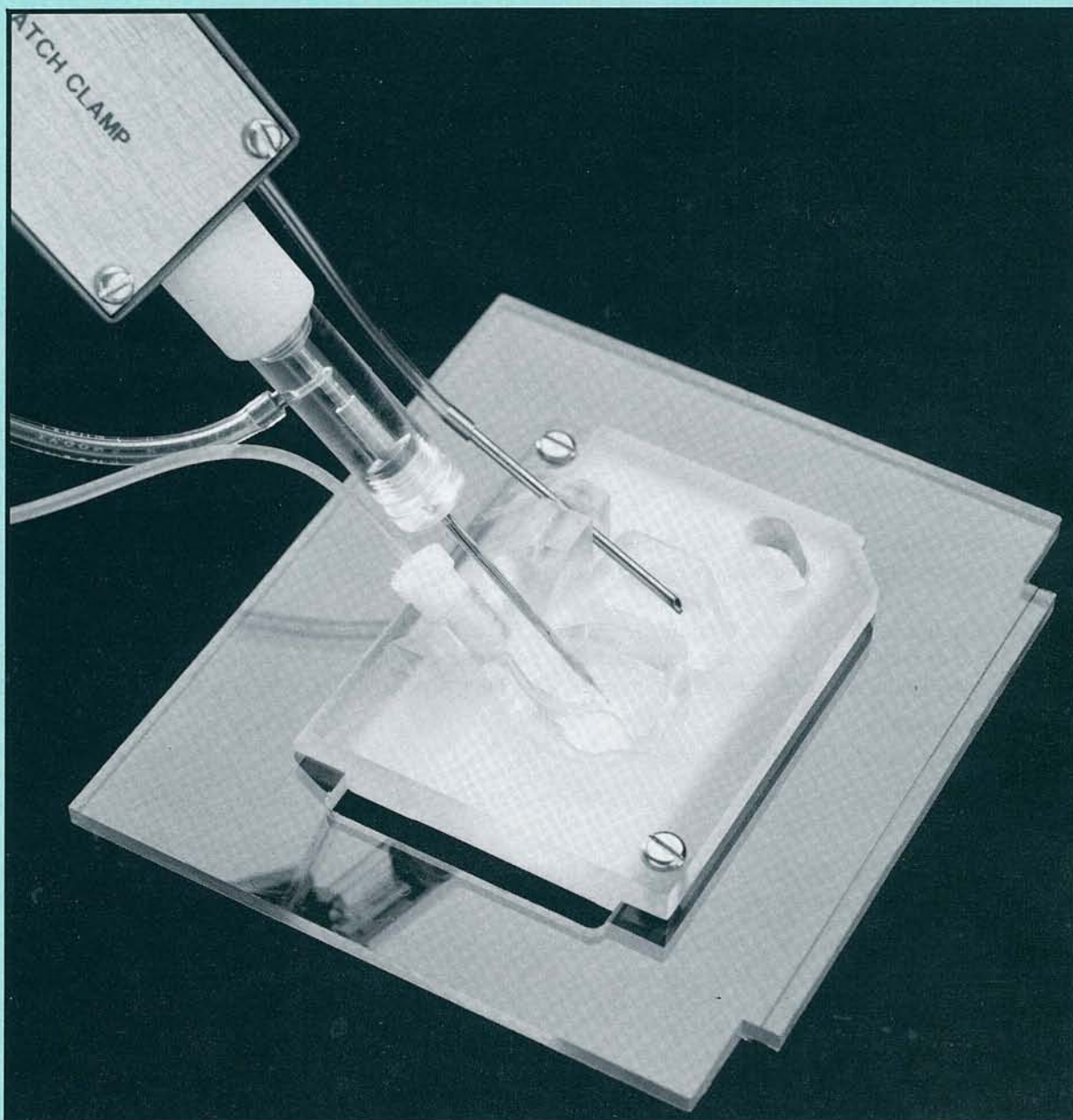


Warner Instrument Corp.



