

2021 PRODUCT CATALOG

Sectioning

Mounting

Grinding & Polishing

Imaging & Analysis

Hardness Testing



CELEBRATING
85 YEARS
1936 - 2021



About BUEHLER

Buehler is a division of Illinois Tool Works (ITW) and is based in Lake Bluff, Illinois. ITW is a global, Fortune 200 company and global industrial manufacturer of value added consumables and specialty equipment with related service businesses. Buehler is a premier manufacturer of scientific equipment and supplies for use in materials analysis with offices in nine countries, sales distribution in over 40 countries, and over 45 Expert Solutions Centers.



Julien Noel
Vice President &
General Manager
Buehler Global

Dear Valued Customer and Partner,

I am pleased to introduce the 2021 Buehler Product Catalog, the most comprehensive product guide for materials characterization and analysis. We hope you find what you are looking for in these pages and strongly encourage you to reach out to the Buehler sales and applications experts to answer any questions and assist with application testing. They will assure you not only get the right products, but also the right methods that ensure quality and reliability of results.

2020 has reminded all of us of the importance of reliability, trust and stability as we endure an unprecedented pandemic in modern times, impacting everyone around the world personally and professionally. As we adjust to the new normal, I want to thank our loyal and trusted customers, partners, distributors, suppliers and everyone that supports us and that have received our support during these challenging times. Thanks to all of you we have been able to navigate the uncertain conditions and continue to support our customers, and we are in a strong position to continue to support the recovery.

Of course, we could not have done it without the full engagement and excellence of the Buehler team. The effort, flexibility, and selflessness that all global Buehler colleagues have demonstrated in protecting the health and safety of our colleagues while continuing to serve our customers with excellence has been exemplary. I could not be prouder or more honored to be a member of this team. We are first and foremost caring for one another and we are going all out for our customers.

My deepest gratitude to each of our colleagues for their continued hard work, dedication, and perseverance during this unprecedented time.

Buehler is proud to be a division of ITW, a global enterprise who focuses on values and people. Integrity, Respect, Trust, Simplicity, and Shared Risk are firmly anchored in our shared commitment to being a highly diverse and inclusive team. By having a more diverse team and by creating an environment that values the diverse perspectives, backgrounds, and experiences of all our Buehler colleagues, we are a better performing company.

Buehler offers the most comprehensive solutions for metallography and material analysis - including sectioning, mounting, grinding, polishing, imaging and hardness testing. Our products are all designed and manufactured by Buehler to ensure the highest quality and reliability for your lab. After a complete refresh of our product line, with innovating market leading new products launched over the past several years, we are continuing to release additional new technologies moving forward. Buehler's innovations are patent-protected, driven by our customer-back approach to innovation which supports the active development of new products with our customers needs in the center, that satisfy the priorities of any experienced or novice users.

Whether you are operating in a high-volume Quality Control environment or conducting advanced Research & Development, our recognized and proven products will meet your most demanding needs. We are fortunate and proud to count over 40,000 customers - located in 93 different countries around the world that use our equipment, consumables, and services. With our global footprint, partner centers, and multi-sites service and warehouse capabilities, Buehler is best suited to provide unparalleled support and expertise this comes from working with customers across all industries in both research and quality control laboratories to develop the best and most reliable material analysis solutions. Buehler's local teams are focused on making customer satisfaction a priority by building strong partnerships and delivering reliable solutions every time, with a focus on superior customer service, technical knowledge, and product support

Thank you for considering Buehler and please let us know how we can further support your material preparation and hardness testing needs.

Stay well,
Julien Noel
Vice President & General Manager - Buehler Worldwide

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Buehler was founded in 1936 by Swiss immigrant, Adolph I. Buehler, who saw a need for metallographic sample preparation equipment and optical inspection instruments for the steel and automotive industries in the Midwest USA. Buehler is well established as the world's leading supplier of materials preparation and analysis instruments, equipment, consumable supplies and application solutions.

SECTIONING

A full range of Abrasive and Precision saws, Blades, and Vises for cutting any material.

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MOUNTING

Automated Compression Mounting Presses, Vacuum Systems and over 20 types of mounting media.

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Automated and Manual Grinders and Polishers with the broadest range of consumables for any lab.

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OmniMet® Imaging Software for powerful image analysis combined with flexible database functionality.

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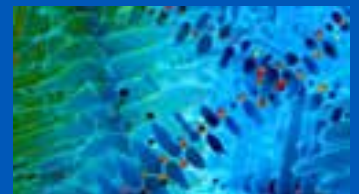
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ADDITIONAL INFORMATION

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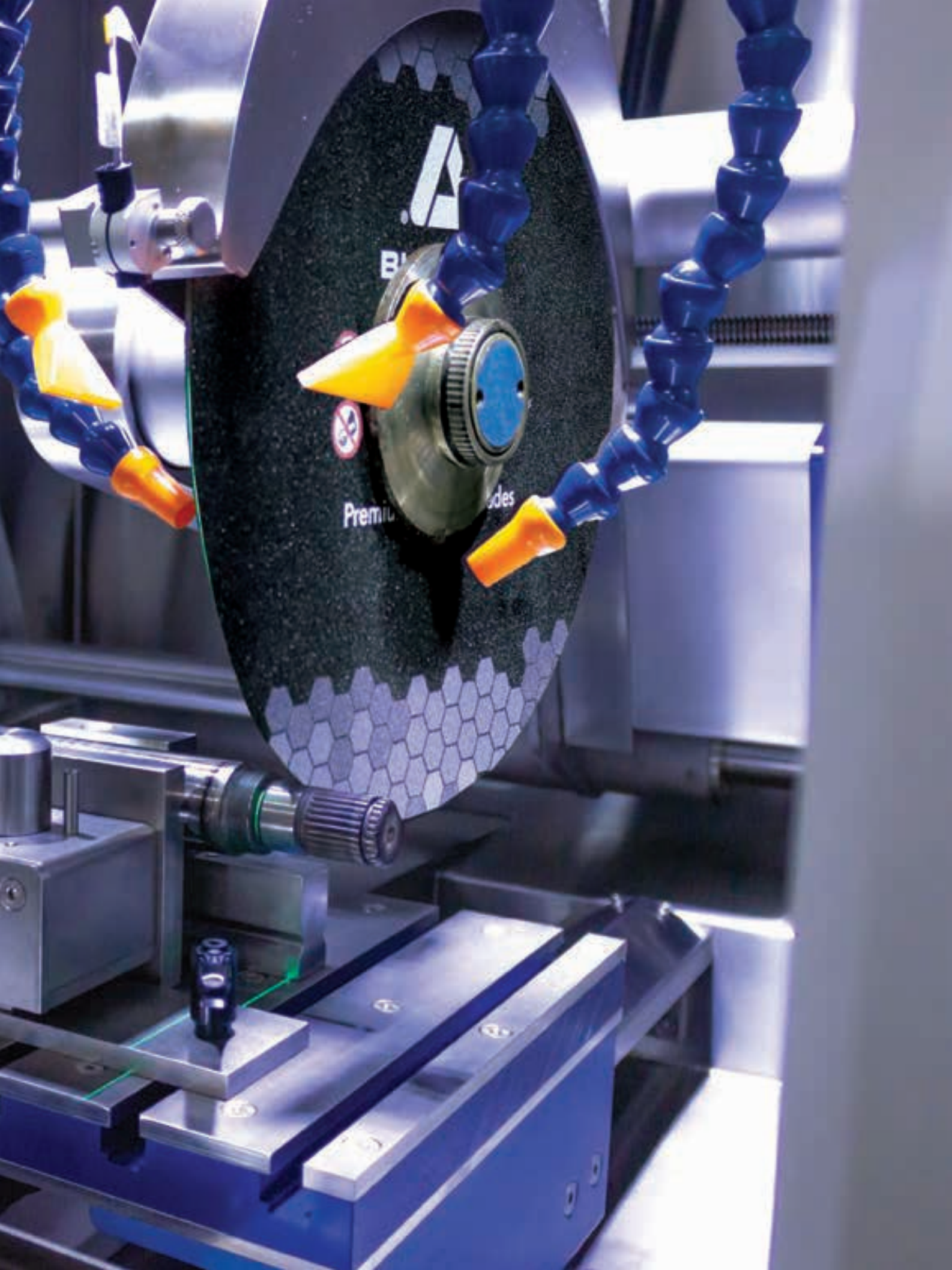


SECTIONING

A full range of abrasive and precision saws, blades, and vises for cutting any material

Specimen preparation for microstructural examination starts with a quality cut. The proper equipment with firm and stable vising minimizes the depth of deformation on the sample surface. The abrasive and precision saws save time by limiting the number of steps needed to analyze samples after sectioning.







Product Comparison

Abrasive Cutters

| | AbrasiMet® M | AbrasiMatic® 300 | Delta® Manual | AbrasiMet® XL Pro |
|-----------------------------|--|---------------------------------------|--------------------------------------|--|
| Wheel Diameter | 10in [254mm] 12in [305mm] | 12in [305mm] | 14in [356mm] | 14in [356mm] 16in [406mm] 18in [457mm] |
| Motor Power | 5.5Hp [4kW] | 5.5Hp [4kW] | 10.7Hp [8kW] | 13.4Hp [10kW] |
| Cut Types | Chop | Chop Y-Feed, Pulsing | Chop | Chop, Y-feed, Planar, Pulsing |
| Manual Movement | Z-axis | X-axis*, Y-axis, Z-axis | Z-axis | Y-axis, Z-axis |
| Automated Movement | | Y-axis | | X-axis, Y-axis, Z-axis |
| Vising Table Size | 12 x 9.8in [305 x 250mm] | 14.4 x 10in [365 x 254mm] | 16.25 x 17.13in [413 x 435mm] | 19.9 x 11.8in [505 x 300mm] |
| Maxium Part Size in Chamber | 25 x 13 x 4.3in [636 x 330 x 109mm] | 16 x 6 x 3.75in [406 x 152 x 95mm] | 26 x 24 x 5in [660 x 610 x 127mm] | 49 x 24 x 7in [1245 x 610 x 178mm] |
| Cutting Capacity** | 4.3in [109mm] | 3.75in [95mm] | 5.00in [127mm] | 7in [178mm] |

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

Precision Cutters

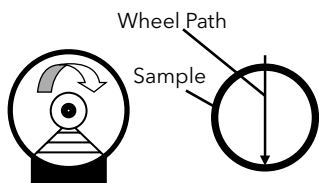
| | IsoMet® Low Speed | IsoMet® 1000 | IsoMet® High Speed | IsoMet® High Speed Pro | PetroThin® Thin Sectioning System |
|----------------------------|-------------------|----------------|---|---|---|
| Maximum Wheel Diameter | 5in [127mm] | 7in [178mm] | 8in [203mm] | 8in [203mm] | 8in [203mm] |
| Cut 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]; 2 x 6.5 x 1in [51 x 165 x 25mm] | 2.8in [71mm]; 2 x 6.5 x 1in [51 x 165 x 25mm] | Petrographic Glass Slides: 1.06 x 1.81in [27x46mm] or 3 x 1in [76.2 x 25.4mm] |

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

Cutting Style and Wheel Path

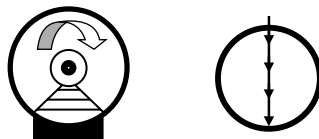
Chop Cutting

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



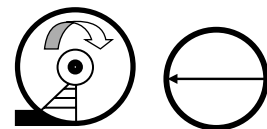
Chop Cutting with Pulsing

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.



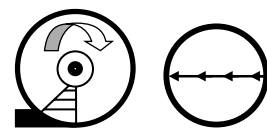
Y-Feed Cut

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.



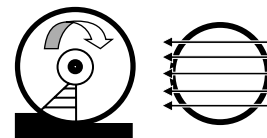
Y-Feed Cut with Pulsing

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.



