

# 2021 PRODUCT CATALOG

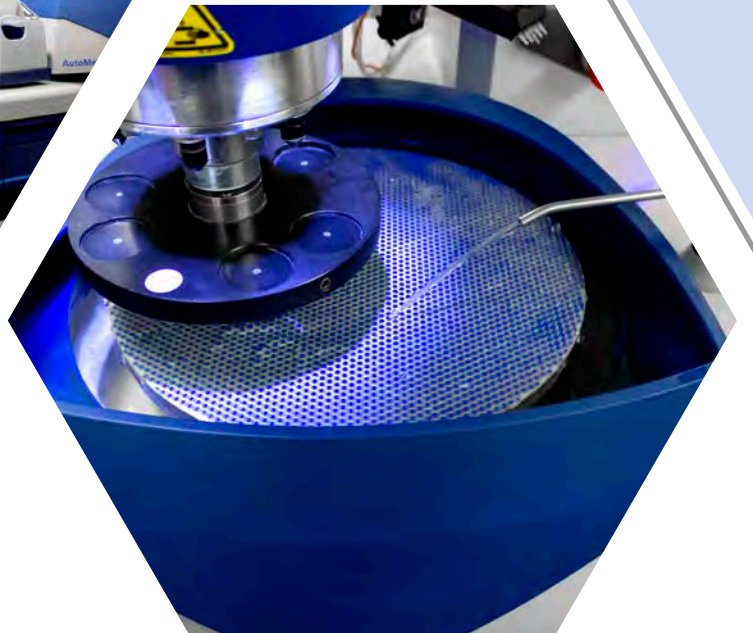
Sectioning

Mounting

Grinding & Polishing

Imaging & Analysis

Hardness Testing



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# About BUEHLER

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



**Julien Noel**  
Vice President &  
General Manager  
Buehler Global

## **Dear Valued Customer and Partner,**

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

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

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

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

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

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

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

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

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



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

## SECTIONING

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

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## MOUNTING

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

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## GRINDING & POLISHING

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

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## HARDNESS TESTING

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

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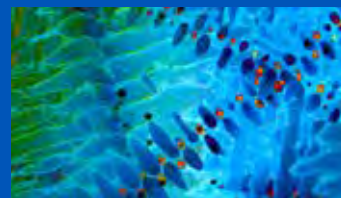


## ADDITIONAL INFORMATION

Customer Care, Expert Lab Solutions, Service, Consumable Shelf Life, 2022 Calendar Submissions.

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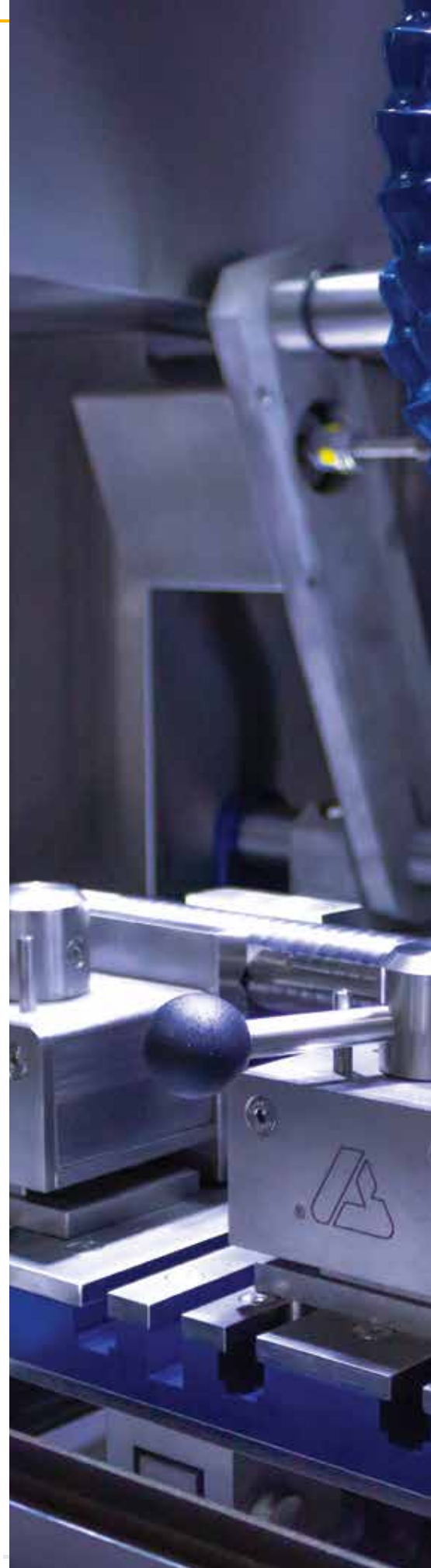


