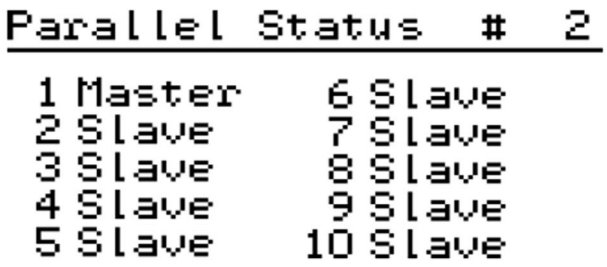
SYSTEM'S STATUS

From any machine connected to the system you can:
– activate or stop the production
– open or close the outlet valve
– change the set of output pressure
– Check the status of each generator connected to the system
To access the status window, simply make a scroll from right to left on the touch screen

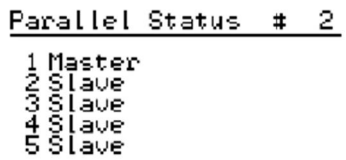


The list is displayed for each unit the following records:

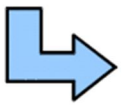
Master	Unit to be used to read the line pressure and control it (Master flow controller)
Slave	Unit connected to the system as a slave
Out line	Unit off-line: interrupted communication with the controller
Alarm	Units on alarm
Pre-Alarm	Units on prealarm

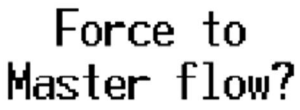
MASTER FLOW CONTROLLER

Normally, the system chooses the car with ID 1 as the "master flow controller" that is the machine designed to read and control the line pressure.
If you want to force the system to choose another press for half a second about the touch screen and displays the status



Press the touch screen for half a second





Confirm by pressing the touch screen for half a second.

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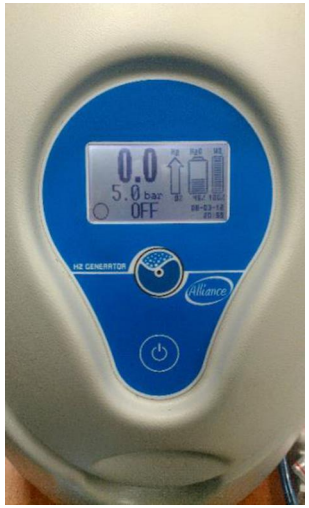
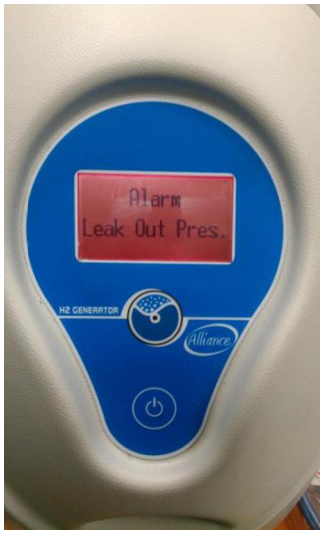
Troubleshooting

ALARM / PREALARM

During operation, the system executes other automatic checks.





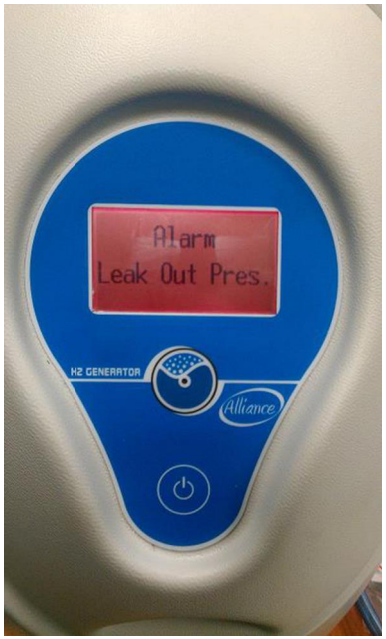
In case of serious anomalies, the display turns red, the buzzer is rapid and intermittent, a message identifying the problem is displayed and hydrogen production is immediately interrupted.

In case of anomalies which are not serious, the LDC display turns yellow, the buzzer sounds every 5 seconds and pre-alarm messages are displayed.

