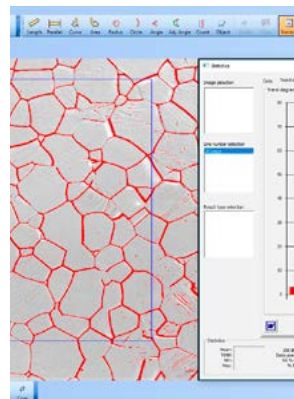


# 2018 PRODUCT CATALOG

Sectioning | Mounting | Grinding & Polishing | Imaging & Analysis | Hardness Testing



# 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 100 countries, and over 45 Expert Solutions Centers.

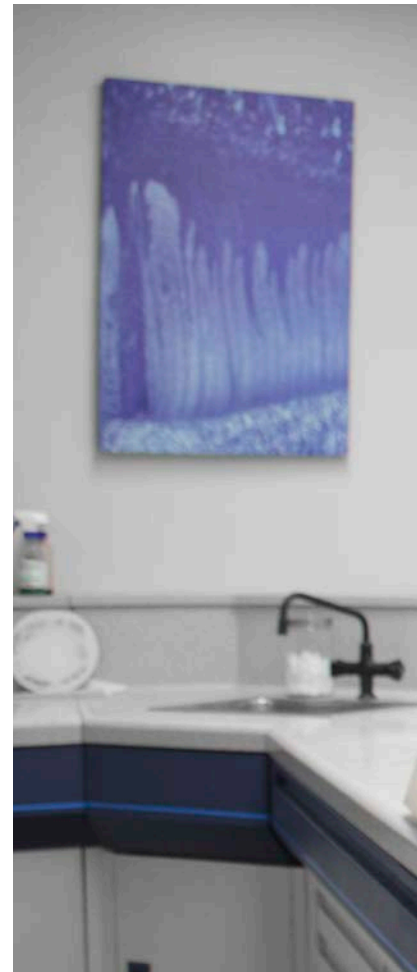
Buehler was founded in 1936 by Swiss immigrant, Adolph I. Buehler, who saw a need for metallographic sample preparation equipment and optical inspection instruments for the steel and automotive industries in the Midwest USA. Eighty years later Buehler is well established as the world's leading supplier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

For more than 100 years Reicherter, Wolpert, and Wilson have designed and manufactured innovative and unique hardness testers. Today Buehler continues in their path with new designs and technologies to meet growing demands. In 2011, Wilson Hardness was combined with Buehler to provide a more robust product offering.

Home of the hardness testing legacy brands:



*Wilson  
Instruments*



**Meredith Platt**  
Vice President & General Manager

Dear Valued Customer,

I am pleased to introduce our 2018 Buehler Product Catalog, the most comprehensive product guide for materials characterization and analysis. In 2016, Buehler celebrated 80 years in the industry and this catalog represents the knowledge and expertise that comes from working with our global customers across all industries and in both research and quality control laboratories to develop the best quality sample analysis solutions. This catalog also represents our investment in new product development and innovation, with new products across major segments.

Buehler is proud to offer the full lab solution - from sectioning, mounting, grinding, polishing, and analysis to hardness testing - all designed and manufactured by Buehler to ensure the highest quality and reliability. Although we hope you find what you are looking for in these pages, we strongly encourage you to reach out to our field and applications experts who can answer any questions you may have and assist with testing to be sure you get not only the right products but also the right methods that ensure quality and reliability of results.

Thank you for considering Buehler and please let us know how we can further support your materials analysis needs.

*M Platt*



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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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## GRINDING & POLISHING

Automated and manual grinders and polishers with the broadest range of consumables for any lab.

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## IMAGING & ANALYSIS

OmniMet™ delivers powerful image analysis possibilities combined with flexible database functionality.

70

## HARDNESS TESTING

Wilson® hardness testers cover all major hardness scales including dedicated Rockwell®, Knoop/Vickers, and Brinell as well as multi-scale Universal machines. We provide ISO and ASTM certified test blocks for all scales.

88

## ADDITIONAL INFORMATION

Consumables shelf life and Index



# Customer Care

## Our Team is Here for You!

Buehler is committed to excellent customer care, and are available to support our customers with any questions, concerns or issues. Our team of customer support professionals, application experts, service engineers, product design & development, technical sales, and in-house design and manufacturing are at your disposal.

- Materials Science PhDs can assist you with material preparation applications
- Industry leading hardness testing experts can assist to train, install or troubleshoot any hardness testers
- Dedicated software support expertise for any software questions
- Support for product returns or questions
- Repair, calibration, installations, and maintenance of equipment



## Committed to Quality

Buehler employees and operations are committed to delivering quality and environmentally responsible products guided by ISO 9001 Quality Management Principles and ISO 14001 Environmental Managements Systems. Buehler innovates solutions and offers expert service and support throughout the materials preparation and analysis market.

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# Full Lab Solutions

## Buehler Solutions Centers

Buehler Solutions Centers provide materials preparation and analysis techniques and training to our customers worldwide. Our mission is to deliver valuable application solutions by applying Buehler products and methodologies. We are committed to maintaining the highest standards in quality and service.



- Labs dedicated to creating application solutions.
- Customer service laboratory for materials prep and analysis
- Collaboration opportunity (research, papers, testing).
- Buehler owned and Power Distributors with current full labsolutions and independent demonstration/ applications skills.

### Buehler Solutions Centers:

- Lake Bluff, IL
- Düsseldorf, Germany
- Kuala Lumpur, Malaysia
- Lyon, France
- Shanghai, China
- Warwick, UK
- Tokyo, Japan
- Esslingen, Germany

## Buehler is Your Lab Partner

Buehler experts provide technical assistance on metallographic and metallurgical topics

Buehler provides many resources to help with your lab solutions:

- SumMet Guide
- TechNotes and SumNotes
- Safety Data Sheets
- Seminars, Webinars and Classes

**TECHNotes**  
Published by Buehler, a division of Struers Tool Works. Volume 6, Issue 1

**Efficient Sample Preparation and Analysis of Ferrous Materials**

**SUMNotes**  
REPLICATING MEDIA by Dr. P. MOORE

**Buehler® SumMet™**  
The Sum Of Our Experience  
A Guide to Materials Preparation & Analysis  
Second Edition

**BUEHLER**  
Strong Partner. Reliable Solutions

**BUEHLER**  
Solutions for Materials Preparation, Testing and Analysis



# Service

## Our Global Service Teams are Committed to You

Protect your investment and ensure consistent performance, minimize downtime and reduce the likelihood of costly repairs with Buehler Preventative Maintenance and Calibration Services.

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



### Reduce Unplanned Downtime

#### On-Site Repair Services

Certified technicians will inspect and repair machines on-site or at Buehler's factory

#### Loaners & Equipment Rental

Loaner machines available for weekly rental

#### Technical Support & Training

Available by phone or email to answer questions



### Ensure Consistent Results

#### Professional Installation

Certified technician will unpack equipment, connect to utilities, set parameters and do basic training

#### Compliance

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

#### Refurbished Machines

Machines have been inspected, repaired and tested to ensure 100% performance



### 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

Customer site or in factory inspection, cleaning, and spare parts exchange

#### Extended Warranty

Extend your complete warranty by 12 months including 100% coverage of parts and labor



# Preventative Maintenance & Extended Warranty Contracts

Protect your investment and ensure consistent performance, minimize downtime and reduce the likelihood of costly repairs with preventative maintenance programs and extended warranty contracts.



## Service Plan Options

Identify the best Service Plan based on the lab's needs.

	Preventative Maintenance	Extended Warranty
Visits Per Year	1	2
Wear Parts Kit	✓	✓
Unlimited Phone Support	✓	✓
Replacement Part Discount	10%	25%
Unlimited Labor Repairs		✓
Priority Response		✓

- Preventative Maintenance ensures consistent results
- Visit includes Wear Parts Kit and 20 Point Maintenance Check list
- Extended Warranty must be purchased prior to the expiration of active warranty

Machine	Preventative Maintenance Number	Extended Warranty Number
AbrasiMet™ 250	10101SRV	
AbrasiMatic™ B300	10219SRV	R0355
AbrasiMatic™ 450	10100SRV	R0585
EcoMet™ 250	49725SRV	R0485
EcoMet™ 300	49726SRV	R0485
IsoMet™ Low Speed	11128SRV	
IsoMet™ 1000	11218SRV	R0315
IsoMet™ 4000/5000	11268SRV	R0325
IsoMet™ High Speed	11260SRV	R0335
SimpliMet™ 3000	20143SRV	R0515
SimpliMet™ 4000	2010SVR	R0495

Machine	Preventative Maintenance Number	Extended Warranty Number
Delta Manual	102213SRV	R0235
Delta Medium	102218SRV	R0245
Delta Large	102318SRV	R0255
PlanarMet™ 300	491000SRV	R0575
PetroThin™	38145SRV	R0345
Vanguard™	63200SRV	
MetaServ™ Manual	49100SRV	
MetaServ™ Twin Manual	49100SRV	
MetaServ™ Twin	49100SRV	
MetaServ™	49100SRV	

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☎ +81 3-5439 5077

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# Buehler Leads the Way in Hardness Testing

## Over 80 Years of Industry Leadership

Founded in 1936 in the United States, Buehler has become one of the world's leading companies in the area of hardness testing - both in industrial development and production-related quality assurance and in academic research.



*Wilson  
Instruments*

## From Research to Industrial Use, Buehler Provides Reliable Solutions

With Reichert, Wilson and Wolpert, Buehler combines the names of great innovators in the area of hardness testing under one roof. With this knowledge and experience, the company has grown into one of the world's leading suppliers of hardness testing equipment. In 2011, Wilson Hardness merged with Buehler to provide an even broader product offering.

Wilson Rockwell, Knoop/Vickers and Brinell hardness testers, along with the associated software, and a comprehensive range of accessories constitute the core of the company's current product portfolio. Buehler products and processes are used in quality assurance and in the development laboratories of major research facilities in numerous sectors, amongst them the aeronautical and aerospace, automotive, electrical, energy generation and medical equipment industries.

Globally located Buehler Solution Centers provide customers with the opportunity to directly work with the company's specialists. These Solution Centers are located throughout the United States, Asia, United Kingdom, France and Germany. They are equipped with the most up-to-date technology for the preparation of materialographic specimens and with latest-generation of hardness testers, including the DiaMet™ testing software that is perfectly adapted to hardness testing. Experienced specialists take a hands-on approach to solving our customers' testing challenges.

Buehler is a strong, trusted partner relied upon by organizations for reliable solutions and consistent results in material preparation, testing and analysis.







# Social Responsibility



It is not enough to achieve our mission to be the premier provider of solutions for our market. We feel strongly that part of our responsibility is to our community and global environmental sustainability. It is for this reason that in 2010 we adopted a robust recycling program throughout our operations and front offices. Now in its fifth year, this program prevents nearly 110,000 pounds [50,000 kilograms] of waste from entering landfills annually, in turn conserving other resources such as electricity, oil and water.

Throughout the year, we support numerous other corporate citizenship programs, primarily in education and human welfare. Through presentations, joint activities and fundraisers, we support Junior Achievement and United Way Worldwide. For several years, our worldwide headquarters has participated in the Work Study program at Cristo Rey St. Martin College Prep School; through this program, Buehler is helping students achieve a high school education as well as making them college bound through their work study program.



**109,761 pounds**  
**49,787 kilograms**

Fiber, Metal and Plastic. On average, the following resources are saved annually:



**35,331 gallons**  
**133,742 liters**  
Oil



**405 cubic yards**  
**309 cubic meters**  
Landfill Space



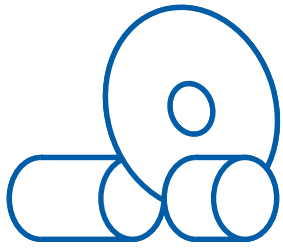
**258,038 gallons**  
**976,780 liters**  
Water



**628,325 kW hours**  
Electricity



**627**  
Mature Trees



# SECTIONING

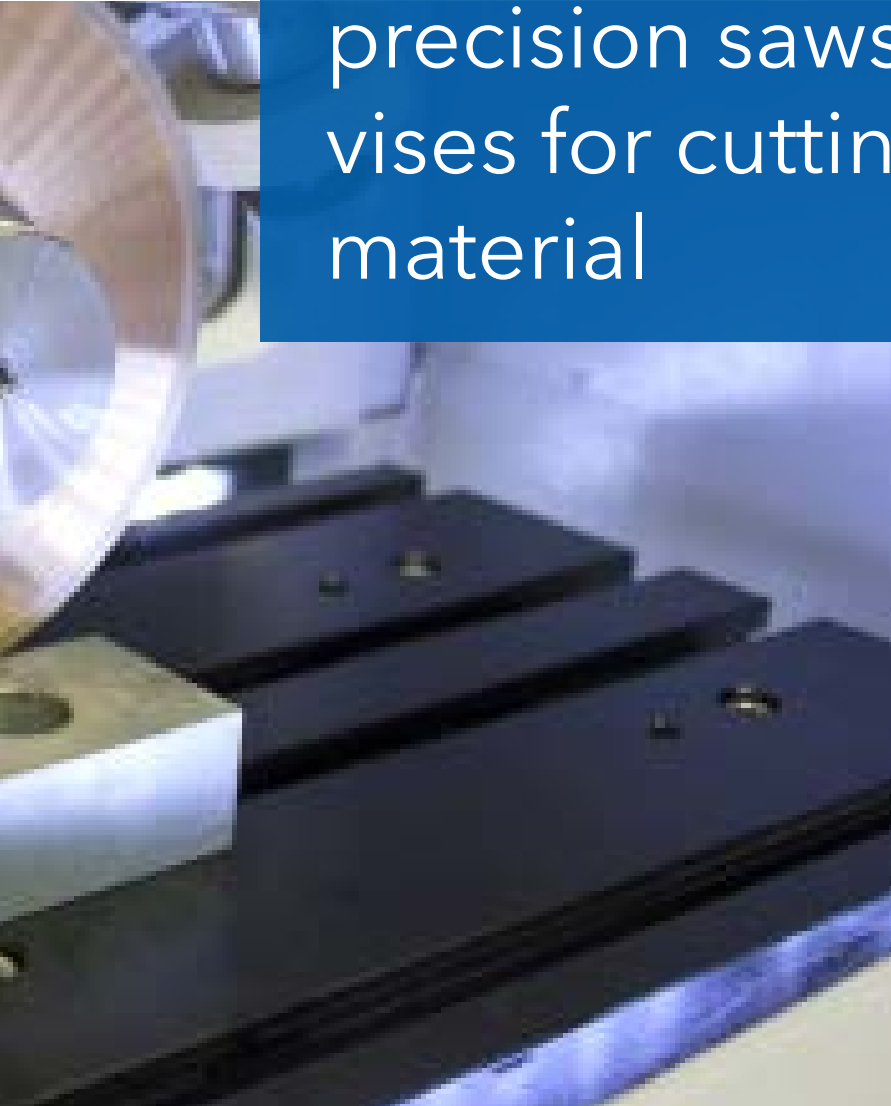


AbrasiMatic™  
Manual Abrasive  
Cutters



Delta  
Automatic  
Abrasive  
Cutters

# 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.



IsoMet™  
Precision  
Cutters



Abrasive and  
Precision Blades



# Product Comparison

## Abrasive Cutters

	AbrasiMet™ 250	AbrasiMatic™ 300	Delta Manual	Delta (Medium)	Delta (Large)
Wheel Diameter	10in [254mm]	12in [305mm]	14in [350mm]	12in [305mm] 14in [356mm]	16in [400mm] 18in [450mm]
Cut Types	Chop	Chop Y-Feed	Chop	Chop Orbital	Chop
Manual Movement	Z-axis	X-axis*, Y-axis, Z-axis	Z-axis		
Automated Movement		Y-axis		X-axis*, Z-axis	X-axis*, Z-axis
Maximum Part Size in Chamber	9 x 12 x 3.5in [229 x 305 x 89mm]	16 x 6 x 3.75in [406 x 152 x 95mm]	26 x 24 x 5in [660 x 610 x 127mm]	24 x 12 x 5.25in [609 x 305 x 133mm]	35 x 20 x 5.5in [889 x 508 x 140mm]
Cutting Capacity	3.5in** [89mm]	2.75** x 6 x 3.75in [70 x 152 x 95mm]	5.00in** [127mm]	2.95** x 5.25in [75 x 133mm]	3.94** x 5.5in [100 x 140 mm]

\*Optional Items

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

## Precision Cutters

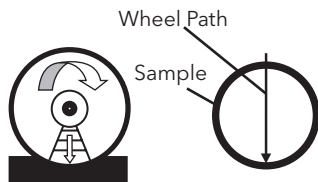
	IsoMet™ Low Speed	IsoMet™ 1000	IsoMet™ High Speed	IsoMet™ High Speed Pro	PetroThin™ Thin Sectioning System
Maximum Wheel Diameter	5in [127mm]	7in [178mm]	8in [203mm]	8in [203mm]	8in [203mm]
Cut Style	Gravity Fed	Gravity Fed	Auto Feed or SmartCut™	Auto Feed, SmartCut Grinding	Manual Thin Sectioning
Sample Movement	X-axis, Z-axis	X-axis, Z-axis			X-axis, Z-axis
Wheel Movement			X-axis, Z-axis	X-axis, Z-axis	
Maximum Cutting Capacity**	1.77in [45mm]	2.5in [64mm]	3in [76mm]; 2 x 6.5 x 1in [51 x 165 x 25mm]	3in [76mm]; 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 size. Generally a struggle with large/difficult parts.



