




## 6.6 Troubleshooting

 <b>WARNING</b>	
	<p><b>When taking action on the primary side of the equipment's breaker, be sure to turn off the main power supply switch at your facility before de-energizing. Also, use caution not to apply voltage accidentally.</b></p> <p>Attempting to solve a problem with the power on can result in electric shock and create a very dangerous situation. Use the supplied breaker handle stopper to prevent the breaker from being turned on accidentally.</p>
	<p><b>Be sure to turn off the breaker before opening the electrical compartment door or the water circuit chamber door.</b></p>

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
Nothing is displayed when the instrumentation power switch is pressed.	Primary side power source is not on.	Turn on the primary side power source.
	The breaker is not on.	Turn on the breaker.
	Fuse is blown.	Replace fuse F1. See " <a href="#">6.7 Fuse and lamp replacement</a> ". If the fuse is blown immediately after replacement, make a service call.
Display suddenly goes blank or screen contents are abnormal.	System error or internal board error	Turn the chamber's breaker back on. If this occurs again after resuming operation, make a service call.
External memory tab contents are not displayed.	Function is being suppressed by the external memory protect setting.	Check with the chamber administrator or check the protect setting.
The message "Remove external memory" is displayed even when external memory is inserted.		

Continued on the next page

Problem	Cause	Solution
Door is difficult to close.	An object is blocking the door.	Remove the object.
	Frost has accumulated on the packing, hardening it.	Defrost the chamber. See " <a href="#">6.7 Fuse and lamp replacement</a> ".
	Test area has become hot and humid, creating strong internal pressure.	This is not a malfunction. Continue operation.
Door is difficult to open.	Test area is under negative pressure.	This is not a malfunction. Continue operation.
	Frost has accumulated on the packing, hardening it.	Defrost the chamber. See " <a href="#">6.7 Fuse and lamp replacement</a> ".
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.	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.	Make a service call.
Unusual smell	Unusual smell remains.	Clean the test area. See " <a href="#">5.4 Maintenance</a> ".
	Specimen is emitting an unusual smell.	This is not a malfunction. Continue operation.
Chamber vibrates.	Leveling feet are not installed properly.	Adjust the leveling feet. See the Installation guide.
Viewing window is clouded or frosted.	Rapid increase in humidity	This is not a malfunction. Continue operation.
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 are growing in the water tank.	Clean the water tank and water supply pump filter. See " <a href="#">5.4 Maintenance</a> ".

Continued on the next page

Problem	Cause	Solution
Temperature (humidity) is unstable.	The door is not closed.	Close the door.
	Cable port plug is off.	Install the plug.
	Ambient temperature has changed 5°C or more in a few minutes.	Resume testing after the ambient temperature has stabilized.
	Power source of a device with a large heat generating load was turned on/off.	Reduce the heat generating load.
	Water supply pump filter is clogged.	Clean the water supply pump filter. See " <a href="#">5.4 Maintenance</a> ".
The temperature has gradually increased above the set temperature.	The specimen heat generating load is high.	Reduce the heat generating load of the specimen.
	Frost has accumulated on the cooler.	Defrost the chamber. See " <a href="#">6.7 Fuse and lamp replacement</a> ".
Set points cannot be changed.	Key lock is activated.	Release the key lock.
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 continues to increase (decrease).	The door is open.	Close the door.
	Specimen heat load is high.	Reduce the amount of the specimen.
	Ambient temperature is too low (high).	Increase (decrease) the ambient temperature.
During warming, warming stops or the temperature decreases midway.	Frost has accumulated on the cooler and dehumidifier.	This is not a malfunction. Continue operation, or defrost the chamber. See " <a href="#">6.7 Fuse and lamp replacement</a> ".
Temperature distribution is poor.	Air flow inside the test area is poor.	Improve the air flow.
	Specimen heat load is high.	Reduce the amount of the specimen.
	Frost has accumulated on the cooler.	Defrost the chamber. See " <a href="#">6.7 Fuse and lamp replacement</a> ".
Humidity does not decrease.	Refrigeration capacity is set to [Manual (stop)], so the test area cannot be dehumidified.	Set the refrigeration capacity to [Auto] or [Manual (STOP and three steps ranging from minimum to maximum)]. See " <a href="#">Chapter 3 Constant operation</a> " or " <a href="#">Chapter 4 Program operation</a> " in the Controller guide.



