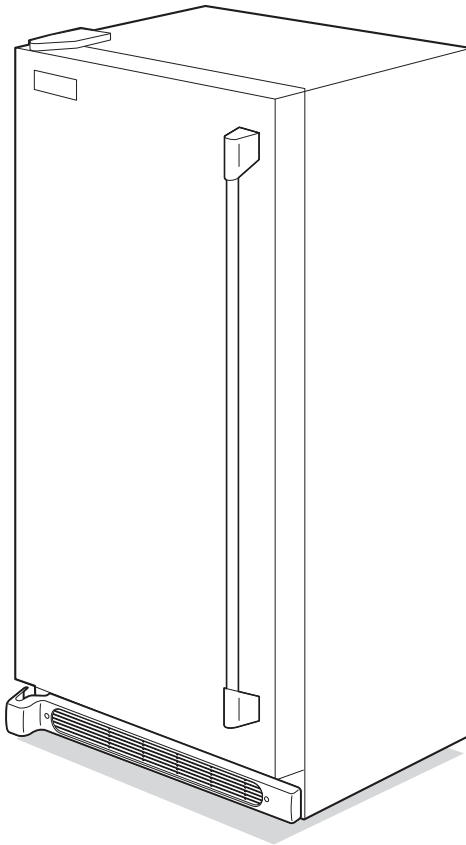


Technical Service Manual

ICON All Refrigerator and
All Freezer - Professional Series



Electrolux

ICON™

Safe Servicing Practices For All Appliances

Avoid personal injury and/or property damage by observing important Safe Servicing Practices. Following are some limited examples of safe practices:

1. DO NOT attempt a product repair if you have any doubts as to your ability to complete the repair in a safe and satisfactory manner.
2. Always use the correct Replacement Parts as indicated in the parts documentation. Substitutions may defeat compliance with Safety Standards Set For Home Appliances. Do not exceed maximum recommended wattage on light bulb replacements. Doing so could blow fuses and/or damage transformers.
3. Before servicing or moving an appliance:
 - Remove power cord from the electrical outlet, trip circuit breaker to the OFF position, or remove fuse.
 - Turn off water supply if applicable.
4. Never interfere with the proper operation of any safety device.
5. Use ONLY REPLACEMENT PARTS CATALOGED FOR THIS APPLIANCE. Substitutions may defeat compliance with Safety Standards Set For Home Appliances.
6. GROUNDING: The standard color coding for safety ground wires is GREEN, or GREEN with YELLOW STRIPES. Ground leads are not to be used as current carrying conductors. It is EXTREMELY important that the service technician reestablish all safety grounds prior to completion of service. Failure to do so will create a hazard.
7. Prior to returning the product to service, ensure that:
 - All electrical connections are correct and secure.
 - All electrical leads are properly dressed and secured away from sharp edges, high-temperature components, and moving parts.
 - All non-insulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels.
 - All safety grounds (both internal and external) are correctly and securely connected.
 - All panels are properly and securely reassembled.

ATTENTION!!!

This service manual is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. Electrolux Home Products, Inc. cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this manual.

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Basic Information

This Manual has been prepared to provide Electrolux Service Personnel with Operation and Service Information for an Electrolux All Refrigerator and/or All Freezer Pro Units, Models Numbers E32AR75FPS, E32AF75FP, E32AR75GTT and E32AF75GT.

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Basic Information

Important Safety Instructions

Safety Precautions

Do not attempt to install, operate or service the unit until you have read the safety precautions in this manual. Safety items throughout this manual are labeled with a Danger, Warning, or Caution based on the risk type.

Definitions

 This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

IMPORTANT

Indicates installation, operation, or maintenance information which is important but not hazard related.

General Safety

- Do not store or use gasoline or other flammable liquids near this or any other appliance. Read product labels for warnings regarding flammability and other hazards.
- Do not operate the unit in the presence of explosive fumes.
- Avoid contact with any moving parts of the automatic ice maker.
- Remove all staples from the carton to avoid injury. Staples can also damage finishes if they come in contact with other appliances or furniture.

Child Safety

Packing Materials:

- Packing cartons covered with rugs, bedspreads, plastic sheets, or stretch wrap may become airtight chambers and can quickly cause suffocation.
- Destroy or recycle the product's carton, plastic bags, and any other exterior wrapping material immediately after the refrigerator is unpacked. Children should never play with these items.

Child Entrapment and Suffocation:

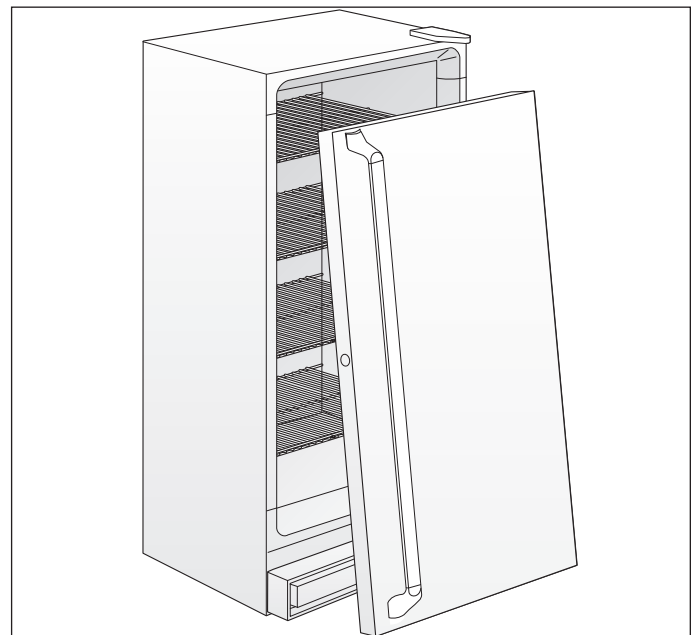
- These problems are not limited to the past. Whether junked, abandoned, or temporarily stored (even for a few hours), unattended refrigerators and freezers are dangerous. Please take the precautions listed below.

Proper Disposal of Refrigerators/Freezers

Electrolux Home Products Inc. strongly encourages responsible appliance recycling/disposal methods. Check with your utility company or visit www.recyclemyoldfridge.com for more information on recycling your old refrigerator.

Before you recycle or dispose of your old refrigerator/freezer:

- Remove the doors.
- Leave the shelves and baskets in place so children may not easily climb inside.
- Have refrigerant and compressor oil removed by a qualified service technician.



Major Appliance Warranty Information

Your appliance is covered by a one year limited warranty. For one year from your original date of purchase, Electrolux will repair or replace any parts of this appliance that prove to be defective in materials or workmanship when such appliance is installed, used, and maintained in accordance with the provided instructions. In addition, the cabinet liner and sealed refrigeration system (compressor, condenser, evaporator, dryer or tubing) of your appliance is covered by a two through five year limited warranty. During the 2nd through 5th years from your original date of purchase, Electrolux will repair or replace any parts in the cabinet liner and sealed refrigeration system which prove to be defective in materials or workmanship when such appliance is installed, used, and maintained in accordance with the provided instructions.

Exclusions

This warranty does not cover the following:

1. Products with original serial numbers that have been removed, altered or cannot be readily determined.
2. Product that has been transferred from its original owner to another party or removed outside the USA or Canada.
3. Rust on the interior or exterior of the unit.
4. Products purchased "as-is" are not covered by this warranty.
5. Food loss due to any refrigerator or freezer failures.
6. Products used in a commercial setting.
7. Service calls which do not involve malfunction or defects in materials or workmanship, or for appliances not in ordinary household use or used other than in accordance with the provided instructions.
8. Service calls to correct the installation of your appliance or to instruct you how to use your appliance.
9. Expenses for making the appliance accessible for servicing, such as removal of trim, cupboards, shelves, etc., which are not a part of the appliance when it is shipped from the factory.
10. Service calls to repair or replace appliance light bulbs, air filters, water filters, other consumables, or knobs, handles, or other cosmetic parts.
11. Pickup and delivery costs; your appliance is designed to be repaired in the home.
12. Surcharges including, but not limited to, any after hour, weekend, or holiday service calls, tolls, ferry trip charges, or mileage expense for service calls to remote areas, including the state of Alaska.
13. Damages to the finish of appliance or home incurred during transportation or installation, including but not limited to floors, cabinets, walls, etc.
14. Damages caused by: services performed by unauthorized service companies; use of parts other than genuine Electrolux parts or parts obtained from persons other than authorized service companies; or external causes such as abuse, misuse, inadequate power supply, accidents, fires, or acts of God.

DISCLAIMER OF IMPLIED WARRANTIES; LIMITATION OF REMEDIES

CUSTOMER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE REPAIR OR REPLACEMENT AS PROVIDED HEREIN. **CLAIMS BASED ON IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR OR THE SHORTEST PERIOD ALLOWED BY LAW, BUT NOT LESS THAN ONE YEAR.** ELECTROLUX SHALL NOT BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES SUCH AS PROPERTY DAMAGE AND INCIDENTAL EXPENSES RESULTING FROM ANY BREACH OF THIS WRITTEN LIMITED WARRANTY OR ANY IMPLIED WARRANTY. SOME STATES AND PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATIONS ON THE DURATION OF IMPLIED WARRANTIES, SO THESE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WRITTEN WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.

If You Need Service

Keep your receipt, delivery slip, or some other appropriate payment record to establish the warranty period should service be required. If service is performed, it is in your best interest to obtain and keep all receipts. Service under this warranty must be obtained by contacting Electrolux at the addresses or phone numbers below.

This warranty only applies in the USA, Puerto Rico and Canada. In the USA and Puerto Rico, your appliance is warranted by Electrolux Major Appliances North America, a division of Electrolux Home Products, Inc. In Canada, your appliance is warranted by Electrolux Canada Corp. Electrolux authorizes no person to change or add to any obligations under this warranty. Obligations for service and parts under this warranty must be performed by Electrolux or an authorized service company. Product features or specifications as described or illustrated are subject to change without notice.

USA

1-877-435-3287

Electrolux Major Appliances North America
P.O. Box 212378
Augusta, GA 30907

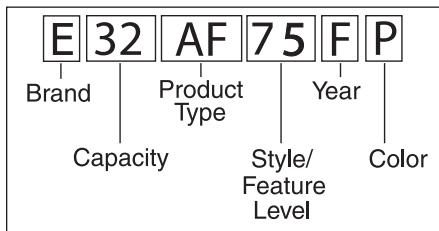
Canada

1-800-265-8352

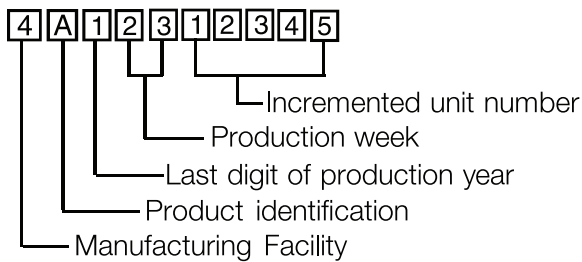
Electrolux Canada Corp.
5855 Terry Fox Way
Mississauga, Ontario, Canada L5V 3E4

Basic Information

Model Number Breakdown



Serial Number Breakdown



Product Identification

- A = Refrigerator
- B = Freezers
- C = Washers
- D = Dryers
- E = Laundry Centers
- F = Ranges
- H = Dishwasher
- G/P= Microwave
- N = Dehumidifier

All Refrigerator Specifications

ENERGYSTAR®	Yes
CAPACITIES	
Total Capacity	16.51 Cu. Ft.
Total Shelf Area	17.5 Sq. Ft.
INTERIOR CONVENIENCES	
PureAdvantage™ Water Filter*	Yes
PureAdvantage™ Air Filter	Yes
Encapsulated Sliding Glass Shelves	3
Fixed Glass Shelf	1
Smooth-Glide™ Full-Extension Crispers	2
Smooth-Glide™ Full-Extension Deli Drawer	1
3-Position Adjustable Crisper Dividers (per Crisper)	2
Clear Dairy Door	1
Clear 1-Gallon Removable Door Bin	1
Clear 2-Liter Adjustable Door Bin	4
Clear Tall Bottle Retainer	1
Clear Door Bin Snugger	1
Interior Light with Dual 40W Short Blue Bulbs	Yes
Theatre Lighting	Yes
Mid-Level Lighting with Dual 25W Short Blue Bulbs	Yes
Dynamic Cool™ Digital Temperature Control System	Yes
Door Closer	Yes
Luxury-Quiet™ Sound Package	Yes
ACCESSORIES	
Single Louvered Trim Kit– SRRRSRKIT	Optional
Double Louvered Trim Kit– DUORSRKIT	Optional
SPECIFICATIONS	
Overall Exterior Dimensions –	
Height – Not Including 21/32" hinge cover (Cabinet)	65-1/8"
(Cabinet Including Optional Trim Kit Riser)	69-1/4" min. 70-1/4" max.
Width	32"
Depth(Including Door) (with 90°Door Open)	26-3/4" 57-1/4"
Voltage Rating	115V/60 Hz/15 or 20A
Connected Load (kW Rating) @ 115 Volts ‡	0.55
Power Cord Location	Right Bottom Rear
Water Line Inlet Location	Left Top Rear
Product Weight	275 Lbs.
Shipping Weight (Approx.)	290 Lbs.

*Provides water filtration for All Freezer ice maker.

‡ An electrical supply with grounded three-prong receptacle is required. The power supply circuit must be installed in accordance with current edition of National Electrical Code (NFPA 70) and local codes & ordinances.

NOTE: Always consult local and/or national electric and plumbing codes.

Specifications subject to change.

Refrigerator Temperature Control

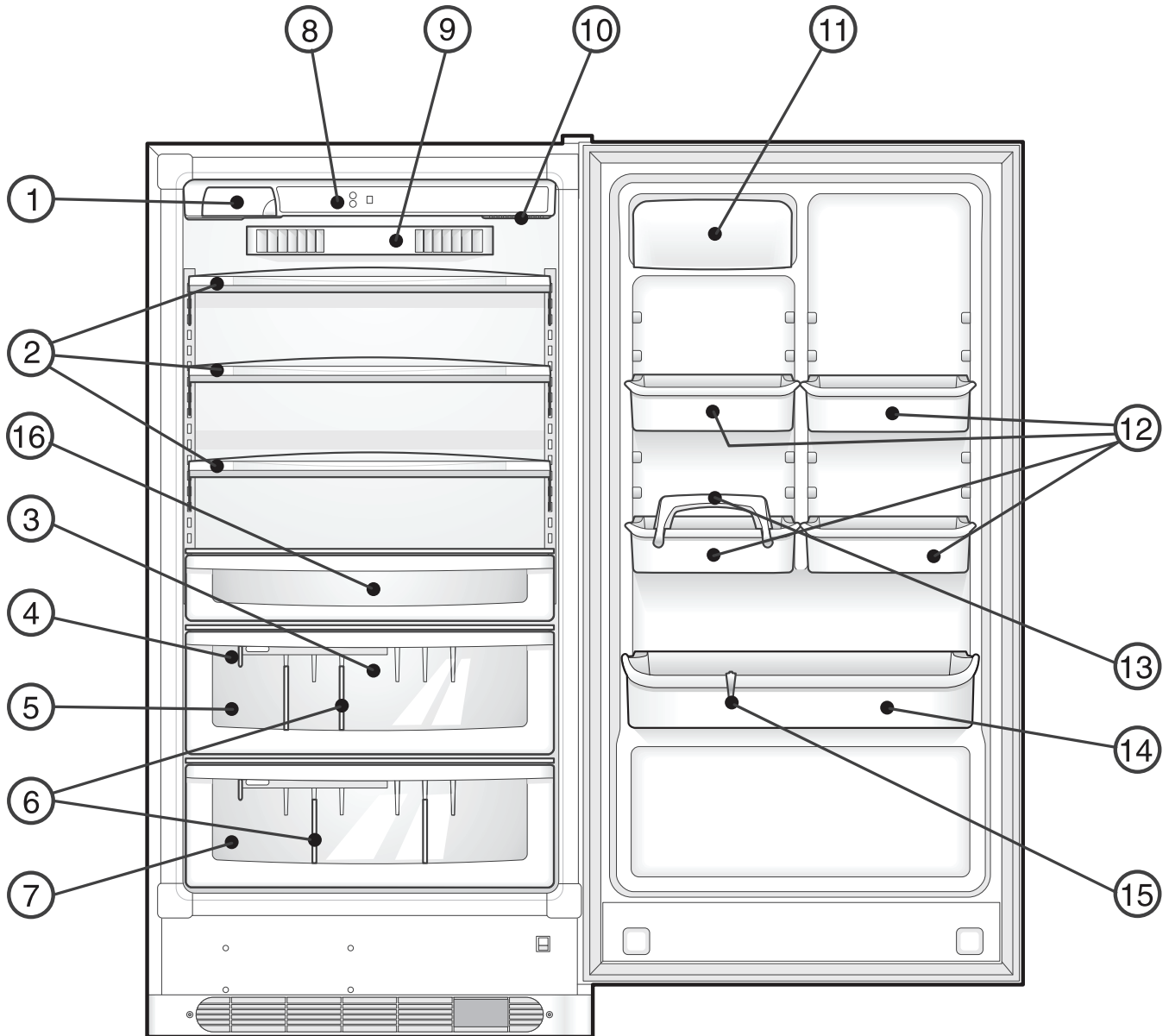
PERFORMANCE (Control at number 1 setting)

Room Ambient	70°F	90°F
Refrigerator Compartment Temperature	43-47°F	43-47°F
Percent Running Time	15-20%	20-30%
Wattage Range (Last 1/3 of cycle)	90-100	90-100
Suction Pressure (Cut-in, Cut-out), PSIG	14-0	14-0
High Side Pressure (Last 1/3 of cycle), PSIG ...	100-125	120-140

Understanding Features and Terms - All Refrigerator Professional Series

Electrolux refrigerators are designed for optimal convenience and storage flexibility. The illustration below is provided to assist you with familiarizing yourself with product features and terminology.

NOTE: Features may vary according to model.



1	Water Filter Cartridge	9	Air Diffuser
2	Spill Safe Slide Out Glass Shelves	10	Air Filter
3	Mid Level Lighting (Back Of Crisper)	11	Dairy Door
4	Humidity Control	12	Tall Bottle Retainer
5	Smooth Glide Upper Crisper	13	Tall Bottle Retainer
6	Adjustable Crisper Dividers	14	Fixed Gallon Door Bin
7	Smooth Glide Lower Crisper	15	Bin Snugger
8	Electronic Controls	16	Smooth Glide Deli Drawer

Basic Information

All Freezer Specifications

ENERGY STAR®	Yes
CAPACITIES	
Total Capacity	16.7 Cu. Ft.
Total Shelf Area	17 Sq. Ft.
INTERIOR CONVENIENCES	
PureAdvantage™ Air Filter	Yes
SpillSafe™ Sliding Glass Shelves	3
Fixed Glass Shelf	1
Smooth-Glide™ Full-Extension Storage Drawers	2
3-Position Adjustable Storage Drawer Dividers (per Drawer)	2
Tilt-Out Tall Door Wire Bin	1
Tilt-Out Short Door Wire Bins	2
White Adjustable Door Bins	2
Interior Light with Dual 40W Short Blue Bulbs	Yes
Theatre Lighting	Yes
Mid-Level Lighting with Dual 25W Short Blue Bulbs	Yes
Dynamic Cool™ Digital Temperature Control System	Yes
Ice Maker*	Yes
Door Closer	Yes
ACCESSORIES	
Single Louvered Trim Kit – SFRRSRKIT	Optional
Double Louvered Trim Kit – DUORSRKIT	Optional
SPECIFICATIONS	
Overall Exterior Dimensions –	
Height – Not Including 21/32" hinge cover (Cabinet)	65-1/8"
(Cabinet Including Optional Trim Kit Riser)	69-1/4" min. 70-1/4" max.
Width	32"
Depth (Including Door)	26-3/4"
(with 90° Door Open)	57-1/4"
Voltage Rating	115V/60Hz/15 or 20A
Connected Load (kW Rating) @ 115 Volts‡	0.55
Power Cord Location	Right Bottom Rear
Water Line Inlet Location	Left Top Rear
Product Weight	266 Lbs.
Shipping Weight (Approx.)	297 Lbs.
UPC (0-12505-)	22476-8

* Water filtration for All Freezer ice maker located in All Refrigerator.

‡ An electrical supply with grounded three-prong receptacle is required. The power supply circuit must be installed in accordance with current edition of National Electrical Code (NFPA 70) and local codes & ordinances.

NOTE: Always consult local and/or national electric and plumbing codes.

Specifications subject to change.

Freezer Temperature Control

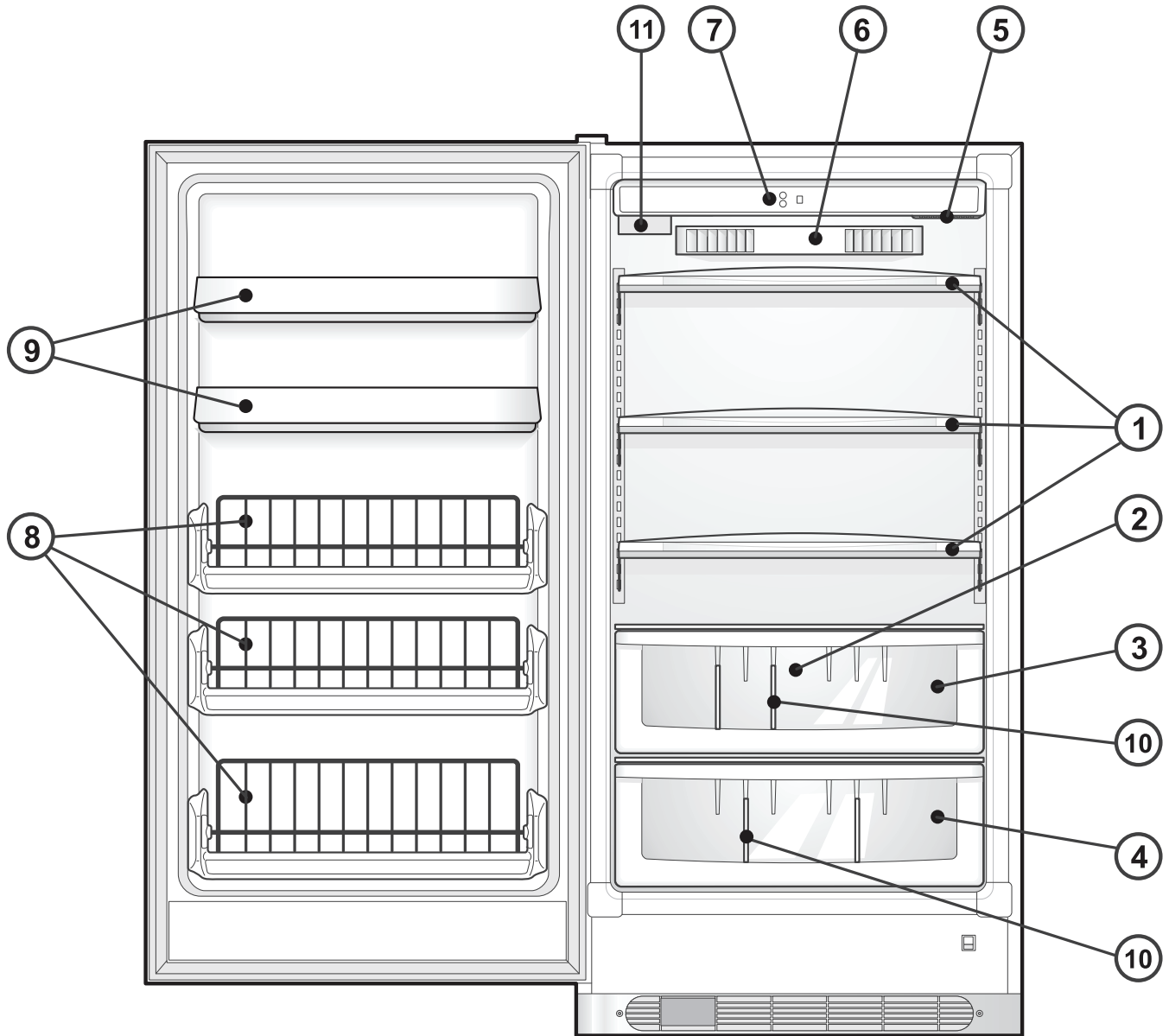
PERFORMANCE (Control at number 1 setting)

Room Ambient	70°F	90°F
Freezer Compartment Temperature	2-12°F	2-12°F
Percent Running Time	30-45%	45-65%
Wattage Range (Last 1/3 of cycle)	110-140	115-145
Suction Pressure (Cut-in, Cut-out), PSIG	14-0	14-0
High Side Pressure (Last 1/3 of cycle), PSIG ...	100-125	140-165

Understanding Features and Terms - All Freezer Professional Series

Electrolux freezer are designed for optimal convenience and storage flexibility. The illustration below is provided to assist you with familiarizing yourself with product features and terminology.

NOTE: Features may vary according to model.



1	Spill Safe Slide Out Glass Shelf	7	Electronic Controls
2	Mid Level Lighting (Back Of Crisper)	8	Tilt-out Shelf
3	Smooth Glide Drawer (Upper)	9	Adjustable Door Bin
4	Smooth Glide Drawer (Lower)	10	Adjustable Crisper Divider
5	Air Filter	11	Ice Maker
6	Air Diffuser		

Recognize safety symbols, words and labels:

Safety items throughout this manual are labeled with a WARNING or CAUTION based on the risk type as described below:



WARNING

This symbol alerts you to situations that may cause serious body harm, death or property damage.



CAUTION

This symbol alerts you to situations that may cause bodily injury or property damage.



WARNING

TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK, OR INJURY WHEN USING AN ICON ALL FREEZER AND/OR ALL REFRIGERATOR, FOLLOW BASIC SAFETY PRECAUTIONS INCLUDING THE FOLLOWING:

- **READ ALL INSTRUCTIONS BEFORE OPERATING THE FREEZER AND/OR REFRIGERATOR.**
- **BEFORE PERFORMING ANY TYPE OF SERVICE OR INSTALLATION, MAKE SURE THAT ELECTRIC POWER TO THE FREEZER AND/OR REFRIGERATOR IS DISCONNECTED.**
- **TO AVOID THE POSSIBILITY OF EXPLOSION OR FIRE, DO NOT STORE OR USE COMBUSTIBLE, FLAMMABLE, OR EXPLOSIVE LIQUIDS OR VAPORS (SUCH AS GASOLINE) INSIDE OR IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.**
- **THIS APPLIANCE IS EQUIPPED WITH A THREE-PRONG GROUNDING PLUG FOR PROTECTION AGAINST POSSIBLE ELECTRIC SHOCK HAZARDS. PLUG IT ONLY INTO A DEDICATED, GROUNDED ELECTRICAL OUTLET. WHEN ONLY A STANDARD TWO-PRONG ELECTRICAL OUTLET IS AVAILABLE, THE CUSTOMER MUST HAVE IT REPLACED WITH A DEDICATED, PROPERLY GROUNDED THREE-PRONG ELECTRICAL OUTLET BEFORE USING THIS APPLIANCE.**
- **DO NOT UNDER ANY CIRCUMSTANCES, CUT OR REMOVE THE THIRD (GROUND) PRONG FROM THE POWER CORD.**
DO NOT USE AN ADAPTER PLUG.
DO NOT USE AN EXTENSION CORD.
DO NOT USE A POWER CORD THAT IS FRAYED OR DAMAGED.
THE USE OF A GROUND FAULT INTERRUPTER (GFI) IS NOT RECOMMENDED.
- **DO NOT INSTALL OR USE A DAMAGED APPLIANCE. IF YOU RECEIVE A DAMAGED APPLIANCE, IMMEDIATELY CONTACT YOUR DEALER OR BUILDER.**
- **THE INSTALLER MUST SHOW THE CUSTOMER THE LOCATION OF THE POWER PLUG SO THAT THEY KNOW WHERE AND HOW TO DISCONNECT POWER TO THE FREEZER AND/OR REFRIGERATOR.**
- **DO NOT INSTALL, REPAIR, OR REPLACE ANY PART OF THE FREEZER AND/OR REFRIGERATOR UNLESS SPECIFICALLY RECOMMENDED IN THE LITERATURE ACCOMPANYING IT. A QUALIFIED SERVICE TECHNICIAN SHOULD PERFORM ALL OTHER SERVICE.**



WARNING

Electrolux Home Products Inc. cannot be held responsible for damage to property or injury to persons caused by failure to comply with the installation, maintenance and safety instructions contained in this Service Manual.

Installation Information

WARNING

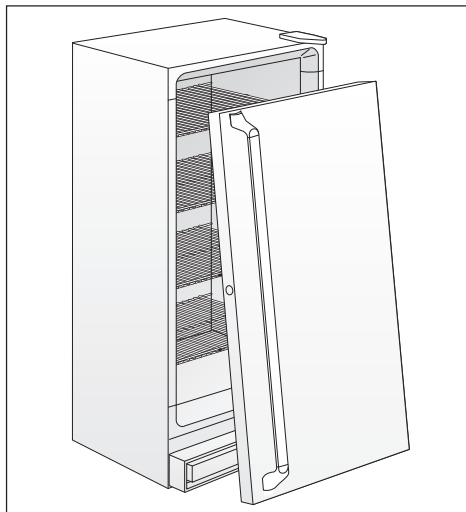
DESTROY CARTON, PLASTIC BAGS, AND ANY EXTERIOR WRAPPING MATERIAL IMMEDIATELY AFTER THE REFRIGERATOR/FREEZER IS UNPACKED. CHILDREN SHOULD NEVER USE THESE ITEMS FOR PLAY. CARTONS COVERED WITH RUGS, BEDSPREADS, PLASTIC SHEETS OR STRETCH WRAP MAY BECOME AIR TIGHT CHAMBERS AND CAN QUICKLY CAUSE SUFFOCATION.

A CHILD MIGHT SUFFOCATE IF THEY CRAWL INTO THE UNIT TO HIDE OR PLAY. REMOVE THE DOOR/LID OF THE REFRIGERATOR/FREEZER WHEN NOT IN USE, EVEN IF YOU PLAN TO DISCARD THE UNIT. MANY COMMUNITIES HAVE LAWS REQUIRING YOU TO TAKE THIS SAFETY PRECAUTION.

REMOVE OR DISCARD ANY SPACERS USED TO SECURE THE SHELVES DURING SHIPPING. SMALL OBJECTS ARE A CHOKE HAZARD TO CHILDREN.

CHILD ENTRAPMENT AND SUFFOCATION ARE NOT PROBLEMS OF THE PAST. JUNKED OR ABANDONED REFRIGERATORS OR FREEZERS ARE STILL DANGEROUS— EVEN IF THEY WILL SIT FOR “JUST A FEW DAYS”. IF YOU ARE GETTING RID OF YOUR OLD REFRIGERATOR OR FREEZER, PLEASE FOLLOW THE INSTRUCTIONS BELOW TO HELP PREVENT ACCIDENTS:

- REMOVE THE DOOR/LID.
- LEAVE SHELVES IN PLACE SO CHILDREN MAY NOT EASILY CLIMB INSIDE.
- HAVE THE REFRIGERANT REMOVED BY A QUALIFIED TECHNICIAN.



Installation Checklist

Doors

- Handles are secure and tight
- Door seals completely to cabinet on all sides
- Doors are level across the top

Leveling

- Unit is level, side-to-side and tilted 1/4" (6mm) front-to-back
- Toe grille is properly attached to the unit frame
- Cabinet is setting solid on all corners

Electrical Power

- House power turned on
- Unit is plugged in

Ice Maker

- House water supply connected to water valve
- No water leaks present at all connections - recheck in 24 hours
- Ice maker is turned ON
- Front filter must be flush with filter housing (select models)

Final Checks

- Shipping material removed
- Fresh food and freezer temperatures set
- Crisper humidity controls set
- Registration card sent in

Location

1. Choose a place that is near a grounded electrical outlet. Do Not use an extension cord or an adapter plug.
2. If possible, place unit(s) out of direct sunlight and away from range, dishwasher or other heat sources.
3. The unit(s) must be installed on a floor that is level and strong enough to support a fully loaded unit(s).
4. Consider water supply availability for models equipped with an automatic ice maker.
5. The unit(s) should be located where surrounding temperature will not exceed 110°F (43°C) or drop below 40°F (5°C).
6. For ease of installation, proper air circulation and electrical connections, see Figure 2-1 for recommended clearances.
7. DO NOT block the toe grille on the lower front of the unit. Sufficient air circulation is essential for the proper operation of the unit(s).

NOTE

The exterior walls of the refrigerator/freezer may become quite warm as the compressor works to transfer heat from the inside. Temperatures as much as 30°F warmer than room temperatures can be expected.

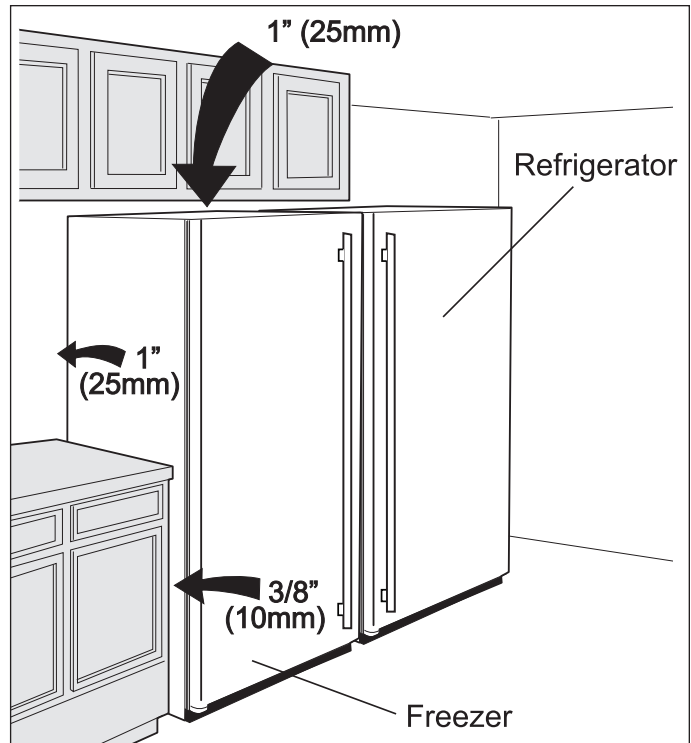


Figure 2-1. Installation Clearances

NOTE

If your refrigerator and/or freezer is placed with the door hinge side against a wall, you may have to allow additional space so the door can be opened wider.

Leveling

The freezer and/or refrigerator must have all bottom corners resting firmly on a solid floor. The floor must be strong enough to support a fully loaded freezer and/or refrigerator.

It is VERY IMPORTANT for your freezer and/or refrigerator to be level in order to function properly. If the unit is not leveled during installation, the door/lid may be misaligned and not close or seal properly, causing cooling, frost or moisture problems.

After discarding crating screws and wood base, use a carpenter's level to level the unit from front to back. Adjust the plastic leveling feet in front, ½ bubble higher, so that the door closes easily when left half way open.

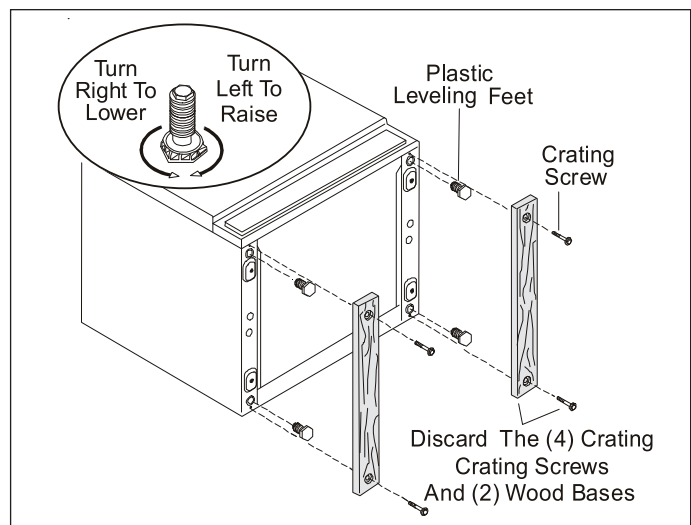


Figure 2-2. Leveling Unit

Installation Information

Leveling Instructions For All Refrigerator/Freezer Pairs

- Remove two leg levelers provided in literature bag. While unit is lying on its back for wood skid removal, install both leg levelers in rear of unit.
- Level door of first unit using all four levelers and slide unit into place. Recheck for levelness and adjust if necessary.
- Measure distance from floor to bottom of door on first unit. Adjust and level second unit so door height matches.
- Leg Level Adjustments:
 - One full turn of all four leg levelers will raise door 5/32".
 - One full turn of both front leg levelers will raise door 3/16" and tilt top of door back 7/16".
 - One full turn of both rear leg levelers will lower door 1/32" and tilt top of door forward 7/16".
 - One full turn of both side leg levelers will raise door 3/16" and tilt top of door 3/8".
- Slide second unit into place leaving a minimum gap of 3/16" between units for door swing clearance.
- This last step may require at least one extraction of the second unit to properly align units in a "built-in" application.

Electrical Information

These guidelines must be followed to ensure that safety mechanisms in the design of the unit will operate properly.

Refer to the serial plate for correct electrical rating. The power cord of the unit is equipped with a three-prong grounding plug for protection against shock hazards. It must be plugged directly in to its own properly grounded three-prong receptacle, protected with a 15 amp time delay fuse or circuit breaker. The receptacle must be installed in accordance with the current edition of the National Electrical Code (NFPA 70) the local codes and ordinances. Consult a qualified electrician. Receptacles with Ground Fault Circuit Interrupters (GFCI) are NOT RECOMMENDED. DO NOT USE AN EXTENSION CORD OR AN ADAPTER PLUG.

If the voltage varies by 10% or more, freezer and/or refrigerator performance may be affected. Operating any unit with insufficient power can damage the motor. Such damage is not covered under the warranty. If you suspect your voltage is high or low, consult your power company for testing.

To prevent the freezer from being turned off accidentally, do not plug the unit in to an outlet controlled by a wall switch or pull cord. Do not pinch, knot, or bend the power cord in any manner.