PREALARM

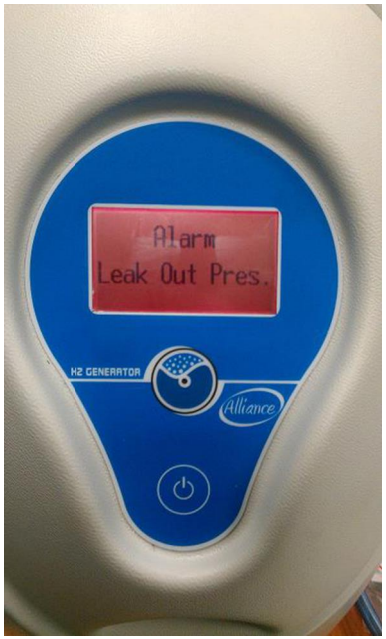
Displayed on screen	Cause	What to do
Power Supply T. Too High	Temperature of electronic power supply too high	- Check that the system working ambient temperature is less than 40°C - Check that the intake/ventilation fans are not blocked and that the corresponding filters are clean, see
Bad Water Quality	Poor quality of the water in the tank	- Change the water using better quality water - Check the water filter and deioniser bag
Water Tank Level Low	Water level less than 5% of the tank capacity	Fill manually the internal tank with new deionised water
Dryer Saturated	Dryer saturated. This alarm continues until a dryer regeneration cycle is completed.	Run a dryer regeneration cycle
Clock Not Set	Internal clock not set or working poorly	Reset system date and time
Check A. Refill	Failed attempt to automatically fill of internal water tank	Check that the external water tank is correctly connected and there is water inside
Check Power Supply	Input power voltage not correct	Try turning off and turning on the system.
Change Deionizer	Water deionization filter saturated	Clean the water filter, replace the deionizer bag and reset the filter remaining life counter using the appropriate function from the “MAINTENANCE” menu

ALARM



Displayed on LCD	Cause	What to do
Low Int.Press.	When the internal pressure cannot reach the value pre-set by the manufacturer	Try to restart the system; if the problem persists, call for service
Low Out Press.	When the external pressure does not reach the outlet pressure set in the correct time	Check that the line is connected to the H2 outlet port
Refill Water	When the internal water tank level goes below the minimum level	Fill manually the internal tank with new water
Bad Water Q.	When the quality of the water is too poor	Completely replace the water in the tank, replace the deionizer bag if necessary and check the water filter
Hight Cell V.	When the cell voltage exceeds the alarm threshold	Try to restart the system; if the problem persists.
Over Current	When the cell current exceeds the alarm threshold	Try to restart the system; if the problem persists, call for service
Over Int.Press	When the internal pressure exceeds the alarm threshold	Try to restart the system; if the problem persists, call for service
P.S. Temp.	When the electronic power source temperature exceeds the maximum threshold	Check that ambient temperature is less than 35°C - Check that the intake/ventilation fans are not blocked and that the corresponding filters are clean, see picture 2 , point 7 and 8
Out Pressure error	When the outlet pressure remains lower than the working set-point during the time set by the user parameter (during the line filling phase).	Check the connections pipes on the H2 outlet port
Memory data	When an error is detected in the reading of the saved parameters	Try to restart the system; if the problem persists, call for service

ALARM



Memory damage	When the parameter and alarm chronology storage device fails	Try to restart the system; if the problem persists, call for service
G.L.S. failure	When a malfunction of the gas-liquid separator is detected	Try to restart the system; if the problem persists, call for service
Power Supply	When the input power voltage of the electronic section is not correct	Try to restart the system; if the problem persists, call for service
P.S. damage	When a power source voltage failure is detected	Try to restart the system; if the problem persists, call for service
Pump failure	When the internal water pump is blocked	Try to restart the system; if the problem persists, call for service
Leak Int.Pres.	When an internal pressure leak is detected	Try to restart the system; if the problem persists, call for service
Leak Out Pres.	When an external pressure leak is detected	Check that the gas line is connected to the output
Heater damage	When the dryer heater does not function	Try to restart the system; if the problem persists, call for service

Open the generator

Remove the five screw

Disconnect the screen of the main board (C037)

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Main Alarm message

Low internal pressure
Pump failure
High cell voltage
Gas Liquid Separator failed
Power supply failure
Other Alarms

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Low internal pressure

Raison:

Not enough pressure

Possible causes:

- Leaks
- Gas Liquid separator valve still open
- Problem with dryer
- Problem with the sensor
- Problem with the cell

