BUEHLER® EcoMet® 250/300 Grinder-Polisher Family & AutoMet® 250/300 Power Head

- Sealed Membrane Keypad or Color-Touch Screen Controls
- EcoMet® Pro Touch-Screen Provides Zaxis Control and Method Programmability
- Choice of 8" (203mm), 10" (254mm) or 12" (305mm) Diameter Platens
- Variable Speed Base Platens and Power Heads
- Unique LED Lighting Illuminates Platen, Bowl, Specimens and Working Area
- High Torque Motors for Large and Multiple Specimen Preparation
- EcoMet® 250 or 300 Grinder-Polisher Base Only for Manual Preparation
- Upgrade to Semi-Automatic Preparation with AutoMet® 250 or 300 Power Head
- Single or Central Force Power Head
- Repeatable Sample Preparation Every Time!





The Future of Sample Preparation is Here! Consistent and Repeatable Results!



EcoMet® 250/300 & AutoMet® 250/300 Family

The EcoMet® 250/300 family of Grinder-Polishers and AutoMet® 250/300 family of Power Heads has been designed to meet the needs of the materials analyst requiring the versatility of manual or automated sample preparation.

The EcoMet® Pro controls upgrades to a color touch-screen control panel for Zaxis material removal by depth controls, method creation/storage and PriMet programmability.

EcoMet® 250/300 Grinder-Polisher Bases Features

The EcoMet 250/300 Grinder-Polishers accommodate a single 8" (203mm), 10" (254mm) or 12" (305mm) diameter platen. The platen has user controlled variable speed with a unique ability to operate in a clockwise or counterclockwise direction. This innovative feature allows the user to perform high grinding force operation with minimal machine vibration. The unique "D" style bowl design provides ample hand room for easy platen

changing. The removable splash guard keeps water and consumables in the bowl and away from the operator.

The machine is designed with platen cooling to help minimize platen heat build-up and reduce sample deformation in heavy-duty use. The adjustable water flow control nozzle can be positioned anywhere over the platen during preparation and has a retractable and stowable water hose with minimal spring tension to allow the operator freedom to spray water where chosen for clean up. The unique 360 degree bowl rinse system helps clean the entire bowl during grinding-polishing. The base can be upgraded to a semi-automatic sample preparation system with the addition of an AutoMet 250/300 Power Head.

Construction

A high torque, continuous-duty motor prevents platen stalling, even under the most extreme grinding conditions. This universal D/C motor ensures constant platen speed and torque, regardless of applied load. A belt-driven platen design and variable speed cooling fan ensures whisper quiet operation.



EcoMet® base for manual grinding-polishing.



Retractable water hose reaches over entire bowl for ease of cleaning.



 $\label{eq:cometer} \textbf{EcoMet}^{\circledast} \ \textbf{Base with AutoMet}^{\circledast} \ \textbf{Power Head for semi-automatic opreation.}$



Large, red and easily accessible mushroom style emergency-stop button for operator safety.



Blue flashing irradescent Power Standby button is easy to actuate.

The durable base casting is constructed of thick heavy-duty cast aluminum that is coated with a stain and chip resistant finish for easy clean up providing a long lasting, like-new appearance.

AutoMet® 250/300 Power Heads

The AutoMet 250/300 Power Heads upgrade the EcoMet 250/300 Grinder-Polisher Bases from manual operation to semi-automatic sample preparation operation, increasing productivity and specimen consistency.

Single or Central Force

The AutoMet 250/300 Power Heads are designed for Single or Central Force applications. Six Single Force fingers prepare one to six samples at the same time. The finger tips are engineered to provide optimally flat sample preparation.

Use Central Force for multiple simultaneous sample preparation. A soft start and soft stop motor function helps prevent sample damage. The mechanical vertical drive provides down force without the need for compressed air in Central Force operation.



D-style bowl for easy platen changing.



Bowl liner in machine.

