

## INTRODUCTION

This Sub-Zero Technical Service and Parts Manual (Job Aid Part #3752200) for the Model 506 Undercounter Ice maker is a compilation of information provided by the Whirlpool Company and has been reprinted by Sub-Zero Freezer Company, Inc., with the permission of the Whirlpool Company. This manual will provide the most recent service information about the Model 506 Undercounter Ice maker. This information will enable the service technician to diagnose malfunctions, perform necessary repairs and return a Model 506 appliance to proper operational status.

The service technician should read the complete instructions contained in this manual before initiating any repairs on a Model 506.

## IMPORTANT SAFETY INFORMATION

Below are Product Safety Labels used in this manual. The "Signal Words" used are **WARNING** or **CAUTION**.

When reviewing this manual, please note these different Product Safety Labels placed at the beginning of certain sections of this manual. You must follow the instructions given in the boxes of the Product Safety Labels in order to avoid personal injury and/or product damage.

The sample Product Safety Labels below illustrate the precautions that should be taken when the signal word is observed.

### **WARNING**

**INDICATES THAT HAZARDOUS OR UNSAFE PRACTICES COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.**

### **CAUTION**

**Indicates that hazardous or unsafe practices could result in minor personal injury, and/or product damage, and/or property damage.**

In addition, please pay attention to the signal word "**NOTE**", which highlights information that is especially important for the topic being covered.

## TECHNICAL ASSISTANCE

If you should have any questions regarding the 506 Series and/or this manual, please contact:

*Sub-Zero Freezer Company, Inc.  
ATTN: Service Department  
P.O. Box 44988  
Madison, WI 53744 - 4988*

*Customer Service & Parts / Warranty Claims  
Phone #: (800) 222 - 7820*

*Technical Assistance  
Phone #: (800) 919 - 8324*

*Customer Service & Technical Assistance  
Facsimile #: (608) 441 - 5887*

*Parts / Warranty Claims  
Facsimile #: (608) 441 - 5886*

*Service Department E-Mail Address:  
customerservice@subzero.com*

*Office Hours:  
7:00 AM to 7:00 PM Central Time  
Monday through Friday*

**This manual is designed to be used by Authorized Service Personnel only. Sub-Zero Freezer Co., Inc. assumes no responsibility for any repairs made on Sub-Zero refrigeration units by anyone other than Authorized Service Technicians.**

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### WARRANTY INFORMATION

This page contains a summary of the 2, 5 & 12 Year Warranty that is supplied with every Sub-Zero Appliance.

#### **TWO, FIVE & TWELVE YEAR Warranty Summary (Starting with Serial #900000)**

- Two year TOTAL PRODUCT warranty, \*parts and labor.
- Five Year SEALED SYSTEM warranty, \*\*parts and labor.
- Sixth through Twelfth year LIMITED SEALED SYSTEM warranty, sealed system \*\*parts only.

#### **ONE, TWO, FIVE & TWELVE YEAR Warranty Summary (Between Serial #600000 and #900000)**

- Two year TOTAL PRODUCT warranty, \*parts and labor.
- Five Year SEALED SYSTEM warranty, \*\*parts and labor.
- Sixth through Twelfth year LIMITED SEALED SYSTEM warranty, sealed system \*\*parts only.

#### **ONE & FIVE YEAR Non-Residential Warranty Summary (Example: Office, Yacht, etc.)**

- One Year TOTAL PRODUCT warranty, \*parts and labor.
- Five year LIMITED SEALED SYSTEM warranty, sealed system \*\*parts only.

#### **ONE & FIVE YEAR Display / Model Home Warranty Summary (Display units sold three years after date of manufacture)**

- One Year TOTAL PRODUCT warranty, \*parts and labor.
- Five year LIMITED SEALED SYSTEM warranty, sealed system \*\*parts only.