WARNING

Avoid fire hazard or electric shock. Do not use an extension cord or an adapter plug. Do not remove any prong from the power cord.

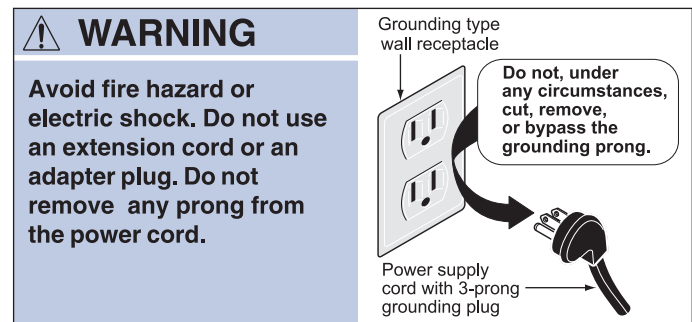


Figure 2-3. Electrical Receptacle

WARNING

Never unplug the freezer by pulling on the power cord. Always grip the plug firmly and pull straight out from the receptacle.

Turning the control to "OFF" turns off the compressor but does not disconnect power to other electrical components.

Cut-Out Dimensions

1. Minimum opening of 66" High x 33" Wide x 25-1/4" Deep is required for a single-unit "Built-In Look" installation. 66" Wide is required for double-unit installation. (66" High to be measured from finished floor to underside of soffit or overhead cabinet.)
2. Minimum 25-1/4" depth requires recessed electrical outlet and copper water line.
3. Remove all wall / floor molding prior to built-in installation.
4. When installing a unit adjacent to wall, cabinet or other appliance that extends beyond front edge of unit, 20" minimum clearance is recommended to allow for optimum 140° door swing, providing complete crisper access and removal. (Absolute 4" minimum clearance will ONLY allow for 90° door swing which will provide limited crisper access with restricted removal.)
5. Water line for ice maker can enter opening through floor or rear wall. Copper tubing is recommended between cold water line and water connection location. Recommended water line tubing is 48" minimum length by 1/4" diameter. Installation of easily accessible shutoff valve in water line is required.
6. To allow for ease of moving out side-by-side units after installation, 84" minimum length of coiled copper tubing recommended.
7. If optional Single or Double Trim Kit is to be used, different cutout dimensions are required.

Optional Accessories

Single All-Freezer Kit (SFRRSRKIT)

Single All-Refrigerator Kit (SRRRSRKIT)

Double All-Freezer/All-Refrigerator Kit (DUORSRKIT)*

*Louvered Trim Kit (DUORSRKIT) is NOT compatible for installation with panel-ready models.

Single Louvered Trim Kit (SRRRSRKIT)

For single All-Refrigerator installation. Includes louvered top grille and vented, louvered toe kick, 4" riser with leveling system and side / top trim pieces.

Double Louvered Trim Kit (DUORSRKIT)

For All-Freezer/ All-Refrigerator side-by-side installation. Includes full-width, louvered top grille and vented, louvered toe kick, two 4" risers with leveling systems and side / top trim pieces.

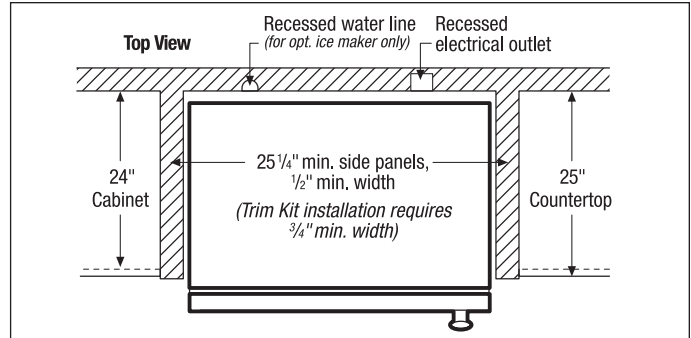


Figure 2-4. All Freezer Unit Cut-out

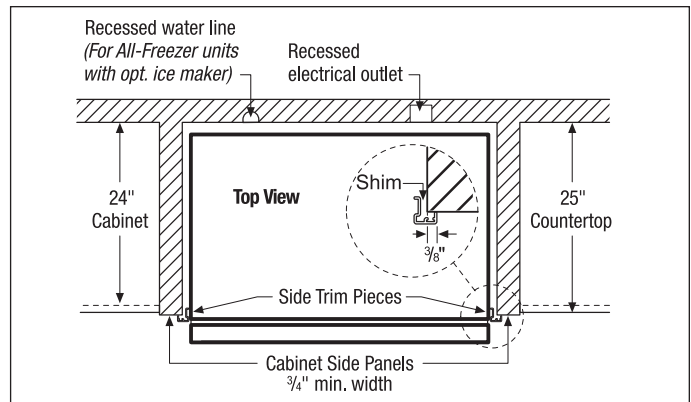


Figure 2-5. All Refrigerator Unit Cut-out

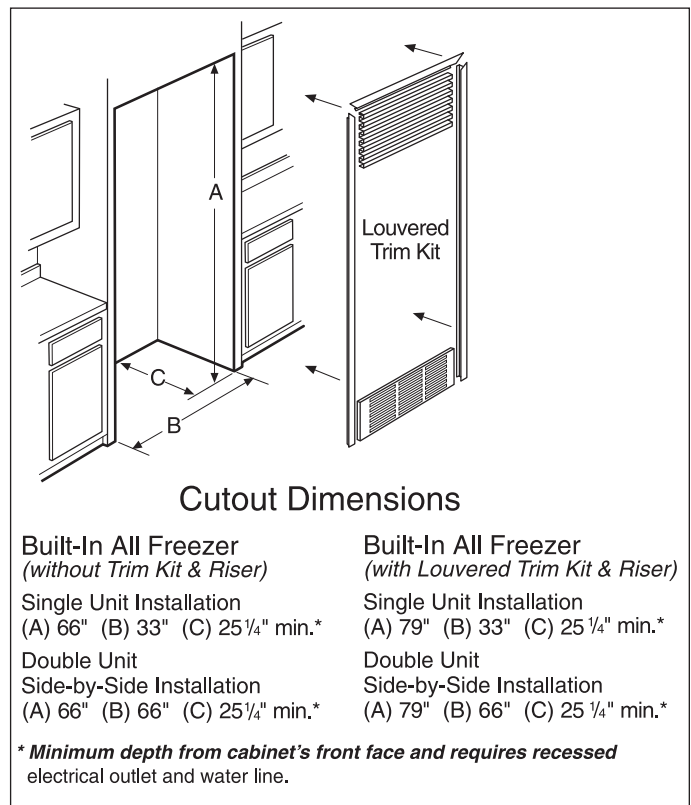


Figure 2-6. Trim Kits

Installation Information

Water Supply

The ice maker (if equipped) requires a permanent water supply to function correctly. During installation, establish this water supply by connecting a copper tube from the household water system to a valve at the rear of the unit.

WARNING

To avoid property damage:

- Use copper tubing for the water supply line (plastic tubing is more likely to leak). Manufacturer is not responsible for any damage if plastic tubing is used for supply line.
- Ensure water supply and installation comply with state and local laws and regulations.
- DO NOT install water supply tubing where temperatures fall below freezing.
- Chemicals from a malfunctioning softener can damage the ice maker. If the ice maker is connected to soft water, ensure that the softener is maintained and working properly.

Requirements:

- Access to a cold water line with pressure of 20-120 psi. (System supplied with cold water only.)
- Copper tubing with 1/4 inch (6.4mm) Outside Diameter (OD). Length is the distance from the rear of the unit to your household water supply line, plus seven (7) feet (2.1 meters).
- A shut-off valve for the connection between your household water line and the refrigerator supply line. DO NOT use a self-piercing shut-off valve.
- A compression nut and ferrule (sleeve) for the water supply connection at the water valve inlet.

NOTE

Water line kit number 5303917950, available from the appliance dealer at additional cost, contains 25 feet (7.6 meters) of 1/4" OD copper tubing, a saddle type shut-off valve (non piercing), (2) 1/4" brass compression nuts, (2) ferrules/sleeves, and instructions for installing a water supply line.

To connect the water supply to the rear of the unit (See Figure 2-7 and 2-8a):

1. Ensure that the unit is unplugged.
2. Flush the supply line until water is clear by placing the end of the copper tube in a sink or bucket and opening the shut-off valve. Close shut-off valve when flushing is complete.

3. Remove and discard the plastic cap from the water valve inlet at the rear of the unit.
4. Slide the brass compression nut, then the ferrule (sleeve) onto the copper tube.
5. Push the copper tube into the water valve inlet as far as it will go (1/4 inch or 6.4mm).
6. Slide the ferrule (sleeve) into the water valve and finger-tighten the compression nut onto the valve. Tighten another half turn with a wrench but DO NOT over-tighten.

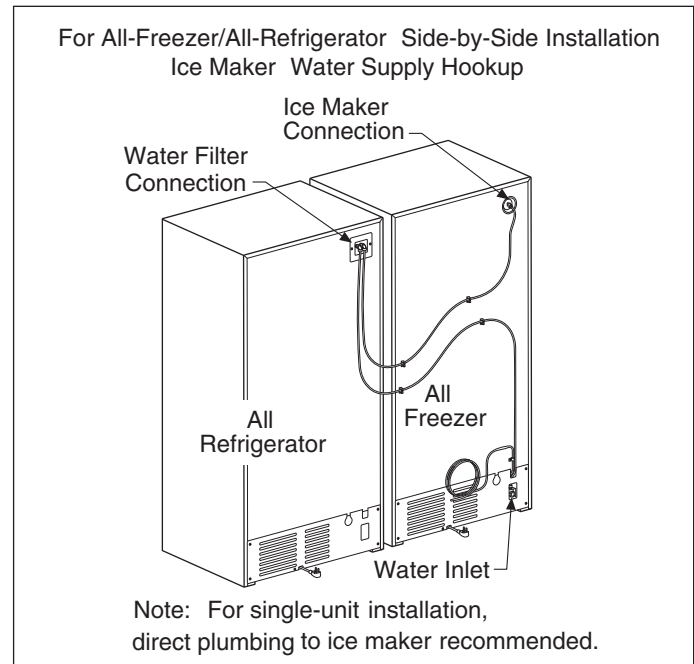


Figure 2-7. Water Connection

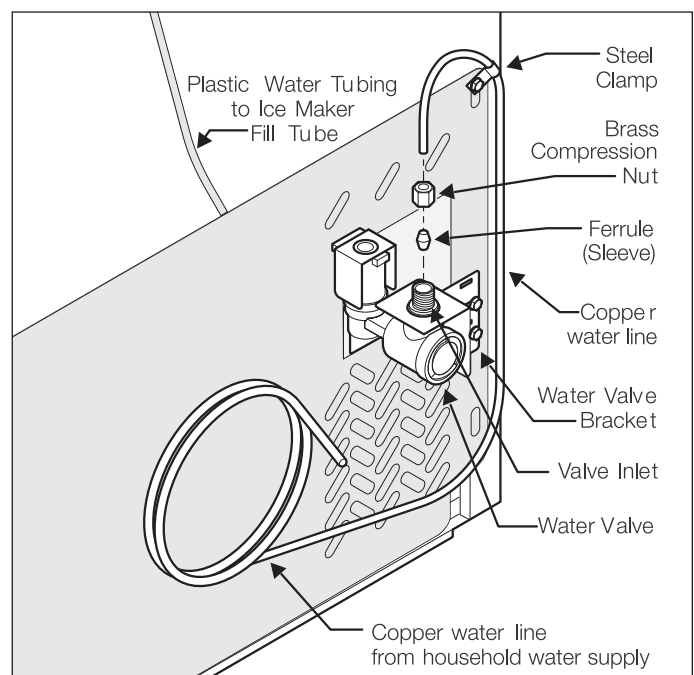


Figure 2-8a. Water Valve Connection

7. Secure the copper tube to the units' rear panel with a steel clamp and screw.
8. Coil the excess copper tubing (about 2½ turns) behind the unit as shown. Arrange coiled tubing to avoid vibration or wear against other surfaces.
9. Open water supply shut-off valve and tighten any connections that leak.
10. Connect unit to home power supply.
11. To turn ice maker On, lower wire signal arm. (See ice maker front cover for On/Off position of arm.)

Connecting the Water Valve to the Ice Maker

For models Serial Number WB92254219 and greater built after June 1, 2009, the units will have a different water valve than earlier production models. The new water valves have a quick connect outlet fitting which takes a standard .255 diameter plastic tube. The old style of water valves required a flanged tube and a threaded nut to make the water connection. (See Figure 2-8b)

Water Line Kit PN 297114101 will still be used to make the water line connections between the new style water valve and ice maker, however the flanged tube will have to be modified as described in the steps below:

1. Using a box cutters or knife, cut the pointed end from the water line just below the raised point. Be sure to cut straight across the water line. Do not leave open/cut end at an angle. (See Figure 2-8c)
2. Remove the cut end and plastic nut from the water line and discard.
3. Measure 11/16" from the end of the water line and place a mark on the line with a permanent marker.
4. Insert the modified water line into the push-type fitting on the new valve, making sure that the water line is pushed in up to the mark.
5. Inspect for leaks once water supply is turned on.

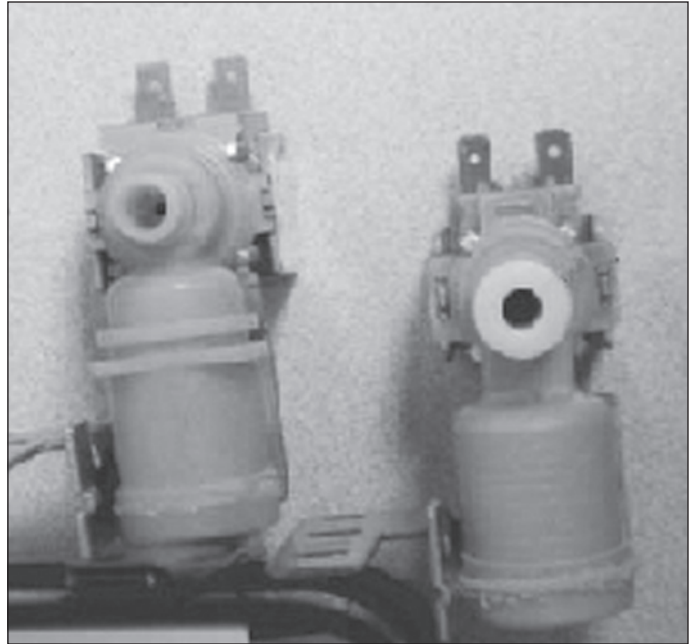


Figure 2-8b. Water Valves
The water valve on the left is the old style threaded outlet connection. The water valve on the right has the push-type outlet fitting.

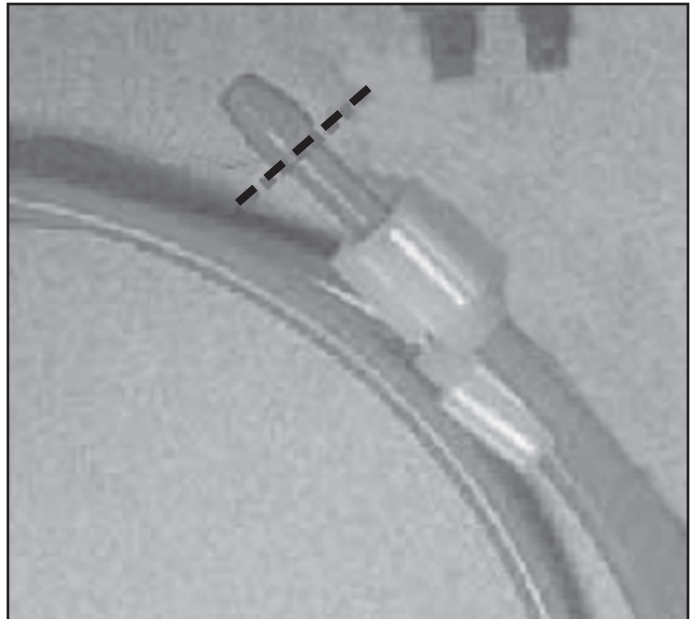


Figure 2-8c. Cut along dotted line to modify tubing.

Trim And Riser Kit Installation Instructions

The Dual Trim and Riser Kit consists of the following:

- Riser Kit - 2 packages
- Hardware Kit - 1 bag
- Trim Kit - 1 package
- Installation Instructions

The Single Trim and Riser Kit consists of the following:

- Riser Kit - 2 packages
- Hardware Kit - 1 bag
- Trim Kit - 1 package
- Installation Instructions

Before starting installation, have the following tools on hand:

- Phillips™ Screwdriver
- Shims - Wooden or Plastic
- Tape Measure (min. 7" length)
- Safety Glasses
- Tape (Duct or Masking)
- Carpenter's Level
- Drill & 1/8" Bit
- 1/2" Socket Wrench

Before You Begin

- Be careful when unpacking components. Do not use sharp objects when removing packaging material. This may scratch the surface of trim components.
- Make sure there is a large, clear area of floor (approx. 10' by 8') to assemble the trim kit. Place a drop cloth over the floor to prevent scratching of the trim kit and/or floor.
- Use extreme care when handling the metal trim pieces. Corners are very sharp and easily damaged if dropped.

The following items should be with the collar kit option:

ITEM	Part #	QTY
A Top Collar Trim--Dual Kit	297032602	1
A Top Collar Trim--Single Kits	297032601	1
B Left Hand Side Trim--All	297032703	1
C Right Hand Side Trim--All	297032702	1
D Bottom Grill--Refrigerator Single Kit	297032904	1
D Bottom Grill--Freezer Single Kit	297032905	1
E Top Grill--Dual Kit	297032803	1
E Top Grill--Single Kits	297032803	1
F Toe Grill--Dual Kit	297094700	1
F Toe Grill--Refrigerator Single Kit	297125800	1
F Toe Grill--Freezer Freezer Kit	297125900	1
G Center Strip Black--Dual Kit only	297034800	1
H Center Strip White--Dual Kit only	297034801	1
PLASTIC BAG CONTAINING THE FOLLOWING:		
I Hinge Cover	216809002	2
J Allen Head Wrench	1006	1
K Corner "L" Shaped Brackets	297034600	2
L Set Screws (for corner brackets)	297034700	4
M Phillips® Head Screw (#8 x 3/4")	50149	6(S) 7(D)

(S) for single unit kit; (D) for dual unit kit

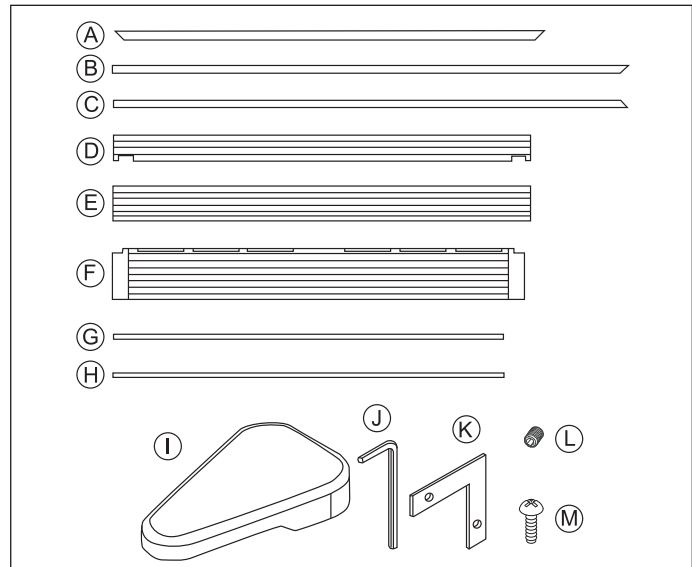


Figure 2-9. Trim Kit Components

Installation Information

Setting Up The Trim And Grill Assembly

1. Lay the parts out on a cleared area face down. Be sure to place a drop cloth over the floor to prevent scratching trim kit and/or floor. (See Figure 2-10).

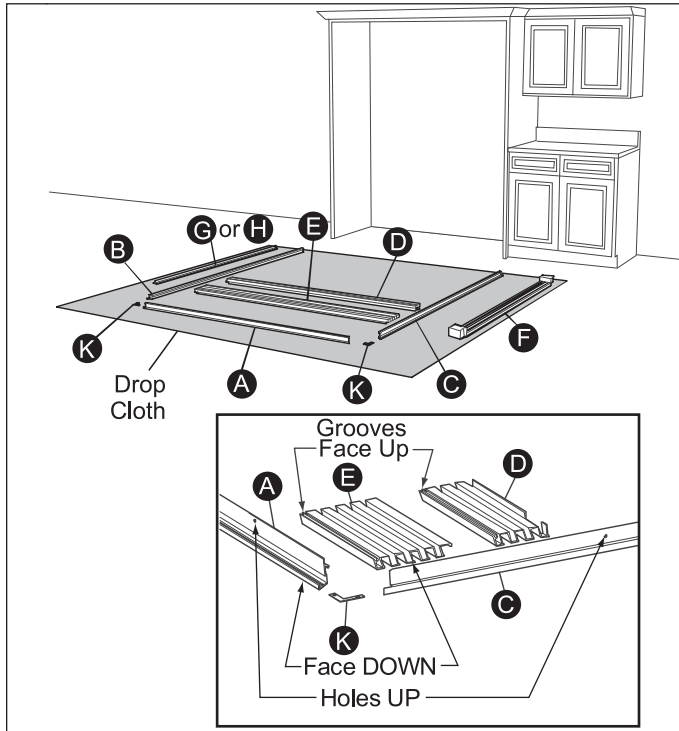


Figure 2-10.

2. Slide top grill (E) and bottom grill (D) together. Make sure the ends are flush, then tape together to prevent parts from sliding. (See Figure 2-11).

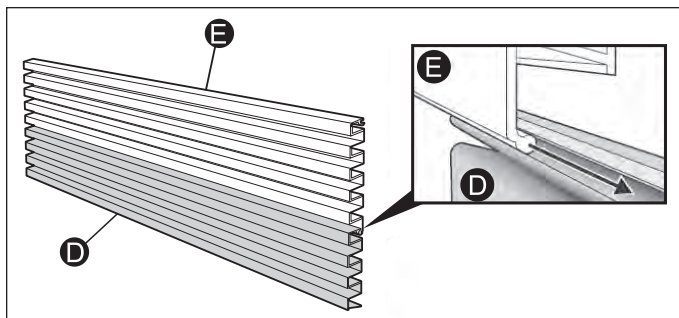


Figure 2-11.

3. Slide grill assembly into top collar trim (A). Tape together to prevent from sliding. (See Figure 2-12).

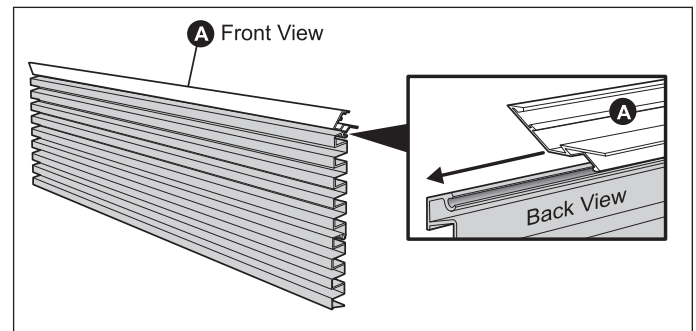


Figure 2-12.

4. Attach brackets (K) to the angled end of each side trim (B and C). Gently secure brackets to side trim by tightening set screws (L) only until snug to avoid dimpling the extrusion face. DO NOT overtighten. (See Figure 2-13).

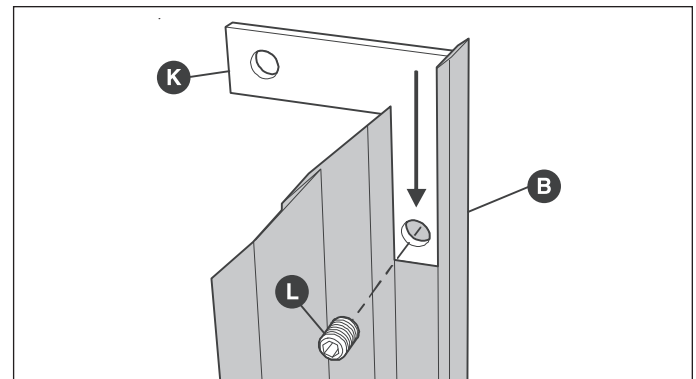


Figure 2-13.

5. Join each side trim (B and C) to the top trim (A). Make sure the ends of the Grill Assembly are captured in the channel of each side trim, then tape in place. Gently secure brackets (K) to top trim (A) by tightening set screws (L) only until snug to avoid dimpling the trim face. DO NOT overtighten. (See Figure 2-14).

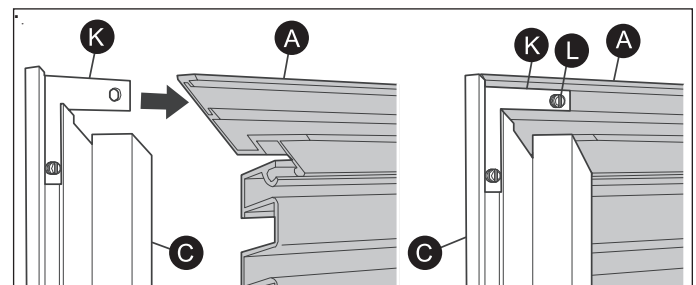


Figure 2-14.

Installation Information

Installing Trim & Grill Assembly Into Cabinetry

1. First, place protective covering where side trim will contact the floor near rough opening. Then, stand up the grill and frame assembly and center in rough opening. You may need to use several pieces of tape at the top corners and top center to temporarily hold the assembly in place. (See Figure 2-15).

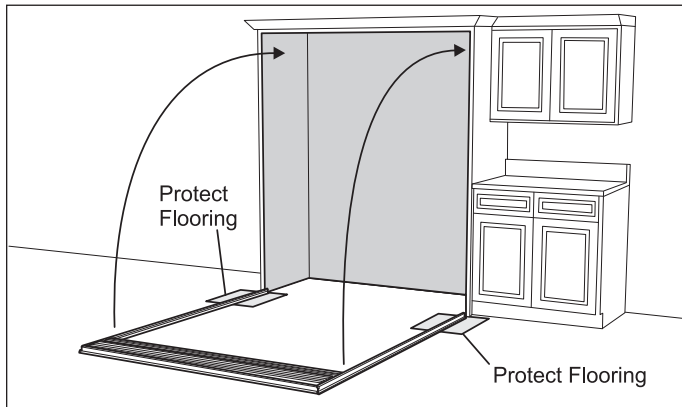


Figure 2-15.

2. Making sure the frame is flush up against the front surface of cabinetry, carefully run one mounting screw (M) through the center hole of the top trim (A) and into the cabinetry. DO NOT tighten at this time.

NOTE

Some cabinet substrates may require pre-drilling holes using a 1/8" diameter drill bit.

3. Level the top of the trim frame using a carpenter's level. (See Figure 2-16).

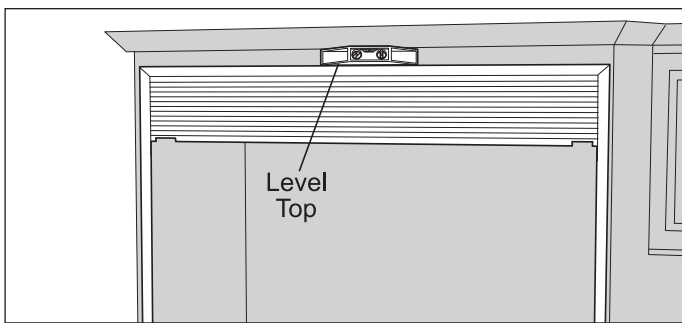


Figure 2-16.

4. Shim as necessary (shims are not included). (See Figures 2-17 and 2-18). Next, secure both ends of top trim (A) to cabinetry using two 3/4" mounting screws (M) through the holes at each end. Make sure all screws are snug across the top.

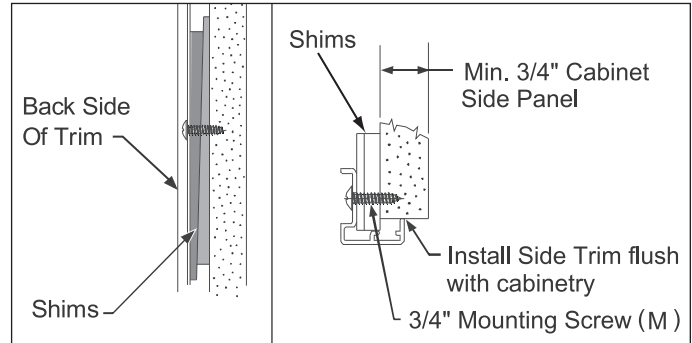


Figure 2-17.

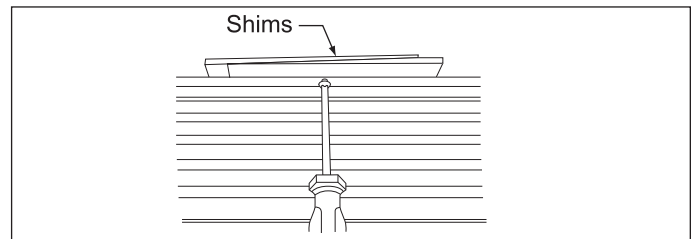


Figure 2-18.

5. Using a carpenter's level, check that each side is vertical. Shim as necessary (shims are not included). Next, secure top and bottom of each side trim to cabinetry using two 3/4" mounting screws (M). (See Figure 2-19).

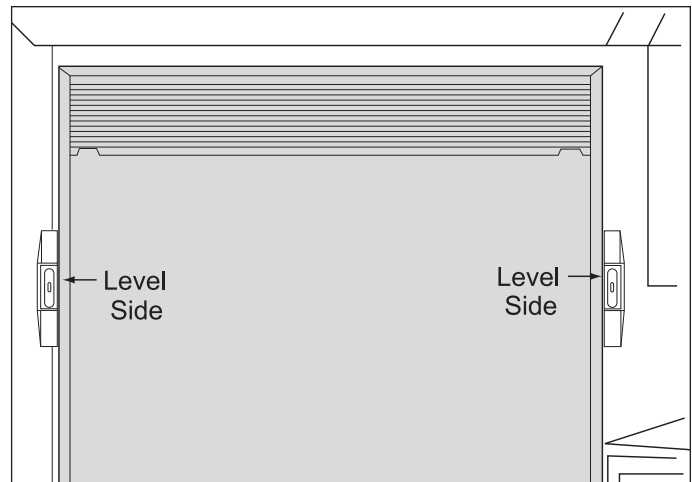


Figure 2-19.

Installing The Riser Kit On Early Models (See Figure 2-20 to identify)

1. First, place a protective covering on the floor to prevent damaging either the refrigerator unit, freezer unit or the floor.
2. Lay the unit on its side, making sure the side with the handle is laying closest to the floor to prevent door from falling open.
3. Remove the two plastic leg levelers on the bottom front side of the units.
4. Remove riser from its box. Locate plastic bag containing the mounting hardware needed to install the riser kit to the unit. The bag should contain four mounting bolts and four washers for each riser.
5. Position the riser on the bottom of the unit, making sure the slanted end is toward the back of the unit.
6. Place a washer on the bolt and feed the bolt through the hole in the top of the riser kit and into the threaded hole in the foot of the unit. **DO NOT TIGHTEN AT THIS TIME.**
7. Repeat the above procedure for the three remaining attachment points. (See Figure 2-20).
8. Once all four bolts are secured to the four feet of the unit, tighten the bolts using a 1/2" socket or open end wrench.
9. After installation, carefully upright the unit with the help of an assistant.

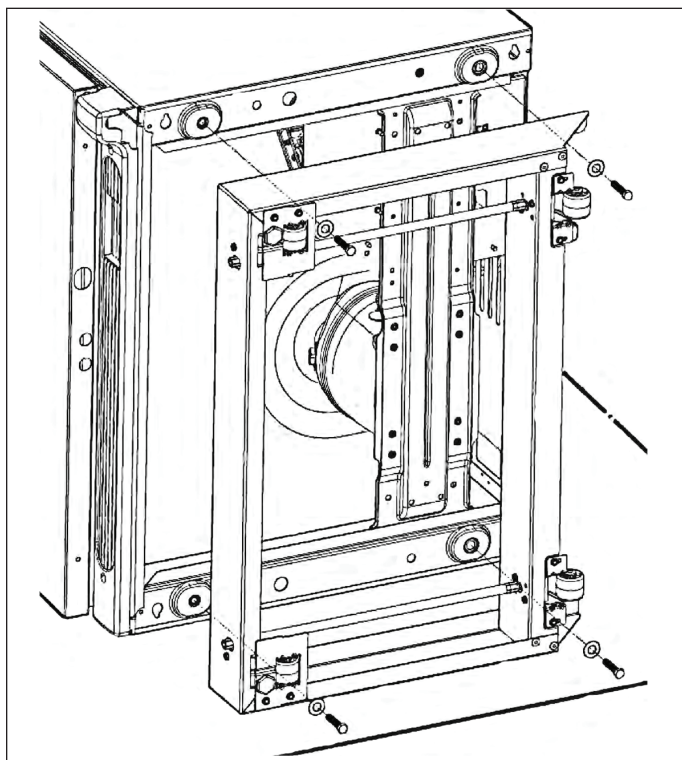


Figure 2-20.

Installing The Riser Kit On Late Models (See Figure 2-21 to identify)

1. First, place a protective covering on the floor to prevent damaging either the refrigerator unit, freezer unit or the floor.
2. Lay the unit on its side, making sure the side with the handle is laying closest to the floor to prevent door from falling open.
3. Remove the two front leg leveler brackets, (2) compressor support screws and rear leg levelers, if applicable, as shown in Figure 2-21.
4. Remove plastic spacers and Hex Bolt 5/16-18UNC x 1.5" from the box and assemble the two together as shown in Figure 2-22.
5. Using three HWD #12-24 X .70 screws, fasten the right front Riser Kit Spacer & Hex Bolt Assembly as shown in Figure 2-23.
6. Using three HWD #12-24 X .70 screws, fasten the left front Riser Kit Spacer & Hex Bolt Assembly as shown in Figure 2-23.
7. Using two HWD 1/4 -20 x .87 screws, fasten the right rear Riser Kit Spacer & Hex Bolt Assembly as shown in Figure 2-23.
8. Using two HWD 1/4 -20 x .87 screws, fasten the left rear Riser Kit Spacer & Hex Bolt Assembly as shown in Figure 2-23.
9. Now that all the spacers are assembled on the unit, you may position the riser on the bottom of the unit, making sure the slanted end is toward the back of the unit. See Figure 2-24.
10. Once in position, feed the riser through the four bolts. Properly mounted riser should hang in place.
11. Place a washer on the bolt and thread into the provided Nut (6/16" UNC). **DO NOT TIGHTEN AT THIS TIME.**
12. Once all four nuts are secured to the four bolts, tighten using a socket or an open wrench.
13. After installation, carefully upright the unit with the help of an assistant.

Installation Information

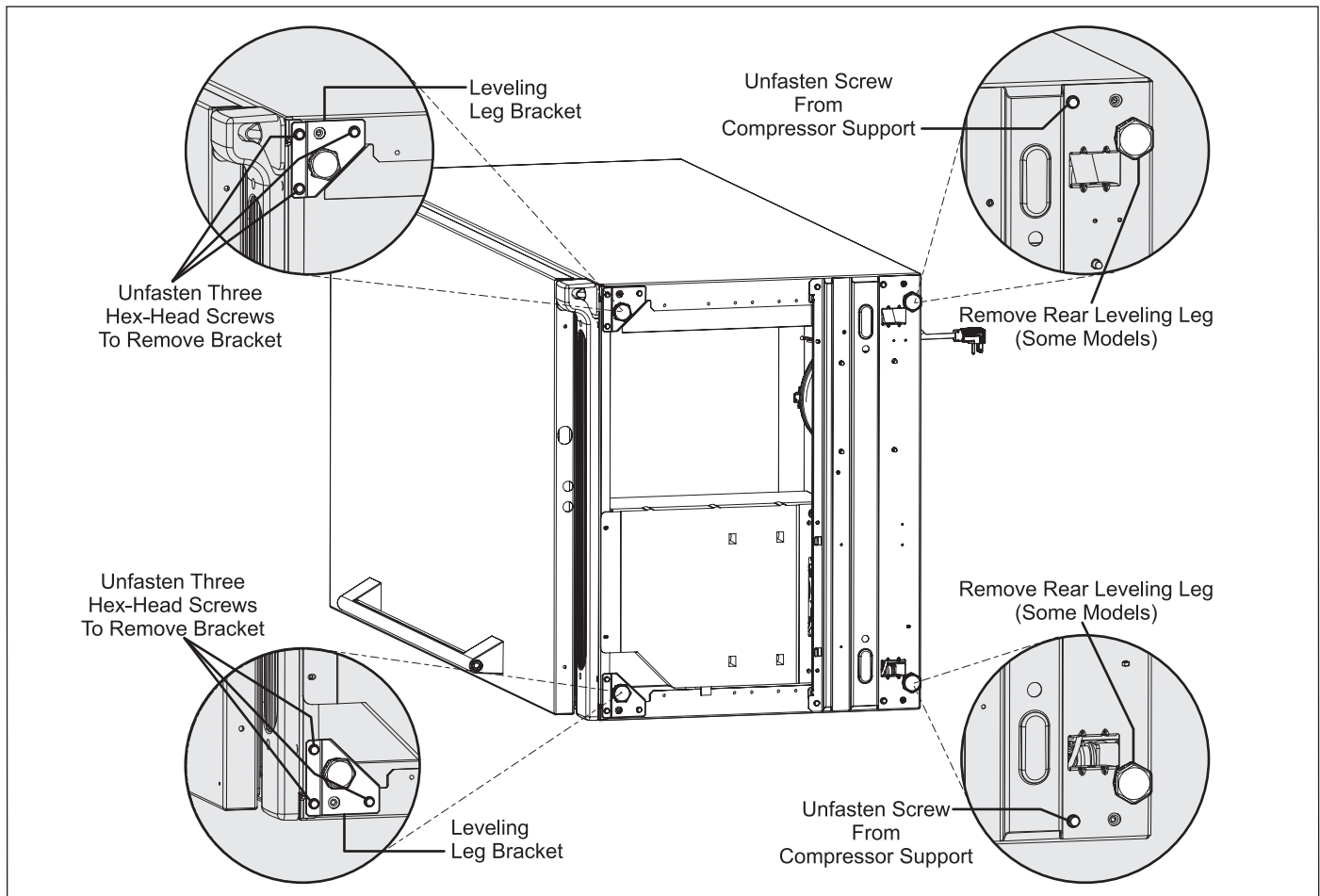


Figure 2-21.

