LEDI
SCOUT

Portable Desalination

Portable. Reliable. Ready when you are.

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INTRODUCTION

About the LEDI SCOUT

The LEDI - Scout is designed to be portable, quick and easy to use. Depending on the variant you've purchased it will run on 12V or 24V power. The system will use a maximum of ~250W and produce ~10 Litres of drinking water per hour from the ocean, dependant upon conditions.

What's in the Box

Each Scout comes with the following:

a. LEDI Scout
b. 2 x 3M 1/2" PU push fit hose
c. 1 x Washable suction filter
d. 1 x 2m power lead with Anderson style 50A adapter
e. 1 x 3m 1/4" PE push fit hose (potable water side)
f. 1 x installed LED UV Steriliser
g. 1 x installed and pickled 2514 Sea water RO membrane
h. 1 x installed 5um pleated 2.5 x 5" cartridge filter
i. 2 x spare 5um 2.5 x 5" cartridge filters
j. Tool Kit
k. User manual and quick start guide

WARNINGS & CAUTIONS

Please read and follow all warnings and cautions to ensure safe operation and maintain water quality. Failure to do so may result in equipment damage, poor water output, or risk to personal health.

General Use

- DO NOT run dry.
- Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
- Do not operate unattended for extended periods.
- Use only with the correct voltage and power supply as specified.
- Do not exceed the system's rated pressure. Over-pressurisation may cause failure or injury.

Water Quality & Safety

- This system is not designed to remove all chemical contaminants. Avoid using water sources affected by industrial waste or agricultural runoff.
- Always discard the first few minutes of product water after prolonged storage or disuse.
- Regular flushing and maintenance are required to ensure water remains safe for consumption.
- Equipped with UV steriliser. Note that UV treatment is not a substitute for proper filtration. Ensure all filters and membranes are installed and functioning.

Maintenance & Handling

- Disconnect power before performing any maintenance or opening housings.
- Allow the system to fully depressurise before disconnecting hoses or fittings.
- Use only LEDI-approved replacement parts to maintain performance and compliance.
- Do not allow the system to freeze, as internal damage may occur.

Storage & Transport

- If storing the system for more than 14 days, follow the preservation procedure detailed in this manual.
- Store in a cool, shaded area away from direct sunlight to protect components.
- Ensure all hoses and fittings are secured before transport to prevent damage or leaks.

Environmental & Disposal

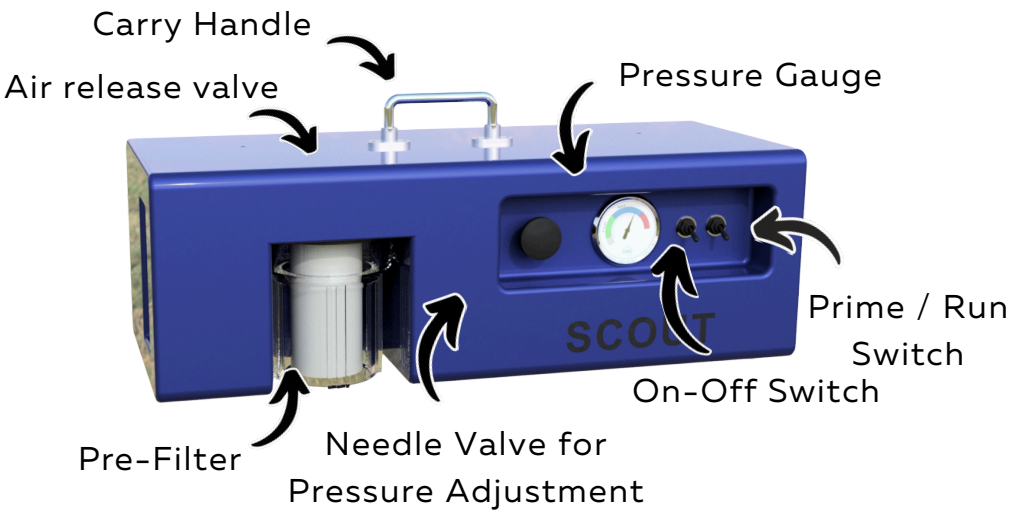
- Dispose of used filters and membranes according to local regulations.
- This device contains electrical components. Do not dispose of with general waste—refer to e-waste disposal guidelines.