#### **Warranty Details:**

- \* Total Product Parts includes, but is not limited to the following:

*Control, Circulating Pump, Switches, Fan Motor & Blade, Drain Tube, Wiring, Water Valve, Hot Gas Valve, Door hinges, Compressor Electricals, etc. . .*

- \*\* Sealed System Parts include the following:

*Compressor, Condenser, Evaporator, Filter-Drier, Heat-exchanger, All Tubing That Carries the Freon.*

**NOTE:** Condenser Fan Motor, Freon, Solder and compressor electricals are NOT considered sealed system parts.

#### **Warranty Notes:**

- Sub-Zero Freezer Company, Inc. assumes no liability or responsibility for Sub-Zero products that have been altered in any way, including the use of parts and/or components not specifically approved by Sub-Zero.
- All warranties begin at the time of the unit's initial installation.
- All Warranty and Service information collected by Sub-Zero is arranged and stored under the unit serial number and/or customer name. Sub-Zero requests that you have the model and serial number available whenever contacting the factory or parts distributor.
- The serial number tag is located in two places, one on the left wall of the ice bin and one on the unit tray.

## Pre-Installation Considerations

### Location

The unit may be closed in on the top, rear and both sides, but the front must be unobstructed for air circulation and proper operation. Installation should be as such that the cabinet can be moved forward for servicing, if necessary.

The installation site should be well ventilated with the temperature above 55°F (13°C) and below 110°F (43°C). The best results are obtained between 70°F (21°C) and 90°F (32°C).

The unit must be installed in an area protected from the elements, such as wind, rain, water spray or drip.

Provision for electricity, water and drain should be determined.

### Electrical Connection

The unit will require an electrical branch circuit of:

- 115 Volts
- 60 Hertz
- 1 Phase
- 15 Amp delayed action fuse or circuit breaker.

It is recommended that the ice maker is the only appliance plugged into the receptacle. Do not use an extension cord. Do not use a receptacle that is controlled by a wall switch. (See Figure 2-1)

### ⚠ WARNING

**ELECTRICAL GROUND IS REQUIRED ON THIS APPLIANCE. DO NOT, UNDER ANY CIRCUMSTANCE, REMOVE THE POWER SUPPLY GROUND PLUG.**

### ⚠ WARNING

#### **ELECTRIC SHOCK HAZARD**

**IMPROPER CONNECTION OF THE EQUIPMENT GROUNDING CONDUCTOR CAN RESULT IN A RISK OF ELECTRICAL SHOCK.**

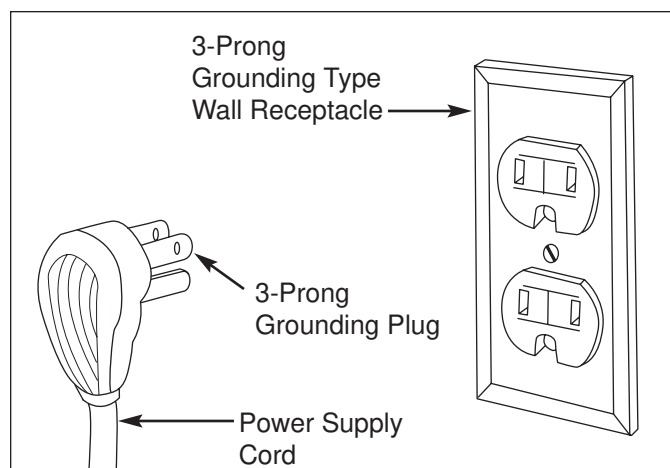
**DO NOT USE A TWO PRONG ADAPTER.**

**DO NOT USE AN EXTENSION CORD.**

**DO NOT HAVE A FUSE IN THE NEUTRAL OR GROUNDING CIRCUIT.**

**DO NOT CONNECT TO ELECTRICAL SUPPLY UNTIL APPLIANCE IS PERMANENTLY GROUND-ED.**

**FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN FIRE, ELECTRICAL SHOCK OR DEATH.**



**Figure 2-1. Power Cord & Wall Outlet**

## Water Connection Requirements

Materials needed for installation:

- 1/4-in. O.D. copper tubing
- 1/4-in. outlet, saddle-type shut-off valve  
(Part No. 4378392)
- 1/4-in. x 1/4-in. tube union  
(Part No. 4378972)

