inclusion retention in steels, and refractory metals  |
| 6µm & Up                | Diamond  | Electronics, ceramics, carbides, petrographic, hard metals, glass, and metal matrix composites   |
| 6µm & Up                | Diamond  | Ferrous materials, sintered carbides and cast irons  |
| 15 - 0.02µm             | Diamond, Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> | Ferrous and nonferrous metals, ceramics, electronics, PCB's, thermal spray coatings, cast irons, cermets, minerals, composites, plastics |
| 15- 0.02µm              | Diamond, Al <sub>2</sub> O <sub>3</sub>                    | Ferrous and nonferrous metals, microelectronics, polymer matrix composites, coatings   |
| 9 - 1µm                 | Diamond  | Ferrous and nonferrous metals, microelectronics, coatings  |
| 9 - 1µm                 | Diamond  | Soft metals  |
| 6 - 0.02µm              | Diamond, Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> | Ferrous and nonferrous metals  |
| 6 - 1µm                 | Diamond  | Cast iron, copper and aluminum alloys  |
| 5- 0.02µm               | Diamond, Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> | Ferrous and nonferrous metals, ceramics, composites, PCBs, cast irons, cermets, plastics, electronics                                    |
| 3 - 0.02µm              | Diamond, Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> | Ferrous and nonferrous materials   |
| 1 - 0.05µm              | Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub>          | Soft nonferrous and microelectronics   |
| 1 - 0.02µm              | Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub>          | Titanium, stainless steel, lead/tin, solders, electronics, soft nonferrous metals, plastics  |



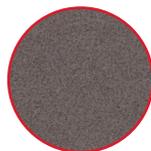
VelTex™



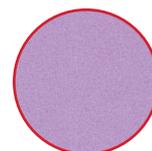
WhiteFelt™



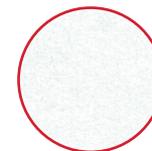
PoliCloth™



MicroCloth™



MicroFloc®



MasterTex®



ChemoMet®

## Diamond Polishing Suspensions & Pastes

Click [Here](#) to shop Diamond Polishing & Pastes

MetaDi Diamond Suspensions and Pastes are high-quality diamond polishing products that provide repeatable performance and deliver exceptional surface quality.

### Repeatable Polishing Results

Buehler's MetaDi Diamond products are tightly controlled to prevent any deviations in particle size or concentrations. This ensures repeatable polishing results and a high quality surface finish for every sample processed.

### Fast Preparation Time

MetaDi Supreme Suspension offers a high material removal rate and minimal deformation making it the product of choice for most materials. The high concentration of polycrystalline diamonds offers numerous sharp cutting faces to efficiently remove material and polish the surface.

### Processing Unique Materials

Some materials are not compatible with water-based suspensions due to water-sensitivity or diamond embedding. The Oil-Based MetaDi Monocrystalline Suspension as well as MetaDi pastes offer multiple options when working with water-sensitive materials.

## MetaDi® Diamond Suspensions

### MetaDi Supreme Polycrystalline Suspension

Water-based, free of solvents, high diamond concentration, tight distribution of diamond grain size. Very high removal rate.

| Color      | Diamond Size | 8oz [0.24L]* | 32oz [0.95L] | 1gal [3.8L]  |
|------------|--------------|--------------|--------------|--------------|
| ● Charcoal | 0.05µm       | 40-6627      |              |              |
| ● Grey     | 0.25µm       | 40-6629      |              | 40-6629-128  |
| ● Blue     | 1µm          | 40-6630      | 40-6630-032  | 40-6630-128  |
| ● Blue     | 1µm Fine     | 40-6630F     | 40-6630F-032 | 40-6630F-128 |
| ● Green    | 3µm          | 40-6631      | 40-6631-032  | 40-6631-128  |
| ● Green    | 3µm Fine     | 40-6631F     | 40-6631F-032 | 40-6631F-128 |
| ● Yellow   | 6µm          | 40-6632      | 40-6632-032  | 40-6632-128  |
| ● Deep Red | 9µm          | 40-6633      | 40-6633-032  | 40-6633-128  |
| ● Brown    | 15µm         | 40-6634      | 40-6634-032  | 40-6634-128  |
| ● Orange   | 30µm         | 40-6635      | 40-6635-032  | 40-6635-128  |
| ● Purple   | 45µm         | 40-6636      |              |              |



### MetaDi Monocrystalline Suspension

Monocrystalline suspension provides good material removal for most materials.

| Color      | Diamond Size | 16oz [0.47L]* | 32oz [0.95L] | 1gal [3.8L] |
|------------|--------------|---------------|--------------|-------------|
| ● Blue     | 1µm          | 40-6530       | 40-6530-032  | 40-6530-128 |
| ● Green    | 3µm          | 40-6531       | 40-6531-032  | 40-6531-128 |
| ● Yellow   | 6µm          | 40-6532       | 40-6532-032  | 40-6532-128 |
| ● Deep Red | 9µm          | 40-6533       | 40-6533-032  | 40-6533-128 |
| ● Brown    | 15µm         | 40-6534       | 40-6534-032  | 40-6534-128 |



### Dye-Free MetaDi Supreme Polycrystalline Suspension

Ideal for materials that may absorb dye and affect image analysis.

| Diamond Size | 8oz [0.24L]* |
|--------------|--------------|
| 1µm          | 40-6730      |
| 3µm          | 40-6731      |
| 6µm          | 40-6732      |
| 9µm          | 40-6733      |

### MetaDi Monocrystalline Suspension Oil Based

Ideal for processing materials that are water-sensitive.

| Color      | Diamond Size | 16oz* [0.47L] |
|------------|--------------|---------------|
| ● Blue     | 1µm          | 40-6540       |
| ● Green    | 3µm          | 40-6541       |
| ● Yellow   | 6µm          | 40-6542       |
| ● Deep Red | 9µm          | 40-6543       |
| ● Brown    | 15µm         | 40-6544       |

### MetaDi Combo, Suspension & Extender

Combination of monocrystalline suspension and extender fluid to maintain consistency when using automated dosing systems.

| Color      | Diamond Size | 32oz [0.95L] |
|------------|--------------|--------------|
| ● Blue     | 1µm          | 40-5530-032  |
| ● Green    | 3µm          | 40-5531-032  |
| ● Yellow   | 6µm          | 40-5532-032  |
| ● Deep Red | 9µm          | 40-5534-032  |

\*8oz and 16oz are supplied with spray nozzle.

## MetaDi® Diamond Pastes

For water free preparation. Polycrystalline for ductile materials, monocrystalline for hard, brittle materials and petrographic applications

Click [Here](#) to shop Diamond Polishing & Pastes

### MetaDi Ultra Polycrystalline Paste

Polycrystalline paste provides efficient material removal for soft materials that may be prone to diamond embedding. Use with MetaDi Fluid or AutoMet Oil.

| Color | Diamond Size | 20g       |
|-------|--------------|-----------|
|       | Blue 1µm     | 40-1-6301 |
|       | Green 3µm    | 40-1-6303 |
|       | Yellow 6µm   | 40-1-6305 |
|       | Deep Red 9µm | 40-1-6307 |
|       | Brown 15µm   | 40-1-6309 |

*This product is grey in color with color coded packaging*



### MetaDi Monocrystalline Paste

Natural monocrystalline diamond paste for materials that are prone to diamond embedding. Use with MetaDi Fluid or AutoMet Oil.

| Color | Diamond Size | 5g      | 20g     |
|-------|--------------|---------|---------|
|       | Grey 0.25µm  | 40-6112 | 40-6102 |
|       | Blue 1µm     | 40-6138 | 40-6128 |
|       | Green 3µm    | 40-6152 | 40-6142 |
|       | Yellow 6µm   | 40-6172 | 40-6162 |
|       | Deep Red 9µm | 40-6192 | 40-6182 |
|       | Brown 15µm   | 40-6212 | 40-6202 |

### MetaDi II Monocrystalline Paste

Synthetic monocrystalline diamond paste for materials that are very prone to diamond embedding. Use with MetaDi Fluid or AutoMet Oil.

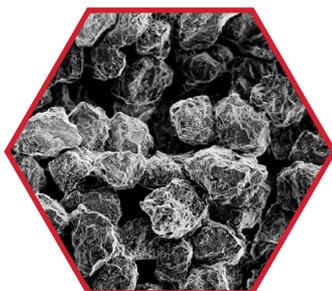
| Color | Diamond Size | 5g      | 20g     |
|-------|--------------|---------|---------|
|       | Grey 0.25µm  | 40-6241 | 40-6240 |
|       | Blue 1µm     | 40-6244 | 40-6243 |
|       | Green 3µm    | 40-6247 | 40-6246 |
|       | Yellow 6µm   | 40-6250 | 40-6249 |
|       | Deep Red 9µm | 40-6253 | 40-6252 |
|       | Brown 15µm   | 40-6256 | 40-6255 |

### Polishing Lubricants

MetaDi Fluid is a water soluble lubricant for use with pastes and suspensions. AutoMet Oil is recommended for use with water sensitive materials.

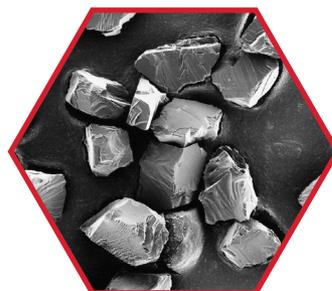
| Part Number | Description                |
|-------------|----------------------------|
| 40-6016     | MetaDi Fluid, 16oz [0.47L] |
| 40-6032     | MetaDi Fluid, 16oz [0.47L] |
| 40-6064-085 | MetaDi Fluid, 16oz [0.47L] |
| 60-3250-006 | AutoMet® Oil, 6oz [0.18L]  |
| 60-3250-128 | AutoMet® Oil, 6oz [0.18L]  |

## Differences between Polycrystalline and Monocrystalline Diamonds



45micron diamond in SEM (450X)

Angular, polycrystalline diamonds provide numerous cutting facets on the particle surface, resulting in less deformation. Recommended for use on most metals and ductile materials.



45micron diamond in SEM (450X)

Sharp edges of monocrystalline diamonds ensure clean and efficient cutting action. Recommended for harder materials, including minerals and ceramics.

## Final Polishing Suspensions

Final polishing suspensions are designed to remove the final layer of surface deformation and prepare a sample for analysis. A variety of products are offered to meet many different application needs.

### Excellent Surface Finish

While the final layer of deformation is often invisible to the naked eye, it must be removed for some analysis techniques.

### Application Specific Solutions

Alumina suspensions and powders along with colloidal silica suspensions offer a solution for the wide variety of materials being processed in today's world.



Sol-gel alumina suspension (0.05 $\mu$ m, ~8.5pH) is excellent for minerals, ferrous metals, carbides, precious metals, PWB's electronics and polymers.

- 63-6377-006 6oz [0.18L]
- 40-6377-032 32oz [0.95L]
- 40-6377-064 64oz [1.9L]



Amorphous colloidal silica suspension (0.06 $\mu$ m, ~10pH) that provides chemo-mechanical polishing and is excellent for refractory metals, minerals and ceramics.

- 40-6370-006 6oz [0.18L]
- 40-6370-064 64oz [1.9L]
- 40-6370-128 128oz [3.8L]



Non-crystallizing amorphous colloidal silica suspension (0.02 $\mu$ m, ~10.5pH) that provides chemo-mechanical polishing action and is excellent for refractory metals, minerals, and ceramics.

- 40-6380-006 6oz [0.18L]
- 40-6380-064 64oz [1.9L]



Blend of high purity alumina and colloidal silica (0.05 $\mu$ m, ~9pH) that contains minimal water and is optimal for water sensitive materials.

- 40-10084 32oz [0.95L]



Iron oxide suspension (0.06 $\mu$ m, ~10pH) that provides chemo-mechanical polishing and is excellent for sapphire, glass, alumina, silicon nitride and metal/ceramic composites.

- 40-6376-032 32oz [0.95L]



Agglomerated alumina suspensions offering high removal rates and suitable for use on pure and alloyed lead and magnesium.

- 40-10083 0.05 $\mu$ m 6oz [0.18L]
- 40-10082 0.3 $\mu$ m 6oz [0.18L]
- 40-10081 1 $\mu$ m 6oz [0.18L]



Agglomerated alumina powders offering high removal rates and suitable for use on pure and alloyed lead and magnesium.

- 40-10075 0.05 $\mu$ m 1lb [0.45kg]
- 40-10076 0.05 $\mu$ m 5lb [2.3kg]
- 40-10077 0.3 $\mu$ m 1lb [0.45kg]
- 40-10078 0.3 $\mu$ m 5lb [2.3kg]
- 40-10079 1 $\mu$ m 1lb [0.45kg]
- 40-10080 1 $\mu$ m 5lb [2.3kg]



High quality deagglomerated alumina powders offering good surface finish and suitable for most minerals and metals.

- 40-6322-016 1 $\mu$ m 1lb [0.45kg]



MiroMet is a 1  $\mu$ m cerium oxide water based suspension. It is mainly used as a universal polishing compound for glass, but is also suitable for a soft materials with very low melting points. Concentrate - dilute with distilled water before use.

- 406355006 1  $\mu$ m 6oz [180 mL]

## FibrMet™ Abrasive Discs

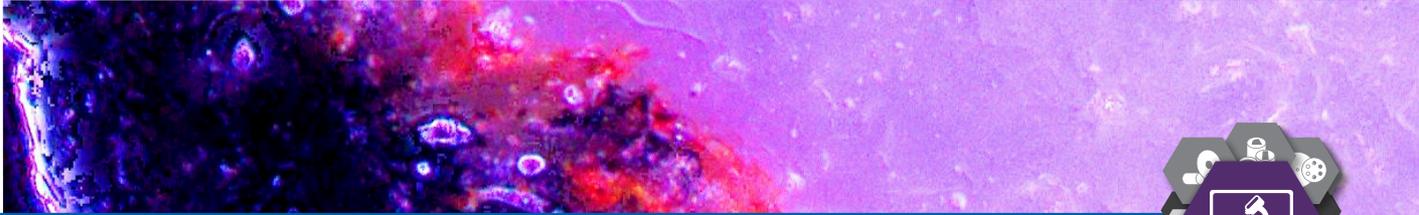
FibrMet® Abrasive Disc are PSA (polyester backed) films, approx. 0.1 mm thick, coated with an aluminum oxide abrasive. These discs can be used wet or dry and are most suitable for fine grinding and polishing application, such as optical fiber and microelectronics where resultant surface flatness is essential. Qty 50

| Micron | 4in [102mm] | 8in [203mm] | 12in [305mm] |
|--------|-------------|-------------|--------------|
| 0.3µm  | 69-3104     | 69-3174     | 69-3124      |
| 1µm    | 69-3103     | 69-3173     | 69-3123      |
| 3µm    | 69-3102     | 69-3172     | 69-3122      |
| 9µm    | 69-3101     | 69-3171     | 69-3121      |
| 12µm   | 69-3100     | 69-3170     |              |

