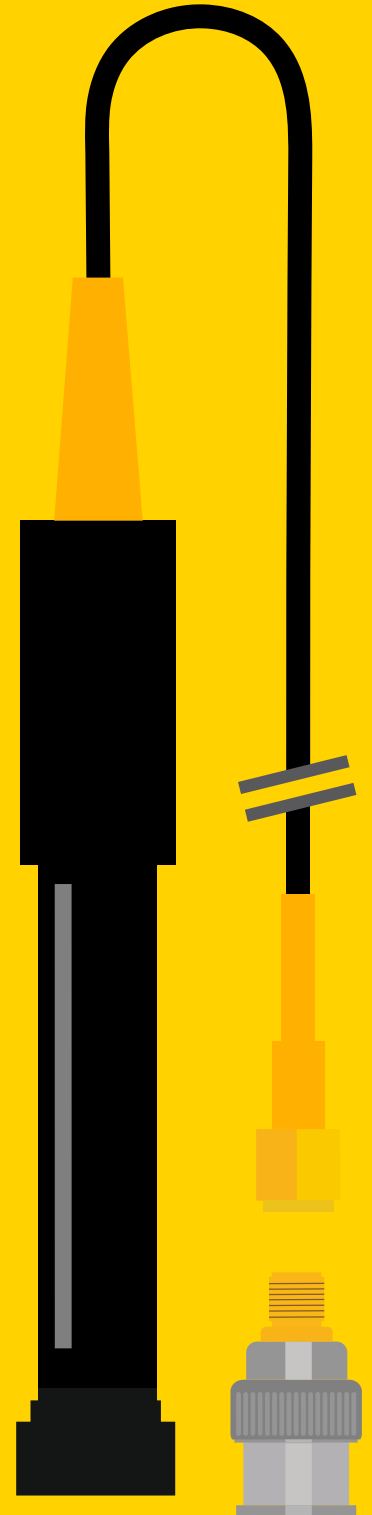


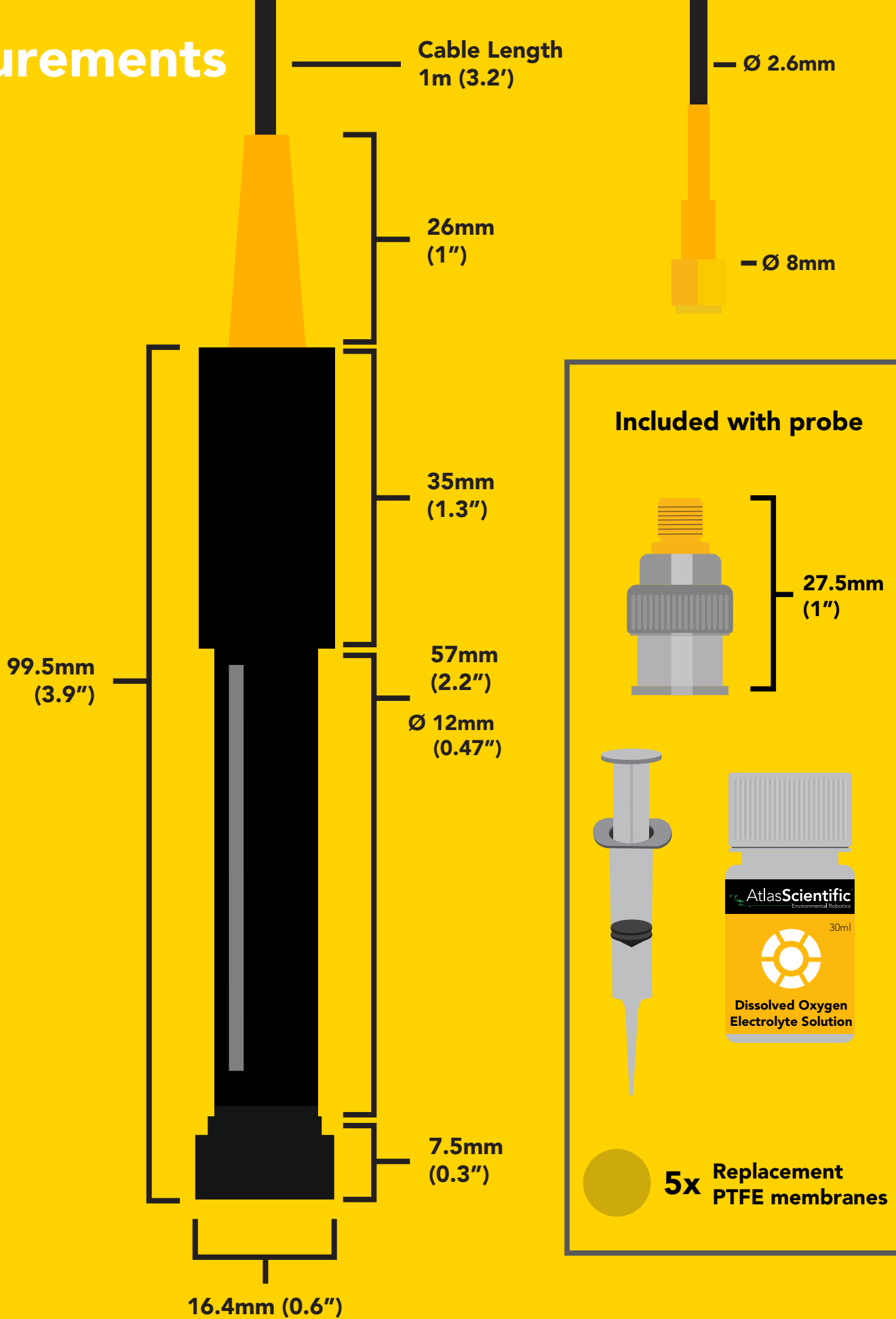
Gen 2

Dissolved Oxygen Probe

Reads	Dissolved Oxygen
Range	0 – 100 mg/L
Accuracy	+/- 0.05 mg/L
Response time	~0.3 mg/L/per sec
Temperature range °C	1 – 60 °C
Max pressure	3,447 kPa (500 PSI)
Max depth	343 Meters (1,125 ft)
Connector	Male SMA / Female BNC
Cable length	1 meter
Internal temperature sensor	No
Time before recalibration	~1 Year
Life expectancy	5 Years +
Maintenance	~18 Months



