AquaRite 100®

Technical Training Guide

TSG-AQR100c

Safety Precautions

High Voltage Electrocution Hazard

Hazardous voltage can shock, burn, cause serious injury and or death. To reduce the risk of electrocution and or electric shock hazards:

- Only qualified technicians should remove the panel
- Replace damaged wiring immediately
- Insure panel is properly grounded and bonded

Table of Contents

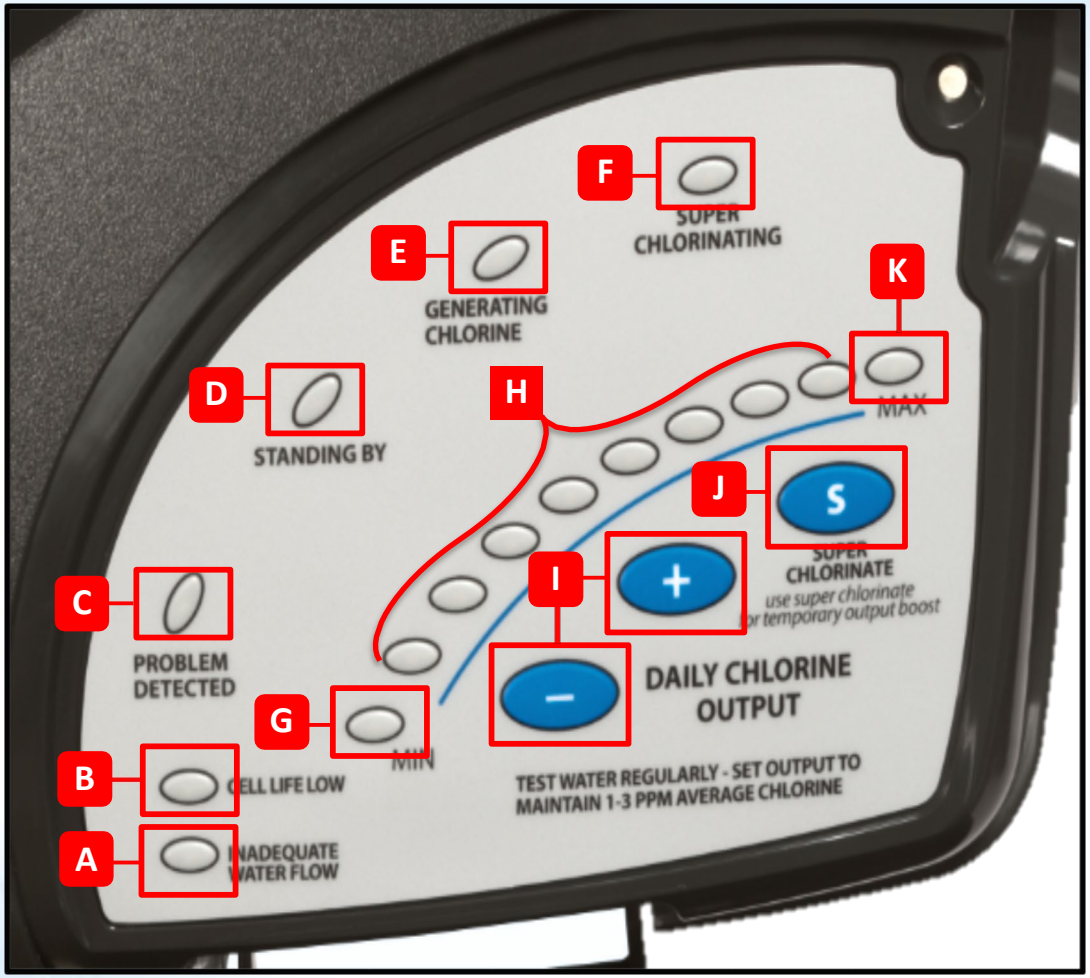
HAYWARD

AquaRite: How It Works

- The AquaRite 100 Salt Chlorine Generator is designed to convert 99% pure salt into chlorine gas ($CL_2(g)$).
- When $CL_2(g)$ is dissolved in water it creates Hypochlorous Acid (HOCL) to sanitize the pool.
- The conversion occurs in the electrolytic cell, also known as the cell (used throughout this guide).
- Power is sent from the AquaRite 100 control center to the cell when chlorine production is scheduled (based on time percentage).
- When power is applied to the cell, conductive plates produce a field; which in-turn establishes an electrochemical reaction between chloride ions & the water to create Hypochlorous Acid.

HAYWARD

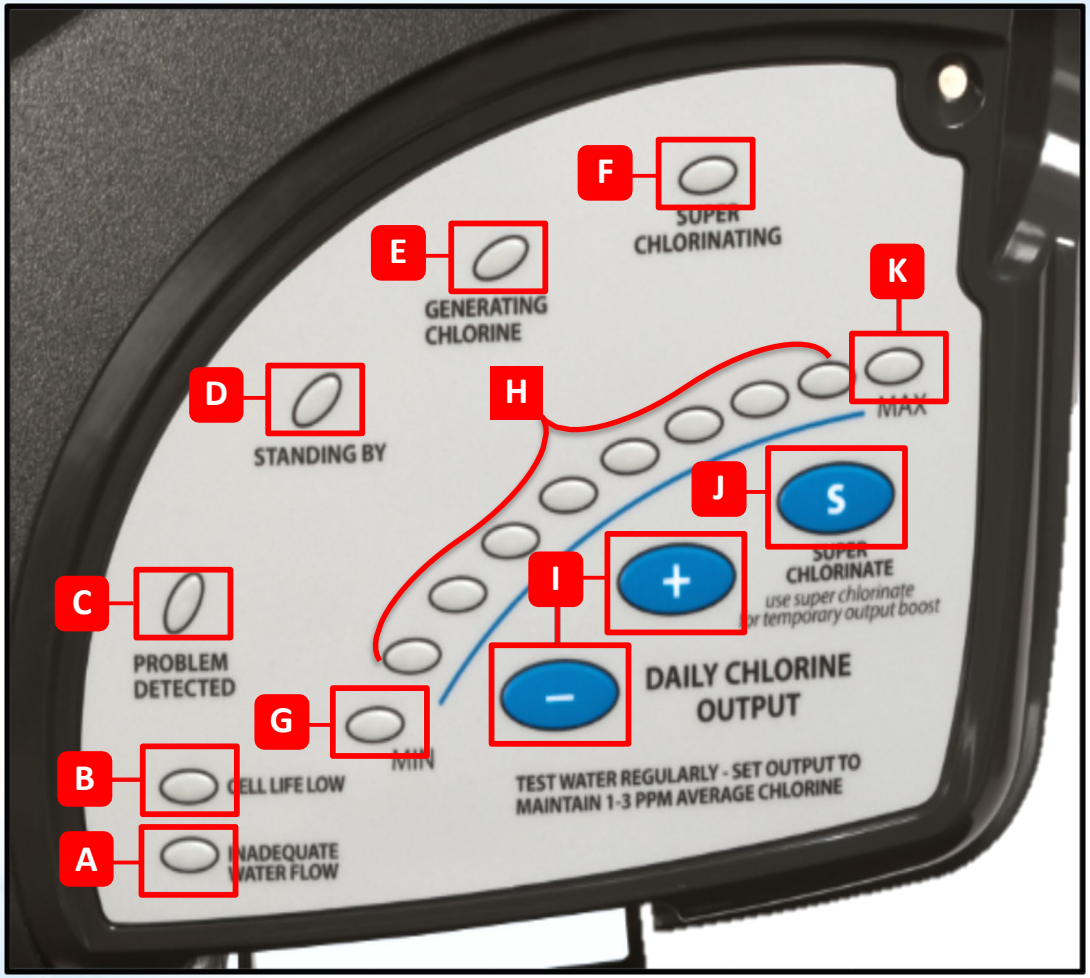
AquaRite 100: Display Layout



A	**Inadequate Water Flow** LED
B	**Cell Life Low** LED
C	**Problem Detected** LED
D	**Standing By** LED
E	**Generating Chlorine** LED
F	**Super Chlorinating** LED
G	**Minimum Chlorine Output** LED (10%)
H	**DAILY CHLORINE OUTPUT** LED's
I	**Chlorine Output** Adjustment Buttons
J	**Super Chlorinate** Button
K	**Maximum Chlorine Output** LED (100%)

HAYWARD

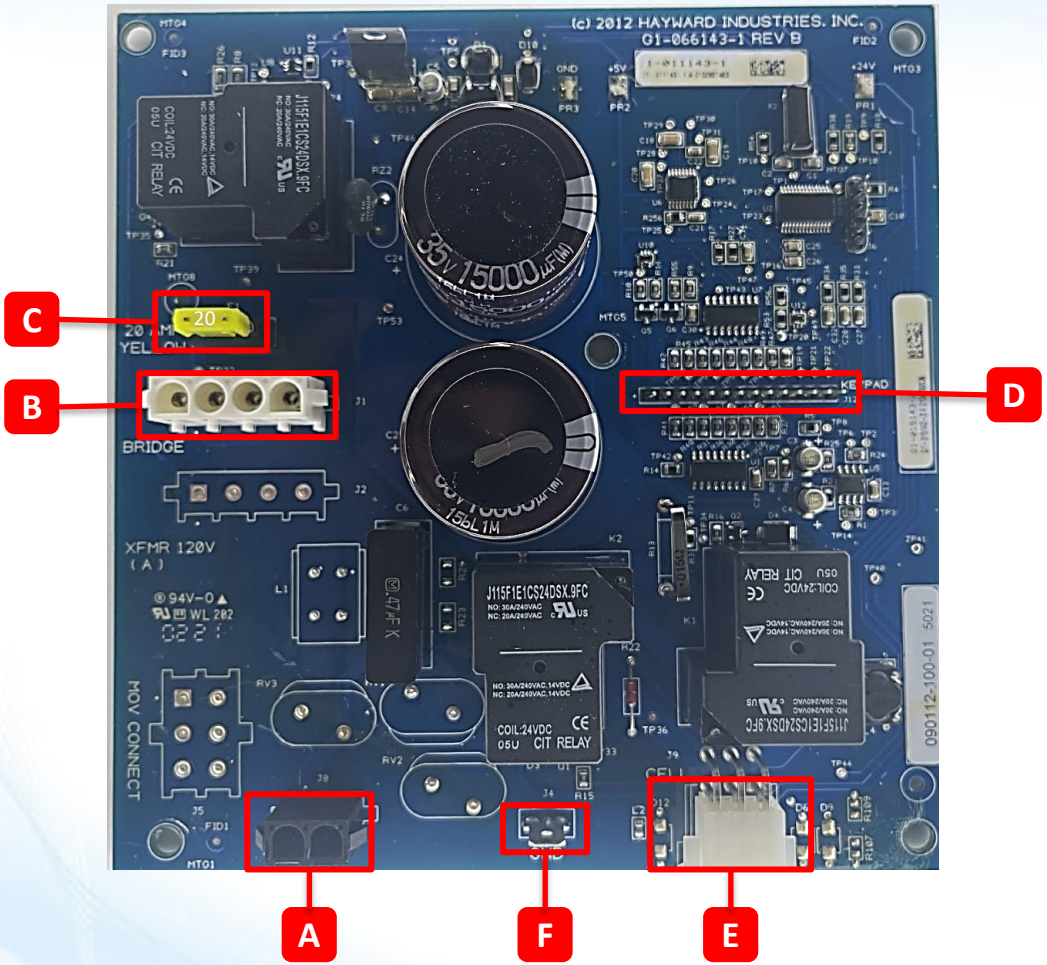
AquaRite 100: Display Function



A	Illuminates when there is no flow or low flow through the cell
B	Illuminates when cell has reached the end of its expected life
C	Illuminates if there is a problem with the unit
D	Illuminates when unit is waiting for the filter pump to turn on or is in-between generating cycles
E	Illuminates when unit is actively generating chlorine
F	Illuminates when unit is Super Chlorinating
G	The minimum daily chlorine output amount of chlorine being generated
H	Indicates daily chlorine output settings
I	Press (+) and (-) to increase or decrease the chlorine generation
J	Boosts daily chlorine output to 100% for 24 hours
K	The maximum daily chlorine output amount of chlorine being generated

HAYWARD

AquaRite 100: Main PCB Layout



A	Transformer Output (24 VAC)
B	Rectifier Output (30-32 VDC)
C	Chlorinator Fuse (20A – ATO style)
D	Display Output
E	Cell Input/Output
F	Ground

HAYWARD

AquaRite 100: Chemistry Requirements

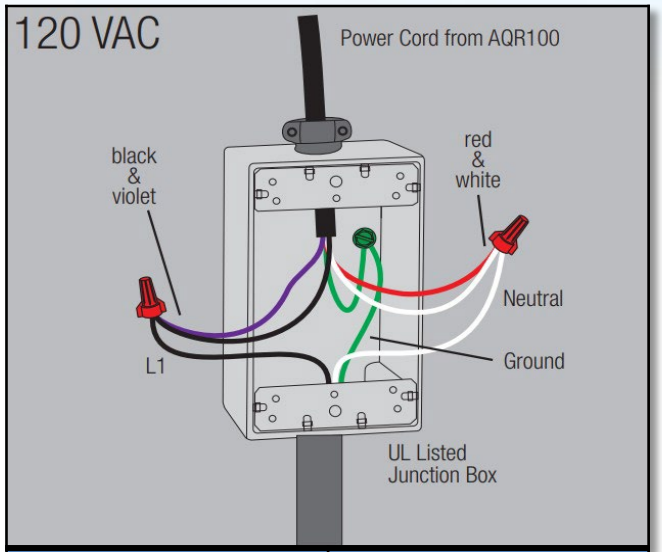
Salt Levels	• Pools 15k gal and below: 1500 – 2700 ppm • Pools up to 30k gal: 2800 – 4500 ppm (Ideal 3200 ppm)
Free Chlorine	•1.0 – 3.0 ppm
PH	•7.2 – 7.8 ppm
Alkalinity	•80 – 120 ppm
Calcium Hardness	•200 – 400 ppm
Cyanuric Acid (Stabilizer)	•Outdoor Pools: 30 – 50 ppm •Indoor Pools: 0 ppm
Metals	•0 ppm
Saturation Index	•-.2 to .2 (0 is best)
Phosphates	•Less than 200 ppb
Nitrates	•As close to 0 ppb as possible

AquaRite 100®

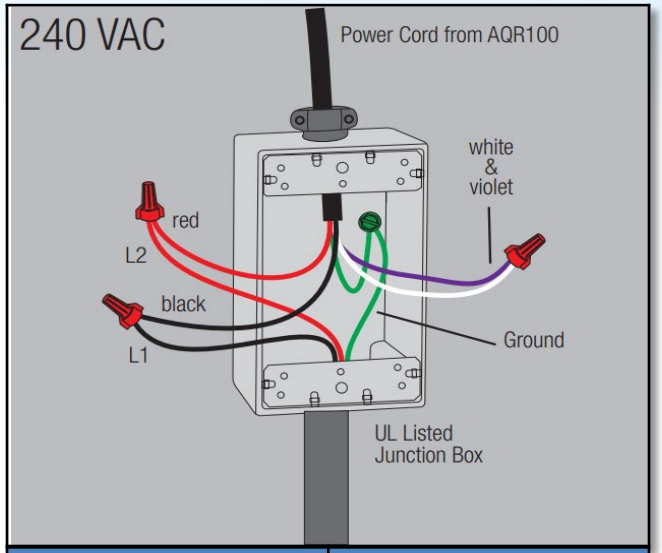
How To:

How To: Input Voltage Configuration

The AquaRite 100 can be powered by 120 VAC or 240 VAC. Use a multi-meter to verify voltage in order to determine wire configuration.



