



BUEHLER®
ELECTROMET® 4
 POLISHER/ETCHER

Electrolytic sample preparation provides an efficient method for polishing and etching of solid solution alloys, including stainless steels, aluminum, titanium and many copper based alloys.

The new ELECTROMET® 4 Polisher/Etcher from BUEHLER® is designed to bring maximum performance and ease of operation to the electropolishing and etching process. It consists of a power source, a polishing cell, an etching cell and accessories.

The ELECTROMET® 4 is aimed at the needs of today's metallographers and is loaded with safety and convenience features such as:

- Corrosion and impact resistant reaction-injection-molded (RIM) cabinets
- Trouble-free solid state design with electronic controls actuated by touch-pad switches
- Electrolyte temperature and current monitoring to prevent operational hazards

- Load simulation mode to facilitate preselection of desired polishing and etching voltages
- Parameter memory to automatically reset operating conditions for repetitive work

Power source controls are laid out in a clear concise manner. Polishing and etching times can be separately preset from 0 to 59 minutes, 59 seconds in 1 second increments and are displayed on a digital LED readout. The ELECTROMET® 4 automatically switches from Polish to Etch if both the polishing and etching times have been selected.

Voltage can be preset using the touch-pad voltage controls and load test control. By depressing the load test control, the operator can simulate actual voltage conditions under load. Actual voltage and current appear on digital LED readouts during operation and amperage is also displayed on a digital LED bar graph.

A current overload shut-off and LED fault indicator prevent excessive amperage draw.

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A major safety feature of the ELECTROMET® 4 is an electrolyte temperature control monitor. A digital LED display on the Power Source front panel monitors electrolyte temperature (in °C) which is controlled by cold water cooling coils positioned inside the tank. If the electrolyte starts to overheat, an LED indicator on the Power Source begins to blink. Should the electrolyte temperature continue to rise, the indicator remains lit and the system shuts itself down before a dangerous condition is reached. The electrolyte pump in the Polishing Cell is controlled from the Power Source Front Panel. The pump utilizes a ½ HP (37W) DC motor which is activated by an illuminated Pump on/off switch. Pump speed can be increased or decreased via touch pad controls and pump speed is displayed (as a percent of maximum speed) on an LED bar graph. The anode arm is adjustable to accommodate specimens up to 5" (12.7cm) in height. The use of different size glass filled polyethylene masks controls the area being prepared.

The external Etching Cell supplied with the ELECTROMET® 4 is used when a different solution than that used for polishing is desired for etching. It has a 200ml capacity and includes both copper and stainless steel cathode sets. A special clamp enables simplified etching of unmounted specimens.



Front panel controls incorporate touch-pad switches, digital LED parameter readouts and bar graphs.

Specifications

No. 70-1830-115 ELECTROMET® 4 Polisher/Etcher complete, including No. 70-1831-115 ELECTROMET® 4 Power Source, No. 70-1832 Polishing Cell, No. 70-3100 Etching Cell, operating instructions. For 115V/60Hz/1 phase operation.

No. 70-1830-220 ELECTROMET® 4 Polisher/Etcher, same as No. 70-1830-115, but for 220-240V/50Hz/1 phase operation.

Dimensions:	Power Source	13½" W × 18½" D × 9" H (33.3cm × 47cm × 22.9cm)
	Polishing Cell	8" W × 8" D × 16" H (20cm × 20cm × 41cm)
	Etching Cell	5" W × 6" D × 8" H (13cm × 15cm × 20cm)

Shipping Weight: 60 lbs. (27.3 kg)

No. 70-1831-115 ELECTROMET® 4 Power Source, 1 KVA system with isolation transformer, electronic touch-pad on/off, timing, voltage, polish/etch select and pump stirrer controls, digital LED displays of time, voltage, current and electrolyte temperature, current and pump speed digital LED bar graphs. Operating instructions. For 115V/60Hz/1 phase operation.

No. 70-1831-220 ELECTROMET® 4 Power Source, same as No. 70-1831-115, but for 220-240V/50Hz/1 phase operation.

No. 70-1832 ELECTROMET® 4 Polishing Cell with transparent one liter capacity PVC electrolyte tank, five polyethylene masks of ⅜" (9.5mm), ½" (12.7mm), ¾" (19.1mm), 7⁄8" (22.2mm) dia. and 0.6" (15.2mm) square, cooling coils and cables for connection to Power Source. Operating instructions.

No. 70-1735 Electrolyte Tank, spare with stirring rod and lid.

No. 70-2015 Masks, set of 5 including 1 ea. ⅜" (9.5mm), ½" (12.7mm), ¾" (19.1mm), 7⁄8" (22.2mm) dia., and 0.6" (15.2mm) square.

No. 70-2100 Cathodes (Set of 2), stainless steel.

No. 70-2105 Cathodes (Set of 2), copper.

No. 70-3100 Etching Cell, with 200 ml capacity electrolyte container, stainless steel and copper cathode sets and specimen clamp.



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