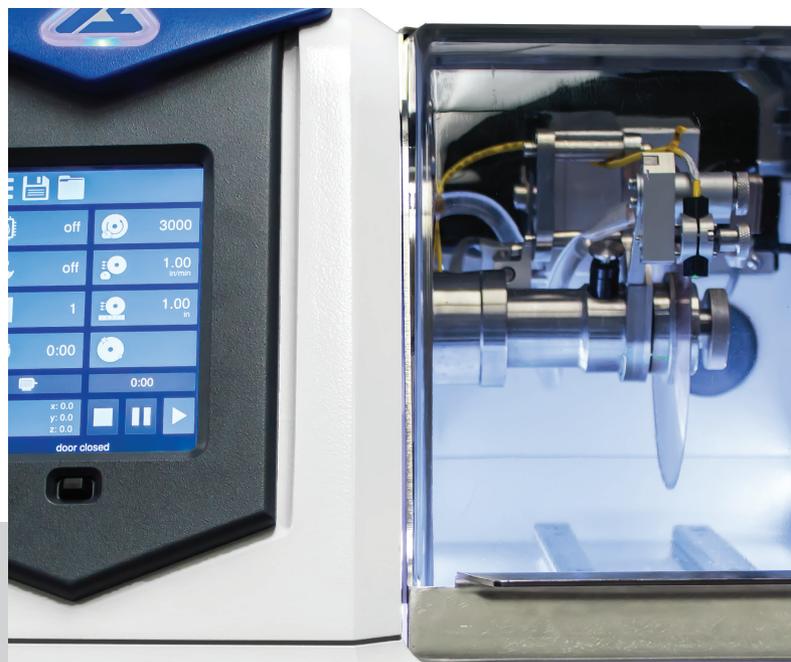




BUEHLER

2017 PRODUCT CATALOG

-  SECTIONING
-  MOUNTING
-  GRINDING & POLISHING
-  IMAGING & ANALYSIS
-  HARDNESS TESTING





WELCOME



Meredith Platt
Vice President & General Manager

Dear Valued Customer,

I am pleased to introduce our 2017 Buehler Product Catalog, the most comprehensive product guide for materials characterization and analysis. In 2016, Buehler celebrated 80 years in the industry and this catalog represents the knowledge and expertise that comes from working with our global customers across all industries and in both research and quality control laboratories to develop the best quality sample analysis solutions.

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

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

M Platt

Buehler is a division of Illinois Tool Works (ITW), and is based in Lake Bluff, Illinois. ITW is a global, Fortune 200 company and global industrial manufacturer of value added consumables and specialty equipment with related service businesses. Buehler is a premier manufacturer of scientific equipment and supplies for use in materials analysis with offices in nine countries, sales distribution in over 100 countries, and over 45 Expert Solutions Centers.

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

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

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

Home of the hardness testing legacy brands:



Wilson Instruments



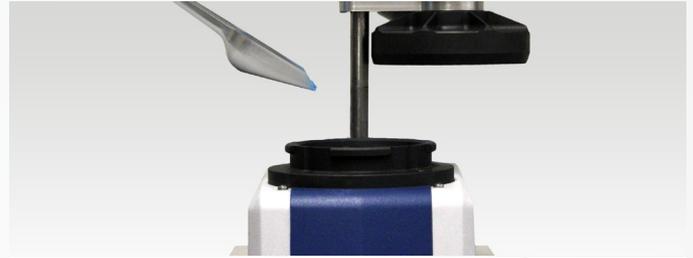
CONTENT



Sectioning

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

2



Mounting

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

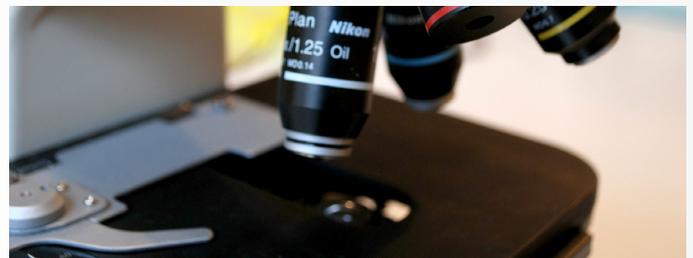
20



Grinding & Polishing

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

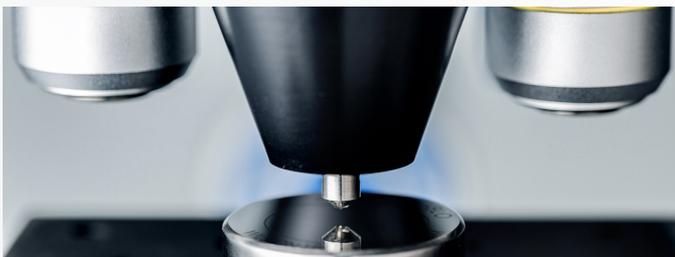
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Imaging & Analysis

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

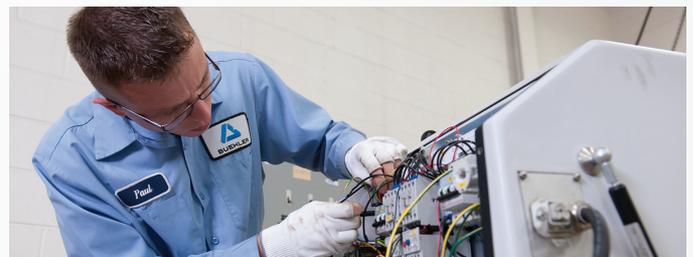
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Hardness Testing

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

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Additional Information

Consumables Shelf life, Full Lab Solutions, Service, and Index

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Visit www.buehler.com for our complete product list.
or shop at www.shop.buehler.com

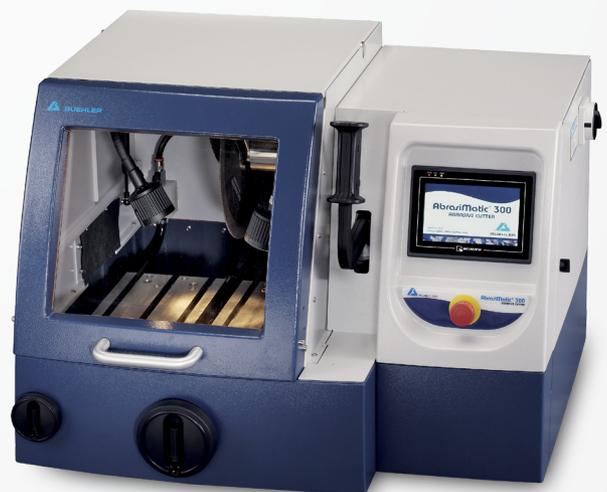
A full range of abrasive and precision saws, blades, and vices for cutting any material.

SECTIONING

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



IsoMet™ Precision Cutters



Abrasive Cutters



Manual Abrasive Cutters

Controllable Cut Quality with Durable Machine Design

The manual feature provides users control of the cut quality. These durable designed machines can handle the abrasive environment.



AbrasiMet™ 250

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



Delta Manual

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



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

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

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

Weight: 300lb [136kg]

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

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

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

Weight: 800lb [365kg]

Accessories for Abrasive Manual Cutters

Delta Manual

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

*See page 6 for vise with 12mm T-Nuts

*See page 7 for Compatible Recirculating tanks



Automatic Abrasive Cutters

Highly Reproducible Results

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



AbrasiMatic™ 300

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

Flexibility for changing lab needs

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

Simple setup for efficient cuts

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

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

	Part Number	Voltage
X, Y & Z-axis	10-2193-260	200-240VAC, 60Hz
	10-2193-460	440-480VAC, 60Hz
	10-2193-250	200-240VAC, 50Hz
	10-2193-400	380-400VAC, 50Hz

Dimensions: 34in [864mm] x 27in [686mm] x 41in [1041mm] open
24in [610mm] closed

Weight: 350lb [165kg]



Simple Setup for Efficient Cuts

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

Delta Orbital Chop Medium

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



Delta Orbital Large

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



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

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

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

Weight: 800Lbs [365kg]

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

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

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

Weight: 880Lbs [400kg]

Accessories for Abrasive Automatic Cutters

AbrasiMatic 300

00-10096 Protective Film for Touchscreen

*See page 6 for vise with 12mm T-Nuts

*See page 7 for Compatible Recirculating tanks

Delta Orbital and Chop Cutters

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

10-2228 Base Cabinet, 1 door

10-2327 T-Slot Bed, X & Y-axis - Medium only



Abrasive Cutter Vises Accessories

Single Piece Sliding Vises

Speed Clamping Vise



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

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

MetKlump VIII



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

Two Piece Sliding Vises

Sliding Vise Kit



Size: Medium
Part Numbers: Left: 10-3540
 Right: 10-3541
Clamping Plate: 2.36" x 3"
 [60x76 mm]
T-Nuts: 12mm*
Size: Large
Part Numbers: Left: 10-3542
 Right: 10-3543
Clamping Plate: 2.95" x 4.23"
 [74 x 107mm]
T-Nuts: 12mm*
 *14mm conversion kits are available
 (Medium: 10-3548 | Large: 10-3549)

MetKlump VII



Part Numbers: Left: 10-2245
 Right: 10-2246
Clamping Plate: 2.3" x 3"
 [59 x 76mm]
T-Nuts: 14mm

Vertical Clamping Vises

Vertical Clamping Kit



Size: Small
Part Numbers: 10-3531
Clamping Height: 2.3" [58mm]
Reach: 2.1" [54mm]
T-Nuts: 12mm
Size: Large
Part Numbers: 10-3523
Clamping Height: 4" [102mm]
Reach: 2.4" [61mm] + 3.5" [90mm]
 with extension (included)
T-Nuts: 12mm and 14mm

Riser Blocks

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



Horizontal Clamp

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



Vee Block Clamp Kit

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



Adjustable Vee Blocks

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



Specialty Vises

Chain Clamping Kit



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

Universal Clamping Kit



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

PetroCut Vise Table & Rock Clamp Kit



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

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

Fastener Vise



Application: For longitudinal sectioning of fasteners. Must be held by another vise.
Part Number: 95-C1702

Recirculating Systems & Fume Extractors

Recirculating System 7 gal [27L]



Part Numbers

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

Size

20.25in [515mm]W x 16.5in [420mm]D
 x 16.75in [426mm]H

(for AbrasiMatic™ 250)

Recirculating System 22 gal [90L]



Part Numbers

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

Size

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

(for AbrasiMatic 300 and Delta Orbital & Chop cutters)

Recirculating System

Part Numbers

560023

Description

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

10-2431-400

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

Cool 3 Fluid



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

Part Number

10-6001
 10-6004
 10-6010

Size

33.8oz [1L]
 1gal [4L]
 2.6gal [10L]

Base Cabinet



Description: For Preparation Equipment

Part Number: 80-10001

Size: 36 W x 30 D x 36in H [910 W x 760 D x 910mm H]

Diamond and CBN Blades for Abrasive Cutters

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

Recommended Use	Blade Type	8in [200mm]	10in [250mm]	12in [300mm]	14in [350mm]	16in [400mm]	18in [450mm]
General Use	Diamond	114608E 1.2mm	114610E 1.3mm				
Hard Materials	Diamond	114808E 1.2mm	114810E 1.2mm	103056 1.4mm	114814E 1.5mm	104056 2mm	
Ceramic and Petrographic samples	Diamond	114709E* 1.2mm	114710E 1.2mm	103053 2.2mm	114714E 1.5mm		
Plastics and Polymers	Diamond		102557 1.25mm				
General use, hardened steel, HRC55 and Up	CBN	102050 1.3mm	102551 1.2mm	103051 1.9mm	103551 2mm	104050 1.7mm	104556 2mm

* 230mm Ø



Abrasive Cutter Consumables

Abrasive Blades

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

Efficient Cutting with Extended Life

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

Resin Bond vs Rubber Bond

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



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

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

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

AcuThin™ Blades



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

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

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

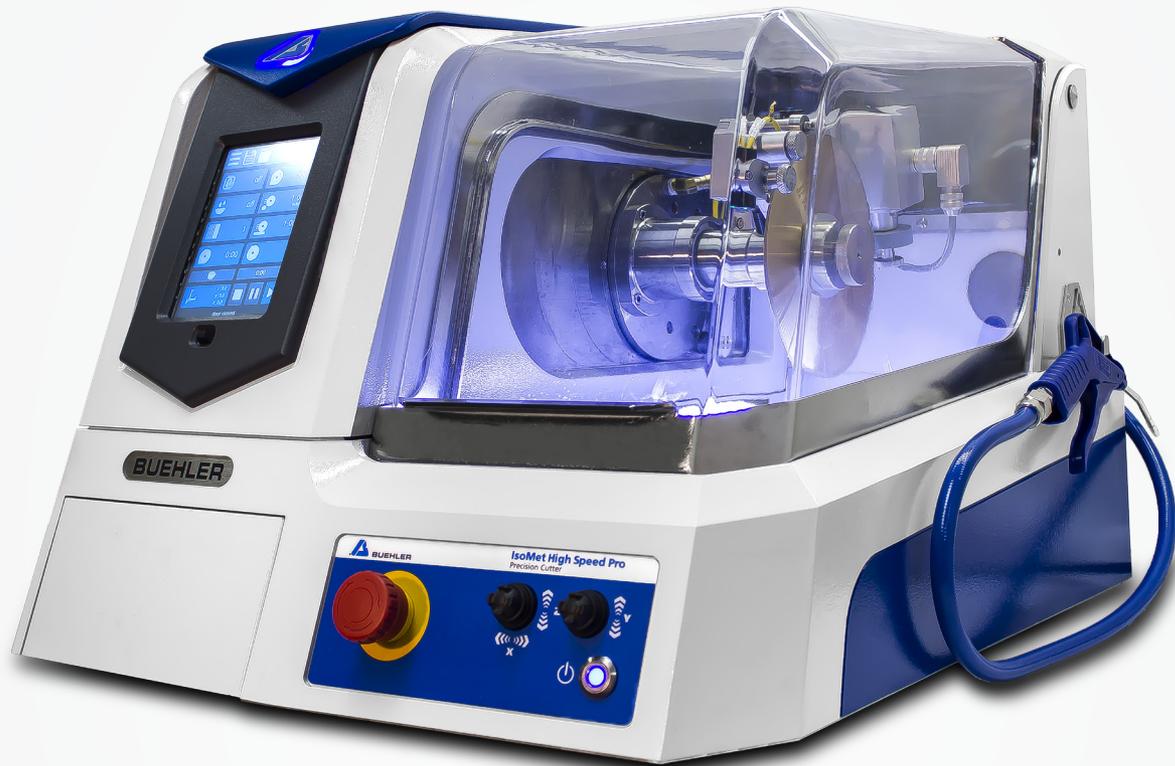
[Blade Thickness is listed under Part Number] *Rubber Bond* = • *Resin Bond* = *

Recommended Use	14in [356mm] Chop/Linear	14in [356mm] Orbital	16in [406mm] Orbital	18in [455mm] Orbital
Superalloys, General Steel, Non-Ferrous	12-4305-010• 0.063in [1.6mm] 95B2412* 0.09in [2.3mm]	12-4305-010• 0.063in [1.6mm]	12-5605-010• 0.075in [1.9mm]	12-5805-010• 0.1in [2.5mm]
Ferrous materials >HRC60	10-4310-010• 0.075in [1.9mm] 103509P* 0.098in [2.5mm]	12-4310-010• 0.105in [2.7mm]	12-5610-010• 0.125in [3mm]	12-5810-010• 0.153in [3.8mm]
Ferrous materials HRC50-60	10-4312-010• 0.115in [2.9mm] 95B2402* 0.09in [2.3mm]	12-4310-010• 0.105in [2.7mm]	12-5612-010• 0.125in [3mm]	12-5816-010• 0.153in [3.8mm]
Ferrous materials HRC35-50	12-4305-010• 0.063in [1.6mm] 103510P* 0.098in [2.5mm]	12-4316-010• 0.105in [2.7mm]	12-5616-010• 0.125in [3mm]	12-5816-010• 0.153in [3.8mm]
Ferrous materials HRC15-35	12-4305-010• 0.063in [1.6mm] 103511P* 0.098in [2.5mm]	12-4320-010• 0.105in [2.7mm]	12-5616-010• 0.125in [3mm]	12-5816-010• 0.153in [3.8mm]
High Speed Steel, Stainless Steel, Carburized Steel	103508P* 0.098in [2.5mm]			
Delicate Cutting				
Titanium Alloys, Zirconium Alloys, Ductile Materials	10-4345-010• 0.075in [1.9mm] 103507P* 0.098in [2.5mm]		12-5645-010• 0.075in [1.9mm]	12-5845-010• 0.1in [2.5mm]
Non-Ferrous Materials (Aluminum, Copper, Brass), Very Soft Ferrous Materials	10-4350-010• 0.105in [2.7mm] 103512P* 0.098in [2.5mm]			12-5850-010• 0.1in [2.5mm]

Precision Cutters

Excellent Cut Quality for Delicate Samples

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



IsoMet™ High Speed

The IsoMet High Speed and IsoMet High Speed Pro is a benchtop precision cutter. This machine enables variety in sample preparation to best fit each sample process with both manual and automatic cutting capabilities.

