6.5 Troubleshooting

WARNING

When taking action on the primary side of the equipment's main power switch, be sure to turn off the main power supply switch at your facility before de-energizing. Also, use caution not to apply voltage accidentally.

Attempting to solve a problem with the power on can result in electric shock and create a very dangerous situation.

When opening the water circuit chamber door (heat exhaust chamber), be sure to first turn off the main power switch.

This section describes problems that the chamber cannot self-diagnose and operations that can be easily mistaken for a malfunction.
If the chamber does not operate properly even after taking the actions listed here, contact your distributor or ESPEC.

Table 6.1 Troubleshooting

Problem	Cause	Solution
Display suddenly goes blank or incorrect information is displayed.	System error or internal board error	Turn on the main power switch of the chamber again. If the same problem occurs after restarting operation, request a service call.
No external memory tab contents displayed	Function is being suppressed by the external memory protect setting.	Check with the chamber administrator or check the protect setting.
"Remove external memory" message displayed even while external memory is inserted.		
Difficulty closing the door	Something is caught in the door.	Remove what it caught in the door.
	Frost has accumulated on the packing, hardening it.	Perform defrost operations. ☞ See "*6.6 Fuse and lamp replacement*".
	Test area has become hot and humid, creating strong internal pressure.	This is not a malfunction. Continue operation.
It is difficult to open the door.	Test area is under negative pressure.	This is not a malfunction. Continue operation.
	Frost has accumulated on the packing, hardening it.	Perform defrost operations. ☞ See "*6.6 Fuse and lamp replacement*".
During operation at freezing temperature, frost columns taller than 5 cm formed on the drain port in the test area or frosting occurs inside the test area. (Excluding LH and LHL models)	External air entered from the cable port.	Cover the cable port with the cable port cap. Plug the cable port with the rubber plug.
	Door packing stopper has a defect or door packing has deteriorated.	Request a service call.

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Problem	Cause	Solution
Unusual smell	An unusual smell remains in the chamber.	Clean the test area. ☞ See "*5.4 Maintenance*".
	The specimen is emitting an unusual smell.	This is not a malfunction. Continue operation.
Abnormal sound	Condenser fins are clogged.	Clean the condenser. ☞ See "*5.4 Maintenance*".
Chamber vibration	Adjustor feet are not set properly.	Adjust the adjustor feet. See the Installation guide.
The inner door (option) is fogged or the viewing window is frosted.	Sudden increase in humidity	This is not a malfunction. Continue operation.
The outside of the chamber is wet.	High ambient humidity	This is not a malfunction. Continue operation. To end operation, allow the test area to return to room temperature before ending operation.
Wet-bulb wick has dried out.	Bacteria is growing inside the water tank.	Clean the water tank and water supply pump filter. ☞ See "*5.4 Maintenance*".
Unstable temperature (humidity)	The door is not closed.	Close the door.
	The cable port rubber plug is not attached.	Attach the plug.
	Ambient temperature has changed 5˚C or more in a few minutes.	Resume testing after the ambient temperature has stabilized.
	The power supply of a device with a large heat generating load was turned on or off.	Reduce the heat generating load.
	The electromagnetic pump protective strainer inside the water tank is clogged.	Clean the electromagnetic pump protective strainer inside the water tank. ☞ See "*5.4 Maintenance*".
The temperature has gradually increased above the set temperature.	Large specimen heat generation load	Reduce the specimen heat generation load.
	Frost has accumulated on the cooler.	Perform a defrost operation (excluding LH model). ☞ See "*6.6 Fuse and lamp replacement*".
Settings cannot be changed.	Settings are protected.	Change settings to turn off protection.
Temperature does not decrease immediately.	Due to the characteristics of the compressor, it takes 5 to 10 minutes to begin cooling.	This is not a malfunction. Continue operation.
Temperature increase (decrease) takes a long time.	The door is open.	Close the door.
	Large specimen heat load	Reduce the number of specimens.
	Too high or too low ambient temperature	Increase (decrease) the ambient temperature.
Humidity increase (decrease) takes a long time.*1	The door is open.	Close the door.
	Too high or too low ambient temperature	Increase (decrease) the ambient temperature.
Temperature rise stops or drops when transitioning from low to high temperature.	Frost has accumulated on the cooler and dehumidifier.	This is not a malfunction. Continue operation. Alternatively, perform defrost operations. ☞ See "*6.6 Fuse and lamp replacement*".