Continued on the next page

Problem	Cause	Solution
During humidity operation, water is not supplied to the humidifying tray or wick pan (water does not accumulate in the water level sensor container of the water tank or the humidifying tray water level controller).	No water in the water supply tank.	Add water to the water supply tank.
	Humidifying tray drain hose is connected to the humidifying tray drain plug (draining water).	Remove the drain hose.
	Drain hose is connected to the water level sensor container of the water tank (draining water).	Remove the drain hose.
	Water pump or water sensor malfunction	Make 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.	Make a service call.
	The set point is 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.	Make a service call.
	Humidifying tray drain hose is connected to the humidifying tray drain plug (draining water).	Remove the drain hose.
	Drain hose is connected to the water level sensor container of the water tank (draining water).	Remove the 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.

## 6.7 Maintenance

### Replacing a fuse

If a fuse becomes blown, replace it with a supplied fuse.

 <b>WARNING</b>	
	<b>Use appropriate methods, as shown below, to replace and inspect the fuse.</b> Failing to do so can result in electric shock.

◆ <b>Note</b> ◆	
If the fuse is blown immediately after replacement, contact your distributor or ESPEC.	

#### <Procedure>

- 1) Turn off the primary power source.
- 2) Turn off the breaker.
- 3) Remove screws at (A) and (B), and remove the electric equipment box rear panel and the electric equipment box cover on the top of the chamber.

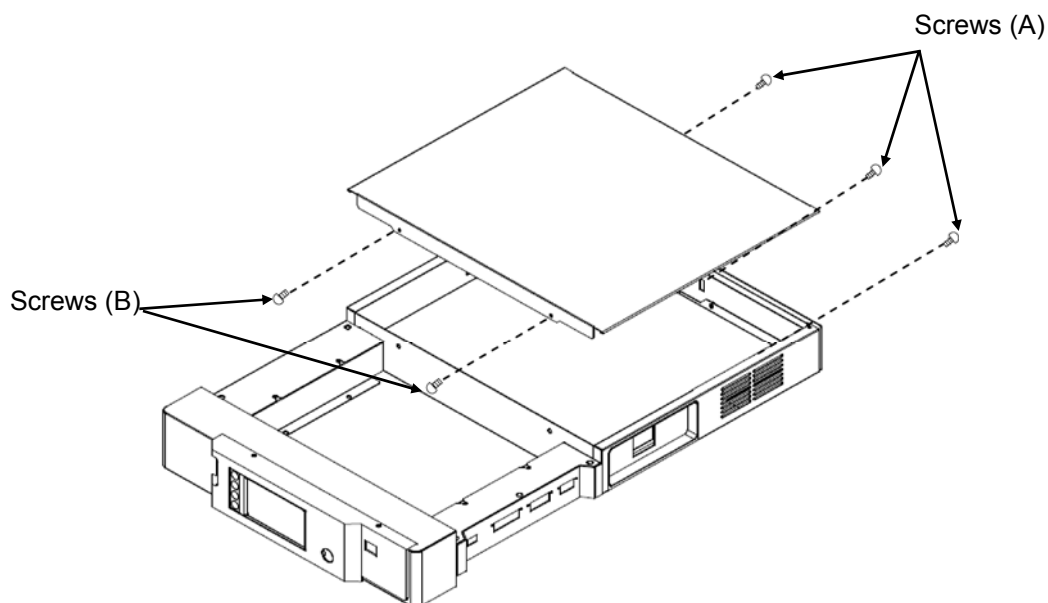
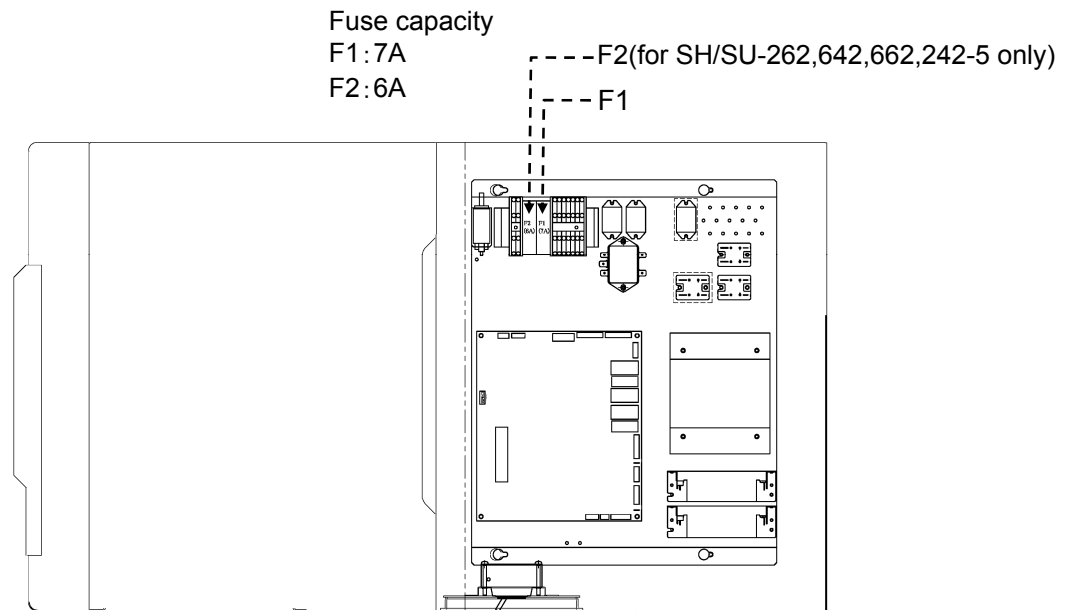


