BUEHLER

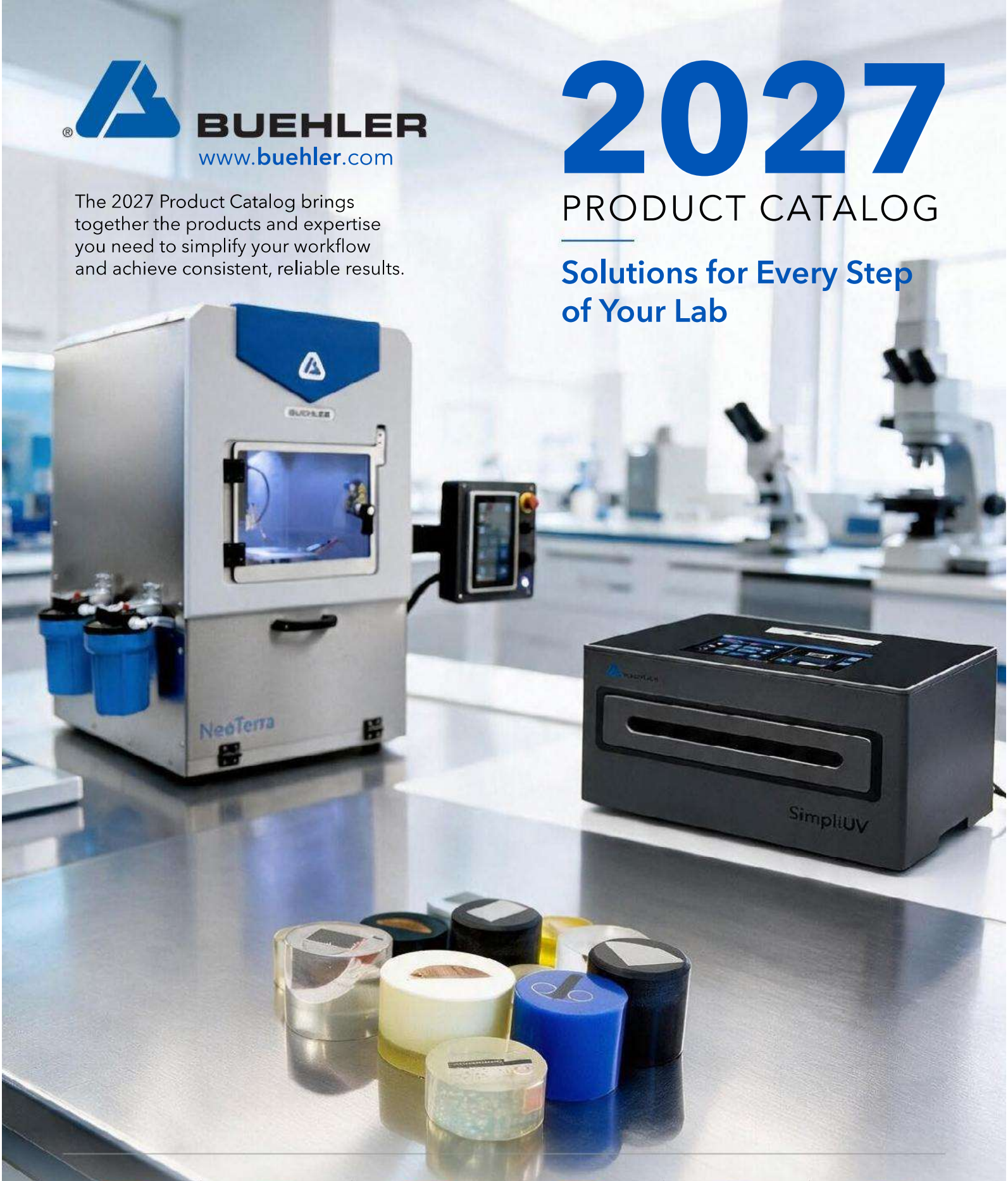
www.buehler.com

2027

PRODUCT CATALOG

The 2027 Product Catalog brings together the products and expertise you need to simplify your workflow and achieve consistent, reliable results.

Solutions for Every Step of Your Lab



SECTIONING | MOUNTING | GRINDING & POLISHING | ELECTROLYTIC PREPARATION | IMAGE ANALYSIS | HARDNESS TESTING



Trusted Partner, Reliable Solutions

Buehler, a division of Illinois Tool Works (ITW) and headquartered in Lake Bluff, Illinois, has a long history of advancing materials preparation and analysis. From industry-defining breakthroughs such as the first commercially available mounting press and Rockwell hardness tester to automated polishing, innovation has always been at the core of how we support laboratories around the world.

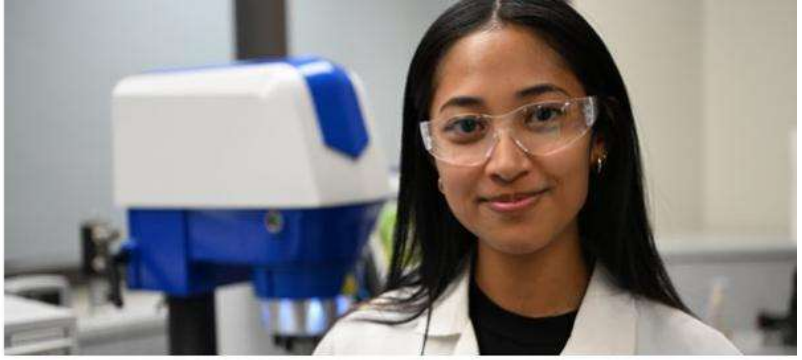
Today's materials laboratories face increasing demands, from evaluating new materials to meeting tighter deadlines while ensuring samples are prepared and analyzed correctly the first time. Drawing on decades of experience, Buehler provides innovative products and technical expertise designed to simplify workflows, reduce training requirements, minimize rework, and deliver consistent, repeatable results.

With offices in seven countries and distribution in more than 100 countries, Buehler continues to be a global leader in materials preparation, testing, and analysis, delivering reliable solutions, trusted support, and expertise laboratories can depend on.

Proud to be an ITW Company

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





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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 - Polishers with the broadest range of consumables for any lab.



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ELECTROLYTIC PREPARATION

Electropolishing and Etching Systems for efficient sample preparation and revealing material microstructures.



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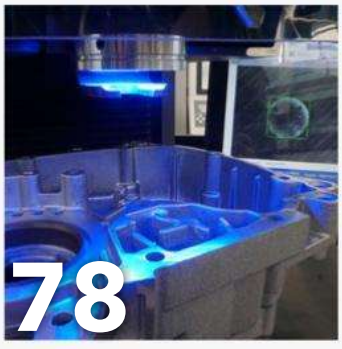
IMAGING & ANALYSIS

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



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HARDNESS TESTING

Wilson® Hardness Testers including Rockwell®, Knoop/ Vickers, Brinell and Universal machines. DiaMet® Software, Hardness Blocks and Accessories.

Social Responsibility

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

Learn more about our commitment

Partner with Buehler for Your Success



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



Contact our Lab!

Online Media Resources

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





Register for Webinars



Quick Response Time

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





Committed to Quality

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

Global Associates and Partners Ready to Assist You

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

Visit **www.buehler.com/contact-buehler.php** for prompt attention to your request for a quotation, lab solutions, service support, customer service or general feedback.

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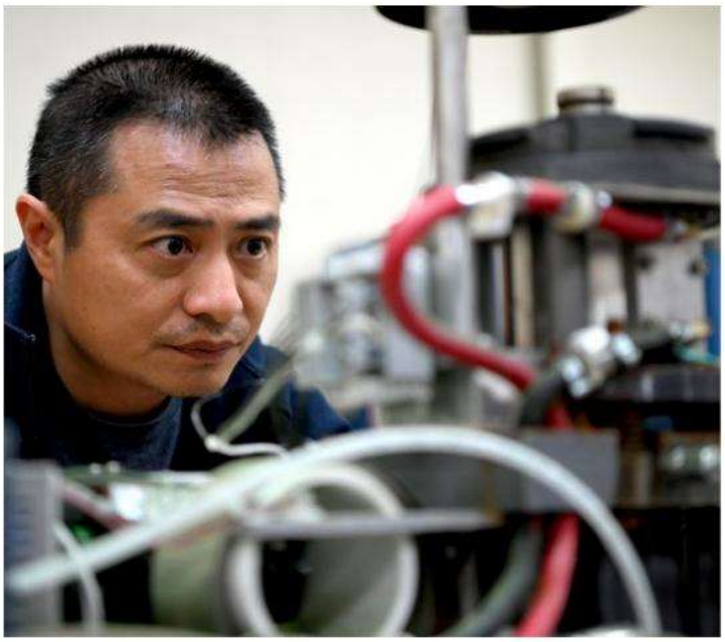
Our Global Service Teams are Committed to You





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





SafeGuard
Your Equipment



SafeGuard *Provides:*

01 Consistent performance with less downtime

02 Increased life of your investment

03 10% Discount on additional replacement parts

SafeGuard *Includes:*

01 Full replacement of common wear parts

02 Multi-point Inspection of equipment

03 Perform by factory trained Buehler technician

Multi-Point Inspection

Buehler sends out a service team member to perform comprehensive check on all mechanical components for smooth operation.

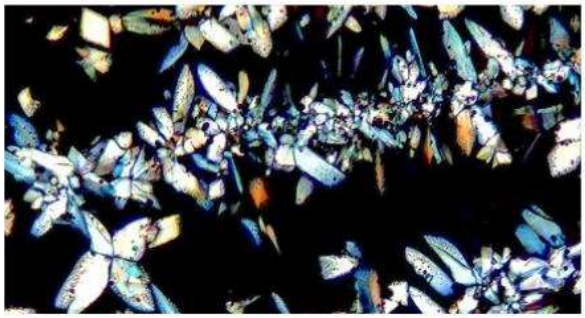
Learn more about Buehler's Multi-point Point Inspections and what happens when Buehler Service team arrives

Get SafeGuard today!

Click here to request a quote today!

Enter Buehler's Annual Calendar Contest

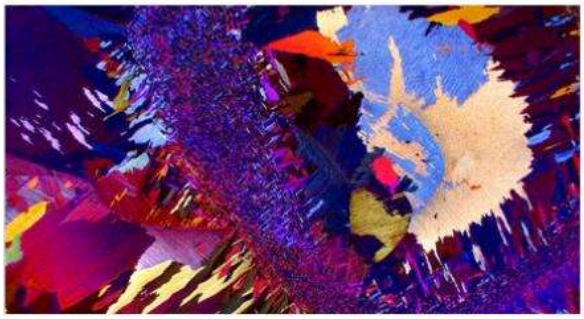
Demonstrate your technical expertise and artistic talents by submitting entries to our annual calendar contest. If your entry is selected to be published, you will receive an honorarium of $200.00 (USD) per image and the privilege of having your work displayed world-wide. Anyone can participate. See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



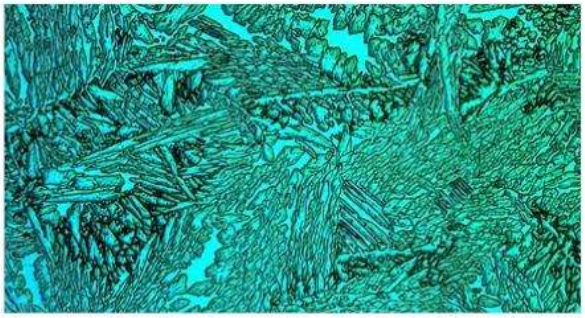
Lead (Pb) smelter slag from SW England. Viewed as a thin section, using plane polarized transmitted light at 200x magnification.
~ **Alexandria Tanciongco**, University of Leicester, UK



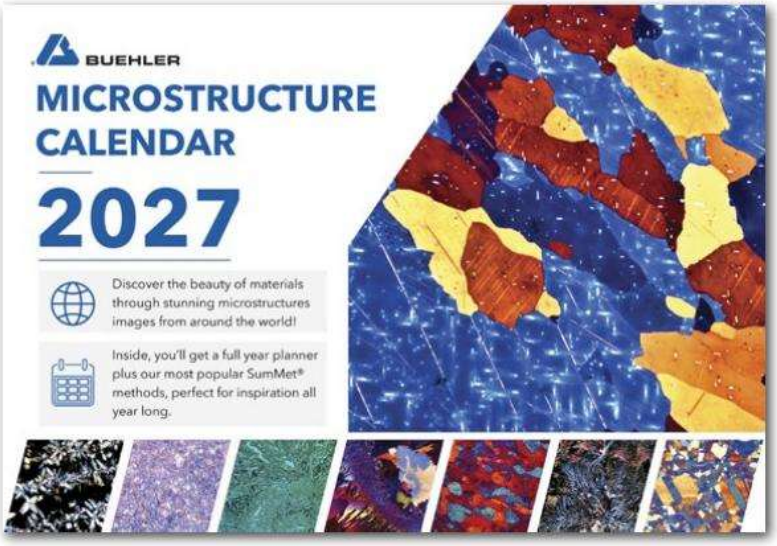
A286 steel retention bolt. Etched with Beraha's II reagent. Image was taken with polarized light plus sensitive tint at 500x magnification.
~ **Lou Duh**, Sikorsky Aircraft, USA



Ti6Al4V Alloy Etched with Modified Weck's Reagent. Viewed under polarized light at 125x magnification.
~ **Lukasz Boron**, Łukasiewicz Research Network Krakow Institute of Technology, Poland



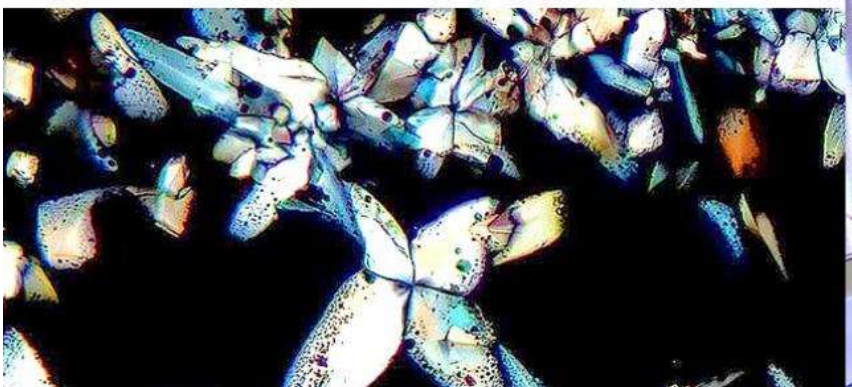
2507 duplex stainless steel etched with the NeoTerra. Viewed under differential interference contrast at 100x magnification.
~ **Stephen Suchy**, Buehler Ltd, USA

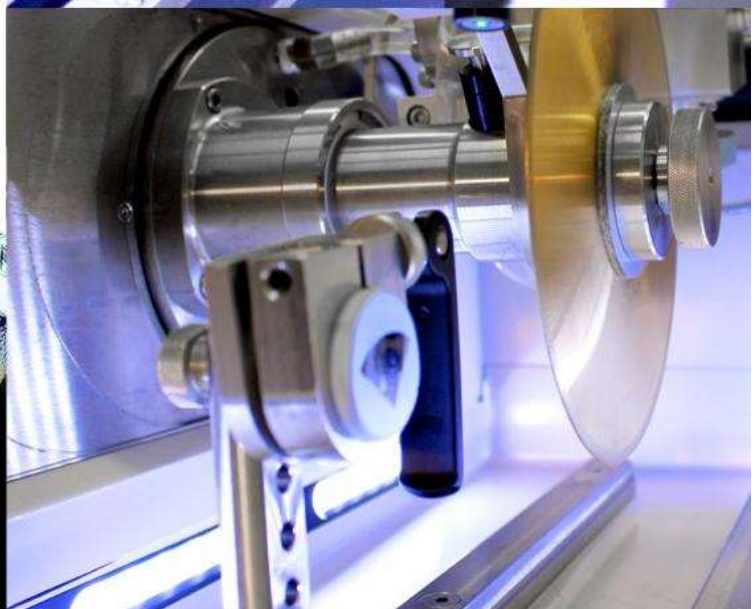


Learn how to submit your images for a chance to win!

Sections

Buehler's sectioning products prioritize easy setup and time-saving features, ensuring you achieve high-quality cuts for any material.





Featured Microstructure

Lead (Pb) smelter slag from SW England. Viewed as a thin section, using plane polarized transmitted light at 200x magnification.