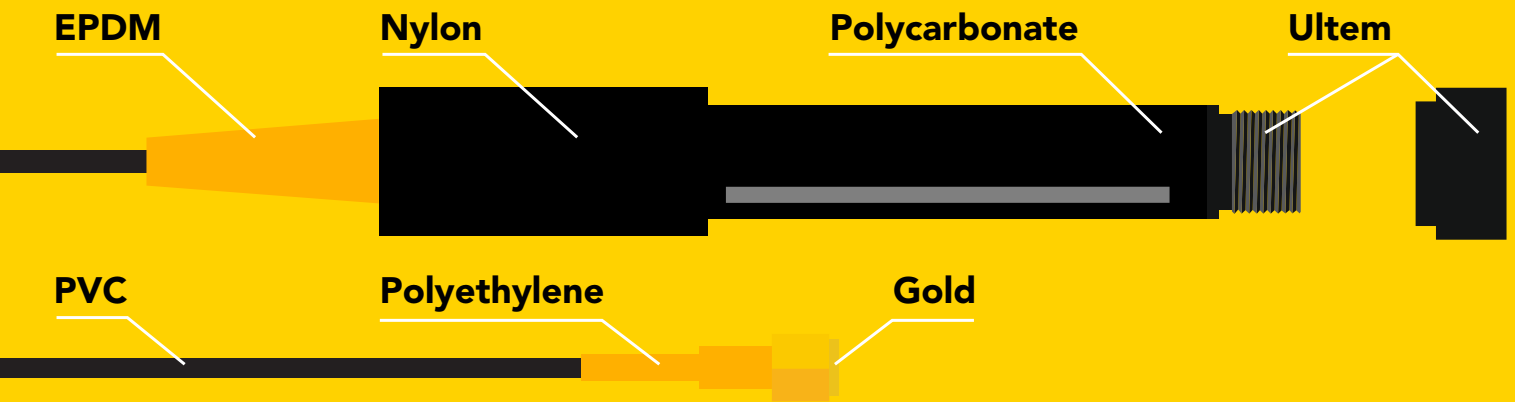
Measurements



Specifications

Max depth	343 meters (1,125 ft)
Cable length	1 meter
Weight	52 grams
Speed of response	~0.3 mg/L/per sec
Dimensions	16.5mm x 124mm (0.5" x 4.9")
SMA connector	Male
Membrane type	PTFE
Sterilization	Chemical only
Food safe	Yes
Included with probe	SMA to BNC adapter

Materials



This Dissolved Oxygen probe can be *fully submerged* in fresh or salt water, up to the SMA connector *indefinitely*.