## UltraPrep™ Diamond Lapping Films

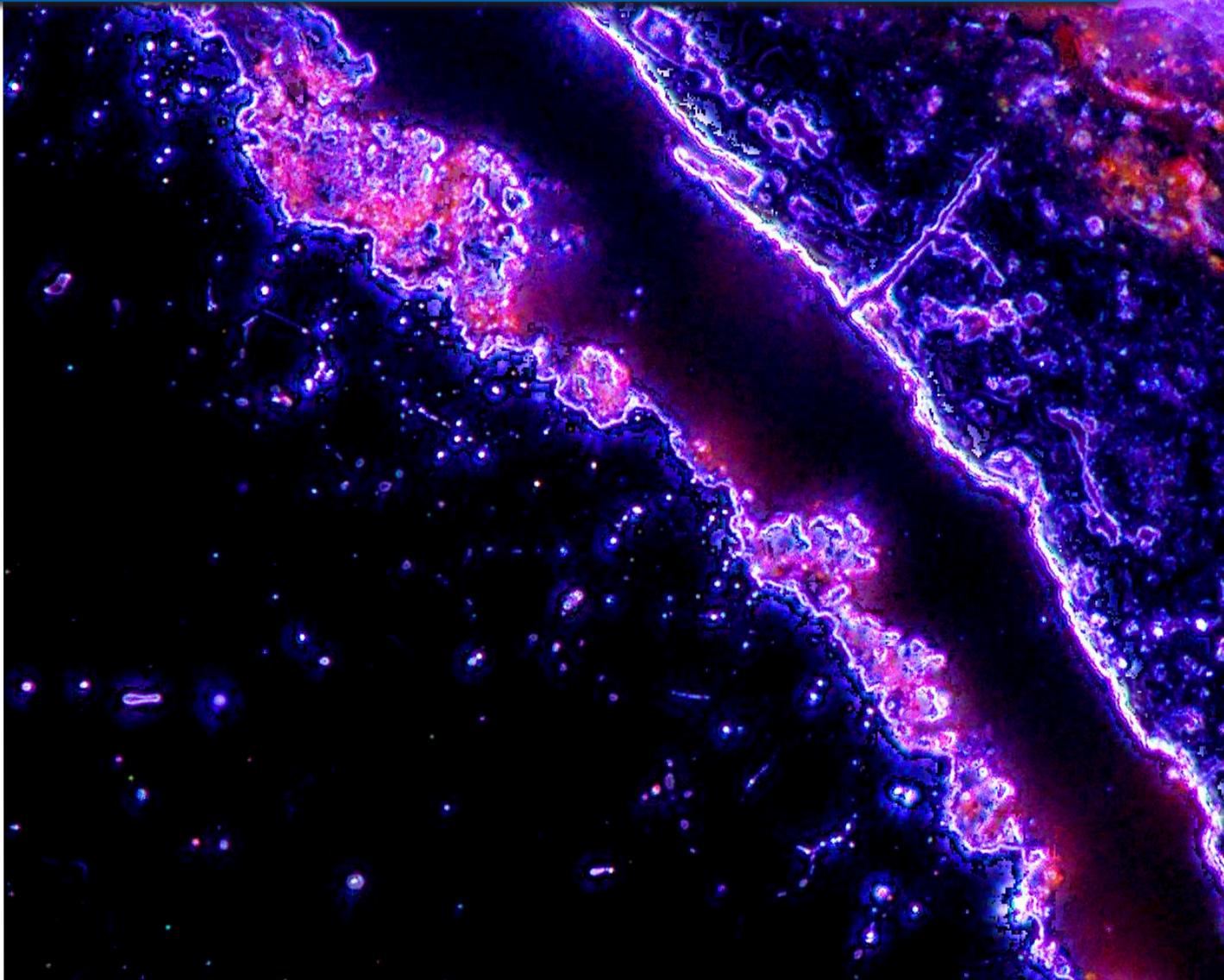
UltraPrep Diamond Lapping Films are designed for various material applications including microelectronic devices, wafers, ceramics, optical fibers, petrographic, and other metallographic materials. Ideal for preparation applications where surface flatness and minimal deformation are critical. Qty 5

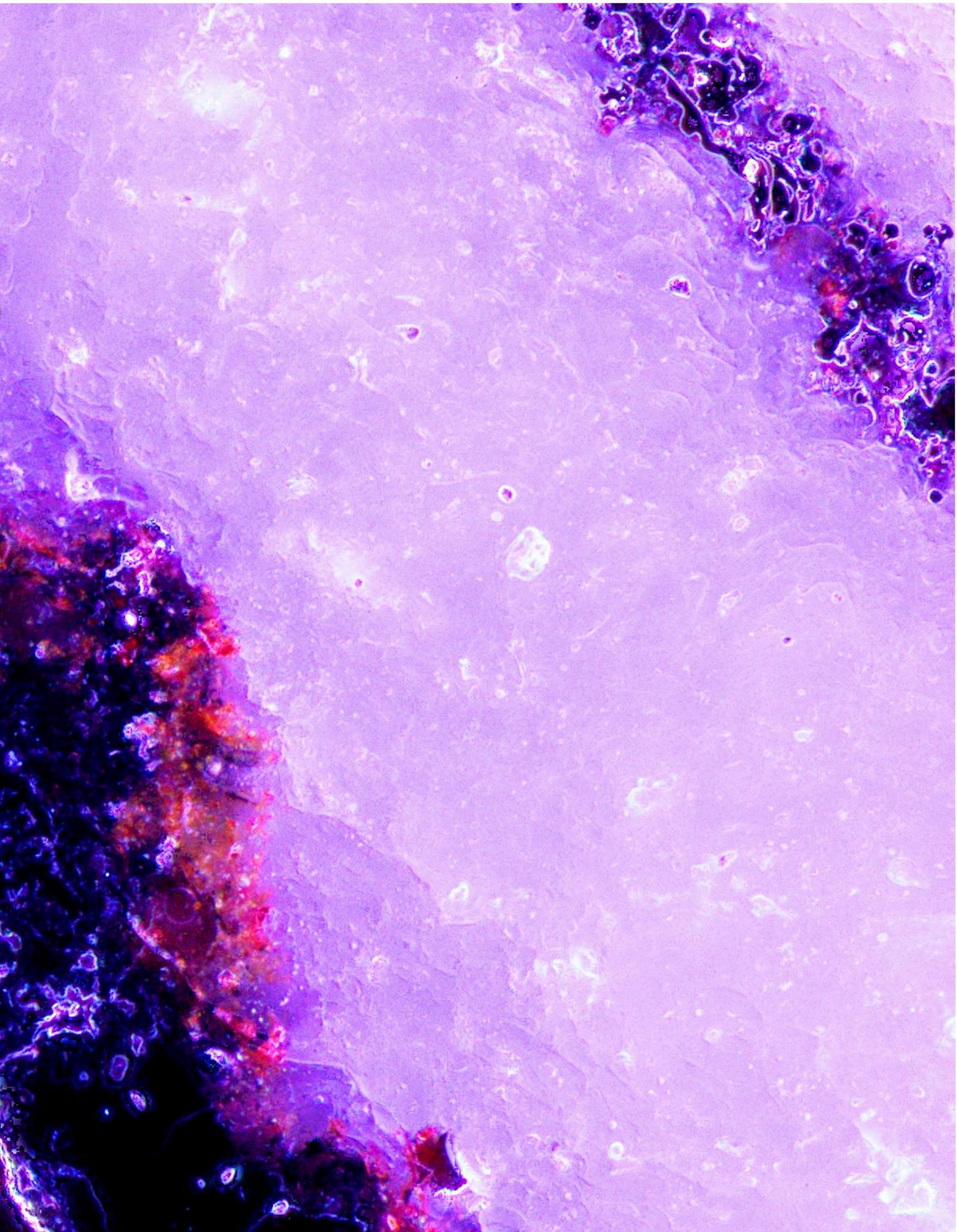
| Micron | 8in [203mm]<br>PSA Backed | 8in [203mm]<br>Plain Backed |
|--------|---------------------------|-----------------------------|
| 0.1µm  | 15-6791                   | 15-6792                     |
| 0.5µm  | 15-6795                   | 15-6796                     |
| 1µm    | 15-6801                   | 15-6802                     |
| 3µm    | 15-6803                   | 15-6804                     |
| 6µm    | 15-6806                   | 15-6807                     |
| 9µm    | 15-6809                   | 15-6810                     |
| 15µm   | 15-6815                   | 15-6816                     |
| 30µm   | 15-6830                   | 15-6831                     |



# IMAGING & ANALYSIS

OmniMet System offers seamless point-and-click analysis possibilities. Simple to use and powerfully flexible, OmniMet combines analytical power with unprecedented ease.





## Designed for Demanding Production Lab Environments

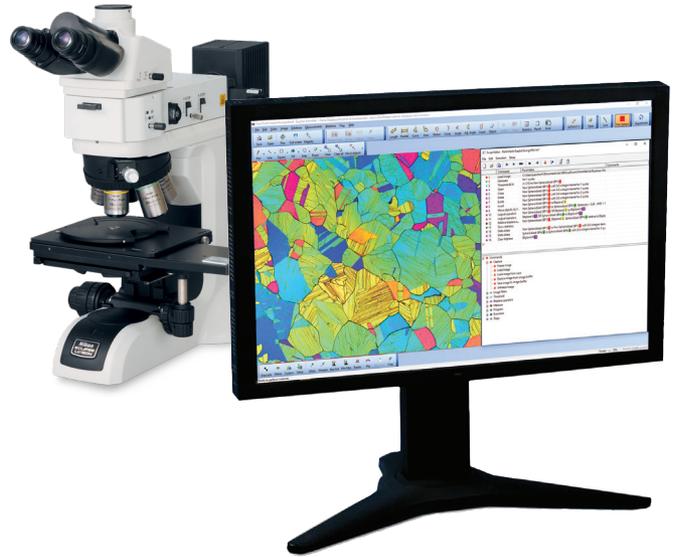


### Flexible

- Flexible platform with preconfigured software or hardware packages and optional accessories. Optional Capture and Measurement Modules available to customize software solution.

### Powerful

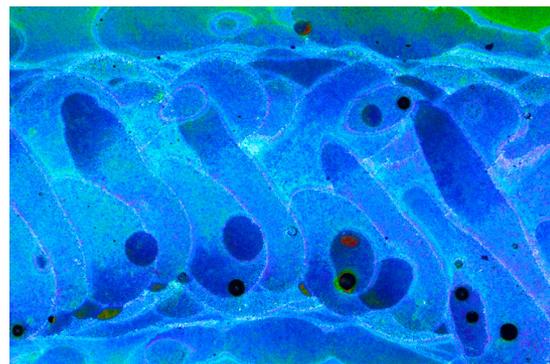
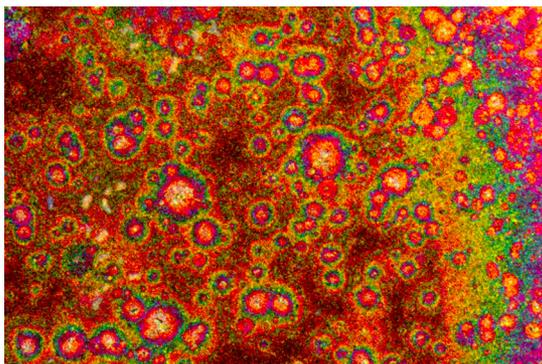
- Any standard format image may be viewed directly from a microscope or be imported into OmniMet for analysis. Local Area Network (LAN) support offered by OmniMet Viewer Module.



| Systems*  | Software** | Editions   |
|-----------|------------|--|
| 86-1-1001 | 86-1-1000  | OmniMet Viewer allows networked users to view and modify images and information in an Omnimet database on the same network   |
|           | 86-1-1010  | OmniMet Capture N' Measure (CnM) enables image capture with basic measurement functions and scale bar (without database functions). Measuring tools include length, parallel lines, curved line, area, perimeter, radius, angle and count. Images can be saved in common formats. Results can be burnt into the image but cannot be stored or exported to Excel®.                                  |
| 86-1-1003 | 86-1-1002  | OmniMet Basic includes everything in Capture 'N Measure, and also adds databasing functionality for archiving as well as MS Office report templates for presenting results. Optional Capture Modules may be added for specific applications  |
| 86-1-1005 | 86-1-1004  | OmniMet Advanced includes everything in OmniMet Basic, and also adds enhanced measurements capabilities. Measurements can be saved in the database, or interactively to Excel worksheets. Built in statistical analysis streamlines interpretation of results and reporting. Optional Capture Modules and Advanced Measurement Modules may be added for specific applications.                     |
| 86-1-1007 | 86-1-1006  | OmniMet Express includes everything in OmniMet Advanced, with the added capability of running automated Scripts. Scripts are application specific image analysis packages to provide best efficiency and reproducibility for repeat analysis in high throughput environments. Optional Capture Modules, Advanced Measurement Modules and pre-programmed Application Specific Scripts may be added. |
| 86-1-1009 | 86-1-1008  | OmniMet Enterprise includes everything in OmniMet Express, with the added capability of writing and editing Scripts. Fully customizable Scripts allow the user complete control of analysis solutions. Comes with 8 commonly used Application Specific Scripts. Optional Capture Modules, Advanced Measurement Modules and additional Application Specific Scripts may be added.                   |

\* System Packages include OmniMet software pre-installed on a Windows 10 64-bit workstation. Package includes keyboard and mouse. Monitor and Microsoft Office not included.

\*\* Software Only package includes software, mousepad and is compatible with Windows 10 computer, (64-bit).



## OmniMet® Software Modules & Features

| Software Description   | Viewer | CnM | Basic | Advanced | Express | Enterprise |
|--|--------|-----|-------|----------|---------|------------|
| <b>Capture</b>   |        |     |       |          |         |            |
| Load and Save  | •      | •   | •     | •        | •       | •          |
| Brightness, Auto-White Balance, Color Correction                         | •      | •   | •     | •        | •       | •          |
| Digital Zoom, Rotate, Calibration & Annotation                           | •      | •   | •     | •        | •       | •          |
| Camera Interface (USB, EEE I394, Capture Cards, DirectShow, Twain, etc.) |        | •   | •     | •        | •       | •          |
| Motorized Stage Controller   |        |     | •     | •        | •       | •          |
| Capture Modules (optional)   |        |     | ◊     | ◊        | ◊       | ◊          |
| <b>Measure</b>   |        |     |       |          |         |            |
| Standard Measurements: Length, Area, Radius, Count, Parallel Lines       | •      | •   | •     | •        | •       | •          |
| Advanced Measurements: 3-point Circle, Adj. Angle, Polygon               |        |     |       | •        | •       | •          |
| Advanced Measurement Modules (optional)                                  |        |     |       | ◊        | ◊       | ◊          |
| Color Threshold (size, intensity), 16 Bitplanes                          |        |     |       |          | •       | •          |
| Automation Capable: Read & Run Scripts                                   |        |     |       |          | •       | •          |
| ScriptEditor: Write, and Edit Scripts                                    |        |     |       |          |         | •          |
| Application Specific Scripts (optional)                                  |        |     |       |          | ◊       | ◊*         |
| <b>Report</b>  |        |     |       |          |         |            |
| Report Data, Report Generator (requires Microsoft® Office)               |        |     | •     | •        | •       | •          |
| Results Window with measurements log                                     |        |     |       | •        | •       | •          |
| <b>Organize</b>  |        |     |       |          |         |            |
| Database Interface   | •      |     | •     | •        | •       | •          |
| Database Creation & Administration                                       |        |     | •     | •        | •       | •          |

• Included with package

◊ Optional module (purchased separately)

\* OmniMet Enterprise comes with a selection of Scripts.

## Optional Modules

### Capture Modules

Can be added to any package

- 86-4130 **OmniMet Multi-Focal Images** - Used to create focused images from multiple images of the same specimen when the viewing surface exists in different focal planes. Beneficial for removing edge rounding or viewing rougher surfaces when sharply focused images are required for analysis.
- 86-4140 **OmniMet Mosaic Multiple Image Stitching** - Used to stitch multiple images together to create one large, calibrated stitched image. Measurements are possible on the stitched image. Useful for documenting features larger than one field of view. A motorized stage is not required.

