DO probes: Membrane replacement and probe renovation

These instructions are for OxyGuard galvanic DO probes with replaceable membranes. It is not relevant for the OxyGuard LDO probe. Depending on the probe type, there may be small differences in design, spare parts or setup. If in doubt, contact support@oxyguard.com.

OxyGuard DO probes should not be opened as part of routine maintenance. In normal use, keep the membrane clean by wiping it regularly with a soft cloth or paper.

Renovate the probe only if:
- the membrane is visibly damaged
- the probe cannot be calibrated after long use
- you can hear liquid splashing inside the probe when gently shaking it
- the probe gives unstable or incorrect readings after normal troubleshooting

Renovation includes replacing the membrane, inspecting and cleaning the anode and cathode, refilling the probe completely with electrolyte, allowing it to stabilize and calibrating it again.

TROUBLESHOOTING

The reading is too high
Check that the correct probe type or settings are selected in the connected system.

The reading is too low
Check that the probe is completely filled with electrolyte and that the membrane is fitted correctly. Check cables and connections.

The reading is unstable
Check for trapped air, damaged membrane, moisture in junction boxes or poor probe placement.
Renovate if you can hear liquid splashing inside the probe and make sure the probe is completely filled.

Calibration fails
Check that the membrane is clean and flat, that the correct membrane is fitted, and that the probe type is set correctly in the connected monitoring and control system.

REQUIRED SPARE PARTS AND TOOLS

- Membrane/O-ring set for the probe type
- Correct electrolyte for your probe type
- D10PAD cleaning pad, brown, for the cathode
- D10SANDP sandpaper, blue, for the anode
- D10TOOL membrane ring tool, if needed
- Clean cloth or soft paper
- Clean water
- Matching anode, if replacement is needed
- Mild soapy water, if a new anode is used
- Screwdriver or similar tool to scratch the anode
- Pacific DO only: anode screw and gasket, if the anode is exchanged

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Step 1: Rinse, open and empty the probe

- Remove the probe from the water. Rinse the outside of the probe with clean water and wipe off dirt or biological deposits.
- Unscrew the probe cap. If the cap is stuck, tap the side of the probe gently, with for example a hammer and try again. Do not use excessive force.
- Discard the used electrolyte.

Step 2: Prepare the cap and fit the new membrane

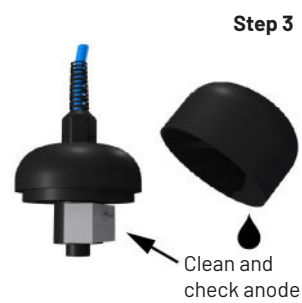
- Rinse the inside of the cap. Remove dark oxide deposits and old electrolyte. Clean and dry the cap and membrane ring thoroughly.
- Remove and discard the used membrane and O-ring. Neither the membrane or the O-ring must be reused.
- Place a new O-ring and a new membrane in the cap. The O-ring must sit under the membrane.
- Tighten the membrane ring.
- Check that the membrane is completely flat. If it wrinkles, remove it and start again with a new membrane and O-ring.

Important: Make sure you fit the membrane itself, not the backing paper.

Step 3: Inspect, clean and prepare the anode

- Inspect the anode. If the probe was completely filled during the last renovation, deposits should be easy to remove.
- Clean the anode gently with a toothbrush or similar. If needed, use the supplied BLUE sandpaper to lightly roughen the anode surface. The anode should not be smooth or shiny. Do not use the brown cleaning pad on the anode.
- Before reassembling the probe, gently scratch the surface of the anode with a screwdriver or similar tool. This prepares the anode before the probe is refilled with electrolyte.
- The anode is designed to oxidize and be consumed during use. Replace the anode only if it is badly worn, deeply pitted or has holes.
- If a new anode is used, wash it in soapy water before fitting it to remove protective oil. Rinse it thoroughly afterwards, then gently scratch the surface before fitting it.

Important for Pacific DO: If the anode is removed, replace the sealing gasket and screw with new ones from the spare part set. This is necessary to maintain waterproof protection.



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Step 4: Clean the cathode

- Inspect the cathode and remove deposits carefully.
- Use the supplied BROWN cleaning pad. If needed, use fine wet or dry abrasive paper as specified for the probe. Do not polish the cathode. Only remove deposits. Rinse and dry the upper part thoroughly.

Step 5: Optional dry zero - probe check

- Before refilling, make sure the probe is completely dry, especially around the cathode.
- If the probe is tested electrically, the output should be close to zero mV when the probe is open and completely dry. If the connected instrument shows mg/L (ppm), % saturation and temperature, then the mg/L and % saturation should be "zero", while the temperature should be normal.

Step 6: Fill the cap with electrolyte

- Fill the cap completely to the brim with electrolyte. The excess electrolyte helps remove air bubbles when the probe is assembled. Air inside the probe can cause unstable readings and calibration problems.

Step 7: Assemble the probe

- Lower the upper part carefully into the filled cap and start the thread gently.
- Hold the probe slightly tilted, with the small flat area on the probe body facing up, while tightening the cap. This allows trapped air and excess electrolyte to escape correctly and helps prevent unnecessary spillage.
- Continue tightening the cap until it is firmly closed. When you are certain the probe is completely filled, tighten the cap hard.
- Wipe off excess electrolyte from the outside of the probe.

Step 8: Stabilize before calibration

- After renovation, the probe should be regarded as new. Hang the probe in air and allow it to stabilize for at least one hour before calibration.
- The probe must be recalibrated 24 hours after renovation.

Step 9: Calibrate and return the probe to operation

- After stabilization, calibrate the probe in open air according to the instructions for the connected OxyGuard system. After a few minutes, the probe should typically read between **98 and 103 % saturation**. If the reading falls outside this range, wait for it to stabilize. Recalibrate after 24 hours.
- A small deviation from exactly 100 % is normal and can be caused by a temperature difference between the probe and the surrounding air.
- After calibration, place the probe back in the water and make sure it is positioned correctly with sufficient water movement around the membrane.

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