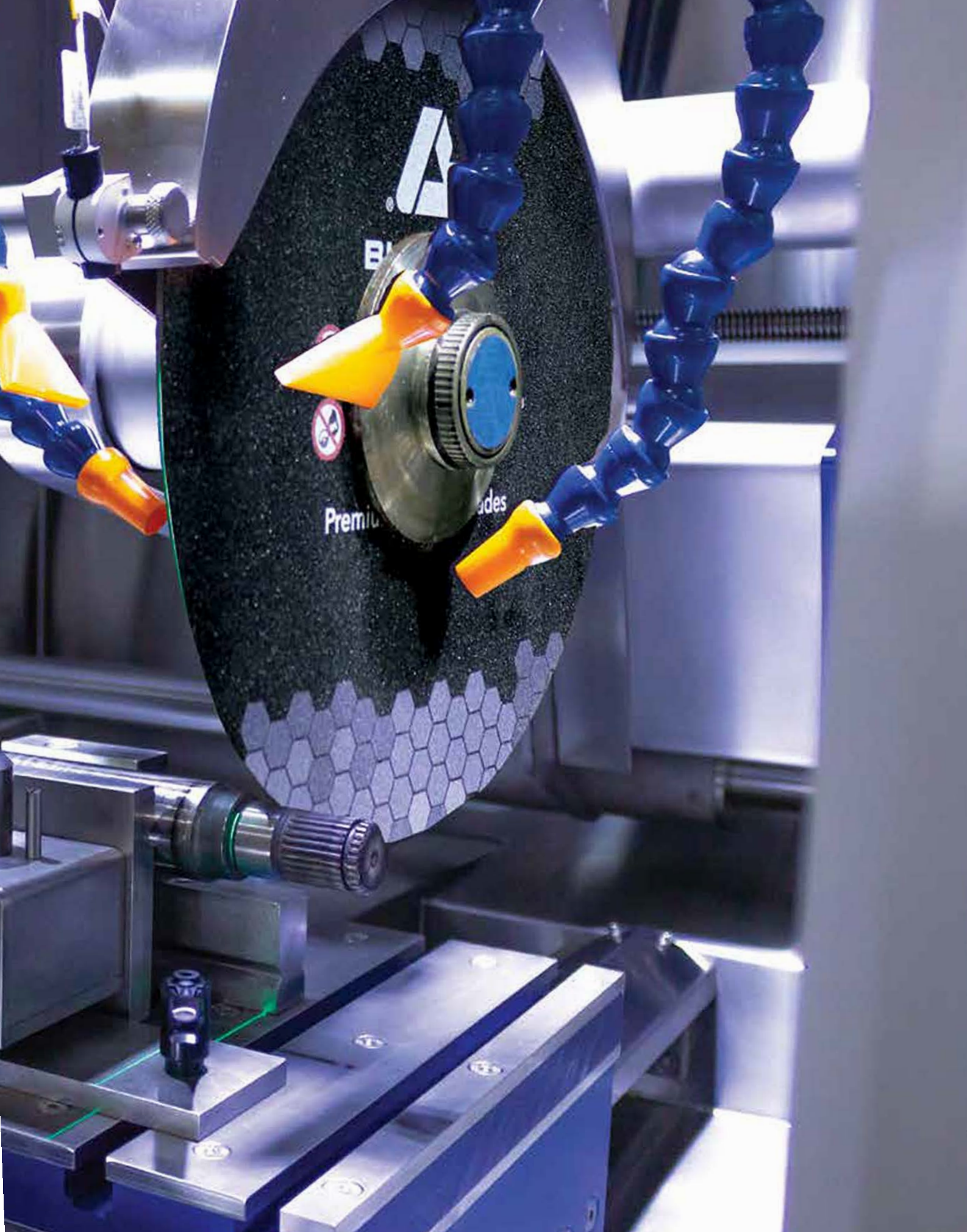


# SECTIONING

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

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





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# Product Comparison

## Abrasive Cutters

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

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

## Precision Cutters

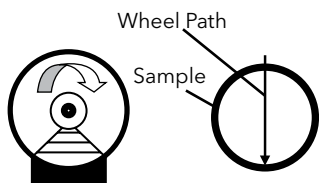
	IsoMet® Low Speed	IsoMet® 1000	IsoMet® High Speed	IsoMet® High Speed Pro	PetroThin® Thin Sectioning System
Maximum Wheel Diameter	5in [127mm]	7in [178mm]	8in [203mm]	8in [203mm]	8in [203mm]
Cut Style	Gravity Fed	Gravity Fed	Y-Feed	Y-Feed	Manual
Sample Movement	X-axis, Z-axis	X-axis, Z-axis			X-axis, Z-axis
Wheel Movement			X-axis, Y-axis	X-axis, Y-axis and Z-axis	
Maximum Cutting Capacity**	1.77in [45mm]	2.5in [64mm]	2.8in [71mm]; 2 x 6.5 x 1in [51 x 165 x 25mm]	2.8in [71mm]; 2 x 6.5 x 1in [51 x 165 x 25mm]	Petrographic Glass Slides: 1.06 x 1.81in [27x46mm] or 3 x 1in [76.2 x 25.4mm]

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

## Cutting Style and Wheel Path

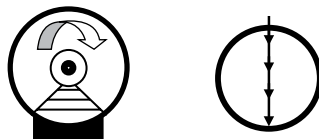
### Chop Cutting

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



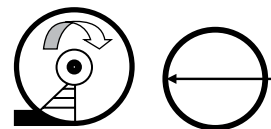
### Chop Cutting with Pulsing

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



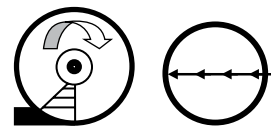
### Y-Feed Cut

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



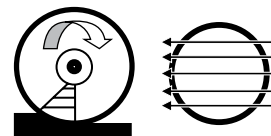
### Y-Feed Cut with Pulsing

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



### Planar Cut

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



# Abrasive Cutters



## Simple Setup for Efficient Cuts

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

### AbrasiMet® M

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

#### Easy to Cut and Maintain

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

#### Durable Machine with Versatile Performance

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



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

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

#### Recirculation Tank (Required)

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

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





# Abrasive Cutters

## Highly Reproducible Results

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

### AbrasiMatic® 300

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

#### Y and Z axis cutting only

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

#### Additional X Axis cutting

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



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

### Delta® Manual

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

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

\*Recirculation tank is included

#### Accessories

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



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





# Abrasive Cutters



## Robust Machine with Intuitive Features

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

### AbrasiMet® XL Pro

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

#### Intuitive and Quick to Operate

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

#### Powerful Machine for Demanding Environments

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



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

**Weight:** 1750 lb [800 kg]

#### Accessories

##### Mist Extractor

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

10-2343-400 Mist Extractor

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

See page 8 for vise with 12mm T-nuts



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# Abrasive Cutter Vises Accessories

## Single Piece Sliding Vises

### Speed Clamping Vise



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



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

### MetKlamp VIII S



**Part Numbers:** Left: 95-C1821S  
 Right: 95-C1822 S  
**Max Opening:** 2.08" [53mm]  
**Clamping Plate:** 1.75" x 2.25"  
 [45 x 58mm]  
**T-Nuts:** 12mm

## Two Piece Sliding Vises

### Sliding Vise Kit



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

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

## Specialty Vises

### Chain Clamping Kit



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

### Fastener Vise



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

## Vertical Clamping Vises

### Vertical Clamping Kit



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

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

### Riser Blocks

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



### Horizontal Clamp

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



### Vee Block Clamp Kit

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



### Adjustable Vee Blocks

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





# Recirculating Systems for Abrasive Sectioning

## For AbrasiMet® M



### Advanced Recirculating System 30 gal [113L]

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



### Standard Recirculating System 30 gal [113L]

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

## For AbrasiMatic® 300



### Recirculating System 22 gal [90L]

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

### Part Numbers

10-2431-400

### Description

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

## Additional Abrasive Accessories



### Cool 3 Fluid

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

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



### Base Cabinet

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

80-10001







# Abrasive Cutter Consumables

## Abrasive Blades

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



### Efficient Cutting with Extended Life

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

### Resin Bond vs Rubber Bond

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

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

[Blade Thickness is listed under Part Number] Rubber Bond = ■ Resin Bond = ■  
SiC Cutting Particle = ■ Al<sub>2</sub>O<sub>3</sub> Cutting Particle = ■

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





## AcuThin™ Blades (Qty 10)



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

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

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

[Blade Thickness is listed under Part Number] Rubber Bond =  Resin Bond =   
SiC Cutting Particle =  Al<sub>2</sub>O<sub>3</sub> Cutting Particle =

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

## Diamond & CBN Blades for Abrasive Cutters

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



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





# Precision Cutters

## Excellent Cut Quality for Delicate Samples

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

### IsoMet® High Speed

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

#### Automatic Dressing System

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

#### Rapid Alignment Laser

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

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

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



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

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

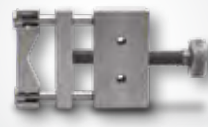















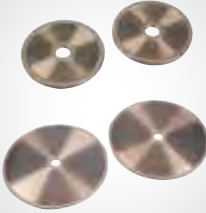
# Precision Cutter Accessories



## IsoMet® High Speed Cutter Accessories

<p><b>Single Saddle Chuck</b></p> 	<p><b>Double Saddle Chuck</b></p> 	<p><b>Mount Chuck</b></p> 	<p><b>Fastener Chuck</b></p> 
<p>Large Single Saddle Chuck holds specimens up to 1.5in [38mm] from 2 point</p> <p>11-2661</p>	<p>Securely holds specimens up to 1.5in [38mm] from 2 points</p> <p>11-2662</p>	<p>Stainless steel chuck holds mounted samples</p> <p>11-2666 1.25in [30mm] 11-2667 1.5in [40mm]</p>	<p>Holds specimens from 0.04in [1mm] to 2in [50mm] for longitudinal sectioning</p> <p>11-2687</p>
<p><b>Large Bone Chuck</b></p> 	<p><b>T-Slot Bed</b></p> 	<p><b>Sliding Vise</b></p> 	<p><b>Rapid Rail Post</b></p> 
<p>Ideal for clamping bone, plastics, or other semi-rigid specimens up to 2in [50mm] in diameter</p> <p>11-2494</p>	<p>Additional T-slot for positioning vises</p> <p>11-2707</p>	<p>6in [152mm] maximum opening, use requires flange to be 2in [50mm] or less, requires T-slot bed</p> <p>11-2669</p>	<p>Use with Rapid Rail</p> <p>11-2660</p>
<p><b>Small Vertical Clamp</b></p> 	<p><b>Irregular Specimen Chuck</b></p> 	<p><b>Recirculating System 7gal [27L]</b></p> 	
<p>Clamps specimens up to 58mm in height</p> <p>460022</p>	<p>Adjusts to hold irregular shaped specimens up to 1in [25mm] in diameter</p> <p>11-1185</p>	<p>Increases cutting fluid capacity to 7gal [27L] at 1.25gal/min [4.7L/min] 16in [406mm]W x 20in [508mm]D x 15in [381mm]H</p> <p>11-2640</p>	

## IsoMet® Precision Cutter Flanges

	<p><b>Aluminum Flange Set</b></p> <p>11-1192 1.38in [35mm] 11-1191 1.75in [44mm] 11-2679 2.5in [64mm] 11-2282 3in [76mm] 11-2283 4in [102mm] 11-2284 5in [127mm]</p>		<p><b>Stainless Steel Flange Set</b></p> <p>11-2688* 3in [76mm] 11-2689* 4in [102mm]</p> <p><i>*Recommended for the IsoMet High Speed</i></p>
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# Precision Cutters

