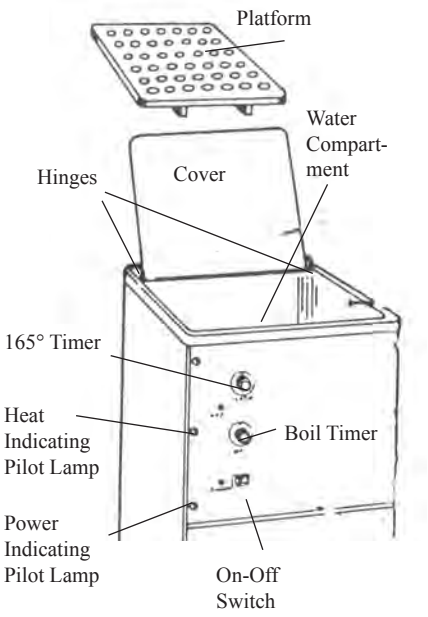
699-9960 (70-300), 699-9965 (70-305) Bench-top Curing Unit

Warranty and Parts:

We warrant our product to be free from defects in material and workmanship for **90 days.** This guarantee does not apply to accident, misuse or normal wear and tear. We particularly cannot be responsible for damage caused by allowing the unit to boil dry.

For technical assistance, call during 8-4 P.M. Eastern Standard Time at **1-800-875-3214.**



Introduction:

The Science First® Curing Unit is a thermostatically controlled, accurately timed water bath. It has been designed to provide trouble-free curing of acrylics with consistent results. The 165° F curing temperature has been calibrated and set at the factory. Three curing cycles have been programmed as follows:

A - Fast Cure - *Boil Only*
B - Medium Cure - *165°F, Boil*
C - Slow Cure - *165°F Only*

Installation:

1. Unpack - Do not discard shipping materials until unit has been thoroughly inspected and operates properly.
2. These wrapped parts are inside the water compartment:

a. Stainless steel platform
b. Stainless steel cover
c. Right and left hinge bracket

3. Remove wrapping materials. Place steel platform into the water compartment so that its feet rest on the bottom, **never on the immersion heater.**
4. Attach both right and left hinge brackets (with rubber pads) to the top right and left rear corners near the water compartment where predrilled and/or tapped holes are located. Use four (4) 6-32 screws with oval heads. Rubber pads under horizontal mounting flanges of hinge brackets prevent water seepage into the unit.
5. With handle of the cover in front, place cover pivots (at each rear corner of cover) into vertical slots of the hinge bracket. Pull forward. After **cover is stopped,** lift cover by handle and observe that it pivots freely. Allow cover to tilt backwards to rest against the horizontal tabs of the hinge bracket so that water condensate can drip into the water compartment.
6. Place on counter near sink.
7. Connect to **120 volt 60 Hz** source having sufficient current capacity to supply 16 amperes (1725 watts).

For *230 volt 60 Hz,* 8 amperes (862 watts) are required.

***Important:* Do not connect to heavily loaded electrical line.**

The addition of a Curing Unit can easily blow existing fuses or trip circuit breakers. Damage, fire and injury may result!

A separate 20 amp line with its own fused electrical supply and disconnect switch should be installed for the **Science First®** Curing Unit only.

- Do not turn unit on until you have read this entire manual
- Do not operate without water to avoid costly damage to equipment and cases.
- Always make certain that there is sufficient water in the compartment to allow for evaporation! Evaporation is reduced if cover is closed.
- Do not leave unit unattended during any cycle.

Science First® cannot be held responsible for repairs caused by allowing the unit to boil dry!

Replacement parts:

51-2385 - Grate
29-0701 - Stai clean, aerosol stainless steel spray cleaner
70-207 - Control Panel

Operation:

Before curing for the first time, it is recommended that the timers and temperature, with the aid of an accurate thermometer, are checked thoroughly. Follow **Steps 1 and 2** outlined below but without curing cases. The water temperature after heat-up should read 165° to 170° F.