120 VAC	Wire Colors
Line 1	Black & Violet
Line 2	N/A
Neutral	Red & White
Ground	Green



240 VAC	Wire Colors
Line 1	Black
Line 2	Red
Neutral	White & Violet
Ground	Green

* Power must be turned off at the circuit breaker before performing any wiring. Follow ALL local and NEC electrical codes. To provide safe operation, the AQR100 should be installed by a qualified service professional and must be properly grounded AND bonded.

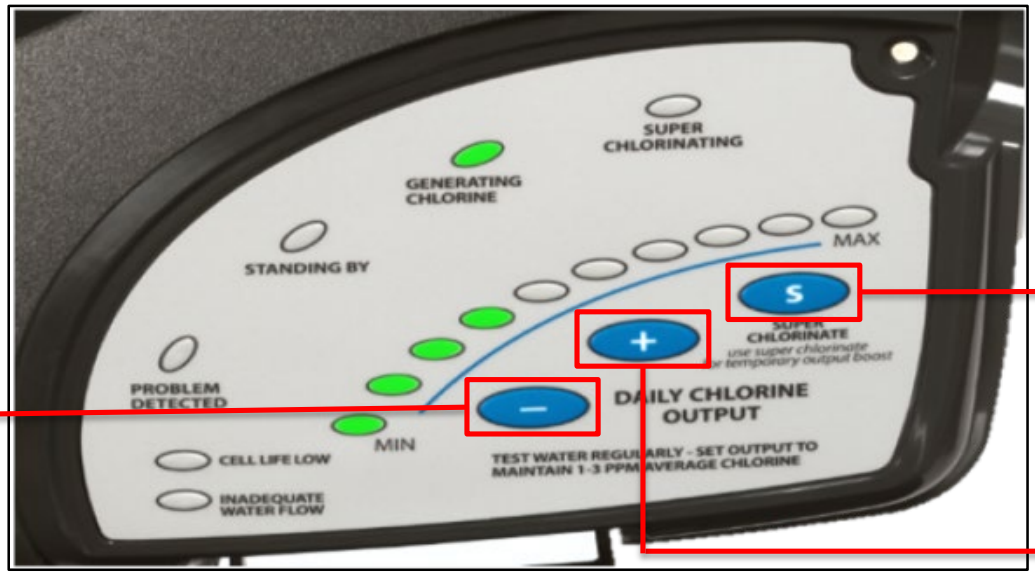
HAYWARD

How To: Adjust Chlorine Output

The “Daily Chlorine Output” buttons set the level of production during the generating cycle. Generating cycles occur in 60 minute increments. Each led illuminated (from Min to MAX) represents 10%, or six(6) minutes of chlorine production time.

Example: The first 4 LED’s being on implies the cell is producing chlorine 40% of the pump run time; so the cell should produce chlorine for the first 24 minutes of each hour before repeating.

Press to decrease output setting



Press to Super Chlorinate
(Temporarily increases chlorine output to 100% for 24 hours. Pump must be on during this time)

Press to increase output setting

NOTE: If the chlorine level does not increase within 24 hours after increasing output, test water using an independent test kit to determine the current salt, stabilizer, phosphate, and nitrate levels.
NOTE: Output is scaled back to 20% or lower (depending on where the dial is set) at 60˚F and chlorine production stops altogether at 50˚F.

HAYWARD

How To: Clean the Cell

Cell cleaning frequency is dependent on several factors; pH & calcium levels have the greatest effect on how often cells requires cleaning. In pH environments between (7.2 - 7.8) cells typically require cleaning 3-4 times a year (with moderate calcium levels).

Turn Pump Off & Remove Cell

Step 1

Remove Calcium and other debris from the Cell

Inspect cell for calcium deposits. Even if a cell appears clean, it may still require cleaning if salt accuracy isoff and/or chlorine production has diminished.

Wear Protective Equipment

Step 2

If the cell requires cleaning, always wear all recommended protective equipment such as gloves, apron, and safety goggles.

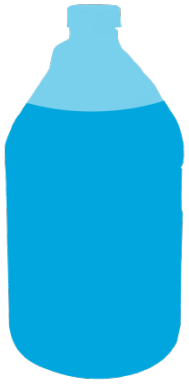
NOTE: Mix solution and clean cell only in a well ventilated area.
Muriatic and other acids can cause severe injury, burns and respiratory problems if not handled properly. Refer to the manufacturer's directions for safehandling.

How To: Clean the Cell (Cont.)

The cell draws amperage when power is applied during chlorination. The amperage draw will be impaired when calcium and other debris exist within the cell's electrolytic grid; this in turn effects the salt reading and chlorination efficiency.

Mix: 4 Parts H_2O / 1 Part Muriatic Acid

Step 3



1 Part:
Muriatic Acid

4 Parts:
Water

Using an approved container, mix a solution comprised of 4 parts water to 1 part Muriatic Acid. **Always Add Acid to Water.**

Carefully Pour Solution into Cell

Step 4

Cleaning Tip:

The electronic cap of the Cell should NOT be submerged in water

Place cell into plastic bucket, pour solution into bucket. Solution should NOT cover electronic cap. Once clean, rinse cell, pour solution back into approved container.

Note: Always add acid to water! Never add water to acid.
The cell cleaning solution may be reused a few times.
Always: store mixed solutions in a safe area, out of harms way.
When the solution is depleted, follow the manufacturer's instructions for proper disposal.

HAYWARD

How To: Test/Replace Cell Cord

Turn Power to AQR 100 Off

Turn AQR100 power off at the breaker. Remove the control box from wall and turn it over to access the back. **Go to next step**.

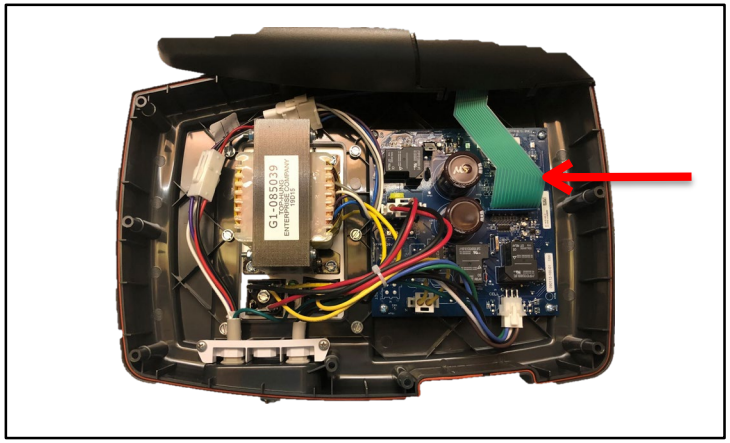
Remove Access Screws

Use a magnetic Philips head screwdriver to remove the 10 screws, then rotate control box onto it's back. **Go to next step**.

HAYWARD

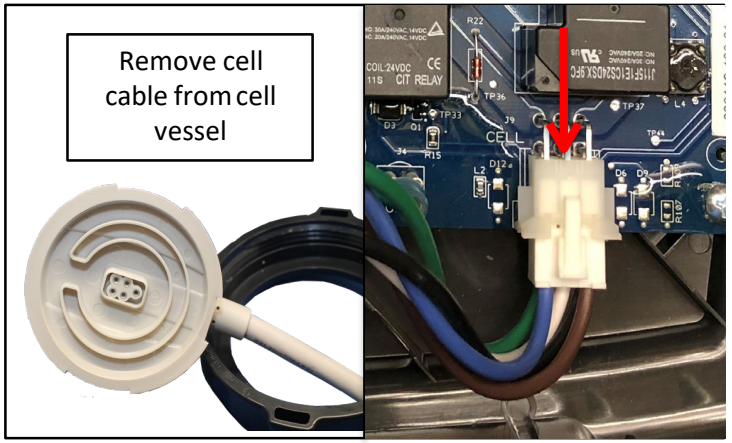
How To: Test/Replace Cell Cord (Cont.)

Remove Front Cover



Slowly separate the front cover from the back of the AQR100 and move it towards the top of the unit. Be mindful not to damage the membrane cable as it will remain connected to the PCB. **Go to next step**.

Disconnect Cell Cable

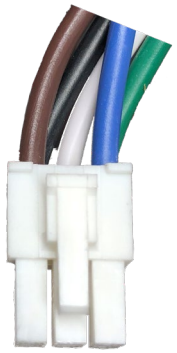


Remove cell cable from the cell vessel by turning the lock nut counter clockwise and removing cable. Unplug the cell cable from the PCB. Cell cable plug is shown in the picture to the right. **Go to next step**.

HAYWARD

How To: Test/Replace Cell Cord (Cont.)

Test Cable Continuity



Use a multi-meter to test continuity of cell cable wires. Place one lead into a wire terminal. Make note of the color of wire at the terminal. The other meter lead will be used at the cell cable cap terminal. Be sure to verify proper continuity at each wire terminal.

Test Cable Continuity

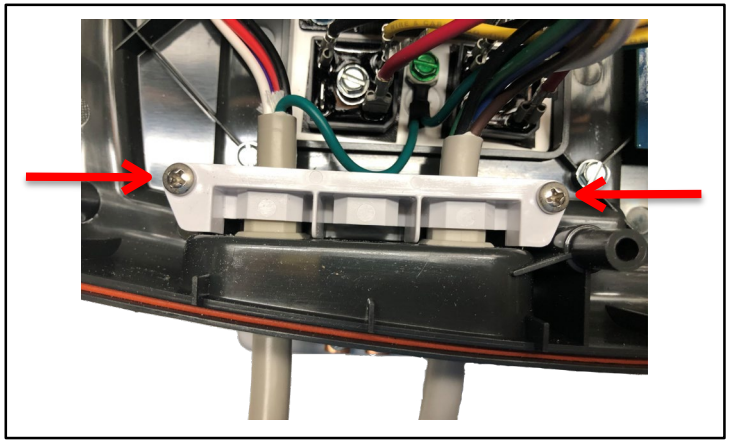
With lead in place at cell plug terminal, use other lead to test each terminal of the cell cable cap. *Only the matching wire terminal should have continuity. If one wire shows continuity in multiple terminals , replace the cell cable (**GLXAQR100CCABLE**). **Go to next step**.

***Terminals at cell cable cap are NOT actually color coded.**
Verify proper orientation of cap while testing continuity.

HAYWARD

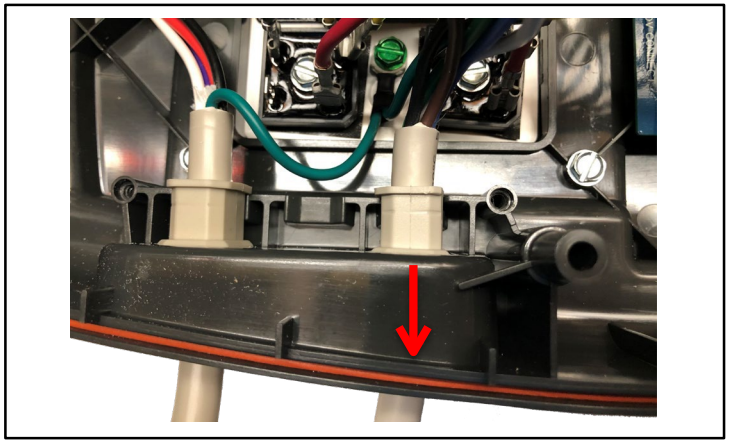
How To: Test/Replace Cell Cord (Cont.)

Remove Cable Strain Relief



Remove the 2 Phillips head screws that secure the strain relief bar. Remove strain relief bar by lifting up and away from control box. **Go to next step**.

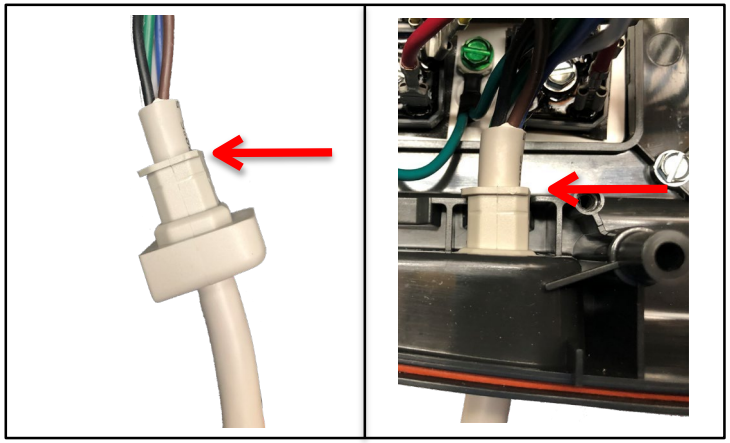
Remove Cell Cable



Remove cell cable by slightly pulling it away from the control box and then pulling it out through the bottom. **Go to next step**.

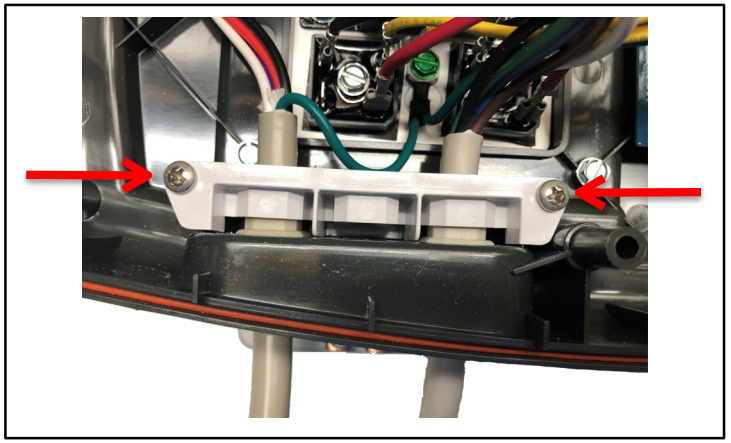
How To: Test/Replace Cell Cord (Cont.)

Reinstall Cell Cable



Prior to installing cell cable verify proper orientation of cable. The flat side of the cable should be to the right. Insert cable through bottom of control box and into position. **Go to next step**.

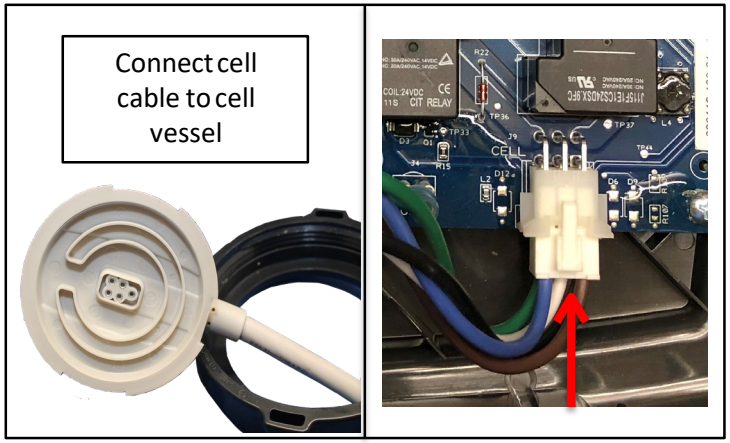
Reinstall Cable Strain Relief



Reinstall the cable strain relief bar. Verify the bar is positioned as show in the picture above. Once strain relief bar is secured, gently pull on the cell cable to verify it stays in place. **Go to next step**.