Automatic Dressing System

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

Rapid Alignment

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

Precise Cut Alignment

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

Quick Sample Adjustments

- In seconds adjust your sample placement with the rapid rail and tool-less vising system.
- The sample size is 2.8in diameter and the RPM is 200-5000 RPM

*Features available only on the IsoMet High Speed Pro

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

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

Weight: 157lbs [71kg]

Precision with Flexibility

The IsoMet product family is capable of cutting with precision via a manual or automatic movement. The IsoMet family provides great versatility in holding all types of sample shapes and configurations.

IsoMet™ 1000

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



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

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

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

Weight: 56lbs [25kg]

IsoMet™ Low Speed

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



To provide cut quality for varied materials a range of 0-300RPM

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

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

Weight: 25lbs [11.3kg]

Tips, Tricks & Techniques



For the best performance from your Precision Cutter System:

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



Precision Cutter Accessories

IsoMet™ Low Speed Cutter Accessories

Goniometer



Rotates specimen along 3 axes

Part Number:
11-2381

Manual Feed Control Dressing Chuck



Enables blade dressing without removing the sample fixture

Part Number:
11-1196

Splash Guard Kit



Prevents lubricant from splashing out of saw

Part Number:
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*)

Part Number:
11-1181

Small, Double Saddle Chuck



Securely holds specimen up to 0.875in [22mm] from 2 points

Part Number:
11-1183

Bar & Tube Chuck



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

Part Number:
11-1184

Irregular Specimen Chuck



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

Part Number:
11-1185

Wafer Chuck



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

Part Number:
11-1186

Single Saddle Chuck



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

Part Number:
11-1187

Vacuum Chuck for Glass Slides



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

Part Number:
11-1188

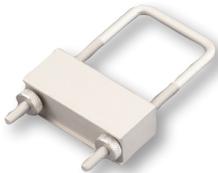
Mount Chuck



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

Part Number:
11-1189

Small Bone Chuck



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

Part Number:
11-1194

IsoMet™ 1000 Accessories

Rotating Chuck Assembly



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

Part Number:
11-2181

Table Saw Attachment



Transforms gravity fed IsoMet 1000 into convenient table saw

Part Number:
11-2182

800 gram Weight Set



Additional weights for gravity fed saws

Part Number:
11-2183

Goniometer



Rotates specimen along 3 axes

Part Number:
11-2185

Table Saw Splash Guard



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

Part Number:
11-2186

Fastener Chuck



Holds specimen up to 2in [50mm] for longitudinal sectioning

Part Number:
11-2482

Swivel Arm Accessory



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

Part Number:
11-2184

Large, Double Saddle Chuck



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

Part Number:
11-2483

Glass Slide Chuck



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

Part Number:
11-2484

Wafer Chuck



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

Part Number:
11-2486

Medium, Single Saddle Chuck



Holds up to 1in [25mm] specimen

Part Number:
11-2487

Glass Slide Chuck



Holds 2 x 3in glass slides

Part Number:
11-2488

Mount Chuck



Holds mounted samples 1.5in [40mm]

Part Number:
11-2489



Precision Cutter Accessories

IsoMet™ High Speed Cutter Accessories

Double Saddle Chuck



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

Part Number:
11-2662

Mount Chuck



Stainless steel chuck holds mounted samples

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

Fastener Chuck



Holds specimens up to 2in [50mm] for longitudinal sectioning

Part Number:
11-2687

Large, Single Saddle Chuck



Holds specimens up to 1.5in [38mm] from 2 point

Part Number:
11-2661

Large Bone Chuck



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

Part Number:
11-2494

T-slot bed



Additional T-slot for positioning vises

Part Number:
11-2707

Sliding Vise



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

Part Number:
11-2703

Rapid Rail



Use with Rapid Rail

Part Number: 11-2660

Small Speed Vise



Clamps specimens up to 58mm in height

Part Number:
460022

Irregular Specimen Chuck



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

Part Number: 11-1185

External Recirculating System Kit



Increases cutting fluid capacity to 7gal [26.5L] at 1.25gal/min [4.7L/min]

Size:
16in [406mm]W x 20in [508mm]D x 15in [381mm]H

Part Number: 11-2640

IsoMet™ Precision Cutter Flanges

Aluminum Flange Set



Part Number:

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

Stainless Steel Flange Set



Part Number:

11-2688	3in [76mm]	11-2690	5in [127mm]
11-2689	4in [102mm]	11-2697	6in [152mm]

**Recommended for the IsoMet High Speed*





Precision Cutter Consumables



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

[Blade Thickness is listed under Part Number]

Recommended Use	3in [76mm]		4in [102mm]		5in [127mm]		6in [152mm]		7in [178mm]		8in [203mm]		Dressing Stick*
	All	All	All	All	All	All	1000 IsoMet High Speed	1000 IsoMet High Speed	1000 IsoMet High Speed	1000 IsoMet High Speed	1000 IsoMet High Speed	1000 IsoMet High Speed Pro only	
Use with Saws													
IsoMet 30HC - Polymers Rubber, Soft Gummy Materials					11-4239 0.030in [0.76mm]				11-4241 0.03in [0.76mm]			11-4242 0.035in [0.9mm],	Blade should not be dressed
IsoMet 20HC - Aggressive Sectioning of Metals					11-4215 0.020in [0.5mm]				11-4237 0.025in [0.6mm]			11-4238 0.035in [0.9mm]	11-1190 11-2490
IsoMet 15HC - Metal Matrix Composite, PCBs, Bone, Ti, TSC	11-4243 0.006in [0.15mm]	11-4244 0.012in [0.3mm]	11-4245 0.015in [0.4mm]	11-4246 0.02in [0.5mm]	11-4247 0.025in [0.6mm]	11-4248 0.035in [0.9mm]	11-1190 11-2490						
IsoMet 20LC - Hard tough Materials, Structural Ceramics			11-4225 0.02in [0.5mm]						11-4227 0.025in [0.6mm]			11-4228 0.035in [0.9mm]	11-1190 11-2490
IsoMet 15LC - Hard Brittle Materials, Glass, Al ₂ O ₃ , ZrO ₂ , Concrete	11-4253 0.006in [0.15mm]	11-4254 0.012in [0.3mm]	11-4255 0.015in [0.4mm]	11-4276 0.02in [0.5mm]	11-4277 0.025in [0.6mm]	11-4279 0.045in [1.1mm]	11-1190 11-2490						
IsoMet 10LC - Medium to Soft Ceramics, Glass Fiber Reinforced Composites	11-4283 0.006in [0.15mm]		11-4285 0.015in [0.4mm]						11-4287 0.02in [0.5mm]			11-4288 0.045in [1.1mm]	11-1290
IsoMet 5LC - Soft, Friable Ceramics, Composites with Fine Reinforcing, CaF ₂ , MgF ₂ , Carbon Composites	11-4293 0.006in [0.15mm]												11-1290
IsoCut™ CBN LC - Fe, Co, Ni based alloys and superalloys	11-4263 0.006in [0.15mm]	11-4264 0.012in [0.3mm]	11-4265 0.015in [0.4mm]	11-4266 0.02in [0.5mm]	11-4267 0.025in [0.6mm]	11-4268 0.035in [0.9mm]	11-1190 11-2490						
IsoCut CBN HC - Fe, Co, Ni based alloys and superalloys	11-5264 0.012in [0.3mm]	11-5265 0.015in [0.4mm]	11-5266 0.02in [0.5mm]	11-5267 0.025in [0.6mm]	11-5268 0.035in [0.9mm]	11-1190 11-2490							
Cup Grinder for Ceramic & Geological Materials (IsoMet 5000 only)			11-2740										

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



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

[Blade Thickness is listed under Part Number]

Recommended Use	5in [127mm]	7in [178mm]	150mm	200mm
Use with Saws	All	1000 IsoMet High Speed	1000 IsoMet High Speed	IsoMet High Speed Pro Only
Tool Steel, hard steel, HRC45 & Up	10-4060-010 0.019in [0.48mm]			
Medium hard, soft steel, HRC45 & Below	10-4061-010 0.019in [0.48mm]			
Steel, Stainless Steel		11-4207-010 0.030in [0.76mm]		
Hard, soft non-ferrous materials		11-4217-010 0.030in [0.76mm]		
Soft materials			101520 0.50mm	102020 0.50mm
Tough materials and general use			1015998E 1mm	1020998E 1.5mm

IsoCut™ Fluid



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

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

Cool 3 Fluid



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

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

Glossy



Clear paste for keeping cutter windows clear

Part Number:
109003 2oz [60mL]

ReciClean™



Cleaner for recirculation systems

Part Number:
109004 1.25gal [4.75L]

AddiCool™



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

Part Number:
109006 1qt [1L]

Dressing Sticks



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

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

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

Dressing Wheel



For IsoMet High Speed only

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

Petrography

Excellent cut quality for delicate samples

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



PetroThin

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

Precise cut location control

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

Increase accuracy and parallelism of samples

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

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

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

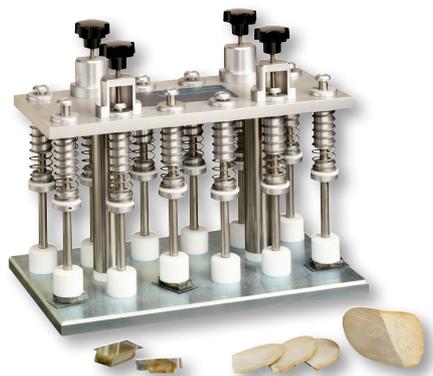
Weight: 94lbs [43kg]

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]

PetroBond™ Thin Section Bonding Fixture



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

Part Number

38-1490

PetroVue™ Thin Section Viewer



Polarized light allows monitoring of thickness & uniformness of the specimen

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

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



MOUNTING

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



SimpliMet™
Compression Mounting



Epoxy and Acrylic Systems



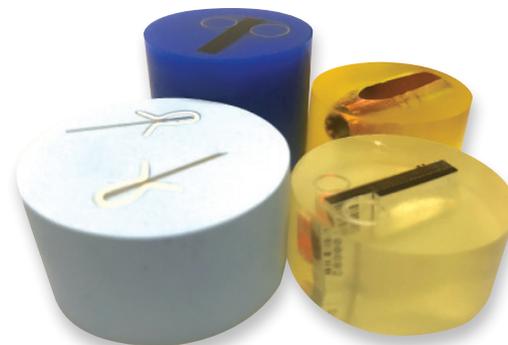
Castable Mounting

Castable mounting systems require neither pressure nor external heat and are recommended for mounting specimens that are sensitive to heat and/or pressure. Buehler carries a complete line of castable mounting acrylics and epoxies as well as accessories and equipment. Epoxy mounting systems provide good physical adherence, low shrinkage and excellent infiltration into pores and cracks when used with a vacuum system. Acrylic mounting systems are typically selected for their short cure times.

Epoxy Systems



Acrylic Systems



Optimized Chemistry for Excellent Results:

- Epoxy chemistry is a complex balance of many factors including shrinkage, cure time, viscosity and adherence. Each lab application requires a slightly different priority of these factors and our line of epoxies has been specially developed to provide the ideal product for your application.

Excellent Infiltration for High Quality Mounts:

- Some samples contain pores and voids that are difficult to fill during mounting but must be filled to achieve the correct results. EpoKwick and EpoHeat are ideal for infiltrating pores to create high quality mounts.

Increased Mounting Throughput:

- With cure times as low as 5 minutes, Buehler's acrylics are designed to increase throughput in a mounting process while providing consistent results.

Quick and Easy Mixing:

- After a quick measure, only a short mixing time is required to fully combine the two components and begin pouring mounts.





Epoxy Mounting Systems

High Performance Choices

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

EpoKwick™ FC



Spend less time preparing and more time analyzing.

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

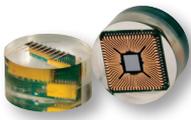
EpoThin™ 2



Protect samples with this gentle low cure temperature epoxy

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

EpoxiCure™ 2



General purpose epoxy system optimized for routine application

- A balanced formula providing good hardness and low shrinkage
- Can be used with larger mounting cups

EpoHeat™ CLR



Save time with long pot life

- Can remain mixed at room temperature for 3 hours and cures in 60 minutes in the oven.
- Water-like viscosity when heated

Product Specifications

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

*values compared with other epoxies

Ordering Information

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

† Restricted article, requires special packaging



Acrylic Mounting Systems

Increased Mounting Throughput

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

SamplKwick™



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

VariKleer™



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

VariDur™ 10



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

VariDur 200



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

VariDur 3003



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

Product Specifications

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

*values compared with other acrylics

Ordering Information

Material	Powder		Liquid†		Kit†	
	Part Number	Size	Part Number	Size	Part Number	Size
SamplKwick™	20-3562	1 lb [0.45kg]	20-3564	12oz [0.36L]	20-3560	Powder 1 lb [0.45kg] Liquid 12oz [0.36L]
	20-3566	5 lbs [2.3kg]	20-3568	64oz [1.9L]		
	20-3562-025	25 lbs [11.3kg]	20-3564-320	2.5gal [9.5L]		
	20-3562-100	100 lb [45kg]	20-3564-640	5gal [19L]		
VariKleer™	20-3591	2.2 lbs [1kg]	20-3592	16.9oz [500mL]	20-3590	Powder 2.2 lbs [1kg] Liquid 16.9oz [500mL]
	20-3591-002	4.4 lbs [2kg]	20-3592-001	33.8oz [1L]		
	20-3591-010	22 lbs [10kg]	20-3592-005	1.3gal [5L]		
VariDur 10	11-1027	2.2 lbs [1kg]	11-1029	16.9oz [500mL]	11-1037	Powder 2.2 lbs [1kg] Liquid 500mL
	11-1031	22 lbs [10kg]	11-1033	1.3gal [5L]		
VariDur 200	11-1030	2.2 lbs [1kg]	11-1029	16.9oz [500mL]	11-1039	Powder 2.2 lbs [1kg] Liquid 33.8oz [1L]
	11-1034	22 lbs [10kg]	11-1033	1.3gal [5L]		
VariDur 3003 3-part system	20-3531	3.3 lbs [1.5kg]	20-3532	16.9oz [500mL] Liquid 1	20-3530	Powder 1.7 lbs [750g] Liquid 1 8.4oz [250mL] Liquid 2 16.9oz [500mL]
	20-3534	16.5 lbs [7.5kg]		33.8oz [1L] Liquid 2		
			20-3535	33.8oz [2.5L] Liquid 1		
			20-3536	1.3gal [5L] Liquid 2		

† Restricted article, requires special packaging





Vacuum Systems, Consumables & Accessories

Cast N' Vac

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



High efficiency

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

Optimized pore impregnation

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

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

*Available only in Europe and Asia

Accessories

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

Ring Forms & Castable Molds

Disposable Mounting Cups (Qty 50)



Best for mounting low exotherm castable systems like EpoxiCure™ 2 and EpoThin™ 2

- Part Number:**
- 20-8280 1in
 - 20-8281 1.25in
 - 20-8282 1.5in

SamplKup™ (Qty 12)



Best dimensional stability and suitable for use with all Buehler castable systems. **not for use in ovens**

- Part Number:**
- 20-9178 1in
 - 20-9179 1.25in
 - 20-9181 1.5in
 - 20-9182 2in
 - 20-9177 25mm
 - 20-9179 30mm
 - 20-9182 40mm
 - 20-9183 50mm

EPDM Round & Rectangular Molds



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

EPDM Round Molds (Qty 5)

- 20-8181 1in
- 20-8182 1.25in
- 20-8183 1.5in
- 20-8184 2in
- 20-7183 40mm
- 20-7184 50mm

EPDM Rectangular Molds (Qty 1)

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

Plastic Ring Forms (Qty 100)



Strengthens a castable mount for polishing in central force mode

- Part Number:**
- 20-8151-100 1in
 - 20-8152-100 1.25in
 - 20-8153-100 1.5in
 - 20-8154-100 2in

Mounting Consumables & Accessories

Pigments for Castable Systems



For color coding or creating contrast between the specimen and the mount

- Part Number:**
 20-8505 Black, 1.5oz [3mL]
 20-8506 Red, 1.5oz [3mL]
 20-8507 Blue, 1.5oz [3mL]

Mixing Cups & Stirring Sticks



For mixing and stirring castable mounting systems

- Part Number:**
 20-8177-100 Non-Graduated Paper Cups, 5oz (148mL) (Qty 100)
 20-8176-100 Graduated Plastic Cups 8.5oz [250mL] (Qty 100)
 20-8175 Wooden Stirring Sticks (Qty 1000)

Release Agent



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

- Part Number:**
 20-8186-004† 4oz [120mL]
 20-8186-032† 32oz [950mL]

Flat Edge Filler



Enhances edge retention in castable mounting systems.