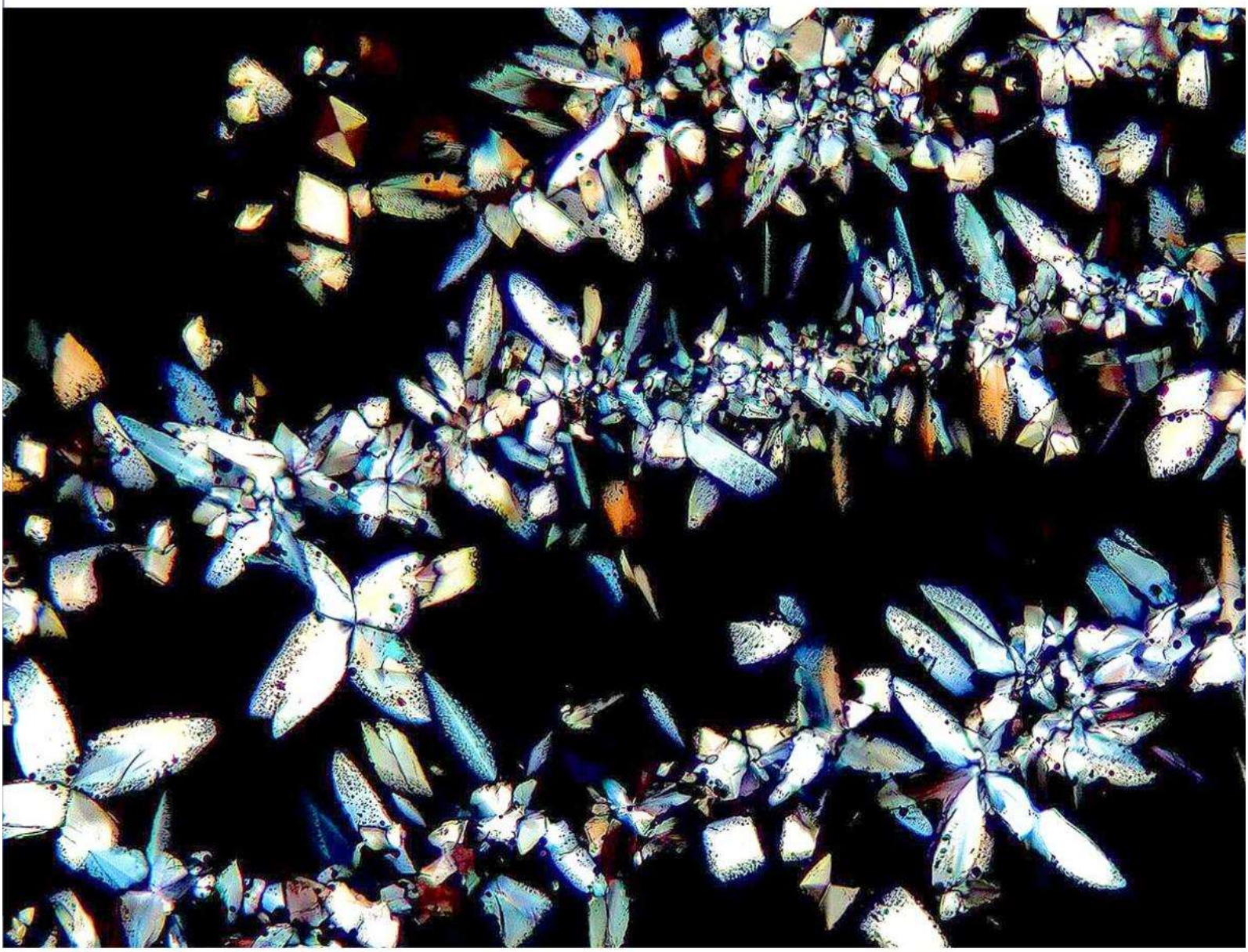


Image Provided by:

Alexandria Tanciongco: University of Leicester, UK



Sectioning Specifications Comparison

Abrasive Cutters

Specifications	AbrasiMet® M	AbrasiMatic® 300	AbrasiMet® L Pro	AbrasiMet® XL Pro
Wheel Diameter	10in [254mm] 12in [305mm]	12in [305mm]	10in [254mm] 12in [305mm] 14in [356mm]	14in [356mm] 16in [406mm] 18in [457mm]
Motor Power	5.5Hp [4kW]	5.5Hp [4kW]	5.5 hp [4 kW]	13.4Hp [10kW]
Cut Types	Chop	Chop, Y-Feed, Pulsing	Chop, Y-feed, Planar, Pulsing	Chop, Y-feed, Planar, Pulsing
Manual Movement	Z-axis	X-axis*, Y-axis, Z-axis	X axis, Y-axis, Z axis	X-axis, Y-axis, Z-axis
Automated Movement		Y-axis	X axis, Y-axis, Z axis	X-axis, Y-axis, Z-axis
Vising Table Size	12 x 9.8in [305 x 250mm]	14.4 x 10in [365 x 254mm]	18.9 x 11.8in [480 x 300mm]	19.9 x 11.8in [505 x 300mm]
Maximum Part Size in Chamber	25 x 13 x 4.3in [636 x 330 x 109mm]	16 x 6 x 3.75in [406 x 152 x 95mm]	26 x 13.5 x 5.4in [660 x 343 x 135mm]	49 x 24 x 7in [1245 x 610 x 178mm]
Cutting Capacity	4.3in [109mm]	3.75in [95mm]	5.4in [135mm]	7in [178mm]

**Optional Items*

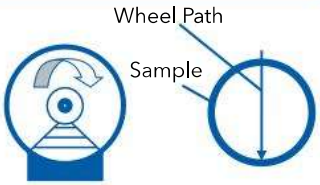
Precision Cutters

Specifications	IsoMet® Low Speed	IsoMet® 1000	IsoMet® High Speed Pro	PetroThin® Thin Sectioning System
Maximum Wheel Diameter	5in [127mm]	7in [178mm]	8in [203mm]	8in [203mm]
Cut Style	Gravity Fed	Gravity Fed	Y-Feed	Manual
Sample Movement	X-axis, Z-axis	X-axis, Z-axis		X-axis, Z-axis
Wheel Movement			X-axis, Y-axis and Z-axis	
Maximum Cutting Capacity**	1.77in [45mm]	2.5in [64mm]	2.8in [71mm]; 2 x 6.5 x 1in [51 x 165 x 25mm]	Petrographic Glass Slides: 1.06 x 1.81in [27x46mm] , 3 x 1in [76 x25mm] or 3 x 2in [76 x 51mm]
Chamber Area		10.79 x 11.51-15.81 in [274 x 292-401 mm]	9 x 19.5 in [228 x 495 mm]	

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

Cutting Style and Wheel Path

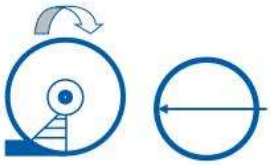
Chop Cutting
The traditional form of machine operation. Wheel contact arc is governed by sample depth. Can sometimes have limited ability with large/difficult parts.



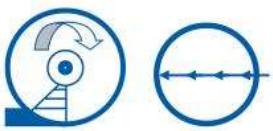
Chop Cutting with Pulsing
Wheel contact still governed by sample depth. The pulsing action pauses the feed rate in short intervals enabling coolant to wash away swarf and dissipate heat, resulting in a better surface quality.



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



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

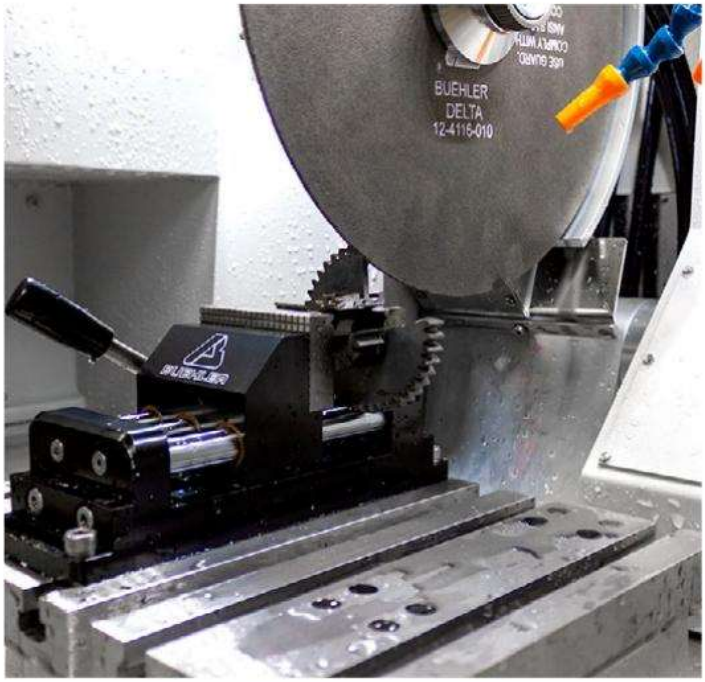


Planar Cut
In Planar mode, a Y-feed cut is completed in successive vertical steps. Wheel contact arc is governed by the height of each step rather than the height of the sample.



Simple Setup for Efficient Cuts

The AbrasiMet M is an easy to use machine ideal for quickly cutting parts and moving to the next step of the process.





AbrasiMet® M



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

Easy to Cut and Maintain

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

Durable Machine with Versatile Performance

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

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



Advanced Recirculating System *(Required)*

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

Dimensions
24.5in [620mm] W x 16.5in [420mm] D x 24.5in [620mm] H

10-2167-200 Advanced Recirculation Tank 200-240VAC, 50/60Hz
10-2167-400 Advanced Recirculation Tank 380-460VAC, 50/60Hz

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]

Technical Specifications

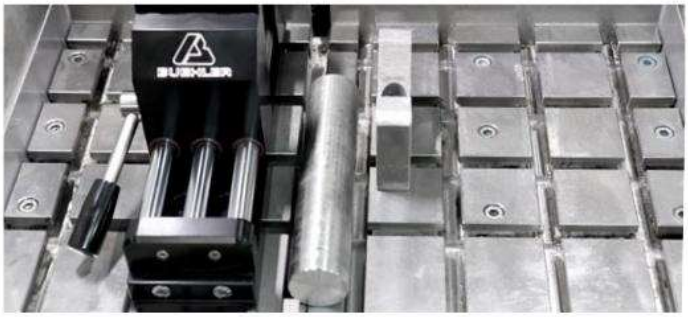
Dimensions
Open
31.1in [791mm] W x 27.3in [694mm] D x 36.2in [979mm] H
Closed
31.1in [791mm] W x 27.3in [694mm] D x 25.7in [653mm] H
Weight
309 lb [140 kg]

Utilities Required

200-240VAC
380-460VAC
CSA 200 -240VAC
50-60Hz

Highly Reproducible Results

The AbrasiMet L Pro is built for high volume environments with specific design features to help users improve sample quality, while being easy to use and maintain.





AbrasiMet® L Pro



Part Number	Description
10-2830-200	200-240VAC Benchtop machine
10-2870-200	200-240VAC Floor standing machine
10-2830-400	380-480VAC Benchtop machine
10-2870-400	380-480VAC Floor Standing machine

Includes Recirculating Tank

Technical Specifications

Dimensions

Benchtop
37.8in [960mm]* x 42.9in [1090mm] x 42.1in [1070mm]
Floor Standing
37.8in [960mm]* x 42.9in [1090mm] x 77.2in [1960mm]
Weight
Benchtop - 948 lb [430 kg] Floor Standing 1422 lb [645kg]
**Depth is 33in [840mm] before control panel is installed*

Utilities Required

200-240VAC
380-460VAC
50-60Hz

The AbrasiMet L Pro is available as both a bench-top and floor standing version for 10in-14in [254-356mm] blades. This saw provides consistent and repeatable cut quality for medium to large samples with programmable methods and automatic cutting.

Improve Sample Quality

- Variable SmartCut feature to deliver great quality while reducing cut time
- Stored methods for consistent sample quality

Easy to Use, Easy to Setup

- Intuitive touchscreen for fast and easy programming
- 4 cutting types for flexibility in cutting-Chop (Z cut), Y-feed (linear), Planar (sawing motion) and Manual
- Laser alignment, bright lights, and large viewing windows

Reliable and Easy to Maintain

- Automatic full chamber cleaning
- Filtering recirculation system to decrease cleaning time and remove debris

Accessories

Mist Extractor
It is highly recommended to use the mist extractor listed below or connect the machine to a facility exhaust system
10-2820-200: 200-240V **10-2820-400**: 380-460V

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]

Quick and Easy to Use

The AbrasiMatic 300 is a fast machine that delivers great cut quality with automatic capabilities.





AbrasiMatic® 300



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

Recirculating System *(Required)*



Dimensions
26.5 W x 18.25 D x 26.5in H
674 W x 464 D x 674mm H
(22.5in [572mm]H w/o wheels)

10-2332-260 [200-240VAC, 60Hz]
10-2332-460 [440-480VAC, 60Hz]
10-2332-250 [200-240VAC, 50Hz]
10-2332-400 [380-400VAC, 50Hz]

Accessories

Base Cabinet
Cabinet stand for AbrasiMet M and AbrasiMatic 300 with space underneath for recirculation system.
80-10001 36 W x 30 D x 36in H [910 W x 760 D x 910mm H]

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]

Y and Z axis cutting only

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

Additional X Axis cutting

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

Technical Specifications

Dimensions
Open
34in [864mm] x 27in [686mm] x 41in [1041mm]
Closed
34in [864mm] x 27in [686mm] x 24in [610mm]
Weight
350lb [165kg]

Utilities Required

200-240VAC, 60Hz
440-480VAC, 60Hz
380-400VAC, 50Hz

Robust Machine with Intuitive Features

The AbrasiMet XL Pro is our largest abrasive cutter for your biggest parts and focuses on delivering high quality through advanced features.



AbrasiMet® XL Pro



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

Advanced Recirculation System included



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

Intuitive and Quick to Operate

- Quickly set up for a cut by positioning the blade and table with the joystick and laser alignment
- Save cutting methods to ensure repeatability and consistency

Powerful Machine for Demanding Environments

- Ideal for heavy duty, repetitive use in the toughest environments
- Efficiently and quickly cut through difficult materials with the powerful 13.4hp [10kW] motor
- Use Buehler's exclusive feature Variable SmartCut to maximize speed and cut quality

Technical Specifications

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

Utilities Required

380-480VAC
50-60Hz

Accessories

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

10-2343-400 Mist Extractor

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]

Single Piece Sliding Vises

Speed Clamping Vise



Size: Medium
Part Numbers: Left: 10-3544
Right: 10-3545
Max Opening: 3.03" [77mm]
Clamping Plate: 3.11" x 1.73"
[79 x 44mm]
T-Nuts: 12mm or 14mm



Size: Large
Part Numbers: Left: 10-3546
Right: 10-3547
Max Opening: 5.1" [130mm]
Clamping Plate: 3.11" x 3.14"
[79 x 80mm]
T-Nuts: 12mm or 14mm

All New

Screw Vise



Size: Medium
Part Numbers: 10-3555
Max Opening: 2.75" [69.8mm]
Clamping Plate: 2" x 1.5"
[50 x 40mm]
T-Nuts: 12mm

MetKlamp VIII S

Ideal for AbrasiMet M



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

MetKlamp VIII



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

Two Piece Sliding Vises

Sliding Vise Kit



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

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

Quick Sliding Vise



Size: Medium
Part Numbers: Left: **10-3580**
Right: **10-3581**
Clamping Plate: 2.6" x 2.1"
[66 x 55mm]
Stroke Length: 2.5" [63mm]
T-Nuts: 12mm
- Has close gap feature

Fastener Vise



Application: For longitudinal sectioning of fasteners. Must be held with either Single Piece (recommended) or Two Piece Left Hand Vising.

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

Vertical Clamping Vises

Vertical Clamping Kit



Includes 2 clamping systems

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

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

Chain Clamping Kit



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



Riser Blocks

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



Horizontal Clamp

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



Vee Block Clamp Kit

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



Adjustable Vee Blocks

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



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.

View Options

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

[Blade Thickness is listed under Part Number] *Rubber Bond =* *Resin Bond =*
SiC Cutting Particle= *Al_2O_3 Cutting Particle=*

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

AcuThin® Blades (Qty 10)

[Blade Thickness is listed under Part Number]



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 Al2O3 abrasive to allow precise, delicate abrasive sectioning with minimal surface damage.

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]

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

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

SiC Cutting Particle= *Al_2O_3 Cutting Particle=*

View Options

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

Diamond Blades for Abrasive Cutters

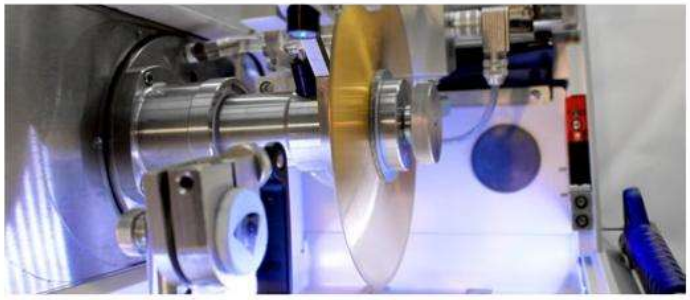
[Blade Thickness is listed under Part Number] 1.25in [32mm] Arbor (Qty 1)



Recommended Use	Blade Type	10in [250mm]	12in [300mm]	14in [350mm]
General Use	Diamond	114610E 0.051in [1.3mm]		
Hard Materials	Diamond	114810E 0.047in [1.2mm]	103056 0.055in [1.4mm]	114814E 0.059in [1.5mm]
Ceramic and Petrographic samples	Diamond	114710E 0.047in [1.2mm]	103053 0.087in [2.2mm]	114714E 0.059in [1.5mm]
Plastics and Polymers	Diamond	102557 0.049in [1.25mm]		

Excellent Cut Quality for Delicate Samples

The IsoMet High Speed Pro is a highly advanced cutter designed for fast, yet delicate, cutting with high consistency cut to cut.



IsoMet® High Speed Pro





Model	Part Number	Voltage/Frequency
IsoMet® High Speed Pro	**11-2800**	100 - 240VAC, 50-60Hz

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]

The IsoMet High Speed Pro is a benchtop precision cutter that provides efficient and precise sample preparation for a variety of applications with automatic cutting capabilities. With its rapid rail and tool-less vising system, sample placement and adjustments are achieved in seconds. The IsoMet High Speed Pro boasts a sample capacity of 2.8 inches (71mm) in diameter and offers blade speeds ranging from 200-5000 RPM.

Automatic Dressing System

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

Rapid Alignment Laser

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

Precise Cut Alignment [Z-Axis]

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

Technical Specifications

Dimensions
Open
24in [609.6mm]W x 30in [762mm]D x 36in [914.4mm]H
Closed
24in [609.6mm]W x 30in [762mm]D x 19in [482.6mm]H
Weight
157lbs [71kg]

Utilities Required

100-240VAC
50-60Hz

Accessories

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

11-2707 12mm T-slot table

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

IsoMet® High Speed Cutter Accessories



Single Saddle Chuck
Large Single Saddle Chuck holds specimens up to 1.5in [38mm]
11-2661



Double Saddle Chuck
Securely holds specimens up to 1.5in [38mm] from 2 points when extra support is needed
11-2662



Mount Chuck
Stainless steel chuck holds mounted samples
11-2666 1.25in [30mm]
11-2667 1.5in [40mm]



Fastener Chuck
Holds specimens from 0.04in [1mm] to 2in [50mm] for longitudinal sectioning
11-2687



Large Bone Chuck
Ideal for clamping bone, plastics, or other semi-rigid specimens up to 2in [50mm] in diameter
11-2494



T-Slot Bed
Additional T-slot for positioning vises
11-2707



Sliding Vise
6in [152mm] maximum opening, use requires flange to be 2in [50mm] or less, requires T-slot bed
11-2669



Rapid Rail Post
Use with Rapid Rail
11-2660



Small Vertical Clamp
Clamps specimens up to 2.28in [58mm] in height
460022



Irregular Specimen Chuck
Adjusts to hold irregular shaped specimens up to 1in [25mm] in diameter
11-1185



Recirculating System
Increases cutting fluid capacity to 7gal[27L] at 1.25gal/min [4.7L/min]. Reduces the frequency of tank cleaning. Especially helpful when abrasive blades are used with the IsoMet High Speed.

16in [406mm]W x 20in [508mm]D x 15in [381mm]H
11-2640

IsoMet® Precision Cutter Flanges



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



Stainless Steel Flange Set
11-2688* 3in [76mm]
11-2689* 4in [102mm]
**Recommended for the IsoMet High Speed Pro*

Precision with Flexibility

The gravity-fed machines in the IsoMet family combine delicate cutting with great versatility for various sample types, including electronics.





