

# Installation QUICK START GUIDE



CL-430-N1.0



CL-410-N0.5

CLEARLINE® SYSTEM

Model CL-430-N1.0/CL-410-N0.5



(888) 384-8881  
(952) 475-8084



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## GENERAL

### DO

1. Refer to the CLEARLINE Installation and Operation Manual for complete instructions.
2. If seawater lines are impacted with barnacles and marine growth, then ElectroSea recommends professional descaling **before** installation of the CLEARLINE System.
3. All ClearCell seawater plumbing connections must be performed by a qualified marine installation professional.
4. All seawater connections should use marine grade hose that is double clamped with two stainless steel clamps, reversing the clamps. Failure to properly secure seawater connections could result in sinking the vessel.
5. Confirm the vessel is operating in seawater with salinity greater than 20 parts per thousand. Seawater with low salinity (brackish or freshwater) will prevent CLEARLINE from operating.
6. Use only original parts supplied by ElectroSea. They are made of special titanium, stainless and other high quality materials. Use of non-factory or substitute parts will void the Warranty.



**FOR PARTS AND ACCESSORIES  
CONTACT ELECTROSEA**

**WWW.ELECTROSEA.COM  
(952) 475-8084 | (888) 384-8881**

### DO NOT

**DO NOT** install CLEARLINE on a seawater system that is clogged with existing marine growth, has clogged strainers or other obstructions to seawater flow.

**DO NOT PERFORM ACID DESCALING OF SEAWATER CIRCUIT AFTER THE CLEARLINE SYSTEM HAS BEEN INSTALLED.**

**DESCALING ACIDS OR CLEANING CHEMICALS WILL DAMAGE THE CLEARCELL CANISTER, CLEARCELL ELECTRODE AND VOID THE WARRANTY.**

**DO NOT TOUCH THE CLEARCELL ELECTRODE PLATES OR USE ANY TYPE OF MECHANICAL BRUSH.**

**THE CLEARCELL ELECTRODE PLATES CONTAIN A SPECIAL METAL OXIDE COATING THAT WILL BE PERMANENTLY DAMAGED IF YOU HANDLE IT.**

**DO NOT** use CLEARLINE with engines or generators.

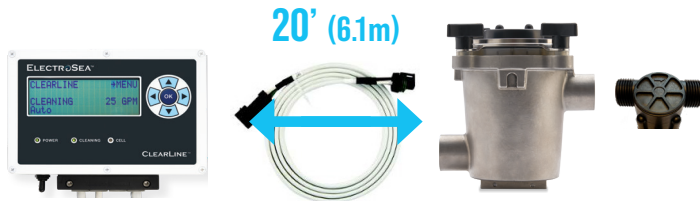
**DO NOT** connect dissimilar metals to the ClearCell.

**DO NOT** use non-factory parts and/or accessories.

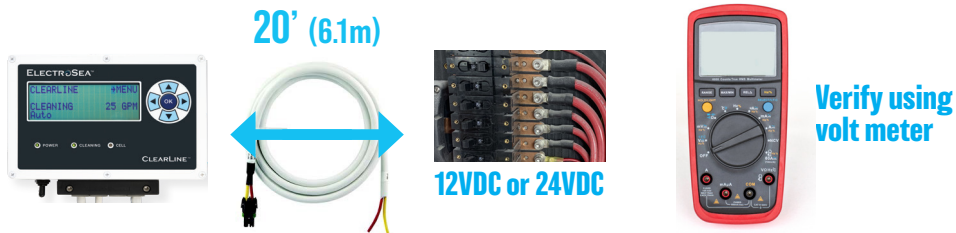
# ELECTRICAL

## DO

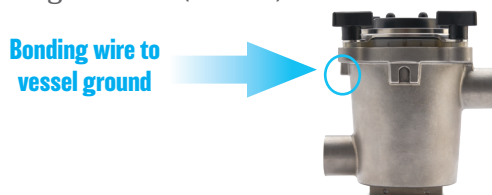
1. Connect CLEARLINE Control Unit:
  - Within 20ft. (6.1m) of ClearCell
  - Within 20ft. (6.1m) of Flow Sensor
  - Within 20ft. (6.1m) of 12VDC or 24VDC power source



2. Connect CLEARLINE Control Unit to constant **12VDC** or **24VDC** power source on the vessel. Connect the **RED (+)** and **YELLOW (-)** wires of the Power Cable to this source according to the appropriate electrical standards (i.e. ABYC).