- Part Number:**
 20-8196 1 lb [0.45kg]

Mold Release Powder



Powder release agent for use on mounting presses

- Part Number:**
 20-3048 2oz [45g]

Conductive Filler



Nickel-based filler makes castable mounting systems conductive

- Part Number:**
 20-8500 2 lb [0.9kg]

Mold Release Spray



Spray release agent for use on castable mounting molds

- Part Number:**
 20-3050-008 8oz [0.24L]

Thermoplastic Cement



For adhering samples to glass slides or other specialty holders

- Part Number:**
 40-8100 (Qty 12)

Mounting Wax



For adhering samples to glass slides or other specialty holders

- Part Number:**
 40-8150* Crystalbond
 7 x 0.875in [178 x 22mm]
 20-8145** Crystalbond LT
 7 x 1 x 0.5in [178 x 25 x 13mm]

MetKleer™ Adhesive Bases



For use with speciality mounts and castable systems

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

†Restricted article, requires special packaging

*Flows at 165F [74C]

**Flows at 120F [49C]



Compression Mounting

Protect the integrity of your samples

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



SimpliMet™ 4000 Mounting Press

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

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

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

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

High reliability in 24/7 use environments

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

Optimize Productivity in Your Space

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

Ease of use saves time and protects sample quality

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

Comfortable to use

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

Chamfer Ram

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

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

SimpliMet™ 3000

This versatile mounting press is designed for users with high variety in the lab. Create reproducible mounts of different sizes using a variety of protocols.



Reduce Complexity with Programmability

- Ideal for labs with multiple protocols and different mount types.
- Store and recall up to 25 different programs, reduce complexity and eliminate errors
- Flexibility for high variability labs
- Highly varying samples sizes can be optimized by selecting different mold sizes. Save on mounting media and improve mount quality

Part Number	Voltage/Frequency
20-1435	85-264VAC, 50/60Hz

Mold Assemblies

Molds are ordered separately, available in a variety of sizes and interchanged easily.

Part Number	Size	Part Number	Size
20-2401	1 in	20-2403	1.5in
20-2405	25mm	20-2407	40mm
20-2402	1.25in	20-2404	2in
20-2406	30mm	20-2408	50mm

Dimensions: 1.6in [406mm]W x 21.5in [546mm]D x 22.5in [571mm]H

Support Clips & Clamps

Support clips are used to support specimens during mounting. The material, size and weight of the clips should be considered when choosing a clip for an application.

SampliKlip Support Clip



For use with all mounting systems.*

Material: Stainless Steel
Weight: 0.575g
Qty: 100
Size: 0.25 H x 0.550 W x 0.350in L
 [6 x 14 x 9mm]
Part Number: 20-4000-100

Specimen Support Clip



Best for castable mount systems.†

Material: Plastic
Weight: 0.145g
Qty: 1000
Size: 0.25 H x 0.290 W x 0.375in L
 [6 x 7 x 9.5mm]
Part Number: 20-4001-000

SampliKlip | Support Clip



Best for castable mounting systems.*

Material: Plastic
Weight: 0.230g
Qty: 100
Size: 0.25 H x 0.475 W x 0.3in L
 [~6 x 12 x 8mm]
Part Number: 20-4100-100
Size: 0.25 H x 0.425 W x 0.25in L
 [~6 x 11 x 6mm]
Part Number: 20-4100-100S

UniClip Support Clip



For use with all mounting systems. Orient with "legs" upward for compression mounting.†

Material: Plastic
Weight: 0.290g
Qty: 100
Size: 0.4 H x 0.360 W x 0.500in L
 [10 x 9 x 13mm]
Color: Clear
Part Number: 20-5100-100

Color: Black
Part Number: 113043

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

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





Compression Mounting Compounds

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

Wide Portfolio for Every Application

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

Excellent Edge Retention

EpoMet offers excellent edge retention making it ideal for processing very hard materials. The fine particle size of EpoMet F is great for intricate structures and penetration while the granular size of EpoMet G is easier and cleaner to use.

Quick Cycle Set-Up with No Mess

Save time and maximize cleanliness by eliminating the measuring and pouring of powder. Simply place a PhenoCure Pre-Mold 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	Better
Diallyl Phthalate - Mineral Filled	Moderately hard material	Blue	~91	Better
Diallyl Phthalate - Glass Filled	Moderately hard material for etching	Blue	~91	Better
EpoMet™ G (Granular)	Very hard material	Black	~94	Best
EpoMet™ F (Fine)	Very hard material with complex geometries	Black	~94	Best
TransOptic™	When transparency of the mount is useful	Clear	~80	Good
KonductoMet™	SEM analysis when carbon is not the object of analysis	Black	~88	Better
ProbeMet™	SEM analysis when copper is not of interest	Copper	~94	Better

General Purpose Compounds

PhenoCure™ Powder

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

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

PhenoCure™ Premolds

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

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



General Purpose Compounds

EpoMet™ G (Granular)



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

Black



Part Number:

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]

Diallyl Phthalate



A filled thermoset resin recommended for mounting moderately hard materials. Choose glass filled for etching or mineral filled for better abrasion resistance. (Glass filled = * Mineral filled = •)

Blue



Part Number:

20-3330-080*	5 lbs [2.3kg]
20-3340-080*	5 lbs [2.3kg]

Specialty Compounds

EpoMet™ F (Fine)



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

Black



Part Number:

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

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™ 3000 or SimpliMet 4000.

Clear



Part Number:

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



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

Black



Part Number:

20-3375-016	1 lbs [.45kg]
20-3375-400	25 lbs [11.3kg]

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 couple on Aluminum specimen.

Copper



Part Number:

20-3385-064	4 lbs [1.8kg]
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Tips, Tricks & Techniques



To simplify setup and achieve excellent edge retention, fill the bottom of the mold with EpoMet then place a PhenoCure PreMold on top.

Use the Red or Green PreMolds to color code samples for easy recognition.



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

GRINDING & POLISHING

The grinding and polishing steps in a metallographic preparation method can be accomplished in many ways and combinations. The goal of any method is to prepare a final polished specimen free of deformation and suitable for analysis. Some labs are working with easier to prepare specimens for routine work where speed is valued over a high level of perfection. Other labs are working with samples that are difficult to prepare and require a high quality finish. Some labs are high variety and need to versatility to do both. Buehler has a solution for all grinding and polishing needs.



EcoMet/AutoMet™
Grinder and Polishers



Grinding and Polishing
Consumables & Accessories

Planar Grinder

PlanarMet™ 300 Planar Grinder

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



High Quality Results

- Auto Dressing System ensures fresh consistent abrasive surface giving consistent results.
- Controlled material depth removal (z-axis) is programmable and accurate to 0.01mm.
- High water flow and unique manifold keeps specimens cool, minimizing subsurface damage.

Save space

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

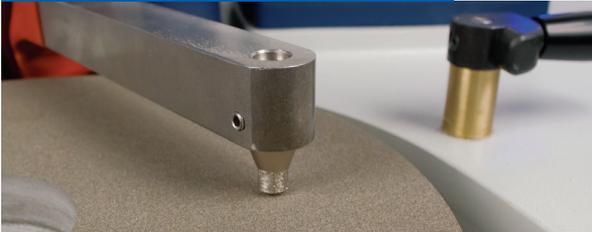
Flexibility to adapt changing needs

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

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

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

Tips, Tricks & Techniques



Benefits of planar grinders

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

Accessories & Consumables for PlanarMet 300

Grinding Stones



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

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

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

Recirculation System



Recirculation tank on wheels for use with PlanarMet™ 300.

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



EcoMet™ 250/300 Grinder - Polisher

Designed for Demanding Production Lab Environments

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

EcoMet Grinder-Polisher with AutoMet Power Head

Intuitive Membrane Controls are Everyday Easy



EcoMet 300

Part Number	Base	Power Head
49-7210	EcoMet 300	None
49-7255	EcoMet 300	AutoMet 250
49-7260	EcoMet 300	AutoMet 300

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

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

EcoMet 250

Part Number	Base	Power Head
49-7200	EcoMet 250	None
49-7250	EcoMet 250	AutoMet 250

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

Accessories

EcoMet 250 & 250 Pro

- 40-4061 8in [203mm] Aluminum Platen
- 40-0500 10in [254mm] Aluminum Platen

EcoMet 300 & 300 Pro

- 49-1777 12in [305mm] Aluminum Platen

Additional Accessories

- 49-6111-160 Recirculating Tank [160VAC, 60Hz]
- 49-6111-250 Recirculating Tank [250VAC, 50Hz]
- 60-9080 Disposable Bowl Liner (Qty 5)
- 4961-250 Splash Guard for AutoMet 250

AutoMet 250 and AutoMet 300 Power Heads

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

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

EcoMet Pro, Grinder and Polishers with AutoMet Power Heads.

Intelligent programming makes advanced functionality easy with highly reproducible results



- Color touchscreen controls add functionality needed for advanced methods such as Z-axis material removal by depth and method creation/storage.
- Improve productivity and consistency by integrating with a Burst Dispenser System (see page 35)
- Quick clean features include a retractable water hose, disposable bowl liner and integrated 360 degree bowl rinse.
- EcoMet 300 Pro has 12" platen size provides a larger working area for faster grinding or to accommodate larger samples.
- EcoMet 250 has 8" and 10" platen size choice optimizes the cost of paper and diamond when a larger unit isn't required.

EcoMet 300 Pro

Part Number	Base	Power Head
49-7211	EcoMet 300 Pro	None
49-7256	EcoMet 300 Pro	AutoMet 250
49-7261	EcoMet 300 Pro	AutoMet 300

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

EcoMet 250 Pro

Part Number	Base	Power Head
49-7201	EcoMet 250 Pro	None
49-7251	EcoMet 250 Pro	AutoMet 250

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





MetaServ 250 Grinder - Polisher

Performance, Economy and Reliability for Routine Applications.

The MetaServ 250 family of Grinder-Polishers offers performance, economy and reliability for low volume preparation applications.

MetaServ 250 Manual

The MetaServ Manual provides simple operation for grinding and polishing. It is compatible with 8in [203mm] and 10in [254mm] platens. Can be easily upgraded with a power head for semi-automatic grinding and polishing.



MetaServ 250 Semi Automatic

Transform the standard speed single or twin to a semi-automatic system with the addition of the Vector™ LC 250 Power Head or purchase the MetaServ 250 with the Vector Power Head.



(*Pictured with the Vector LC Power Head)

Model	Part Number	Voltage Frequency
Single	49-10055	85-264VAC, 50/60Hz
Twin	49-10057	85-264VAC, 50/60Hz
Twin - High Speed	49-10057HS	85-264VAC, 50/60Hz

Single

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

Twin & Twin High Speed

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

Model	Part Number	Power Head	Voltage Frequency
Single	49-10055	60-10059-115 Vector LC 250	115VAC 50/60Hz
Single	49-10055	60-10059-230 Vector LC 250	230VAC 50/60Hz
Twin	49-10057	60-10059-115	115VAC 50/60Hz
Twin	49-10057	60-10059-230	230VAC 50/60Hz
Single w/ Vector Power Head	49-10056	included	85-264VAC 50/60Hz

Single

Dimensions: 17.8in [452mm]W x 28.9in [735mm]D x 24.5in [622mm]H

Twin

Dimensions: 31.7in [805mm]W x 28.9in [735mm]D x 24.5in [622mm]H

Accessories

40-4061	8in [203mm] Aluminum Platen
40-0500	10in [254mm] Aluminum Platen
30-2008	8in [203mm] Paper Holding Band
95-2825	10in [254mm] Paper Holding Band

Vector LC and Vector Power Heads

Vector LC - Single force operation for 1-4 samples.

Vector - Accommodates up to 6 single and central force samples. Additional parameter controls including force, time, rotation, and water.



Grinder Polisher Accessories

Burst Dispensing System

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

Choose from two different Burst Configurations

Fully Integrated

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



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

Independent

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



Compatible with AutoMet 250 Pro and AutoMet 300 Pro

How to configure fully integrated burst system:

- Choose up to 5 burst modules (Part Number 40-1005)
- Add stadium seating module (Part Number 40-10004)
- Add dispensing arm (Part Number 40-10006)
- Add optional stir bar (Part Number 00-10100)

Compatible with all Grinder Polishers

How to configure independent burst modules:

- Choose burst module (Part Number 40-1005)
- Up to 5 modules can be connect to one electrical power source, *requires Cable for connecting module to module (Part Number 40-2832)
- Add optional stir bar (Part Number 00-10100)
- Add optional hand switch (Part Number 40-2823)

Accessories

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

Accessories

- 40-2832 Cable for connecting module to module
For connecting more than 1 burst module in the independent configuration. Up to 5 modules can be connected together. Requires one cable for each module added to the first module.
- 40-2823 Hand Switch
Used to control the start/stop function.
- 00-10100 Stir Bar
Magnetically driven stir bars prevents settling of suspension. Use one for each module.

Grinder Polisher Accessories

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

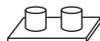
Single Force Specimen Holders



Round/Barrel



Rectangle



Slides



Teardrop

Vector™ LC 250 Power Head

For use with 60-9005 Drive Adapter

Part Number	Style	Size	Capacity	Additional Accessories
60-10060	○	1in	4	63-1022 Retaining Rings (Qty 6pk)
60-10061	○	1.25in	4	63-1023 Retaining Rings (Qty 6pk)
60-10062	○ 	1.5in	4	63-1024 Retaining Rings (Qty 3pk) 69-1583 1 x 2in Glass Slide Holder
60-10063	○	25mm	4	63-1022 Retaining Rings (Qty 6pk)
60-10064	○	30mm	4	63-1023 Retaining Rings (Qty 6pk)
60-10065	○	40mm	4	63-1024 Retaining Rings (Qty 3pk)



Vector Power Head

Part Number	Style	Size	Capacity	Additional Accessories
60-3001	○	1in	4	63-1022 Retaining Rings (Qty 6pk)
60-3002	○	1.25in	4	63-1023 Retaining Rings (Qty 6pk)
60-3003	○	1.5in	4	60-1024 Retaining Rings (Qty 3pk)
60-3004	○	25mm	4	63-1022 Retaining Rings (Qty 6pk)
60-3005	○	30mm	4	63-1023 Retaining Rings (Qty 6pk)
60-3006	○	40mm	4	63-1024 Retaining Rings (Qty 3pk)
60-3000		1 x 2	4	69-1584 1 x 2in Glass Slide Holder



AutoMet™ 250 Power Head

For use with 60-9005 Drive Adapter.

Part Number	Style	Size	Capacity	Additional Accessories
60-9010	○ 	1in	6	63-1022 Retaining Rings (Qty 6pk) 60-9120 1 x 3in Glass Slide Holder 60-9130 2 x 3in Glass Slide Holder 60-9100 27 x 46mm Glass Slide Holder 60-9140 28 x 48mm Glass Slide Holder
60-9011	○	1.25in	6	63-1023 Retaining Rings (Qty 6pk)
60-9012	○	1.5in	6	63-1024 Retaining Rings (Qty 3pk)
60-9020	○	25mm	6	63-1022 Retaining Rings (Qty 6pk)
60-9021	○	30mm	6	63-1023 Retaining Rings (Qty 6pk)
60-9022	○	40mm	6	63-1024 Retaining Rings (Qty 3pk)
60-9030	○	Multiple	6	60-9031 1in Distance Rings 60-9032 1.25in Distance Rings 60-9033 25mm Distance Rings 60-9034 30mm Distance Rings



Single Force Specimen Holders



Round/Barrel



Rectangle



Slides



Teardrop

AutoMet™ 300 Power Head

For use with 60-9005 Drive Adapter.

Part Number	Style	Size	Capacity	Additional Accessories
60-9060		1 in	6	63-1022 Retaining Rings (Qty 6pk) 60-9120 1 x 3in Glass Slide Holder 60-9130 2 x 3in Glass Slide Holder 60-9100 27 x 46mm Glass Slide Holder 60-9140 28 x 48mm Glass Slide Holder
60-9061		1.25in	6	63-1023 Retaining Rings (Qty 6pk)
60-9062		1.5in	6	63-1024 Retaining Rings (Qty 3pk)
60-9063		2in	6	
60-9070		25mm	6	63-1022 Retaining Rings
60-9071		30mm	6	63-1023 Retaining Rings
60-9072		40mm	6	63-1024 Retaining Rings
60-9073		50mm	6	
60-9040		Multiple	6	60-2106 1in and 25mm Distance Rings 60-2103 1.25in Distance Rings 60-2104 1.5in Distance Rings 60-2102 30mm Distance Rings 60-2105 40mm Distance Rings
60-9041		Multiple	6	
60-9049		Multiple Target Holders	3	

Slide Holders & Glass Slides

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



Grinder Polisher Accessories

Central Force Specimen Holders

○ Round/Barrel □ Rectangle ▽ Teardrop

Vector™, AutoMet™ 250 Power Heads

For use with Drive Adapters 60-2499 for Vector and 60-9000 for AutoMet 250.

Part Number	Style	Size	Capacity	Loading Plate
60-2482	○	1in	6	
60-2483	○	1.25in	6	
60-2484	○	1.25in	3	60-2411
60-2422	▽	1.25in [32mm]	6	
60-2485	○	1.5in	3	60-2413
60-2486	○	30mm	6	
60-2487	○	40mm	3	
60-2409	□	1 x 1.25in [25.4 x 31.75mm]	4	
60-8240†	▽	18 - 51mm	5	
60-8210†	▽	12 - 40mm	6	60-2411
60-8262†	▽	10 - 25mm	12	60-2412
60-8254†	□	55 x 30mm	5	
60-8255†	□	70 x 40mm	3	

† Requires 10in [254mm] platen



AutoMet 300 Power Head and PlanarMet™ 300

For use with 60-9000 Drive Adapter.