IsoMet® 1000

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

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

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

Accessories

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

11-2182 Table Saw Attachment

Technical Specifications

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

Weight: 56lbs [25kg]

Utilities Required

85-264VAC
50-60Hz

Cool 3 Fluid



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

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





IsoMet® Low Speed

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

Includes 4in IsoMet Blade, assorted weights, dressing stick, 2.5in [64mm] flanges and the following chucks: single saddle, irregular specimen and wafer

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

**IsoCut Fluid coolant recommended for use with IsoMet Low Speed*

Technical Specifications

Dimensions: 10.5in [267mm]W x12in [305mm]D x 13in [330mm]H

Weight: 25lbs [11.3kg]

Utilities Required

115VAC
230VAC
50-60Hz

IsoMet® Low Speed Cutter Accessories



Goniometer
Positions specimen along 3 axis

11-2381



Manual Feed Control Dressing Chuck
Enables blade dressing without removing the sample fixture

11-1196



Splash Guard Kit
Prevents lubricant from splashing out of saw

11-1199

IsoMet® Low Speed Cutter & 1000 Accessories



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

11-1181



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

11-1184



Wafer Chuck
Use mounting wax, 20-8145 or 40-8155 to glue specimens to wafer chuck
1.125 x 2in [29 x 51mm]

11-1186



Vacuum Chuck
Holds specimens mounted to glass slides to chuck with vacuum force

11-1188



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

11-1194



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

11-1183



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

11-1185



Single Saddle Chuck
Holds specimens up to 0.75in [19mm] in diameter

11-1187



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

11-1189

IsoMet® 1000 Accessories



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

11-2186



Table Saw Attachment
Transforms gravity fed IsoMet 1000 into convenient table saw

11-2182



800 gram Weight Set
Additional weights for gravity fed saws

11-2183



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

11-2184



Mount Chuck
Holds mounted samples 1.5in [40mm]

11-2489



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

11-2482



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

11-2487



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

11-2483



Small Glass Slide Chuck
Holds 27 x 46mm, 1 x 2in, or 1 x 3in glass slides

11-2484



Large Glass Slide Chuck
Holds 2 x 3in glass slides

11-2488



Wafer Chuck
Use mounting wax (40-8155) to glue specimens to wafer chuck 1.75 x 2.5in [44 x 64mm]

11-2486



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

[Blade Thickness is listed under Part Number]

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

**IsoMet High Speed Pro Only*

Precision Blades



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

[Blade Thickness is listed under Part Number]

View Options

Recommended Use	3in [76mm]	4in [102mm]	5in [127mm]	6in [152mm]
Use with Saws	All	All	All	1000 IsoMet High Speed Pro
IsoMet 30HC - Polymers Rubber, Soft Gummy Materials, epoxies			**11-4239** 0.030in [0.76mm]	
IsoMet 20HC - Aggressive general sectioning of non-ferrous materials			**11-4215** 0.020in [0.5mm]	
IsoMet 15HC - Blades for routine use, metal matrix composites, PC boards, bone, titanium, thermal spray coatings, otoliths	**11-4243** 0.006in [0.15mm]	**11-4244** 0.012in [0.3mm]	**11-4245** 0.015in [0.4mm]	**11-4246** 0.02in [0.5mm]
IsoMet 20LC - Hard tough materials, structural ceramics, boron nitride, silicon nitride			**11-4225** 0.02in [0.5mm]	
IsoMet 15LC - Hard and brittle materials, structural ceramics, glass, electronic substrates, alumina, zirconia, concrete	**11-4253** 0.006in [0.15mm]	**11-4254** 0.012in [0.3mm]	**11-4255** 0.015in [0.4mm]	**11-4276** 0.02in [0.5mm]
IsoMet 10LC - Medium to Soft Ceramics, Glass Fiber Reinforced Composites	**11-4283** 0.006in [0.15mm]		**11-4285** 0.015in [0.4mm]	
IsoMet 5LC - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF_2, MgF_2, Carbon Composites	**11-4293** 0.006in [0.15mm]		**11-4295** 0.015in [0.4mm]	
IsoCut CBN - Ferrous materials, nickel, cobalt, lead-based alloys and super alloys	**11-4263** 0.006in [0.15mm]	**11-5264** 0.012in [0.3mm]	**11-5265** 0.015in [0.4mm]	**11-5266** 0.02in [0.5mm]
Cup Grinder for Ceramic & Geological Materials			**11-2740**	

Recommended Use	7in [178mm]	8in [203mm]	Dressing Stick*
Use with Saws	IsoMet 1000 IsoMet High Speed Pro	IsoMet High Speed Pro	
IsoMet 30HC* - Polymers Rubber, Soft Gummy Materials	**11-4241** 0.03in [0.76mm]		Blade should not be dressed
IsoMet 20HC - Aggressive general sectioning of non-ferrous materials	**11-4237** 0.025in [0.6mm]	**11-4238** 0.035in [0.9mm]	**11-1190** **11-2490**
IsoMet 15HC - Blades for routine use, metal matrix composites, PC boards, bone, titanium, thermal spray coatings	**11-4247** 0.025in [0.6mm]	**11-4248** 0.035in [0.9mm]	**11-1190** **11-2490**
IsoMet 20LC - Hard tough materials, structural ceramics, boron nitride, silicon nitride	**11-4227** 0.025in [0.6mm]	**11-4228** 0.035in [0.9mm]	**11-1190** **11-2490**
IsoMet 15LC - Hard Brittle Materials, Glass, Al_2O_3, ZrO_3, Concrete	**11-4277** 0.025in [0.6mm]	**11-4279** 0.045in [1.1mm]	**11-1190** **11-2490**
IsoMet 10LC - Medium to Soft Ceramics, Glass Fiber Reinforced Composites	**11-4287** 0.02in [0.5mm]	**11-4288** 0.045in [1.1mm]	**11-1290**
IsoMet 5LC - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF_2, MgF_2, Carbon Composites			**11-1290**
IsoCut CBN - Ferrous materials, nickel, cobalt, lead-based alloys and super alloys	**11-5267** 0.025in [0.6mm]	**11-5268** 0.035in [0.9mm]	**11-1190** **11-2490**

All Blades (Except 30HC) come with a Dressing Stick included. The Part Numbers shown in the table can be used for re-ordering the Dressing Sticks.
** Use an IsoMet 30HC blade for cutting a PWB when using Table Saw Attachment*

Additional Sectioning Consumables



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]



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]



Dressing Wheel

For IsoMet High Speed Pro

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



Dressing Sticks

11-1190	3 x 0.5 x 0.5in [76 x 13 x 13mm] for 20HC, 15HC, 20LC, 15LC, CBN LC and CBN HC precision blades
15-6190	6 x 1 x 1 inches [152 x 25 x 25 mm] Dressing stick that can be used for diamond blades 10 inches and larger.
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

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 cutting. A blade may require dressing while sectioning these types of materials.

Excellent Cut Quality for Petrographic and Thin Sections

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 ±5µm

Increase Accuracy and Parallelism of Samples

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

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



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

Technical Specifications

Dimensions

23.5in [597mm] x 19in [483mm] x 16in [406mm]

Weight

94lb [143kg]

Utilities Required

Drain

Water

115VAC, 60Hz
220VAC, 50hz

Petrography Accessories



PetroBond®

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

38-1490



PetroVue®

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

30-8050-220

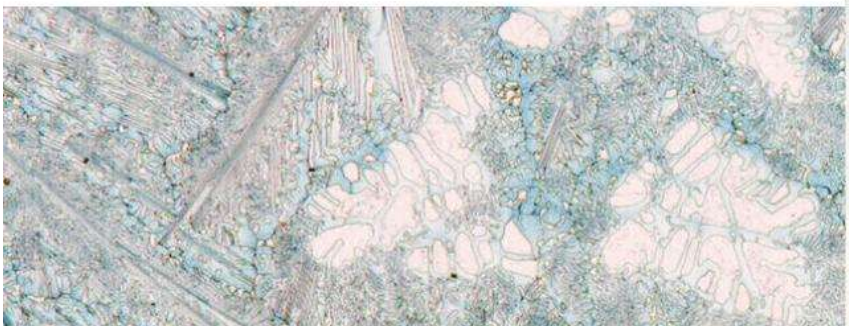
PetroThin Consumables



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

Mounting

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





Featured Microstructure

Eutectic high-entropy alloy $AlCoCrFeNi_{2.1}$, electrolytically etched in a solution of 40 mL H_2O and 60 mL HNO_3 at 1.5 V for 3 s. The alloy exhibits a fine, intricately branched two-phase morphology consisting of ordered B2 and FCC-based phases. Viewed in bright field at 200x magnification.

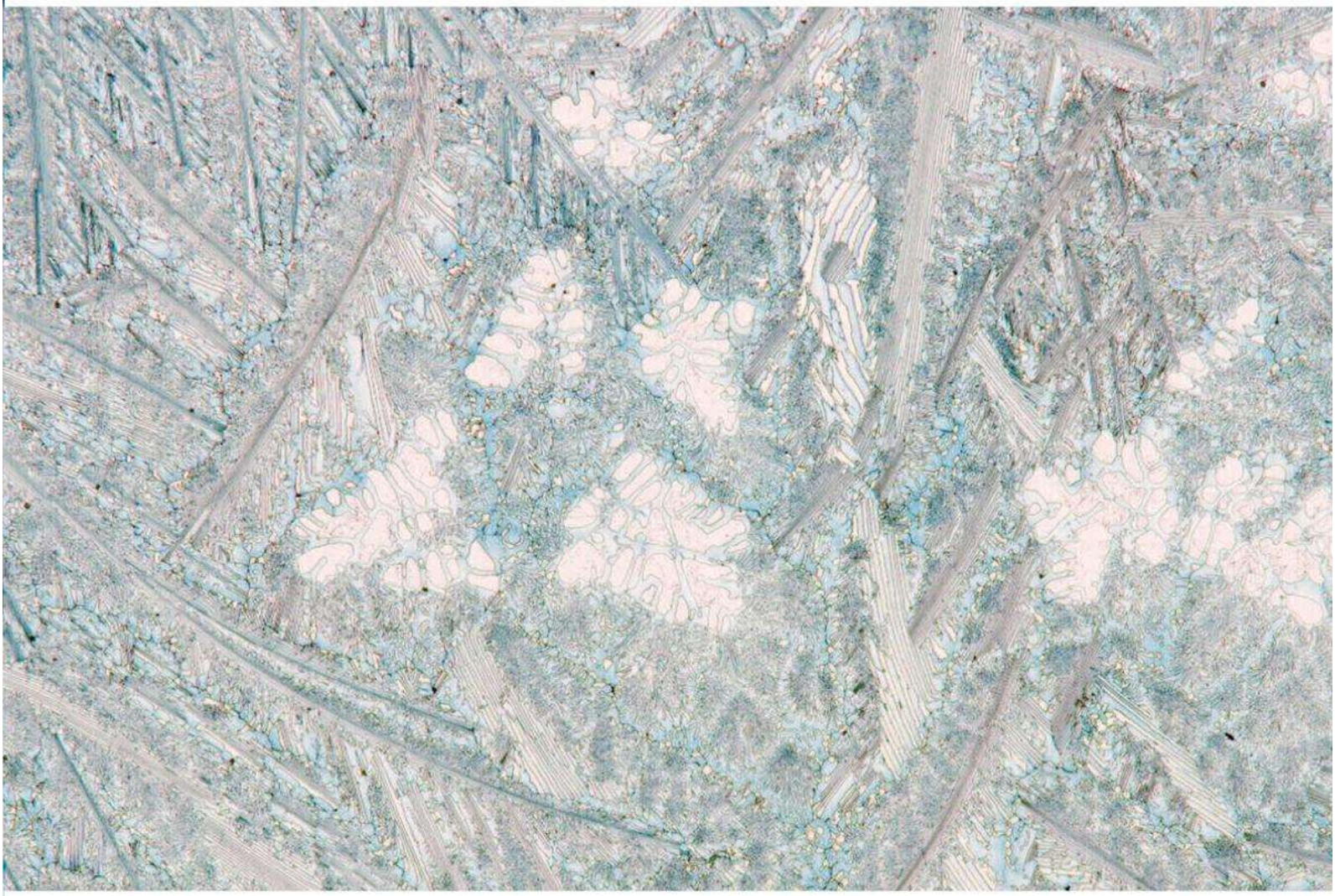


Image Provided by:

~ **Ondrej Ambroz**: Institute of Scientific Instruments of the Czech Academy of Sciences, Czech Republic

High Performance Choices

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

EpoKwick® FC



Spend less time preparing and more time analyzing

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

EpoThin® 2



Protect samples with this gentle low cure temperature epoxy

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

EpoxiCure® 2



General purpose epoxy system optimized for routine application

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

EpoHeat® CLR



Save time with long pot life

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

Product Specifications

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

**values compared with other epoxies* *• Peak exotherm is for 20g cured at 70° F*

Ordering Information

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

† Restricted article, requires special packaging

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.

Only available in Europe

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 min @ room temperature	Good	Good	~84	~ 170F [77C]
VariDur™ 10	8min @ room temperature	Good	Good	~80	~212°F [100°C]
VariDur™ 200	5-8min @ room temperature	Good	Better	~85	~212°F [100°C]
VariDur™ 3003	15-30min @ room temperature	Good	Best	~90	~252°F [122°C]

**values compared with other acrylics* *•Peak exotherm is for 20g cured at 70° F*

Ordering Information

	Powder		Liquid†	
Material	**Part Number**	**Size**	**Part Number**	**Size**
SamplKwick®	**20-3562** **20-3566** **20-3562-025** **20-3562-100**	1 lb [0.45kg] 5 lbs [2.3kg] 25 lbs [11.3kg] 100 lb [45kg]	**20-3564** **20-3568** **20-3564-320** **20-3564-640**	12oz [0.36L] 64oz [1.9L] 2.5gal [9.5L] 5gal [19L]
VariKleer®	**20-3591** **20-3591-002** **20-3591-010**	2.2 lbs [1kg] 4.4 lbs [2kg] 22 lbs [10kg]	**20-3592** **20-3592-001** **20-3592-005**	16.9oz [500mL] 33.8oz [1L] 1.3gal [5L]
VariDur™	**20-3576**	5lbs [2.3kg]	**20-3578**	64oz [1.9L]
VariDur™ 10	**11-1027** **11-1031**	2.2 lbs [1kg] 22 lbs [10kg]	**11-1029** **11-1033**	16.9oz [500mL] 1.3gal [5L]
VariDur™ 200	**11-1030** **11-1034**	2.2 lbs [1kg] 22 lbs [10kg]	**11-1029** **11-1033**	16.9oz [500mL] 1.3gal [5L]
VariDur™ 3003 3-part system	**20-3531** **20-3534**	3.3 lbs [1.5kg] 16.5 lbs [7.5kg]	**20-3535** **20-3536** **20-3532**	.65gal [2.5L] Liquid 1 1.3gal [5L] Liquid 2 Liquid Kit Contains: 16.9oz [500mL] Liquid 1 33.8oz [1L] Liquid 2

† Restricted article, requires special packaging

UV Curing System

SimpliUV®, UVKwick®, & UVKups®



All New

Simplify Your Mounting Process

SimpliUV improves lab efficiency with fast curing, reduced material waste, and fewer preparation steps. Its intuitive operation minimizes training and rework, helping labs achieve faster turnaround times while focusing more time on analysis.

How the SimpliUV Works

This UV curing system delivers fast, high-performance results through optimized UV-curing technology, enabling curing in as little as 2 minutes. Advanced control over curing variables can help minimize peak temperatures, improve consistency and sample integrity. The low-viscosity resin enhances flow and penetration. Once cured, it achieves a hardness exceeding 80 Shore D, providing excellent support and edge retention, ultimately improving throughput and reliability in demanding applications.

1 Pour



Place your sample into a **UVKup®** mold and fill using **UVKwick®** resin.

2 Program



Select a program to cure the resin.

3 Cure



Start the curing cycle and produce samples ready for your next step.

UV Curing

Simplify your mounting process

FAST EASY CONSISTENT

Maximize Time and Resources

SimpliUV improves lab efficiency with fast curing, reduced material waste, and fewer preparation steps. Its intuitive operation minimizes training and rework, helping labs achieve faster turnaround times while focusing more time on analysis.

Faster
- Cycles as short as 2 min
- Reduced prep time
- Higher throughput

Simpler
- Single component resin
- No mixing
- Minimal training

More Productive
- More samples processed per shift
- Optimized workflow

Cost Effective
- Reduced material waste
- Lower consumption
- Fewer remounts

Ordering Information



Part Number	Description
201800UV	SimpliUV Mounting System



Part Number	Description
201810040	UVKwick Resin 0.38L [400g]
201810400	UVKwick Resin 3.8L [4kg]
201820025	UVKup Mold, Ø25mm
201820030	UVKup Mold, Ø30mm
201820040	UVKup Mold, Ø40mm
201820050	UVKup Mold, Ø50mm
201820100	UVKup Mold, Ø1 in
201820125	UVKup Mold, Ø1.25 in
201820150	UVKup Mold, Ø1.5 in
201820200	UVKup Mold, Ø2 in

Technical Specifications

Dimensions: 17.7 in L x 13 in D x 9.8 in H [450mm L x 330mm D x 250mm H]
Weight: 62.8lbs [28.5kg]
Chamber Capacity: up to 20 samples* (*UVKup Mold, Ø25mm)
Sample Stage Dimensions: 12.6 in L x 6.5 in D x 1.6 in H [321mm L x 165mm D x 40mm H]

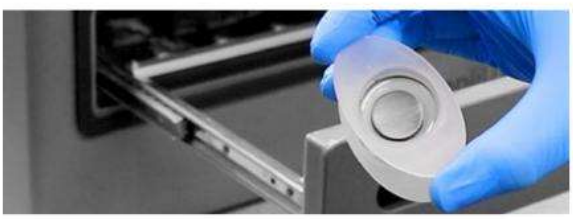
Utilities Required

120-240VAC
50-60Hz

Accessories

Glass Sample Stage	201801UV
Fume Extractor (220V/50HZ)	201802UV
Fume Extractor (120V/60Hz)	201804UV
DeKup Press	201803UV







Unique Functionality

A vacuum system with unique multi-cycle capabilities, offering excellent pore impregnation in a compact format.





