

---

# LABORATORY REFRIGERATOR- FREEZER

## Installation, Operation and Maintenance Instructions

---

### INSPECTION

When the equipment is received, all items should be carefully checked against the bill of lading to insure all crates and cartons have been received. All units should be inspected for concealed damage by uncrating the units immediately. If any damage is found, it should be reported to the carrier at once, and a claim should be filed with the carrier. This equipment has been inspected and tested at the manufacturing facility and has been crated in accordance with transportation rules and guidelines. Manufacturer is not responsible for freight loss or damage.

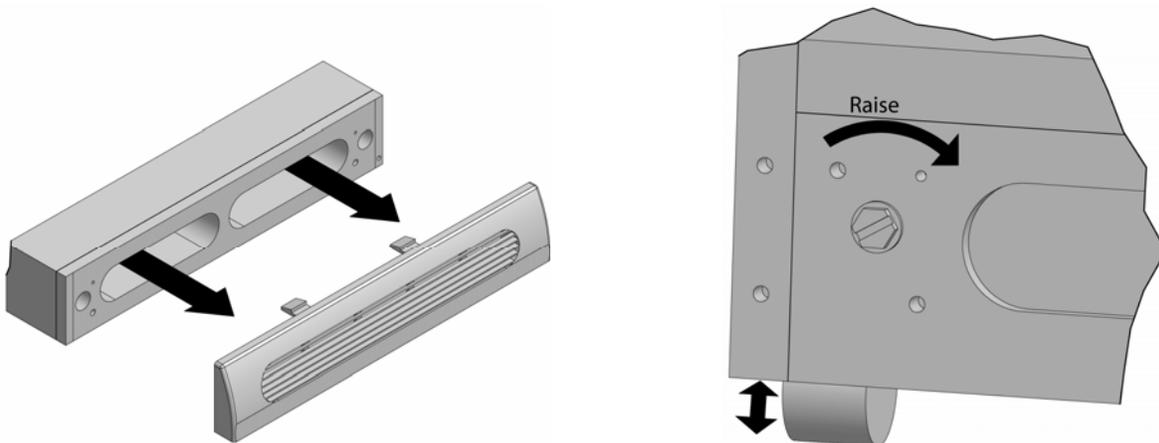
Before connecting the refrigerator to the power supply, let it stand for approximately two hours to reduce the possibility of malfunctions in the cooling system due to transport handling

### INSTALLATION

#### GENERAL

After the unit crate and crate base have been removed, ensure that the cabinet is level. All four corners of the unit must rest firmly on a solid floor. The cabinet is equipped with adjustable front rollers to level the unit. Remove the toe grill as shown below and use a flat bladed screwdriver or 3/8" socket wrench to adjust the front rollers (see the illustration below). Raise the front of the cabinet enough so that the doors will close freely when opened halfway. The cabinet should slope 1/4" to 1/2" from front to back. Then level the cabinet from side to side.

**Note:** It is extremely important that the refrigerator be level in order to function properly. If the refrigerator is not properly leveled during installation, the door may be misaligned and not close or seal properly causing cooling, frost or moisture problems.



Choose a location near a grounded electrical outlet. Do not install the refrigerator-freezer where the temperature will drop below 55°F (13°C) or rise above 110°F (43°C). The compressor will not be able to maintain proper temperatures inside the refrigerator-freezer.

*Allow adequate space around the unit for good air circulation.* A minimum of 3/8 inch (10 mm) space on the sides and top and 1 inch (25 mm) space at the back of the refrigerator-freezer is required for adequate air circulation.

Do not block the toe grille on the lower front of the refrigerator-freezer. Sufficient air circulation is essential for proper operation of the unit.

**Note:** The exterior walls of the refrigerator may become quite warm as the compressor works to transfer heat from the interior. Temperatures as much as 30°F (-1°C) warmer than room temperature can be expected. It is particular in hotter climates to allow adequate space for air circulation around the refrigerator.

## ELECTRICAL

Check the proposed outlet to be used to insure that the voltage, phase, and current carrying capacity of the circuit from the electrical panel correspond to the requirements of the cabinet. **NEVER** use an extension cord or adapter plug to wire any unit. Refer to the serial tag for all pertinent electrical information.