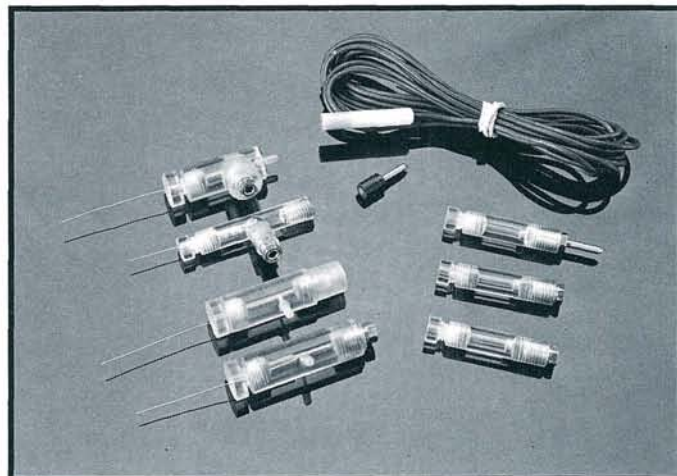
Microelectrode Recording Accessories 1991/1992

- Microelectrode & Micropipette Holders • Reference Cells
- Recording & Bilayer Chambers
- Glass Capillary Tubing

Microelectrode and Micropipette Holders, Reference Cells

Applications

- Intracellular Recording
- Microiontophoresis
- Micro Perfusion
- Patch / Whole Cell Clamp
- Ion Sensitive Measurements
- Pressure Injection



Microelectrode Holders

Microelectrode holders provide a convenient coupling between fluid filled microelectrodes and amplifier inputs. Since optimum recording is generally achieved when this coupling is as short as possible, these holders are made for direct connection to the headstage. The holders are precision machined from either cast acrylic or polycarbonate. Holders are available with selection of style, electrical coupling, mating connector, glass size, port or vent and material. Most applications involving microelectrodes are covered by the large variety of holders available.

Micropipette Holders

Similar in construction to the microelectrode holder, micropipette holders are non-electrical and are made for applications involving pressure injection of drugs, etc. A handle is included for mounting in a micropositioner. A choice of tubing connections is available.

Reference Cells

Reference cells are Ag-AgCl pellets encapsulated in epoxy and provided with either a wire, tip plug or tip jack for electrical connection. They are commonly employed for grounding a preparation, particularly when using a microelectrode holder with a pellet. When used in pairs in this way, junction potentials may be minimized since the typical potential difference is less than a millivolt.

General Holder Characteristics

Selection of a holder involves many choices, including:

STYLE - Style refers to the angle of the microelectrode with respect to the headstage connection. Holders are either straight (S) in-line, right angle (R) at 90°, or (45) at a 45° angle.

COUPLING - The electrical coupling between electrode and headstage connector can be a Ag-AgCl pellet (P) or Ag wire (W). Pellets or wires are replaceable. Wires must be chlorided prior to use.

CONNECTORS - To accommodate the variety of amplifier headstages in use, four choices of connector are offered:

- F - A 2mm jack to mate with standard 2mm tip plugs
- M - A 2mm pin to mate with standard 2mm tip jacks
- A - A 1mm pin connector similar to the BNC type.
- B - A BNC connector to mate with standard BNC's.

GLASS SIZE - Holders are bored for specific glass tubing diameters. Standard sizes are 1.0, 1.2, 1.5, 1.7 and 2.0 mm. Non standard sizes are available by special order. A replaceable rubber seal and threaded end cap prevent electrolyte leakage while providing good mechanical stability of the electrode. A spare seal is included with each holder.

PORT or VENT - Holders can be ordered with or without a port or vent by specifying:

- N - No port or vent
- P - With 2mm port to accept 1/16" ID tubing.
- V - With small diameter vent hole into chamber to equalize pressure*.

MATERIAL - Holders are made from either cast acrylic or polycarbonate. Refer to the holder series information on standard and optional choices.

* A vented holder has been reported to be important in relieving pressure in oocyte voltage clamp experiments. Holders supplied with our Model OC-725A (ESP-FxxV and ERW-FxxVH) now include a vent.