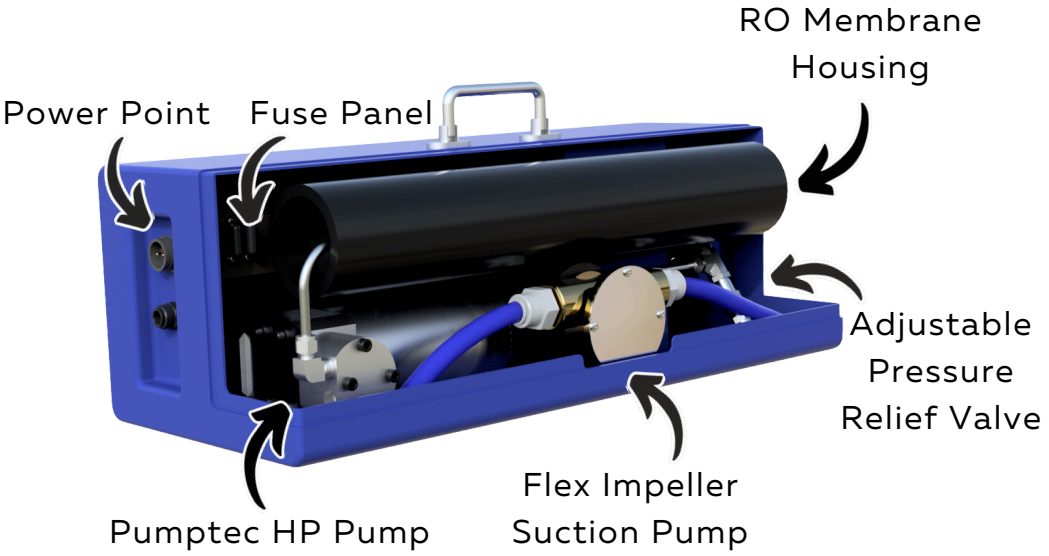
Water Source Guidelines

For best performance and safe drinking water, the Scout should only be used with natural water sources such as seawater, brackish water, or freshwater that are free from heavy chemical contamination. Avoid using water from industrial discharge, mining runoff, or areas with known chemical pollutants. The system is designed to remove salt, sediment, and microbiological contaminants when used correctly, but it is not intended to treat water with unknown or hazardous chemical content.

Suitable: clear seawater, clear running freshwater sources (rivers, lakes)
Avoid: Stagnant water, water with visible contamination, or wastewater

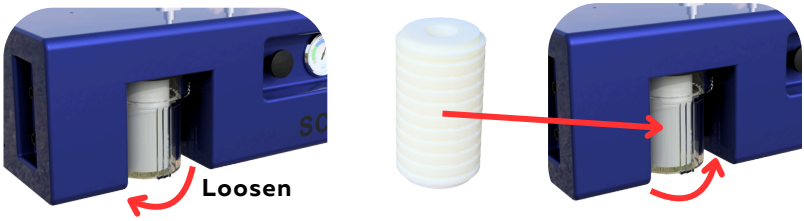
KEY COMPONENTS



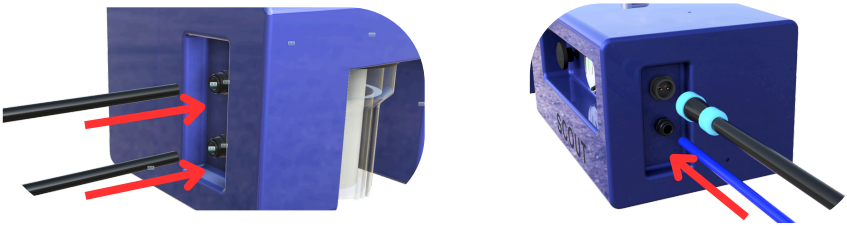


QUICK START GUIDE

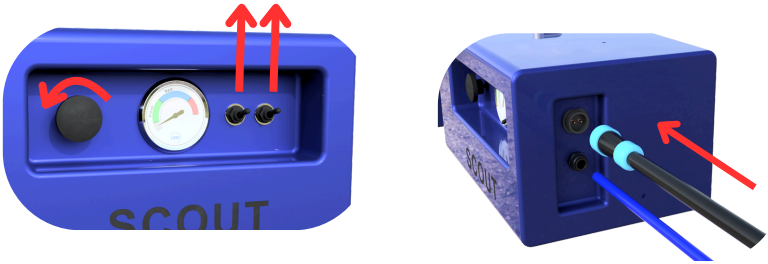
Step 1. Remove bungs and pre-filter housing.