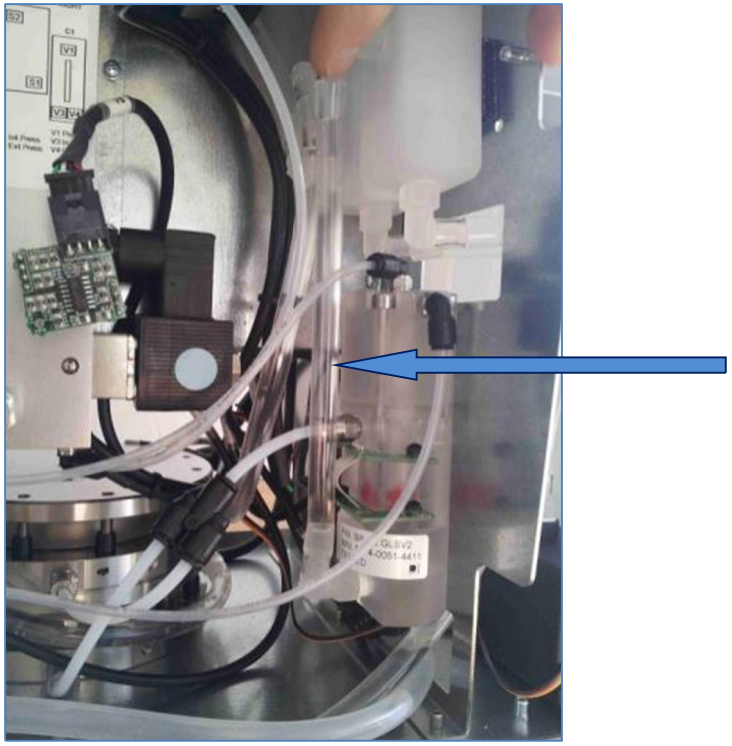
Leak test

Use a leak detector

Never use soap inside the generator

Check all the quick connections

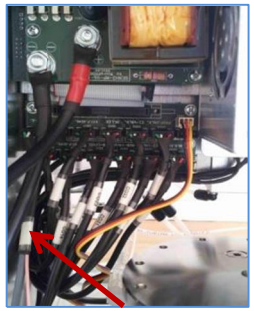
Gas Liquid separator valve still open



Check if there are bubbles in the transparent tube.

In this case, remove it and test the purge valve.