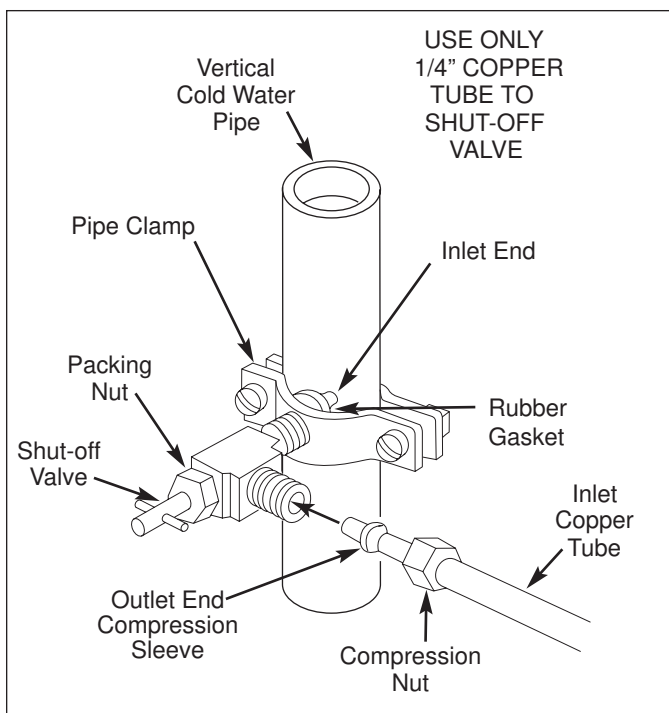
These materials can be obtained locally or from your FSP Parts Distributor by ordering Ice Maker Installation Kit No. 978567, which includes 25 feet of copper tubing. Do not use plastic tubing because it becomes brittle with aging.

Make sure the saddle valve complies with local plumbing codes. Do not use a self-piercing type or 3/16-inch saddle valve because they reduce water flow and clog more easily.

For proper operation, the ice maker should be connected to an active water supply line delivering cold water at pressures between 20 and 120 pounds per square inch. (See Figure 2-2)

### CAUTION

**Do not install copper tubing in an area where temperatures drop below freezing. To do so may result in water damage.**



**Figure 2-2. Water Connection Components**

## Installation of Line Tapping Device and/or Shut-off Valve

1. Select the point on an active cold water supply line convenient to the unit where connection is to be made. A point on a vertical section of 1/2-in. or 3/4-in. line leading to the kitchen sink is ideal. If installed on a horizontal line, place valve on top or side of line; never on bottom. (This will keep water away from the drill during installation and helps normal sediment from collecting in the valve.) Turn off the water supply and clear line of pressure.
2. Provide a length of 1/4-in. O.D. copper tubing for connecting the ice maker to the water supply. To determine the length, measure distance from the unit to the connecting point on supply line, and add approximately three feet to allow for connection to the water valve in the unit. Be sure both ends of copper tubing are cut square.
3. Drill a 1/8-in. hole in water supply line at point selected for making connection. Care must be taken to drill a clean hole perpendicular to wall of supply line. Be sure electric drill is grounded, or use a hand drill to avoid shock.
4. Be sure the shut-off valve is in the OFF position. Turn clockwise until the stem is seated.
5. Assemble shut-off valve and pipe clamp and mount it on the supply line. The inlet tube of the shut-off valve must extend through the rubber washer and into the 1/8-in. hole drilled in the line. Tighten the packing nut. Tighten the clamp screws just enough for the rubber gasket to ensure a watertight seal. Clamping too tightly may crush the copper tubing.
6. Slip the compression nut, and then the sleeve, on the end of the 1/4-in. tubing. Insert the end of the tube into the outlet end of the shut-off valve as far as it will go, then screw the compression nut onto the shut-off valve enough to get a watertight seal. Place the other end in a sink drain or bucket.
7. Turn on the main water supply. Turn the handle on the shut-off valve counterclockwise to open the valve and flush the tubing until the water runs clear, then close the valve.