Features

The variable speed power head is adjustable and can be changed for complimentary or contra (clockwise or counter-clockwise) rotation. LED lights illuminate the platen, bowl, specimen holder, and working area. A simple clamping chuck design allows the operator to quickly attach and remove the specimen holder with a single pull of the clamping ring. The two-button start is designed to ensure operator safety. The head locking handle secures the power head into the required stationary position. A head location stop lever sets the exact location of the power head over the platen surface every time for correct sample positioning and repeatable results.

Membrane Button Control Panel

The EcoMet/AutoMet family is designed with a separate control panel housing constructed of a heavy-duty aluminum protective shell. The sealed waterproof membrane keypad allows easy cleaning. Tactile feedback buttons with an audible "click" ensures the operator that their control commands have been entered. The control



Removable splash guard.



Protective bowl cover keeps platens contaminant and dust free when not in use.



EcoMet® Grinder-Polisher with AutoMet® Power Head for semi-automatic preparation.



Quick release lift lock chuck provides quick connection and removal of specimen holders.



Back control panel contains power button, air inlet, recirc and PriMet® connectors.



Unique LED lighting illuminates platen and working area.



Head locking handle secures head firmly.



Head position locator stop handle allows specimens to be located at the same position over the platen every time.



Central force application for superior flatness.

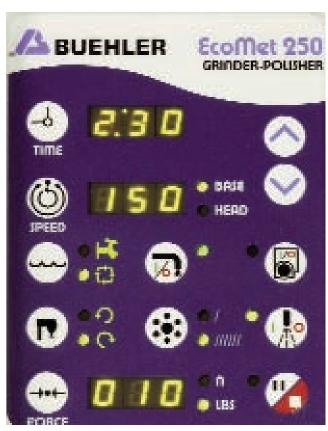


Single force application for preparation flexibility.

panel consists of time, speed, fresh/recirc, water on/off, platen on/off, auxilliary dispensing on/off, single/central force mode, head rotation, force and pause/stop buttons.

Operating parameters, such as speed and force, are adjustable during the preparation sequence. The pause function allows the operator to stop operation during a step and complete that step at a later time. A loud and audible "beep" alerts operator to the end of cycle. The built in memory retains last parameters setting. A time-up clock tracks manual grinding operations and the time-down clock tracks semi-automatic sample preparation methods.

The unit of measure is selectable between imperial or metric. Three-digit LED's display the time, speed and force while 14 LED's highlight system status. The power on/off button is equipped with a blue flashing LED indicator to show standby mode. A large emergency off switch, built-in circuit protection and low voltage controls ensure operator safety.

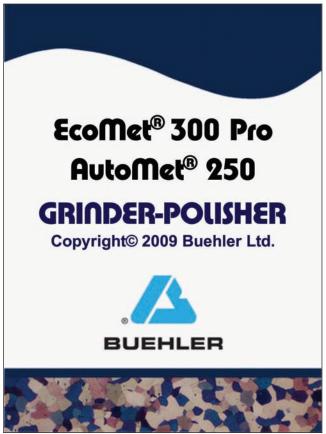


Membrane keypad control panel with tactile feed back buttons, bright LED's and easy-to-read intuitive icons.

EcoMet® Pro Touch-Screen Control Panel

The EcoMet® Pro utilizes state-of-the-art color touch-screen controls. The GUI (Graphical User Interface) provides information exchange and communication between the user and the machine's electromechanical system. This allows the user to input commands through touchable images on a user-friendly window. The GUI has been designed to provide an intuitive, easy-to-use controls interface for all levels of operators and users.

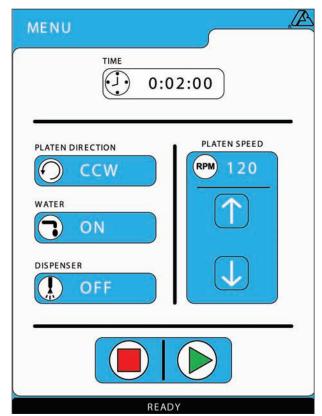
The EcoMet® Pro offers all of the same features and construction as the EcoMet® 250/300, but has touch-screen controls in place of the standard button control panel for additional capabilities. Additional base and head combination features include Zaxis material removal by depth system, method creation and storage, and PriMet® programmability. A maximum of 32 custom methods can be programmed and saved.