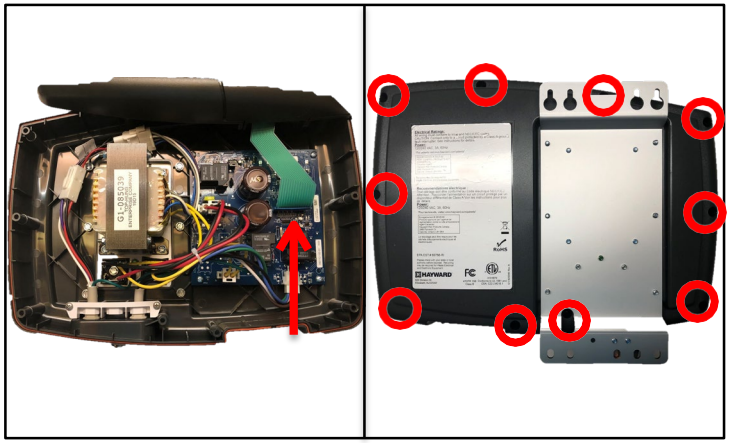
How To: Test/Replace Cell Cord (Cont.)

Plug in Cell Cable



Connect cell cable to cell vessel by rotating the locknut clockwise until snug. Plug cell cable back into the PCB as shown in the picture to the right. **Go to next step**.

Reassemble AQR100



Verify ribbon cable is positioned correctly. Gently place front cover onto the control box. Reassemble AQR100 by installing 10 Phillips head screws.

HAYWARD

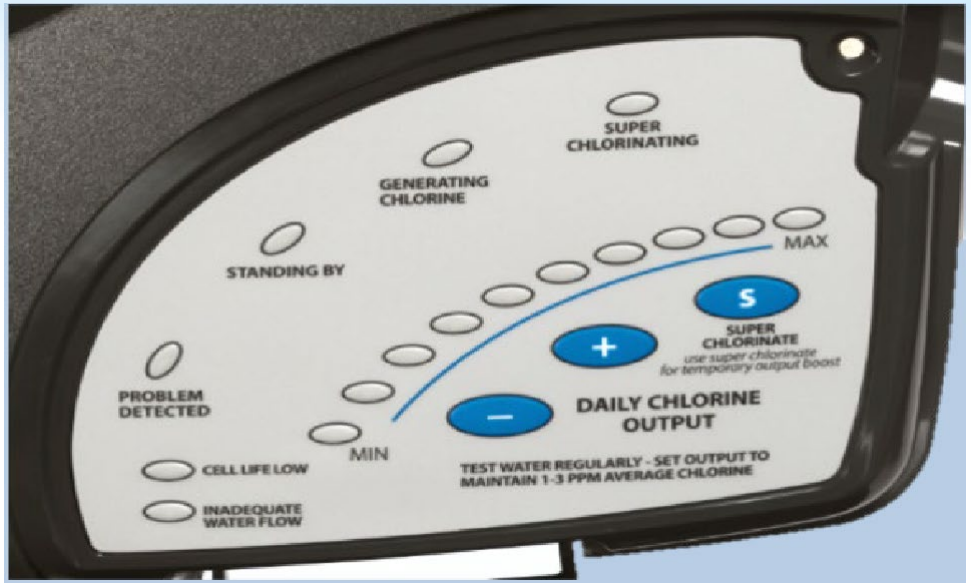
AquaRite 100®

Troubleshooting

For online troubleshooting visit www.Hayward-Pool.com click Tools, How to Guides & Demos, Do It Yourself AQR100/Salt & Swim or click link below

https://www.hayward-pool.com/shop/en/pools/res-in-ground/res-sanitization/do-it-yourself-salt---swim

No LED's On Display

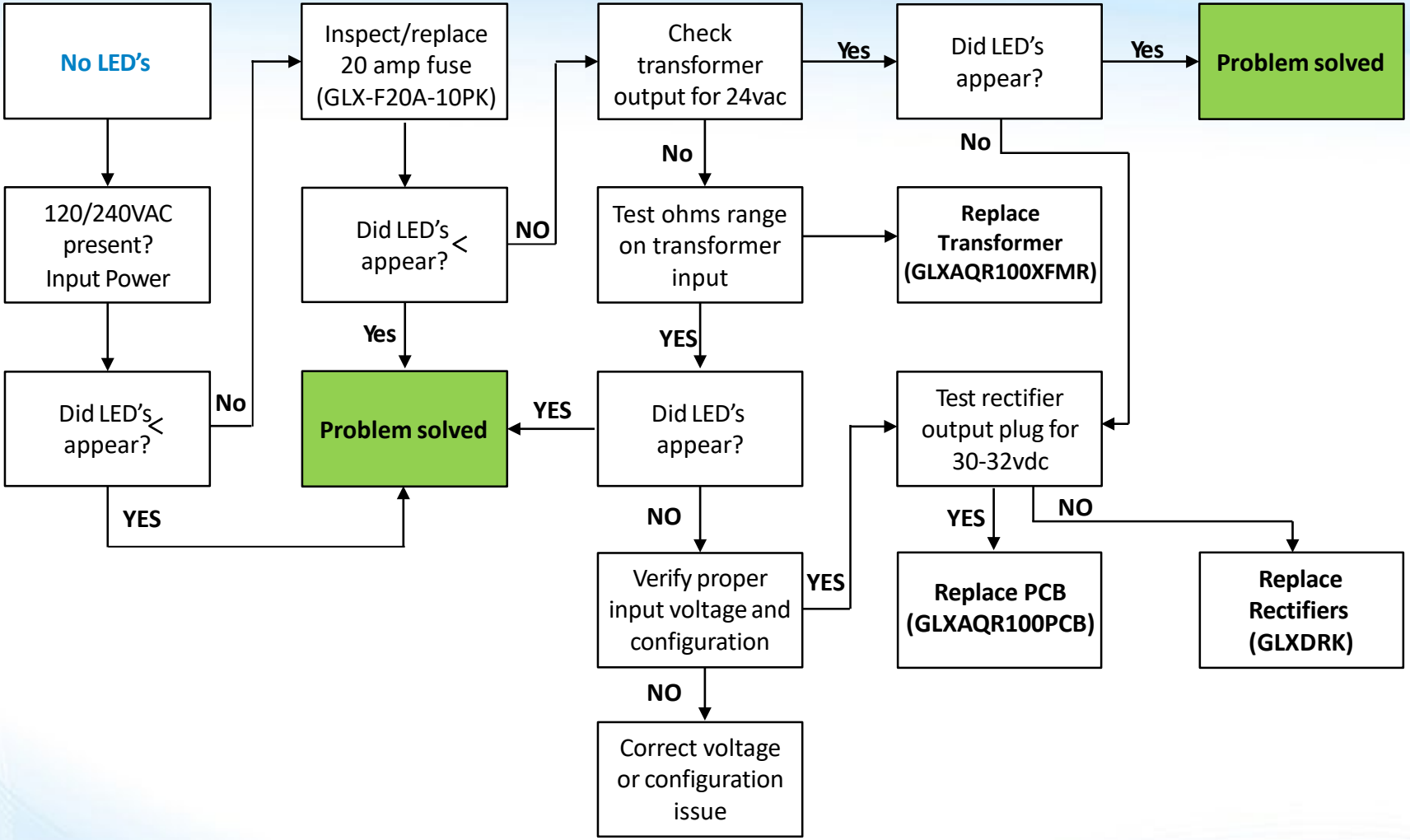


Reason	Possible Action
No power to AQR100	Turn power to the pump "ON", check breaker
Blown fuse	Inspect internal 20 amp fuse
No power to PCB	Test transformer
No power to display	Test voltage from PCB to display

***Pages 21-28 will walk you through the proper steps to diagnose this issue**

HAYWARD

No LED's On Display



*For verification of diagnosis contact Hayward Technical Support
908-355-7995

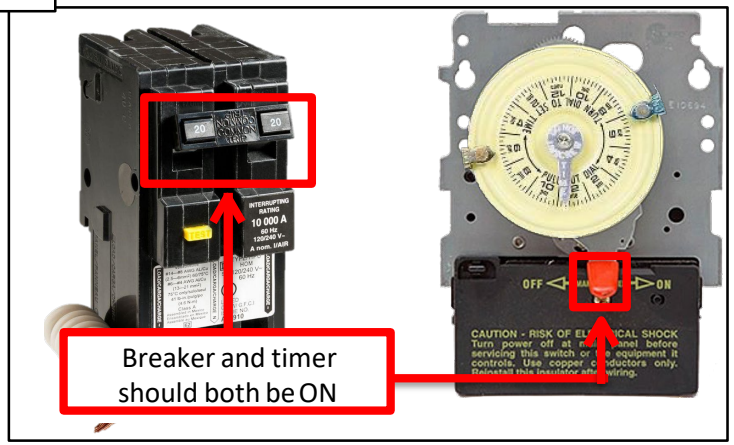
HAYWARD

No LED's On Display

No LED's indicate a loss of power to/within the AQR100

Verify Power to AQR100

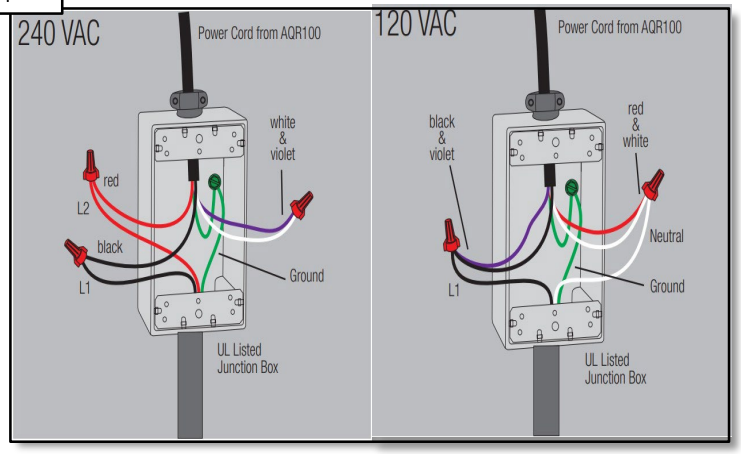
Step 1A



Verify breaker is not tripped, reset breaker by switching to the off position and then back to on. Make sure timer is "ON". If both are in the "ON" position, **go to step 1B**.

Verify Proper AQR100 Wiring

Step 1B



If the breaker and timer are ON, verify proper wiring configuration for the voltage being applied to the AQR100. If correct, **go to step 1C**.

HAYWARD

No LED's On Display (Cont.)

No LED's indicate a loss of power to/within the AQR100

Turn Power to AQR 100 Off

Step 1C

Turn AQR100 power off at the breaker. Remove the control box from wall and turn it over to access the back. **Go to step 1D**.

Remove Access Screws

Step 1D

Use a magnetic Philips head screwdriver to remove the 10 screws, then rotate control box onto it's back. **Go to step 1E**.

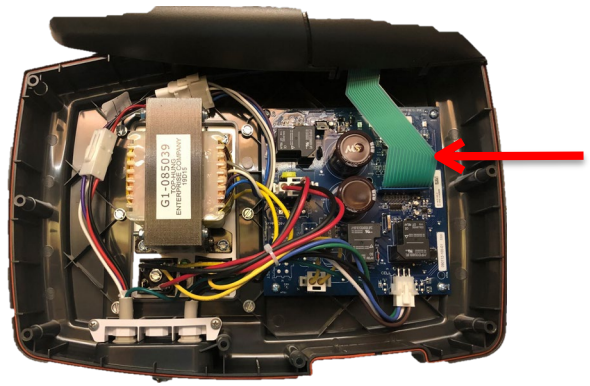
HAYWARD

No LED's On Display (Cont.)

No LED's indicate a loss of power to/within the AQR100

Remove Front Cover

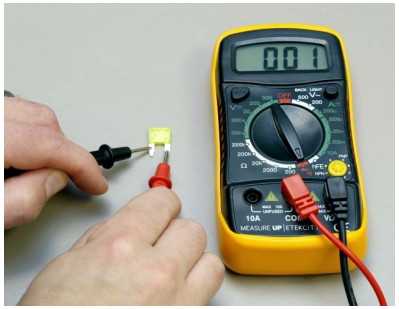
Step 1E



Slowly separate the front cover from the back of the AQR100 and move it towards the top of the unit. Be mindful not to damage the membrane cable as it will remain connected to the PCB. **Go to step 1F**.

Check 20a Fuse

Step 1F



Remove yellow 20a fuse and test for continuity. If fuse is bad replace it (**GLX-F20A-10PK**), restore power, check for display LED's. If fuse is good and no LED's are on, **go to step 1G**. If LED's come back on re-assemble AQR100.

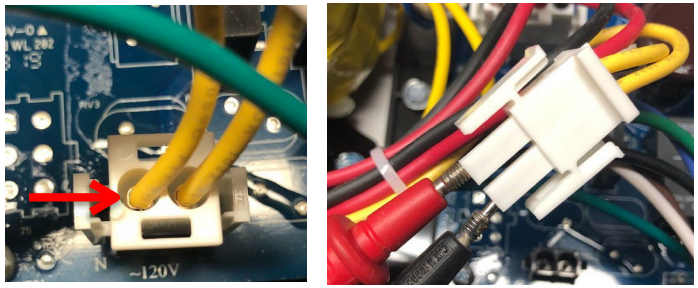
HAYWARD

No LED's On Display (Cont.)

No LED's indicate a loss of power to/within the AQR100

Check Transformer Output

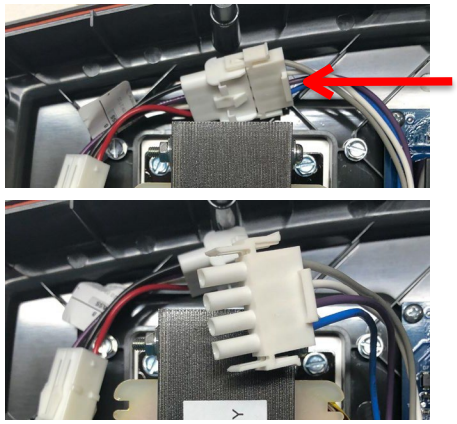
Step 1G



Test the yellow transformer output wires for 24vac by removing the plug from the PCB and testing as shown. If voltage is present **go to step 1K**, if not **go to step 1H**.

Test Transformer

Step 1H



Locate the transformer input plug as shown in the top photo. Squeeze the tabs on the sides and disconnect the plug. **Go to step 1I**.

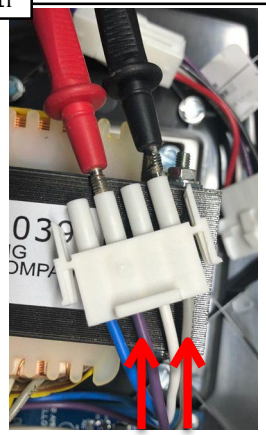
HAYWARD

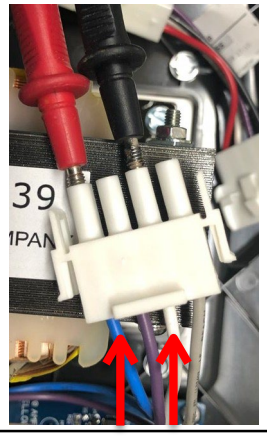
No LED's On Display (Cont.)