**NOTE:** Make sure there is a vigorous flow of water (volume and pressure).

8. Bend the tubing to run it to the installation location. Position the tubing so it can enter the access hole located in the right rear of the ice maker cabinet. The tubing will extend beyond the cabinet front when the cabinet is pushed back into position.

## Drain Connection Requirements

The ice maker has a gravity drain. The ideal installation has a standpipe (1-1/4-in. minimum) installed directly below the outlet of the drain tube. (See Figure 2-3 and Figure 2-4)

The drain tube must run into an open drain standpipe. The drain tube cannot be “sealed” into the standpipe.

Because the drainage water will probably be very cold, it may be desirable to insulate the drain standpipe thoroughly up to the drain inlet to minimize condensation on the drain standpipe.

When a drain connection below the ice maker is not available, a pump may be used to lift the water to an available drain.

Condensate Pump Kit No. 759064 is no longer available as a service replacement. If a replacement is needed, purchase a reliable condensate pump locally and install Part No. 759014 shunt plug into the ice machine pump receptacle. The condensate pump can be installed on the floor directly behind the unit where it is installed. Install the pump with the discharge tube to the rear. Run a 5/8-in. I.D. plastic tube from the bin drain directly into the pump inlet.

## How It Works

The pump recommended for use with an undercounter or freestanding ice maker is a pressure activated, high speed pump which will lift water (from melting ice and fill cycles) to a place where it can be disposed of.

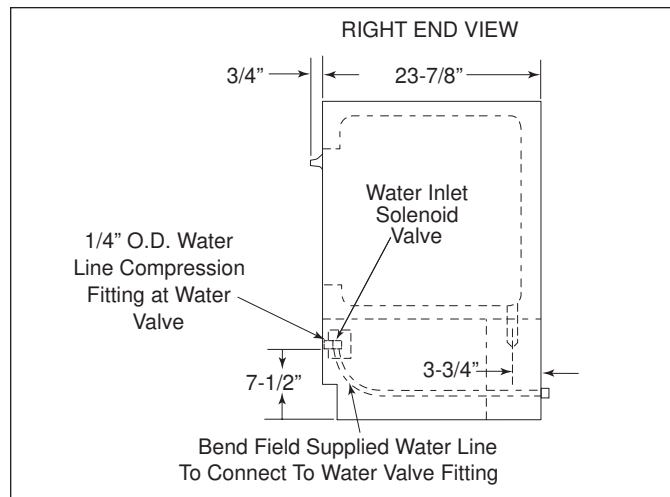
The pump installs in the compartment below the ice maker storage bin and operates on 120VAC 60Hz current. It receives the AC power from a receptacle that is shunted except when the pump is present. Remove the shunt, and plug pump into receptacle.

The pump connects directly to the drain stub of the storage bin. As the sealed chamber of the pump fills, the pressure from the water actuates the pressure switch, and causes the pump to run and pump water from the chamber. (See Figure 2-5)

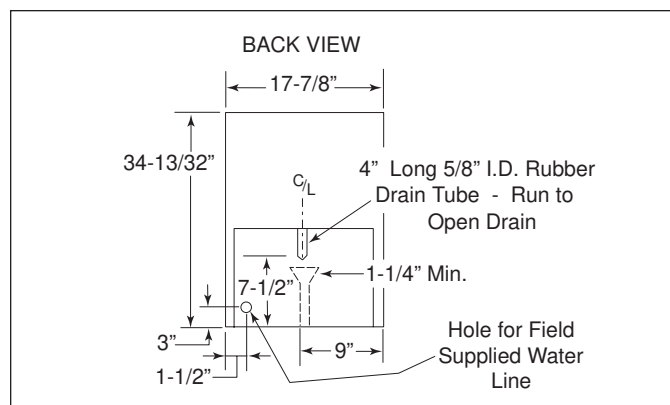
Water exits through the tube leading to the drain and is prevented from re-entering the chamber by a check valve in the output fitting on the pump.

The impeller rotates at 3000RPM in a molded housing designed to prevent cavitation.