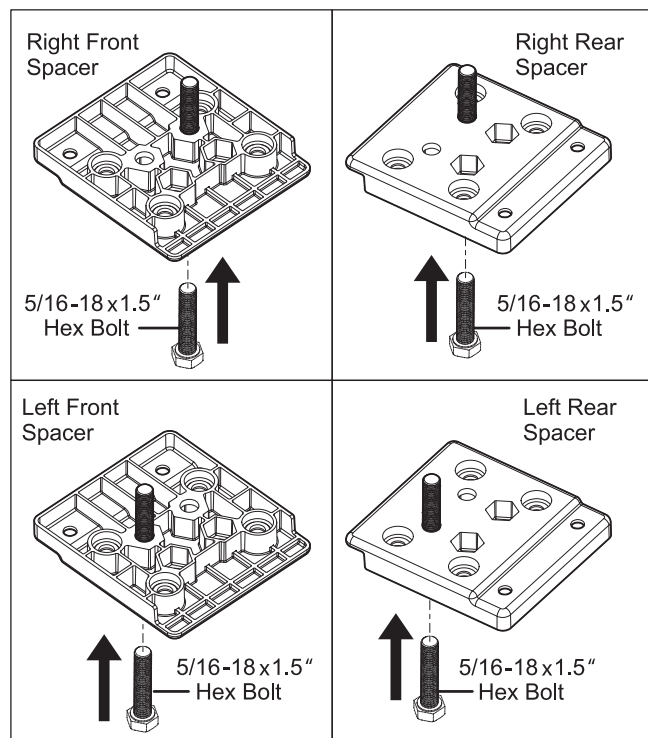


Figure 2-22.

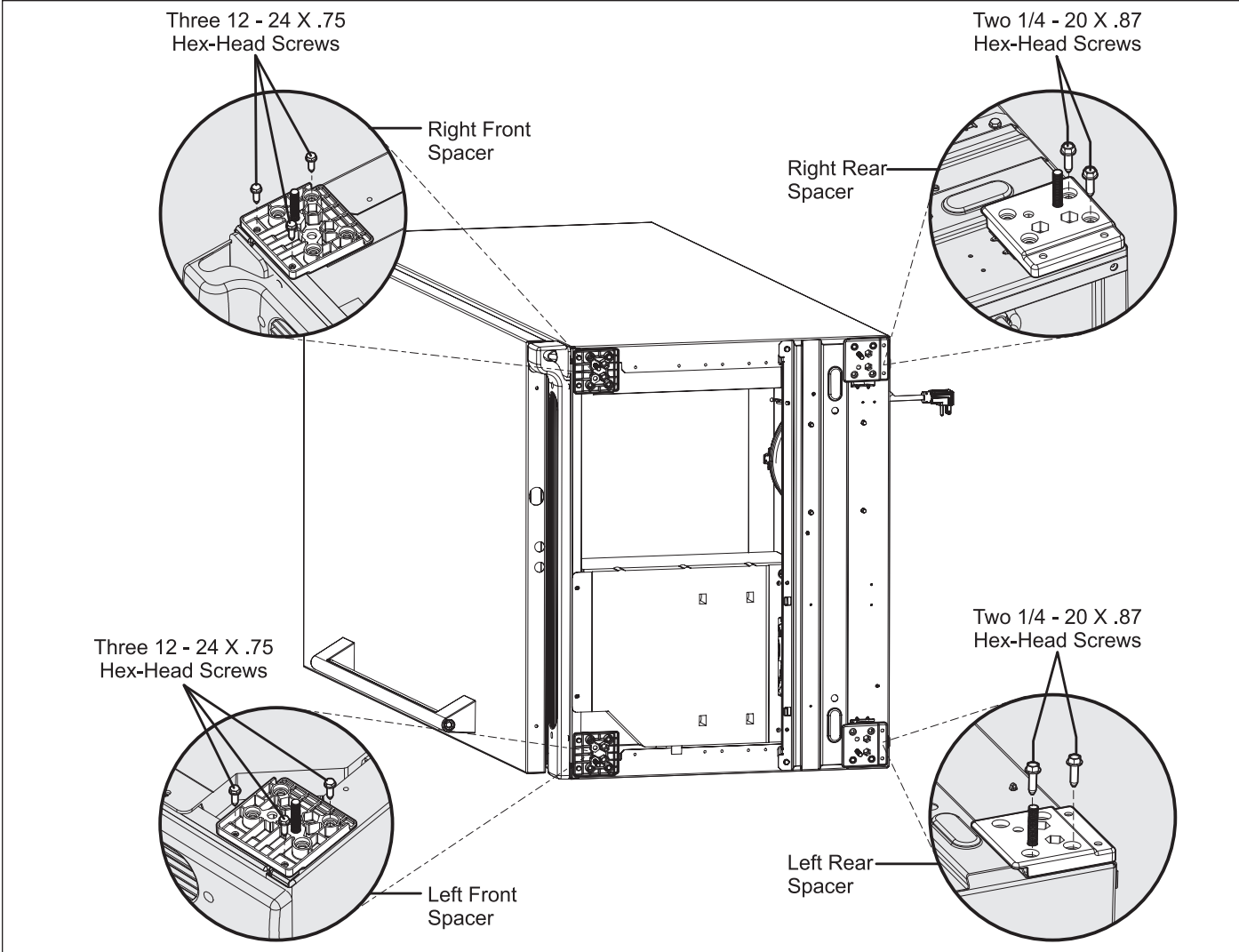


Figure 2-23.

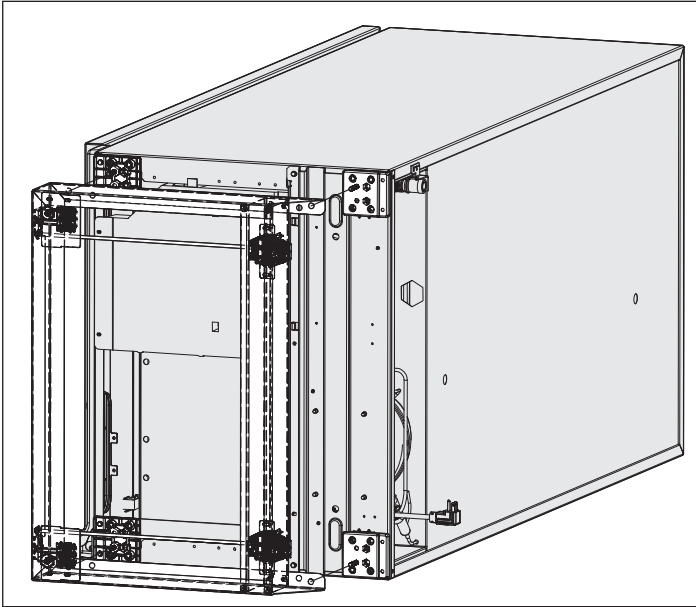


Figure 2-24.

Installation Information

Leveling The Refrigerator And Freezer

1. Remove the plastic top hinge covers and replace with the supplied silver hinge covers (I).
2. Remove the plastic toe grill panels at the bottom of each unit. Save the four screws as they will be used later in the installation.
3. Place a carpenter's level across the top of the door. Using a tape measure, adjust all four levelers so that each door is level and to a height of 69-3/8" across top front edge of door. (See Figures 2-25 and 2-26).

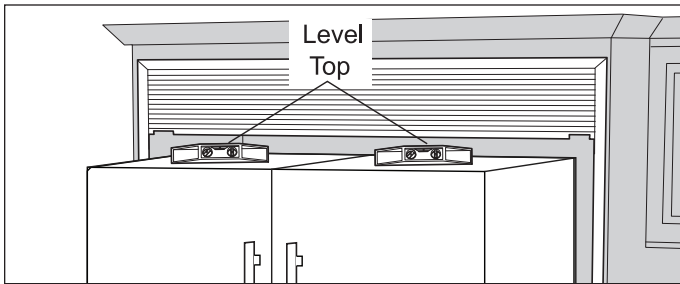


Figure 2-25.

4. Place a carpenter's level vertically on the front of the door and level so that the front surface of door is vertical. Recheck to make sure top front edge of door is still at a height of 69-3/8". Adjust as necessary. (See Figures 2-25 and 2-26).

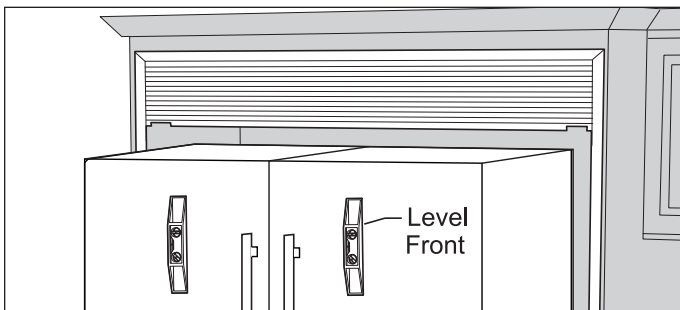


Figure 2-26.

How To Adjust Levelers

1. To adjust the height of the cabinet back, use an adjustable wrench and turn the leveling bolt clockwise to raise or counterclockwise to lower. (See Figure 2-27).
2. To adjust the height of the cabinet front, turn the front leg leveler clockwise to raise or counterclockwise to lower. (See Figure 2-27).

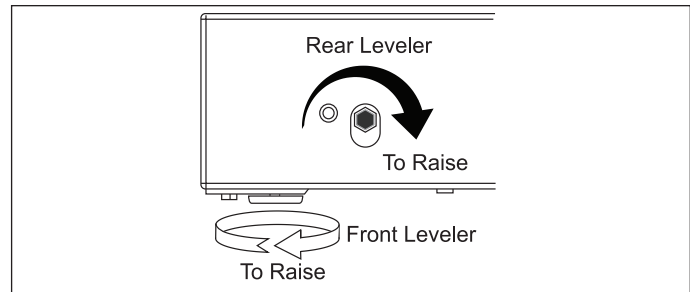


Figure 2-27.

Final Positioning

1. Connect the ice maker water lines (if so equipped). Refer to the "Connecting Ice Maker To Water Supply" in the literature bag for proper hook-up of water filter and ice maker to your household water supply before sliding the units in place. Plug power cords into their receptacles prior to pushing unit fully into place. If your receptacle is not centered in the space, make sure to slide the unit on the side opposite the receptacle into place first. Slide units into place one at a time. Slide units carefully to avoid pinching or damaging the ice maker and water filter hoses on the back of the unit.
2. Re-check the level of each unit. Depending on the flatness of your floor, you may need to readjust several times before achieving an acceptable state of levelness and alignment. Allow 3/8" gap between units for center trim (G or H). (See Figure 2-28).
3. In the case of a side-by-side installation of two units, install the magnetic center trim piece (G or H) in the gap between both units. The trim piece should be flush with tops of units and fit just above the toe grill.

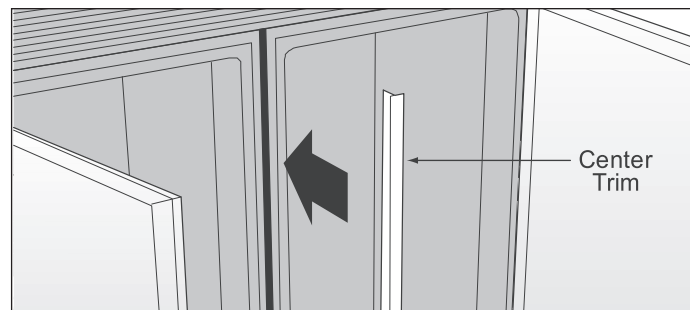


Figure 2-28.

4. Attach metal toe grill (F) using the screws saved during removal of the plastic grill panel(s). It may help to open door of each unit to aid alignment of screws. Run screws through the left-most and right-most grill holes and tighten until slightly snug. Adjust so the top of toe grill is parallel with the bottom of both door(s). For a dual unit installation, install two inner screws. Tighten all screws.

Care & Cleaning Of Your Trim Kit

The trim and grill kit surfaces are best cleaned with a cotton cloth dampened with a mixture of water and mild detergent. Avoid using abrasive cleaners as they will mar the surface of the metal components.

Door Removal

For some installations it may be necessary to remove the door to fit through the entrance of the installation site.

To remove the door, follow the steps below.

1. Make sure electrical plug is disconnected from the wall outlet.
2. Gently lay freezer on its back on a soft clean surface.
3. Remove kickplate.
4. Lift plastic cover off upper hinge assembly. (See Figure 2-29)
5. Using a 3/8" socket or wrench, extract the two bolts securing the upper hinge to the unit frame.
6. Using a 3/8" socket or wrench, extract the two bolts securing the lower hinge to the unit frame. Use a phillips head screwdriver to extract the remaining screw from the lower hinge assembly. (See Figure 2-30).
7. Lift the door assembly off of the unit frame.

Door Handle Mounting Instructions

For some installations the door handle may need to be removed. (See Figure 2-31)

To remove the door handle:

1. Remove screw cover plates by pushing in and sliding the screw cover plate off of the door handle.
2. Using a phillips head screwdriver, extract the screws securing the door handle to the door assembly.
3. Push upwards until the screw button assembly is free of the dovetail inside the handle assembly. Pull handle assembly from door.

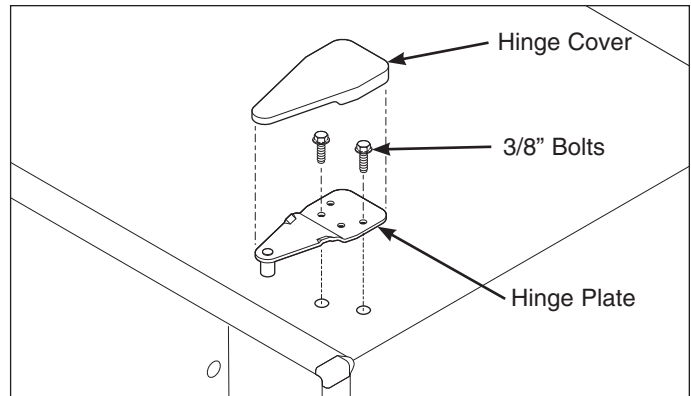


Figure 2-29. Top Hinge Removal

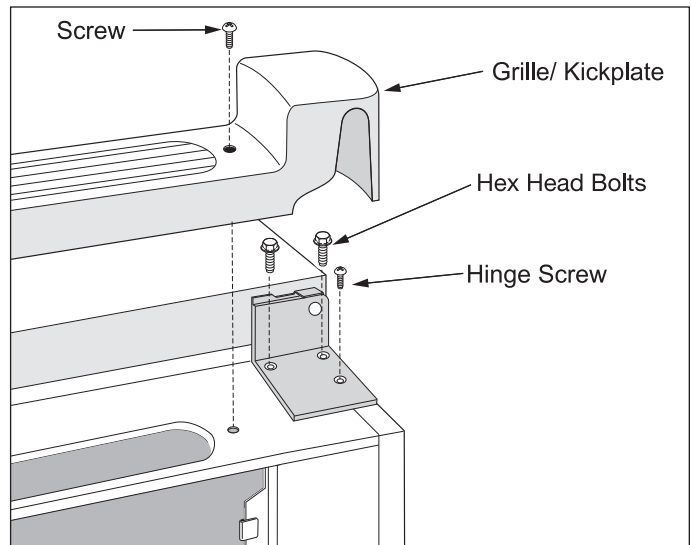


Figure 2-30. Bottom Hinge Removal

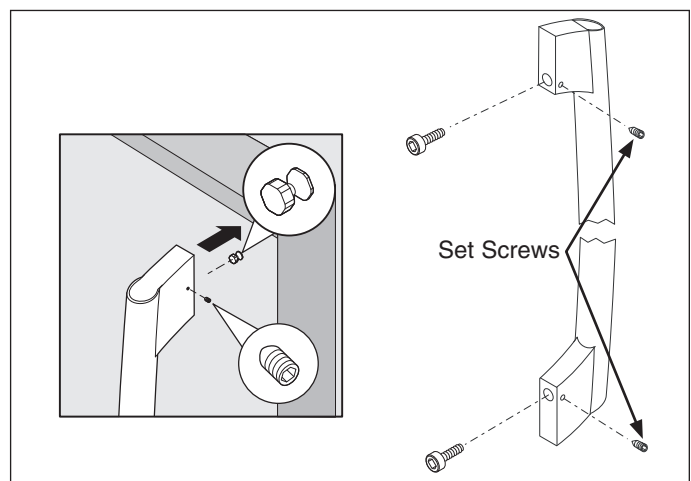


Figure 2-31. Handle Removal

Electronic Temperature Control

The electronic temperature control is located at the top center of the refrigerated compartment. Temperature is factory preset to provide satisfactory food storage temperatures. However, the temperature control is adjustable to provide a range of temperatures for personal satisfaction. To adjust the temperature setting, press the UP button on the control panel for warmer temperatures and the DOWN button for colder temperatures. Allow several hours for the temperature to stabilize between adjustments.

Power Up

On initial power up, control defaults to set temperature “4”.

Temperature Setting Selection

For settings 1 through 7 when the UP button is pushed (to increase temperature), the setting number will decrease by one and when the DOWN button is pushed (to decrease temperature), the setting number will increase by one.

To turn the control off, go to temperature setting “1”. Then press the UP key three times within five seconds. The display will show “0”.

To turn the control on, press the DOWN key three times within five seconds. The display will show “1”.

When the temperature setting is changed to “0”, the compressor and defroster (if applicable) will be turned off. Thermistor, Stuck Key and Low Voltage errors are disabled.

Fail Safe Mode

Refrigerator Fail Safe Mode:

When in fail safe mode, the refrigerator will run a “duty cycle” with the compressor running 5 minutes and then shutting off for 32 minutes. This will repeat until the error is interrupted or the unit enters the defrost mode. The refrigerator will remember compressor run time and will go into its normal defrost, engaging the heater until the defrost termination switch is opened and then will remain in the defrost mode for a total of 30 minutes, including heater “on” time and dwell time. Any time there is an interruption of power or fail safe mode, regardless of where the duty cycle was, the compressor will always run for 5 minutes even if it was in the run mode when fail safe was interrupted. Manual defrost will not activate during this condition.

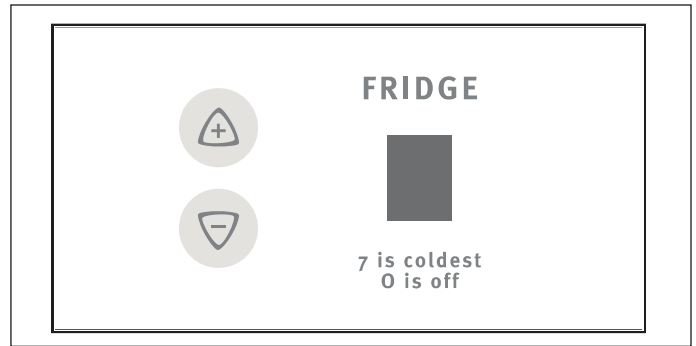


Figure 3-1.

Freezer Fail Safe Mode:

When freezer is in fail safe mode the unit will run as described for the refrigerator. The control will also remember the compressor run time and when run time is satisfied, a 30 minute defrost cycle will occur. Manual defrost will not activate in fail safe.

Error Indication

The following error conditions are monitored:

- Thermistor open or shorted.
- Stuck Key (the key appears to be pressed for longer than 30 seconds).
- Low Voltage (AC line voltage has dropped below 92 volts).

If any of these errors occur, the display will flash an “E” at one-second intervals.

Refrigerator:

Error indicator comes on at approximately 91 volts.

Freezer:

Error indicator comes on at approximately 92 volts.

During this condition compressor and heater are disabled.

Exiting Fail Safe Mode

Once a failure is resolved (such as thermistor or stuck key), the control resumes its normal operating mode under the setting it was at before the error occurred.

Electronic Control

Initiate Diagnostics Mode

The control will enter Diagnostics Mode when both keys are pressed for 3 seconds while on temperature setting “4”.

Diagnostics Indicator

The control will display the following (in 3-second intervals):

- “8” (7 segment display test)
- Model ID
- SW version
- Thermistor status
- “C” = short
- “O” = open
- “-” = good

The control will then return to normal operation.

Defrost Timing

The length of the defrost cycle is 30 minutes, this includes the heater “on” time and dwell time.

Refrigerator:

This will occur after every 8 hours of compressor run time.

Freezer:

This will occur after every 12 hours of compressor run time.

Manual Defrost Mode

When pressing both keys for 3 seconds while on setting “2”, the control will enter Manual Defrost mode. The display will show a “d”.

Manual defrost can be cancelled by again holding both keys for 3 seconds.

Manual Defrost mode will terminate after the defrost cycle has completed. The control will resume normal operation on setting “2”. The defrost cycle resets the compressor run time counter to zero.

Showroom Mode

When pressing both keys for 3 seconds while on setting “0”, the control will enter Showroom Mode. The display will show an “S” for three seconds. Showroom mode allows control functions to be demonstrated without having the defrost heater or compressor operational. Showroom mode is cancelled in the same manner as initiating it. The display will show a “-” character for one second followed by an “S” for three seconds.

Compressor Run Time (CRT) Display Mode

When pressing both keys for 3 seconds while on setting “5”, the control will display the current compressor run time (in seconds) in five digit decimal format. Leading zeros will be displayed if required. Each digit will be displayed for three seconds followed by a “-” character for one second. When all 5 digits have been displayed, the control will issue two consecutive “-” characters and resume normal operation on setting “5”.

Compressor Delay Start

When the compressor is turned off, it will not start again for 13 minutes if a freezer, and 4 minutes if a refrigerator.

Memory Retention

Whenever power is restored to the control after a power loss, the control resumes normal operation under the setting in which it was in before power was lost. However, if the setting is changed during fail safe, then the new setting will not be saved, and the control will resume operations under the last setting it was on before the failure occurred. Compressor run time (CRT) is retained while the control has power applied and is recovered after a power down/up cycle.

Voltage Range

The control operates normally down to a line voltage of 92 volts. Below this voltage, the compressor is turned off and an “E” will flash on the display at one-second intervals. Once the voltage rises above 92 volts, the control resumes normal operation

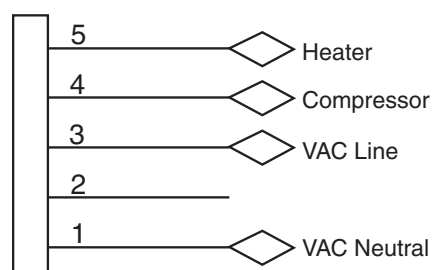
Stuck Key

If either key is held in for more than 30 seconds, the control enters fail-safe operation.

Main Power Connector

To test function of defrost heater and compressor:

Connect an AC voltmeter from pin 1 (neutral) to pin 3, 4, or 5. If line voltage is present, that output is on. If line voltage is 0V, the output is off.



Side Mounted Ice Maker

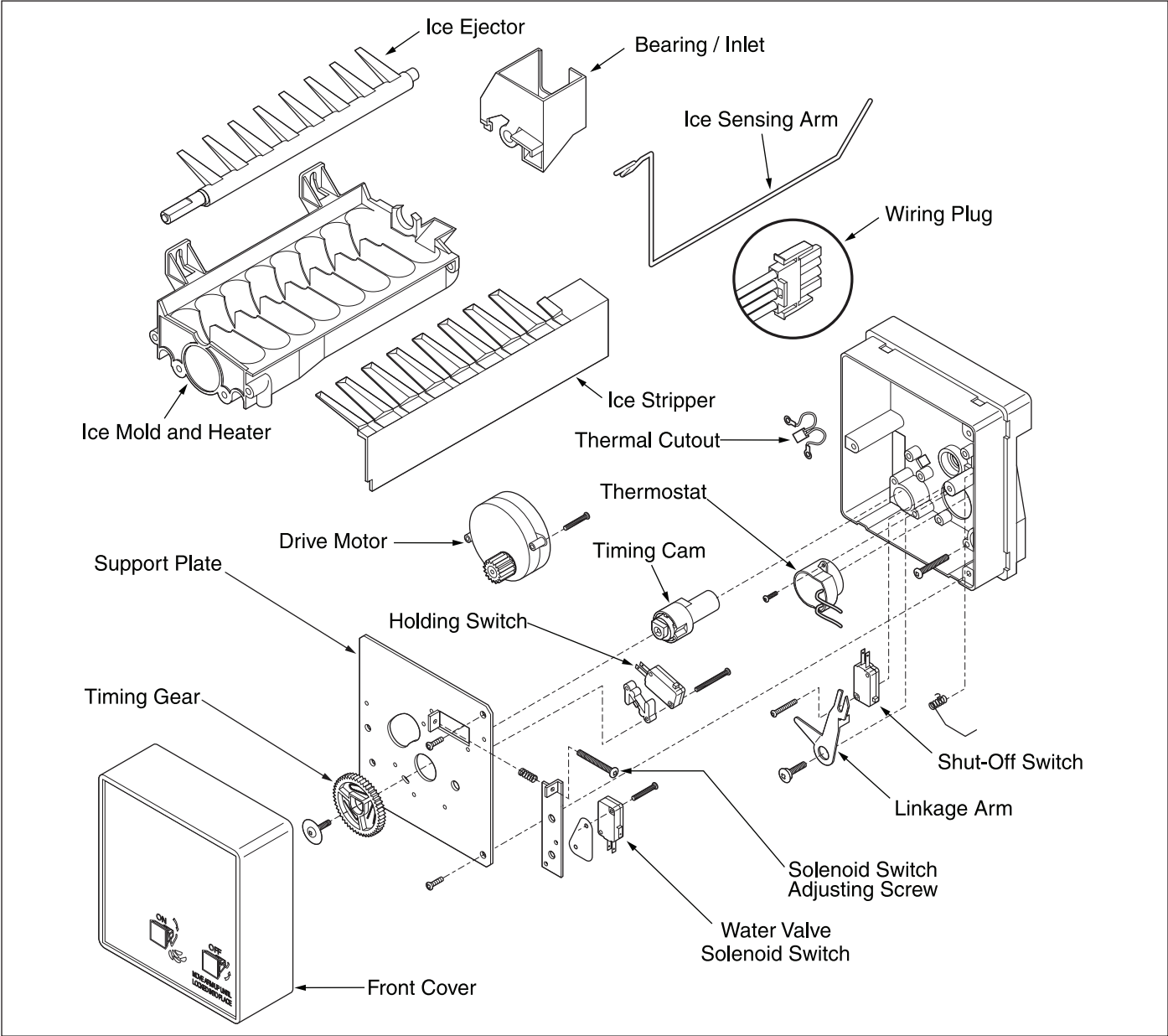
The Ice Maker is designed to produce ice automatically. The length of time between harvest cycles will vary, depending on load conditions, door openings, ambient temperature and freezer temperature and water temperature. These factors must be taken into consideration when checking the ice production rate.

With a temperature of -2°F to +5°F in the freezer, the rate of harvest will be 40 to 96 cubes per 24 hour period.

The ice maker is wired across the line and will harvest ice in the refrigeration or defrost cycles.

The water valve and solenoid assembly are both mounted in the compressor compartment.

A tube extends from the water valve up the rear wall of the freezer to a water inlet spout that directs the water into the fill trough. The water fill spout connects to a housing in the back of the freezer and directs water flow into the ice maker from the back of the mold.



Ice Maker

Ice Maker Components

Front Cover

A decorative molded plastic front cover encloses the operating mechanism of the ice maker that protects the mechanism from moisture. It is essential that the cover be in place on an operating ice maker to protect against possible contact with the mechanism by the user.

Ice Mold

The ice mold is die-cast aluminum with the ice maker thermostat bonded to its front surface. The mold has a semi-circular interior partitioned into equal size compartments. Water enters at the side of the mold, through a fill trough. A film of silicon grease on the top edge of the mold prevents siphoning of water by capillary action.

Mold Heater

A mold heater, rated at 112 watts at 115 volts, 108 ohms \pm 10%, is covered with an aluminum sheath and embedded in the grooved section on the underside of the ice mold. When the mold heater is energized, the ice contact surface within the mold is heated enough to allow harvest of the ice pieces.

The mold heater is wired in series with the ice maker thermostat, which acts as a safety device.

The heater is staked in place, and is replaced as part of the ice maker mold. A thermalmastic sealer is placed between the heater and the mold to ensure good thermal contact.

Ice Stripper

An ice stripper is attached to the mold to prevent ice pieces from falling back into the mold. It also serves as a decorative side cover.

Ice Ejector

The ejector blades are molded from delrin, and extend from a central shaft, which turns in nylon bearings at the front and rear. Each blade sweeps an ice section out of the mold. The drive end of the ice ejector is "D" shaped. Food grade silicone grease is used to lubricate the bearing surfaces.

Water Valve Assembly

The water valve is solenoid operated, and when energized, releases water from the household supply into the ice mold. The amount of water released is directly proportional to the length of time the water valve switch is energized. A flow washer inside the water valve, maintains a constant rate of water flow over a supply line with pressure ranging from 20 to 100 psig. It will not compensate for pressures below 20 psig, or greater than 100 psig. A No. 80-mesh screen, placed ahead of the flow washer, filters out foreign materials.

The solenoid coil draws 10 to 20 watts of power. The coil is wired in series with the mold heater, across the supply voltage.

Thermostat

The thermostat is a single-pole, single throw (SPST), bimetallic, disk-type, thermal switch. It automatically starts the harvest cycle when the ice is frozen. The thermostat closes at a temperature of $9^{\circ}\text{F} \pm 2^{\circ}$. Wired in series with the mold heater, the thermostat acts as a safety device against overheating in the event of mechanical failure. A thermalmastic bond is provided where the thermostat is mounted against the mold. A gasket prevents water from leaking into the support housing.

Sensing Arm & Linkage

The sensing arm is cam-driven and operates a switch that controls the quantity of ice produced. In the harvest cycle, the arm is raised and lowered during each of the two revolutions of the timing cam. If the sensing arm comes to rest on top of ice in the storage compartment during either revolution, the switch will remain open and stop the ice maker at the end of that revolution. When sufficient ice is removed from the storage container, the sensing arm lowers and ice production resumes. To manually stop the ice maker turn the switch located on the housing at the left end of the ice maker to Off. Operation is resumed when switch is turned back to On.

Timing Switches

The three timing switches used are single-pole, double throw (SPDT). They are identical except for function, and can be used interchangeably.

1. Hold Switch - assures completion of a revolution once the ice maker operation has started.
2. Water Fill Switch - opens the water valve during the fill cycle. It is the only adjustable component in the ice maker.
3. Shut-off Switch - stops ice maker operation when the storage container is full of ice. The switch is opened after the sensing arm is raised to its most upright position. The switch is mounted to the top right wall of the ice maker support.

Thermal Cut-Out (TCO)

The thermal cut-out is a one-time limit fuse used as a safety device. It is located under the mounting plate, in the head of the ice maker, between the thermostat and wire connector.

If the thermal cut-out opens, the cause of failure must be determined and corrected prior to replacing the TCO. Normal causes of the TCO failing are a bad thermostat or a shorted coil on the water valve.

Timing Cam & Coupler

Three separate cams are combined in one molded Delrin part:

1. Inner cam operates shut-off switch lever arm.
2. Center cam operates hold switch.
3. Outer cam operates water fill switch.

One cam end is attached to a large timing gear. The other cam end is coupled to the ejector.

Timing Gear

This large molded plastic gear is driven by the motor and, in turn, rotates the cam and ejector. A "D" shaped hole in the gear fits over the timing cam hub. Spacer tabs on the backside of the gear prevent the gear from binding on the mounting plate.

Motor

A low wattage, stall-type motor drives the timing gear. This gear turns the timing cam and ejector blades approximately one revolution every three minutes (1/3 RPM).

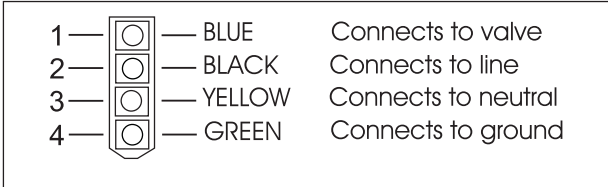
On/Off Switch

A single-pole, single-throw switch is mounted on the right side of the housing at the front of the ice maker. This switch is used to turn the ice maker off. Unlike the switch on the bail arm the on/off switch will stop the ice maker as soon as it is pushed, and it will not allow the ice maker to complete the revolution.

Wiring

A four-prong plug connects the ice maker wiring to the cabinet wiring harness. The ice maker assembly is wired across the line and will harvest in either the refrigeration or defrost cycles. A wiring diagram is located inside the front cover of the ice maker.

Ice Maker Connector Plug



Ice Maker

Installing Water Supply Line to Ice Maker

Supply line installation must comply with all applicable plumbing codes. The ¼" tubing, and any other plumbing materials required, should be obtained locally.

The ice maker should be connected to a frequently used cold water line to ensure a fresh water supply. Be sure to leak test all connections after the water supply has been turned on.

Water Valve Switch – Water Fill Volume

The amount of water fill is directly proportional to the length of time terminals "C-NC" of the water fill switch are closed. Closing occurs when the switch plunger drops into a cavity formed in the cam.

Different water valves have different flow rates. For this reason, anytime a water valve is replaced, the water fill must be checked and the fill switch must be adjusted if needed.

The correct water fill volume is 80 to 100 cc. To measure the fill volume, test-cycle Ice Maker and collect the water. Measure in a container calibrated in cubic centimeters (CC), the fill time is 5.0 seconds.

The fill volume is adjusted by increasing or decreasing the length of time the water fill switch remains closed.

To adjust the water fill switch, first determine how much water is needed. The adjusting screw is calibrated so that one complete revolution changes the water fill about 18 cubic centimeters. Turning the screw clockwise decreases the fill, while turning counterclockwise increases the fill.

NOTE

A vertical cold water line should be selected for the water supply. If a vertical line is not available, a horizontal line may be used, providing the connection is on the side or top of the pipe, but not on the bottom. Scale and foreign material in the pipe could cause stoppage of water flow if the connection is on the bottom.

Test Cycling Ice Maker

Operation of the ice maker, water refilling, and controlled ice storage, require proper functioning and timing of all components.

Consider the following:

- Has unit been properly installed and connected to sources of electrical power and water?
- Has freezer compartment evaporator pulled down to temperature?
- Is the ice maker turned on?
- Have several ice making cycles been completed to remove all the air from the water lines?
- Do the ejector blades make two revolutions per cycle? Is ice stored on blades after harvest?
- Is the water solenoid wired in series with the mold heater?

It may be necessary, on occasion, to test-cycle an ice maker to check its operation. This can be done on the repair bench or while mounted in the refrigerated compartment.

If ice maker is in an operating freezer, take precautions against the formation of condensate by allowing the cold, metal components to warm up before removing the front cover. This can be expedited by cycling the assembly with the cover in place and the water supply valve closed.

To manually cycle the ice maker, push the on off switch to the on position then push in harder against the spring loaded second set of contacts in the switch and hold in until the hold switch circuit to the motor is completed. When the motor starts, all components except the ice maker thermostat should perform normally. Once the ice maker completes its cycle, if additional testing is necessary you can push in on the switch again to start the ice maker into another cycle.

Operating Cycle Illustrations - Manual Cycle

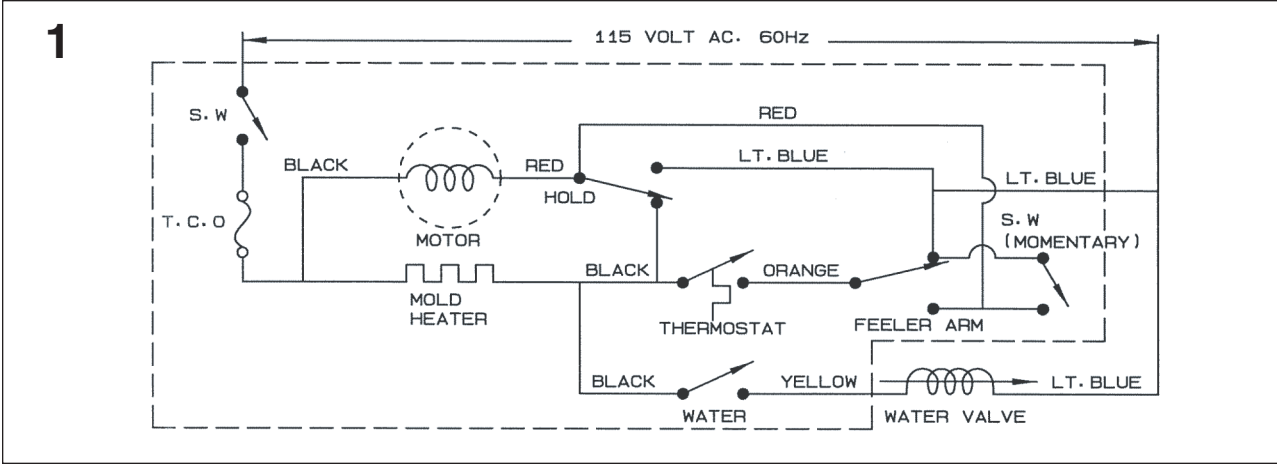
To manually cycle ice maker:

1. Turn the On/Off switch to ON
2. Press in on switch holding the spring loaded contact set closed, this will allow the motor to start.
3. Hold in on the switch for 10 seconds to allow hold switch contacts to close allowing the ice maker to continue through a cycle.