Step 2. Install a new pre-filter. Connect hoses (push firmly into fittings). Place all three hoses in the ocean or a dechlorinated fresh water source.



Step 3. Ensure switches are off (toggle up) and valve is open (turned counterclockwise). Connect the power cable and ensure power is supplied.



Step 4. Toggle the left switch down to start the supply pump. Release trapped air by pressing down on the pre-filter air bleed valve. Wait for 5 minutes.

5min

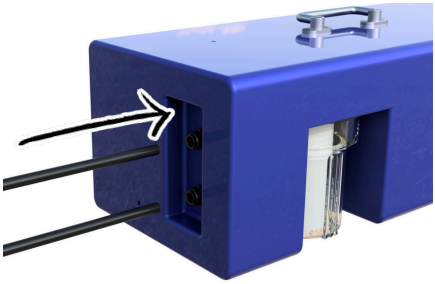
Step 5. Toggle the right switch down to start the high pressure pump. Wait for 5 minutes.

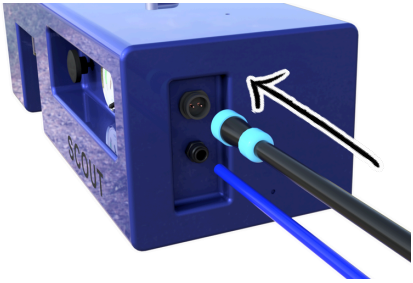
5min

Step 6. Close the needle valve (turn clockwise). Pressure will increase and stabilise. Water will be produced from the output water line. Discard any water produced for the first 30 minutes.

SET UP

1. **Install the pre-filter:** The pre-filter can be removed by unscrewing the external housing. The pre-filter must be fitted for use and the housing should be done up tightly to stop leaks.
2. **Install Hoses:** All hose fittings are push-fit fittings. To connect hoses firmly push in to the fitting as far as possible. To remove, depress the collar on the fitting, before pulling the tube out. Place both the suction and brine hoses into the water source.
3. **Connect Power Lead.** Ensure the two switches are turned off before connecting power. The power cable must be properly aligned to allow fitment (observe locating lugs). The power supply must be 12V DC with 25A available (24V DC for 24V version). Ensure an appropriately sized fuse is installed to protect your wiring.



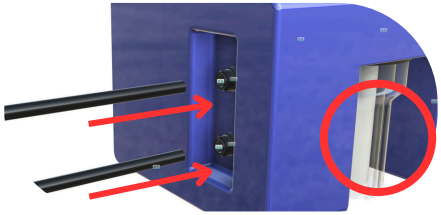


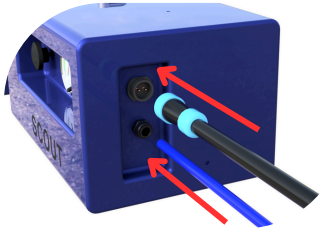
OPERATION

MAKING WATER

WARNING DO NOT run the system dry (without water).

1. Connect the intake (top) and waste (bottom) lines. The intake must be placed in the supply water. Brine will be expelled out of the waste line. Make sure the pre-filter is always fitted in order to protect the internal pumps.





CAUTION Ensure switches are off and valve is open.

2. Connect the potable water output line. Connect the power cable and ensure power is supplied.

3. Toggle the left switch down to turn on and prime the system. Release trapped air by pressing down on the pre-filter air bleed valve. The valve is accessed using the tool provided, via the small hole above the pre-filter. Allow water to flow through the system for 5 minutes.

4. Toggle the right switch down to start the high pressure pump. Let water run through the system for 3 minutes. Note: Pressure will not build during this process.