### 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 size.



### Chop Cutting with Pulsing

Wheel contact still governed by sample size. The pulsing action pauses the feed rate in short intervals enabling coolant to wash away swarf and dissipate heat.



### Orbital

A chop cutting action with elliptical blade movement. Simpler and quicker in operation. Part size is irrelevant as the orbital action produces a minimum contact arc area during cutting.





# Manual Abrasive Cutters

## Controllable Cut Quality with Durable Machine Design

The manual feature provides user control of the cut quality. These durable machines are designed for both laboratory and industrial environments.

### AbrasiMet™ 250

The AbrasiMet 250 is a bench top manual abrasive cutter. This cutter's simple design enables rapid sectioning of samples.



### Delta Manual

The Delta Manual is a floor standing manual abrasive cutter. This cutter's large workspace and versatile viewing options enable simple, quick and easy positioning of samples for sectioning.



Allow for sectioning of parts with a 3.5in [88cm] diameter. (Varies based on part shape)

Part Number	Voltage
10-10106-260	200-240VAC, 60Hz
10-10106-460	440-480VAC, 60Hz
10-10106-250	200-240VAC, 50Hz
10-10106-400	380-400VAC, 50Hz

Dimensions: 28in [711mm]W x 29in [737mm]D x 32in [813mm]H open  
22.5in [571mm]H closed

Weight: 300lb [136kg]

Allow for sectioning of parts with a 5.25in [133mm] diameter. (Varies based on part shape)

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

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

Weight: 800lb [365kg]

### Accessories for Abrasive Manual Cutters

#### Delta Manual

10-2327 T-Slot Bed, 12mm, X & Y-axis slots

\*See page 8 for vise with 12mm T-Nuts

\*See page 9 for compatible recirculating tanks



# Automatic Abrasive Cutters

## Highly Reproducible Results

Our Abrasive Automatic Cutters allow repeatable and consistent cuts with automatic cutting. They are able to cut samples quickly without compromising cut quality with minimal area contact methods.



## AbrasiMatic™ 300

The AbrasiMatic 300 is a benchtop dual abrasive cutter. This machine enables variety in sample preparation to best fit each sample process with both manual and automatic cutting capabilities.

### Flexibility for changing lab needs

- Best of both cutting methods with manual and automatic cutting
- Control and “feel” of the cut with the manual cutting in the Y and Z direction
- Allow for sectioning of parts with a 3.75in [95mm] diameter (varies based on part shape).

### Simple setup for efficient cuts

- Quick vising and cut alignment with X-axis motion (optional)
- Simple user interface to program automatic cutting and set manual cutting
- The automatic cutting creates more time for critical activities
- Electrical brake for user safety and quick part change

Two Axis Cutting		
	Part Number	Voltage
Y & Z-axis	10-2190-260	200-240VAC, 60Hz
	10-2190-460	440-480VAC, 60Hz
	10-2190-250	200-240VAC, 50Hz
	10-2190-400	380-400VAC, 50Hz

Three Axis Cutting		
	Part Number	Voltage
X, Y & Z-axis	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]

# Simple Setup for Efficient Cuts

The Delta Orbital and Chop Cutters use automatic cutting that creates more time for critical activities. The cutter has an electrical brake for user safety and quick part change.

## Delta Orbital Chop Medium

The Delta Medium is a floor standing automatic chop and orbital cutter. This cutter increases productivity and reduces differences between operators with the selectable feed rate.



## Delta Orbital Large

The Delta Large is a floor standing automatic chop and orbital cutter. This cutter reduces variability of sample quality with the programmable cuts.



Allow for sectioning of parts with a 4.5in [114mm] diameter. (Varies based on part shape)

	Part Number	Voltage
Orbital	10-2219B-260	200-240VAC, 60Hz, 7.5Hp
	10-2219B-460	440-480VAC, 60Hz, 7.5Hp
	10-2219B-400	380-415VAC, 50Hz, 7.5Hp
Chop	10-2216B-260	200-240VAC, 60Hz, 7.5Hp
	10-2216B-460	440-480VAC, 60Hz, 7.5Hp
	10-2216B-400	380-415VAC, 50Hz, 7.5Hp

Dimensions: 29in [736mm]W x 31in [787mm]D x 73in [1854mm]H open  
63in [1600mm]H closed

Weight: 800Lbs [365kg]

Allow for sectioning of parts with a 5.25in [133mm] diameter. (Varies based on part shape)

	Part Number	Voltage
16in 10hp	10-2318B-260	200-240VAC, 60Hz
	10-2318B-460	440-480VAC, 60Hz
	10-2318B-400	380-415VAC, 50Hz
18in 15hp	10-2319B-460	440-480VAC, 60Hz
	10-2319B-400	380-415VAC, 50Hz

Dimensions: 46in [1168mm]W x 40in [1016mm]D x 73in [1854mm]H open  
66in [1676mm]H closed

Weight: 880Lbs [400kg]

### Accessories for Abrasive Automatic Cutters

#### AbrasiMatic 300

00-10096 Protective Film for Touchscreen

\*See page 8 for vise with 12mm T-Nuts

\*See page 9 for compatible recirculating tanks

#### Delta Orbital and Chop Cutters

10-2227 T-Slot Bed, X & Y-axis - Medium Only

10-2228 Base Cabinet, 1 door- Medium Only

10-2327 T-Slot Bed, X & Y-axis - Large Only



# 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)

### MetKlamp VII



**Part Numbers:** Left: 10-2245  
 Right: 10-2246  
**Clamping Plate:** 2.3" x 3"  
 [59 x 76mm]  
**T-Nuts:** 14mm\*  
 \*only for use on Delta cutters  
 with 14mm T-slot bed

## 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



## Specialty Vises

### Chain Clamping Kit



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

### Universal Clamping Kit



**Application:** For clamping very intricate samples  
**T-Nuts:** 12mm  
**Part Number:** 10-3570

### PetroCut Vise Table & Rock Clamp Kit



**Application:** Converts the AbrasiMet 250 for petrographic cutting  
**Part Number:** 10-10106-000  
**Description:** PetroCut Vise Table & Rock Clamp Kit

**Part Number:** 10-10106-001  
**Description:** Rock Clamp Kit

### Fastener Vise



**Application:** For longitudinal sectioning of fasteners. Must be held by another vise.  
**Max Opening:** 1.6" [40.6mm]  
**Part Number:** 95-C1702



See Visiting Guide for More Information



## Recirculating Systems



**Recirculating System 7 gal [27L]**

For AbrasiMatic™ 250  
20.25in [515mm]W x 16.5in [420mm]D  
x 16.75in [426mm]H

10-2165-260 [200-240VAC, 60Hz]  
10-2165-460 [440-480VAC, 60Hz]  
10-2165-250 [200-240VAC, 50Hz]  
10-2165-400 [380-400VAC, 50Hz]



**Recirculating System 22 gal [90L]**

For AbrasiMatic 300 and Delta Orbital &  
Chop cutters

26.5in [674mm]W x 18.25in [464mm]D  
x 26.5in [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]

### Recirculating System

**Part Numbers** **Description**  
560023 60L with filter for  
AbrasiMet 250  
24in [610mm]W x  
16in [407mm]D x 22in  
[559mm]H (18.5in  
[470mm]H w/o wheels)

10-2431-400 160L with sloped filter  
for AbrasiMatic 300  
and Delta  
30in [762mm]W x  
25.5in [648mm]D x  
24in [610mm]H



**Base Cabinet**

For Preparation Equipment  
36 W x 30 D x 36in H  
[910 W x 760 D x 910mm H]  
80-10001



**Cool 3 Fluid**

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

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



## Diamond and CBN Blades for Abrasive Cutters

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

Recommended Use	Blade Type	8in [200mm]	10in [250mm]	12in [300mm]	14in [350mm]	16in [400mm]
General Use	Diamond	114608E 0.047in [1.2mm]	114610E 0.051in [1.3mm]			
Hard Materials	Diamond	114808E 0.047in [1.2mm]	114810E 0.047in [1.2mm]	103056 0.055in [1.4mm]	114814E 0.059in [1.5mm]	104056 0.079in [2mm]
Ceramic and Petrographic samples	Diamond	114709E* 0.047in [1.2mm]	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]	

\* 230mm Ø



# 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 = \***

Recommended Use	9in [230mm] Chop/Linear	10in [254mm] Chop/Linear	12in [305mm] Chop/Linear	12in [305mm] Orbital
Superalloys, General Steel, Non-Ferrous	95B2112* 0.067in [1.7mm]	12-4205-010• 0.055in [1.4mm]	12-4405-010• 0.055in [1.4mm]	12-4405-010• 0.055in [1.4mm]
		95B2212* 0.08in [2mm]	95B2312* 0.08in [2mm]	
Ferrous materials >HRC60	10-4110-010• 0.07in [1.8mm]	10-4210-010• 0.07in [1.8mm]	12-4110-010• 0.105in [2.7mm]	12-4410-010• 0.105in [2.7mm]
	102309P* 0.06in [1.5mm]	102509P* 0.06in [1.5mm]	103009P* 0.079in [2mm]	
Ferrous materials HRC50-60	10-4112-010• 0.07in [1.8mm]	10-4210-010• 0.07in [1.8mm]	10-4412-010• 0.105in [2.7mm]	12-4410-010• 0.105in [2.7mm]
	102310P* 0.06in [1.5mm]	95B2202* 0.08in [2mm]	95B2302* 0.08in [2mm]	
Ferrous materials HRC35-50	10-4116-010• 0.07in [1.8mm]	10-4216-010• 0.07in [1.8mm]	12-4116-010• 0.105in [2.7mm]	12-4416-010• 0.105in [2.7mm]
	95B2103* 0.067in [1.7mm]	102510P* 0.06in [1.5mm]	103010P* 0.079in [2mm]	
Ferrous materials HRC15-35	10-4120-010• 0.07in [1.8mm]	10-4220-010• 0.063in [1.6mm]	12-4120-010• 0.105in [2.7mm]	12-4420-010• 0.105in [2.7mm]
		102511P* 0.06in [1.5mm]	103011P* 0.079in [2mm]	
High Speed Steel, Stainless Steel, Carburized Steel	102308P* 0.06in [1.5mm]	102508P* 0.06in [1.5mm]	103008P* 0.079in [2mm]	
Delicate Cutting	10-4127-010• 0.032in [0.8mm]	10-4227-010• 0.032in [0.8mm]		
Titanium Alloys, Zirconium Alloys, Ductile Materials	10-4145-010• 0.063in [1.6mm]	10-4245-010• 0.063in [1.6mm]	12-4145-010• 0.055in [1.4mm]	
	102307P* 0.06in [1.5mm]	102507P* 0.06in [1.5mm]	103007P* 0.079in [2mm]	
Non-Ferrous Materials (Aluminum, Copper, Brass), Very Soft Ferrous Materials	10-4150-010• 0.063in [1.6mm]	10-4250-010• 0.043in [1.1mm]	103012P* 0.079in [2mm]	
	95B2104* 0.067in [1.7mm]	102512P* 0.06in [1.5mm]		

## AcuThin™ Blades



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 = \***

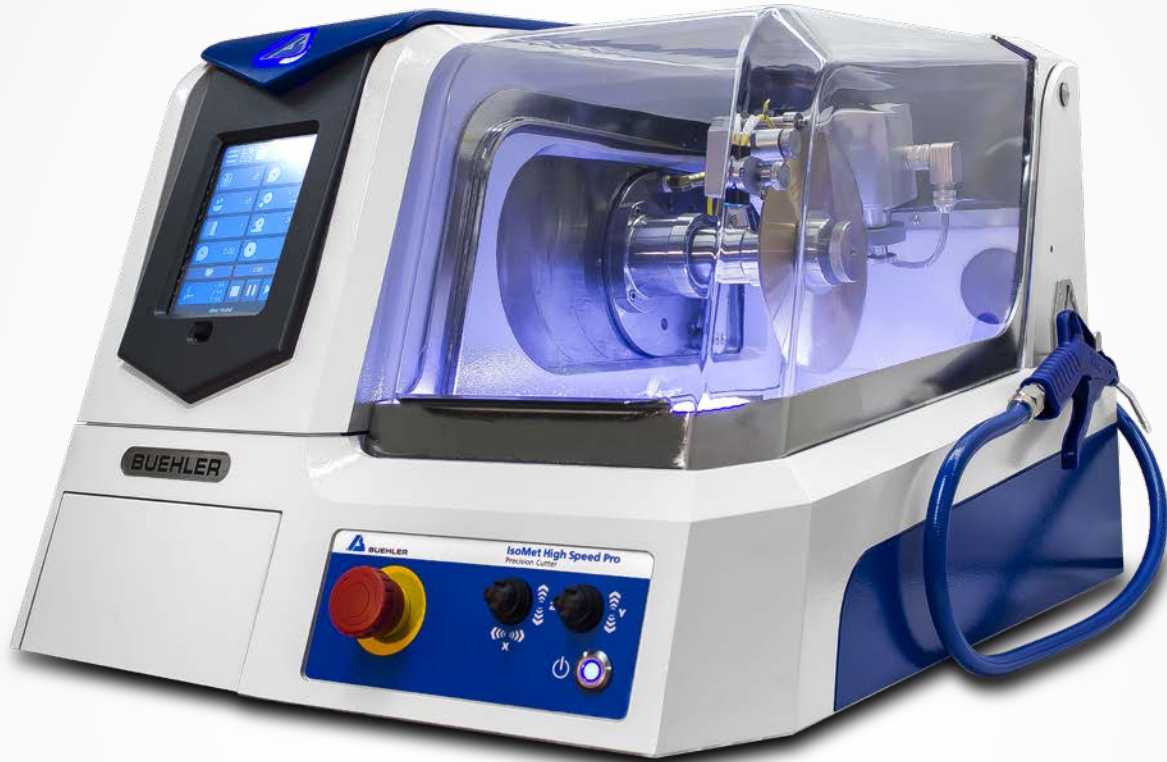
Recommended Use	14in [356mm] Chop/Linear	14in [356mm] Orbital	16in [406mm] Orbital	18in [455mm] Orbital
Superalloys, General Steel, Non-Ferrous	12-4305-010• 0.063in [1.6mm] 95B2412* 0.09in [2.3mm]	12-4305-010• 0.063in [1.6mm]	12-5605-010• 0.075in [1.9mm]	12-5805-010• 0.1in [2.5mm]
Ferrous materials >HRC60	10-4310-010• 0.075in [1.9mm] 103509P* 0.098in [2.5mm]	12-4310-010• 0.105in [2.7mm]	12-5610-010• 0.125in [3mm]	12-5810-010• 0.153in [3.8mm]
Ferrous materials HRC50-60	10-4312-010• 0.115in [2.9mm] 95B2402* 0.09in [2.3mm]	12-4310-010• 0.105in [2.7mm]	12-5612-010• 0.125in [3mm]	12-5816-010• 0.153in [3.8mm]
Ferrous materials HRC35-50	12-4305-010• 0.063in [1.6mm] 103510P* 0.098in [2.5mm]	12-4316-010• 0.105in [2.7mm]	12-5616-010• 0.125in [3mm]	12-5816-010• 0.153in [3.8mm]
Ferrous materials HRC15-35	12-4305-010• 0.063in [1.6mm] 103511P* 0.098in [2.5mm]	12-4320-010• 0.105in [2.7mm]	12-5616-010• 0.125in [3mm]	12-5816-010• 0.153in [3.8mm]
High Speed Steel, Stainless Steel, Carburized Steel	103508P* 0.098in [2.5mm]			
Delicate Cutting				
Titanium Alloys, Zirconium Alloys, Ductile Materials	10-4345-010• 0.075in [1.9mm] 103507P* 0.098in [2.5mm]		12-5645-010• 0.075in [1.9mm]	12-5845-010• 0.1in [2.5mm]
Non-Ferrous Materials (Aluminum, Copper, Brass), Very Soft Ferrous Materials	10-4350-010• 0.105in [2.7mm] 103512P* 0.098in [2.5mm]			



# Precision Cutters

## Excellent Cut Quality for Delicate Samples

Sectioning tools capable of cutting virtually any material including brittle or ductile 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. This machine enables variety in sample preparation to best fit each sample process with both manual and automatic cutting capabilities. Quick sample placement or adjustments 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.

