



Jandy AquaPure, PureLink & Nature² Fusion Soft Workbook



BARACUDA®

Jandy®



Polaris®



ZODIAC POOL SYSTEMS, INC.

Zodiac Pool Systems, Inc.
1-800-822-7933
www.ZodiacPoolSystems.com

Instructor _____ ext. _____

Sales Representatives _____ ext. _____

_____ ext. _____

_____ ext. _____

Service Manager _____ ext. _____

_____ ext. _____

IMPORTANT SAFETY INSTRUCTIONS

The information contained in this technical guide is intended for Zodiac trained service personnel only. Electrical installation and repairs should only be performed by a certified electrician or Zodiac trained professional, and must comply with all national electric codes (NEC, Canadian, etc.), state and local law, ordinances, codes and regulations.

If you have not received training, **do not attempt any of the electrical repairs presented in this document.** Contact Zodiac Pool Care, Inc. at 1-800-822-7933 for assistance.

Read and follow all instructions carefully.

When servicing equipment, basic safety precautions should always be followed including those listed below.



WARNING

Failure to heed the following warnings could result in property damage, permanent injury or death.

TO REDUCE THE RISK OF ELECTRICAL SHOCK:

- Disconnect main power to pool equipment area prior to any service or repairs.
- Keep all electrical equipment at least 10 feet (3 m) from inside wall of pool or spa.
- Connect equipment only to a receptacle (cord models) or circuit (hardwired) protected by a ground fault circuit interrupter (GFCI).
- Use only copper conductors and supply wires suitable for the specific device.
- Replace damaged power cord(s) immediately and use only identical replacement parts.
- Do not bury power cord(s). Position cord(s) to minimize abuse from lawn mowers, hedge trimmers and other equipment.
- Do not install or service equipment if precipitation is present or imminent.

TO REDUCE EQUIPMENT WATER PRESSURE HAZARD:

- Always turn pump off to release pressure prior to removing or installing in-line equipment.
- To avoid equipment damage, do not exceed water pressure (psi) specifications for the device.

To reduce the risk of injury, do not permit children to operate, handle or play on equipment.

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Chlorine Generation

Current Models:

Discontinued Models:



**Jandy PureLink, APureM,
& Nature² FusionM**

(Require Cell Kit or Nature² Fusion Soft)



AquaPure



COM 25

ClorMatic II

ClorMatic III

Parts Still Available!

Finished Goods Part Numbers “Chlorine Generators”

6613AP

Power Pack Model:

6614AP-L= Sub Panel Power Center PureLink for AL-RS/PDA

6613AP= Standard Power Center PureLink Generator for AL-RS/PDA

AquaPureM or Nature² FusionM = Stand Alone AquaPure/Nature² Fusion

Cell Model:

PLC= Cell Kit

FSOFT= Cell Kit with Nature2 Vessel

Size:

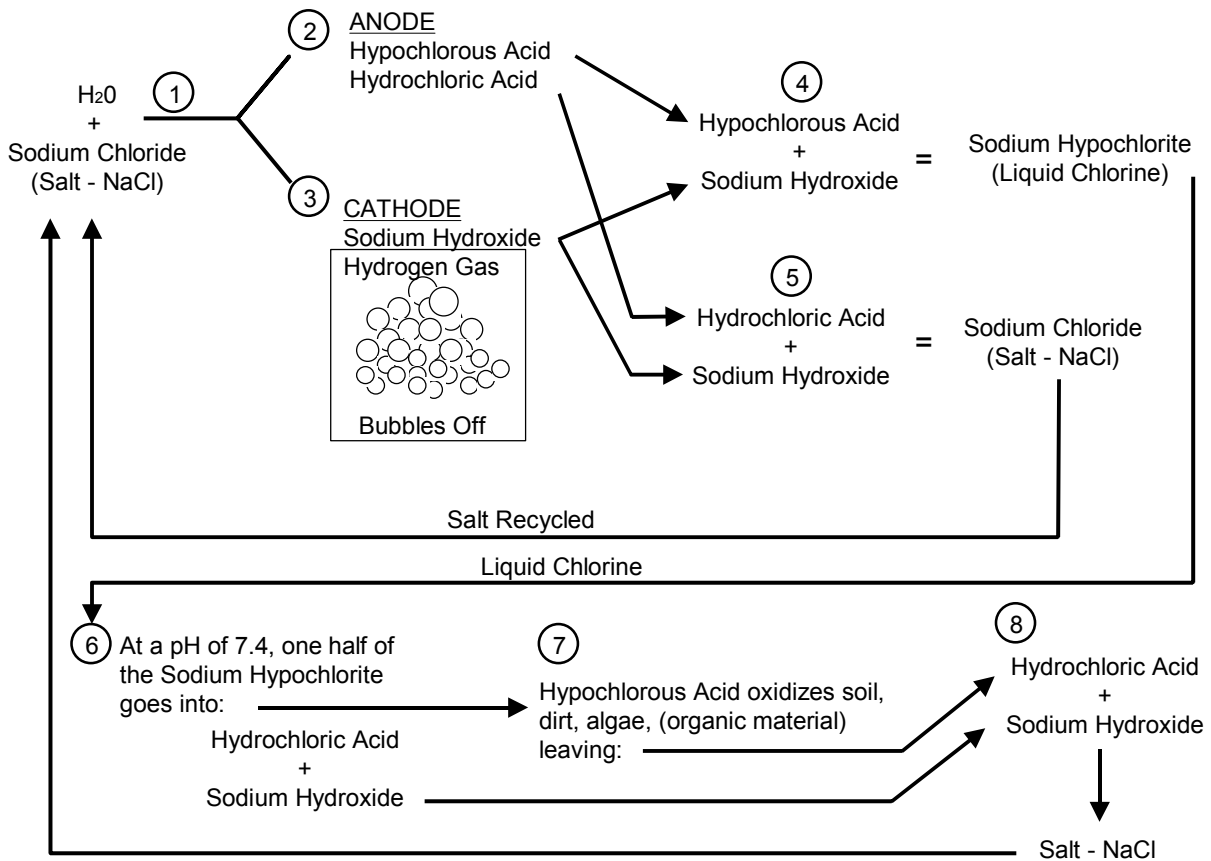
1400= 14 Plate Cell

700= 7 Plate Cell

PLC1400

Chlorine Production and Process

	Gas Chlorine	Liquid Chlorine (12.5%)	90% Tri-Chlor Tabs	Calcium Hypochlorite
700	.625 lbs.	.625 gallons	.69 lbs.	0.95 lbs.
1400	1.25 lbs	1.25 gallons	1.38 lbs	1.9 lbs.



Notes:

CHLORINE GENERATION

AQUAPURE AND NATURE² FUSION POWER PACKS

STAND ALONE POWER PACK

APUREM

NATURE² FUSIONM

PURELINK POWER CENTERS

STANDARD POWER CENTER

6613AP

SUB-PANEL POWER CENTER

6614AP-L



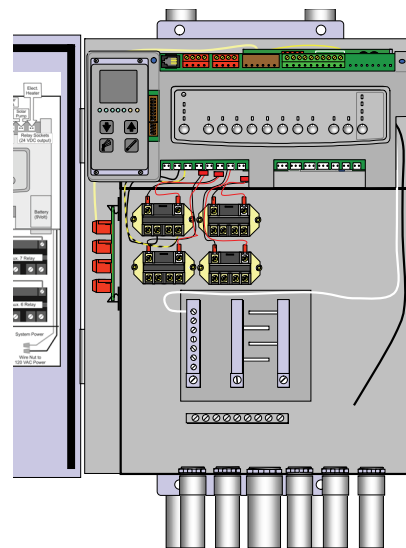
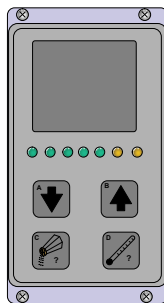
AquaPure/
Nature² Fusion Soft
Power Pack



PureLink

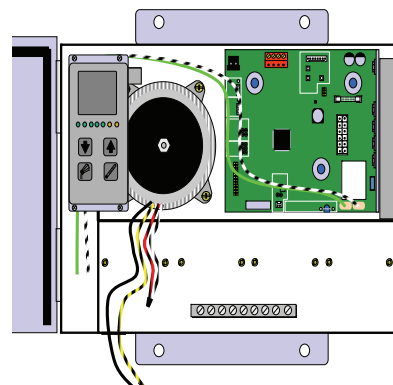
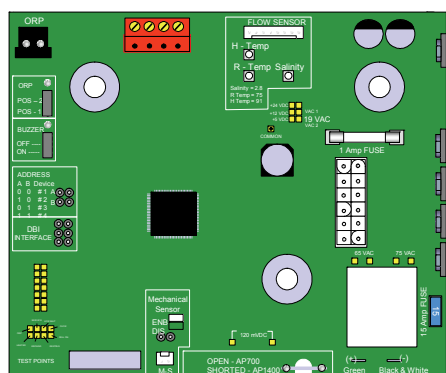
USER INTERFACE BOARD (UIB)

Replacement P/N: R0467400



POWER INTERFACE BOARD (PIB)

Replacement P/N: R0467600



CHLORINE GENERATION

CELL KITS

16' CORDS

PLC700 (Up to 12,000 Gallons)

PLC1400 (Up to 40,000 Gallons)

25' CORDS

PLC700-25

PLC1400-25



Cell – 3 Port



Low Voltage
Cord



Flow/Temp/Salinity
Sensor

NATURE² FUSION SOFT KITS

16' CORDS

FSOFT700 (Up to 12,000 Gallons)

FSOFT1400 (Up to 40,000 Gallons)

NATURE² CARTRIDGES

W28000 = Single Cartridge for FSOFT700

W26000 = 4 Pack of Cartridges for FSOFT700

W28002 = Single Cartridge for FSOFT1400

W26002 = 4 Pack of Cartridges for FSOFT1400



Nature²
Cartridge



Nature² Fusion Soft
(Cell and Start Up Cartridge Included)



Low Voltage
Cord



Flow/Temp/Salinity
Sensor

Nature²

Nature² Benefits

- The Bactericidal qualities of silver reduce the amount of chlorine required to maintain the pool. The copper inhibits algae growth.
- By Lowering the output of the chlorine generator, the pool water quality dramatically improves and the life of the electrolytic cell is extended.