No LED's indicate a loss of power to/within the AQR100

Test Transformer

Step 1I

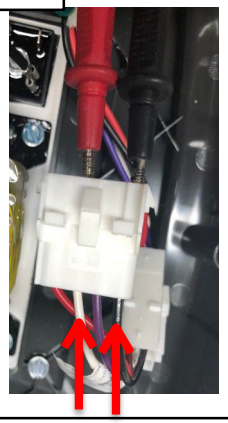


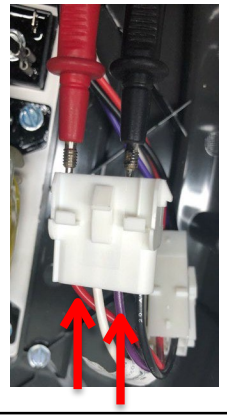


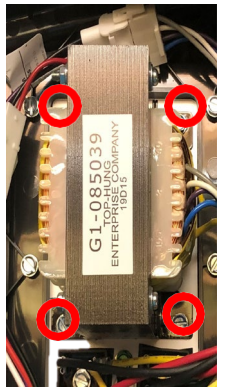
Use your meter to test the resistance (1.5-2.5 ohms) of the transformer input wires. Test the gray and violet wires together, then the blue and white wires together. If correct **go to step 1J**. If not, replace the transformer (**GLXAQR100XFMR**).

Test Input Voltage

Step 1J







Use a meter to test AC voltage on the power input plug. *Test across the black and white wires and then across the red and violet wires for 120vac. **If voltage is good replace transformer (**GLXAQR100XFMR**). If not check power from breaker.

***Testing and voltage will be the same regardless of applied input voltage of 120vac or 240vac**

**** Remove the (4) 5/16" screws to replace the transformer**

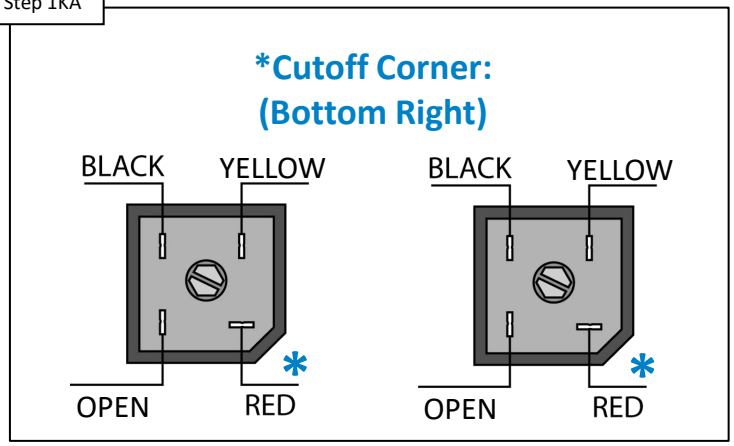
HAYWARD

No LED's On Display (Cont.)

The rectifiers take AC voltage from the transformer and convert it to DC voltage for both main board and chlorination functions.

Inspect Rectifier Wiring

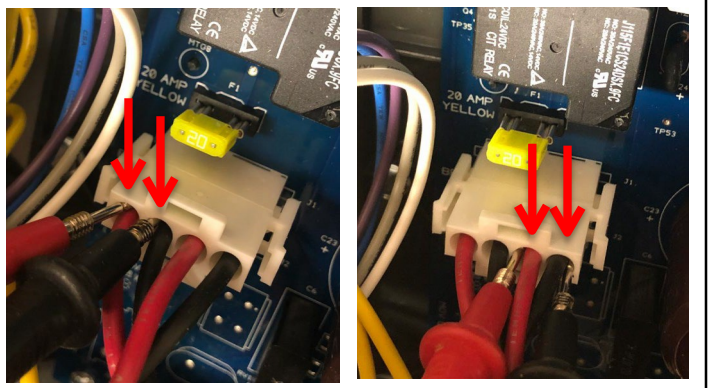
Step 1KA



Make sure the rectifiers are wired as shown above. IF the rectifiers are incorrectly wired, correct the wiring and retest. IF the rectifiers are wired, as shown above, proceed **to step 1KB**.

Check Rectifier Voltage

Step 1KB



Use your meter to test 30-32vdc at the rectifier plug on the PCB. Test each pair of red and black wires as shown. If voltage is not correct on both pairs replace rectifiers (**GLXDRK**). If it is correct **go to step 1L**.

***Take note of the display ribbon cable position to verify proper re-installation**

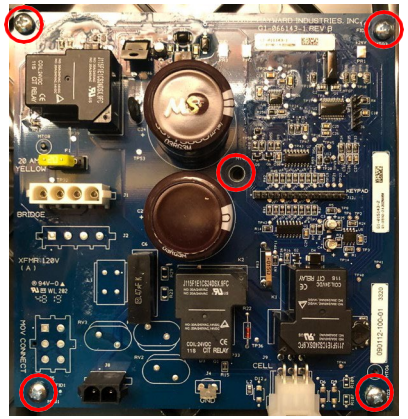
HAYWARD

No LED's On Display (Cont.)

No LED's indicate a loss of power to/within the AQR100

Replace PCB

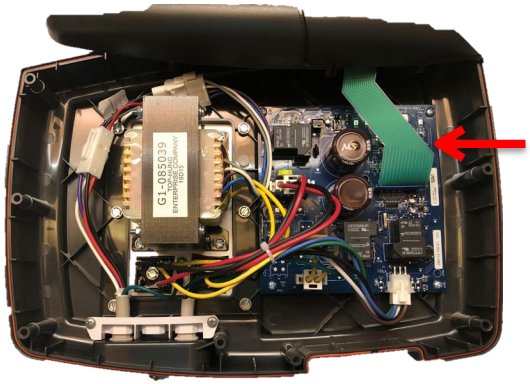
Step 1L



If all else is correct replace the PCB (**GLXAQR100PCB**).
*Remove all plugs from PCB. Remove the 5 screws that hold PCB to the AQR100. Remove and replace PCB. Reattach all plugs and cables and restore power.

Re-assemble AQR100

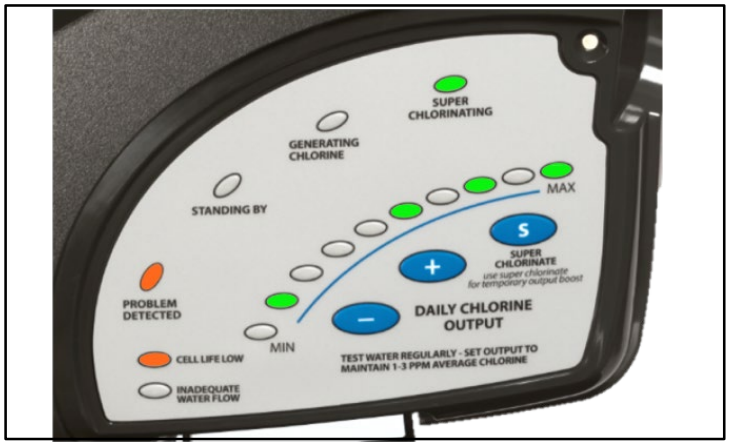
Step 1M



Verify all cables and plugs are properly connected. Check that the display ribbon cable is attached as shown. Place cover back onto the AQR100 and reinstall the 10 Phillips head screws to secure the front cover.

LED’s On Display

Display Ribbon Incorrectly Installed

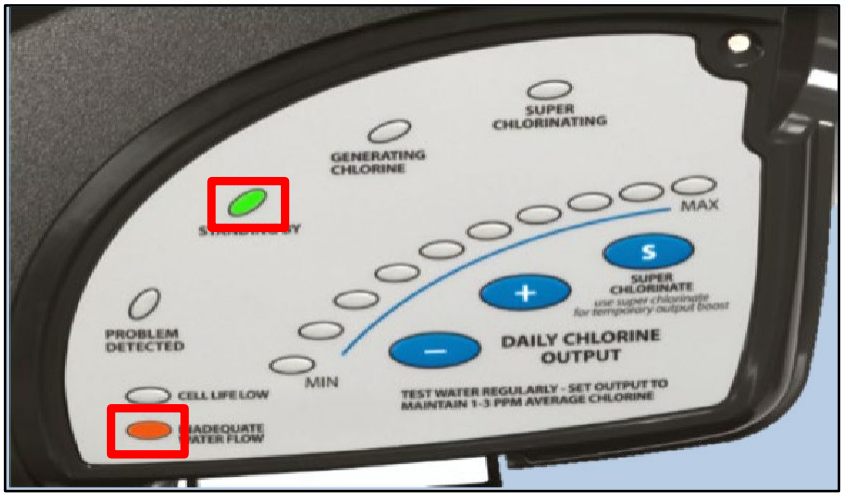


If the display ribbon cable is pluggedinto the PCB upside down the above series of LED’s will be illuminated when power is restored to the AQR100. Install ribbon cable correctly to remedy the issue.

HAYWARD

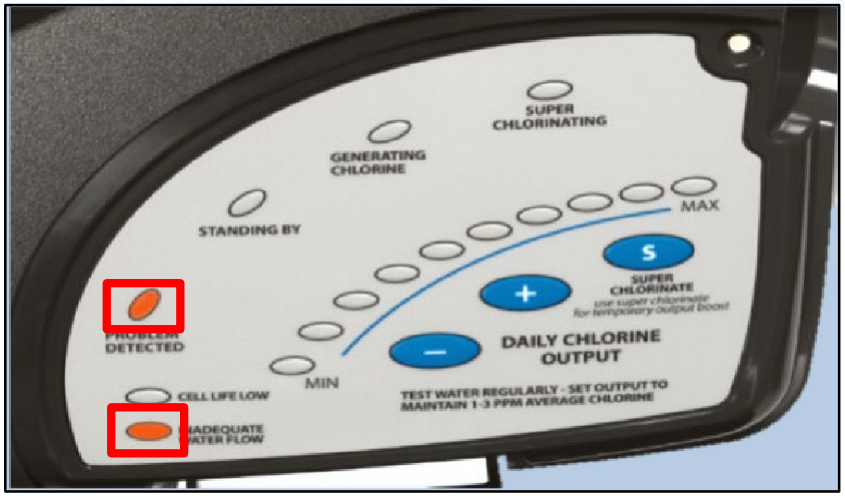
Inadequate Water Flow LED

With “Standing BY” LED



Reason	Possible Action
Power to the pump is turned “off”	Turn power to the pump “on”
AQR 100 is between generating cycles	Wait until next generating cycle begins or cycle power to the AquaRite 100

With “Problem Detected” LED



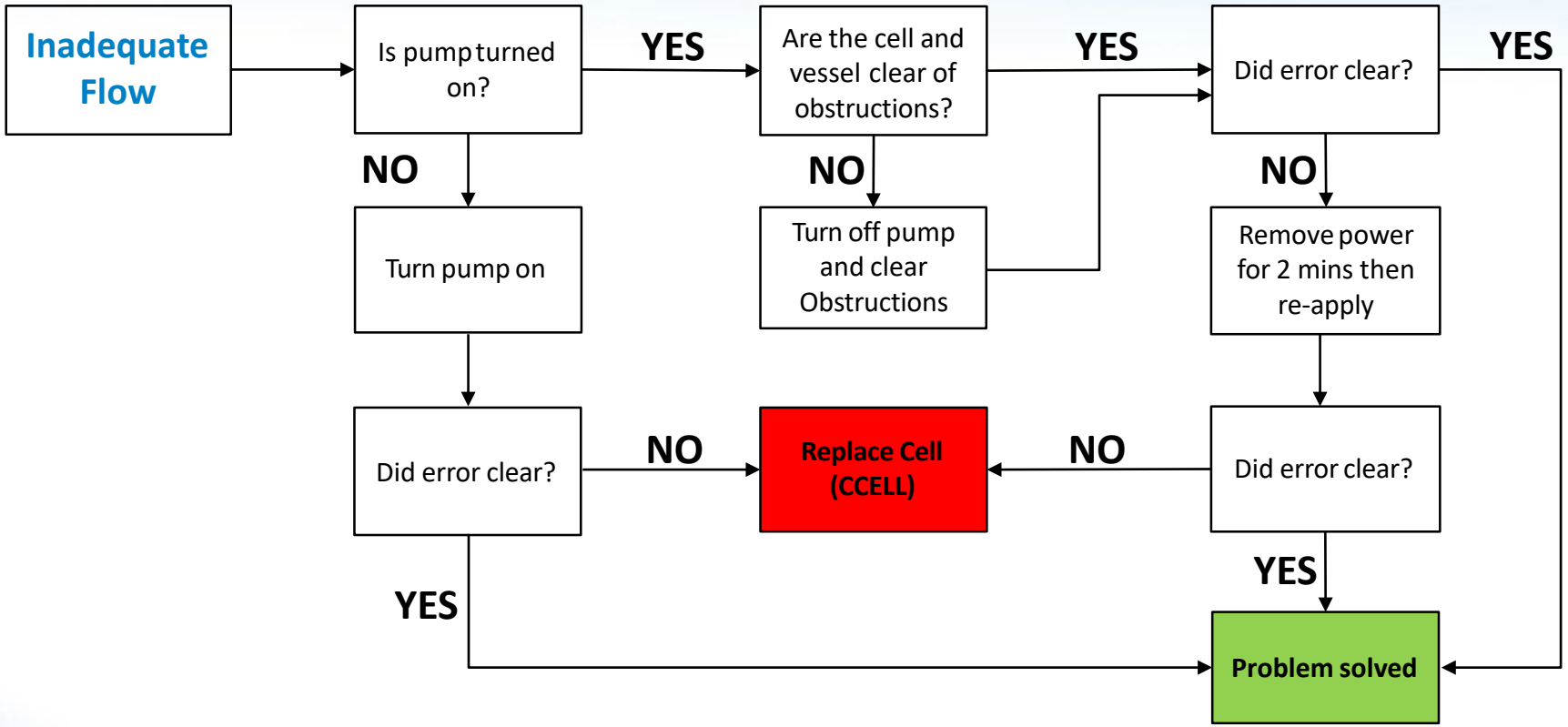
Reason	Possible Action
No water flow detected	Verify pump is “on” Remove power for two minutes
Low water flow detected	Check for obstructions or other flow related issues in plumbing. Verify filter is clean.

***Pages 30-32 will walk you through the proper steps to diagnose these errors**

HAYWARD

Problem Detected: Inadequate Flow

These lights illuminated together indicate Low or No water flow through cell vessel



*For verification of diagnosis contact Hayward Technical Support
908-355-7995

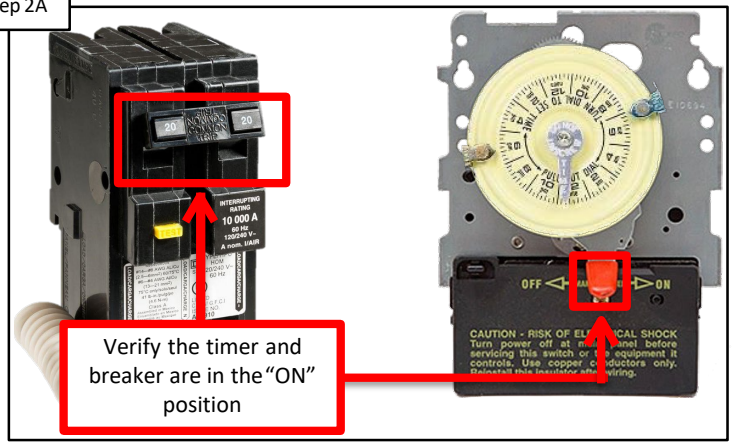
HAYWARD

Problem Detected: Inadequate Flow

These lights illuminated together indicate Low or No water flow through cell vessel

Verify Pump is Turned On and Running

Step 2A



Verify pump is on and water is flowing. If pump is running, remove power to the AQR100 for two mins then re-apply. If error still does not clear **go to step 2B**.

