

Model 1000 Hybridization Incubator USER MANUAL

Cat. #1040-70-1, 1040-70-2



NOTE: THIS PRODUCT HAS BEEN DISCONTINUED.

FOR RESEARCH USE ONLY
Not for Use in Diagnostic Procedures

Serial Number

The following serial number identifies the specific instrument you have purchased and must be referenced when requesting service. A copy is affixed to the instrument.

Technical Service: (408) 733-7337, techserv@scigene.com

Warranty

SciGene warrants that the rotating oven described in this manual shall be free of defects in materials and workmanship for a period of 12 months from date of delivery. This warranty does not cover removable rotators or accessories including hybridization tubes. In the event of a defect during the warranty period, SciGene's limit of liability will be to provide replacement parts at no charge or, at its sole discretion, replace the product. The foregoing warranty is void in the event the unit was abused or modified or used in a manner inconsistent with its intended purpose. SciGene makes no other warranty, expressed or implied including warranties of merchantability and fitness for a particular purpose. In no event shall SciGene be liable for any direct, indirect, special, incidental or consequential damages or for any damages resulting from loss arising out of or in connection with the sale, use or performance of the product.

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I. SAFETY NOTICES

A. Warnings

Failure to comply with the following warnings that are affixed to the product can lead to possible personal injury or death.



B. Cautions

Failure to comply with the following cautionary statement affixed to the product may lead to possible personal injury. Items heated in the oven should be handled with heat protective gloves.

Open all closed vessels heated in the oven with the opening pointed away from you to avoid contact with heated aerosols.



C. Lifting and Moving the Unit

The rotating oven you have purchased weighs approximately 55 lbs (25 kg). Use caution when lifting the unit to protect you and others from personal injury.

II. UNPACKING AND SETTING UP YOUR OVEN

A. Removing the Unit from the Carton

Position the shipping carton on the floor close to the intended location.

Open the shipping carton and remove the foam inserts from the top of the unit. Position one person at the front and one at the back of the oven. Grip the recessed edges along the top of the unit and lift it straight up and out of the shipping carton, taking care to keep it balanced, and place it on the bench.

Carefully inspect the unit for damage. If there is evidence of damage, do not discard the shipping materials since they may be needed to return the unit.

B. Parts Provided

The items provided with the Model 1000 Hybridization Incubator are generally shipped in two boxes as follows:

- Large Box (23" x 25" x 26")
 - Rotating Oven
 - Power Cord
 - User Manual
 - Tube Gripper
 - Standard 6/12 Tube Rotator (SciGene Cat. #1040-71-1)
- Small Box (15" x 15" x 6")
 - Stainless Steel Drip Pan (SciGene Cat. #1040-20-3)
 - One – 35 x 300 mm Hybridization Tube with Screw Cap (SciGene Cat. #1040-01-0)

Please verify that all items are received and are in good condition.

C. Installation

1. Placement

Place the unit on a stable, level surface within a few feet of the power source. *Avoid locating it below a shelf where solutions are stored.* A spill may enter the electrical compartment through the vent holes on the top of the unit and cause damage. Ensure there is adequate clearance along the front and right side of the oven to open the door completely.

There should be a minimum clearance of 3 inches along the top and back panels for air circulation.

2. Connecting the Power

Plug the power cord provided into the back of the unit and then to a properly grounded outlet. Use only the power cord provided.