Typical applications

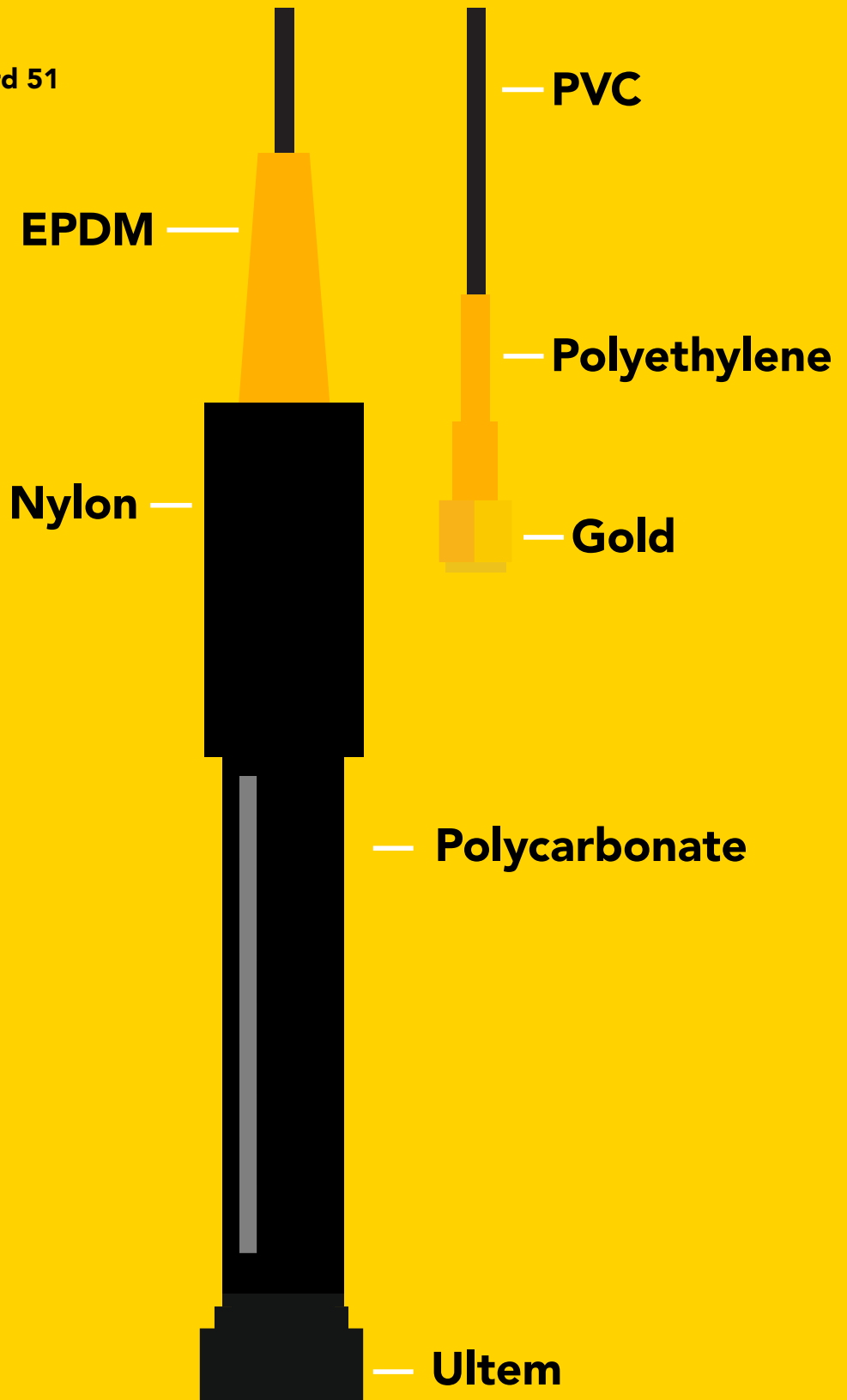
- Standard Lab use
- Field use
- Hydroponics
- Fish keeping
- Wine making
- Environmental monitoring