### Additional IsoMet High Speed Pro Features

#### Automatic Dressing System

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

#### Rapid Alignment

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

#### Precise Cut Alignment

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

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

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

**Weight:** 157lbs [71kg]

# Precision with Flexibility

The IsoMet product family is capable of cutting with precision via a manual 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 is designed for cutting various types of materials with minimal deformation. Targeted for delicate parts by only using gravity fed force.



RPM ranges from 100-975 to provide cut quality for varied materials

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

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

Weight: 56lbs [25kg]

## IsoMet™ Low Speed

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



RPM ranges from 0-300 to provide cut quality for varied materials

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

Dimensions: 10.5in [267mm]W x 12in [305mm]D x 25.5in [571mm]H

Weight: 25lbs [11.3kg]

## Tips, Tricks & Techniques



For the best performance from your Precision Cutter System:

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



# Precision Cutter Accessories

## IsoMet™ Low Speed Cutter Accessories



**Goniometer**

Rotates specimen along 3 axis

11-2381



**Manual Feed Control Dressing Chuck**

Enables blade dressing without removing the sample fixture

11-1196



**Splash Guard Kit**

Prevents lubricant from splashing out of saw

11-1199

## IsoMet™ Low Speed Cutter & 1000 Accessories



**Swivel Arm Assembly**

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

11-1181



**Bar & Tube Chuck**

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

11-1184



**Wafer Chuck**

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

11-1186



**Vacuum Chuck**

Holds specimens mounted to glass slides to chuck with vacuum force

11-1188



**Small Bone Chuck**

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

11-1194



**Double Saddle Chuck**

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

11-1183



**Irregular Specimen Chuck**

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

11-1185



**Single Saddle Chuck**

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

11-1187



**Mount Chuck**

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

11-1189

## IsoMet™ 1000 Accessories



### 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

Rotates 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

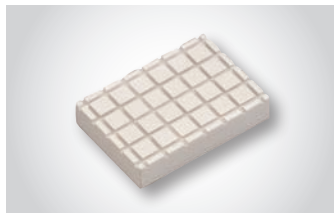
11-2483



### 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 Accessories

## IsoMet™ High Speed Cutter Accessories



**Single Saddle Chuck**

Large Single Saddle Chuck holds specimens up to 1.5in [38mm] from 2 point

11-2661



**Double Saddle Chuck**

Securely holds specimens up to 1.5in [38mm] from 2 points

11-2662



**Mount Chuck**

Stainless steel chuck holds mounted samples

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



**Fastener Chuck**

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

11-2687



**Large Bone Chuck**

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

11-2494



**T-Slot Bed**

Additional T-slot for positioning vises

11-2707



**Sliding Vise**

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

11-2703



**Rapid Rail Post**

Use with Rapid Rail

11-2660



**Small Speed Vise**

Clamps specimens up to 58mm in height

460022



**Irregular Specimen Chuck**

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

11-1185



**Recirculating System 7gal [27L]**

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

11-2640

## IsoMet™ Precision Cutter Flanges



**Aluminum Flange Set**

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



**Stainless Steel Flange Set**

11-2688\* 3in [76mm]  
11-2689\* 4in [102mm]

\*Recommended for the IsoMet High Speed





# Precision Cutter Consumables



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

[Blade Thickness is listed under Part Number]

Use with Saws	3in [76mm]		4in [102mm]		5in [127mm]		6in [152mm]		7in [178mm]		8in [203mm]		Dressing Stick*
	All	All	All	All	All	1000 IsoMet High Speed	1000 IsoMet High Speed	1000 IsoMet High Speed	1000 IsoMet High Speed	1000 IsoMet High Speed	1000 IsoMet High Speed Pro only		
<b>IsoMet 30HC</b> - Polymers Rubber, Soft Gummy Materials					11-4239 0.030in [0.76mm]				11-4241 0.03in [0.76mm]		11-4242 0.035in [0.9mm],		Blade should not be dressed
<b>IsoMet 20HC</b> - Aggressive Sectioning of Metals					11-4215 0.020in [0.5mm]				11-4237 0.025in [0.6mm]		11-4238 0.035in [0.9mm]		11-1190 11-2490
<b>IsoMet 15HC</b> - Metal Matrix Composite, PCBs, Bone, Ti, TSC	11-4243 0.006in [0.15mm]	11-4244 0.012in [0.3mm]	11-4245 0.015in [0.4mm]	11-4246 0.02in [0.5mm]	11-4247 0.025in [0.6mm]	11-4248 0.035in [0.9mm]	11-4249 0.035in [0.9mm]	11-1190 11-2490					
<b>IsoMet 20LC</b> - Hard tough Materials, Structural Ceramics			11-4225 0.02in [0.5mm]			11-4227 0.025in [0.6mm]	11-4228 0.035in [0.9mm]	11-1190 11-2490					
<b>IsoMet 15LC</b> - Hard Brittle Materials, Glass, Al <sub>2</sub> O <sub>3</sub> , ZrO <sub>2</sub> , 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]	11-4277 0.025in [0.6mm]	11-4279 0.045in [1.1mm]	11-1190 11-2490						
<b>IsoMet 10LC</b> - Medium to Soft Ceramics, Glass Fiber Reinforced Composites	11-4283 0.006in [0.15mm]		11-4285 0.015in [0.4mm]		11-4287 0.02in [0.5mm]	11-4288 0.045in [1.1mm]	11-1290						
<b>IsoMet 5LC</b> - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF <sub>2</sub> , MgF <sub>2</sub> , Carbon Composites	11-4293 0.006in [0.15mm]		11-4295 0.015in [0.4mm]				11-1290						
<b>IsoCut™ CBN LC</b> - Fe, Co, Ni based alloys and superalloys	11-4263 0.006in [0.15mm]	11-4264 0.012in [0.3mm]	11-4265 0.015in [0.4mm]	11-4266 0.02in [0.5mm]	11-4267 0.025in [0.6mm]	11-4268 0.035in [0.9mm]	11-1190 11-2490						
<b>IsoCut CBN HC</b> - Fe, Co, Ni based alloys and superalloys		11-5264 0.012in [0.3mm]	11-5265 0.015in [0.4mm]	11-5266 0.02in [0.5mm]	11-5267 0.025in [0.6mm]	11-5268 0.035in [0.9mm]	11-1190 11-2490						
Cup Grinder for Ceramic & Geological Materials (IsoMet 5000 only)							11-2740						

\* All Blades 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
Use with Saws	IsoMet High Speed	IsoMet High Speed	IsoMet High Speed	IsoMet High Speed Pro Only
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]		
Soft materials			101520 0.50mm	102020 0.50mm
Tough materials and general use			1015998E 1mm	1020998E 1.5mm



**IsoCut™ Fluid**

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

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



**Cool 3 Fluid**

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

10-6001 33.8oz [1L]  
10-6004 1.05gal [4L]  
10-6010 2.6gal [10L]



**Glossy**

Clear paste for keeping cutter windows clear

109003 2oz [60mL]



**ReciClean™**

Cleaner for recirculation systems

109004 1.25gal [4.75L]



**AddiCool™**

Additive to prevent galvanic corrosion when cutting Cu and Cu-alloys

10-9006 1qt [1L]



**Dressing Wheel**

For IsoMet High Speed only

11-2655 20 HC, 15HC, 20LC, 15LC, CBN HC, and CBN LC blades  
11-2656 10 LC and 5LC blades



**Dressing Sticks**

11-1190 3 x 0.5 x 0.5in [76 x 13 x 13mm] for 20HC, 15HC, 20LC, 15LC, CBN LC and CBN HC precision blades  
11-2490 3 x 1 x 1in [76 x 25 x 25mm] for 20HC, 15HC, 20LC, 15LC, CBN LC and CBN HC precision blades  
11-1290 3 x 0.5 x 0.5in [76 x 13 x 13mm] for 10LC and 5LC precision blades

# Petrography

## 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 edges by eliminating the need to remove the glass slide between steps

38-1450-160	115VAC, 60Hz
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38-1450-250	220VAC, 50Hz
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**Dimensions:** 23.5in [597mm] x 19in [483mm] x 16in [406mm]

**Weight:** 94lbs [43kg]

## 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.

### Part Number

38-1490

## PetroVue™ Thin Section Viewer



Polarized light allows monitoring of thickness & uniformity of the specimen

Part Number	Voltage/Frequency
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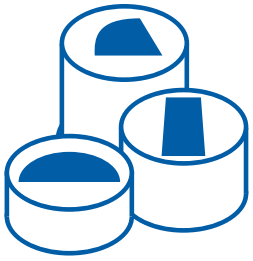
30-8050-115	115VAC, 60Hz
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30-8050-220	220VAC, 50/60Hz
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## PetroThin Consumables



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



SimpliMet™ 4000



Epoxy Systems

# 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.



Acrylic Systems



Compression Mounting Compounds



# 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 applications with porous samples.

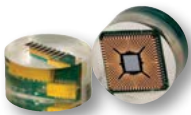
### EpoThin™ 2



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

- Combines low viscosity and low cure temperature
- Provides strong adherence and good pore penetration.
- Can be used with larger mounting cups

### 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

## 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

## Ordering Information

Material	Small Resin & Hardener		Large Resin & Hardener	
	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™



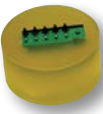
SamplKwick offers quick cure times and excellent wetting characteristics making it ideal for electronics and PWB applications.

### VariKleer™



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

### VariDur™ 10



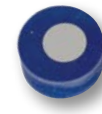
VariDur 10 is a general purpose acrylic system offering a semi-transparent mount with a reduced odor while curing.

### 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

## Ordering Information

Material	Powder		Liquid†		Kit†	
	Part Number	Size	Part Number	Size	Part Number	Size
SamplKwick™	20-3562	1 lb [0.45kg]	20-3564	12oz [0.36L]	20-3560	Powder 1 lb [0.45kg] Liquid 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]	20-3590	Powder 2.2 lbs [1kg] Liquid 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]	11-1037	Powder 2.2 lbs [1kg] Liquid 500mL
	11-1031	22 lbs [10kg]	11-1033	1.3gal [5L]		
VariDur 200	11-1030	2.2 lbs [1kg]	11-1029	16.9oz [500mL]	11-1039	Powder 2.2 lbs [1kg] Liquid 33.8oz [1L]
	11-1034	22 lbs [10kg]	11-1033	1.3gal [5L]		
VariDur 3003 3-part system	20-3531	3.3 lbs [1.5kg]	20-3535	33.8oz [2.5L] Liquid 1	20-3530	Powder 1.7 lbs [750g] Liquid 1 8.4oz [250mL] Liquid 2 16.9oz [500mL]
	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

Visit [www.buehler.com](http://www.buehler.com) for ordering information.



# Vacuum Systems, Consumables & Accessories

## Cast N' Vac 1000

This vacuum system offers excellent pore impregnation in a compact format. As a result, edge retention is enhanced and friable samples are supported during grinding and polishing.



### High efficiency

- Large vacuum chamber allows for 11, 1.5in molds to be processed simultaneously.
- The rugged vacuum pump supplies ample vacuum pull down to quickly evacuate trapped air from any porous specimen while the patented, high strength plastic chamber maintains vacuum throughout the impregnation period.

### Optimized pore impregnation

- The unique dispensing mechanism with a built in rotating turn table allows pouring epoxy while under vacuum.

Part Number	Voltage/Frequency
20-1382-160	115VAC, 60Hz
20-1382-250	220VAC, 50Hz
20-1382-250E*	220VAC, 50Hz

*\*Available only in Europe and Asia*

### Accessories

- 20-2835 Drierite Dehydrating Agent
- 20-2845 Vacuum Table Liners (Qty 100)

## 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
- 20-8281 1.25in
- 20-8282 1.5in



**SamplKup™**

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

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



**Plastic Ring Forms**

Strengthens a castable mount 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

### 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
- 20-8182 1.25in
- 20-8183 1.5in
- 20-8184 2in
- 20-7183 40mm
- 20-7184 50mm

#### EPDM Rectangular Molds (Qty 1)

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



# Mounting Consumables & Accessories



**Pigments**

Use with castable resins for color coding or creating contrast

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



**Release Agent**

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

- 20-8186-004<sup>†</sup> 4oz [120mL]
- 20-8186-032<sup>†</sup> 32oz [950mL]



**Mold Release Spray**

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

- 20-8176-100 8.5oz [250mL] (Qty 100)



**Paper Mixing Cup**

Non Graduated Paper Mixing cup for mixing castable mounting systems

- 20-8177-100 5oz [148mL] (Qty 100)



**Stirring Sticks**

For stirring castable mounting systems

- 20-8175 (Qty 1000)



**MetKleer™ Adhesive Bases**

For use with ring forms and castable systems

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



**Conductive Filler**

Nickel-based filler makes castable mounting systems conductive

- 20-8500 2 lb [0.9kg]



**Flat Edge Filler**

Enhances edge retention in castable mounting systems.

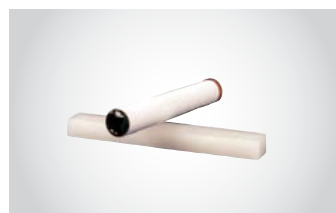
- 20-8196 1 lb [0.45kg]



**Thermoplastic Cement**

For adhering samples to glass slides or other specialty holders

- 40-8100 (Qty 12)



**Crystalbond Mounting Wax**

For adhering samples to glass slides or other specialty holders

- 40-8150 Flows at 165°F [74°C]
- 20-8145 Flows at 120°F [49°C]

\* Compatible with specimens up to 0.200in [5mm] thick

† 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 Mounting Press

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.

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

**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

### 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	Part Number	Description
2011120	1in Chamfer ram and spacer	2011124	1.5in Chamfer ram and spacer
2011121	25mm Chamfer ram and spacer	2011125	40mm Chamfer ram and spacer
2011122	1.25in Chamfer ram and spacer	2011127	50mm Chamfer ram and spacer
2011123	30mm Chamfer ram and spacer		

### 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 negligible increase in cycle time.

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

Simple user interface eliminates errors and protects the quality of your sample prep. Everything you need is right on the front panel. Use your press out of the box without the wait.

### Comfortable to use

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



# 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 very hard materials. The fine particle size of EpoMet F is great for intricate structures and penetration while the granular size of EpoMet G is easier and cleaner to 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
KonductoMet™	SEM analysis when carbon is not the object of analysis	Black	~88	Good
ProbeMet™	SEM analysis when copper is not of interest. Great for Electropolishing	Copper	~94	Better

## General Purpose Compounds



PhenoCure™ Powder

A wood-flour phenolic thermoset resin that provides good edge retention and moderate shrinkage.

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™ Premold

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		

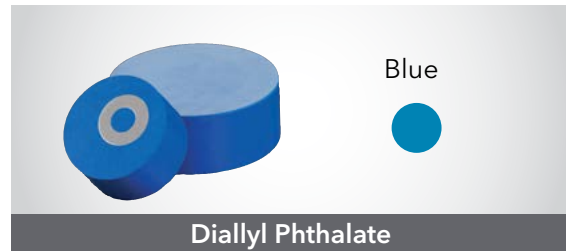


## General Purpose Compounds



A mineral filled epoxy thermoset with excellent edge retention for mounting very 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]



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

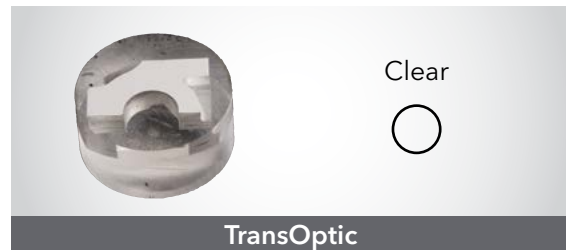
- 20-3330-080 Mineral Filled, 5 lbs [2.3kg]
- 20-3340-080 Glass Filled, 5 lbs [2.3kg]

## Specialty Compounds



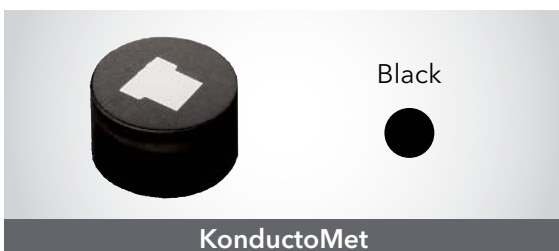
A mineral filled epoxy thermoset with fine particles and excellent edge retention for mounting very hard materials with complex geometries.

