

Refrigerated Sampler Vapor Tube Removal / Thermostat Conversion Replacement Instructions

Overview

Isco's vinyl and stainless steel refrigerators now have a solid state thermostat. To replace the old vapor tube thermostat with the new solid state thermostat, follow the instructions below.

WARNING

Disconnect power to the unit before servicing of any kind.

Removal of Old Thermostat

1. Unplug the power from the unit.
2. Remove the sheet metal rear panel(s) from the unit.
3. Remove the 6 mounting screws from the thermostat control mounting plate and lift the mounting plate off of the plastic base.

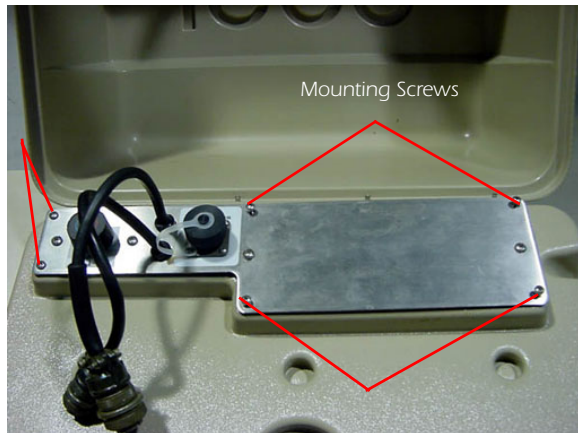


Figure 1: Thermostat Control Mounting Plate

4. Pull the control knob and AC power cord leads off of the thermostat. Unscrew the thermostat from the control mounting plate and remove, along with the 2 black spacers. Retain the mounting hardware for reuse.
5. Disconnect the other end of the power cord, removing and reconnecting each wire **one at a time**. Combine the remaining exposed black wire with the other black wires on the incoming AC, using a wire nut.
6. Inside the refrigerator cavity, unscrew the vapor tube from the evaporator plate. The nut and

back plate may fall down inside the refrigerator cavity when loosened. This will not interfere with refrigerator operation.

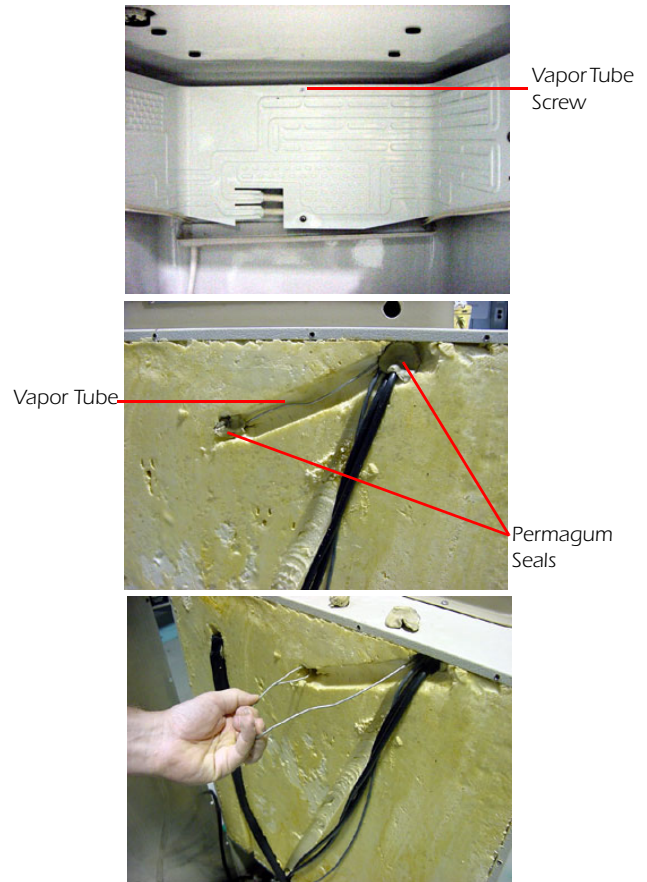


Figure 2: Removal of Vapor Tube

7. Remove the Permagum seals from the opening where the vapor tube enters the refrigerator and where it goes to the thermostat, retaining the Permagum for reuse. Remove the thermostat through the top of the refrigerator, pulling the vapor tube up and out.