SimpliVac®

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

High efficiency

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

Simple Dispensing

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

Programmability

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

Technical Specifications

Vacuum Chamber

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

Utilities Required

120-240VAC 50-60Hz

Compressed Air

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

Accessories

Dispensing Tubes (Qty 100)	**20-1551**
Vacuum Bowl Liner (Qty 5)	**20-1553**
Vacuum Tray Liner (Qty 100)	**20-1555**

Ring Forms & Castable Molds



Disposable Mounting Cups

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

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



Plastic Ring Forms

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

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



SamplKup®

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

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



EPDM Round & Rectangular Molds

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

EPDM Round Molds (Qty 5)

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

EPDM Rectangular Molds (Qty 1)

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

Mounting Consumables & Accessories



Pigments

Use with castable resins for color coding or creating contrast

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



Release Agent

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

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



Mold Release Spray

Less hazardous spray release agent for use on castable mounting molds

20-3050-008 8oz [0.24L]



Mold Release Powder

Powder release agent for use on mounting presses

20-3048 2oz [45g]



SamplKlip

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

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

20-4000-100 (Qty 100)



SamplKlip I

Plastic support clip best for castable mounting systems.*

0.25 H x 0.475 W x 0.3in L
[~6 x 12 x 8mm] 0.230g
20-4100-100 (Qty 100)

0.25 H x 0.425 W x 0.25in L
[~6 x 11 x 6mm] 0.230g
20-4100-100S (Qty 100)



Specimen Support Clip

Plastic support clip best for castable mount systems.•

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

20-4001-000 (Qty 1000)



UniClip Support Clip

Plastic support clip for use with all mounting systems.

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

20-5100-100 Clear (Qty100)
113043 Black (Qty 100)



Plastic Mixing Cup

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

20-8176-100



Paper Mixing Cup

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

20-8178-100



Stirring Sticks

For stirring castable mounting systems. (Qty 1000)
Not availabe in Europe

20-8175



Conductive Filler

Nickel filler makes castable mounting systems conductive

20-8500 2 lb [0.9kg]



Flat Edge Filler

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

20-8196 1 lb [0.45kg]



Thermoplastic Cement

For adhering samples to glass slides or other specialty holders

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



Crystal LT Mounting Wax

For adhering samples to glass slides or other specialty holders

20-8145 Use at 127°F[53°C]



Crystalbond Mounting Wax

For adhering samples to glass slides or other specialty holders

40-8155 Use at 257°F [125°C]

** Compatible with specimens up to 0.200in [5mm] thick*
† Restricted article, requires special packaging
• Compatible with specimens between 0.0035 – 0.090in [0.9 – 2.3mm]

Protect the Integrity of Your Samples

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



SimpliMet® 4000



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

Technical Specifications

Dimensions

Open
12.25in [311mm]W x 26in [662mm]D x 20.62in [524mm]
Closed
12.25in [311mm]W x 26in [662mm]D x 19.62in [498mm]
Weight
120lbs [54kg]

Utilities Required

Drain

Water

100-240VAC
50-60Hz



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

High Reliability in 24/7 Environments

- The SimpliMet 4000 was tested in extreme conditions to simulate the busiest labs in the world. This machine provides high reliability in continuous use environments.

Optimize Productivity in Your Space

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

Ease of Use Saves Time and Protects Sample

- The simple user interface makes the machine easy to use and increases the repeatability of your sample prep.
- Initial setup is so simple, you can use the SimpliMet 4000 right out the box without the wait.

Comfortable to use

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

Chamfer Ram

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

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

Minimize Shrinkage and Preserve Sample

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

Wide Portfolio for Every Application

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

Excellent Edge Retention

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

Quick Cycle Set-Up with No Mess

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

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

General Purpose Compounds



PhenoCure® & PhenoCure® LP Powder

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

PhenoCure

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

PhenoCure LP

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



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**		

View Options for Compression Mounting Compounds

Specialty Compounds



EpoMet® G (Granular)

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

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

Black



Diallyl Phthalate

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

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

Blue



EpoMet® F (Fine)

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

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

Black



TransOptic

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

20-3400-080	5 lbs [2.3kg]

Clear



ProbeMet®

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

20-3385-064	4 lbs [1.8kg]

Copper



KonductoMet®

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

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

Black

Compression Mounting Tips



Gaps between the mounting compound and sample are related to differences in expansion coefficient and ability of the media to adhere to the sample. Use of a slightly lower molding temperature and fully cooling under pressure will reduce shrinking with most mounting compounds.



Circumferential splitting results from formation of gases in the media during molding. This may be caused by absorbed moisture. Ensure storage of media is in a cool, dry place. Use pre-load settings to assist in release of gases while media is in the liquid state.



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 specimens farther from the edge of the mount.



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

View Compression Mounting Guide for more information



Unfused mounts may have a frosted appearance, this is caused by insufficient molding pressure or time at temperature.



Lack of clarity, "cotton balling", in TransOptic is caused by a failure to reach proper molding temperature or insufficient time at temperature. Crazing in TransOptic is caused by insufficient or too rapid cooling. Increase cooling time, use thermoplastic cooling settings (available on SimpliMet 4000).

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 fills pores in the specimen with epoxy and enhances the end result.
- Epoxies are sensitive to the ratio of resin and hardener. Be sure to follow the recommended mass ratio for each product.

View Epoxy Mounting Guide for more information

Acrylic Tips

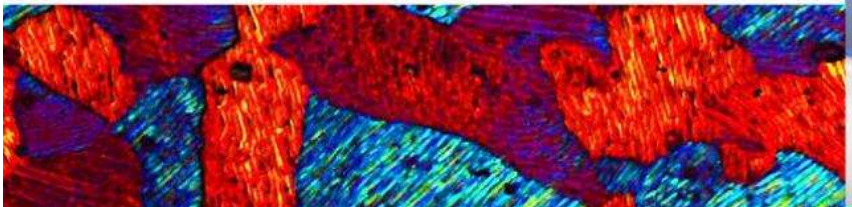


- Acrylics cure quickly so it is highly recommended to pour the mixture into the mold immediately after mixing to prevent "gelling".
- Acrylic systems are not for use with Vacuum Systems because the vapor released can eliminate the vacuum nor are they for use with Disposable Mounting Cups because the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

View Acrylic Mounting Guide for more information

Grinding & Polishing

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





Featured Microstructure

Commercial pure aluminum core within copper clad aluminum. Anodized with Barker's reagent and viewed under cross-polarized light at 200x magnification.

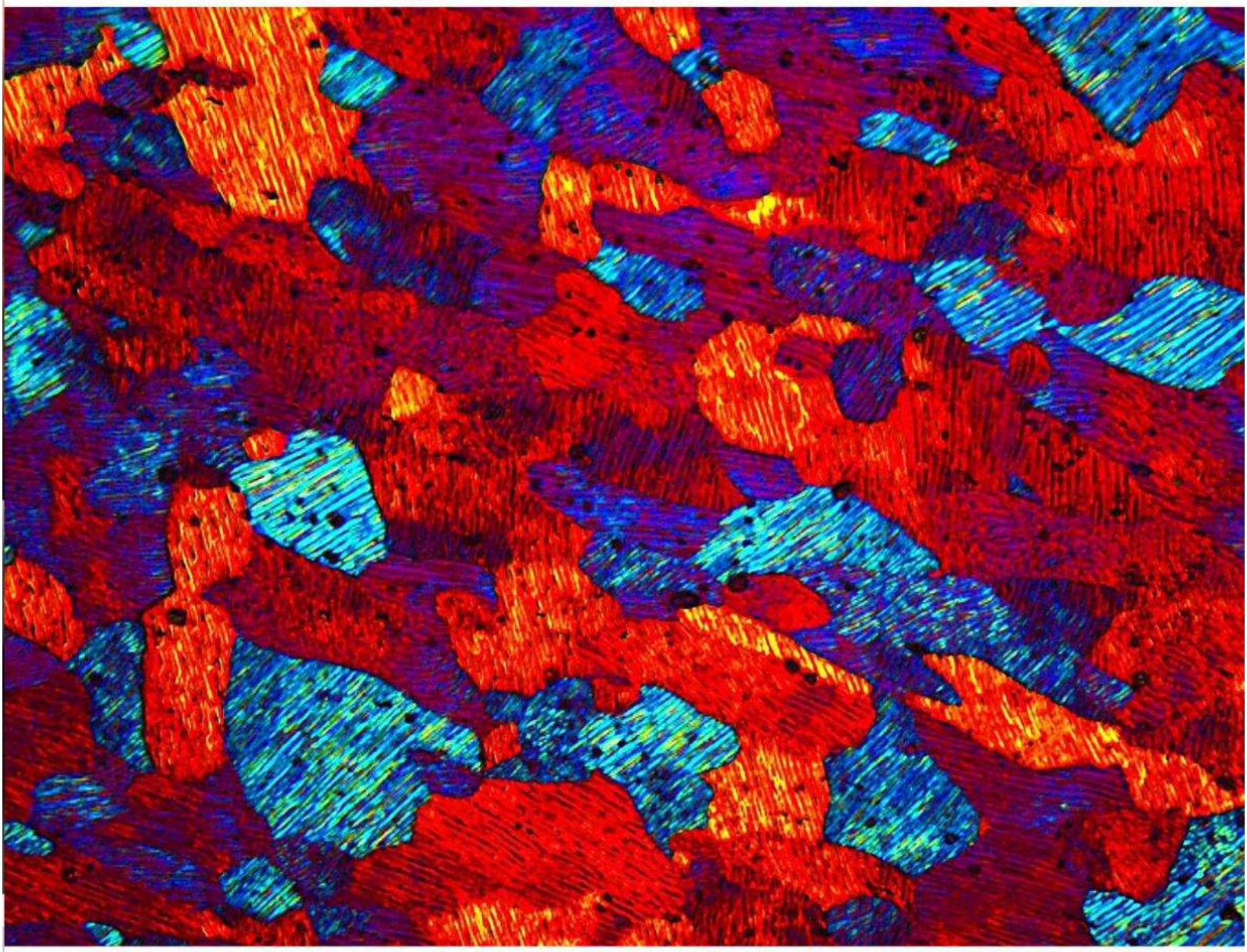


Image Provided by:
Brandon Finateri, University of Windsor, Canada; Credit also to **Renata Zavadil** and **Noah Carson**, CanmetMATERIALS Natural Resources Canada

A Grinder-Polisher Solution for Any Lab

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



EcoMet® 30 Manual

EcoMet 30 Manual is a simple yet effective machine with the functions you need to manually process. It has quick clean features to save time and effort, is made from a durable metal casting for robustness and stability, and has an ergonomic splash ring for comfortable manual use. Available with single or twin platens for multiple users.



EcoMet® 30 Semi-Auto

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



AutoMet® 250

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



AutoMet® 250 Pro

AutoMet 250 Pro has additional premium features like an intuitive and programmable touchscreen and Z axis depth removal. With method storage, users can achieve repeatability and fast setup, which can be improved even more when combined with the Burst automated dispensing system.



AutoMet® 300 Pro

AutoMet 300 Pro is similar to the AutoMet 250 Pro, with an enhanced motor and larger platen size to accommodate larger samples. In addition, it also features advanced options like Z depth grinding and is compatible with the PC-Met and PWB Met electronic solutions.



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

Product Specifications

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

Designed for Demanding Production Lab Environments

Accommodate various applications with this versatile line of Grinder-Polishers, featuring durable construction, quick-cleaning design, and user-friendly enhancements for high-use environments.





AutoMet®



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

AutoMet Features

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

AutoMet Pro Features

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

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

Accessories

AutoMet 250 & 250 Pro

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

AutoMet 300 Pro

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

Technical Specifications

Dimensions

AutoMet 250 & 250 Pro

27.5in H x 24.4" D x 20in W [699mm H x 620mm D x 508mm W]

Weight

170 lb [77 kg]

AutoMet 300 Pro

28.5in H x 28.6in D x 23in W [724mm H x 726mm D x 584mm W]

Weight

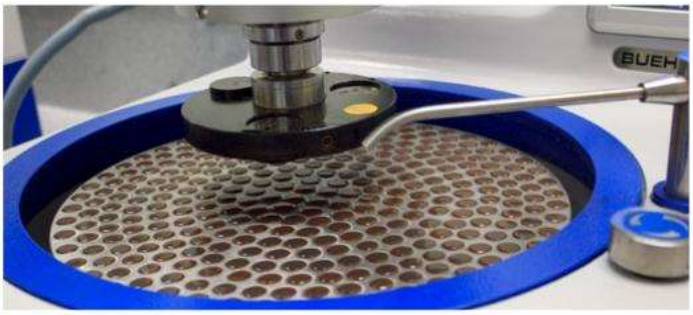
219 lb [99 kg]

Utilities Required

Drain | Water | 100-240VAC 170 -240VAC 50-60Hz | Compressed Air

Grinding & Polishing Made Simple

The EcoMet 30 is a simple, yet highly effective grinder-polisher and an excellent choice for any lab that values efficiency. Best suited for consistent sample environments or those with a dedicated machine for each grinding-polishing step.



EcoMet® 30 Semi-Auto



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

** Platen Kit not included*

Technical Specifications

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

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

Utilities Required

Drain | Water | 85-264VAC 50-60Hz | Compressed Air



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

Routine Grinding and Polishing Made Easy

- Intuitive and easy to learn touchscreen interface
- Focus on everyday use features
- Stored steps for quick setting recall

Easy to Clean

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

Burst Dispensing

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

Accessories

Platen Kit *(Required)*
Each Kit includes a platen, splash ring and cover

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

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

49-1005 Qty 5

Rapid Grinding & Polishing

Quickly process individual samples with manual machines. The EcoMet 30 Manual was designed to be a constant-use machine to quickly move samples to the next step.





EcoMet® 30 Manual



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

Ergonomic Manual Polish

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

Easy to Clean

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

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

Technical Specifications

EcoMet 30 Manual Single
Dimensions:
19.7in [500mm] L x 25.6in [650mm] D x 17.7in [450mm] H
Weight: 102lbs [46kg]

EcoMet 30 Manual Twin
Dimensions:
37.4in [950mm] L x 26in [660mm] D x 17.7in [450mm] H
Weight: 154lbs [70kg]

Utilities Required

Drain | Water | 85-264VAC 50-60Hz

Accessories

Platen Kit *(Required)*
Each Kit includes a platen, splash ring and cover

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

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

49-1005 Qty 5

Integrate Your Grinder-Polisher with Burst Dispensing

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

Choose from two different Burst Configurations

Fully Integrated

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

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



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

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

- Choose up to 5 Burst modules (Part Number **40-10005**)
  includes a stir bar and 16oz bottle
- Add stadium seating module (Part Number **40-10004**)
- Add dispensing arm (Part Number **40-10006**)
- Add additional stir bar (Part Number **00-10100**)

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

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

Accessories

40-10004 **Stadium Seating Module**
A compact and efficient method to hold up to 5 burst modules

40-10006 **Dispensing Arm for AutoMet® 250/300**
The dispensing arm attaches the AutoMet Pro Grinder-Polisher to the burst dispensing system. Outlet tubing from the burst system is secured neatly into the arm. Outlet nozzles dispense suspension on to the platen.

00-10100 **Stir Bar**
Magnetically driven stir bars prevent settling of suspension. Use one for each module.

Independent

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



Compatible with all Grinder-Polishers

How to configure independent Burst modules:

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

Accessories

40-2832 **Cable for connecting module to module**
For connecting more than 1 burst module in the independent configuration. Up to 5 modules can be connected together. Requires one cable for each module added to the first module.

40-2823 **Hand Switch**
Used to control the start/stop function.

00-10100 **Stir Bar**
Magnetically driven stir bars prevent settling of suspension. Use one for each module.

40-2704 **Cable to Control Start/Stop Function**
For controlling start/stop function of Burst from the AutoMet 250/300 & EcoMet 30

Prepare for Grinding Samples

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

Single Force Specimen Holders

◯ *Round/Barrel* ▭ *Rectangle* *Slides*

EcoMet 30 Power Head

*For use with **60-9005** Drive Adapter.*

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





AutoMet® 250 Power Head

*For use with **60-9005** Drive Adapter.*

Part Number	Style	Size	Capacity	Additional Accessories
60-9010	◯ Slides	1in	6	**63-1022** Retaining Rings (Qty 6pk) **60-9120** 1 x 3in Glass Slide Holder **60-9130** 2 x 3in Glass Slide Holder **60-9100** 27 x 46mm Glass Slide Holder **60-9140** 28 x 48mm Glass Slide Holder
60-9011	◯	1.25in	6	**63-1023** Retaining Rings (Qty 6pk)
60-9012	◯	1.5in	6	**63-1024** Retaining Rings (Qty 3pk)
60-9020	◯	25mm	6	**63-1022** Retaining Rings (Qty 6pk)
60-9021	◯	30mm	6	**63-1023** Retaining Rings (Qty 6pk)
60-9022	◯	40mm	6	**63-1024** Retaining Rings (Qty 3pk)

AutoMet® 300 Power Head

*For use with **60-9005** Drive Adapter.*

Part Number	Style	Size	Capacity	Additional Accessories
60-9060	◯ Slides	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	

Prepare for Grinding Samples

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.