Touch-screen splash screen initializes at start up.



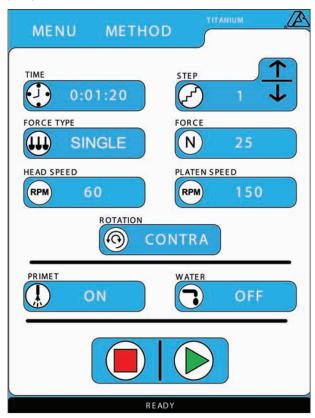
Set-up screen allows user to define choice of parameters.



Text mode offers traditional "buttons-look" control. Base only screen shows run time and allows control of platen rotation, speed, water and dispenser.



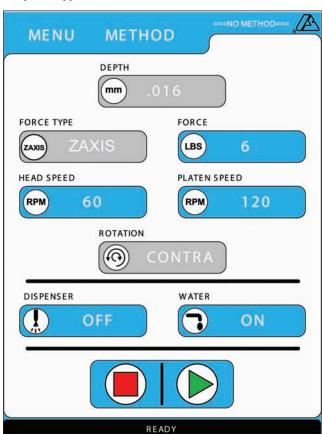
EcoMet Pro graphics mode offers icon based controls for simplicity and ease of use.



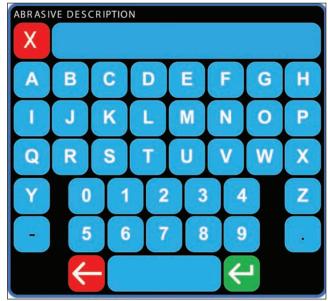
Base and Power Head text mode screen allows control of time, force, speed, rotation, water, dispenser, Zaxis and methods creation/storage.



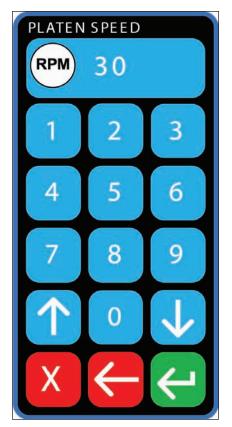
Methods programmability allows creation and storage of methods for specific applications and materials.



Zaxis allows controlled material removal by depth. All parameters are easily entered using the keypad screens.



Alpha numeric keypad provides for easy input of method names and parameters.



Numerical pop-up key pads allow input of parameters such as platen speed, time and force.

Accessories

PriMet® Pro Modular Dispensing Satellite

Connect the EcoMet/AutoMet family to the optional PriMet® Pro Modular Dispensing Satellite for automatic fluid suspension dispensing during preparation steps. The PriMet® Pro Modular Dispensing Satellite uses peristaltic pumps, no mist technology, to distribute lubricant, diamond and colloidal polishing suspensions. Controlled dispensing offers repeatable results regardless of the operator.



PriMet® Pro Modular Dispensing Satellites.



PriMet® Pro Modular Dispensing Satellite with EcoMet® 300 Grinder-Polisher and AutoMet® 300 Power Head.

Recirculating System

Connect the EcoMet/AutoMet family to the optional recirculating system. This system prevents contaminants from being released into local water drain lines. It has a 24 gallon (91 ℓ) reservoir and sits on a roller cart. Baffles in the reservoir form contamination free compartments and minimize the abrasives entering the grinder-polisher intake supply. The remaining abrasives and contaminants can then be disposed of properly or recycled.



Recirculating system with baffles.