How to remove the GLS



Disconnect CO35

Disconnect pipes on quick connections

Unscrew the 2 screws with Allen key

•Diconnect the "black"
•Wire and then remove the
•clear tube,

How to Clean the GLS valve

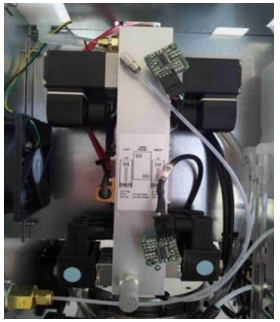
•Unscrew the central nut

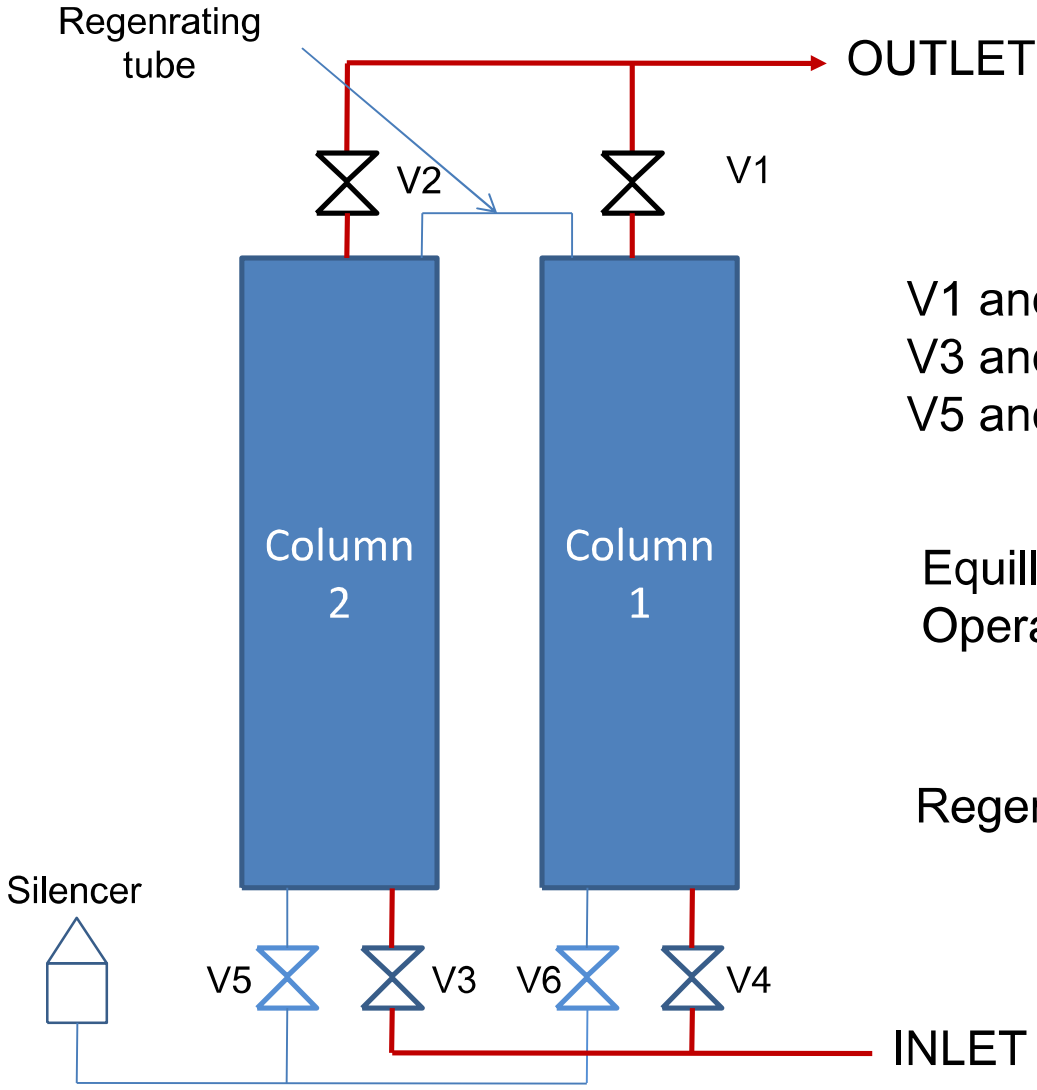
•Unscrew the two screws at the top left and bottom right and remove the valve