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



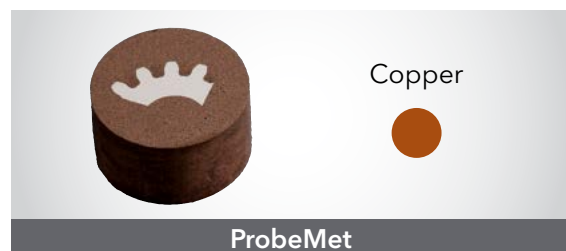
A transparent thermoplastic acrylic that allows the user to easily extract the specimen from the mount with reheating. Requires a special cooling cycle available on the SimpliMet™ 3000 or SimpliMet 4000.

- 20-3400-080 5 lbs [2.3kg]



A graphite and mineral filled phenolic thermoset recommended for SEM analysis of specimens when carbon is not the object of analysis.

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



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 couple on Aluminum specimen.

- 20-3385-064 4 lbs [1.8kg]



# Mounting Tips

## 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 too much 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 or by samples that are too large for the mold. Round off sharp corners and move the specimen farther from the edge of the mount.



Bulging or soft mounts are caused by insufficient cure times. Increase the cure time.



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

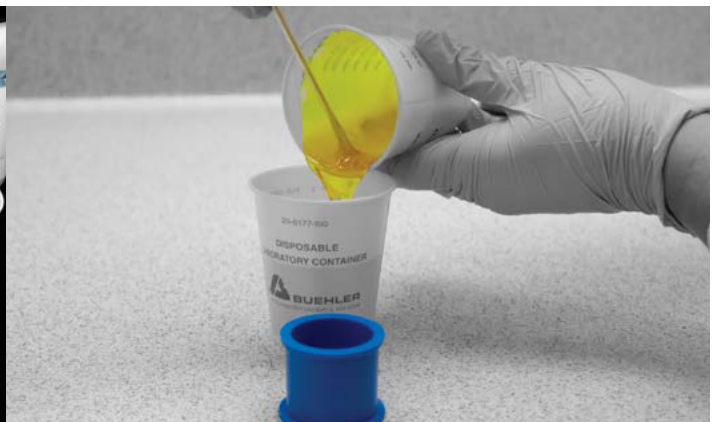
## Castable Mounting Tips

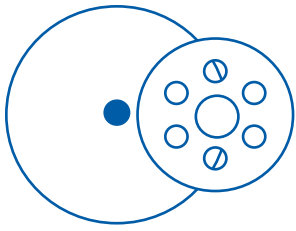
### Epoxy Tips

- Some epoxies can be cured more quickly by gently heating, typically at 30-40° C. Use caution as higher cure temperatures can cause excessive heating during curing.
- When mixing, tilt the cup containing the resin and hardener slightly and gently work the resin and hardener together using a lift and stir motion.
- To get the best results, use a vacuum system to evacuate air trapped in epoxy systems and samples. This reduces or eliminates the gap at the sample/epoxy interface, 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 ratio for each product.

### Acrylic Tips

- Acrylics cure quickly so it is recommended to pour the mixture into the mold immediately after mixing to prevent "gelling".
- Acrylic systems are not for use with Vacuum Systems or Disposable Mounting Cups.
- To improve edge retention for acrylic systems, coat the sample in the liquid hardener before pouring in mixed compound.





# GRINDING & POLISHING



EcoMet™/AutoMet  
Grinder Polisher



MetaDi™ Diamond  
Pastes & Suspensions

# 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 needs.

CarbiMet Silicon Carbide  
Grinding Papers



Premium  
Polishing Cloths





# EcoMet™/AutoMet™ 250/300 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.

## EcoMet Grinder-Polisher with AutoMet Power Head

Intuitive membrane controls are everyday easy



### EcoMet 300

Part Number	Base	Power Head
49-7255	EcoMet 300	AutoMet 250
49-7260	EcoMet 300	AutoMet 300

Dimensions: 22.5in [572mm]W x 28.6in [726mm]D x 20in [508mm]H

### EcoMet 250

Part Number	Base	Power Head
49-7250	EcoMet 250	AutoMet 250

Dimensions: 19.5in [495mm]W x 24.4in [620mm]D x 20in [508mm]H

- 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.
- EcoMet 300 12" platen size provides a larger working area for faster grinding or to accommodate large samples.
- EcoMet 250 8" and 10" platen size choice optimizes the cost of paper and diamond when a larger unit isn't required.

### Accessories

#### EcoMet 250 & 250 Pro

- 40-4061 8in [203mm] Aluminum Platen
- 40-0500 10in [254mm] Aluminum Platen
- 60-9080 Disposable Bowl Liner (Qty 5)
- 4961-250 Splash Guard for AutoMet 250

#### EcoMet 300 & 300 Pro

- 40-0500 10in [254mm] Aluminum Platen
- 49-1777 12in [305mm] Aluminum Platen
- 60-9081 Disposable Bowl Liners (Qty 5)

### AutoMet 250 and AutoMet 300 Power Heads

AutoMet 250 - Accommodates single or central force samples up to 40mm.

AutoMet 300 - Accommodates single and central force samples up to 50mm. Higher horsepower motor provides faster speeds and higher force.



# EcoMet Pro Grinder and Polishers with AutoMet Power Heads.

Intelligent programming makes advanced functionality easy with highly reproducible results



- Color touchscreen controls add functionality needed for advanced methods, such as Z-axis material removal by depth and method creation/storage.
- Improve productivity and consistency by integrating with a Burst Dispenser System. (see page 36)
- Quick clean features include a retractable water hose, disposable bowl liner and integrated 360 degree bowl rinse.
- EcoMet 300 Pro 12" platen size provides a larger working area for faster grinding or to accommodate larger samples.
- EcoMet 250 Pro 8" and 10" platen size choices optimize the cost of paper and diamond when a larger unit isn't required.

## EcoMet 300 Pro

Part Number	Base	Power Head
49-7256	EcoMet 300 Pro	AutoMet 250
49-7261	EcoMet 300 Pro	AutoMet 300

Dimensions: 22.5in [572mm]W x 28.6in [726mm]D x 28.5in [724mm]H

## EcoMet 250 Pro

Part Number	Base	Power Head
49-7251	EcoMet 250 Pro	AutoMet 250

Dimensions: 19.5in [495mm]W x 24.4in [620mm]D x 27.5 [699mm]H



# EcoMet™ 30 Grinder - Polisher

## EcoMet 30 Manual Grinder Polisher

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.



### EcoMet 30 Manual

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

Dimensions: 17.8in [452mm]W x 28.9in [735mm]D x 24.5in [662mm]H

#### 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

### EcoMet 30 Twin Manual

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

Dimensions: 31.7in [805mm]W x 28.9in [735mm]D x 24.5in [662mm]H



#### 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 include one bowl liner. Remove and wash the liner for quick bowl cleaning.

- 49-1005 Qty 5

# EcoMet 30 Semi-Automatic Grinder Polisher

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.



## EcoMet 30 Semi-Automatic

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

**Dimensions:** 17.8in [452mm]W x 28.9in [735mm]D x 9.5in [242mm]H

### Routine Grinding and Polishing Made Easy

- Intuitive touchscreen interface
- No complicated menus
- Focus on everyday use features

### Easy to Clean

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

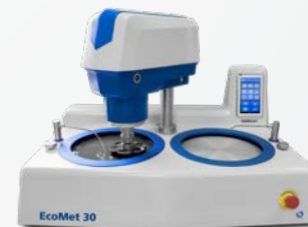
### Thoughtful Design Elements

- 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 Twin Semi-Automatic

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

**Dimensions:** 31.7in [805mm]W x 28.9in [735mm]D x 10.2in [260mm]H



### 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 include one bowl liner. Remove and wash the liner for quick bowl cleaning.

49-1005	Qty 5
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# 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.



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

#### Independent

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



#### Compatible with AutoMet 250 Pro and AutoMet 300 Pro

##### How to configure the fully integrated burst system:

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)

#### 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

- 40-10004 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 prevents settling of suspension. Use one for each module.

#### 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 prevents 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 EcoMet/AutoMet 250/300



# Planar Grinder

## PlanarMet™ 300 Planar Grinder

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 0.01mm.
- High water flow and unique manifold keeps specimens cool, minimizing subsurface damage

### Save space

- Compact format that is just as powerful as large, floor standing models
- 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

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

Dimensions: 21.25in [539mm]W x 31in [787mm]D x 29.75 [755mm]H

## Tips, Tricks & Techniques



Benefits of planar grinders:

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

## 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

### Recirculation System



Recirculation tank on wheels for use with PlanarMet™ 300.

Part Number	Description
49-7280	Alumina Grinding Stone
49-7281	SiC Grinding Stone
49-100	Replacement Dressing Stick, Metal-Matrix Diamond
49-1001	Chuck adaptor for legacy specimen holders

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

∩ Teardrop

### 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) 69-1583 1 x 2in Glass Slide Holder
60-10063	○	25mm	4	63-1022 Retaining Rings (Qty 6pk)
60-10064	○	30mm	4	63-1023 Retaining Rings (Qty 6pk)
60-10065	○	40mm	4	63-1024 Retaining Rings (Qty 3pk)



### AutoMet™ 250 Power Head

For use with 60-9005 Drive Adapter.

Part Number	Style	Size	Capacity	Additional Accessories
60-9010	○ 	1in	6	63-1022 Retaining Rings (Qty 6pk) 60-9120 1 x 3in Glass Slide Holder 60-9130 2 x 3in Glass Slide Holder
60-9011	○	1.25in	6	63-1023 Retaining Rings (Qty 6pk)
60-9012	○	1.5in	6	63-1024 Retaining Rings (Qty 3pk)
60-9020	○	25mm	6	63-1022 Retaining Rings (Qty 6pk)
60-9021	○	30mm	6	63-1023 Retaining Rings (Qty 6pk)
60-9022	○	40mm	6	63-1024 Retaining Rings (Qty 3pk)
60-9030	○	Multiple	6	60-9031 1in Distance Rings 60-9032 1.25in Distance Rings 60-9033 25mm Distance Rings 60-9034 30mm Distance Rings

### 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	
60-9040	○	For Distance Rings	6	60-2106 1in and 25mm Distance Rings 60-2103 1.25in Distance Rings 60-2104 1.5in Distance Rings 60-2102 30mm Distance Rings 60-2105 40mm Distance Rings
60-9049	○	For Target Holders	3	

# Central Force Specimen Holders



Round/Barrel



Rectangle



Slides



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
60-5289	○	2in	3
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
60-2484	○	1.25in	3
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

GRINDING & POLISHING

# Accessories for Specimen Holders

## Loading Fixtures and Plates



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

\*See table above for loading plate and specimen holder compatibility.

Part Number	Description
60-2410	Loading Fixture
60-2411	Loading Plate for 130mm and 157mm diameter
60-2412	Loading Plate for 157mm and 181mm diameter
60-2413	Loading Plate for 130mm and 181mm diameter

## 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 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
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 EcoMet™ 300 and AutoMet™ 250/300 Power Head

Part Number	Contents
60-5090	Indexing pins, carbide and diamond stops, coupon 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 300 and AutoMet 250 Power Head

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

### Accessories

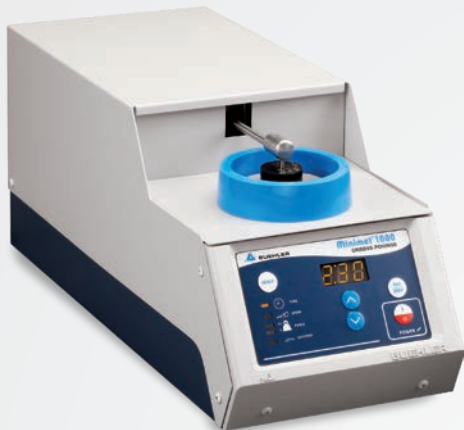
60-5186	PWB Met Short Pin Loader 0.375in [10mm] long,
60-5084	PWB Met Pins 0.375in [10mm] long (Qty 3000)



# 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

Part Number	Voltage/Frequency
69-1100	85-264VAC, 50/60Hz
Dimensions: 7in [180mm]W x 16in [400mm]D x 8in [200mm]H	

### 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	Replacement Glass Discs (Qty of 3)
69-1575	Electro-mechanical Accessories	69-1550	MiniMet Alignment Fixture with 3 Drill Bits
69-1580	MiniMet Thin Section Attachment (includes 3 bowls, glass and section holder)	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 Vibratory Polisher

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

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

Dimensions: 21.5in [546mm]W x 23in [584mm]D x 14.5in [368mm]H

### Accessories

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

## 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

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

### 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

### PoliMat™ 2



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

Part Number	Voltage/Frequency
511000	230VAC, 50/60Hz

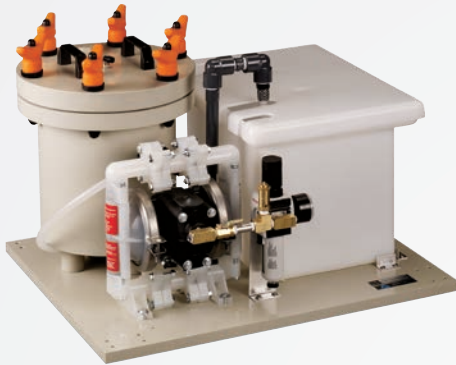
Dimensions: 19.7in [500mm]W x 11.8in [300mm]D x 9.8in [250mm]H

### Accessories

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

## EnvironMet™ System

Filtration and recirculation systems compatible with all Grinder-Polishers. The recirculating version removes down to 1µm particulates. The filter version removes down to 100µm particulates. The system requires no electrical connections and has a 6gal [23L] capacity



### Part Number

49-2500 Recirculating Filter System (1µm Filter)

49-2501 Filter System (100µm Filter)

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

### Accessories

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

## UltraMet™ Ultrasonic Cleaners

Quickly clean specimens in between preparation steps. Built in timer and continuous cleaning cycle



### UltraMet 2002 Ultrasonic Cleaner, 0.75gal [2.8L]

Part Number	Voltage/Frequency
-------------	-------------------

80-2002-115	115VAC, 60Hz
-------------	--------------

80-2002-220	220VAC, 50Hz
-------------	--------------

### UltraMet 2005 Ultrasonic Cleaner, 2.5gal [9.5L]

Part Number	Voltage/Frequency
-------------	-------------------

80-2005-115	115VAC, 60Hz
-------------	--------------

80-2005-220	220VAC, 50Hz
-------------	--------------

### Accessories

80-3012	Tank Cover for UltraMet 2002
80-3013	Insert Tray, solid, for UltraMet 2002
80-3014	Insert Tray, perforated stainless steel, for UltraMet 2002
80-5012	Tank Cover for UltraMet 2005

80-5013	Insert Tray, solid, for UltraMet 2005
80-5014	Insert Tray, perforated stainless steel, for UltraMet 2005
75-6000-032	UltraMet 2 Sonic Cleaner, 32oz [0.95L]

## Replicating Materials for Field Applications

Field metallography is necessitated by certain applications. Both Replicating Tape and Replicating Media provide users the ability to produce a portable copy of the microstructure of interest. Replicating Tape requires some skill for producing excellent results. Replicating Media is a simple two-part system that easily captures the surface detail.