Operating Cycle Illustrations - Electrical

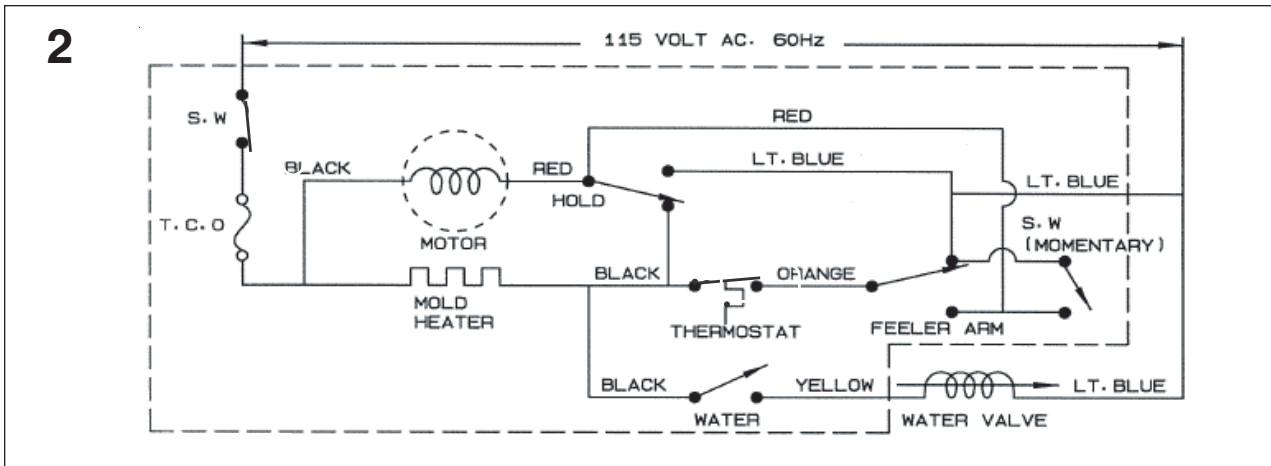
The following wiring diagrams illustrate the electrical operation of an ice maker.

- Ice Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat open.
- Motor not rotating.
- Mold Heater off.
- Control Arm in the down position.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NC.
- Water Fill Switch open.

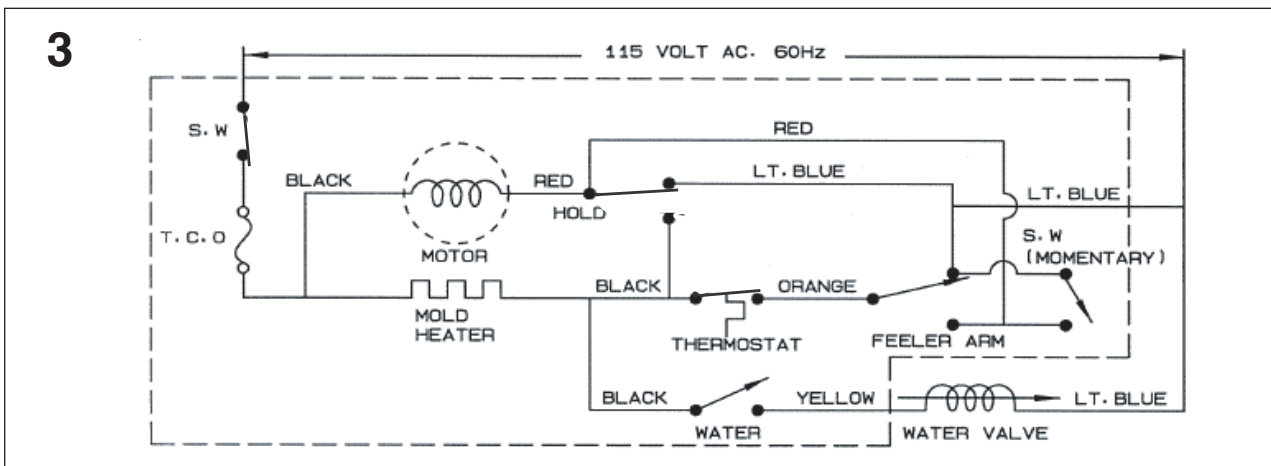


Ice Maker

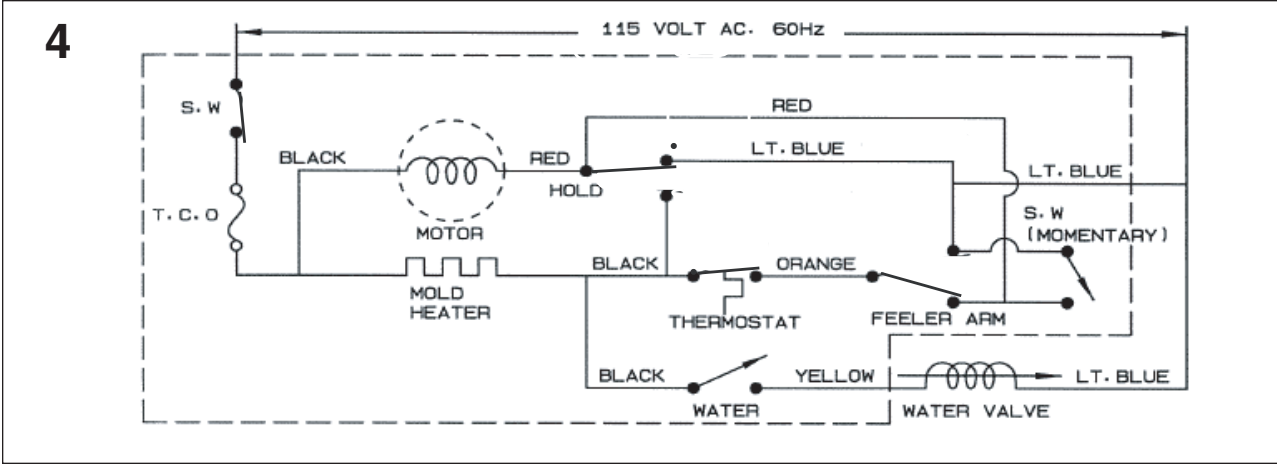
- Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat closes.
- Motor starting.
- Mold starting to heat.
- Control Arm in the down position.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NC.
- Water Fill Switch open.



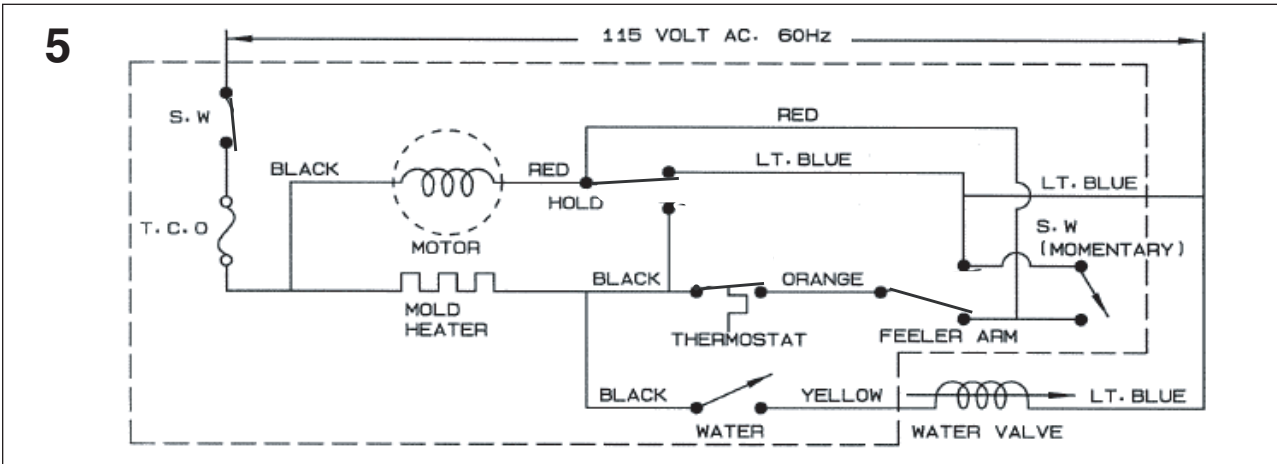
- Ice Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat closed.
- Motor starting to rotate.
- Mold starting to heat.
- Control Arm in the down position.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NC.
- Water Fill Switch open.



- Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat closed.
- Motor rotating.
- Mold heating.
- Control Arm swinging up.
- Feeler Arm Switch closed C to NC.
- Hold Switch closed C to NC.
- Water Fill Switch open.

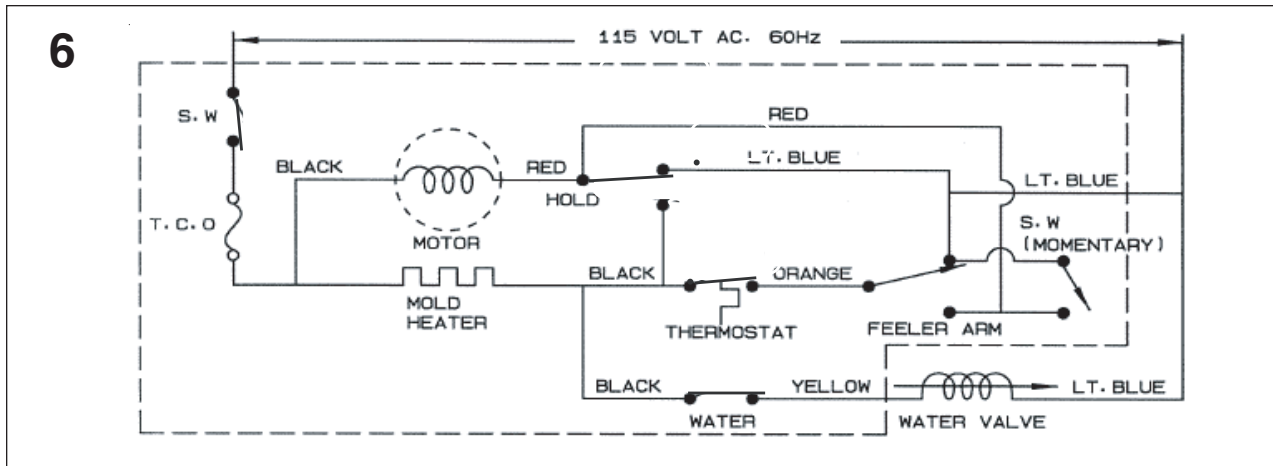


- Ice Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat closed.
- Motor stalls as ejector hits ice in mold.
- Mold heating.
- Control Arm swinging down.
- Feeler Arm Switch closed C to NC.
- Hold Switch closed C to NO.
- Water Fill Switch open.

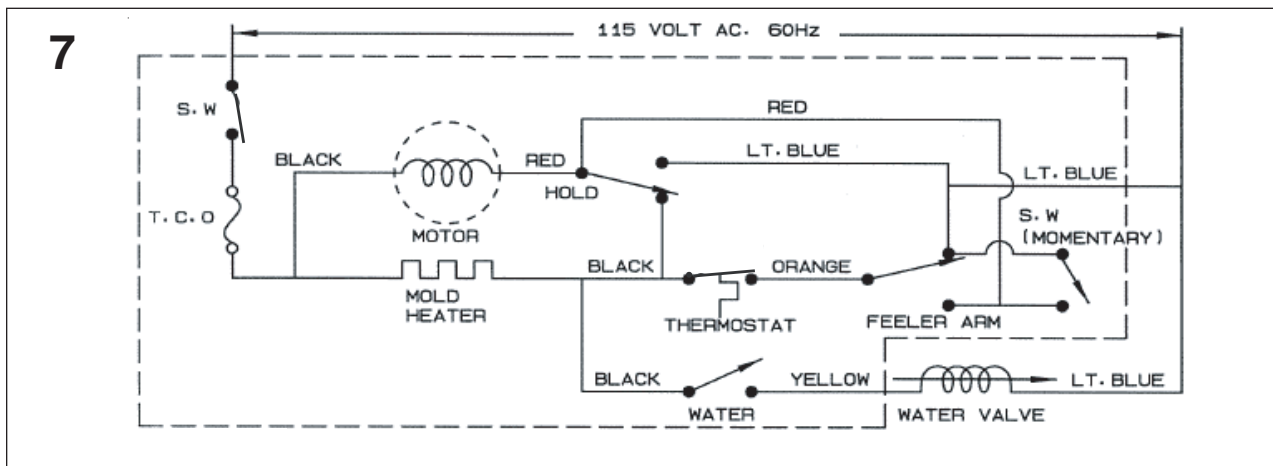


Ice Maker

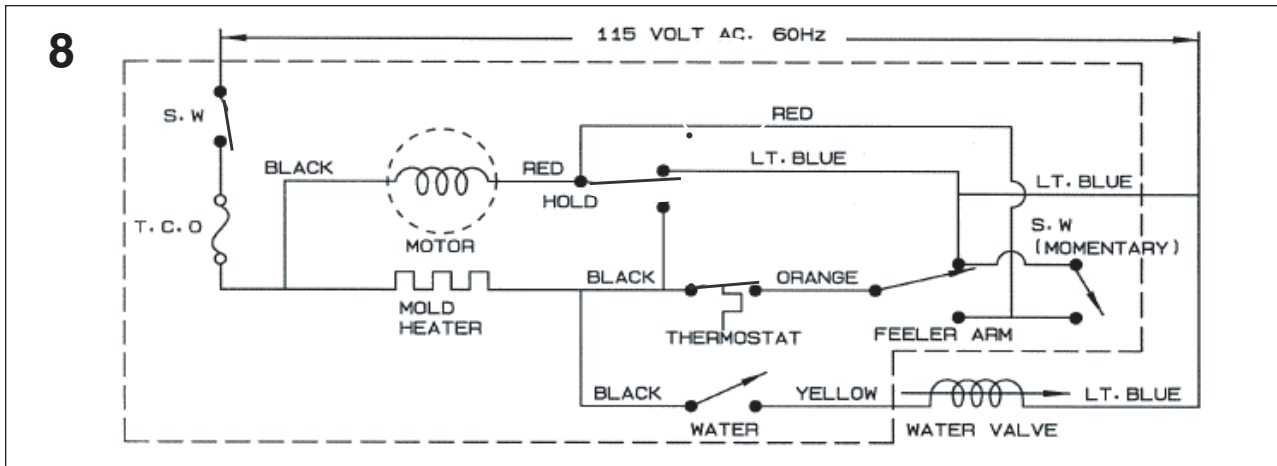
- Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat closed.
- Motor starts to rotate as ice breaks loose.
- Mold heating.
- Control Arm is down.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NO.
- Water Fill Switch closed but shorted open by thermostat.



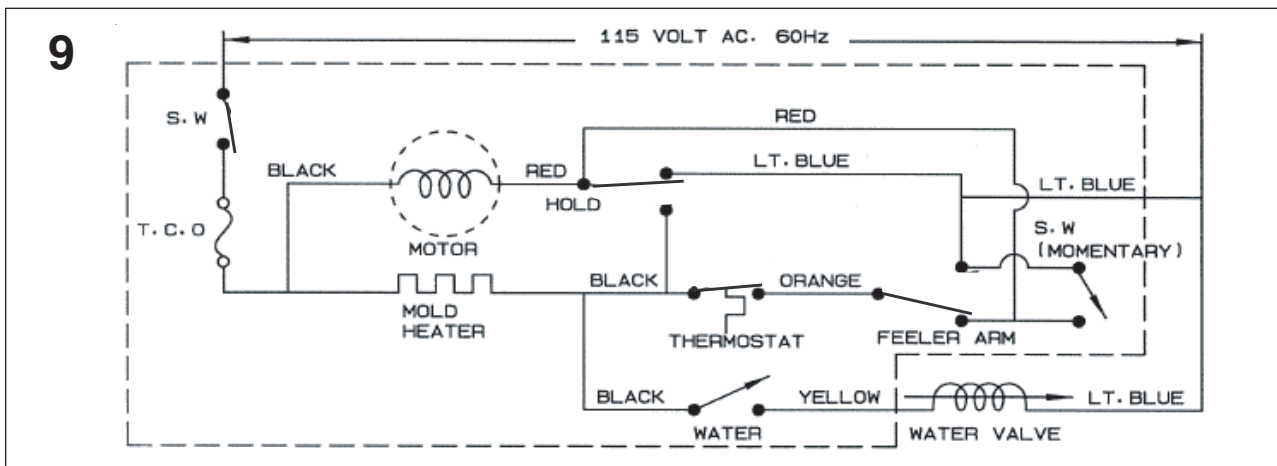
- Ice Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat closed.
- Motor is rotating.
- Mold heating.
- Control Arm is down.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NC.
- Water Fill Switch open.



- Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat closed.
- Motor is rotating.
- Mold heating.
- Control Arm swinging up.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NO.
- Water Fill Switch open.

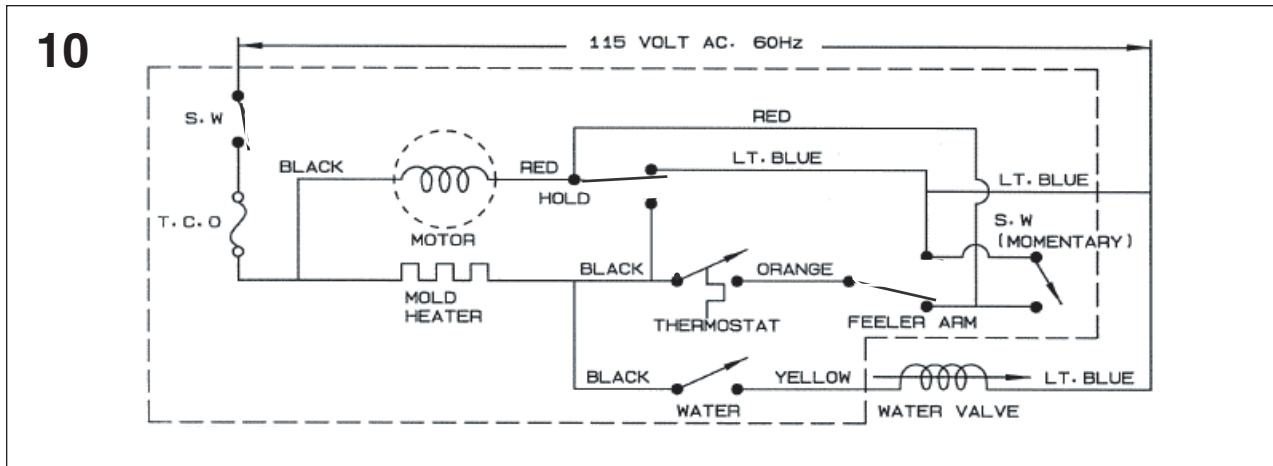


- Ice Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat closed.
- Motor is rotating.
- Mold heating.
- Control Arm swinging up.
- Feeler Arm Switch closed C to NC.
- Hold Switch closed C to NO.
- Water Fill Switch open.

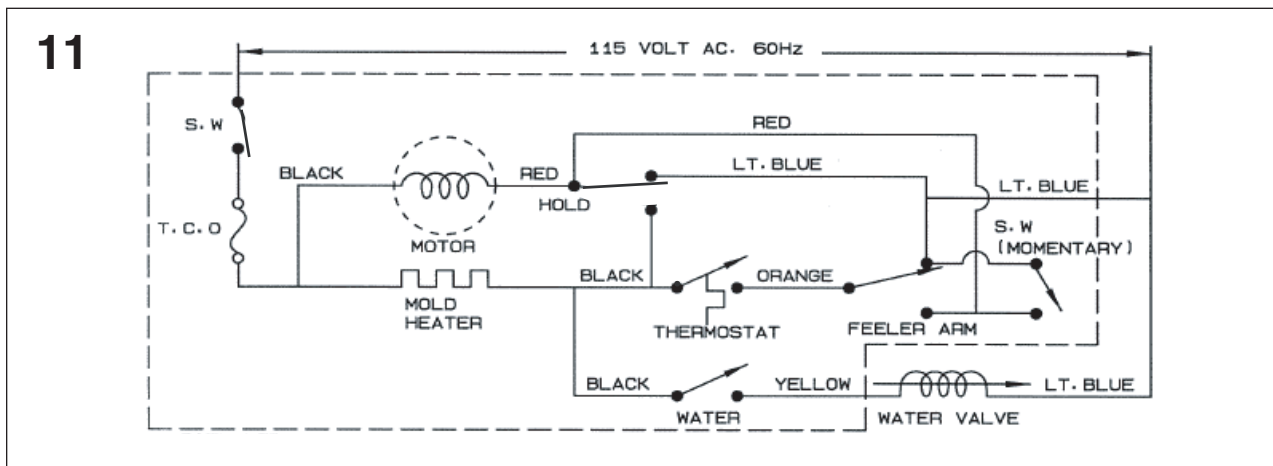


Ice Maker

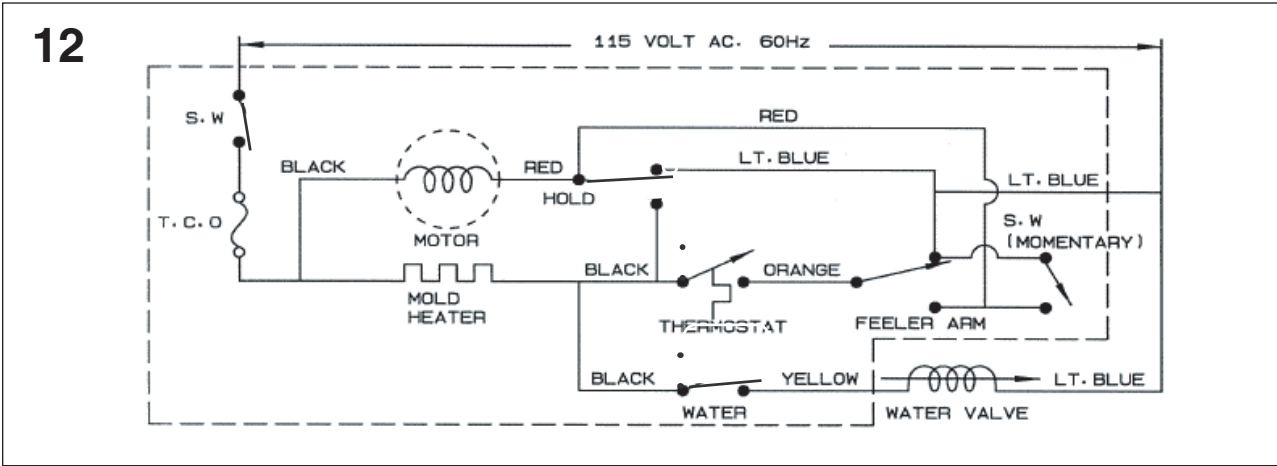
- Maker connected to electricity.
- Mold temperature above 40°F.
- Thermostat opens.
- Motor is rotating.
- Mold heater off.
- Control Arm swinging up.
- Feeler Arm Switch closed C to NC.
- Hold Switch closed C to NO.
- Water Fill Switch open.



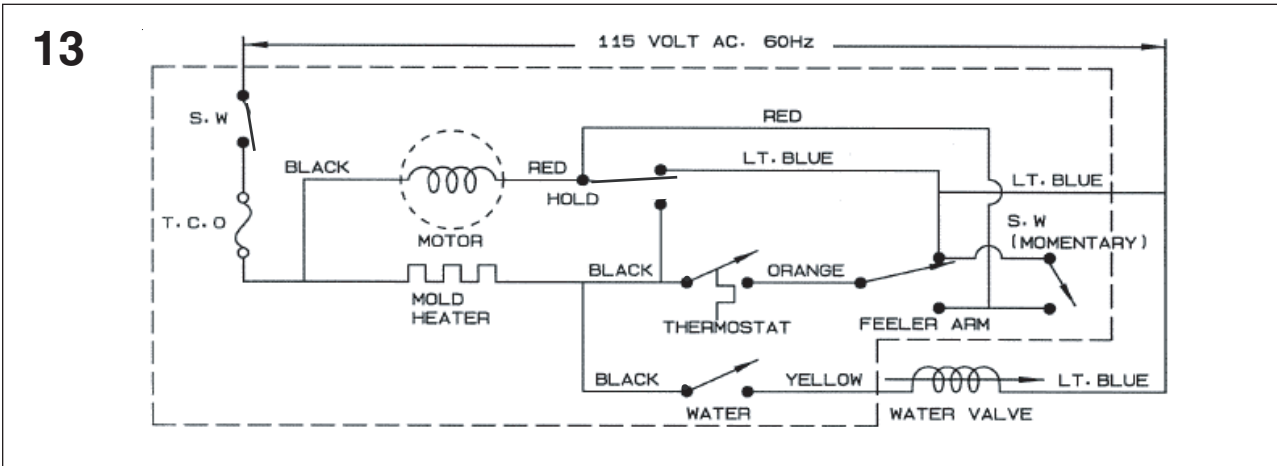
- Ice Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat open.
- Motor is rotating.
- Mold heater off.
- Control Arm swinging down.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NO.
- Water Fill Switch open.



- Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat open.
- Motor is rotating.
- Mold heater is in series with water valve.
- Control Arm swinging down.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NO.
- Water Fill Switch closed.

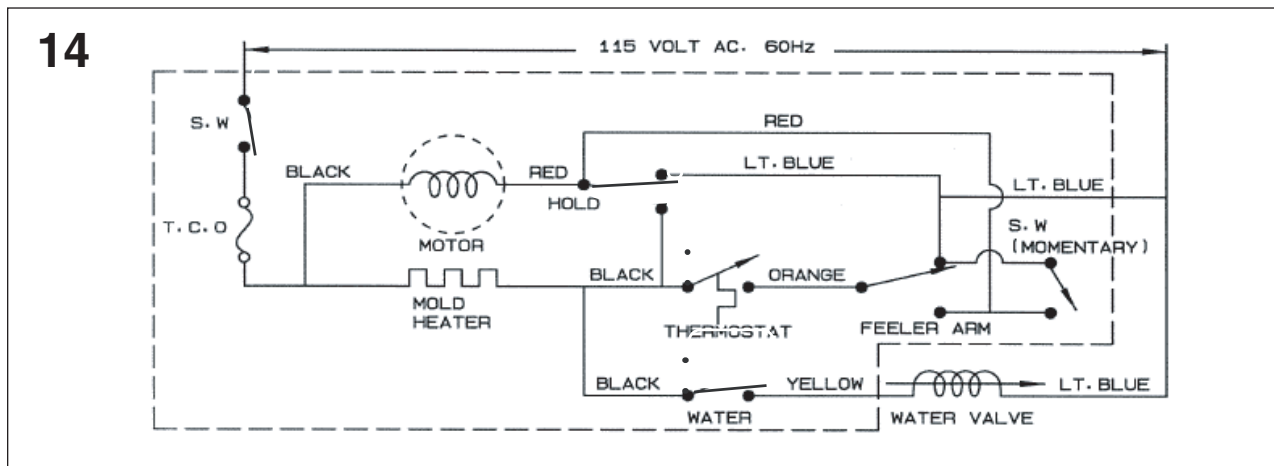


- Ice Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat open.
- Motor is rotating.
- Mold heater off.
- Control Arm swinging down.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NO.
- Water Fill Switch open.



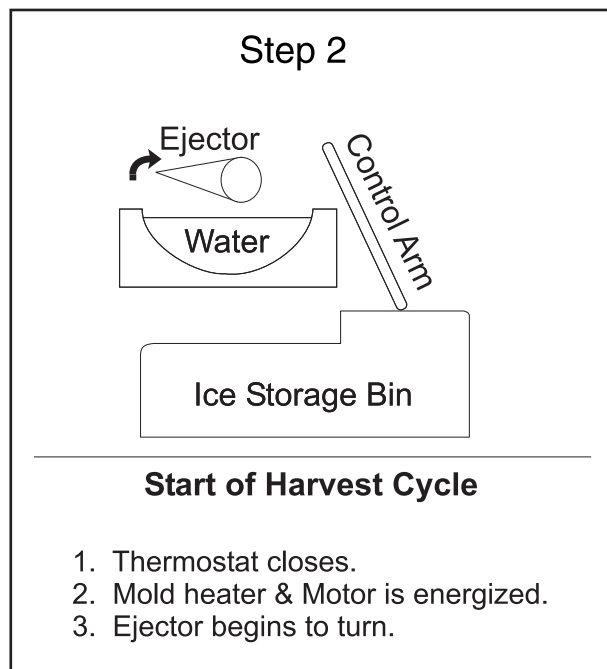
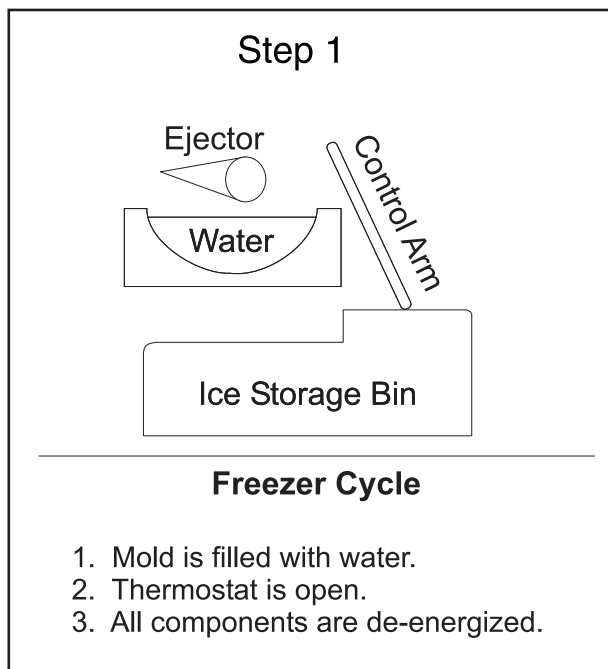
Ice Maker

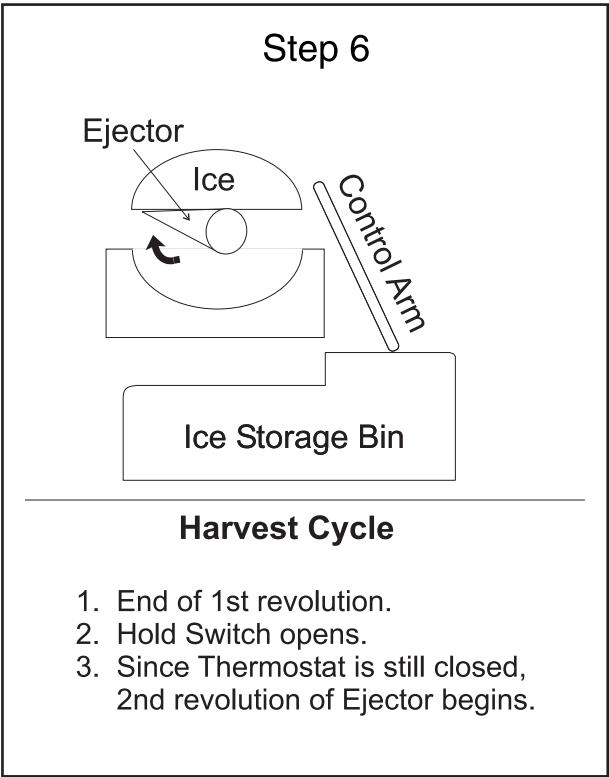
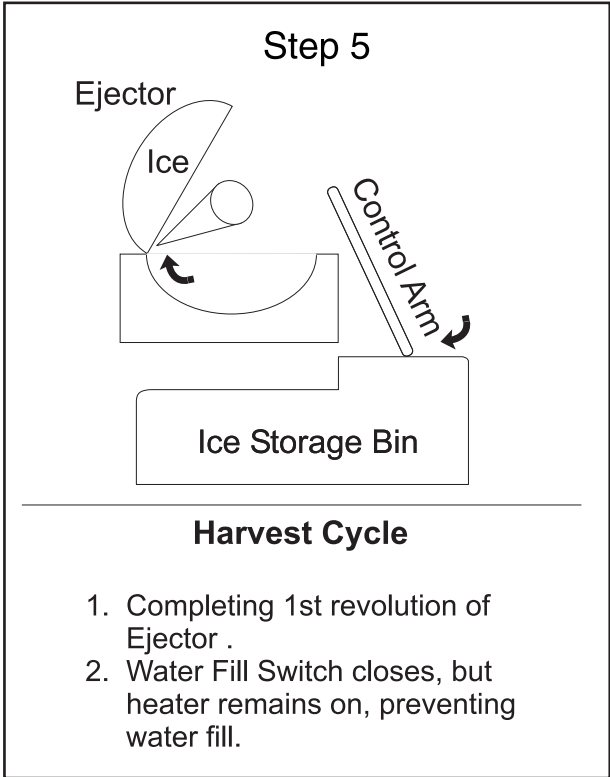
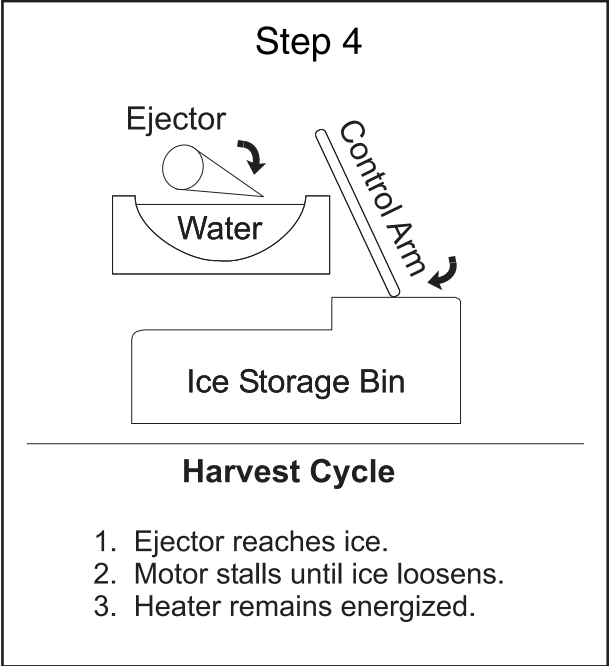
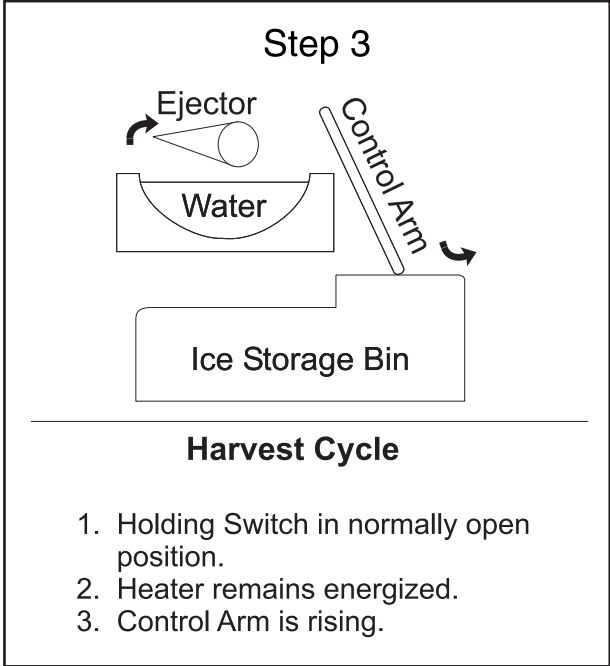
- Maker connected to electricity.
- Mold temperature above 9°F.
- Thermostat open.
- Motor not rotating.
- Mold heater off.
- Control Arm down.
- Feeler Arm Switch closed C to NO.
- Hold Switch closed C to NC.
- Water Fill Switch open.



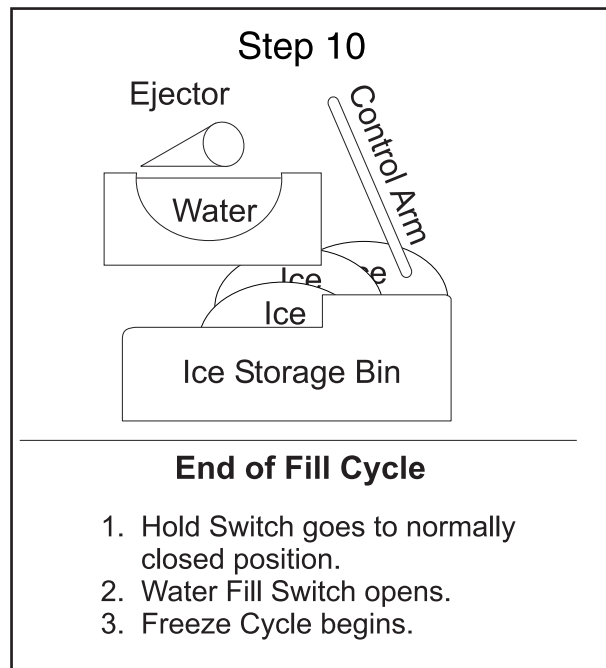
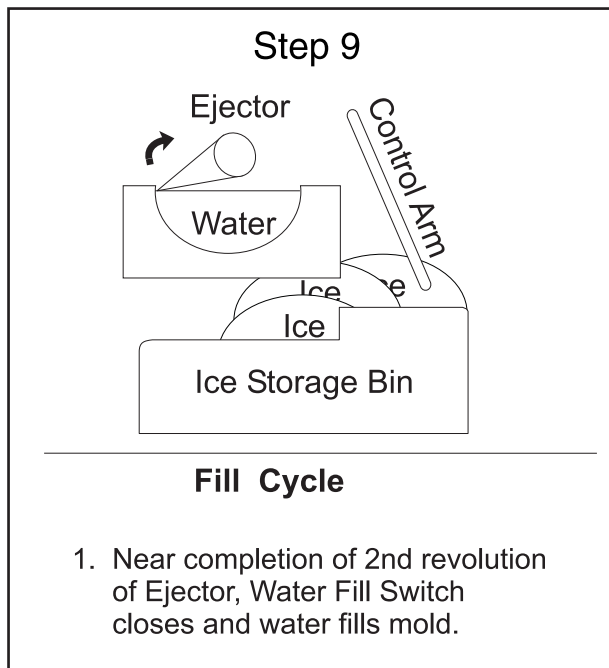
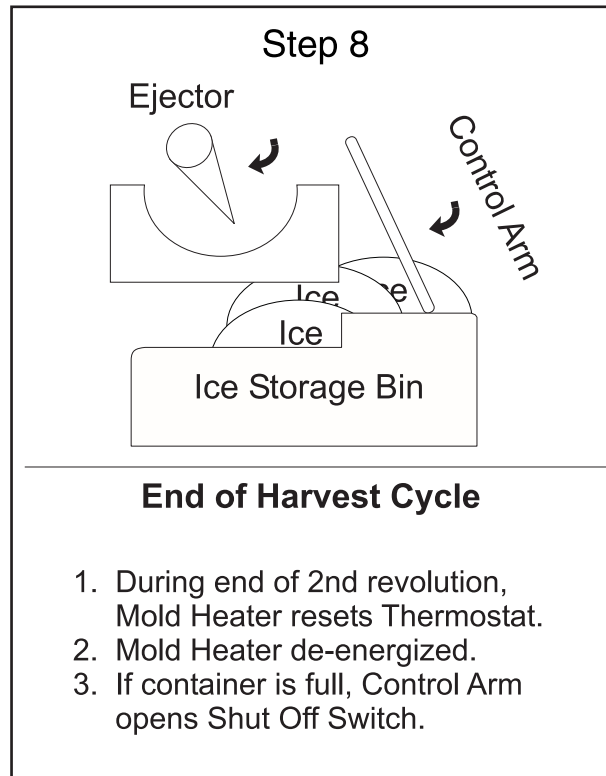
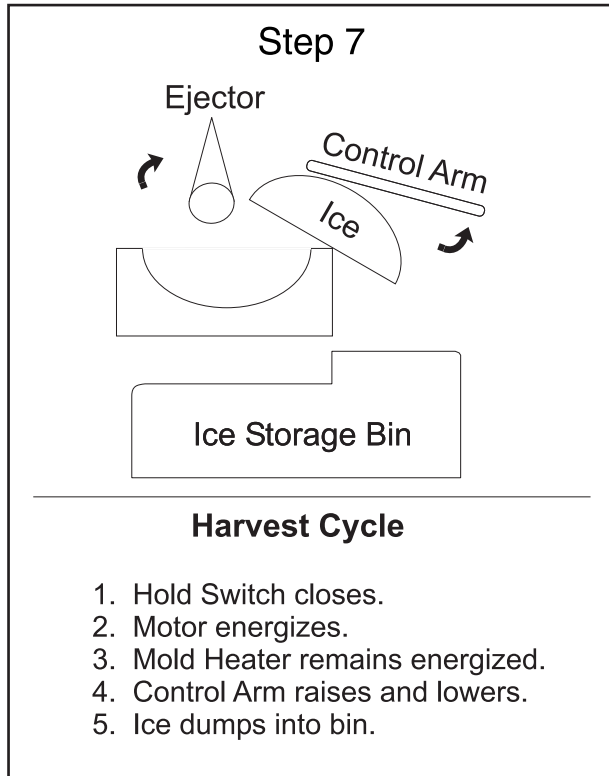
Operating Cycle Illustrations - Mechanical

The following diagrams illustrate the mechanical operation of an ice maker.





