

# Corning<sup>®</sup> LSE<sup>™</sup> 49L Shaking Incubator

CORNING

## INSTRUCTION MANUAL

### Models

6750 (120V US)

6752 (230V EU)



**Rev. 06/15**

This unit is a general purpose air incubator for professional, industrial, or educational use where the preparation or testing of materials is done at approximate atmospheric pressure and no flammable, volatile, or combustible materials are being heated. This unit is not intended for use with hazardous materials or in household locations.

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## 1.0 INTRODUCTION

The Corning® 49L Shaking Incubator has a temperature range between ambient +5°C up to 80°C and can be used for both general purpose or high temperature incubation applications.

The temperature feedback system provides precise temperature control within the incubator. The microprocessor maintains excellent temperature accuracy and stability. Desired temperature is set and displayed digitally on the large display. An independent, user settable safety thermostat protects samples and the incubator from overheating in the unlikely event of a primary controller failure.

A uniform temperature environment within the chamber is maintained by mechanical convection or fan-assisted heating. This type of heating also speeds temperature recovery after the door of the incubator is opened.

The interior of the 49L Shaking Incubator is constructed of mirror finished stainless steel. The exterior is made of cold rolled steel to resist corrosion and provide strength. The insulated door incorporates a glass viewing area for observing samples without disrupting the temperature environment within the chamber.

Your safety and satisfaction require a complete understanding of this unit. Read the instruction manual thoroughly before operating the incubator. All operators should be given adequate training before using the 49L Shaking Incubator.

**NOTE:** Any alterations or modifications of the incubator may void the warranty.

Should any questions arise concerning the Corning 49L Shaking Incubator, please contact Corning Customer Service at 800.492.1110 (US) or +1.978.442.2200 (outside the US).

## 2.0 WARRANTY

Corning Life Sciences guarantees that the Corning® 49L Shaking Incubator that you have received meets its published specification. The 49L Shaking Incubator is designed to be free of defects in materials and workmanship for a period of two years from the date of purchase. This guarantee is valid only if the unit has been used in accordance with the instructions in this manual and for its intended purpose. Corning shall not be responsible for consequential damages or damages resulting from the abuse or misuse of this equipment. Corning's liability shall be limited to the repair or replacement of the unit or refund of the purchase price, at Corning's discretion.

If you have a question about the Corning LSE 49L Shaking Incubator or have a service inquiry, contact Corning Customer Service immediately at:

1.800.492.1110 (in the United States and Canada)  
+1.978.442.2200 (outside the United States)  
Contact your local Corning sales office

Before returning any unit for service, a Return Authorization (RA) number must first be obtained. Equipment sent without our prior authorization will be returned at the customer's expense. When returning a unit to Corning for service, it should be sent in

the original packaging. If this is not possible, be sure the unit is sufficiently protected. Any damage resulting from improper packaging is the responsibility of the customer. A written explanation should accompany the unit along with the RA number.

Corning reserves the right to alter the specifications of the Corning® Model 49L Shaking Incubator without notice. This allows the incorporation of improvements as they are developed.

Please complete the following information. This information is required in the event that service becomes necessary. The serial number is found on the data plate located on the back of the unit.

Serial No \_\_\_\_\_

Date of Purchase \_\_\_\_\_

### 3.0 SPECIFICATIONS

Temperature Range	Ambient +5°C to 80°C
Temperature Uniformity	±0.25°C
Temperature Accuracy	±0.1°C
Temperature Set/Display	Digital/Digital
Temperature Control	Microprocessor
Over Temperature Safety	Independent, user-settable
Shaker Speed	20 to 400 rpm (maximum 300 rpm when stacked)
Door	Magnetic gasketed, insulated
View Area in Door	9.25 x 13.5 in. (23.5 x 34.3 cm), double glass
Working Area	1.7 cu. ft.
Exterior Construction-	Cold rolled stainless steel
Interior Construction	Mirror finished stainless steel
Exterior Dimensions (W x H x L)	23 x 19.75 x 22.25 in. (58.42 x 50.16 x 56.52 cm)
Interior Dimensions (W x H x L)	14.75 x 13.5 x 13.75 in. (37.5 x 34.3 x 35.0 cm)
Standard Accessories	Adjustable leveling feet 3 steel shelves Shelving points
Voltage Requirements	120V/60Hz
Power/Current	780W/6.5A

