Introduction

Charging the Batteries on a SMELTS Lift-Raft

SMELTS Lift-Rafts are equipped with AGM batteries housed within the acoustic vessel to power critical acoustic and pneumatic components. To ensure optimal performance and reliability, batteries must be charged and maintained. This document outlines the recommended charging procedures, guidelines, and safety precautions required to keep batteries in peak condition and to prevent operational failures.

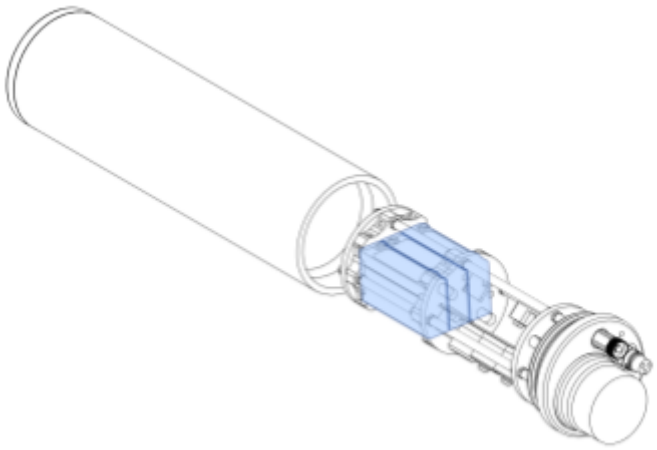


Figure 1: Battery cell highlighted in exploded view of EdgeTech acoustic vessel.

Checking Battery Voltage

SMELTS Lift-Rafts with EdgeTech acoustics operate at 18V DC. Battery percentage can be checked using either the "Status" command in the EdgeTech TrapTracker app, or by checking the voltage reading on the battery charger while the charger is **unplugged from a 120v power source** (if the charger remains plugged into a 120V power source, voltage reading will reflect charging operation, not actual battery voltage).

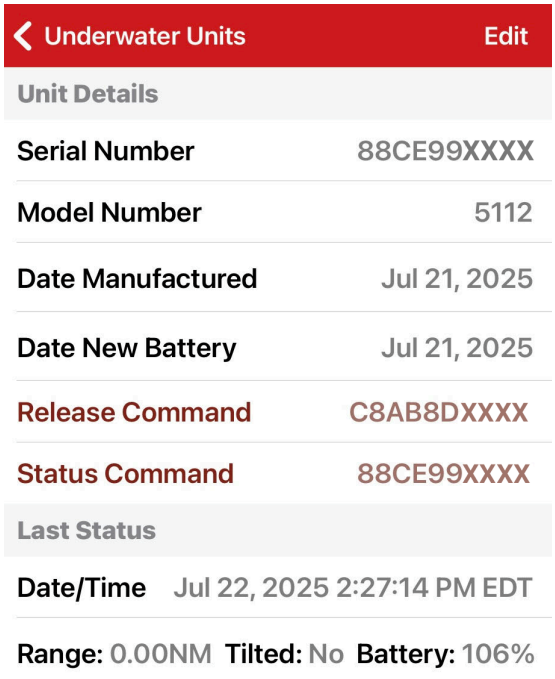


Figure 2: EdgeTech TrapTracker App being used to check battery percentage after a successful status command.

Service Recommendations

SMELTS Lift-Rafts operate using precision acoustic technology which requires consistent power levels to operate reliably. To ensure gear functions properly, SMELTS recommends charging batteries consistently to maintain a high voltage level:

- **Check battery voltage every haul to ensure proper, reliable operation.**
- **Fully charge battery after <u>3-5 hauls/2 months</u> (Whichever comes first).**

DO NOT ALLOW BATTERY VOLTAGE TO FALL BELOW 16V (85% CHARGE). FREQUENT DEEP DISCHARGING CAN LEAD TO SULFATION, WHICH PREVENTS BATTERIES FROM HOLDING CHARGE.

Batteries that have sustained multiple deep discharges may have trouble maintaining a full charge, ultimately preventing the unit from operating at an optimal performance level.

<18V

Maintaining the batteries at 18V +/-0.5V will ensure long battery life & reliable operation.