### Advanced Measurement Modules

Can be added to any Advanced, Express or Enterprise package

- 86-4110 **OmniMet Object Analysis** - 'Single phase' image analysis for measurements of image features and field characteristics: Area Fraction, Area Position, Number of Objects, Perimeter, Compactness, Length, Feret Diameter, Center of Gravity, Inclusion and Exclusion of Objects by Size.
- 86-4115 **OmniMet Weld** - Measurement Tools for determining weld characteristics. Use a circle radius to determine effective weld depth, angular A-measurements, or full weld outline characterization to determine effective depth, penetration and area.
- 86-4120 **OmniMet Hardness** - Measure Vickers and Knoop indentations interactively, quickly, and easily. Allows load force in gf or kgf and delivers accurate HV/HK values along with the diagonal indent dimensions.
- 86-4125 **OmniMet Grain Size** - Measure grain size interactively using ASTM-E112 methodology with linear intercept or circle intercept methods.

## Application Specific Scripts (optional)

|   |   |
|---|---|
| <p>86-3050* <b>Manual Interactive</b> - Thickness Measurements of line lengths with statistics for length and thickness measurements.</p> <p>86-3100* <b>Grain Size</b> - Automated grain size measurements in accordance with ASTM E112. Average grain size by intercept methods and grain size distributions using areas are delivered. Additional processing identifies ALA grain size and duplex populations in accordance to ASTM E930 and ASTM E1181 where appropriate. ISO 643 compliant.</p> <p>86-3300* <b>Coating Layer</b> - Thickness Measures coating, plating or layer thickness of cross-sectioned samples in compliance with ASTM B487.</p> <p>86-3400* <b>Graphite in Cast Iron</b> - Automated analysis of graphite in cast iron in accordance with ASTM A247. Measures size and class count of graphite nodules and area percentages of ferrite graphite and pearlite. For gray iron graphite length is also provided.</p> <p>86-3500* <b>Particle Sizing</b> - Detects and measures particles in a field of view providing statistics on quantity and size distribution. Suitable for non-agglomerated particulates, precipitates, and powders.</p> <p>86-3550* <b>Porosity Assessment</b> - Provides automated measurements of fine holes or pores in a material.</p> <p>86-3750* <b>Dendritic Arm Spacing</b> - Delivers measurements of lengths between dendrite arms in cast aluminum alloys.</p> <p>86-3200* <b>Phase Area Percent</b> - Determines phase area and percentage area of multiple phases in accordance with ASTM 562.</p> | <p>86-3150 <b>Intercept Grain Size</b> - Automated grain size determination delivering average grain size per field using straight line and circular intercept methods in accordance with ASTM E112.</p> <p>86-3310 <b>Surface Roughness</b> - Surface roughness measurements in accordance with ASME B46.1-02.</p> <p>86-3350 <b>Decarburization Depth Assessment</b> - Determines depth of total or partial decarburization according to the relative amount of free ferrite present according to ASTM E1077.</p> <p>86-3525 <b>Cleanliness Assessment</b> - Provides cleanliness assessment of particles on filter paper meeting the requirements of ISO 4406.</p> <p>86-3600 <b>Indentation Hardness</b> - Provides the capability to measure and analyze Knoop and Vickers indents in accordance with ASTM E384. Reports can be exported in HK, HV, HRC, and HRB scales with graphical displays of the hardness profile.</p> <p>86-3700 <b>Banding Assessment</b> - Determines the degree of microstructural banding in conformance with ASTM E1268. Delivers quantitative information on the degree of orientation, anisotropy index, and mean feature spacing.</p> <p>86-3850 <b>Inclusion Rating</b> - Determines area percentage, mean free path distances, and average numbers of intercepts for oxide and sulfide stringers in ferrous metals in accordance with ASTM E1245.</p> |
|---|---|

\* Included with OmniMet® Enterprise

## Upgrades and Updates

Existing customers may update their OmniMet software to the latest versions. Additionally lower level OmniMet software packages may be upgraded to higher level packages for increased functionality.

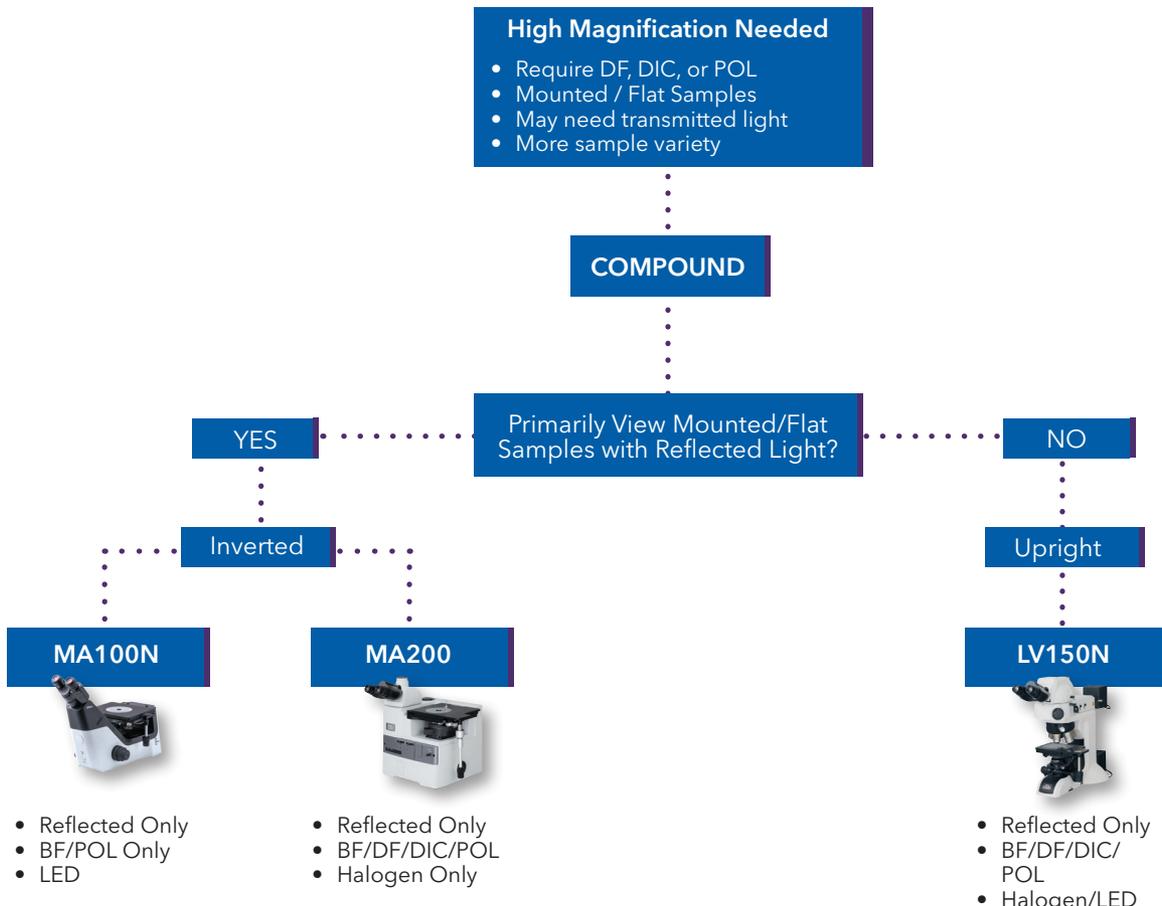
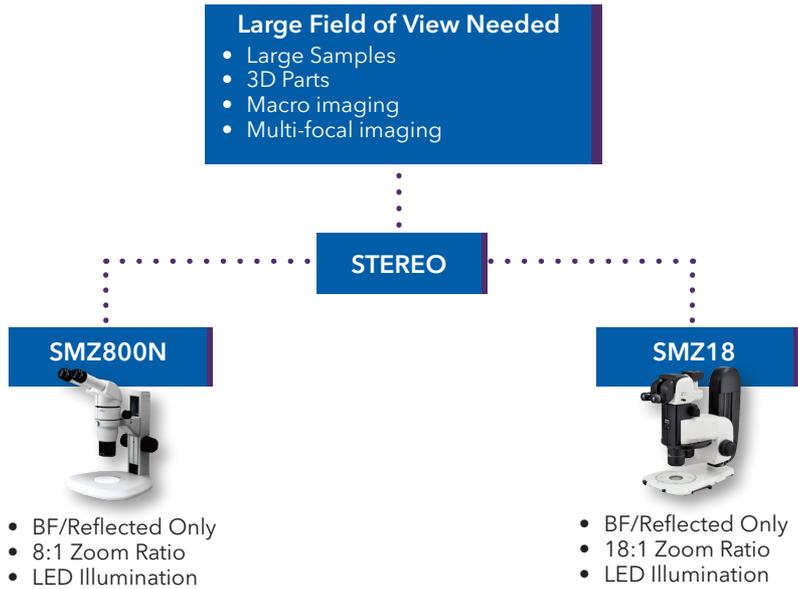
Upgrades to a higher functional level include an update to the latest software release. When ordering Upgrades or Updates, the customer license number and site ID must be included with purchase order.

Update OmniMet to the latest software release:

|         |                           |
|---------|---------------------------|
| 86-4202 | Update Basic              |
| 86-4204 | Update Advanced           |
| 86-4205 | Update Viewer             |
| 86-4206 | Update Capture N' Measure |
| 86-4201 | Update Express            |
| 86-4203 | Update Enterprise         |

| Upgrade From / To  | Basic   | Advanced | Express | Enterprise |
|--------------------|---------|----------|---------|------------|
| Capture N' Measure | 86-5006 | 86-4006  | 86-3006 | 86-1006    |
| Capture Basic      | x       | 86-4002  | 86-3002 | 86-1002    |
| Capture Advanced   | x       | x        | 86-3004 | 86-1004    |
| Express            | x       | x        | x       | 86-1003    |

Microscopes offered by Buehler generally fall into the categories of stereo microscopes, upright microscopes, or inverted microscopes. Inverted microscopes are commonly referred to as metallurgical microscopes. Microscopes may offer episcopic (reflected light) observation, diascopic (transmitted light) observation, or both possibilities. Illumination may be delivered in bright field mode (BF) or dark field mode (DF), and several techniques such as differential interference contrast (DIC) and polarized light microscopy make use of the nature of light to reveal specific pieces of information when studying materials.



## Nikon SMZ800N



Zoom Stereo Microscopes from Nikon with high resolution and macro magnification of parts. Perfect for large sample analysis and multi-focal imaging.

- High resolution and magnification stereoscope ideal for weld analysis and macro imaging
- 1-8X zoom range (with 1/2/3/4/6/8x click stops)
- 5x - 160x magnification range with 10x eyepieces (dependent upon objective and camera adapter selection)
- LED fiber illumination available with epi coaxial, ringlight and flexible light pipe options for a variety of applications.
- Double nosepiece accessory enables on-axis viewing, extended depth of focus, and quick rotation between multiple objectives.
- Trinocular body tubes enables built-in access for camera adapter, camera, and OmniMet® integration

| Part Number | Configuration  |
|-------------|--|
| 8741-01     | Nikon SMZ800N with 1x Objective - on plain stand with 50/50 trinocular body tube with camera port (requires camera adapter), 10x eyepieces, 1x objective, LED illuminator, flexible light pipes, ¼ Lambda plate, and dust cover.     |
| 8741-02     | Nikon SMZ800N with 0.5x Objective - on plain stand with 50/50 trinocular body tube with camera port (requires camera adapter), 10x eyepieces, 0.5x objective, LED illuminator, flexible light pipes, ¼ Lambda plate, and dust cover. |

## Nikon SMZ800N Objectives and Accessories



- NIMNH54050 - 0.5x
- NIMNH54100 - 1x
- NIMNH54075 - 0.75x
- NIMNH54150\* - 1.5x
- NIMNH54200† - 2x

\*Cannot use with ¼ Lambda Plate  
 †Cannot use with ringlight, Coax illuminators or ¼ Lambda Plate



Rotatable nosepiece for 2 objectives. Also provides on-axis viewing, necessary for using multi-focus module 86-4130 with the stereo microscope (Choose a 2nd objective for this option)

8741-61



Camera Adapter, C-Mount, 1x, LV-TV

8749-13



Camera Adapter, C-Mount, 0.55x, LV-TV

8749-11



Camera Adapter, C-Mount, 0.7x, LV-TV

8749-12

## Nikon SMZ18

Zoom Stereo Microscopes from Nikon with high resolution and macro magnification of parts. Perfect for large sample analysis and multi-focal imaging.

- Ease of creating higher resolution, contrast, and zoom ratio images for electronics and other 3D parts
- High zoom range (0.75 - 13.5x with 0.75/1/2/3/4/5/6/8/10/12/13.5x click stops)
- 3.75 - 270x magnification range with 10x eyepieces (dependent upon objective and camera adapter selection)
- Double nosepiece accessory enables on-axis viewing, extended depth of focus, and quick rotation between multiple objectives.
- Trinocular body tubes enables built-in access for camera adapter, camera, and OmniMet® integration



| Part Number | Configuration  |
|-------------|--|
| 8742-01     | Nikon SMZ18 with 1x Objective - on plain base with 105mm of Z travel, 50/50 trinocular body tube with camera port (requires camera adapter), 10x eyepieces, 1x objective, LED illuminator, fiber optic ringlight, ¼ Lambda plate, and dust cover |

## Nikon SMZ18 Objectives and Accessories



NIMNH55050 - 0.5x    NIMNH55160\* - 1.5x  
 NIMNH55100 - 1x    NIMNH55200\* - 2x

*\*Cannot use with Coax or ringlight*



Camera Adapter, C-Mount, 0.55x, LV-TV

8749-11



Camera Adapter, C-Mount, 0.7x, LV-TV

8749-12



Camera Adapter, C-Mount, 1x, LV-TV

8749-13

## Nikon Eclipse MA100N

Inverted Microscopes are compact, durable and used for high magnification needs. They are ideal for mount sample analysis with flat sample surfaces and are equipped to use multiple light sources for analysis variation.

- The MA100N is a compact inverted microscope designated for bright field and simple polarizing observations.
- This model offers cost-effective solution to manufacturing and QA QC situations in industries, such as automotive/electronics and industrial machinery/tools.
- This simple but durable microscope enables high contrast image observation and capture.



| Part Number | Configuration  |
|-------------|--|
| 8743-03     | Nikon MA100N inverted LED Microscope - with ISO camera port (0.63x camera adapter incl.), LED illuminator, 10x eyepieces, manual XY stage (50x50mm), 5 position turret, includes 5x, 10x, 20x, 50x TU Epi Plan objectives, dust cover. |

## Nikon Eclipse MA100N Objectives and Accessories

### Nikon Eclipse MA100N Objectives



- |                    |                   |
|--------------------|-------------------|
| NIMUE12010* - 1x   | NIMUD00200 - 20x  |
| NIMUE12030* - 2.5x | NIMUD00500 - 50x  |
| NIMUD00050 - 5x    | NIMUD00900 - 100x |
| NIMUD00100 - 10x   |                   |

\*Polarizer Required

### Polarizer/Analyzer



Polarizer/Analyzer set for MA100N

874365

### Stage Insert



Includes 1in, 1.125in, 1.5in stage inserts

8743-63

Includes 25mm, 30mm, 40mm stage inserts  
8743-64

### Camera Adapter



Camera Adapter, C-Mount, 1x, ISO

8749-15

### Grain Size Reticle



For eyepiece

8743-62

## Nikon Eclipse MA200



Inverted Microscopes are compact, durable and used for high magnification needs. They are ideal for mount sample analysis with flat sample surfaces and are equipped to use multiple light sources from BF, DF, DIC & POL for analysis variation.