3. Connect vessel bonding wire to ClearCell bonding terminal according to appropriate bonding standards (i.e. ABYC).



## DO NOT

**DO NOT** cut, extend, or splice the 20' (6.1m) ClearCell cable.



**NOTICE** Modification of ClearCell cable will impair CLEARLINE operation.

**DO NOT** connect multiple ClearCell cables together.

**DO NOT** connect the red (+) and yellow (-) power wires to the incorrect polarity.

**DO NOT** connect CLEARLINE to an intermittent power source. Intermittent operation of CLEARLINE could allow biofouling.



**DO NOT perform acid descaling after the CLEARLINE System has been installed. Descaling acids will damage the ClearCell canister, ClearCell Electrode and void the Warranty.**

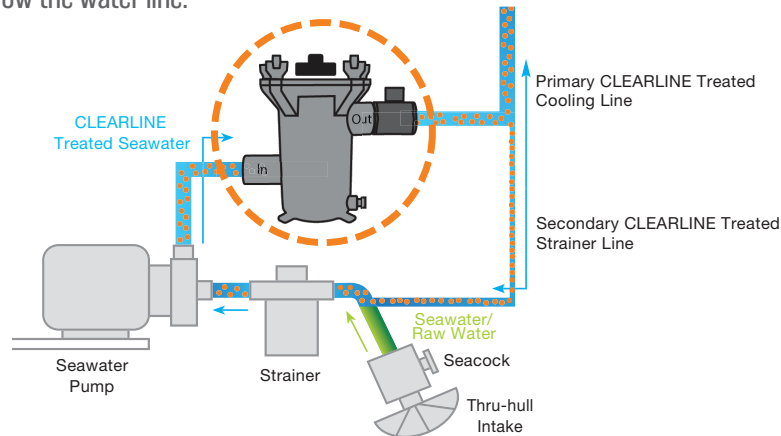
# PLUMBING

## DO

Make fewest changes to vessel's factory plumbing as possible.

**NOTICE** Check manufacturer's seawater flow specifications of all downstream equipment.

- The ClearCell should be installed **after the seawater intake strainer and pump**, and **before** any seawater cooled equipment such as the air conditioner, chiller, etc. The ClearCell should be installed at or below the water line.

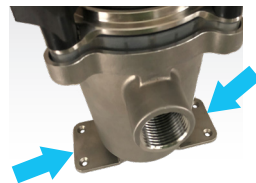


- ClearCell must be mounted so it is level.
- ClearCell should be mounted at or below the waterline.

### OPTION A Base Tab Mounting

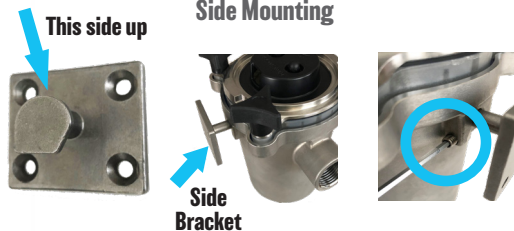


Attach Bottom Brackets to the canister.



Mount canister to flat and level interior engine room surface.

### OPTION B Side Mounting



- Attach Side mount bracket to stringer or other appropriate load supporting vertical surface.
- Place canister on side bracket and secure with set screw.

## DO NOT

**DO NOT** exceed ClearCell maximum pressure of 35 PSI.

**DO NOT** decrease seawater flow below manufacturer's specifications for downstream cooling equipment.

**DO NOT** install Flow Sensor on ClearCell input or in incorrect direction/orientation on the output.

**DO NOT** place elbows or restrictions between ClearCell Output and Flow Sensor.

**NOTICE** Limit the use of 90° elbows as they restrict flow and cause pressure drop.



**NOTICE** Failure to turn OFF all seacock valves in the seawater circuit before CLEARLINE installation could result in sinking the vessel.

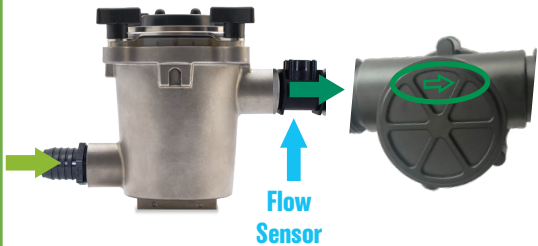
**NOTICE** The ClearCell is made of 2205 Duplex Stainless Steel for high corrosion resistance. Do not connect dissimilar metals to the ClearCell.

# DO

## CLEARCELL CANISTER AND FLOW SENSOR INSTALLATION

The ClearCell canister and Flow Sensor have directional INPUT and OUTPUT requirements. Seawater MUST enter at the INPUT port and flow through the ClearCell and Flow Sensor according to the marked labels.