The Minerals

- Copper– inhibits algae growth, regularly sold as algaecides
- Silver– known bactericide, used for thousands of years to bacteria in water, milk, and on skin
- Porous Alumina– releases silver and copper, assists in trapping nuisance metals, algae, and bacteria

The Facts

- Copper is released into the pool at low levels (.02 - .06 ppm)
- Silver is maintained throughout the cartridge life (6 months at .01 - .05 ppm)
- Minimum pump run time is 6 hours, and can be run up to 24 hours

Additional Nature² Products



Nature² Fusion Inground

- Nature² with Chlorine Tab Feeder
- Up to 45,000 Gallons
- 3 Cartridge Sizes



Professional G

- Stand Alone Nature²
- Up to 45,000 Gallons
- 3 Cartridge Sizes



Nature² Express

- Stand Alone Nature²
- After Market, Easy Install
- Up to 25,000 Gallons

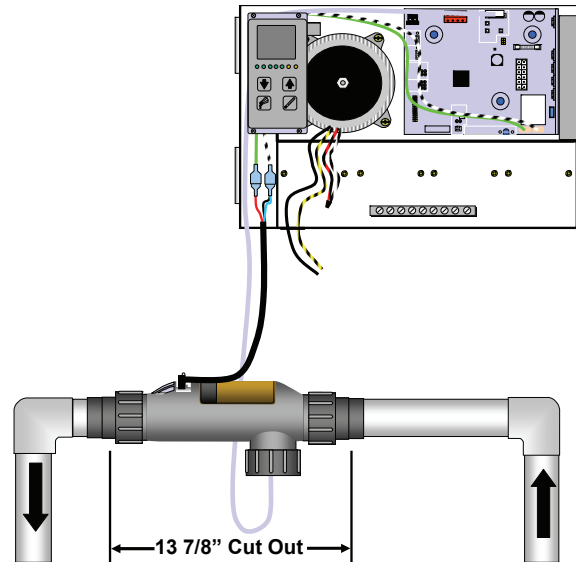
Notes:

CHLORINE GENERATION INSTALLATION – PLUMBING

3 Port Cell and Sensor

Preferred Plumbing

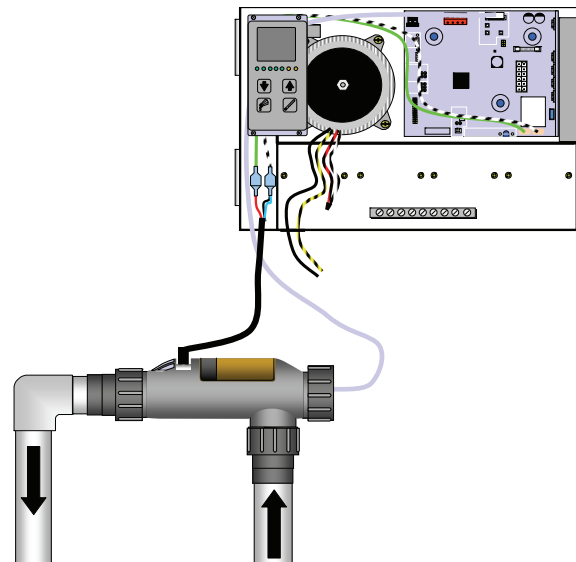
The “T” for the Flow/Temp/Salinity Sensor should be pointed down to prevent air entrapment which could cause false readings.



3 Port Cell and Sensor

OK Plumbing

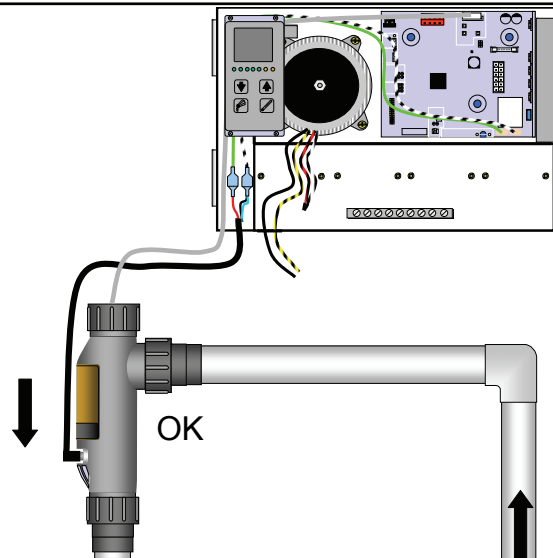
The 3 Port Cell can be located so the sensor is mounted to the side of the cell.



3 Port Cell and Sensor

OK Plumbing

The 3 Port Cell can be located so the sensor is mounted to the top of the cell.

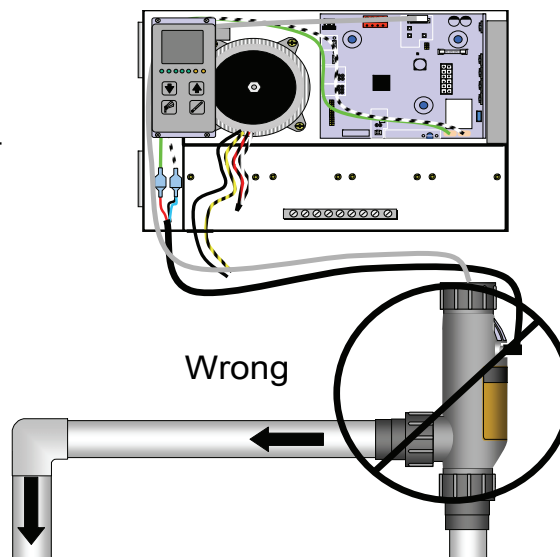


CHLORINE GENERATION INSTALLATION - PLUMBING

3 Port Cell and Sensor

Wrong Plumbing

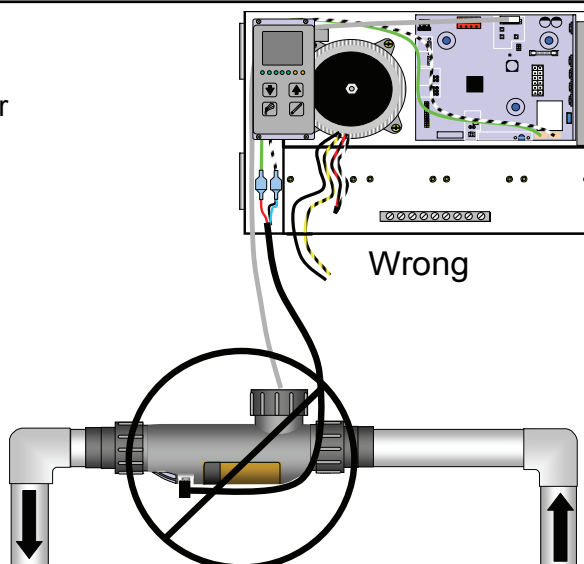
If the 3 Port Cell is plumbed as shown, the cell may not produce chlorine, and the sensor will provide inaccurate readings.



3 Port Cell and Sensor

Wrong Plumbing

If the 3 Port Cell is plumbed as shown, the sensor may provide inaccurate readings.



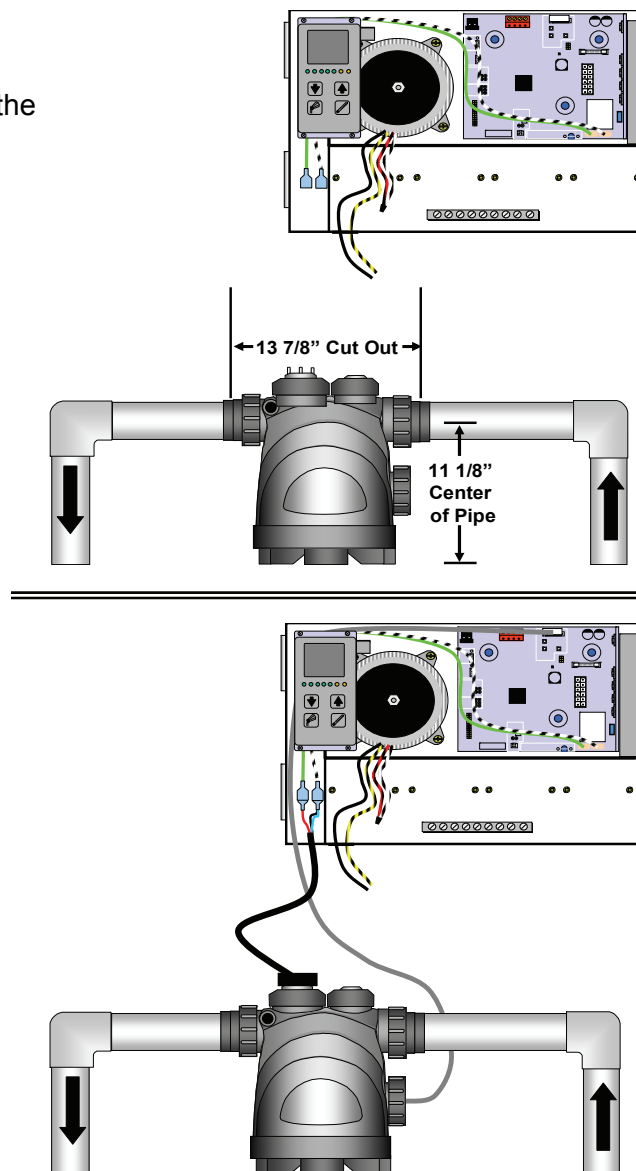
Notes:

CHLORINE GENERATION INSTALLATION - PLUMBING

Nature² Fusion

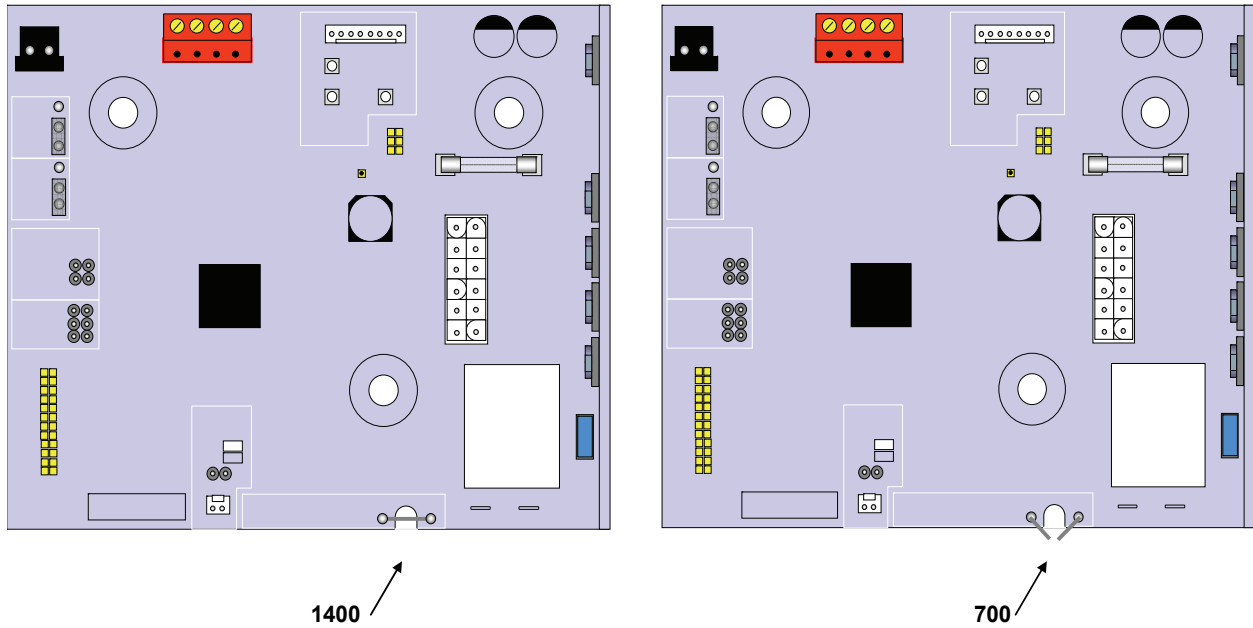
Proper Plumbing

The Flow/Temp/Salinity must be plumbed on the inlet side of the Nature² Fusion.