NSF/ANSI 51 Compliant

Atlas Scientific LLC, hereby certifies that,

Dissolved Oxygen Probe
Part # ENV-40-DO

Complies with NSF/ANSI Standard 51



PVC

NSF-51 Compliant



Gold

NSF-51 Compliant



Ultem

NSF-51 Compliant



Nylon

NSF-51 Compliant



EPDM

NSF-51 Compliant



Polyethylene

NSF-51 Compliant



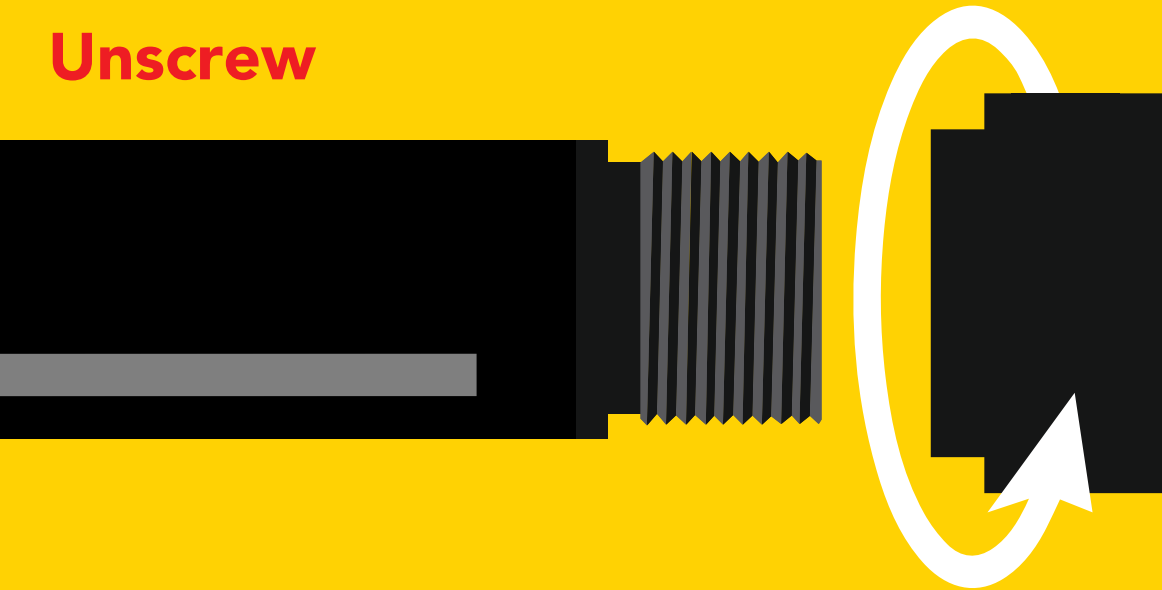
Polycarbonate

NSF-51 Compliant

Disassembly instructions

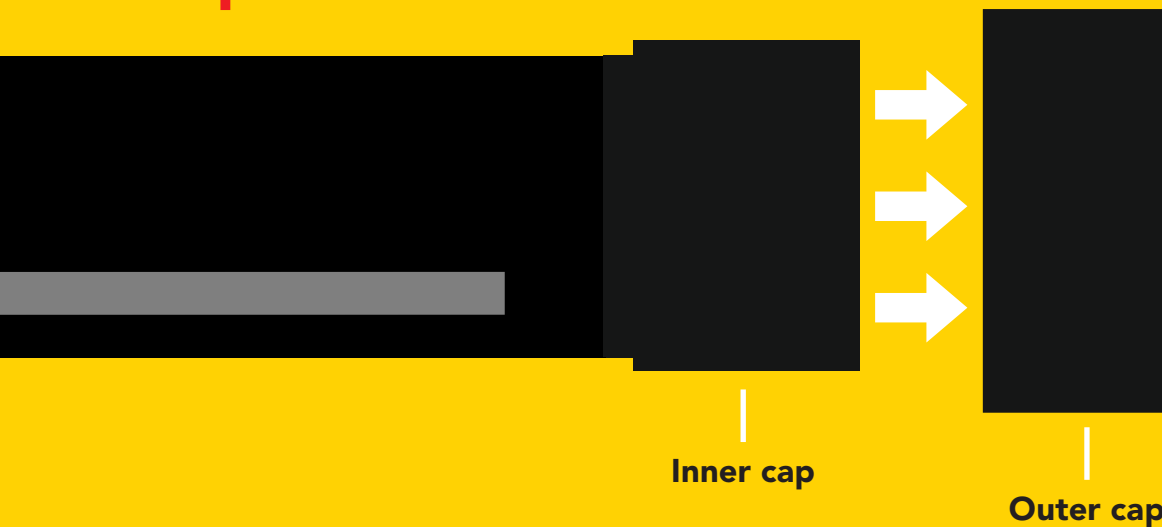
The Atlas Scientific dissolved oxygen probe comes apart in two different ways.

Unscrew



Unscrewing the entire cap off of the dissolved oxygen probe allows you to add or replace electrolyte solution into the probe. **See pg. 6 for more information.**

Pull apart

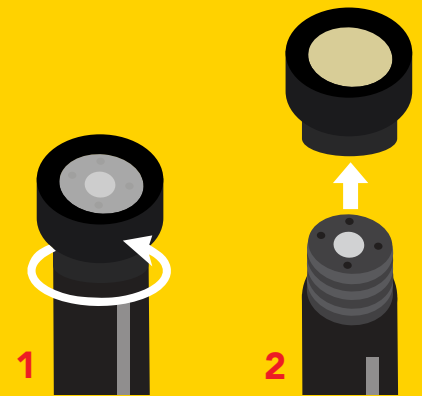
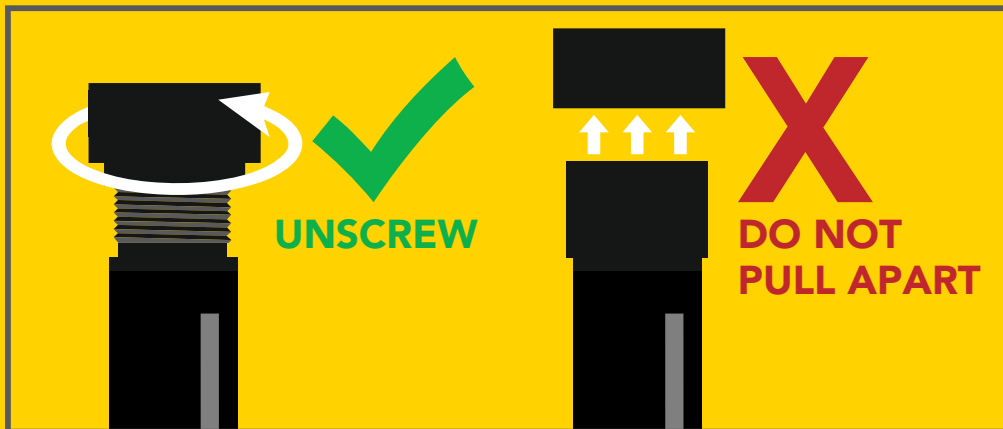