The refrigerator-freezer must be plugged into its own 115 volt, 60 Hz, single phase outlet. The power cord of the refrigerator is equipped with a three-prong grounding plug for protection against shock hazards. It must be plugged into a properly grounded three-prong receptacle. The receptacles must be installed in accordance with local codes and ordinances.

If voltage varies by more than 10%, refrigerator performance may be affected. Operating the refrigerator with insufficient power can damage the compressor.

To prevent the refrigerator from being accidentally turned off, do not plug the unit into an outlet controlled by a wall switch or pull cord.

Do not pinch, knot or bend the cord in any manner.

**Observe all Warning Labels. Disconnect power supply to eliminate injury from electrical shock or moving parts when servicing equipment.**

## OPERATION

### Cool Down Period

For safe storage of product, allow a minimum of 12 hours for the refrigerator to cool down completely. The refrigerator will run continuously for the first several hours.

### Temperature Control

The temperature control is located inside the refrigerator. When first energizing the refrigerator-freezer, move the refrigerator and freezer controls to ▼ which is the recommended initial setting. Adjust the controls after 24 hours if required. Adjust the temperatures gradually. Move the control in small increments and allow the temperature to stabilize between setting changes.

For colder temperatures, adjust the control knob towards **Colder**.

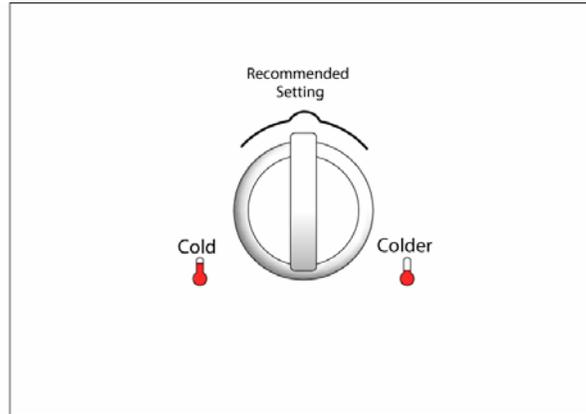
For warmer temperatures, adjust the control knob towards **Cold**.

Turning the refrigerator control will change temperatures in both the refrigerator and the freezer. If the temperature control is turned to a colder setting, the freezer control may require adjustment to a warmer setting. Turning the freezer temperature control will change only the freezer temperature.

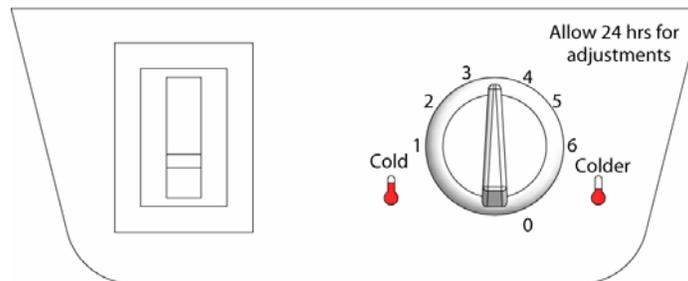
To maintain required temperatures, a fan circulates air in the refrigerator and freezer compartments. Do not block cold air vents with product.

## TEMPERATURE ADJUSTMENT GUIDE

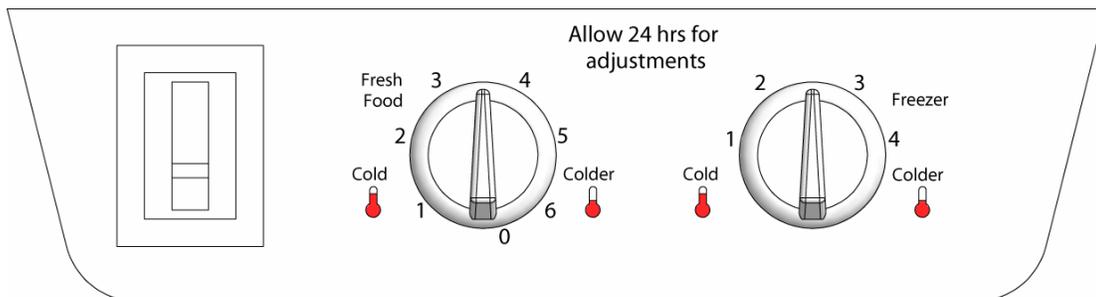
<b>If Refrigerator compartment is too warm</b>	Turn Refrigerator Control slightly towards <b>Colder</b>
<b>If Refrigerator compartment is too cold</b>	Turn Refrigerator Control slightly towards <b>Cold</b>
<b>If Freezer compartment is too warm</b>	Turn Freezer Control slightly towards <b>Colder</b>
<b>If Freezer compartment is too cold</b>	Turn Freezer Control slightly towards <b>Cold</b>
<b>To turn Refrigerator OFF</b>	Turn Refrigerator Control to <b>0</b>