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Problem	Cause	Solution
Temperature distribution is poor.	Air flow inside the test area is poor.	Improve the air flow.
	Large specimen heat load	Reduce the number of specimens.
	Frost has accumulated on the cooler.	Perform a defrost operation (excluding LH model). ☞ See "*6.6 Fuse and lamp replacement*".
During humidity operation, there is no water in the humidifying tray or wick pan (water does not accumulate in the water tank).	No water in the water supply tank.	Add water to the water supply tank.
	Water supply and drain hose is connected to the humidifying tray drain port with snap-on socket (draining water).	Remove the water supply and drain hose.
	Water pump or water sensor malfunction	Request a service call.
Humidity does not reach the set point.	The door or cable port is open, and steam is leaking.	Close the door or cable port.
	Door packing has degraded and steam is leaking.	Request a service call.
	Set point outside the temperature and humidity control range	Set within the control range.
	Water is not reaching the wick pan or humidifying tray.	See "During humidity operation, water is not supplied to the humidifying tray or wick pan".
Humidifying water consumption is high.	The door or cable port is open, and steam is leaking.	Close the door or cable port.
	Door packing has degraded and steam is leaking.	Request a service call.
	Water supply and drain hose is connected to the humidifying tray drain port with snap-on socket (draining water).	Remove the water supply and drain hose.
	Water level of the humidifying tray is high, and the water is overflowing into the test area and being drained.	If the problem persists even after leveling the chamber, make a service call.

*1 The LHU-124 and LU-124 use cross output temperature (humidity) control that prioritizes heater output over humidifier output. Because maximum current is being suppressed, changes settings due to ambient temperature and running conditions can take about two hours before the test area humidity reaches the humidity set point.

6.6 Maintenance

Replacing a fuse

If a fuse blows, replace it with a supplied fuse.

WARNING

Use appropriate methods, as shown below, to replace and inspect the fuse.

Failing to do so can result in electric shock.

◆ Note ◆

If the fuse is blown immediately after replacement, contact your distributor or ESPEC.

<Procedure>

1) Turn off the primary-side power supply.
2) Turn the main power switch off.
3) Remove the three screws along the bottom of the front panel and then remove the front panel.
(Opening the chamber door makes it easier to remove the front panel.)

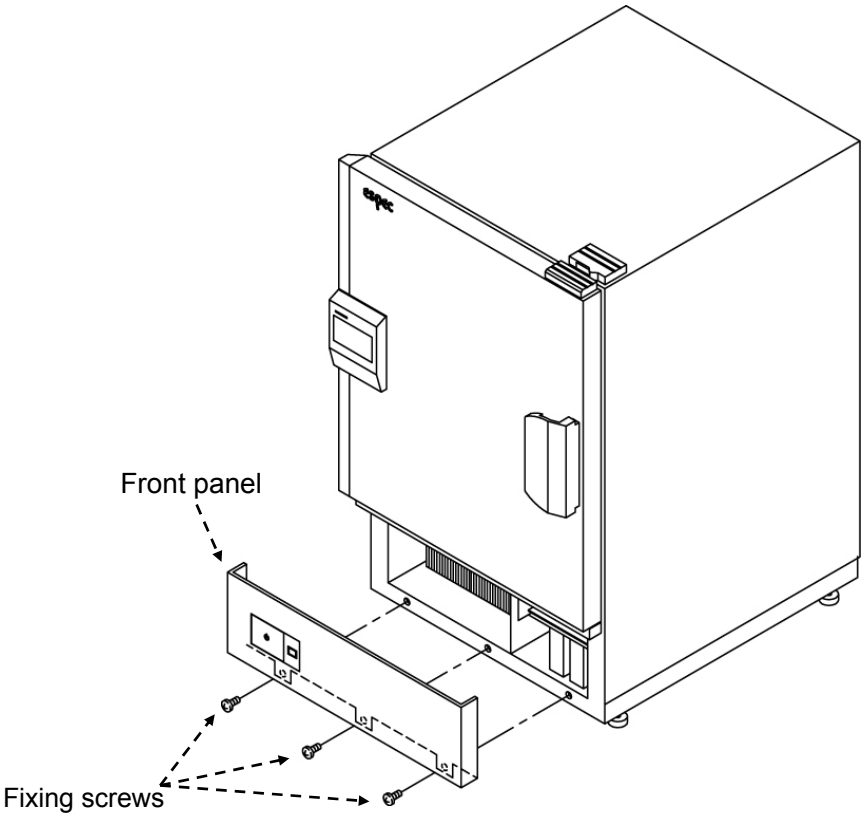

Fig 6.1 Replacing a cartridge fuse

4) Check the position of the fuse by referring to the electric equipment box parts layout diagram, and replace the blown fuse with a new one.