Central Force Specimen Holders

◯ *Round/Barrel* ▭ *Rectangle* 💧 *Teardrop*



AutoMet 300 Power Head

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

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	6
60-5288	◯	40mm	6
60-5299	◯	2in	5
60-5296	💧	2in or 50mm	5
60-5297	▭	55 x 30mm	5
60-5298	▭	70 x 40mm	3

AutoMet 250 and EcoMet 30 Power Heads



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

Part Number	Style	Size	Capacity
60-2482	◯	1in	6
60-2483	◯	1.25in	6
60-2422	💧	1.25in [32mm]	6
60-2485	◯	1.5in	3
60-2486	◯	30mm	6
60-2487	◯	40mm	3
60-2409	▭	1 x 1.25in [25.4 x 31.75mm]	4
Uses loading plates ***60-2411*** or ***60-2412*** 157mm diameter for 10" or 12" platens			
60-8240	💧	18 - 51mm	5
60-8210	💧	12 - 40mm	6
60-8262	💧	10 - 25mm	12
60-8254	▭	55 x 30mm	5
60-8255	▭	70 x 40mm	3

Accessories for Specimen Holders

Loading Fixtures and Plates



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

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

Drive Adapters



Pairs specimen holders to the chuck of the automatic head

Part Number		Compatible With
60-9000	Central Force	AutoMet 250/300, EcoMet 30
60-9005	Single Force	AutoMet 250/300, EcoMet 30

Target Holders



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

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

Irregular Sample Holder

Versatile holder for preparation of irregular samples



Part Number	Description
49-2505	127mm Ø for 8", 10" or 12" platens
49-2506	157mm Ø for 10" or 12" platens
49-2507	200mm diameter for 12" platens
49-2508	Polymer coated pins for delicate samples

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" Aluminum platens	AutoMet® 250 AutoMet® 300 EcoMet® 30
60-5254	7.12in [181mm] for 12" Aluminum platens only	AutoMet 300 EcoMet® 30

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	**60-9150** (max 3 per specimen holder)	**60-10062** for EcoMet 30	**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 30 and AutoMet 300

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

Accessories

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

PWB Met® Small Hole Accessory



- Higher precision PWB preparation system
- Prepares up to 18 coupons simultaneously
- Prepares reproducible cross-sections of through-holes down to 0.004in
- For use with EcoMet 30 and AutoMet 300

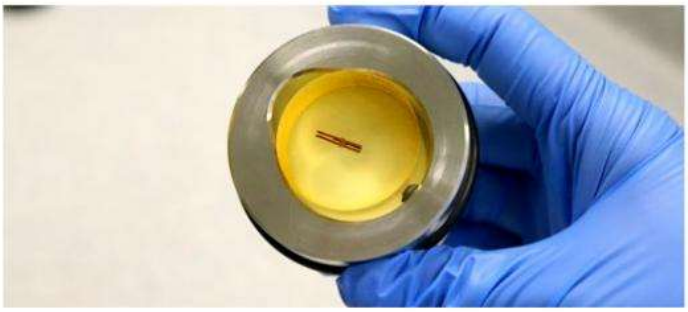
Part Number	Contents
60-5175	Indexing pins, polycrystalline diamond stops, Pin loader, dial indicator calibration gauge, silicone mold release spray, gauge blocks, sample extractor and wooden case

Accessories

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

Unmatched Quality Through Vibration

The VibroMet 3 uses gentle vibration to achieve the surface quality your sample requires.





VibroMet® 3



Part Number	Description
672105	VibroMet 3, 100-240VAC

Technical Specifications

Dimensions:
Open
20.6in [522mm] W x 28.5in [724mm] D x 28in [711mm]
Closed
20.6in [522mm] W x 23.8in [578mm] D x 15in [381mm]

Weight: 160lbs [71.5kg]

Utilities Required

100 - 240VAC,
1 phase
50/60Hz

The VibroMet 3 vibratory polisher delivers superior sample quality for diverse applications, including EBSD analysis. Its advanced features eliminate residual deformations for an exceptional polish, while programmable settings ensure consistent quality and batch reliability. Trust the VibroMet 3 for precision and confidence in your process.

High Quality Surface Finish

- With its oscillating motor and use with final polishing cloths and suspension, remove the minor deformation remaining after mechanical preparation, revealing the stress-free surface without the need for hazardous electrolytes required by electro-polishers.

Maximized Efficiency

- Easily adjust parameters, save customized methods, and safeguard samples with end-cycle protection options on the the VibroMet 3's programmable and user-friendly interface.

Accessories

67-2121	Specimen Holder, 1in [25mm] (Qty 3)
67-2122	Specimen Holder, 1.25in [30mm] (Qty 3)
67-2123	Specimen Holder, 1.5in [40mm] (Qty 3)
67-2124	Specimen Holder, 2in [50mm] (Qty 3)
67-2129	Specimen Weights (Qty 9)
67-2140	Loading Fixture, (all diameters)
67-2130	Polishing Bowl and Ring

Precise

Target deformation for exceptional sample quality.

Versatile

Transition quickly between batches of various materials.

Dependable

Deliver repeatable, high quality surface finishes.



EnvironMet® System

Designed for use with manual and semi-automatic grinder-polishers, the EnvironMet® Filter System supplies clean water for each step in preparation. The filtration rate allow up to two grinder-polishers to operate off of one system.

Part Number	
49-2500	Recirculating Filter System (1µm Filter)
49-2501	Filter System (100µm Filter)

Accessories

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

Technical Specifications

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

Weight: 56lbs [25kg]

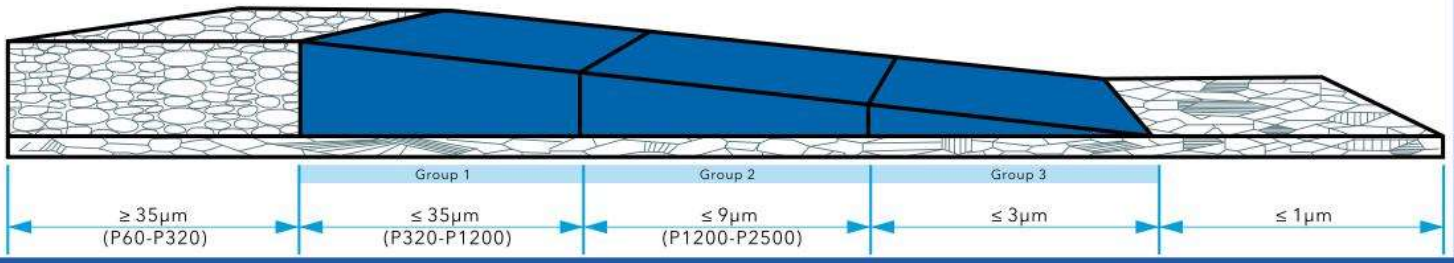
Utilities Required

Drain

Compressed Air

BUEHLER SumMet® Materials Preparation Guide

Specimen Preparation



SEVERITY RATING	PLANAR GRINDING		SAMPLE INTEGRITY STAGE		POLISHING
5	Apex DGD 70µm/ Apex DGD Color 75µm (BF, SD, MM)	Apex DGD 30µm (BF)	Silicon Carbide Paper (BF, DG, P)	VerduTex/TriDent/ MicroFloc (VH, BF, P, GM, PM)	TexMet C (VH, BF)
	Apex DGD Color 55µm (DG)	Apex DGD 30µm (DG)	Ultra-Pad/Ultra-Pol/ TexMet P (VH, DG)		Ultra-Pol (BF)
4		Apex DGD Color 35µm (SD, BF, MM)	Hercules S/TexMet P/ Apex DGD Color 15um (BF, SD, DG, GM)	TexMet C/MicroFloc (BF, DG, MM)	PoliCloth/TexMet C MicroFloc (DG)
		Silicon Carbide Paper (BF, DG, P, PM)			MicroCloth/VelTex (DG, MM)
3	Silicon Carbide Paper P80-P320 (BF, SD, DG, P, MM, PM)	Hercules H/Hercules S/ Apex DGD 30µm (BF, DG, GM)	TexMet P (BF, SD, MM)	Ultra-Pol (BF, MM, GM)	ChemoMet (VH, BF, SD, DG, MM, GM, PM)
			TexMet P/TexMet C (VH, BF, GM)		MasterTex (BF, SD, DG, MM, PM)
2	Hercules H/Hercules S/ Apex DGD 45µm (BF, DG, GM)	Ultra-Pad/ Ultra-Pol/TexMet P (VH, BF, DG, MM)	TexMet C (VH, BF, DG, PM)	VerduTex/ TriDent/Nylon (SD, MM, PM)	VelTex (SD, DG, MM)
			VerduTex/ TriDent/Nylon (SD, DG, MM)		
1			VerduTex/TriDent/ Nylon/MicroFloc (BF, SD, DG)		Vibratory Polish (BF, SD, DG, MM, GM, PM)

Material Type

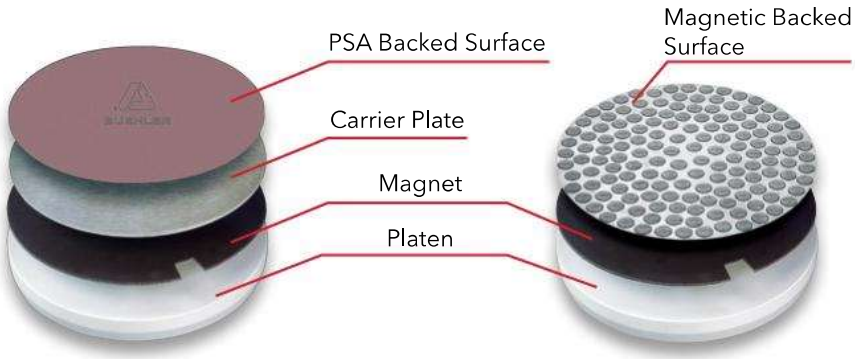
- VH — Very Hard HV1200+ Tungsten Carbide
- BF — Brittle Fracture HV1200- Refractories, Minerals, Ceramics
- SD — Soft Ductile HV90- Aluminium, Lead, Copper, Tin
- DG — Ductile General HV120+ Ferrous, Non-ferrous
- P — Polymer
- MM — Metal Matrix Composites (MMC)
- GM — Glass Matrix Composites (GMC)
- PM — Polymer Matrix Composites (PMC)

Platen Systems

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

Magnetic System

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



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

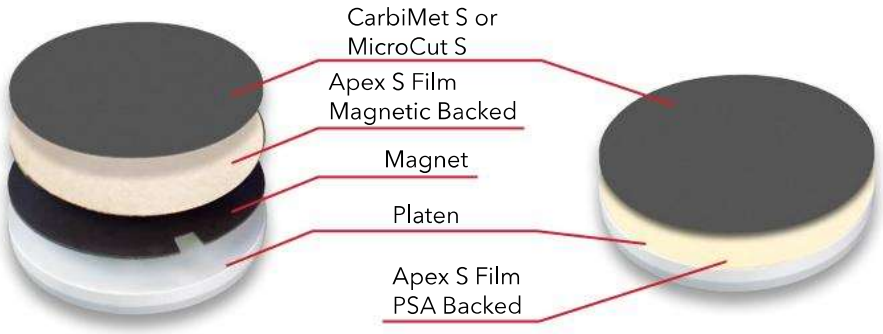
Type	Description	8in [203mm]	10in [254mm]	12in [305mm]
Apex® M Magnet PSA Backed (Qty 1)	Contains tabs for easier plate removal	**41-2739-608-001**	**41-2739-610-001**	**41-2739-612-001**
MagnoFix Magnet PSA Backed (Qty 1)	Standard magnet	**16-2070**	**16-2570**	**16-3070**

Carrier Plate Selection

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

Apex® S System

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



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

Efficient Material Removal & Minimal Surface Damage

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

High Material Removal with Superior Surface Finish

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

Quick Change-Overs

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

Delicate Preparation

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

Apex® S Backed

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

	Grit Size ANSI [FEPA]	Approx. Micron Size	8in [203mm]	10in [254mm]	12in [305mm]
CarbiMet S	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 S	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*



View Options

CarbiMet and MicroCut Accessories

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

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

PSA Backed

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

View Options

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

*Contains 50 pcs

Plain Backed

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

View Options

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

*Contains 50 pcs

Diamond Grinding Discs with Great Removal and Flatness

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

Long Life with Consistent Results

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

Process a Variety of Materials

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

DGD Color

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

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





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

DGD Terra

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

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



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

DGD Ultra

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

Micron	8in [203mm]	12in [305mm]
125µm	**15-6199**	**15-6299**
70µm	**15-6170**	**15-6270**
45µm	**15-6145**	**15-6245**
15µm	**15-6115**	**15-6215**
9µm	**15-6109**	**15-6209**
6µm	**15-6106**	**15-6206**



Accessories



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



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

Versatile Premium Cloths Designed for Longevity & Quality Surface

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

Easy to Use Magnetic Backing

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

A Cloth for Every Application

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

Reliable Preparation Results

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

Polishing Cloth Selection Guide

	Cloth	Backing	Quantity	8in [203mm]	10in [254mm]	12in [305mm]	Description
COARSE	UltraPad®	PSA	10	40-7118	40-7120	40-7122	Hard woven, no nap
		Magnetic	5	42-3008	42-3010	42-3012	
	UltraPol®	PSA	10	40-7448	40-7450	40-7452	Hard woven, non-aggressive silk
	TexMet® P	PSA	5	40-7638	40-7640	40-7642	Hard non-woven, perforated
INTERMEDIATE	Nylon	PSA	10	40-7068	40-7070	40-7072	Medium hard woven, oil resistant, no nap
	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™


UltraPol™


TexMet® P


Nylon


TriDent™


TexMet® C


VerduTex®

Apex® Hercules

- Magnetic backed resin surface that provides excellent flatness
- Use with MetaDi® Diamond Suspension

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



Cloth	Recommended Micron Size	Abrasive Type	Applications
UltraPad®	6µm & Up	Diamond	Ferrous materials and thermal spray coatings
UltraPol®	6µm & Up	Diamond	Minerals, coals, ceramics, inclusion retention in steels, and refractory metals
TexMet® P	6µm & Up	Diamond	Electronics, ceramics, carbides, petrographic, hard metals, glass, and metal matrix composites
Nylon	6µm & Up	Diamond	Ferrous materials, sintered carbides and cast irons
TexMet® C	15 - 0.02µm	Diamond, Al_2O_3, SiO_2	Ferrous and nonferrous metals, ceramics, electronics, PCB's, thermal spray coatings, cast irons, cermets, minerals, composites, plastics
TriDent®	15- 0.02µm	Diamond, Al_2O_3	Ferrous and nonferrous metals, microelectronics, polymer matrix composites, coatings
VerduTex®	9 - 1µm	Diamond	Ferrous and nonferrous metals, microelectronics, coatings
VelTex®	9 - 1µm	Diamond	Soft metals
WhiteFelt™	6 - 0.02µm	Diamond, Al_2O_3, SiO_2	Ferrous and nonferrous metals
PoliCloth™	6 - 1µm	Diamond	Cast iron, copper and aluminum alloys
MicroCloth®	5- 0.02µm	Diamond, Al_2O_3, SiO_2	Ferrous and nonferrous metals, ceramics, composites, PCBs, cast irons, cements, plastics, electronics
MicroFloc™	3 - 0.02µm	Diamond, Al_2O_3, SiO_2	Ferrous and nonferrous materials
MasterTex®	1 - 0.05µm	Al_2O_3, SiO_2	Soft nonferrous and microelectronics
ChemoMet®	1 - 0.02µm	Al_2O_3, SiO_2	Titanium, stainless steel, lead/tin, solders, electronics, soft nonferrous metals, plastics


VelTex™


WhiteFelt™


PoliCloth™


MicroCloth®


MicroFloc®


MasterTex®


ChemoMet®

View Options

Suspensions & Pastes that Ensure Superior Surface Quality

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

Repeatable Polishing Results

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

Fast Preparation Time

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

Processing Unique Materials

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

MetaDi® Diamond Suspensions

MetaDi Supreme Polycrystalline Suspension

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

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



MetaDi Monocrystalline Suspension

Monocrystalline suspension provides good material removal for most materials.

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



Dye-Free MetaDi Supreme Polycrystalline Suspension

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

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

MetaDi Monocrystalline Suspension Oil Based

Ideal for processing materials that are water-sensitive.

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

MetaDi Combo, Suspension & Extender

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

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

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

MetaDi® Diamond Pastes

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

View Options

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.

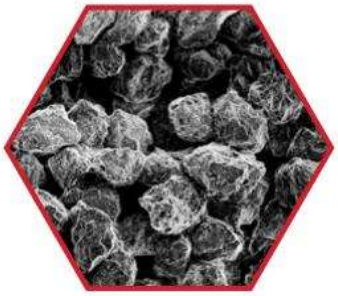
Color	Diamond Size	5g	20g
Grey	0.25µm	**40-6241**	**40-6240**
Blue	1µm	**40-6244**	**40-6243**
Green	3µm	**40-6247**	**40-6246**
Yellow	6µm	**40-6250**	**40-6249**
Deep Red	9µm	**40-6253**	**40-6252**
Brown	15µm	**40-6256**	**40-6255**

Polishing Extenders and Lubricants

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

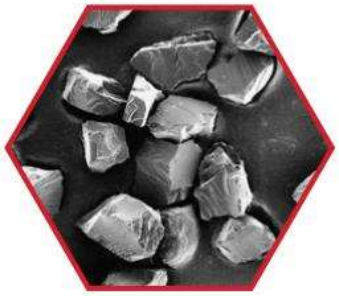
Part Number	Description
40-6016	MetaDi Fluid, 16oz [0.47L]
40-6032	MetaDi Fluid, 32oz [0.95L]
40-6064-085	MetaDi Fluid, 85oz [2.5L]
60-3250-006	AutoMet® Oil, 6oz [0.18L]
60-3250-128	AutoMet® Oil, 1gal [3.8L]

Differences between Polycrystalline and Monocrystalline Diamonds



45micron diamond in SEM (450X)

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



45micron diamond in SEM (450X)

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

Effectively Eliminate Surface Deformation

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

Excellent Surface Finish

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

Application Specific Solutions

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



MasterPrep® Alumina

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

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



MasterMet® Colloidal Silica

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

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



MasterMet® 2 Colloidal Silica

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

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



MasterPolish® Final Polish

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

40-10084	32oz [0.95L]



MicroPolish® Alumina Suspension

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

40-10083	0.05µm	6oz [0.18L]
40-10082	0.3µm	6oz [0.18L]
40-10081	1µm	6oz [0.18L]
40-10081-128	1µm	128oz [3.785L]



MicroPolish® Alumina Powder

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

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



MiroMet® Polish

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

406355006	1 µm	6oz [180 mL]



MicroPolish® II Alumina Powder

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

40-6322-016	1µm	1lb [0.45kg]

FibrMet™ Abrasive Discs

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

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

UltraPrep™ Diamond Lapping Films

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

Micron	8in [203mm] 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**

Consumables for MiniMet 1000

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

SiC Paper PSA Backed, 2.875in [73mm] Qty 100

	Cloth	Stage	Part Number
Polishing Cloths	UltraPol™	Coarse	**40-7442**
	Nylon	Intermediate	**40-7052**
	TexMet® C	Intermediate	**40-1102**
	TriDent™	Intermediate	**40-7502**
	MicroCloth®	Fine	**40-7212**
	MasterTex®	Fine	**40-7702**
	ChemoMet®	Fine	**40-7902**

PSA Backed, 2.875in [73mm] Qty 20

View Options

Scan to see all options and accessories for the MiniMet 1000

Electrolytic Preparation

Electrolytic Polishing and Etching Systems for faster sample preparation, reduced processing steps, and consistent, repeatable results.