FREEZER CONTROL (SOME MODELS)



REFRIGERATOR CONTROL (SOME MODELS)



REFRIGERATOR & FREEZER CONTROL  
(SOME MODELS)

## DOOR REMOVAL & REVERSAL

The direction in which the cabinet doors open (door swing) can be reversed from left to right or right to left by relocating the door hinges. Reversing the door swing should be performed by qualified personnel.

Note: Before removing or reversing the doors, adjust the temperature control to "0" and remove electrical power. Remove all product from the refrigerator-freezer interior.

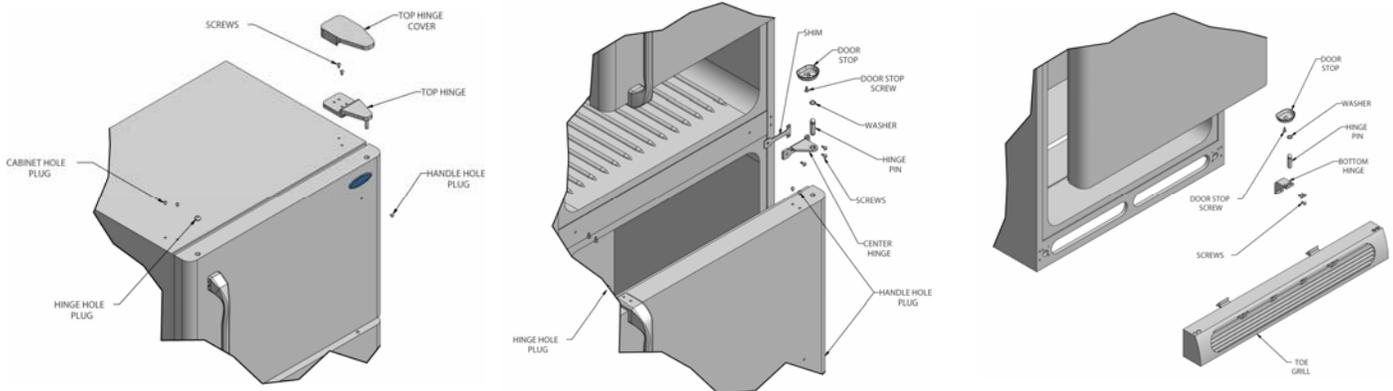
Tools required:

1. Phillips head or Quadrex head screwdriver
2. Socket wrench set and adjustable wrench
3. Putty knife
4. Pliers
5. Awl

Instructions (Refer to the illustrations below)

### DOOR REMOVAL & REVERSAL

1. Remove the toe grille and top hinge cover.
2. Remove the top hinge with a 3/8" hex driver and lift freezer door off the center hinge pin. Set the door aside.
3. Unscrew the center hinge pin using an adjustable wrench and save for reassembly. Ensure that the plastic washer stays on the hinge pin.
4. Lift the refrigerator door off the bottom hinge and set the door aside.
5. Remove the center hinge and shim by removing the inside screw and loosening two outside screws enough to allow the hinge and shim to slide out. Tighten the screws.
6. Loosen the two outside screws on the opposite side of the refrigerator, remove the inside screw and install the center hinge.
7. Remove the two screws on the bottom hinge with a 3/8" socket wrench.
8. Install the bottom on the opposite side with the two screws removed from step 7.
9. Unscrew the bottom hinge pin using an adjustable wrench. Move the hinge pin to the other hole in the hinge and tighten with the adjustable wrench.
10. Reverse the door handles (see instructions on the next page)
11. Move the freezer and refrigerator door stops to the opposite side. Use an awl to puncture the foam before starting the screws.
12. Position the refrigerator door onto the bottom hinge and screw the center hinge pin through the center hinge into the top of the door. Close the refrigerator door to help align the hinge hole.
13. Tighten the center hinge pin with an adjustable wrench.
14. Remove the cabinet and hinge pin hole plugs and reinstall on the opposite side.
15. Lower the freezer door onto the center hinge pin.
16. Close the freezer door. Have an assistant lift up on the opposite side of the door while tightening the screws to install the top hinge.
17. Reinstall the toe grille and top hinge cover.