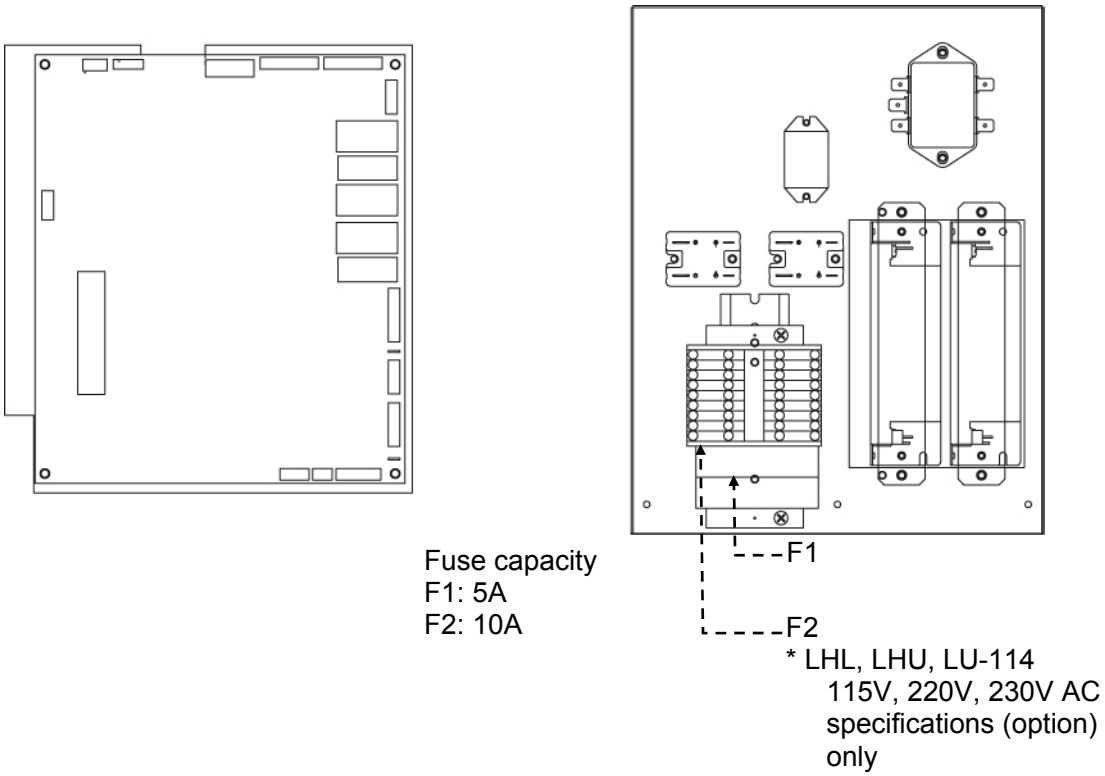

Fig 6.2 Fuse position

Defrost operation (excluding LH model)

Notice

- **Periodically defrost the cooler. An excessive amount of frost forming on the cooler will lead to symptoms such as taking a long time to decrease temperature and notably poor chamber control.**
  Do not use the defrosting procedure in such cases. Too much frost on the cooler prevents the defrosting procedure because air does not flow inside the chamber. On the contrary the thermal fuse may blow in order to protect the chamber.
- **If there is too much frost on the cooler, stop operation and let the chamber stand at ambient temperature with the chamber door open for half a day to all day until the frost dissolves.**
- **Operating the chamber continuously for a long time with frost on the cooler can lead to malfunctions. Be sure to defrost the cooler.**
  Frost may form on the cooler during temperature (humidity) operations below 30˚C to 40˚C. If you notice any of the following symptoms, perform a defrost operation.

- If temperature (& humidity) inside the chamber is uncontrollable or rises slowly
- If air blow from the chamber is weak (when the door is opened)
- If frost or ice form on test area walls
- If the “DRY WICK” alarm is displayed and frost forms on the rear wall of the test area during the temperature and humidity operation

You could also perform the procedure below, which is the same as the defrost operation when there is frost on the packing.

■ **Performing a defrost operation**

<Procedure>

1) Confirm that the main power switch is on.
2) Configure settings to a test area temperature of 70˚C or higher, and turn off humidity control (excluding LU models).
3) Start operation.
   Run the chamber for about 60 minutes with the door closed, then for 15 minutes with the door slightly open.

◆ Note ◆

As necessary, discharge the water from the humidifying tray manually (excluding LU models).