Installation of New Thermostat

1. Attach the control potentiometer assembly to the mounting bracket with the locating tab in the **single** hole and tighten the hardware.
2. Install the rubber grommet in the thermostat hole of the control mounting plate and seal it to the plate with super glue or equivalent adhesive.
3. Use the old hardware to attach the potentiometer mounting bracket to the control mounting plate with the lead wires facing the front of the refrigerator. Push the wires down through the hole in the top of the refrigerator, routing them along with the other wires out the back.
 - *Suggestion: To make this step easier, loop the end of a stiff piece of wire around the lead connectors and carefully pull the wire through the hole.*

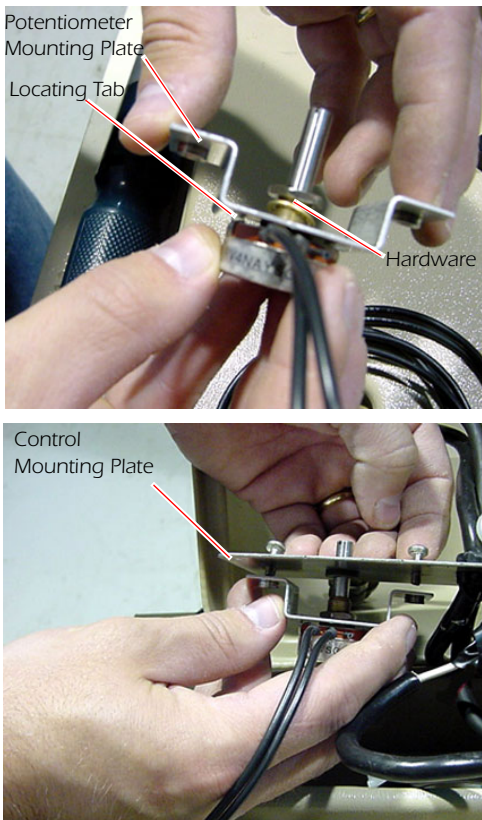


Figure 3: Mounting the Potentiometer

Reinstall the control mounting plate and tighten the screws.

4. Using the two #10 self-tapping screws and lock washers, attach the thermo control relay mounting plate to the frame rails in the bottom rear of the refrigerator, to the left of the compressor, with the center nut facing down.

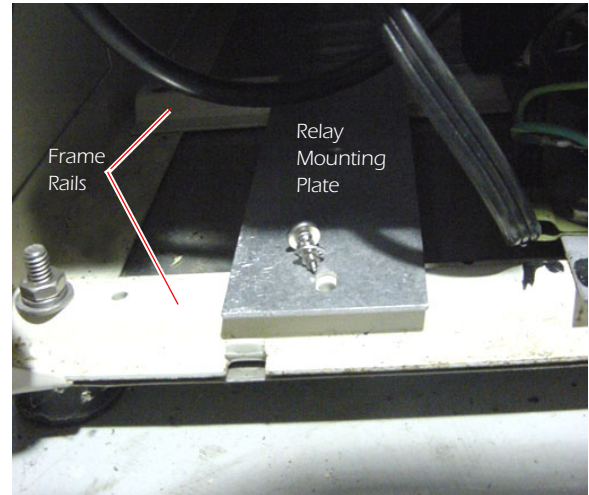


Figure 4: Installation of Relay Mounting Plate

5. Ensure that the thermo control relay switches **1**, **4**, and **8** are in the ON position and that all other switches are in the OFF position. Mount the relay on the plate, using the #10 1½" screw, spring washer, and flat washer provided, with the power terminals facing the compressor (right).
6. Detach the smooth black wire of the incoming AC power (it will be spliced from a wire nut) from the left side of the terminal block (see Figure 5, #1). Connect it to the relay terminal marked **BLK** or **2**.

