

FD/HD MODULAR REPAIR PROCESS

TROUBLESHOOTING WITH THE MODULAR FD/HD

Indications are given to find and resolve faults in the Modular FD/HD.

CHECKING FIRST

The first thing to always check is that the unit is plugged in to the mains, and connected to the water, with the tap open.

Verify that when you turn on the unit from the switch, it lights up.

Remove the front cover, and check that the switch on the right side below is in position I (manufacturing).

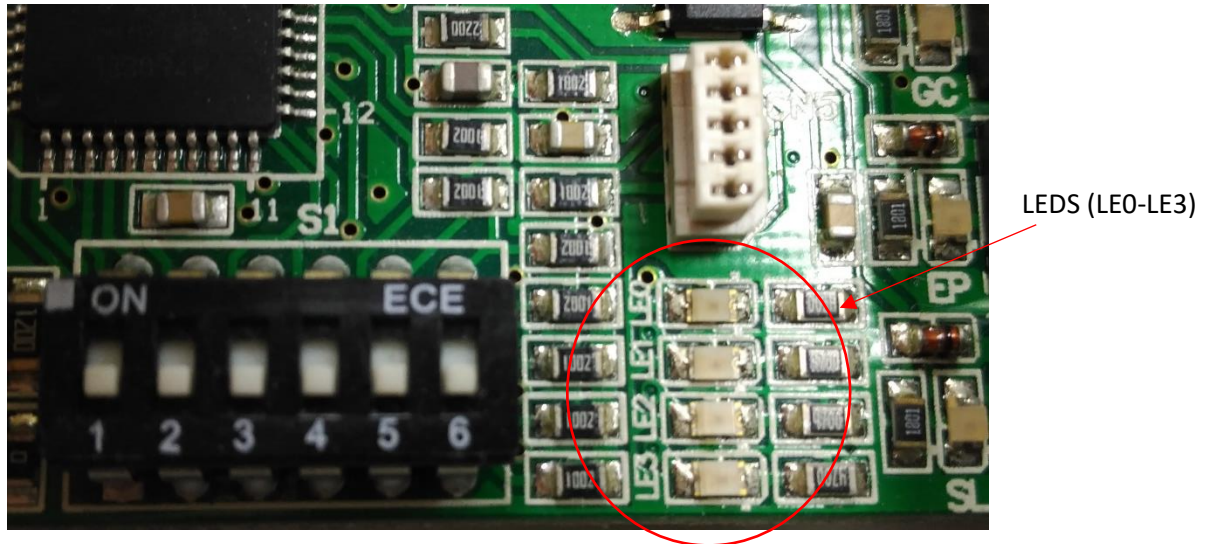
Remove the right side to access the electronic board, and be able to check the alarm or State. Shown below.

Verify that the plate has voltage.

MODULAR FD/HD ELECTRONIC BOARD, LEDS, STATUS, ALARMS, CAUSES AND SOLUTIONS

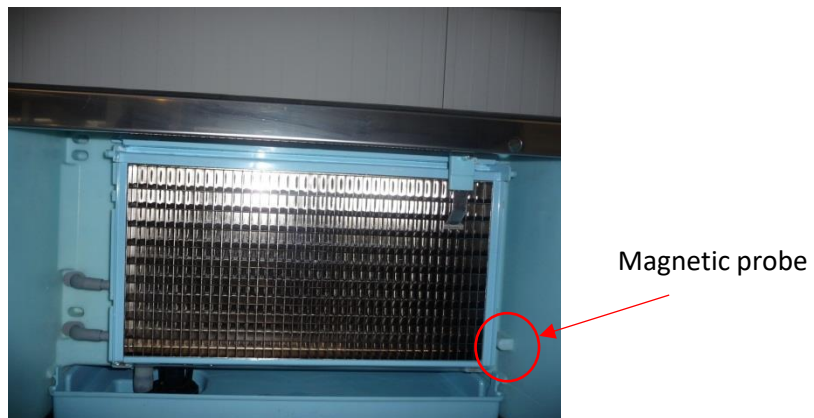


Electronic board



STATUS LEDS (unit working): FIXED LED

- LE0 - Standby: Unit is off due to the switch in 0 position
- LE1 – Ice: Normal status, making ice (switch position I)
- LE2 – Cleaning: Switch position II, cleaning mode, compressor is off to stop making ice, only the water pump, filling and drain work.
- LE3 – Stopped due to full stock: Normal stop when the curtain is open due to the last ice drop, and the ice cannot keep falling in the bin (bin full of ice). The curtain magnet (10x3) is open and the magnetic circuit is also open.