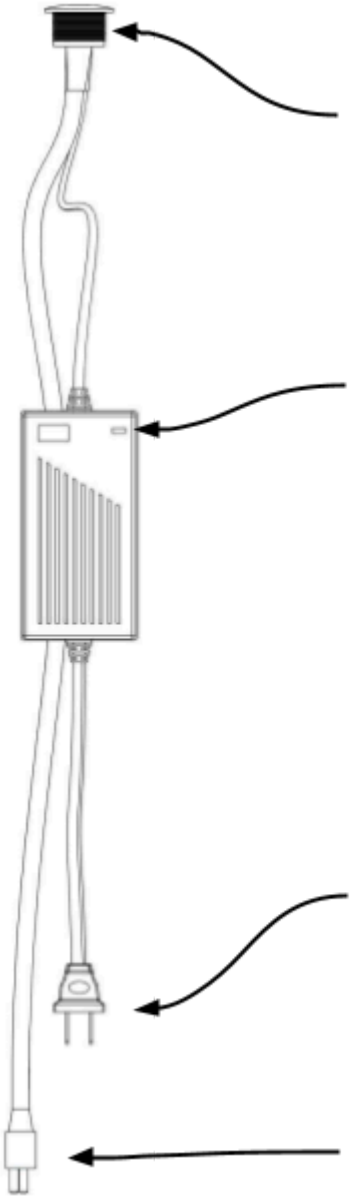
16V - 17.5V

SMELTS Recommends charging batteries in the 16V - 17.5V range to prevent damage to batteries & equipment failure.

>16V

Batteries that have gone below 16V are at risk of losing battery life. Attempting to haul a Lift-Raft with such a battery level can be unsuccessful.

Battery Charger Diagram



Voltage Display

The voltage display shows the battery voltage of the unit when the unit is unplugged from a 120V power source.

LED Status Indicator

The battery charger features an LED indicator light which shows the status of the charging operation.

A BLINKING RED LIGHT INDICATES BATTERIES ARE STILL CHARGING.

A SOLID GREEN LIGHT INDICATES BATTERIES HAVE FINISHED CHARGING.

120V Plug

The Battery Charger must be plugged into a 120V power source to charge the battery.

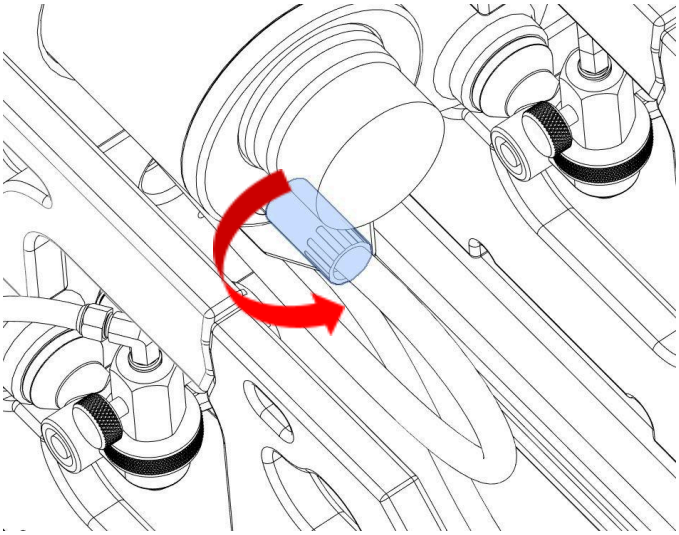
3-Pin Connector

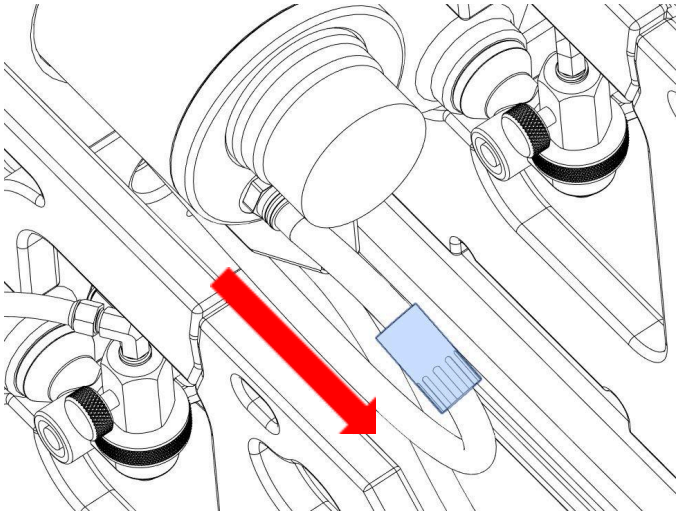
EdgeTech units use a 3-pin connector on the vessel's bulkhead to actuate the valve & charge the battery.