Part Number	Style	Size	Capacity	Loading Plate
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	60-2412
60-5253	▽	1.5in or 40mm	6	
60-5288	○	40mm	6	60-2413
60-5289	○	2in	3	60-2414
60-5299	○	2in	5	
60-5296	▽	2in or 50mm	5	
60-5245	□	2 x 1.38in [50 x 35mm]	5	
60-5297	□	55 x 30mm	5	
60-5298	□	70 x 40mm	3	



Blank Specimen Holders



For use with 60-2499 or 60-9000 Drive Adapter.

Part Number	Diameter	Power Head
60-2408	5.12in [130mm]	Vector™, AutoMet™ 250
60-5254	7.12in [181mm]	AutoMet 300

Platens



Aluminum platens for use on Buehler Grinder Polishers

Part Number	Diameter	Grinder-Polisher
40-4061	8in [203mm]	MetaServ, EcoMet™ 250
40-0500	10in [254mm]	MetaServ, EcoMet 250
49-1777	12in [305mm]	EcoMet 300

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 8in [203mm] and 10in [254mm] specimen holders
60-2412	Loading Plate for 10in [254mm] and 12in [305mm] specimen holders
60-2413	Loading Plate for 8in [203mm] and 12in [305mm] specimen holders
60-2414	Loading Plate for 12in [305mm] and 14in [354mm] specimen holders

Target Holders



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

Part Number	Description
60-8100	For 28 x 48mm glass slide (histologic holder)
60-8101	For 1in [25mm] mounted specimens
60-8102	For 1.25in [32mm] mounted specimens
60-8112	For 30mm mounted specimens
60-8113	For 40mm mounted specimens
60-9049	Specimen Holder for Target Holders (Drive Adapter required)

Drive Adapters



Securely holds specimens up to 0.875in [22mm] from 2 points

Part Number	Compatible With
60-2499 Central Force	Vanguard, Vector and legacy AutoMet
60-9000 Central Force	AutoMet 250/300 PlanarMet 300
60-9005 Single Force	AutoMet 250/300

Grinder Polisher Accessories

PC-Met™ Precision High Volume Printed Wiring Board Accessory



- High volume printed wiring board preparation system
- Prepares up to 36 coupons simultaneously
- Prepares reproducible cross-sections of through-holes down to 0.008in
- For use with EcoMet™ 300 and AutoMet™ 250/300 Power Head

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

Accessories

60-5053	Coupon Pins 1.0625in [27mm] long (Qty 1000)
60-5067	Cup, Extended Upper Mold Plate, 0.8in (Qty 6)
60-9000	Central Force Drive Adapter for AutoMet™ 250/300

PWB Met™ Small Hole Accessory



- High volume printed wiring board preparation system
- Prepares up to 18 coupons simultaneously
- Prepares reproducible cross-sections of through-holes down to 0.004in
- For use with EcoMet 300 and AutoMet 250 Power Head

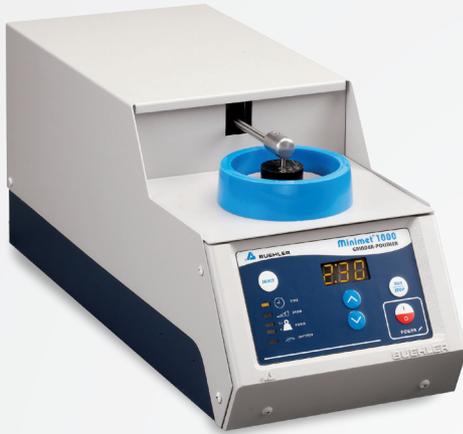
Part Number	Contents
60-5175	Indexing pins, polycrystalline diamond stops, coupon loader, dial indicator calibration gauge, silicon mold release spray, gauge blocks, sample extractor and wooden case

Accessories

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

MiniMet™ 1000

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



Easy to use

- Simple operations ideal for low volume applications

Save space and lower costs

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

Easier clean-up saves time

- Retractable water hose for wash down

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

Dimensions: 7in [180mm]W x 16in [400mm]D x 8in [200mm]H

Accessories

69-1111	Caged Specimen Holder, for 1in [25mm] or 1.25in [32mm] Mounted Specimens	69-1581	Thin Section Bowls, 4.75in [121mm] (1 each Black, White, Blue)
69-1112	Caged Specimen Holder, for 1.5in [38mm] Mounted Specimens	69-1582	Thin Section Glass Platens, 4in [100mm] (Qty 3)(replacement)
69-1500	Polishing Bowls, 4in [100mm] Diameter (1 each Black, White, Blue)	69-1583	MiniMet Thin Section Slide Holder, 46 x 27mm
69-1562	Glass Circular Slides, 0.5in [13mm] Diameter (Qty 50)	69-1590	MiniMet Wafer Polishing Attachment
69-1566	MiniMet 1000 Precision Thinning Attachment	69-1502	Storage Caddie for MiniMet Bowls (Qty 3)
69-1567	Glass Disc, 2.145in [55mm] Diameter (Qty 5)	69-1510	Replacement Glass Discs (Qty of 3)
69-1575	Electro-mechanical Accessories	69-1550	MiniMet Alignment Fixture with 3 Drill Bits
69-1580	MiniMet Thin Section Attachment (includes 3 bowls, glass and section holder)	69-1552	Set of 3 Drill Bits (replacement)

Grinding & Polishing Consumables for MiniMet 1000

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



CarbiMet™

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

MicroCut™

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

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



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

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





Grinder Polisher Specialty & Support Equipment

VibroMet™ 2 Vibratory Polisher

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



Safe and Effective results

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

High quality surface finish

- Combine the VibroMet 2 with MasterMet™ 2 Colloidal Silica to chemomechanically polish a specimen to a surface finish suitable for electron-backscatter diffraction (EBSD)

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

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

Accessories

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

ElectroMet™ Polisher-Etchers

An efficient electro polishing system. The ElectroMet has parameter retention. The etching system reveals microstructure quickly

ElectroMet™ 4



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

Part Number	Voltage Frequency
70-1830-115	115VAC, 60Hz
70-1830-220	220-240VAC, 50Hz

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

ElectroMet



Products not available in Europe

Part Number	Voltage Frequency
70-1710	115VAC, 50/60Hz

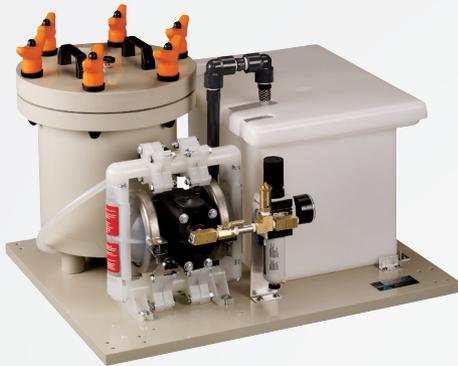
Dimensions: 7in [177mm]W x 5.75in [146mm]D x 7.75in [197mm]H

Accessories

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

EnvironMet™ System

Filtration and recirculation systems compatible with all Grinder-Polishers. The EnvironMet uses fresh water at each step. The recirculating version removes up to 1µm particulates. The filter version removes up to 100µm particulates. The system requires no electrical connections and has a 6gal [23L] capacity



Part Number

49-2500 EnvironMet Recirculating Filter System

49-2501 EnvironMet Filter System

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

Accessories

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

UltraMet™ Ultrasonic Cleaners

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



UltraMet 2002 Ultrasonic Cleaner, 0.75gal [2.8L]

Part Number	Voltage/Frequency
80-2002-115	115VAC, 60Hz
80-2002-220	220VAC, 50Hz

UltraMet 2005 Ultrasonic Cleaner, 2.5gal [9.5L]

Part Number	Voltage/Frequency
80-2005-115	115VAC, 60Hz
80-2005-220	220VAC, 50Hz

Accessories

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

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

Replicating Materials for Field Applications

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

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

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



Grinding & Polishing Consumables

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



CarbiMet Silicon Carbide Paper

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



Premium Polishing Cloths

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



MetaDi Diamond Suspension & Paste

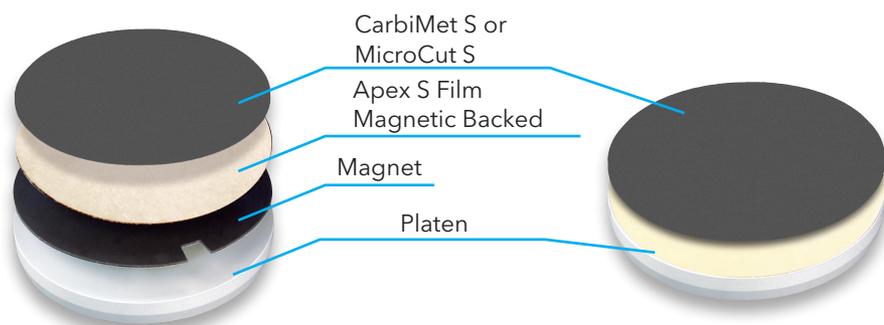
MetaDi is the premier line of diamond suspensions and pastes that ensures consistency in the polishing process. A variety of types and micron sizes are available to fit any application.



Platen Systems

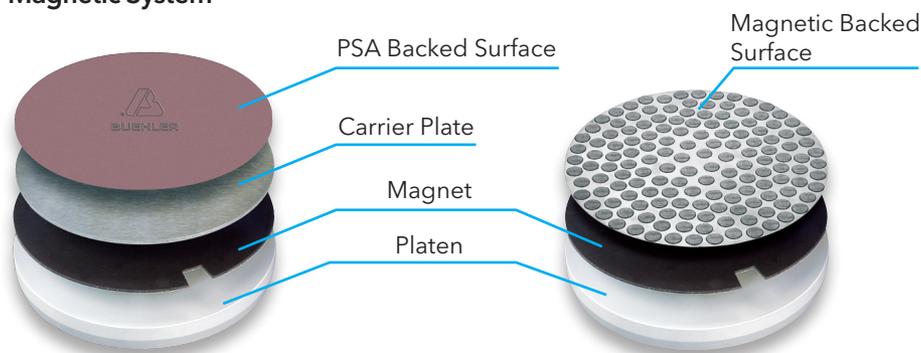
The choice of platen system depends on the goals of the lab and the products being used in the preparation process. The Apex S system provides the fastest solution for changing between grinding papers, while a magnetic system can be adapted for use with nearly all products.

Apex S System



- High friction backing system that is the ideal choice to reduce changeover times between grinding paper steps
- Compatible with CarbiMet S and MicroCut S products
- Apex S film is available in either PSA or magnetic backing

Magnetic System



- Versatile system that allows easy removal and storage of grinding and polishing consumables
- Compatible with magnetic and PSA backed surfaces

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



Grinding & Polishing Consumables

CarbiMet™ & MicroCut Silicon Carbide Grinding Papers

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

High Material Removal with Superior Surface Finish

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

Quick Change-Overs

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

Delicate Preparation

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

Apex™ S Backed (Qty 100)

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



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

CarbiMet and MicroCut Accessories

- Apex S film is applied to a platen for use with CarbiMet S or MicroCut S
- MetGrip liners are used with plain backed CarbiMet or MicroCut

Description	8in [203mm]	10in [254mm]	12in [305mm]
Apex S Carrier Film magnetic backed (Qty 2)	16-2074	16-2574	16-3074
Apex S Carrier Film PSA backed (Qty 2)	16-2075	16-2575	16-3075
MetGrip™ Liners (Qty 10)	30-8508	30-8510	30-8512

PSA Backed (Qty 100)

Pressure sensitive adhesive (PSA) backing for easy application

	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

Plain Backed (Qty 100)

Plain backing that requires the use of adhesive liner

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



Grinding & Polishing Consumables

Diamond Grinding Discs

Diamond grinding discs offer a long-wear surface that provides excellent surface flatness for a wide variety of materials. Buehler offers multiple different types of products depending on the material being processed.

Long Life with Consistent Results

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

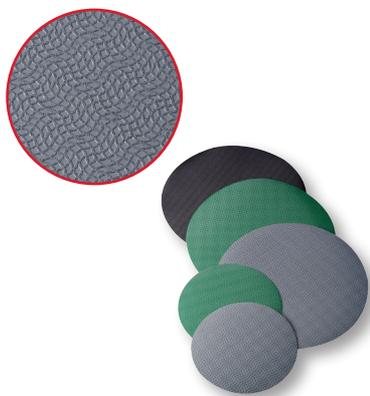
Ideal Solution for Automation

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

Process a Variety of Materials

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

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



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

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

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



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

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

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



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

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

UltraPrep™ Diamond Discs (Qty 1)



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

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

UltraPrep Diamond Abrasive Discs (Qty 1)

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



Grinding Consumables

Premium Polishing Cloths

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

Reliable Preparation Results

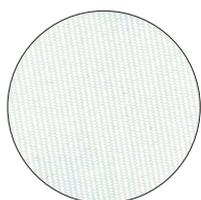
Buehler's cloths are thoroughly tested and developed with MetaDi Diamond to provide a complete solution that delivers reliable results for each sample processed.

A Cloth for Every Application

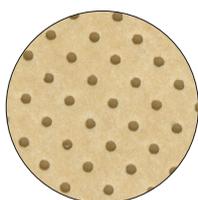
The type of cloth used depends heavily on the material being processed and the requirements for the final analysis. With a variety of fabrics, weaves and naps, there is a cloth to fit every application

Polishing Cloth Selection Guide

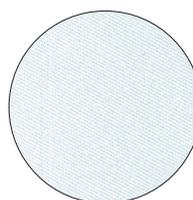
	Cloth	Backing	Quantity	8in [203mm]	10in [254mm]	12in [305mm]	Description
COARSE	UltraPad™	PSA	10	40-7118	40-7120	40-7122	Hard woven, no nap
	UltraPol™	PSA	10	40-7448	40-7450	40-7452	Hard woven, non-aggressive silk
	TexMet™ P	PSA	5	40-7638	40-7640	40-7642	Hard non-woven, perforated
INTERMEDIATE	Nylon	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
	TriDent™	PSA	10	40-7518	40-7520	40-7522	Soft woven synthetic, no nap
	VerduTex	PSA	10	40-8018	40-8020	40-8022	Medium hard, synthetic silk
	VelTex	PSA	10	40-8218	40-8220	40-8222	Short nap, synthetic velvet
	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
FINE	MicroCloth™	PSA	10	40-7218	40-7220	40-7222	Soft synthetic rayon, long nap
	MicroFloc	PSA	10	40-8318	40-8320	40-8322	Soft, long nap
	MasterTex™	PSA	10	40-7738	40-7740	40-7742	Soft synthetic velvet, low nap
	ChemoMet™	PSA	10	40-7918	40-7920	40-7922	Soft synthetic, porous, chemically resistant



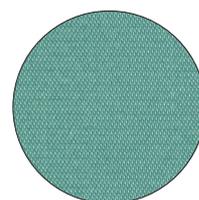
UltraPad™



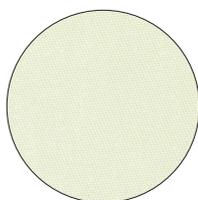
TexMet™ P



TriDent™



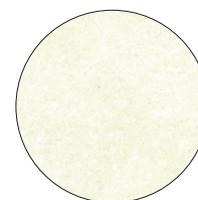
VerduTex™



UltraPol™



Nylon



TexMet™ C

Apex™ Hercules



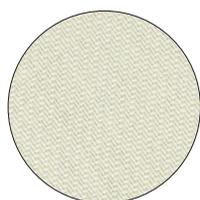
- Magnetic backed resin surface that provides excellent flatness and edge retention
- Use with MetaDi diamond suspension

Type	8in [203mm]	10in [254mm]	12in [305mm]
Apex Hercules H For materials ≥ HRC20	41-2740-308-001	41-2740-310-001	41-2740-312-001
Apex Hercules S For materials < HRC20	41-2740-408-001	41-2740-410-001	41-2740-412-001

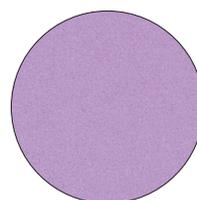
Recommended Micron Size	Abrasive Type	Applications
6µm & Up	Diamond	Ferrous materials and thermal spray coatings
6µm & Up	Diamond	Minerals, coals, ceramics, inclusion retention in steels, and refractory metals
6µm & Up	Diamond	Electronics, ceramics, carbides, petrographic, hard metals, glass, and metal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



VelTex™



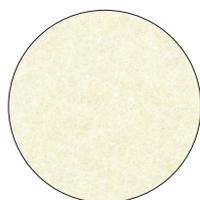
PoliCloth™



MicroFloc™



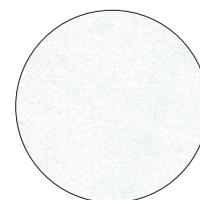
ChemoMet™



WhiteFelt™



MicroCloth™



MasterTex™



Grinding & Polishing Consumables

Diamond Polishing Suspensions & Pastes

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

Repeatable Polishing Results

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

Fast Preparation Time

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

Processing Unique Materials

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

MetaDi™ Diamond Suspensions

MetaDi Supreme Polycrystalline Suspension

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



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

MetaDi Monocrystalline Suspension

Monocrystalline suspension providing 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	40-5533-032

MetaDi™ Diamond Pastes

MetaDi Ultra Polycrystalline Paste

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



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

This product is grey in color with color coded packaging

MetaDi Monocrystalline Paste

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

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

MetaDi II Monocrystalline Paste

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

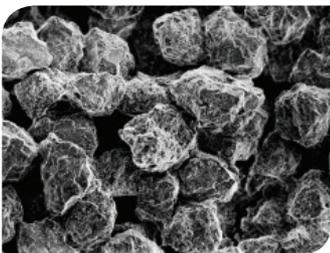
Color	Diamond Size	5g	20g
Grey	0.25µm	40-6241	40-6240
Blue	1µm	40-6244	40-6243
Green	3µm	40-6247	40-6246
Yellow	6µm	40-6250	40-6249
Deep Red	9µm	40-6253	40-6252
Brown	15µm	40-6256	40-6255

Polishing Lubricants

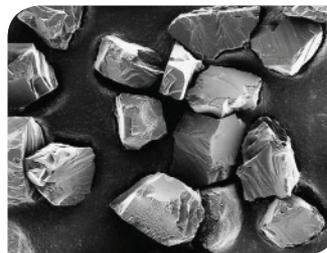
MetaDi Fluid is a water soluble lubricant for use with pastes and suspensions. AutoMet Oil is recommended for use with water sensitive materials.