EnvironMet® Systems

Connect the EcoMet/AutoMet family to the optional EnvironMet® Filter System. This system is ideal for laboratories concerned with water regulations, conservation requirements and environmental issues. It is available with a 1 μ m filtering system with a 6 gallon (23 ℓ) recirculating reservoir or a 100 μ m filtering system for use with fresh water. Compressed air is required.



 $\textbf{EnvironMet}^{\texttt{\$}} \ \textbf{Filtering System}.$

PC Met® Precision Printed Wiring Board Accessory

This preparation system is designed for cross-sectioning printed wiring boards copper plated through holes. The fixture can prepare up to 36 coupons at the same time, 1" (25mm) long in six separate cavities. It provides accurate, reproducible cross-sections or through-holes down to 0.008" (200 μ m) in diameter. Central force drive adapter (60-9000) required (sold separately).



PC Met® Precision Printed Wiring Board Accessory connected to AutoMet® 300 Power Head with central force drive adapter (sold separately).

Target Holders

Target holders are used for precise material removal from a metallographic specimen (for microscopic analysis or measurements) to a defined level of plane within the specimen. The holders can be used either manually or automated using single sample force.

Specimen Holders

Specimen holders are offered in a variety of designs and shapes, including round barrel lock, teardrop, rectangular and flat blank holders. Buehler's unique barrel lock specimen holders provide a secure and uniform sample holding force.



Round sample mounts Target holder for manual preparation.



Target holders attached to a single force holder for semi-automatic preparation using AutoMet 300 Power Head.



Barrel-lock specimen holders secure undersized samples in half the time.



Central force specimen holder and drive adapter.



Single force specimen holder and drive adapter.



Distance ring specimen holders accommodate a variety of different sample sizes (single force only).



Variety of single and central force specimen holders available.



Tapered drive adapter provides easy specimen holder connection and removal.



Glass slide holders connect to specimen holder with unique clamping design.



Tapered (standard) and U-cup (optional) tips available for single force operation.



Water filter (included) ensures contaminate free lines and connectors.



Air regulator/filter (included).

Specifications

Machine Power, 250/300

Voltage

85-264 VAC / 170-264 VAC

Frequency 50/60 Hz

Phase Single

EcoMet® Grinder-Polishers

Motor Power EcoMet 250: 1 Hp (750 W) EcoMet 300: 2 Hp (1500 W)

Platen Wheel Speed

EcoMet 250:

10-500 rpm, in 10 rpm increments

EcoMet 300:

10-400 rpm, in 10 rpm increments

Wheel Direction

Clockwise or counter-clockwise

Water Supply Hose 1/4" (6mm) OD tube

Water Supply Pressure 40-100 psi (2.8-6.9 bar)

Water Return Hose 1" (25mm) ID tube

AutoMet® Power Head

Motor Power AutoMet 250: 0.156 Hp (116 W)

AutoMet 300: 0.75 Hp (560 W)

Rotation Direction

Complementary or contra (Clockwise or counterclockwise)

Speed

AutoMet 250:

30-60 rpm, in 10 rpm increments

AutoMet 300:

60-150 rpm, in 10 rpm increments

Central Specimen Force AutoMet 250: 5-60 lbs (20-260 N)

AutoMet 300:

10-120 lbs (40-535 N)

Single Specimen Force

AutoMet 250:

1-10 lbs (5-45 N)

AutoMet 300:

1-20 lbs (5-90 N)

Air Supply Hose 0.23" (6mm) OD tube

Air Supply Pressure 35 psi (2.4 bar)

Specimen Capacity

Central Mode
AutoMet 250:

1", 1¼", 1½", 25mm, 30mm and

40mm

Large and irregular specimens

AutoMet 300:

1", 1½", 1½", 2", 25mm, 30mm, 40mm and 50mm

Large and irregular specimens

Single Mode AutoMet 250:

1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ", 25mm, 30mm and

40mm

AutoMet 300:

1", 1½", 1½", 2", 25mm, 30mm, 40mm and 50mm

Power Usage

Base Only

EcoMet 250:

1.1 kW, 9.6 A/4.8A @ 115/230 VAC

EcoMet 300:

2.3 kW, 10 A @ 230 VAC

Head Only

AutoMet 250:

630 W, 5.5 A/2.7A @ 115/230 VAC

AutoMet 300:

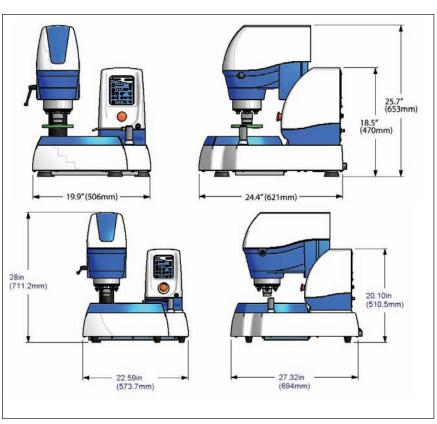
1.3 kW, 5.65 A @ 230 VAC

Base and Head

EcoMet 250/AutoMet 250:

1.73 kW, 15/7.5 A @ 115/230 VAC

EcoMet 300/AutoMet 300: 3.6 kW, 15 A @ 230 VAC



Top) Dimensions for EcoMet 250 Grinder-Polisher/AutoMet 250 Power Head. Bottom) Dimensions for EcoMet 300 Grinder-Polisher/AutoMet 300 Power Head.

Specifications (cont.)

Membrane Button Control Panel

Display:

Three 3-digit LED displays, 14 status LED's

Time:

20 seconds to 99 minutes

Unit of Measure: Imperial or Metric

Touch-Screen Control Panel

Full Color TFT (Thin Film Transistor)

LCD

65K color screen, backlight

Size:

7" (175mm) diagonal

4" W x 5.25" L (100mm x 131mm)

Resolution: 640 x 400

Time:

9 hours, 59 minutes

NEMA4 (IP 65) water resistant

Sound Rating*

EcoMet 250: 59.5 dB @ 100 rpm

EcoMet 300:

51.5 dB @ 100 rpm

EcoMet 250/AutoMet 250:

61.5 dB @ 100/30 rpm

EcoMet 300/AutoMet 300: 64.5 dB @ 100/60 rpm

* Taken from 1.5' (0.5 m) distance under no-load

Weight

Base Only EcoMet 250:

100 lbs (45 kg)

EcoMet 300: 127 lbs (58 kg)

Head Only

EcoMet 250: 70 lbs (32 kg)

EcoMet 300:

95 lbs (42 kg)

Base and Head:

EcoMet 250/AutoMet 250:

170 lbs (77 kg)

EcoMet 300/AutoMet 300:

219 lbs (99 kg)

Regulatory Standards

CE marked

EC applicable directives

Ordering Information

EcoMet® Grinder-Polisher Bases Only for Manual Operation

The EcoMet® 250 and EcoMet® 300 Grinder-Polishers include a splash guard, removable bowl cover, water filter kit, electrical power cord, discharge hose, a selection of grinding paper and polishing cloths, bowl liner, quick start guide and operating instructions. Platens, paper holding bands and cloth clamps sold separately.

49-7200 EcoMet® 250 Grinder-Polisher Base

49-7210 EcoMet® 300 Grinder-Polisher Base

49-7201 EcoMet® 250 Pro Grinder-Polisher Base with Touch-Screen Control

49-7211 EcoMet® 300 Pro Grinder-Polisher Base with Touch-Screen Control

AutoMet® Power Heads Only for Semi-Automatic Operation

The AutoMet® 250 and AutoMet® 300 Power Heads includes a mounting post and mounting hardware, air filter/regulator kit, lift-lock chuck and operating instructions. Specimen holders and drive adapters sold separately. AutoMet 250 must be installed by authorized Buehler service personnel or at factory.