Ice Maker



IMPORTANT

The purpose of this section is to give the service technician an understanding of refrigerants and sealed system service. Persons attempting to use this service manual to make repairs to sealed system refrigeration systems should have electrical training as well as training in sealed system repairs. The person making the repairs must know and understand all laws (Local and International) governing handling of all refrigerants. The technician must be trained in the use of recovery and recycling equipment and an EPA certification for servicing refrigeration systems. Electrolux Home Products, Inc. cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this manual.

IMPORTANT

Effective July 1, 1992, the United States clean air act governs the disposal of refrigerants such as R-134a. Therefore, when discharging or purging the sealed system use an EPA approved refrigerant recovery system as outlined in the final rule on the protection of stratospheric ozone and refrigerant recycling, which was published in the Federal Register May 14, 1993.

NOTE

Electrolux does not permit the use of recovered refrigerant in the servicing of our products for in-warranty and out-of-warranty repairs or for products covered by service contracts. Therefore, only new refrigerant or refrigerant that has been reclaimed back to new specifications by a refrigerant manufacturer is to be used.

Soldering

WARNING

WEAR APPROVED SAFETY GLASSES WHEN WORKING WITH OR ON ANY PRESSURIZED SYSTEM OR EQUIPMENT. HAVE AN APPROVED DRY TYPE FIRE EXTINGUISHER HANDY WHEN USING ANY TYPE OF GAS OPERATED TORCH.

1. All joints to be soldered must have a proper fit. Clearance between tubes to be soldered should be from .001" to .006". It is not practical to actually measure this; however, you do not want a dry fit or loose fit. Tubing joints should overlap about the distance of their diameter except for restrictor tubes, which should be inserted 1.25".
2. Clean all joint areas with fine steel wool or preferably an abrasive cloth, such as grit cloth No. 23 or Scotch-Brite.
3. Apply a thin film of liquid flux recommended for silver soldering to surfaces to be joined, and to surfaces immediately adjacent to joint.

4. Align tubing so no stress is on joint. Do not move tubing while solder is solidifying or leaks will result.
5. Use a torch of adequate capacity so joint can be quickly heated with a minimum of heat travel to other points. Use a good grade of silver solder.

CAUTION

During application of heat, use wet cloths to prevent heat from conducting to areas other than the soldered joint. Use a sheet of metal or torch guard pad as a heat deflector to keep flame away from inflammable materials and painted surfaces.

6. Solder connections. If tubing is properly cleaned and fluxed, solder will flow readily. Use only enough solder to make a good bond.
7. Allow joint to cool, then wash exterior with water to remove flux.

Sealed System

Introduction

This Service manual is intended as a guide for introducing the service technician to R-134a refrigerant, and the equipment needed to service R-134a systems. The replacement of R-12 refrigerant involves changes in materials, choice of lubricant, and processing procedures, with an overall requirement of continuous high quality system performance and reliability. The following information provides a good practical foundation for service needed to maintain long product life.

Compressor Oils

In a refrigerating system designed for R-134a refrigerant, only R-134a refrigerant is to be used. The current design of hermetic compressors lead to the situation that some oil (a small percentage) will follow with the refrigerant through the whole system. R-134a compressors require a new lubricant. At this time, only synthetic ester oil is to be used. The R-12 compressors used mineral oil. Mineral oil is not compatible with R-134a and is not to be used in R-134a systems. Ester oil must not be mixed nor replaced with any other lubricant. Compressors used with R-134a systems charged with oil, cannot have any tube fittings exposed to ambient air for more than 15 minutes. Ester oil is more hygroscopic (it will absorb water at a much faster rate) than the mineral oil used with R-12 systems.

CAUTION

Ester oil can be an irritant to eyes and skin. Refer to manufacture safety data sheets from lubricant supplier for handling specifications. As with all current refrigerants, you must have an adequately ventilated work area at all times for sealed system service and repairs.

Refrigeration Systems

The sealed refrigeration system will consist of the same basic components being utilized in the R-12 systems.

There is a 10% to 15% discharge pressure increase using R-134a, with a 5% to 10% decrease in suction pressure when compared to the same product with an R-12 system operating at 90°F (32°C) ambient temperature conditions. Lower suction pressures result from the lower density of R-134a refrigerant which effects refrigerant flow rate. R-134a systems commonly operate in a 1"-2" vacuum on the suction side.

Products using R-134a refrigerant will have a different heat exchanger than an R-12 product. The difference is in the capillary tube, it will be longer to maintain a similar flow rate. On some models, a larger condenser will be used to reduce the discharge pressures and lower start-up sound transmission. A different filter-drier will be used on refrigerating systems with R-134a. The molecules of R-134a are smaller than those of R-12, therefore, a dryer with smaller pores is necessary. Otherwise, R-134a could be trapped inside the filter-drier along with the water. On some products you will see some changes to the evaporator and suction line. Ester oil and R-134a mix satisfactorily within the compressor. Lower gas speed increases the risk of oil accumulation in the evaporator. Some changes will be required to ensure good oil returnability.

Sealed System Repair

To prevent any form of cross contamination of R-134a, and R-12 refrigerant, or a cross contamination of ester oil and mineral oil, you must have dedicated equipment. The equipment consists of one set of gauges, manifold, hoses, vacuum pump, charging cylinder, and reprocessing or transfer pump. This means you must have one complete set for CFC, (R-11, R-12) and HCFC, (R-22) systems, and one complete set for HFC, (R-134a) systems. You can not share the use of any of the same equipment on both systems.

Since the R-134a molecule is smaller than the R-12 molecule, R-134a could pass through more minor leaks than R-12, and the flow through a certain leak would be larger for R-134a than for R-12. As a consequence, it is critical to maintain very good brazing processes and leak tests.

Make sure you do not mix refrigeration oil or refrigerant in your bulk storage area. Because moisture infiltration is much higher in ester oil, you must keep it stored in sealed containers and only allow exposure to room air for a very short period of time when changing or adding oil to a system. You must not mix refrigerant in your storage containers for used refrigerant removed from products for service. You must have dedicated cylinders for each refrigerant R-12, R-22, and R-134a.

Service Diagnostic Tips

A prime requisite on the initial contact is: Always allow the customer to explain the problem. Many times the trouble can be diagnosed more quickly, based on the customer's explanation. Most of all, do not jump to conclusions until you have heard the full story and have evaluated the information obtained from the customer. Then proceed with your diagnosis.

Before starting a test procedure, connect the product service cord to the power source, through a wattmeter, combined with a voltmeter. Then make a visual inspection and operational check of the refrigerator to determine the following:

1. Is the product properly leveled?
2. Is the product located for proper dissipation of heat from the condenser? Check recommended spacing from walls.
3. Feel condenser. With compressor in operation, condenser should be hot, with gradual reduction in temperature from entry to exit of condenser.
4. Are door gaskets sealing properly?
(Refrigerators and freezers)
5. Does the door actuate the light switch?
(Refrigerators and freezers)
6. Is evaporator fan properly located on motor shaft?
7. Is the thermostat sensing element properly positioned?
8. Observe frost pattern on evaporator.
9. Check thermostat knob setting.
10. Inscribe bracket opposite slotted shaft of defrost timer to determine if timer advances (Refrigerators and freezers - auto defrost models only).

The service technician should inquire as to the number of people in the family to determine the service load and daily door openings. In addition, he should know the room temperature for refrigerator and freezers.

After this phase of diagnosis is completed, a thorough operational check should be made of the refrigeration system.

Refrigerator and Freezer Air Temperatures

Temperatures are affected by improper door seal, frost accumulation on the evaporator, service load, ambient temperature, percent of relative humidity, thermostat calibration (cut-in and cut-out), location of evaporator fan blade on motor shaft, and by compressor efficiency.

Line Voltage

It is essential to know the line voltage at the product. A voltage reading should be taken at the instant the compressor starts, and also while the compressor is running. Line voltage fluctuation should not exceed 10% plus or minus, from nominal rating. Low voltage will cause overheating of the compressor motor windings, resulting in compressor cycling on thermal overload, or the compressor may fail to start. Inadequate line wire size and overloaded lines are common reasons for low voltage at the product.

IMPORTANT

Your Country may have regulations or restrictions governing the discharging of chlorofluorocarbons (CFC's) such as R-12 and R-22 to the atmosphere. Therefore, when discharging or purging the sealed system, use an approved refrigerant recovery system.

Sealed System

Basic Components

The basic components of a refrigerated unit are a compressor, condenser, evaporator, heat exchanger (capillary tube and suction line), drier and perimeter hot tube.

Perimeter Hot Tube

To reduce the possibility of condensation forming on the exterior of the cabinet in high humidity areas, a perimeter hot tube (refrigerant tube) has been installed in the unit. The perimeter tube extends up the left side, across the top of the unit and down the right side into the filter drier. When the compressor operates, warm refrigerant flows through the primary condenser, then into the primary hot tube, warming the cabinet front exterior.

The perimeter hot tube is not replaceable. In the unlikely event of a leak in the hot tube, a kit is available to bypass the hot tube in the sealed system. An electrical heater wire must be installed within the tubing. The electrical connection for the electrical heater wire for a solid state PTC relay compressor is connected into the condenser fan circuit. For a variable speed compressor, the electrical connection must be made to the 115V inverter board. Refer to the appropriate parts list of the model being serviced for the correct kit part number.

Refrigerant Cycle

The refrigerant cycle is a continuous cycle that occurs whenever the compressor is in operation. Liquid refrigerant is evaporated in the evaporator by the heat that enters the cabinet through the insulated walls, and by the heat from product load and door openings. The refrigerant vapor is then drawn from the evaporator, through the suction line, to the compressor.

Compression raises the pressure and temperature of the vapor in the compressor and the vapor is then forced through the discharge valve into the discharge line and into the condenser. Air passing over the condenser surface removes heat from the high pressure vapor which then condenses to a liquid. The liquid refrigerant then flows from the condenser to the evaporator through the small diameter liquid line (capillary tube).

Before it enters the evaporator, the liquid refrigerant is sub-cooled in the heat exchanger by the low temperature suction vapor in the suction line. When refrigerant is added, the frost pattern will improve, the suction and discharge pressures will rise, the condenser will become hot and the wattage will increase.

Testing for Refrigerant Leaks

NOTE

The line piercing valve (clamp-on type) should be used for test purposes only. It must be removed from system after it has served its purpose.

If the sealed system is diagnosed as short of refrigerant and the system has not been recently opened, there is probably a leak in the system. Adding refrigerant without first locating and repairing the leak or replacing the component will not permanently correct the difficulty.

The leak must be found!

Sufficient refrigerant may have escaped to make it impossible to leak test effectively. In such cases, add a 1/4" line piercing valve to the compressor process tube. Add sufficient refrigerant vapor to increase the pressure to 75 lbs. per sq. in. Through this procedure, leaks are more easily detected before discharging the system into reprocess/recapture equipment. Check the low side for leaks. Run the compressor 2 or 3 minutes and check the high side for leaks. Recover refrigerant using an EPA approved recovery system.

Checking For Internal Leaks

Before checking for internal leaks, check all accessible system components and joints for leaks.

If an internal leak is suspected, it must be confirmed. Use the following procedure:

1. Discharge the system by using refrigerant recovery equipment.
2. Disconnect the condenser and the drier from the hot tube on refrigerators. On food freezers, separate the high and low pressure sides of the system. Pinch off and solder closed one end of the part of the system to be tested.
3. Solder a 1/4" charging hose fitting to the open end of the part of the system to be tested.
4. Connect a pressure gauge and access valve to the open end of the part of the system to be tested. Pressurize to 250 lbs. using dry nitrogen or carbon dioxide.
5. Leave the pressure on the hot tube for 24 hours. Any drop in pressure is an indication of a leak.

Definitions

Recovery:

To remove refrigerant in any condition from a system and store it in an external container without necessarily testing or processing it in any way.

Recycling:

To clean refrigerant for reuse by oil separation and single or multiple passes through devices, such as replaceable core filter-driers, which reduce moisture, acidity and particulate matter. This term usually applies to procedures implemented at the field job site or at a local service shop.

Reclaim:

To reprocess refrigerant to new product specifications by means which may include distillation, will require chemical analysis of the refrigerant to determine that appropriate product specifications are met. This term usually implies the use of processes or procedures available only at a reprocessing or manufacturing facility.

Equipment Needed for Evacuation & Recharging

1. 1 - Heated Dial-A-Charge charging cylinders.
2. 1 - Recovery/Recycling equipment.
3. 1- Tank for each type of refrigerant you use in service. (Do not mix refrigerants in the same tank)
4. 1 - External vacuum pumps.
5. Process tube adapter kit (Robinair No.12458)
6. Tubing cutter.
7. Pinch-off tool capable of making leak proof seal.
8. Leak detector.
9. Complete brazing torch set.
10. Small 3-corner file.
11. Grit cloth or Scotch-Brite.
12. 45% silver solder and flux.
13. 1 -Gauge and Manifold set. (See Figure 5-1)
14. 2 - Tube piercing valves.
15. Oil test kits.
16. Heat Gun.
17. Swag Tool. (See Figure 5-2)

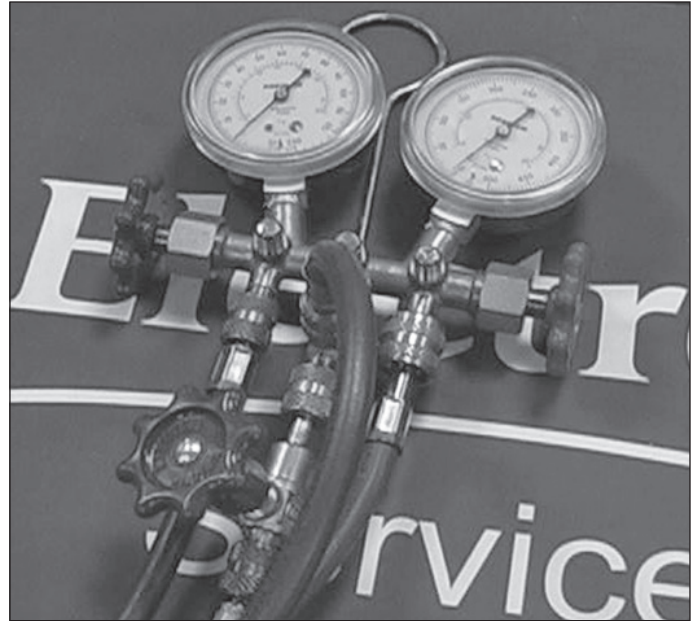


Figure 5-1.



Figure 5-2.

Sealed System

Low/High Side Leak or Undercharge

A loss of refrigerant can result in any of the following:

1. Excessive or continuous compressor operation.
2. Above normal freezer compartment temperature.
3. A partially frosted evaporator (depending on amount of refrigerant loss).
4. Below normal freezer compartment temperature.
5. Low suction pressure (vacuum).
6. Low wattage.

The condenser will be “warm to cool”, depending on the amount of refrigerant lost.

In the case of a low side refrigerant leak resulting in complete loss of refrigerant, the compressor will run but will not refrigerate. Suction pressure will drop below atmospheric pressure and air and moisture will be drawn into the system, saturating the filter drier. A system with R-134a refrigerant and ester oil will become saturated with moisture much faster than a system with R-12 and mineral oil. Therefore, you must obtain a sample of the oil and check with an oil test kit to determine the amount of contamination. You will find that the oil in an R-134a system will have to be replaced after most low side leaks.

If there is reason to believe the system has operated for a considerable length of time with no refrigerant and the leak occurred in the low side of the system, excessive amounts of moisture may have entered the system. In such cases, the two stage service Dryer Filter part number 5303918288 and vacuum procedure listed under Refrigerant Leaks, need to be followed to prevent repetitive service.

If a slight undercharge of refrigerant is indicated and no leak can be found after a thorough leak test, the charge can be corrected without changing the compressor.

If a high side leak is located and some refrigerant remains in the system it is not necessary to change the compressor.

Precautions For Charging Sealed Systems

Overcharging a refrigeration system with refrigerant can be dangerous. If the overcharge is sufficient to immerse the major parts of the motor and compressor in liquid refrigerant, a situation has been created which, when followed by a sequence of circumstances, can lead to the compressor shell seam separating.

When a hydraulic block occurs, the compressor is prevented from starting. This condition is known as locked rotor. Electric current continues to flow through the compressor motor windings which become, in effect, electric resistance heaters. The heat produced begins to vaporize the excess refrigerant liquid, causing a rapid increase in system pressure. If the compressor protective devices fail, pressure within the system may rise to extremes far in excess of the design limits. Under these conditions, the weld seam around the compressor shell can separate with explosive force, spewing oil and refrigerant vapor, which could ignite.

To eliminate this exceedingly rare but potential hazard, never add refrigerant to a sealed system. If refrigerant is required, evacuate the existing charge and recharge with the correct measured amount of the refrigerant specified for the system.

Always make sure your equipment is in good condition and all manufacturer's instructions are followed to prevent the accidental rupture of a hose, connection fitting, or a tank which could cause a serious injury. Run equipment until system has reached 13 inches of vacuum. Shut system down and allow to set for two minutes, if pressure remains below (0) pounds per square inch, disconnect equipment and proceed. If pressure does not stay below (0) pounds per square inch, repeat above procedure until all refrigerant is removed and system remains in a vacuum.

Flushing The System With Nitrogen

It is recommended that system be flushed with dry Nitrogen. However, if refrigerant is used to flush the system you must look at the serial plate to see what type of refrigerant is used in the system. This is the only refrigerant that can be used to flush the system and it must be recovered.

CAUTION

Use extreme care when using Dry Nitrogen to flush systems. Pressure in nitrogen cylinder could be as high as 2000 psi. Nitrogen cylinder must be equipped with approved pressure regulator and pressure relief valve. Ensure that your hoses have adequate ratings for pressure involved and that all of your equipment is in good condition.

When flushing with nitrogen there **MUST** Be a pressure regulator on the tank with the maximum pressure on the lowside of the sealed system (evaporator) at 150 PSI and at the High side, 300 PSI.

The end of the flushing hose on this tank regulator must be equipped with a hand shut-off valve (Robinair No. 40380). Close hand shut-off valve and adjust nitrogen regulator to correct pressure before proceeding with flushing procedure.

1. Remove compressor and filter-drier. Connect process coupling to outlet tube of condenser.
2. Fasten cloth over other end of coil to prevent old oil from spraying over room.
3. Connect hand shut-off valve on flushing hose to process coupling.
4. Slowly open hand shut-off valve and allow nitrogen to flow through condenser until discharge is clear.

CAUTION

DO NOT exceed 300 Psi.

5. Disconnect cap tube from evaporator. Flush evaporator in same manner as condenser.

CAUTION

DO NOT exceed 150 Psi.

6. Flush cap tube. This is only possible if you have a proper service valve adapter.

CAUTION

DO NOT exceed 300 Psi.

7. Reassemble system.

WARNING

NEVER PRESSURIZE WITH OXYGEN. NEVER OPEN A HIGH PRESSURE TANK UNLESS IT IS EQUIPPED WITH A PRESSURE REGULATOR. NEVER PUT HIGH PRESSURE ON THE DOME OF THE COMPRESSOR - IT MIGHT EXPLODE. MAKE SURE GAUGE FITTINGS ARE IN GOOD CONDITION AND DO NOT LEAK.

If dry nitrogen or carbon dioxide is not available. Follow instructions 1 through 3, then use 4 and 5 listed below as an alternative method.

4. Connect gauges to charging hose fittings. Pull a vacuum on each side of the system.
5. Leave the vacuum on each side of the system for 24 hours. Any loss of vacuum is an indication of a leak.

Compressor Oil Contamination

Before installing new compressor, check for possible system contamination by obtaining an oil sample from the old compressor. On R-134a systems use an oil test kit to check for contamination. If oil has a burned odor or shows contamination (dark color), the system should be flushed to remove as much of the contamination as possible before installing a new compressor and filter-drier. If this contamination is allowed to remain in the system it will mix with the new oil causing it to become contaminated and damage the new compressor, or cause a restriction in the filter-drier or cap tube.

NOTE

NEVER install a new compressor without first checking for possible system contamination.

Sealed System

Recovering Refrigerant

Recovering refrigerant is the first step in preventive maintenance or repair of equipment. Simply put, recovery means transferring the systems' refrigerant into a refillable refrigerant cylinder.

The first step is to have on hand, clean, safe, refillable cylinders evacuated to 25 microns, and labeled for each different type of refrigerant you will be working with. Example; for repairing Electrolux Home Products Inc. built products you will need one cylinder for R-12, one for R-22, one for R-134a, and one for R-500 if you work on dehumidifiers.

Second step is you must have dedicated equipment for HFC (R-134a) refrigerant. Because of the difference in the oil and the refrigerant, you can not use the same equipment on HFC based refrigerants as you use on CFC based refrigerants.

⚠ CAUTION

Always make sure equipment is in good condition and all manufacture instructions are followed to prevent accidental rupture of a hose, connection fitting, or a tank, that could cause a serious injury. Always sit tank on a scale when transferring refrigerant into the tank. Always check the weight to see when tank is full, do not over fill the tank.

To recover the refrigerant:

1. Disconnect unit from source of power.
2. Attach an approved self tapping line tap valve to the process tube. Connect refrigerant recovery system to tap valve. Turn on recovery system, open the line tap valve, and allow refrigerant to flow into an approved tank. (See Figure 5-3)
3. Allow the recovery pump to run until the system has reached 13 inches of vacuum.
4. Shut system down and allow to set for two minutes. If pressure is below (0) pounds per square inch, disconnect equipment and proceed with repair.
5. If pressure does not stay below (0) pounds per square inch, repeat steps 3 and 4 until all refrigerant is removed and system remains in a vacuum.

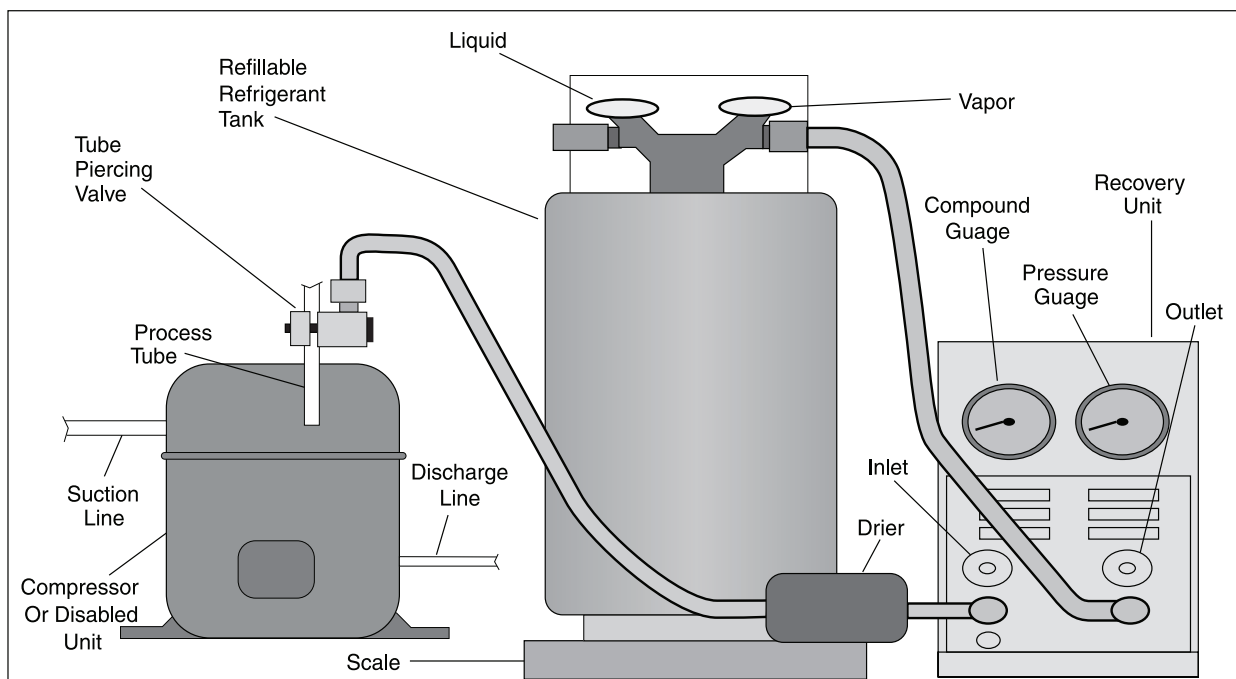


Figure 5-3. Installation of Recovery Equipment

Installing a New Compressor

NOTE

Entirely new compressors have been developed for use with R-134a and Ester oil refrigeration systems. Both compressor and electric motor have been modified. Old compressors intended for R-12 refrigerant must not be used for new systems charged with R-134a.

Replacement of compressor and installation of filter-drier must be done in a continuous sequence so the system is exposed to atmosphere no longer than necessary.

All replacement compressors are shipped with rubber plugs in the suction, discharge and process tubes, and contain the correct oil charge and a holding charge of inert gas. Compressors have a low-side process tube attached to the compressor shell. A high-side process tube is attached to the filter-drier.

Replacement compressors for some units may have an oil cooler even if the original compressor did not. If the product is not equipped for an oil cooler, leave the plastic caps in place and install the compressor, connecting only to the suction and discharge lines of the new compressor.

Before installing the replacement compressor, remove the discharge plug and check for the pop sound of the inert gas leaving the compressor.

CAUTION

DO NOT use compressor if you do not hear this sound.

If the compressor checks OK, reinstall the plug. Do not remove any of the plugs again until the compressor is in position and you are ready to braze the lines.

A new compressor which is cold (e.g. after having been kept in a cold service van) should be left to warm to the surrounding temperature before the plugs on the compressor connections are removed. This will help prevent condensation from forming in the oil and the compressor. Also, avoid opening the system when any of the components or lines are cold.

A process tube is connected onto the high-side process tube of the filter drier. This tube is located at the top of the filter-drier.

WARNING

DO NOT OPERATE RECIPROCATING COMPRESSORS WHEN CHARGING LIQUID REFRIGERANT INTO SYSTEM THROUGH ITS PROCESS TUBE.

To replace the compressor:

1. Pull unit from its installation position and unplug from wall outlet.
2. Extract the screws securing the compressor shield to the unit frame and remove from unit.
3. Attach an approved self tapping line tap valve to the process tube. Connect refrigerant recovery system to tap valve. Turn on recovery system, open the line tap valve, and allow refrigerant to flow into an approved tank.
4. Using a 7/16" socket, remove the (4) bolts, one in each corner, holding the compressor to the base.
5. Disconnect electrical leads from compressor.
6. After refrigerant is completely recovered, cut suction and discharge lines as close to compressor as possible. Leave only enough tubing to pinch off and seal defective compressor. Plug or tape any open system tubing to avoid entrance of moisture and air into system. Remove inoperable compressor and transfer mounting parts to new compressor.
7. Release holding charge (release slowly to avoid oil discharge) on new compressor to ensure there is no leak in seam or tubing. Reinstall rubber plug.
8. Install new compressor in exact same manner as original compressor.

NOTE

If low-side process tube is too short, silver solder four inch piece of tubing onto process tube at this time.

9. Reform both suction and discharge lines to align with new compressor. If they are too short, use additional lengths of tubing. Joints should overlap 0.5" to provide sufficient area for good solder joints. Clean and mark area where tubing should be cut. Cut tubing with tubing cutter. Work quickly to avoid letting moisture and air into system.

CAUTION

On R-134a systems, compressor must NOT be left open to atmosphere for more than 10 minutes to prevent moisture contamination of oil.

Sealed System

10. Solder all connections according to soldering procedure.
11. Remove original filter-drier.

CAUTION

DO NOT unbraid old filter-drier from system. This will vaporize and drive moisture from desiccant back into system. The old filter-drier should be cut out of system.

12. Install new filter-drier at condenser outlet.
13. Evacuate and charge system using recommended procedure described under Evacuating and Recharging.
14. Reconnect compressor terminal leads in accordance with unit wiring diagram.
15. Reassemble unit.

Condenser Replacement

1. Disconnect electrical supply to refrigerator/freezer.
2. Remove compressor access panel.
3. Recover refrigerant by using EPA approved recovery system.
4. Remove condenser fan mounting screws.
5. Unplug fan motor harness located in back of fan motor.
6. Remove fan motor and fan blade.
7. After refrigerant is completely recovered, disconnect inlet and discharge lines from condenser.
8. Lift front of condenser and pull out of retainers mounted to the drain pan.
9. Remove old condenser out the back of cabinet.
10. Install replacement condenser.
11. Remove original filter-drier.

CAUTION

DO NOT unbraid old filter-drier from system. This will vaporize and drive moisture from desiccant back into system. The old filter-drier should be cut out of system.

12. Install new filter-drier at condenser outlet.
13. Evacuate and charge the system using recommended procedure described under Evacuating and Recharging.
14. Reassemble unit.

Filter-Drier Installation

Any time the sealed system is opened and the refrigerant charge is removed, the liquid line filter-drier must be replaced and the system thoroughly evacuated before replacing refrigerant.

CAUTION

DO NOT unbraid old filter-drier from system. This will vaporize and drive moisture from desiccant back into system. The old filter-drier should be cut out of system.

1. Disconnect electrical supply to refrigerator/freezer.
2. Recover refrigerant by using EPA approved recovery system.
3. Using a 3 cornered file, score a groove around capillary tube as close to old filter-drier as possible. Break capillary tube along score mark from filter-drier.
4. Cut condenser outlet tube at filter-drier. Discard filter-drier.
5. Thoroughly clean condenser outlet tube and capillary tube.
6. Place inlet connection of filter-drier over condenser tube approximately 1/4" and solder.
7. Insert capillary tube input end into filter-drier outlet. Do not allow tube to bottom against screen. Solder carefully so that solder does not plug capillary tube.
8. Install process tube adapter to filter-drier.
9. Evacuate and charge system using the recommended procedure described under Evacuating and Recharging.
10. Reassemble unit.

Evaporator and Suction Line Replacement

1. Disconnect electrical supply to refrigerator/freezer.
2. Recover refrigerant by using EPA approved recovery system.
3. Remove shelving.
4. Remove evaporator cover.
5. Remove evaporator from its installation position.
6. Cut or remove suction line from compressor.

7. Cut filter-drier from condensing unit.
8. Remove sealant from cabinet where suction line enters.
9. Remove evaporator and suction line as one piece.
10. Install new evaporator with attached suction line.
11. Seal cabinet.
12. Install new filter drier at condenser outlet.
13. Evacuate and charge system using the recommended procedure described under Evacuating and Recharging.

CAUTION

DO NOT unbrazed old filter-drier from system. This will vaporize and drive moisture from desiccant back into system. The old filter-drier should be cut out of system.

Installing Evacuation and Recharging Equipment

1. Disconnect refrigerator/freezer from electrical supply.
2. If compressor was replaced, install correct sized process tube adapter on process tube. If compressor was not replaced, cut process tube with tubing cutter leaving as much tube as possible and install correct size process tube adapter.
3. Install correct sized process tube adapter on high-side process tube.
4. Attach refrigeration service gauge manifold to system in following order: (See Figure 5-4)
 - Low-side (compound gauge) hose to suction side process tube adapter.
 - High-side (pressure gauge) hose to high-side process tube adapter.
 - Center port manifold hose before hand shut-off valve to charging cylinder.
 - Center port manifold hose after hand shut-off valve to vacuum pump.

WARNING

R-134A SYSTEMS ARE PARTICULARLY SUSCEPTIBLE TO MOISTURE CONTAMINATION WHICH CAN ONLY BE PREVENTED BY EVACUATING THE SYSTEM FOR A MINIMUM OF 30 MINUTES TO ATTAIN A MINIMUM 29.9 INCH (500 MICRON OR LOWER) VACUUM.

Evacuating System

To achieve the required levels of evacuation, a properly maintained two stage vacuum pump in good condition is required. It is absolutely essential to maintain your vacuum pump according to the manufacturer's instructions including required oil changes at the recommended intervals. Vacuum pump oil should always be changed after evacuating a contaminated system.

Vacuum pump performance should be checked periodically with a micron gauge.

1. Make certain that charging cylinder valve, hand shut-off valve, and manifold gauge valves are all closed.
2. Start vacuum pump.
3. Open hand shut-off valve and slowly open both manifold valves, turning counterclockwise, for two full rotations.

CAUTION

If high vacuum equipment is used, just crack both manifold valves for a few minutes and then open slowly for the two full turns counterclockwise. This will prevent the compressor oil from foaming and being drawn into vacuum pump.

4. Operate vacuum pump for a minimum of 30 minutes to a minimum of 29.9" (500 micron) vacuum.
5. Close hand shut-off valve to vacuum pump. Watch compound gauge for several minutes. If reading rises, there is a leak in the system, go to step 6. If no leak is indicated, stop vacuum pump. System is now ready for charging.
6. If a leak is indicated, stop vacuum pump and introduce a small charge of refrigerant into system by cracking valve on bottom of charging cylinder until system is pressurized to 40 or 50 lbs psi.
7. Leak test low-side. Close compound gauge. Run compressor for a few minutes and leak test high-side. When leak is found, recapture refrigerant using EPA approved recovery system. Repair and go back to step 1.

Sealed System

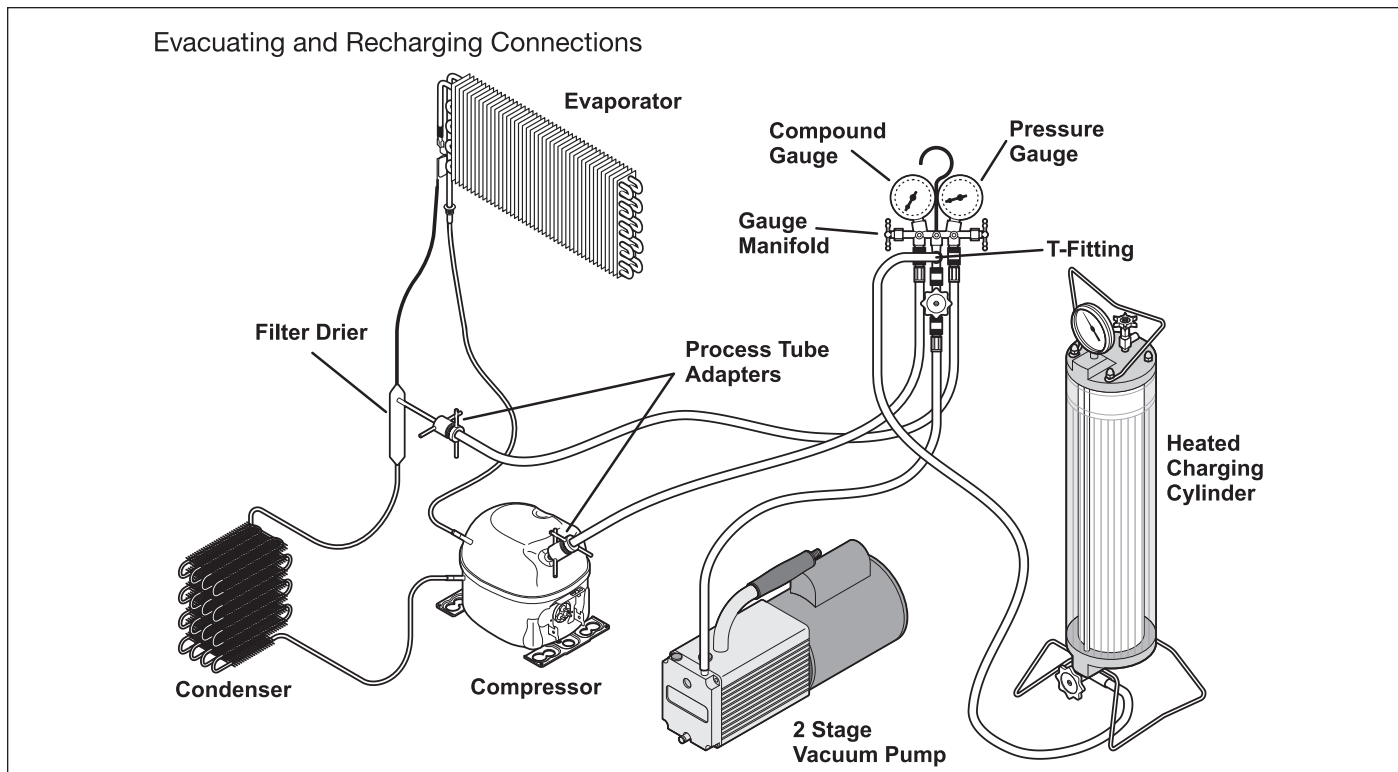


Figure 5-4. Installation of Recovery Equipment

Charging The System

⚠ CAUTION

Check the serial plate for the correct refrigerant type. It is extremely important to verify the type of refrigerant in the system before starting any sealed system repairs. After charging the system with liquid be certain to wait at least 5 minutes before starting the compressor to give the refrigerant a chance to disperse throughout the system. Otherwise the compressor could be damaged by attempting to pump excessive quantities of liquid.