## 4.0 RECEIVING AND INSPECTION

Your satisfaction and safety require a complete understanding of this unit. Read the instructions thoroughly and be sure all operators are given adequate training before attempting to put the unit in service. **NOTE:** This equipment must be used only for its intended application; any alterations or modifications will void your warranty.

- 4.1 **Inspection:** The carrier, when accepting shipment, also accepts responsibility for safe delivery and is liable for loss or damage. On delivery, inspect for visible exterior damage, note and describe on the freight bill any damage found, and enter your claim on the form supplied by the carrier.

Inspect for concealed loss or damage on the unit itself, both interior and exterior. If any, the carrier will arrange for official inspection to substantiate your claim.

- 4.2 **Return Shipment:** Save the shipping crate until you are sure your unit is working properly. If for any reason you must return the unit, contact your service representative for authorization and supply the data plate information.

Verify that all of the equipment indicated on the packing slip is included with the unit. Carefully check all packaging before discarding. This unit is equipped with 2 large shelves, 1 small shelf, 12 shelf clips, and 4 leveling feet.

## 5.0 INSTALLATION

Local city, county, or other ordinances may govern the use of this equipment. If you have any questions about local requirements, please contact the appropriate local agency. Installation may be performed by the end-user.

Under normal circumstances this unit is intended for use indoors, at room temperatures between 5°C and 40°C at no greater than 80% relative humidity (at 25°C) and with a supply voltage that does not vary by more than 10%.

- 5.1 **Power Source:** Check the data plate for voltage, cycle, phase, and ampere requirements. If matched to your power source, plug the power cord into a grounded outlet. **VOLTAGE SHOULD NOT VARY MORE THAN 10% FROM THE DATA PLATE RATING.** This unit is intended for 50/60Hz application. A separate circuit is recommended to preclude loss of product due to overloading or circuit failure.
- 5.2 **Location:** In selecting a location, consider all conditions which might affect performance, such as heat from radiators, ovens, autoclaves, etc. Avoid direct sun, fast-moving air currents, heating/cooling ducts, and high-traffic areas. Allow a minimum of 2 in. (5 cm) between the unit and walls or partitions which might obstruct free air flow.
- 5.3 **Lifting/Handling:** This unit is heavy and care should be taken to use appropriate lifting devices that are sufficiently rated for these loads. Units should only be lifted from their bottom surfaces. Doors, handles and knobs are not adequate for lifting or stabilization. The unit should be completely restrained from tipping during lifting or transport. All moving parts, such as shelves and trays

should be removed and doors need to be positively locked in the closed position during transfer to prevent shifting and damage.

- 5.4 **Leveling:** The unit must sit level and solidly. Leveling feet are to be installed in the holes at the base of the unit. Turn them clockwise to raise the level. If the unit must be moved, turn the leveling feet in all the way to prevent damage.
- 5.5 **Cleaning:** The unit was cleaned at the factory but not sterilized. Remove all interior parts, if assembled, and clean the inside of the chamber thoroughly with a disinfectant that is appropriate to your application. Make sure to rinse the cleaned surface with a damp cloth, using water only, and dry the surface with a clean cloth. DO NOT use chlorine-based bleaches or abrasives, as this will damage the stainless steel surfaces. A similar periodic cleaning is recommended.

## 6.0 CONTROL PANEL OVERVIEW

- 6.1 **Power Switch:** The main power 1/0 (On/Off) switch controls all power to the unit. It must be in the ON position before any systems are operational.
- 6.2 **Temperature Control System:** This control consists of the digital display and UP/DOWN arrow pads for inputting set point temperatures and calibration.