Pulling the outer cap apart from the inner cap allows you to replace the PTFE sensing membrane. **See pg. 7 for more information.**

Attention!

This probe will not work until you add electrolyte solution.

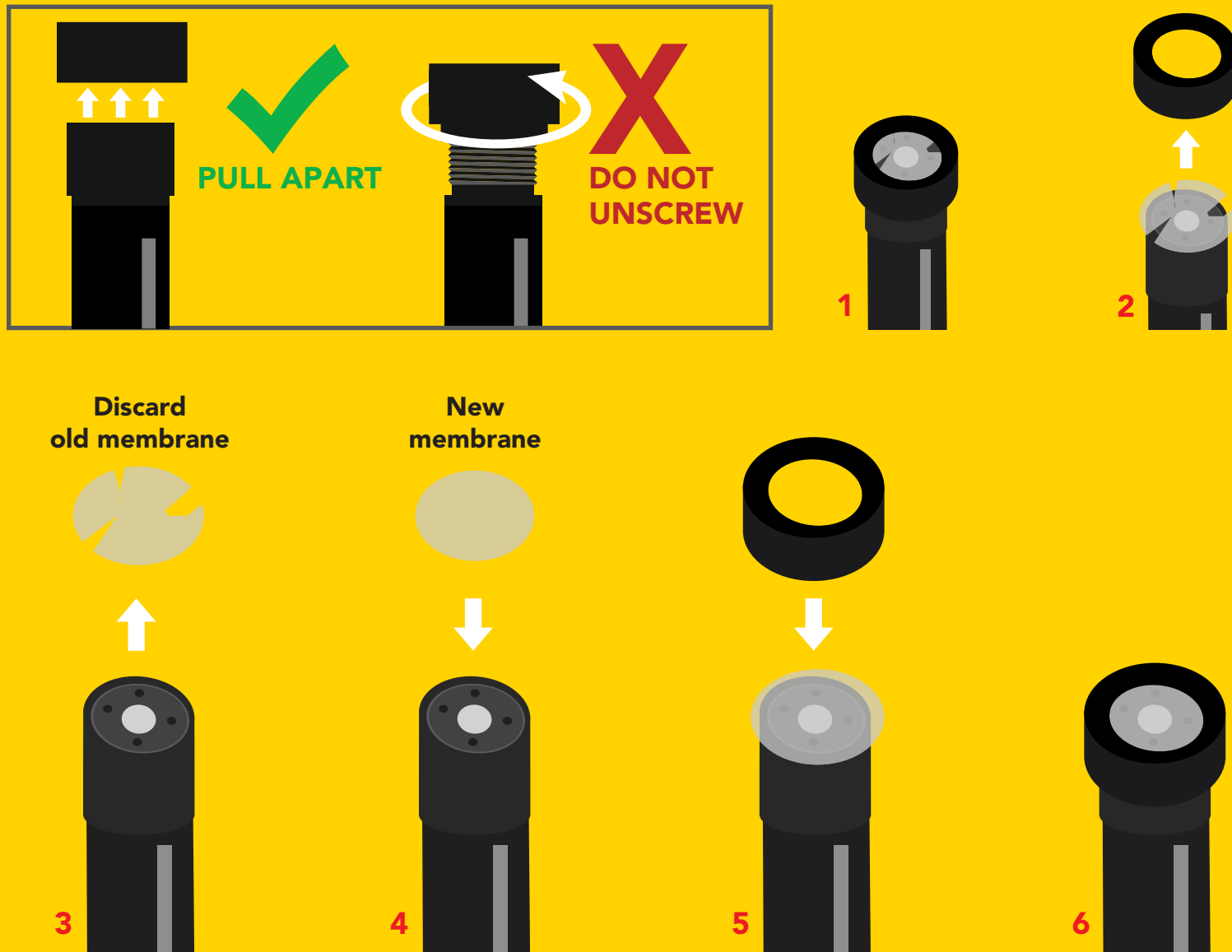
How to add / replace electrolyte solution:



Membrane replacement

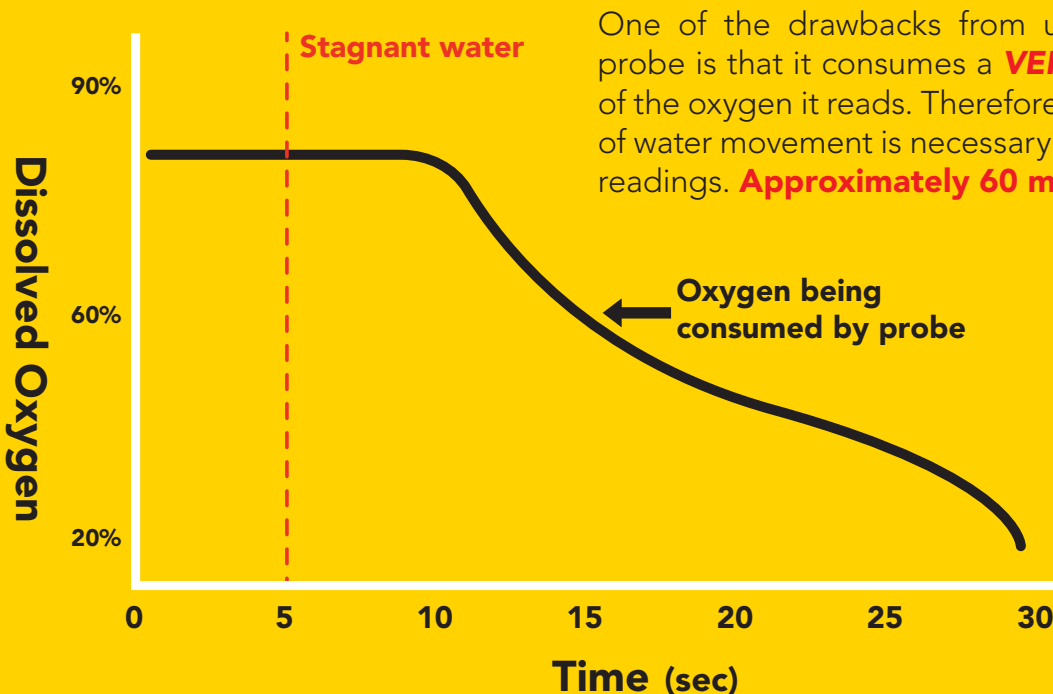
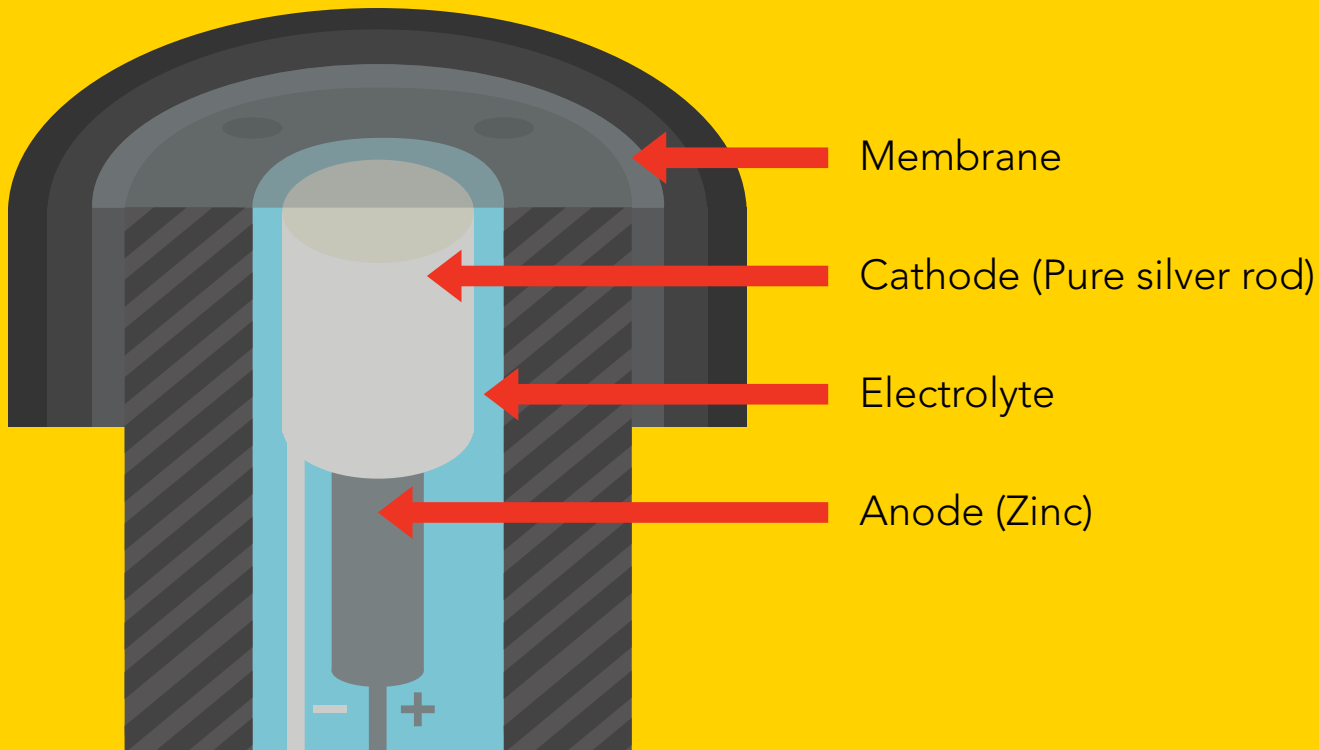
Over time, the membrane can dry out or tear, this will lead to irregular readings from the probe. To correct this issue, the probes membrane must be replaced.