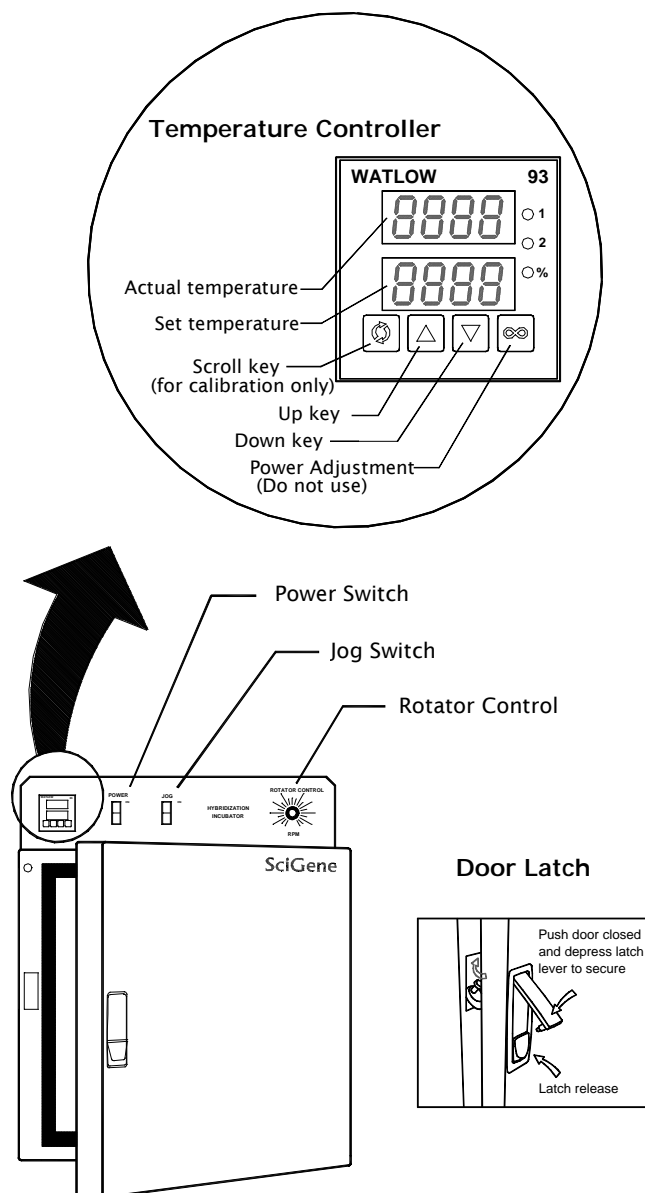
3. Powering On

Turn power ON to the heater using the switch on the front of the unit.

III. USING YOUR OVEN

D. Oven Components and Controls

- **Power Switch** -Turns ON power to the unit.
- **Temperature Controller** - Used to set and observe chamber temperature
- **Rotator Control** -Turns on and controls the speed of the rotator
- **Jog Switch** - Activates rotator with door open at the speed selected
- **Door Latch** - Tightly secures the door closed with button release to open



B. Closing and Opening the Door

To secure the door closed, press the door against the cabinet and push down the top lever. To open, press the lower latch release button.

C. Using the Temperature Controller

Turn on power to the heater using the ON/OFF switch on the front of the unit.

The temperature controller has a single LED readout and three buttons. The LED displays either the SET or ACTUAL temperature. The buttons are used to set the temperature and, when required, calibrate the temperature controller.

To set the temperature, hold in the SET button. The previous set temperature will be displayed. While depressing the set button, press the up or down arrow buttons until the desired set temperature is shown. Release the buttons and the ACTUAL oven temperature will display. The unit will now adjust the heat of the chamber until the new set temperature is reached.

The controller is calibrated at the factory to provide an accurate chamber temperature when operated between 35 to 65°C.

D. Using the Rotator Switch

Rotator motion is controlled using a three-position switch on the front of the unit. To engage the rotator, press the switch in at the top. The rotator moves at a fixed 6 RPM.

To momentarily move (jog) the rotator when mounting or removing tubes, press and hold the switch in the down position. The rotator will move at 6 RPM until the switch is released.

E. Calibrating the Oven Temperature

The temperature controller comes calibrated from the factory to provide accurate chamber temperatures from 35 to 65°C. The temperature controller will require calibration only if,

- You plan to use your oven above 65°C or
- The oven temperature on the thermometer differs by more than one degree from the actual temperature shown on the controller display, when checking the chamber temperature with a calibrated thermometer.

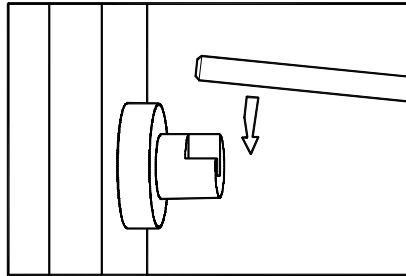
A NIST-calibrated digital thermometer (sold separately, SciGene Cat. #1051-52-0) is required to calibrate the oven. The oven must be calibrated at both the high and low end of the temperatures in which it will be used; not to exceed 35°C. For example, for the range of temperatures of 50°C to 65°C, calibrate the unit for 50°C operation first then repeat the calibration process for 65°C.