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

Differences between Polycrystalline and Monocrystalline Diamonds



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



Sharp edges of monocrystalline diamonds ensure clean and efficient cutting action.

Grinding & Polishing Consumables

Final Polishing Suspensions

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

Excellent Surface Finish

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

Application Specific Solutions

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

MasterPrep Alumina



- 0.05µm Sol-gel alumina suspension
- ~8.5pH
- Excellent for minerals, ferrous metals, low melting point alloys, carbides, PWB's, precious metals and electronics

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

MasterMet Colloidal Silica



- 0.06µm
- Amorphous colloidal silica suspension
- ~10pH
- Chemo-mechanical polishing action
- Excellent for metals, minerals, ceramics and polymers

Part Number:
 40-6370-006 6oz [0.18L]
 40-6370-064 64oz [1.9L]

MasterMet 2 Non-Crystallizing Colloidal Silica



- Non-crystallizing 0.02µm amorphous colloidal silica suspension
- ~10.5pH
- Chemo-mechanical polishing action

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

MasterPolish Final Polish



- Blend of 0.05µm high purity alumina and colloidal silica
- ~9pH
- Contains minimal water and is optimal for water sensitive materials

Part Number:
 40-10084 32oz [0.95L]

MasterPolish 2 Final Polish



- 0.06µm Iron Oxide Suspension
- Chemo-mechanical polishing action
- ~10pH
- Excellent for sapphire, glass, alumina, silicon nitride, metal/ceramic composites

Part Number:
 40-6376-032 32oz [0.95L]

MicroPolish™ Alumina



- Agglomerated alumina offers higher removal rates than other aluminas of the same size
- Good for use on magnesium, lead and their alloys

Powders

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

Suspensions

Part Number	Micron	Size
40-10083	0.05µm	6oz [0.18L]
40-10082	0.3µm	6oz [0.18L]
40-10081	1µm	6oz [0.18L]

MicroPolish™ II Alumina



- Agglomerated alumina offers higher removal rates than other aluminas of the same size
- Good for use on magnesium, lead and their alloys

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

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



Specialty Grinding & Polishing

FibrMet™ Abrasive Discs (Qty 50)

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

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

UltrPrep™ Diamond Lapping Films (Qty 5)

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

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

Abrasive Powders - (5lb)

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



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

Storage Cabinets

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

Standard Storage Cabinet



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

Dessicator Storage Cabinet

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



Part Number	Description
20-1445	Dessicator Storage Cabinet

Accessories

20-1446	Spacer Tray, 1in [25mm]	20-8280	1in Disposable Mounting Cup
20-1447	Spacer Tray, 1.25in [32mm]	20-8281	1.25in Disposable Mounting Cup
20-1448	Spacer Tray, 1.5in [38mm]	20-8282	1.5in Disposable Mounting Cup
20-1449	Dessicant	20-8283	2in Disposable Mounting Cup



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



IMAGING & ANALYSIS

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

The OmniMet system offers seamless point-and-click integration of microscopes, cameras, and image analysis software via an intuitive Microsoft® Windows® interface. In general any standard format image may be viewed directly from a calibrated microscope or be imported into OmniMet for analysis. OmniMet software is offered at different levels of flexibility, functionality, and analytical power to meet the metrology needs of every laboratory requiring image data archiving and quantitative image analysis.



OmniMet™ Modular
Digital Imaging System



OmniMet™ Modular Digital Imaging System

Designed for Demanding Production Lab Environments

Flexible

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

Powerful

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



Available Editions (Training available through webinars. Contact Buehler for details.)

Systems*	Software**	Editions
86-1-1001	86-1-1000	OmniMet Viewer allows networked users to view images and measurements completed on an OmniMet imaging system on the same network.
	86-1-1010	OmniMet Capture N' Measure (CnM) enables image capture with basic measurement functions without database functions. Measuring functions included are length, parallel lines, curves, area + perimeter, radius, angle and count. Results can be burnt into the image but cannot be stored or exported to Excel®.
86-1-1003	86-1-1002	OmniMet Basic offers imaging system calibration, image capture, manual measurements, database for archiving, and MS Office report templates for presenting results. Measurements include lengths, width, area, curve length, radius, angles, text annotations, and scalebars. Optional Capture Modules may be added for specific applications.
86-1-1005	86-1-1004	OmniMet Advanced offers imaging system calibration, image capture, manual measurements, databases for archiving, MS Office report templates for presenting results, and enhanced measurement capability. Optional Capture and Advanced measurement modules may be added.
86-1-1007	86-1-1006	OmniMet Express offers imaging system calibration, image capture, manual measurements, databases for archiving, MS Office report templates for presenting results, and enhanced measurement capability. Optional Capture, Advanced measurement modules and Pre-programmed Application specific Scripts may be added.
86-1-1009	86-1-1008	OmniMet Enterprise offers imaging system calibration, image capture, manual measurements, databases for archiving, MS Office report templates for presenting results, and enhanced measurement capability. Optional Capture, Advanced measurement modules and Pre-programmed Application specific Scripts may be added. ScriptEditor enables the user to write fully customizable analysis Scripts for complete control to develop customized image analysis solutions.

* System Package includes software pre-installed on a Windows 7, 64-bit workstation with MS Office 2013, mousepad and SumMet CD. Includes keyboard and mouse, does not include a monitor.

** Software Only package includes software, mousepad and SumMet CD and is compatible with Windows 7 computer, (32 or 64-bit) with MS Office.





OmniMet™ Modular Digital Imaging System

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 Modules: Length, Area, Radius, Count, Parallel Lines	•	•	•	•	•	•
Advanced Modules: 3-point Circle, Adj. Angle, Polygon				•	•	•
Advanced Measurement Modules (optional)				◊	◊	◊
Color Threshold (size, intensity), 16 Bitplanes					•	•
Automation Capable: Read & Run Scripts					•	•
ScriptEditor: Read, Run, Write, and Edit Scripts						•
Application Specific Scripts (optional)					◊	◊*
Report						
Report Data, Report Generator (requires Microsoft® Office)	•		•	•	•	•
Results Window with measurements log				•	•	•
Organize						
Database Interface	•		•	•	•	•
Database Creation & Administration			•	•	•	•

• Included with package

◊ Optional module (purchased separately)

* OmniMet Enterprise comes with a selection of Scripts.

Capture and Advanced Measurement Modules (optional)

Capture Modules

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

Advanced Measurement Modules

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

Application Specific Scripts (optional)

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

* Included with OmniMet™ Enterprise

Upgrades and Updates

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

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

Update OmniMet to the latest software release:

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

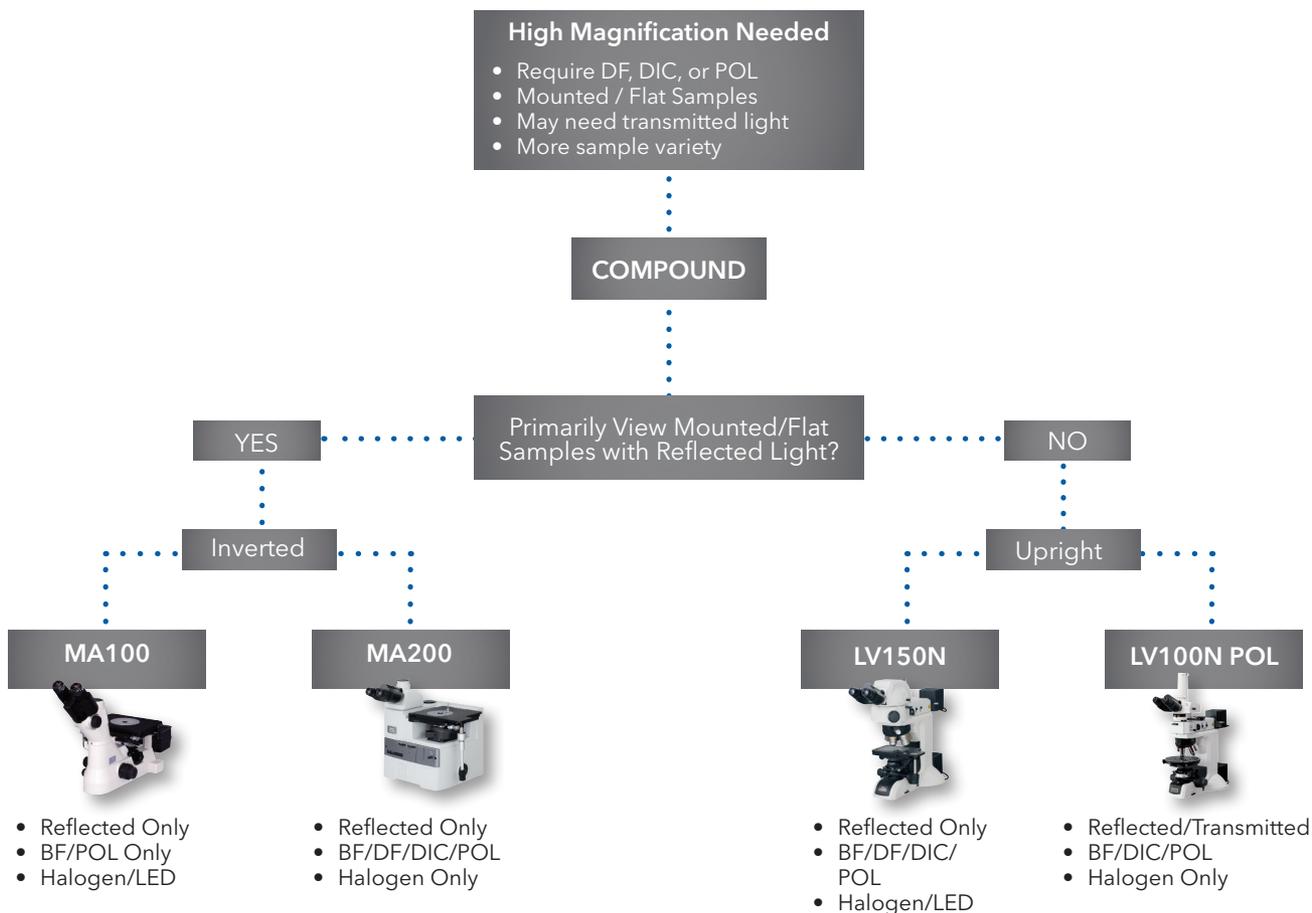
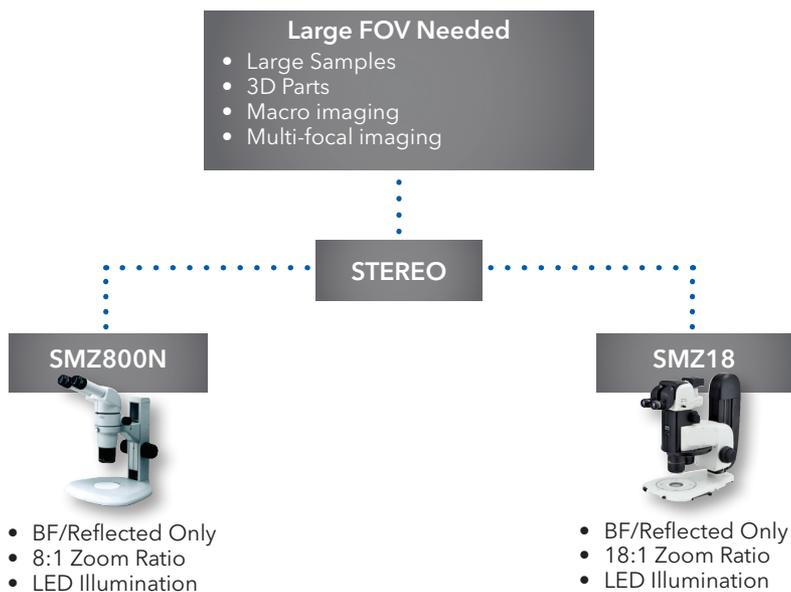
Upgrade From / To	Basic	Advanced	Express	Enterprise
Capture N' Measure	86-5006	86-4006	86-3006	86-1006
Capture Basic	x	86-4002	86-3002	86-1002
Capture Advanced	x	x	86-3004	86-1004
Express	x	x	x	86-1003





Microscopy

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





Stereo Microscopes

Nikon SMZ800N Zoom Stereo Microscope

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



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

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

Nikon SMZ800N Objectives and Accessories

Nikon SMZ800N Optional Objectives



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

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

Manual Rotatable Nosepiece



Rotatable nosepiece for 2 objectives (Choose a 2nd objective for this option)

Part Number:
8741-61

Mechanical Stage and Adapter



3 x 2in Mechanical Stage and Adapter

Part Number:
8741-62

Camera Adapter



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

Part Number:
8749-11

Camera Adapter



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

Part Number:
8749-12

Camera Adapter



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

Part Number:
8749-13





Stereo Microscopes

Nikon SMZ18 Zoom Stereo Microscope

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



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

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

Nikon SMZ18 Objectives and Accessories

Nikon SMZ800N Optional Objectives



- Part Number:**
 NIMNH55050 - 0.5x
 NIMNH55100 - 1x
 NIMNH55100 - 1x
 NIMNH55160* - 1.5x
 NIMNH55200* - 2x

*Cannot use with Coax or ringlight

Low Profile Stage



Low Profile 6 x 4in Stage

Part Number:
8742-61

Camera Adapter



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

Part Number:
8749-11

Camera Adapter



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

Part Number:
8749-12

Camera Adapter



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

Part Number:
8749-13



Inverted Industrial Microscopes

Nikon Eclipse MA100 Inverted Microscope

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



- Compact, durable, inverted microscope ideal for mounted, flat samples
- Available in BF only, reflected illumination only
- LED and Halogen (6V/30W) illumination available
- Trinocular body tubes enables built-in access for camera adapter, camera, and OmniMet™ integration

Part Number	Configuration
8743-01	Nikon MA100 Inverted Halogen Microscope - with ISO camera port (requires ISO camera adapter), halogen lamphouse and 30W bulb, NCB11 and ND4 filters, 10x eyepieces, manually driven XY stage (50 x 50mm) travel, 5-position nosepiece, includes 5x, 10x, 20x and 50x TU Epi Plan objectives, and dust cover.
8743-02	Nikon MA100 Inverted LED Microscope - with ISO camera port (requires ISO camera adapter), 1W LED illuminator, 10x eyepieces, manually driven XY stage (50 x 50mm) travel, 5-position nosepiece, includes 5x, 10x, 20x and 50x TU Epi Plan objectives, and dust cover.

Nikon Eclipse MA100 Objectives and Accessories

Nikon Eclipse MA100 Optional Objectives



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

**Polarizer Required*

Polarizer/Analyzer



- Part Number:**
8743-61

Stage Insert



Includes 1in, 1.125in, 1.5in stage inserts

- Part Number:**
8743-63

Stage Insert



Includes 25mm, 30mm, 40mm stage inserts

- Part Number:**
8743-64

Camera Adapter



Camera Adapter, C-Mount, 0.7x, ISO

- Part Number:**
8749-14

Camera Adapter



Camera Adapter, C-Mount, 1x, ISO

- Part Number:**
8749-15

Grain Size Reticle



For eyepiece

- Part Number:**
8743-62





Inverted Industrial Microscopes

Nikon Eclipse MA200 Inverted Microscope

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



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

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



Brightfield Objectives

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

**Polarizer Required*

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

NIMUE12500 - 50x
 NIMUE12900 - 100x

Darkfield/DIC Objectives

NIMUE42050 - 5x
 NIMUE42100 - 10x

NIMUE42200 - 20x
 NIMUE42500 - 50x

NIMUE42900 - 100x

Nikon Eclipse MA200 Accessories

Polarizer/Analyzer



Included with DIC Package

Part Number:
8744-61

Grain Size Reticle Slider



Part Number:
8744-62

Scale Dial Slider



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

Part Number:
8744-63

Stage Insert



Includes 1in, 1.125in, 1.5in stage inserts

Part Number:
8744-63

Stage Insert



Includes 25mm, 30mm, 40mm stage inserts

Part Number:
8743-62

Camera Adapter



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

Part Number:
8749-11

Camera Adapter



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

Part Number:
8749-12

Camera Adapter



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

Part Number:
8749-13

ViewMet™ Inverted Microscope

Entry level, inverted microscope for general purpose applications for hardness testing



Part Number	Configuration
0760-0100	Includes main body, trinocular head, c-mount, mechanical stage with 15 x 15mm XY travel, 6V/30W illumination, a pair of 10x eyepieces and 5x, 10x, 20x and 50x Plan Achromat objectives, diffusion, yellow, green and blue filters, power cord, instruction manual and dust cover.

