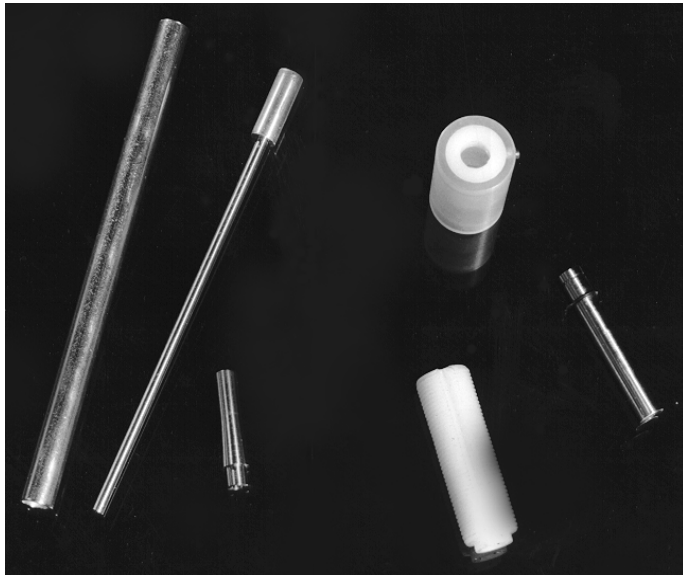


Microchronic Recording System



The **Microchronic Recording System** has been designed to permit microelectrode stimulating or recording in awake, unrestrained small animals. The System is small enough to be implanted on 300g rats yet provides access to position the microelectrode in a 2.5mm diameter tissue volume. A unique mounting arrangement permits the electrodes to be raised or lowered into tissue at a rate of 500u per cap revolution without rotation of the electrode itself. A miniature preamplifier or transmitter can be mounted near the column in the skull to help eliminate cabling artifacts.

The low cost Microchronic Recording System includes three sets of columns and caps, stainless steel recording barrels, as well as guide tubes through which the electrode is advanced and electrical connection to a remote connector is made. Also included are insulating Polyimide sheaths and tools for mounting and assembling the system. Additional caps, columns, recording barrels and tubing kits are also available.

ORDERING INFORMATION

- 40-77-2 Microchronic Recording System includes one each of the following: 40-77-1, 40-77-7, 40-77-3, and 40-77-8, implanting fixtures and tools
- 40-77-1 Columns and Caps include 3 columns, 3 caps
- 40-77-7 Tubing Kit includes 1 foot each of 0.008", 0.014", and 0.028" I.D. ML Polyimide, and ten 23g x 18mm stainless steel tubes, 38g insulated Cu wire
- 40-77-3 Recording Barrel Kit includes 3 slotted 10g stainless steel recording barrels, 25 slip rings

ILLUSTRATIVE PROCEDURE

The connector wiring, as well as the electrode recording barrel configuration should be prepared in advance of surgery. Epoxy the guide tube(s) in place anywhere within the diameter of the recording barrel. Cut the electrode to a predetermined length, insulate it with a Polyimide sheath and insert it in the guide tube. Band and slide the shank end through one of the slots in the recording barrel; secure it with a slip ring. Wire the input pin of the remote connector to the bottom of the electrode connection tube, then insulate the tube and junction with a Polyimide sheath.

Drill a 3mm diameter hole in the skull and trim the base of the column so it rests lightly on intact dura. Hold the column in place with the mounting fixture supplied with the System. Position the insulated electrical connection tube in one of the two grooves in the threaded column. Cement the column and remote connector in place on the skull with dental acrylic, burying the base of the electrical connection tube and connecting wires.

Electrical connection of the microelectrode is accomplished by sliding the cut, uninsulated end of the electrode into the electrical connection tube.

The recording barrel and cap are now essentially one piece so that the electrode is raised and lowered as the cap is rotated. The electrode itself does not rotate.