Abrasive Cutters



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



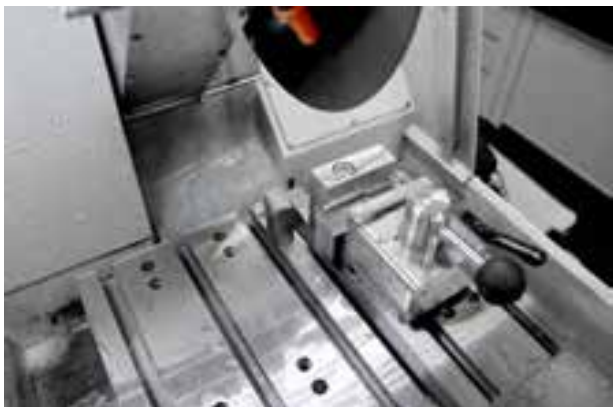
Dimensions: 31.1in [791mm] W x 27.3in [694mm] D x 36.2in [979mm] H open
25.7in [653mm] H closed
Weight: 309 lb [140 kg]

| 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 nested tank design with a filter screen that makes regular debris removal fast and simple, extending the time in between emptying the reservoir. The standard recirculation tank does not feature the filtering option, but comes at a more economical price. All tanks are 30 gal[113L]. See also on page 9.

| | | | |
|-------------|--|-------------|--|
| 10-2166-200 | Advanced Recirculation Tank 200-240VAC, 50/60Hz | 10-2166-400 | Advanced Recirculation Tank 380-460VAC, 50/60Hz |
| 10-2166-205 | Standard Recirculation Tank 200-240VAC, 50/60Hz | 10-2166-405 | Standard Recirculation Tank 380-460VAC, 50/60Hz |





Abrasive Cutters

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]

Delta® Manual

The Delta Manual is a floor standing manual abrasive cutter for 14in [356mm] blades. This cutter's high powered motor, large chamber and versatile viewing options enable simple, quick and easy positioning of samples for sectioning.

| Part Number | Voltage |
|---------------|------------------|
| 10-2213EB-260 | 200-240VAC, 60Hz |
| 10-2213EB-460 | 440-480VAC, 60Hz |
| 10-2213EB-400 | 380-415VAC, 50Hz |

*Recirculation tank is included

Accessories

10-2327 T-Slot Bed, 12mm, Y-axis Slots



Dimensions: 33in [838mm]W x 48in [1212mm]D x 81.5in [2070mm]H open
64in [1626mm]H closed
Weight: 800lb [365kg]



Robust Machine with Intuitive Features

The durable design and intuitive features of the AbrasiMet XL Pro make it the ideal machine for high volume environments that require the highest levels of cut quality, flexibility and consistency.

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 coolant 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 hard and difficult materials with the powerful 13.4hp [10kW] motor paired with the Buehler exclusive feature, Variable SmartCut
- 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



Dimensions: 54in [1372mm] W x 50.7in [1288mm] D x 75in [1905mm] H

Weight: 1750 lb [800 kg]

Accessories

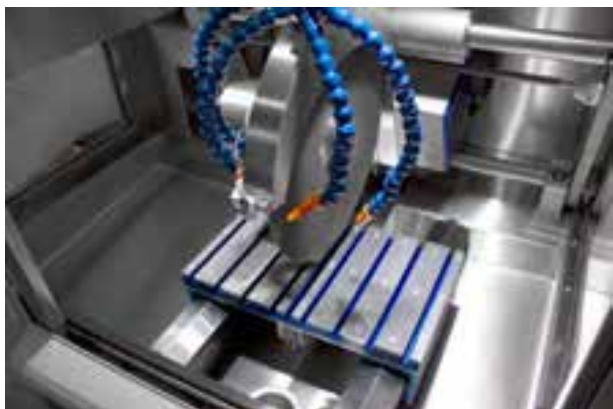
Mist Extractor

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

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

See page 8 for vise with 12mm T-nuts





Abrasive Cutter Vises Accessories

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



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

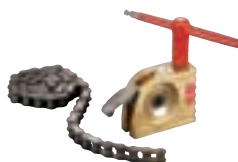


Size: Medium
Part Numbers: Left: 10-3540
 Right: 10-3541
Clamping Plate: 2.36" x 3"
 [60x76 mm]
T-Nuts: 12mm*

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 Sliding Vise.

Max Opening: 1.6" [40.6mm]
Part Number: 95-C1702

Vertical Clamping Vises

Vertical Clamping Kit



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]



Horizontal Clamp

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



Vee Block Clamp Kit

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



Adjustable Vee Blocks

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





Recirculating Systems for Abrasive Sectioning

For AbrasiMet® M



Advanced Recirculating System 30 gal [113L]

27 W x 26 D x 24in H
686 W x 660 D x 610mm H
10-2166-200 [Adv 200-240VAC, 50/60Hz]
10-2166-400 [Adv 380-460VAC, 50/60Hz]



Standard Recirculating System 30 gal [113L]

27 W x 26 D x 24in H
686 W x 660 D x 610mm H
10-2166-205 [Std 200-240VAC, 50/60Hz]
10-2166-405 [Std 380-460VAC, 50/60Hz]

For AbrasiMatic® 300



Recirculating System 22 gal [90L]

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

10-2431-400

Description

42 gal [160L] with sloped filter
for AbrasiMatic 300 and Delta
30 W x 25.5 D x 24in H
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 Cutter Consumables

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 = **Al₂O₃ Cutting Particle** =

| Recommended Use | 10in [254mm] Chop/Linear | 12in [305mm] Chop/Linear | 14in [356mm] Chop/Linear | 16in [406mm] Chop/Linear |
|--|--------------------------------|--------------------------------|--------------------------------|-------------------------------|
| Superalloys, General Steel, Non-Ferrous | 12-4205-010 0.051in [1.3mm] | 12-4405-010 0.055in [1.4mm] | 12-4305-010 0.063in [1.6mm] | 10-31605-010 0.125in [3mm] |
| | | 10-31205-010 0.08in [2mm] | | |
| Ferrous materials >HRC60 | 10-4210-010 0.083in [2.1mm] | 12-4110-010 0.09in [2.3mm] | 10-4310-010 0.075in [1.9mm] | 10-31610-010 0.125in [3mm] |
| | 102509P 0.06in [1.5mm] | 103009P 0.08in [2mm] | 103509P 0.098in [2.5mm] | |
| | | 10-31218-010 0.08in [2mm] | | |
| Ferrous materials HRC50-60 | 10-4212-010 0.083in [2.1mm] | 10-4412-010 0.105in [2.7mm] | 10-4312-010 0.09in [2.3mm] | 10-31612-010 0.125in [3mm] |
| | 10-31014-010 0.06in [1.5mm] | 10-31212-010 0.08in [2mm] | 103509P 0.098in [2.5mm] | |
| Ferrous materials HRC35-50 | 10-4216-010 0.083in [2.1mm] | 12-4116-010 0.105in [2.7mm] | 12-4305-010 0.063in [1.6mm] | 10-31616-010 0.125in [3mm] |
| | 102510P 0.06in [1.5mm] | 103010P 0.083in [2.1mm] | 103510P 0.098in [2.5mm] | |
| | 10-31014-010 0.06in [1.5mm] | 10-31218-010 0.08in [2mm] | | |
| Ferrous materials HRC15-35 | 10-4220-010 0.067in [1.7mm] | 12-4120-010 0.105in [2.7mm] | 12-4305-010 0.063in [1.6mm] | |
| | 102511P 0.06in [1.5mm] | 103011P 0.079in [2mm] | 103511P 0.098in [2.5mm] | |
| High Speed Steel, Stainless Steel, Carburized Steel | 102508P 0.063in [1.6mm] | 103008P 0.079in [2mm] | 103508P 0.102in [2.6mm] | |
| Delicate Cutting | 10-4227-010 0.032in [0.8mm] | | | |
| Titanium Alloys, Zirconium Alloys, Ductile Materials | 10-4245-010 0.063in [1.6mm] | 12-4145-010 0.087in [2.2mm] | 10-4345-010 0.063in [1.6mm] | |
| | 102507P 0.06in [1.5mm] | 103007P 0.079in [2mm] | 103507P 0.098in [2.5mm] | |
| Non-Ferrous Materials (Aluminum, Copper, Brass), Very Soft Ferrous Materials | 10-4250-010 0.063in [1.6mm] | 103012P 0.079in [2mm] | 10-4350-010 0.087in [2.2mm] | 10-31650-010 0.125in [3mm] |
| | 102512P 0.06in [1.5mm] | | 103512P 0.098in [2.5mm] | |



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

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

[Blade Thickness is listed under Part Number] Rubber Bond = Resin Bond =
SiC Cutting Particle = Al₂O₃ Cutting Particle =

| Recommended Use | 12in [305mm] Orbital | 14in [356mm] Orbital | 16in [406mm] Orbital | 18in [457mm] Orbital |
|--|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Superalloys, General Steel, Non-Ferrous | 12-4405-010 0.055in [1.4mm] | 12-4305-010 0.063in [1.6mm] | 12-5605-010 0.075in [1.9mm] | 12-5805-010 0.1in [2.5mm] |
| Ferrous materials >HRC60 | 12-4410-010 0.105in [2.7mm] | 12-4310-010 0.105in [2.7mm] | 12-5610-010 0.125in [3mm] | 12-5810-010 0.153in [3.8mm] |
| Ferrous materials HRC50-60 | 12-4410-010 0.105in [2.7mm] | 12-4310-010 0.105in [2.7mm] | 12-5612-010 0.125in [3mm] | 12-5816-010 0.153in [3.8mm] |
| Ferrous materials HRC35-50 | 12-4416-010 0.105in [2.7mm] | 12-4316-010 0.105in [2.7mm] | 12-5616-010 0.125in [3mm] | 12-5816-010 0.153in [3.8mm] |
| Ferrous materials HRC15-35 | 12-4420-010 0.105in [2.7mm] | 12-4320-010 0.087in [2.2mm] | 12-5616-010 0.125in [3mm] | 12-5816-010 0.153in [3.8mm] |
| Titanium Alloys, Zirconium Alloys, Ductile Materials | | | 12-5645-010 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 0.051in [1.3mm] | | |
| Hard Materials | Diamond | 114810E 0.047in [1.2mm] | 103056 0.055in [1.4mm] | 114814E 0.059in [1.5mm] |
| Ceramic and Petrographic samples | Diamond | 114710E 0.047in [1.2mm] | 103053 0.087in [2.2mm] | 114714E 0.059in [1.5mm] |
| Plastics and Polymers | Diamond | 102557 0.049in [1.25mm] | | |
| General use, hardened steel, HRC55 and Up | CBN | | | 103551 0.079in [2mm] |



Precision Cutters

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 |


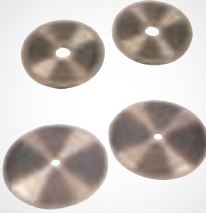




IsoMet® High Speed Cutter Accessories

| | | | |
|--|--|--|---|
| <p>Single Saddle Chuck</p>  | <p>Double Saddle Chuck</p>  | <p>Mount Chuck</p>  | <p>Fastener Chuck</p>  |
| <p>Large Single Saddle Chuck holds specimens up to 1.5in [38mm] from 2 point</p> <p>11-2661</p> | <p>Securely holds specimens up to 1.5in [38mm] from 2 points</p> <p>11-2662</p> | <p>Stainless steel chuck holds mounted samples</p> <p>11-2666 1.25in [30mm] 11-2667 1.5in [40mm]</p> | <p>Holds specimens from 0.04in [1mm] to 2in [50mm] for longitudinal sectioning</p> <p>11-2687</p> |
| <p>Large Bone Chuck</p>  | <p>T-Slot Bed</p>  | <p>Sliding Vise</p>  | <p>Rapid Rail Post</p>  |
| <p>Ideal for clamping bone, plastics, or other semi-rigid specimens up to 2in [50mm] in diameter</p> <p>11-2494</p> | <p>Additional T-slot for positioning vises</p> <p>11-2707</p> | <p>6in [152mm] maximum opening, use requires flange to be 2in [50mm] or less, requires T-slot bed</p> <p>11-2669</p> | <p>Use with Rapid Rail</p> <p>11-2660</p> |
| <p>Small Vertical Clamp</p>  | <p>Irregular Specimen Chuck</p>  | <p>Recirculating System 7gal [27L]</p>  | |
| <p>Clamps specimens up to 58mm in height</p> <p>460022</p> | <p>Adjusts to hold irregular shaped specimens up to 1in [25mm] in diameter</p> <p>11-1185</p> | <p>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</p> <p>11-2640</p> | |

IsoMet® Precision Cutter Flanges

| | | | |
|---|--|---|---|
|  | <p>Aluminum Flange Set</p> <p>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]</p> |  | <p>Stainless Steel Flange Set</p> <p>11-2688* 3in [76mm] 11-2689* 4in [102mm]</p> <p><i>*Recommended for the IsoMet High Speed</i></p> |
|---|--|---|---|



Precision Cutters

Precision with Flexibility

The IsoMet product family is capable of cutting with precision via a gravity fed or automatic movement. The IsoMet family provides 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.