To replace membrane:



Operating principle

A galvanic dissolved oxygen probe consists of a PTFE membrane, an anode bathed in an electrolyte and a cathode. Oxygen molecules diffuse through the probe's membrane at a constant rate (without the membrane the reaction happens too quickly). Once the oxygen molecules have crossed the membrane they are reduced at the cathode and a small voltage is produced. If no oxygen molecules are present, the probe will output 0 mV. As the oxygen increases so does the mV output from the probe. Each probe will output a different voltage in the presence of oxygen. The only thing that is constant is that **0mV = 0 Oxygen**.

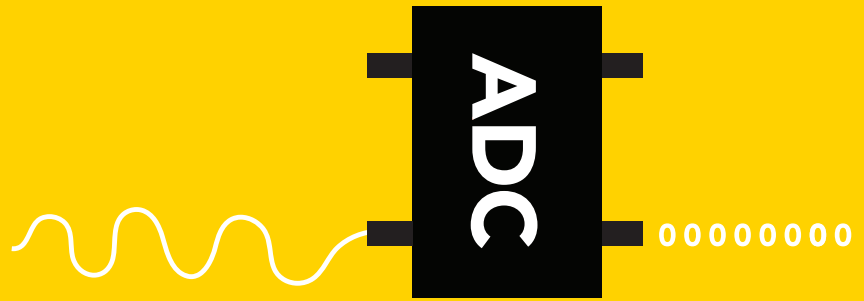


One of the drawbacks from using a galvanic probe is that it consumes a **VERY** small amount of the oxygen it reads. Therefore, a small amount of water movement is necessary to take accurate readings. **Approximately 60 ml/min**.

This galvanic dissolved oxygen probe is a passive device that generates a small voltage from 0mv – 60+ mv depending on the oxygen saturation of the PTFE sensing membrane. This voltage can easily be read by a multimeter or an analog to digital converter.



Can be read with Multimeter



Can be read with ADC

How often do you need to recalibrate a Dissolved Oxygen probe?

Because every use case is different, there is no set schedule for recalibration.

The dissolved oxygen probe reacts with oxygen in the water, the more oxygen it reacts with the more the probe is depleted of its electrolyte solution. Typically a dissolved oxygen probe will last ~2 years before the electrolyte is depleted (*results will vary*). When the electrolyte is depleted, the probe will read very low numbers. Best practice is to replace the electrolyte solution and PTFE membrane every 1–2 years.

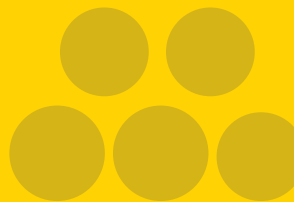
The Gen 2 Dissolved Oxygen probe comes with:



**30ml
Dissolved Oxygen
Electrolyte Solution**



Syringe



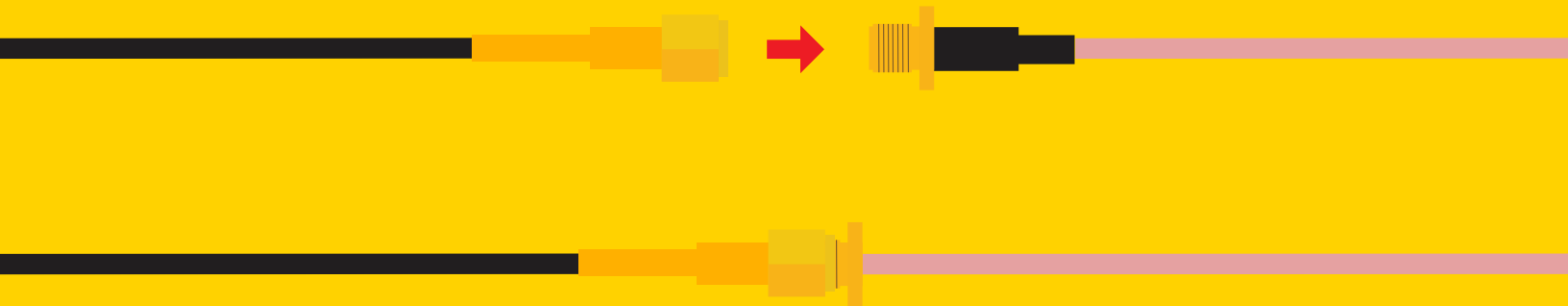
**5x Replacement
PTFE Membranes**

Extending the probe cable length

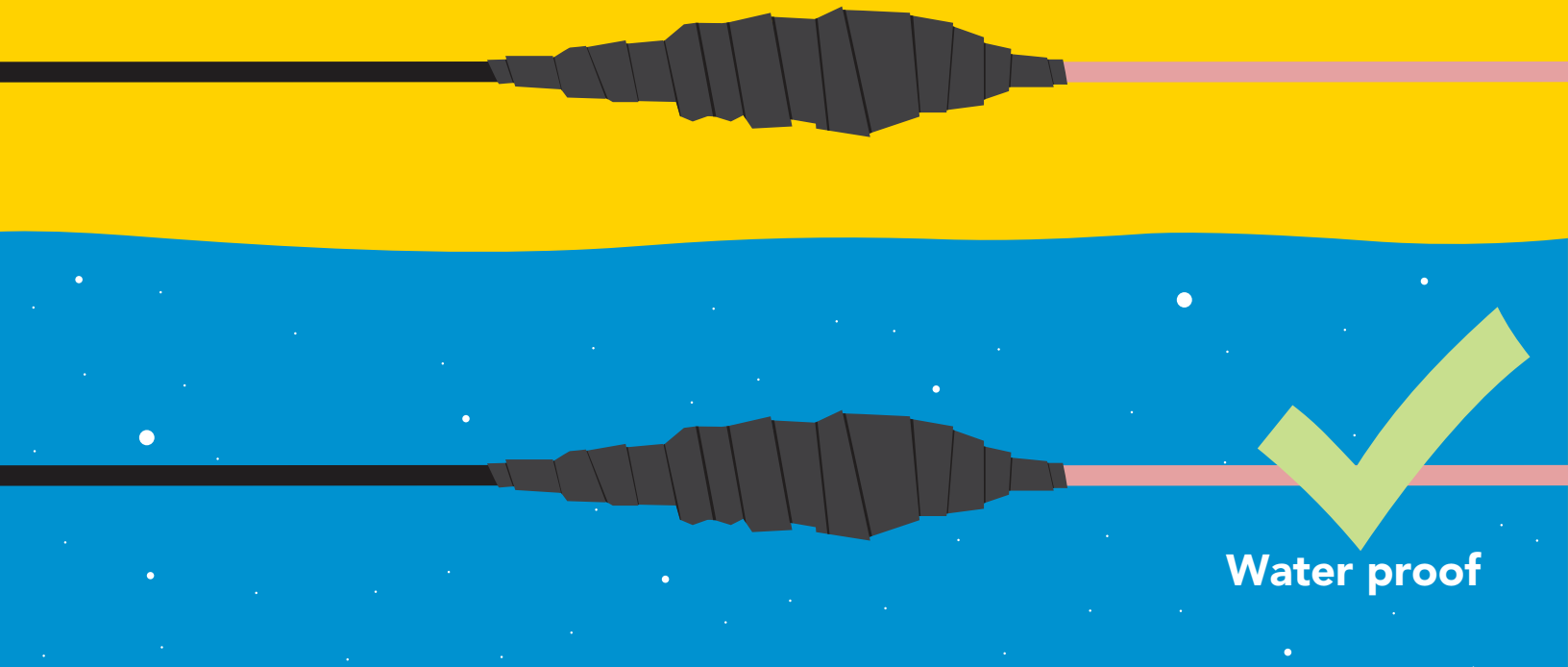
You can extend the cable to greater than 100 meters with no loss of signal. Atlas Scientific has tested up to 300 meters without a problem, however you run the risk of turning your D.O. probe into an antennae, picking up noise along the length of your cable.

If you want to extend your cable, we recommend that you use proper isolation, such as the **Basic EZO™ Inline Voltage Isolator**, or **Tentacle Shield**. Be sure to calibrate your probe with the extended cable.

Extending a probe cable can be easily done with our **SMA Extension Cable**. Simply connect the BNC end of the probe to the Extension cable, and you are all set.



If you need to water proof a BNC connection, we highly recommend using a product like **Coax-Seal** to safely cover and prevent any water damage that may occur.



Probe cleaning

Over time dissolved oxygen probes can become dirty and covered in chemical deposits. Soft coatings can be removed by lightly brushing around the sides of the probe and membrane cap. If the probes membrane is in need of cleaning, use a mild bleach mixture to gently wash away any deposits.

DO NOT USE A BRUSH TO CLEAN THE MEMBRANE

If the probes membrane is ripped it must be replaced, as it will cause irregular readings.