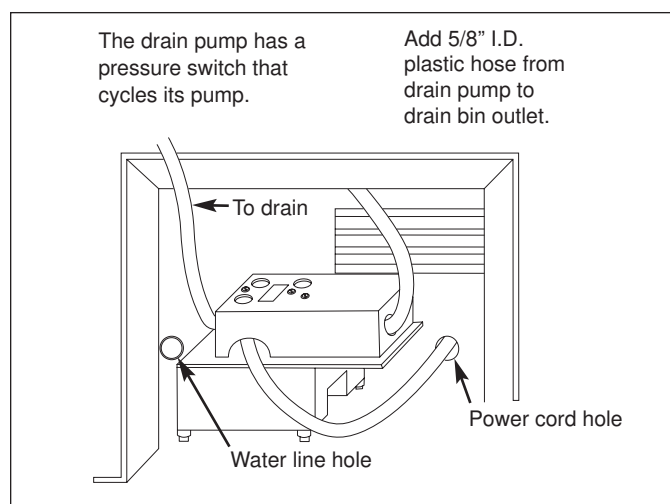
The pump is a sealed unit that depends on the weight of the water accumulating in the drain from the storage bin to activate it. Make sure pump chamber and lid are sealed to prevent water leakage, and that all connections are water tight.



**Figure 2-3. Water System Connections**



**Figure 2-4. Drain Tube Location**



**Figure 2-5. Condensate Pump**

## How It Works (Continued)

When the pump is in harvest cycle, the electric circuit bypasses the pump pressure switch, and the pump runs continuously.

At all other times, regardless of any other switch setting or condition, the pump is on line and will run when the pressure switch closes.

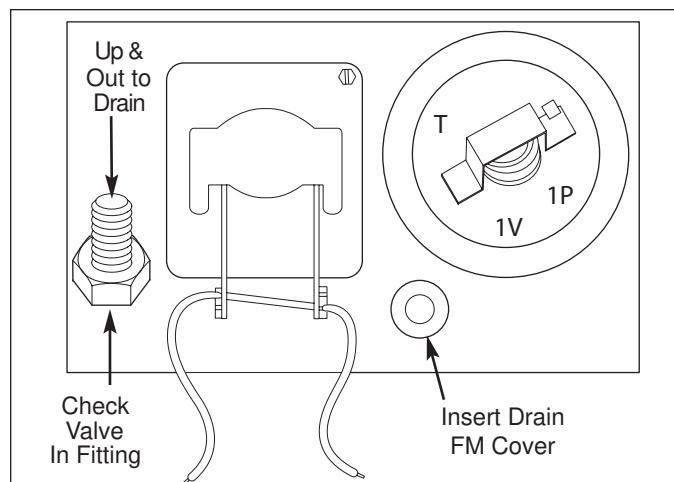
If pump should fail to run when the pressure switch closes, it interrupts the circuit to the fill valve so that no additional water can enter. It also interrupts the circuit to the hot gas defrost solenoid. (See Figure 2-6 and Figure 2-7)

Run the condensate pump power cord through the hole in the wall and into the unit compartment. Inside the unit compartment, remove the shunt from the receptacle and plug in the condensate pump. (See Figure 2-8)

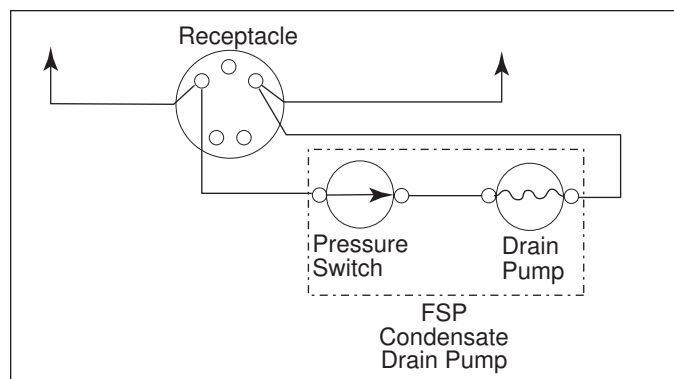
**NOTE:** Do not discard the shunt that is removed from the receptacle. This shunt must be replaced if the unit is to be operated later without a condensate pump. Tape shunt to wall of unit compartment to avoid loss.

