EH100 ELECTRODE HOLDER

INSTRUCTIONS FOR USE

Introduction

This electrode holder serves to protect the 1302 oxygen electrode. In combination with the perspex ring supplied, it forms a convenient method for inserting and sealing the electrode in custom-built respiration chambers. The electrode is positioned in this holder by pressure exerted by the cap on three O rings at the cable-entry end of the electrode. This seals the nose of the electrode against the precision shaped plastic tip of the holder, so that only the membrane-covered cathode protrudes.

Assembly

Unscrew the cap on the electrode holder and remove. Insert the electrode into the holder. Pass the knurled cap over the cable and screw it back on tight.
When doing this it is essential that the electrode holder is held vertically, so that the topmost O ring is centred symmetrically around the cable. If you do not do this, the top O ring can be distorted up through the opening in the cap. This in turn will mean that insufficient pressure is exerted on the electrode, which may cause leakage when the tip of the holder is immersed in liquid.

Insertion of the Electrode Holder into your respirometer

Drill a 13mm hole in the wall of the respirometer chamber.

Slide the perspex ring on to the shaft of the 13mm drill. Apply suitable adhesive to the area around the hole.

Insert the drill into the hole until the face of the perspex ring bonds with the adhesive. Carefully withdraw the drill without disturbing the positioning of the ring.

After the adhesive has set, the electrode holder may be inserted and withdrawn through the port in the respiration chamber so created, the 'O' ring in the perspex ring making a watertight seal.

Notes

The electrode may be calibrated when it is within the holder.

Take care to protect the exposed tip of the electrode and preferably keep the tip covered in water when not in use for short periods.

It is important that air bubbles do not remain attached to the tip of the electrode holder when it is inserted into the chamber. This could happen if the holder develops a thin film of grease. If this should happen, clean the end of the holder in a dilute detergent solution, taking care not to abrade the membrane of the protruding electrode tip. Then rinse with distilled water and dry carefully with paper tissue.

Caution

Although there is an O ring seal around the cable at the point where it enters the electrode, it is nevertheless good practice to ensure that water, particularly seawater, does not enter the top of the EH100 after it has been assembled. If water does enter the electrode by this route it can cause irreparable damage. Symptoms of problems of this kind are a very high short circuit current so that it becomes impossible to zero the electrode when it is being calibrated in a zero oxygen solution.