

# RPT5 SENSOR REPLACEMENT INSTRUCTIONS

For ULTRAPEN™ models PT5 and PTBT5

**NOTE:** Please read these instructions thoroughly and carefully — Damage caused by improper installation or mishandling will void the warranties of the instrument and the new sensor.

**CAUTION:** Moisture trapped in instrument will cause damage to the electronic circuitry. Careful adherence to the following procedure will significantly reduce the potential for failure due to moisture contamination or damaged connectors.

**CAUTION:** AVOID TOUCHING AND/OR CONTAMINATING THE ULTRAPEN ELECTRONICS OR SENSOR CONNECTOR/CIRCUITRY AT ALL TIMES!

For clarity, this procedure is broken down into four sections. Follow each section carefully to avoid damage. Refer to images as necessary. All images are of model PT5 for example.

- Always replace the sensor dry and fill with electrolyte after installation.
- Only remove/replace the sensor in a CLEAN and DRY environment.

## I. Preparation of ULTRAPEN

1. Remove the protective/hydration cap from your ULTRAPEN by wiggling it side to side while gently pulling it off the ULTRAPEN.



2. Remove the membrane cap assembly by turning it in a counter-clockwise direction.



3. Empty the electrolyte well of ALL electrolyte solution.

4. Rinse the sensor end and surrounding area with clean water (preferably DI, RO, or distilled) and dry thoroughly.

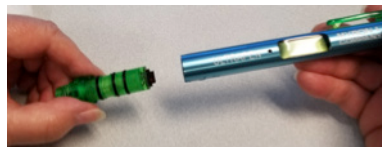


5. Ensure hands are clean and dry. Moisture will damage the electronics.

6. Unscrew the battery cap and remove the battery tray. (There is a pressure relief tube running from the battery compartment to the sensor compartment, which allows pressure equalization in the sensor area.)



7. Grasp the sensor body and gently pull the sensor out of the ULTRAPEN.



8. Carefully clean off any residual salt or liquid around the opening of the ULTRAPEN's sensor compartment using a towel. **Caution:** Do NOT contaminate the inside of the ULTRAPEN.



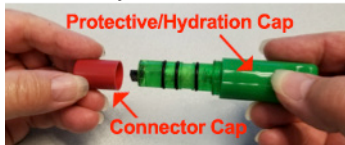
## II. Preparing the New Sensor

**NOTE:** The O-rings of the sensor are pre-greased for ease of insertion. Carefully remove any packaging from the shaft before installation and handle the sensor by the protective/hydration cap to avoid migration of the grease to the membrane.

1. Holding the new sensor, remove the warning label from around the protective/hydration cap.

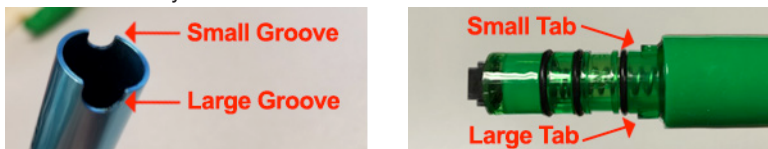


2. Remove the Connector Cap from the connector end of the sensor and inspect to ensure 3 O-rings are on the sensor body.

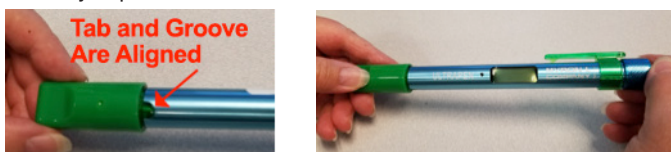


## III. Installing the New Sensor

1. Align the Large and Small alignment tabs on the sensor with the Large and Small grooves on the ULTRAPEN. (It will only go in one way.) **WARNING:** Damage **WILL** occur to the connectors inside your ULTRAPEN if you attempt to install the sensor incorrectly.



2. While maintaining alignment, gently apply pressure to insert the sensor into the ULTRAPEN. You may need to apply a slight twisting motion to start each O-ring, ensuring all 3 O-rings on sensor slide evenly into ULTRAPEN. **CAUTION:** A damaged O-ring will allow solution to leak into the instrument. Press sensor **STRAIGHT** into the ULTRAPEN until it is securely in place.



3. Replace the battery tray by aligning the guide bump inside the enclosure with the alignment groove in the battery tray, then sliding the tray into the case until it is fully seated. The groove in the tray corresponds to a guide bump inside the enclosure that guides the tray back into the correct position. Screw the battery cap back on.



## IV. Sensor Setup

1. Remove the hydration cap by wiggling it back and forth while pulling it off.
2. Remove the membrane cap from the sensor body by turning it in a counter-clockwise direction. Use caution not to touch the membrane or silver cathode with your fingers, as oil will compromise measurements.
3. Install the syringe tip on the syringe and fill the syringe with DO electrolyte solution.
4. Holding the ULTRAPEN vertically with the DO sensor at the top, insert the syringe tip into one of the four openings of the sensor body as far as it can go inside the electrolyte well and fill the sensor to the top with electrolyte.
  - Top off with more electrolyte after removing the syringe from the sensor body.
5. Pour some electrolyte inside the membrane cap to minimize air bubbles that may occur when installing the cap.
6. Holding the filled ULTRAPEN in one hand and the filled membrane cap in your other hand, tilt the membrane cap and place it onto the sensor body.
7. Carefully turn the membrane cap clockwise until it tightens firmly to the sensor body. Some electrolyte may escape. DO NOT over tighten the cap.
8. Rinse any residual electrolyte from the outside of the sensor body with clean water (DI, RO or distilled).
9. Fill the hydration cap with enough clean water to soak the sponge inside (preferably DI, RO, or distilled water).
10. Push the hydration cap onto the DO Sensor by wiggling it back and forth while pushing it on. Do not go beyond the Cap Stop.
11. Let the sensor stabilize for 2-4 hours before using the PT5.

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