Preparing The Charging Cylinder:

1. Make certain that hand shut-off valve to vacuum pump is closed.
2. Close high-side manifold gauge valve.
3. Set charging cylinder scale to pressure indicated on cylinder pressure gauge.
4. Observe refrigerant level in sight glass. Subtract amount to be charged into system and note shut off point.
5. Open charging cylinder valve slowly and allow proper charge to enter system.

6. As soon as refrigerant in sight glass has gone down to predetermined level, close charging cylinder valve.

⚠ WARNING

DISCONNECT THE CHARGING CYLINDER HEATER AT THIS TIME TO PREVENT THE CYLINDER PRESSURE FROM EXCEEDING ITS MAXIMUM LIMITS.

7. Allow system to sit for five minutes.
8. Turn on refrigerator compressor. Run compressor for a few minutes and monitor system pressures.
9. When satisfied that the unit is operating correctly, clamp the high-side process tube with the pinch-off tool while the unit is still running.

Final Leak Test

1. With the refrigerator turned OFF leak test all low-side system components.
2. Turn the unit ON and run until the condenser is warm. Leak test the high-side system components.

Dedicated Equipment

R-134a must not be mixed with other types of refrigerants. R-134a must be recovered in dedicated and properly identified recovery bags and tanks.

It will be necessary to check with the manufacturer of your recovery equipment to determine R-134a compatibility. Some recovery equipment manufacturers have changeover instructions for switching between refrigerant types. Protect yourself and your equipment by following all manufacturer guidelines.

Also, ensure that your refrigeration hoses are specified for use with R-134a refrigerant. Research has shown that compounds in standard refrigeration hoses may enter sealed systems and ultimately restrict the cap tube in an R-134a system.

For example, hoses that were used for a refrigeration system operating on R-12 may contain small quantities of mineral oil which can block the capillary tube in a system operating on R-134a. As little as one milligram may be sufficient to cause a blockage. In addition, sealed system components that have been used with CFC systems must not be used with R-134a systems. These components may contain residual amounts of refrigerant and oil which could damage an R-134a system.

At the earliest stage of development work on R-134a, tests were carried out on a different type of synthetic oil known as Poly-Alkaline Glycol (PAG). This oil is also used in certain air conditioning systems for cars. PAG and Ester oil DO NOT mix with one another. Service equipment used for R-134a / Ester oil must not come into contact with PAG.

Vacuum Pump Maintenance

It is absolutely essential to maintain your vacuum pump according to the manufacturer's instructions, including required oil changes at the recommended intervals. Vacuum pump oil should always be changed after evacuating a contaminated system. Vacuum pump performance should be checked periodically with a micron gauge.

Vacuum pump suppliers may or may not recommend changing the vacuum pump oil to the same type that's in the system being evacuated. Some manufacturers may recommend a vacuum pump that's dedicated to R-134a systems.

Robinair has stated that their current and discontinued vacuum pump models, using mineral oil currently specified for use in their vacuum pumps, can be used to evacuate R-134a/Ester oil systems. Robinair also states that it is acceptable to alternate between evacuating R-12/mineral oil and R-134a/Ester oil systems without adversely affecting the vacuum pump's performance.

For other brands of vacuum pumps, check with the manufacturer for restrictions and guidelines when using with R-134a.

CAUTION

Check the serial plate for the correct refrigerant type. It is extremely important to verify the type of refrigerant in the system before starting any sealed system repairs.

With the possible exception of the vacuum pump, all service equipment that comes in contact with R-134a during evacuation and recharging must be dedicated. Accordingly, R-134a will require a dedicated charging cylinder, manifold gauge set, process tube adapters, and hoses. Any residual mineral oil on other tools (tubing cutter, etc.) must be thoroughly cleaned off before using on R-134a/Ester oil systems. It will be necessary to check with the manufacturer of your vacuum pump for refrigerant and oil compatibility issues.

If you use a vacuum pump with mineral oil to evacuate an R-134a system, it is ABSOLUTELY ESSENTIAL to have a shut-off valve between the pump and your manifold gauge set as shown on page 4-10. The hand valve must be closed during all times when the vacuum pump is not operating. This will prevent the migration of mineral oil vapor into the R134a/Ester oil system. If the vacuum pump should stop during evacuation for any reason, the hand pump shut-off valve must be closed immediately.

Insure that your refrigeration hoses are specified for use with R-134a refrigerant. Research has shown that compounds in standard refrigeration hoses may enter sealed systems and ultimately restrict the cap tube in an R-134a system.

Sealed System

VACUUM CHART		
Vacuum Inches Hg.	Microns	Boiling Point of Water °F
28.940	25000	77.9
29.530	10000	52.0
29.832	4600	32.0
29.882	1000	1.0
29.901	500	-11.2
29.915	150	-32.8
29.917	100	-38.2
29.919	50	-49.0

To achieve the required 29.9 inch (500 micron) vacuum, a properly maintained two-stage vacuum pump in good condition is required. A two stage pump can reach a deeper vacuum than a single stage because the exhaust from the first pumping stage is discharged into the second pumping stage. This means the second stage begins pumping at a lower pressure so a lower ultimate vacuum can be achieved.

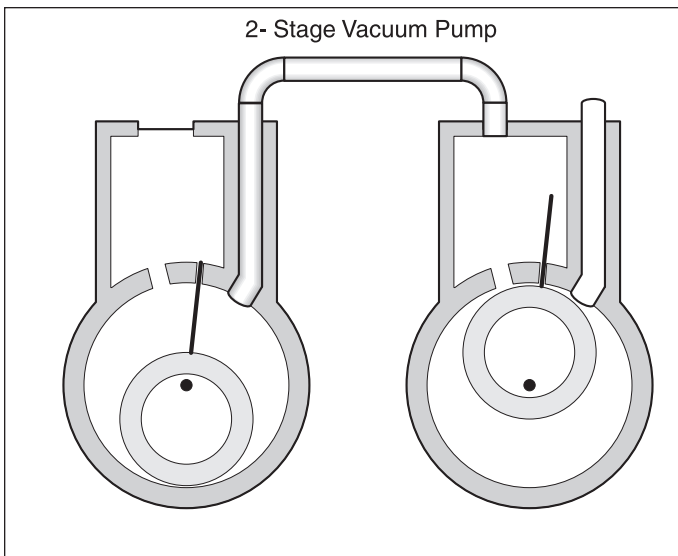


Figure 5-5. Two Stage Vacuum Pump

Spills or Leaks

If a large release of vapor occurs, such as from a large spill or leak, the vapors may concentrate near the floor or low spots and displace the oxygen available for breathing, causing suffocation.

Evacuate everyone until the area has been ventilated. Use blowers or fans to circulate the air at floor level. DO NOT re-enter the affected area unless you are equipped with a self-contained breathing apparatus or unless an area monitor indicates that the concentration of HFC-134a vapors in the area is below the AEL.

Always use self-contained breathing apparatus or an air-line mask when entering tanks or other areas where vapors might exist. Use the buddy system and a life-line. Refer to the Material Safety Data Sheet (MSDS) for HFC-134a information.

HFC-134a vapors have a slightly sweet odor that can be difficult to detect. Therefore, frequent leak checks and the installation of permanent area monitors may be necessary in enclosed spaces. Refer to ASHRAE Standards 15 and 34 for refrigeration machinery rooms.

To ensure safety when working with HFC-134a in enclosed areas:

1. Route relief and purge vent piping (if present) outdoors, away from air intakes.
2. Make certain area is well ventilated, using auxiliary ventilation if needed to move vapors.
3. Make sure area is clear of vapors prior to beginning work.
4. Install air monitoring equipment to detect leaks.

HFC 134a COMPARISON WITH CFC 12

HFC 134a (1,1,1,2-tetrafluoroethane) is being studied as part of the PAFT I programme sector, which began in December 1987. It is a prime candidate for the replacement of CFC 12 (dichlorodifluoromethane) in refrigeration and air conditioning systems, medical aerosols, and in certain foam blowing applications. HFC 134a is similar to CFC 12 in that it has a low chemical reactivity and a high degree of stability. Both chemicals are gases.

Inhalation Toxicity

(Short-term exposures to high concentrations, such as accidental leakages)

Both HFC 134a and CFC 12, are very low in toxicity by the inhalation route. The 4-hour LC₅₀ for HFC 134a is greater than 500,000 ppm, and for CFC 12 it is 760,000 ppm. As with other halogenated hydrocarbons, CFC 12 and HFC 134a can, at high dose levels, sensitize the heart to adrenaline. For CFC 12, the threshold level for cardiac sensitization is 50,000 ppm, while for HFC 134a it is 75,000 ppm.

HFC-134a poses no acute or chronic hazard when it is handled in accordance with DuPont recommendations and when exposures are maintained at or below the DuPont Acceptable Exposure Limit (AEL) of 1,000 ppm (8 and 12 hour Time-Weighted Average or TWA).

An AEL is an airborne exposure limit established by DuPont scientists that specifies time-weighted average (TWA) airborne concentrations to which nearly all workers may be repeatedly exposed without adverse effects. The AEL for HFC-134a has the same value as the Threshold Limit Values (TLVs) established for CFC-12 and HCFC-22. TLVs are established by the American Conference of Governmental and Industrial Hygienists (ACGIH).

However, inhaling high concentrations of HFC-134a vapor may cause temporary central nervous system depression with narcosis, lethargy and anesthetic effects. Other effects that may occur include dizziness, a feeling of intoxication and a loss of coordination. Continued breathing of high concentrations of HFC-134a vapors may produce cardiac irregularities (cardiac sensitization), unconsciousness, and with gross overexposure, death. Intentional misuse or deliberate inhalation of HFC-134a may cause death without warning. This practice is extremely dangerous.

If you experience any of the initial symptoms, move to fresh air and seek medical attention.

Cardiac Sensitization

If vapors are inhaled at a concentration of 75,000 ppm, which is well above the AEL, the heart may become sensitized to adrenaline, leading to cardiac irregularities and, possibly, to cardiac arrest. The likelihood of these cardiac problems increases if you are under physical or emotional stress.

Medical attention must be given immediately if exposed to high concentrations of HFC-134a. DO NOT treat with adrenaline (epinephrine) or similar drugs. These drugs may increase the risk of cardiac arrhythmia and cardiac arrest. If the person is having difficulty breathing, administer oxygen. If breathing has stopped, give artificial respiration.

Skin and Eye Contact

At room temperature, HFC-134a vapors have little or no effect on the skin or eyes. However, in liquid form, HFC-134a can freeze skin or eyes on contact, causing frostbite. Following contact, soak the exposed area in lukewarm water, not cold or hot. If medical treatment cannot begin immediately, apply a light coat of a nonmedicated ointment, such as petroleum jelly. If the exposed area is in a location where the presence of the ointment would be awkward, such as on the eye, apply a light bandage. In all cases of frostbite, seek medical attention as soon as possible. Always wear protective clothing when there is a risk of exposure to liquid HFC-134a. Where splashing is possible, always wear eye protection and a face shield.

Sealed System

Combustibility of HFC-134a

HFC-134a is nonflammable at ambient temperatures and atmospheric pressure. However, tests have shown HFC-134a to be combustible at pressures as low as 5.5 psi (139.3 kPa absolute) at 177°C (350°F) when mixed with air at concentrations generally greater than 60% volume air. At lower temperatures, higher pressures are required for combustibility. (HCFC-22 is also combustible at pressures above atmospheric in the presence of high air concentrations). Test results and calculations have shown:

- At ambient temperature, all concentrations of HFC-134a in air are nonflammable at pressures below 15 psi (205 kPa absolute).
- Combustible mixtures of air and HFC-134a will not form when liquid HFC-134a is pumped into closed vessel if initial air pressure in vessel is limited to one atmosphere absolute and final pressure is limited to 300 psi (2,170 kPa absolute). If initial air pressure is greater than one atmosphere, combustible mixtures may form as tank is filled.

Based on above information, the following operating practices are recommended:

Bulk Delivery and Storage

- Tanks should normally be evacuated at start of filling, and should never be filled while under positive air pressure.
- Tank pressure should never be allowed to exceed 300 psi (2,170 kPa) when filling with HFC-134a. Relief devices on either tanks or HFC-134a supply system usually prevent this.
- Tank pressures should be monitored routinely.
- Air lines should never be connected to storage tanks.

Filling and Charging Operations

- Before evacuating cylinders or refrigeration equipment, any remaining refrigerant should be removed by recovery system.
- Vacuum pump discharge lines should be free of restrictions that could increase discharge pressures above 15 psi (205 kPa) and result in formation of combustible mixtures.
- Cylinders or refrigeration equipment should normally be evacuated at start of filling, and should never be filled while under positive air pressure.
- Final pressures should not exceed 300 psi (2,170 kPa).
- Filled cylinders should periodically be analyzed for air (nonabsorbable gas or NAG).

Refrigerant Recovery Systems

Efficient recovery of refrigerant from equipment or containers requires evacuation at the end of the recovery cycle. Suction lines to a recovery compressor should be periodically checked for leaks to prevent compressing air into the recovery cylinder during evacuation. In addition, the recovery cylinder pressure should be monitored, and evacuation stopped in the event of a rapid pressure rise indicating the presence of noncondensable air. The recovery cylinder contents should then be analyzed for NAG, and the recovery system leak checked if air is present. **DO NOT** continue to evacuate a refrigeration system that has a major leak.

Thermal Decomposition

HFC-134a vapors will decompose when exposed to high temperatures from flames or electric resistance heaters. Decomposition may produce toxic and irritating compounds, such as hydrogen fluoride. The pungent odors released will irritate the nose and throat and generally force people to evacuate the area. Therefore, it is important to prevent decomposition by avoiding exposure to high temperatures.

R-134a Physical Properties:

R-134a - Tetrafluoroethane

Refrigerant of choice in automotive industry. Genetron134a replaces CFC12 for air conditioning and refrigeration systems in commercial residential and industrial applications.

R-12 - Dichlorodifluoromethane

A versatile and widely used refrigerant. Common in reciprocating and rotary type equipment. For all types of applications, household to industrial. Also employed in some centrifugal designs and in several special applications.

Chemical formula	CF ₃ CH ₂ F
Molecular weight	102.03
Boiling point at 1 atm.....	-15.1°F (-26.2°C)
Critical temperature	214.0°F (101.1°C)
Critical pressure, psia.....	589.9
Critical density, lb./cu. ft.	31.97
Liquid density at 80°F (26.7°C). lb./cu. ft.	75.0
Heat of vaporization at boiling point, Btu/lb.°F.....	92.4
Specific heat of liquid at 80°F (26.7°C). Btu/lb.°F.....	0.341
Specific heat of vapor at constant pressure (1 atm.) and 80°F (26.7°C), (Btu/lb.°F)	0.204
*Flammable range, %volume in air.	None
Ozone depletion potential.....	0
Greenhouse warming potential (estimate)	0.285

* Flame limits measured using ASTM E681 with electrically activated kitchen match ignition source per ASHRAE Standard 34.

Comparative Cycle Performance:

Evaporator temperature = 20°F

Condenser temperature = 110°F

Suction superheat = 30°F

sub-cooling = 10°F

Compressor isentropic efficiency = 65%

	Refrigerant		
	12	22	134a
Evaporator pressure, psi	21.0	43.0	18.5
Condenser pressure, psi	136.4	226.3	146.4
Compression ratio	4.23	4.17	4.86
Compressor discharge temperature, °F	188.1	227.0	178.3
Coefficient of performance	2.90	2.79	2.83
Refrigerant circulation per ton, lb./min.	3.80	2.78	3.00
Compressor displacement per ton, cfm.	4.51	2.82	4.55
Liquid flow per ton, cu. in. /min.	83.2	67.4	71.7
Latent heat at evaporator temp., Btu/lb.....	66.5	90.6	86.9
Net refrigeration effect. Btu/lb	52.7	72.0	66.7

Sealed System

HFC-134a, CFC-12 Pressure Temperature Chart

°F	°C	HFC-134a	CFC-12		°F	°C	HFC-134a	CFC-12
-60	-51.1	21.8*	19.0*		55	12.8	51.1	52.0
-55	-48.3	20.4*	17.3*		60	15.6	57.3	57.7
-50	-45.6	18.7*	15.4*		65	18.3	63.9	63.8
-45	-42.8	16.9*	13.3*		70	21.1	70.9	70.2
-40	-40.0	14.8*	11.0*		75	23.9	78.4	77.0
-35	-37.2	12.5*	8.4*		80	26.7	86.4	84.2
-30	-34.4	9.8*	5.5*		85	29.4	94.9	91.8
-25	-31.7	6.9*	2.3*		90	32.2	103.9	99.8
-20	-28.9	3.7*	0.6		95	35.0	113.5	108.3
-15	-26.1	0.0	2.4		100	37.8	123.6	117.2
-10	-23.3	1.9	4.5		105	40.6	134.3	126.6
-5	-20.6	4.1	6.7		110	43.3	145.6	136.4
0	-17.8	6.5	9.2		115	46.1	157.6	146.8
5	-15.0	9.1	11.8		120	48.9	170.3	157.7
10	-12.2	12.0	14.6		125	51.7	183.6	169.1
15	-9.4	15.0	17.7		130	54.4	197.6	181.0
20	-6.7	18.4	21.0		135	57.2	212.4	193.5
25	-3.9	22.1	24.6		140	60.0	227.9	206.6
30	-1.1	26.1	28.5		145	62.8	244.3	220.3
35	1.7	30.4	32.6		150	65.6	261.4	234.6
40	4.4	35.0	37.0		155	68.3	279.5	249.5
45	7.2	40.0	41.7		160	71.1	298.4	265.1
50	10.0	45.3	46.7		165	73.9	318.3	281.4

CFCs

Chlorofluorocarbons (CFCs) are compounds consisting of chlorine, fluorine, and carbon atoms which are very stable in the troposphere. They are degraded only in the stratosphere by the sun's radiation where released chlorine may contribute to ozone depletion. They can persist in the troposphere for a hundred years or longer.

Fluorocarbons

These chemical compounds include CFCs, hydrochlorofluorocarbons (HCFCs), and hydrofluorocarbons (HFCs). For many years, CFCs have served vital functions in society. They are used in a variety of applications including refrigeration, air conditioning, energy efficient insulation, medical products, and cleaning of electronic and precision engineering components. HCFCs and HFCs retain many of the desirable properties of CFCs but because they exist for a shorter time in the atmosphere, ozone depletion and global warming concerns are significantly reduced.

Global Warming

Global warming, which is an increase in the natural greenhouse effect, refers to the physical phenomenon that may lead to heating of the earth. Most of the sun's energy reaches the earth as visible light. After passing through the atmosphere, part of this energy is absorbed by the earth's surface and in the process is converted into heat energy. The earth, now warmed by the sun, radiates heat energy back into the atmosphere toward space.

Naturally occurring gases, such as carbon dioxide, water vapor, and ozone, absorb and thus retain some of the outgoing heat energy. This process slows the heat loss, making the earth's surface warmer than it would be if this heat energy had passed unobstructed through the atmosphere into space. The warmer earth's surface, in turn, radiates more heat until a balance is established between incoming and outgoing energy. This warming process, caused by the atmosphere's absorption of the heat energy radiated from the earth's surface, is called the greenhouse effect.

Increasing concentrations of gases from man-made sources (e.g., carbon dioxide, methane, and CFCs) that absorb the heat radiation could lead to a slow warming of the earth. This phenomenon is commonly referred to as global warming.

Global Warming Potential (GWP)

An index developed to provide a simplified means of describing the relative ability of each greenhouse gas emission to affect radiative forcing and thereby the global climate. GWPs are defined on a mass basis, relative to either CFC-11 (the Halocarbon GWP or HGWP) or carbon dioxide. Because CFC-11 has a finite lifetime in the atmosphere, the HGWP can be calculated explicitly and is a single number. Because carbon dioxide does not have a finite lifetime in the atmosphere, GWPs relative to it have to be calculated up to a particular time horizon, for example, 20, 100, or 500 years.

Greenhouse Gases

Gases present in relatively small quantities in the atmosphere that strongly absorb infrared radiation or "heat" emitted by the earth. The primary greenhouse gases are water vapor, carbon dioxide, methane, nitrous oxide, ozone, and some of the chlorofluorocarbons. Concentrations of several greenhouse gases are increasing, primarily as a result of human activities.

Sealed System

HCFCs

Hydrochlorofluorocarbons (HCFCs) are compounds comprised of hydrogen, chlorine, fluorine, and carbon atoms. These compounds have many of the useful properties of CFCs, but are destroyed naturally in the lower atmosphere and do not persist to the same extent as CFCs. Only a fraction of HCFCs emitted can be transported to the ozone layer in the stratosphere where their chlorine could deplete ozone. HCFCs typically have an ozone depletion potential 2 to 10 percent that of CFCs.

HFCs

Hydrofluorocarbons (HFCs) are compounds consisting of hydrogen, fluorine, and carbon atoms which, like the HCFCs, are destroyed naturally in the lower atmosphere. They have many of the useful properties of the CFCs. Because they do not contain chlorine, they are not involved in ozone depletion.

NOT-IN-KIND (NIK) Technologies

Technologies that do not rely on the use of fluorocarbons.

Ozone

Ozone, formed in the stratosphere by the action of sunlight on oxygen, is also an airborne pollutant near ground level. Low altitude (tropospheric) ozone is formed by reactions between hydrocarbons and oxides of nitrogen in sunlight.

Ozone Depletion

Ozone is continually being formed and destroyed by chemical reactions occurring in the stratosphere. There are large natural changes in ozone concentration in the stratosphere; for example, between summer and winter there is a change of about 25 percent at mid-latitudes. Ozone depletion occurs if the rate of ozone destruction is increased due to human activities.

Component Teardown

This section explains how to access and remove components from an Electrolux ICON Built-In All Refrigerator Pro and/or a Built-In All Freezer Pro unit, and has been arranged in such a way as to simulate which components would need to be removed first in order to gain access to other components. When following a component removal procedure, it may be necessary to reference another component removal procedure listed earlier in this section.

NOTE: This section will cover the All Refrigerator units first, the Compressor area components for All Refrigerator and All Freezer units second, and the All Freezer components last.

WARNING

Electrolux Home Products Inc. cannot be held responsible for damage to property or injury to persons caused by failure to comply with the installation, maintenance and safety instructions contained in this Service Manual.

IMPORTANT

Before continuing, please take note of the WARNINGS and CAUTIONS below.

WARNING

- IF IT IS NECESSARY TO REMOVE AN ALL REFRIGERATOR PRO AND/OR AN ALL FREEZER PRO UNIT FROM ITS INSTALLATION, USE PROPER LIFTING TECHNIQUES AS UNITS ARE HEAVY AND COULD FALL RESULTING IN SERIOUS INJURY OR DEATH. PULLING A UNIT FROM ITS INSTALLATION SHOULD ONLY BE PERFORMED BY A TRAINED AUTHORIZED SERVICE TECHNICIAN OR INSTALLER.
- TO AVOID ELECTRIC SHOCK, POWER TO AN ALL REFRIGERATOR PRO AND/OR AN ALL FREEZER PRO UNIT MUST BE DISCONNECTED WHENEVER ACCESSING/ REMOVING COMPONENTS POWERED BY ELECTRICITY OR COMPONENTS NEAR OTHER ELECTRICAL COMPONENTS.
- AFTER SERVICE IS COMPLETED, BE SURE ALL SAFETY-GROUNDING CIRCUITS ARE COMPLETE, ALL ELECTRICAL CONNECTIONS ARE SECURE, AND ALL ACCESS PANELS ARE IN PLACE.
- IF UNIT WAS USED PRIOR TO SERVICE, THE COMPRESSOR ASSEMBLY WILL BE HOT. WEAR PROTECTIVE GLOVES AND THE APPROPRIATE SAFETY GEAR WHEN WORKING WITH COMPRESSORS.
- IF REMOVING A DOOR FROM A UNIT, REMEMBER THAT THE DOORS ARE HEAVY. IF A DOOR WERE TO FALL, IT COULD CAUSE SERIOUS PERSONAL INJURY.

CAUTION

- Metal edges may be sharp. Use caution and wear appropriate safety equipment when servicing evaporators and condensers to avoid personal injury.
- If working in the compressor area, remember that compressor and tubing may be hot.

Component Teardown

Refrigerator Exterior Components

Door Handle Removal

The door handle is secured with setscrews to the handle mounting shoulder screws that are fastened into the front of the door assembly.

To remove the handle, use a 3/32" allen wrench and extract the two setscrews located in each handle standoff. Pull handle assembly from door assembly. (See Figure 6-1)

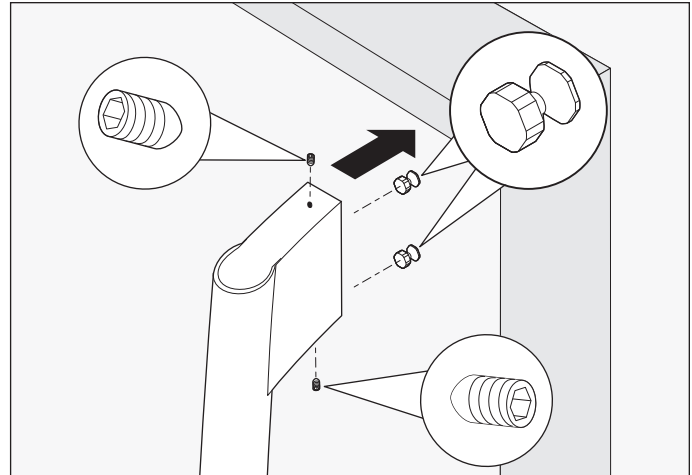


Figure 6-1. Handle Removal

Kickplate Removal

The kickplate is secured with two screws to the lower front of the unit.

To remove the kickplate, extract the screw from each end of the kickplate with a phillips head screwdriver. (See Figure 6-2)

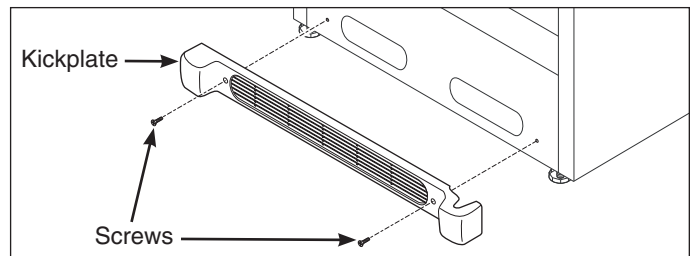


Figure 6-2. Kickplate Removal

Door Hinge and Door Assembly Removal

The door assembly is secured to the unit frame by an upper and lower hinge assembly.

To remove the door assembly:

1. Gently lay freezer on its back on a soft clean surface.
2. Remove kickplate.
3. Lift plastic cover off upper hinge assembly. (See Figure 6-3)
4. Using a 3/8" socket or wrench, extract the two bolts securing the upper hinge to the unit frame.
5. Using a 3/8" socket or wrench, extract the two bolts securing the lower hinge to the unit frame. Use a phillips head screwdriver to extract the remaining screw from the lower hinge assembly. (See Figure 6-4)
6. Lift the door assembly off of the unit frame.

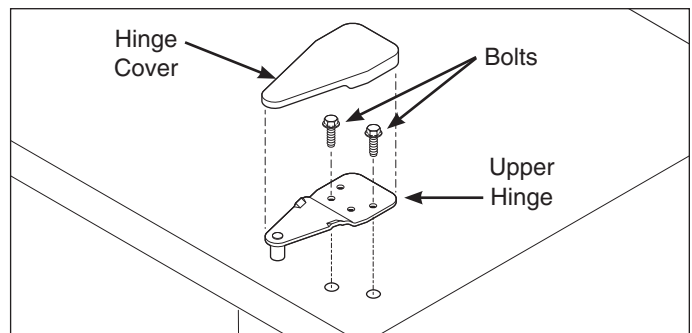


Figure 6-3. Upper Hinge Removal

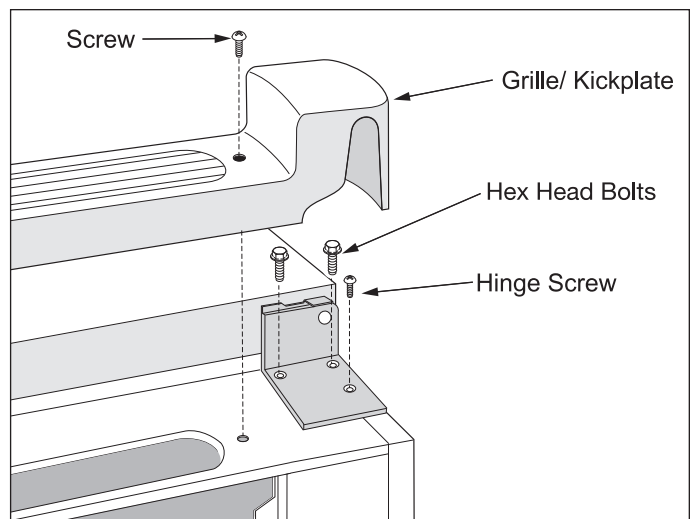


Figure 6-4. Lower Hinge Removal

Door Stop Assembly Removal

The door stop is secured to with two screws the underside of the door assembly.

To remove the door stop:

1. Remove door from unit.
2. Extract the two screws securing the door stop to the bottom of the door assembly. (See Figure 6-5) Door stop assembly is now free.

Door Gasket and Inner Panel Removal

The inner panel of the door assembly is secured with screws that pass through the inner panel and fasten into the door assembly. The door gasket has an inner lip that is pressed between the inner panel and the door assembly and is secured in position when the inner panel screws are fastened to the door assembly. The inner panel does not have to be completely removed to extract the door gasket from the door assembly.

To remove the door gasket:

1. Lift the inside edge of the door gasket to access the inner panel screws.
2. Loosen the inner panel screws until the door gasket can be pulled out from under the inner panel. (See Figure 6-6)
3. Continue loosening screws around door assembly until door gasket is free.
4. To remove the inner panel, extract all screws from the outside edge of the inner panel and remove from unit.
5. The secondary gasket is secured with two retaining clips that snap into the inner door panel. Pry out the two retaining clips with a small putty knife, using caution not to damage the inner door panel. The secondary gasket is now free.

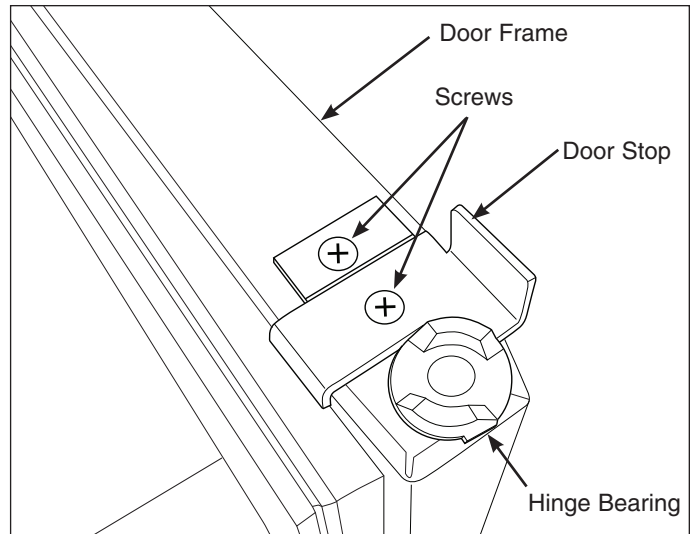


Figure 6-5. Door Stop Removal

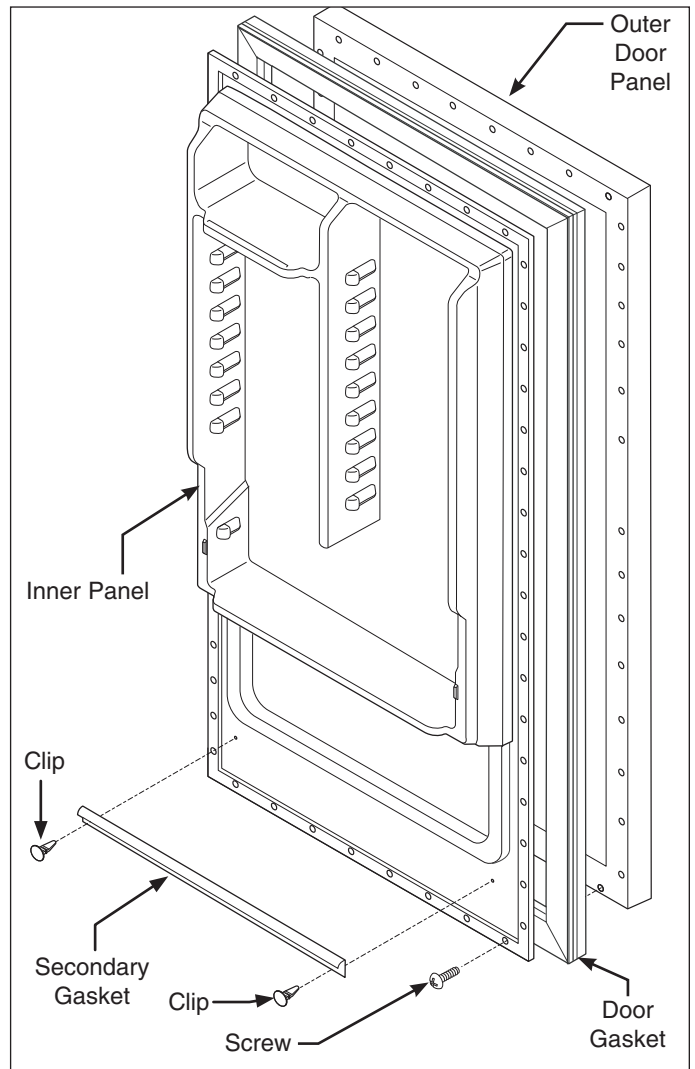


Figure 6-6. Inner Panel and Door Gasket Removal

Component Teardown

Adjustable Door Bins Removal

There are four two liter door bins that can be arranged as needed by the user.

To remove a two liter door bin, lift the bin straight up until it is free of the supports molded into the door liner, then pull from unit. (See Figure 6-7)

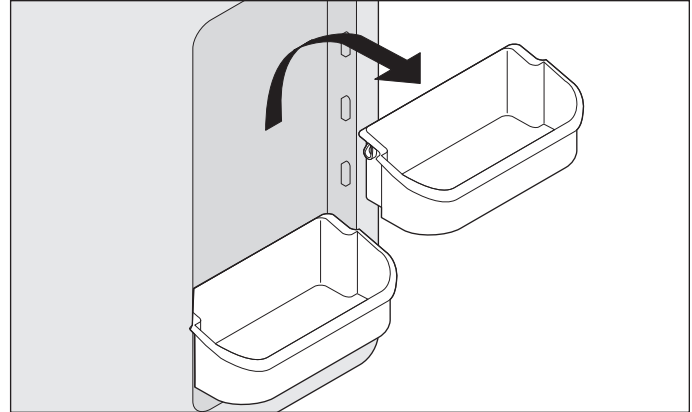


Figure 6-7. Adjustable Door Bin Removal

Dairy Door Removal

The dairy door has a hole on each side that fits over molded pins in the door liner.

To remove the dairy door:

1. Open dairy door.
2. Grab the dairy door on each side and flex the outer edge inwards until the door is free of the pins in the door liner, then pull from door. (See Figure 6-8)

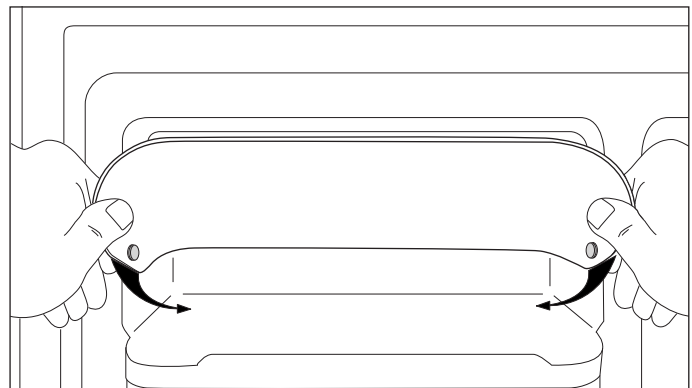


Figure 6-8. Dairy Door Removal

Door Switch Removal

The door switch is mounted inside a hole in the cabinet base along the lower left hand side.

(See Figure 6-9)

To remove the door switch:

1. Disconnect unit from power supply.
2. Remove kickplate.
3. Reach into the access hole next to the door switch and disconnect the electrical leads from the door switch terminals.
4. Press in on the retaining latch on the switch body and push switch through hole in cabinet base.