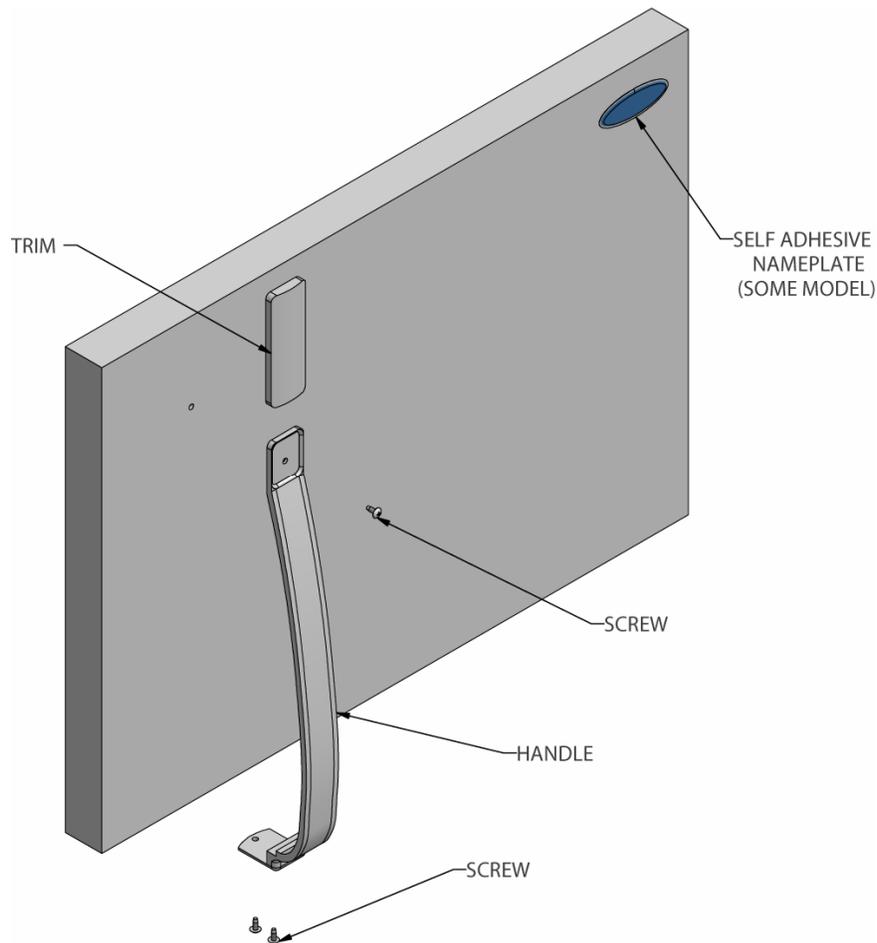


## FREEZER HANDLE REMOVAL & REVERSAL

Various handle styles may be installed. All styles and removal/reversing instruction are detailed below.

(Handles may be easier to reverse while doors are off.)

1. Remove the two screws attaching the handle to the bottom of the freezer door.
2. Remove the short trim piece by sliding the trim straight up and off the handle bracket.
3. Remove the screw attaching the top of the handle to the door.
4. **Self-Adhesive Models:** Use a putty knife to gently peel off the nameplate from the door and reapply it over the old handle holes.
5. Reinstall the freezer handle on the opposite side using the same holes as the nameplate
6. Attach the handle to the bottom of the door using the screws removed in step 1.
7. Slide the trim piece straight down onto the handle bracket.