(If the temperature requires adjustment, see **Calibration of Thermostat.)**

1. Fill the water compartment about 7 to 8 inches from the top.
2. Place the flasks on the platform. If necessary, add water to complete immerse the flasks plus allowance for evaporation.
3. Close the cover and turn on the power switch. "Power" pilot should be **on.**
4. Select one of the following curing cycles:

A. Fast Cure - Boil Only
B. Medium Cure - 165° and Boil
C. Slow Cure - 165° only

A. Fast Cure Procedure:

1. Set the "Boil" timer only to the desired boil time. **Do not set the 165° timer.**
2. Water at 60° - 70° F will take approximately one hour to reach full boil.
3. Do not leave unit attended during any curing cycle.

Illustrative "Fast Cure" Example:

Purpose: To cure at boil for 2 hours.
Procedure: Set the boil timer to 3 hours.
Computed as follows:
1 hour to reach boil from 65° F
2 hours at boil
3 hours total
During this cycle, the "heat" pilot light will be on continuously.

B. Medium Cure Procedure

1. Set the 165° F timer to the time interval. Water at 65° will take approximately 1/2 hour to read 165° F.
2. Set the "boil" timer to the desired "boil" time. Water at 165° F will take approximately 1/2 hour to reach full boil.
3. Do not leave unit unattended during any curing cycle.

Illustrative "Medium Cure" Example:

Purpose: To cure at 165° F for 1 hour 30 minutes and 1 hour at boil.
Procedure: Set the "165° F" timer to 2 hours.
Computed as follows:
1/2 hour to reach 165° F from 65°
1-1/2 hour at 165° F
2 hours total
Procedure: Set "boil" timer to 1-1/2 hours.
Computed as follows:
1/2 hour to reach boil from 165°F
1 hour at boil
1 1/2 hours totals

***Important!* "Boil" timer will start automatically when "165° F" timer reaches zero!**

During the 165° F curing cycle, the "heat" pilot light will be on when the thermostat calls for heat. When the water temperature reaches 165° F, the "heat" light will be off and will cycle **on** and **off** as the thermostat functions to maintain the water temperature.

When the "165° F" time interval has elapsed to zero, the "heat" light will remain on continuously indicating that the boil cycle has started. Upon completion of the "boil" cycle, the "heat" light will be off.

C. Slow Cure Procedure

1. Set the 165° F timer to the desired curing time interval. Water at 65° F will take approximately 1/2 hour to reach 165° F.
2. Do not set "boil" timer!
3. During this cure cycle the "heat" light will cycle **on** and **off** as the thermostat functions to maintain the water temperature.
4. Do not leave unit unattended during any curing cycle.

Illustrative "Slow Cure" Example:

Purpose: Cure at 165° F for 9 hrs.
Procedure: Set the "165° F "timer to 9 1/2 hours.
Computed as follows:
1/2 hr to reach 165°F from 65°F
9 hours at 165° F
9 1/2 hours total

D. To gain access to thermostat for adjustment, proceed as follows:

1. *Caution:* Disconnect the electrical power before removing the front panel.

> Electrical shock, burns and/or fatal injuries may occur. Do not remove front panel until it is disconnected from power supply and the unit is completely cool: three (3) hours minimum.

2. Remove the (6) screws from the front panel and allow the panel to pivot forward with front face down, resting on a wooden chair or platform approximately the same height as the door.

Caution: Do not try to pull the control panel completely away from the unit until the power coupling plug (green) has been unscrewed and disconnect from the control panel.

F. Calibration of Thermostat

1. Although your Curing Unit was carefully calibrated to provide 165° F, the thermostat is occasionally upset during shipping. Before curing cases, fill water compartment, heat up unit, and check temperature at 165° F with accurate thermometer.
2. Allow temperature to stabilize for at least one (1) hour.
3. If thermostat require recalibrating, turn off and unplug unit. Allow to cool at least three (3) hours before removing front panel. Failure to do so could result in burns, electrical shocks and/or fatal injuries.
4. Once unit is completely cool, remove front panel, leaving all wires connected. Thermostat is mounted on water recep- table behind the panel. Turn thermostat, adjusting screw clockwise to raise temperature and counterclockwise to reduce temperature.
5. Replace cover.
6. Plug the curing unit back in and heat to 165° F. Allow temperature to stabilize for one (1) hour before rechecking temperature.

Maintenance:

Science First® Curing Units are constructed of high quality components. Long periods of trouble-free service can be expected. However, since problems do arise occasionally, file this Manual so that it will be readily available to assist you.