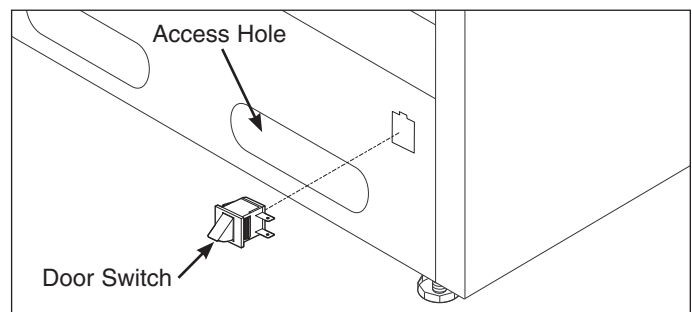


Figure 6-9. Door Switch Removal

Interior Components

Adjustable Interior Shelves

Multi-position adjustable interior shelves can be moved to any position for larger or smaller packages. The cantilever shelves are supported at the back of the refrigerator. (See Figure 6-10) Replace the shelf by inserting the hooks at rear of the shelf into the wall bracket. Lower the shelf into the desired slots and lock into position.

To remove the shelf assemblies:

1. Lift front edge up.
2. Pull shelf out.

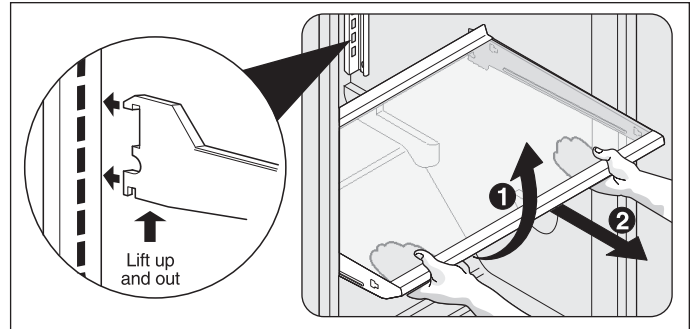


Figure 6-10. Interior Shelving Removal

Refrigerator Drawer Assembly Removal

The refrigerator drawer assembly can be lifted off of the supports and pulled from the refrigerated compartment. The drawer may now be removed from the drawer slides. (See Figure 6-11)

To remove the refrigerator drawers assemblies:

1. Remove the lowest adjustable interior shelf.
2. Lift up on the front of the drawer assembly and lift upwards until the bracket releases from the supports mounted to the liner sidewalls. Then pull assembly out of the cabinet interior.
3. Remove the glass shelf.
4. Remove crisper drawer from slides by using a flat bladed screwdriver just behind the clip between the drawer and rail, then gently twisting up. The clip will release and the drawer will be free.
5. The drawer slides are secured with two tabs that lock into the drawer frame brackets. Push drawer slide upwards until the front tab releases, then pull drawer slide forward until rear tab disengages. Drawer slide is now free.
6. The bracket is secured with two screws to the drawer frame. Extract the two screws to separate the bracket and drawer frame.
7. The supports are secured with two screws to the compartment sidewall. Extract the screws and remove the supports.

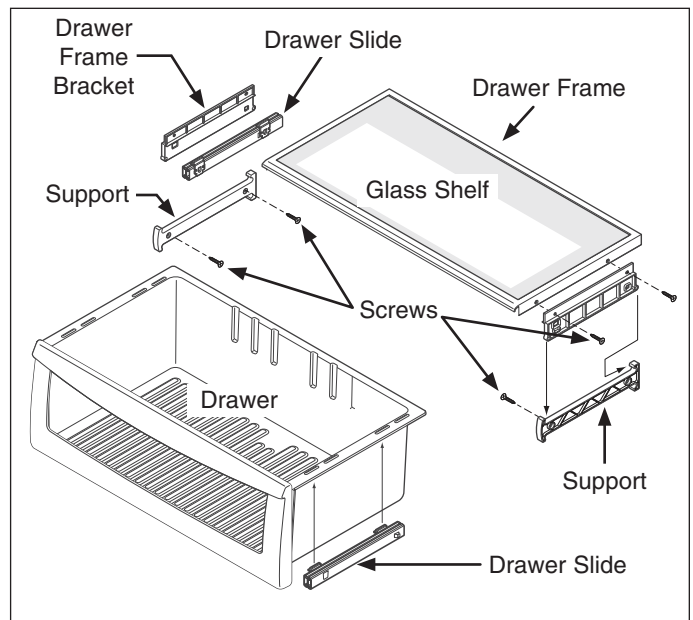


Figure 6-11. Refrigerator Drawer Assembly Removal

Component Teardown

Air Filter Removal

Push the plastic bubble tab at the back of the control box housing. This releases the hinged bottom half to drop open. Remove the old filter and discard it. Unpackage the new filter and place it inside the hinged bottom half of the housing. Push the hinged bottom half upward until the tab snaps into closed position. (See Figure 6-12)

Control Box Assembly Removal

The control box assembly is secured with five screws to the top of the refrigerated compartment and has sealant along the front face to prevent ambient air from reaching the compartment thermistor.

The water filter components are part of the control box assembly.

To remove the control box:

1. Disconnect power from unit.
2. Remove the adjustable shelves.
3. Extract the five screws from the recessed holes in control box securing the control box to the compartment ceiling. (See Figure 6-13)
4. Pull forward on the control box until the sealant along the front edge breaks. Use caution not to strain the wire harness connections.
5. Disconnect wire harness from control box at the quick disconnects.
6. Push in on the outer edges of the fittings connecting the water filter base to the inlet and outlet water lines as you pull the water lines out of water filter base. Control box is now free.

Light Fixture Removal

To remove the light fixture:

1. Disconnect power from unit.
2. Remove control box from refrigerated compartment.
3. Remove light bulbs by turning counter-clockwise.
4. Disconnect wire leads from light fixture terminals.
5. Press on the retaining latches securing the light fixture to the control box while pushing the light fixture through the cutout in the control box. (See Figure 6-14)

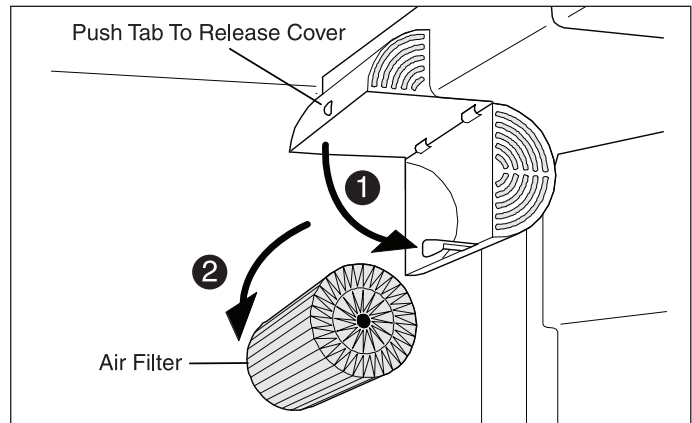


Figure 6-12. Light Shield and Fixture Removal

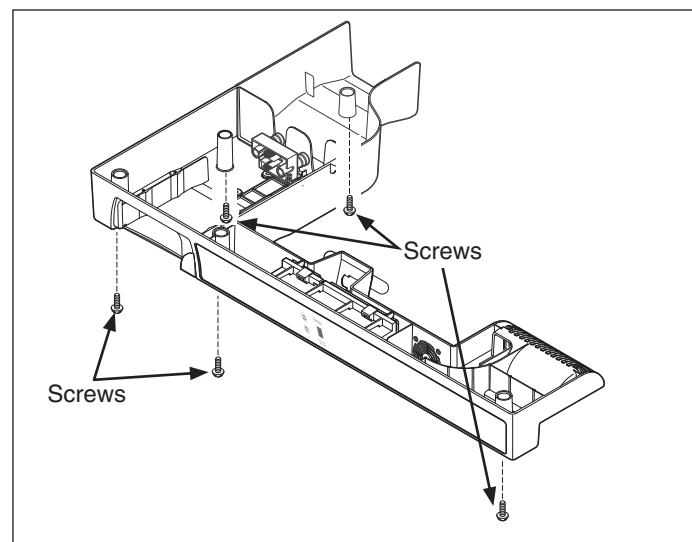


Figure 6-13. Control Box Removal

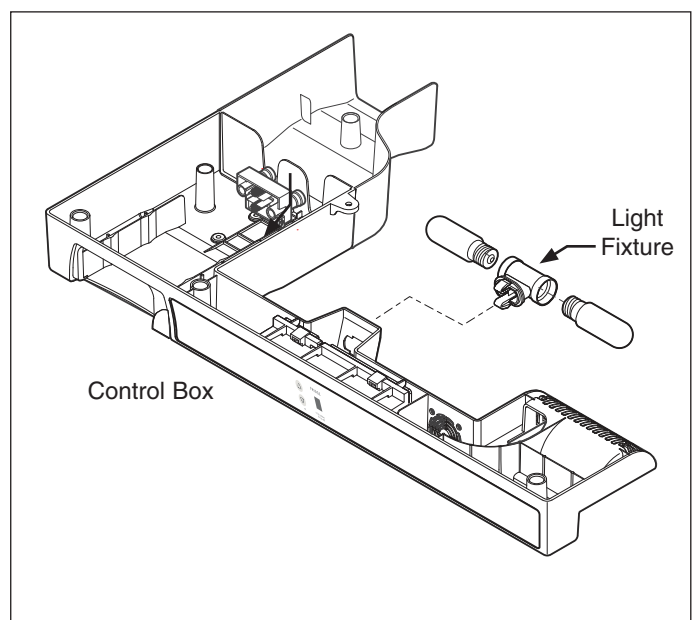


Figure 6-14. Light Fixture Removal

Control Removal

To remove the control:

1. Disconnect power from unit.
2. Remove control box from refrigerated compartment.
3. Extract the two screws securing the control to the control box. (See Figure 6-15)
4. Pull the front of the control box away from the control while pulling the control up and out from its installation position.
5. Disconnect the two wire harness connections from the control board. Control is now free.

Water Filter Base Components

The water filter base is secured with two screws to the underside of the control box. The water filter release mechanism is secured with two screws and clamps to the inside of the control box assembly.

To remove the control:

1. Disconnect power from unit.
2. Remove control box from refrigerated compartment.
3. Remove water filter raceway by pressing in on the retaining latches and separating the raceway from the control box assembly. (See Figure 6-16)
4. Extract the two screws from the underside of the control box assembly securing the water filter base to the inside of the control box assembly.
5. Extract the screw from each retainer securing the release rod to the control box assembly. Lift retainers off release rod. (See Figure 6-16)
6. Lift water filter base and release rod from control box assembly. Turn release rod 90° to remove from water filter base.
7. The water lines are removed from the hose junction mounted to the rear wall by turning the nylon nuts counter clockwise and then pulling the water lines from the hose junction. (See Figure 6-17)
8. The hose junction may be removed by first disconnecting the water lines from the rear of the unit. Then, press in on the retaining latches while pushing the hose junction through the cabinet wall. (See Figure 6-17)
9. Remove the hose junction retainer by extracting the two screws from the rear of the unit, then pull the retainer from the unit. (See Figure 6-17)

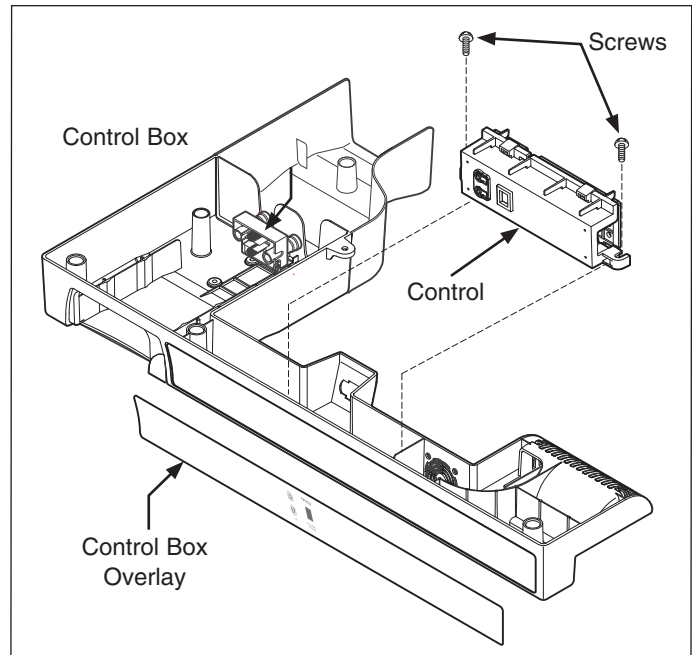


Figure 6-15. Light Fixture and Control Removal

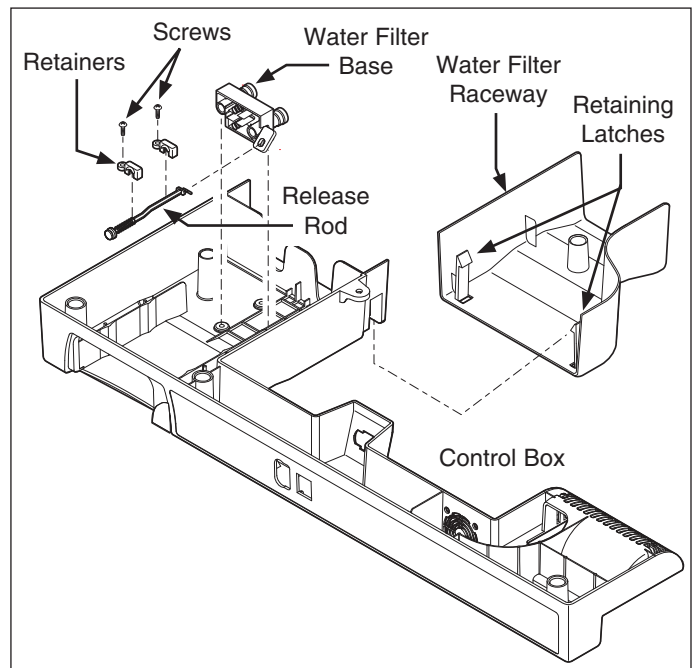


Figure 6-16. Light Fixture and Control Removal

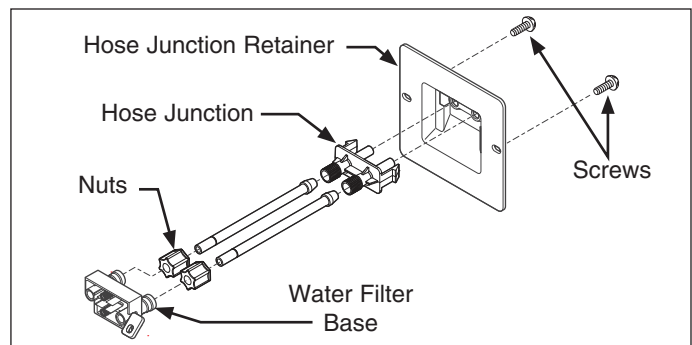


Figure 6-17. Light Fixture and Control Removal

Component Teardown

Baffle Plate Removal

To remove the baffle plate, with one hand grab the baffle plate from the center and pull back while with the other hand, reach behind to disengage the retaining latches. (See Figure 6-18)

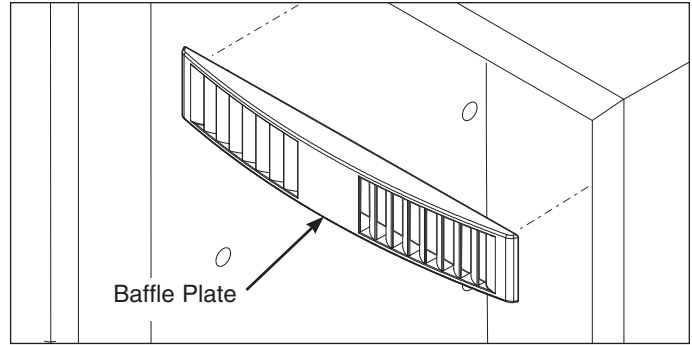


Figure 6-18. Baffle Plate Removal

Evaporator Cover Removal

The evaporator cover is secured with screws to the back wall and bottom of the freezer compartment. The evaporator cover has a gasket on each side to create proper airflow in the compartment. (See Figure 6-19)

To remove the evaporator cover:

1. Disconnect unit from power supply.
2. Remove the cantilever shelves.
3. Remove the crispers and crisper supports.
4. Using a phillips head screwdriver, extract the ten (10) screws securing the evaporator cover to the refrigerator compartment.
5. Pull the thermostat knob from thermostat shaft.
6. Carefully pull the evaporator cover away from the back wall enough to access the wire harness connections to the light fixtures and thermostat. Use caution not to damage the gaskets on both sides of the evaporator cover.
7. From behind the evaporator cover, disconnect the wire leads from the light fixture terminals. Evaporator cover may now be removed from unit.

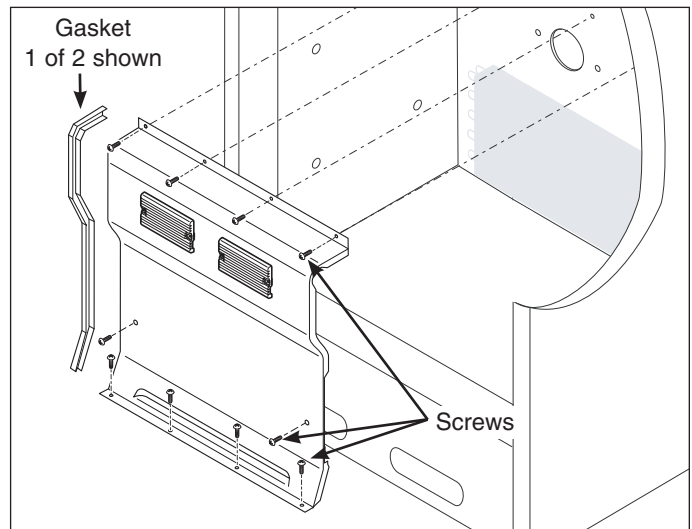


Figure 6-19. Evaporator Cover Removal

Mid Level Lighting Removal

The mid level lighting components may be accessed without the evaporator cover being completely removed from the compartment. By pulling the top of evaporator cover away from the rear wall, the light wire harness connections and light fixture may be accessed.

To remove the mid level lighting on the evaporator cover:

1. Disconnect power from unit.
2. Remove the lens from the lamp housing by unsnapping it from the lamp housing using your fingers or a screwdriver. Be careful not to break the locking tabs on the lamp housing.
3. Remove bulb by turning counterclockwise.
4. Remove evaporator cover or remove screws and pull away top of cover enough to access components mounted to rear of cover, then disconnect the wire leads from the light fixture terminals. (See Figure 6-20)
5. Remove light fixture by pressing in the retaining latches and pushing the light fixture through the evaporator cover.

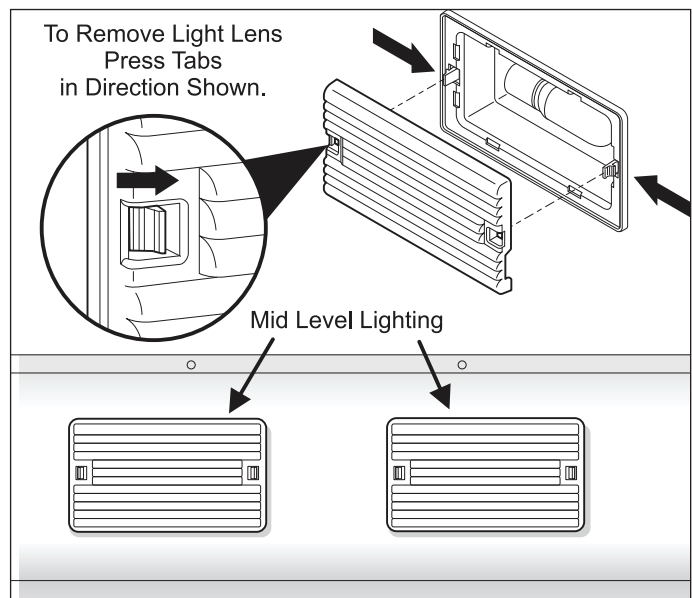


Figure 6-20. Mid Level Lighting Removal

Thermistor Removal

The evaporator cover does not need to be completely removed to access the thermistor wire harness connections and mounting screw, however, removing the evaporator cover from the unit will make the task easier.

To remove the thermostat control:

1. Disconnect power from unit.
2. Remove the adjustable shelves.
3. Remove the freezer drawers and supports.
4. Remove the evaporator cover screws, then pull the top of the evaporator cover away from the back wall enough to access the thermistor mounting screw and electrical connection.
5. Extract the screw securing the thermistor to the back wall of the cabinet interior. (See Figure 6-21)
6. Disconnect thermistor from wire harness at the quick disconnect. Thermistor is now free.

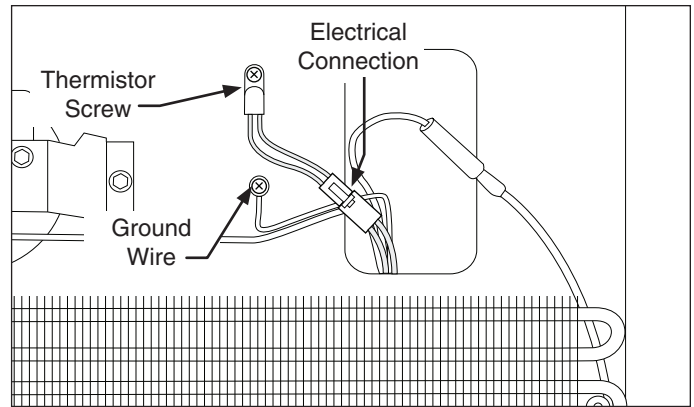


Figure 6-21. Thermistor Removal

NOTE: The lighting wire harness is not shown for clarity.

Evaporator Fan Assembly Removal

The evaporator fan assembly consists of the fan motor mount bracket, fan motor and fan blade. Two screws secure the fan motor to the fan motor mount bracket. The evaporator fan assembly is then secured with two screws to the back wall of the freezer compartment. (See Figure 5-18)

To remove the evaporator fan assembly:

1. Disconnect unit from power supply.
2. Remove the cantilever shelves.
3. Remove the crispers and crisper supports.
4. Remove the evaporator cover.
5. Remove wires from retaining clips mounted on the fan motor mounting bracket. Disconnect the electrical leads of fan motor at quick disconnect.
6. Using a 5/16" socket or nut driver, extract the two hex head screws securing the fan motor mounting bracket to the back wall of the unit. (See Figure 6-22)
7. Separate the fan motor from the mounting bracket by extracting the two hex head screws securing the fan motor to mounting bracket.
8. Pull fan blade from fan motor shaft.

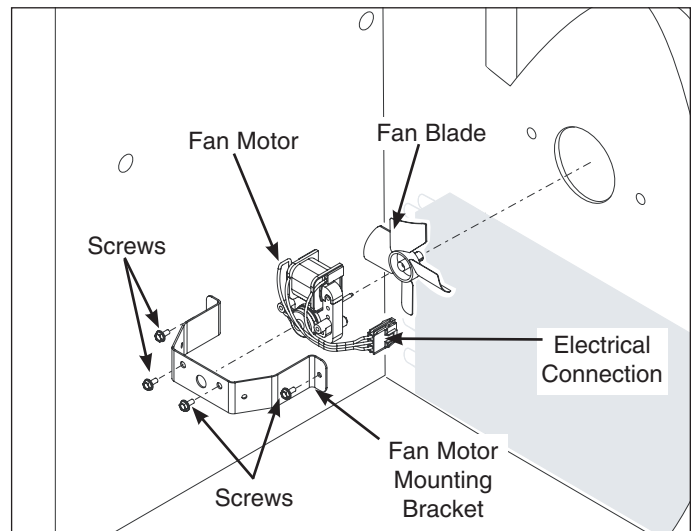


Figure 6-22. Evaporator Fan Assembly Removal

Component Teardown

Defrost Thermostat Removal

The defrost thermostat is secured with a retaining clip to the upper left corner of the evaporator assembly. The defrost thermostat and wire harness connections may be accessed without completely removing the evaporator cover. The top of the evaporator cover may be pulled away from the rear of the cabinet interior enough to remove the defrost terminator and disconnect the wire harness connections. (See Figure 6-23)

To remove the defrost thermostat:

1. Disconnect unit from power supply.
2. Remove the cantilever shelves.
3. Remove the crispers and crisper supports.
4. Remove the evaporator cover.
5. Disconnect the defrost thermostat wire leads from the wire harness. (See Figure 6-23)
6. Pull the defrost thermostat off of the evaporator inlet tubing.

NOTE

Refrigerator defrost thermostats must be installed on the evaporator inlet tubing.

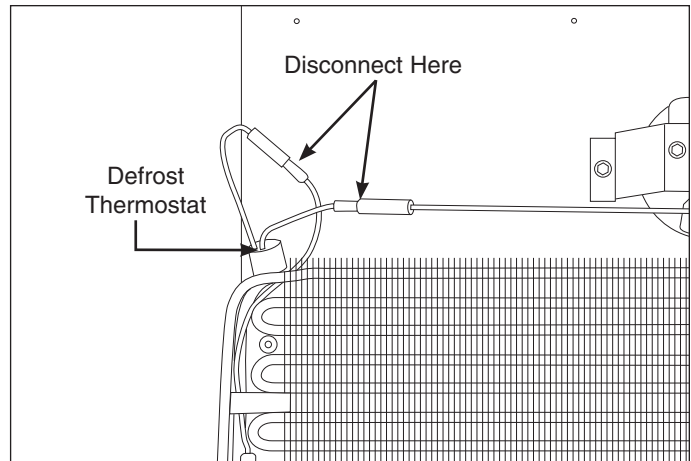


Figure 6-23. Defrost Thermostat Removal

Defrost Heater Removal

The defrost heater is secured with two aluminum straps to the bottom tube of the evaporator assembly.

To remove the defrost heater:

1. Disconnect unit from power supply.
2. Remove the cantilever shelves.
3. Remove the crispers and crisper supports.
4. Remove the evaporator cover.
5. Disconnect the defrost heater wire leads from the wire harness. (See Figure 6-24)
6. Release the aluminum straps securing the defrost heater to the bottom of the evaporator assembly.
7. Remove the styrofoam insulators from both sides of the evaporator.
8. Pull defrost heater from evaporator assembly.

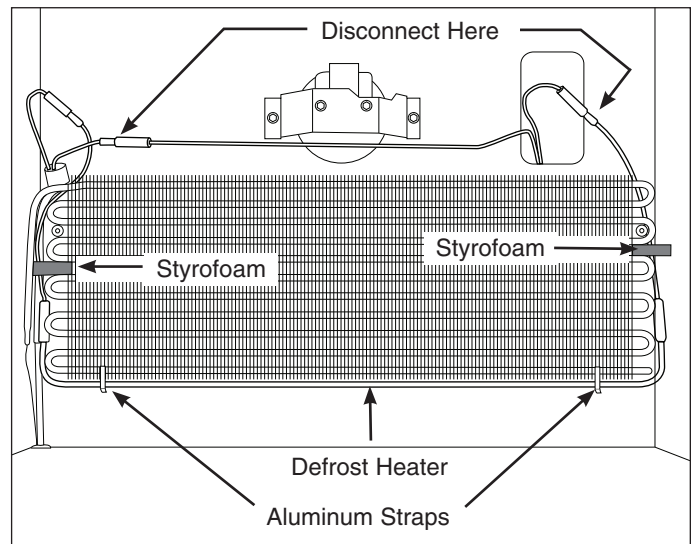


Figure 6-24. Defrost Heater Removal

Evaporator Removal

The evaporator sets upon the two screw standoffs mounted to the back wall of the freezer compartment. Two pieces of styrofoam are pressed between the evaporator assembly and the sidewalls of the unit, securing the assembly in position. (See Figure 6-25)

To remove the evaporator:

1. Disconnect unit from power supply.
2. Remove the cantilever shelves.
3. Remove the crispers and crisper supports.
4. Remove the evaporator cover.
5. Remove the styrofoam insulators from both sides of the evaporator.
6. Remove the defrost thermostat and defrost heater.
7. Recover refrigerant by using EPA approved recovery system.

NOTE

Whenever the sealed system is opened the filter-drier must be replaced.

8. Remove the filter-drier.
9. Cut suction line about 1" from compressor.
10. Straighten the tubing, remove the foam sleeve, and carefully feed the heat exchanger through the cabinet while pulling up on the evaporator.

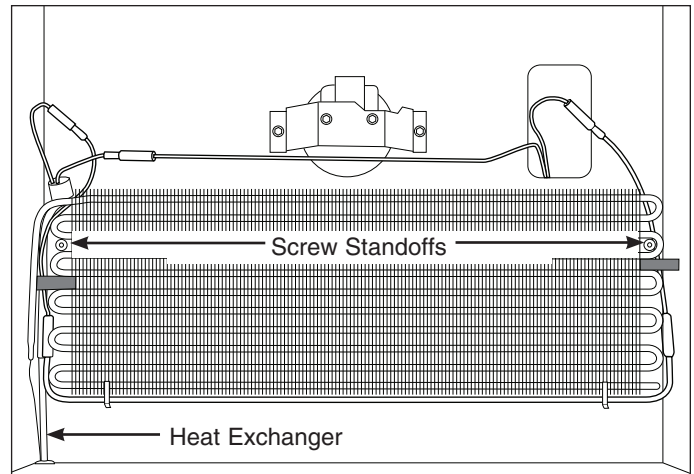


Figure 6-25. Evaporator Removal

Component Teardown

Compressor Area Components All Refrigerator and All Freezer-Pro Models

The compressor area components for the All Refrigerator and All Freezer-Pro Units are similar in layout and have the same access and removal steps. However, the part numbers for items in the compressor area may differ between the all refrigerator and all freezer models.

Power Cord Removal

The power cord enters the compressor area on the lower left side and is secured to the compressor mounting plate with a P-clamp and screw.

To remove the power cord:

1. Pull unit from its installation position to access the rear compressor area. Disconnect power from unit.
2. Using a phillips head screwdriver, extract the four screws securing the compressor area shield to the rear of the unit. Remove shield.
3. Using a 1/4" socket or wrench, extract the screw securing the P-clamp to the compressor mounting plate. (See Figure 6-26)
4. Using a 1/4" socket or wrench, extract the screw securing the ground wires to the compressor mounting plate.
5. Disconnect power cord from the wire harness at the quick disconnect. Remove power cord from unit.

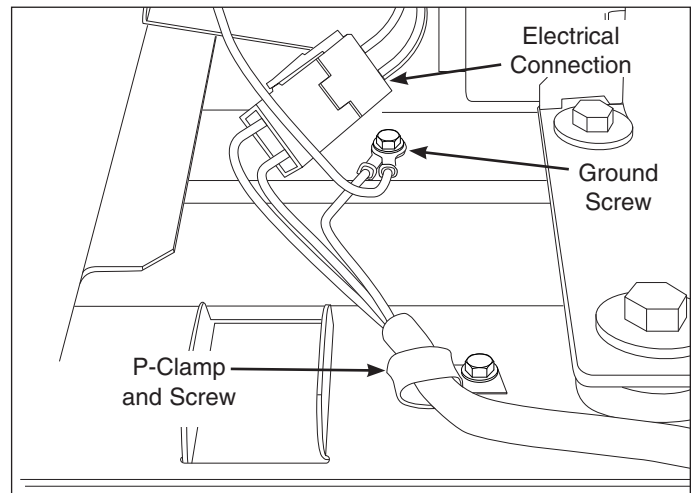


Figure 6-26. Power Cord Removal

Water Valve Removal (if equipped)

The water valve is secured with two screws to the right hand side of the unit behind the compressor area shield.

To remove the water valve:

1. Pull unit from its installation position to access the rear compressor area.
2. Using a phillips head screwdriver, extract the four screws securing the compressor area shield to the rear of the unit. Remove shield.
3. Disconnect water valve from household water supply. (See Figure 6-27)
4. Using fingers, disconnect the icemaker water line from water valve.
5. Using a 1/4" socket or wrench, extract screws securing water valve to unit frame.
6. Disconnect electrical connections from terminals of water valve.

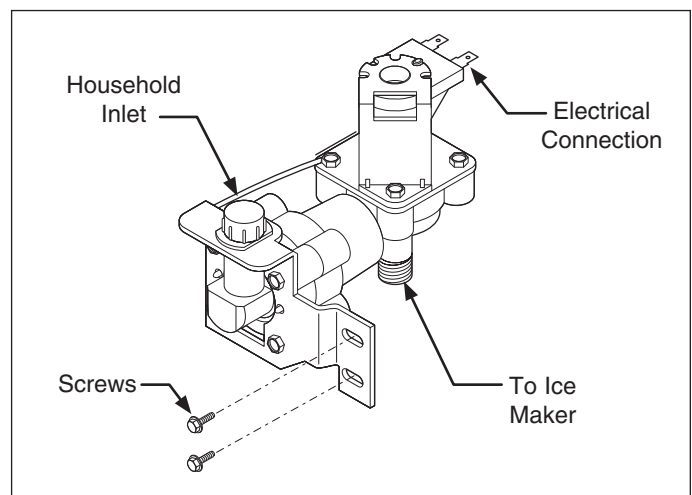


Figure 6-27. Power Cord Removal

Theater Lighting Control Removal

The theater lighting control is mounted to the lower left interior side wall in the compressor area. The control may be accessed from the front but is easier to access from the rear of the unit. (See Figure 6-28)

To remove the theater lighting control:

1. Pull unit from its installation position to access the rear compressor area. Disconnect power from unit.
2. Extract the screws securing the fiber board cover to the unit frame and remove from unit.
3. Disconnect wire harness connector from theater lighting control.
4. Extract screws securing the theater lighting control to the side wall of the unit. Remove control from unit.

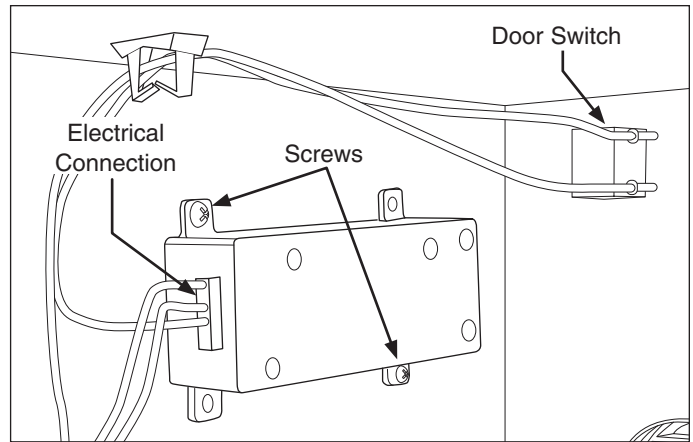


Figure 6-28. Theater Lighting Control Removal

Filter-Drier Removal

The filter-drier is located in the compressor area on the left side of the compressor. (See Figure 6-29)

To remove the filter-drier:

1. Pull unit from its installation position to access the rear compressor area. Disconnect power from unit.
2. Extract the screws securing the fiber board cover to the unit frame and remove from unit.
3. Recover refrigerant by using EPA approved recovery system.
4. Using a 3 cornered file, score a groove around capillary tube as close to old filter-drier as possible. Break capillary tube along score mark from filter-drier.
5. Cut condenser outlet tube at filter-drier. Discard filter-drier.
6. Thoroughly clean condenser outlet tube and capillary tube.
7. Place inlet connection of filter-drier over condenser tube approximately 1/4" and solder.
8. Insert capillary tube input end into filter-drier outlet. Do not allow tube to bottom against screen. Solder carefully so that solder does not plug capillary tube.
9. Install process tube adapter to filter-drier.
10. Evacuate and charge system using recommended procedure described under Evacuating and Recharging in the Refrigeration section.
11. Reassemble unit.

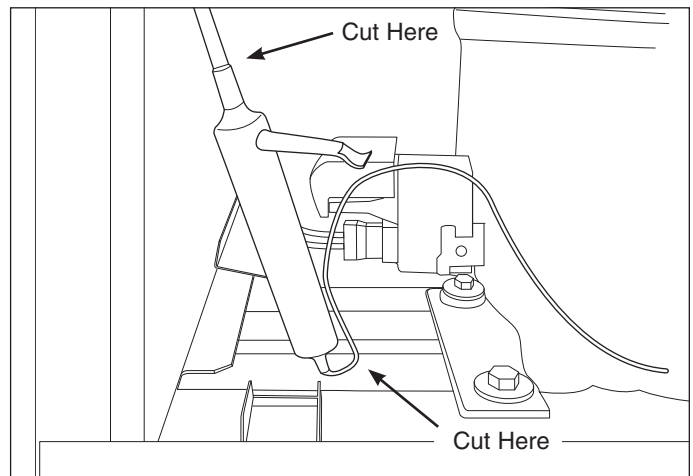


Figure 6-29. Filter-Drier Removal

CAUTION

On R-134a systems, the system must NOT be left open to the atmosphere for more than 10 minutes to prevent moisture contamination of compressor oil.

Component Teardown

Compressor Removal

The compressor sits on four grommets and is secured with four screws to the compressor mounting plate. (See Figure 6-30)

To remove the filter-drier:

1. Pull unit from its installation position to access the rear compressor area. Disconnect power from unit.
2. Extract the screws securing the compressor shield to the unit frame and remove from unit.
3. Using a small flat bladed screwdriver, release the locking tab from the wire harness connection and disconnect from compressor controller.
4. Using a needle nose pliers, remove spring wire holding the controller to the compressor.
5. Recover refrigerant by using EPA approved recovery system.
6. Using a 7/16" socket, remove the (4) bolts, one in each corner, holding the compressor to the base. (See Figure 6-30)
7. After refrigerant is completely recovered, cut suction and discharge lines as close to compressor as possible. Leave only enough tubing to pinch off and seal defective compressor. Plug or tape any open system tubing to avoid entrance of moisture and air into system. Remove inoperable compressor and transfer mounting parts to new compressor.
8. Install new compressor inexact same manner as original compressor.
9. Reform both suction and discharge lines to align with new compressor. If they are too short, use additional lengths of tubing. Joints should overlap 0.5" to provide sufficient area for good solder joint. Clean and mark area where tubing should be cut.
10. Cut tubing with tubing cutter. Work quickly to avoid letting moisture and air into system.
11. Reassemble unit.