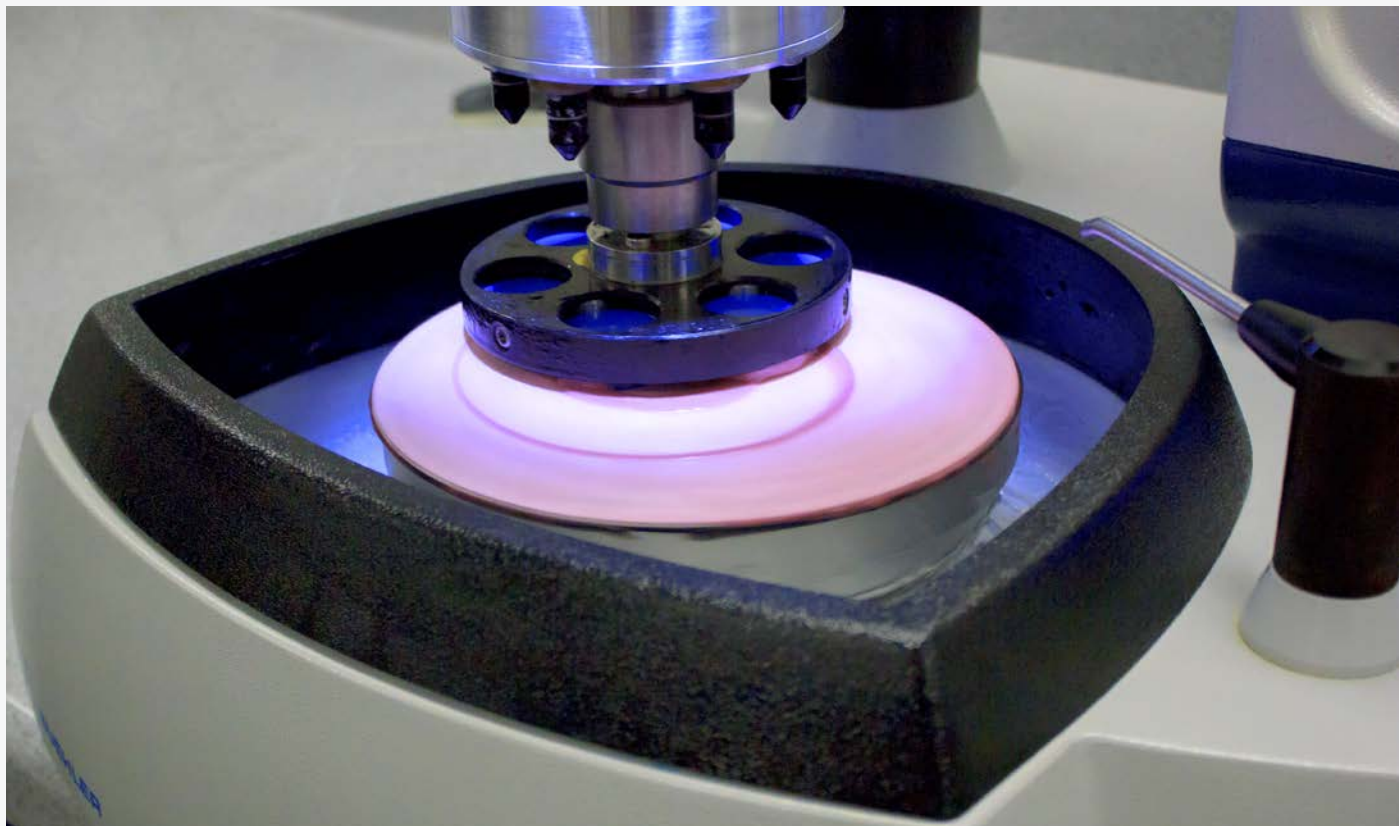
Part Number	Description
57-5005	Disc Holder, hard rubber, 1in [25mm]
57-5003	Disc Holder, hard rubber, 2.875in [73mm]
57-5000	Replicating Tape, 1 x 0.005 x 25ft [25 x 0.13 x 7620mm]
57-5001	Replicating Adhesive Bases, 1 x 3in [25 x 76mm] (Qty 30)

Part Number	Description
57-6004	Replicating Media Cartridges, 50ml each (Qty 8)
57-6005	Dispensing Gun for Replicating Media
57-6006	Nozzles for Replicating Media Dispensing Gun



# 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 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.

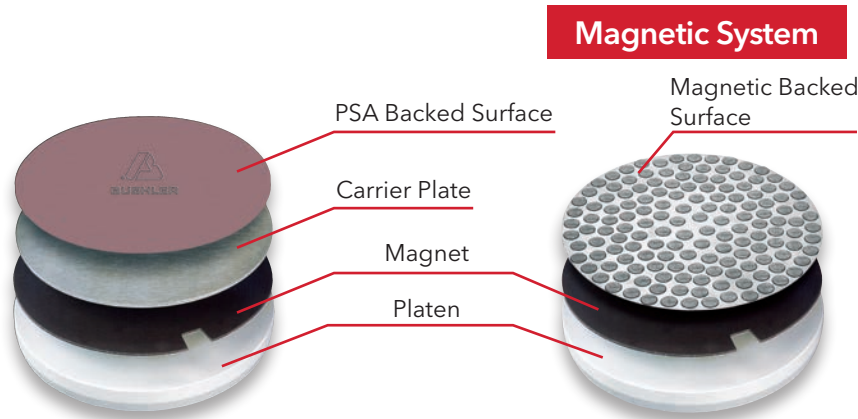


**MetaDi Diamond Suspension & Paste**

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 Apex S system provides the fastest solution for changing between grinding papers, while a magnetic system can be adapted for use with nearly all products.



- 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 for use or utilize a carrier plate for PSA backed surfaces.

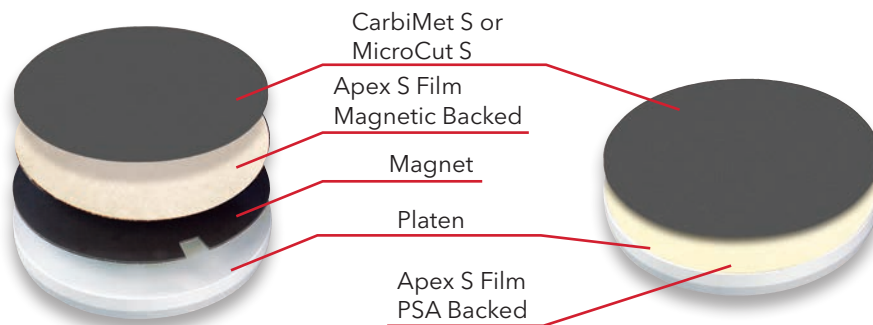
## Magnet Selection

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	16-2073	16-2573	16-3073
Apex B Carrier Plate (Qty 1)	Prevents adherence of magnetic particles	41-2739-208-001	41-2739-210-001	41-2739-212-001
MagnoMet Carrier Plate (Qty 5)	Standard metallic carrier plate	16-2072	16-2572	16-3072

## 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

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

### High Material Removal with Superior Surface Finish

CarbiMet offers quick grinding times with minimal surface damage during the grinding process. Since there is less damage to remove, the amount of subsequent processing may possibly 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 (Qty 100)

High friction backing allows for easy & fast changeovers between grinding steps



	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

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

## PSA Backed (Qty 100)

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

	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 (Qty 100)

Plain backing that requires the use of adhesive liner

	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.

### Long Life with Consistent Results

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

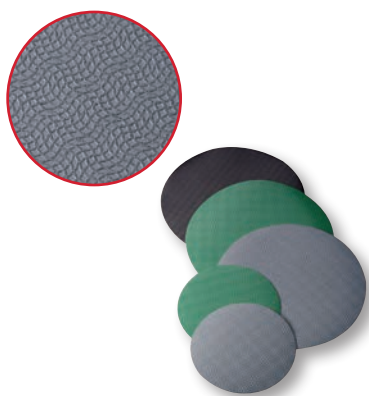
### Ideal Solution for Automation

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.

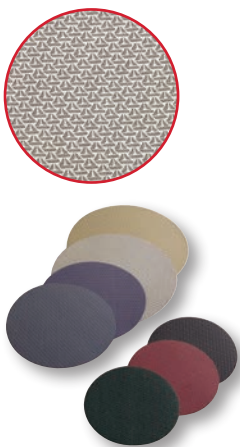
## Apex™ CGD (Coarse Grinding Discs) (Qty 1)



- Provide fast, aggressive materials removal for specimens that are not susceptible to excessive damage
- Available with PSA backing

Color	Micron	8in [203mm]	10in [254mm]	12in [305mm]
Grey	320µm	41-10006	41-10009	41-10012
Green	240µm	41-10007	41-10010	41-10013
Black	125µm	41-10008	41-10011	41-10014

## Apex™ DGD Color (Diamond Grinding Discs) (Qty 1)



- 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

### Accessories

15-6190 Dressing Stick for Diamond Grinding Discs



## Apex™ DGD (Diamond Grinding Disc) (Qty 1)



- 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

GRINDING & POLISHING

## UltraPrep™ Diamond Discs (Qty 1)



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

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

### UltraPrep Diamond Abrasive Discs (Qty 1)

Micron	8in [203mm]	10in [254mm]	12in [305mm]
250µm		14-2580	14-3080
125µm	14-2081	14-2581	14-3081
74µm	14-2082	14-2582	14-3082
40µm	14-2083	14-2583	14-3083
20µm	14-2085	14-2585	14-3085



# 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 magnet provides consistent polishing results while reducing the changeover time between cloths.

### A Cloth for Every Application

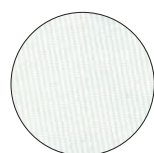
The type of cloth used depends heavily on the material being processed and the requirements for the final analysis. With a variety of fabrics, weaves and naps, there is a cloth to fit every application.

### Reliable Preparation Results

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

### Polishing Cloth Selection Guide

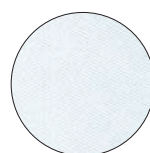
	Cloth	Backing	Quantity	8in [203mm]	10in [254mm]	12in [305mm]	Description
COARSE	UltraPad™	PSA	10	40-7118	40-7120	40-7122	Hard woven, no nap
		Magnetic	5	42-3008	42-3010	42-3012	
	UltraPol™	PSA	10	40-7448	40-7450	40-7452	Hard woven, non-aggressive silk
	TexMet™ P	PSA	5	40-7638	40-7640	40-7642	Hard non-woven,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



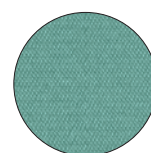
UltraPad™



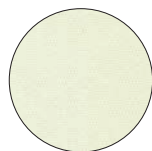
TexMet™ P



TriDent™



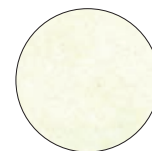
VerduTex™



UltraPol™

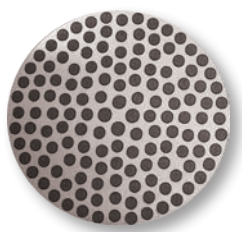


Nylon



TexMet™ C

# Apex™ 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 For materials ≥ HRC20	41-2740-308-001	41-2740-310-001	41-2740-312-001
Apex Hercules S For materials < HRC20	41-2740-408-001	41-2740-410-001	41-2740-412-001

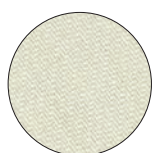
Recommended Micron Size	Abrasive Type	Applications
6µm & Up	Diamond	Ferrous materials and thermal spray coatings
6µm & Up	Diamond	Minerals, coals, ceramics, inclusion retention in steels, and refractory metals
6µm & Up	Diamond	Electronics, ceramics, carbides, petrographic, hard metals, glass, and metal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



VelTex™



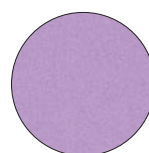
WhiteFelt™



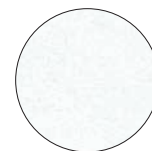
PoliCloth™



MicroCloth™



MicroFloc™



MasterTex™



ChemoMet™



# 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 sample 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

Polycrystalline suspension provides the fastest material removal with minimal subsurface deformation.



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		40-6636-128

### MetaDi Monocrystalline Suspension

Monocrystalline suspension provides good material removal for most materials.



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

### Dye-Free MetaDi Supreme Polycrystalline Suspension

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

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

### MetaDi Monocrystalline Suspension Oil Based

Ideal for processing materials that are water-sensitive.

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

### MetaDi Combo, Suspension & Extender

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

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

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

# MetaDi™ Diamond Pastes

## 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.

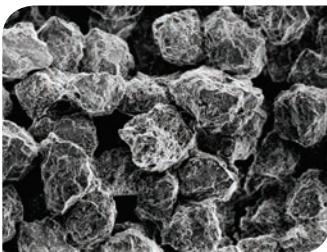
Color	Diamond Size	5g	20g
Grey	0.25µm	40-6241	40-6240
Blue	1µm	40-6244	40-6243
Green	3µm	40-6247	40-6246
Yellow	6µm	40-6250	40-6249
Deep Red	9µm	40-6253	40-6252
Brown	15µm	40-6256	40-6255

## Polishing Lubricants

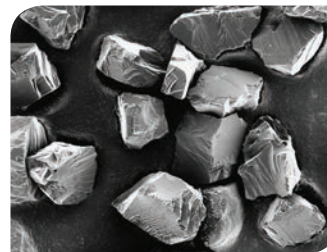
MetaDi Fluid is a water soluble lubricant for use with pastes and suspensions. AutoMet Oil is recommended for use with water sensitive materials.

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



Angular, blocky-shaped polycrystalline diamonds provide numerous cutting facets on the particle surface, resulting in less deformation.



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 alumina and silica 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, precision metals, PWB's and electronics.

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 metals, minerals, ceramics and polymers.

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 metals, minerals, ceramics and polymers.

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 magnesium, lead and their alloys.

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 magnesium, lead and their alloys.

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

40-6323-016 0.3µm 1lb [0.45kg]  
40-6321-016 1µm 1lb [0.45kg]  
40-6323-080 0.3µm 5lb [2.3kg]  
40-6321-080 1µm 5lb [2.3kg]



**MicroPolish II Alumina Suspension**

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

40-6363-006 0.3µm 6oz [0.18L]  
40-6363-128 0.3µm 1gal [3.8L]  
40-6361-006 1µm 6oz [0.18L]

### FibrMet™ Abrasive Discs (Qty 50)

FibrMet Abrasive Discs are for fine grinding applications on glass, epoxy, or polymers and produce a fine surface finish. FibrMet Discs use Aluminum Oxide and are available with PSA backing.

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

### UltrPrep™ Diamond Lapping Films (Qty 5)

UltraPrep Diamond Lapping Films are for fine grinding of hard materials such as ceramics. They provide a fine surface finish and gentle material removal.

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

### Abrasive Powders - (5lb)

Abrasive Powders are for fine grinding on cast iron, tin, or cloth-covered platens. They should be mixed with distilled water to achieve desired consistency.



Abrasive Type	Part Number	Grit Size ANSI [FEPA]	Micron
Silicon Carbide	40-6415-600-080	600 [P1200]	15µm
Silicon Carbide	40-6418-000-080	1000 [P2000]	10µm
Aluminum Oxide	40-6605-050-080	–	5µm
Aluminum Oxide	40-6603-030-080	–	3µm

## Storage Cabinets

Buehler's storage cabinets are durable with easy to clean storage of platens and surfaces.

### Standard Storage Cabinet



Part Number	Description
19-06-11	For 8in [203mm] / 10in [254mm] discs and platens (5 drawers)
19-06-12	For 8in [203mm] / 10in [254mm] discs and platens (10 drawers)
19-06-09	For 12in [305mm] discs and platens
19-06-10	Additional Shelves for 19-06-09

### Dessicator Storage Cabinet

These cabinets are specially designed for ideal, moisture free conditions of up to 500 mounted specimens. They also hold platens, polishing cloths and abrasive discs up to 12in [305mm]. *Dessicator canisters sold separately*



Part Number	Description
20-1445	Dessicator Storage Cabinet

### Accessories

20-1446	Spacer Tray, 1in [25mm]	20-8280	1in Disposable Mounting Cup
20-1447	Spacer Tray, 1.25in [32mm]	20-8281	1.25in Disposable Mounting Cup
20-1448	Spacer Tray, 1.5in [38mm]	20-8282	1.5in Disposable Mounting Cup
20-1449	Dessicant		



# IMAGING & ANALYSIS



OmniMet™ Modular  
Digital Imaging System



Stereo  
Microscopes



# 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. In general, any standard format image may be viewed directly from a calibrated microscope or be imported into OmniMet for analysis. OmniMet software is offered at different levels of flexibility, functionality, and analytical power to meet the metrology needs of every laboratory requiring image data archiving and quantitative image analysis.





# OmniMet™ Modular Digital Imaging System

## Designed for Demanding Production Lab Environments

### Flexible

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

### Powerful

Any standard format image may be viewed directly from a calibrated 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 images and measurements completed on an OmniMet imaging system on the same network.
	86-1-1010	OmniMet Capture N' Measure (CnM) enables image capture with basic measurement functions without database functions. Measuring functions included are length, parallel lines, curves, area + perimeter, radius, angle and count. Results can be burnt into the image but cannot be stored or exported to Excel®.
86-1-1003	86-1-1002	OmniMet Basic offers imaging system calibration, image capture, manual measurements, database for archiving, and MS Office report templates for presenting results. Measurements include lengths, width, area, curve length, radius, angles, text annotations, and scalebars. Optional Capture Modules may be added for specific applications.
86-1-1005	86-1-1004	OmniMet Advanced offers imaging system calibration, image capture, manual measurements, databases for archiving, MS Office report templates for presenting results, and enhanced measurement capability. Optional Capture and Advanced measurement modules may be added.
86-1-1007	86-1-1006	OmniMet Express offers imaging system calibration, image capture, manual measurements, databases for archiving, MS Office report templates for presenting results, and enhanced measurement capability. Optional Capture, Advanced measurement modules and Pre-programmed Application specific Scripts may be added.
86-1-1009	86-1-1008	OmniMet Enterprise offers imaging system calibration, image capture, manual measurements, databases for archiving, MS Office report templates for presenting results, and enhanced measurement capability. Optional Capture, Advanced measurement modules and Pre-programmed Application specific Scripts may be added. ScriptEditor enables the user to write fully customizable analysis Scripts for complete control to develop customized image analysis solutions.

\* System Package includes software pre-installed on a Windows 10, 64-bit workstation with MS Office 2013, 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) with MS Office.