**6in diamond blade, 3in flanges, single saddle chuck and mount chuck included*



Dimensions: 15.5in [394mm]W x 20.25in [514mm]D x 24.5in [622mm]H open
12in [305mm]H closed
Weight: 56lbs [25kg]

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

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



Dimensions: 10.5in [267mm]W x 12in [305mm]D x 25.5in [571mm]H
Weight: 25lbs [11.3kg]

| 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 |

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



Precision Cutter Accessories

IsoMet® 1000 Accessories

Rotating Chuck Assembly



Rotates specimen chuck to increase the maximum cutting depth of the blade

11-2181

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

Goniometer



Positions specimen along 3 axis

11-2185

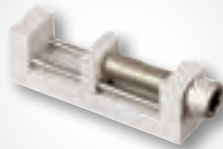
Table Saw Splash Guard



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

11-2186

Fastener Chuck



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

11-2482

Swivel Arm Accessory



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

11-2184

Double Saddle Chuck



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

11-2483

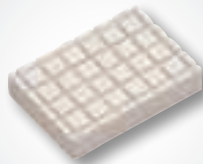
Glass Slide Chuck



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

11-2484

Wafer Chuck



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

11-2486

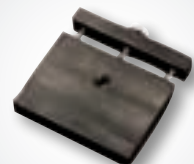
Single Saddle Chuck



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

11-2487

Glass Slide Chuck



Holds 2 x 3in glass slides

11-2488

Mount Chuck



Holds mounted samples 1.5in [40mm]

11-2489

Precision Cutter Consumables



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

[Blade Thickness is listed under Part Number]

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

* 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.

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



Precision Cutter Consumables



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, HRC45 & Up | 10-4060-010 0.019in [0.48mm] | | | |
| Medium hard, soft steel, HRC45 & Below | 10-4061-010 0.019in [0.48mm] | | | |
| Steel, Stainless Steel | | 11-4207-010 0.030in [0.76mm] | | |
| Hard, soft non-ferrous materials | | 11-4217-010 0.030in [0.76mm] | | |
| Tough materials and general use | | | 1015998E 1mm | 1020998E* 1.5mm |

**IsoMet High Speed Pro Only*

Additional Precision Cutting Consumables



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]



Clear paste for keeping cutter windows clear

109003 2oz [60mL]



Cleaner for recirculation systems

109004 1.25gal [4.75L]



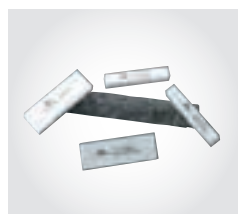
Water miscible fluid concentrate. Dilute coolant to 1:25 to 2:25, with water.

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



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



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

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

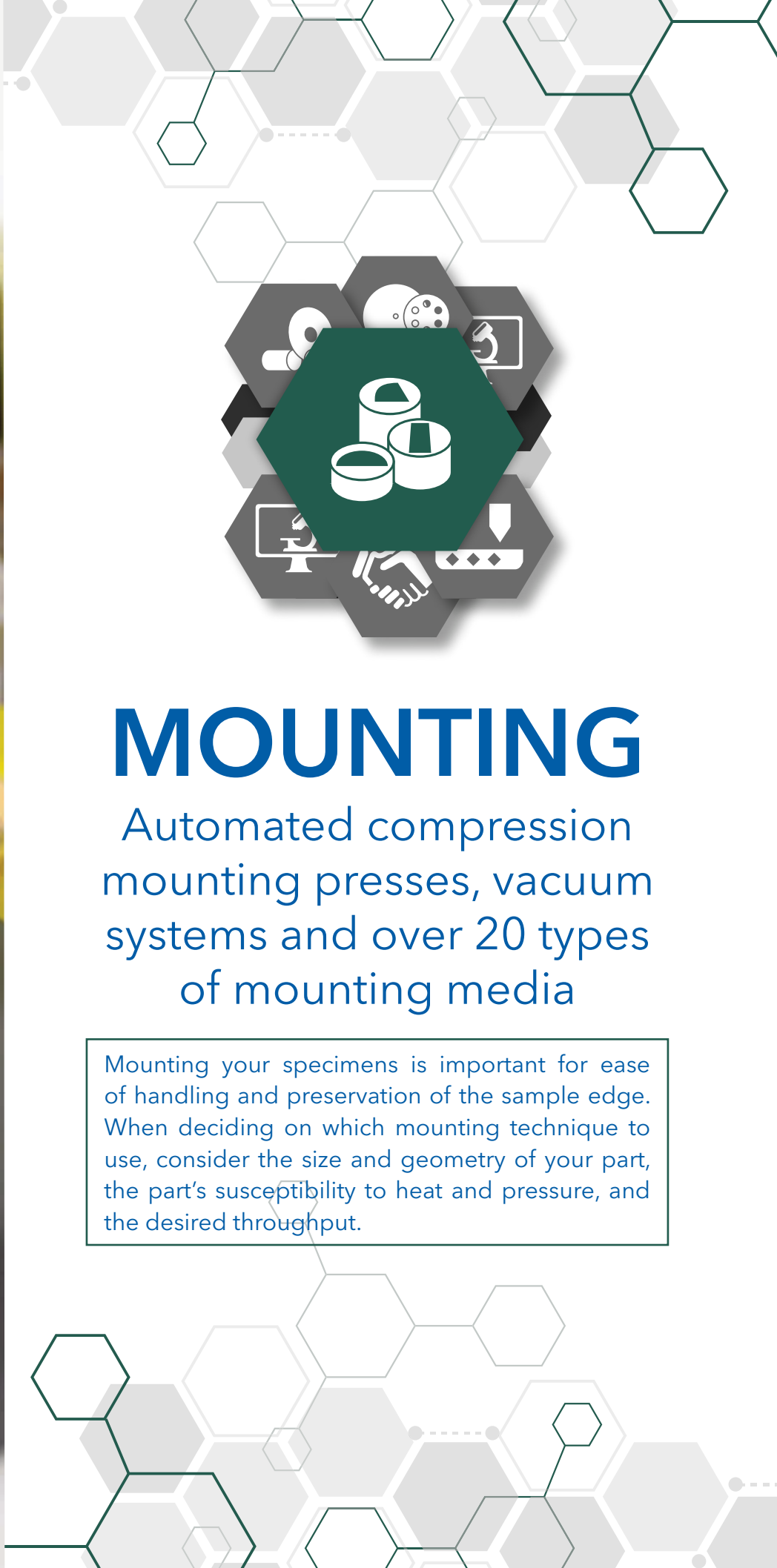
30-8050-220 220VAC, 50/60Hz

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

Automated compression mounting presses, vacuum systems and over 20 types of mounting media

Mounting your specimens is important for ease of handling and preservation of the sample edge. When deciding on which mounting technique to use, consider the size and geometry of your part, the part's susceptibility to heat and pressure, and the desired throughput.



Epoxy Mounting Systems

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.
- Recommended for electronic boards and heat sensitive materials

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

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.

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

Small Resin & Hardener

Large Resin & Hardener

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

† Restricted article, requires special packaging

Acrylic Mounting Systems



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 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: 16.9oz [500mL] Liquid 1 33.8oz [1L] Liquid 2 |

† Restricted article, requires special packaging



Vacuum Systems, Consumables & Accessories

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

| 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)

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



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



SimpliKup™

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)

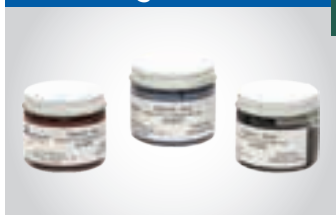
| | |
|---------|------------------------------------|
| 20-7185 | 2.2 x 1.2 x 0.9in [55 x 30 x 22mm] |
| 20-6185 | 2.5 x 1.4 x 1.8in [63 x 25 x 46mm] |
| 20-7186 | 2.8 x 1.6 x 0.9in [70 x 40 x 22mm] |
| 20-6186 | 6 x 4 x 2in [150 x 100 x 50mm] |
| 20-6187 | 6 x 3 x 1in [150 x 76 x 25mm] |

Consumables & Accessories



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

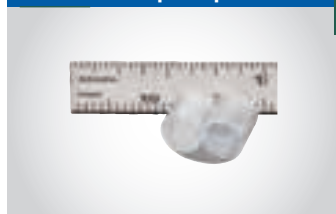


Stainless Steel support clip for use with all mounting systems.*

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

20-4000-100 (Qty 100)

SamplKlip I

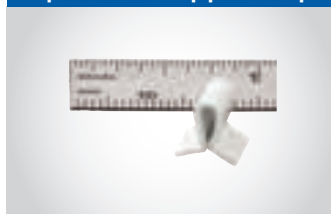


Plastic support clip best for castable mounting systems.*

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 (Qty100)
113043 Black (Qty 100)

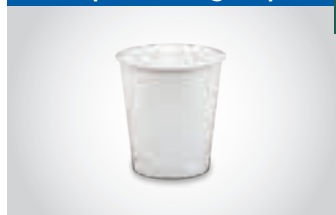
Plastic Mixing Cup



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

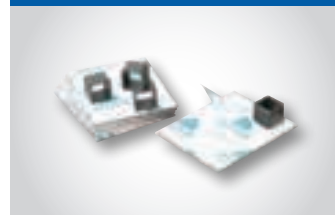
Stirring Sticks



For stirring castable mounting systems. (Qty 1000)

20-8175

MetKleer® Adhesive Bases



For use with ring forms and castable systems.

4 x 5in [102 x 127mm] (Qty 10)
20-8188

Conductive Filler



Nickel-based 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]



Compression Mounting

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 limits errors and protects the quality of your sample prep. Everything you need 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

| 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 |



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

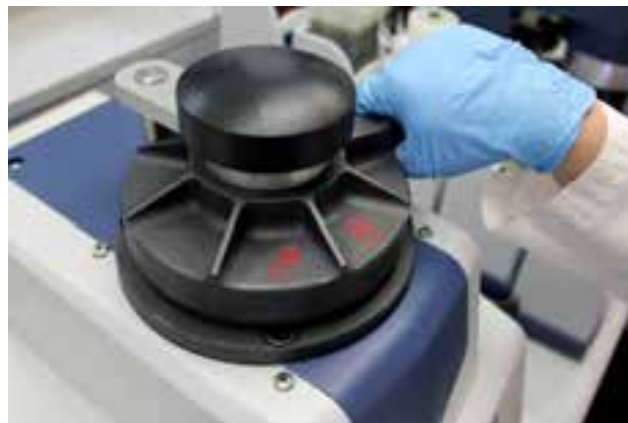
Voltage/Frequency: 85-264VAC, 50/60Hz

Weight: 120lb [54kg]

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 | Description |
|-------------|-------------------------------|
| 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



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 |
| 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 | | |



Compression Mounting Compounds

General Purpose 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 ●

Specialty Compounds



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.



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.



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 reduces or fills pores in the specimen with epoxy and enhances the end result.
- 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

Automated and manual grinders and polishers with a broad range of consumables for any lab

The goal of the grinding and polishing steps is to prepare a final polished specimen that is free of deformation and suitable for analysis. This can be achieved in multiple ways depending on the overall goals of the lab. Whether a lab is looking for the quickest overall process, the best surface finish or versatility to prepare many different materials, Buehler has a solution for the grinding and polishing process







Product Comparison

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 easily accessible on an uncomplicated touch screen interface. It's 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 straightforward 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

| | 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 |

AutoMet® Grinder - Polisher



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 that makes advanced functionality easy with 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 36).



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]

| 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 | 170-240 VAC, 50-60Hz |

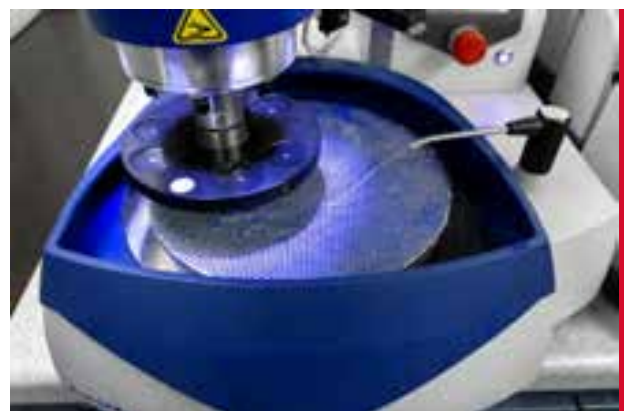
Accessories

AutoMet 250 & 250 Pro

| | |
|---------|----------------------------------|
| 40-4061 | 8in [203mm] Aluminum Platen |
| 40-0500 | 10in [254mm] Aluminum Platen |
| 60-9081 | Disposable Bowl Liner (Qty 5) |
| 49-1250 | Lid for AutoMet 250 |
| 49-2250 | Splash Guard Kit 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 |





EcoMet® 30 Grinder - Polisher

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 saves time with advanced cleaning features. Durability tested over 2500 hours and flexible enough to be 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