- Compact, durable, inverted microscope ideal for mounted, flat samples.
- Available in BF, DF, DIC, & POL with Halogen illumination (50W).
- Ergonomic design with all controls easily accessible from the front.
- DIC configuration includes intelligent nose-piece which displays objective position on front.
- Slider slots available for Grain Size and Dial Size reticle which show up on camera as well as through the eyepiece.

| Part Number | Configuration  |
|-------------|--|
| 8744-01     | Nikon MA200 BF Inverted Microscope - with stationary trinocular body tube, 10x eyepieces, LV-TV camera ports on body and trinocular head (requires camera adapter), halogen lamphouse with 50W bulb, manual XY stage with insert (50 x 50mm travel), 6-position nosepiece with 5x, 10x, 20x, and 50x Epi Plan Fluor BF objectives, and dust cover.   |
| 8744-02     | Nikon MA200 BD/DF Inverted Microscope - with stationary trinocular body tube, 10x eyepieces, LV-TV camera ports on body and trinocular head (requires camera adapter), halogen lamphouse with 50W bulb, manual XY stage with insert (50 x 50mm travel), 5-position nosepiece with 5x, 10x, 20x, and 50x Epi Plan Fluor BF objectives, and dust cover.  |
| 8744-03     | Nikon MA200 BF/DF/DIC Inverted Microscope - with stationary trinocular body tube, 10x eyepieces, LV-TV camera ports on body and trinocular head (requires camera adapter), halogen lamphouse with 50W bulb, manual XY stage with insert (50 x 50mm travel), polarizer and analyzer set, DIC slider, 5-position nosepiece with 5x, 10x, 20x, 50x Epi Plan Fluor BD objectives and dust cover. |

## Nikon Eclipse MA200 Accessories and Objectives

|   |   |   |  |
|---|---|---|--|
| <b>Polarizer/Analyzer</b><br><br>Included with DIC Package<br><a href="#">8744-61</a>         | <b>Grain Size Reticle Slider</b><br><br>Slider for grain size analysis and NMI analysis<br><a href="#">8744-62</a>        | <b>Scale Dial Slider</b><br><br>5x, 10x, 20x, 50x, 100x<br><a href="#">8744-63</a>                                      | <b>Stage Insert</b><br><br>Includes 1in, 1.125in, 1.5in stage inserts<br><a href="#">8744-64</a>                     |
| <b>Stage Insert</b><br><br>Includes 25mm, 30mm, 40mm stage inserts<br><a href="#">8744-65</a> | <b>Camera Adapter</b><br><br>Camera Adapter, C-Mount, 0.55x, LV-TV, for 1/2" chip size cameras<br><a href="#">8749-11</a> | <b>Camera Adapter</b><br><br>Camera Adapter, C-Mount, .7x, LV-TV, for 2/3" chip size cameras<br><a href="#">8749-12</a> | <b>Camera Adapter</b><br><br>Camera Adapter, C-Mount, 1x, LV-TV, for 1" chip size cameras<br><a href="#">8749-13</a> |

### Nikon Eclipse MA200 Objectives



#### Brightfield Objectives

NIMUE12010\* - 1x  
 NIMUE12030\* - 2.5x  
 NIMUE12050 - 5x

\*Polarizer Required

#### Darkfield/DIC Objectives

NIMUE42050 - 5x  
 NIMUE42100 - 10x

NIMUE12100 - 10x  
 NIMUE12200 - 20x  
 NIMUE00400 - 40x

NIMUE42200 - 20x  
 NIMUE42500 - 50x

NIMUE12500 - 50x  
 NIMUE12900 - 100x

NIMUE42900 - 100x

## Nikon Eclipse LV150N

Upright Industrial Microscopes are versatile upright microscopes suitable for reflected light applications. Perfect for high magnification needs with samples that are not flat or mounted.

- Versatile upright microscope suitable for reflected light applications
- Available with LED illumination for BF applications
- Available with Halogen (50W) illumination for BF, DF, DIC, & POL
- Epi Plan Fluor objectives provide superior chromatic aberration performance, high numerical apertures, and long working distance at all magnifications



| Part Number | Configuration  |
|-------------|--|
| 8745-01     | Nikon LV150NL BF Upright LED Microscope - with stationary trinocular body tube, 10x eyepieces, LV-TV camera port (requires camera adapter), LED illumination, manual 3 x 2in [76 x 51mm] mechanical stage, 6-position nosepiece with 5x, 10x, 20x and 50x Epi Plan Fluor BF objectives, and dust cover.  |
| 8745-02     | Nikon LV150N BF/DF/DIC Upright Halogen Microscope - with stationary trinocular body tube, 10x eyepieces, LV-TV camera port (requires camera adapter), Halogen illumination with 50W bulb, NCB11 and ND4 filters, 3 x 2in [76 x 51mm] mechanical stage, 5-position nosepiece with 5x, 10x, 20x and 50x Epi Plan Fluor BF objectives, rotating polarizer/analyzer, DIC slider, and dust cover. |

## Nikon LV150N Objectives & Accessories



Polarizer/Analyzer

For LV150N Halogen

8745-61



Polarizer/Analyzer

For LV150NL LED

8745-62



Camera Adapter

Camera Adapter, C-Mount, 1x, LV-TV

8749-13



Camera Adapter

Camera Adapter, C-Mount, 0.55x, LV-TV

8749-11



Camera Adapter

Camera Adapter, C-Mount, .7x, LV-TV

8749-12



Nikon LV150N Objectives

### Brightfield Objectives

- NIMUE12010\* - 1x
- NIMUE12030\* - 2.5x
- NIMUE12050 - 5x

\*Polarizer Required

### Darkfield/DIC Objectives

- NIMUE42050 - 5x
- NIMUE42100 - 10x

- NIMUE12100 - 10x
- NIMUE12200 - 20x
- NIMUE00400 - 40x

- NIMUE12500 - 50x
- NIMUE12900 - 100x

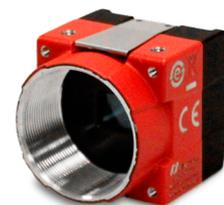
- NIMUE42200 - 20x
- NIMUE42500 - 50x

- NIMUE42900 - 100x

## Digital Cameras

| Part Number | Model          | Mega pixels | Chip Size | Resolution (w x h) | Frame Rate (fps) | Image Sensor | Interface |
|-------------|----------------|-------------|-----------|--------------------|------------------|--------------|-----------|
| 86-0501     | Alvium U-500c  | 5.0         | 0.5 in    | 2592 x 1944        | 68               | CMOS         | USB3.1    |
| 86-0124     | Alvium U-1240c | 12.0        | 0.5 in    | 4024 x 3036        | 29               | CMOS         | USB3.1    |

NOTE: Alvium cameras require USB3 connection and OmniMet 2022 (v12) or later. Systems with older versions of OmniMet will require an update.



## Motorized Stage Kits

| Part Number | Description                   |
|-------------|-------------------------------|
| 8610003     | Motorized XYZ Stage for MA200 |
| 8610008     | Motorized XYZ Stage for MA100 |

NOTE: Kits include stage, focus drive, controller and 3-axis joystick



## Stage Micrometer

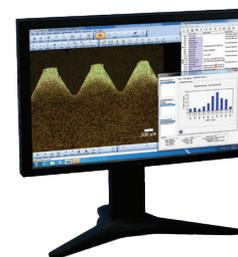
| Part Number | Description   |
|-------------|---|
| 8749-21     | Stage Micrometer, mm-Inch NIST Certified                  |
| 8749-22     | Stage Micrometer, Metal, 1mm/0.01mm                       |
| 8749-23     | Stage Micrometer, Metal, 1mm/0.01mm with UKAS certificate |



## Computers & Monitors

| Part Number | Description   |
|-------------|---|
| 85-0135     | 24in Touch Monitor, LCD with 1920 x 1200 display capability   |
| 86-10007    | Windows 10 workstation, complete. XE3 I7-8700, 512GB SSD, 16GB RAM, Intel chipset video with shared memory. Includes keyboard, mouse, and 24-in LCD Monitor (1920 x 1200) |

NOTE: Computer and monitor specifications subject to change based on availability



## Leveling Accessories for Upright Microscopes

| Part Number | Description                          |
|-------------|--------------------------------------|
| 8749-31     | Leveling Press                       |
| 8749-34     | Metal Slides, Set of 5, 75mm x 25 mm |
| 8749-35     | Metal Slides, Set of 2, 1in x 3in    |

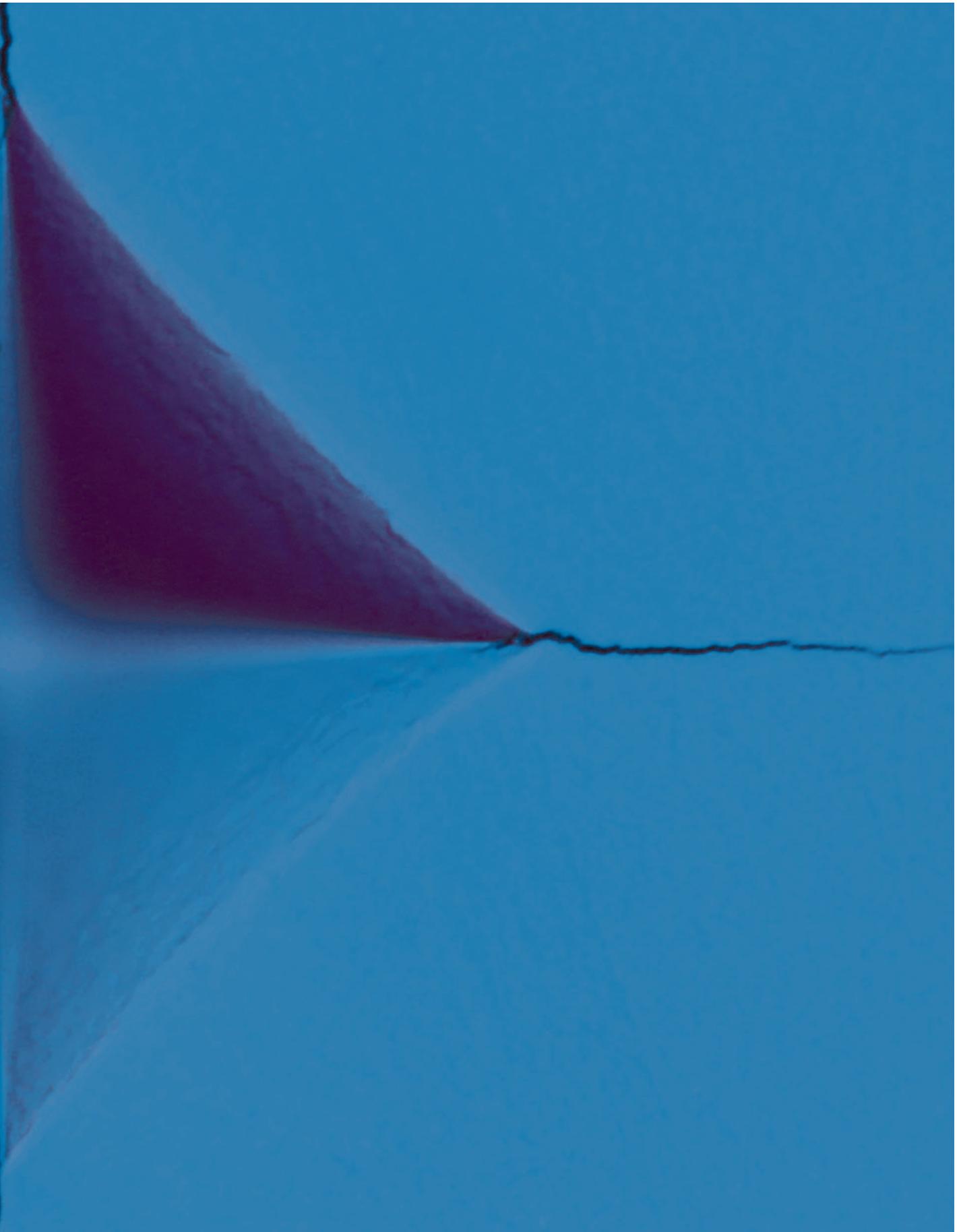




# HARDNESS TESTING

Buehler offers complete hardness solutions with testers, test blocks, and software designed by Buehler. Our fully integrated systems remove the guesswork from hardness testing with intuitive interfaces and software combined with test blocks that set the standard for uniformity and repeatability.

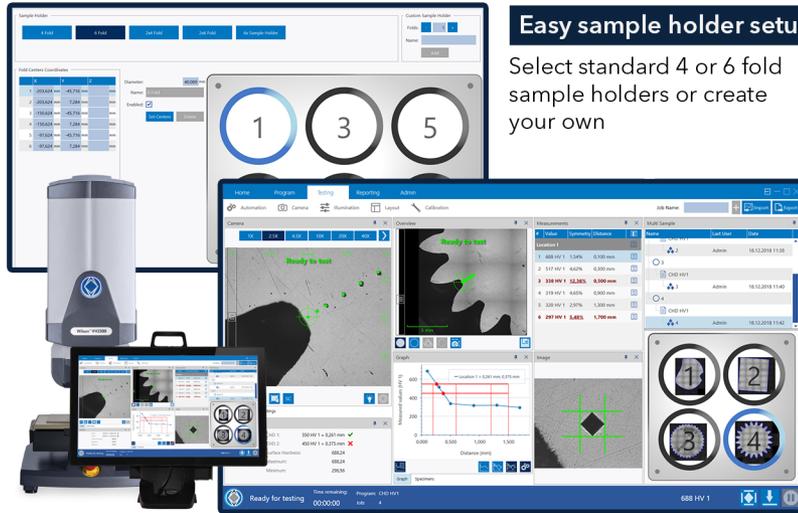




## DiaMet - Hardness Testing Made Easy

Navigation within the DiaMet™ Software is made easy by its clean design and is supported by simple and intuitive gestures. Virtual tabs on top of the screen let you navigate between Home, Program, Testing and Reporting. Comprehensive feedback is shown on the status bar, which makes interactions clear and efficient. Being designed for touch panel use, with an entirely new look and feel, DiaMet is simple, useful, and smart to work with! Easy To Operate by touch, mouse or keyboard. DiaMet Enterprise options let you Scan, Stitch and edge detect your sample to find exact locations where you can drop in pre-configured testing templates to speed up your operation.

## Wilson® DiaMet™ Multisample



### Easy sample holder setup

Select standard 4 or 6 fold sample holders or create your own

### Define start coordinates

For each sample, the center or any needed X, Y or Z coordinate can be programmed and used for navigation or pattern placement

### Perfect overview

When scanning the contour or the whole sample, it is displayed on the holder

### Simple Stage Navigation

Click on the sample of the holder and move to the defined sample coordinates

### Easy testing workflow

Clear your tested sample holder and start with the next batch of samples right away

## DiaMet - Automation Packages

Automated Microindentation system available with different levels of automation. All control of the hardness instrument can be handled through comprehensive software. Automatically test and measure indentations, as well as set up and run automatic testing sequences and generate reports through export of data with minimal operator interaction. All parameters of the test, such as load monitoring, dwell times, and focusing are controlled through the software providing a very user friendly system. Hardness conversion into other scales is supported.