READ AND UNDERSTAND ALL SAFETY INFORMATION BEFORE USING THIS PRODUCT. Failure to follow these instructions may result in **CATASTROPHIC EQUIPMENT FAILURE**, which could cause **SERIOUS INJURY, PROPERTY DAMAGE, OR SYSTEM MALFUNCTION**. Misuse or negligence is solely the responsibility of the user.

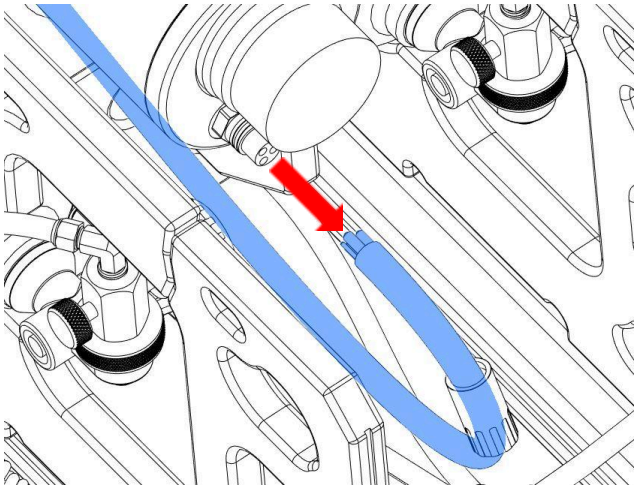
How To Charge The Battery

1. **Unscrew the plastic collar on the valve connector and slide the collar down the cable.**