Brightfield Objectives

- 0750-0005 5x Plan Achromat Objectives Lens, NA 0.12, W.D. 18.3mm
- 0750-0010 10x Plan Achromat Objective Lens, NA 0.25, W.D. 8.9mm
- 0750-0020 20x Plan Achromat Objective Lens, NA 0.40, W.D. 8.7mm
- 0750-0050 50x Plan Achromat Objective Lens, NA 0.70, W.D. 2.02mm
- 0750-0080 80x Plan Achromat Objective Lens, NA 0.80, W.D. 0.96mm
- 0750-0100 100x Plan Achromat Objective Lens, NA 1.25, oil, W.D. 0.36mm

Accessories

- 0755-0011 10x Eyepiece, diopter adjustable with reticle holder (required when ordering reticle)
- 0755-0025 Micrometer Eyepiece Reticle, 10mm/10mm
- 0755-0030 Grain Size Reticle
- 0755-0150 Diffusion Filter
- 0755-0155 Green Filter
- 0755-0160 Yellow Filter
- 0755-0165 Blue Filter





Upright Industrial Microscopes

Nikon Eclipse LV150N Upright Microscope

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



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

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

Nikon LV150N Objectives

Nikon LV150N Optional Objectives



Brightfield Objectives

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

*Polarizer Required

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

NIMUE12500 - 50x
 NIMUE12900 - 100x

Darkfield/DIC Objectives

NIMUE42050 - 5x
 NIMUE42100 - 10x

NIMUE42200 - 20x
 NIMUE42500 - 50x

NIMUE42900 - 100x

Nikon LV150N Accessories

Polarizer/Analyzer



For LV150N Halogen (included with DIC Package)

Part Number: 8745-61

Polarizer/Analyzer



For LV150NL LED

Part Number: 8745-62

Column Riser



Adds 35mm of working distance, max 2

Part Number: 8745-63

Camera Adapter



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

Part Number: 8749-11

Camera Adapter



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

Part Number: 8749-12

Low Profile Stage



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

Part Number: 8749-13

Nikon Eclipse LV100N POL Upright Microscope

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



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

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

Nikon LV100N POL Objectives

Nikon LV100N POL Optional Objectives



NIMUE13050 - 5x
NIMUE13100 - 10x
NIMUE13200 - 20x

NIMUE13500 - 50x
NIMUE13900 - 100x

Nikon LV100N POL Accessories

Camera Adapter



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

Part Number:
8749-11

Camera Adapter



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

Part Number:
8749-12

Camera Adapter



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

Part Number:
8749-13

Epi/Dia Dual Kit

Enables use of transmitted and reflected illumination simultaneously.

Includes:

- 12V/1000W Transformer
- Cable & Power Cord

Part Number:
8746-61





Microscopy Accessories

Digital Cameras



LE Edition



SE Edition

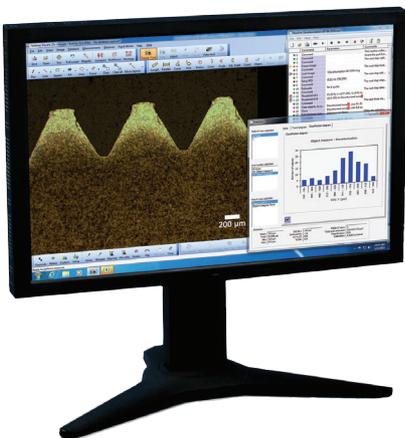
Part Number	Model	Mega pixels	Chip Size	Resolution (w x h)	Frame Rate (fps)	Image Sensor	Interface
86-0240	uEye 1240LE-C	1.3	0.55in	1280 x 1024	25.8	CMOS	USB2.0
86-0274	uEye 1460SE-C	3.1	0.5in	2048 x 1536	11.2	CMOS	USB2.0
86-0270	uEye 1460LE-C	3.1	0.5in	2048 x 1536	11.2	CMOS	USB2.0
86-10004	uEye 1480SE-C	5	0.5in	2560 x 1920	6.3	CMOS	USB2.0
86-10005	uEye 1490SE-C	10	0.5in	3840 x 2748	3.2	CMOS	USB2.0
86-0278	uEye 2240SE-C	1.3	0.5in	1280 x 1024	15	CCD	USB2.0
86-0280	uEye 2250SE-C	1.9	0.55in	1600 x 1200	18	CCD	USB2.0
86-0358	uEye 3580LE	5	0.5in	2560 x 1920	15.2	CMOS	USB3.0
86-0336	uEye 3360CP	2	0.67in	2048 x 1088	15.2	CMOS	USB3.0
86-0337	uEye 3370CP	4	1in	2048 x 2048	80	CMOS	USB3.0

C-Mount Camera Adapters

Part Number	Description
8749-11	C-Mount 0.55x, LV-TV
8749-12	C-Mount 0.7x, LV-TV
8749-13	C-Mount 1x, LV-TV
8749-14	C-Mount 0.7x, ISO
8749-15	C-Mount 1x, ISO

Part Number	Description
8749-16	C-Mount for ViewMet
8749-17	C-Mount 1x, for MicroMet 5100
8749-18	C-Mount 1x, for Opti/Epiphot
8749-19	C-Mount 1x, for MicroMet 2100
8749-10	C-Mount 1x, for Eclipse

Monitors



Part Number	Description
85-0124	24in Monitor, LCD with 1920 x 1200 display capability
85-0127	27in Monitor, LCD with 2650 x 1600 display capability
85-0135	22in Monitor, Touch Screen with 1920 x 1080 display capability
85-0142	22in Monitor, LCD with 1920 x 1080 display capability
8749-15	C-Mount 1x, ISO

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 w/ UKAS certificate
8749-24	Stage Micrometer, Metal, 50mm/0.1mm
8749-25	Stage Micrometer, Metal, 50mm/0.1mm w/ UKAS certificate

Leveling Accessories for all Upright Microscopes



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

Spare Bulbs for Microscopes & Illuminators



Part Number	Description
8749-71	Halogen Bulb, 12V/50W for Nikon LV100ND, LV150N, LV150, LV100D, & MA200
8749-72	Halogen Bulb, 150W for FibrFlex Illuminator
8749-73	Halogen Bulb, 6V/10W for Nikon SMZ Stereo Illuminator
8749-74	Halogen Bulb, 6V/30W for DigiMet 2000, SMZ1000, SMZ1500 & MA100
8749-75	Halogen Bulb, 6V/30W for ViewMet



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



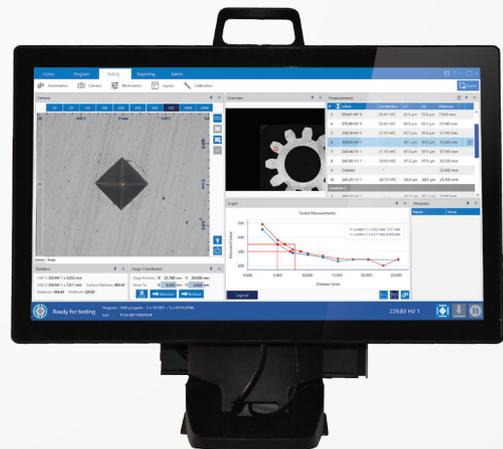
HARDNESS TESTING

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

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



Wilson® VH3300
Hardness Tester



DiaMet™ Hardness
Testing Software

DiaMet Hardness Software

DiaMet - Hardness Testing Made Easy



Often a high level of Automation comes with a high level of complexity, both in set-up and in operation. DiaMet breaks with that convention and focuses on a fast and simple operation to satisfy the needs of low trained operators, while maintaining the flexibility and high level of features required by expert users.

Expert Control & Evaluation Software

DiaMet is optimized for evaluating Macro-Vickers, Micro-Vickers and Knoop indents according to ISO 6507, ISO 4545 and ASTM E384 standards. A standard DiaMet feature is an automatic symmetry calculation for both Knoop and Vickers. This extra validation, with clear visual indication, helps to ensure the results conform to standards.

Tab Interface

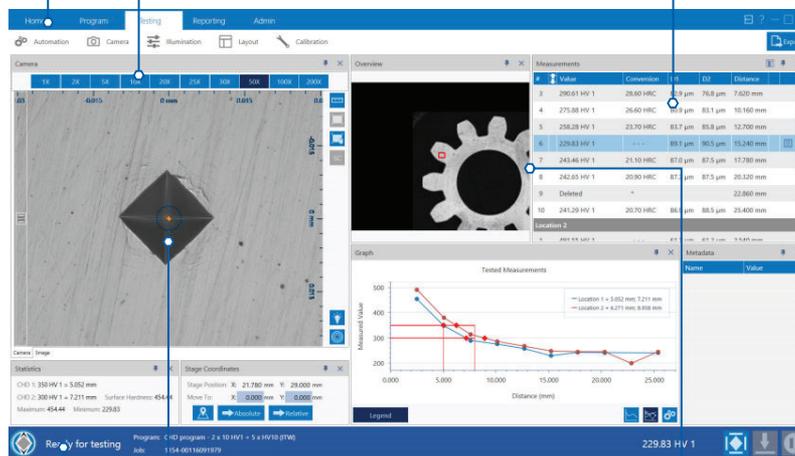
No deeply buried menus. Jump from Program to Testing, to Reporting.

Magnifications

Direct access to all available zoom steps. It is possible to preset the desired magnifications in the test program.

Touch Optimized

Now control your hardness tester by touch. Tap, swipe and slide your samples to accurate results.



Status Bar

Monitor your hardness tester, program and job status in one overview, with the DiaMet status bar.

XYZ Controls

Besides the traditional Point & shoot and arrow stage navigation, DiaMet introduces Stickynav, where the stage follows your finger on the screen.

Overview

Use the overview window* for easy navigation and fast travel. Zoom and pan over the workspace. (*option in combination with scan option).

HARDNESS TESTING



DiaMet Hardness Software

DiaMet - Automation Packages

Automated Microindentation system solutions 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 scale conversions into other scales is supported.

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

● standard delivery

○ optional

Auto-Illumination

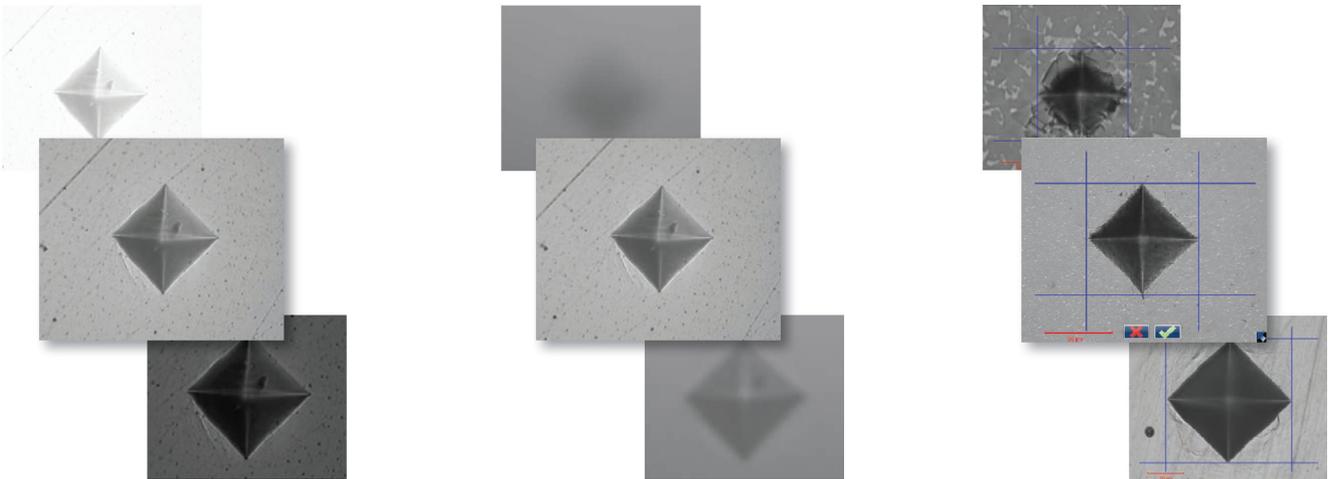
The DiaMet™ software automatic illumination adjusts to the correct illumination level on whatever sample, wherever on the sample independent from material

Auto-Focus

Enjoy the shear AF-speed when focusing at close range. The DiaMet software Auto-focus algorithm sets new standards.

Auto-Measure

Manual positioning of filar lines is no longer required with the DiaMet software's refined measurement algorithm. Enable the automatic indent symmetry check on demand for further standards confirmation





Vickers/Knoop Hardness Testers

Wilson® VH1102/1202 Vickers/Knoop Hardness Tester

The VH1102 and VH1202 offer a versatile, affordable, and reliable solution for accurate micro-hardness testing, both for quality control and for metallurgical research applications. The VH1002-series allows its operator to take measurements using the digital eyepiece in standalone mode or by using an optional integrated high-resolution camera and the powerful DiaMet™ software.



Best in Class Optics

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

Automatic Load Selection

- Designed for Vickers testing conform international standards ISO 6507 and ASTM E384
- The wide load range with 9 individual load steps, offer testing capabilities from 10gf up to 2kgf

VH1102 - 1 Vickers or Knoop indenter,
Total mag 100x, 500x

Part Number - W1102D01

Description	
Hardness scales	HV, or HK
Main-load	0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2kgf
Objectives	10x and 50x Regular

VH1202 - 2 Vickers/Knoop indenter positions,
Total mag 50x, 100x, 500x

Part Number - W1202D01

Description	
Hardness scales	HV, or HK
Main-load	0.01 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2kgf
Objectives	5x, 10x and 50x Long Working Distance

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]

Accessories

Indenters for VH1102/1202

- W9100-687 Vickers indenter 136°, includes ASTM & ISO certificate (Vickers A)
- W9100-684 Knoop indenter 172°, includes ASTM & ISO certificate (Knoop A)

Objectives for VH1102/1202

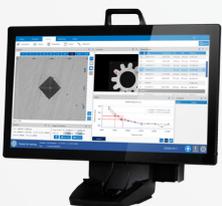
- W-5X-LWD 5x Long Working Distance objective
- W-10X-LWD 10x Long Working Distance objective
- W-20X-LWD 20x Long Working Distance objective

Manual Stages

- 9170-506 XY-stage with analog metric micrometers
- 9170-507 XY-stage with digital micrometers

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

DiaMet Automation Packages



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

Visit www.buehler.com for ordering information.



Vickers/Knoop Hardness Testers

Wilson® VH1150 MacroVickers Hardness Tester

The Wilson VH1150 is the ultimate evolution of the deadweight Vickers hardness tester with a unique load range, 300gf - 50kgf, combined in one machine. The automatic load selection eliminates the need for a hard to operate manual selector knob, and opens new possibilities in (semi-) automation applications. Functions like multi-scale conversion, shape correction and USB data export, make hardness testing easier and help you focus on your actual process control.