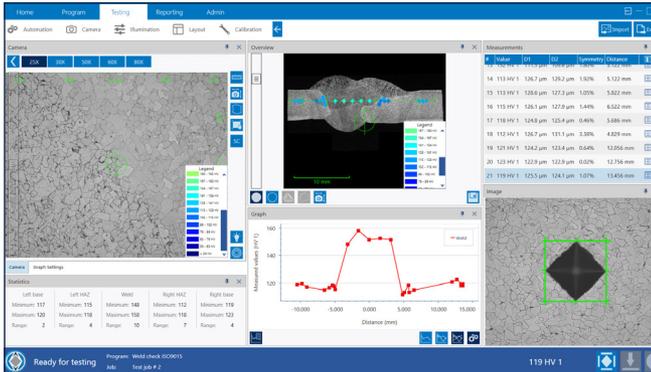
### DiaMet Features

|                                      | Manual (Cam Only) | Basic | Semi-Automatic | Full-Automatic | Enterprise |
|--------------------------------------|-------------------|-------|----------------|----------------|------------|
| Manual Indent Measure                | ●                 | ●     | ●              | ●              | ●          |
| Auto Indent Measure                  | ●                 | ●     | ●              | ●              | ●          |
| Barcode Scanner Interface            | ●                 | ●     | ●              | ●              | ●          |
| Statistics, Reporting & Export tools | ●                 | ●     | ●              | ●              | ●          |
| K1c Testing                          | ●                 | ●     | ●              | ●              | ●          |
| Weld Testing                         | ●                 | ●     | ●              | ●              | ●          |
| Auto-illumination                    |                   | ●     | ●              | ●              | ●          |
| Digital zoom                         |                   | ●     | ●              | ●              | ●          |
| Motorized XY-stage control           |                   |       | ●              | ●              | ●          |
| Multi Sample Testing                 |                   |       |                | ●              | ●          |
| Auto-focus                           |                   |       |                | ●              | ●          |
| Edge detection                       |                   |       |                | ●              | ●          |
| Contour, Scanning & stitching        |                   |       |                |                | ●          |
| Hardness mapping                     |                   |       |                |                | ●          |
| Specimen templates                   |                   |       |                |                | ●          |

# DiaMet - Hardness Testing Functions

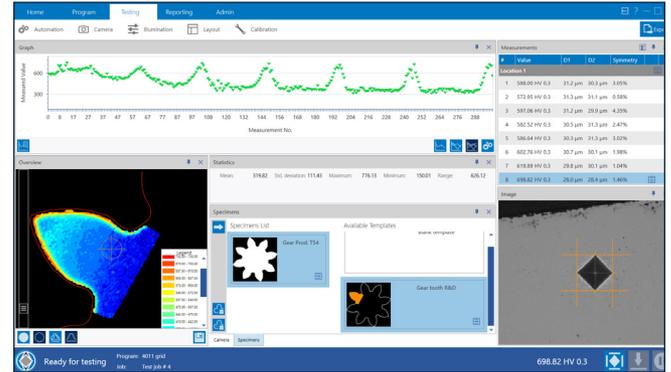
## Weld Testing

Weld testing has never been easier. Use the intuitive weld pattern generator in the program section and align your pattern on each weld section within seconds.



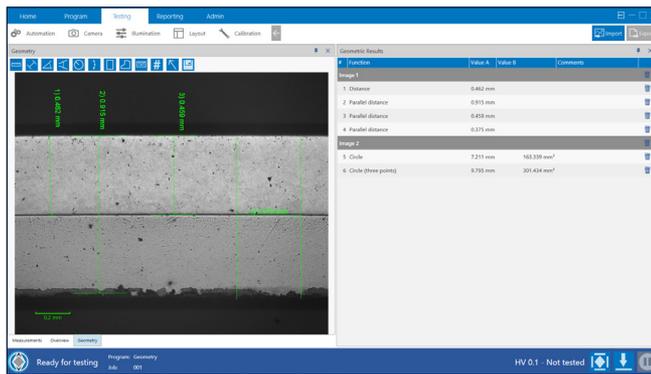
## Color & 3D Mapping

Mapping gives an indication of the hardness distribution across a region of interest. Especially helpful for surface treated materials.



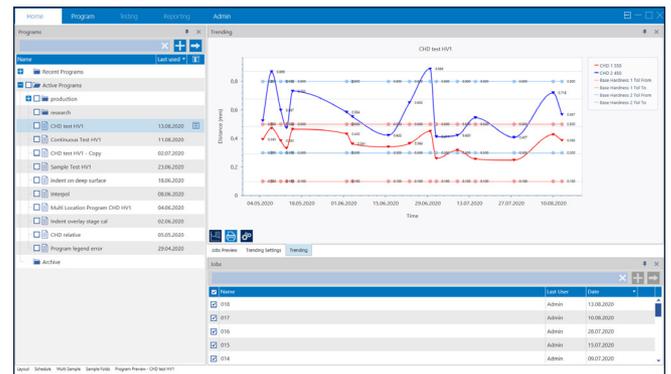
## Geometric Functions

Basic measurements support you across the board of hardness testing. Make simple length or angle measurements, circle or area calculations with our geometry tool.



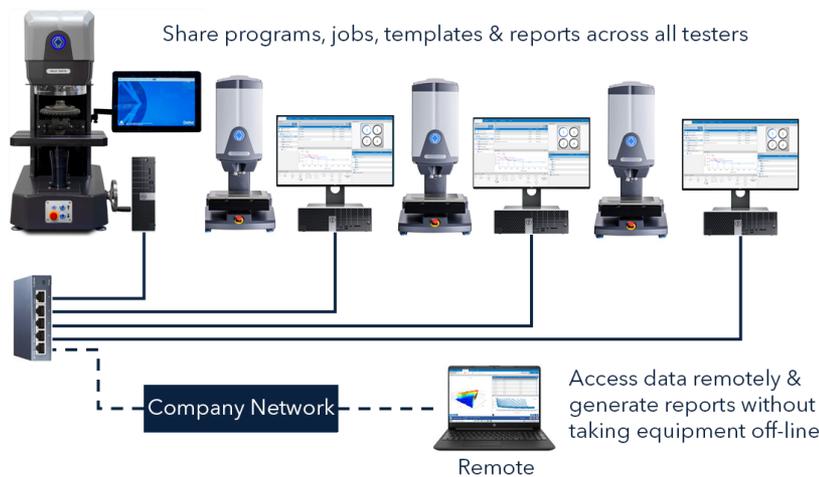
## Results Trending

Trending of selection of test jobs of a specific program enables to track the process performance of customer samples/test programs



## Shared Database Networking

Multiple testers can share programs and jobs to maximize throughput of hardness testing. Access data from all testers remotely to generate reports without downtime.



## Wilson® All-in-One VH3100

The best pre-configured full automatic Vickers hardness tester on the market. The All-in-One Wilson VH3100 has all you need for your production control hardness testing requirements. This setup is configured to easily perform hardness tests with advanced software solutions - DiaMet Enterprise.



Wilson All-in-One VH3100 - 125mm Vertical Capacity  
**Part Number - VH3100**

### Description

|                                |  |
|--------------------------------|--|
| Hardness scales                | ISO and ASTM certified Vickers indenter  |
| Loads                          | 0.05 - 10kgf (0.49 - 98.07N)   |
| Objectives                     | 10x and 50x long working distance objective for measurements and navigation  |
| Stage                          | Motorized 180x180mm stage (travel 110x140mm)   |
| Overview camera                | Bright field overview camera with 13x13mm FOV, for navigation, scanning or stitching   |
| DiaMet Enterprise              | All software features you need - including mapping, edge detection, scanning, stitching of overview image, CHD calculations, statistics, weld testing, exporting and barcode scanner interface |
| DiaMet workstation and monitor | High performance PC with 24" FullHD touchmonitor   |



Please select the correct sample holder by sample diameter or a clamping device.

## Sample Holders and Accessories

A good sample holder keeps your specimen stationary and provides support during testing. Buehler sample holders also level tapered samples to ensure that the test surface is perfectly perpendicular to the indenter. This ensures an accurate and problem free execution of your test job.

### Leveling Vise



Self leveling vise for one round mounted sample up to 40mm (requires additional insert), incl. magnets

886164

Self leveling vise for a single 50mm round mounted sample, no inserts applicable. Incl. magnets.

886167

### 4 Fold Leveling Vise



Self leveling vise for four round mounted samples up to 40mm (requires additional inserts). Incl. magnets.

886169

Self leveling vise for four 50mm round mounted sample, no inserts applicable. Incl. magnets.

886175

### 6 Fold Leveling Vise



Self leveling vise for six round mounted samples up to 40mm (requires additional inserts). Incl. magnets.

886178

### Universal Leveling Vise



Universal clamping & leveling vise. Can be used to hold tapered pieces, wires and mounted samples.

900086323

### EZ Clamp



Single mount canister

9100575 Canister (requires cap selection)

9100570 Mount Cap for 1in mounts

9100571 Mount Cap for 1.25in mounts

9100572 Mount Cap for 1.5in mounts

9100576 Mount Cap for 2in mounts

9100574 Magnetic Stop and Stage Mount

\*Mount Cap requires the Canister

### Sample Holder Insert



Sample holders 886164, 886169 and 886178 require one insert ring per slot.

886170 Ø 1in [25mm] insert

886171 Ø 30mm insert

886172 Ø 40mm insert

886173 Ø 1.25in insert

886174 Ø 1.5in insert

### Precision Vise



Opening max 45mm

9100258

### Anti-Vibration Table



Active anti-vibration table 600 x 600mm [24 x 24in]

9100906

### Passive Platform



Passive Vibration Isolation Platform 18 x 24in [610 x 460mm]  
9100904 for VH3300 and Rockwell Testers  
9100905 for VH3100 and VH1000 series

For more sample holders and supports please contact our technical sales team.

## Wilson® VH3100-3300

The Wilson Fully Automated Hardness Testing System provides a fully integrated platform for your complete Vickers and Knoop hardness testing needs. From leading edge modular frame, stage, and optic designs to a fully featured User Interface, our VH3100 and VH3300 Testers can be built to meet your Application needs today, tomorrow, and into the future.

### Ease of use

- Focus on a fast and simple operation to satisfy the needs of novice operators, while maintaining the flexibility and complexity of features required by expert users with DiaMet operation software.

### Flexibility

- With a 6 position vertical turret (Buehler patent), the VH3300 offers the flexibility to configure the tester for the complete 0.01 - 50kgf (0.098 - 490.33N) load range or just a section of this.
- The zero-offset overview optics housed in the turret and is both illuminated and calibrated.
- Designed for testing to Vickers, Knoop and Brinell standards ASTM E10, E92, & E384, ISO 4545, 6506, & 6507, JIS Z-2243, Z-2244, & Z-2251

### Increase Up-time & Reduce Service Costs

- Collision Resistant System - prevents indenter or objective damage.
- All components and software are completely designed, manufactured and integrated by Buehler.



**Dimensions** 13.39in [340mm]W x 23.62in [600mm]D  
**Vertical Test Capacity** - VH3100 choose:  
 4.92in [125mm], 6.69in [170mm] or  
 8.46in [215mm] VH3300 choose:  
 4.1in [105mm] or 6.1in [155mm]  
**Horizontal Test Capacity** - 9.23in [235mm]  
**Weight** VH3100: 82.7 lbs [37.5kg]  
 VH3300: 144 lbs [65kg]

## System Configurations

Start by selecting either the VH3100 or VH3300 and continue on to create a customized Vickers-Knoop Hardness tester

### Main Unit



#### Wilson VH3100

- 3 objectives + 1 indenter
- 0.050 - 10kgf load range
- Includes DiaMet workstation and 24" monitor

W3111



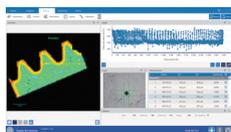
#### Wilson VH3300

- 3 objectives + 3 load cells
- 0.010 - 50kgf load range\*
- Includes DiaMet workstation and 24" monitor

\*depending on configuration

W3210

### Software Options



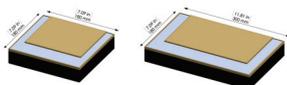
#### DiaMet Full-Automatic software package

W3100A03

#### DiaMet Enterprise software package

W3100A15

### Motorized Stages



#### Standard size (180 x 180mm)

W3000SS

#### Large size (300 x 180mm)

W3000SL

## System Configurations *(Continued)*

### Wilson VH3100

### Wilson VH3300

#### Vertical Test Capacity



W3100D01 - height 125mm  
 W3100D02 - height 170mm  
 W3100D03 - height 215mm

W3200D01 - height 105mm  
 W3200D02 - height 155mm

#### Load Cell

*select one for VH3100,  
 select one per indenter for  
 VH3300, up to three total*

W3100E02 - 100N loadcell

W3210E01 - 10N loadcell  
 W3200E02 - 100N loadcell  
 W3200E04 - 500N loadcell

| Scales | HK0.01 | HK0.025 | HK0.05 | HK0.1 | HK0.2 | HK0.3 | HK0.5 | HK1 | HK2 |     |     |      |      |      |      |  |
|--------|--------|---------|--------|-------|-------|-------|-------|-----|-----|-----|-----|------|------|------|------|--|
|        | HV0.01 | HV0.025 | HV0.05 | HV0.1 | HV0.2 | HV0.3 | HV0.5 | HV1 | HV2 | HV3 | HV5 | HV10 | HV20 | HV30 | HV50 |  |



#### Overview Camera



- Separate overview camera for VH3100
  - Includes Scan & Stitch function in the DiaMet software
- W3110F01

- Turret integrated camera for VH3300
  - Includes Scan & Stitch function in the DiaMet software
- W3200F01

#### Additional Accessories

For Indenters select one Indenter per Load Cell.  
 For Long Working Distance Objectives select up to two for VH3100, select two or three for VH3300

#### Indenter Holder\*

*\*for VH3100 Only*

Standard holder  
 W3100G01

SnapGrip Holder  
 W3100G02

#### Vickers Indenter

Vickers Indenter, ISO & ASTM Certified  
 W9100687

#### Knoop Indenter

Knoop Indenter, ISO & ASTM Certified  
 W9100684

#### Brinell Indenters

*\*for VH3300 Only*

1mm Brinell ball indenter, ISO & ASTM Certified, Use with W3200E04 load cell  
 W741237

2.5mm Brinell ball indenter, ISO & ASTM Certified  
 W741238



#### Objectives

| Part Number | Native Mag. | Max. Field of View | Part Number | Native Mag. | Max. Field of View |
|-------------|-------------|--------------------|-------------|-------------|--------------------|
| W5XLWDO     | 5x          | 3600µm             | W40XLWD     | 40x         | 450µm              |
| W10XLWD     | 10x         | 1800µm             | W50XLWD     | 50x         | 360µm              |
| W20XLWD     | 20x         | 900µm              | W100XLWD    | 100x        | 180µm              |

*Please select your sample holder on page 75*

## Wilson® VH1102-1202

The VH1102 and VH1202 offer a versatile, affordable, and reliable solution for accurate micro-hardness testing, both for quality control and for metallurgical research applications. The VH1X02-series allows its operator to take measurements using the digital eyepiece in standalone mode or by using an optional integrated high-resolution camera and the powerful DiaMet™ software.

### Best in Class Optics

- This high quality optical system, with proprietary components, provides an unparalleled image.
- The optional digital camera is integrated inside the housing, keeping it safe from dust and dirt as well as preventing it from getting misaligned.