•Unscrew the two screws at the top right and bottom left to open the valve

Clean the valve

Check the dryer





V1 and V2: Proportionnal Valves
V3 and V4: Inlet valves
V5 and V6: Purge valves

Equillibrating time: 1200s
Operating time: 10800s

Regenaration ratio: 10%

Check the dryer:
Check proportional valve

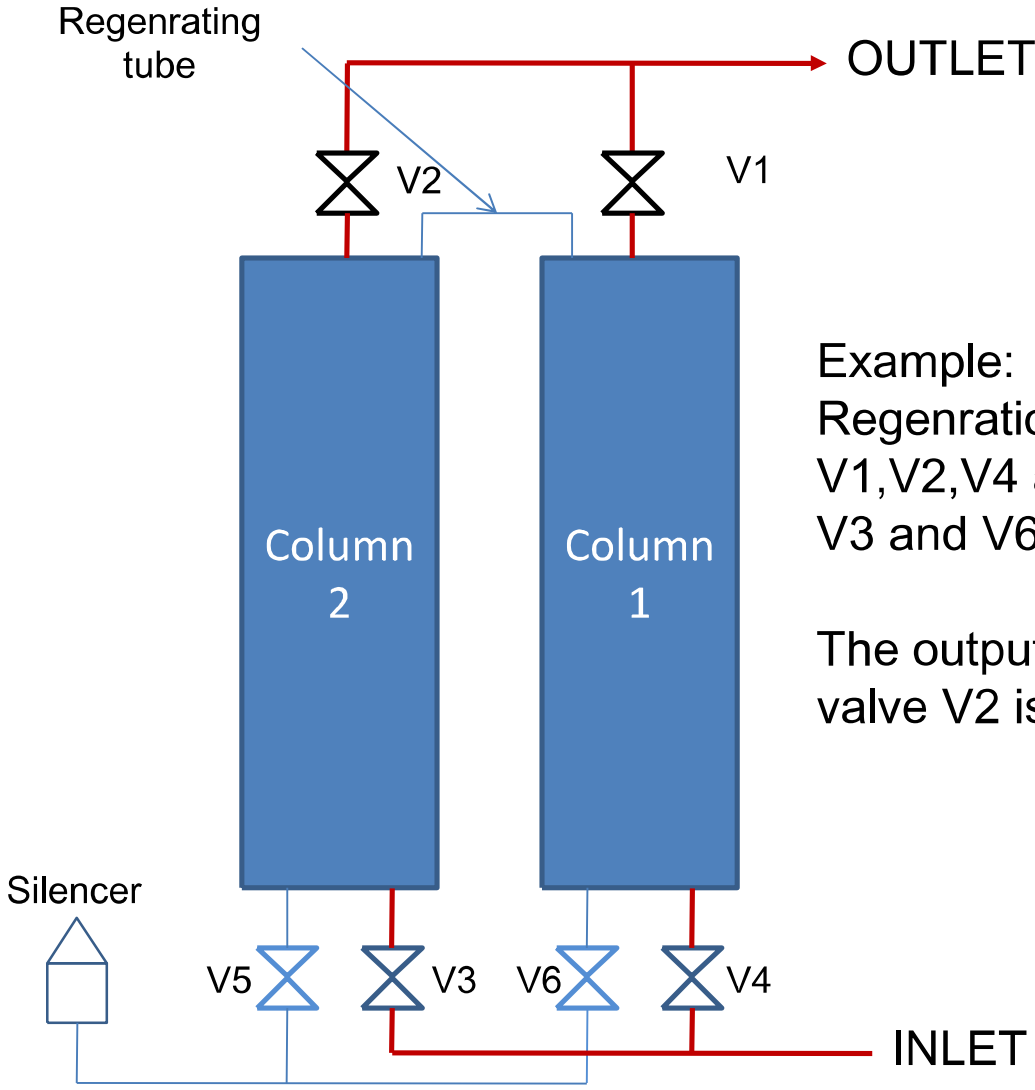
1- Put an external cap and start the generateur with the command START CLOSED

2- Go to MENU=> MAINTENANCE => SERVICE
Enter the code 345 => SWITCH DRYER COLUMN

3- Check if the output pressure stay at 0 bar. In the other case, remove the proportional valve of the opposite colum and check it

4- Push Two times on the screen to change the column. If in this 2 operations, the output pressure stay at 0, check the inlet and purge valve.

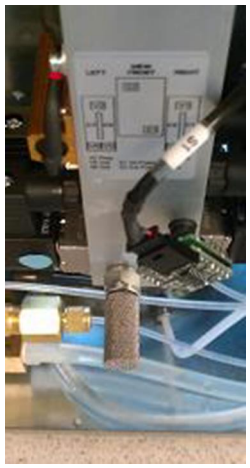
Proportionnal valve

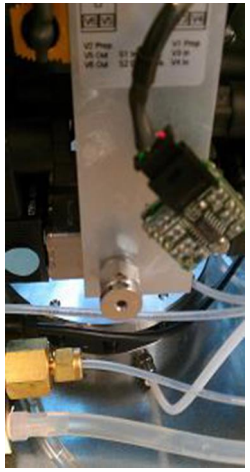


Example:
Regenration column 1:
V1,V2,V4 and V5 are closed
V3 and V6 is opened

The output pressure increase the valve V2 is opened and damaged

Check the dryer:
Check inlet and purge valve





1- Remove the grey silencer and exchange it by a cap

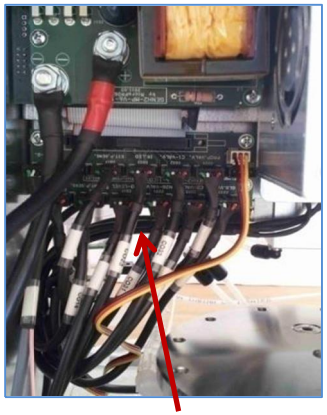
2- Start the generator and check if the generator increase and pressure.

3- Go to MENU=> MAINTENANCE => SERVICE
Enter the code 345 => SWITCH DRYER COLUMN.
Push Two times on the screen to change the regenerating column. If in this 2 operations, the internal pressure reach correctly, check the inlet and purge valve.