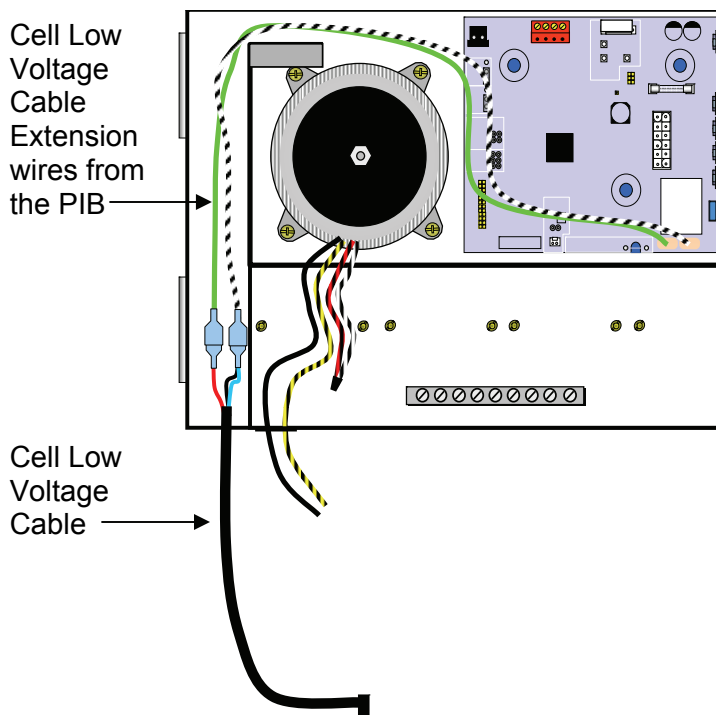
Notes:

CHLORINE GENERATION INSTALLATION - ELECTRICAL



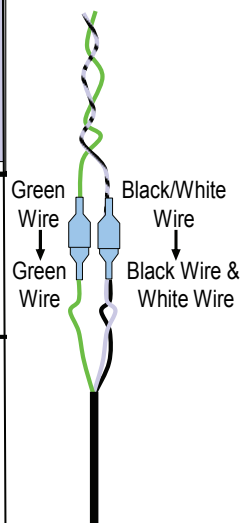
**To Convert a Power Interface Board (PIB)
from a 1400 to a 700 cut the jumper**

Cell Low Voltage Cable Connection



Original

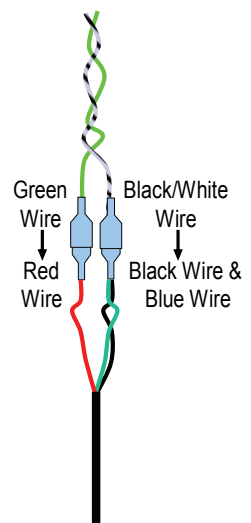
Cell Low Voltage Cable Extension



Cell Low Voltage Cable

New

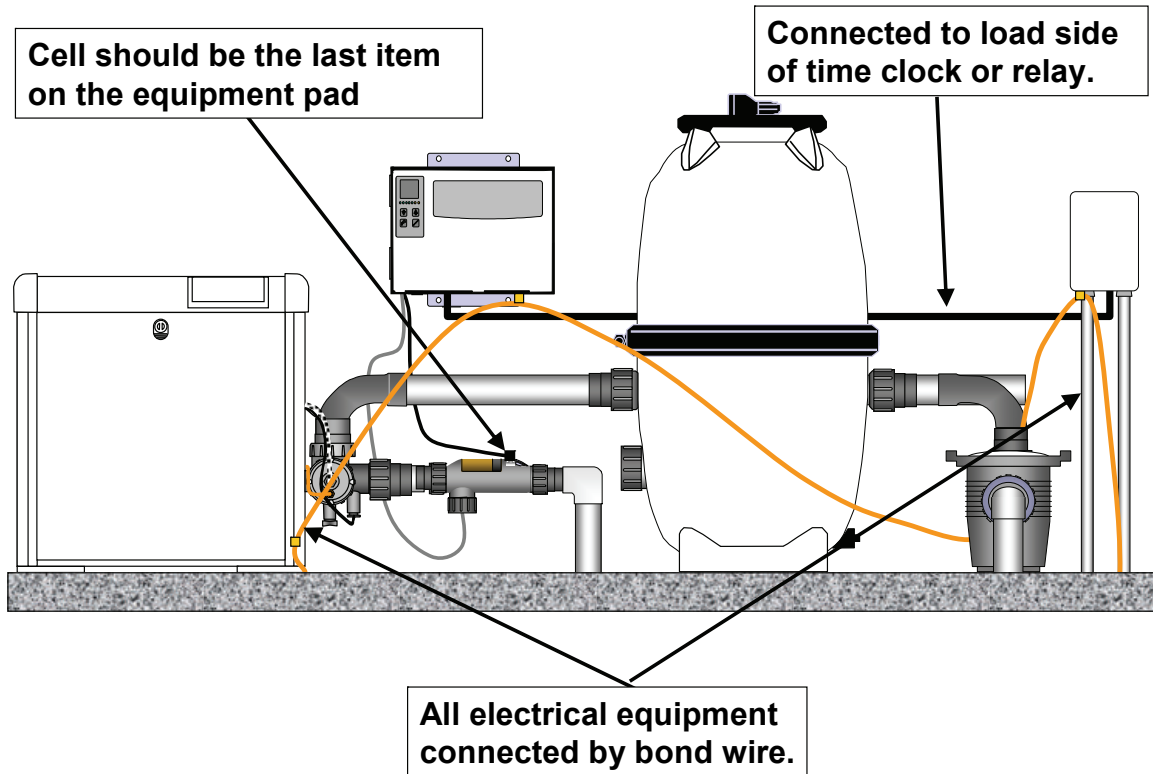
Cell Low Voltage Cable Extension



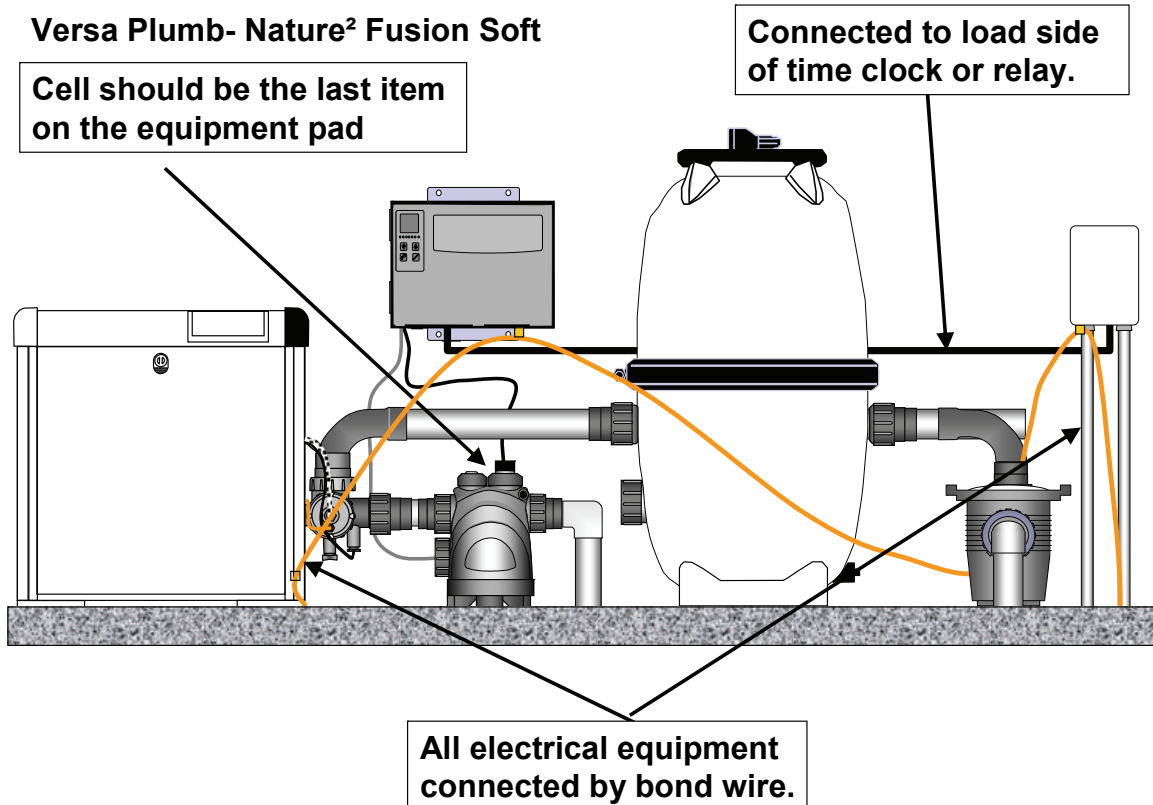
Cell Low Voltage Cable

CHLORINE GENERATION INSTALLATION - ELECTRICAL

Versa Plumb- 3 Port Cell



Versa Plumb- Nature² Fusion Soft



CHLORINE GENERATION INSTALLATION - CHEMISTRY

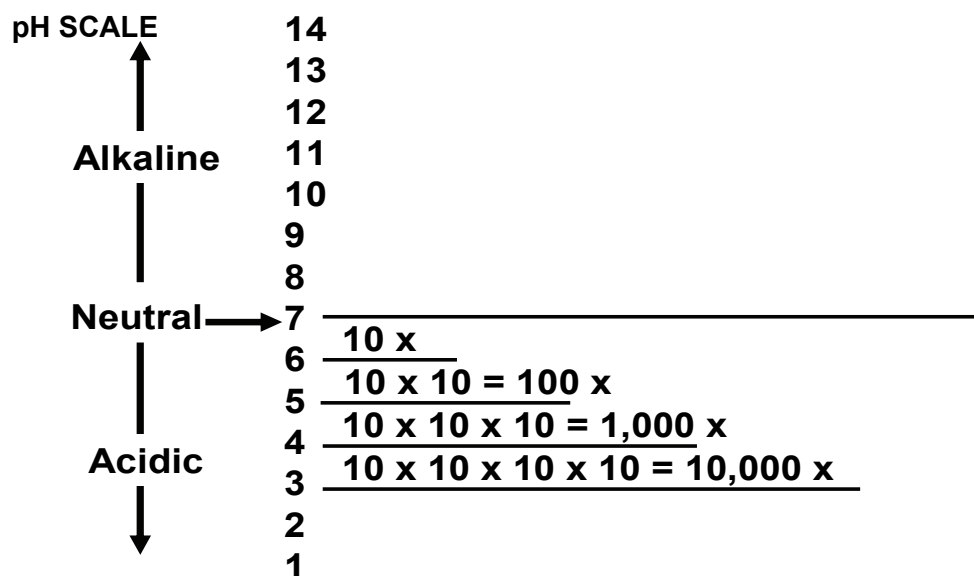
START-UP

Before starting a chlorine generator

- Balance the pool water
- Super chlorinate if needed.
- Add a metal remover.

WATER CHEMISTRY

- Free chlorine - 1.0 to 3.0 (Low of .5 is possible with the Nature² Fusion)
 - pH - 7.2 to 7.8
 - Total Alkalinity - 80 to 120 ppm
 - Cyanuric Acid (Stabilizer) - 10 to 100 ppm
 - Total Dissolved Solids (TDS) - Less than 2000 ppm.
(Subtract salinity level to arrive at corrected level.)
-



WHAT AFFECT DOES pH HAVE ON CHLORINE...

The efficacy of chlorine, that is, the power of it to have an effect, is greatly influenced by the care with which the pH level is managed. As the pH of the pool increases, the killing power of chlorine decreases. At a pH of 6.0, we'll get 96% or so of the potential out of each lb of chlorine, but at what cost? Such a low pH would wreck havoc on all of the surfaces the water comes in contact with, including swimmers. It's just too corrosive. Move the pH up to 7.0 and the efficacy of the chlorine drops to 73%, but raise it up to 8.0, where many a pool seems to drift, and it drops dramatically...down to 21%! At a perfect pH level of 7.5, we can expect to have about 50% of the chlorine in the molecular structure of hypochlorous acid, the active, killing form. The remaining half is in the form of a hypochlorite ion, which is also an active form of chlorine, but very weak and slow to kill.

Notes:

CHLORINE GENERATION INSTALLATION - CHEMISTRY

SALT

As a general guideline, the purer the salt the better the performance and the longer the “life” of the cell. Calcium and magnesium are the enemies of the cell and cause scaling, poor performance and shortened anode life.

It is recommended to use food grade salt only with the following characteristics:

- Minimum 99.8% pure NaCl
- No added anti-caking agents
- No sodium ferrocyanides (aka - yellow prussiate of soda)
- Non-iodized.

SALT TEST METER

MYRON L METER

P/N - M1003

Testing Salt Level
Myron L Meter
Calibrated to test for NaCl



SALT ADJUSTMENT CHART

Add 1.25 lbs. of stabilizer for every 50 lbs. of salt.