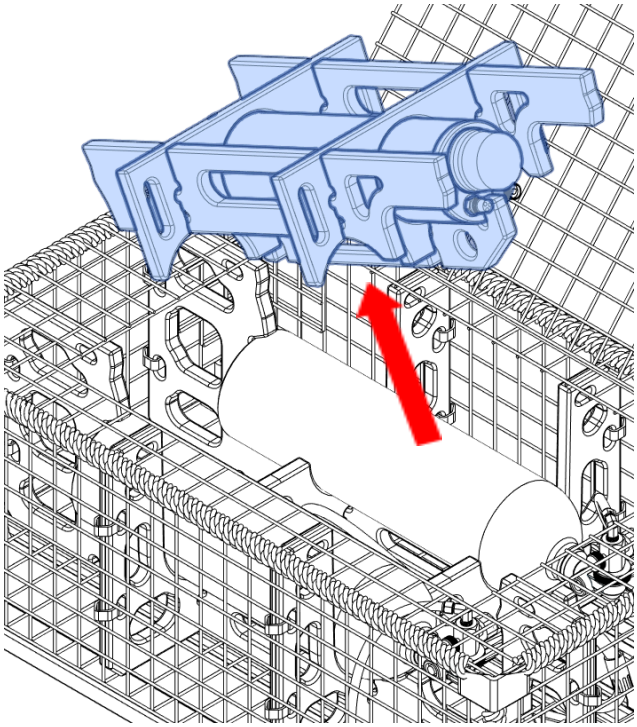




2. **Disconnect the 3-pin valve cable connector from the module.**

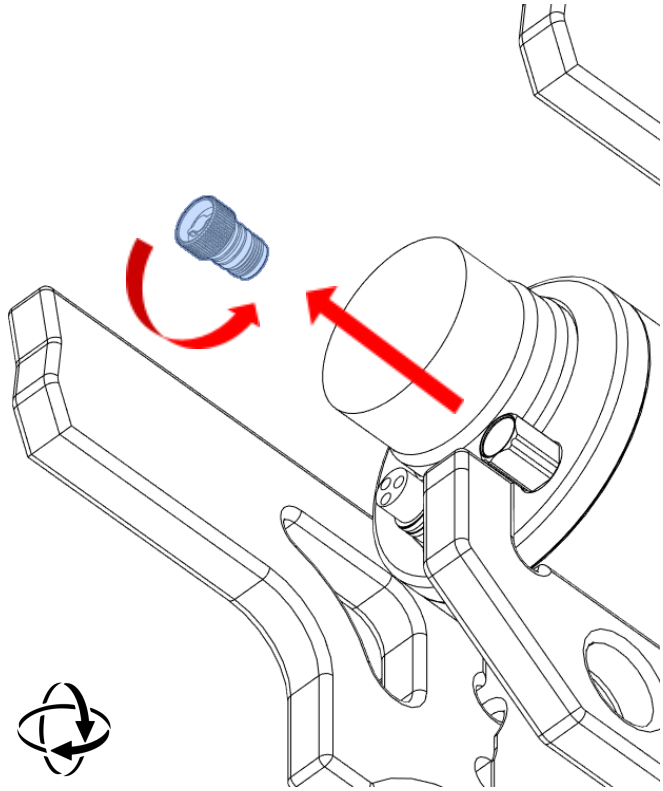


3. **Remove the module assembly, and place it in a secure location, ready for charging.**



4. **Unscrew and remove the vent plug from the module <u>BY HAND</u>, and put the plug in a safe spot.**

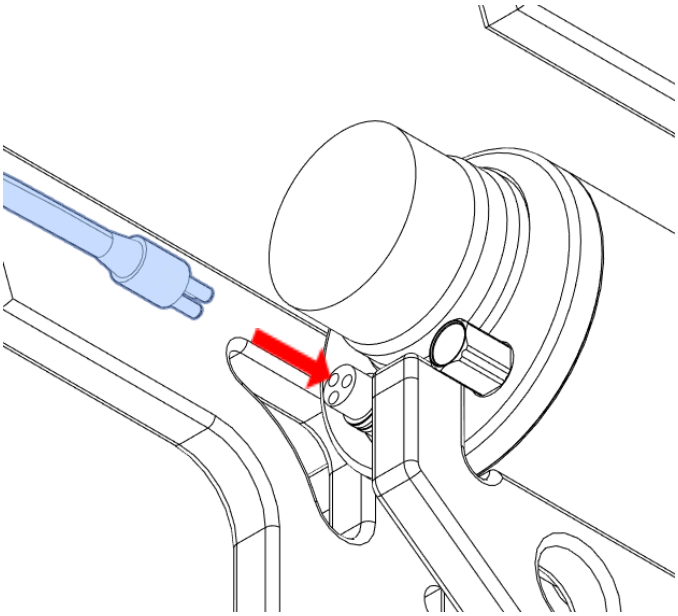
DO NOT LOSE THIS PLUG! Failure to re-insert the plug into the vessel before a deployment will cause **CATASTROPHIC EQUIPMENT FAILURE!**



Remove ONLY the vent cap as shown in image, NOT the entire vent assembly.

AGM Batteries can release gasses such as oxygen and hydrogen when charging. The removal of this cap allows these gasses to escape the vessel, preventing unwanted pressurization.

5. **Connect the male end of the 3-pin connector on the charger to the female connector on the module.**

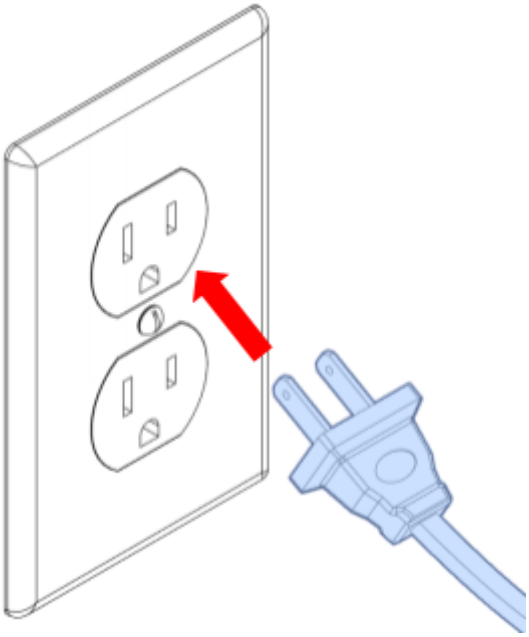


The battery voltage can be checked before charging using the digital voltmeter on the charger.