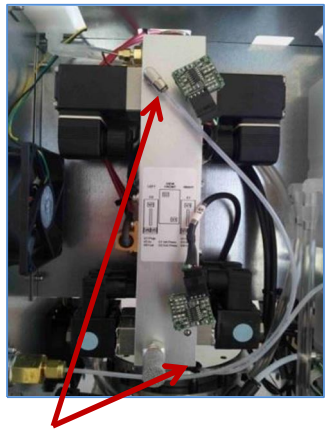
If the pressure still be at 0, check the pressure sensor or the cell.

Remove the dryer

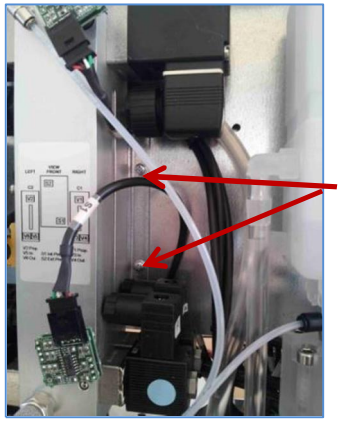
Disconnect the terminal block central green



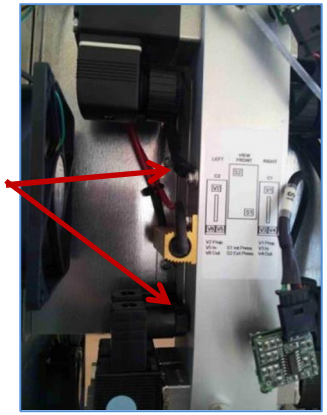
Disconnect CO6, CO14, CO17, CO32, CO33, CO34



Disconnect the two pipes on quick connections



Unscrew the four mounting screws



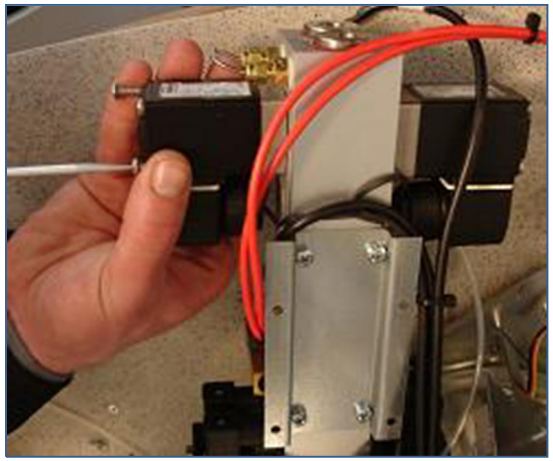
Check or remove inlet/purge valve

Unscrew the central nut

Unscrew the two screws at the top left and bottom right and r emove the valve

Then unscrew the remaining two screws and clean the internal components after verification of the presence of impurities

Check or remove proportional valve



Unscrew the two screws at the top left and bottom right and r emove the valve

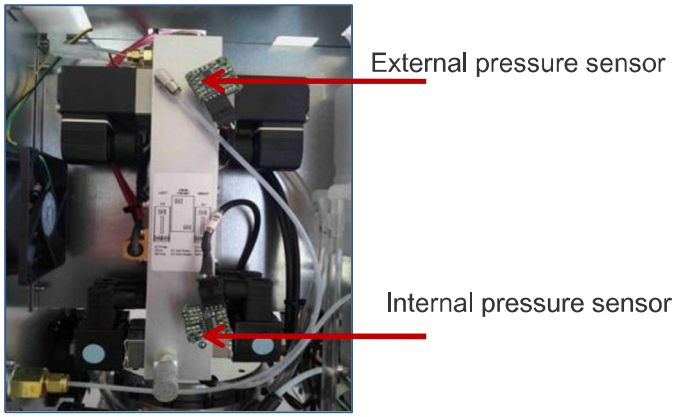
Then unscrew the remaining two screws and clean the internal components
after verification of the presence of impurities

Check the pressure sensor

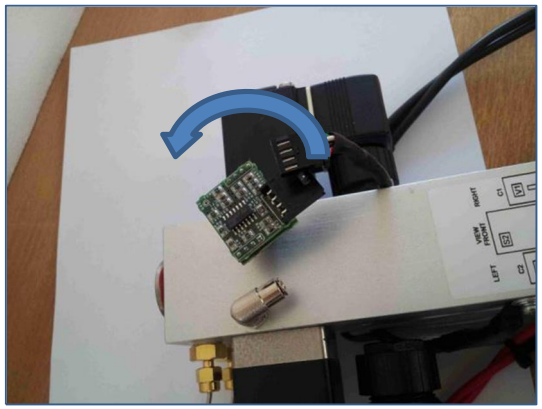
1. Put a gauge between GLS and dryer
2. START CLOSED tht generator
3. Go to MENU => DIAGNOSTIC
4. Compare manometer and the value