Salt Adjustment Chart to Achieve 3.0 gpl (food grade salt only)							
Current Salinity	Pool Size						
	10,000	14,000	18,000	20,000	24,000	28,000	30,000
0.0 gpl	250 lbs	350 lbs	450 lbs	500 lbs	600 lbs	700 lbs	750 lbs
1.0 gpl	165 lbs	230 lbs	300 lbs	330 lbs	400 lbs	460 lbs	495 lbs
1.5 gpl	125 lbs	175 lbs	225 lbs	250 lbs	300 lbs	350 lbs	375 lbs
2.0 gpl	85 lbs	120 lbs	150 lbs	170 lbs	205 lbs	240 lbs	255 lbs
2.5 gpl	40 lbs	60 lbs	70 lbs	80 lbs	100 lbs	110 lbs	120 lbs
3.0 gpl	0 lbs	0 lbs	0 lbs	0 lbs	0 lbs	0 lbs	0 lbs

SALT MAINTENANCE CHART

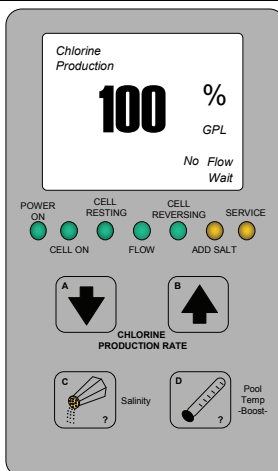
Approximate Pound (kg) of Salt Needed to Maintain 3.0 gpl (3000 PPM)	
Salt Concentration, Before Addition	Salt Addition Required per 1000 gallon pool capacity
0.0 gpl	25.6 lbs. (11.6 kg)
0.3 gpl	23.5 lbs. (10.7 kg)
0.5 gpl	21.4 lbs. (9.7 kg)
0.8 gpl	19.2 lbs. (8.7 kg)
1.0 gpl	17.1 lbs. (7.8 kg)
1.3 gpl	15.0 lbs. (6.8 kg)
1.5 gpl	12.8 lbs. (5.8 kg)
1.8 gpl	10.7 lbs. (4.8 kg)
2.0 gpl	8.5 lbs. (3.9 kg)
2.3 gpl	6.4 lbs. (2.9 kg)
2.5 gpl	4.2 lbs. (1.9 kg)
2.8 gpl	2.2 lbs. (1 kg)

CHLORINE GENERATION - OPERATION

FACTORS WHICH AFFECT CHLORINE RESIDUAL

Model/Size of chlorine generator.
How long the chlorine generator is ON.
Setting of Production Percentage of the chlorine generator.
Salt level.
Water chemistry.
Water temperature.
Covered or uncovered.
Water features.
Bathing load.
Other organic matter (e.g. Phosphates).

AQUAPURE LCD DISPLAY



WHAT THE LCD DISPLAY MEANS

50 or 60 - The unit is detecting the electrical supply to optimize the unit settings. 60 cycles power is the US standard. If the unit detects 60 cycles, it will display the temperature in degrees F. 50 cycles is common in Europe.

CHLORINE PRODUCTION - displays the current production percentage rate for chlorine.

WAIT - the unit is still testing its diagnostics.

NO FLOW - the unit is still testing its diagnostics, or no water flow is detected.

FLOW - the flow sensor is indicating to the unit it has enough water flow.

LO - indicates the water temperature is less than 51 degrees F.

BO - boost cycle has been activated. Cancel by holding the POOL TEMPERATURE button down for 10 seconds.

EC - the unit is being controlled by an external controller or ORP device.

JA - indicates operation is controlled by a Jandy AquaLink RS or PDA, and is in AUTO mode.

JO - indicates operation is controlled by a Jandy AquaLink RS or PDA, and the system is in SERVICE or TIMEOUT mode.

JB - indicates operation is controlled by a Jandy AquaLink RS or PDA, and the system is in BOOST mode.

WHAT THE INDICATOR LIGHTS MEAN

CELL ON - Full power is being sent to the cell.

CELL RESTING - The cell is in the off portion of chlorine production cycle. *Cycle time is 30 minutes. As an example, when the chlorine production rate is set to 50%, full power will be applied to the cell for 15 minutes and then no power (CELL RESTING) for the next 15 minutes.*

FLOW - The sensor is detecting water flow.

CELL REVERSING - Control switches polarity to the cell every 3 hours to help clean the plates. The cell will rest for 3 minutes between switching of polarity.

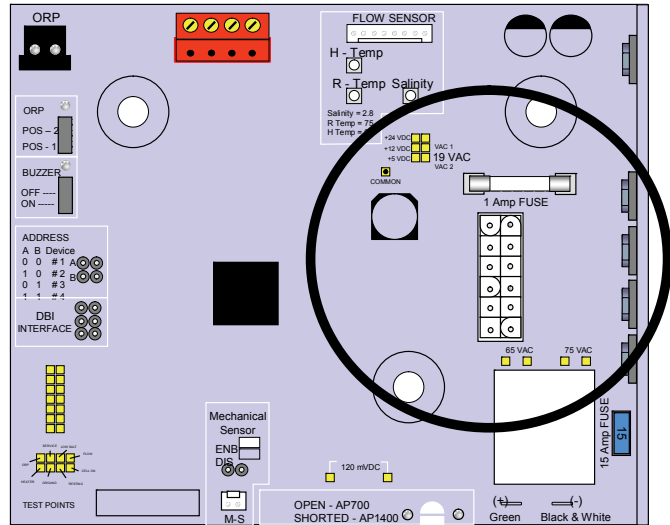
ADD SALT - Salinity level is 2.5 gpl or less. Should be 3.0 to 3.5 gpl.

SERVICE - A service problem has been detected. The display will also show one or two error codes.

POWER ON - Power is being sent to the control and received at the User Interface Board

TROUBLESHOOTING - TRANSFORMER VOLTAGE

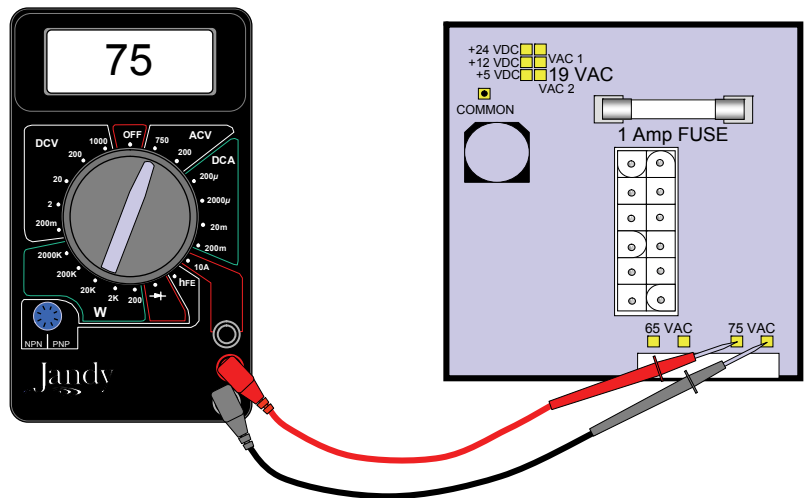
This test confirms the proper secondary voltage is coming out of the transformer.



First Test:

Set the meter to 200 ACV or higher. Put the leads on the 75 VAC test points. The voltage should be between 67 to 87.

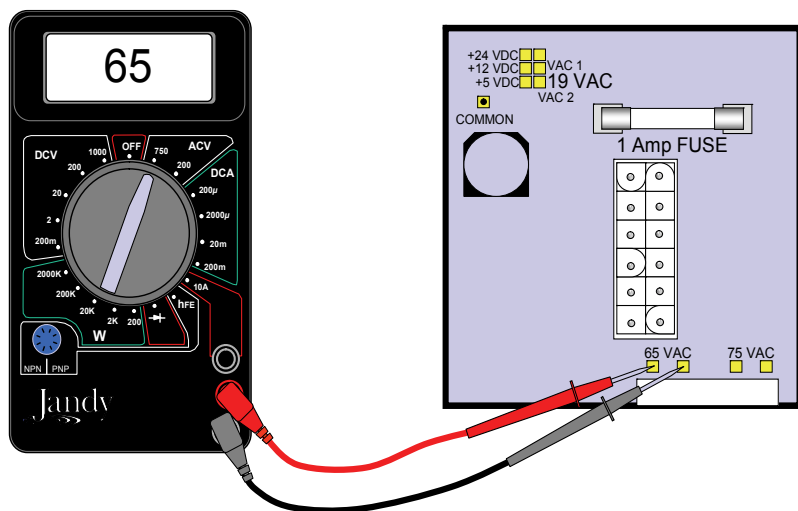
If the voltage is outside this range, replace the Transformer.



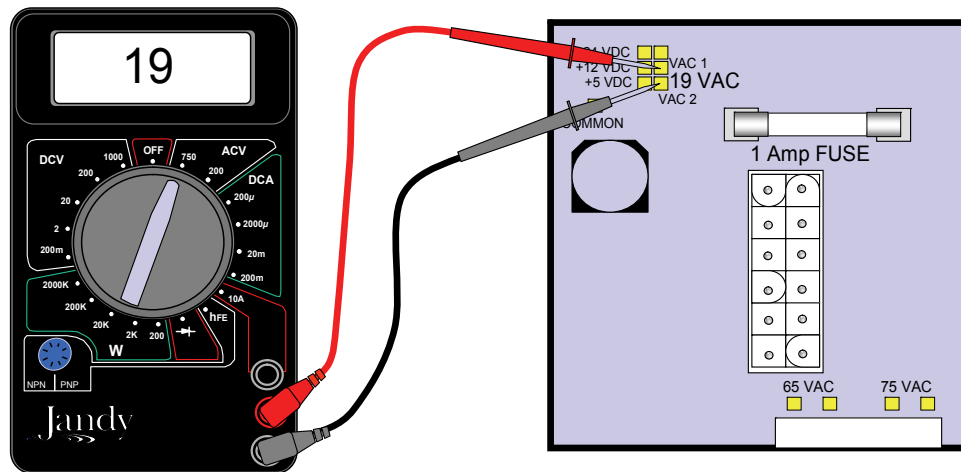
Second Test:

Set the meter to 200 ACV or higher. Put the leads on the 65 VAC test points. The voltage should be between 60 to 75.

If the voltage is outside this range, replace the Transformer.



TROUBLESHOOTING - TRANSFORMER VOLTAGE



Third Test:

Set the meter to 200 ACV or higher. Put the leads on VAC 1 & VAC 2 of the 19 VAC test points. The voltage should be between 17 to 24.

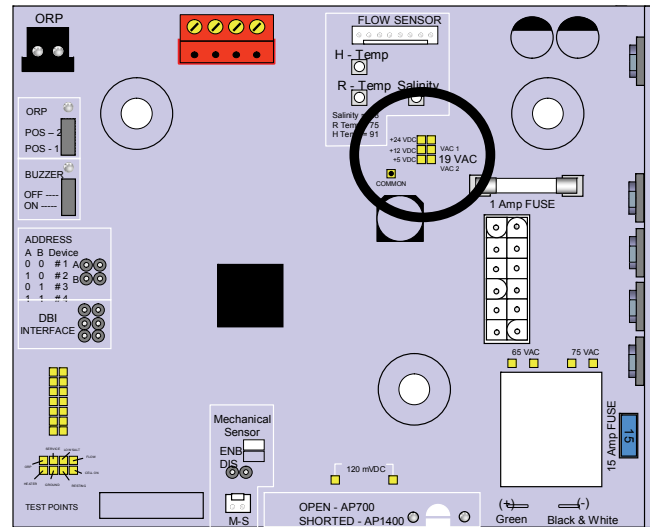
If no voltage is present, check 1 Amp Fuse on PIB.

If the voltage is outside the above range, replace the Transformer.