# OmniMet™ Software Modules & Features

Software Description	Viewer	CnM	Basic	Advanced	Express	Enterprise
<b>Capture</b>						
Load and Save	•	•	•	•	•	•
Brightness, Auto-White Balance, Color Correction	•	•	•	•	•	•
Digital Zoom, Rotate, Calibration & Annotation	•	•	•	•	•	•
Camera Interface (USB, IEEE 1394, Capture Cards, DirectShow, Twain, etc.)		•	•	•	•	•
Motorized Stage Controller			•	•	•	•
Capture Modules (optional)			◊	◊	◊	◊
<b>Measure</b>						
Standard Modules: Length, Area, Radius, Count, Parallel Lines	•	•	•	•	•	•
Advanced Modules: 3-point Circle, Adj. Angle, Polygon				•	•	•
Advanced Measurement Modules (optional)				◊	◊	◊
Color Threshold (size, intensity), 16 Bitplanes					•	•
Automation Capable: Read & Run Scripts					•	•
ScriptEditor: Read, Run, Write, and Edit Scripts						•
Application Specific Scripts (optional)					◊	◊*
<b>Report</b>						
Report Data, Report Generator (requires Microsoft® Office)	•		•	•	•	•
Results Window with measurements log				•	•	•
<b>Organize</b>						
Database Interface	•		•	•	•	•
Database Creation & Administration			•	•	•	•
<p>• Included with package                      ◊ Optional module (purchased separately)                      * OmniMet Enterprise comes with a selection of Scripts.</p>						

## Capture and Advanced Measurement Modules (optional)

### Capture Modules

- 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

- 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.	86-3150	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.
86-3100*	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.	86-3310	Surface Roughness Surface roughness measurements in accordance with ASME B46.1-02.
86-3300*	Coating Layer Thickness Measures coating, plating or layer thickness of cross-sectioned samples in compliance with ASTM B487.	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.
86-3400*	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.	86-3525	Cleanliness Assessment Provides cleanliness assessment of particles on filter paper meeting the requirements of ISO 4406.
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.	86-3600	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.
86-3550*	Porosity Assessment Provides automated measurements of fine holes or pores in a material.	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.
86-3750*	Dendritic Spacing Delivers measurements of lengths between dendrite arms in cast aluminum alloys.	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.
86-3200*	Phase Area Percent determines phase area and percentage area of multiple phases in accordance with ASTM 562.		

\* 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:

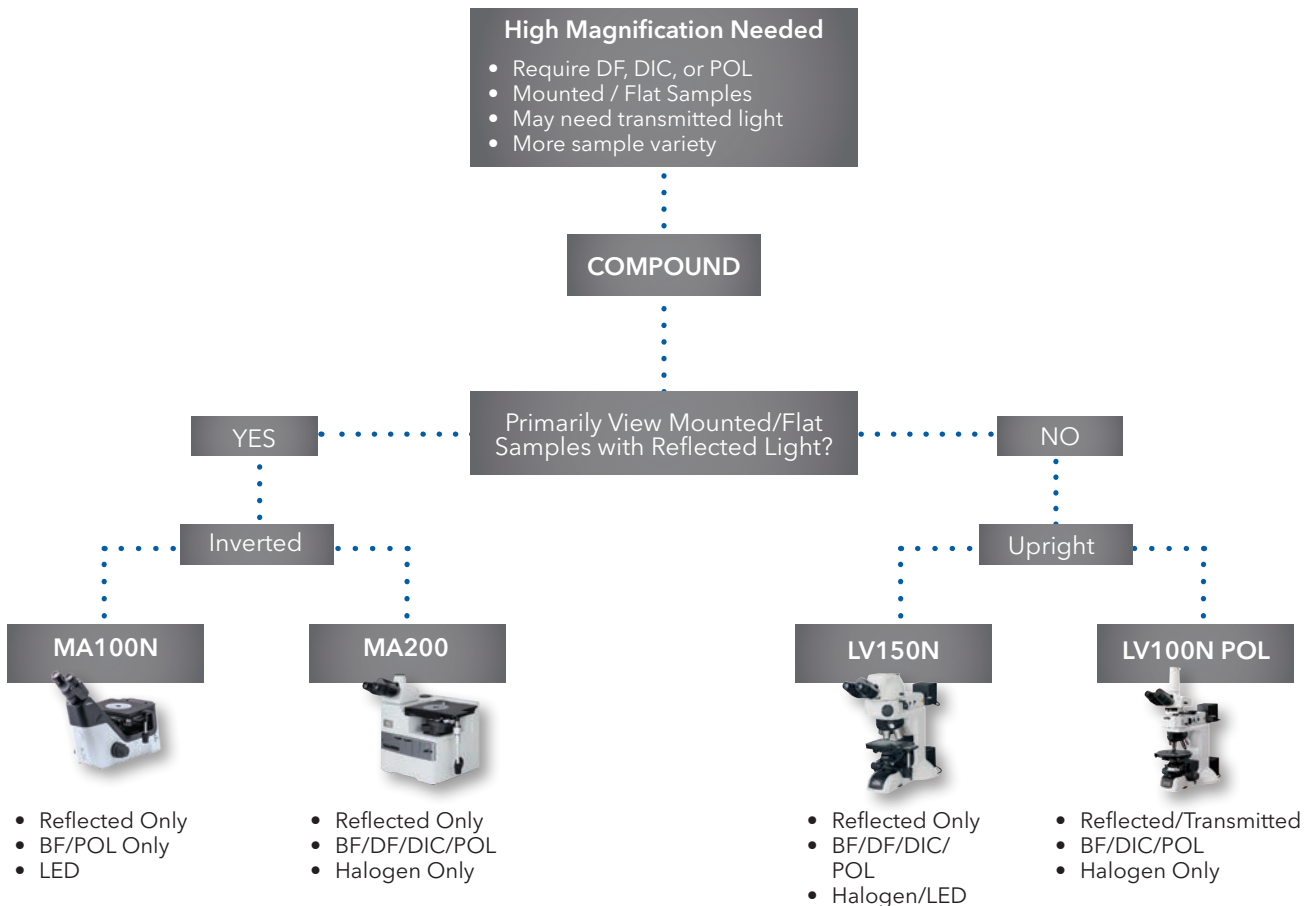
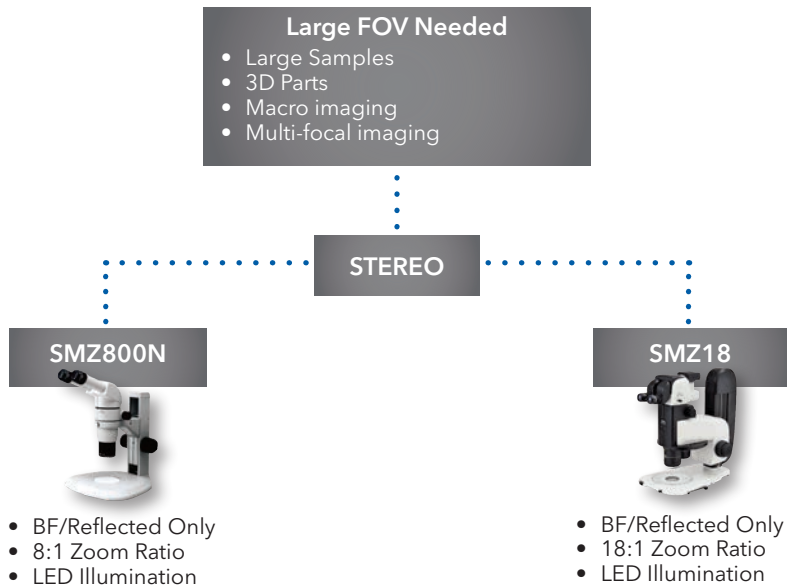
86-4202	Update Basic
86-4204	Update Advanced
86-4205	Update Viewer
86-4206	Update Capture N' Measure
86-4201	Update Express
86-4203	Update Enterprise

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



# Microscopy

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, diasopic (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.





# Stereo Microscopes

## Nikon SMZ800N Zoom Stereo Microscope

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  
 NIMNH54075 - 0.75x    NIMNH54150\* - 1.5x  
 NIMNH54100 - 1x    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  
 (Choose a 2nd objective for this option)

8741-61



**Mechanical Stage and Adapter**

3 x 2in Mechanical Stage and Adapter

8741-62



**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

# Nikon SMZ18 Zoom Stereo Microscope

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)
- 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
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



**Low Profile Stage**

Low Profile 6 x 4in Stage

8742-61



**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, 0.7x, LV-TV

8749-13



# Inverted Industrial Microscopes

## Nikon Eclipse MA100N Inverted Microscope

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

8743-61



**Stage Insert**

8743-63 Includes 1in, 1.125in, 1.5in stage inserts

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



**Camera Adapter**

Camera Adapter, C-Mount, 0.7x, ISO

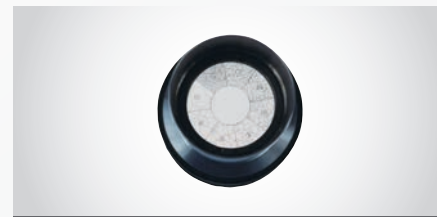
8749-14



**Camera Adapter**

Camera Adapter, C-Mount, 1x, ISO

8749-15



**Grain Size Reticle**

For eyepiece

8743-62



# Nikon Eclipse MA200 Inverted Microscope

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 Objectives



### Brightfield Objectives

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

*\*Polarizer Required*

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

NIMUE12500 - 50x  
 NIMUE12900 - 100x

### Darkfield/DIC Objectives

NIMUE42050 - 5x  
 NIMUE42100 - 10x

NIMUE42200 - 20x  
 NIMUE42500 - 50x

NIMUE42900 - 100x



# Inverted Industrial Microscopes

## Nikon Eclipse MA200 Accessories



**Polarizer/Analyzer**

Included with DIC Package

8744-61



**Grain Size Reticle Slider**

Slider for grain size analysis

8744-62



**Scale Dial Slider**

5x, 10x, 20x, 50x, 100x

8744-63



**Stage Insert**

Includes 1in, 1.125in, 1.5in stage inserts

8744-64



**Stage Insert**

Includes 25mm, 30mm, 40mm stage inserts

8744-65



**Camera Adapter**

Camera Adapter, C-Mount, 0.55x, LV-TV, for 1/2" chip size cameras

8749-11



**Camera Adapter**

Camera Adapter, C-Mount, .7x, LV-TV, for 2/3" chip size cameras

8749-12



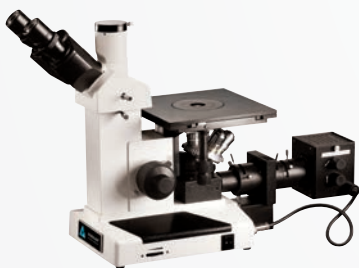
**Camera Adapter**

Camera Adapter, C-Mount, 1x, LV-TV, for 1" chip size cameras

8749-13

## ViewMet™ Inverted Microscope

Entry level, inverted microscope for general purpose applications.



### Part Number

### Configuration

0760-0100

Includes main body, trinocular head, c-mount, mechanical stage with 15 x 15mm XY travel, 6V/30W illumination, a pair of 10x eyepieces and 5x, 10x, 20x and 50x Plan Achromat objectives, diffusion, yellow, green and blue filters, power cord, instruction manual and dust cover.

### Brightfield Objectives

0750-0005 5x Plan Achromat Objectives Lens, NA 0.12, W.D. 18.3mm

0750-0010 10x Plan Achromat Objective Lens, NA 0.25, W.D. 8.9mm

0750-0020 20x Plan Achromat Objective Lens, NA 0.40, W.D. 8.7mm

0750-0050 50x Plan Achromat Objective Lens, NA 0.70, W.D. 2.02mm

0750-0080 80x Plan Achromat Objective Lens, NA 0.80, W.D. 0.96mm

0750-0100 100x Plan Achromat Objective Lens, NA 1.25, oil, W.D. 0.36mm



# Upright Industrial Microscopes

## Nikon Eclipse LV150N Upright Microscope

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

### Nikon LV150N Optional Objectives



#### Brightfield Objectives

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

\*Polarizer Required

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

NIMUE12500 - 50x  
 NIMUE12900 - 100x

#### Darkfield/DIC Objectives

NIMUE42050 - 5x  
 NIMUE42100 - 10x

NIMUE42200 - 20x  
 NIMUE42500 - 50x

NIMUE42900 - 100x

## Nikon LV150N Accessories



Polarizer/Analyzer

For LV150N Halogen  
 8745-61



Polarizer/Analyzer

For LV150NL LED  
 8745-62



Column Riser

Adds 35mm of working distance, max 2  
 8745-63



Camera Adapter

Camera Adapter, C-Mount, 0.55x, LV-TV  
 8749-11



Camera Adapter

Camera Adapter, C-Mount, .7x, LV-TV  
 8749-12



Camera Adapter

Camera Adapter, C-Mount, 1x, LV-TV  
 8749-13



# Upright Industrial Microscopes

## Nikon Eclipse LV100N POL Upright Microscope

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.



- Upright microscope suitable for reflected and transmitted light application ideal for petrography applications.
- Available with Halogen Illuminations (12V/50W) for BF, DIC, & POL.
- Configured with precision circular stage and attachable XY stage.
- Accomplished advanced polarizing microscopy under both reflected and transmitted illumination.
- Epi Plan Fluor POL objectives provide superior chromatic aberration performance, high numerical apertures, and long working distance at all magnifications.

Part Number	Configuration
8746-01	Nikon LV100N POL Upright Microscope in BF/DIC/POL - with Episcopic (reflected) and diascopic (transmitted) halogen illumination (8746-61 Epi/Dia Dual Kit required for simultaneous use) with 2 lamphouses, 50W bulbs, trinocular body with camera port (requires camera adapter), 10x eyepieces, rotating circular precision stage with attachable XY stage (35 x 25mm travel), 5-position nosepiece with 5x, 10x, 20x, and 50x Epi Plan Fluor POL objectives, flip-out condenser, NB11 and ND4 filters, ¼ wave plate, and dust cover.

## Nikon LV100N POL Objectives and Accessories



**Nikon LV100N POL Objectives**

- NIMUE13050 - 5x
- NIMUE13100 - 10x
- NIMUE13200 - 20x
- NIMUE13500 - 50x
- NIMUE13900 - 100x



**Camera Adapter**

Camera Adapter, C-Mount, 0.55x, LV-TV, for 1/2" chip size cameras

8749-11



**Camera Adapter**

Camera Adapter, C-Mount, 0.7x, LV-TV, for 2/3" chip size cameras

8749-12



**Camera Adapter**

Camera Adapter, C-Mount, 1x, LV-TV, for 1" chip size cameras

8749-13



# Microscopy Accessories

## Digital Cameras



LE Edition



SE Edition

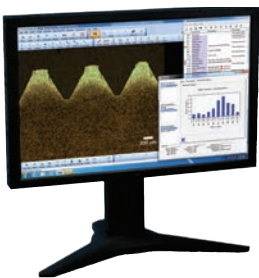
Part Number	Model	Mega pixels	Chip Size	Resolution (w x h)	Frame Rate (fps)	Image Sensor	Interface
86-0274	uEye 1460SE-C	3.1	0.5in	2048 x 1536	11.2	CMOS	USB2.0
86-0270	uEye 1460LE-C	3.1	0.5in	2048 x 1536	11.2	CMOS	USB2.0
86-10004	uEye 1480SE-C	5	0.5in	2560 x 1920	6.3	CMOS	USB2.0
86-0278	uEye 2240SE-C	1.3	0.5in	1280 x 1024	15	CCD	USB2.0
86-0358	uEye 3580LE	5	0.5in	2560 x 1920	15.2	CMOS	USB3.0
86-0336	uEye 3360CP	2	0.67in	2048 x 1088	15.2	CMOS	USB3.0
86-0337	uEye 3370CP	4	1in	2048 x 2048	80	CMOS	USB3.0

## Stage Micrometer



Part Number	Description
8749-21	Stage Micrometer, mm-Inch NIST Certified
8749-22	Stage Micrometer, Metal, 1mm/0.01mm
8749-25	Stage Micrometer, Metal, 50mm/0.1mm w/ UKAS certificate

## Monitors

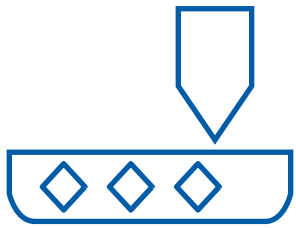


Part Number	Description
85-0124	24in Monitor, LCD with 1920 x 1200 display capability
85-0127	27in Monitor, LCD with 2650 x 1600 display capability

## Leveling Accessories for all Upright Microscopes



Part Number	Description
8749-31	Leveling Press
8749-33	Protective paper (Josef-Paper)
8749-34	Metal Slides, Set of 5, 75mm x 25 mm
8749-35	Metal Slides, Set of 2, 1in x 3in



# HARDNESS TESTING



DiaMet  
Hardness Software



Vickers-Knoop  
Hardness Testers



Universal  
Hardness Testers

# 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.

Providing service and support that is dedicated to ensuring the highest quality calibration, verification, and service throughout the world and our applications support combines years of experience with unparalleled expertise. With dedicated sales, manufacturing, and research & development facilities located around the world, including the Americas, Europe, and Asia, we are always close to you.

