ELECTROSEA®
EXPERTS IN MARINE GROWTH PREVENTION SYSTEMS®

ClearLine Troubleshooting Guide

ClearCell Electrode End of Life

Each ClearLine® model has minimum, maximum, and optimal flow rate values, as shown in the table below:

MODEL	CL-2000-X2.0	CL-1000-X1.5	CL-990-X1.5	CL-430-N1.0	CL-410-N0.5
Inlet/Outlet NPT	2” (DN50)	1.5” (DN40)	1.5” (DN40)	1” (DN25)	0.5” (DN15)
Optimal Flow	**20-40 gpm** (76-151 lpm)	**15-30 gpm** (57-114 lpm)	**15-30 gpm** (57-114 lpm)	**6-15 gpm** (23-57 lpm)	3-7 gpm (11-26 lpm)
Min/Max Flow	**10-75 gpm** (38-284 lpm)	**10-50 gpm** (38-189 lpm)	**10-50 gpm** (38-189 lpm)	**4-26 gpm** (15-98 lpm)	**2-10 gpm** (8-38 lpm)

The average life expectancy of a ClearLine ClearCell® Electrode is 2-4 years. ClearCell Electrode life is dependent on flow rate, hours of use, seawater quality, and other factors. ClearCell Electrodes that are supplied with higher seawater flow rates will deplete faster than those receiving lower flow rates. Refer to the value shown in gallons (or liters) per minute on the Control Unit screen to see the current flow rate.

End of Life

The first indication that the ClearCell Electrode is beginning to deplete or reach the end of its life expectancy is the appearance of calcium scale. This scale forms when the metal-oxide coating on the ClearCell Electrode plates has worn off.

If calcium scale is present and continuously getting worse, first find out the age of the ClearCell Electrode. This can be done by viewing the Cell Menu on the Control Unit or by asking the customer.

To view the CELL Menu, press Menu, then Cell, then OK. There will be a number followed by the letter D in the format XXXD. The number indicates the number of DAYS the Control Unit has been in operation. For example, “365D” means the Control Unit has been in operation for 365 days, or one year. If only one ClearCell Electrode has been used with the system, then this number is equal to the number of days the ClearCell Electrode has been used. NOTE: If multiple ClearCell Electrodes have been used with the system or if the Control Unit has been replaced previously, then the number shown will not accurately reflect the age of the current ClearCell Electrode.

Calcium scale is often the first indication of the ClearCell Electrode nearing the end of its life expectancy.

If the ClearCell Electrode is approaching the 3-4-year mark or more, then it's likely time to replace the ClearCell Electrode.

If the ClearCell Electrode is 2-3 years old, check the ClearLine system's flow rate. If the flow rate exceeds the optimal flow rate range for that model system, then it's likely time to replace the ClearCell Electrode.

Voltage

Another way to determine if the ClearCell Electrode needs to be replaced is to access the LOG/DIAG Menu. To do this, press and hold the Up and Right arrows at the same time for 10 seconds or until the menu appears. Scroll up/down so that ENABLED is seen, then press OK.

You should now see new numbers on the home screen. Check the voltage (V) reading. When the ClearCell Electrode is at its end of life, the voltage will be at 4.0 V in one or both cycles. The cycle will be indicated in the bottom line of the display. Cycle 1 is indicated with one dot (.), and cycle 2 is indicated by two dots (:). In between cycles, the power will disappear, and a dash (-) will appear. Please watch the display for a minimum of 10 minutes to get an accurate voltage reading.

Increase in marine growth

An increase in marine growth in the strainer basket or downstream of the ClearCell Canister is another indication that the ClearCell Electrode may be at end of its life expectancy. Remove the ClearCell Electrode from the ClearCell Canister and make sure there is no growth between the ClearCell plates.

Next steps

If you have determined that the ClearCell Electrode is at or near the end of its life expectancy, use the following chart to order a replacement:

PART NO	DESCRIPTION	CLEARLINE MODEL
300072-002	CC-2020 ClearCell Electrode Assembly	CL-2000-X2.0
300056-001	CC-1020 ClearCell Electrode Assembly	CL-1000-X1.5 and CL-990-X1.5
300062-004	CC-430 ClearCell Electrode Assembly (11 plate)	CL-430-N1.0
300062-002	CC-430 ClearCell Electrode Assembly (7 plate)	CL-430-N1.0 or CL-410-N0.5

If you have determined that the ClearCell Electrode is not nearing or at the end of its life expectancy by following the steps outline above but you are still experiencing trouble, please contact ElectroSea Service at support@electrosea.com or (561) 257-5739.

ElectroSea's products are designed, assembled and quality-control tested at our headquarters in Minneapolis, Minnesota, USA.

U.S. Patent No. 11,027,991; 11,345,621; 11,718,542; 11,498,855; 11,866,351
R.O.C. Patent No. I782112; I848048 | P.R.C. Patent No. ZL202080034495.3
Other U.S. and Foreign Patents Pending
REV 9/16/24