1. Mount Flow Sensor on ClearCell Output port.
  - Flow Sensor must be oriented so seawater follows direction of flow arrows.



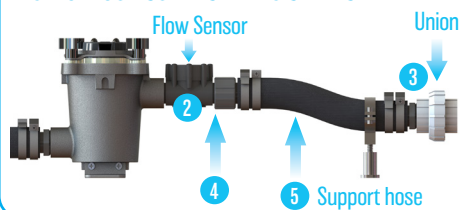
### Recommended ClearCell to Flow Sensor Pipe Connections

- 4x turns of Hercules® MEGATAPE™ PTFE or equivalent
- Hercules® REAL-TUFF Thread Sealant or equivalent

**NOTICE** If Flow Sensor cannot be located directly at ClearCell output, then there should be 12" (30.5cm) of the same size hose before and after flow sensor.

2. Connect the threaded female PVC hose connector to Flow Sensor output. Use PTFE tape and thread sealant.
3. Connect male PVC hose connector to threaded Union. The Union provides quick access to the Flow Sensor as necessary. Use PTFE tape and thread sealant.
4. Add flexible hose of desired length and join hose connector on Flow Sensor output to hose connector on Union. Use two hose clamps (not included), reversing the clamps, over the flexible hose connections.
5. Add flexible hose hanger, hose strap or hose support bracket within 12" (30.5cm) of Flow Sensor. Make sure the Flow Sensor output hose and Union are properly supported.

### FLOW SENSOR CONNECTED TO CLEARCELL



### FLOW SENSOR CONNECTED TO UNION



# DO NOT

**DO NOT** block or restrict access to the top of ClearCell.



**NOTICE** ClearCell must be accessible from the top to remove the Electrode Assembly for service.

**DO NOT** place 90° elbows, or other flow restrictive plumbing fitting, BEFORE the Flow Sensor. This will alter the measured flow and cause improper operation of the CLEARLINE System.



**DO NOT** let the weight of the hose or any plumbing hang unsupported on the Flow Sensor. Use hose hangers, hose straps or hose support brackets that are attached securely to a bulkhead, stringer or other solid object to relieve any force on the Flow Sensor when connected to ClearCell.

**NOTICE** Failure to use hose clamps could result in a seawater leak or hose disconnection, causing damage to property and/or the vessel sinking.

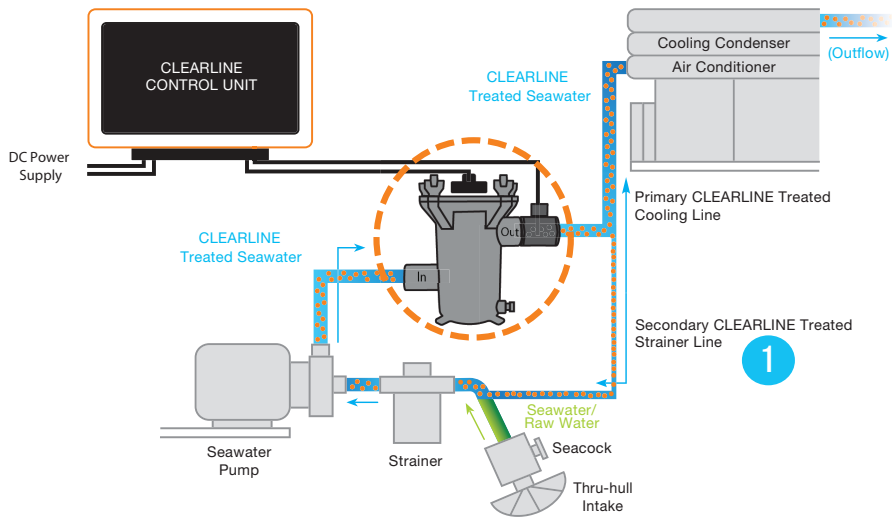
**DO NOT** split or divert seawater before the Flow Sensor.

**NOTICE** All seawater flowing through the ClearCell must flow through the Flow Sensor.

# DO

## OPTIONAL STRAINER RETURN LINE

1. **OPTIONAL:** Add CLEARLINE treated strainer return line after the ClearCell Flow Sensor using a tee-fitting and ball valve to the strainer.
  - The CLEARLINE treated strainer return line should be connected after the seacock and before the strainer.
  - The CLEARLINE treated strainer return line should be 1/4" (6.4mm) ID flexible hose and include a ball valve.



# DO NOT

- DO NOT** connect the return line source before the pump on the suction side.
- DO NOT** drill through the top of any strainer lid. The lid will crack and/or fail over time and could result in sinking the vessel.



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