Rockwell  
Hardness Testers



Brinell  
Hardness Tester



Hardness  
Test Blocks





# 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 make 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 lets you Scan, Stitch and edge detect your sample to find exact location where you can drop in pre-configured testing templates (“specimen”) to speed up your operation.

## Expert Control & Evaluation Software

DiaMet is optimized for evaluating Vickers, Rockwell, Brinell and Knoop measurements according to ISO 6506, ISO 6507, ISO 6508, ISO 4545 and ASTM E384, ASTM E92, ASTM E10 and ASTM E18. A standard DiaMet feature is an automatic symmetry calculation for Vickers, Knoop and Brinell indents. This extra validation, with clear visual indication, helps to ensure the results conform to standards.

### Flexible UI

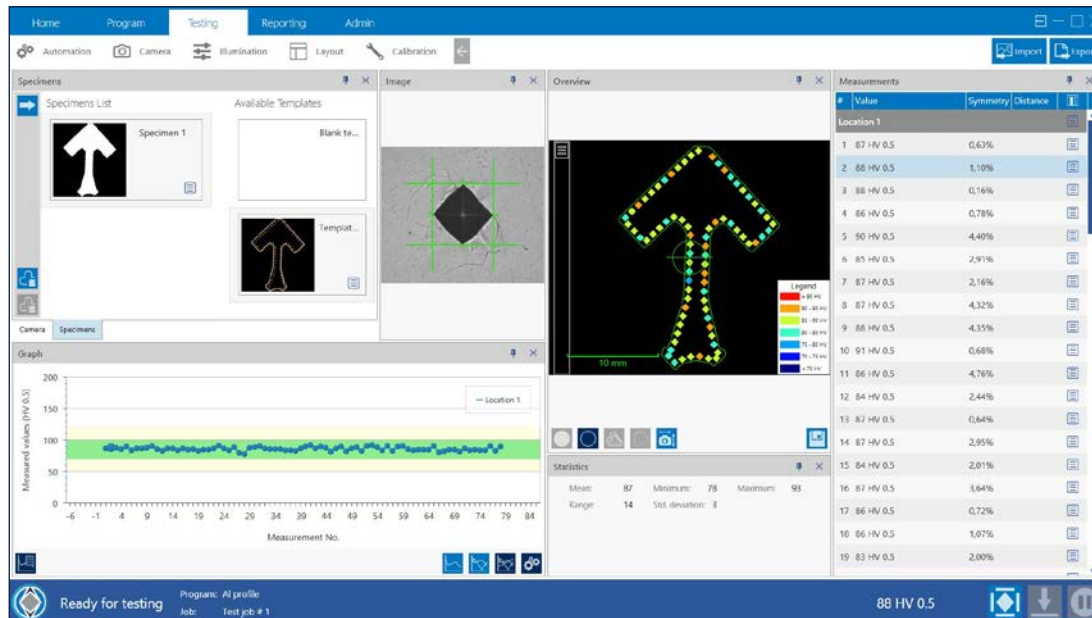
Use the functions you need - fully configurable

### Measurement

State-of-the-art algorithms ensure auto-measure, illumination and focus

### Overview

Use the overview window for specimen navigation and pattern placement



### Specimens

Scan your samples and save them as templates - automatic pattern placement

### Status Bar

Total test time and indent counter - plan your test cycles

### Data Management

Review and manage your test data with easy access



# DiaMet - Automation Packages

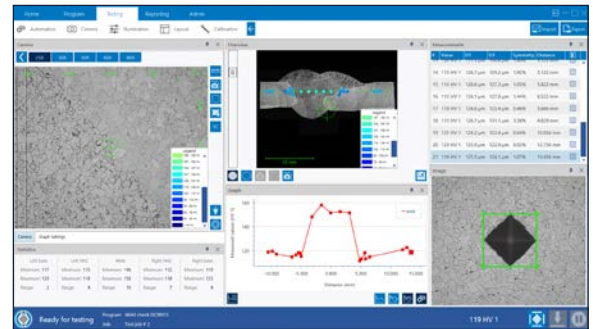
Automated Microindentation system available with different levels of automation. All control of the hardness instrument can be handled through comprehensive software. Automatically test and measure indentations, as well as set up and run automatic testing sequences and generate reports through export 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.

	Manual	DiaMet Basic	DiaMet Semi Auto	DiaMet Full Auto	DiaMet Enterprise
Analog Micrometers		●			
Digital Micrometers		○			
Auto Measure	●	●	●	●	●
Auto Illumination		●	●	●	●
Motorized XY-Stage			●	●	●
Auto Focus				●	●
Scan, map & template					●

standard delivery  
 optional

## 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.

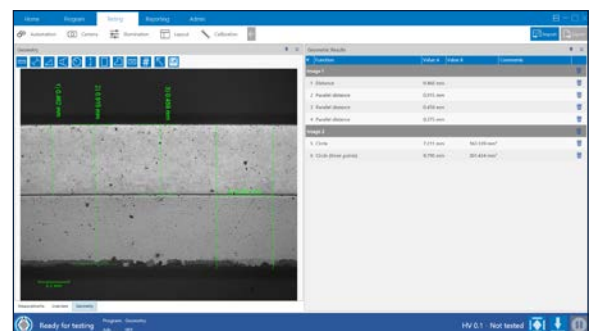


## Geometric Functions

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

## Color Mapping

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



HARDNESS TESTING



# Vickers-Knoop Hardness Testers

## Wilson® VH3100-3300 Vickers-Knoop Hardness Tester

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 10gf - 50kgf 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]

## 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

W3111



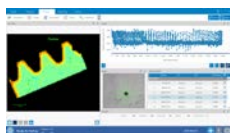
#### Wilson VH3300

- 3+3 position motorized turret
- 0,010 - 50kgf load range\*

*\*depending on configuration*

W3210

### Software Options



DiaMet Full-Automatic software package

W3100A03

DiaMet Enterprise software package

W3100A15

DiaMet Full-Automatic software package

W3100A03

DiaMet Enterprise software package

W3100A15

### Monitors



21.5" Touch screen

W3100-B03

24" Full HD monitor

W3100-B04

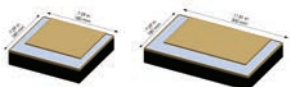
21.5" Touch screen

W3100-B03

24" Full HD monitor

W3100-B04

### Motorized Stages



Standard size

- 180 x 180mm

W3100C02

Large size

- 300 x 180mm

W3100C03

Standard size

- 180 x 180mm

W3200C03

Large size

- 300 x 180mm

W3200C02

# System Configurations *(Continued)*

## Wilson VH3100

## Wilson VH3300

### Vertical Test Capacity



W3100-D01 - height 125mm  
 W3100-D02 - height 170mm  
 W3100-D03 - height 215mm

W3200D01 - height 105mm  
 W3200D02 - height 155mm

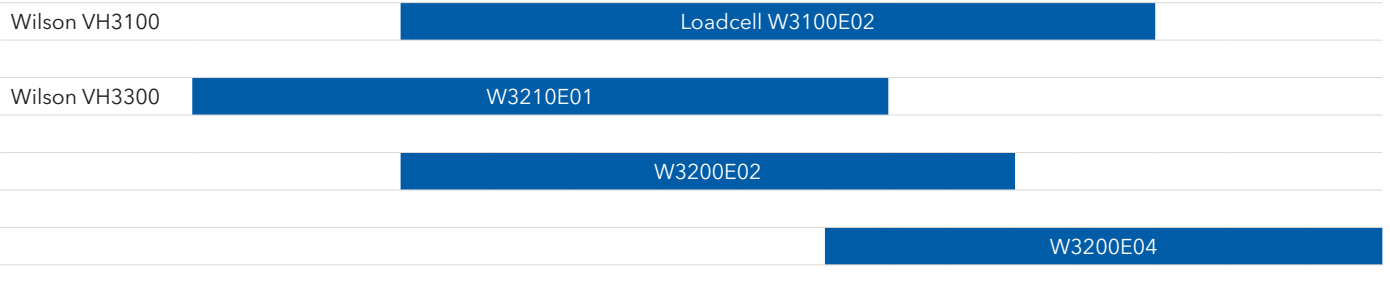
### Load Cell

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

W3100-E02 - 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 Objectives select up to two for VH3100, select two or three for VH3300

**Indenter Holder\***

Standard holder  
 W3100G01  
 SnapGrip Holder  
 W3100G02

*\*for VH3100 Only*

**Vickers Indenter**

Vickers Indenter certified to ASTM  
 9100687  
 Vickers Indenter certified to ISO  
 9100688  
 Vickers Indenter, ISO & ASTM  
 Certified  
 W9100687

**Knoop Indenter**

Knoop Indenter certified to ASTM  
 9100684  
 Knoop Indenter certified to ISO  
 9100689  
 Knoop Indenter, ISO & ASTM  
 Certified  
 W9100684

**Objectives**

W5XLWD 5x LWD FOV: 3600µm  
 W10XLWD 10x LWD FOV: 1800µm  
 W20XLWD 20x LWD FOV: 900µm  
 W40XLWD 40x LWD FOV: 450µm  
 W50XLWD 50x LWD FOV: 360µm  
 W100XLWD 100x LWD FOV: 180µm

Please select your sample holder on page 78



# Vickers-Knoop Hardness Testers

## Wilson® VH1102-1202 Vickers-Knoop Hardness Tester

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 VH1002-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 10gf up to 2kgf

VH1102 Standalone Tester  
**Part Number** - W1102D01 for Vickers  
 W1102D02 for Knoop

Description	
Hardness scales	HV or HK
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

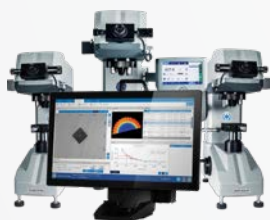
9.8in [250mm]W x 20.4in [520mm]D x 26.3in [670mm]H

**Vertical Test Capacity** - 5.1in [130mm]

with XY-stage 3.7in [95mm]

**Horizontal Test Capacity** - 5.1in [130mm]

## VH1102-1202 with DiaMet Automation Software



Testers	DiaMet Basic Manual (Analog)	DiaMet Basic Manual (Digital)	DiaMet Semi Auto	DiaMet Full Auto	DiaMet Enterprise
VH1102 Vickers	W1102D31	W1102D33	W1102D35	W1102D37	W1102D45
VH1102 Knoop	W1102D32	W1102D34	W1102D36	W1102D38	W1102D46
VH1202 Vickers & Knoop	W1202D31	W1202D33	W1202D35	W1202D37	W1202D45

### Accessories

#### Indenters for VH1102-1202-1150

W9100-687	Vickers indenter, includes ASTM & ISO certificate
W9100-684	Knoop indenter, includes ASTM & ISO certificate
9100684	Knoop Indenter, includes ASTM certificate
9100687	Vickers Indenter, includes ASTM certificate
9100688	Vickers Indenter, includes ISO certificate
9100689	Knoop Indenter, includes ISO certificate

#### Manual Stages

W9170-506	XY-stage with analog metric micrometers
W9170-507	XY-stage with digital micrometers

#### Objectives for VH1102-1202-1150

W-5X-LWD	5x Long Working Distance objective
W-10X-LWD	10x Long Working Distance objective
W-20X-LWD	20x Long Working Distance objective
W-40X-LWD	40x Long Working Distance objective
W-50X-LWD	50x Long Working Distance objective
W-100X-LWD	100x Long Working Distance objective

# Wilson® VH1150 Macro Vickers Hardness Tester

The Wilson VH1150 is the ultimate evolution of the deadweight Vickers hardness tester with a unique load range, 300gf - 50kgf, 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 comfort and accuracy of a higher segment

- 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 (10) 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

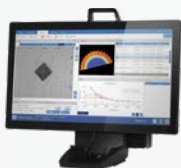
9in [230mm]W x 25in [625mm]D x 30in [760mm]H

**Vertical Test Capacity** - 8.2in [210mm]

with standard flat anvil

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

## VH1150 with DiaMet Automation Software



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

W9100-687	Vickers indenter, includes ASTM & ISO certificate
W9100-684	Knoop indenter, includes ASTM & ISO certificate
9100684	Knoop Indenter, includes ASTM certificate
9100687	Vickers Indenter, includes ASTM certificate
9100688	Vickers Indenter, includes ISO certificate
9100689	Knoop Indenter, includes ISO certificate

#### Manual Stages

W9170-506	XY-stage with analog metric micrometers
W9170-507	XY-stage with digital micrometers

#### Objectives for VH1102-1202-1150

W-5X-LWD	5x Long Working Distance objective
W-10X-LWD	10x Long Working Distance objective
W-20X-LWD	20x Long Working Distance objective
W-40X-LWD	40x Long Working Distance objective
W-50X-LWD	50x Long Working Distance objective
W-100X-LWD	100x Long Working Distance objective



# Vickers-Knoop Hardness Accessories

## 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 a single round mounted sample (without insert).

88-6168

Self leveling vise for a single Ø 50mm round mounted samples (with inserts).

88-6176



**4 Fold Leveling Vise**

4x Self leveling vise for round mounted samples (without inserts).

88-6169

4x Self leveling vise for Ø 50mm round mounted samples (with inserts).

88-6175



**6 Fold Leveling Vise**

6x Self leveling vise for round mounted samples (without inserts).

88-6178



**Universal Leveling Vise**

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

900086323



**EZ Clamp**

Single mount canister

- 9100-570 Mount Cap for 1in mounts
  - 9100-571 Mount Cap for 1.25in mounts
  - 9100-572 Mount Cap for 1.5in mounts
  - 9100-576 Mount Cap for 2in mounts
  - 9100-575 Canister (requires cap selection)
- \*Mount Cap requires the Canister*



**Sample Holder Insert**

Sample holders 88-6168, 88-6169 and 88-6178 require one insert ring per slot.

- 88-6170 Ø 1in [25mm] insert
- 88-6171 Ø 30mm insert
- 88-6172 Ø 40mm insert
- 88-6173 Ø 1.25in insert
- 88-6174 Ø 1.5in insert



**Precision Vise**

Opening max 45mm

9100258



**Anti-Vibration Table**

Active anti-vibration table 600x600 (24"x24")

9100906

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



## Wilson® UH250

The Universal Hardness Tester UH250 contains all standardized and usual hardness testing methods between 1-250kgf, according to ISO 6506, 6507, 6508 & 4545 and ASTM E18, E92 & E10. The machine combines top quality of mechanical components with closed loop technology. Now available with DiaMet™ control software, the touch optimized user-friendly interface provides many powerful automation features.



### Dimensions

9.8in [250mm]W x 24.4in [620mm]D x 35.4 [900mm]H

Vertical Test Capacity - 12.6in [320mm]

Horizontal Test Capacity - 8.4in [215mm]

### 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.
- Integrated camera with Zoom module allows a fast, accurate and user independent Vickers-Brinell measurement.

### Flexibility

- Closed-loop system for quick and highly accurate test results.
- Wide load range 9.81N and 2452 N (1 - 250kgf)

### Increase up-time & reduce service costs

- High clamping force system for safe testing of both small and very large parts.
- All components and software are completely designed, manufactured, and integrated by Buehler.

## UH250

Description	
Hardness scales	HB, HV, HR
Main-load	1 - 250kgf

Part Number	Description
W703421	<b>Version A</b> optical and depth measurement (HV, HB & HR), with standard PC & DiaMet software, 10x objective included
W703424	<b>Version D</b> optical and depth measurement (HV, HB & HR), with touch screen PC & DiaMet software, 10x objective included

## Accessories

### Objectives for UH250

W5XLWD	5X Long Working Distance objective
W10XLWD	10X Long Working Distance objective

### Indenters for UH250

741076	Rockwell ball indenter with carbide ball 1-16" ISO & ASTM Certified	741075	Brinell ball indenter with carbide ball 10mm (fixed) - Not Certified
741077	Rockwell ball indenter with carbide ball 1-8" ISO & ASTM Certified	740576	Vickers indenter with diamond pyramid 136° >HV5 - ISO Certified
741073	Brinell ball indenter with carbide ball 1mm ISO & ASTM Certified	741073	Brinell ball indenter with carbide ball 1mm - ISO & ASTM Certified
741072	Brinell ball indenter with carbide ball 2,5mm ISO & ASTM Certified	741214	Vickers indenter with diamond pyramid 136° <HV5 - HV0,2 - ISO Certified
741074	Brinell ball indenter with carbide ball 5mm ISO & ASTM Certified	740575	Rockwell indenter with diamond cone 120° - ISO Certified



# 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.



### Dimensions

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

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

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

### 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
Main-load	60, 100, 150kgf
Hardness scales	HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV

### 574S Superficial - for all Superficial test scales

**Part Number** - WH574S

Description	
Pre-load	3kgf
Main-load	15, 30, 45kgf
Hardness scales	15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y

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

**Part Number** - WH574T

Description	
Pre-load	3, 10kgf
Main-load	15, 30, 45, 60, 100, 150kgf
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



# Wilson® Rockwell® 2000

The Rockwell 2000 Series Hardness Testers achieve the highest level of depth measurement accuracy and resolution available and as a result has the best GR&R performance in the industry. This instrument is offered in two sizes, 10 - 14 in vertical capacity, to accommodate varying sample sizes and is available in three different variations of Rockwell Regular, Superficial, or Twin hardness scales.