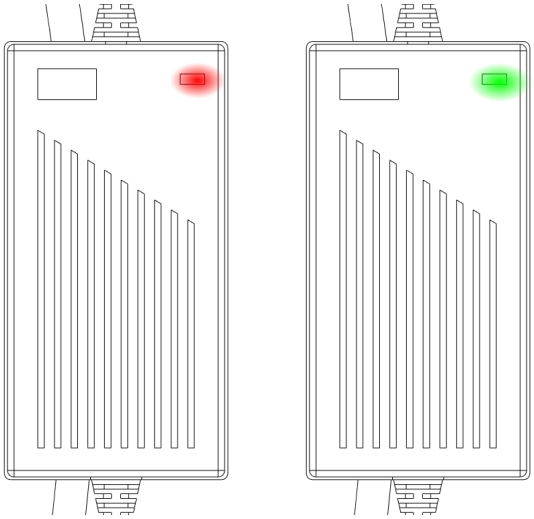
Charging the battery MORE FREQUENTLY to REDUCE the chance of a deep discharge will help EXTEND BATTERY LIFE.

FREQUENT DEEP DISCHARGES GOING BELOW 85% BATTERY LIFE (~16V) CAN INCREASE THE CHANCES OF SULFATION, PREVENTING BATTERIES FROM HOLDING PROPER CHARGE.

6. **Plug the charger into any 120V AC power source.**

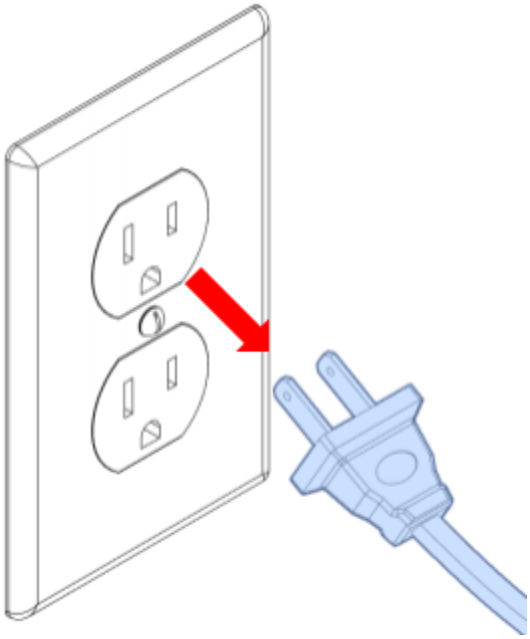


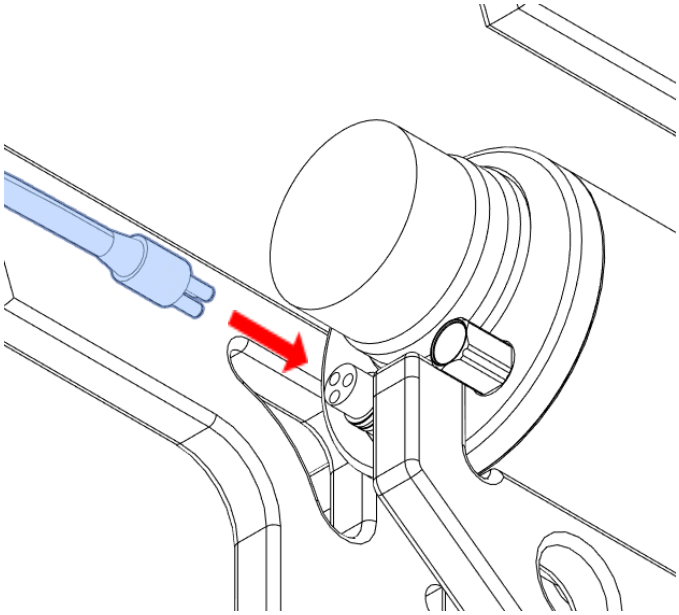
While the battery is changing, the status light will blink red. A solid green light indicates that the battery is fully charged.