ALARMS LED (stop due to alarm): BLINKING LED

- LE0 - Harvest > 3'
- LE1 - Fabrication > 60'
- LE2 - Fabrication < 2'
- LE3 – Water inlet > 3'
- LE0+LE1+LE2+LE3 – High pressure switch

ALARM LE0 - HARVEST:

When the unit shows us a harvest error, 0 LED flashes in the electronic board, we have a failure during harvest of the ice. It occurs for several reasons. The system detects the error when entering harvest mode and it runs for more than 3 minutes without activating the micro of the curtain (the micro of the curtain is always open, when it is closing the magnetic circuit being in contact with the sensor magnet, and when the curtain opens the curtain contact is closed). After 3 minutes passes while the curtain doesn't open and activates the micro, proceeds to return manufacturing, and if the error remains goes alarm showing the LED0.

ALARM LE1 – LONG FABRICATION TIME:

When the unit shows in the electronic board LED1 flashing, is because after 60 minutes working has not come to produce ice (ice/thickness sensor) does not close the circuit indicating the plate that the ice is formed.

ALARM LE2 – SHORT FABRICATION TIME:

The error is displayed when you reach end of manufacturing in less than two minutes (the thickness sensor closes the circuit in less than two minutes). System tries to do a harvest and returns to manufacture, and if in this second manufacturing it has again the same error, the unit stops and shows the alarm.

ALARM LE3 – WATER INLET:

When the water level probe does not detect water after 3 minutes, it gives error water inlet and stops the unit.

ALARM LE0+LE1+LE2+LE3 (ALL OF THEM) – HIGH PRESSURE SWITCH

The high pressure switch activates and it stops the unit.

FD/HD MODULAR REPAIR PROCESS

CAUSES AND SOLUTIONS TO THE ALARMS

ALARM LEO – HARVEST

Check the drive. If the unit performs correctly the ice sheet on the evaporator, with a suitable thickness (3-4 mm), but does not harvest, can be the following:

- Check that the unit is level, can be leveled more forward to allow a better harvest of the slab by gravity.
- Make sure that the curtain opens correctly, that there are no elements that prevent its opening.
- Visually check the status of the magnet of the curtain and see if opening the curtain lights the LED in curtain plate. If it does not light up, try to use a magnet, if it lights up, proceed to change sensor or magnet.
- Check that there are no cables loose or poorly connected on the electronic board, as well as in the unit.
- Check that the electronic board does not has a harvest error before the 3.5 minutes that LEO is implemented. If you get the error before the 3.5 minute the electronic board is the problem. CHANGE THE ELECTRONIC BOARD

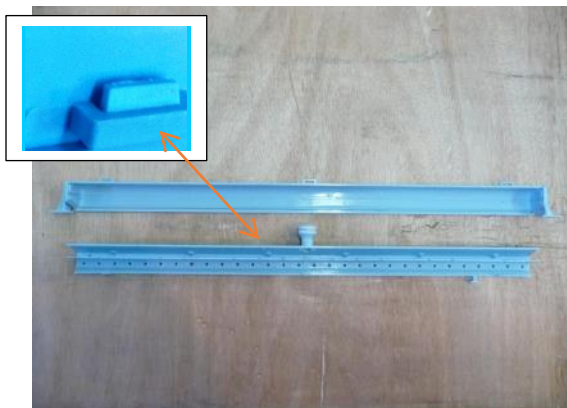


- Check that the water pump works properly during harvest. Remove if necessary the distributor and check that it is not dirty, preventing the water outlet from the back to the evaporator.



The arrows of the figures indicate the points where the distributor is anchored to the evaporator.

With great care and at the same time we pull the two sides to remove all the Distributor.



To open the dispenser there are three tabs which must be depressed simultaneously.

- Check that water inlet valve works correctly, that it gets the 220 volts during harvest, and also opens and the water flows through. If it does not open having voltage, change the valve. If tension fails, change the electronic board.
- Check that hot gas coil works, opening correctly (check with tester that the signal reaches the coil and then that opens).



- Check the pressure during harvest, should be approximately 6 bar (87 psi)
- Check that the fan modulates correctly, should stop, since we need hot gas, the pressure to make the fan start is 240 psi (16 bar), and stops at 225 psi (15,50 bar), if it fails, check the pressure of condensation, even try to disconnect fan to see if it harvest better. If the fan doesn't stop, change the condensation pressure switch.
- The final operating pressure is 2 bar (29 psi). Check that we have the unit working properly.