Experience the comfort and accuracy of a higher segment

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

Versatile

- Designed for Vickers testing conform international standards ISO 6507 and ASTM E384
- Segment leading load range - 0.3 - 50 kgf load range over ten (10) individual load steps

VH1150 - eyepiece, 1 Vickers indenter

Part Number - W1151

Description	
Hardness scales	HV, HK
Main-load	0.3 - 0.5 - 1 - 2 - 3 - 5 - 10 - 20 - 30 - 50kgf
Objectives	10x and 20x Regular

Dimensions

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

Vertical Test Capacity - 8.2in [210mm]

with standard V-anvil

Horizontal Test Capacity - 6.3in [160mm]

Accessories

Indenters for VH1102/1202

W9100-687 Vickers indenter 136°, includes ASTM & ISO certificate (Vickers A)

W9100-684 Knoop indenter 172°, includes ASTM & ISO certificate (Knoop A)

Objectives for VH1102/1202

W-5X-LWD 5x Long Working Distance objective

W-10X-LWD 10x Long Working Distance objective

W-20X-LWD 20x Long Working Distance objective

Manual Stages

W9170-506 XY-stage with analog metric micrometers

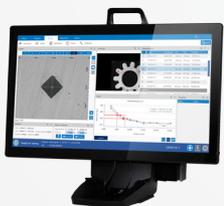
W9170-507 XY-stage with digital micrometers

W-40X-LWD 40x Long Working Distance objective

W-50X-LWD 50x Long Working Distance objective

W-100X-LWD 100x Long Working Distance objective

DiaMet Automation Packages



Testers	DiaMet Manual (Analog)	DiaMet Manual (Digital)	DiaMet Semi Auto	DiaMet Full Auto	DiaMet Enterprise
VH1150	W1151C31	W1151C33	W1151C135	W1151C37	W1151C45



Vickers/Knoop Hardness Accessories

Universal Clamping & Leveling Device



Part Number:
9000-86323

Vertical Clamp



Part Number:
9000-86167

Wire Testing Fixture



Part Number:
9000-85144

Universal Vise



Size:
2in [50mm]
Part Number:
9100-258

Thin Metal Clamp



Part Number:
9000-85128

"V" Testing Cradle



Part Number:
9000-85129

Special "V" Testing Cradle



Part Number:
9000-85253

Thin Metal Clamp



Part Number:
9000-85130

EZ Clamp



Part

Number:
9100-773
9100-774
9100-775
9100-570
9100-571
9100-572
9100-576
9100-575
9100-574

Description:

Single Mount Holder and Leveling device for 1in mounts
Single Mount Holder and Leveling device for 1.25in mounts
Single Mount Holder and Leveling device for 1.5in mounts
Mount Cap for 1in mounts (*requires Canister*)
Mount Cap for 1.25in mounts (*requires Canister*)
Mount Cap for 1.5in mounts (*requires Canister*)
Mount Cap for 2in mounts (*requires Canister*)
Canister (*requires cap selection*)
Magnetic Stop Stage mount and hardware for single mount holders

Additional Vises

Part

Number:
9100-258
9100-260
9170-507

Description:

Precision vise for specimens up to 3.93 x 3.93in [100 x 100mm]
Axel chuck
Manual XY stage with digital micrometers for VH1102/1202, and KV400 series testers

Regional Accessories for Vickers/Knoop Hardness Testers

Vises and Clamping Devices

Part

Number:
88-6168
88-6169
88-6170
88-6171
88-6172
88-6173
88-6174
88-6176
88-6175
9100-216
1600-1151

Description:

Self leveling vise for round mounted samples (without insert)
4x Self leveling vise for round mounted samples (without insert)
Ø 1in [25mm] insert for 88-6168 and 88-6169
Ø 30mm insert for 88-6168 and 88-6169
Ø 40mm insert for 88-6168 and 88-6169
Ø 1.25in insert for 88-6168 and 88-6169
Ø 1.5in insert for 88-6168 and 88-6169
Self leveling vise for Ø 50mm round mounted samples
4x Self leveling vise for Ø 50mm round mounted samples
Universal Precision Vise, 80mm maximum capacity
Universal Inclining Holder with tilt control
(40mm maximum capacity, height: 82mm)

Vises and Clamping Devices

Various Accessories

9100902 Vibration isolation Table for Tukon 1102 & 1202
9100903 Vibration isolation Table for R574 & R2000
9100904 Vibration isolation Table for VH3100
9100906 Active anti-vibration table 600x600 (24"x24")





Vickers/Knoop Hardness Testers

Wilson® VH3100/3300 Vickers/Knoop Hardness Tester

The VH1102 and VH1202 offer a versatile, affordable, and reliable solution for accurate micro-hardness testing, both for quality control and for metallurgical research applications. The VH1002-series allows its operator to take measurements using the digital eyepiece in standalone mode or by using an optional integrated high-resolution camera and the powerful DiaMet™ software.



Ease of use

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

Flexibility

- With a 6 position vertical turret (Buehler patent), the VH3300 offers the flexibility to configure the tester for the complete 10gf - 50kgf load range or just a section of this.
- The zero-offset overview optics houses in the turret and is both illuminated and calibrated.
- Designed for Vickers testing conform international standards ASTM E384 & E92; ISO 6507, 9385, 4546

Increase up-time & reduce service costs

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

VH3100 - 1 Vickers or Knoop indenter,
Part Number - W3111

Description	
Hardness scales	HV, HK
Main-load	Medium loadcell (100N) 50gf - 10kgf
Objectives	30X - 2000X with digital zooming

VH3300 - Up to 3 Vickers or Knoop indenter,
Part Number - W3210

Description	
Hardness scales	HV, HK
Main-load	Small loadcell (10N) 10gf - 1kgf Large loadcell (500N) 0,5kgf - 50kgf
Objectives	30X - 2000X with digital zooming

Dimensions

13.39in [340mm]W x 23.62in [600mm]D

Vertical Test Capacity - 5.1in [130mm]
with XY-stage 3.7in [95mm]

Horizontal Test Capacity - 5.1in [130mm]

DiaMet Automation Packages

Wilson VH3100

Part Number	Description
W3111	VH3100 tester main unit
W3100C02	High Speed XY Stage 180x180mm
W3100C03	Large High Speed XY Stage 300x180mm
W3100D01	Height option 125mm
W3100D02	Height option 170mm
W3100D02	Height option 215mm
W3100E02	Loadcell 100N integrated
W3110F01	VH3100 - Overview camera high resolution

Wilson VH3300

Part Number	Description
W3210	VH3300 tester main unit ≥ 0.2 kgf load
W3200C02	High Speed XY Stage 180x180mm
W3200C03	Large High Speed XY Stage 300x180mm
W3200D01	Height option 105mm
W3200D01	Height option 155mm
W3210E01	Loadcell 10N with Connector VH3300
W3200E02	Loadcell 100N with Connector VH3300
W3200E03	Loadcell 500N with Connector VH3300
W3200F01	Overview optic [FOV 6,5 x 5,4mm]

Wilson® VH3100/3300 Accessories

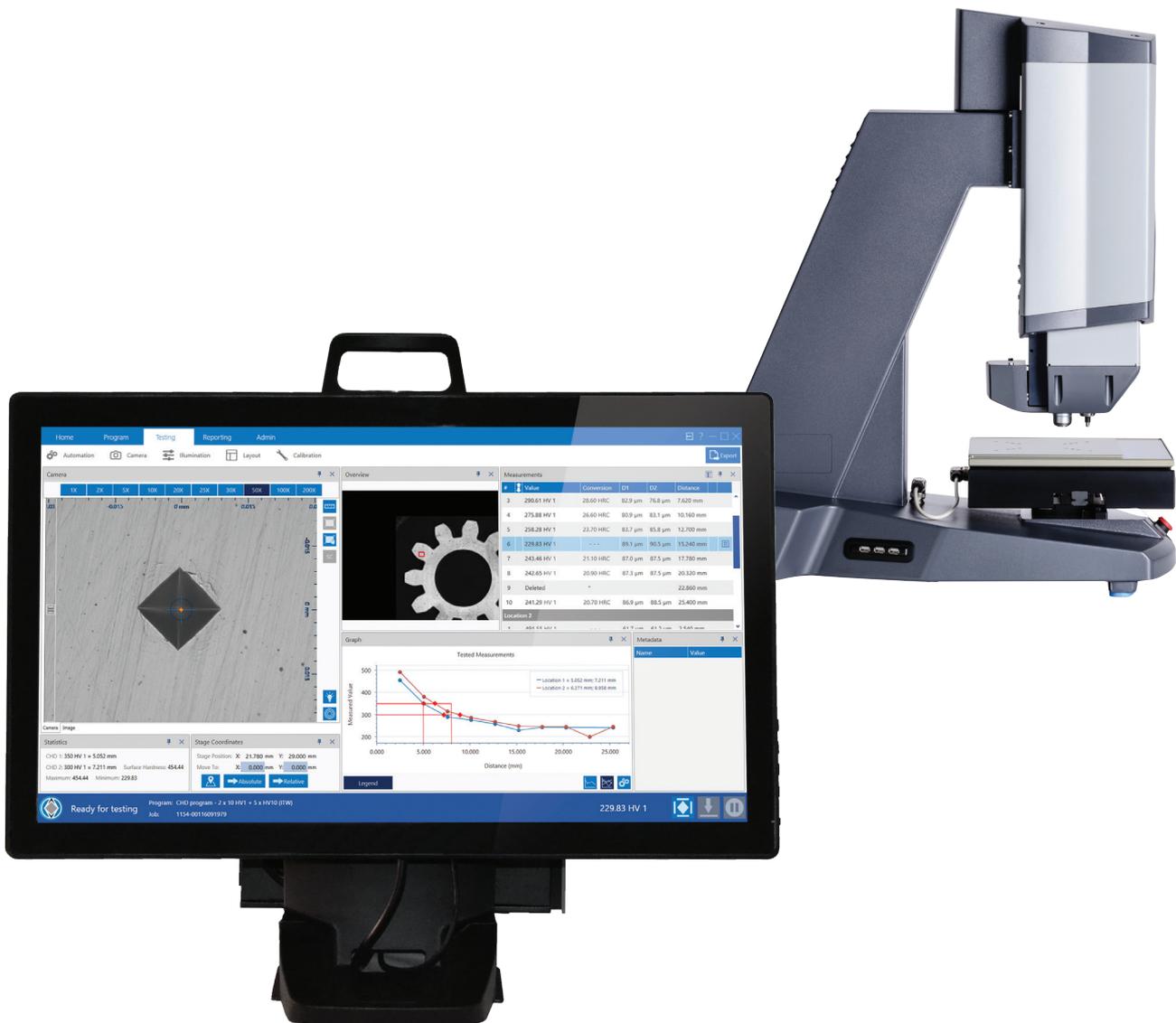
Part Number	Description
W3100G01	VH3100 Standard fixed mounted indenter holder
W3100G02	VH3100 Snap Grip indenter holder - start kit
W3100G02A	VH3100 Snap Grip additional indenter holder
W9100687	Tukon/VH Vickers indenter 136° certified
W9100684	Tukon/VH Knoop indenter 172° certified

Part Number	Description
W5XLWD	5X Long Working Distance objective
W10XLWD	10X Long Working Distance objective
W20XLWD	20X Long Working Distance objective
W40XLWD	40X Long Working Distance objective
W50XLWD	50X Long Working Distance objective
W100XLWD	100X Long Working Distance objective

Universal items for both Wilson VH3100 and VH3300

Part Number	Description
W3100A03	DiaMet Fully automatic Software package
W3100A05	DiaMet Fully auto. Software package scan & template
W3100A06	DiaMet Fully auto. Software package scan & mapping

Part Number	Description
W3100A15	DiaMet Fully automatic Software package Enterprise
W3100B03	Small form PC with 24" HD monitor
W3100B04	Small form PC with 21"



HARDNESS TESTING



Universal Hardness Testers

Wilson® UH250

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



Ease of use

- Focus on a fast and simple operation to satisfy the needs of inexperienced operators, while maintaining the flexibility and complexity of features required by expert users with DiaMet operation software.
- Integrated camera with Zoom module allows a fast, accurate and user independent Vickers/Brinell measurement.

Flexibility

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

Increase up-time & reduce service costs

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

UH250

Description

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

Part Number

Description

W703421	Version A optical and depth measurement (HV, HB & HR), with standard PC & DiaMet software
W703424	Version D optical and depth measurement (HV, HB & HR), with touch screen PC & DiaMet software

Dimensions

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

Vertical Test Capacity - 12.6in [320mm]

Horizontal Test Capacity - 8.4in [215mm]

Accessories

W5XLWD	Lens 5x; max 300x magnification
W10XLWD	Lens 10x; max 600x magnification
W20XLWD	Lens 20x; max 1200x magnification

W741084	Motorized XY-stage incl. Controller hub Stage size 180mm x 180mm
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Rockwell Hardness Testers

Wilson® Rockwell® 574

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



Dimensions

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

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

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

Segment Leading GR&R Performance

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

Ease of Use

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

Robust

- Proven robust design with all stainless steel internal components

574R Regular - for all Regular test scales

Part Number WH574R

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

574S Superficial - for all Superficial test scales

Part Number - WH574S

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

574T Twin - for all Regular and Superficial test scales

Part Number - WH574T

Description	
Pre-load	3, 10kgf
Main-load	15, 30, 45, 60, 100, 150kgf
Hardness scales	HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y



Rockwell Hardness Testers

Wilson® Rockwell® 2000

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



Dimensions-
13.5in [343mm]W x 23.2in [590mm]D x 48.5 [1232mm]H
Vertical Test Capacity -
Normal (R): 9.44in [240mm]
Extended Version (RL): 14.37in [365mm];
Extra Extended (RXL): 19.68in [500mm]
Horizontal Test Capacity - 5.9in [150mm]

Industry Leading GR&R Performance

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

Ease of Use

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

Flexible

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

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

Part Number: WH2002R & WH2003R

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

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

Part Number - WH2002S & WH2003S

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

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

Part Number - WH2002T & WH2003T

Description	
Pre-load	3, 10kgf
Main-load	15, 30, 45, 60, 100, 150kgf
Hardness scales	HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y

Rockwell® Hardness Testers Accessories

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

Part Number	Description
WH2000AUTO	RB2000 Automation kit including stage, software and connecting hub
CP107588	Video option for the RB2000 Automation kit
741038	Single Bar Jominy Fixture for stage mount
CP102392	Three Bar Jominy Fixture for stage mount
9100-564	Specimen Clamping Fixture
A58253	T-Slot table - 13 x 11in [330 x 280mm]

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

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

Rockwell® Diamond and Ball Indenters



Rockwell 2000 and Rockwell 574

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

BRIRO Series

Part Number	Description
740207	Certified Diamond Indenter Rockwell 120° Cone
740091	Certified Carbide Ball Indenter, 1/16in
740236	Certified Carbide Ball Indenter, 1/8in
740252	Certified Carbide Ball Indenter, 1/4in
740092	Certified Carbide Ball Indenter, 2.5mm
740093	Certified Carbide Ball Indenter, 5mm

Spare Balls for all Rockwell Testers

Part Number	Description
9100422	Certified Carbide Balls, 1/16in Ø (Qty 5)
9100423	Certified Carbide Balls, 1/8in Ø (Qty 5)
900000461	Certified Carbide Ball, 1/4in Ø
900000464	Certified Carbide Ball, 1/2in Ø

Why Buehler for Hardness Testing?



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

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

Brinell Hardness Testers

Wilson® BH3000

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



Ease of use

- Heavy duty clamping and protection

Accuracy

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

Flexibility

- Wide load range 612N - 29.42 KN (62.5 kgf - 3000 kgf.).
- Deep reading microscope (order separately).

BH3000

Part Number: WHB30000

Description	
Hardness scales	HB
Main-load	62.5 - 3000kgf

Dimensions

10.4in [265mm]W x 23.9in [608mm]D x 39.5in [1000mm]H

Vertical Test Capacity - 11in [280mm]

Horizontal Test Capacity - 5in [130mm]

Accessories

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

*Products only available in North America & South America

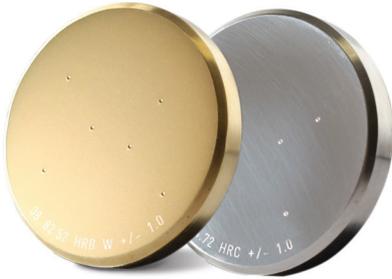


Wilson® Hardness Test Blocks

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

- We work directly with the steel and brass mills to specify the chemical composition
- Our machining processes (grinding, lapping, polishing) are all done in house, at the site of calibration.
- 100% inspection to ensure that every single test block meets the physical requirements of ASTM (thickness, flatness, parallelism, surface roughness)

Wilson® Rockwell Test Blocks



Rockwell B •

Part Number	Nominal Hardness
9202050W	40HRB
9202060W	50HRB
9202070W	60HRB
9202080W	70HRB
9202090W	80HRB
9202100W	95HRB

Rockwell E •

Part Number	Nominal Hardness
9205050W	81HRE
9205060W	87HRE
9205070W	93HRE

Superficia Rockwell 30-N

Part Number	Nominal Hardness
9213110	46HR30N
9213130	55HR30N
9213150	64HR30N
9213190	80HR30N

Rockwell C

Part Number	Nominal Hardness
9203111	25HRC
9203121	30HRC
9203131	35HRC
9203141	40HRC
9203151	45HRC

Rockwell A

Part Number	Nominal Hardness
9201110	63HRA
9201150	73HRA
9201190	83HRA

Superficia Rockwell 15-N

Part Number	Nominal Hardness
9212110	72HR15N
9212130	78HR15N
9212150	83HR5N
921290	91HR15N

Superficia Rockwell 30-T •

Part Number	Nominal Hardness
9219050W	43HR30T
9219070W	56HR30T
9219090W	70HR30T

Rockwell C

Part Number	Nominal Hardness
9203161	50HRC
9203171	55HRC
9203181	60HRC
9203191	63HRC

Rockwell F

Part Number	Nominal Hardness
9206020W	63HRF
9206050W	79.5HRF
9206070W	91HRF

Superficia Rockwell 15-T •

Part Number	Nominal Hardness
9218020W	64HR15T
9218050W	73.5HR15T
9218070W	80HR15T
9218090W	86.5HR15T

α Specify hardness required and load force for certification

* Specify additional Vickers or Knoop hardness scale and load force for certification

• Certified using a Tungsten Carbide ball indenter

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





Wilson® Hardness Test Blocks

Wilson® Vickers/Knoop Test Blocks



Nominal value	min	max	HV3	HV5	HV10	HV20	HV30
250 HV	225	274	9500-026	9500-046	9500-066		
300 HV	275	324	9500-027	9500-047	9500-067	9500-087	9500-107
400 HV	375	424	9500-029	9500-049	9500-069	9500-089	9500-109
550 HV	525	574	9500-032	9500-052	9500-072	9500-092	9500-112
600 HV	575	624	9500-033	9500-053	9500-073	9500-093	9500-113
650 HV	625	674	9500-034	9500-054	9500-074	9500-094	9500-114
700 HV	675	724	9500-035	9500-055	9500-075	9500-095	9500-115
750 HV	725	774	9500-036	9500-056	9500-076	9500-096	9500-116
800 HV	775	824				9500-097	9500-117
850 HV	825	875	9500-038	9500-058	9500-078	9500-098	9500-118