CHARGING **CHARGED**

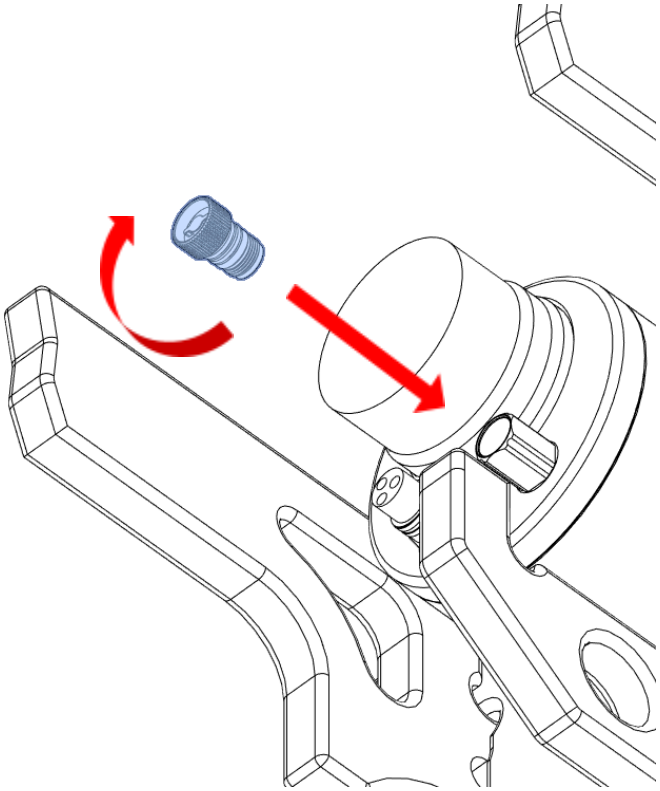
7. **When the battery has finished charging, unplug the charger from the 120V AC power source, and disconnect the charger from the module.**





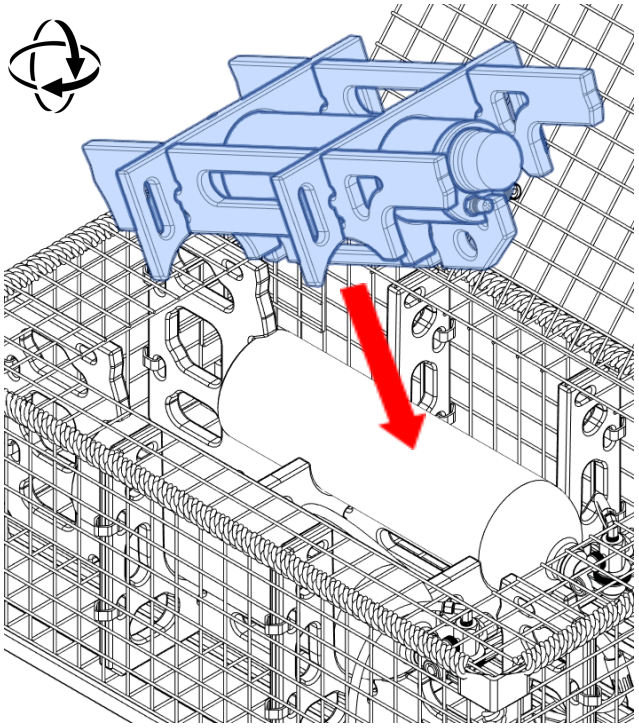
8. **Re-install the vent plug, tightening it firmly <u>BY HAND</u>.**

Failure to re-insert the plug into the vessel before a deployment will cause **CATASTROPHIC EQUIPMENT FAILURE!**