**Safety:** This control is equipped with an adjustment knob and a graduated dial marked "0 to 10." Completely independent of the Temperature Control System, the Safety guards against any failure which would allow temperature to rise past set point. If temperature rises to the safety set point, the Safety takes control of the heating element and allows continued use of the incubator until the problem can be resolved or service can be arranged.

- 6.3 **Heating Indicator:** This pilot light is on when the Temperature Control System has activated the heating element to reach and maintain set point.
- 6.4 **Safety Light:** This pilot light comes on when the Safety controller is activated. Under normal operating conditions this pilot light should never be on.
- 6.5 **Circuit Breaker:** Located on the lower left rear of the unit, the breaker is manually resettable and offers protection against power source variations. Protection is in addition to the automatic high temperature limit designed into the heating element itself.



## 7.0 OPERATION

- 7.1 Check power supply against unit serial plate. They must match.
- 7.2 Plug the service cord into the grounded electrical outlet. Push the power switch to the **ON** position, and turn the **Safety** clockwise to its maximum position.
- 7.3 **Temperature Control System:** Enter desired set point temperature. To enter set point mode on the controller, press either the **UP** or **DOWN** arrow pad one time. The digital display will start to blink, going from bright to dim. While blinking, the digital display is showing the set point. To change the set point, use the **UP** and **DOWN** arrow pads. If the arrow pads are not pressed for 5 seconds, the display will stop blinking and will read the temperature of the unit. Allow the incubator at least 24 hours to stabilize.

**NOTE:** When first operating new units, it is not uncommon to experience smoking during the first cycle to temperature (see section 9).

- 7.4 **Calibration:** The unit was calibrated at the factory at 37°C; however it is recommended that the unit be recalibrated once it is in its working environment and has been stable at set point for several hours. Place a certified reference thermometer inside the chamber where it can be easily viewed. Make certain it is not touching any shelving or chamber walls. Allow the temperature to stabilize again until the temperature remains constant for 60 minutes. Compare the reading on the reference thermometer with the digital display. If there is a difference, put the display into calibration mode by pressing on both the **UP** and the **DOWN** arrow pads at the same time and holding them in for about 5 seconds or until the two outside decimal points start to flash. When the decimal points are flashing, the display can be calibrated to match the reference thermometer by pressing on the **UP** or **DOWN** arrow pads until the display reads the correct value. Allow the incubator temperature to stabilize and repeat if needed.
- 7.5 **Set Safety Controller:** As mentioned in step 7.2, the Safety should be initially set to its maximum position to allow the unit to stabilize. Once the incubator is stable at the desired set point, turn the Safety counterclockwise until the **Safety Light** turns on. Then, turn the **Safety** clockwise just until the **Safety Light** turns off. This will set the **Safety** controller at approximately 1°C above the **Temperature Control System**.

## 8.0 CLEANING AND ROUTINE CARE

Both the interior and exterior of the incubator should be wiped down with a soft cloth periodically to prevent any build-up of dust and grime.

Any spills in the interior of the incubator should be cleaned immediately. Cleaning may be performed with a soft, damp cloth. If required, the chamber may be disinfected. Before using any disinfectant or cleaning agent, ensure the product will not damage the stainless steel interior of the incubator. After cleaning the incubator, rinse the cleaned surface with a damp cloth using water only. Dry with a clean cloth.

Do not pour liquid into the chamber or immerse the unit in liquid. **DO NOT USE** chlorine-based bleaches or abrasives as these will damage the stainless steel.



## 9.0 TROUBLESHOOTING

Always make a visual inspection of the incubator and control panel when troubleshooting. Look for loose or disconnected wires that may be the source of trouble.