Run the discharge line from the pump directly to the available drain. The FSP condensate pump has a check valve located in the discharge outlet valve.

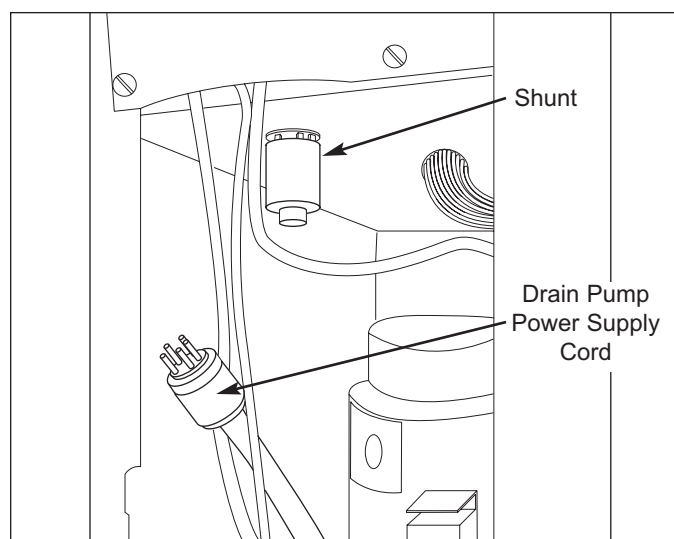
Other non-FSP sump pumps may be used with the ice maker. These pumps are usually located near the available drain. Run a 5/8-in. I.D. plastic tube from the drain bin to the pump and a plastic hose from the discharge outlet of the pump into the available drain. If the pump does not have a check valve on the discharge outlet valve, one should be installed on the outlet tube. The sump pump will be plugged into an available power supply near the drain. A pressure switch inside the pump will operate the pump as needed, independently of the ice maker operation. The shunt remains in place in the receptacle of the unit when a non-FSP sump pump is used.



**Figure 2-6. Water System Connections**



**Figure 2-7. Pump Electrical Schematic**



**Figure 2-8. Shunt Location**



## Installing the Unit

1. Lay carton on its rear face and break open the bottom flaps.
2. Set the carton upright with all four flaps outward.

### ⚠ CAUTION

To avoid damage to the finished floor when the unit is installed, or if the unit needs to be removed for service purposes, the finished floor should be protected with appropriate material.

3. Lift carton up and off of unit.
4. Remove all of the packing tape and packaging material from the outside and inside of the cabinet.
5. Remove the lower panel and grille by removing the two securing screws at the bottom of the grille, and pulling the lower panel assembly down and outward. (See Figure 2-9)
6. Reach into the unit compartment and turn the fan by hand to make certain it moves freely.
7. Inside the bin, loosen the thumbscrews holding the cutter grid and the water reservoir pan until they are just thumb tight. (See Figure 2-10 and Figure 2-11)
8. Carefully move the ice maker into the installation location, pulling the water supply line through the hole in the rear. The water line will project through the front of the unit after the ice maker is pushed into position.
9. Check that the unit is level from side to side by placing a level across the top of the cabinet.
10. If necessary, the ice maker should be shimmed so that it is solid as well as level. Use a hard, permanent material, such as Masonite, for shims.
11. If the ice maker is installed under a counter top, a custom Trim Kit, Part No. 819421 for the sides and top is available from your FSP parts distributor.
12. After the ice maker is in place, bend the water supply tubing to meet the connection at the water inlet valve. It may be necessary to trim the excess length of tubing. Use the garden hose threaded compression fitting supplied with the ice maker to connect the water supply line to the unit.

After completing the water line connection, open the water supply line valve and check for water tight seals along the supply line.

Make sure the tubing inside the unit compartment does not touch any other component in the compartment, to prevent rattle.