Notes:

TROUBLESHOOTING - PIB DC VOLTAGE

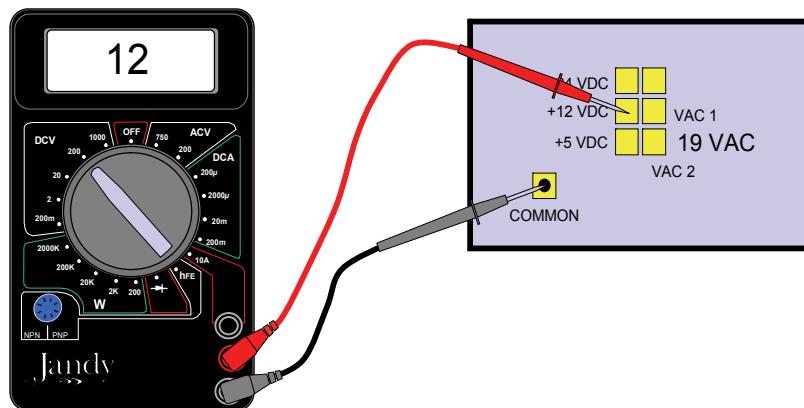
This test confirms that the Power Interface Board (PIB) is taking the AC Voltage from the Transformer and converting it to DC Voltage.



First Test:

Set the meter to 200 DCV or higher. Put the leads on the Common & +12 VDC test points. The voltage should be between 11.8 to 12.2.

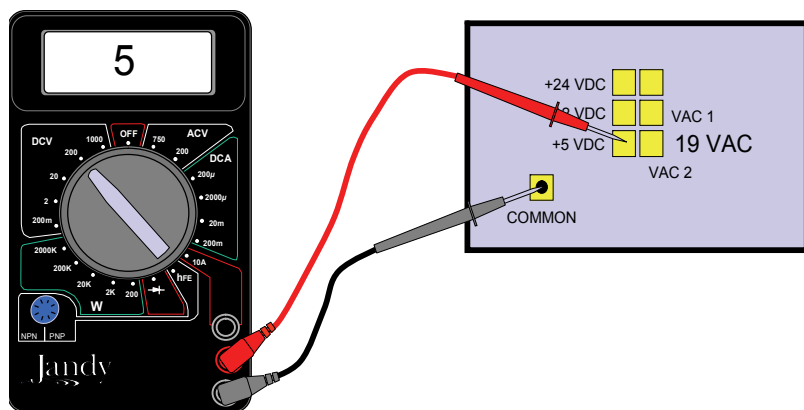
If the voltage is outside the above range, replace the PIB.



Second Test:

Set the meter to 200 DCV or higher. Put the leads on the Common & +5 VDC test points. The voltage should be between 4.8 to 5.2.

If the voltage is outside the above range, replace the PIB.



TROUBLESHOOTING - SENSOR INSPECTION

FLOW/TEMP/SALINITY SENSOR

The Sensor determines flow by comparing the temperature differential between the heated and unheated test pads. Salinity is measured by the two "silver" test pads. These pads should be kept clean to insure accuracy.

FLOW/TEMP/SALINITY SENSOR REVISION

Current Revisions are HX19 and JX 11

FLOW/TEMP/SALINITY SENSOR CLEANING

Once per year, or as needed, clean the sensor as follows:

1. Remove Flow/Temp/Salinity Sensor.
2. Brush with a mildly abrasive green fiber household cleaning pad. Contacts should be clean and bright when done.
3. Thoroughly rinse the Flow/Temp/Salinity Sensor with clean tap water. Replace and resume normal operation.
4. Turn power off and back on to re-calibrate and reset

Flow/Temp/Salinity Sensor.

PROBLEMS:

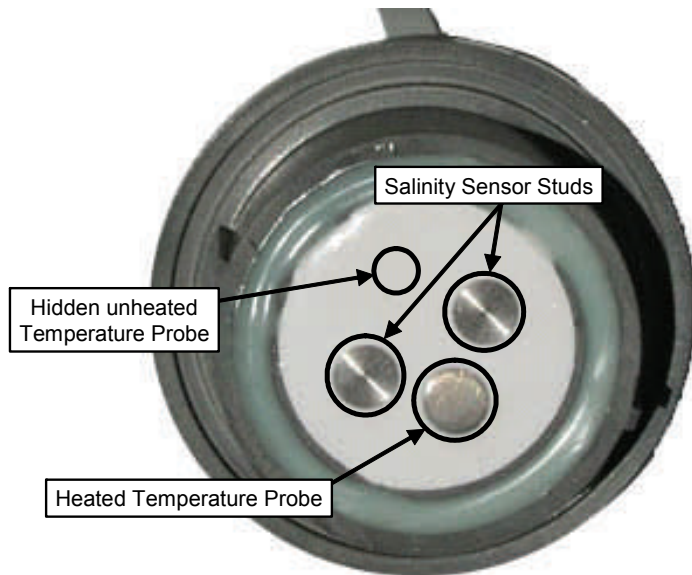
- Failure to shut off power.
- Failure to indicate flow.
- Incorrect salt indications.

CAUSES:

- Broken or damaged wires.
- Calcified sensor(s).
- Failed electrical component.
- System not Bonded.



Look for JX 11
printed on label

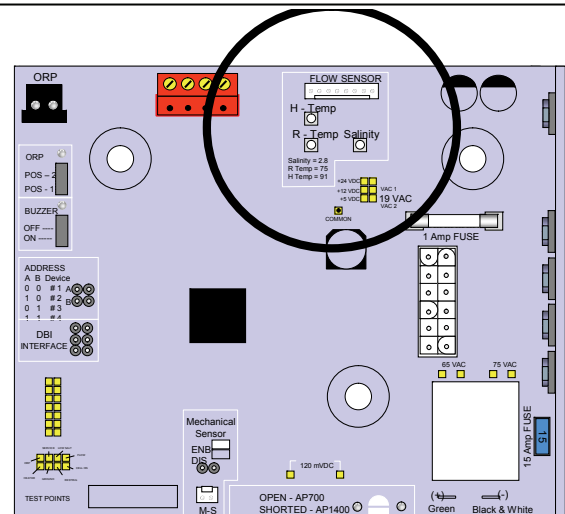


Notes:

TROUBLESHOOTING - SENSOR READINGS TEST

This test confirms that the Power Interface Board (PIB) is reading the Flow/Temp/Salinity Sensor correctly utilizing the User Interface Board (UIB).

The Flow/Temp/Salinity Sensor must be disconnected for these 3 Tests.

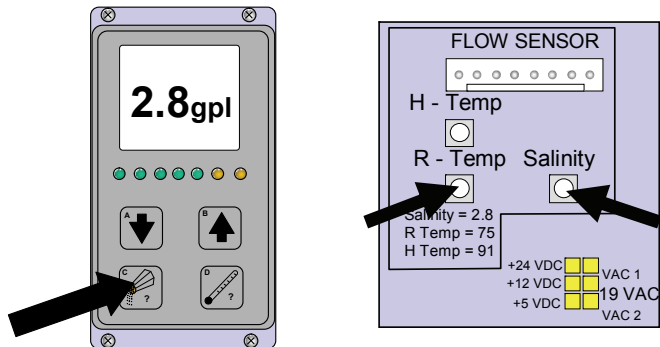


First Test- Salinity:

Press the R-Temp & the Salinity buttons on the PIB, and the Salinity readout button on the UIB.

The UIB display should read between 2.7 to 3.1.

If the number is outside this range, replace the PIB.

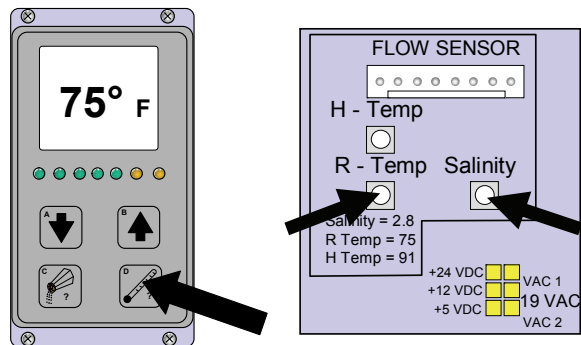


Second Test- Low Temp:

Press the R-Temp & the Salinity buttons on the PIB, and the Temperature readout button on the UIB.

The UIB display should read between 73 to 77 Degrees.

If the number is outside this range, replace the PIB.

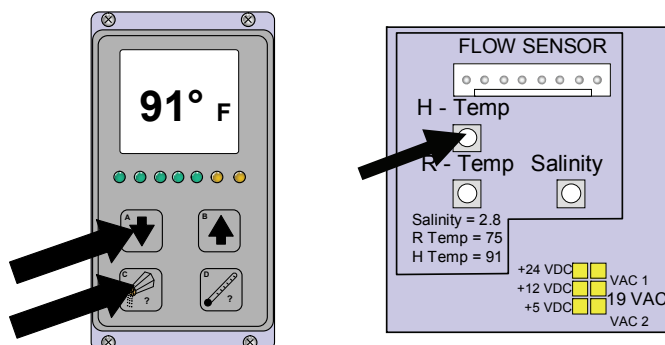


Third Test- High Temp:

Press the H-Temp & button on the PIB, and the Salinity readout & Chlorine Production down button on the UIB.

The UIB display should read between 89 to 93 Degrees.

If the number is outside this range, replace the PIB.



TROUBLESHOOTING - CELL

CELL

AP 700 - 7 plate cell

AP 1400 - 14 plate cell



CELL PROBLEMS

- Needs cleaning, calcium buildup.
- No current at cell.
- Coating worn off of plates.
- Damaged due to low flow, freezing, broken or cracked fittings.
- Shorted with foreign matter.



CELL CLEANING

- Clean the cell by submerging it in 4 parts water to 1 part muriatic acid.
- When bubbling quits, the cell is clean of calcium deposits.
- Rinse thoroughly after cleaning.
- Do not leave the cell in acid for more than 30 minutes.

TEST VOLTAGE AT THE CELL

Turn power off.

Lift cable enough to slide test probes to the terminals.

Touch common probe to the center terminal and the other probe to either outside terminal. Make certain cable stays in contact with terminals.

Turn on power and wait for control to call for chlorine production.

With the cell under full load there should be 22 to 28 VDC.

If the correct voltage is present, but the cell is not producing chlorine, manually test the water chemistry and salt ppm. Correct any readings out of range. If the problem continues, replace the cord and cell.

After testing is complete, press the cable down tightly.

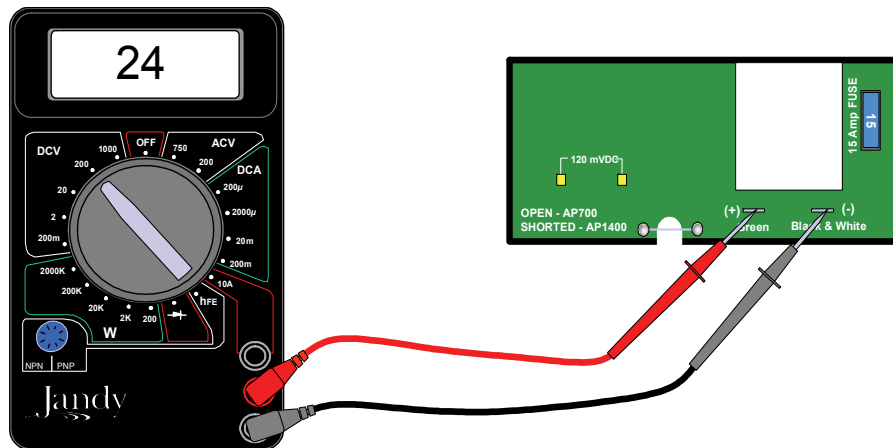
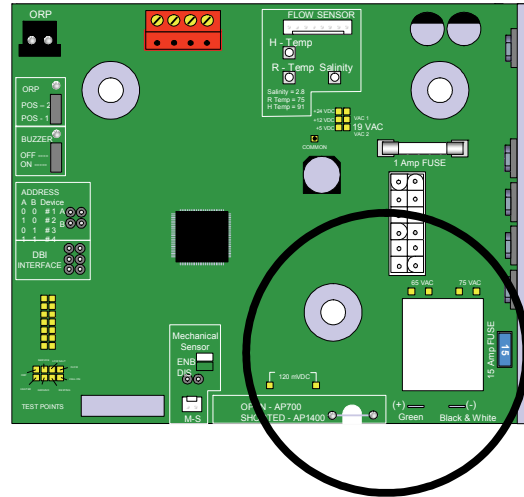


Notes:

TROUBLESHOOTING - CELL VOLTAGE & CURRENT

These tests confirm that the Power Interface Board (PIB) is sending the correct voltage to the cell and that the cell has the proper current passing between plates.