### Automatic Load Selection

- Designed for Vickers and Knoop testing to conform to international standards ISO 6507, ISO 4545, ASTM E92, and ASTM E384
- The wide load range with 9 individual load steps, offer testing capabilities from 0.01 - 2kgf (0.098 - 19.61N)

#### VH1102 Standalone Tester

**Part Number - W1102D01**

| Description     |  |
|-----------------|--|
| Hardness scales | HV   |
| Main-load       | 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2kgf |
| Objectives      | 10x and 50x Long Working Distance                      |
| Sample Support  | Flat anvil (19mm pin) & Analog XY Stage                |

#### VH1202 Standalone Tester

**Part Number - W1202D01**

| Description     |  |
|-----------------|--|
| Hardness scales | HV & HK  |
| Main-load       | 0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2kgf |
| Objectives      | 5x, 10x and 50x Long Working Distance                  |
| Sample Support  | Flat anvil (19mm pin) & Analog XY Stage                |



#### Dimensions

9.8in [250mm]W x 20.4in [520mm]D x 26.3in [670mm]H  
**Vertical Test Capacity** - 5.1in [130mm] with XY-stage 3.7in [95mm]  
**Horizontal Test Capacity** - 5.1in [130mm]  
**Weight** - 110lbs [50kg]



## VH1102-1202 with DiaMet™ Automation Software

DiaMet workstation and 24" monitor included with VH1102-1202 Hardness Tester



| Testers                    | DiaMet Basic Manual (Analog) | DiaMet Basic Manual (Digital) | DiaMet Semi Auto                   | DiaMet Full Auto                               | DiaMet Enterprise                              |
|----------------------------|------------------------------|-------------------------------|------------------------------------|--|--|
| VH1102 Vickers             | W1102D31                     | W1102D33                      | W1102D35                           | W1102D37                                       | W1102D45                                       |
| VH1202 Vickers & Knoop     | W1202D31                     | W1202D33                      | W1202D35                           | W1202D37                                       | W1202D45                                       |
| <b>Automation included</b> | Camera only                  | Camera, Digital Stage Readout | Camera, Motorized 100x100 mm Stage | Camera, Motorized 100x100 mm Stage, Auto-Focus | Camera, Motorized 100x100 mm Stage, Auto-Focus |

# Wilson® VH1150

The Wilson VH1150 is the ultimate evolution of the deadweight Vickers hardness tester with a unique load range, 0.3 - 50kgf (2.94 - 490.33N), combined in one machine. The automatic load selection eliminates the need for a hard to operate manual selector knob, and opens new possibilities in semi-automation applications. Functions like multi-scale conversion, shape correction and USB data export, make hardness testing easier and help you focus on your actual process control.



## Experience the Flexibility of a Segment Leading Wide Load Range

- The manual load selector knob is replaced with a durable motor to change the loads automatically.
- The fast & quiet motorized turret is integrated as part of completely automatic test cycle. One push of the start button is all it takes.

## Versatile

- Designed for Vickers, testing conforms to international standards ISO 6507 and ASTM E92.
- Segment leading load range - 0.3 - 50 kgf load range over ten individual load steps.

VH1150 Standalone Tester

Part Number - W1151D01

| Description     |  |
|-----------------|--|
| Hardness scales | HV   |
| Main-load       | 0.3 - 0.5 - 1 - 2 - 3 - 5 - 10 - 20 - 30 - 50kgf |
| Objectives      | 10x and 20x Long Working Distance                |
| Sample Support  | Flat anvil (19mm pin) & Analog XY Stage          |

### Dimensions

9in [230mm]W x 25in [625mm]D x 30in [760mm]H

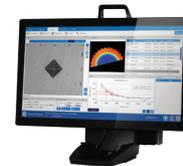
**Vertical Test Capacity** - 8.2in [210mm] with standard flat anvil

**Horizontal Test Capacity** - 6.3in [160mm]

**Weight** - 154 lbs [70.5kg]

## VH1150 with DiaMet® Automation Software

DiaMet workstation and 24" monitor included with VH1150 Hardness Tester



| Testers             | DiaMet Basic Manual (Analog) | DiaMet Basic Manual (Digital) | DiaMet Semi Auto                   | DiaMet Full Auto                               | DiaMet Enterprise                              |
|---------------------|------------------------------|-------------------------------|------------------------------------|--|--|
| VH1150              | W1151D31                     | W1151D33                      | W1151D35                           | W1151D37                                       | W1151D45                                       |
| Automation included | Camera only                  | Camera, Digital Stage Readout | Camera, Motorized 100x100 mm Stage | Camera, Motorized 100x100 mm Stage, Auto-Focus | Camera, Motorized 100x100 mm Stage, Auto-Focus |

### Accessories

#### Indenters for VH1102-1202-1150

- W9100687 Vickers indenter, includes ASTM & ISO certificate
- W9100684 Knoop indenter, includes ASTM & ISO certificate

#### Manual Stages

- 9170506 XY-stage with analog metric micrometers
- 9170507 XY-stage with digital micrometers

#### Objectives for VH1102-1202-1150

- W5XLWD 5x Long Working Distance objective
- W10XLWD 10x Long Working Distance objective
- W20XLWD 20x Long Working Distance objective
- W40XLWD 40x Long Working Distance objective
- W50XLWD 50x Long Working Distance objective
- W100XLWD 100x Long Working Distance objective

## Wilson® UH4000 Series

The UH4000 series universal hardness tester is designed for high volume production labs and production floor. It is available in two different configurations, the UH4250 and UH4750. Universal hardness testers are designed to perform several hardness scales with one machine, in most cases for higher loads (>5kgf). The UH4000 series testers contain all standardized and usual hardness testing methods between 0.5 - 250kgf (4,90 - 2451,66 N) and 3 - 750kgf (29,42 - 7354,99N), according to ISO 6506, 6507, 6508 and 4545 and ASTM E18, E10 & E92. Additionally, plastics and carbon testing can be performed according to ISO2039 and DIN51917.



### Ease of Use

- Focus on a fast and simple operation to satisfy the needs of novice operators, while maintaining the flexibility and complexity of features required by expert users with DiaMet operation software.

### Flexibility

- The optional clamping tool will ensure stability during the test process.
- 8 position turret to have all objectives and indenters you need.
- Laser for easy test location targetting and a ringlight for best Brinell measurement accuracy

### Increase Up-time & Reduce Service Costs

- Steel casting provides full protection for production environments.

#### Dimensions

28in [704mm]W x 21in [534mm]H x 39.2in [995mm]D

**Maximum Specimen Height** - 11.8in [300mm]

**Test Stage Dimensions** - T-slot stage with 12mm slot width, 11.8in [300mm] x 15.7in [400mm]

**Weight** - 660 lbs [300kg]

## System Configurations

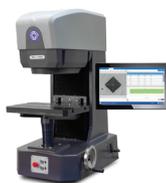
Start by selecting either the UH4250 or UH4750 and continue on to create a customized Universal Hardness tester. The standard models UH4250 and UH4750 will be controlled by DiaMet Basic, including autofocus and automeasurement. The UH4250 Auto model includes a motorized stage and will be controlled by DiaMet Enterprise.

### Main Unit



#### Wilson UH4250

- Load Range 0.5-250kgf, Standard Monitor 24" W4250
- Load Range 0.5-250kgf, Touchscreen 19.5" W4251



#### Wilson UH4750

- Load Range 3 - 750kgf, Standard Monitor 24" W4750
- Load Range 3 - 750kgf, Touchscreen 19.5" W4751



#### Wilson UH4250 Auto\*

- Load Range 0.5- 250kgf, 24" Standard Monitor, 180 x 180mm motorized stage W4250XY
- Load Range 0.5-250kgf, 19.5" Touchscreen, 180x180mm motorized Stage W4251XY

\* Clamping device W4100CL not applicable

### Configure Turret

Select up to 8 different items



### Objectives

- |          |   |
|----------|---|
| W4100X2  | 2.5x Objective, optional with Ringlight |
| W4100X5  | 5x Objective                            |
| W4100X10 | 10x Objective                           |
| W4100X20 | 20x Objective                           |
| W4100X40 | 40x Objective                           |
| W4100X50 | 50x Objective                           |



### Laser

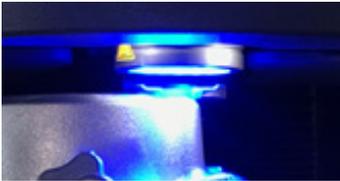
- |        |                   |
|--------|-------------------|
| W4100L | Positioning Laser |
|--------|-------------------|

### Indenters

- |           |  |
|-----------|--|
| W4100K    | Knoop Indenter with turret adapter         |
| W4100V    | Vickers Indenter with turret adapter       |
| W4100B1   | Brinell Indenter 1mm with turret adapter   |
| W4100B2   | Brinell Indenter 2.5mm with turret adapter |
| W4100B5   | Brinell Indenter 5mm with turret adapter   |
| W4100B10  | Brinell Indenter 10mm with turret adapter  |
| W4100R120 | Rockwell Diamond Cone Indenter             |
| W4100R16  | Rockwell Indenter 1/16" Ball               |
| W4100R8   | Rockwell Indenter 1/8" Ball                |
| W4100R4   | Rockwell Indenter 1/4" Ball                |
| W4100R2   | Rockwell Indenter 1/2" Ball                |

## Additional Accessories

### Ring Light



Ringlight for 2.5x objective (improves reading of soft Brinell indents)  
W4100RL

### Auto Clamping Device



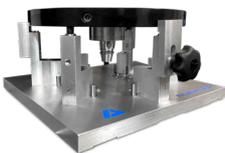
The unique clamping device for the UH4000 series hardness testers ensures that workpieces will be fixed properly during testing. The device is designed to adapt different types of clamping forks.  
Clamping width: 35mm [1.37in]  
W4100CL

### Workbench



Workbench with Drawers 1000w x 700d x 800h mm [30 x 27 x 31in] with spindle hole  
944872

### GP-HDT Sample Fixture



Adjustable fixture for use with Grinding & Polishing central force specimen holders. Fixture directly accepts specimen holder and allows for multi-sample hardness testing without the need for unloading and reloading individual samples.  
W4100GP

### Anvils (25mm)

Anvils fit UH4000 series, BH3000, and legacy testers with 25mm pinhole.



V anvil for max. 45mm diameter  
cylindric workpieces  
740096



V anvil for max. 85mm diameter  
cylindric workpieces  
740095



10mm spot anvil for small  
workpieces  
740160



Auto-leveling anvil Planoflex -  
flat 60mm diameter  
740587



Test anvil flat 80mm diameter  
740191



Test anvil flat 190mm diameter  
740101

## Wilson® Rockwell® RH2150

The Wilson RH2150 hardness tester is designed for high volume production labs and production floor Rockwell testing, as well as supporting worldwide research facilities with its vast amount of testing scales with a maximum loadrange from 1 - 187.5 kgf (9.81 - 1838.7N) . The Wilson RH2150 is available in two different sizes, with a vertical capacity of 10 and 14 inch (254 and 356mm respectively). It is fully protected from outside influences with sheet metal casing and a loadcell protection. The intuitive user interface aligns with our DiaMet™ software - making it easy to use. A DiaMet™ package is available to have all advanced features of DiaMet.

### Wilson® RH2150 Series Features

- Auto-stop clamping device holds down the sample and secures it during the testing.
- The adjustable LED workspace illumination highlights the test location to ensure clarity and full visibility.
- Indenter extensions are optionally available in several sizes to enable testing also on hard to reach test locations (only usable with clamping device)
- Standard 0.75 in(19mm) pin anvils are shared with the Wilson RB2000 and R574 testers to simplify accessories in a lab
- The operator panel can be adjusted on the frame or taken off completely to put aside the machine if needed - ensuring full flexibility and an ergonomic test process
- USB connection for easy data output to memory drives
- In conjunction with the clamping device, the external footswitch can be used in multiple ways:
  - clamping and manual start
  - clamping and automatic start
  - manual release after test
  - automatic release after test
- Rockwell Fast Mode, achieving test results in seconds



#### Dimensions

600 mm [28 in] × 350 mm [21 in] × 1260 mm [39.2 in]  
(Size 1) or 1360mm [41.2in](Size 2)

#### Vertical Test Capacity -

Size 1: 10in [254mm] or Size 2: 14in [356mm]

**Weight** - 275 lbs [125 kg]

### Description

|  |  |
|--|--|
| Available indenters                                | Rockwell: Rockwell diamond cone 120°, 1/16", 1/8", ¼", ½" carbide ball indenters, Brinell: 1mm, 2.5mm, 5mm and 10mm ball indenters |
| Rockwell test procedures ISO 6508-1, ASTM E18      | A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y             |
| Plastic testing Ball indentation ISO 2039-1        | HB5: 49N, 132N, 358N, 961N   |
| Plastic testing Ball indentation ISO 2039-2        | HRR, HRL, HRM, HRE   |
| Rockwell carbon testing Ball indentation DIN 51917 | HR2.5: 7, HR5: 7, 20, 40, 60, 100, 150, HR10: 20, 40, 60, 100, 150   |
| Brinell depth testing (non-standardized) HBW-T     | HBW-T2.5: 6.25, 15.625, 31.25, 62.5, 187.5, HBW-T5: 25, 62.5, 125, HBW-T10: 100  |

## System Configurations

Select the Main Unit with the needed vertical capacity as well as the scales selection - regular or regular & superficial Rockwell scales.

### Main Unit



| Part Number | Description   |
|-------------|---|
| W2101R      | Size 1 - 10in [254mm] - with regular Rockwell scales, 10-187.5 kgf                |
| W2102R      | Size 2 - 14in [356mm] - with regular Rockwell scales, 10-187.5 kgf                |
| W2101T      | Size 1 - 10in [254mm] - with regular and superficial Rockwell scales, 1-187.5 kgf |
| W2102T      | Size 2 - 14in [356mm] - with regular and superficial Rockwell scales, 1-187.5 kgf |

Every tester includes a 63mm flat anvil, as well as a 1/16" ball indenter

## Additional Accessories

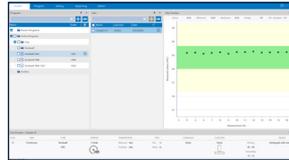
### Auto Clamping Device



Clamping device with auto-stop function, clamping force ca. 60kgf (130lbs)

W2100CL

### Software Options



DiaMet basic software option, start testcycle by software and manage & export test data, program generation, statistics etc., incl. DiaMet workstation and 24" FullHD monitor

W1001R31

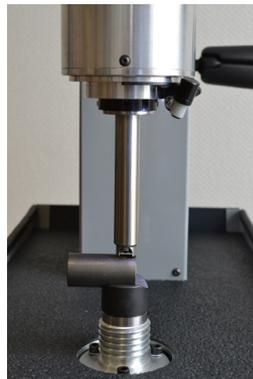
### T-Slot Table



13.3in x 11in [340x280mm] T slot table, 12mm slot width, with bore pattern for spindle adaption

W2100C02

### Indenter Extension



Indenter extension 2" [50mm], only in combination with clamping device W2100CL

W2100E2

Indenter extension 4in [100mm], only in combination with clamping device W2100CL

W2100E4

Indenter extension 6in [150mm], only in combination with clamping device W2100CL

W2100E6

### Foot Switch



Footswitch for external test cycle start, intelligent trigger logic

W2100FS

### Gooseneck Adapter

Gooseneck indenters are used for internal testing on rings and tubes. Gooseneck anvils also available for external testing of springs and coils.



Max. internal reach diameter is 9.5mm  
Min inside diameter is 14mm  
Max. outside diameter with Min. inside diameter at Max. internal reach is 45mm

W2100G2

Rockwell indenters for Gooseneck Adapters  
900001459 (A scale)  
900001460 (N scale)



Max. internal reach diameter is 26mm  
Min inside diameter is 35mm  
Max. outside diameter with Min. inside diameter at Max. internal reach is 130mm  
Available Rockwell Diamond indenters are all standard Rockwell indenters (cf. Table)

W2100G5

## Wilson® Rockwell® 574

The 574 Series Rockwell Hardness Testers offer quality, durability, and an industry leading Gauge Repeatability and Reproducibility (GR&R) making this hardness testing instrument best in class. This system is available in Regular, Superficial or Twin Scale models and capable of testing in all of the regular and superficial Rockwell hardness scales in conformance with ASTM E18 and ISO 6508.

### Segment Leading GR&R Performance

- High precision depth measurement system for accurate and repeatable testing.
- Auto preload brake and automated main load test cycle ensure repeatability.