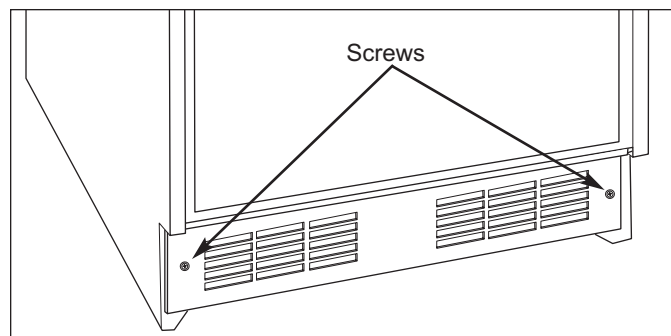


Figure 2-9. Grille Removal

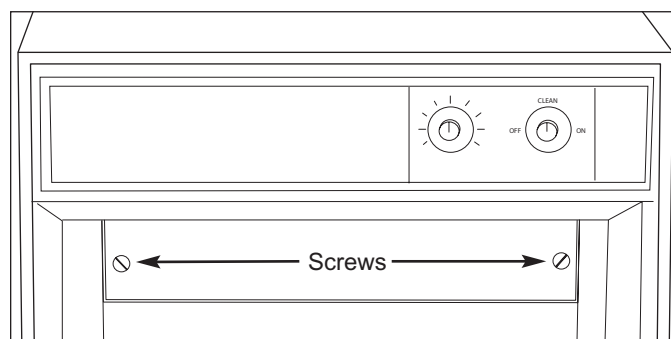


Figure 2-10. Accessing Water Reservoir

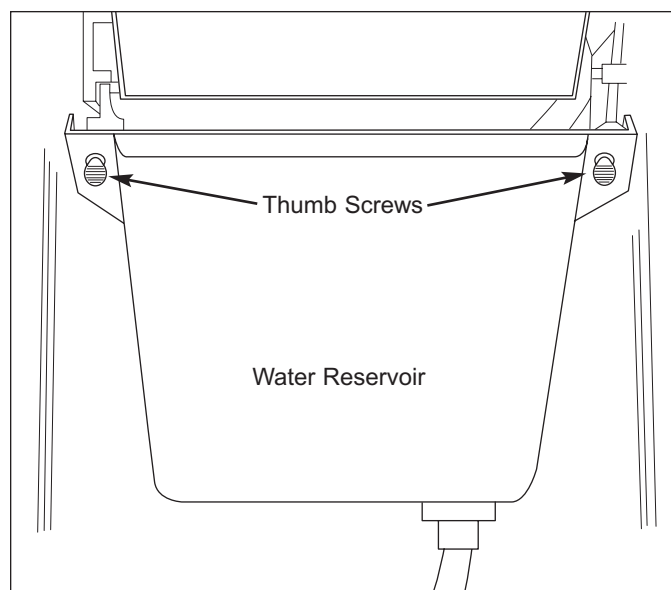


Figure 2-11. Water Reservoir

13. Local sanitation codes may require that the ice maker cabinet is sealed to the floor with an approved caulking compound.  
If the ice maker is installed in restaurant, local codes may require that the unit be installed up off the floor. The Part No. 876649 leg kit is no longer available.
14. If the front panels are not going to be changed, replace the lower panel and grille.

## Changing Front Panels

Front panels for the bin door and lower panel are available in different colors from your FSP parts distributor. Some models of the Undercounter Ice Maker may come with one or more additional colored panels inside the bin door assembly. Each panel has two colors, one on each side.

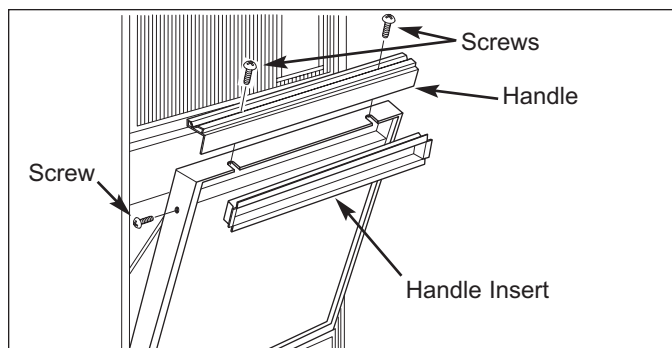
Where required by local codes, stainless steel panels for installation of the unit in a restaurant, are also available.