### TEMPERATURE

Symptom	Solution
Temperature too high; display and reference thermometer don't match	<ul style="list-style-type: none"><li>• Controller set too high. See section 7.3.</li><li>• Controller failed. Contact Corning Scientific Support.</li></ul>
Display reads "HI" or "400"+	<ul style="list-style-type: none"><li>• Probe is unplugged, is broken, or wire to sensor is broken.</li><li>• To see if there are intermittent problems, trace wire from display to probe; move wire to see if there are intermittent problems.</li></ul>
Chamber temperature spikes over set point and then settles to set point.	<ul style="list-style-type: none"><li>• Recalibrate. See section 7.4.</li></ul>
Temperature too low; display and reference thermometer don't match	<ul style="list-style-type: none"><li>• Safety set too low. See section 7.5.</li><li>• Controller set too low. See section 7.3.</li><li>• Unit not recovered from door opening. Wait for display to stop changing.</li><li>• Unit not recovered from power failure or being turned off. Incubator will need 24 hours to warm up and stabilize.</li><li>• Element failure. See if heating light is on; compare current draw to data plate.</li><li>• Controller failure. Confirm with front panel lights that controller is calling for heat.</li><li>• Safety failure. Confirm with front panel lights that Safety is operating correctly.</li><li>• Wiring problem. Check all functions and compare wiring to owner's manual, especially around any areas recently worked on.</li><li>• Loose connection. Contact Corning Scientific Support.</li></ul>
Display reads "LO"	<ul style="list-style-type: none"><li>• If ambient temperature is lower than range of unit, compare set points and ambient temperature to rated specifications in section 3.0.</li><li>• Sensor is plugged in backwards. Contact Corning Scientific Support.</li></ul>
Unit will not heat over a temperature that is below set point	<ul style="list-style-type: none"><li>• Confirm that fan is moving and that amperage and voltage match data plate. Check fan motor motion by removing back body panel of the unit.</li><li>• Confirm that set point is set high enough. Turn Safety all the way clockwise and see if heating light or safety light comes on.</li><li>• Check connections to sensor.</li><li>• Check calibration. Using independent thermometer, follow instructions in section 7.4.</li></ul>

## TEMPERATURE (cont'd)

Symptom	Solution
Unit will not heat up at all	<ul style="list-style-type: none"> <li>• Verify that controller is asking for heat by looking for the Heating light. If pilot light is not on continuously during initial startup, there is a problem with the controller.</li> <li>• Check amperage. Amperage should be virtually at maximum rated (data plate) amperage.</li> <li>• Do all controller functions work?</li> <li>• Is the Safety set high enough? For diagnostics, should be fully clockwise with the pilot light never on.</li> <li>• Has the fuse/circuit breaker blown?</li> </ul>
Will not maintain set point	<ul style="list-style-type: none"> <li>• Ensure that set point is at least 5 degrees over ambient.</li> <li>• See if ambient is fluctuating. Check for adjacent open doors or HVAC duct openings, stabilize ambient conditions.</li> </ul>
Display and reference thermometer don't match	<ul style="list-style-type: none"> <li>• Calibration error. See section 7.5.</li> <li>• Temperature sensor failure. Evaluate if pilot light is operating correctly.</li> <li>• Controller failure. Evaluate if pilot light is operating correctly.</li> <li>• Allow at least 24 hours to stabilize at set point temperature.</li> <li>• Verify that reference thermometer is certified.</li> </ul>
Cannot adjust set points or calibration	<ul style="list-style-type: none"> <li>• Turn entire unit off and on to reset.</li> <li>• If repeatedly happens, contact Corning Scientific Support.</li> </ul>
Calibrated at one temperature but not a another	<ul style="list-style-type: none"> <li>• This can be a normal condition when operating temperature varies widely. For maximum accuracy, calibration should be done at, or as close to, the set point temperature as possible.</li> </ul>