Return your unit to Science First® or call a qualified electrical repair service if repairs are needed. For technical assistance, phone us at 1-800-875-3214.

- Regular and liberal use of **29-0701 Stai-Clean** cleaner prevents buildup of wax and rust. This aerosol cleaner is available from many dental dealers or directly from us.
- Rinse thoroughly after each use. Run the water for a few minutes and rub with a sponge.
- Towel dry after each use to prevent mineral deposits from building upon the sink.
- Scour sink once a week, rubbing in the direction of finish lines, with cleanser.
- Don't scour across the finish lines. This can damage the original sink finish.
- Don't allow liquid soap or cleanser to dry on the sink's surface. Most brands contain chemical additives which will affect the original finish.
- Don't leave standing solutions of chlorine bleach and water in the sink for long periods. Chlorides, which occur in most soaps, are very aggressive. If left on stainless steel too long, they can cause surface pitting. However, since chlorides are water soluble, rinsing after each use and scouring weekly will remove chloride residue.
- Don't clean with a steel wool pad. If a more abrasive product is needed, use a Scotch Brite™ pad, being sure to rub in the direction of the finish lines. Steel wool pads can break apart and small particles of steel can become embedded in the sink. These will rust and look as if the sink itself is rusting.
- Don't use rubber mats or pans in the sink. Leaving such items can lead to surface rust or possible pitting. If you do use them, remove after each use.
- Don't leave wet items on the sink. This can cause rust or fires if the unit boils dry.
- Use a damp sponge to clean the finish on the cabinet.
- Replace the water in the Curing Unit regularly and never allow it to boil dry.
- Scratches caused by usage will, over time, blend into the overall finish of your sink.
- The quality of your water can affect your sink's appearance. If your water has a high iron content, a brown surface stain can form on the sink giving the appearance of rust. Additionally, in areas with a high concentration of minerals, or with over-softened water, a white film may develop on the sink. To combat these problems, we suggest that the sink be towel dried after use. The sink should be cleaned on a weekly basis using a recommended abrasive cleaner.

Problem	Cause	Solution
Circuit breaker trips or fuse "blows"	**Line is overloaded.** (16 amp capacity is required @ 120 v or 8 amperes @ 230 v)	**Connect the curing unit to dedicated electrical line.**
	Short circuit in unit.	**Disconnect immediately and have unit serviced.**
Unit will not go "on"	***Follow in sequence:*** **Check supply voltage.**	**110-120 volts are needed. (220-240 v for 220 volt unit)**
	Malfunctioning controls.	**Have unit serviced. Return control panel to Science First® for repair.**
Power supply to unit OK, both pilot lamps on - *No Heat*	**Have a licensed electrician test thermostat**	**Return entire unit to Science First® for repair.**
	Thermostat OK	**Return control panel to Science First® for repair.**
Unit heats beyond the 165° setting.	**Thermostat out of adjustment**	**Adjust thermostat.**
	Thermostat contacts sticking	**Return entire unit to Science First® for repair.**
	Relay contacts sticking	**Return control panel to Science First® for repair.**
Unit set to "Boil" will not heat (*Important:* Boil function will not operate until 165° F Timer is "OFF")	**Malfunctioning controls.**	**Return control panel to Science First® for repair.**
Power and heat to unit but pilot lamp(s) are not on	**Pilot lamp is burned out.**	**Return control panel to Science First® for repair.**
Relay chatters	**Faulty capacitor**	**Return control panel to Science First® for repair.**

Science First® Curing Unit Boil Guard

Your Science First® Curing Unit is now equipped with a Boil-Guard feature which will prevent damage to your Vari-cure in the event it boils dry.

The Boil-Guard is a thermostatic switch mounted on the bottom of the water tank. If your Science First® Curing Unit boils dry, you will need to unplug the unit, wait six (6) hours for the unit to cool completely, and press the button located on the Boil-Guard. The Boil-Guard is on the bottom, in the center, and is round in shape. The button is located between the two connectors for the wires.

Do not touch wires if the unit is plugged in!

Replace the panel when done and reconnect the power. Your Science First® Curing Unit should now operate normally.

We recommend Science First® Stai-Clean aerosol stainless-steel cleaner (29-0701) to clean, polish and protect your curing unit.

P/N 24-7300