Inspect the Cell

Step 2B

Remove calcium and other debris from the cell

The cell must be clean to report an accurate salt reading. If cell is dirty, clean the cell (**steps on** pg.11-12). If cell is clean, like the image above, **go to step 2C**.

The cleanliness of the cell plays a major role in the AquaRite 100's ability to report salt levels accurately.

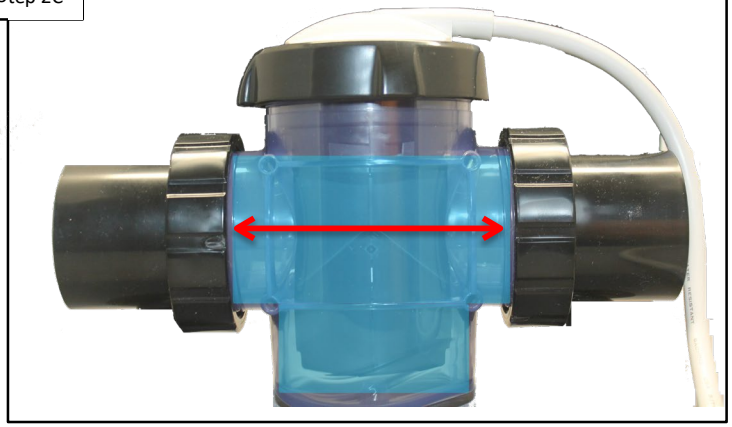
HAYWARD

Problem Detected and MIN LED

These lights illuminated together indicate Low or No water flow through cell vessel

Verify Moving Water Fully Covers Cell Plates

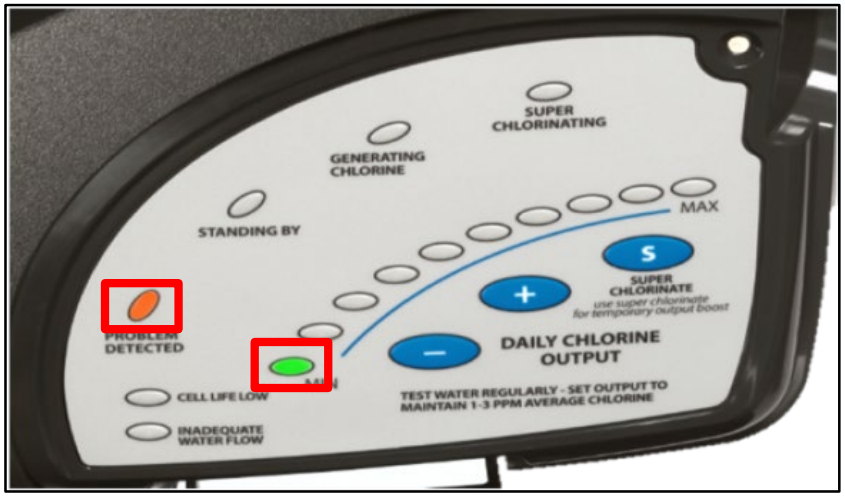
Step 2C



Inspect cell vessel, verify cell plates are fully covered by moving water. If NOT fully covered by moving water, clear obstructions. If error persists, replace cell (**CCELL**).

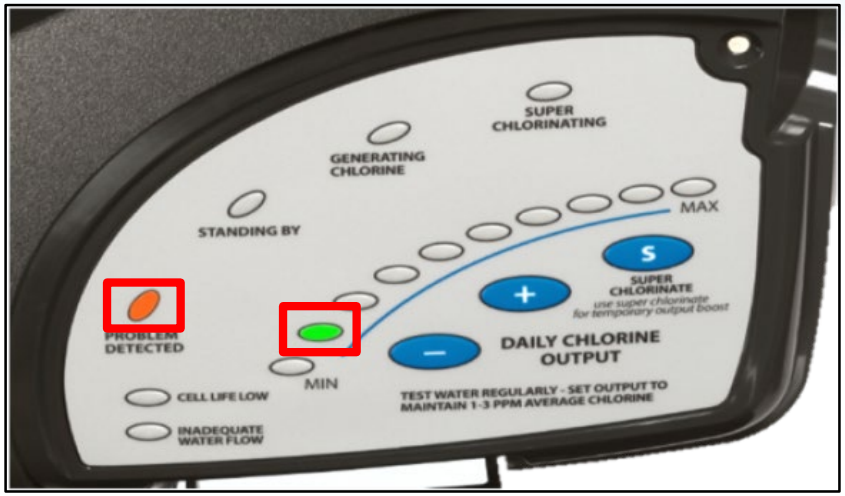
Problem Detected LED

With "MIN" LED



Reason	Possible Action
Low Salt	Verify salt level is between 1500 – 4500 ppm Adjust salt level if necessary
	Inspect cell. If dirty (calcified) then follow the Cell cleaning procedure
	Inspect cell vessel, verify cell platesare covered by moving water
	Remove power to the AquaRite 100 for two minutes, then re-apply to reset system

With LED #2



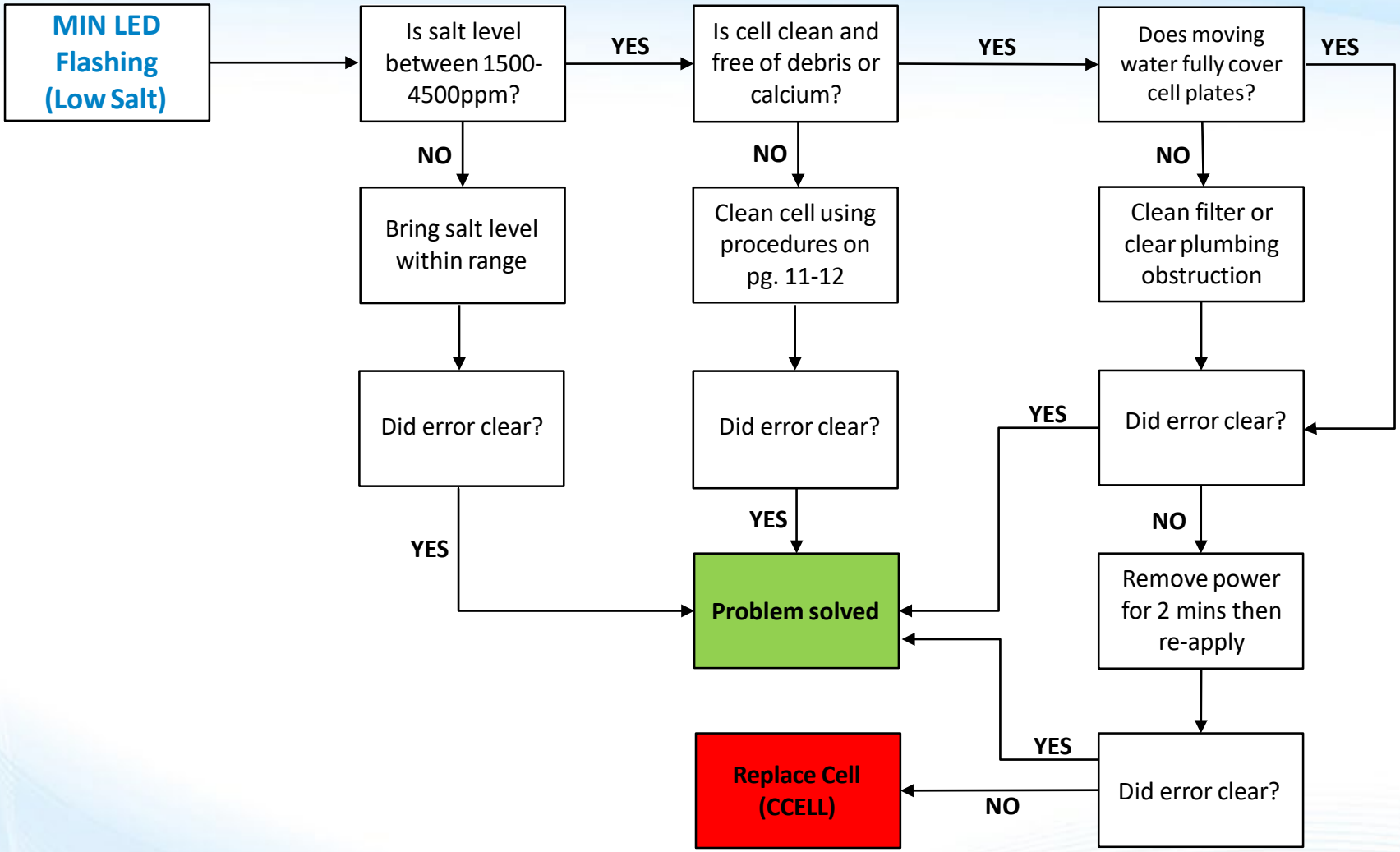
Reason	Possible Action
High Salt	Check the salt level in the pool is no greater than 4500ppm
	Verify water temperature is no greater than 104°F
	Bring water temperature between 65°F -104°F if necessary
	Remove power to the AquaRite 100 for two minutes, then re-apply to reset system

***Pages 34-39 will walk you through the proper steps to diagnose these errors**

HAYWARD

Problem Detected: MIN LED

When these lights illuminate together, the Cell reports salt levels below 1500.



***For verification of diagnosis contact Hayward Technical Support**
908-355-7995

HAYWARD

Problem Detected and MIN LED

When these lights illuminate together, the cell reports salt levels below 1500.

Test the Salt Level

Step 3A

Desired Salt Concentration:
1500-4500 PPM

Test the salt concentration of the water using an independent test, with a calibrated salt meter. If the salt level is below 1500, raise the salt level (**refer to salt addition table pg. 54**). If fine, **go to step 3B**.

Inspect the Cell

Step 3B

Remove calcium and other debris from the cell

The cell must be clean in order to report an accurate salt reading. If the cell is dirty, clean the cell (**steps on pg.11-12**). If cell is clean, like the image above, **go to step 3C**.

The cleanliness of the Cell plays a major role in the AquaRite 100's ability to report salt levels accurately.

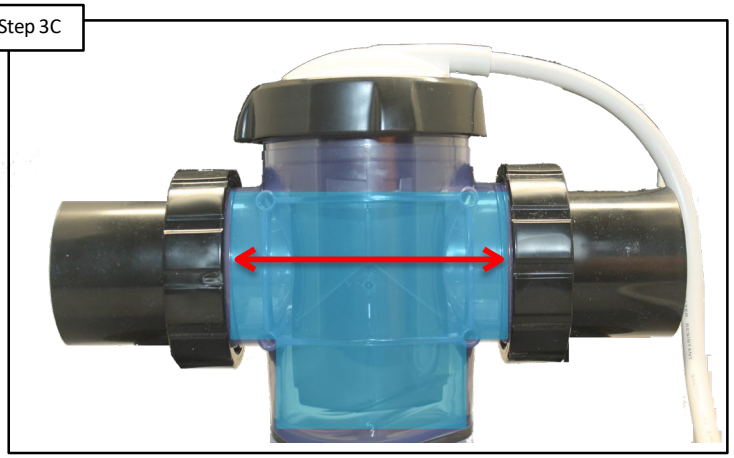
HAYWARD

Problem Detected and MIN LED

When these lights illuminate together, the cell reports salt levels below 1500.

Verify Moving Water Fully Covers Cell Plates

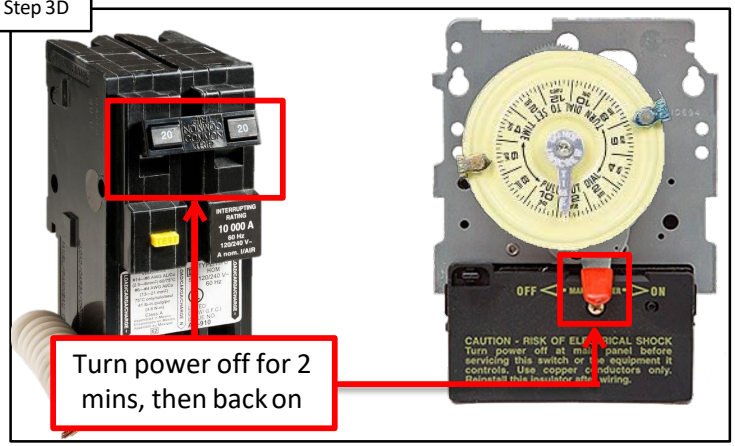
Step 3C



Inspect cell vessel, verify cell plates are fully covered by moving water. If NOT fully covered by moving water, clear obstructions. If error persists, **go to step 3D**.

Remove Power From the AQR100

Step 3D

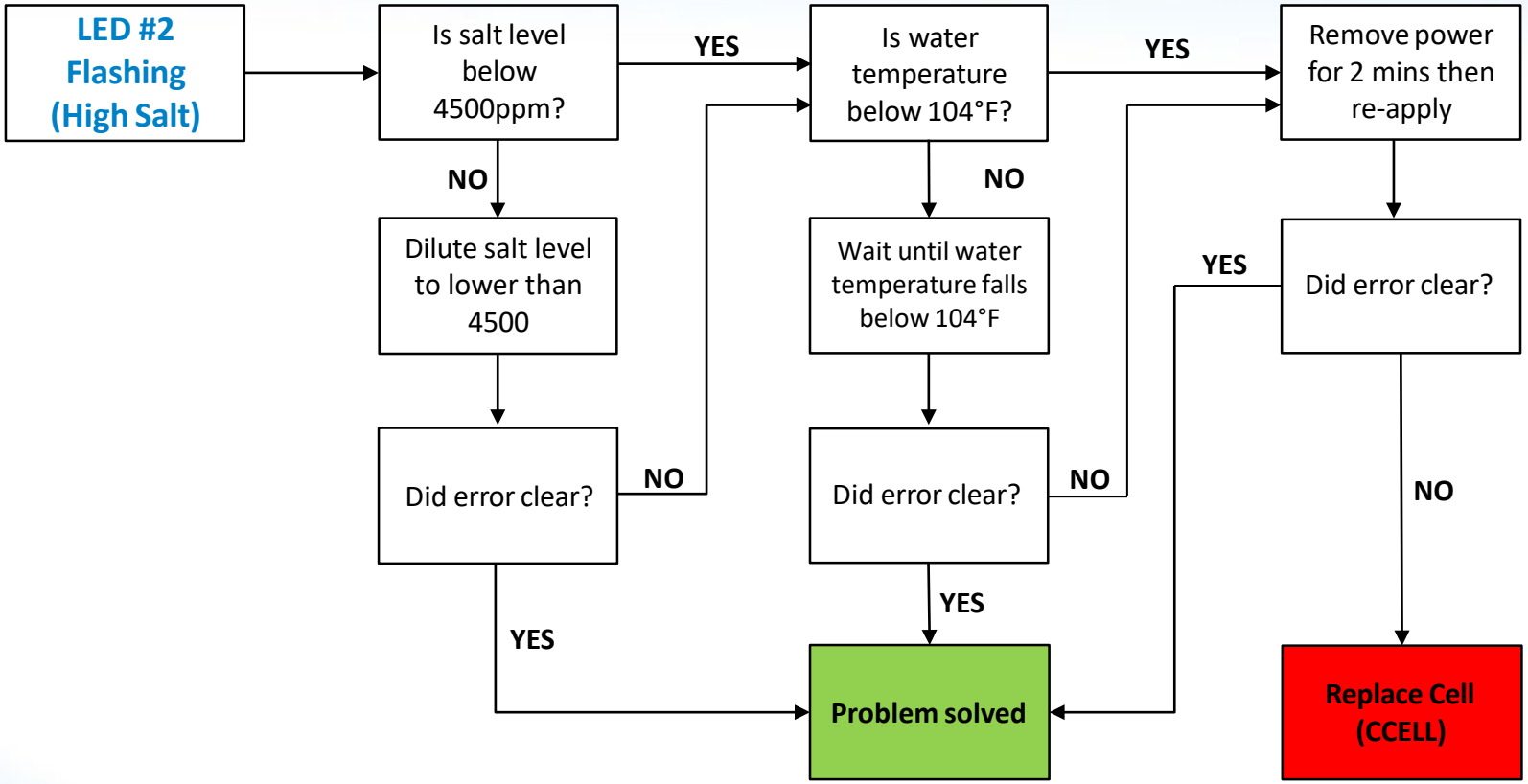


Remove power to the AQR100 for two minutes. Re-apply power to reset the system. If error does not clear replace the cell **(CCELL)**.