5. Close the needle valve (turn clockwise) until pressure increases and stabilises (it may take a few minutes for the pressure to increase). Water will be produced from the output water line. Discard water produced for the first 5 minutes of operation.

6. The system can operate continuously, however after 6-8hrs of continuous operation the fresh water output will slow. It is important to release pressure and allow the system to fast flush every few hours to reduce salt build up on the surface of the membrane.

NOTE: You may hear a change of pattern in the high pressure pump during operation. This is due to air bubbles passing through the system. This is normal and will self resolve.

SHUT DOWN

1. To shut down, fully open the needle valve and wait for pressure to drop. Once the pressure drops, switch off the high-pressure pump using the right switch.

2. Allow the system to flush by running for 5 minutes, then turn off the supply pump using the left switch.

3. At the end of the day, or after every 6 hours of use, it's recommended you flush the system with fresh drinking water. To do this, place the inlet and outlet hose in 5L of clean water (not your water supply) and run the supply pump for about 10 minutes.

MAINTENANCE & CLEANING

To maintain optimal performance, a clean and descale is recommended every 6 months. If a significant drop in operating pressure is observed, additional cleaning or descaling may be necessary.

Important: Cleaning and descaling procedures are identical except for the chemical used. These steps must be performed separately, not combined. Ensure solution is free of grit and small particles (may clog the pump).

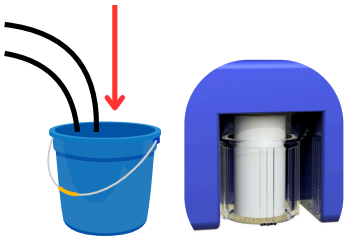
Required Parts:

- **1 sachet of LEDI cleaning/descale solution**
- **10-15L permeate or purified fresh water**
- **Large bucket**

1. Prepare Solution. Mix one sachet of cleaning or descaling chemical into 5 L of permeate water. Stir until completely dissolved.

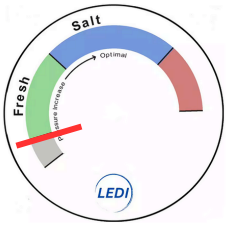
2. Prepare Scout. Remove the pre-filter (unscrew the housing, remove the filter, refit empty housing). Place the **intake and wastewater tubes** into the prepared solution.

3. Prime Scout. Turn on the supply pump (left switch). Run the system for 5 minutes to circulate the solution.



4. Pressurise Scout. Turn on the high pressure pump. Slowly adjust the valve to the start of the green section. Do not exceed the second black line. Run the system for 10 minutes at this pressure.

Dont Exceed Pressure.



5. Power off. Without adjusting the valve - turn off the power.

6. Soak. Leave the system to soak for 30 minutes.

7. Re-Prime Scout. Open the needle valve to release pressure. Turn on the supply pump (left switch). Press the pre-filter air release button to remove air. Ensure the solution is circulating through the Scout.

8. Repeat Pressurised Cleaning. Repeat Step 4 (including 10 minute run). Then repeat Step 5 (turn off). Open the needle valve to release pressure.

9. Final Flush. Place the intake tube in dechlorinated water and run the system for 10 minutes.

10. Pre-Filter. Refit the pre-filter within it's housing.

NOTE: Discard the first 5L produced when next used.

PRESERVATION

The system must be preserved if it will sit idle for more than **4 weeks.**

Required Parts:

- **1 sachet of LEDI pickling solution**
- **10-15L permeate or purified fresh water**
- **Large bucket**

1. Flush Scout. Remove the pre-filter. Place the intake tube in dechlorinated fresh (permeate) water . Turn on the supply pump (left switch). Press the pre-filter air release button to remove air. Run the system for 5 minutes to flush out any saltwater from the Scout.

2. Prepare Solution. Mix one sachet of preservation chemical into 5 L of permeate water. Stir until completely dissolved.

3. Prepare Scout. Remove the pre-filter (unscrew the housing, remove the filter, refit empty housing). Place the **intake and wastewater tubes** into preservation solution.

4. Circulate. Turn on both switches pump. Circulate preservation solution through the Scout for 3 minutes.

5. Store. Turn off the supply pump. Close the needle valve all the way. Remove tubes and cap the connections. Store your Scout in a cool, shaded place.