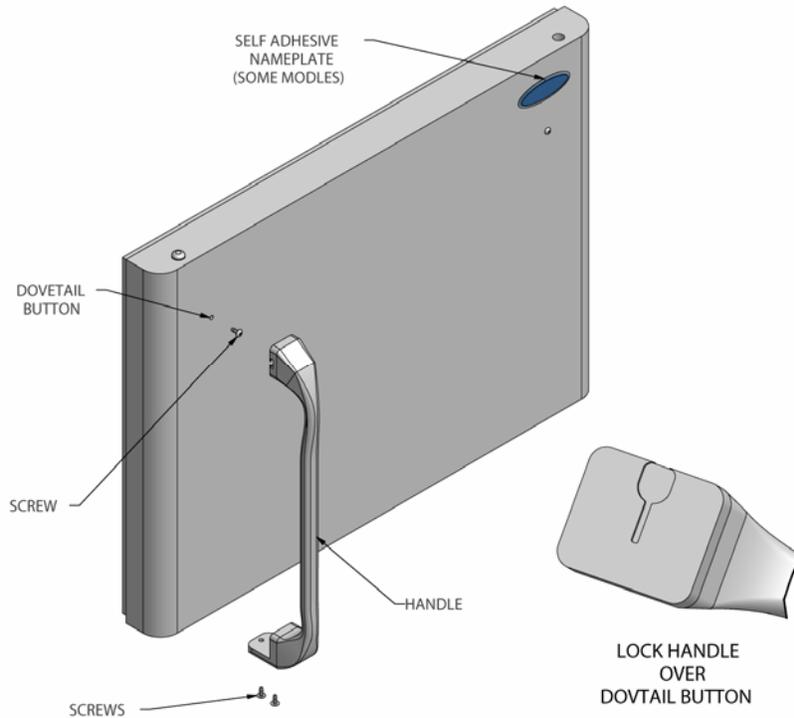


## REMOVE/REVERSE FREEZER HANDLE

(Handles may be easier to reverse while doors are off.)

1. Remove the two screws attaching the handle to the bottom of the freezer door.
2. Swing the bottom of the handle away from the door and slide the handle straight up and off the dovetail button.
3. Remove the screw and dovetail button and reinstall on the other side after the nameplate has been reversed (see steps 4 and 5).

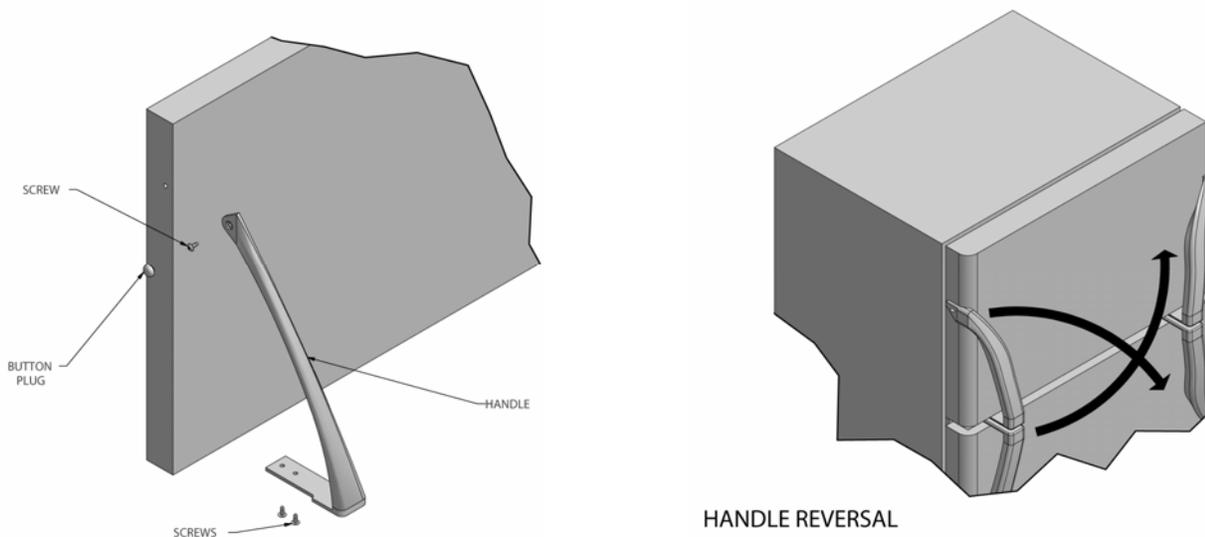
4. **Self-Adhesive nameplate Models:** Use a putty knife to gently peel off the nameplate from the door and reapply it over the old handle holes.
5. Reinstall the handle with the handle offset away from the door. Place the top of the handle over the dovetail button, swing the handle into an upright position and pull downward locking it into place.
6. Secure the bottom of the handle with the two screws removed in step 1.