Follow these steps to calibrate the oven for the standard temperature range of 35 to 65°C:

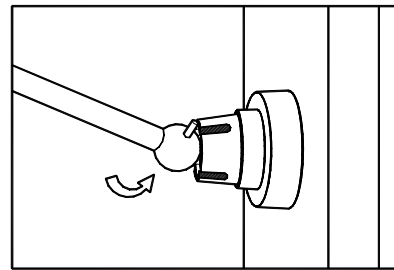
1. On the controller, enter 35°C and allow the temperature in the unit to stabilize.
2. Using the cable provided with the digital thermometer, plug one end into the blue jack found on the back of the unit and the other into the digital thermometer. Turn on the thermometer using the on/off button on the keypad. The temperature of the oven will be displayed.
3. On the temperature controller, press both up and down arrows simultaneously for 3 seconds until “Aut” is displayed.
4. Using the down arrow set the display to “Pid”.
5. While pressing the SET key, press the up arrow to display “YES”. Release the SET key.
6. Sequentially press the up arrow until “CAL” is displayed.
7. Press and hold the SET key. The offset value between the controller and digital thermometer is displayed.
8. Calculate the difference in temperature shown on the controller prior to starting calibration and the digital thermometer. For example, if the controller displays 52.5°C and the digital thermometer displays 51.0°C, the difference is 1.5°C.
9. Press and hold the SET key. Use the up and down arrows to enter the offset value calculated in step 8. For example, if the controller displays a temperature that is 1.5°C higher than the digital thermometer, adjust the offset value to *minus 1.5* (“-1.5”).
10. Press and hold both the up and down arrows to exit calibration. The display will now show the oven temperature. It should match the readout on the digital thermometer.

Your oven temperature is now calibrated for operation at 35°C. Repeat the calibration process starting at Step 1 for 65°C.

F. Loading and Removing Rotators



Place end of shaft on left bearing



Insert shaft ball with alignment pin into right bearing

All rotators are loaded and removed using the same two-step process. When loading, first insert the end of the shaft that ends in a ball joint with alignment pin into the slotted bearing on the *right* wall of the chamber. The left end of the shaft is then placed into the bearing on the left side of the chamber. Reverse this procedure when removing the rotator.

IV. MAINTAINING YOUR OVEN

A. Servicing

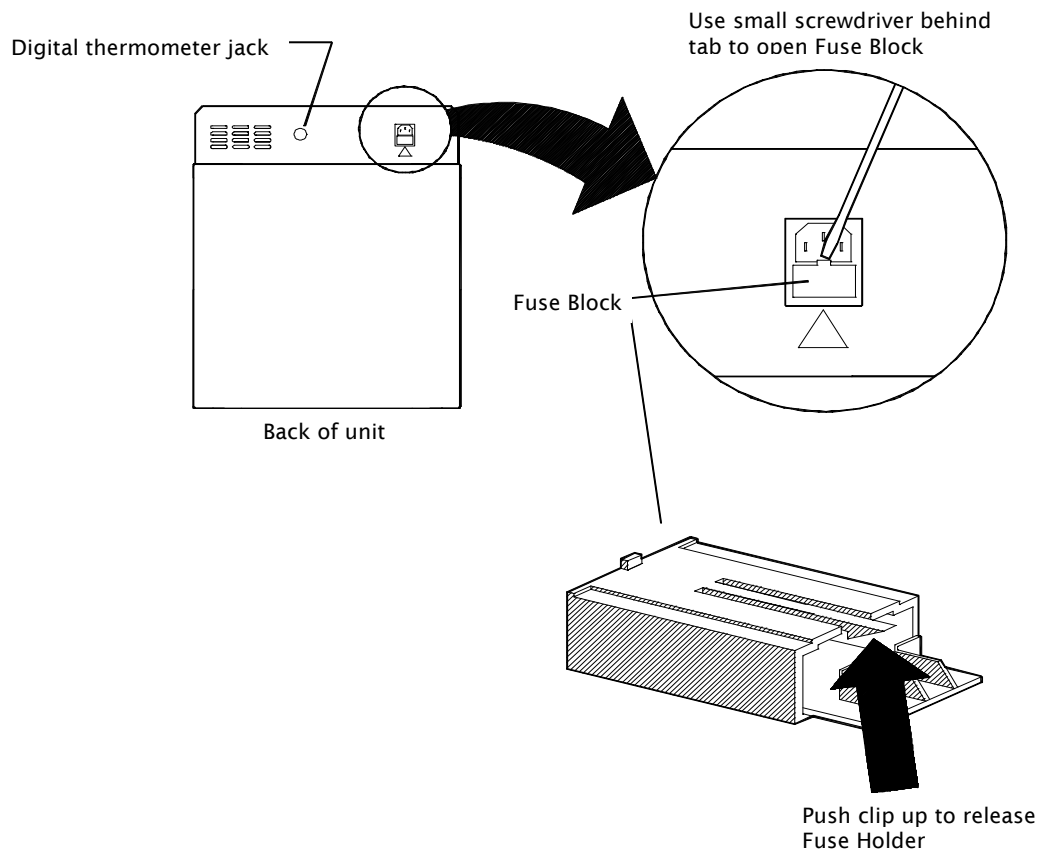
Unplug the power cord before performing any service procedure.