PRE-FILTER REPLACEMENT

WARNING Ensure the Scout is depressurised and does not have power applied before any maintenance is conducted.

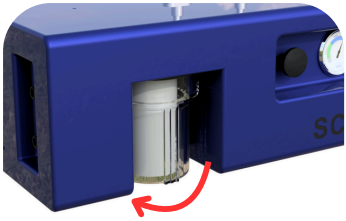
The pre-filter will gradually clog, reducing the system's efficiency. It should be cleaned by hand or replaced as needed. If the Scout is used regularly, it is recommended to replace the pre-filter every six months.

Replacing the Pre-Filter

1. Turn the pre-filter housing clockwise (as if viewed from above) to unscrew. Remove the filter cartridge.

2. Insert a clean or replacement pre-filter. Refit the housing by turning it counterclockwise until tight to prevent leaks.

WARNING During operation a pre-filter must always be installed to protect internal system components.



Loosen

Tighten

MEMBRANE REPLACEMENT

WARNING Ensure the Scout is depressurised and does not have power applied before any maintenance is conducted.

Over time, the reverse osmosis (RO) membrane will degrade, reducing the efficiency and output of the Scout.

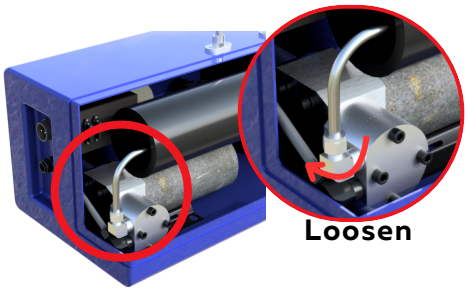
Required Parts:

- **1 x 2514 SW RO membrane (LEDI can provide)**
- **Quantity of towels/ rags**
- **LEDI tool kit**
- **Needle nose pliers**
- **Gloves**

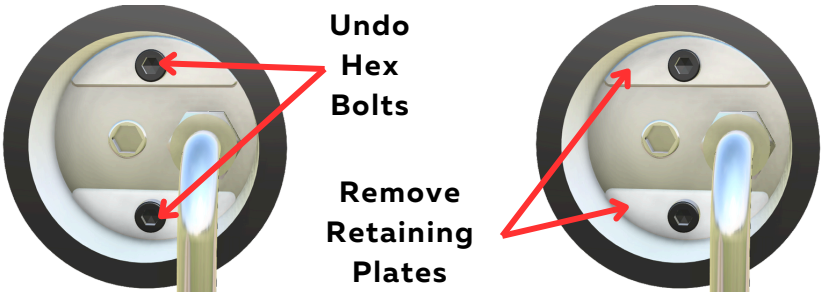
Replacing the Reverse Osmosis Membrane

1. Unscrew and remove the back panel of the Scout to access the membrane housing.

2. Put on gloves and pack towels underneath membrane to catch water that will leak from endcap. Locate the stainless steel compression fitting connecting the membrane to the high-pressure pump (same end as the power connection). Turn the fitting counterclockwise to loosen and disconnect. Use the spanner provided in the tool kit.

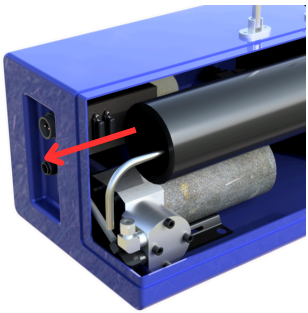


3. At the same end of the membrane housing, remove the two hex bolts securing the metal retaining plates.



4. Grasp the stainless steel tubing and carefully lift the end out of the elbow fitting. Supporting the pressure vessel with one hand. Remove the end cap by twisting the end cap back and forth, using the stainless steel tube as a handle. Pull the end cap and membrane out of the housing. (it will be stiff).
If the membrane doesn't come out with the end cap. Use a pair of needle nose locking pliers to grasp the membrane and remove.

Lift Out of Elbow



Pull Out of Housing

5. Slide the new membrane all the way into the housing.Ensuring the the end with the brine ring (black rubber external o-ring) is the last to be pushed in. Secure the tube with one hand and push the end cap into place. Re-attach the metal retaining plates with the hex bolts. Ensure they are seated into the groove within the housing.