### REMOVE/REVERSE FREEZER HANDLE

(Handles may be easier to reverse while doors are off.)

1. Remove the two screws attaching the handle to the bottom of the freezer door.
2. Remove the bottom plug using the edge of a putty knife.
3. Remove the screw on the side of the freezer door and remove the handle.
4. Reinstall the side of the handle to door and replace the bottom plug.
5. Secure the bottom of the handle with the two screws removed in step 1.



### **TRIM REMOVAL (Full Length Trim Models Only)**

In some models, the refrigerator door has a full length trim piece which continues from the bottom of the handle to the bottom of the door. The top of the trim attaches to the handle bracket (see Figure 1) or fits around the base of the handle (see Figure 2). An adhesive trim lock is positioned approximately half way down the trim piece. The bottom of the trim is secured by either an adhesive trim lock or a trim lock with two prongs inserted into a hole on the face of the door.

#### **REMOVE TRIM:**

1. Remove the trim by gently pulling the trim lock areas out and away from the door.
2. When the trim is free from the door, slide the trim straight down and away from the base of the handle. **Note:** For models with a short handle trim, remove by sliding the trim straight down and off the handle bracket.

### **REMOVE/REVERSE REFRIGERATOR HANDLE**

(Handles may be easier to reverse while doors are off.)

#### **Figure 1 Style Handles**

1. Remove the two screws attaching the handle to the top of the refrigerator door.
2. Remove the screw attaching the bottom of the handle to the door.
3. Remove the two hole plugs and hinge pin plug on the top of the door and reinstall them on the opposite side of the door. Use a Phillips head screwdriver to remove the plastic screw plug from the front of the door and reinstall it on the opposite side of the door.

#### **Figure 2 Style Handles**

1. Remove the two screws attaching the handle to the top of the refrigerator door.
2. Swing the top of the handle away from the door and slide the handle down and off the dovetail button.
3. Remove the screw and dovetail button and reinstall them on the opposite side of the door and move the hole plugs from the corresponding holes to the opposite side.

### **REATTACH REFRIGERATOR HANDLE**

#### **Figure 1 Style Handles**

1. Secure the bottom of the handle with the screws removed above.
2. Secure the top of the handle with the screws removed above.

#### **Figure 2 Style Handles**

1. Start with the handle offset away from the door. Place the bottom of the handle over the dovetail button, swing the handle into an upright position and pull upward locking the handle into place.
2. Secure the top of the handle with the screws removed above.

### **TRIM ATTACHMENT**

1. Slide both trim locks out of the trim.
2. Insert new adhesive trim locks contained in the literature pack.
3. Install the trim to the handle by sliding under the base of the handle. Carefully align the trim and press down at the trim lock locations.
4. Use rubbing alcohol to remove any adhesive residue from the old trim lock locations.