To change panels:

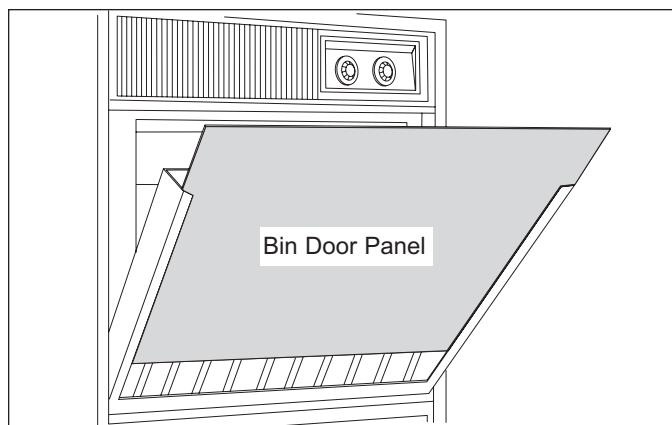
1. Open bin door.
2. Remove the two screws on top of the door, and loosen the upper side screw on one of the sides. (See Figure 2-12)
3. Spread the trim on one side, and remove the door handle and top trim piece.
4. Slide the metal panel out and replace with the new colored panel. (See Figure 2-13)
5. Reassemble the door.
6. Remove the screws on top of the lower panel assembly (after it has already been removed from the unit), spread the side trim, and slide out the metal panel. (See Figure 2-14)
7. Replace with the new colored panel and reassemble the lower panel assembly. Make sure the galvanized metal panel is in place on the rear of the lower panel assembly.
8. Replace the lower panel and grille assembly.

Decorative wood panels to match the existing kitchen cabinets can also be installed on the ice maker. The consumer should order the panels from their kitchen cabinet supplier. The panels should be beveled to no more than 1/4-in. (6 mm) thick around the edges that will fit under the trim.

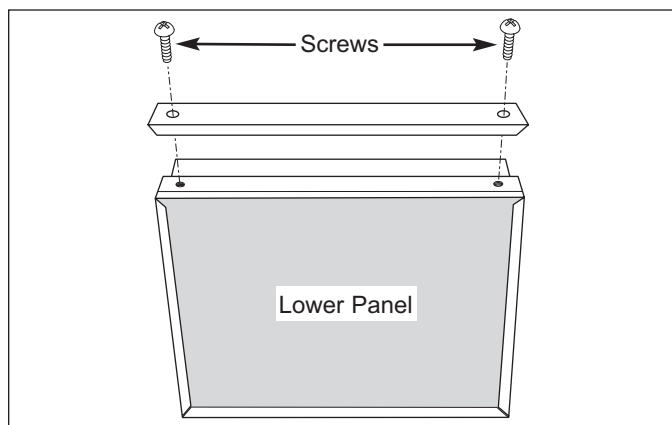
When installing custom-made panels, break off the ribs on the styrofoam insulation under each metal panel to allow for the thickness of the wood panel. (See Figure 2-15)



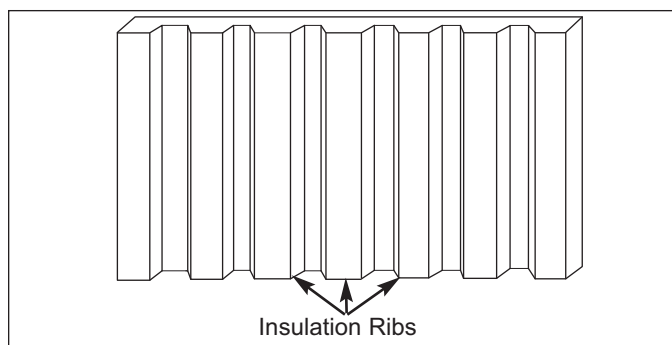
**Figure 2-12. Bin Door Handle Removal**



**Figure 2-13. Bin Door Panel Removal**



**Figure 2-14. Bin Door Panel Removal**



**Figure 2-15. Bin Door Panel Removal**