**Dimensions-**  
 13.5in [343mm]W x 23.2in [590mm]D x 48.5 [1232mm]H  
**Vertical Test Capacity -**  
 Size 2: 10in [254mm]  
 Size 3: 14in [356mm]  
**Horizontal Test Capacity -** 8.5in [216mm]

## Industry Leading GR&R Performance

- Load cell force application ensures fast, precise, and reliable testing. Highly accurate "in-line" depth measuring scale.

## Ease of Use

- One button start - tester controls load application speed and dwell times.
- A flexible and user friendly LCD control panel for method set up and configuration.

## Flexible

- Available in two sizes ranging from 10 - 14 in (254 - 356 mm) to accommodate varying sample sizes.
- Available in three different variations: Regular, Superficial, or Twin hardness scales.

**2002R & 2003R Regular** - for all Regular test scales

**Part Numbers** - Size 2: WH2002R, Size 3: WH2003R

Description	
Pre-load	10kgf
Main-load	60, 100, 150kgf
Hardness scales	HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV

**2002S & 2003S Superficial** - for all Superficial test scales

**Part Numbers** - Size 2: WH2002S, Size 3: WH2003S

Description	
Pre-load	3kgf
Main-load	15, 30, 45kgf
Hardness scales	15N, 30N, 45N, 15T, 30T, 45T, 5W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y

**2002T & 2003T Twin** - for all Regular and Superficial test scales

**Part Numbers** - Size 2: WH2002T, Size 3: WH2003T

Description	
Pre-load	3, 10kgf
Main-load	15, 30, 45, 60, 100, 150kgf
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



# Rockwell Hardness Testers Accessories

## Rockwell® Hardness Testers Accessories

Part Number	Description
90007156	Anvil, Pedestal spot
900007730	Anvil, 1-2in [12.7mm] Shallow "V", < 6mm diam
900030797	Anvil, 1.5in [38.1mm] Standard "V", > 6mm diam
900007730	Flat Anvil, 8in [203mm] testing table
9100401	NIST standard "C" Diamond Indenter
900002015	NIST standard "N" Diamond Indenter
9100405	1-16in Carbide Ball Indenter with ball
9100406	1-8in Carbide Ball Indenter with ball

Part Number	Description
WH2000AUTO	RB2000 Automation kit including stage, software and connecting hub
CP107588	Video option for the RB2000 Automation kit
741038	Single Bar Jominy Fixture for stage mount
CP102392	Three Bar Jominy Fixture for stage mount
9100-564	Specimen Clamping Fixture
9100568	T-Slot table - 13 x 11in [330 x 280mm]

**Kits contain recommended indenters and test blocks. Please refer to your local Buehler representative for details.**

Part Number	Description
WA582143	Regular scale accessory kit
WA58239	Superficial scale accessory kit
WA582144	Twin scale accessory kit

## Rockwell® Diamond and Ball Indenters



### Rockwell 2000 and Rockwell 574

Part Number	Description
9100401	Certified Diamond Indenter Rockwell "C" 120° Cone
900006838	Certified Diamond Indenter Rockwell "A" 120° Cone
900002015	Certified Diamond Indenter Rockwell "N" 120° Cone
9100405	Certified Carbide Ball Indenter, 1-16in with 4 additional spare balls
9100406	Certified Carbide Ball Indenter, 1-8in with 2 additional spare balls
9100407	Certified Carbide Ball Indenter, 1-4in with 1 additional spare ball
9100408	Certified Carbide Ball Indenter, 1-2in with 1 additional spare ball

**!** Special Purpose Indenters available on request such as Thin Tipped Diamonds and Ball indenters, side cut for difficult applications. Please let us know if you have a special need or application.

## Why Buehler for Hardness Testing?



Buehler® is committed to providing a superior range and level of support services to its customers. Buehler, the world's leading manufacturer of hardness testing equipment, has been in the forefront of manufacturing and servicing a comprehensive range of hardness testers manufactured by Wilson Instruments, Wolpert and Reichert for over 85 years.

Buehler offers an extensive range of calibration and verification services for hardness testing instruments and related equipment. Buehler's factory trained service engineers are uniquely qualified to not only perform accredited calibrations, but to also provide expert preventive maintenance, adjustments and repairs using parts from the factory that meet original equipment specs. This extends the life of your equipment and optimizes its accuracy and reliability.



## 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

Description	
Hardness scales	HB
Main-load	62.5 - 3000kgf

### 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]

### 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*



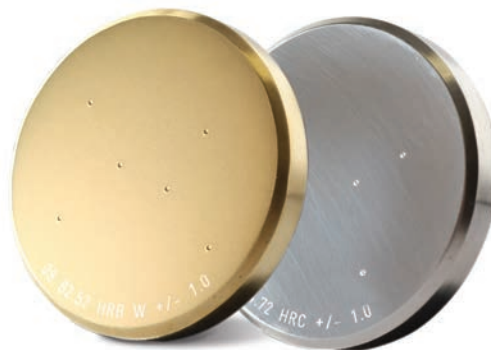
# Wilson® Hardness Test Blocks

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)

## Wilson® Rockwell Test Blocks

	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



	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

Part Number	Description
9201002	Special Range-Hardness Request
9201003	Engraving for Indent Spacing
9201006	API Compliance

# Wilson® Vickers-Knoop Test Blocks

According to ISO 6507 & ASTM E92



## Vickers Test Blocks

Load (kg)	Part Number	Nominal Hardness	Range
HV0.1	93-001-200	200 HV	175-224
	93-001-425	425 HV	400-450
	93-001-515	515 HV	490-540
	93-001-775	775 HV	750-800
HV0.2	93-002-200	200 HV	175-224
	93-002-425	425 HV	400-450
	93-002-515	515 HV	490-540
	93-002-775	775 HV	750-800
HV0.3	93-003-200	200 HV	175-224
	93-003-310	310 HV	285-335
	93-003-425	425 HV	400-450
	93-003-515	515 HV	490-540
	93-003-700	700 HV	675-725
	93-003-775	775 HV	750-800
HV0.5	93-005-200	200 HV	175-224
	93-005-310	310 HV	285-335
	93-005-425	425 HV	400-450
	93-005-515	515 HV	490-540
	93-005-700	700 HV	675-725
	93-005-775	775 HV	750-800
HV1	93-010-200	200 HV	175-224
	93-010-310	310 HV	285-335
	93-010-450	450 HV	425-475
	93-010-515	515 HV	490-540
	93-010-700	700 HV	675-725
	93-010-775	775 HV	750-800
93-010-830	830 HV	805-855	

Load (kg)	Part Number	Nominal Hardness	Range
HV5	93-050-200	200 HV	175-224
	93-050-310	310 HV	285-335
	93-050-450	450 HV	425-475
	93-050-515	515 HV	490-540
	93-050-600	600 HV	575-625
	93-050-700	700 HV	675-725
	93-050-775	775 HV	750-800
	93-050-830	830 HV	805-855
HV10	93-100-200	200 HV	175-224
	93-100-310	310 HV	285-335
	93-100-450	450 HV	425-475
	93-100-515	515 HV	490-540
	93-100-600	600 HV	575-625
	93-100-700	700 HV	675-725
	93-100-775	775 HV	750-800
	93-100-830	830 HV	805-855
HV20	93-200-200	200 HV	175-224
	93-200-310	310 HV	285-335
	93-200-450	450 HV	425-475
	93-200-515	515 HV	490-540
	93-200-600	600 HV	575-625
	93-200-700	700 HV	675-725
	93-200-775	775 HV	750-800
	93-200-830	830 HV	805-855
HV30	93-300-200	200 HV	175-224
	93-300-310	310 HV	285-335
	93-300-450	450 HV	425-475
	93-300-515	515 HV	490-540
	93-300-600	600 HV	575-625
	93-300-700	700 HV	675-725
	93-300-775	775 HV	750-800
	93-300-830	830 HV	805-855

## Knoop Test Blocks

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

Part Number	Description
93-000-001*	Vickers Microindentation (10gf - 500gf)
93-000-002*	Vickers Macroindentation (1kgf - 50kgf)
94-000-001*	Knoop Microindentation (10gf - 500gf)
93-000-012*	2 Vickers-Knoop Calibrations
93-000-013*	3 Vickers-Knoop Calibrations
93-000-014*	4 Vickers-Knoop Calibrations

\*Specify hardness required and load force for calibration

•Specify additional load force for calibration



# Wilson® Hardness Test Blocks

## Wilson® Brinell Test Blocks

### Brinell reference blocks up to 250kgf load

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



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 †

Part Number	Description
WHSMLBRIN*	1mm or 2.5mm ball indenter

Part Number	Description
WHSPECBRIN*	5mm or 10mm ball indenter

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

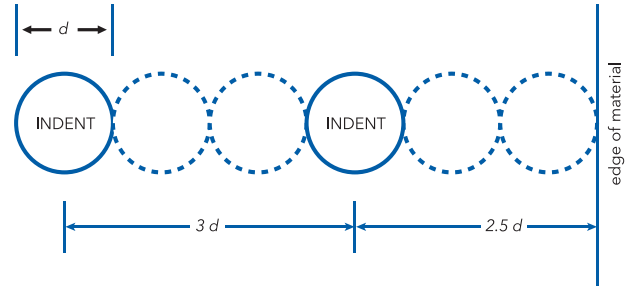
# Proper Indent Spacing

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

## Rockwell & Brinell

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

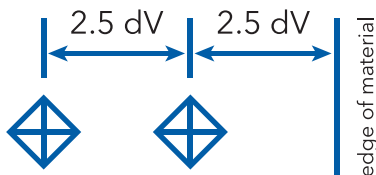
The distance from the center of any indentation to an edge of the test piece shall be at least two and a half times the diameter of the indentation.



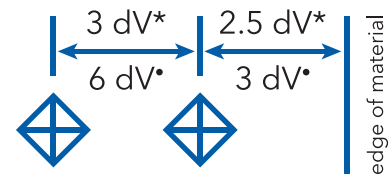
## Vickers

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

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



$dV$  = Vickers Diagonal

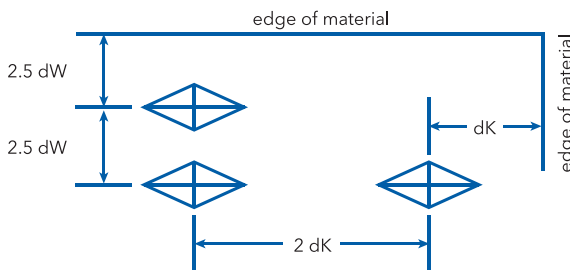


\* For steel, copper and copper alloys  
\* For light metals, lead, tin and their alloys

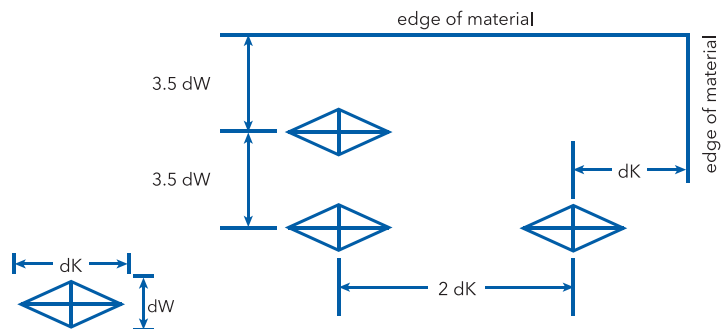
## Knoop

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

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



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



# 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
UltraMet™ 2 Sonic Cleaning Solution	2 years
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



# 2019 Buehler Microstructure Calendar Call for Entries

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 2018 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/2018-buehler-calendar-contest>
- If an alternate method is preferred, please contact us at (847) 295-6500 or [marketing@buehler.com](mailto:marketing@buehler.com) for instructions on FTP login

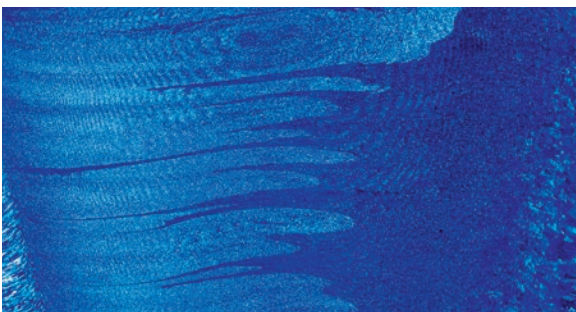
### DEADLINE FOR SUBMISSIONS:

August 1st, 2018

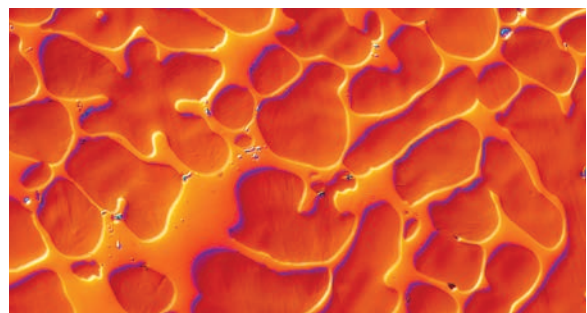
### WINNERS:

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](mailto: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; iMdx, 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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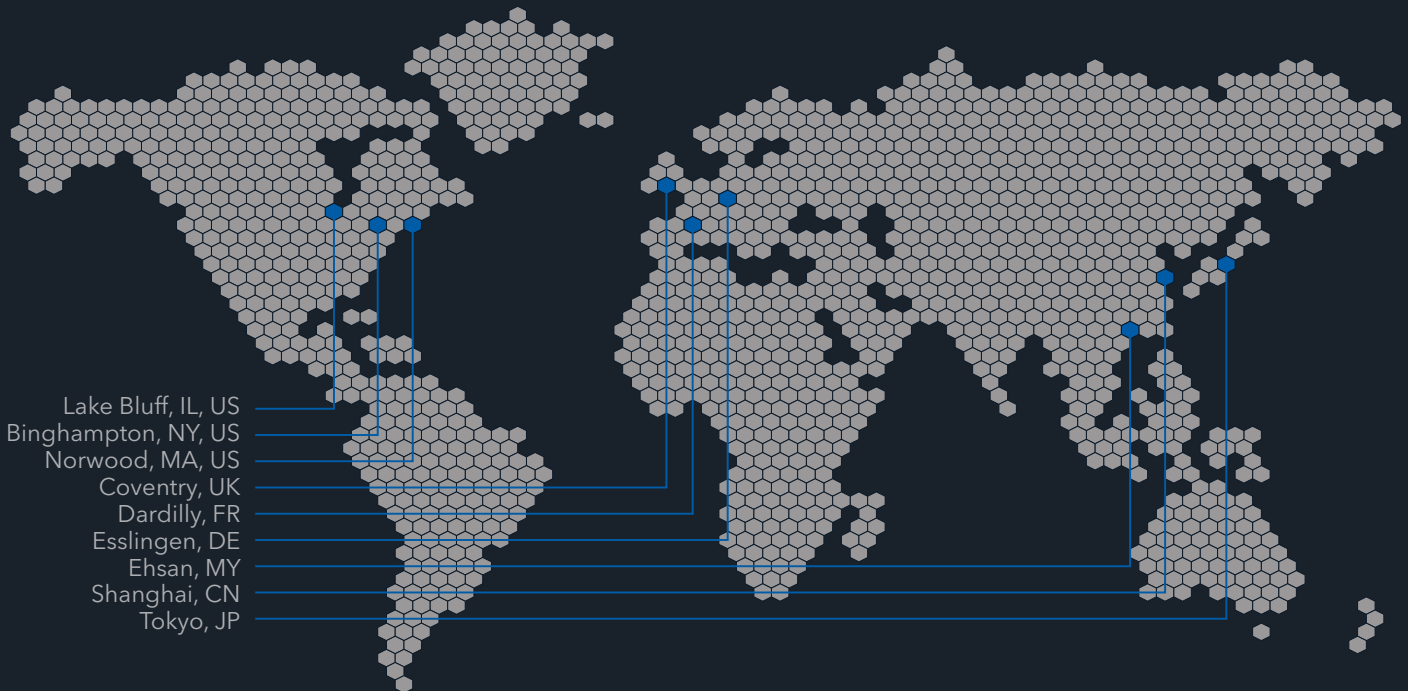
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