Featured Microstructure

2507 duplex stainless steel etched with the NeoTerra. Viewed under differential interference contrast at 100x magnification.

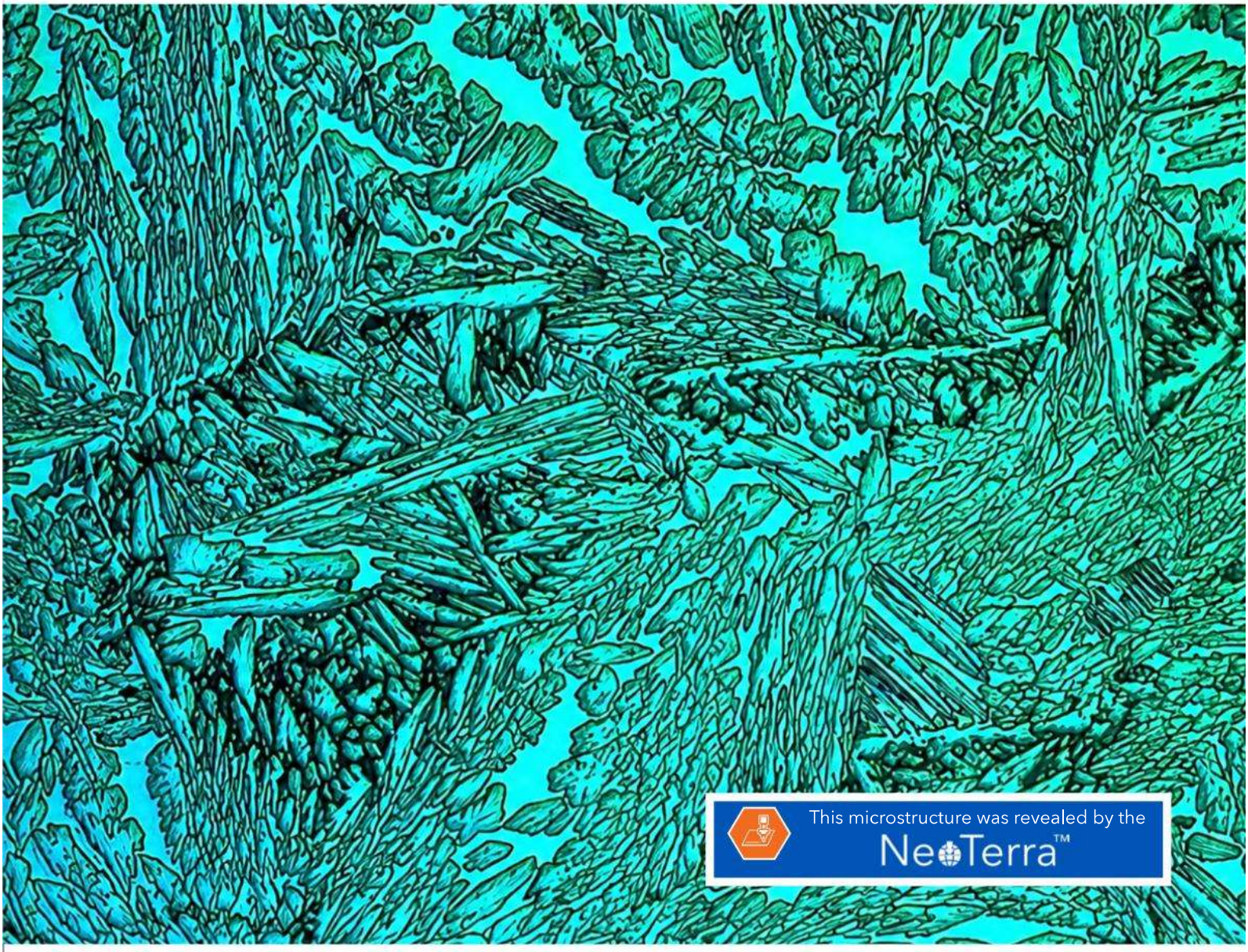


Image Provided by:

Stephen Suchy: Buehler a Division of ITW, USA.

NeoTerra® Electrolytic Metallography System



A SAFER, SMARTER APPROACH TO SAMPLE PREPARATION

NeoTerra prepares samples in minutes using our acid free **TerraBlends**. Skip multiple steps while obtaining consistent, repeatable results from every technician in the lab.

Simply select your material, choose a method, select your etch area and run. The **NeoTerra** also includes a built in washdown function and the **TerraBlends** recirculate in the self-contained system.

Fast — Easy — Safe

How NeoTerra® works?

NeoTerra uses the latest technology to electrolytically remove material using our **TerraBlend** solution. A special nozzle applies a current across the sample's surface along a defined area of the sample. The result is a plug and play process that eliminates steps in grinding and polishing of materials and achieves an etched surface.

1 Prep & Place



Start with a fast, reduced-step grinding and polishing workflow. Then load the sample into NeoTerra and establish the circuit.

2 Target & Tap



Use the joystick and laser sight to select your target area. Choose your pre-programmed method with just a tap.

3 Press Play & Reveal



Press play and watch NeoTerra reveal the microstructure.

NeoTerra®

Designed for the Needs of Busy Labs



FAST

The unique nozzle design does the work of multiple traditional grinding and polishing steps.



EASY

Simply select your material, choose a method, select your etch area and run.



SAFE

TerraBlends do not contain the dangerous chemicals typically used for metallographic etching.



Part Number	Description
499200	NeoTerra Electrolytic Metallography System

*Product availability varies by region



TerraBlends® Bundle

Acid-Free solution for use with the NeoTerra.

499221	Terrablend 1 5L with replacement filter
499222	Terrablend 2 5L with replacement filter

Technical Specifications

Dimensions:
35in [889mm] W x 27.5in [699mm] D x 30.5in [775mm] H
Weight: 150lbs [68kg]
Max. Sample Size:
6in [152.4mm] W x 6in [152.4mm] D x 2in [50.8mm] H
Max. Polishing Etch Area: 3.6in [93mm] X 3.7in [96mm]

Utilities Required

110-220VAC 50-60Hz | Water | Compressed Air

Accessories

Ring Holders for Mounted Samples
Choose these ring holders for use with mounted samples to facilitate setting an electrical circuit.

49-92000025	Specimen Holder, 1in [25mm]
49-92000030	Specimen Holder, 1.25in [30mm]
49-92000040	Specimen Holder, 1.5in [40mm]
49-92000050	Specimen Holder, 2in [50mm]
49-92000001	Specimen Holder, Unmounted

NeoTerra® Electrolytic Metallography System

COMPARISON OF ETCHING METHODS





	Traditional Electrolytic Etching	Chemical Etching	NeoTerra
Preparation time prior to etch	Often saves preparation steps	Full preparation process with high quality polish	Often saves preparation steps
Repeatability	Repeatable results once set up complete unless etch area is changed	Variable results person to person - experience required	Excellent repeatability with virtually no training required even if etch area is changed
Chemicals used	Uses hazardous chemicals that are sometimes explosive-often requiring a fume hood	Uses hazardous chemicals often requiring a fume hood. Some chemical are highly reactive	Safe electrolytes that can be used without a fume hood

Great Results with Fewer Preparation Steps

Save time on preparation and analyze sooner. Most NeoTerra preparation methods are 1-2 steps.

Traditional Preparation of Inconel (Nickel Alloy)

Additive Manufactured Nickel Alloy


CarbiMet®
Grind until Plane


UltraPad®
9µm **MetaDi®** Supreme
*Polish for **5** min*


TriDent®
3µm **MetaDi®** Supreme
*Polish for **3** min*


TriDent®
1µm **MetaDi®** Supreme
*Polish for **2** min*


ChemoMet®
0.06µm **MasterMet®**
*Polish for **2** min*


Kalling's Reagent
Etch sample

Preparation of Inconel (Nickel Alloy) with NeoTerra


CarbiMet®
Grind until Plane


NeoTerra®
***1-2** min*

Prepared with the NeoTerra®
Achieve the same great results in ***fewer steps*** and ***less time***



Etching Systems

The PoliMat 2 system provide both electropolishing and etching capabilities to enable efficient sample preparation.





PoliMat® 2



Produce smooth, artifact-free surfaces in minutes with a safe, cooled automatic electrolytic polishing and etching system for homogeneous metals and alloys. The PoliMat® 2 delivers highly polished, deformation-free surfaces ideal for microscopic examination while significantly reducing preparation time.

Key Benefits

- Automatic electrolytic polisher and etcher
- Polishes specimen areas up to 10 cm²
- Typical polishing times of 30 seconds or less
- Effective electrolyte cooling system
- Integrated safety features for temperature protection
- Distortion-free, highly polished surfaces
- No mechanical deformation layer
- Simple, user-friendly operation
- Suitable for most homogeneous metals and alloys

Part Number	Voltage
511000	PoliMat® 2 (220V, 50/60 Hz)
512000	PoliMat® 2 (110V, 50/60Hz)
510010	Electrolysis Cell (Complete Polishing Cell)
510011	Electrolyte Container Only
510012	Top Cover with Anode for Etching/Polishing Cell
510100	Mask Set (1 cm², 2 cm², 10 cm² and Blind Mask)

Technical Specifications

Dimensions
19.7in [500mm] x 9.8in [250mm] x 11.8in [300mm]
Weight
51lb [23kg]

Utilities Required

120VAC, 50/60Hz
220VAC, 50/60Hz

Imaging & Analysis

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





Featured Microstructure

Ti6Al4V Alloy Etched with Modified Weck's Reagent. Viewed under polarized light at 125x magnification.

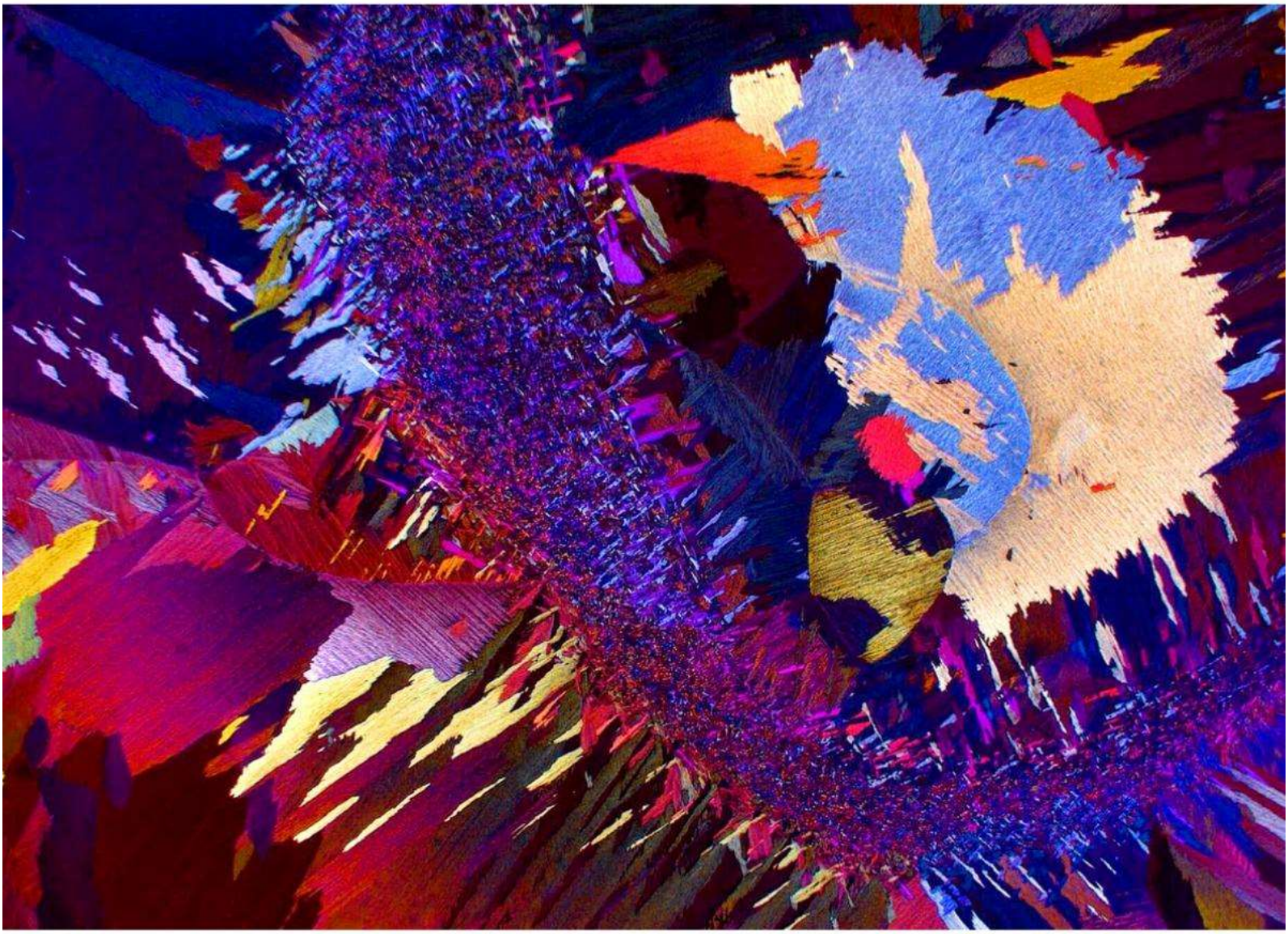
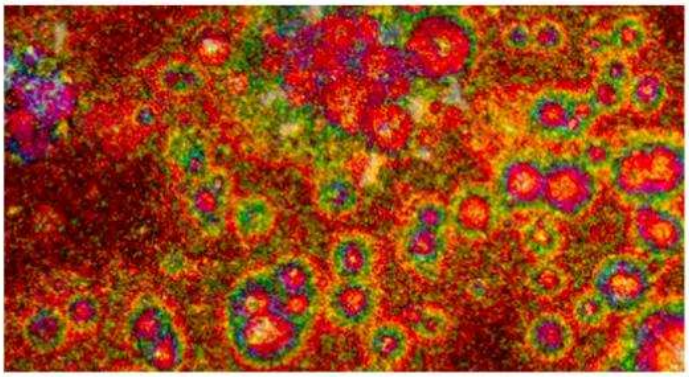


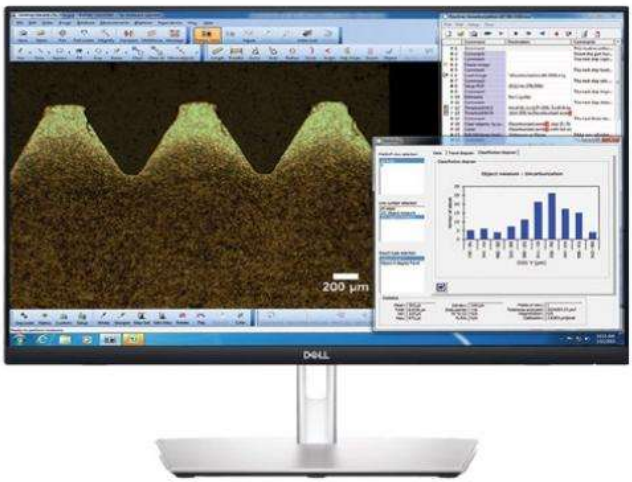
Image Provided by:

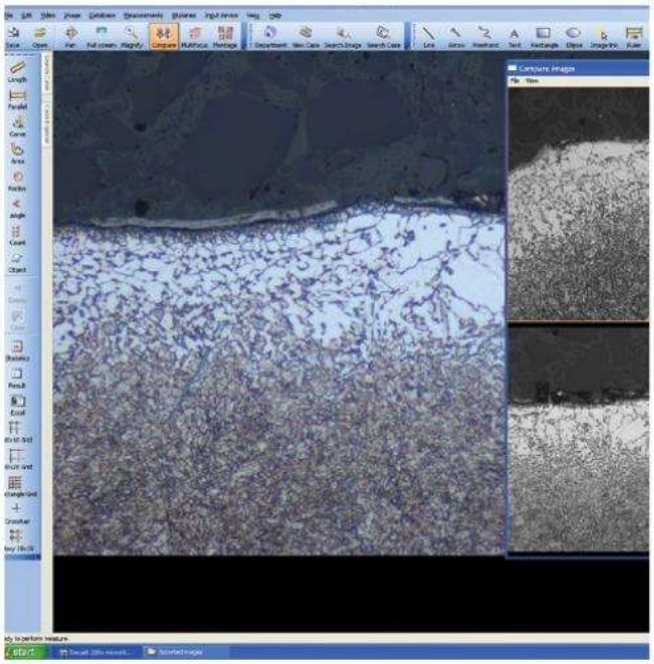
Lukasz Boron: Łukasiewicz Research Network Krakow Institute of Technology, Poland

Designed for Demanding Production Lab Environments



OmniMet®





Flexible

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

Powerful

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

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

** System Packages include OmniMet software pre-installed on a Windows 11 64-bit workstation. PPackage includes monitor, keyboard and mouse. Microsoft Office not included.*

*** Software Only package includes software, mousepad and is compatible with Windows 11 computer, (64-bit).*

OmniMet® Software Modules & Features

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

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

Capture Modules

Can be added to any package

86-4130 **OmniMet Multi-Focal Images**
Used to create focused images from multiple images of the same specimen when the viewing surface exists in different focal planes. Beneficial for removing edge rounding or viewing rougher surfaces when sharply focused images are required for analysis.

86-4140 **OmniMet Mosaic Multiple Image Stitching**
Used to stitch multiple images together to create one large, calibrated stitched image. Measurements are possible on the stitched image. Useful for documenting features larger than one field of view. A motorized stage is not required.

Advanced Measurement Modules

Can be added to any Advanced, Express or Enterprise package

86-4110 **OmniMet Object Analysis**
'Single phase' image analysis for measurements of image features and field characteristics: Area Fraction, Area Position, Number of Objects, Perimeter, Compactness, Length, Feret Diameter, Center of Gravity, Inclusion and Exclusion of Objects by Size.

86-4115 **OmniMet Weld**
Measurement Tools for determining weld characteristics. Use a circle radius to determine effective weld depth, angular A-measurements, or full weld outline characterization to determine effective depth, penetration and area.

86-4120 **OmniMet Hardness**
Measure Vickers and Knoop indentations interactively, quickly, and easily. Allows load force in gf or kgf and delivers accurate HV/HK values along with the diagonal indent dimensions.

86-4125 **OmniMet Grain Size**
Measure grain size interactively using ASTM-E112 methodology with linear intercept or circle intercept methods.

Application Specific Scripts *(optional)*

86-3050* **Manual Interactive** - Thickness Measurements of line lengths with statistics for length and thickness measurements.