6. Refit the stainless steel tubing into the elbow fitting. If correctly aligned, the threaded fitting should turn smoothly by hand for several turns. Be careful not to cross thread the fitting.

7. Once hand-tightened, use the provided spanner to tighten until firm. Tilt the scout to drain any water that has leaked in. Reinstall the Scout back cover and secure with screws.

8. The system is now ready for use. Discard the first 5L produced.

SUCTION PUMP MAINTENANCE

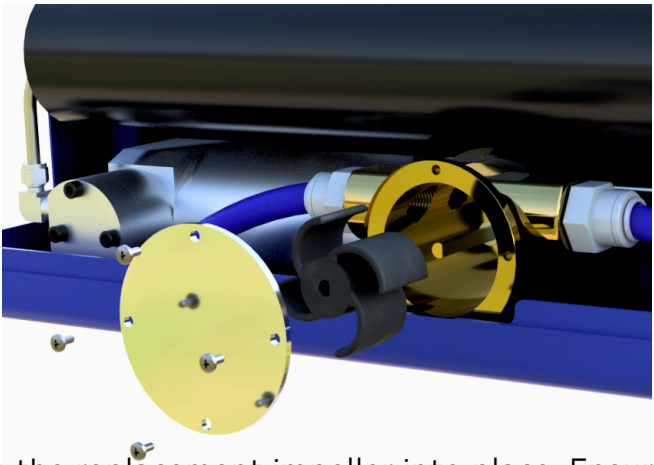
The supply pump impeller may degrade due to extended use. If you notice a significant drop in flow rate or system performance, the impeller may need to be replaced.

Replacing the Impeller

1. Unscrew and remove the back panel of the Scout to access the supply pump.

2. Undo the four bolts securing the front face of the supply pump. Remove the metal cover plate to expose the impeller.

3. Pull the impeller straight out of the pump. It is not mechanically fixed but may be firmly held in place.



4. Push the replacement impeller into place. Ensure the pump lug (drive slot) is correctly aligned with the impeller's central hub.

5. Reattach the metal plate, firmly tighten the four bolts. Refit the back panel of the Scout and fasten in position.

FUSE REPLACEMENT

Internal fuses may blow to protect the system from overload, internal faults, or external power surges.

Replacing Fuses

1. Unscrew and remove the back panel of the Scout to access internal components.

2. Locate the electrical enclosure. Two fuses are located under the fuse covers.

3. Remove the fuse cover. Gently pull out the fuse. Insert appropriate replacement fuse. Replace fuse cover.

ADJUST PRESSURE VALVE

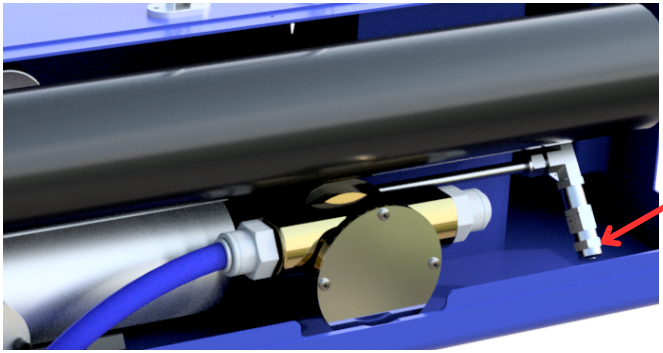
The internal pressure valve is set for optimal water production but can be manually adjusted. Adjustment may also be necessary if the valve loosens over time.

Adjusting the Pressure Valve

1. Unscrew and remove the back panel of the Scout to access the pressure valve.

2. Loosen the locking lug on the pressure valve. Loosen the pressure valve by turning it clockwise (as viewed from top down) several turns.

3. Start the Scout following the standard procedure, including running the high-pressure pump with the needle valve fully closed. Check where the max pressure settles and adjust as needed. The pressure gauge will now respond to changes in the pressure valve setting.