## Precision with Flexibility

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

### IsoMet® 1000

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

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



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

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

### IsoMet® Low Speed

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

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



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

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

## Tips, Tricks & Techniques



For the best performance from your Precision Cutter System:

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



# Precision Cutter Accessories



## IsoMet® Low Speed Cutter Accessories

### Goniometer



Positions specimen along 3 axis

11-2381

### Manual Feed Control Dressing Chuck



Enables blade dressing without removing the sample fixture

11-1196

### Splash Guard Kit



Prevents lubricant from splashing out of saw

11-1199

## IsoMet® Low Speed Cutter & 1000 Accessories

### Swivel Arm Assembly



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

11-1181

### Bar & Tube Chuck



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

11-1184

### Wafer Chuck



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

11-1186

### Vacuum Chuck



Holds specimens mounted to glass slides to chuck with vacuum force

11-1188

### Small Bone Chuck



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

11-1194

### Double Saddle Chuck



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

11-1183

### Irregular Specimen Chuck



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

11-1185

### Single Saddle Chuck



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

11-1187

### Mount Chuck



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

11-1189







# Precision Cutter Accessories

## IsoMet® 1000 Accessories

### Rotating Chuck Assembly



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

11-2181

### Table Saw Attachment



Transforms gravity fed IsoMet 1000 into convenient table saw

11-2182

### 800 gram Weight Set



Additional weights for gravity fed saws

11-2183

### Goniometer



Positions specimen along 3 axis

11-2185

### Table Saw Splash Guard



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

11-2186

### Fastener Chuck



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

11-2482

### Swivel Arm Accessory



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

11-2184

### Double Saddle Chuck



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

11-2483

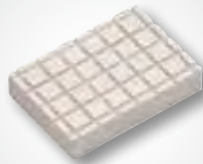
### Glass Slide Chuck



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

11-2484

### Wafer Chuck



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

11-2486

### Single Saddle Chuck



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

11-2487

### Glass Slide Chuck



Holds 2 x 3in glass slides

11-2488

### Mount Chuck



Holds mounted samples 1.5in [40mm]

11-2489



# Precision Cutter Consumables



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

[Blade Thickness is listed under Part Number]

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

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

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

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





# Precision Cutter Consumables



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

[Blade Thickness is listed under Part Number]

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

*\*IsoMet High Speed Pro Only*

## Additional Precision Cutting Consumables



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

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



Clear paste for keeping cutter windows clear

109003 2oz [60mL]



Cleaner for recirculation systems

109004 1.25gal [4.75L]



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

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



For IsoMet High Speed and High Speed Pro

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



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

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







## Excellent cut quality for delicate samples

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

### PetroThin®

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

#### Precise Cut Location Control

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

#### Increase Accuracy and Parallelism of Samples

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

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



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

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

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

## Petrography Accessories



### PetroBond™

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

38-1490



### PetroVue™

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

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

## PetroThin Consumables



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



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# MOUNTING

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

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







# Epoxy Mounting Systems

## High Performance Choices

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

### EpoKwick® FC



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

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

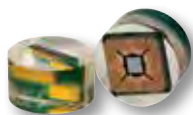
### EpoThin™ 2



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

- Combines low viscosity and low cure temperature
- Provides strong adherence and good pore penetration.
- Recommended for electronic boards and heat sensitive materials

### EpoxiCure® 2



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

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

### EpoHeat® CLR



**Save time with long pot life**

- Can remain mixed at room temperature for 3 hours and cures in 60 minutes in the oven.
- Water-like viscosity when heated
- Recommended for samples requiring maximum pore penetration.

## Product Specifications

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

\*values compared with other epoxies

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

## Ordering Information

### Small Resin & Hardener

### Large Resin & Hardener

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

† Restricted article, requires special packaging



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# Acrylic Mounting Systems



## Increased Mounting Throughput

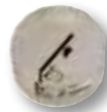
With cure times as low as 5 minutes, our line of acrylics is designed to increase throughput in your mounting process while providing consistent results.

### SamplKwick®



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

### VariKleer™



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

### VariDur™ 10



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

### VariDur™ 200



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

### VariDur™ 3003



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

## Product Specifications

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

\*values compared with other acrylics

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

## Ordering Information

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

† Restricted article, requires special packaging



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# Vacuum Systems, Consumables & Accessories

## SimpliVac™

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

### High efficiency

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

### Simple Dispensing

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

### Programmability

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

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

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

## Ring Forms & Castable Molds

### Disposable Mounting Cups

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

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

### Plastic Ring Forms

Provides a stronger fit of the castable mount to the sample holder for polishing in central force mode. (Qty 100)

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



### Vacuum Chamber

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

### Accessories



Dispensing tubes  
(Qty 100)  
20-1551



Vacuum Bowl Liner  
(Qty 5)  
20-1553



Vacuum Tray Liner  
(Qty 100)  
20-1555



### SamplKup™

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

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



### EPDM Round & Rectangular Molds

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

#### EPDM Round Molds (Qty 5)

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

#### EPDM Rectangular Molds (Qty 1)

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



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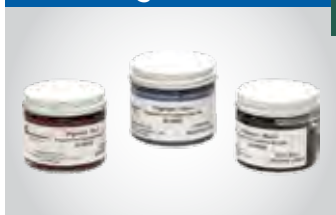


# Consumables & Accessories



## Mounting Consumables & Accessories

### Pigments



Use with castable resins for color coding or creating contrast

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

### Release Agent



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

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

### Mold Release Spray



Less hazardous spray release agent for use on castable mounting molds

20-3050-008 8oz [0.24L]

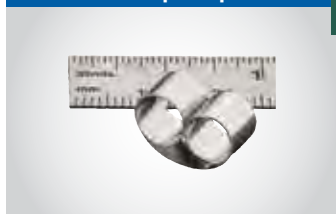
### Mold Release Powder



Powder release agent for use on mounting presses

20-3048 2oz [45g]

### SamplKlip



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

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

20-4000-100 (Qty 100)

### SamplKlip I



Plastic support clip best for castable mounting systems.\*

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

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

### Specimen Support Clip



Plastic support clip best for castable mount systems.\*

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

20-4001-000 (Qty 1000)

### UniClip Support Clip

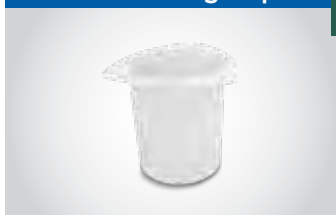


Plastic support clip for use with all mounting systems.

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

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

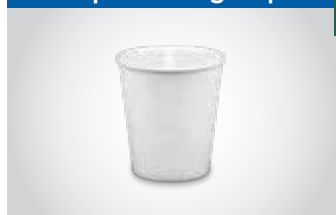
### Plastic Mixing Cup



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

20-8176-100

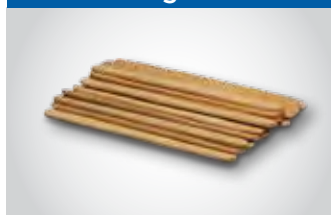
### Paper Mixing Cup



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

20-8178-100

### Stirring Sticks



For stirring castable mounting systems. (Qty 1000)

20-8175

### MetKleer® Adhesive Bases



For use with ring forms and castable systems.

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

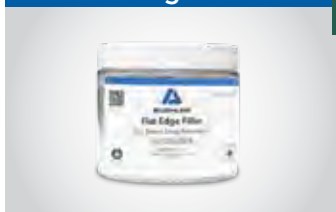
### Conductive Filler



Nickel-based filler makes castable mounting systems conductive

20-8500 2 lb [0.9kg]

### Flat Edge Filler



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

20-8196 1 lb [0.45kg]

### Thermoplastic Cement



For adhering samples to glass slides or other specialty holders

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

### Crystalbond Mounting Wax



For adhering samples to glass slides or other specialty holders

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

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

<sup>†</sup> Restricted article, requires special packaging

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





# Compression Mounting

## Protect the integrity of your samples

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

### SimpliMet® 4000

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

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

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

#### Optimize productivity in your space

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

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

The simple user interface limits errors and protects the quality of your sample prep. Everything you need is right on the front panel. Use the SimpliMet 4000 out of the box without the wait.