HAYWARD

Problem Detected: LED #2

*When these lights illuminate together, the **Cell** reports salt levels above 4500.*



*For verification of diagnosis contact Hayward Technical Support
908-355-7995

HAYWARD

Problem Detected: LED #2

*When these lights illuminate together, the **Cell** reports salt levels above 4500.*

Test the Salt Level

Step 3E

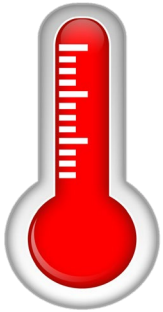
Desired Salt Concentration:
1500-4500 PPM

Test the salt concentration of the water using an independent test, with a **calibrated** salt meter. If salt level is above 4500, dilute salt level **(referring to salt dilution calculation on pg. 55)**. If fine, go to Step 3E.

Verify Water Temperature is Within Range

Step 3F

Desired Water Temperature is between
65°F - 104°F



If water temperature is NOT within the proper range, wait until the water temperature is between 65°F - 104°F . If the temperature IS within the proper range continue to step 3G.

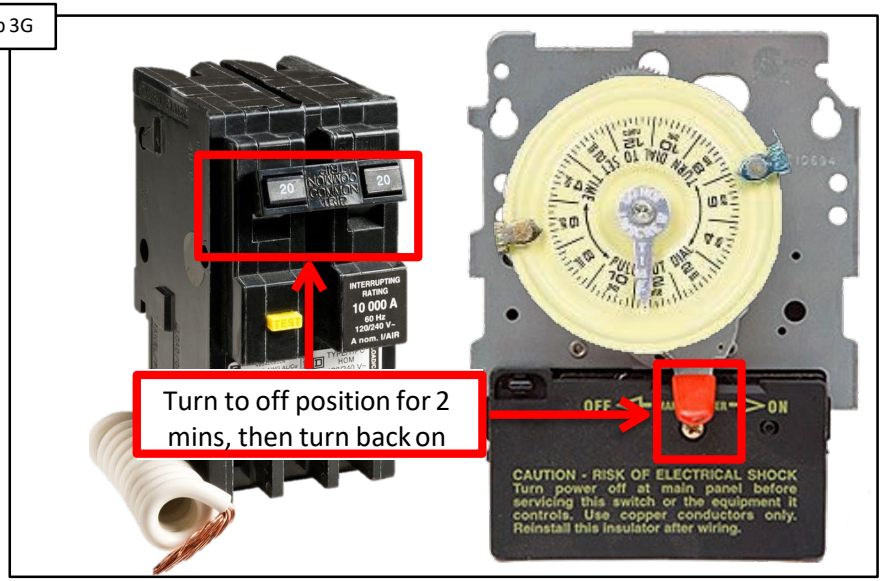
HAYWARD

Problem Detected: LED #2

When these lights illuminate together, the cell reports salt levels above 4500.

Remove Power From the AQR100

Step 3G

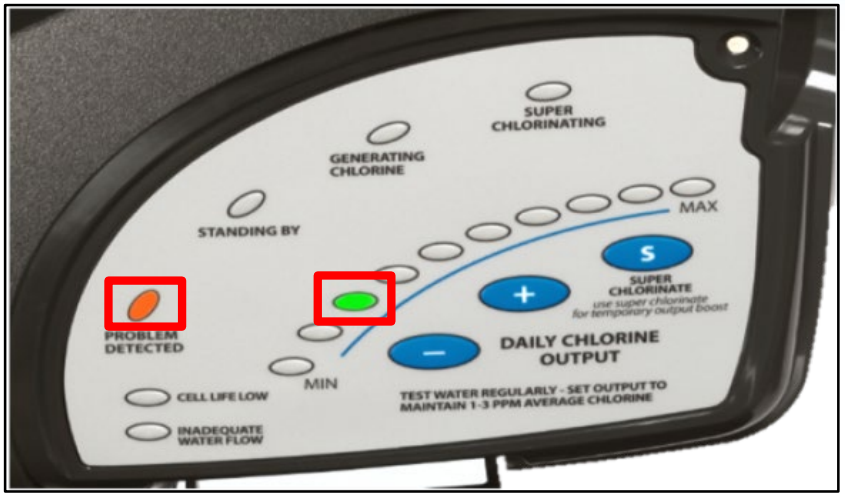


Remove power to the AQR100 for two minutes. Re-apply power to reset the system. If error does not clear replace the cell **(CCELL)**.

HAYWARD

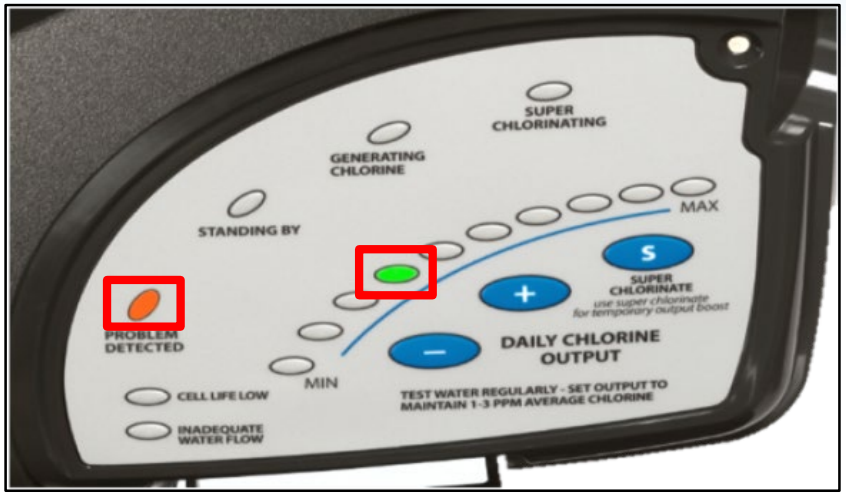
Problem Detected LED

With LED #3



Reason	Possible Action
Low Input Power	Remove power to AquaRite 100 for two minutes, then re-apply to reset system
	Verify input power wiring is configured for the correct voltage (pg. 9 of this manual)
	Verify proper voltage to the AquaRite 100

With LED #4

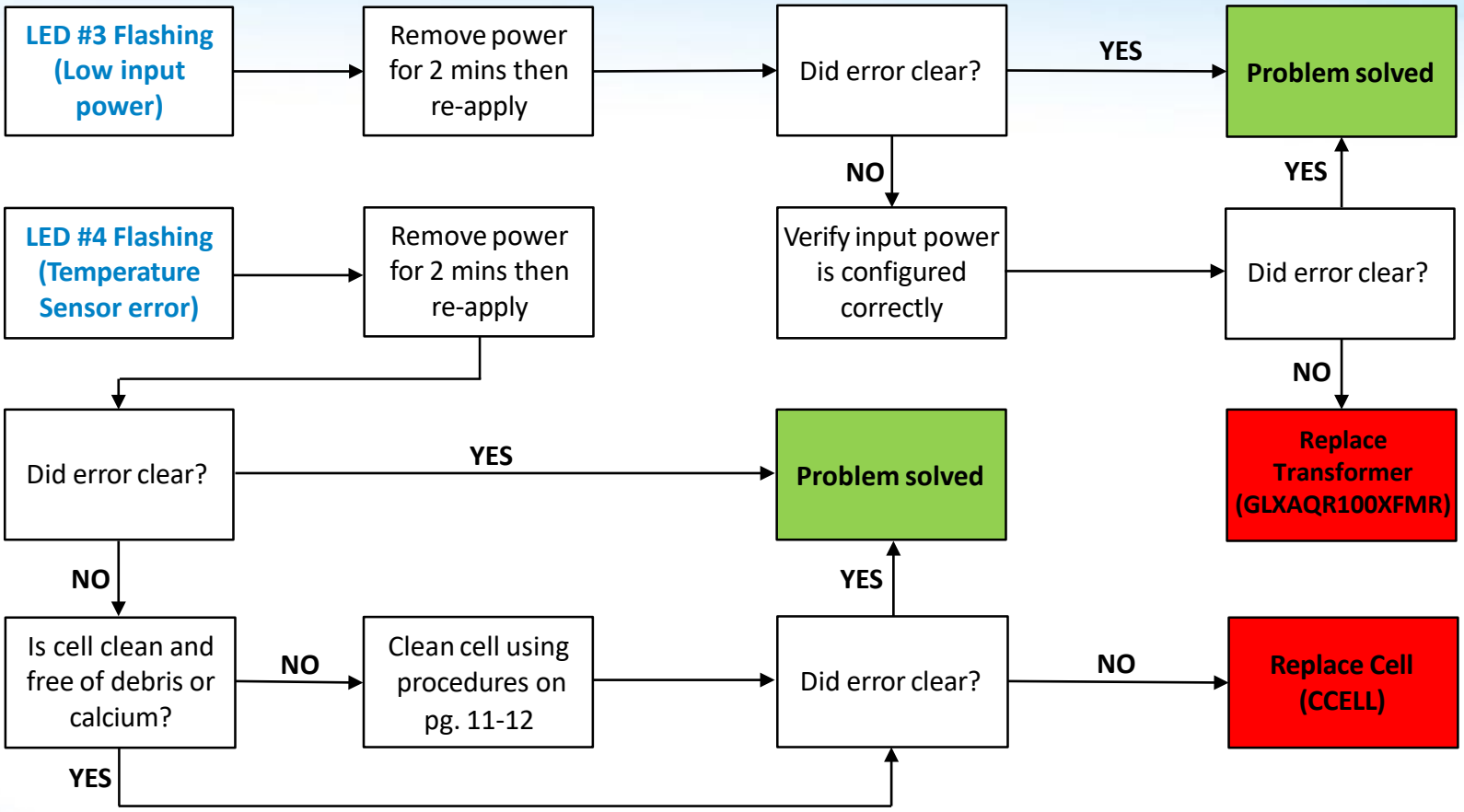


Reason	Possible Action
Temperature Sensor Error	Remove power to AquaRite 100 for two minutes, then re-apply to reset system
	Inspect cell. If dirty (calcified) then follow the cell cleaning procedure
	Replace cell

***Pages 41-43 will walk you through the proper steps to diagnose these errors**

HAYWARD

Problem Detected: LED #3 or #4



*For verification of diagnosis contact Hayward Technical Support
908-355-7995

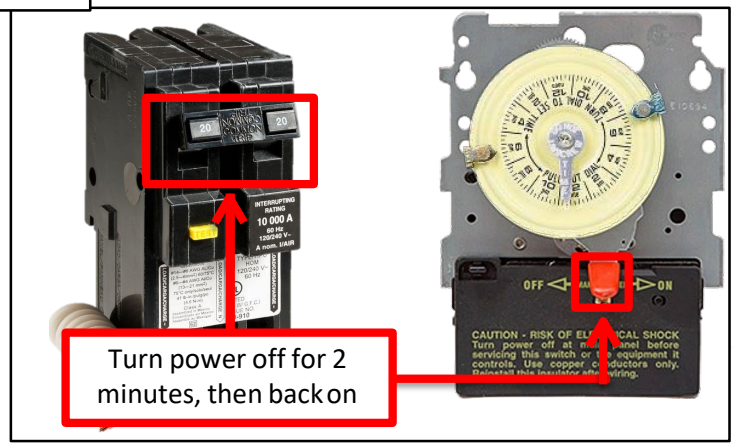
HAYWARD

Problem Detected: LED #3

When these lights illuminate together the AQR100 is registering Low Input Power.

Remove Power From AQR100

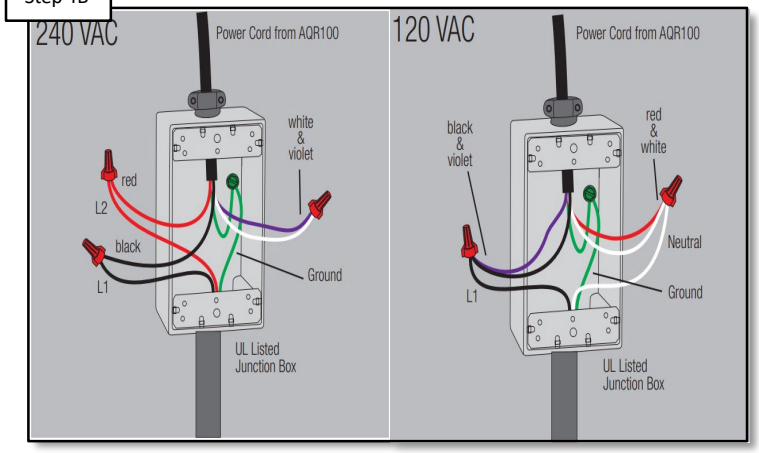
Step 4A



Remove power from the AQR100 for two minutes. Re-apply power to reset the system. If error does not clear **go to step 4B**.

Verify AQR100 Wiring

Step 4B



Wiring should be configured correctly for the applied voltage. Verify proper voltage to AQR100. *If error persists, replace transformer **(GLXAQR100XFMR)**.

***Follow the steps on pages 23-26 to access/test/replace transformer**

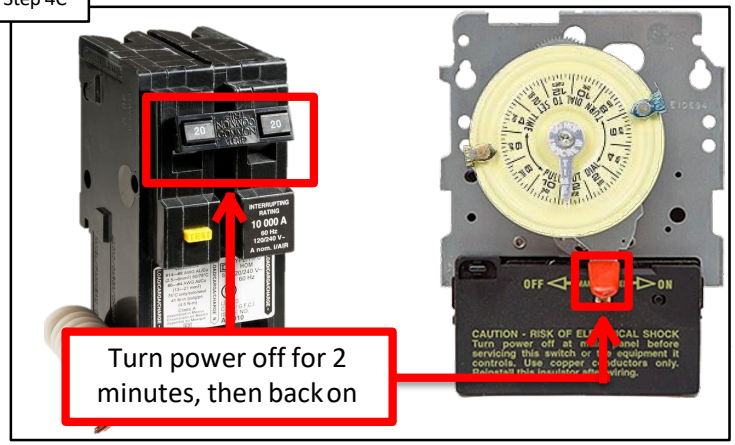
HAYWARD

Problem Detected: LED #4

These lights illuminated together indicate a Temperature Sensor Error.

Remove Power From AQR100

Step 4C



Remove power from the AQR100 for two minutes. Re-apply power to reset the system. If error does not clear **go to step 4D**.