60-7230 AutoMet® 250 Power Head

60-7240 AutoMet® 300 Power Head

EcoMet® Grinder-Polisher Bases with AutoMet® Power Heads for Semi-Automatic Operation

EcoMet Grinder-Polishers with AutoMet Power Heads includes splash guard, removable bowl cover, electrical power cord, bowl liner, discharge hose, water filter, lift-lock chuck, air filter/regulator, operating instructions and a selection of grinding paper and polishing cloths. Platens, paper holding bands, cloth clamps, specimen holders and drive adapters sold separately.

49-7250 EcoMet® 250 Grinder-Polisher with AutoMet® 250 Power Head

49-7255 EcoMet® 300 Grinder-Polisher base with AutoMet® 250 Power Head

49-7260 EcoMet® 300 Grinder-Polisher base with AutoMet® 300 Power Head

49-7251 EcoMet® 250 Pro Grinder-Polisher and AutoMet® 250 Power Head with Touch-Screen Control

49-7256 EcoMet® 300 Pro Grinder-Polisher base and AutoMet® 250 Power Head with Touch-Screen Control

49-7261 EcoMet® 300 Pro Grinder-Polisher base and AutoMet® 300 Power Head with Touch-Screen Control

EcoMet® 250 / EcoMet® 300 Grinder-Polisher Accessories

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General	Accessories	

Air Filter Vit for Down Hoods (included)	60,0000
Air Filter Kit for Power Heads (included)	
Recirculating System with Cart, 115 VAC (24 gallons / 91 liters Reservoir)	
Recirculating System with Cart, 230 VAC (24 gallons / 91 liters Reservoir)	
EnvironMet Recirculating Filter System	
EnvironMet Filter System	
Specimen Loading Fixture	
Water Filter (included)	60-9091
EcoMet® 250 Grinder-Polisher Accessories	
8" (203mm) Aluminum Platen	
10" (254mm) Aluminum Platen	
Disposable Bowl Liner (pkg of 5)	60-9080
EcoMet® 300 Grinder-Polisher Accessories	
12" (305mm) Aluminum Platen	
Disposable Bowl Liner (pkg of 5)	60-9081
12" (305mm) Cast Iron Platen (geological)	95-2657
AutoMet® 250 / AutoMet® 300 Power Head Accessories	
AutoMet® 250 / AutoMet® 300 Power Head Drive Adaptors	
Central Force (Required)	60-9000
Single Force (Required)	
AutoMet® 250 Power Head Central Force Specimen Holders	
Blank Specimen Holder	60-2408
Barrel Specimen Holder 1" x (25.4mm) x 6	
Barrel Specimen Holder 1¼" (32mm) x 6	
Barrel Specimen Holder 1½" (32mm) x 3	
Barrel Specimen Holder 1½" (38mm) x 3	
Barrel Specimen Holder 30mm x 6	
Barrel Specimen Holder 40mm x 3	
Rectangular Specimen Holder 1" x 1¼" (25.4mm x 32mm) x 4	
Teardrop Specimen Holder 1¼" (32mm) x 6	
Specimen Loading Plate for 8" (203mm) and 10" (254mm) Specimen Holders	
AutoMet® 250 / AutoMet® 300 Power Head Single Force Tips	
Cone Design Single Force Tips (pkg of 6)	60-9092
U-Cup Design Single Force Tips (pkg of 6)	
AutoMet® 250 Power Head Single Force Specimen Holders	
1" Single Force Specimen Holder	60-9010
1¼" Single Force Specimen Holder	
1½" Single Force Specimen Holder	
25mm Single Force Specimen Holder	60-9020