86-3100* **Grain Size** - Automated grain size measurements in accordance with ASTM E112. Average grain size by intercept methods and grain size distributions using areas are delivered. Additional processing identifies ALA grain size and duplex populations in accordance to ASTM E930 and ASTM E1181 where appropriate. ISO 643 compliant.

86-3300* **Coating Layer** - Thickness Measures coating, plating or layer thickness of cross-sectioned samples in compliance with ASTM B487.

86-3400* **Graphite in Cast Iron** - Automated analysis of graphite in cast iron in accordance with ASTM A247. Measures size and class count of graphite nodules and area percentages of ferrite graphite and pearlite. For gray iron graphite length is also provided.

86-3500* **Particle Sizing** - Detects and measures particles in a field of view providing statistics on quantity and size distribution. Suitable for non-agglomerated particulates, precipitates, and powders.

86-3550* **Porosity Assessment** - Provides automated measurements of fine holes or pores in a material.

86-3750* **Dendritic Arm Spacing** - Delivers measurements of lengths between dendrite arms in cast aluminum alloys.

86-3200* **Phase Area Percent** - Determines phase area and percentage area of multiple phases in accordance with ASTM 562.

86-3150 **Intercept Grain Size** - Automated grain size determination delivering average grain size per field using straight line and circular intercept methods in accordance with ASTM E112.

86-3310 **Surface Roughness** - Surface roughness measurements in accordance with ASTM E B46.1-02.

86-3350 **Decarburization Depth Assessment** - Determines depth of total or partial decarburization according to the relative amount of free ferrite present according to ASTM E1077.

86-3525 **Cleanliness Assessment** - Provides cleanliness assessment of particles on filter paper meeting the requirements of ISO 4406.

86-3600 **Indentation Hardness** - Provides the capability to measure and analyze Knoop and Vickers indents in accordance with ASTM E384. Reports can be exported in HK, HV, HRC, and HRB scales with graphical displays of the hardness profile.

86-3700 **Banding Assessment** - Determines the degree of microstructural banding in conformance with ASTM E1268. Delivers quantitative information on the degree of orientation, anisotropy index, and mean feature spacing.

86-3850 **Inclusion Rating** - Determines area percentage, mean free path distances, and average numbers of intercepts for oxide and sulfide stringers in ferrous metals in accordance with ASTM E1245.

** Included with OmniMet® Enterprise*

Upgrades and Updates

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

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

Update OmniMet to the latest software release:

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

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

Microscopy

Microscopes offered by Buehler are categorized by stereo microscopes, upright microscopes, or inverted microscopes. Inverted microscopes are commonly referred to as metallurgical microscopes. Microscopes may offer episcopic (reflected light) observation, diascopic (transmitted light) observation, or both possibilities.

Large Field of View Needed
- Large Samples
- 3D Parts
- Macro imaging
- Multi-focal imaging

STEREO

SMZ800N



- BF/Reflected Only
- 8:1 Zoom Ratio
- LED Illumination

SMZ18



- BF/Reflected Only
- 18:1 Zoom Ratio
- LED Illumination

High Magnification Needed
- Require DF, DIC, or POL
- Mounted / Flat Samples
- May need transmitted light
- More sample variety

COMPOUND

Primarily View Mounted/Flat Samples with Reflected Light?

YES

Inverted

MA100N



- Reflected Only
- BF/POL Only
- LED

MA200



- Reflected Only
- BF/DF/DIC/POL
- Halogen Only

NO

Upright

LV150N



- Reflected Only
- BF/DF/DIC/POL
- Halogen/LED

Nikon SMZ800N



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

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

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

Nikon SMZ800N Objectives and Accessories



Nikon SMZ800N Objectives

NIMNH54055 - 0.5x **NIMNH54076** - 0.75x
NIMNH54105 - 1x **NIMNH54150*** - 1.5x
NIMNH54200† - 2x

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



Manual Rotatable Nosepiece

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

8741-61



Camera Adapter

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

8749-13



Camera Adapter

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

8749-11



Camera Adapter

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

8749-12

Nikon SMZ18

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

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



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

Nikon SMZ18 Objectives and Accessories



Nikon SMZ800N Objectives

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

**Cannot use with Coax or ringlight*



Camera Adapter

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

8749-11



Camera Adapter

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

8749-12



Camera Adapter

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

8749-13

Nikon Eclipse MA100N



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

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

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

Nikon Eclipse MA100N Objectives and Accessories



Nikon Eclipse MA100N Objectives

NIMUE12010* - 1x
NIMUE12030* - 2.5x
NIMUD00055 - 5x
NIMUD00105 - 10x
NIMUD00205 - 20x
NIMUD00505 - 50x
NIMUD00900 - 100x

**Polarizer Required*



Polarizer/Analyzer

Polarizer/Analyzer set for MA100N
874365



Stage Insert

Includes 1in,1.125in, 1.5in stage inserts
8743-63
Includes 25mm, 30mm, 40mm stage inserts
8743-64



Camera Adapter

Camera Adapter, C-Mount, 1x, ISO
8749-15



Grain Size Reticle

For eyepiece
8743-62

Nikon Eclipse MA200

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

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

Nikon Eclipse MA200 Accessories



Polarizer/Analyzer
Included with DIC Package
8744-61



Grain Size Reticle Slider
Slider for grain size analysis and NMI 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
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



Nikon Eclipse LV150N



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

- 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



Polarizer/Analyzer
For LV150N Halogen
8745-61



Polarizer/Analyzer
For LV150NL LED
8745-62



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



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



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



Objectives

SCAN ME

Scan to see our full line of objectives

Digital Cameras



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

NOTE: Alvium cameras require USB3 connection and OmniMet 2022 (v12) or later. Systems with older versions of OmniMet will require an update. Work with your regional sales engineer to ensure camera compatibility with your set-up before purchase.

Motorized Stage Kits



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

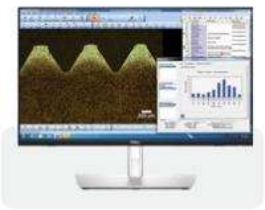
NOTE: Kits include stage, focus drive, controller and 3-axis joystick

Stage Micrometer



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

Computers & Monitors



Part Number	Description
85-0135	24in Touch Monitor, LCD with 1920 x 1200 display capability
86-10007	Windows 11 workstation, complete. XE3 I7-8700, 512GB SSD, 16GB RAM, Intel chipset video with shared memory. Includes keyboard, mouse, and 24-in LCD Monitor (1920 x 1200)

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

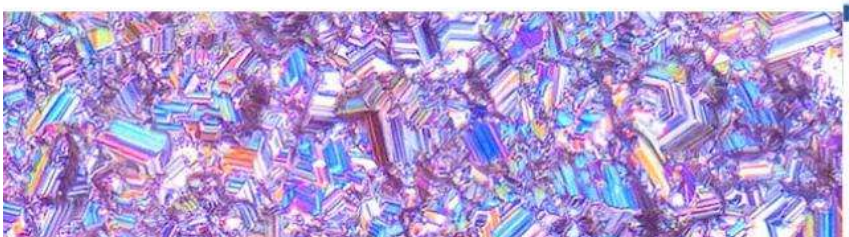
Leveling Accessories for Upright Microscopes



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

Hardness Testing

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





Featured Microstructure

TiO_2 oxide layer on the surface of an oxidized Ti-Ni-Fe B2 structured intermetallic. Viewed using Differential Interference Contrast at 1000x magnification.

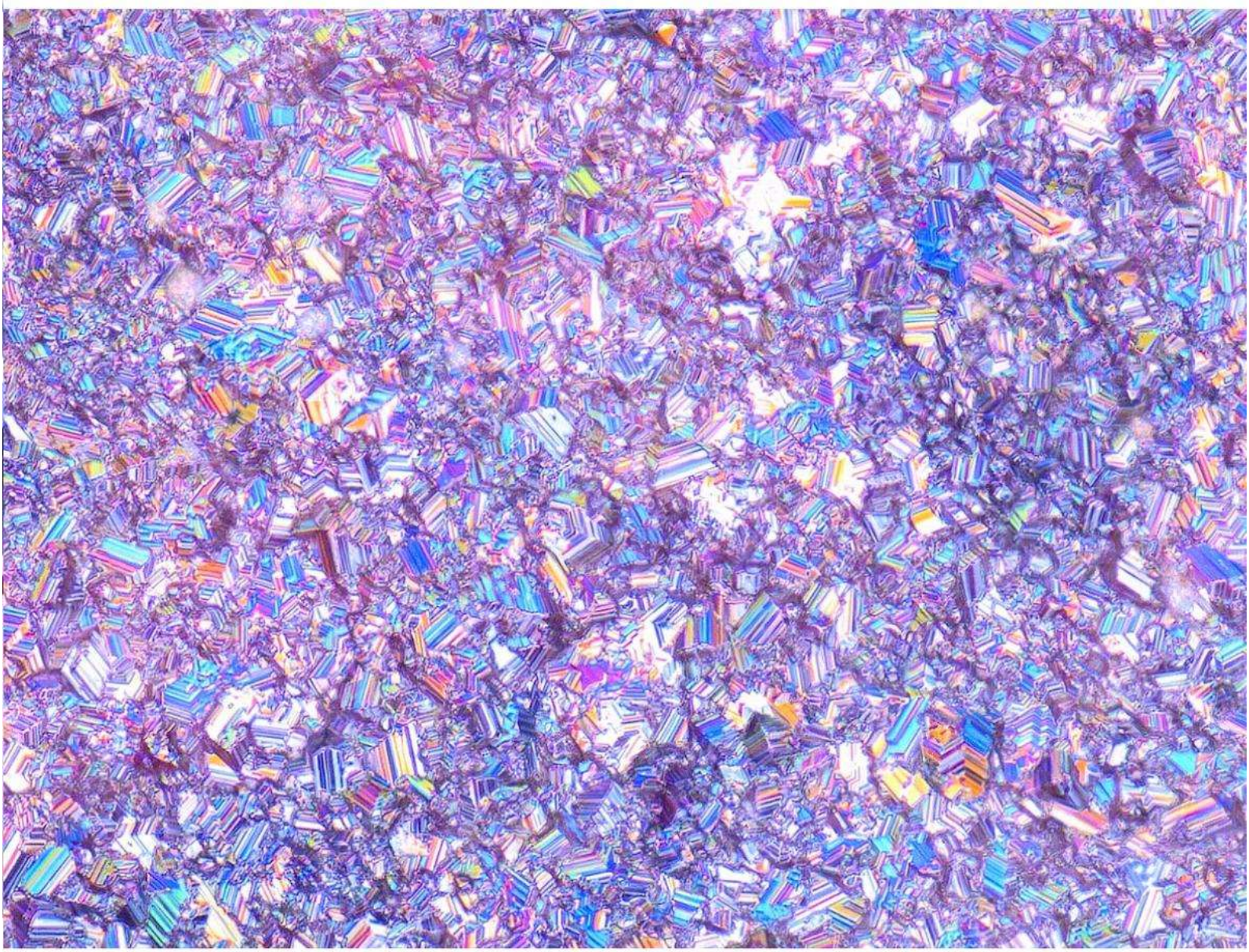


Image Provided by:

Subha Sanket Panda, Indian Institute of Technology Kanpur, India. Credit also to **Dr. Sudhanshu Shekhar Singh**

DiaMet® - Hardness Testing Made Easy

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

Wilson® DiaMet® Multisample



Easy sample holder setup

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

Define start coordinates

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

Perfect overview

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

Simple Stage Navigation

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

Easy testing workflow

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

DiaMet - Automation Packages

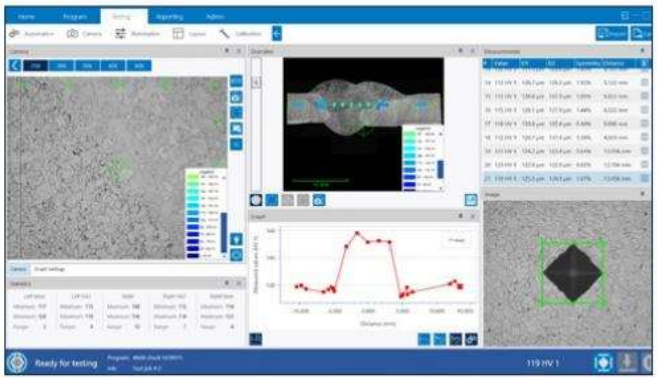
Automated Microindentation system available with different levels of automation. All control of the hardness instrument can be handled through comprehensive software. Automatically test and measure indentations, as well as set up and run automatic testing sequences and generate reports through export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

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

DiaMet® - Hardness Testing Functions

Weld Testing

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



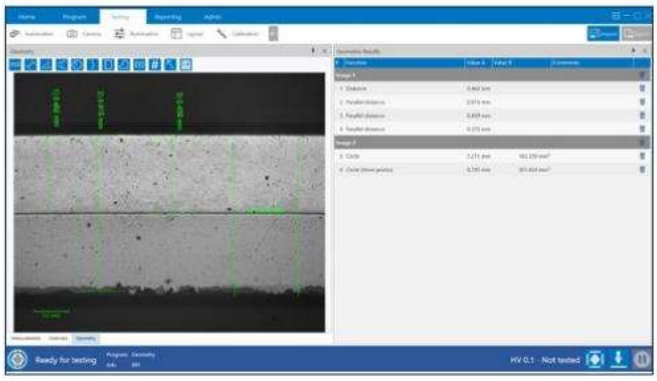
Color & 3D Mapping

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



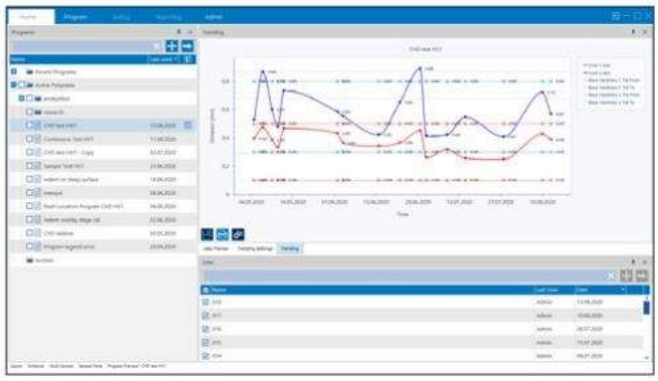
Geometric Functions

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



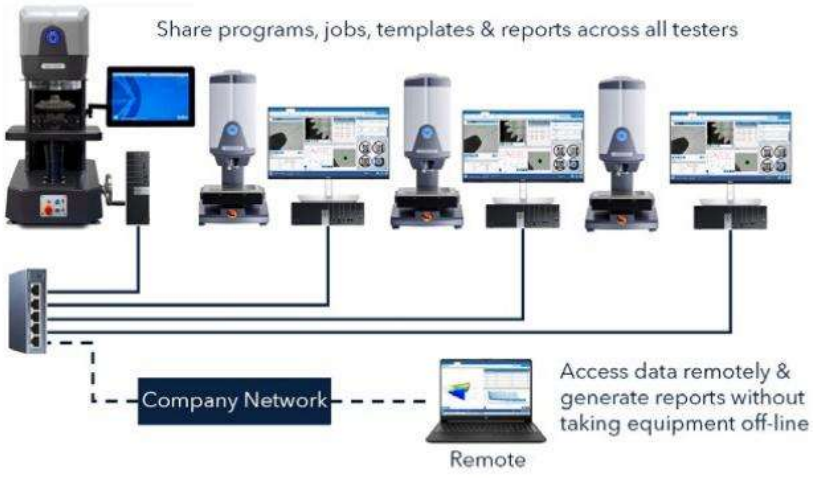
Results Trending

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



Shared Database Networking

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





Wilson® VH3100 & VH3300 All-in-One



The best fully automated Vickers and Knoop hardness testers. The Wilson VH3100 and VH3300 All-in-One platforms have all you need for your production control hardness testing. Machine setups are pre-configured to easily perform hardness tests with our most advanced software solution – DiaMet Enterprise.

Technical Specifications

Dimensions 13.39in [340mm]W x 23.62in [600mm]D
Vertical Test Capacity –
VH3100: 4.92in [125mm]
VH3300: 4.1in [105mm]
Horizontal Test Capacity – 9.23in [235mm]
Weight VH3100: 82.7 lbs [37.5kg]
VH3300: 144 lbs [65kg]

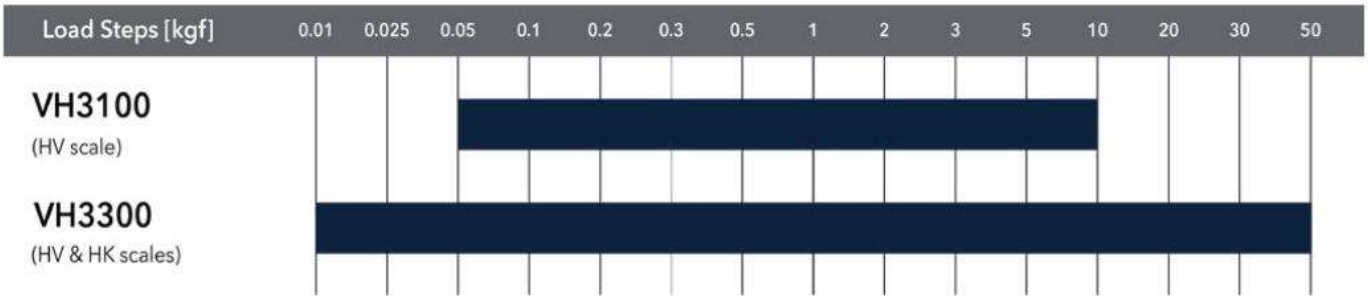
All-in-One System Configuration Comparisons

View the configurations for the VH3100 and VH3300 below to compare and pick the right fit for Hardness Testing

Features	VH3100 Part Number VH3100	VH3100 Part Number VH3100S	VH3300 Part Number VH3300
Hardness Scales	Vickers	Vickers & Knoop	Vickers & Knoop
Load Cells	0.05 - 10kgf (0.49 - 98.07N)		10gf - 1kgf (.10 - 9.81N) & 1 - 50kgf (9.81 - 490.33N)
Objectives	10x and 50x		
Overview Camera	Separate Overview Camera		Turret Integrated
Stage	Motorized 180 x180mm stage		
DiaMet Enterprise	All software features you need – including mapping, edge detection, scanning, stitching of overview image, CHD calculations, statistics, weld testing, exporting and barcode scanner interface		
DiaMet Workstation & Monitor	High performance PC with 24" FullHD touchmonitor		
Vertical Test Capacity	125mm		105mm
Turret	Virtual Turret		6 Position Star Turret
Collision Resistance	Collision Detection System prevents indenter or objective damage by detecting unintended obstructions in the test path.		