The Chlorine Generator has to be set to 100% and producing chlorine to perform these tests.

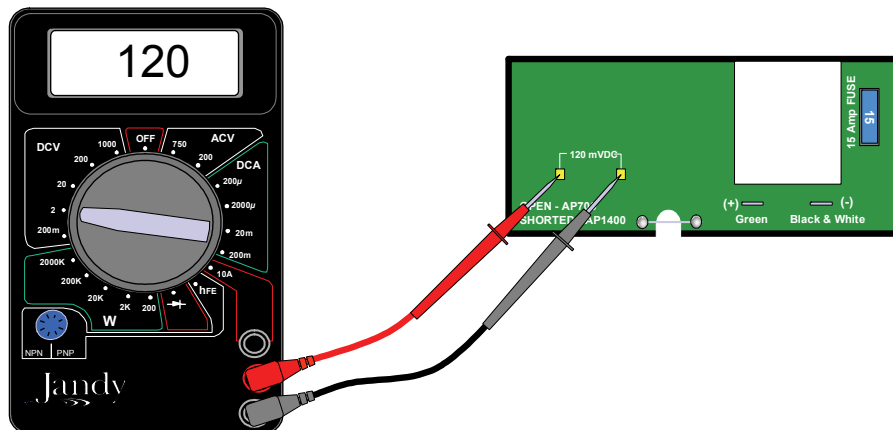


Test:

Set the meter to 200 DCV or higher. Put the leads on the Cell connection test points. The voltage should be between 22 to 28.

If no voltage is present, check 15 Amp Fuse on PIB.

If the voltage is outside the above range, replace the PIB.

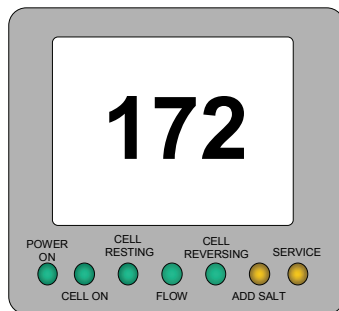


Test:

Cell Current is test through DC Millivolts. Set the meter to 2 DCV. Put the leads on the 120 mVDC test points. The voltage should be between 100 to 145.

If the voltage is outside the above range, inspect the cell and replace the PIB as needed.

TROUBLESHOOTING - SERVICE CODES



LEVEL 1

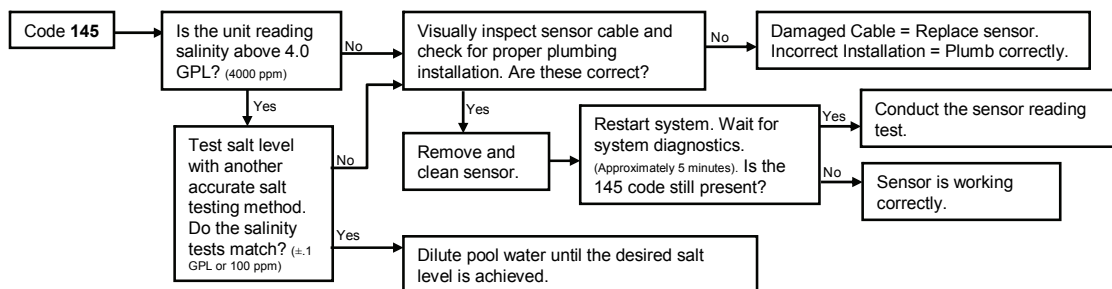
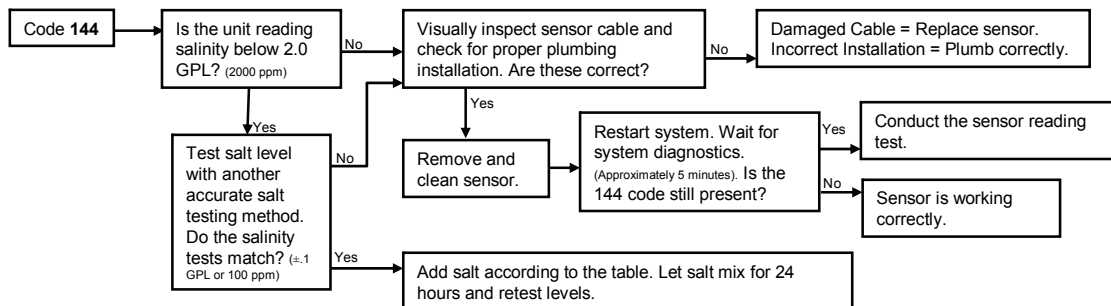
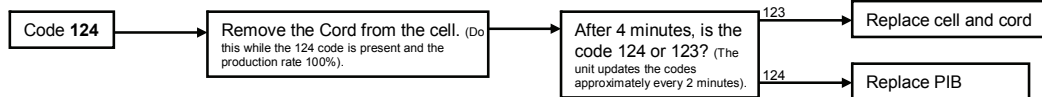
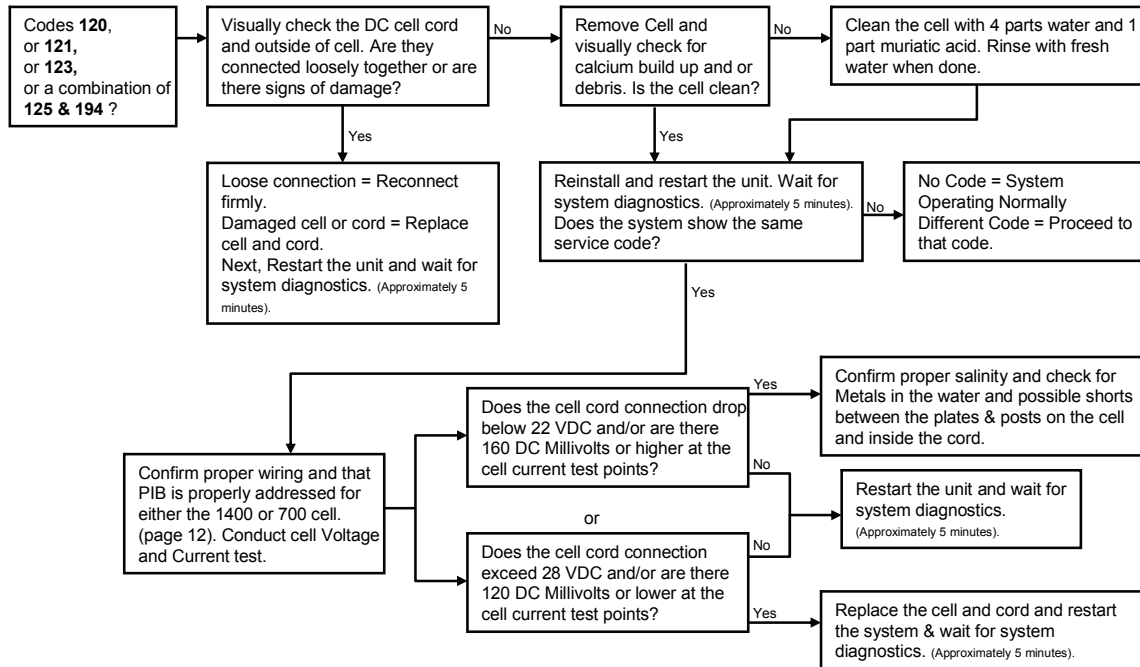
- 120** - Low cell current in forward direction - check DC cord, clean cell if necessary or replace cell.
- 121** - Low cell current in reverse direction, same as 120 above.
- 123** - Low to no current at cell - check DC cord, clean cell or replace if necessary.
- 124** - High current indicated at the cell - this usually means a bad PIB.
- 125** - Cell needs to be cleaned or replaced.
- 126** - Low current in forward direction and VAC input voltage below 100/200 VAC - check input voltage, transformer and PIB voltages.
- 127** - Low current in reverse direction and VAC input voltage below 100/200 VAC - check input voltage, transformer and PIB voltages.
- 144** - Low Salinity (below 2.0 gpl) - indicates the pool needs salt added.
- 145** - High Salinity (above 4.0 gpl) - indicates pool needs to be diluted.
- 170** - PIB service condition indicated and is usually caused by low incoming AC voltage - check transformer voltages.
- 171** - PIB service condition - indicates board needs to be replaced.
- 172** - Flow sensor service - clean sensor, check for damage and replace if necessary.
- 173** - Low VAC input voltage and on-board power supply is not regulated - make sure unit is wired with the proper voltage.
- 174** - Pool temperature is too high for operation of AquaPure (i.e. > 108°F).
- 175** - Flow sensor air lock condition or very low salinity.

LEVEL 2

- 180** - Heated sensor element not heating (generates 172 code)
- 181** - Flow sensor temperature sensor failure (generates 172 code – Flow sensor service)
- 182** - Salinity Sensor sees less than 0.2 gpl of salt, either no salt in pool or sensor air locked (generates 175 code – Flow sensor air lock)
- 183 to 186** - flow salinity sensor temperature probe error codes. They will all generate 172 codes which indicate flow sensor service is required.
- 187** - PIB power supply either too low or too high (generates 173 - Low input voltage code if Level II code 188 is present) (generates 170 code if 188 is not present).
- 188** - VAC input voltage is too low (generates 173 code if Level II code 187 is present)
- 189** - Relay not conducting in the forward direction (generates 171 code - PIB service)
- 190** - Relay not conducting in the reverse direction (generates 171 code - PIB service)
- 191** - High cell current (at upper limit of A/D converter) and cell voltage below 19V (generates 170 code PIB service)
- 192** - High cell current and cell voltage below 19V (generates 171 code – PIB service).
- 193** - Measured significant cell current when SCRs were turned off (generates 170 code – PIB service).
- 194** - Cell Current is 85% lower than desired and cell voltage above 19V (generates 125 code - Cell dirty or needs replacement).
- 195** - Salinity invalid due to out of range measurements caused by PIB error (generates 170 code – PIB service).