#### Comfortable to use

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

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

#### Chamfer Ram

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

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



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

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

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



# Compression Mounting Compounds



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

## Wide Portfolio for Every Application

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

## Excellent Edge Retention

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

## Quick Cycle Set-Up with No Mess

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

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

## General Purpose Compounds



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

### PhenoCure

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

### PhenoCure LP

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



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

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







# Compression Mounting Compounds

## General Purpose Compounds

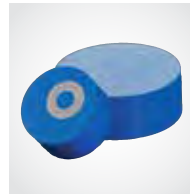


### EpoMet® G (Granular)

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

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

Black ●



### Diallyl Phthalate

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

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

Blue ●

## Specialty Compounds

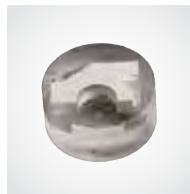


### EpoMet® F (Fine)

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

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

Black ●

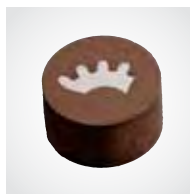


### TransOptic

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

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

Clear ○



### ProbeMet®

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

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

Copper ●



### KonductoMet®

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

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

Black ●

## Compression Mounting Tips



You can minimize shrinkage and improve edge retention by cooling the mount to room temperature under pressure before removing it from the mounting press.



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



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



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



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





### Epoxy Tips

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



### Acrylic Tips

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



See Mounting Guide for More Information



# GRINDING & POLISHING

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

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



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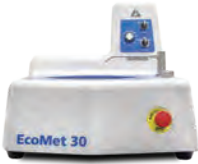


# Product Comparison

## A Grinder-Polisher Solution for Any Lab

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

### EcoMet® 30 Manual



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

### EcoMet® 30 Semi-Auto



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

### AutoMet® 250



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

### AutoMet® 250 Pro



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

### AutoMet® 300 Pro



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



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

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





# AutoMet® Grinder - Polisher



## Designed for Demanding Production Lab Environments

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

### AutoMet®

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

#### AutoMet Features

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

#### AutoMet Pro Features

- Color touch screen controls add functionality needed for advanced methods, such as method creation/storage and Z-axis material removal by depth.
- Improve productivity and consistency by integrating with a Burst Dispensing System (see page 36).



#### AutoMet 250 & 250 Pro:

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

#### AutoMet 300 Pro:

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

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

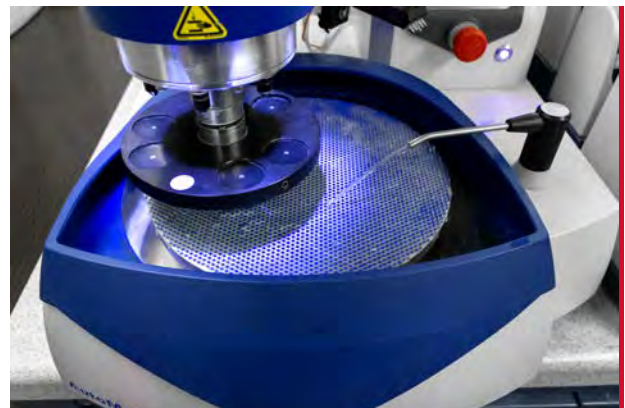
#### Accessories

##### AutoMet 250 & 250 Pro

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

##### AutoMet 300

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







# EcoMet® 30 Grinder - Polisher

## Grinding & Polishing Made Simple

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

## EcoMet® 30 Semi-Automatic

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

### Routine Grinding and Polishing Made Easy

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

### Easy to Clean

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

### Burst Dispensing

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

### Thoughtful Design Elements

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



#### EcoMet 30 Semi Automatic Single

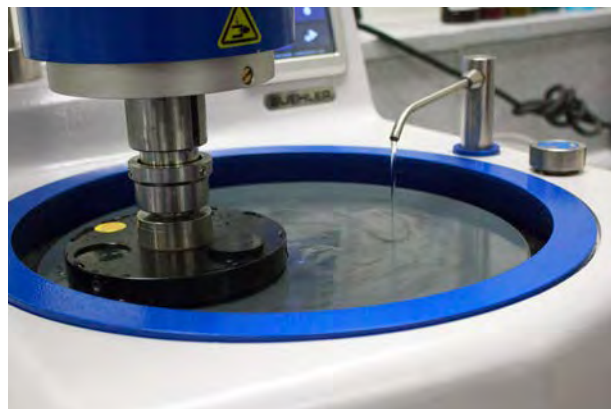
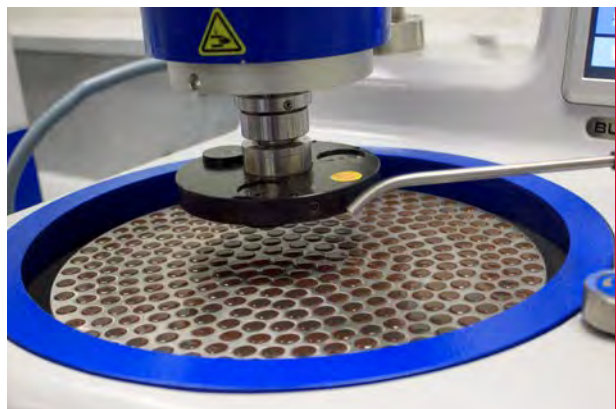
Dimensions: 19.7" L x 25.6" D x 25.6" H [500 mm L x 650 mm D x 650 mm H]  
Weight: 165lbs [75kg]

#### EcoMet 30 Semi Automatic Twin

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

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

\* Platen Kit not included



# EcoMet® 30 Grinder - Polisher



## Grinding & Polishing Made Simple

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

### EcoMet® 30 Manual

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

#### Ergonomic Manual Polish

- Large flat work space and ergonomic bowl height provides better control and more comfort
- Additional control improves sample quality and reduces grinding time
- Low force on/off knob

#### Easy to Clean

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

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



#### Accessories

##### Platen Kit (Required)

Each Kit includes a platen, splash ring and cover

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

##### Replacement Bowl Liners

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

49-1005	Qty 5
---------	-------

##### EcoMet 30 Single:

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

Weight: 102lbs [46kg]

##### EcoMet 30 Twin:

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

Weight: 154lbs [70kg]





# Grinder Polisher Accessories

## Burst Dispensing System

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

### Choose from two different Burst Configurations

#### Fully Integrated

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

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



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

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

Choose up to 5 Burst modules (Part Number 40-10005)

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

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

Choose up to 3 Burst modules (Part Number 40-100005)

- Add cable to control start/stop function (Part Number 40-2704)
- Add optional stir bar (Part Number 00-10100)

#### Accessories

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

#### Independent

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



Compatible with all Grinder-Polishers

#### How to configure independent Burst modules:

Choose Burst module (Part Number 40-10005)

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

#### Accessories

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





# Planar Grinder



## Grinding & Polishing Made Simple

### PlanarMet™ 300

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

#### High Quality Results

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

#### Save Space

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

#### Flexibility to Adapt to Changing Needs

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

#### Benefits of Planar Grinders

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



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

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

## Accessories & Consumables for PlanarMet 300

### Grinding Stones



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

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

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

### Recirculation System



Recirculation tank on wheels for use with PlanarMet® 300.

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



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# Grinder Polisher Accessories

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

## Single Force Specimen Holders

○ Round/Barrel

□ Rectangle

 Slides

### EcoMet 30 Power Head


For use with 60-9005 Drive Adapter

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




### AutoMet® 250 Power Head

For use with 60-9005 Drive Adapter.

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

### AutoMet® 300 Power Head

For use with 60-9005 Drive Adapter.