If the pressure gauge increase and the screen value still be 0, change pressure transmitter

Remove the sensor



1. Disconnect the connector
2. Turn left the sensor, unplug it and replace it
3. Repeat everything for the second sensor
4. Start the calibration

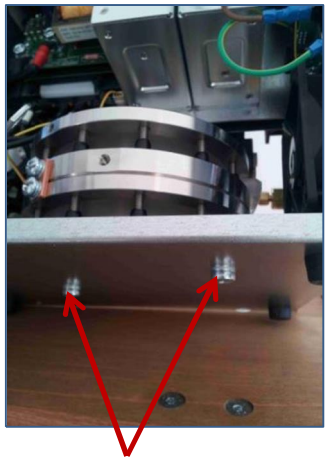


Sensor calibration

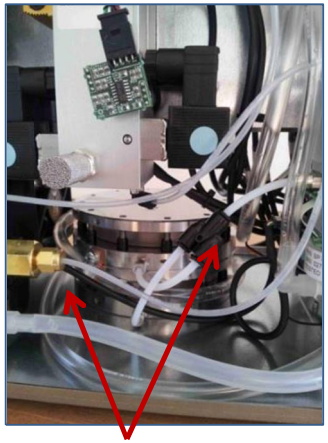
1. Put an external gauge
2. Go to MENU => MAINTENANCE => SERVICE => MANUAL CALIBRATION
3. In the display menu select "manual pressure calibration" and start the procedure
4. Wait for the terms automatically until the pressure reach 10 bar
5. Read the pressure gauge on the exact set on the generator and press the center of the display to save and exit the menu

Remove the cell

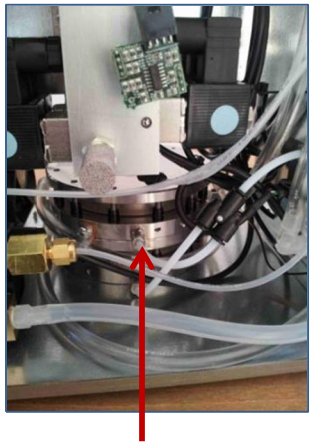
Unscrew the two screws on the cables of the cell power



Remove the two screws below



Disconnect the two transparent tubes inlet and outlet water



Disconnect the two white tubes

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PUMP Failure

Raison:

The message « Pump failure » means that the pump don't work

Possible causes:

- The pump is disconnected, check the connector C061
- The pump need to be replace

Replace the pump

- Empty the water tank

- Unplug the connector CO61, located at the end of the wires yellow / red / black and

Unscrew the two screws located below the generator

Disconnect the two transparent tubes

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High cell Voltage

Raison:

The voltage of the cell is too high

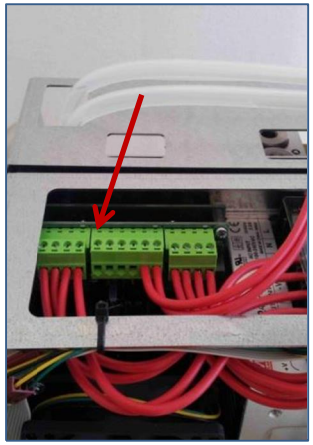
Possible causes:

- The fan is damaged and the temperature increase
- The quality of water is bad
- The water filter is full of dust
- Problem of the pump
- The cell is damaged, most probability
- The main board is damaged