EcoMet 30 Semi Automatic Single

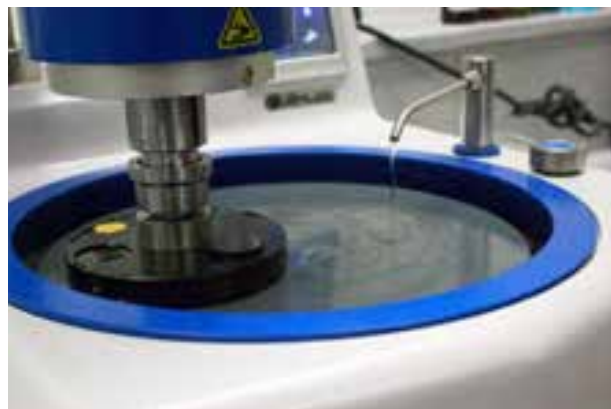
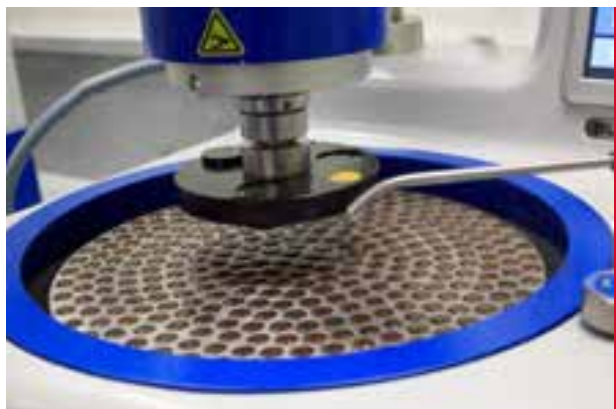
Dimensions: 19.7" L x 25.6" D x 25.6" H [500 mm L x 650 mm D x 650 mm H]
Weight: 165lbs [75kg]

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]

| 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 Grinder - Polisher



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 flexible enough to be 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
- Low force on/off knob

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 |



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]

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 |
|---------|-------|





Grinder Polisher Accessories

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)

- Add stadium seating module (Part Number 40-10004)
- Add dispensing arm (Part Number 40-10006)
- Add optional 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 40-100005)

- Add cable to control start/stop function (Part Number 40-2704)
- Add optional 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 optional 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

Planar Grinder



Grinding & Polishing Made Simple

PlanarMet™ 300

The PlanarMet 300 bench top planar grinding machine with a high torque, continuous duty, 5.7Hp motor has an aggressive material removal rate normally seen in much larger, more expensive floor model machines. Convenience features such as an integrated auto wheel dressing and built in cooling make it easy to get consistent results.

High Quality Results

- Auto Dressing System ensures fresh consistent abrasive surface giving consistent results.
- Controlled material depth removal (Z-axis) is programmable and accurate to 0.0004in or 0.1mm.
- High water flow and unique manifold keeps specimens cool, minimizing subsurface damage

Save Space

- Compact format that is just as powerful as a large, floor standing model
- Bench top design ideal for direct integration to bench top polishing steps

Flexibility to Adapt to Changing Needs

- Choice of grinding stones available for almost any material application
- Timed cycle provides flexibility in methods

Benefits of Planar Grinders

- Reduce process steps and grind 4X faster compared to SiC paper
- Go from 3 grinding steps to just 1 step



Dimensions: 21.25in [539mm]W x 31in [787mm]D x 29.75 [755mm]H
Weight: 275 lbs [125 kg]

| Part Number | Voltage/Frequency |
|--------------|---------------------------|
| 49-10000-250 | 208-240VAC, 50Hz, 3-Phase |
| 49-10000-260 | 208-240VAC, 60Hz, 3-Phase |
| 49-10000-450 | 380-480VAC, 50Hz, 3-Phase |
| 49-10000-460 | 380-480VAC, 60Hz, 3-Phase |

Accessories & Consumables for PlanarMet 300

Grinding Stones



Planar Grinding Stones are multi-use abrasive discs designed for the PlanarMet 300. They provide high material removal rates and consistent scratch patterns.

Size: 12in [305mm], 1in [25mm] thickness
Grit: 120grit [P120] Alumina or SiC

| Part Number | Description |
|-------------|--|
| 49-7280 | Alumina Grinding Stone for Ferrous & Superalloy |
| 49-7281 | SiC Grinding Stone for Non-Ferrous & Ti Alloys |
| 49-100 | Replacement Dressing Stick, Metal-Matrix Diamond |
| 49-1001 | Chuck adaptor for legacy specimen holders |

Recirculation System



Recirculation tank on wheels for use with PlanarMet® 300.

| Part Number | Capacity | Voltage/Frequency |
|-------------|-------------|---------------------|
| 56-0026 | 12gal [60L] | 380-400VAC, 50/60Hz |
| 56-0027 | 12gal [60L] | 200-240VAC, 50/60Hz |




Grinder Polisher Accessories

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) |
| 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) |



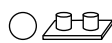








AutoMet® 250 Power Head

For use with 60-9005 Drive Adapter.

| Part Number | Style | Size | Capacity | Additional Accessories |
|-------------|---|--------|----------|---|
| 60-9010 |  | 1in | 6 | 63-1022 Retaining Rings (Qty 6pk) 60-9120 1 x 3in Glass Slide Holder 60-9130 2 x 3in Glass Slide Holder 60-9100 27 x 46mm Glass Slide Holder 60-9140 28 x 48mm 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) 60-9120 1 x 3in Glass Slide Holder 60-9130 2 x 3in Glass Slide Holder 60-9100 27 x 46mm Glass Slide Holder 60-9140 28 x 48mm 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 | |
| 60-9049 |  | For Target Holders | 3 | |



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 |
| 60-5245 | □ | 2 x 1.38in [50 x 35mm] | 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 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 |
| 60-8112 | For 30mm mounted specimens |
| 60-8113 | For 40mm mounted specimens |
| 60-9049 | Specimen Holder for Target Holders (Drive Adapter 60-9005 required) |



Grinder Polisher Accessories

Blank Specimen Holders

For use with 60-9000 Drive Adapter.

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



Slide Holders & Glass Slides

| Glass Slide Size | Slide Holder | Single Force Specimen Holder | Glass Slides |
|------------------|--|--|---|
| 1 x 3in | 60-9120 (max 3 per specimen holder) | 60-9010 for AutoMet 250 60-9060 for AutoMet 300 | |
| 2 x 3in | 60-9130 (max 2 per specimen holder) | 60-9060 for AutoMet 300 | |
| 27 x 46mm | 60-9100 (max 3 per specimen holder) | 60-9010 for AutoMet 250 60-9060 for AutoMet 300 | 40-8000-001 (Qty 144) 40-8000-010 (Qty 1440) |
| 27 x 46mm | 30-8005 hand-held holder | | 40-8000-001 (Qty 144) 40-8000-010 (Qty 1440) |
| 28 x 48mm | 60-9140 (max 3 per specimen holder) | 60-9010 for AutoMet 250 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) |
| 60-5067 | Cup, Extended Upper Mold Plate, 0.8in (Qty 6) |
| 60-9000 | Central Force Drive Adapter for AutoMet® 250/300 |

PWB Met™ Small Hole Accessory

- High volume printed wiring board preparation system
- Prepares up to 18 coupons simultaneously
- Prepares reproducible cross-sections of through-holes down to 0.004in
- For use with EcoMet 30 and 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) |

Grinder Polisher Specialty & Support Equipment



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 Platens, 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 |





Grinder Polisher Specialty & Support Equipment

VibroMet® 2

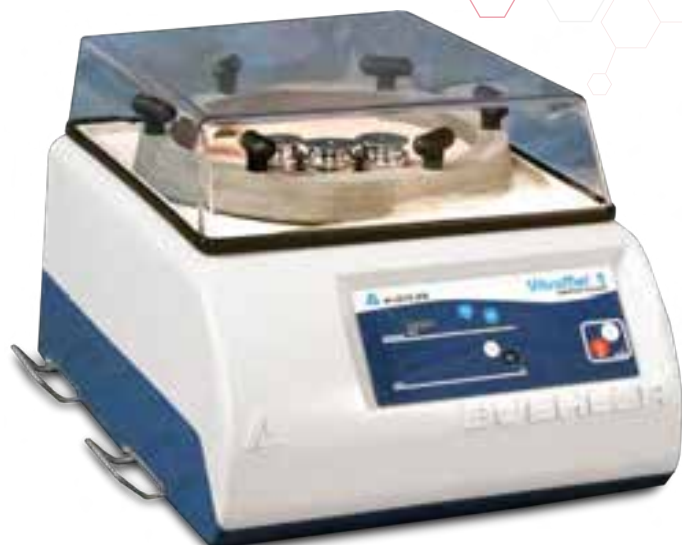
VibroMet 2 Vibratory Polisher is designed to prepare high quality polished surfaces on a wide variety of materials, including EBSD applications. The 7200 cycles per minute horizontal motion produces a very effective polishing action, providing superior results, exceptional flatness and less deformation.

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® Colloidal Silica to chemomechanically polish a specimen to a surface finish suitable for electron-backscatter diffraction (EBSD).



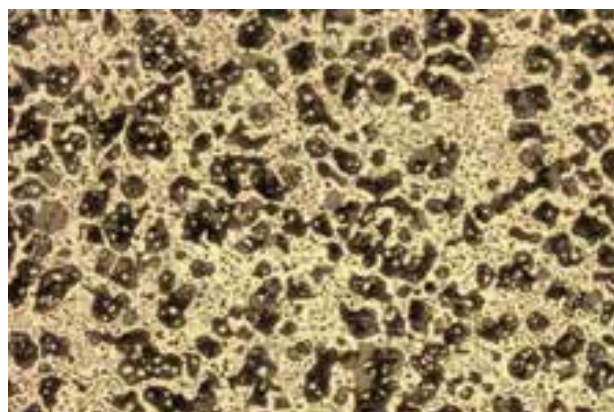
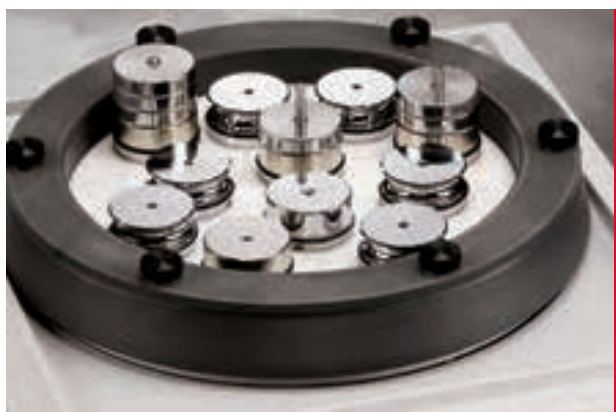
Dimensions: 21.5in [546mm]W x 23in [584mm]D x 14.5in [368mm]H
Weight: 175lbs [80kg]

| 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] |





Grinder Polisher Specialty & Support Equipment

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 |



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 ² , 2cm ² , 10cm ² , and without hole) |



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



Grinding & Polishing Consumables

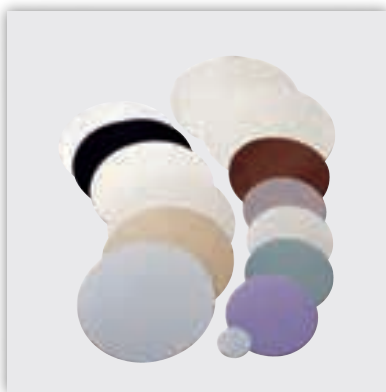
The choice of grinding and polishing consumables is a key factor that impacts the preparation process. Buehler's consumables are designed to improve efficiency and ensure repeatability within the process. With a wide variety of products, there is a Buehler consumable that can improve your materials preparation process.

CarbiMet Silicon Carbide Paper



CarbiMet is a specialized silicon carbide grinding paper that offers quick and efficient material removal with minimal surface damage.

Premium Polishing Cloths



The selection of a polishing cloth depends on the material being processed and the requirements for the final analysis. With a variety of fabrics, weaves and naps, there is a high quality Buehler cloth to fit every application.

MetaDi Suspension & Paste



MetaDi is the premier line of diamond suspensions and pastes that ensures consistency in the polishing process. A variety of types and micron sizes are available to fit any application.