Part Number	Style	Size	Capacity	Additional Accessories
60-9060	○ 	1in	6	63-1022 Retaining Rings (Qty 6pk) 60-9120 1 x 3in Glass Slide Holder 60-9130 2 x 3in Glass Slide Holder
60-9061	○	1.25in	6	63-1023 Retaining Rings (Qty 6pk)
60-9062	○	1.5in	6	63-1024 Retaining Rings (Qty 3pk)
60-9063	○	2in	6	
60-9070	○	25mm	6	63-1022 Retaining Rings
60-9071	○	30mm	6	63-1023 Retaining Rings
60-9072	○	40mm	6	63-1024 Retaining Rings
60-9073	○	50mm	6	
60-9049	○	For Target Holders	3	



# Grinder Polisher Accessories



## Central Force Specimen Holders

○ Round/Barrel    □ Rectangle    ▽ Teardrop

### AutoMet 300 Power Head

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

Part Number	Style	Size	Capacity
60-5281	○	1in	10
60-5282	○	1.25in	10
60-5252	▽	1.25in or 30mm	9
60-5287	○	30mm	10
60-5283	○	1.5in	6
60-5253	▽	1.5in or 40mm	6
60-5288	○	40mm	6
60-5299	○	2in	5
60-5296	▽	2in or 50mm	5
60-5245	□	2 x 1.38in [50 x 35mm]	5
60-5297	□	55 x 30mm	5
60-5298	□	70 x 40mm	3

### AutoMet 250 and EcoMet 30 Power Heads

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

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

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

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

## Accessories for Specimen Holders

### Loading Fixtures and Plates



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

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

### Drive Adapters



Pairs specimen holders to the chuck of the automatic head

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

### Target Holders



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

Part Number	Description
60-8100	For 28 x 48mm glass slide (histologic holder)
60-8101	For 1in [25mm] mounted specimens
60-8102	For 1.25in [32mm] mounted specimens
60-8112	For 30mm mounted specimens
60-8113	For 40mm mounted specimens
60-9049	Specimen Holder for Target Holders (Drive Adapter 60-9005 required)







# Grinder Polisher Accessories

## Blank Specimen Holders

For use with 60-9000 Drive Adapter.

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



## Slide Holders & Glass Slides

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

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

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

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



### Accessories

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

## PWB Met™ Small Hole Accessory

- High volume printed wiring board preparation system
- Prepares up to 18 coupons simultaneously
- Prepares reproducible cross-sections of through-holes down to 0.004in
- For use with EcoMet 30 and AutoMet 300

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



### Accessories

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



# Grinder Polisher Specialty & Support Equipment



## MiniMet® 1000

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

### Easy to use

- Simple operations ideal for low volume applications

### Save space and lower costs

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



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

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

### Accessories

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

## Grinding & Polishing Consumables for MiniMet 1000

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

#### CarbiMet®

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

#### MicroCut®

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



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

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

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





# Grinder Polisher Specialty & Support Equipment

## VibroMet® 2

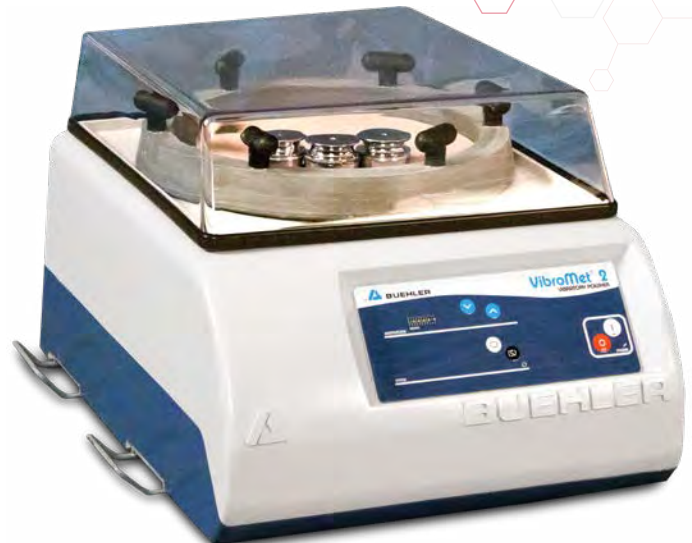
VibroMet 2 Vibratory Polisher is designed to prepare high quality polished surfaces on a wide variety of materials, including EBSD applications. The 7200 cycles per minute horizontal motion produces a very effective polishing action, providing superior results, exceptional flatness and less deformation.

### Safe and Effective Results

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

### High Quality Surface Finish

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



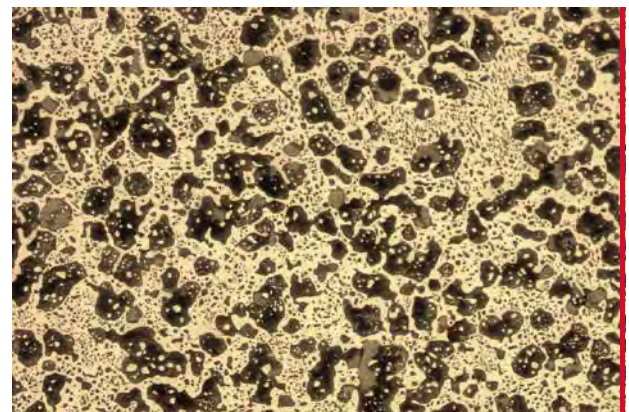
Dimensions: 21.5in [546mm]W x 23in [584mm]D x 14.5in [368mm]H  
Weight: 175lbs [80kg]

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

### Accessories



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







# Grinder Polisher Specialty & Support Equipment

## EnvironMet™ System

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



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

### Part Number

49-2500 Recirculating Filter System (1µm Filter)

49-2501 Filter System (100µm Filter)

### Accessories

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

## Electropolishing & Etching Systems

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

## ElectroMet® 4

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

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

### Accessories

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



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

## PoliMat™ 2

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

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

### Accessories

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



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





# Grinding & Polishing Consumables

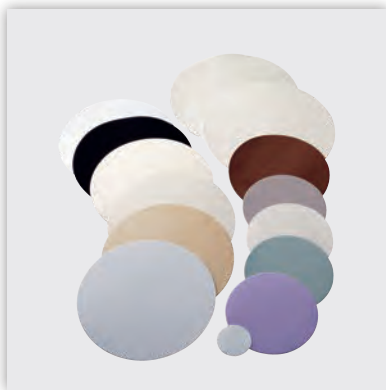
The choice of grinding and polishing consumables is a key factor that impacts the preparation process. Buehler's consumables are designed to improve efficiency and ensure repeatability within the process. With a wide variety of products, there is a Buehler consumable that can improve your materials preparation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

## CarbiMet Silicon Carbide Paper



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

## Premium Polishing Cloths



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

## MetaDi Suspension & Paste



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



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# Grinding & Polishing Consumables

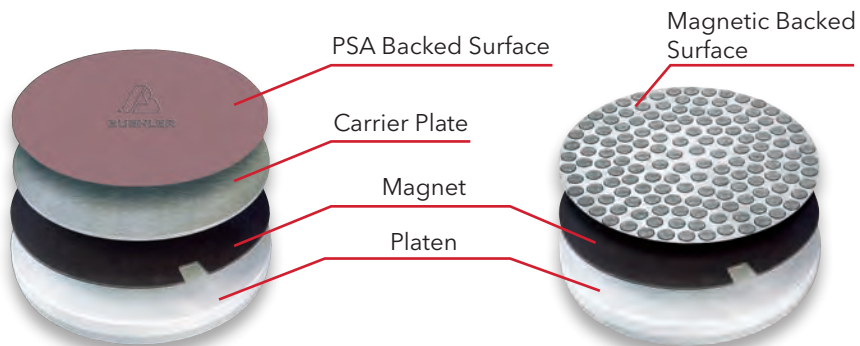


## Platen Systems

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

### Magnetic System

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



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

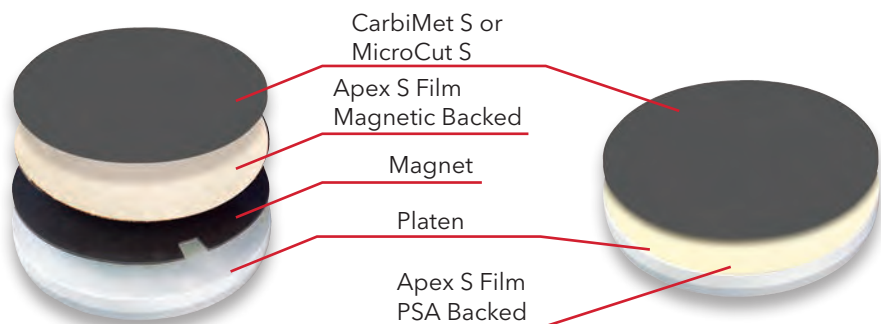
Type	Description	8in [203mm]	10in [254mm]	12in [305mm]
Apex® M Magnet PSA Backed (Qty 1)	Contains tabs for easier plate removal	41-2739-608-001	41-2739-610-001	41-2739-612-001
MagnoFix Magnet PSA Backed (Qty 1)	Standard magnet	16-2070	16-2570	16-3070