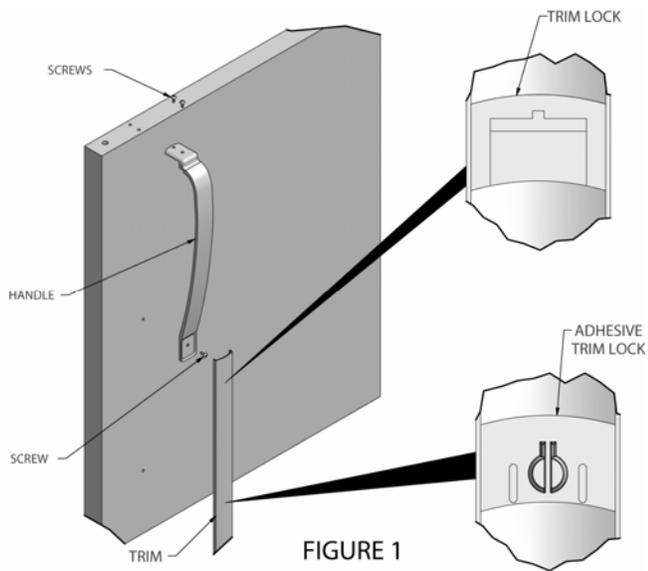


FIGURE 1

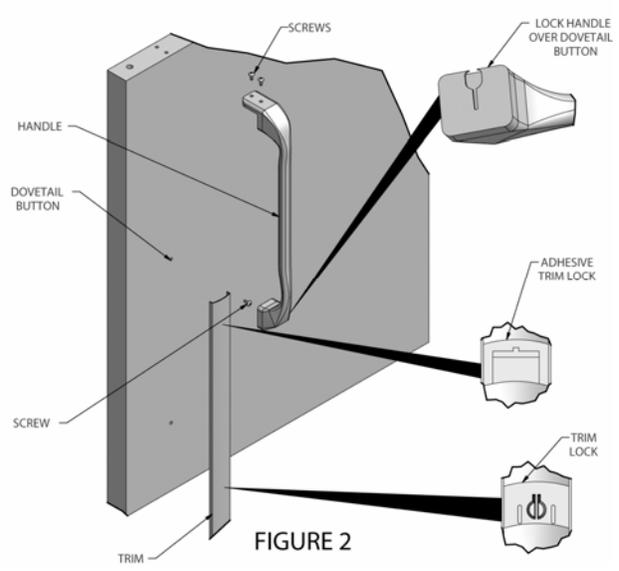
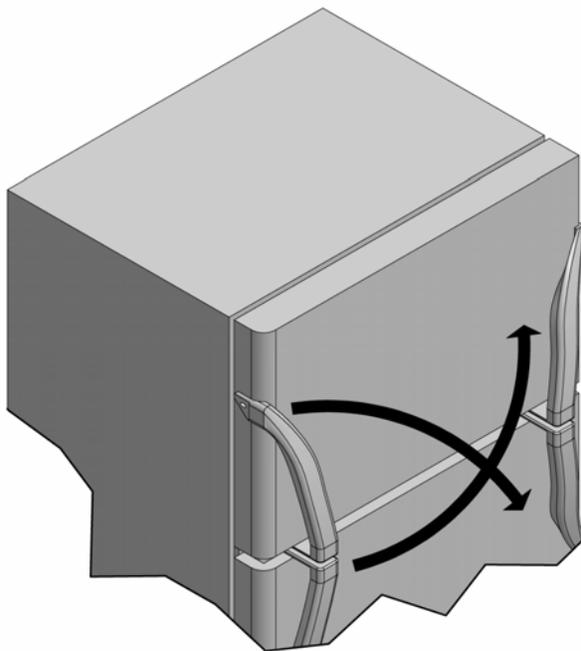


FIGURE 2

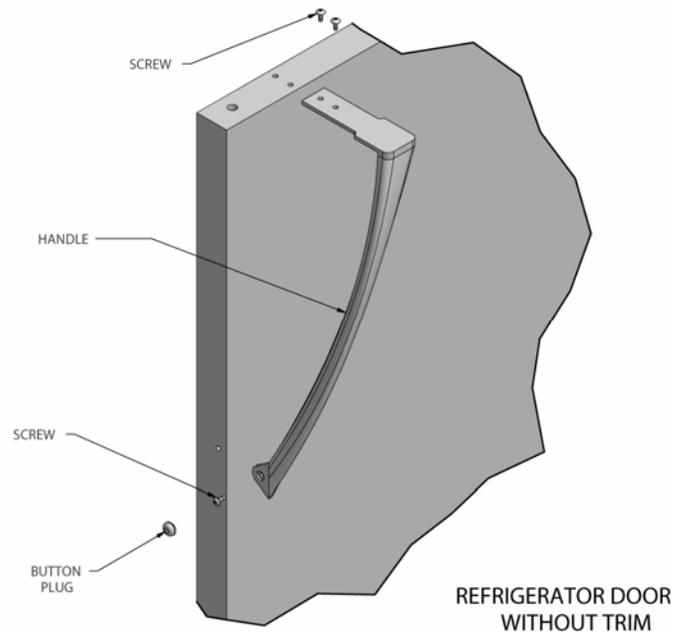
### REMOVE/REVERSE REFRIGERATOR HANDLE

(Handles may be easier to reverse while doors are off.)

1. Remove the two screws attaching the handle to the top of the refrigerator door.
2. Remove the button plug using the edge of a putty knife.
3. Remove the screw on the side of the refrigerator door and remove the handle.
4. Reverse the freezer and refrigerator handles as shown in Figure 3.