Load Range & Hardness Scales

Proper load range and scales are critical to accurate testing. The Wilson VH3100 All-in-One tester accommodates one loadcell and a Vickers indenter. The wider load range of the VH3300 All-in-One is populated with three loadcells and indenters, resulting in a load range of 10gf to 50kgf and accommodations for both Vickers and Knoop hardness testing.



Need More Versatility?

The full VH3000 series of Vickers and Knoop hardness testers can be fully configured to match the system with your application. Customize your VH3100 or VH3300 machine from motorized stage sizes, vertical test capacity, optics, and load cell selections. Options available through hardware and software allow testers tailored to your specific needs and requirements.





** Please select your sample holder from the Vickers-Knoop Hardness Accessories Page*

Wilson® VH3100 & VH3300



The Wilson VH3000 Series Automated Hardness Testing System provides a fully integrated platform for your complete Vickers and Knoop hardness testing needs. From leading edge modular frame, stage, and optic designs to a fully featured user interface, our VH3100 and VH3300 testers can be built to meet your application needs today, tomorrow, and into the future.

Ease of use

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

Flexibility

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

Increase Up-time & Reduce Service Costs

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

Technical Specifications

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

System Configurations

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

Main Unit



Wilson VH3100

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

W3111



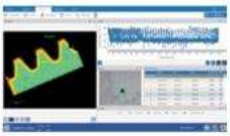
Wilson VH3300

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

**depending on configuration*

W3210

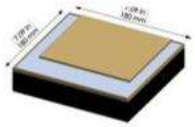
Software Options



DiaMet Full-Automatic software package
W3100A03

DiaMet Enterprise software package
W3100A15

Motorized Stages



Standard size (180 x 180mm)
W3000SS

Large size (300 x 180mm)
W3000SL

Vertical Test Capacity



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

W3200D01 - height 105mm
W3200D02 - height 155mm

System Configurations *(Continued)*

Load Cell

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

Wilson VH3100

W3100E02 - 100N loadcell

Wilson VH3300

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

Vickers/Knoop 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

Wilson VH3100	Loadcell **W3100E02**
Wilson VH3300	**W3210E01**
	W3200E02
	W3200E04*

**** Loadcell supports Brinell up to HBW62.5***

Overview Camera



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

W3110F01

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

W3200F01

Additional Accessories

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



Indenter Holder

Standard holder
W3100G01

SnapGrip Holder
W3100G02



Vickers Indenter

Vickers Indenter, ISO & ASTM Certified
W9100687



Knoop Indenter

Knoop Indenter, ISO & ASTM Certified
W9100684



Brinell Indenters

1mm Brinell ball indenter, ISO & ASTM Certified,
W741237

2.5mm Brinell ball indenter, ISO & ASTM Certified
W741238

Objectives



Part Number	Native Mag.	Max. Field of View
W5XLWDO	5x	3600µm
W10XLWD	10x	1800µm
W20XLWD	20x	900µm

Part Number	Native Mag.	Max. Field of View
W40XLWD	40x	450µm
W50XLWD	50x	360µm
W100XLWD	100x	180µm

** Please select your sample holder from the Vickers-Knoop Hardness Accessories Page*

Wilson® VH1102-1202



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

Best in Class Optics

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

Automatic Load Selection

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

VH1102 Standalone Tester

Part Number - W1102D03 (Digital)

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

VH1202 Standalone Tester

Part Number - W1202D03 (Digital)

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

Technical Specifications

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

VH1102-1202 with DiaMet® Automation Software

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



Testers	DiaMet Basic: Manual (Digital)	DiaMet Semi Auto	DiaMet Full Auto	DiaMet Enterprise
VH1102 Vickers	**W1102D33**	**W1102D35**	**W1102D37**	**W1102D45**
VH1202 Vickers & Knoop	**W1202D33**	**W1202D35**	**W1202D37**	**W1202D45**
Automation included	Camera, Digital Stage Readout	Camera, Motorized 100x100 mm Stage	Camera, Motorized 100x100 mm Stage, Auto-Focus	Camera, Motorized 100x100 mm Stage, Auto-Focus

Wilson® VH1150

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



Experience the Flexibility of a Segment Leading Wide Load Range

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

Versatile

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

VH1150 Standalone Tester
Part Number - W1151D03

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

Technical Specifications

Dimensions
9in [230mm]W x 25in [625mm]D x 30in [760mm]H
Vertical Test Capacity – 8.2in [210mm with standard flat anvil
Horizontal Test Capacity – 6.3in [160mm]
Weight - 154 lbs [70.5kg]

VH1150 with DiaMet® Automation Software

DiaMet workstation and 24" monitor included with VH1150 Hardness Tester



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

Accessories

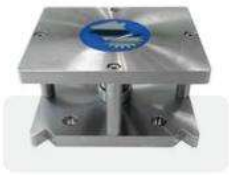
Indenters for VH1102-1202-1150
W9100687 Vickers indenter, includes ASTM & ISO certificate
W9100684* Knoop indenter, includes ASTM & ISO certificate

Manual Stages
9170507 XY-stage with digital micrometers
* Not for use with VH1150

Objectives for VH1102-1202-1150
W5XLWD 5x Long Working Distance objective
W10XLWD 10x Long Working Distance objective
W20XLWD 20x Long Working Distance objective
W40XLWD 40x Long Working Distance objective
W50XLWD* 50x Long Working Distance objective
W100XLWD* 100x Long Working Distance objective

Sample Holders and Accessories

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



Leveling Vise

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

886164

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

886167



4 Fold Leveling Vise

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

886169

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

886175



6 Fold Leveling Vise

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

886178



Universal Leveling Vise

Clamping & leveling fixture for sample diameters of 0.8-1.8in [20.3-45.7mm] and heights up to 0.8in [20.3mm]

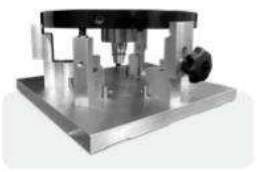
900086323



EZ Clamp

Single mount canister

9100575 Canister (requires cap selection)
9100570 Mount Cap for 1in mounts
9100571 Mount Cap for 1.25in mounts
9100572 Mount Cap for 1.5in mounts
9100576 Mount Cap for 2in mounts
9100574 Magnetic Stop and Stage Mount
**Mount Cap requires the Canister*



GP-HDT Sample Fixture

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

886180



Precision Vise

Opening max 45mm

9100258



Anti-Vibration Table

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

* Anti-Vibration Table to be used with both VH3000 and VH1000 series testers

9100906



Passive Platform

Passive Vibration Isolation Platform 18 x 24in [460 x 610mm]

* Passive platform to be used with both VH3000 and VH1000 series testers

9100904 for VH3300
9100905 for VH3100 and VH1000 series



Sample Holder Insert

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

886170	Ø 1in [25mm] insert
886171	Ø 30mm insert
886172	Ø 40mm insert
886173	Ø 1.25in insert
886174	Ø 1.5in insert

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

Wilson® Rockwell® 574

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



Segment Leading GR&R Performance

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

Ease of Use

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

Robust

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

574R Regular - for all Regular test scales

Part Number - WH574R

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

574T Twin - for all Regular and Superficial test scales **Part Number - WH574T**

Description	
Pre-load	3, 10kgf (29.42, 98.07N)
Main-load	15, 30, 45, 60, 100, 150kgf (147.1, 294.19, 441,29, 588.39, 980.67, 1471N)
Hardness scales	HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y

Technical Specifications

Dimensions
11.53in [292mm]W x 22.3in [566mm]D x 36.83in [934mm]H
Vertical Test Capacity – 11.43in [289mm] without accessories
Horizontal Test Capacity – 6.12in [155mm] at the bottom; 6.93in [175mm] at the top
Weight - 165 lbs [75kg]

Auto-clamping device

Clamping device with auto-stop function, clamping force ca. 60kgf (130lbs)
Part Number: WH-CLFX-574

Wilson® Rockwell® RH2150



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

Wilson® RH2150 Series Features

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

Technical Specifications

Dimensions
600mm [28in]D × 350mm [21in]W × 1260mm [39.2in]H (Size 1) or 1360mm [41.2in] (Size 2)
Vertical Test Capacity –
Size 1: 10in [254mm] or Size 2: 14in [356mm]
Weight – 275 lbs [125 kg]

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

System Configurations

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

Main Unit



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

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

Additional Accessories

Auto Clamping Device



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

W2100CL

Software Options



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

W1001R31

T-Slot Table



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

W2100C02

Indenter Extension



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

W2100E2

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

W2100E4

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

W2100E6

Foot Switch



Footswitch for external test cycle start, intelligent trigger logic

W2100FS

Gooseneck Adapter

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



Max. internal reach diameter is 9.5mm

Min inside diameter is 14mm

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

W2100G2

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



Max. internal reach diameter is 26mm

Min inside diameter is 35mm

Max. outside diameter with Min. inside diameter at Max. internal reach is 130mm

Available Rockwell Diamond indenters are all standard Rockwell indenters (cf. Table)

W2100G5

Rockwell® Indenters

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

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



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

Rockwell® Verification Kits

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

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

Rockwell® Anvils

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

Flat anvil



2.5" [63mm]
900001236

Testing Table



7.50" (190mm)
W741246

V Anvil Shallow



0.5" [12.7mm] stem height for cylindrical parts < 0.25" [6,3mm]
900007388

V Anvil Shallow



1" [25mm] stem height for cylindrical parts < 0.25" [6,3mm]
900007195

V Anvil Standard



For cylindrical parts > 0.25" [6,3mm]
900030797

Anvil Cylindron Jr.



For cylindrical parts 0.25-3" [6-76mm]
900007425

Anvil Cylindron



For cylindrical parts 2-8" [50-203mm]
900007147

Anvil for Ball Testing



For round parts 1/16"-1" [1,6-25mm]
900001371

Eyeball Anvil



For pieces with slight taper (to mount on spindle)
900007088

Pedestal spot Anvil



0.5" [12,7mm] stem height, 0.27" [7mm] spot diameter
900007387

Pedestal spot Anvil



1" [25mm] stem height, 0.27" [7mm] spot diameter
900007156

Diamond spot anvil



For HR30T scale, 0.39" [10mm] spot diameter
900007400

Wilson® BH3000

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

Ease of use

- Heavy duty clamping and protection

Accuracy

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

Flexibility

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



BH3000

Part Number: WH3000BH

Description	
Hardness scales	HB
Main-load	31.25 - 3000kgf (306.46 - 29419.95N)

Technical Specifications

Dimensions
10.4in [265mm]W x 23.9in [608mm]D x 39.5in [1000mm]H
Vertical Test Capacity – 11in [280mm]
Horizontal Test Capacity – 5in [130mm]
Weight - 573 lbs [260kg]

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)
WHKINGSC5	King Scan V - Automatic Brinell Measurement System	**900000595***	5mm Carbide Ball with NVLAP certificate (Qty 2)
9110-213	Testing table diameter 235mm	**900007350***	10mm Ball Retainer, MJ, L, K, KDR, AP, & CLB3
9110-123	Indenter 10mm Carbide Ball with certificate		

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



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

Wilson® UH4000 Series



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

Ease of Use

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

Flexibility

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

Increase Up-time & Reduce Service Costs

- Steel casting provides full protection for production environments.

Technical Specifications

Dimensions
28in [704mm]W x 21in [534mm]H x 39.2in [995mm]D
Maximum Specimen Height – 11.8in [300mm]
Test Stage Dimensions – T-slot stage with 12mm slot width, 11.8in [300mm] x 15.7in [400mm]
Weight - 660 lbs [300kg]

System Configurations

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

Main Unit



Wilson UH4250

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



Wilson UH4750

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



* Clamping device W4100CL not applicable

Wilson UH4250 Auto*

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

Configure Turret

Select up to 8 different items



Objectives

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



Laser

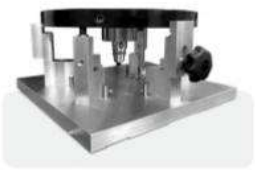
W4100L	Positioning Laser

Indenters

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

Additional Accessories

GP-HDT Sample Fixture



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

886180

Ring Light



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

W4100RL

Auto Clamping Device



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

W4100CL

** Not compatible with UH4250 Auto*

Workbench



Workbench with Drawers 1000w x 700d x 800h mm [30 x 27 x 31in]. Includes instructions for spindle hole build

944872

Anvils (25mm)

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



V anvil for max. 45mm diameter cylindric workpieces

740096



V anvil for max. 85mm diameter cylindric workpieces

740095



10mm spot anvil for small workpieces

740160



Auto-leveling anvil Planoflex - flat 60mm diameter

740587



Test anvil flat 80mm diameter

740191



Test anvil flat 190mm diameter

740101

Wilson® Rockwell® Test Blocks

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

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

View Options

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

	Part Number	Nominal Hardness
Rockwell A	9201110	63HRA
	9201150	73HRA
	9201190	83HRA
Rockwell B •	9202050W	40HRB
	9202060W	50HRB
	9202070W	60HRB
	9202080W	70HRB
	9202090W	80HRB
	9202100W	95HRB
Rockwell C	9203111	25HRC
	9203121	30HRC
	9203131	35HRC
	9203141	40HRC
	9203151	45HRC
	9203161	50HRC
	9203171	55HRC
	9203181	60HRC
	9203191	63HRC
Rockwell E•	9205010W	57HRE
	9205020W	63HRE
	9205050W	81HRE
	9205060W	87HRE
	9205070W	93HRE
Rockwell F•	9206020W	63HRF
	9206050W	80HRF
	9206070W	91HRF



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

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

• *Certified using a Tungsten Carbide ball indenter*

Special Order Items *(not applicable in EU)*

Part Number	Description
9201002	Special value - please provide hardness value and Rockwell scale
9201003G	Add for block grid/ engraving service
9201006API	Add for API compliance service
9201007	API compliance with grid service

Wilson® Vickers-Knoop Test Blocks



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

Vickers Test Blocks

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

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

Range for each block up to 475 HV may be +/- 25 HV from the nominal value listed
Range for each block from 475 to 800 HV may be +/- 50 HV from the nominal value listed
Range for each block above 800 HV may be +/- 100 HV from the nominal value listed

	not ISO 6507 due to <20µm diagonal length
	Vickers Block Size 2.4in x 0.35in [60mm x 9mm]
	Vickers Block Size 1.25in x 0.63in [32mm x 16mm]

Knoop Test Blocks

According to ASTM E92, ISO 4545-3 and JIS B 7734
Available in full range of HK Scales and with special certifications.

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



Special Order Items

Not applicable for Europe, please contact Buehler Europe

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

**Specify hardness required and load force for calibration*

•Specify additional load force for calibration

Wilson® Brinell Test Blocks

According to ASTM E10, ISO 6506-3, and JIS B 7736

Brinell reference blocks up to 250kgf load

Blocksize: Ø 2.4 in x 0.35 in (Ø 60mm x 9mm)

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



Brinell reference blocks up to 3000kgf load

Block size: 6" x 4.5" (152 x 114 x 18mm)

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



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

not applicable for Europe, please contact Buehler Europe

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

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

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

View Test Block Guide

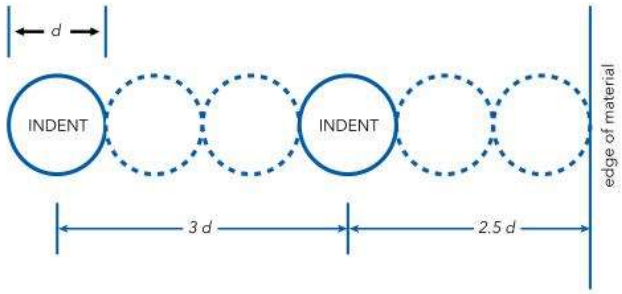
Proper Indent Spacing

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

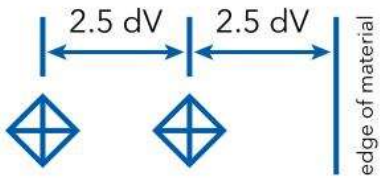
According to ASTM and ISO Standards: The distance between the centers of two adjacent indentations shall be at least three times the diameter (d) of the indentation.

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.



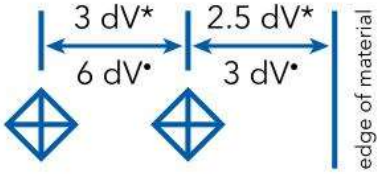
Vickers

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.



dV= Vickers Diagonal

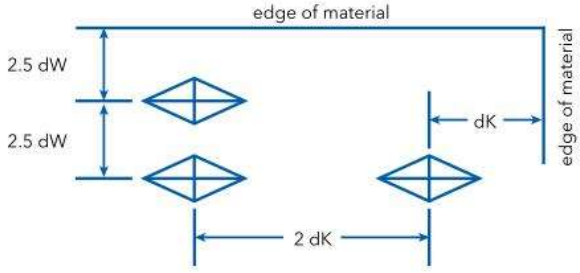
According to ISO Standards: The distance between the centers of two indents shall be at least three times the diagonal (dV) of the indent for steel, copper and copper alloys, and at least six times for light metals, lead and tin and their alloys. The distance between the center of an indent and the edge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



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

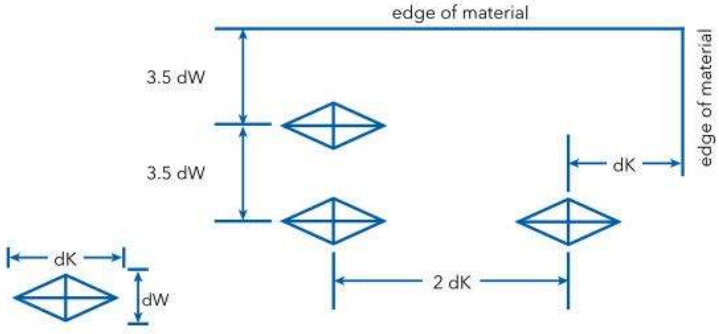
Knoop

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.



dK = Knoop Long Diagonal
dW = Knoop Short Diagonal

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.



Consumable Shelf Life

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

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

**Warranty depends on Quality Assurance/Lab evaluation on an individual basis*
***Shelf life starts when product is shipped*
See Terms & Conditions for warranty information

Notes

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