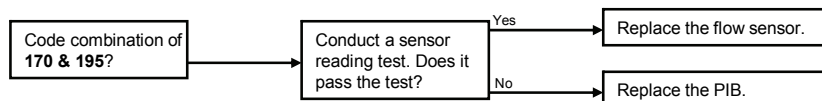
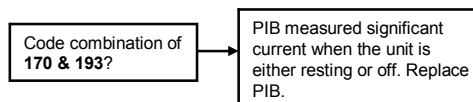
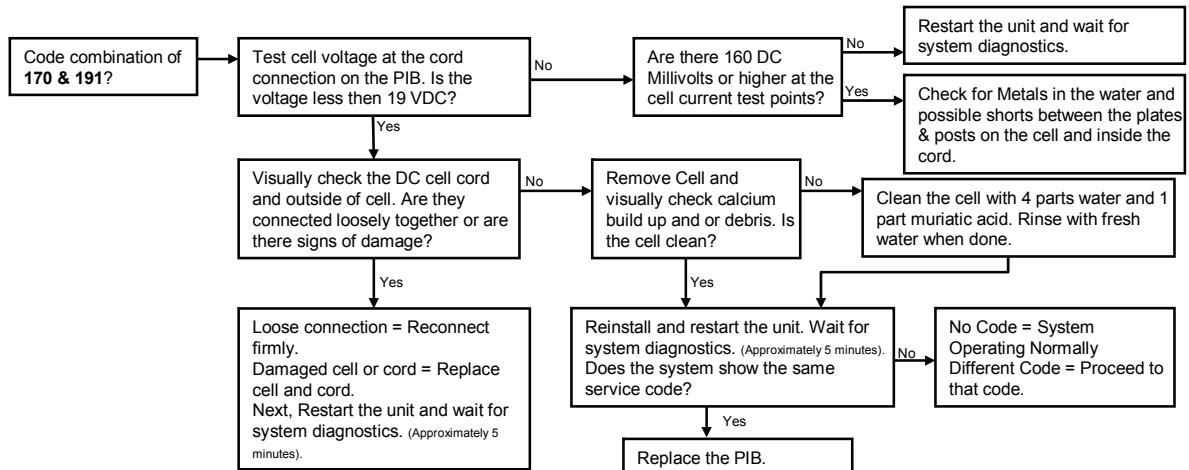
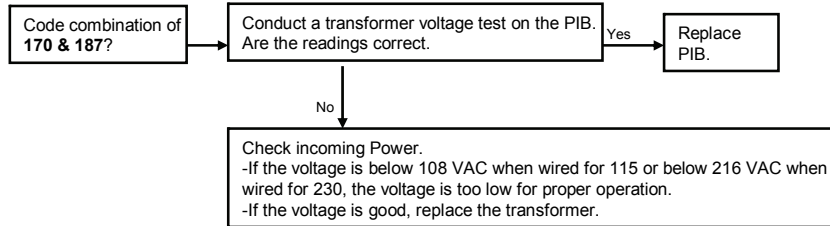
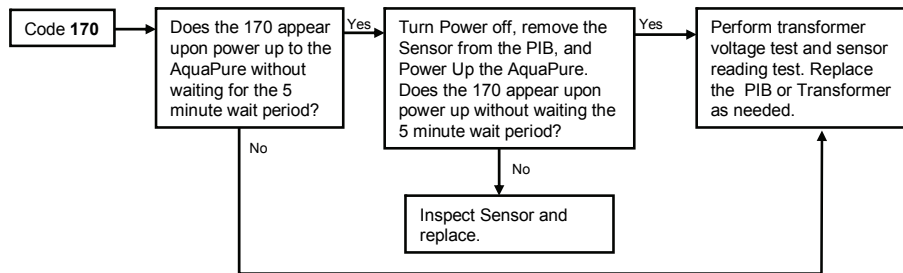
SERVICE CODE FLOW CHARTS

When 3 digit service codes are present on the display screen, the service light will be lit. To troubleshoot any code, set the production to 100% and follow the steps below for that code.



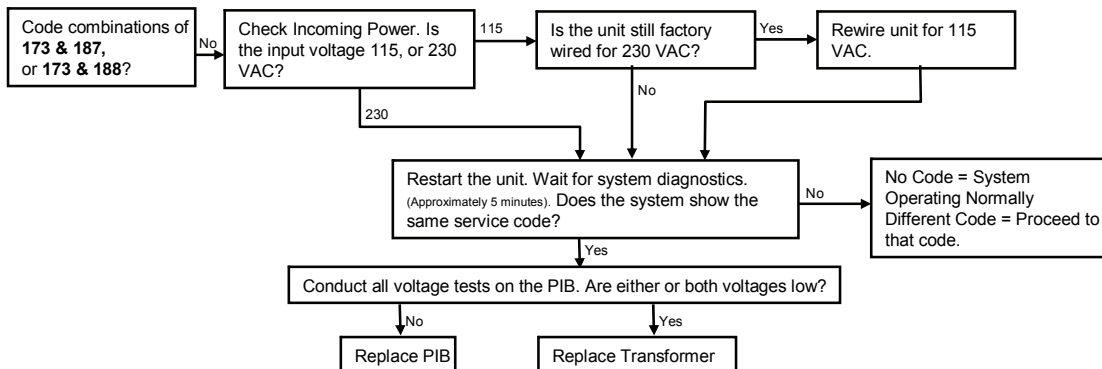
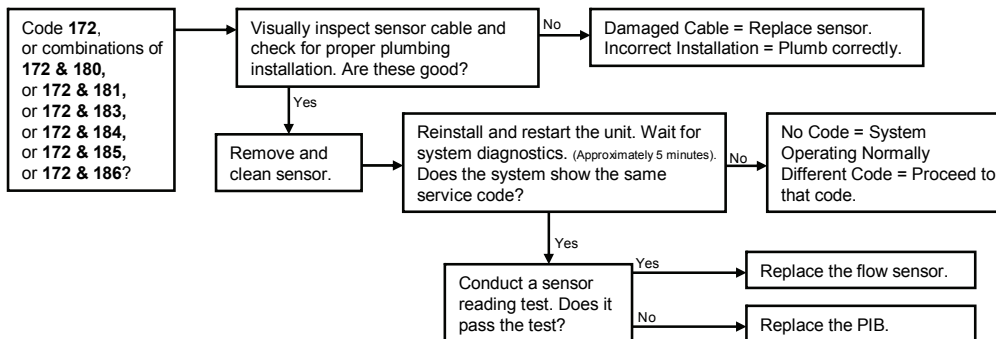
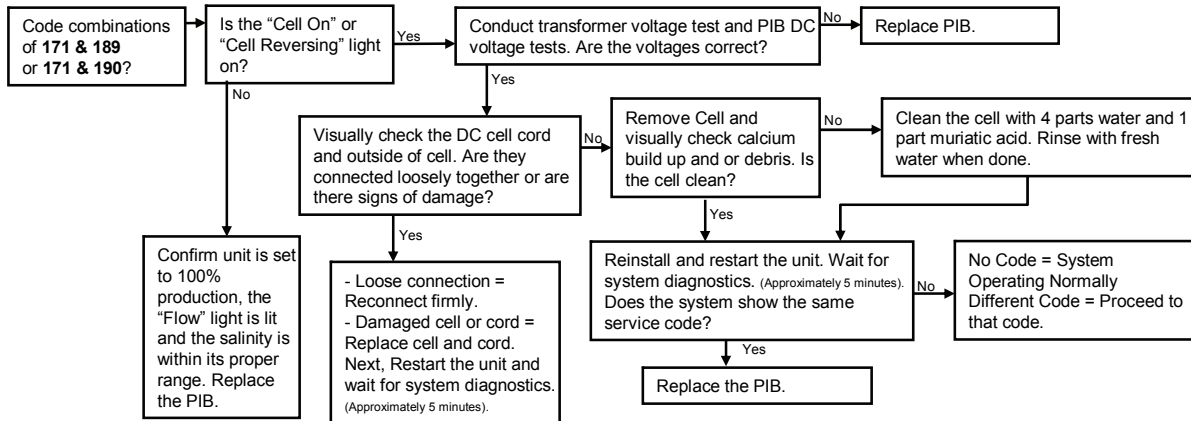
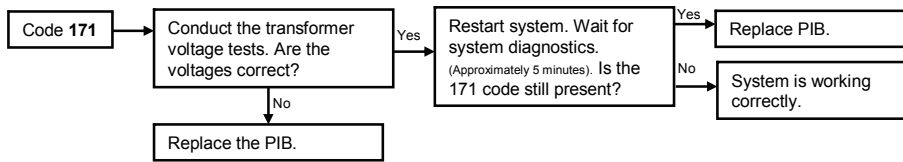
Inspection, Voltage, & Current Tests on pages 17-23.

SERVICE CODE FLOW CHARTS



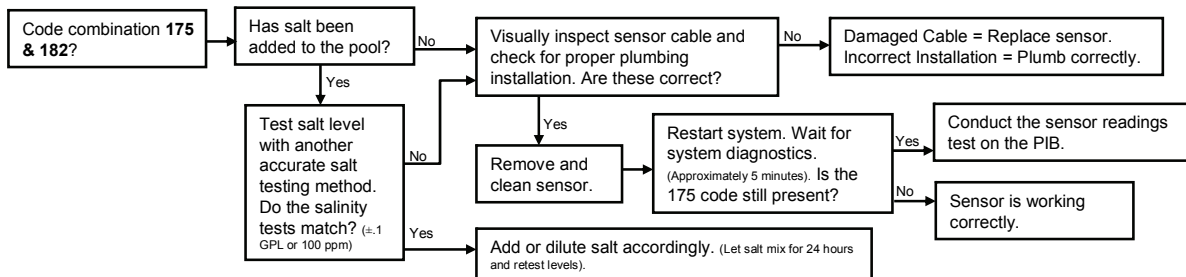
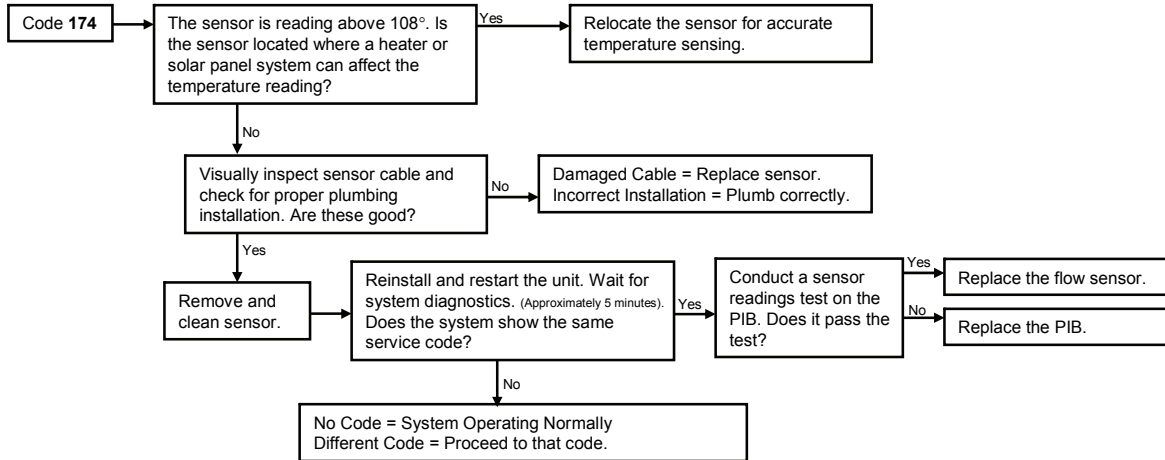
Inspection, Voltage, & Current Tests on pages 17-23.

SERVICE CODE FLOW CHARTS



Inspection, Voltage, & Current Tests on pages 17-23.

SERVICE CODE FLOW CHARTS

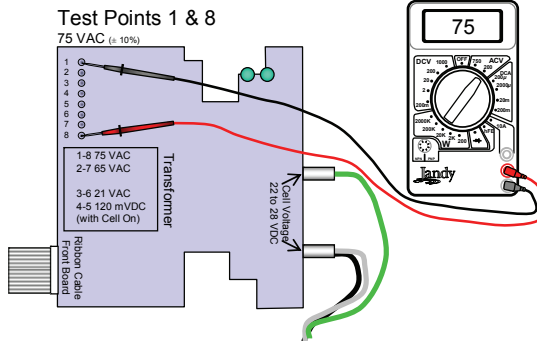


Inspection, Voltage, & Current Tests on pages 17-23.