### Carrier Plate Selection

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

### Apex® S System

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



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







# Grinding & Polishing Consumables

## CarbiMet® & MicroCut® Silicon Carbide Grinding Papers

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

### High Material Removal with Superior Surface Finish

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

### Quick Change-Overs

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

### Delicate Preparation

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

## Apex® S Backed

High friction backing allows for easy & fast changeovers between grinding steps. Qty 100

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

\*Contains 50 pcs



### CarbiMet and MicroCut Accessories

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

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



# Grinding & Polishing Consumables



## PSA Backed

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

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

\*Contains 50 pcs

## Plain Backed

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

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

\*Contains 50 pcs





# Grinding & Polishing Consumables

## Diamond Grinding Discs

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

### Long Life with Consistent Results

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

### Ideal Solution for Automation

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

### Process a Variety of Materials

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

## DGD Mosaic®

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

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

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



## Application Methods for DGD Mosaic

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

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

### Accessories



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



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



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# Grinding & Polishing Consumables

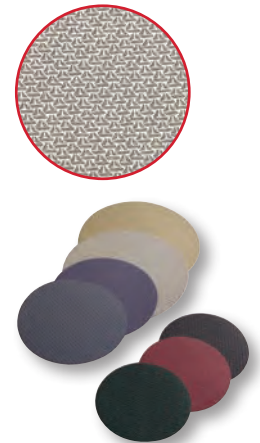


## DGD Color

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

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

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



## DGD Terra

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

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

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



## DGD Ultra

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

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





# Grinding Consumables

## Premium Polishing Cloths

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

### Easy to Use Magnetic Backing

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

### A Cloth for Every Application

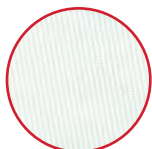
The type of cloth used depends heavily on the material being processed and the requirements for the final analysis. With a variety of fabrics, weaves and naps, there is a cloth to fit every application.

### Reliable Preparation Results

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

## Polishing Cloth Selection Guide

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



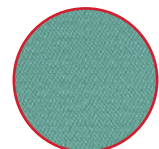
UltraPad™



TexMet\* P



TriDent™



VerduTex\*



UltraPol™



Nylon



TexMet\* C

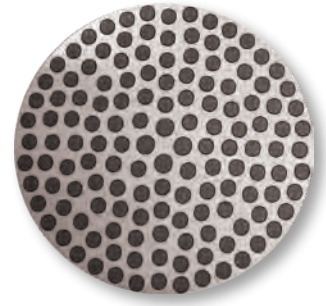


# Grinding Consumables



## Apex<sup>®</sup> Hercules

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



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

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



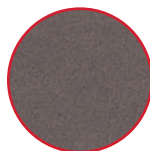
VelTex™



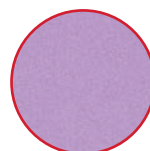
WhiteFelt™



PoliCloth™



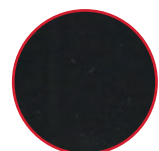
MicroCloth®



MicroFloc®



MasterTex®



ChemoMet®







# Grinding & Polishing Consumables

## Diamond Polishing Suspensions & Pastes

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

### Repeatable Polishing Results

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

### Fast Preparation Time

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

### Processing Unique Materials

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

## MetaDi® Diamond Suspensions

### MetaDi Supreme Polycrystalline Suspension

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

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



### MetaDi Monocrystalline Suspension

Monocrystalline suspension provides good material removal for most materials.

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



### Dye-Free MetaDi Supreme Polycrystalline Suspension

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

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

### MetaDi Monocrystalline Suspension Oil Based

Ideal for processing materials that are water-sensitive.

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

### MetaDi Combo, Suspension & Extender

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

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

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



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# Grinding & Polishing Consumables



## MetaDi® Diamond Pastes

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

### MetaDi Ultra Polycrystalline Paste

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

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

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



### MetaDi Monocrystalline Paste

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

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

### MetaDi II Monocrystalline Paste

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

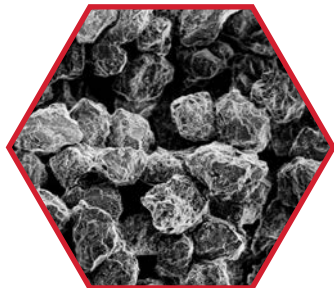
Color		Diamond Size	5g	20g
●	Grey	0.25µm	40-6241	40-6240
●	Blue	1µm	40-6244	40-6243
●	Green	3µm	40-6247	40-6246
●	Yellow	6µm	40-6250	40-6249
●	Deep Red	9µm	40-6253	40-6252
●	Brown	15µm	40-6256	40-6255

### Polishing Lubricants

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

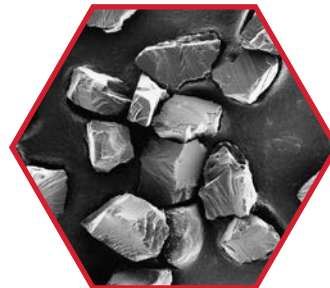
Part Number	Description
40-6016	MetaDi Fluid, 16oz [0.47L]
40-6032	MetaDi Fluid, 32oz [0.95L]
40-6064-085	MetaDi Fluid, 85oz [2.5L]
60-3250-006	AutoMet® Oil, 6oz [0.18L]
60-3250-128	AutoMet Oil, 1gal [3.8L]

## Differences between Polycrystalline and Monocrystalline Diamonds



45micron diamond in SEM  
(450X)

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



45micron diamond in SEM  
(450X)

Sharp edges of monocrystalline diamonds ensure clean and efficient cutting action





# Grinding & Polishing Consumables

## Final Polishing Suspensions

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

### Excellent Surface Finish

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

### Application Specific Solutions

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

#### MasterPrep® Alumina



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

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

#### MasterMet® Colloidal Silica



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

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

#### MasterMet® 2 Colloidal Silica



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

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

#### MasterPolish® Final Polish



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

40-10084      32oz [0.95L]

#### MasterPolish® 2 Final Polish



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

40-6376-032      32oz [0.95L]

#### MicroPolish® Alumina Suspension



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

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

#### MicroPolish® Alumina Powder



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

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

#### MicroPolish® II Alumina Powder



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

40-6322-016      1µm 1lb [0.45kg]