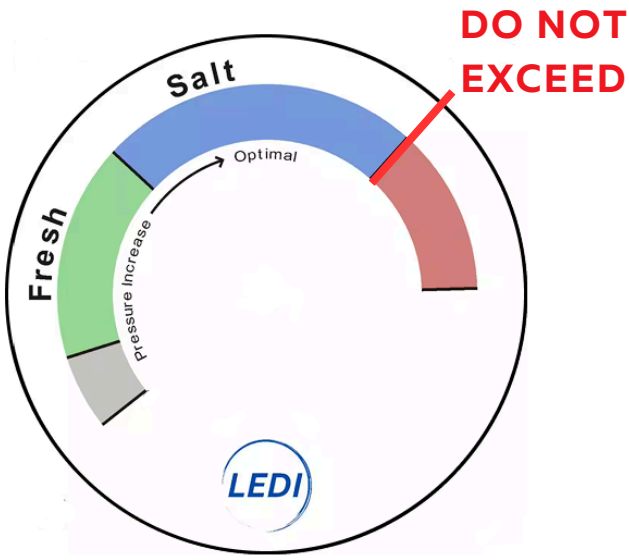
Pressure relief valve adjustable end cap

CAUTION Increasing the pressure will use more power and may exceed your wiring.

WARNING DO NOT ever exceed 1000PSI . This will cause irreversible system damage.

4. Slowly turn the pressure valve to increase or decrease system pressure as needed. Watch the pressure gauge. Do not pressurise into the red region of the pressure gauge.

5. Once the desired pressure is reached, tighten the locking lug to secure the valve. Shut down the Scout using the standard shutdown procedure. Replace the back panel.



TROUBLESHOOTING

1. System Does Not Turn On	
Possible Cause	**Solution**
No power	• Check power cable correctly fitted • Confirm power supply is on and supplying 250W DC Power • Check fuses properly fitted and not blown

2. System Does Not Prime	
Possible Cause	**Solution**
Supply Hose Issue	• Confirm supply hose in water supply • Confirm supply hose correctly fitted into push fit fitting • Confirm suction filter is not clogged
Scout is more than 2m above water line.	• Confirm Scout is drawing water for <2m vertically
Trapped Air	• Press air release valve until pre-filter housing fills with water

3. Pumps Not Turning On / Pumps Turning Off

Possible Cause	Solution
No Power	• Refer to 1 on previous page.
System Not Priming	• Confirm system is priming (refer to 2 on previous page)
Pump Overheating	• Remove system from hot environment • Stop operation for 15 minutes to allow cooling, restart Scout

4. Noise of System Operation Changing

Possible Cause	Solution
Internal Air Bubbles	• Minor noise variation is expected during use (<1 second) • Press air release valve until pre-filter housing fills with water • Confirm system is priming (refer to 2 on previous page)
Pump Turning Off	• Refer to 3, above.

5. Low Drinking Water Production

Possible Cause	Solution
Not Pressurised	• Refer to 7 on next page.
Pre-Filter Clogged	• Remove pre-filter and clean • Replace pre-filter
System Clogged	• Clean water flush the system for 10 minutes • Clean the system
Membrane Clogged	• Replace RO membrane

6. System is Leaking

Possible Cause	Solution
Pre-Filter Loose	• Tighten the pre-filter housing
Hoses Loose	• Check all hoses are pushed all the way in to push fit fittings
Internal Leak	• Remove Scout back plate and look for leaks. Tighten fittings or re-seat / replace tube

7. System Does Not Reach Pressure	
Possible Cause	**Solution**
Valve Open	• Confirm valve is closed (turned all the way clockwise)
Insufficient Power	• Ensure 250W is power is supplied to the Scout
Internal Pressure Valve Loose	• Adjust valve (refer to Adjust Pressure Valve page in maintenance section)
High Pressure Pump Failure	• Contact LEDI to discuss servicing

8. Water Produced is Salty or Smells Bad	
Possible Cause	**Solution**
Internal Fouling	• Flush the system with clean water for 15 minutes • Clean the system
Damaged RO Membrane	• Replace the RO membrane

Email support@ledi.com.au for other enquiries.

MAINTENANCE LOG

DATE	ACTION	NOTES
25 June 2025	Preserved	Scout Preserved for Shipping - flush before 24 Aug


LEDI