Notes:

Transformer Voltage on Back Board

(All test point voltages are marked on the board)

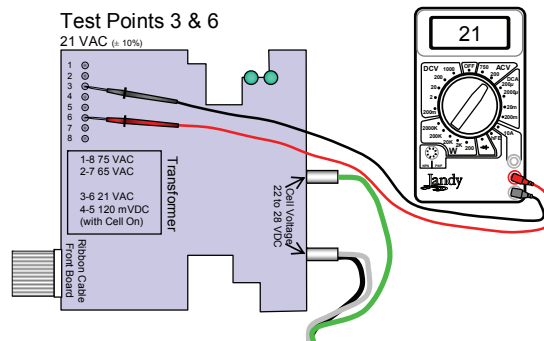
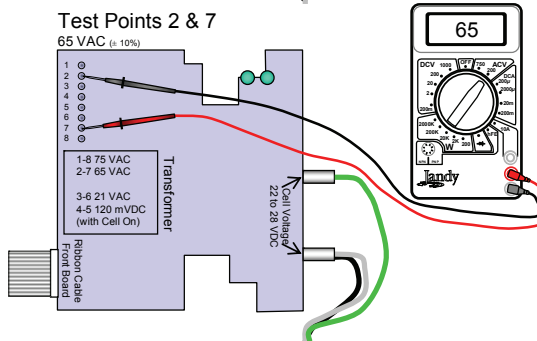


Test the output voltage of the transformer on the test points 1 & 8, 2 & 7, and 3 & 6. This confirms that the unit is getting the proper voltage needed.

If the voltage is not within the proper range, check incoming Power.

-If the voltage is below 105 VAC when wired for 120 or below 210 VAC when wired for 240, the voltage is too low for proper operation.

-If the voltage is good, replace the transformer.



Cell Current and Voltage on Back Board

(All test point voltages are marked on the board)

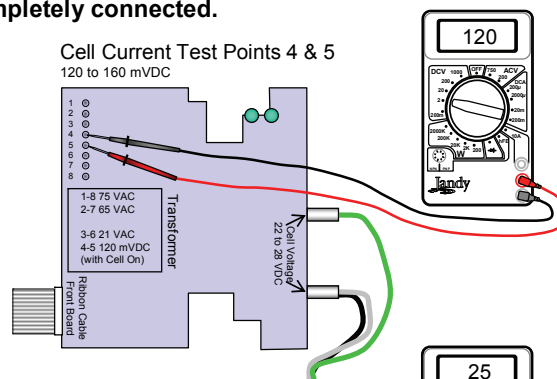
Confirm that the unit is turned on and the cell production is set to 100%. Also, make sure that the cell, cord, and back board are firmly and completely connected.

Test the current to the cell at test points 4 & 5.

-If the voltage is higher than 160 mVDC, check for possible shorts between the plates & posts on the cell and inside the cord. Also, check the water for possible metals and other conductive material.

-If the voltage is less than 120 mVDC, turn off the unit, replace the cell & cord and restart the unit. Wait for system diagnostics and retest.

(Approximately 5 minutes).

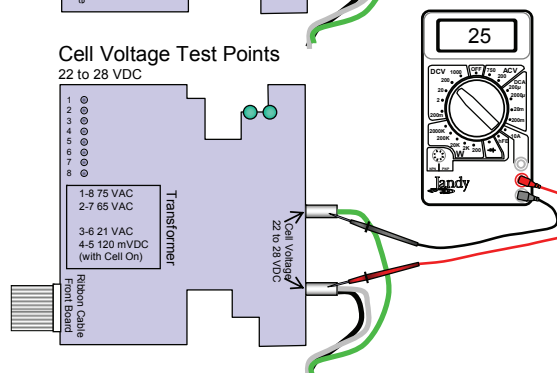


Test the voltage to the cell at test points at the cord connection point.

-If the voltage is less than 22 VDC, check for possible shorts between the plates & posts on the cell and inside the cord. Also, check the water for possible metals and other conductive material.

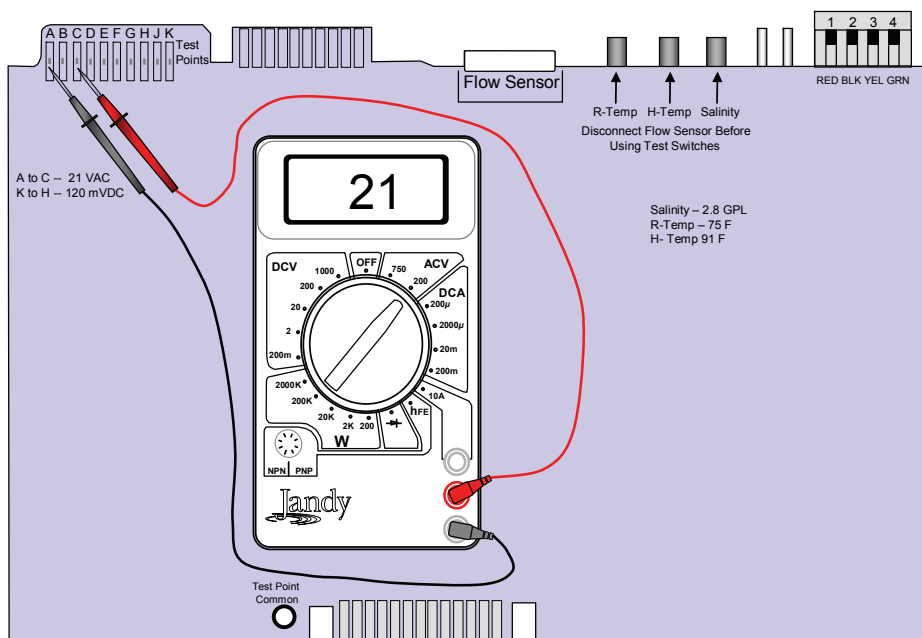
-If the voltage is higher than 28 VDC, turn off the unit, replace the cell & cord and restart the unit. Wait for system diagnostics and retest.

(Approximately 5 minutes).



Voltage on Front Board

(All test point voltages are marked on the board)

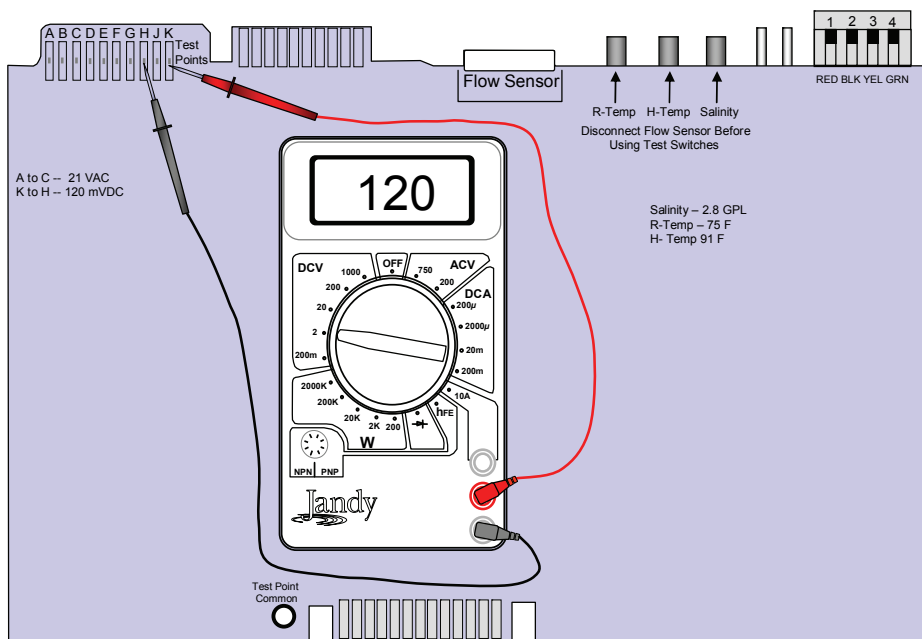


Test the voltage from the back board at test points A & C.

-If the voltage is not 21 VAC ($\pm 10\%$) confirm that the ribbon cable that connects the back board to the front board is not damaged and that it is seated correctly and retest. If the retest remains outside the required voltage, perform a back board test.

Cell Current on Front Board

(All test point voltages are marked on the board)



Cell Current is tested through DC Millivolts. Test the current from the cell at test points H & K. -If the voltage is higher than 160 mVDC or less than 120 mVDC, confirm that the ribbon cable that connects the back board to the front board is not damaged and that it is seated correctly and retest. If the retest remains outside the required voltage, perform a back board test.

Informational Note:

>20 millivolts =
1 ampere on a 1400 unit
>40 millivolts =
1 ampere on a 700 unit

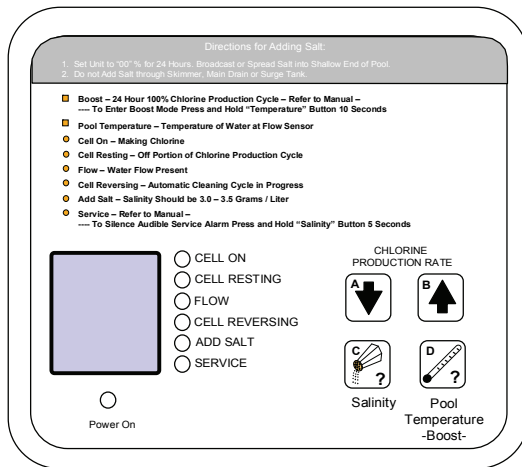
AquaPure Sensor Readings Test - Front Board

To help determine if a fault is with the front board or the sensor, there are self diagnostic tests put on the front board. To use these, you will need access to the front board display side and the corner of the front board next to the red four pin connector.

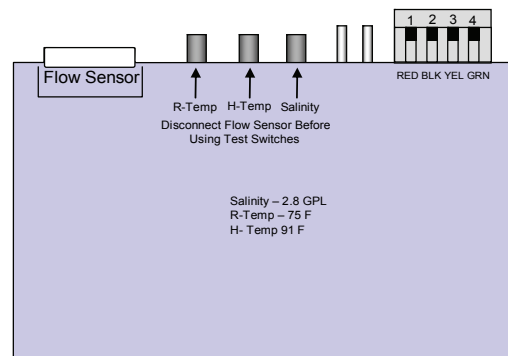
-On an AquaPure, you will need to remove the front cover and use both sides of the cover.

-On a PureLink, drop the power center down and you will be able to access both sets of buttons at the same time.

Display side of AquaPure



Upper right side of front board on an AquaPure

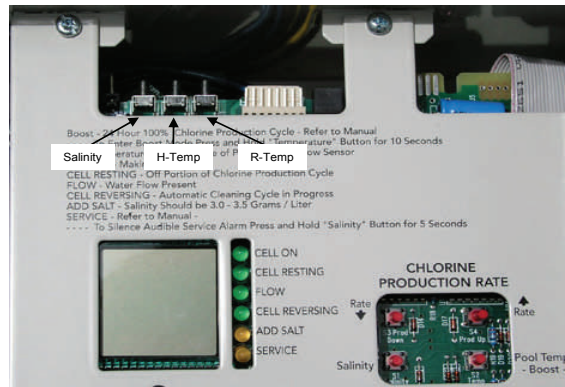


PureLink Sensor Readings Test- Front Board

Disconnect the sensor from the front board for the following tests.

- 1) Press and hold the test buttons marked Salinity and R-Temp. While still pressing these test buttons, press the 'Salinity' key ('C') on the front cover of the unit. The LCD should read 2.8gpl. ($\pm .1$)^{*}
- 2) Press and hold the test buttons marked Salinity and R-Temp. While still pressing these test buttons, press the 'Pool Temperature' key ('D'). It should read 75° F or 24° C. ($\pm 1^\circ$)

PureLink front board access



- 3) Press and hold the test button marked H-Temp. While still pressing the test button, press the 'Salinity' key ('C') together with the 'Chlorine Production Rate' arrow down key ('A') on the front cover of the unit. The LCD should read 91° F or 33° C. ($\pm 1^\circ$)

If the readings are correct then the front board is O.K. and the problem is with the sensor.

If the readings are different then it indicates that there is a problem with the front board.

Turn off power and replace the failed component. Restart the unit and wait for system diagnostics. (Approximately 5 minutes).

^{*}Note: In some cases the front board may have been recalibrated. This will show a different gpl then what is listed. If the front board or housing has any markings that indicate it has been recalibrated, contact Zodiac technical support at 800-822-7933. Otherwise replace the front board.