# Grinding & Polishing Consumables



## FibrMet™ Abrasive Discs

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

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

## UltraPrep™ Diamond Lapping Films

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

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





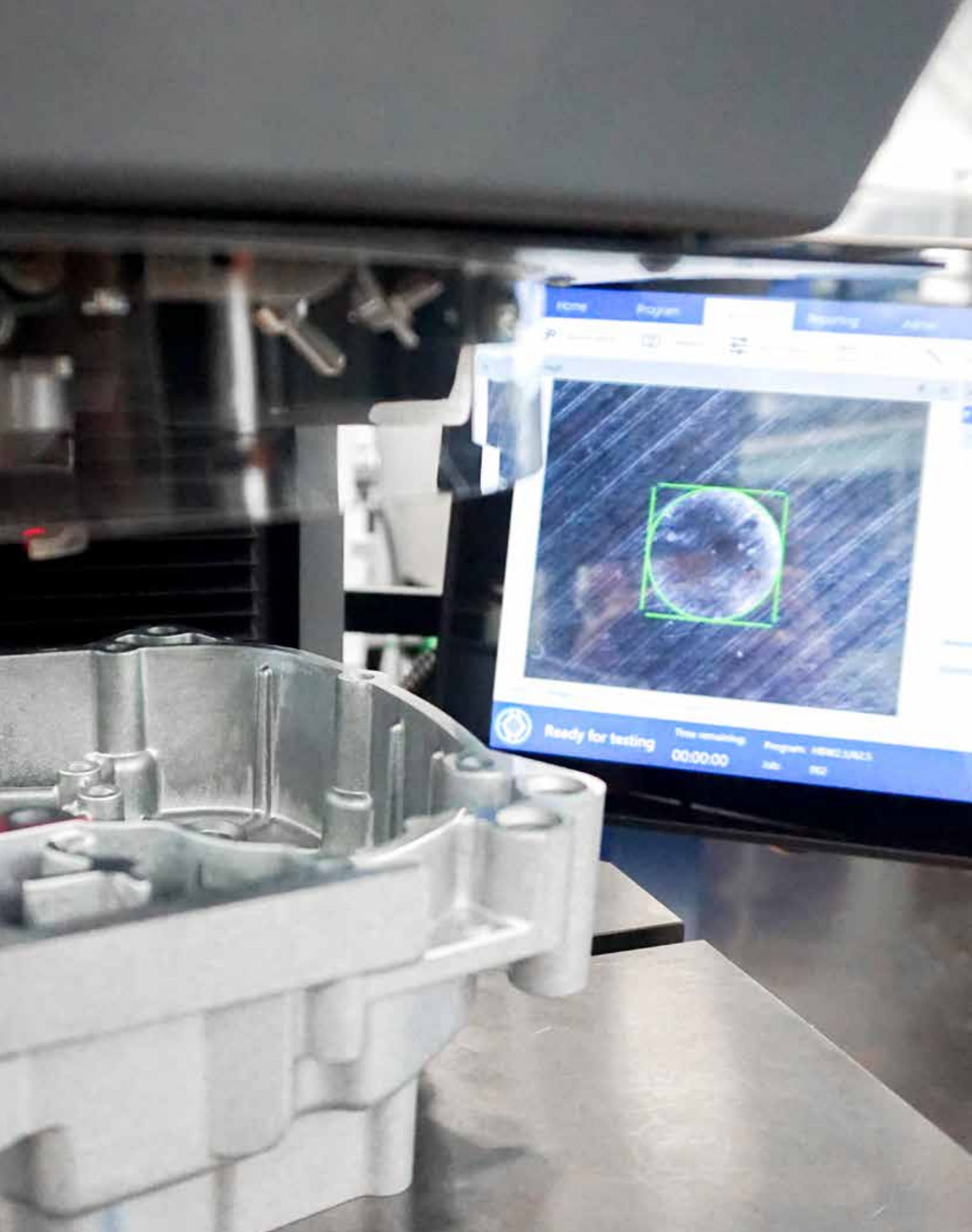
# HARDNESS TESTING

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

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

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









# DiaMet™ Hardness Software

## DiaMet - Hardness Testing Made Easy

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

## Wilson® DiaMet™ Multisample



### Easy sample holder setup

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

### Define start coordinates

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

### Perfect overview

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

### Simple Stage Navigation

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

### Easy testing workflow

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

## DiaMet - Automation Packages

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

### DiaMet Features

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

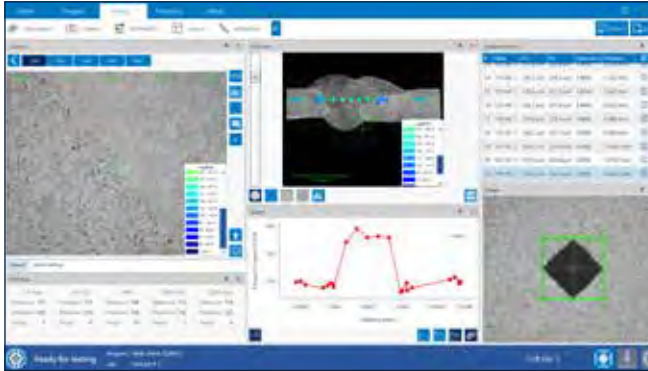




## DiaMet - Hardness Testing Functions

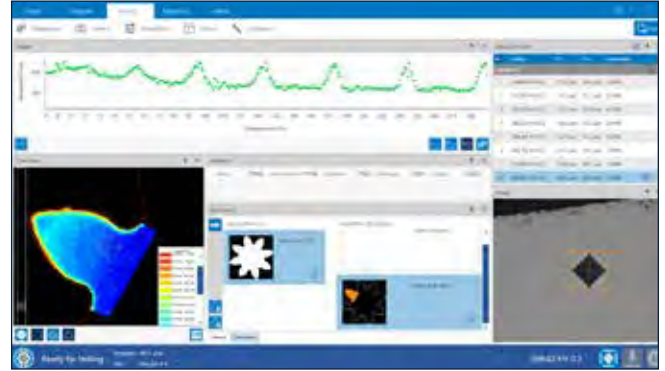
### Weld Testing

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



### Color Mapping

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



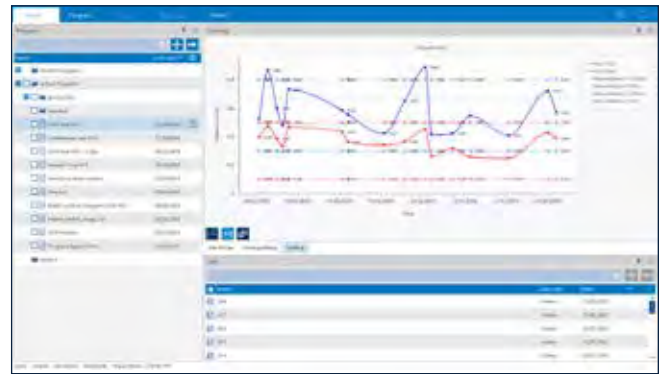
### Geometric Functions

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



### Results Trending

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



### Database Query

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





# Vickers Hardness Testers

## Wilson® All-in-One VH3100

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



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

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



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





# Vickers-Knoop Hardness Accessories



## Sample Holders and Accessories

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

### Leveling Vise



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

886164

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

886167

### 4 Fold Leveling Vise



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

886169

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

886175

### 6 Fold Leveling Vise



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

886178

### Universal Leveling Vise



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

900086323

### EZ Clamp



Single mount canister

9100575 Canister (requires cap selection)

9100570 Mount Cap for 1in mounts

9100571 Mount Cap for 1.25in mounts

9100572 Mount Cap for 1.5in mounts

9100576 Mount Cap for 2in mounts

9100574 Magnetic Stop and Stage Mount

\*Mount Cap requires the Canister

### Sample Holder Insert



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

886170

Ø 1in [25mm] insert

886171

Ø 30mm insert

886172

Ø 40mm insert

886173

Ø 1.25in insert

886174

Ø 1.5in insert

### Precision Vise



Opening max 45mm

9100258

### Anti-Vibration Table



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

9100906

### Passive Platform



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

9100904 for VH3300 and Rockwell Testers

9100905 for VH3100 and VH1000 series

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





# Vickers-Knoop Hardness Testers

## Wilson® VH3100-3300

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

### Ease of use

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

### Flexibility

- With a 6 position vertical turret (Buehler patent), the VH3300 offers the flexibility to configure the tester for the complete 0.01 - 50kgf (0.098 - 490.33N) load range or just a section of this.
- The zero-offset overview optics housed in the turret and is both illuminated and calibrated.
- Designed for Vickers testing to conform to international standards ASTM E384 & E92; ISO 6507, 9385, 4546.

