

## 12 Maintenance



**WARNING:** Risk of Shock. Disconnect equipment from main power before attempting any maintenance to equipment or its controls unless stated otherwise.

### 12.1 Cleaning the Cabinet Interior

To clean the cabinet interior, remove the shelves, drawers, or baskets following the instructions in *Section 7.3*, *Section 7.4* and *Section 7.5*. Use a solution of water and a mild detergent for cleaning. Rinse the interior storage components and wipe them dry with a soft cloth.

### 12.2 Cleaning the Condenser Filter

Clean the condenser filter every three months. There is one condenser filter located in the back cage of the unit that can be accessed without removing the back cage or disconnecting the power.

To clean the filter, complete the following steps:

1. Remove the filter by pulling upwards through the slot in the back cage.
2. Shake the filter to remove loose dust.
3. Rinse the filter in clean water.
4. Shake the excess water from the filter and let it dry.
5. Reinstall filter by pushing downwards through the slot in the back cage.



**CAUTION:** Risk of Abrasion. Do not pull the filter downwards from the bottom. The condenser has sharp surfaces.

### 12.3 Cleaning the Condenser



Condensers should be cleaned at least every six months; more often if the laboratory area is dusty. In heavy traffic areas, condensers load with dirt more quickly. Failure to keep the condenser clean can result in equipment warm-up or erratic temperatures.



**CAUTION:** Risk of Abrasion. Never clean around the condensers with your fingers. Some surfaces are sharp.

The condenser is located in the top rear of the machine compartment. To clean the condenser, complete the following steps:

1. Disconnect the power.
2. Remove the filter.
3. Vacuum the condenser and clean up any loose dust.
4. Replace the filter.

5. Reconnect power.

## 12.4 Automatic Defrost

The defrosting process on all -30°C freezers initiates automatically in response to a built-in timer. The defrost interval timer adapts to user conditions and will either be approximately every 6 hours or 15 hours. During this time, there may be a slight increase in display temperature.

If a door or port has been open for an extended duration allowing room air to flow into the freezer, frost may build up inside of the freezer and negatively affect the performance of the freezer. The unit defrost may not be able to overcome this and the unit must be manually defrosted by turning the freezer off.

## 12.5 Gasket Maintenance

Periodically check the gaskets around the door for punctures or tears. Leaks are indicated by condensation or frost which form at the point of gasket failure. Make sure that the cabinet is level (refer to *Section 7.1.1* for leveling information).

Keep the door gaskets clean and frost free by wiping gently with a soft cloth.

To check the door seal, complete the following steps:

1. Open the door.
2. Insert a strip of paper (a couple of inches wide) between the door gasket and the cabinet flange and close the door.
3. Slowly pull the paper strip from the outside. You should feel some resistance.
4. Repeat this test at 4-inch intervals around the door. If the door does not seal properly, replace the gasket.

## 12.6 Alarm Battery Maintenance

Have a certified technician replace the alarm battery every twelve months at most or when the alarm is active. The part number for a replacement battery is 322533H01.

## 12.7 Preparation for storage

If the unit is going to be stored in an off condition, allow the unit to warm up and dry out with the door open before moving into storage.

## 13 Troubleshooting



**WARNING:** Risk of Shock. Troubleshooting procedures involve working with high voltages which can cause injury or death. Troubleshooting should only be performed by trained personnel.

This section is a guide for troubleshooting equipment problems.

**Table 11. Troubleshooting Procedures**

Problem	Cause	Solution
Unit does not operate or Power Failure Indicator is on	Power supply	<p>Check that the cord is securely plugged in.</p> <p>Plug another appliance into the outlet to see if it is live.</p> <p>Check that the double pole circuit breaker located next to the power inlet is in “ON” position (i.e. “I” position). Try cycling to OFF position (i.e. “O” position) &amp; then bring to ON (“I”) position.</p> <p>Test the voltage and verify that it is correct for your unit (refer to <i>Table 2</i>).</p> <p>If the outlet is dead, check the circuit breaker or fuses.</p> <p>The unit should not be connected to a GFCI (Ground Fault Circuit Interrupter) protected outlet as it may be subject to nuisance tripping.</p>
Temperature fluctuates	Temperature Control	Make sure that the control is set correctly. Refer to <i>Section 9.3</i> .
	Condenser clogged	Make sure the condenser and filter are clean. Refer to <i>Section 12.2</i> and <i>Section 12.3</i> .
	Solution bottle	Make sure the solution bottles for the temperature sensors are full. The solution is a 50/50 mixture of glycerine and distilled water.
	Other causes	If the temperature control is set correctly, the condenser is clean, but temperature continues to fluctuate, call an authorized service representative.
Low battery icon is lit	12V backup battery needs to be replaced.	Replace the battery. It is located on the top right hand side of the cabinet. Call an authorized service representative.
Condensation around door frame	Incorrect Perimeter Heater Duty Cycle	Increase the Perimeter Heater Duty Cycle, Refer to <i>Section 9.4</i> .
	Gaps exist in unit port holes	Ensure all port holes in the cabinet top, sides, and back are sealed properly to prevent warm airflow into the cabinet. Seal any gaps.
	Door seal is broken	Verify nothing is placed through the door seal such as a sensor. Check the door seal following instructions in <i>Section 12.5</i> .

**Table 11. Troubleshooting Procedures**

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Unit is warm around door frame	Perimeter Heater is ON	This is a normal function of the unit and is a result of the perimeter heater to reduce condensation.
Unit warms up	Door is open	Make sure the door is completely closed.
	Door seal	Check the door seal, following instructions in <i>Section 12.5</i> .
	Warm product recently loaded in unit	Allow ample time to recover from loading warm product.
	Power supply	Check for proper voltage to the unit. If there is no voltage to the unit, call an electrician.
	Setpoints need to be adjusted	To adjust the setpoint, refer to <i>Section 9.3</i> .
	Extended air leak into freezer	Warm air entering the freezer from extended door openings, leaking gaskets, or unsealed port holes may create excess frost and ice buildup in the freezer that the automatic defrost may not be able to remove. This will inhibit freezer cooling. The freezer needs to be manually defrosted by turning off the unit to allow all frost and ice to melt.
“E01” on display	Invalid Algorithm	Check to ensure the model type is set correctly in service mode. Refer to <i>Section 9.4</i>
“E02” on display	Control Probe Failure	Check for loose probe connector. Replace control probe.
“E03” on display	Defrost Probe Failure	Check for loose probe connector. Replace defrost probe.
“E05” on display	Ambient Probe Failure	Check for loose probe connector. Replace ambient probe.
“E06” on display	Drip Pan Probe Failure	Check for loose probe connector. Replace Drip pan probe.
“Err” on display	Upper Bottle Probe Failure	Check for loose probe connector. Replace upper bottle probe.
“---” on display	Lost Communication	Call customer service.