AutoMet® 250 / AutoMet® 300 Power Head Accessories (cont.) 40mm Single Force Specimen Holder60-9022 1" x 2" (28mm x 48mm) Glass Slide Single Force Specimen Holder, use with 60-9010 Holder60-9050 AutoMet® 250 Power Head Single Force Distance Rings System 1" Distance Rings (pkg of 6)60-9031 1¼" Distance Rings (pkg of 6)60-9032 25mm Distance Rings (pkg of 6).......60-9033 30mm Distance Rings (pkg of 6)......60-9034 AutoMet® 250/300 Power Head Central Force Specimen Holders with EcoMet® 300 Base Blank Specimen Holder60-5254 Barrel Specimen Holder 1" (25mm) x 1060-5281 Barrel Specimen Holder 1¼" (32mm) x 1060-5282 Barrel Specimen Holder 1½" (38mm) x 660-5283 Barrel Specimen Holder 30mm x 1060-5287 Barrel Specimen Holder 40mm x 660-5288 Barrel Specimen Holder 2" (50mm) x 360-5289 Barrel Specimen Holder 2" (50mm) x 560-5299 Teardrop Specimen Holder 1¼" (32mm) x 960-5252 Teardrop Specimen Holder 2" (50mm) x 560-5296 Rectangular Specimen Holder 2" x 1.375" x 5......60-5245 Rectangular Specimen Holder 3" x 1.38" x 360-5250 Rectangular Specimen Holder 55mm x 30mm x 560-5297 Rectangular Specimen Holder 70mm x 40mm x 360-5298 Specimen Loading Plate for 12" (305mm) Central Force Specimen Holders.......60-2412 PC Met Printed Wiring Board Accessory60-5090 AutoMet® 300 Power Head Single Force Specimen Holders 1" Single Force Specimen Holder.......60-9060 1¼" Single Force Specimen Holder60-9061 1½" Single Force Specimen Holder60-9062 25mm Single Force Specimen Holder60-9070 30mm Single Force Specimen Holder60-9071 40mm Single Force Specimen Holder60-9072 50mm Single Force Specimen Holder60-9073 1" x 2" (28mm x 48mm) Glass Slide Single Force Specimen Holder for use with 60-9060 Specimen Holder.......60-9051 1" x 3" (28mm x 76mm) Glass Slide Single Force Specimen Holder for use with 60-9060 Specimen Holder60-9052

AutoMet® 250 / AutoMet® 300 Power Head Accessories (cont.)

AutoMet® 300 Power Head Distance Rings for Imperial Inch Systems

2" Single Force Specimen Holder for use with Distance Rings	60-9040
1" Distance rings (pkg of 6)	60-2106
1¼" Distance Rings (pkg of 6)	60-2103
1½" Distance Rings (pkg of 6)	60-2104
25mm Distance Rings (pkg of 6)	60-2106
30mm Distance Rings (pkg of 6)	60-2102
40mm Distance Rings (pkg of 6)	60-2105
AutoMet® 300 Power Head Distance Rings for Metric Systems	
25mm (each)	40-2001
30mm (each)	40-2002
32mm (each)	40-2003
38mm (each)	40-2004
40mm (each)	40-2005
50mm Single Force Specimen Holder for use with Distance Rings	60-9041
AutoMet® 300 Power Head Target Holders	
Single Force Specimen Holder for 2" (50mm) Target Holders	60-9049
1" Target Holder for Mounted Specimens	60-8101
1¼" Target Holder for Mounted Specimens	60-8102
1½" Target Holder for Mounted Specimens	60-8103
25mm Target Holder for Mounted Specimens	60-8101
30mm Target Holder for Mounted Specimens	60-8112
40mm Target Holder for Mounted Specimens	60-8113
Target Holder for Glass Slide 28mm x 48mm (Histolic Holder)	60-8100
Target Holder for Aligning Features (Electronics)	60-8105
Mold for making rectangular mounts (5mm x 35mm) for 60-8105 Holder	20-8210
Stop Ring with Ceramic Coating	60-8110
Stop Ring with Hardened Steel Surface60-81	

For additional selections of specimen holders, consumables and other accessories, refer to the Buehler Equipment Buyers Guide or Consumables Buyers Guide, or contact your local Buehler Sales Engineer. Buehler continuously makes product improvements; therefore, technical specifications are subject to change without notice.

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