Inspect Cell

Step 4D

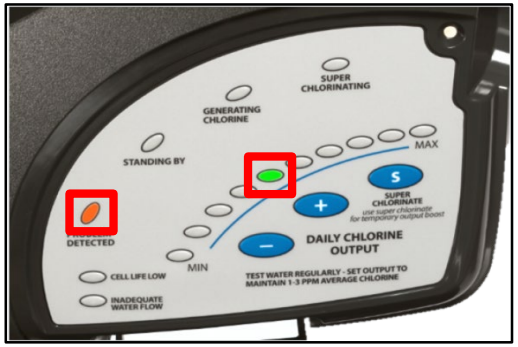
Remove calcium and other debris from the cell

Cell should be clean & free of debris. If cell is dirty, clean the cell.
If cell is clean, replace cell **(CCELL)**.

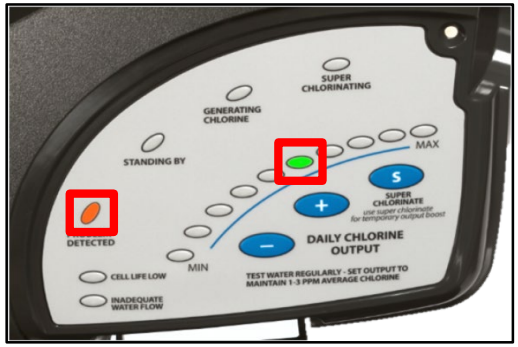
HAYWARD

Problem Detected LED

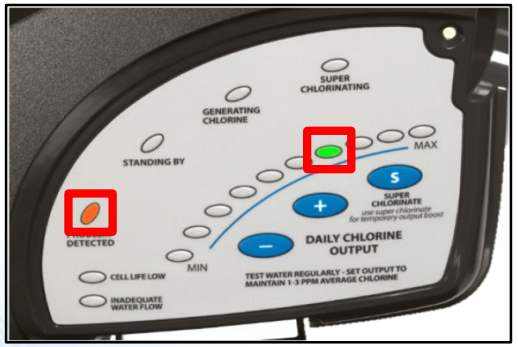
With LED #5



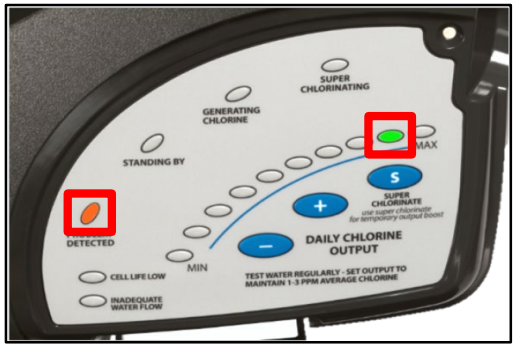
With LED #6



With LED #7



With LED #9



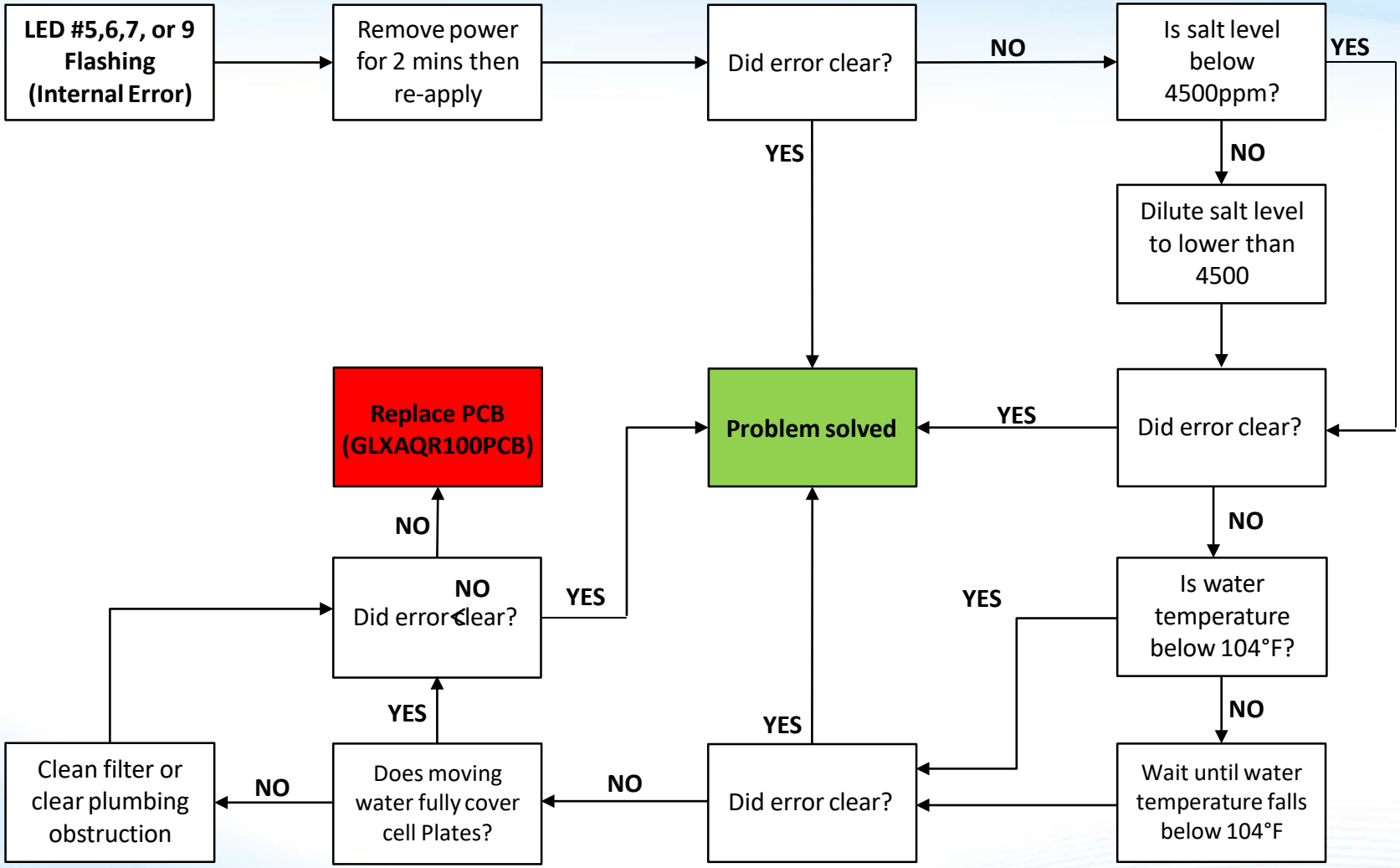
Reason	Possible Action
Internal Error	Remove power to the AquaRite 100 for two minutes, then re-apply to reset system
	Verify salt level is no greater than 4500 ppm
	Verify water temperature is no greater than 104°F
	Inspect cell vessel and verify cell plates are fully covered by moving water
	Replace PCB **(GLXAQR100PCB)**

***Pages 45-47 will walk you through the proper steps to diagnose these errors**

HAYWARD

Problem Detected: LED #5,6,7, or 9

Problem Detected with any one of these LED's illuminated indicates an Internal Error.



*For verification of diagnosis contact Hayward Technical Support
908-355-7995

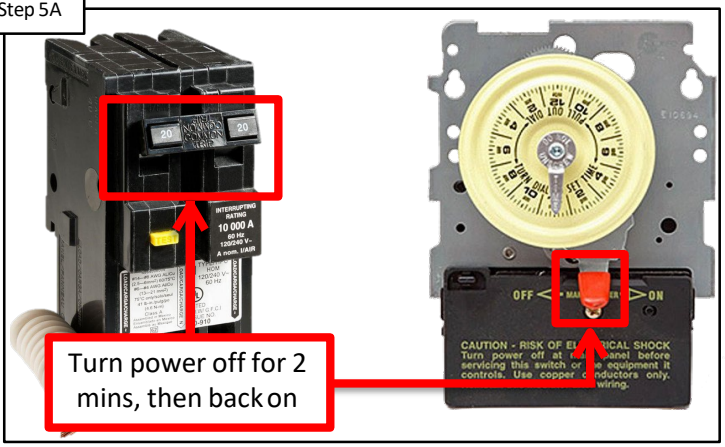
HAYWARD

Problem Detected: LED #5,6,7, or 9

Problem Detected with any one of these LED's illuminated indicates an Internal Error.

Remove Power From the AQR100

Step 5A



Remove power to the AQR100 for two minutes. Re-apply power to reset the system. If error does not clear **go to step 5B**.

Test the Salt Level

Step 5B

Desired Salt Concentration:

1500-4500 PPM

Test salt level of water, using an independent test, with a calibrated salt meter. If salt level is above4500, dilute salt. If fine, **go to Step 5C**.

*** Salt Dilution Formula is found on pg. 55 of this manual**

HAYWARD

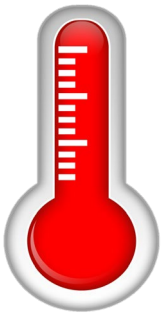
Problem Detected: LED #5,6,7, or 9

Problem Detected with any one of these LED's illuminated indicates an Internal Error.

Verify Water Temperature is Within Range

Step 5C

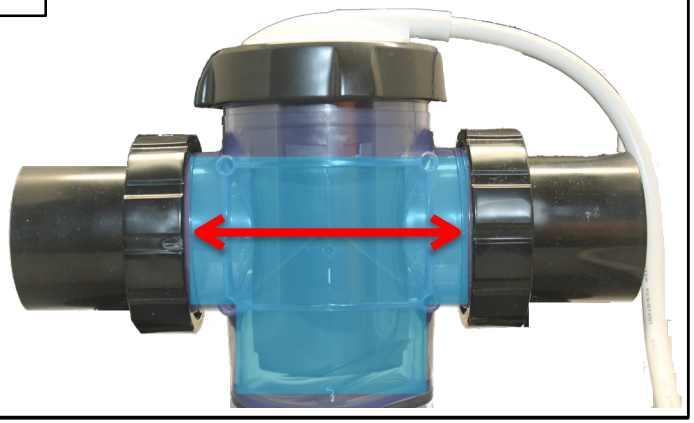
Desired Water Temperature is between
65°F - 104°F



If water temperature is NOT within the proper range, wait until it is within range.
If the temperature IS within range **go to step 5D**.

Verify Moving Water Fully Covers Cell Plates

Step 5D



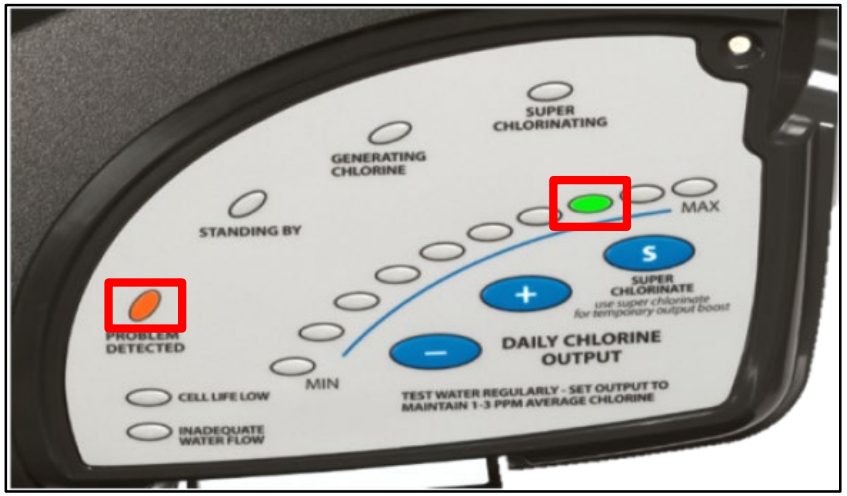
Inspect cell vessel and verify cell plates are fully covered by moving water. If issue does not clear, replace the PCB (**GLXAQR100PCB**).

*Follow the steps on pages 23-27 to access/test/replace PCB

HAYWARD

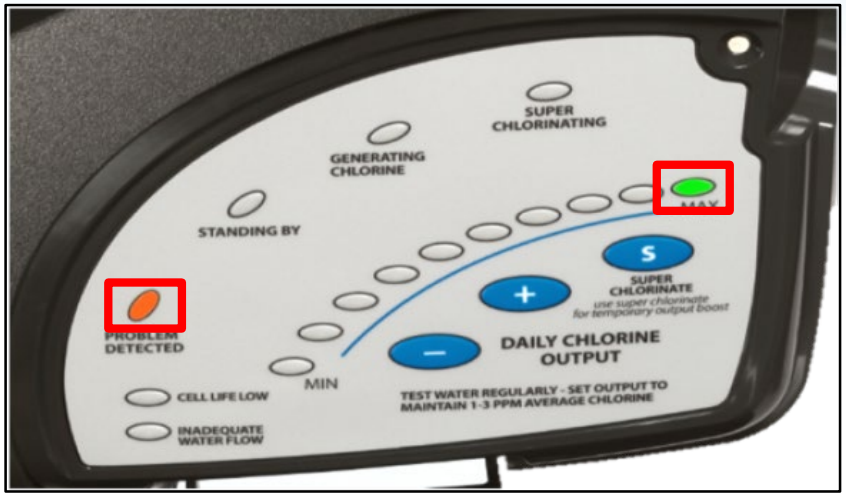
Problem Detected LED

With LED #8



Reason	Possible Action
No Current to Cell	Remove power to the AquaRite 100 for two minutes and then re-apply to reset system
	Turn on Super Chlorinate briefly then go back to original setting
	Inspect cell vessel and verify cell plates are fully covered by moving water