### Increase Up-time & Reduce Service Costs

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



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

## System Configurations

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

### Main Unit



#### Wilson VH3100

- 3+1 position virtual turret
- 0.050 - 10kgf load range
- Includes DiaMet workstation and 24" monitor

W3111



#### Wilson VH3300

- 3+3 position motorized turret
- 0.010 - 50kgf load range\*
- Includes DiaMet workstation and 24" monitor

\*depending on configuration

W3210

### Software Options



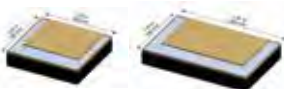
#### DiaMet Full-Automatic software package

W3100A03

#### DiaMet Enterprise software package

W3100A15

### Motorized Stages



#### Standard size

- 180 x 180mm

W3100C02

#### Large size

- 300 x 180mm

W3100C03

#### Standard size

- 180 x 180mm

W3200C02

#### Large size

- 300 x 180mm

W3200C03



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# Vickers-Knoop Hardness Testers



## System Configurations *(Continued)*

### Wilson VH3100

### Wilson VH3300

#### Vertical Test Capacity



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

W3200D01 - height 105mm  
 W3200D02 - height 155mm

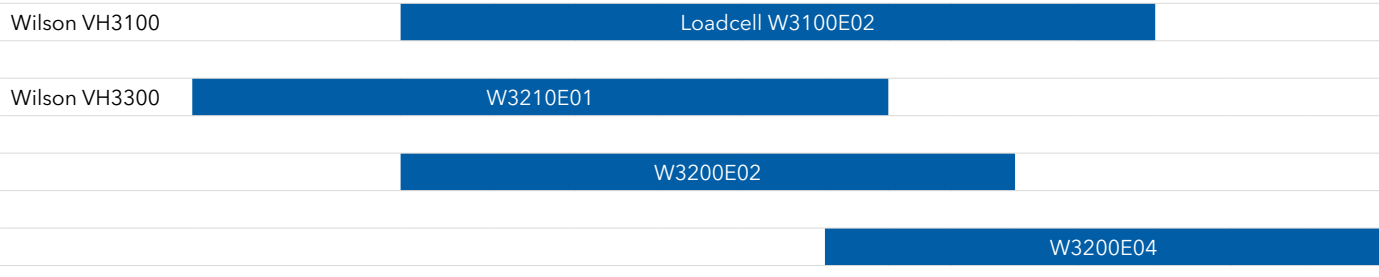
#### Load Cell

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

W3100E02 - 100N loadcell

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

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



#### Overview Camera



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

W3110F01

- Turret integrated overview
- Includes Scan & Stitch function in the DiaMet software

W3200F01

#### Additional Accessories

For Indenters select one Indenter per Load Cell.

For Long Working Distance Objectives select up to two for VH3100, select two or three for VH3300

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

Please select your sample holder on page 78





# Vickers-Knoop Hardness Testers

## Wilson® VH1102-1202

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

### Best in Class Optics

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

### Automatic Load Selection

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

#### VH1102 Standalone Tester

**Part Number - W1102D01**

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

#### VH1202 Standalone Tester

**Part Number - W1202D01**

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



#### Dimensions

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

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

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

**Weight** - 110lbs [50kg]



## VH1102-1202 with DiaMet™ Automation Software

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



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



# Vickers-Knoop Hardness Testers



## Wilson® VH1150

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

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

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

### Versatile

- Designed for Vickers, testing conforms to international standards ISO 6507 and ASTM E384.
- Segment leading load range - 0.3 - 50 kgf load range over ten individual load steps.

#### VH1150 Standalone Tester

**Part Number - W1151D01**

Description	
Hardness scales	HV
Main-load	0.3 - 0.5 - 1 - 2 - 3 - 5 - 10 - 20 - 30 - 50kgf
Objectives	10x and 20x Long Working Distance
Sample Support	Flat anvil & manual XY Stage



#### Dimensions

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

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

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

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

### VH1150 with DiaMet™ Automation Software



DiaMet workstation and 24" monitor included with VH1150 Hardness Tester



Testers	DiaMet Basic Manual (Analog)	DiaMet Basic Manual (Digital)	DiaMet Semi Auto	DiaMet Full Auto	DiaMet Enterprise
VH1150	W1151D31	W1151D33	W1151D35	W1151D37	W1151D45

### Accessories

#### Indenters for VH1102-1202-1150

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

#### Manual Stages

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

#### Objectives for VH1102-1202-1150

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





# Universal Hardness Testers

## Wilson® UH4000 Series

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



### Ease of Use

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

### Flexibility

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

### Increase Up-time & Reduce Service Costs

- Steel casting provides full protection for production environments.

### System Configurations

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

#### Dimensions

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

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

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

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

#### Main Unit



#### Wilson UH4250

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



#### Wilson UH4750

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



#### Wilson UH4250 Auto\*

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

\* Clamping device W4100CL not applicable

#### Configure Turret

Select up to 8 different items



#### Objectives

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



#### Laser

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

#### Indenters

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



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## Additional Accessories

### Ring Light



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

### Auto Clamping Device



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

### Workbench



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

### Anvils

All anvils fit on testers with 25mm pinhole.



V anvil for max. 45mm diameter  
cylindric workpieces  
740096



V anvil for max. 85mm diameter  
cylindric workpieces  
740095



10mm spot anvil for small  
workpieces  
740160



Auto-leveling anvil Planoflex -  
flat 60mm diameter  
740587



Test anvil flat 80mm diameter  
740191



Test anvil flat 190mm diameter  
740101





# Rockwell® Hardness Testers

## Wilson® Rockwell® RH2150

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

### Wilson® RH2150 Series Features

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



#### Dimensions

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

#### Vertical Test Capacity -

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

Weight - 125kg

#### Description

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



# Rockwell® Hardness Testers



## System Configurations

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

### Main Unit



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

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

## Additional Accessories

### Auto Clamping Device



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

W2100CL

### Software Options



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

W1001R31

### T-Slot Table



13.3in x 1in [340x280mm] T slot table, 12mm slot width, with bore pattern for spindle adaption

W2100C02

### Indenter Extension



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

W2100E2

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

W2100E4

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

W2100E6

### Foot Switch



Footswitch for external test cycle start, intelligent trigger logic

W2100FS

### Gooseneck Adapter

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



Max. internal reach diameter is 9.5mm  
 Min inside diameter is 14mm  
 Max. outside diameter with Min. inside diameter at Max. internal reach is 45mm  
 Available Rockwell Diamond indenters are  
 900001459 (A scale)  
 900001460 (N scale)  
 W2100G2



Max. internal reach diameter is 26mm  
 Min inside diameter is 35mm  
 Max. outside diameter with Min. inside diameter at Max. internal reach is 130mm  
 Available Rockwell Diamond indenters are all standard Rockwell indenters (cf. Table)  
 W2100G5





# Rockwell® Hardness Testers

## Wilson® Rockwell® 574

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

### Segment Leading GR&R Performance

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

### Ease of Use

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

### Robust

- Proven robust design with all stainless steel internal components.

574R Regular - for all Regular test scales

**Part Number - WH574R**

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

574T Twin - for all Regular and Superficial test scales

**Part Number - WH574T**

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



#### Dimensions

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

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

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

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



# Rockwell® Hardness Testers Accessories



## Rockwell® Indenters

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



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

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

## Rockwell® Verification Kits

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

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

## Rockwell® Anvils

All anvils fit on testers with 19mm pinhole.

### Flat anvil



2.5" [63mm]  
900001236

### Flat anvil



7.5" [190mm]  
W741246

### V Anvil Shallow



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

### V Anvil Shallow



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

### V Anvil Standard



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

### Anvil Cylindron Jr.



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

### Anvil Cylindron



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

### Anvil for Ball Testing



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

### Eyeball Anvil



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

### Pedestal spot Anvil



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

### Pedestal spot Anvil



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

### Diamond spot anvil



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







# Brinell Hardness Testers

## Wilson® BH3000

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

### Ease of use

- Heavy duty clamping and protection

### Accuracy

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

### Flexibility

- Wide load range 613N - 29.42 KN (62.5 kgf - 3000 kgf.).
- Deep reading microscope (order separately).

### BH3000

**Part Number:** WH3000BH



#### Dimensions

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

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

### Accessories

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

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



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





## Wilson® Rockwell® Test Blocks

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

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

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

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



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

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

• Certified using a Tungsten Carbide ball indenter

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

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



# Wilson® Hardness Test Blocks

## Wilson® Vickers-Knoop Test Blocks

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



### Vickers Test Blocks

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

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

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

not ISO 6507 due to <20µm diagonal length

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

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

### Knoop Test Blocks

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

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

### Special Order Items

Not applicable for Europe, please contact Buehler Europe

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

\*Specify hardness required and load force for calibration

•Specify additional load force for calibration



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## Wilson® Brinell Test Blocks

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

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

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



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

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

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

*not applicable for Europe, please contact Buehler Europe*

Part Number	Description	Part Number	Description
WHSMLBRIN*	Special block - please provide hardness value and Brinell scale using 1mm or 2.5mm ball indenter	WHSPECBRIN*	Special block - please provide hardness value and Brinell scale using 5mm or 10mm ball indenter

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



See Test Block Guide for More Information





# Shelf Life for Consumable Products

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

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

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

\*\*Shelf life starts when product is shipped

See Terms & Conditions for warranty information