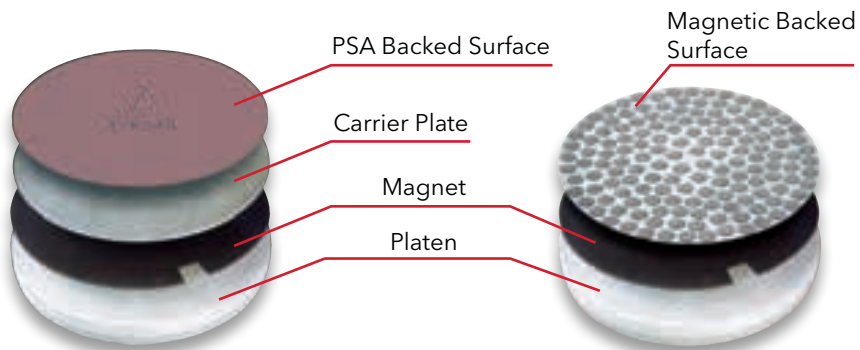


Platen Systems

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

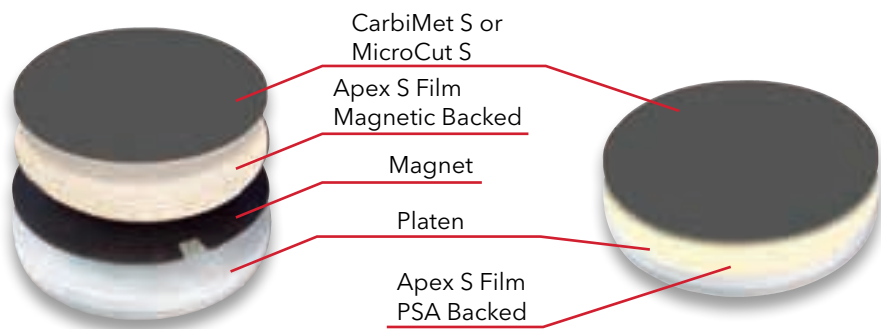
| Type | Description | 8in [203mm] | 10in [254mm] | 12in [305mm] |
|------------------------------------|--|-----------------|-----------------|-----------------|
| Apex® M Magnet PSA Backed (Qty 1) | Contains tabs for easier plate removal | 41-2739-608-001 | 41-2739-610-001 | 41-2739-612-001 |
| MagnoFix Magnet 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 Carrier Plate (Qty 5) | For easier removal of PSA surfaces, ideal for polishing cloths | 16-2073 | 16-2573 | 16-3073 |
| MagnoMet Carrier Plate (Qty 5) | Standard stainless steel carrier plate, ideal for SiC paper | 16-2072 | 16-2572 | 16-3072 |
| Apex B Carrier Plate (Qty 1) | Bimetallic disc for cloth or SiC paper. Prevents adherence of magnetic 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 PSA backed (Qty 2) | For application directly to platen | 16-2075 | 16-2575 | 16-3075 |
| Apex S Film Magnetic backed (Qty 2) | For use with magnetic system | 16-2074 | 16-2574 | 16-3074 |



Grinding & Polishing Consumables

CarbiMet® & MicroCut® Silicon Carbide Grinding Papers

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, aluminium, 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).

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. Qty 100

| | Grit Size ANSI [FEPA] | Approx. 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 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 |

Grinding & Polishing Consumables



PSA Backed

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

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



Grinding & Polishing Consumables

Diamond Grinding Discs

Diamond grinding discs offer a long-wear surface that provides excellent surface flatness for a wide variety of materials. Buehler offers multiple different types of products depending on the material being processed. All DGD's come in a quantity of one per box

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

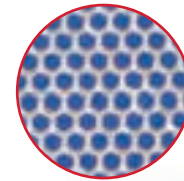
Grinding hard materials requires a different type of surface than grinding softer materials. Buehler's Diamond Grinding Discs offer customized solutions for different material types to ensure efficient and consistent grinding.

DGD 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 ANSI [FEPA] | Approx. 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 includes dressing stick 11-1190 (Requires dressing before initial use)



Application Methods for DGD Mosaic

| Material | 120 grit | 220 grit | 320 grit | 400 grit | 1000 grit |
|---------------------------------------|----------|----------|----------|----------|-----------|
| Low Hardness Surface Treated Steels | | | • | | |
| Medium Hard Surface Treated Steels | | • | | | |
| Very Hard Surface Treated Steels | • | | | | |
| >60 HRC Steel | • | | | | |
| 50-60 HRC Steel | | • | | | |
| 40-50 HRC Steel | | | • | | |
| Low Carbon Steel | | | • | | |
| Cast Irons | | • | ‡ | | |
| Nodular Cast Irons (SG) | | • | ‡ | | |
| White Cast Iron | • | | | | |
| High Alloy Steels | | • | | | |
| Iron Based Superalloy | | • | ‡ | | |
| High Strength Alloy Steel | | • | | | |
| Nickel | | • | ‡ | | |
| Cobalt | | | • | | |
| Thermal Spray Coatings | | | • | ‡ | |
| Silicon, Boron, and Sintered Carbides | | | • | → | • |
| Capacitors, Diodes and Si Wafers | | | | • | ‡ |

•=recommendation #1 ‡=recommendation #2 Note: Recommendation may vary based on specific material and desired surface finish

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

Grinding & Polishing Consumables



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 (dressing required with some materials).

- 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 |





Grinding Consumables

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



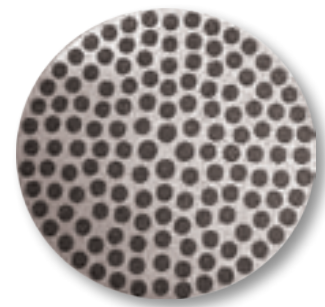
TexMet* C

Grinding Consumables



Apex[®] Hercules

- Magnetic backed resin surface that provides excellent flatness and edge retention
- Use with MetaDi[®] Diamond Suspension



| Type | 8in [203mm] | 10in [254mm] | 12in [305mm] |
|--|-----------------|-----------------|-----------------|
| Apex Hercules H 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 |
| Apex Hercules S 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 ₂ O ₃ , SiO ₂ | Ferrous and nonferrous metals, ceramics, electronics, PCB's, thermal spray coatings, cast irons, cermets, minerals, composites, plastics |
| 15- 0.02µm | Diamond, Al ₂ O ₃ | 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 ₂ O ₃ , SiO ₂ | Ferrous and nonferrous metals |
| 6 - 1µm | Diamond | Cast iron, copper and aluminum alloys |
| 5- 0.02µm | Diamond, Al ₂ O ₃ , SiO ₂ | Ferrous and nonferrous metals, ceramics, composites, PCBs, cast irons, cermets, plastics, electronics |
| 3 - 0.02µm | Diamond, Al ₂ O ₃ , SiO ₂ | Ferrous and nonferrous materials |
| 1 - 0.05µm | Al ₂ O ₃ , SiO ₂ | Soft nonferrous and microelectronics |
| 1 - 0.02µm | Al ₂ O ₃ , SiO ₂ | Titanium, stainless steel, lead/tin, solders, electronics, soft nonferrous metals, plastics |



VelTex™



WhiteFelt™



PoliCloth™



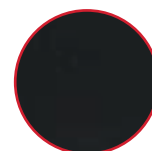
MicroCloth®



MicroFloc®



MasterTex®



ChemoMet®



Grinding & Polishing Consumables

Diamond Polishing Suspensions & 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 traditional 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.

Grinding & Polishing Consumables



MetaDi® Diamond Pastes

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

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.

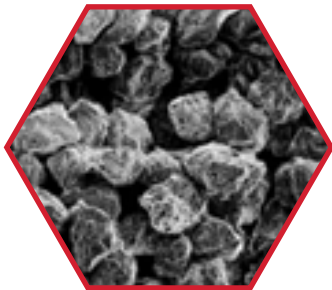
| Color | | Diamond Size | 5g | 20g |
|-------|----------|--------------|---------|---------|
| ● | Grey | 0.25µm | 40-6241 | 40-6240 |
| ● | Blue | 1µm | 40-6244 | 40-6243 |
| ● | Green | 3µm | 40-6247 | 40-6246 |
| ● | Yellow | 6µm | 40-6250 | 40-6249 |
| ● | Deep Red | 9µm | 40-6253 | 40-6252 |
|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

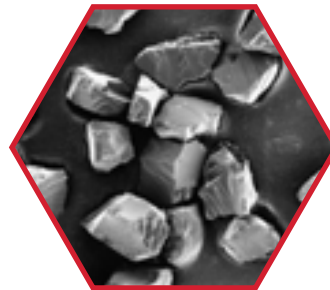
| Part Number | Description |
|-------------|----------------------------|
| 40-6016 | MetaDi Fluid, 16oz [0.47L] |
| 40-6032 | MetaDi Fluid, 32oz [0.95L] |
| 40-6064-085 | MetaDi Fluid, 85oz [2.5L] |
| 60-3250-006 | AutoMet® Oil, 6oz [0.18L] |
| 60-3250-128 | AutoMet Oil, 1gal [3.8L] |

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



45micron diamond in SEM
(450X)

Sharp edges of monocrystalline diamonds ensure clean and efficient cutting action



Grinding & Polishing Consumables

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.



MasterPrep® Alumina

Sol-gel alumina suspension (0.05µm, ~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]



MasterMet® Colloidal Silica

Amorphous colloidal silica suspension (0.06µm, ~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]



MasterMet® 2 Colloidal Silica

Non-crystallizing amorphous colloidal silica suspension (0.02µm, ~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]



MasterPolish® Final Polish

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

40-10084 32oz [0.95L]



MasterPolish® 2 Final Polish

Iron oxide suspension (0.06µm, ~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]



MicroPolish® Alumina Suspension

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

40-10083 0.05µm 6oz [0.18L]
40-10082 0.3µm 6oz [0.18L]
40-10081 1µm 6oz [0.18L]



MicroPolish® Alumina Powder

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

40-10075 0.05µm 1lb [0.45kg]
40-10076 0.05µm 5lb [2.3kg]
40-10077 0.3µm 1lb [0.45kg]
40-10078 0.3µm 5lb [2.3kg]
40-10079 1µm 1lb [0.45kg]
40-10080 1µm 5lb [2.3kg]



MicroPolish® II Alumina Powder

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

40-6322-016 1µm 1lb [0.45kg]

Grinding & Polishing Consumables



FibrMet™ Abrasive Discs

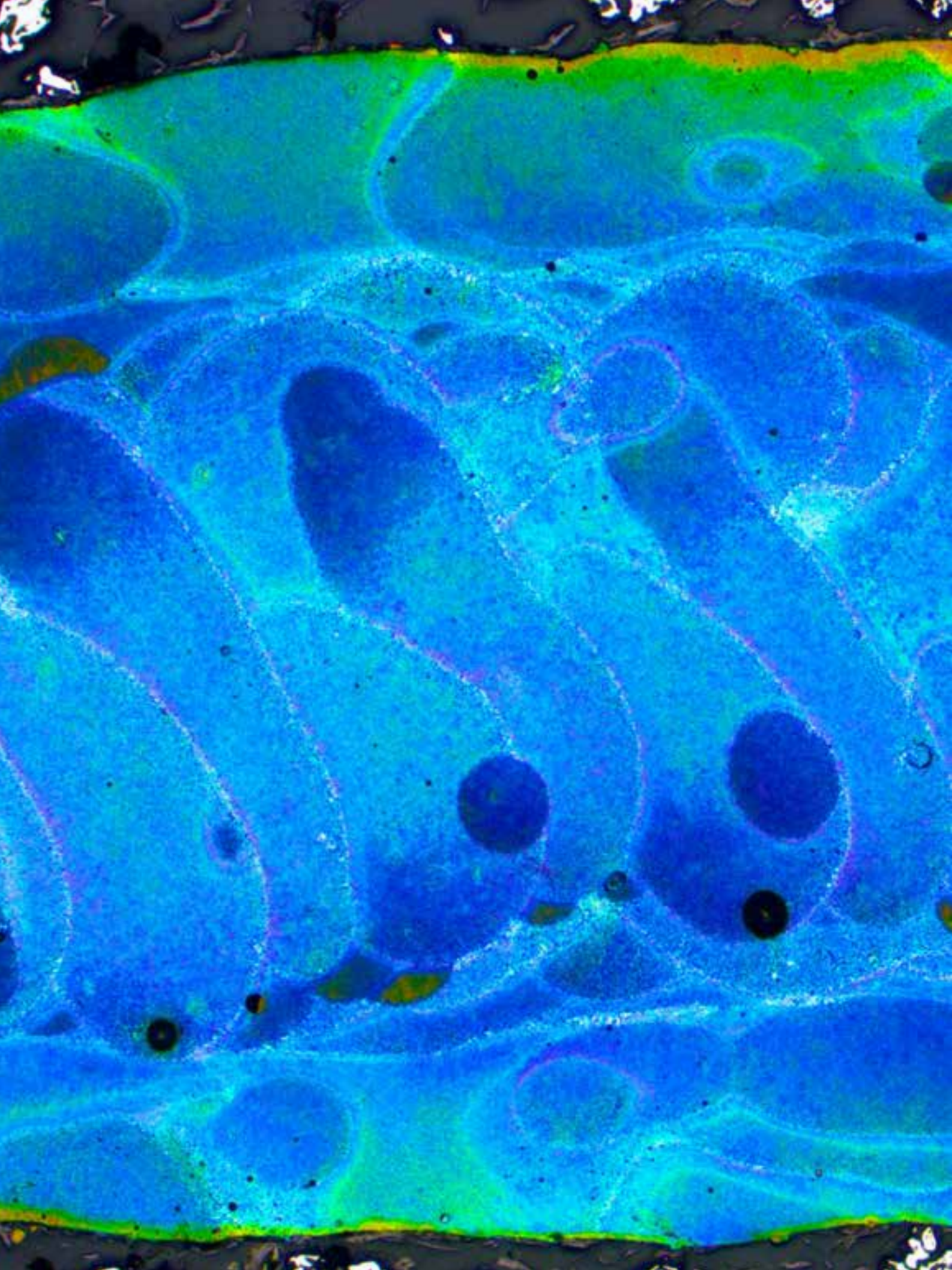
FibrMet® Abrasive Disc are PSA (polyester backed) films, approx. 0.1 mm thick, coated with either an aluminum oxide or silicon carbide abrasive. These discs can be used wet or dry and are most suitable for fine grinding and polishing application, such as optical fiber and microelectronics where resultant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