With "MAX" LED

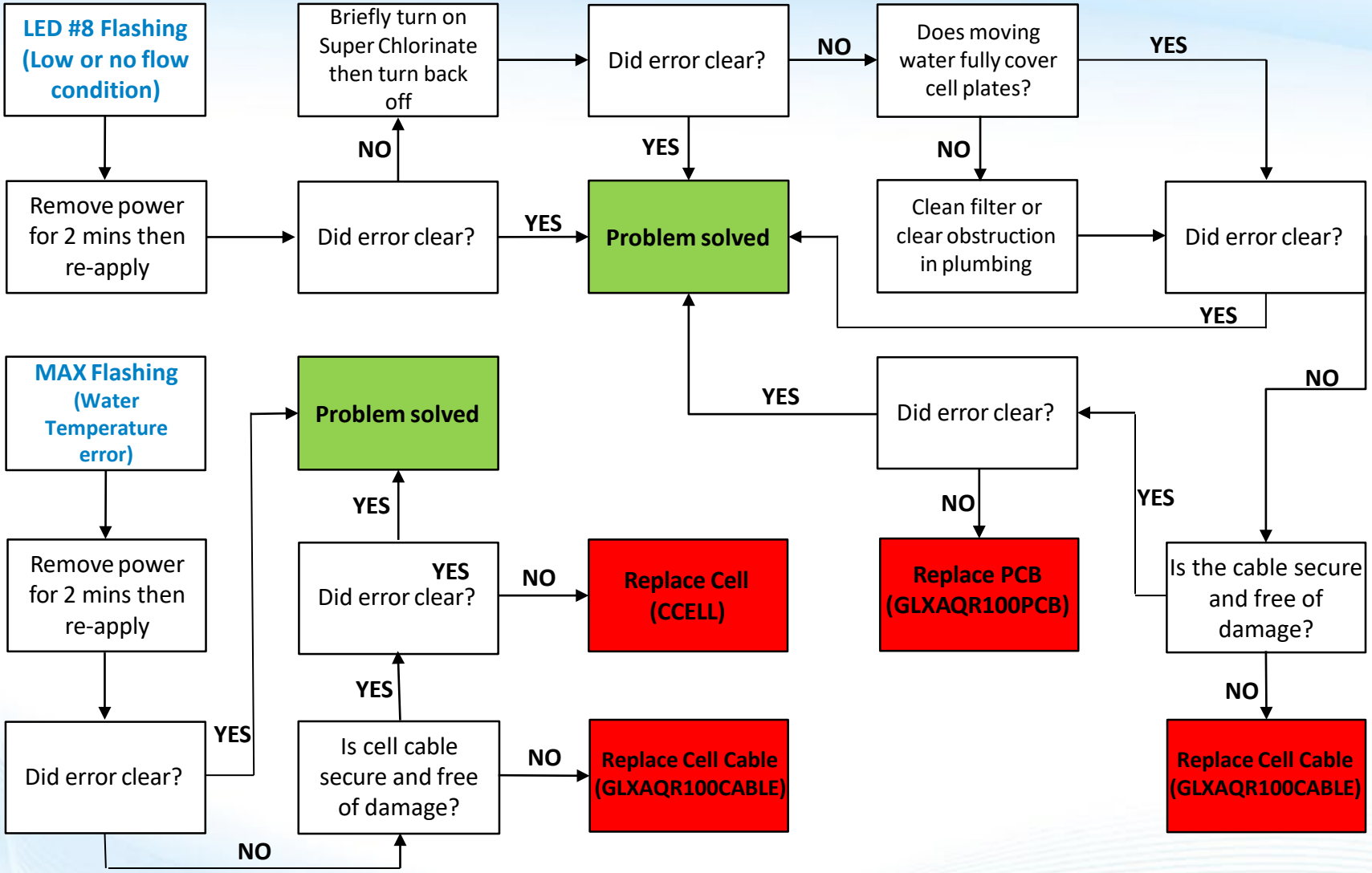


Reason	Possible Action
Cell Error	Remove power to the AquaRite 100 for two (2) minutes and then re-apply to reset system
	Make sure cell cable is secure and free of damage, replace if necessary (**GLXAQR100CABLE**)
	If error persists, replace the cell (**CCELL**)

***Pages 49-52 will walk you through the proper steps to diagnose these errors**

HAYWARD

Problem Detected: LED #8 or MAX



*For verification of diagnosis contact Hayward Technical Support
908-355-7995

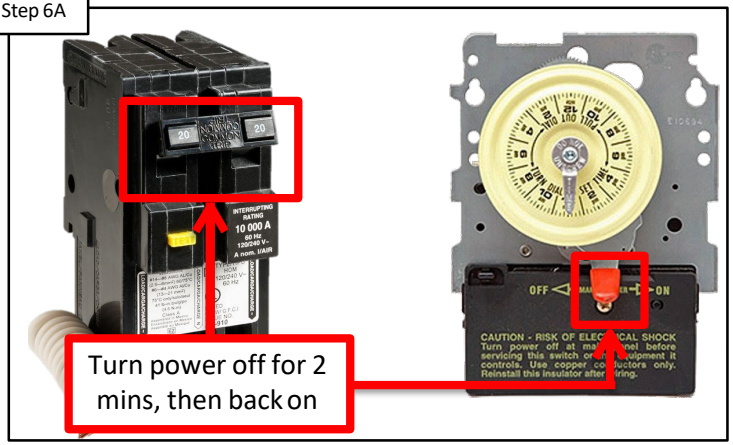
HAYWARD

Problem Detected: LED #8

These lights illuminated together indicate there is no current to the cell.

Remove Power From the AQR100

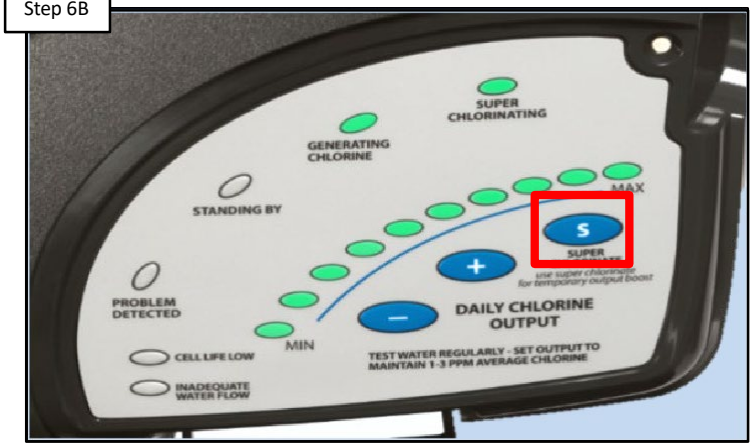
Step 6A



Remove power to the AQR100 for two minutes. Re-apply power to reset the system. If error does not clear **go to step 6B**.

Super Chlorinate

Step 6B



Press Super Chlorinate button to force generating cycle to begin. After a few moments press button again to turn it off. If error does not clear **go to step 6C**.

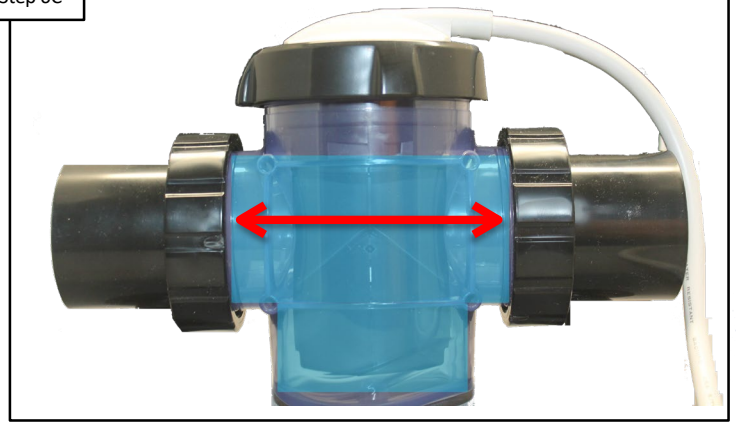
HAYWARD

Problem Detected: LED #8

These lights illuminated together indicate there is no current to the Cell.

Verify Moving Water Fully Covers Cell Plates

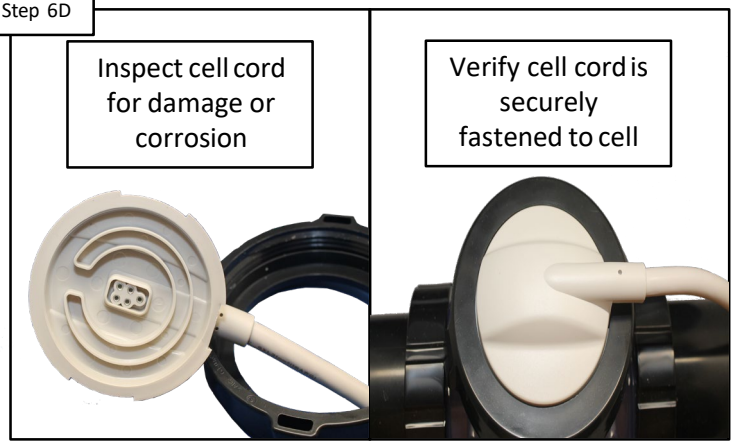
Step 6C



Inspect cell vessel and verify cell plates are fully covered by moving water. Clear cell of any obstructions. If problem persists, **go to step 6D**.

Inspect Cell Cord

Step 6D



*Cell cord must be connected securely and be free of damage, replace if necessary (**GLXAQR100CABLE**). **If error does not clear replace the PCB **(GLXAQR100PCB)**.

***Follow the steps on pages 13-18 to access/test/replace cell cable**
****Follow the steps on pages 23-27 to access/test/replace PCB**

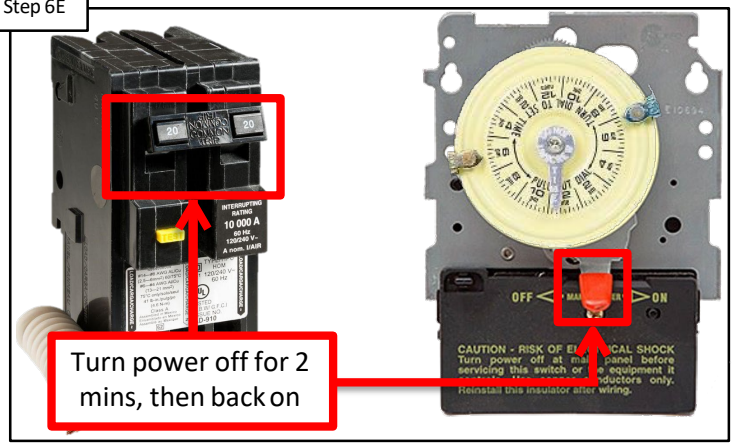
HAYWARD

Problem Detected: MAX LED

These lights illuminated together indicate there is no current to the cell.

Remove Power From the AQR100

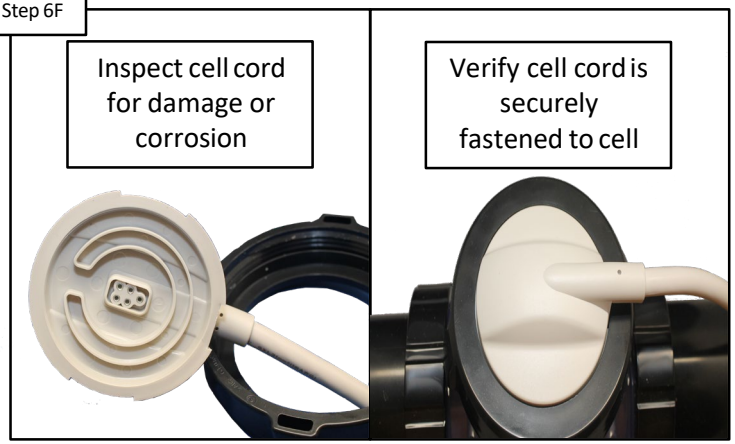
Step 6E



Remove power to the AQR100 for two minutes. Re-apply power to reset the system. If error does not clear **go to step 6F**.

Inspect Cell Cord

Step 6F



*Cell cord must be connected securely and be free of damage, replace if necessary (**GLXAQR100CABLE**). **If error does not clear replace the PCB **(GLXAQR100PCB)**.

***Follow the steps on pages 13-18 to access/test/replace cell cable**
****Follow the steps on pages 23-27 to access/test/replace PCB**

HAYWARD

Problem Detected: STANDING BY LED (Blinking)

The AQR100 has shut down because the temperature of the pool/spa water is too high (120ºF) or too low (50ºF).

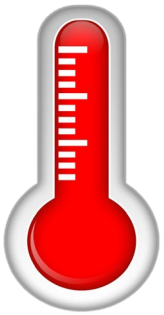
The system will not resume operation until the water temperature returns to normal.

Confirm water temperature

Step 1G

Desired Water Temperature is between

65°F - 104°F



Confirm water temperature is between *50ºF and 120ºF.* Remove power to the AQR100 for two minutes. Re-apply power to reset the system. If error does not clear **go to step 2G.**

Inspect Cell Cord Connection

Step 2G

Inspect cell cord for damage or corrosion

Inspect cell pins for water damage or corrosion

Cell cord must be connected securely and be free of damage. Check the cell/cable connector for water intrusion. Grease connection and reconnect. If error does not clear **replace the cell.**

***** NOTE: This condition can sometimes happen if the pool/spa temperature is already high, and the heater is running. The temperature coming out of the heater and into the Cell could possibly be high enough to shut down the AQR100.

HAYWARD

AquaRite 100®

Additional Information

Salt Addition Chart: lbs. Required for 3200ppm

Current Salt Level	Pool Size - Gallons																
	8,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000	24,000	26,000	28,000	30,000	32,000	34,000	36,000	38,000	40,000
0	213	267	320	373	427	480	533	587	640	693	747	800	853	907	960	1013	1067
200	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
400	187	233	280	327	373	420	467	513	560	607	653	700	747	793	840	887	933
600	173	217	260	303	347	390	433	477	520	563	607	650	693	737	780	823	867
800	160	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760	800
1000	147	183	220	257	293	330	367	403	440	477	513	550	587	623	660	697	733
1200	133	167	200	233	267	300	333	367	400	433	467	500	533	567	600	633	667
1400	120	150	180	210	240	270	300	330	360	390	420	450	480	510	540	570	600
1600	107	133	160	187	213	240	267	293	320	347	373	400	427	453	480	507	533
1800	93	117	140	163	187	210	233	257	280	303	327	350	393	397	420	443	467
2000	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
2200	67	83	100	117	133	150	167	183	200	217	233	250	267	283	300	317	333
2400	53	67	80	93	107	120	133	147	160	173	187	200	213	227	240	253	267
2600	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
2800	27	33	40	47	53	60	67	73	80	87	93	100	107	113	120	127	133
3000	13	17	20	23	27	30	33	37	40	43	47	50	53	57	60	63	67
3200	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal
3400	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
3600+	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute

Note: Prior to adding salt, always test water with independent tests to determine current salt and stabilizer levels.

How to add salt

Brushing the salt around will speed up the dissolving process. DO NOT allow the salt to sit in a pile at the bottom of the pool. Salt water is heavier than fresh water, so the salt water will tend to accumulate at the deepest part of the pool. Run the filter system with the suction coming from the main drain for 24 hours to evenly distribute the salt throughout the pool

Note: Refer to the Plasters recommendations for cure time before adding salt.

Salt Dilution Formula

To calculate how much water will need to be removed from a pool, with too much salt, follow the formula provided below (Proportional Method):

rt I

$$\frac{\text{(Ave. Pool Depth" X 3200)}}{\text{Actual Salt level in Pool}}$$

Part 1: Take the average depth of the pool in inches and multiply that by **3200 (or desired salt level within 1500-4500ppm)**. Then divide that number by the actual salt level in the pool (based on independenttest).

Part 2: Subtract the Average Pool Depth by the answer from **part 1**. This will give you the total number of inches to drain and replenish with fresh water to achieve a salt level of to match desired salt level from step1.

Part II

Ave. Pool Depth - Answer from Part 1 = Amount of Water to Drain

Example: a pool has an ave. depth of 54" and the salt level is 4500ppm

Example: PartI

$$54 \text{ X } 3200 = \frac{172800}{4500} = 38.4$$

Example: PartII

54 – 38.4 = **15.6"**

Note: It is recommended to reduce the water level no more than six inches at a time before replenishing with fresh water. Failure to due so may result in damage to the pool structure or surface.

Replacement Part Numbers

Replacement Part Number	Description
CCELL	Replacement Cell Only
GLXAQR100CCABLE	Cell Cable
GLXAQR100PCORD	Power Cord
GLXAQR100CTL	AQR 100 Control Center Only
GLXAQR100DOOR	Door Flap for Display
GLXAQR100PCB	Main PCB
GLXAQR100VESNUT	Vessel/ Cell Nut
GLXAQR100XFMR	Transformer
GLXAQR100VESSEL	Replacement Vessel (w/o cell)
GLX-F20A-10PK	Fuse Kit, 20A/Yellow (10 pack)
SP3200UNKIT	Vessel Unions Kit
GLX-DRK	Rectifiers

Reading Serial Numbers

3A20284-123456

3A20284 = **Standard Warranty Term**

3**A**20284 = **Product Family**

3A**20**284 = **Year of Manufacture**

3A20**284** = **Day of Manufacture**

123456 = **Manufacturing ID**

HAYWARD