If this still does not harvest, having the correct working pressures, it is possible that the hot gas valve fails, or the mesh filter before the hot gas valve is clogged. You can see easily, if you open the valve the hot gas pass but when you reach the T before the expansion valve stops flowing, it is because it does not have enough strength to pass the T, due to a clogged filter. If the pipe does not get warm after the valve is it because the valve is clogged and it does not open (as long as the coil works). You can check if the valve opens by forcing it with a magnet.

If the problem is the hot gas valve, replace together with the filter.

ALARM LE1 – LONG FABRICATION TIME:

- Check sensor thickness, must be 3 or 4 mm away from the evaporator, should not have broken support, the white wire should not be peeled or cut (to check the thickness sensor, disassemble it, and by touching any part of the unit plate, see if the LED on the electronic board lights up, if it does, it is working correctly). If the sensor has lime, clean it.
- Check that the water pump works properly. If the water pump fails, change it (check that 220V reach the pump, if it does not and the electronic board has on the pump relay, replace board).
- Check that there is water in the water tank. Check that once manufactured the water does not come out down the drain (if it goes down the drain, disassemble the drainage valve and clean it (possible obstruction)).
- Check that the refrigerant circuit works (the compressor operates and produces ice). If the compressor relay is marked in the electronic board but does not start up, check compressor and the electronic board. If the compressor receives voltage and will not start compressor failure, replace the compressor. If do not receive the start up signal, the electronic board fails, replace it.

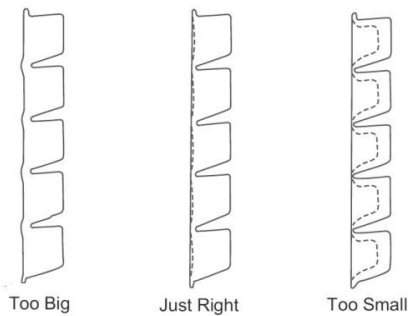


FD/HD MODULAR REPAIR PROCESS

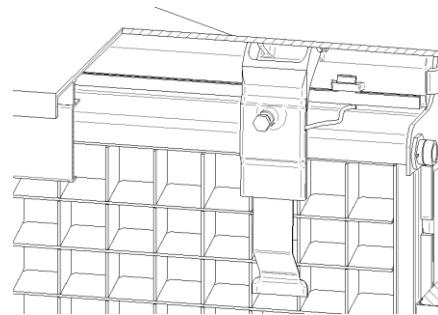
ALARM LE2 – SHORT FABRICATION TIME:

- Make sure the thickness sensor is not in contact with the evaporator (at distance of 3-4 mm).
- Check that the thickness sensor does not have a broken wire and is in contact with the plate of the machine (metal part).
- Check that the thickness sensor is not loose and touching evaporator.
- Check that water flows well, not splashed steadily evaporator, if so, clean the water dispenser.
- Check that the slab of ice is not too thick, therefore not harvesting, and creating the error.

THICKNESS SENSOR:

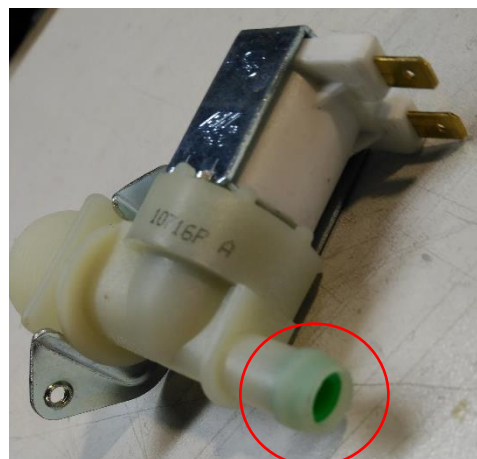


Move the sensor screw counter clockwise to get the ice less thick



ALARM LE3 – WATER INLET:

- Check that we have water connected to the unit and have the required minimum pressure.
- Check that the water solenoid valve opens, you can measure using a voltage tester, if it fails, check wires to circuit board, if all correct, change the electronic board.
- If the solenoid valve has current and does not open, change it.
- Check water level probe, by accumulation of lime could not make connection to the other part of the probe on the pump, and water would be going past the established time, overflowing water. Clean if necessary.
- In exceptional cases and when the pressure is below the requirements, you can eliminate the restrictor of the water inlet solenoid valve.



Restrictor in the opposite side of the water inlet.