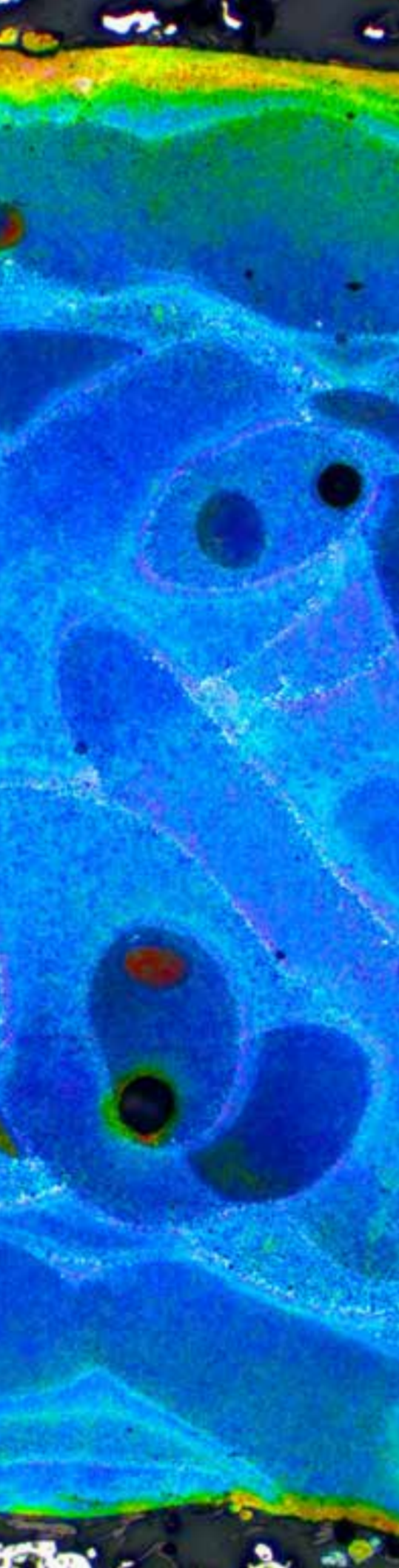
| Micron | 4in [102mm] | 8in [203mm] | 12in [305mm] |
|--------|-------------|-------------|--------------|
| 0.3µm | 69-3104 | 69-3174 | 69-3124 |
| 1µm | 69-3103 | 69-3173 | 69-3123 |
| 3µm | 69-3102 | 69-3172 | 69-3122 |
| 9µm | 69-3101 | 69-3171 | 69-3121 |
| 12µm | 69-3100 | 69-3170 | 69-3120 |

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] PSA Backed | 8in [203mm] 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[®] delivers powerful image analysis possibilities combined with flexible database functionality.

OmniMet[®] delivers powerful image analysis possibilities combined with flexible database functionality. Customize OmniMet with intuitive user friendly point-and-click measurement possibilities, pre-programmed analysis routines, or with capabilities for running user programmable analysis scripts. The database utilizes a multi-tiered approach to logically organize numerous users and image data with unprecedented ease.

The OmniMet system offers seamless point-and-click integration of microscopes, cameras, and image analysis software via an intuitive Microsoft[®] Windows[®] interface. Images can be viewed and analyzed directly from a compatible microscope camera, or imported into Omnimet as images files in any standard format. OmniMet software is offered at different levels of flexibility, functionality, and analytical power to meet the needs of every laboratory requiring image data archiving and quantitative image analysis.



OmniMet® Modular Digital Imaging System

Designed for Demanding Production Lab Environments

OmniMet®

Flexible

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

Powerful

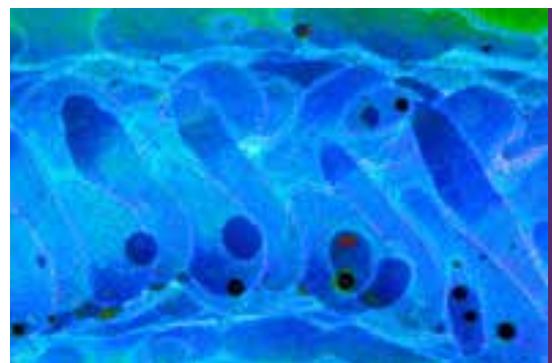
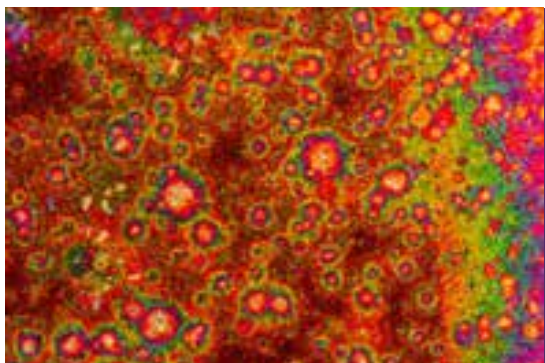
- Any standard format image may be viewed directly from a microscope or be imported into OmniMet for analysis. Local Area Network (LAN) support offered by OmniMet Viewer Module.



| 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 Package includes software pre-installed on a Windows 10, 64-bit workstation and mousepad. Includes keyboard and mouse, does not include a monitor.

** 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 |
|--|--------|-----|-------|----------|---------|------------|
| Capture | | | | | | |
| 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) | | | ◊ | ◊ | ◊ | ◊ |
| Measure | | | | | | |
| 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) | | | | | ◊ | ◊* |
| Report | | | | | | |
| Report Data, Report Generator (requires Microsoft® Office) | | | • | • | • | • |
| Results Window with measurements log | | | | • | • | • |
| Organize | | | | | | |
| Database Interface | • | | • | • | • | • |
| Database Creation & Administration | | | • | • | • | • |

• Included with package
 ◊ Optional module (purchased separately)
 * OmniMet Enterprise comes with a selection of Scripts.

Capture and Advanced Measurement Modules (optional)

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.



OmniMet® Modular Digital Imaging System

Application Specific Scripts (optional)

- 86-3050* **Manual Interactive** - Thickness Measurements of line lengths with statistics for length and thickness measurements.
- 86-3100* **Grain Size** - 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.
- 86-3300* **Coating Layer** - Thickness Measures coating, plating or layer thickness of cross-sectioned samples in compliance with ASTM B487.
- 86-3400* **Graphite in Cast Iron** - 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.
- 86-3500* **Particle Sizing** - Detects and measures particles in a field of view providing statistics on quantity and size distribution. Suitable for non-agglomerated particulates, precipitates, and powders.
- 86-3550* **Porosity Assessment** - Provides automated measurements of fine holes or pores in a material.
- 86-3750* **Dendritic Arm Spacing** - Delivers measurements of lengths between dendrite arms in cast aluminum alloys.
- 86-3200* **Phase Area Percent** - Determines phase area and percentage area of multiple phases in accordance with ASTM 562.
- 86-3150 **Intercept Grain Size** - Automated grain size determination delivering average grain size per field using straight line and circular intercept methods in accordance with ASTM E112.
- 86-3310 **Surface Roughness** - Surface roughness measurements in accordance with ASME B46.1-02.
- 86-3350 **Decarburization Depth Assessment** - Determines depth of total or partial decarburization according to the relative amount of free ferrite present according to ASTM E1077.
- 86-3525 **Cleanliness Assessment** - Provides cleanliness assessment of particles on filter paper meeting the requirements of ISO 4406.
- 86-3600 **Indentation Hardness** - 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.
- 86-3700 **Banding Assessment** - 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.
- 86-3850 **Inclusion Rating** - 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.

* 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.

Upgrade OmniMet to a higher functional level:
Customer license number and site ID MUST BE INCLUDED with purchase order.

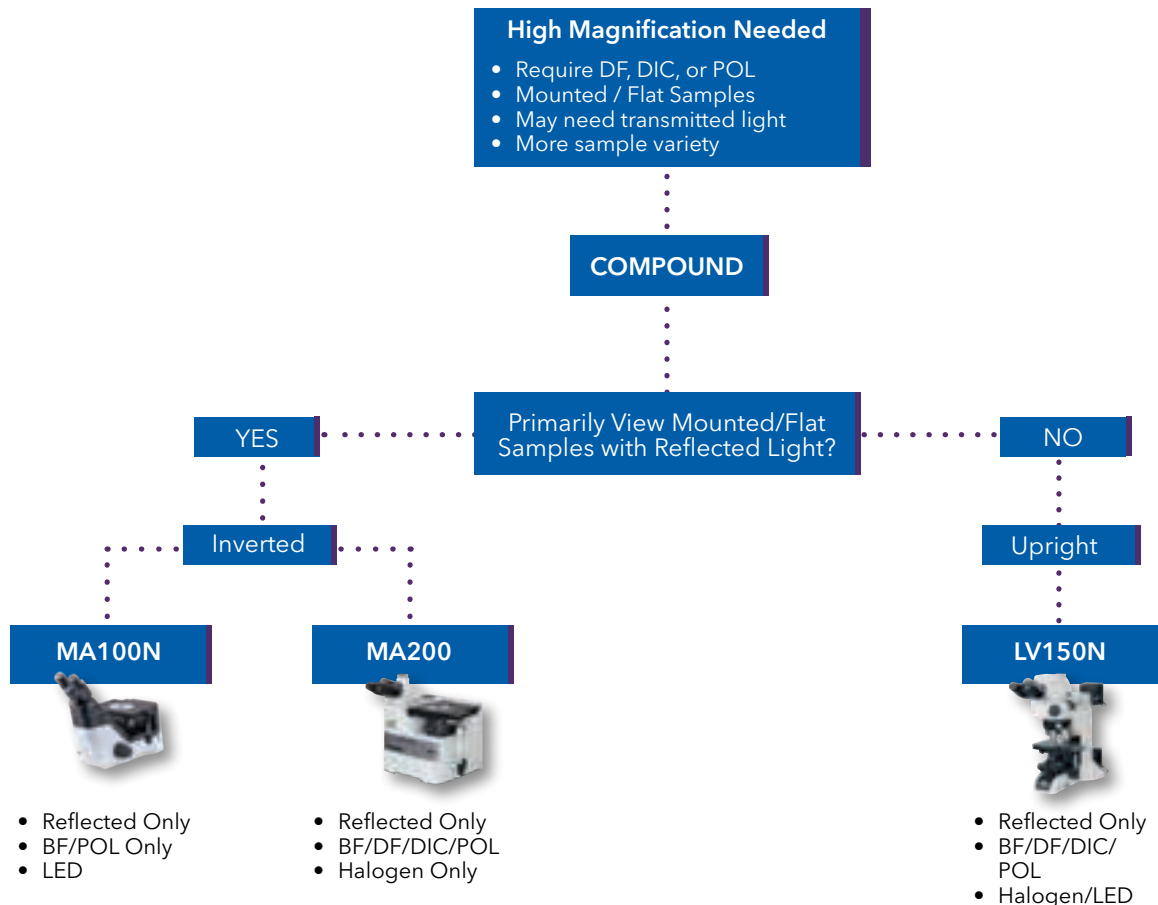
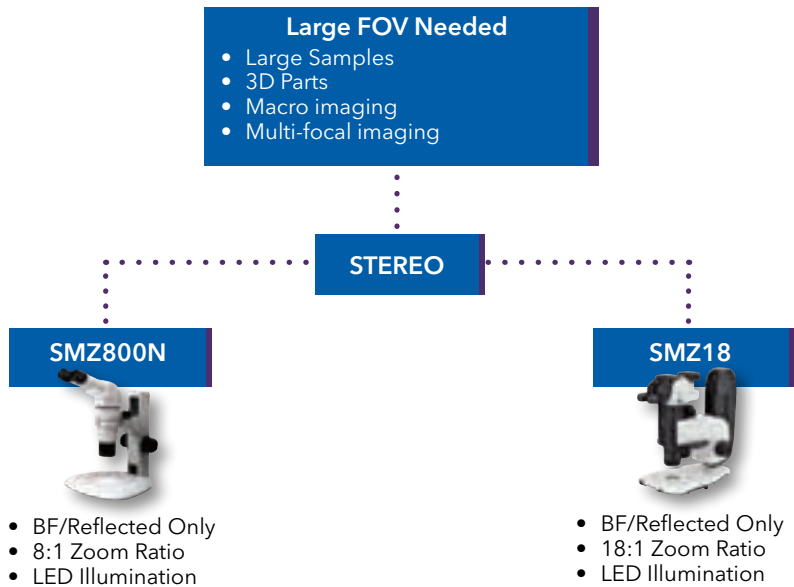
Update OmniMet to the latest software release:

- 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.