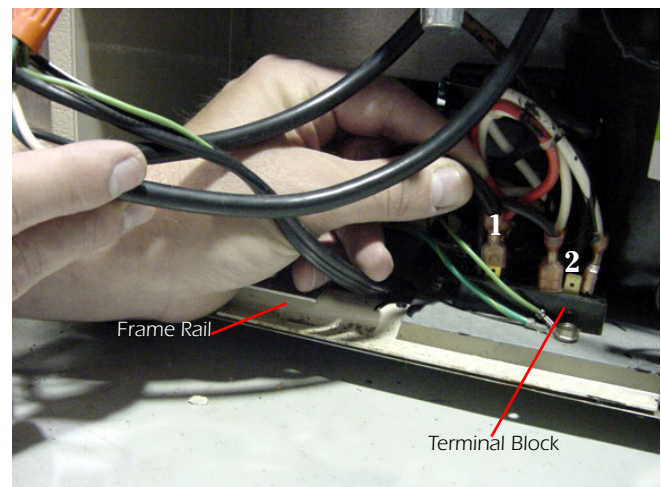


Figure 5: Terminal Block Locations

7. Connect the red lead assembly from your kit to the relay terminal marked **LOAD/RED** or **3**. Connect the other end to the terminal block location where the black wire was removed in step 6.
8. Install the white lead assembly from your kit to the relay terminal marked **WHT** or **1**. Connect the other end to a vacant terminal on the right side of the terminal block (See Figure 5, #2).

9. Connect the thermistor leads to the relay terminals marked **THERMISTOR** or **4 & 5**.
10. Adjust the potentiometer to $50k \pm 1k$ ohms (or the midpoint of rotation). Route the potentiometer leads down along the groove in the back of the refrigerator and connect them to the relay terminals marked **POT** or **6 & 7**. Install the knob on the potentiometer with the marker pointing to the arrow on the label and tighten the set screws on the knob.
11. Route the thermistor up along the groove in the back of the refrigerator into the vapor tube opening, behind the evaporator plate. Re-seal the holes in the back of the refrigerator with the Permagum.
12. Attach the thermistor to the mounting bracket with the #6 $\frac{9}{16}$ " screw and locknut provided.
13. Peel and attach the 2-sided adhesive pad to the back of the thermistor mounting bracket. After thoroughly cleaning and drying the rear inside wall of the refrigerator, press the assembly to the wall, in a horizontal position, 5 inches from the left vertical wall and $4\frac{3}{8}$ inches below the drip tray.

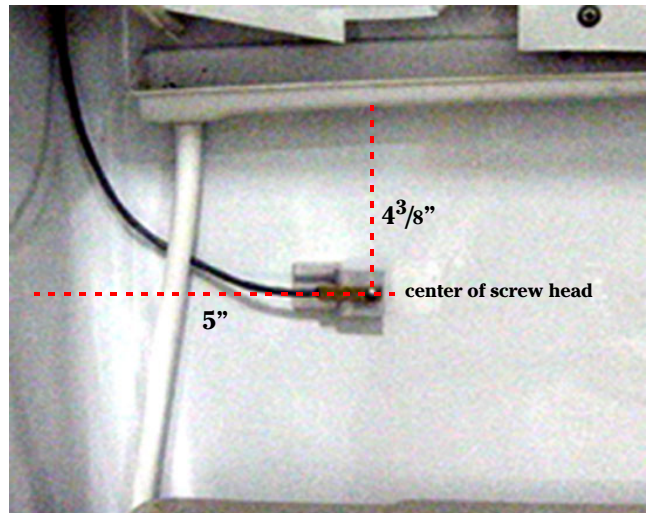


Figure 6: Mounting the Thermistor Assembly

14. Restore power to the unit to verify operation. The fan should begin running within approximately 10 to 15 seconds. Reinstall the rear panel(s). **!**

Last modified June 27, 2003

Isco, Inc.

www.isco.com