

## Electrode Installation Pamphlet



### ***Unpacking the electrodes***

1. Remove the electrode from its box and visually inspect it for any damage during shipping.
2. Carefully remove the protective caps from the tips of the electrode. The electrode is transported with de-ionized water in the protective cap. Rinse the tips with de-ionized water and stand the electrodes in a 0.01M solution of KCl overnight.

### ***Installing the electrodes in the flow cell***

1. Unscrew the electrode shields from the Kynar flow cell. The electrode shields are the two protruding knurled fittings.
2. Remove the O-rings from the two electrode ports and wet them with a squirt bottle.
3. Slide the electrode shield over the electrode.
4. Moisten the tip of the electrode and carefully push the O-ring over the tip of the electrode.
5. The next step requires care to ensure that the delicate glass electrode is not shattered and the O-ring is correctly positioned.
6. CAREFULLY insert the electrode into the electrode port and screw in the electrode shield. By sighting down the flow channel, position the electrode so that the tip is just visible in the flow channel. Be careful not to drive the electrode into the opposite wall of the flow cell.
7. Gently screw down the electrode shield to seal the O-ring around the electrode. Note – finger-tighten only to the first sign of resistance from the O-ring.
8. Repeat for both electrodes.

***Flow cell and electrode care***

1. Both the reference and pH electrodes are sealed electrodes and therefore do not need to be refilled.
2. The electrodes should be kept in contact with liquid to keep the glass wetted. When not in use ensure that the cell is full of a suitable electrolyte (e.g. 0.01M KCl)

***Noise and grounding***

1. These electrodes require a high impedance amplifier to process the signal.
2. Signal lines should be shielded or twisted.
3. The flow stream can be grounded to improve the signal to noise ratio. This effect is sometimes improved by increasing the ionic strength of the stream.

***Flow cell orientation***

1. The flow cell must be mounted so that the electrodes describe a shallow "V".
2. The stream should be fed in at the bottom of the flow cell and should exit the top. In this way, electrical contact will be maintained within the electrode and bubbles will make their way out the flow cell.