Zoom Stereo Microscopes

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

Nikon SMZ800N Objectives



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

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

Manual Rotatable Nosepiece



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



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, 0.7x, LV-TV

8749-12

Zoom Stereo Microscopes



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

Nikon SMZ800N Objectives



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

**Cannot use with Coax or ringlight*

Camera Adapter



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

8749-11

Camera Adapter



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

8749-12

Camera Adapter



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

8749-13



Inverted Industrial Microscopes

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, 0.7x, ISO

8749-14

Camera Adapter



Camera Adapter, C-Mount, 1x, ISO

8749-15

Grain Size Reticle



For eyepiece

8743-62

Inverted Industrial Microscopes



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

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

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

NIMUE12500 - 50x
 NIMUE12900 - 100x

NIMUE42200 - 20x
 NIMUE42500 - 50x

NIMUE42900 - 100x



Inverted Industrial Microscopes

Nikon Eclipse LV150N

Upright Industrial Microscopes are versatile upright microscopes suitable for reflected and/or transmitted 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



For LV150N Halogen

8745-61



For LV150NL LED

8745-62



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

8749-13



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

8749-11



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

8749-12



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

Upright Industrial Microscopes



Digital Cameras

| Part Number | Model | Mega pixels | Chip Size | Resolution (w x h) | Frame Rate (fps) | Image Sensor | Interface |
|-------------|---------------|-------------|-----------|--------------------|------------------|--------------|-----------|
| 86-0274 | uEye 1460SE-C | 3.1 | 0.5in | 2048 x 1536 | 11.2 | CMOS | USB2.0 |
| 86-0270 | uEye 1460LE-C | 3.1 | 0.5in | 2048 x 1536 | 11.2 | CMOS | USB2.0 |
| 86-0358 | uEye 3580LE | 5 | 0.5in | 2560 x 1920 | 15.2 | CMOS | USB3.0 |
| 86-0337 | uEye 3370CP | 4 | 1in | 2048 x 2048 | 80 | CMOS | USB3.0 |



LE Edition



SE Edition

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 |



Monitors

| Part Number | Description |
|-------------|---|
| 85-0135 | 24in Touch Monitor, LCD with 1920 x 1200 display capability |



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 |





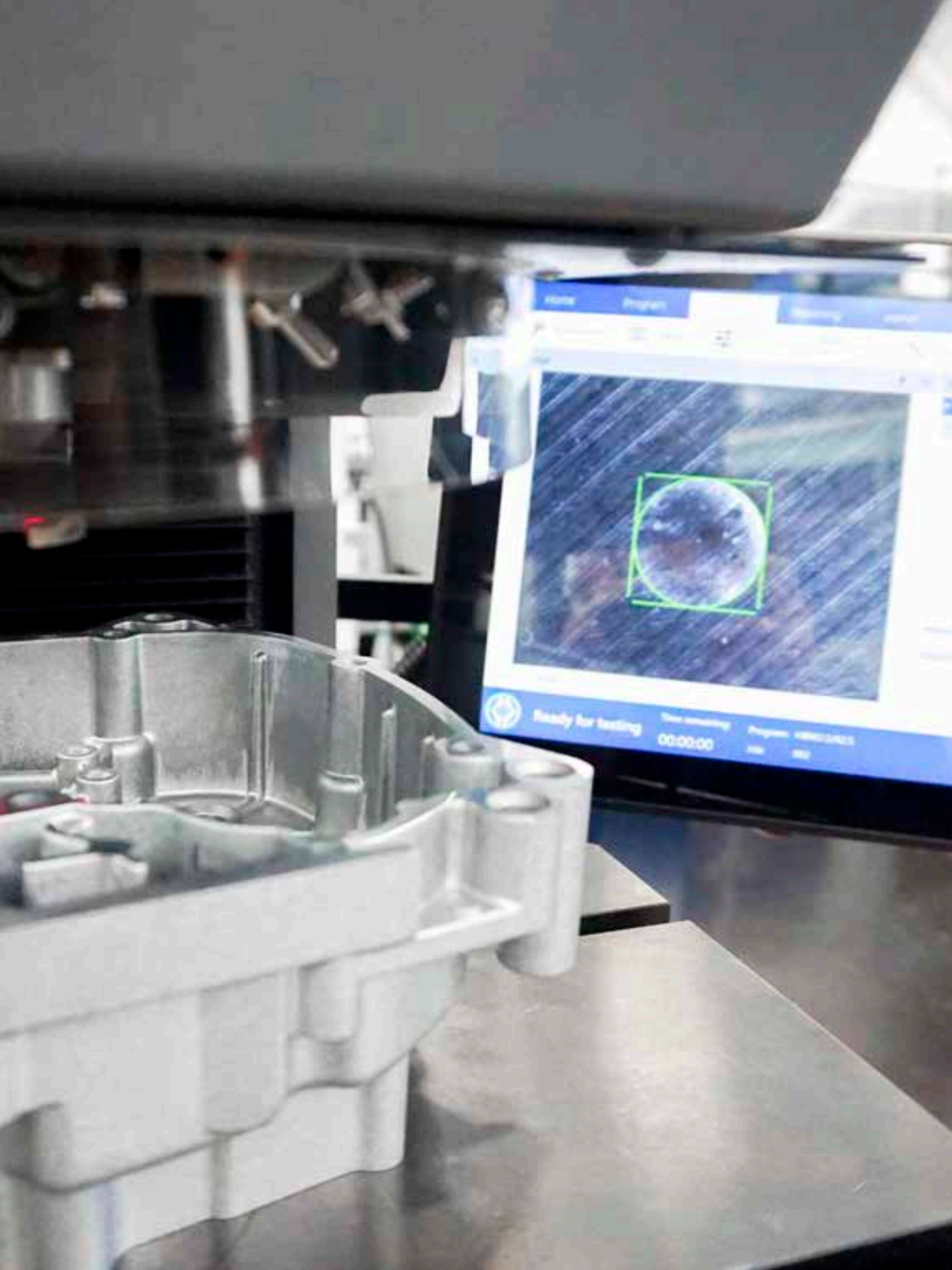
HARDNESS TESTING

Wilson® hardness testers include a comprehensive range of hardness testers from Rockwell®, Knoop, Vickers, and Brinell

Wilson® hardness testers include a comprehensive range of hardness testers from Rockwell®, Vickers-Knoop, and Brinell to fully automatic production systems. Our testers are complemented by a range of test blocks, accessories, and fixtures. Our calibration laboratory is recognized as the global leader in the production of premium test blocks and indenters.

Buehler Service Support is dedicated to ensure the highest quality calibration, verification, and service throughout the world and our Application Support combines years of experience with unparalleled expertise.







DiaMet™ Hardness Software

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 to 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

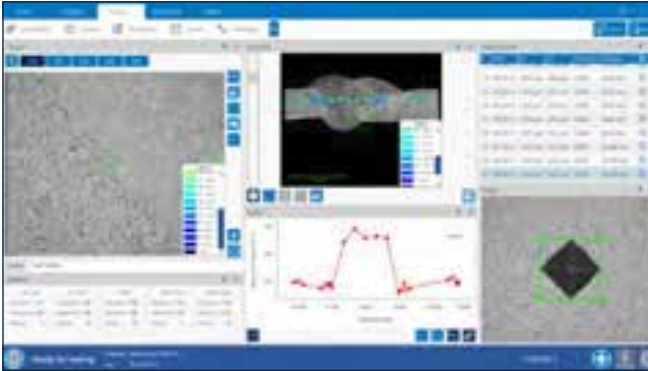
| | Manual (Cam Only) | Basic | Semi-Automatic | Full-Automatic | Enterprise |
|--------------------------------------|-------------------|-------|----------------|----------------|------------|
| Manual Indent Measure | ● | ● | ● | ● | ● |
| Auto Indent Measure | ● | ● | ● | ● | ● |
| Barcode Scanner 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 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.



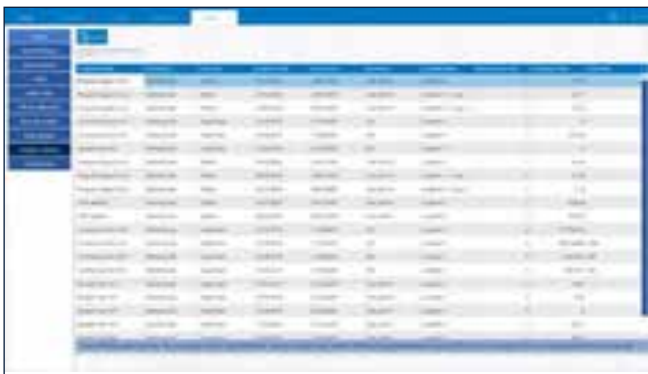
Results Trending

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



Database Query

Have access to the full database and search, filter and export your selection of interest.





Vickers Hardness Testers

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 |



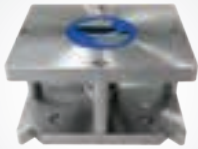
Please select the correct sample holder by sample diameter or a clamping device.



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.



Vickers-Knoop Hardness Testers

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 Vickers testing to conform to international standards ASTM E384 & E92; ISO 6507, 9385, 4546.

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: 144lbs [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+1 position virtual turret
- 0.050 - 10kgf load range
- Includes DiaMet workstation and 24" monitor

W3111



Wilson VH3300

- 3+3 position motorized turret
- 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

W3100C02

Large size

- 300 x 180mm

W3100C03

Standard size

- 180 x 180mm

W3200C02

Large size

- 300 x 180mm

W3200C03

Vickers-Knoop Hardness Testers



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

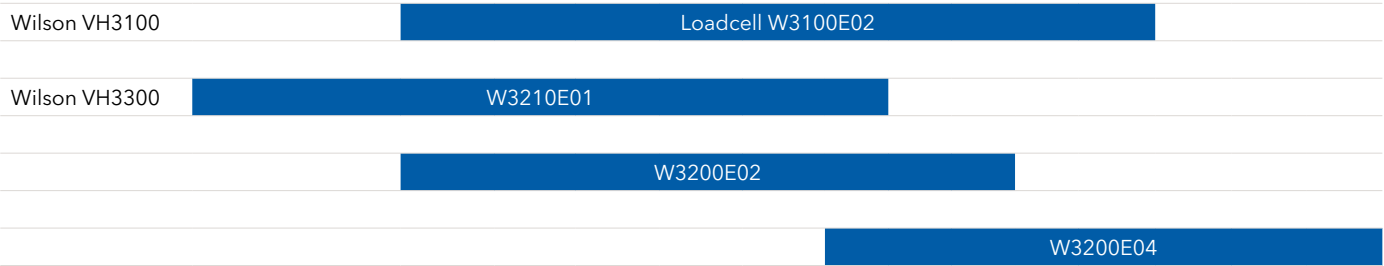
Load Cell

select one for VH3100,
 select between one and
 three for VH3300

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
- Includes Scan & Stitch function in the DiaMet software

W3110F01

- Turret integrated overview
- 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

| Objectives | Indenter Holder* | Vickers Indenter | Knoop Indenter | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------------------|--------------------|--------------------|---------|----|--------|---------|-----|--------|---------|-----|-------|---------|-----|-------|---------|-----|-------|----------|------|-------|---|--|--|
| | <p><i>*for VH3100 Only</i></p> | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Part Number</th> <th>Native Mag.</th> <th>Max. Field of View</th> </tr> </thead> <tbody> <tr> <td>W5XLWDO</td> <td>5x</td> <td>3600µm</td> </tr> <tr> <td>W10XLWD</td> <td>10x</td> <td>1800µm</td> </tr> <tr> <td>W20XLWD</td> <td>20x</td> <td>900µm</td> </tr> <tr> <td>W40XLWD</td> <td>40x</td> <td>450µm</td> </tr> <tr> <td>W50XLWD</td> <td>50x</td> <td>360µm</td> </tr> <tr> <td>W100XLWD</td> <td>100x</td> <td>180µm</td> </tr> </tbody> </table> | Part Number | Native Mag. | Max. Field of View | W5XLWDO | 5x | 3600µm | W10XLWD | 10x | 1800µm | W20XLWD | 20x | 900µm | W40XLWD | 40x | 450µm | W50XLWD | 50x | 360µm | W100XLWD | 100x | 180µm | <p>Standard holder W3100G01</p> <p>SnapGrip Holder W3100G02</p> | <p>Vickers Indenter, ISO & ASTM Certified W9100687</p> | <p>Knoop Indenter, ISO & ASTM Certified W9100684</p> |
| Part Number | Native Mag. | Max. Field of View | | | | | | | | | | | | | | | | | | | | | | |
| W5XLWDO | 5x | 3600µm | | | | | | | | | | | | | | | | | | | | | | |
| W10XLWD | 10x | 1800µm | | | | | | | | | | | | | | | | | | | | | | |
| W20XLWD | 20x | 900µm | | | | | | | | | | | | | | | | | | | | | | |
| W40XLWD | 40x | 450µm | | | | | | | | | | | | | | | | | | | | | | |
| W50XLWD | 50x | 360µm | | | | | | | | | | | | | | | | | | | | | | |
| W100XLWD | 100x | 180µm | | | | | | | | | | | | | | | | | | | | | | |

Please select your sample holder on page 78



Vickers-Knoop Hardness Testers

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 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 & manual 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 & manual 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 |

Vickers-Knoop Hardness Testers



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 E384.
- 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 & manual 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 |

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



Universal Hardness Testers

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.