### Ease of Use

- Powerful auto-braking system on preload ensures a seamless operation.
- Built in USB port offers rapid data transfer to Microsoft® Excel® or other applications.

### Robust

- Proven robust design with all stainless steel internal components.
- Standard 0.75 in (19mm) pin anvils are shared with the Wilson RB2000 and RH2150 testers to simplify accessories in a lab

### 574R Regular - for all Regular test scales

Part Number - WH574R

| Description     |   |
|-----------------|---|
| Pre-load        | 10kgf (98.07N)  |
| Main-load       | 60, 100, 150kgf (588.39, 980.67, 1471N)                                   |
| Hardness scales | HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV |

### 574T Twin - for all Regular and Superficial test scales

Part Number - WH574T

| Description     |  |
|-----------------|--|
| Pre-load        | 3, 10kgf (29.42, 98.07N)   |
| Main-load       | 15, 30, 45, 60, 100, 150kgf (147.1, 294.19, 441.29, 588.39, 980.67, 1471N)   |
| Hardness scales | HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y |

### Auto-clamping device

Clamping device with auto-stop function, clamping force ca. 60kgf (130lbs)

Part Number WH-CLFX-475



### Dimensions

11.53in [292mm]W x 22.3in [566mm]D x 36.83in [934mm]H

**Vertical Test Capacity** - 11.43in [289mm] without accessories

**Horizontal Test Capacity** - 6.12in [155mm] at the bottom; 6.93in [175mm] at the top

**Weight** - 165 lbs [75kg]



## Rockwell® Indenters

All indenters fit on Wilson legacy testers and R574, RH2150 and RB2000 testers. The indenter shaft length is 11,1mm and 6,34mm in diameter.



\* C, D and A scales refer to regular Rockwell scales, N scales refer to superficial Rockwell scales

\*\* WC = tungsten carbide

| Part Number | Description   |
|-------------|---|
| 9100401     | Rockwell indenter C scale, 120° diamond cone, ASTM certified                    |
| 9100402     | Rockwell indenter C, D, A, N scales, 120° diamond cone, ASTM certified          |
| 9100431     | Rockwell indenter C, A, D scales, 120° diamond cone, ISO and ASTM certified     |
| 9100432     | Rockwell indenter N scales, 120° diamond cone, ISO and ASTM certified           |
| 9100434     | Rockwell indenter C,A,D,N scales, 120° diamond cone, ISO and ASTM certified     |
| 900003405   | Rockwell indenter A scale for Carbides, 120° diamond cone, ASTM certified       |
| 900002015   | Rockwell indenter N scale, 120° diamond cone, ASTM certified                    |
| 9100405     | Rockwell indenter 1/16" WC ball with 4 spare balls, ASTM, ISO and JIS certified |
| 9100406     | Rockwell indenter 1/8" WC ball with 4 spare balls, ASTM, ISO and JIS certified  |
| 9100407     | Rockwell indenter 1/4" WC ball with 1 spare ball, ASTM, ISO and JIS certified   |
| 9100408     | Rockwell indenter 1/2" WC ball with 1 spare ball, ASTM, ISO and JIS certified   |
| 9100422     | 1/16" Diameter WC Balls, 5 pcs, ASTM, ISO and JIS certified                     |
| 9100423     | 1/8" Diameter WC Balls, 5 pcs, ASTM, ISO and JIS certified                      |
| 9100424     | 1/4" Diameter WC Balls, 3 pcs, ASTM, ISO and JIS certified                      |
| 9100425     | 1/2" Diameter WC Ball, 1 pcs, ASTM, ISO and JIS certified                       |
| W2100B2     | Brinell indenter 2.5mm WC ball, ASTM, ISO and JIS certified                     |
| W2100B5     | Brinell indenter 5mm WC ball, ASTM, ISO and JIS certified                       |

## Rockwell® Verification Kits

The kits contain recommended indenters and blocks for the dedicated scales.

| Part Number | Description  |
|-------------|--|
| A582143     | Rockwell Regular Kit - includes Rockwell C Indenter, 25 HRC, 63 HRC and 80 HRB test blocks                         |
| A58239      | Rockwell Superficial Kit - includes Rockwell N Indenter, 46 HR30N, 80 HR30N and 70 HR30T test blocks               |
| A582144     | Rockwell Twin Kit - includes Rockwell C and N Indenters, 25 HRC, 63 HRC, 80 HRB, 80 HR30N and 70 HR30T test blocks |

## Rockwell® Anvils

Anvils fit RH2150, R574, R2000, VH1102, VH1202, VH1150, and legacy testers with 19mm pinhole.

|  |   |   |   |
|--|---|---|---|
| <p><b>Flat anvil</b></p>  <p>2.5" [63mm]<br/>900001236</p>   | <p><b>Testing Table</b></p>  <p>7.50" (190mm)<br/>W741246</p>  | <p><b>V Anvil Shallow</b></p>  <p>0.5" [12.7mm] stem height for cylindrical parts &lt; 0.25" [6,3mm]<br/>900007388</p> | <p><b>V Anvil Shallow</b></p>  <p>1" [25mm] stem height for cylindrical parts &lt; 0.25" [6,3mm]<br/>900007195</p> |
| <p><b>V Anvil Standard</b></p>  <p>For cylindrical parts &gt; 0.25" [6,3mm]<br/>900030797</p>        | <p><b>Anvil Cylindron Jr.</b></p>  <p>For cylindrical parts 0.25-3" [6-76mm]<br/>900007425</p>               | <p><b>Anvil Cylindron</b></p>  <p>For cylindrical parts 2-8" [50-203mm]<br/>900007147</p>                              | <p><b>Anvil for Ball Testing</b></p>  <p>For cylindrical parts 1/16"-1" [1,6-25mm]<br/>900001371</p>               |
| <p><b>Eyeball Anvil</b></p>  <p>For pieces with slight taper (to mount on spindle)<br/>900007088</p> | <p><b>Pedestal spot Anvil</b></p>  <p>0.5" [12,7mm] stem height, 0.27" [7mm] spot diameter<br/>900007387</p> | <p><b>Pedestal spot Anvil</b></p>  <p>1" [25mm] stem height, 0.27" [7mm] spot diameter<br/>900007156</p>               | <p><b>Diamond spot anvil</b></p>  <p>For HR30T scale, 0.39" [10mm] spot diameter<br/>900007400</p>                 |

## Wilson® BH3000

The BH3000 is a durable, 30 kN (3000 kgf) Brinell Hardness Tester ideal for wide range of Brinell loads from 62.5 kgf - 3000 kgf. Designed with rugged construction to withstand harsh environments, the BH3000 combines high rigidity and closed-loop load cell technology to ensure accurate and safe load applications. The standards are ISO 6506, ASTM E10, JIS.

### Ease of use

- Heavy duty clamping and protection

### Accuracy

- Closed-loop system for quick and highly accurate test results.
- Integrated hardness calculator and conversions.

### Flexibility

- Wide load range 613N - 29.42 KN (62.5 kgf - 3000 kgf.).
- Deep reading microscope (order separately).
- Standard 1.0 in (25mm) pin anvils are shared with UH4000 Series and legacy testers to simplify accessories in a lab

### BH3000

**Part Number:** WH3000BH

| Description     |                                     |
|-----------------|-------------------------------------|
| Hardness scales | HB                                  |
| Main-load       | 62.5 - 3000kgf (612.92 - 29419.95N) |



**Dimensions**  
 10.4in [265mm]W x 23.9in [608mm]D x 39.5in [1000mm]H  
**Vertical Test Capacity** - 11in [280mm]  
**Horizontal Test Capacity** - 5in [130mm]  
**Weight** - 550 lbs [250kg]

### Accessories

|  |            |  |
|--|------------|--|
| WHSCOPE20X Brinell microscope 20X with LED light source                      | 9110-122   | Indenter 5mm Carbide Ball with certificate       |
| WHSCOPE40X Brinell microscope 40X with LED light source                      | 9110-121   | Indenter 2.5mm Carbide Ball with certificate     |
| WHSCOPE60X Brinell microscope 60X with LED light source                      | 900000485* | 10mm Carbide Ball with NVLAP certificate (Qty 2) |
| WHKINGSC4 King Scan IV - Computer Based Automatic Brinell Measurement System | 900000595* | 5mm Carbide Ball with NVLAP certificate (Qty 2)  |
| 9110-213 Testing table diameter 235mm  | 900007350* | 10mm Ball Retainer, MJ, L, K, KDR, AP, & CLB3    |
| 9110-123 Indenter 10mm Carbide Ball with certificate                         |            |  |

*\*Products only available in North America & South America*



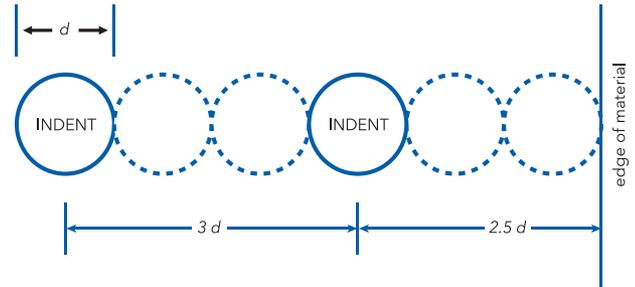
| Item       | Magnification | Field of View [mm] | Measuring Range [mm] | Direct reading [µm] | Height [mm] |
|------------|---------------|--------------------|----------------------|---------------------|-------------|
| WHSCOPE20X | 20x           | 8                  | 7                    | 50                  | 150         |
| WHSCOPE40X | 40x           | 5                  | 4                    | 20                  | 155         |
| WHSCOPE60X | 60x           | 2,5                | 2                    | 12,5                | 155         |

When making indentations on a test block, the hardness of the material immediately surrounding an indentation will usually increase due to the residual stress and work hardening caused by the indentation process. If an indentation is made too close to the edge of a test piece, there may be insufficient material to constrain the deformation around the indentation. Both of these scenarios can lead to inaccurate hardness readings. To prevent incorrect readings, recommended spacing has been defined in the standards for each type of hardness test. To ensure proper spacing is followed, Buehler offers pattern engraving on the surface of test blocks.

## Rockwell & Brinell

**According to ASTM and ISO Standards:** The distance between the centers of two adjacent indentations shall be at least three times the diameter ( $d$ ) of the indentation.

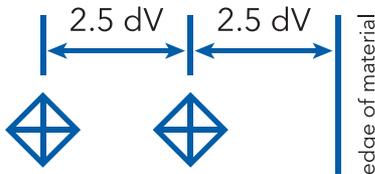
The distance from the center of any indentation to an edge of the test piece shall be at least two and a half times the diameter of the indentation.



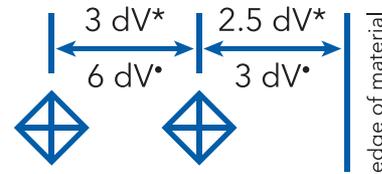
## Vickers

**According to ASTM Standards:** The distance between two indents or an indent and the edge of the test piece shall be at least two and a half times the diagonal ( $dV$ ) of the indentation.

**According to ISO Standards:** The distance between the centers of two indents shall be at least three times the diagonal ( $dV$ ) of the indent for steel, copper and copper alloys, and at least six times for light metals, lead and tin and their alloys. The distance between the center of an indent and the edge of the test piece shall be at least two and a half times the diagonal ( $dV$ ) for steel, copper and copper alloys, and at least three times for light metals, lead and tin and their alloys.



$dV$  = Vickers Diagonal

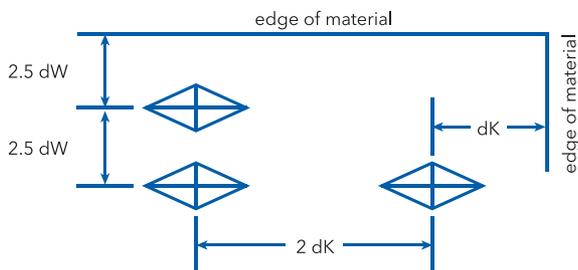


\* For steel, copper and copper alloys  
\* For light metals, lead, tin and their alloys

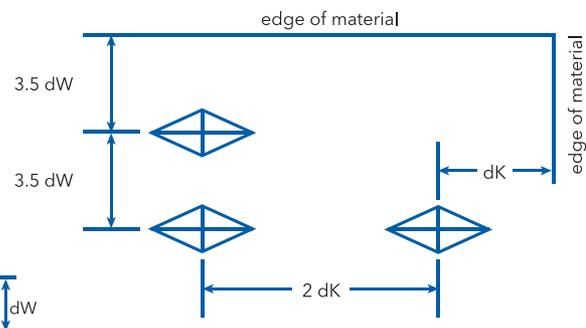
## Knoop

**According to ASTM Standards:** The distance between two indentations shall be at least two times the diagonal ( $dK$ ) of the indentation and two and a half times the width ( $dW$ ) of the indentation. The distance between the center of an indentation and the edge of a test piece shall be at least one diagonal ( $dK$ ) or two and a half times the width ( $dW$ ) of the indentation.

**According to ISO Standards:** The distance between two indentations shall be at least two times the diagonal ( $dK$ ) of the indentation and three and a half times the width ( $dW$ ) of the indentation. The distance between the center of an indentation and the edge of a test piece shall be at least one diagonal ( $dK$ ) or three and a half times the width ( $dW$ ) of the indentation.



$dK$  = Knoop Long Diagonal  
 $dW$  = Knoop Short Diagonal



## Wilson® Rockwell® Test Blocks

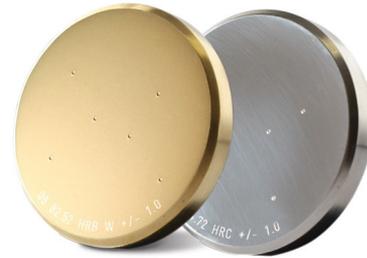
Wilson Hardness test blocks set the standard for the industry and are made from the highest quality material to insure the most uniform and repeatable blocks available. A comprehensive variety of scales and blocks are available to meet the wide ranges and hardness scales associated with Rockwell®, Brinell, Knoop and Vickers testing. All Wilson test blocks are calibrated in the Wilson Hardness Calibration Laboratory in Binghamton, NY. The Wilson lab is accredited to ISO-IEC 17025 by A2LA and the testers used in the calibration process undergo a stringent monitoring process using NIST traceable devices. For the ultimate accuracy and performance in tester verification, calibration sets are available for most Rockwell scales.

- We work directly with the steel and brass mills to specify the chemical composition
- Our machining processes (grinding, lapping, polishing) are all done in house, at the site of calibration
- 100% inspection to ensure that every single test block meets the physical requirements of ASTM (thickness, flatness, parallelism, surface roughness)
- Available in full range of regular scales HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRL, HRM, HRP, HRR, HRS, HRV and superficial scales HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y.