HANDLE REVERSAL



# MAINTENANCE

## PERIODIC CLEANING

**Disconnect the power supply before cleaning the refrigerator.**

Beginning with the initial installation, the interior surfaces of the cabinet should be periodically wiped down with a solution of warm water and baking soda (two tablespoons in one quart of warm water). This solution will remove any odors from spillage that has occurred. The exterior of the cabinet should also be cleaned frequently with warm water and a mild liquid detergent. **Caution: Do not use an abrasive or alkaline solution. Do not wash any removable parts in a dishwasher.**

### Defrosting

**CAUTION: Refrigerator-Freezer must be unplugged to avoid electrical hazard from power source when defrosting the unit.**

On upright models with a defrost drain (Figure 1), remove the drain plug on the interior floor of the freezer by pulling straight out. To access the external drain tube on models with the base panel, remove the two screws from the base panel. Locate the drain tube near the left center under the freezer. Place a shallow pan under the drain tube. Defrost water will run out. Check the pan occasionally to ensure that the drain water does not overflow. A ½ inch garden hose adapter can be used to drain the freezer directly into a floor drain. If the model used is not equipped with an adapter, one can be purchased at most hardware stores. Replace the drain plug when defrosting and cleaning are complete. If the drain is left unplugged, warm air may enter the freezer.

## MAINTENANCE SERVICE AND ANALYSIS GUIDE

<u>MALFUNCTION</u>	<u>POSSIBLE CAUSE</u>	<u>SOLUTION</u>
Refrigerator does not run.	<ol style="list-style-type: none"> <li>1. Refrigerator plugged into a ground fault interrupt circuit.</li> <li>2. Temperature control is in the OFF position.</li> <li>3. Fuse blown or tripped circuit breaker.</li> <li>4. Temperature Control set at 0</li> </ol>	<ol style="list-style-type: none"> <li>1. Use another circuit.</li> <li>2. See <b>Temperature Control</b> Section.</li> <li>3. Check/replace fuse with a 15A time delay fuse. Reset circuit breaker</li> <li>4. Adjust Control for proper temperature.</li> </ol>
Freezer runs too much or too long.	<ol style="list-style-type: none"> <li>1. Freezer recently disconnected for a lengthy period.</li> <li>2. Large amount of product recently stored.</li> <li>3. Doors opened too frequently or too long.</li> <li>4. Refrigerator door may be slightly open.</li> <li>5. Temperature control set too cold.</li> <li>6. Refrigerator gasket is dirty, worn, cracked or poorly fitted.</li> </ol>	<ol style="list-style-type: none"> <li>1. 4 hours required for refrigerator cool down.</li> <li>2. Warm product will cause refrigerator to run more until desired temperature is reached.</li> <li>3. Open doors less often.</li> <li>4. Refrigerator may not be level.</li> <li>5. Reset temperature control.</li> <li>6. Clean or replace gasket.</li> </ol>
Vibrating or rattling noise.	<ol style="list-style-type: none"> <li>1. Refrigerator not level.</li> <li>2. Refrigerator is touching the wall.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-level the refrigerator as specified in the <b>INSTALLATION</b> section.</li> <li>2. Move the refrigerator away from the wall.</li> </ol>
Moisture forms on refrigerator interior.	<ol style="list-style-type: none"> <li>1. Weather is hot and humid.</li> <li>2. Door not seating properly.</li> <li>3. Door kept open too long or too frequently.</li> </ol>	<ol style="list-style-type: none"> <li>1. This is normal.</li> <li>2. Re-level the refrigerator.</li> <li>3. Open door less often.</li> </ol>
Moisture forms on refrigerator exterior.	<ol style="list-style-type: none"> <li>1. Door may not be sealing properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-level the refrigerator.</li> </ol>
Door will not close.	<ol style="list-style-type: none"> <li>1. Refrigerator is not level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-level the refrigerator.</li> </ol>
Light bulb will not turn on.	<ol style="list-style-type: none"> <li>1. Light bulb burned out.</li> <li>2. No electric current reaching the refrigerator.</li> <li>3. Defective light bulb holder or Light switch.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace light bulb with a new bulb of the Same wattage.</li> <li>2. Ensure refrigerator is plugged into power receptacle.</li> <li>3. Contact a service technician.</li> </ol>