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]

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.

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 Automation 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 1000 x 700 x 800mm [30 x 27 x 31in] with spindle hole
944872

Anvils

All anvils fit on 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



Rockwell® Hardness Testers

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 - 1230g

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

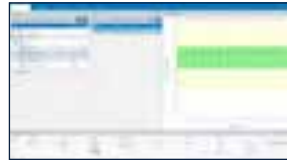
Auto Clamping Device



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

W2100CL

Software Options



DiaMet basic software option, start test cycle 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 1in [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

For internal testing on rings and tubes (excl. Indenters)



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
 Available Rockwell Diamond indenters are
 900001459 (A scale)
 900001460 (N scale)
 W2100G2



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



Rockwell® Hardness Testers

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 and can accommodate a wide variety of applications.

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.

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 |



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.

| 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 |

* C, D and A scales refer to regular Rockwell scales, N scales refer to superficial Rockwell scales
 ** WC = tungsten carbide

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

All anvils fit on testers with 19mm pinhole.

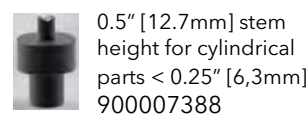
Flat anvil



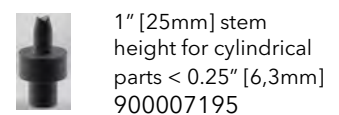
Flat anvil



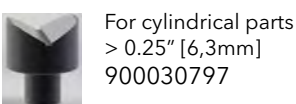
V Anvil Shallow



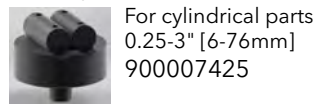
V Anvil Shallow



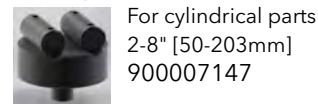
V Anvil Standard



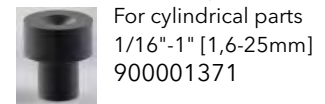
Anvil Cylindron Jr.



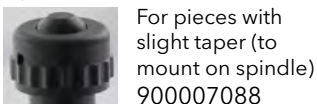
Anvil Cylindron



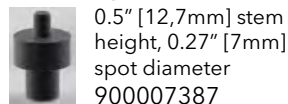
Anvil for Ball Testing



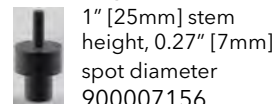
Eyeball Anvil



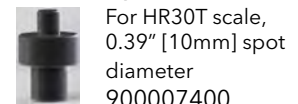
Pedestal spot Anvil



Pedestal spot Anvil



Diamond spot anvil





Brinell Hardness Testers

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).

BH3000

Part Number: WH3000BH



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]

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

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 |



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)

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 |
| 9205020W | | 63HRE |
| 9205050W | | 81HRE |
| 9205060W | | 87HRE |
| 9205070W | | 93HRE |
| 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® Hardness Test Blocks

Wilson® Vickers-Knoop Test Blocks

According to ISO 6507 & ASTM E92 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- | 93020- | 93030- | 93050- | 150 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 200 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 250 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 300 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 350 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 400 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 450 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 500 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 550 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 600 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 700 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 775 |
| 930005- | 93001- | 93002- | 93003- | 93005- | 93010- | 93020- | 93030- | 93050- | 93100- | 93020- | 93030- | 93050- | 830 |

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

The Hardness Values can deviate by +/- 25 HV from nominal value

not ISO 6507 due to <20µm diagonal length

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

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

Knoop Test Blocks

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

| 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





Wilson® Brinell Test Blocks

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

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



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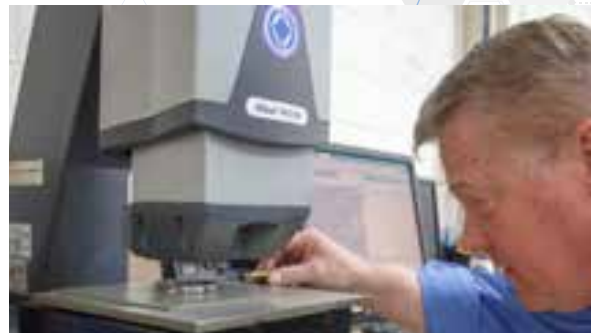
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Ensure Consistent Results

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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

Genuine Spare Parts

Buehler supplies parts for all equipment, including obsolete machines for a minimum of 5 years after discontinuation.

Preventative Maintenance

Buehler offers on-site or factory inspection, cleaning and replacement of wear parts to ensure optimal performance.

Technical Support & Services



Buehler's Service Department is available to keep your lab operating efficiently with an offering of Preventative Maintenance Plans, Calibration Services, NADCAP audit preparation services and optical verifications for microscopes and reticles.

Preventative Maintenance Service Plan Ensures Consistent and Reliable Results

Protect your investment, ensure consistent performance, minimize downtime and reduce costly repairs with Buehler's Preventative Plans. Trained technicians replace wear parts and conduct a Maintenance Check. Preventative Maintenance Plans are currently available for the following machines:

| | | |
|-------------------|----------------------|--------------------|
| AbrasiMet® 250 | Delta Manual | IsoMet® 4000/5000 |
| AbrasiMatic® 300 | Delta Medium | IsoMet® High Speed |
| AbrasiMatic® 450 | Delta Large | PlanarMet™ 300 |
| AbrasiMet® M | EcoMet® 30 Manual | PetroThin® |
| AbrasiMet® XL Pro | EcoMet® 30 Semi-Auto | MetaServ® 250 |
| AutoMet® 250 | IsoMet® Low Speed | SimpliMet® 3000 |
| AutoMet® 300 | IsoMet® 1000 | SimpliMet® 4000 |

Ensure Consistent Performance

Ensure compliance with A2LA Accredited & ISO-17025 indirect & direct hardness verifications following both ASTM or ISO standards. Indirect verifications include two scales and additional scales can be purchased.



CERT#2237.01 - CALIBRATION



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- EcoMet® Grinder Polishers
- Hardness and Imaging Software
- Test Blocks and Consumables

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Our Governance & Ethics

- We operate our business with a demonstrated commitment to the highest level of ethical conduct, everywhere in the company and every day.
- We have a commitment to fair, ethical and honest business dealings, robust governance, and compliance with applicable laws, while demonstrating respect for human rights at Buehler and throughout our supply chain.



Our People

- We strive to create diverse and inclusive workplaces where all of our colleagues can perform to their full potential.
- We strive every day to foster a proactive safety culture through the execution of our Enterprise Safety Strategy, with a shared goal of zero accidents.



Our Communities

We encourage and support our colleagues globally in their efforts to make positive contributions to the communities where they work and live.

- As a company we are committed to supporting programs and initiatives to improve access to a high-quality education and workforce/career preparation for youth in under-served communities, both in greater Chicago and around the world.
- Throughout the year we support corporate citizenship programs such as Junior Achievement and United Way Worldwide.



Our Environment

Buehler is committed to operating our business in a way that demonstrates our dedication to global environmental sustainability.

- We work with suppliers who operate with similar dedication to global environmental sustainability
- We partner with our customers in innovating solutions that address their needs for environmentally responsible products.
- We are involved with the LovetheOceans, a non-profit marine conservation organization that promotes sustainable fishing and protecting endangered species.
- We improve our environmental performance on an ongoing basis. This includes participation in a robust recycling program that prevents nearly 110,000 pounds of waste from entering landfills and conserves electricity, oil and water.



Shelf Life for Consumable Products

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 |
| Apex Hercules 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

2022 Buehler Microstructure Calendar



The Buehler Microstructure Calendar is a recognized forum for excellence in this unique area of technical expertise. Publication in the calendar is open to anyone who has achieved a level of excellence in materials preparation. If you would like to submit an entry for the 2022 edition, please do so according to the following guidelines.

GUIDELINES

SUBJECT OF PHOTO MICROGRAPH:

- Microstructural details or hardness indents of any metallic, non-metallic, geological or bio-related materials
- Image must be obtained through the use of a light optical microscope (no SEM or TEM)
- Image must not be digitally pseudo colored or enhanced

REQUIRED INFORMATION:

- Completed entry form
- Brief title statement that details the material depicted in the image
- The original magnification used to acquire the image
- The illumination mode used, such as brightfield, darkfield, polarized light, reflected or transmitted, differential interference contrast (DIC), phase contrast, or any other relevant information concerning the illumination and observation methods
- Details of any etchants used to reveal the microstructure, including the chemical formulation where applicable

IMAGE REQUIREMENTS (*Images not meeting the requirements will not be accepted*)

- The entry must be uniformly illuminated and have sharp, crisp, in-focus details.
- The image cannot have a scale-bar.
- Digital files MUST be TIF, JPG or BMP and 120dpi (*printed size will be 13in x 9in*)
- 8in x 10in [200 x 250mm] up to 11in x 14in [275 x 350mm] color photo prints will also be accepted.

SEND FILES:

ONLINE:

- Send your images through our website at <http://www.buehler.com/2022-buehler-calendar-contest>
- If an alternate method is preferred, please contact us at (847) 295-6500 or marketing@buehler.com for instructions on FTP login

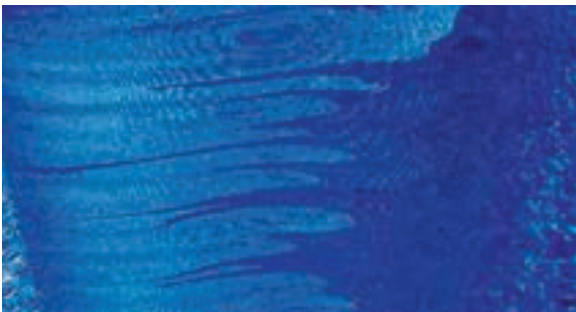
DEADLINE FOR SUBMISSIONS:

August 1st, 2021

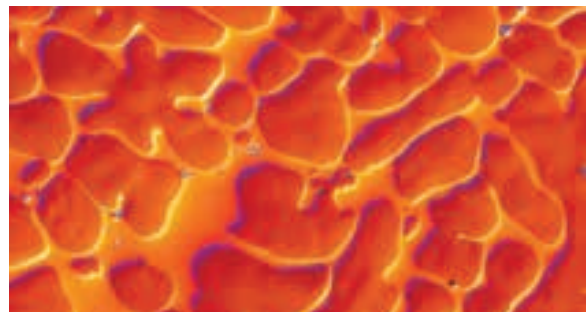
WINNERS:

If your entry is published, you will receive an honorarium of \$200 (USD) per image and the privilege of having your work displayed worldwide. Selected calendar entries become the sole property of Buehler and may be used in other Buehler publications.

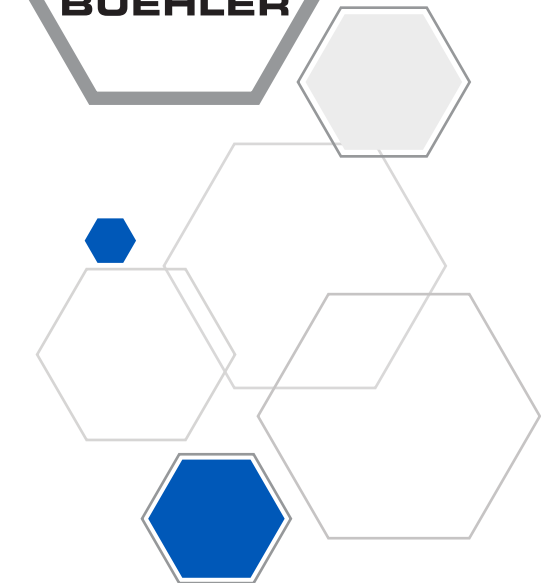
If you have further questions, please contact us at: (847) 295-6500 or email: marketing@buehler.com



7075 and 6061 Aluminum Weld, etched with Barker's reagent, mag. 50x, polarized light
~Matthew Ryder and Xiangbin Wang; Worcester Polytechnic Institute; iMdc, Worcester, MA USA



Aluminum beryllium casting, mag. 200x, viewed with Differential Interference Contrast.
~ Daniel Slates; Materion Brush Performance Alloys; Elmore, Ohio USA



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