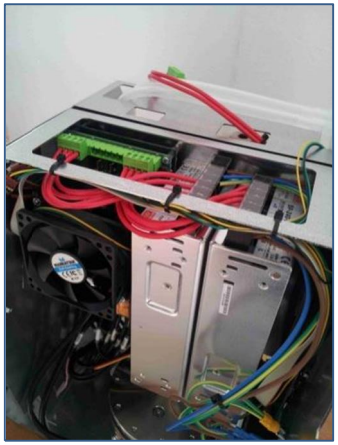
Check and replace the main board

Unscrew the four screws

Remove the water cap

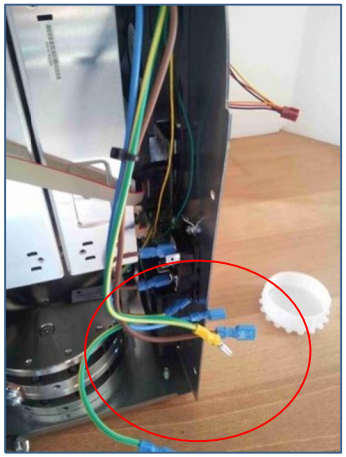


Unplug the connector central green

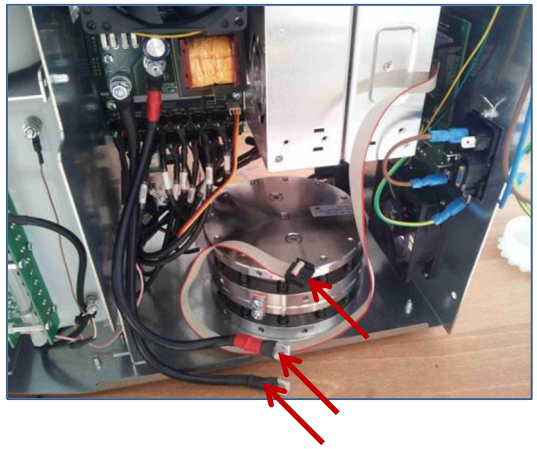


Cut the three fixing wires

Disconnect the cable connection of the cooling fans



Disconnect the cables connecting the power supply and the earth



Disconnect the cable "flat" and the power cords of the cell

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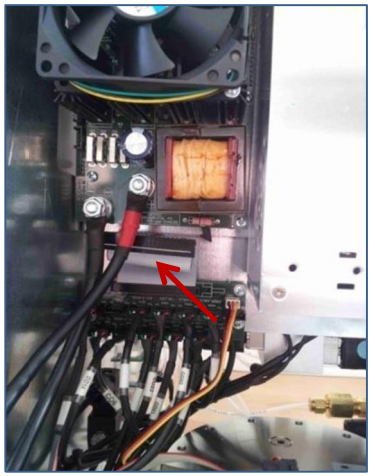
Check and replace the main board

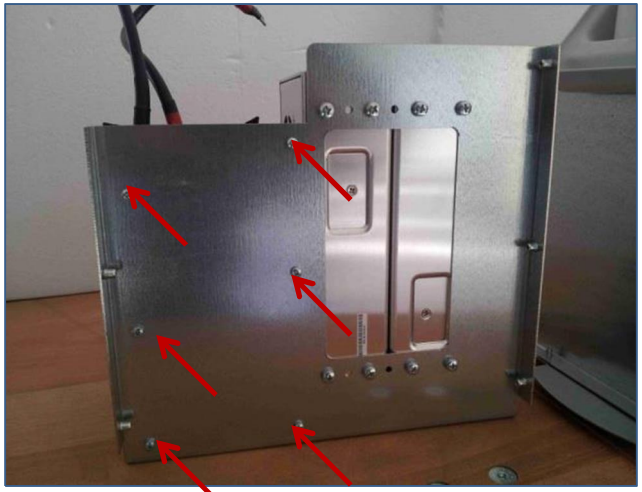
Unscew the four front screws

Unscrew the five screws on the rear panel



Disconnect the cable "flat"

Pull the rack



Unscrew the sixscrews

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GLS Failure

Raison:

The message « GLS failure » means that the second IR sensor has detect water

Possible causes:

- The valve doesn’t open well
- There is a ball of water between 2 IR sensors
- There is a defect on the IR sensors

The valve doesn’t open well

Correct position

Bad position

Solutions:

-Check the valve
-Remove Valve
-Remove GLS

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How to Check the IR sensors

Go to:
MAINTENANCE ▸ SERVICE ▸ PASSWORD 345 ▸ COMPLETE TEST

When the test is finished, take a picture of the screen or write down all the data

LEAK TEST:
C1 PASS
C2 PASS
GLS PASS
IR1: xx xxx xxx
IR2: xx xxx

The first number of IR1 must be under 20

The first number of IR2 must be under 30, but the last numbers of IR2 must be above 100 (if not, means the second IR sensor has a problem)

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Power supply failure

Raison:

The power supply is damaged

Possible causes:

- Check the power supply
- Check the electrical connection