Products not available in North America & South America

Nominal value	min	max	HV0.1	HV0.3	HV0.5	HV1
250 HV	225	274	9700-006	9600-046	9600-026	9600-006
300 HV	275	324	9700-008	9600-047	9600-028	9600-007
400 HV	375	424	9700-010	9600-048	9600-029	9600-009
550 HV	525	574	9700-012	9600-052	9600-032	9600-012
600 HV	575	624	9700-013	9600-053	9600-033	9600-013
650 HV	625	674	9700-014	9600-054	9600-034	9600-014
700 HV	675	724	9700-015	9600-055	9600-035	9600-015
750 HV	725	774	9700-016	9600-056	9600-036	9600-016
850 HV	825	875	9700-018	9600-058	9600-038	9600-018

Products not available in North America & South America

Vickers Microindentation α

Part Number	Load Range	Hardness Scale
9200202	0.050-0.499kg	HV
9200202	0.5-1.0kg	HV

Knoop Microindentation α

Part Number	Load Range	Hardness Scale
9200200	0.010-0.499kg	HK
9200201	0.5-1.0kg	HK

Vickers Macroindentation α

Part Number	Load Range	Hardness Scale
900020515	1-120kg	HV

Additional Calibration *

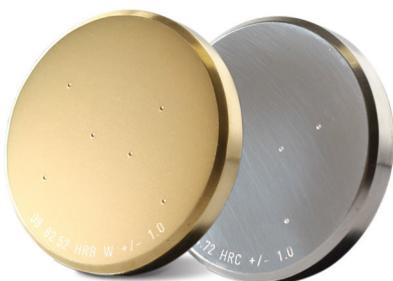
Part Number	Load Range	Hardness Scale
900020511	---	HV or HK

Products only available in North America & South America

α Specify hardness required and load force for certification

* Specify additional Vickers or Knoop hardness scale and load force for certification

Wilson® Brinell Test Blocks



Brinell reference blocks up to 250kgf load

Nominal value	min	max	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-1875	
350 HBW	325	375		WH-350HBW-1875	
400 HBW	375	449		WH-400HBW-1875	
500 HBW	450	525		WH-500HBW-1875	

Brinell reference blocks up to 3000kgf load



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

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

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

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



Hardness Testing - Legacy Buehler

Hardness Tester Accessories for Legacy Rockwell® Hardness Testers (MacroMet™ 5100 Series)

Part Number:	Description:	Part Number:	Description:
1700-1020WC	1/16in WC Penetrator with WC Ball	1800-1015	Rockwell Diamond Indenter for C, D, and A Scales on MacroMet 5100 Series
1700-1021WC	1/8in WC Penetrator with WC Ball	1700-1043	Anvil, Small V-Shape, 0.39in [10mm] diameter
1700-1022WC	1/4in WC Penetrator with WC Ball	1700-1044	Anvil, Round Table, 7.9in [200mm] diameter
1700-1023WC	1/2in WC Penetrator with WC Ball	1700-1046	Anvil, Diamond Spot
1700-1024WC	3/4in WC Penetrator with WC Ball	1700-1047	Anvil, 0.19in [5mm] Taper Spot
1700-1020	1/16in Steel Ball Penetrator with 50 Steel Balls	1700-1048	Anvil, V, 3.5in [90mm] diameter
1700-1021	1/8in Steel Ball Penetrator with 8 Steel Balls	1700-1091	Anvil, Extension Rest
1700-1022	1/4in Steel Ball Penetrator with 4 Steel Balls	1700-1094	Jack Rest for 1800-5101RA and 1800-5101TA Testers
1700-1023	1/2in Steel Ball Penetrator with 4 Steel Balls	1700-1095	Jominy Test Fixture
1700-1024	3/4in Steel Ball Penetrator with 4 Steel Balls	1600-6502	Dot matrix printer for letter size plain paper or 10in roll paper
1800-1005	Rockwell Superficial Diamond Indenter for N Scale on MacroMet 5100 Series	1600-6503	Kit for connection of 5100 series digital hardness tester to a PC for data download
1800-1007	Rockwell Diamond Indenter for A Scale on MacroMet 5100 Series		
1800-1009	Rockwell Diamond Indenter for C Scale on MacroMet 5100 Series		
1800-1010	Rockwell Diamond Indenter for C, D, A, and N Scales on MacroMet 5100 Series		

Spares for Legacy Testers

Indenters for Legacy Testers:

1600-3200	Vickers for MicroMet™ 5100 Series Testers	1600-9200*	Vickers for MicroMet 5100 Series Testers
1600-3201	Knoop for MicroMet 5100 Series Testers	1600-9201*	Knoop for MicroMet 5100 Series Testers
1600-3202	Light-load Vickers for MicroMet 5114 & 5124	1600-9120*	Vickers for Semi- and MacroVickers 2100 Series earlier testers
1600-3203	Light-load Knoop for MicroMet 5114 & 5124	1600-9121*	Knoop for Semi- and MacroVickers 2100 Series earlier testers
1600-1159	Vickers for IndentaMet 1104, 1105 & 1106	1600-9300*	Vickers for Semi- and MacroVickers 5100 Series Testers
1600-1160	Knoop for IndentaMet 1104, 1105 & 1106	1600-9301*	Knoop for Semi- and MacroVickers 5100 Series Testers
1900-3200	Vickers Indenter for 5100 Series Macro & Semi-Macro	1600-1159*	Vickers for IndentaMet™ Microindentation series
1900-3201	Knoop Indenter for 5100 Series Macro & Semi-Macro	1600-1160*	Knoop for IndentaMet Microindentation series
1600-3202	Light Load Vickers for MicroMet 5114	1600-1169*	Vickers for IndentaMet Semi- and MacroVickers series
1600-3203	Light Load Knoop for MicroMet 5114	1600-1170*	Knoop for IndentaMet Semi- and MacroVickers series

Indenters for Legacy Testers with UKAS/United Kingdom certificate:

1600-9100*	Vickers for MicroMet 2100 Series and earlier testers
1600-9101*	Knoop for MicroMet 2100 Series and earlier testers

Special Indenters for Semi- and MacroVickers 5100 series:

1600-3209*	Brinell indenter with hard metal ball 1mm Ø
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Replacement Bulbs

0718-0116	12V/50W bulb for MicroMet™ 5100 Series
1600-1350	MicroMet I Bulb, Indicator Lights
1600-1351	MicroMet I Bulb, Stage Illuminator
1600-1353	6V/10W bulb for MicroMet I, Microscope Illumination
1600-2352	6V/18W bulb for MicroMet II, I, 3, 4 & 2001
1600-2353	4.5V/17W Fiber Optic Illuminator for MicroMet 2003
1600-2354	4.5V/17W Alpha for MicroMet 2000
1600-2355	12V/18W bulb for MicroMet 2100 Series
1700-1051	100V/5W Stage Illuminator Bulb for Rockwell Test

Accessories and Spare Parts for MacroMet™:

1800-1010*	Rockwell® Indenter 120° for C, D, A and N Scales for MacroMet 5100 series
19BAA074*	Rockwell Ball Indenter 1/16in for MacroMet 5100 series (includes sintered carbide ball)
19BAA075*	Rockwell Ball Indenter 1/8in for MacroMet 5100 series (includes sintered carbide ball)
19BAA076*	Rockwell Ball Indenter 1/4in for MacroMet 5100 series (includes sintered carbide ball)
19BAA077*	Rockwell Ball Indenter 1/2in for MacroMet 5100 series (includes sintered carbide ball)
1700-1015*	Rockwell Indenter 120° for MacroMet 3100 series and earlier
1700-1020*	Rockwell Ball Indenter 1/16in for MacroMet 3100 series and earlier

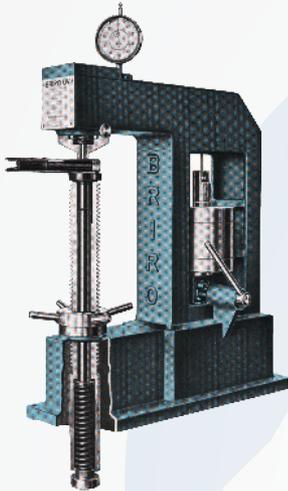
*Products not available in North America & South America



Buehler Leads the Way in Hardness Testing

From Research & Development to Global Manufacturing

Buehler, with its line of Wilson Hardness testers, is the global leader in hardness testing software, equipment and accessories. Buehler is at the forefront of engineering, software development and manufacturing with facilities in Lake Bluff, Illinois and Shanghai, China and Esslingen, Germany, along with applications centers around the world. Buehler is proud to be the proprietor of 100-year old legacy brands that created the hardness testing industry, including Wilson Instruments, Reicheter and Wolpert, the innovators and founders of the hardness testing industry. Buehler's current product lines include improved Rockwell, Knoop/Vickers, Brinell, Universal testing equipment.



*Wilson
Instruments*

We Build on Our Legacy Brands & Develop Innovations for the Future

Wilson Instruments introduced the first Rockwell tester to the market over 90 years ago. Wilson went on to develop the legendary Tukon™ range of Micro-indentation testers. With the introduction of the Rockwell R2000 in 1998, Wilson was the first to bring a closed loop Rockwell hardness tester to market. Buehler currently markets the Rockwell™ 574 and 2000.

German engineered Reicheter has been the benchmark for production support hardness testers with an installed base that includes 50+ year old equipment. In addition, Wolpert, a well-known name in the German hardness testing industry manufactured automatic testers since 1927.

Today Buehler has improved upon the original designs of these three brands and produces the next generation of Rockwell, Knoop, Vickers, Brinell, and Universal hardness testers, along with automatic Computer-Controlled Systems, DiaMet™ software and a wide range of accessories and hardness reference blocks.



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TECHNotes
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Volume 6, Issue 1

Efficient Sample Preparation and Analysis of Ferrous Materials

Introduction
Many thousands of years ago ferrous materials naturally occurring forms, such as ductile iron, were used for tools and weapons. In 1784, the first iron was produced in a blast furnace in what is now Sweden. It took another 500 years of early steel manufacture in simple furnaces that quenching could improve hardness. The end of the 19th century saw the development of steel and the end of the Iron Age.

As late as the 1800's, processing of steel was not possible, mainly using the "hammering bar" of iron with charcoal for days or a week. The process was slow and labor-intensive. In 1856, the Bessemer converter, closely followed by the Siemens converter, allowed the removal of carbon and other impurities and the true control of the elements in steel.

Today, there are several hundred varieties of steels. To meet modern demands, the quality of the steel need to be tightly controlled. The production and analysis techniques have needed to be increasingly demanding applications.

This paper discusses sample preparation and analysis techniques for today's often used ferrous materials and consumables.

Background
Heat Treatment of Ferrous Materials
Sample preparation and analysis was established, before analysis and heat treatment have the corresponding mechanical properties, flexibility, elasticity or durability depend on the heat treatment.

Heat treatment is generally defined as the heating of solid metal or alloy to obtain specific microstructures. There are many different treatments, including normalizing, annealing and stress relieving. These treatments can be performed simultaneously, but improving one can be done in some cases components need to have a specific microstructure. In these cases, heat treatment is used to modify the surface, but maintain the ductility and strength without breaking. For example, a surface layer involves using heat and exposure to the carbon or nitrogen to modify the surface properties.

SUMNotes
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REPLICATING MEDIA by Dr. G. MOORE

Replicating media is used for non-destructive examination of engineering components and materials in a non-pert system that isolates and reproduces the details of the surface in applied with very high precision. The application in metallurgical/microstructural analysis, failure and forensic investigations among others.

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A Guide to Materials Preparation & Analysis
Second Edition

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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
Abrasive Paper, PSA or S Backed	1 year
Abrasive 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	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™	1 year
Release Agent	1 year
Silicon Carbide Powder	2 years
TransOptic Powder	1 year
UltraPrep™ Diamond Lapping Film	1 year
UltraMet™ 2 Sonic Cleaning Solution	2 years
Wafering Blades	1 year

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

**Shelf life starts when product is shipped

See Terms & Conditions for warranty information

2018 Buehler Microstructure Calendar Call for Entries

The Buehler Microstructure Calendar is a recognized forum for excellence in this unique area of technical expertise. Publication in the calendar is open to anyone who has achieved a level of excellence in materials preparation. If you would like to submit an entry for the 2018 edition, please do so according to the following guidelines.

GUIDELINES

SUBJECT OF PHOTO MICROGRAPH:

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

REQUIRED INFORMATION:

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

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

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

SEND FILES:

ONLINE:

- Send your images through our website at <http://www.buehler.com/2018-buehler-calendar-contest>
- If an alternate method is preferred, please contact us at (847) 295-6500 or marketing@buehler.com for instructions on FTP login

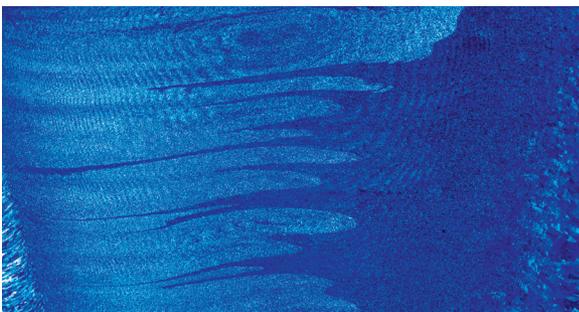
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August 1st, 2017

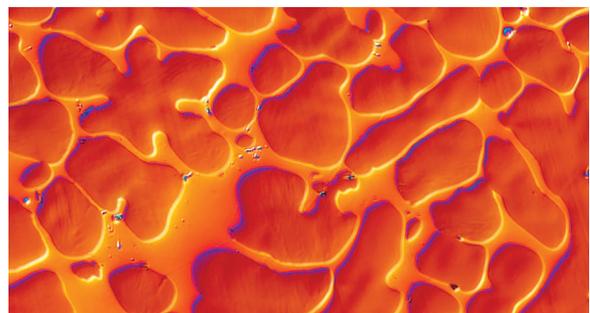
WINNERS:

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

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



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



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

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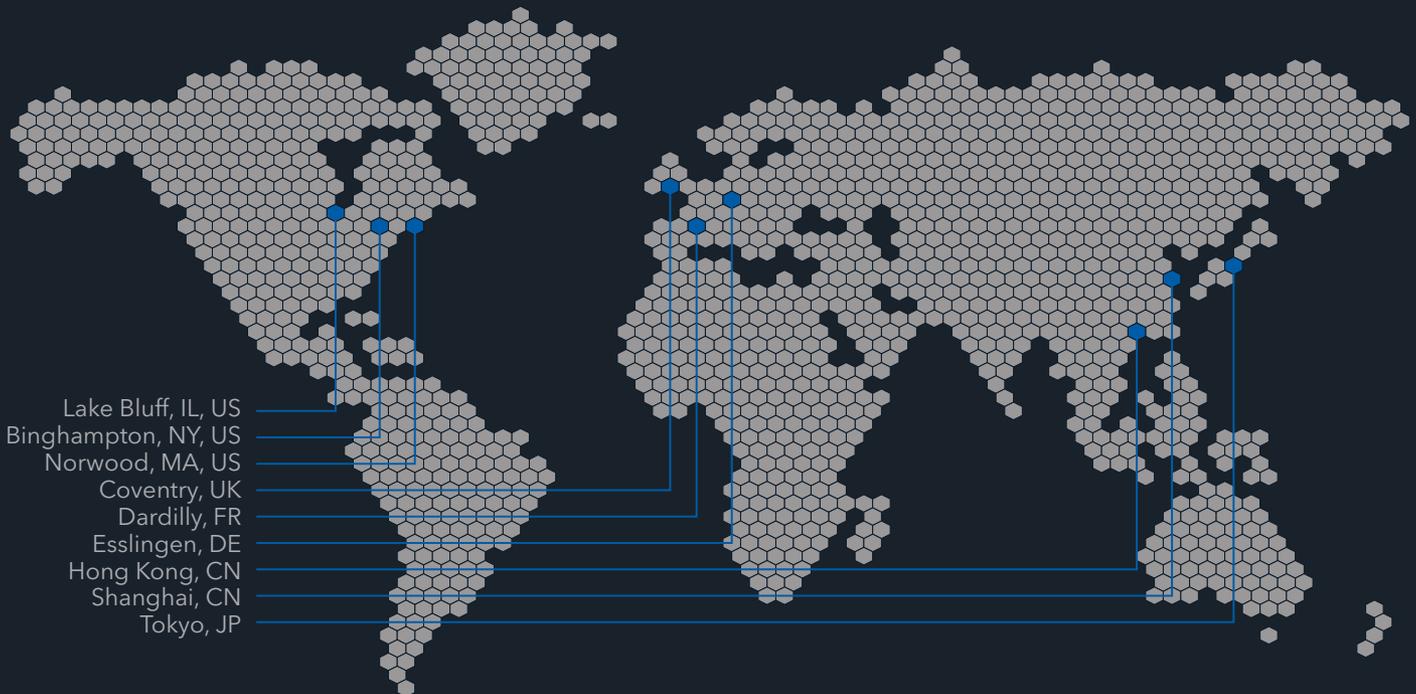
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