1. Checking and Replacing Fuses

Fuses are located in a removable fuse block below the power cord receptacle on the back of the unit.

Unplug the cord and using a flat blade screwdriver, remove the fuse block as shown in the illustration. Remove the fuse holder from the block and gently remove the two fuses. A blown fuse will appear dark.

Always replace a blown fuse with fuses matching the amperage and voltage as shown on the label below the fuse block.



2. Replacing the Temperature Controller

If the actual temperature reported on the controller is erratic after calibration, the temperature controller may need to be replaced. Please contact the SciGene Technical Service Department (techserv@scigene.com) for assistance in troubleshooting. If needed, replacement controllers are available (SciGene Cat. #RP600-0146-02).

3. Rotator Drive System

The rotator drive system is designed to provide trouble-free operation for many years and does not require routine maintenance. However, components of the drive system that fail due to normal wear and tear over long-term usage can be easily replaced. Contact SciGene's Technical Service Department (techserv@scigene.com) to obtain replacement parts and perform these repairs.

B. Cleaning

Clean the exterior and interior surfaces using a mild, detergent-based spray cleaner and wipe with a soft cloth.

Under no circumstances should solutions be allowed to enter the electronics package through the ventilation slots on the top of the unit.

Do not use abrasive cleansers or scouring pads that can scratch the stainless steel.

V. TROUBLESHOOTING

Symptom	Cause	Solution
Rotator does not turn after closing door	Rotator control is in the off position	Rotate speed controller clockwise.
Temperature is erratic	Thermal controller is defective	Replace controller

VI. SPECIFICATIONS

Electrical (Oven Unit)	
Cat. #1040-70-1	115/120V AC; 50/60 Hz; 350 W
Cat. #1040-70-2	220/240V AC; 50/60 Hz; 350 W
Dimensions	
Interior Chamber	10W x 14D x 11H inches
	25.5W x 35.5D x 30H cm
Exterior	18W x 18D x 17H inches
	45W x 45D x 43.5H cm
Weight	
Net	55 lbs (25kg)
Gross	58lbs (26kg) Includes shipping carton
Performance and Controls	
Temperature Range	Ambient +5°C - 99°C
Temperature Control	± 0.1°C
Heat up Time	3°C per minute
Temperature Controller	Digital PID, single loop
Temperature Display	Actual/Set Dual LED
Rotation Speed	2 to 20 RPM
Chamber	Stainless Steel
Digital Thermometer Output	Thermocouple

VII. ROTATORS AND ACCESSORIES

Cat. #	Description	UOM
1040-01-0	Hybridization tube, 35 x 300 mm with screw cap	Each
1040-02-0	Hybridization tube, 35 x 150 mm with screw cap	Each
1040-20-3	Replacement Drip Pan for Model 1000	Each
1040-71-0	Removable Rocking Platform	Each
1040-71-1	Rotator for 6 large / 12 small hybridization tubes	Each
1040-71-2	Rotator for 3 large 75 x 300mm glass tubes	Each
1051-52-0	Digital thermometer. Includes cable and NIST certificate.	Each

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