[Click Here](#) to shop Test Blocks

According to ASTM E18, ISO 6508-3 and JIS B 7730

|              | Part Number | Nominal Hardness |
|--------------|-------------|------------------|
| Rockwell A   | 9201110     | 63HRA            |
|              | 9201150     | 73HRA            |
|              | 9201190     | 83HRA            |
| Rockwell B • | 9202050W    | 40HRB            |
|              | 9202060W    | 50HRB            |
|              | 9202070W    | 60HRB            |
|              | 9202080W    | 70HRB            |
|              | 9202090W    | 80HRB            |
|              | 9202100W    | 95HRB            |
| Rockwell C   | 9203111     | 25HRC            |
|              | 9203121     | 30HRC            |
|              | 9203131     | 35HRC            |
|              | 9203141     | 40HRC            |
|              | 9203151     | 45HRC            |
|              | 9203161     | 50HRC            |
|              | 9203171     | 55HRC            |
|              | 9203181     | 60HRC            |
|              | 9203191     | 63HRC            |
| Rockwell E • | 9205010W    | 57HRE            |
|              | 9205020W    | 63HRE            |
|              | 9205050W    | 81HRE            |
|              | 9205060W    | 87HRE            |
| Rockwell F • | 9206020W    | 63HRF            |
|              | 9206050W    | 80HRF            |
|              | 9206070W    | 91HRF            |



Block size: Ø 2.4 in x 0.35 in (Ø 60mm x 9mm)

|                             | Part Number | Nominal Hardness |
|-----------------------------|-------------|------------------|
| Superficial Rockwell 15-N   | 9212110     | 72HR15N          |
|                             | 9212150     | 83HR5N           |
|                             | 9212190     | 91HR15N          |
| Superficial Rockwell 15-T • | 9218020W    | 64HR15T          |
|                             | 9218050W    | 74HR15T          |
|                             | 9218070W    | 80HR15T          |
|                             | 9218090W    | 87HR15T          |
| Superficial Rockwell 30-N   | 9213110     | 46HR30N          |
|                             | 9213130     | 55HR30N          |
|                             | 9213150     | 64HR30N          |
|                             | 9213190     | 80HR30N          |
| Superficial Rockwell 30-T • | 9219050W    | 43HR30T          |
|                             | 9219070W    | 56HR30T          |
|                             | 9219090W    | 70HR30T          |

• Certified using a Tungsten Carbide ball indenter

### Special Order Items (not applicable in EU)

| Part Number | Description   |
|-------------|---|
| 9201002     | Special value - please provide hardness value and Rockwell scale                      |
| 9201003     | Special value with grid - please provide hardness value and Rockwell scale            |
| 9201006     | API compliance - special tolerance - please provide hardness value and Rockwell scale |

# Wilson® Vickers-Knoop Test Blocks

According to ASTM E92, ISO 6507-3 and JIS B 7735



## Vickers Test Blocks

| HV0.05  | HV0.1  | HV0.2  | HV0.3  | HV0.5  | HV1    | HV2    | HV3    | HV5    | HV10   | HV20   | HV30   | HV50   | Value |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 150   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 200   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 250   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 300   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 350   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 400   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 450   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 500   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 550   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 600   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 700   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 775   |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93200- | 93300- | 93500- | 830   |
| 50 gf   | 100 gf | 200 gf | 300 gf | 500 gf | 1 kgf  | 2 kgf  | 3 kgf  | 5 kgf  | 10 kgf | 20 kgf | 30 kgf | 50 kgf | Value |

Item number example: 93003700 for a 700 HV0.3 test block

Range for each block may be +/- 25 HV from the nominal value listed in the table.

not ISO 6507 due to <20µm diagonal length

Micro Vickers blocks (1.25in x 0.63in [32mm x 16mm])

Macro Vickers blocks (2.4in x 0.35in [60mm x 9mm])

## Knoop Test Blocks

According to ASTM E92, ISO 4545-3 and JIS B 7734

Available in full range of HK Scales and with special certifications.

| Load (kg) | Part Number | Nominal Hardness | Range   |
|-----------|-------------|------------------|---------|
| HK0.5     | 94-005-225  | 225 HK           | 200-250 |
|           | 94-005-315  | 315 HK           | 290-340 |
|           | 94-005-440  | 440 HK           | 415-465 |
|           | 94-005-540  | 540 HK           | 515-565 |
|           | 94-005-630  | 630 HK           | 605-655 |
|           | 94-005-730  | 730 HK           | 705-755 |
|           | 94-005-850  | 850 HK           | 825-875 |

## Special Order Items

Not applicable for Europe, please contact Buehler Europe

| Part Number | Description  |
|-------------|--|
| 93-000-001* | Special block - please provide hardness value and Vickers scale                                |
| 93-000-002* | Special block - please provide hardness value and Vickers scale                                |
| 94-000-001* | Special block - please provide hardness value and Knoop scale                                  |
| 93-000-012* | Special block - 2 scales certification - please provide hardness value and Vickers/Knoop scale |
| 93-000-013* | Special block - 3 scales certification - please provide hardness value and Vickers/Knoop scale |
| 93-000-014* | Special block - 4 scales certification - please provide hardness value and Vickers/Knoop scale |

\*Specify hardness required and load force for calibration

\*Specify additional load force for calibration



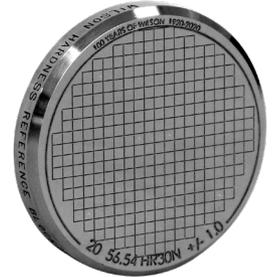
[Click Here](#) to shop Test Blocks

## Wilson® Brinell Test Blocks

According to ASTM E10, ISO 6508-3, and JIS B 7736

**Brinell reference blocks up to 250kgf load** Blocksize: Ø 2.4 in x 0.35 in (Ø 60mm x 9mm)

| Nominal value | Range   | HBW2.5-62.5 scale | HBW2.5-187.5 scale | HBW5-250 scale |
|---------------|---------|-------------------|--------------------|----------------|
| 140 HBW       | 115-169 | WH-140HBW-625     | WH-140HBW-1875     | WH-140HBW-250  |
| 200 HBW       | 170-224 | WH-200HBW-625     | WH-200HBW-1875     | WH-200HBW-250  |
| 250 HBW       | 225-274 | WH-250HBW-625     | WH-250HBW-1875     | WH-250HBW-250  |
| 300 HBW       | 275-324 | WH-300HBW-625     | WH-300HBW-1875     |                |
| 350 HBW       | 325-375 | WH-350HBW-625     | WH-350HBW-1875     |                |
| 400 HBW       | 375-449 |                   | WH-400HBW-1875     |                |
| 500 HBW       | 450-525 |                   | WH-500HBW-1875     |                |



**Brinell reference blocks up to 3000kgf load** Block size: 6" x 4.5" (152 x 114 x 18mm)

| Nominal value | Range   | HBW5-750 scale | HBW10-3000 scale |
|---------------|---------|----------------|------------------|
| 140 HBW       | 115-169 | WH-140HBW-750  | WH-140HBW-3000   |
| 200 HBW       | 170-224 | WH-200HBW-750  | WH-200HBW-3000   |
| 225 HBW       | 212-238 |                | WH-225HBW-3000   |
| 250 HBW       | 225-274 | WH-250HBW-750  | WH-250HBW-3000   |
| 275 HBW       | 262-288 |                | WH-275HBW-3000   |
| 300 HBW       | 275-324 | WH-300HBW-750  | WH-300HBW-3000   |
| 325 HBW       | 312-338 |                | WH-325HBW-3000   |
| 350 HBW       | 325-375 | WH-350HBW-750  | WH-350HBW-3000   |
| 375 HBW       | 362-388 |                | WH-375HBW-3000   |
| 400 HBW       | 375-449 | WH-400HBW-750  | WH-400HBW-3000   |
| 500 HBW       | 450-525 | WH-500HBW-750  | WH-500HBW-3000   |



### Other Brinell scales that use 1mm 2.5mm, 5mm or 10mm ball indenters †

not applicable for Europe, please contact Buehler Europe

| Part Number | Description  |
|-------------|--|
| WHSMLBRIN*  | Special block - please provide hardness value and Brinell scale using 1mm or 2.5mm ball indenter |

| Part Number | Description   |
|-------------|---|
| WHSPECBRIN* | Special block - please provide hardness value and Brinell scale using 5mm or 10mm ball indenter |

† Specify hardness required, load force, and ball indenter size for certification



See Test Block Guide for More Information



Shelf life is defined as the length of time listed products are considered best suitable for performance. This does not mean that a product will not perform beyond this time period, nor does it mean that the product will be usable continuously for this time frame. The shelf life is independent of the warranty\* period as defined below. The shelf life depends on proper storage - i.e. Abrasive Cut-Off Wheels must be stored lying flat and in a dry location. Stored standing up or in a humid area breaks down the wheel composition.

| Product Name                            | Shelf Life** |
|---|--------------|
| Abrasive Cut Off Wheels                 | 2 years      |
| CarbiMet Paper, PSA or S Backed         | 1 year       |
| CarbiMet Paper, Plain Backed            | 2 years      |
| Acrylic Systems                         | 1 year       |
| Aluminum Oxide Powder                   | 2 years      |
| Apex® Bimetallic Plate                  | 1 year       |
| Apex CGD and DGD                        | 1 year       |
| ApexHercules Grinding Disc              | 1 year       |
| Apex Magnetic Disc                      | 1 year       |
| Apex S Carrier Films                    | 1 year       |
| AutoMet® Lapping Oil                    | 2 years      |
| Cool 3 Fluid                            | 2 years      |
| Diallyl Phthalate Powder                | 2 years      |
| Epoxy Systems                           | 1 year       |
| EpoMet® F & G Powder                    | 1 year       |
| FibrMet® Discs PSA Backed               | 2 years      |
| Flat Edge Filler                        | 2 years      |
| IsoCut® Cutting Fluid                   | 1 year       |
| KonductoMet Powder                      | 1 year       |
| MasterMet® 2                            | 3 years      |
| MasterMet                               | 2 years      |
| MasterPolish®                           | 1 year       |
| MasterPrep                              | 2 years      |
| MetGrip® Liners                         | 1 year       |
| MetaDi® Fluid                           | 2 years      |
| MetaDi® Suspensions & Pastes            | 2 years      |
| MicroPolish Alumina Suspension & Powder | 1 year       |
| PhenoCure® Powder & PreMolds            | 2 years      |
| Pigments for Castable Mounts            | 1 year       |
| Planar Grinding Stones                  | 2 years      |
| Polishing Cloths with PSA               | 1 year       |
| Powdered Mold Release                   | 2 years      |
| ProbeMet® Powder                        | 1 year       |
| Release Agent                           | 1 year       |
| Silicon Carbide Powder                  | 2 years      |
| TransOptic Powder                       | 1 year       |
| UltraPrep® Diamond Lapping Film         | 1 year       |
| Wafering Blades                         | 1 year       |

\*Warranty depends on Quality Assurance/Lab evaluation on an individual basis

\*\*Shelf life starts when product is shipped

See Terms & Conditions for warranty information

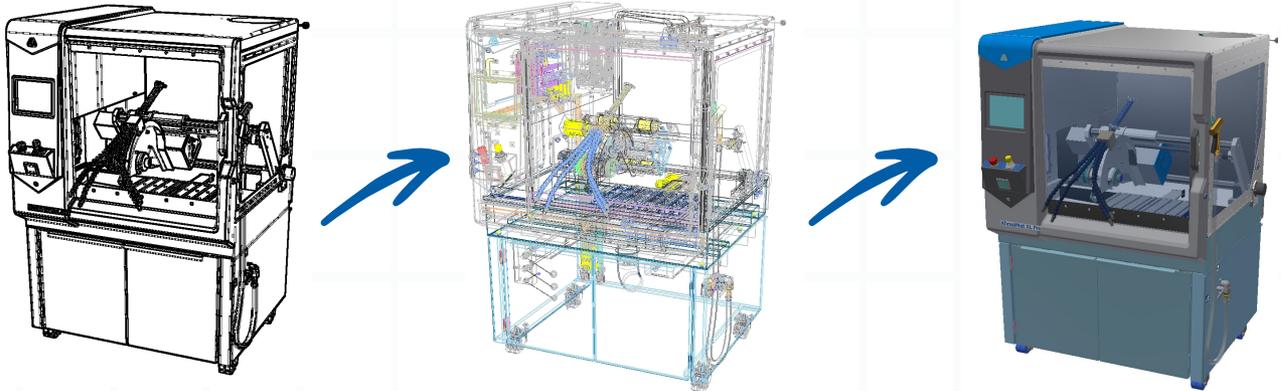


## Contribute to *Future Innovations!*

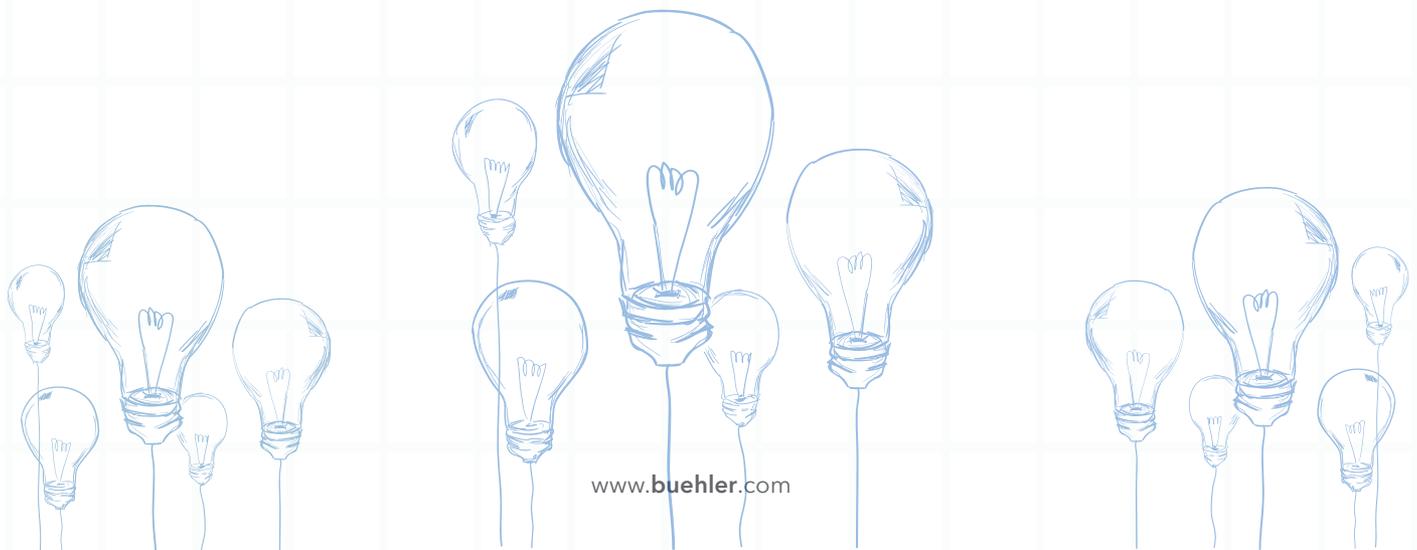
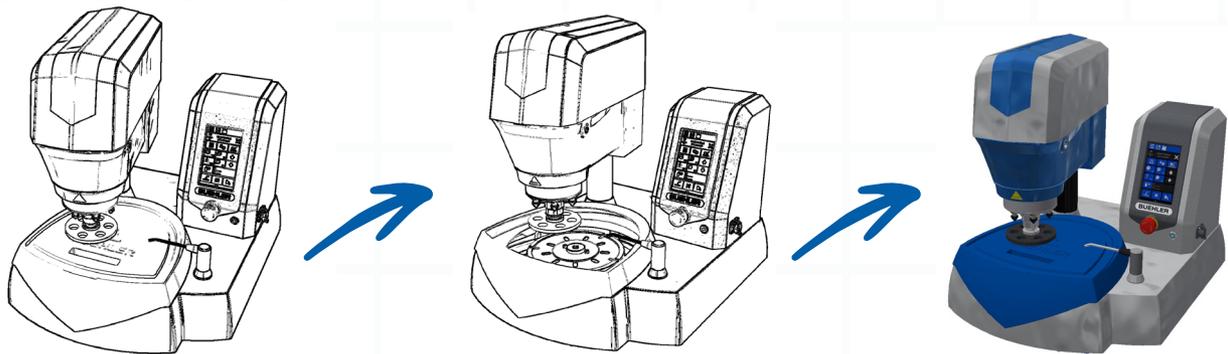
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