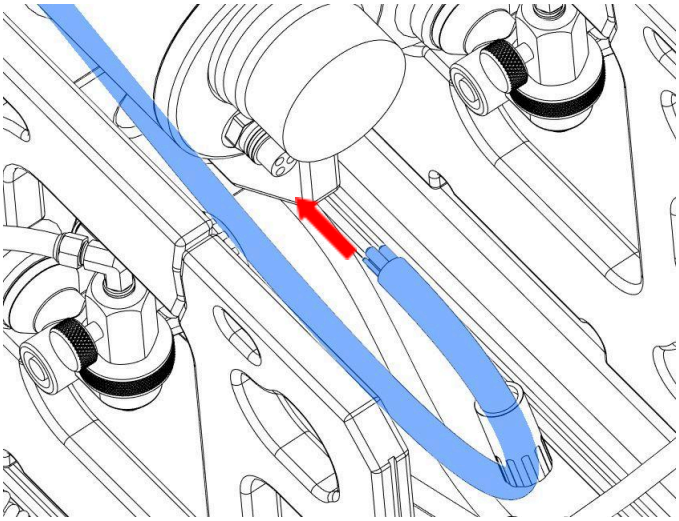


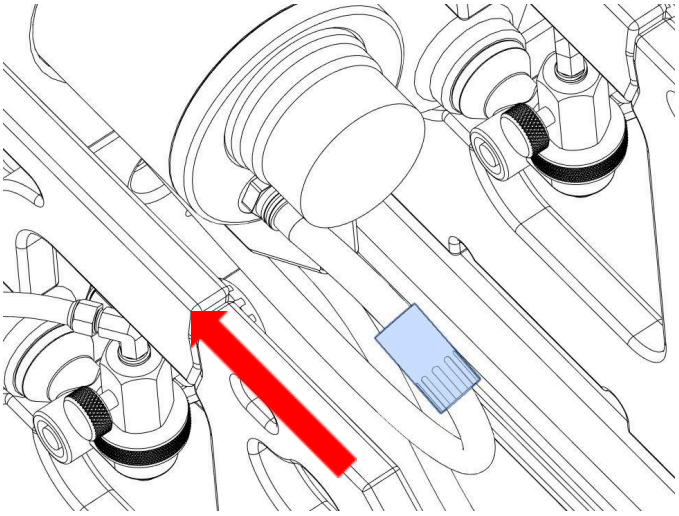
ENSURE THE VENT CAP IS TIGHTENED FULLY. DO NOT USE PLIERS/GRIPS TO TIGHTEN CAP TO AVOID DAMAGE.

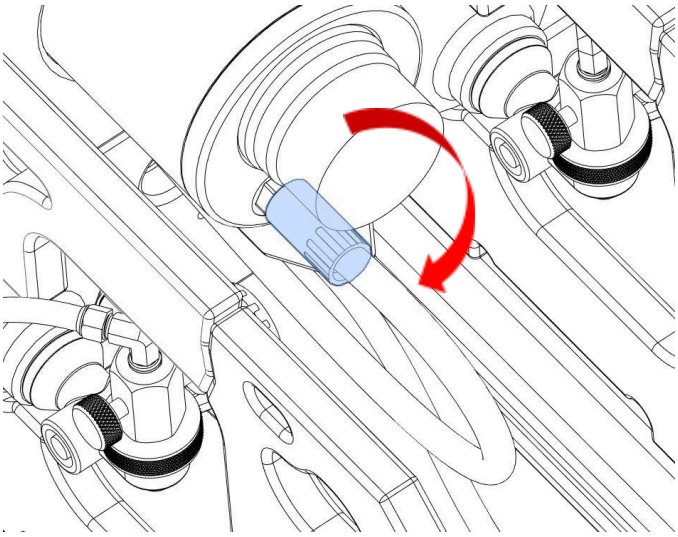
9. **Re-install the module assembly into the Lift-Raft.**



10. **Reconnect the 3-pin valve cable connector to the module and screw the plastic collar back onto the valve connector**







Disclaimer

Failure to follow these instructions can result in battery damage, electric shock, personal injury, or catastrophic equipment failure. Always charge AGM batteries in a well-ventilated area using only the manufacturer approved charger. Do not overcharge, short-circuit, or expose to an open flame/intense heat. Keep terminals clean, and regularly inspect systems for damage.

For storage, maintain proper float charge, and recharge periodically to prevent deep discharge or sulfation. Never use unregulated power sources as a charger, and do not operate the battery if it shows signs of overheating, leakage, or drastically reduced capacity.

Questions? Concerns?

Contact us!

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