## MECHANICAL

Symptom	Solution
Door not sealing	<ul style="list-style-type: none"> <li>• Check physical condition of gasket.</li> <li>• Ensure that gasket clamps are in original location.</li> <li>• Adjust hinge blocks or twist the door.</li> <li>• Confirm that unit has not been damaged and body is square.</li> </ul>
Motor does not move	<ul style="list-style-type: none"> <li>• If shaft freely moves, check connections to motor and check voltage to motor.</li> <li>• If shaft rubs or is frozen, relieve binding and retest.</li> </ul>
Motor makes noise	<ul style="list-style-type: none"> <li>• Contact Corning Scientific Support.</li> </ul>

## OTHER

Symptom	Solution
Controller on at all times – “locked-up”	<ul style="list-style-type: none"> <li>• Turn unit off and on to reset.</li> <li>• If cannot change any condition on the front panel, contact Corning Scientific Support.</li> </ul>
Front panel displays are all off	<ul style="list-style-type: none"> <li>• Check for wire damage.</li> </ul>

Unit or wall fuse/circuit breaker is blown	<ul style="list-style-type: none"> <li>• Check wall power source.</li> <li>• Compare current draw and compare to specs on data plate.</li> <li>• See what other loads are on the wall circuit.</li> </ul>
Unit will not turn on	<ul style="list-style-type: none"> <li>• Check wall power source.</li> <li>• Check fuse/circuit breaker on unit or in wall.</li> <li>• See if unit is on (e.g., fan or heater and that just the controller is off).</li> <li>• Check all wiring connections, especially around the on/off switch.</li> </ul>
Unit is smoking – out of box	<ul style="list-style-type: none"> <li>• This is not an uncommon occurrence when first operating new units. Put unit under vent and run at full power for one hour. Smoking is normal during first cycle to temperature.</li> </ul>
Contamination in chamber	<ul style="list-style-type: none"> <li>• See cleaning procedure in operator's manual.</li> <li>• Develop and follow standard operating procedure for specific application; include definition of cleaning technique and maintenance schedule.</li> </ul>

If following these troubleshooting suggestions does not solve the problem, contact Corning Scientific Support at:

1.800.492.1110 (in the United States and Canada)

+1.978.442.2200 (outside the United States)

Contact your local Corning sales office

## 10.0 PARTS AND ACCESSORIES

<b>Corning Cat. No.</b>	<b>Description</b>
480157	Shelf, full
480158	Stacking adapter
480153	Flask clamp platform, pre-drilled
480154	Flat platform with non-slip rubber mat (30 x 30 cm)
480155	Double flat platform with non-slip rubber mat
480156	Universal spring loaded clamp platform for flasks, bottles, etc. (fits 49L only)
480110	Flask clamp, 25 mL (max. 16)
480111	Flask clamp, 50 mL (max. 16)
480112	Flask clamp, 125 mL (max. 16)
480113	Flask clamp, 250 mL (max. 9)
480114	Flask clamp, 500 mL (max. 5)
480115	Flask clamp, 1000 mL (max. 4)

## 11.0 PRODUCT DISPOSAL



According to Directive 2012/19/EU of the European Parliament and Council of 4<sup>th</sup> July 2012 on waste and electronic equipment (WEEE) as amended, the Corning 49L Shaking Incubator is marked with the crossed-out wheeled bin and must not be disposed of with domestic waste.

Consequently, the buyer shall follow the instructions for reuse and recycling of waste electronic and electrical equipment (WEEE) provided with the products and available at the following link: [www.corning.com/weee](http://www.corning.com/weee).

For additional information, visit [www.corning.com/lifesciences](http://www.corning.com/lifesciences) or call 1.800.492.1110. Outside the United States, call 978.442.2200.

For Corning technical information, e-mail us at: [ScientificSupport@corning.com](mailto:ScientificSupport@corning.com) or call 1.800.492.1110. Outside the United States, call 978.442.2200.

For more specific information on claims, visit the Certificates page at [www.corning.com/lifesciences](http://www.corning.com/lifesciences).

**Warranty/Disclaimer:** Unless otherwise specified, all products are for research use only. Not intended for use in diagnostic or therapeutic procedures. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications.

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