Fig 6.1 Replacing a glass tube fuse

- 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.



(The figure is for SH/SU-642, 662)

Fig 6.2 Fuse position

## Defrosting

### Notice

- **Defrost the chamber periodically, or too much frost on the cooler causes slow temperature pull-down or remarkably unstable control.**  
Do not use the defrosting procedure below in this case. 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.
- **In the case of too much frost on the cooler, stop the operation and let the chamber stand at ambient temperature with the chamber door opened for half a day to all day until the frost dissolves.**
- **Be sure to defrost the chamber.**  
Frost may form on the cooler in temperature (& humidity) operations below 30 to 40°C. The refrigerator may be damaged in these continuous operations for a long time.

- 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

Use this procedure to defrost packing as well.

### ■ How to defrost chamber

#### <Procedure>

- 1) Check that the breaker is in the ON position.
- 2) Turn refrigerator control OFF.  
For an explanation on how to set refrigerator control, see Controller guide "2.4 Convenient functions".
- 3) Change settings so that the operation is not interrupted or an alarm generated if the chamber is run with the door cracked slightly. Make the following settings.  
For details on settings, see Controller guide.
  - Select [Off] next to Chamber Operation.
  - Press the ON box next to Hold Door Alarm so that the dot is black.

- 4) Set target temperature to a minimum 70°C and turn OFF humidity control (not necessary with temperature-only chambers).
- 5) Get the Operation Mode Selection screen.  
Press either the [OPER./STOP] key on the operating panel or the chamber operating status box on the screen.
- 6) Press the [OPER] button under Constant Mode to start the chamber.  
Run the chamber for about 60 minutes with the door closed, then for 30 minutes with the door slightly cracked.
- 7) Return settings made in step 3 to their original settings.

**◆ Note ◆**

As necessary, drain the humidifying tray manually (not necessary with temperature-only chambers).