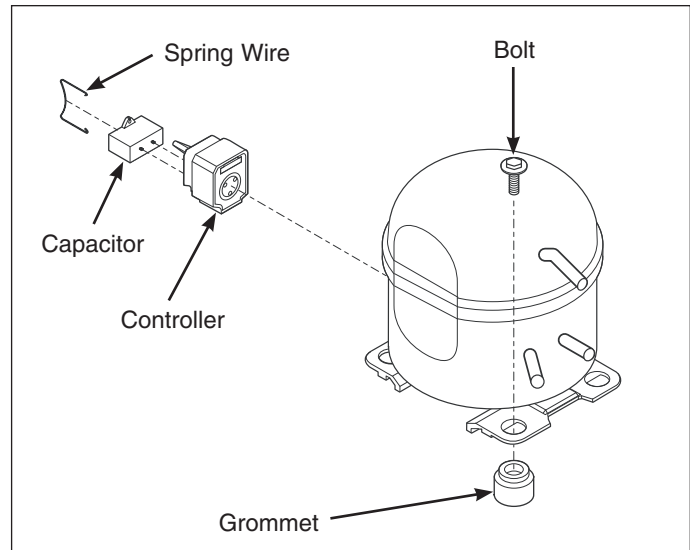


Figure 6-30. Compressor Components

Drain Pan Removal

The drain pan is secured with four screws to bottom of the unit frame.

To remove the drain pan:

1. Pull unit from its installation position to access the rear compressor area. Disconnect power from unit.
2. Extract the screws securing the compressor shield to the unit frame and remove from unit.
3. The rear of the unit may need to be raised to access the drain pan screws.

CAUTION

Use caution when tilting a freezer unit. Use sturdy blocking materials that will not allow the freezer to rock or tip over when servicing unit.

4. Using a short phillips head screwdriver, extract the two screws securing the drain pan to the bottom of the unit frame. (See Figure 6-31)
5. Position unit to access the front of the unit. Remove kickplate.
6. The front of the unit may need to be raised to access the drain pan screws.
7. Using a short phillips head screwdriver, extract the two screws securing the drain pan to the bottom of the unit frame. (See Figure 6-31)
8. Allow the drain pan to drop down. Pull drain tube from drain pan.
9. Pull condenser tubes out of the retainers mounted to the drain pan. Drain pan may now be removed from the unit.

Condenser Fan Motor Removal

The condenser fan motor is secured with three screws to the condenser fan motor bracket. Two hooks and two screws at the base of the condenser fan motor bracket secure the assembly to the unit base. (See Figure 6-32)

To remove the condenser fan motor:

1. Pull unit from its installation position to access the rear compressor area. Disconnect power from unit.
2. Extract the screws securing the compressor shield to the unit frame and remove from unit.
3. Disconnect wire harness from the wire leads of condenser fan at quick disconnect.
4. Remove the four drain pan screws. Allow the drain pan to drop from its installation position.

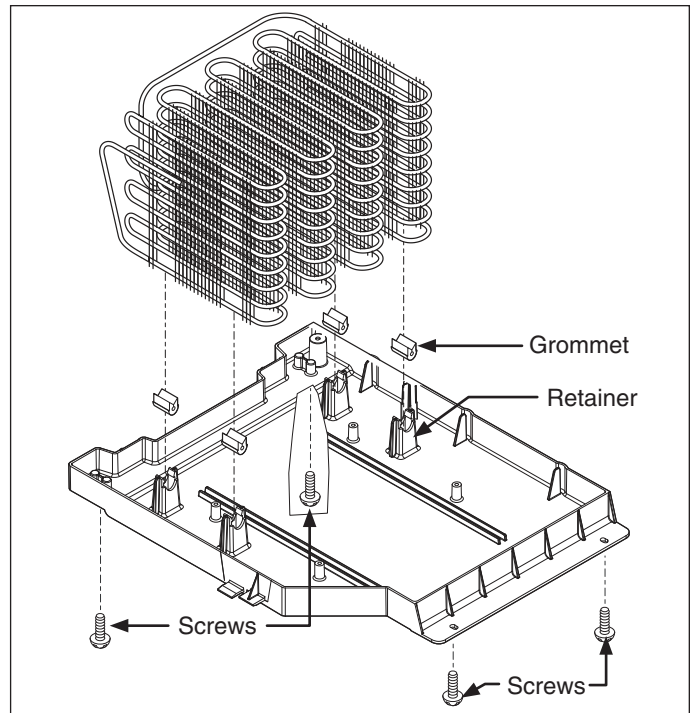


Figure 6-31. Condenser Drain Pan Removal

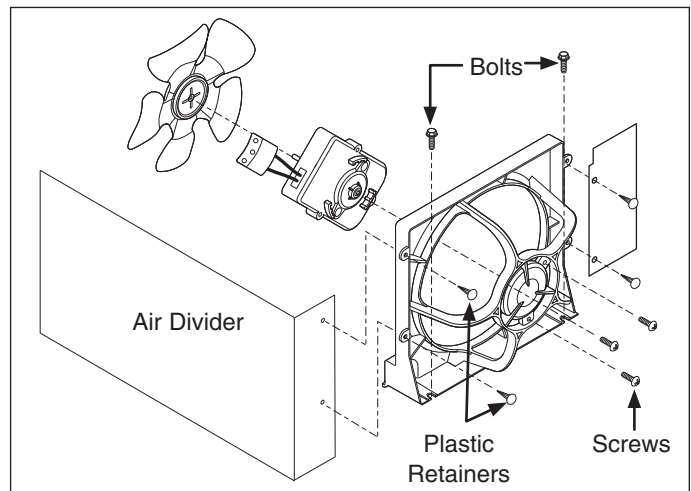


Figure 6-32. Condenser Fan Motor Removal

5. With a needle nose pliers, reach behind air dividers and compress the plastic retainers while pushing them out of the condenser fan mounting bracket. Remove air dividers.
6. Using a 1/4" socket or wrench, extract the two bolts securing fan mounting bracket to unit frame.
7. Using a phillips head screwdriver, extract the three screws securing the fan motor to the fan mounting bracket.
8. Pull fan motor and fan blade out from behind the mounting bracket. Remove fan blade by pulling the fan blade from the motor shaft.

Component Teardown

Condenser Coil Removal

The condenser coil is mounted to the drain pan by four retaining clips.

To remove the drain pan:

1. Pull unit from its installation position to access the rear compressor area. Disconnect power from unit.
2. Extract the screws securing the compressor shield to the unit frame and remove from unit.
3. Recover refrigerant by using EPA approved recovery system.
4. Remove condenser fan assembly from unit.
5. Disconnect inlet and outlet lines from condenser. (See Figure 6-33)
6. The front of the unit will need to be raised to access the drain pan screws.
7. Using a short phillips head screwdriver, extract the four screws securing the drain pan to the bottom of the unit frame.
8. Allow the drain pan to drop down. Pull drain tube from drain pan.
9. Pull condenser tubes out of the retainers mounted to the drain pan. Remove condenser from unit.
10. Replace old filter-drier after installing the new condenser.

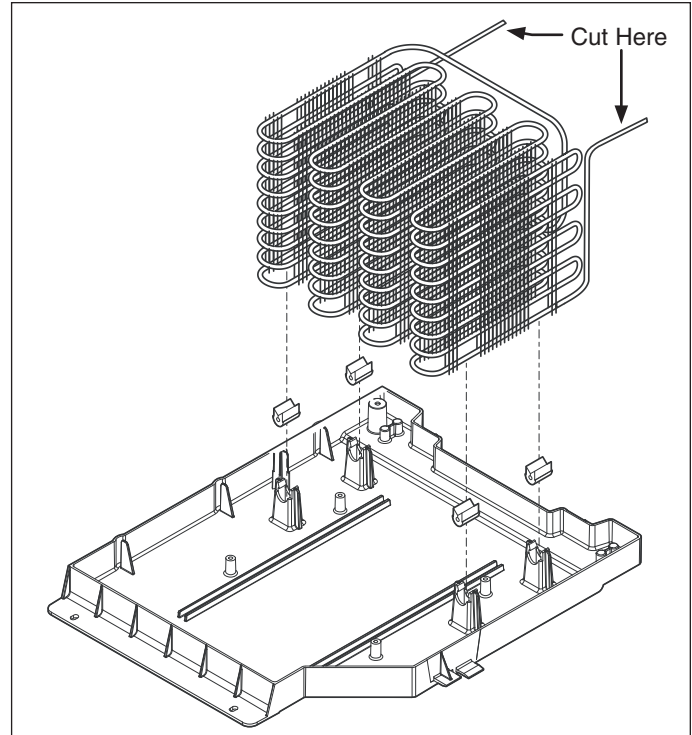


Figure 6-33. Condenser Coil Removal

Freezer Exterior Components

Door Handle Removal

The door handle is secured with setscrews to the handle mounting shoulder screws that are fastened into the front of the door assembly.

To remove the handle, use a 3/32" allen wrench and extract the setscrew located in each handle standoff. Pull handle assembly from door assembly. (See Figure 6-34)

Use a 5/32" allen wrench to extract the screw located inside the handle standoff, that secures the handle standoff to the handle.

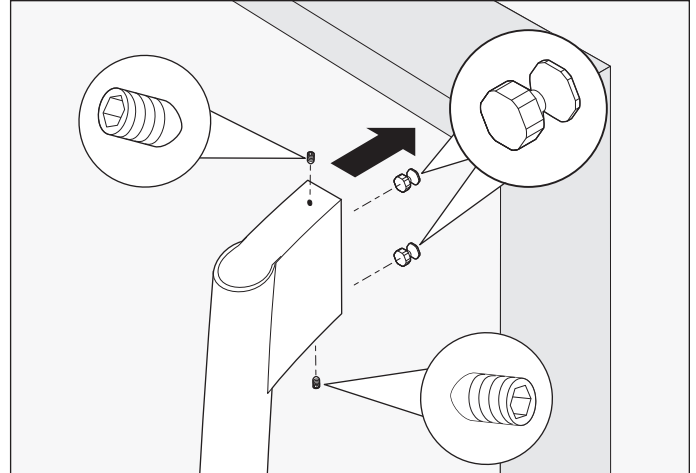


Figure 6-34. Handle Removal

Kickplate Removal

The kickplate is secured with two screws to the lower front of the unit.

To remove the kickplate, extract the screw from each end of the kickplate with a phillips head screwdriver. (See Figure 6-35)

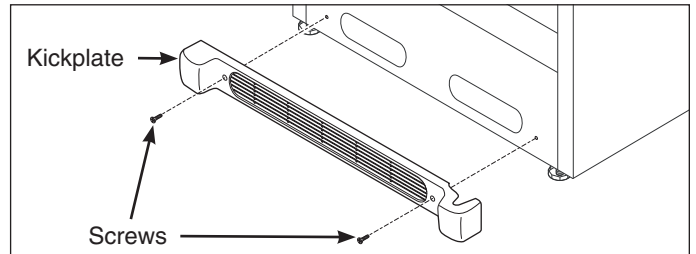


Figure 6-35. Kickplate Removal

Door Hinge and Door Assembly Removal

The door assembly is secured to the unit frame by an upper and lower hinge assembly.

To remove the door assembly:

1. Gently lay freezer on its back on a soft clean surface.
2. Remove kickplate.
3. Lift plastic cover off upper hinge assembly. (See Figure 6-36)
4. Using a 3/8" socket or wrench, extract the two bolts securing the upper hinge to the unit frame.
5. Using a 3/8" socket or wrench, extract the two bolts securing the lower hinge to the unit frame. Use a phillips head screwdriver to extract the remaining screw from the lower hinge assembly. (See Figure 6-37)
6. Lift the door assembly off of the unit frame.

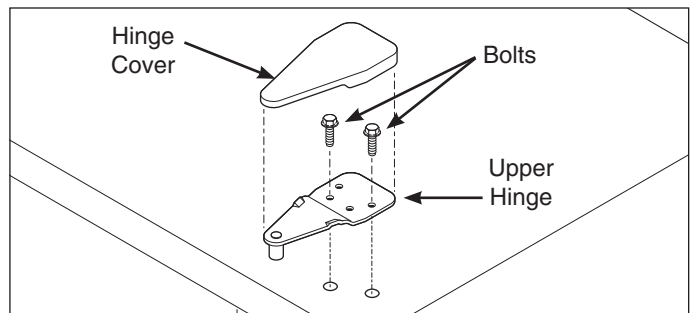


Figure 6-36. Upper Hinge Removal

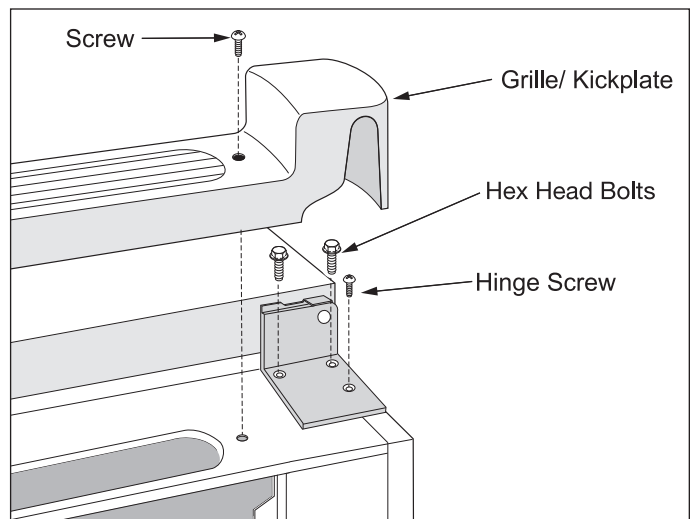


Figure 6-37. Lower Hinge Removal

Component Teardown

Door Bin Removal

There are two door bins that can be arranged as needed by the user.

To remove a door bin, lift the bin straight up until it is free of the supports molded into the door liner, then pull from unit. (See Figure 6-38)

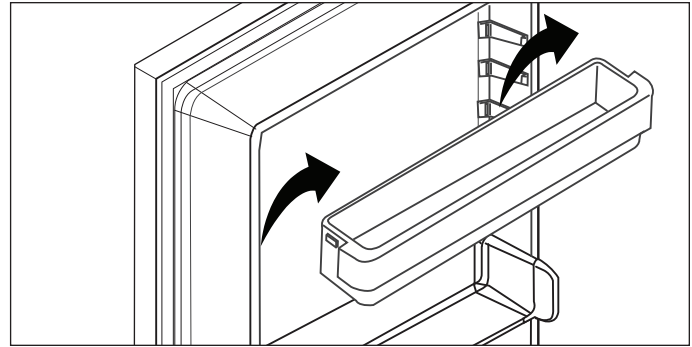


Figure 6-38. Door Shelf Guard Removal

Tilt Out Wire Shelf Removal

The tilt out wire shelves have a bar that locates in the end caps that enable the wire shelves to tilt outward. The end caps have two standoffs that snap into holes in the inner panel.

To remove the tilt out wire shelves:

1. Flex the inner panel outward and lift the wire shelf out of the end cap. Then pull the opposite end of the wire shelf out of the opposite end cap. (See Figure 6-39)
2. The end caps are removed by simply pulling the end caps out of the inner panel.

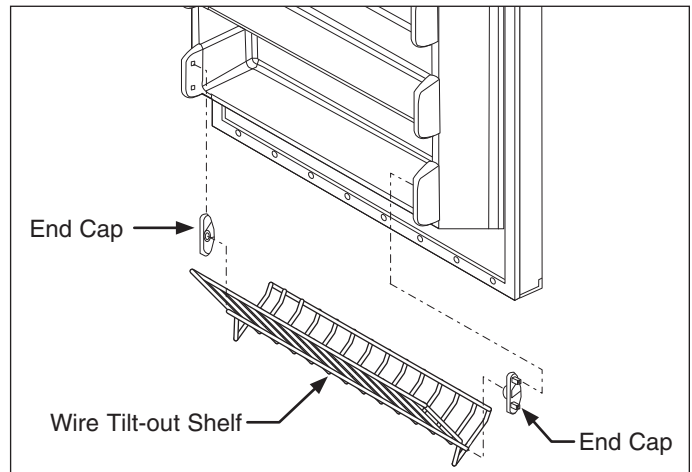


Figure 6-39. Door Lock Removal

Door Stop Assembly Removal

The door stop is secured to with two screws the underside of the door assembly.

To remove the door stop:

1. Remove door from unit.
2. Extract the two screws securing the door stop to the bottom of the door assembly. (See Figure 6-40) Door stop assembly is now free.

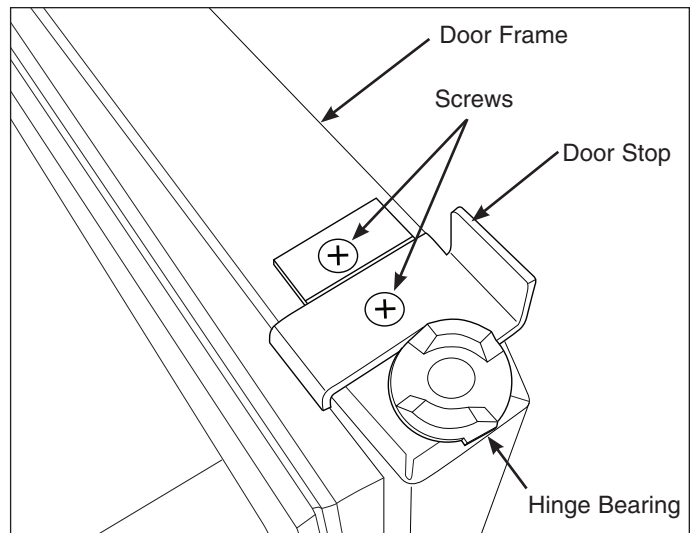


Figure 6-40. Door Stop Removal

Door Gasket and Inner Panel Removal

The inner panel of the door assembly is secured with screws that pass through the inner panel and fasten into the door assembly. The door gasket has an inner lip that is pressed between the inner panel and the door assembly and is secured in position when the inner panel screws are fastened to the door assembly. The inner panel does not have to be completely removed to extract the door gasket from the door assembly.

To remove the door gasket:

1. Lift the inside edge of the door gasket to access the inner panel screws.
2. Loosen the inner panel screws until the door gasket can be pulled out from under the inner panel. (See Figure 6-41)
3. Continue loosening screws around door assembly until door gasket is free.
4. To remove the inner panel, extract all screws from the outside edge of the inner panel and remove from unit.
5. The secondary gasket is secured with two retaining clips that snap into the inner door panel. Pry out the two retaining clips with a small putty knife, using caution not to damage the inner door panel. The secondary gasket is now free.

Door Switch Removal

The door switch is mounted inside a hole in the cabinet base along the lower left hand side. (See Figure 6-42)

To remove the door switch:

1. Disconnect power from unit.
2. Remove kickplate.
3. Reach into the access hole next to the door switch and disconnect the electrical leads from the door switch terminals.
4. Press in on the retaining latch on the switch body and push switch through hole in cabinet base.

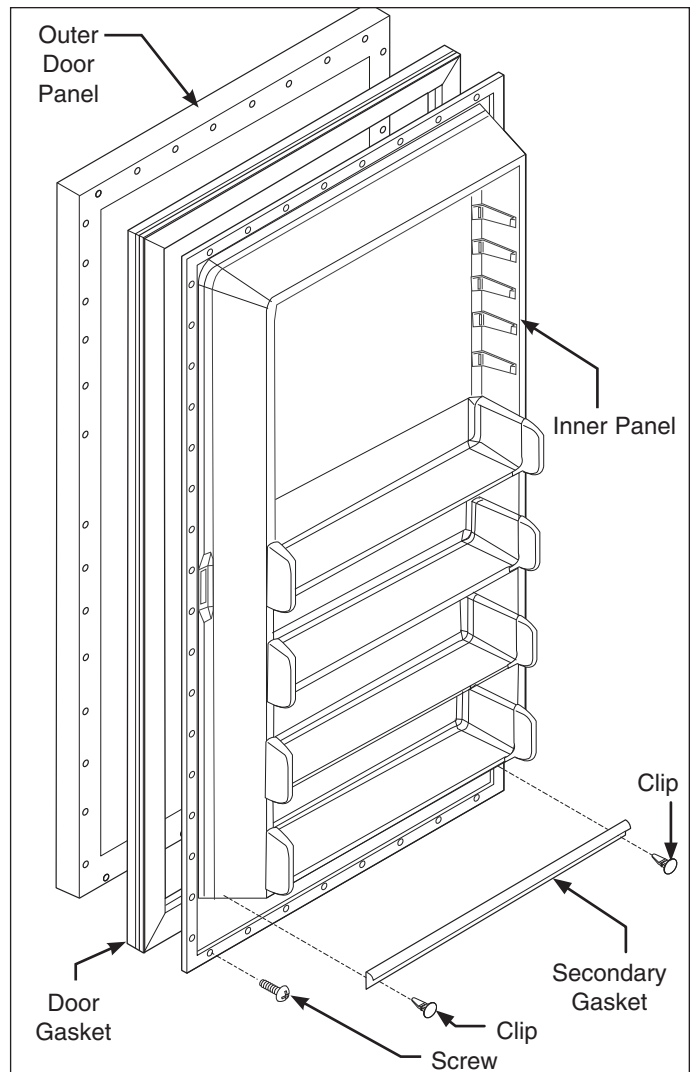


Figure 6-41. Inner Panel and Door Gasket Removal

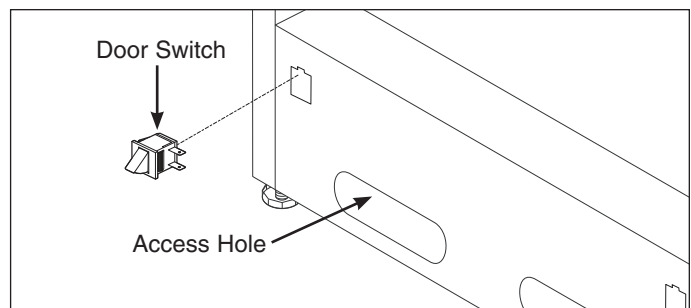


Figure 6-42. Door Switch Removal

Component Teardown

Interior Components

Adjustable Interior Shelves

Multi-position adjustable interior shelves can be moved to any position for larger or smaller packages. The cantilever shelves are supported at the back of the refrigerator. (See Figure 6-43) Replace the shelf by inserting the hooks at the rear of the shelf into the wall bracket. Lower the shelf into the desired slots and lock into position.

To remove the shelf assemblies:

1. Lift front edge up.
2. Pull shelf out.

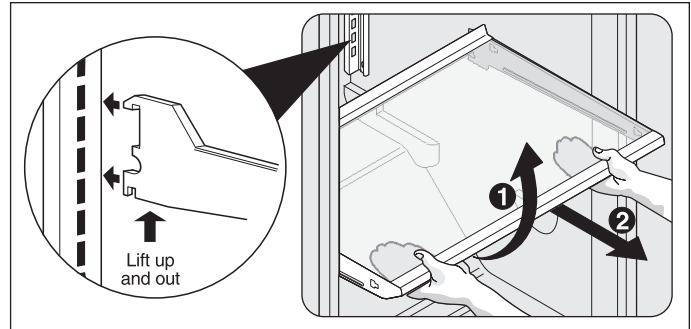


Figure 6-43. Interior Shelving Removal

Freezer Drawer Assembly Removal

The freezer drawer assembly can be lifted off of the supports and pulled from the freezer compartment. The drawer may now be removed from the drawer slides. (See Figure 6-44)

To remove the freezer drawers:

1. Remove the lowest adjustable interior shelf.
2. Lift up on the front of the drawer assembly and lift upwards until the bracket releases from the supports mounted to the liner sidewalls. Then pull assembly out of the cabinet interior.
3. Remove the glass shelf.
4. Remove crisper drawer from slides by inserting a flat bladed screwdriver just behind the clip between the drawer and rail and gently twisting up. The clip will release and the drawer will be free.
5. The drawer slides are secured with two tabs that lock into the drawer frame brackets. Push drawer slide upwards until the front tab releases, then pull drawer slide forward until rear tab disengages. Drawer slide is now free.
6. The bracket is secured with two screws to the drawer frame. Extract the two screws to separate the bracket and drawer frame.
7. The supports are secured with two screws to the compartment sidewall. Extract the screws and remove the supports.

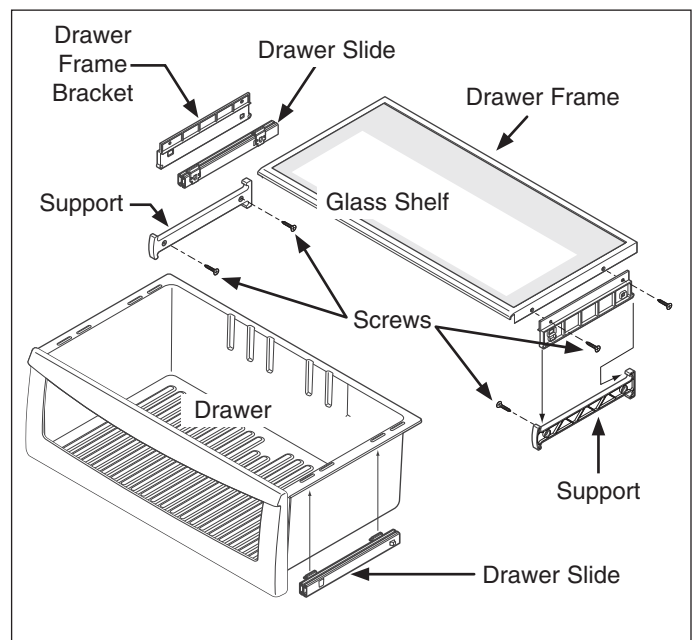


Figure 6-44. Glass Shelf and Wire Basket Assemblies Removal

Air Filter Removal

Push the plastic bubble tab at the back of the control box housing. This releases the hinged bottom half to drop open. Remove the old filter and discard it. Unpackage the new filter and place it inside the hinged bottom half of the housing. Push the hinged bottom half upward until the tab snaps into closed position. (See Figure 6-45)

Control Box Removal

The control box is secured with three screws to the top front of the refrigerated compartment and has sealant along the front face to prevent ambient air from reaching the compartment thermistor.

To remove the control box:

1. Disconnect power from unit.
2. Remove the adjustable shelves.
3. Extract the three screws securing the control box to the compartment ceiling. (See Figure 6-46)
4. Pull forward on the control box until the sealant breaks. Use caution not to strain the wire harness connections.
5. Disconnect wire harness from control box at the quick disconnects. Control box is now free.

Light Fixture Removal

To remove the light fixture:

1. Disconnect power from unit.
2. Remove control box from refrigerated compartment.
3. Remove light bulbs by turning counter-clockwise.
4. Disconnect wire leads from light fixture terminals.
5. Press on the retaining latches securing the light fixture to the control box while pushing the light fixture through the cutout in the control box. (See Figure 6-48)

Control Removal

To remove the control:

1. Disconnect power from unit.
2. Remove control box from refrigerated compartment.
3. Extract the two screws securing the control to the control box. (See Figure 6-47)
4. Pull the front of the control box away from the control while pulling the control up and out from its installation position.
5. Disconnect the two wire harness connections from the control board. Control is now free.

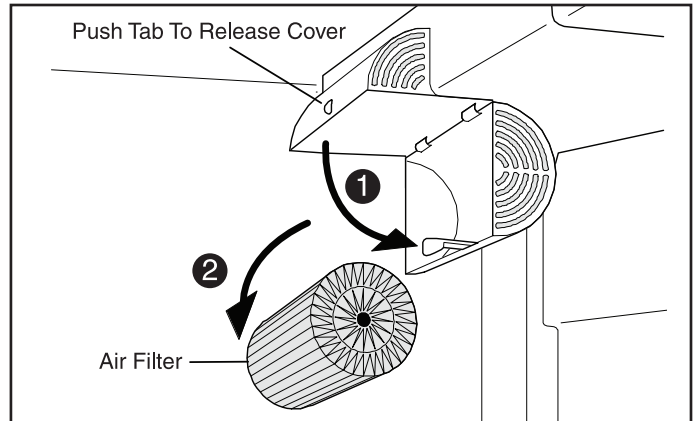


Figure 6-45. Light Shield and Fixture Removal

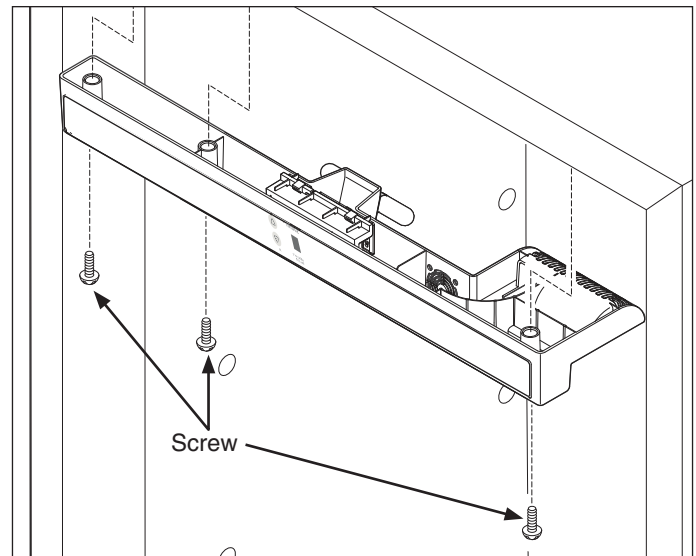


Figure 6-46. Control Box Removal

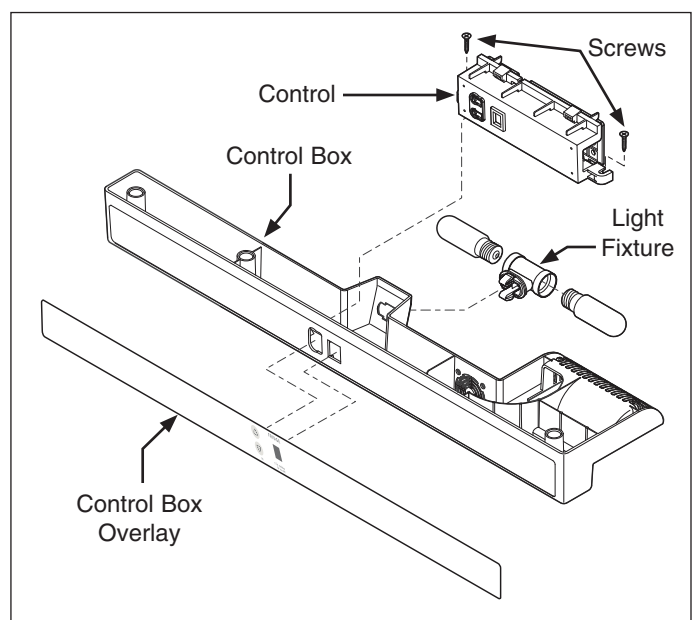


Figure 6-47. Light Fixture and Control Removal

Component Teardown

Baffle Plate Removal

To remove the baffle plate, remove any shelves that block access to the baffle. Then push towards the center from one end while pulling away from the back wall. (See Figure 6-48)

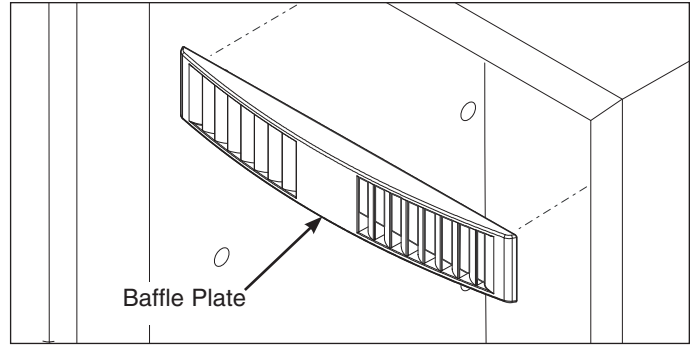


Figure 6-48. Baffle Plate Removal

Ice Maker Removal

The icemaker is mounted with two 1/4" hex head screws to the upper left hand corner of the freezer compartment. (See Figure 6-49)

To remove the ice maker:

1. Disconnect power from unit.
2. Remove uppermost glass shelf and ice bucket. If needed, remove all the adjustable shelves for easier access to the ice maker.
3. Using a 1/4" extended socket or nut driver, extract the two screws securing the ice maker to the left sidewall of the unit.
4. Disconnect wire leads from icemaker at the quick disconnect mounted in the upper left corner of the freezer compartment.

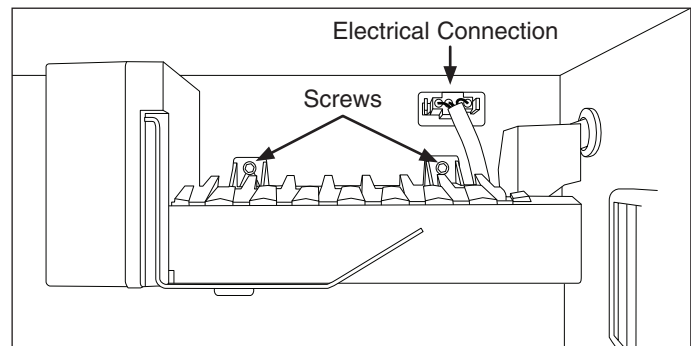


Figure 6-49. Ice Maker Removal

Evaporator Cover Removal

The evaporator cover is secured with screws to the back wall and bottom of the freezer compartment. The evaporator cover has a gasket on each side to create proper airflow in the compartment. (See Figure 6-50)

To remove the evaporator cover:

1. Disconnect power from unit.
2. Remove the adjustable shelves.
3. Remove the freezer drawers and supports.
4. Using a phillips head screwdriver, extract the ten (10) screws securing the evaporator cover to the freezer compartment.
5. Carefully pull the evaporator cover away from the back wall enough to access the wire harness connections to the light fixtures. Use caution not to damage the gaskets on both sides of the evaporator cover. The gaskets may be removed to aid in pulling the evaporator cover away from the back wall.
6. From behind the evaporator cover, disconnect the wire leads from the light fixture terminals. The evaporator cover may now be removed from the refrigerated compartment.

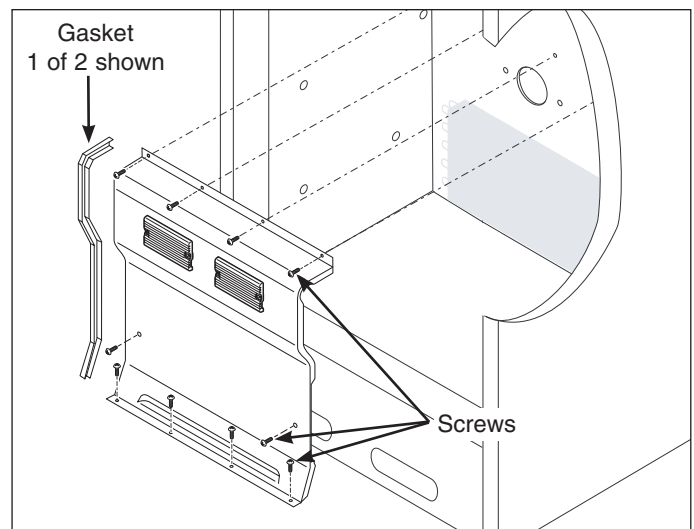


Figure 6-50. Evaporator Cover Removal

Mid Level Lighting Removal

The mid level lighting components may be accessed without the evaporator cover being completely removed from the compartment. By pulling the top of evaporator cover away from the rear wall, the light wire harness connections and light fixture may be accessed.

To remove the mid level lighting on the evaporator cover:

1. Disconnect power from unit.
2. Remove the lens from the lamp housing by unsnapping it from the lamp housing using your fingers or a screwdriver. Be careful not to break the locking tabs on the lamp housing. (See Figure 6-51)
3. Remove bulb by turning counterclockwise.
4. Remove evaporator cover or remove screws and pull away top of cover enough to access components mounted to rear of cover, then disconnect the wire leads from the light fixture terminals.
5. Remove light fixture by pressing in the retaining latches and pushing the light fixture through the evaporator cover.

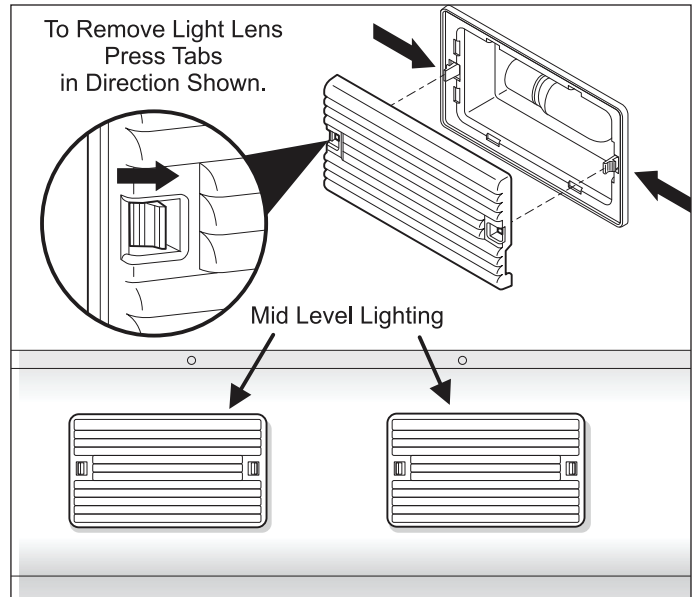


Figure 6-51. Mid Level Lighting Removal

Thermistor Removal

The evaporator cover does not need to be completely removed to access the thermistor wire harness connections and mounting screw, however, removing the evaporator cover from the unit will make the task easier.

To remove the thermostat control:

1. Disconnect power from unit.
2. Remove the adjustable shelves.
3. Remove the freezer drawers and supports.
4. Remove the evaporator cover screws, then pull the top of the evaporator cover away from the back wall enough to access the thermistor mounting screw and electrical connection.
5. Extract the screw securing the thermistor to the back wall of the cabinet interior. (See Figure 6-52)
6. Disconnect thermistor from wire harness at the quick disconnect. Thermistor is now free.

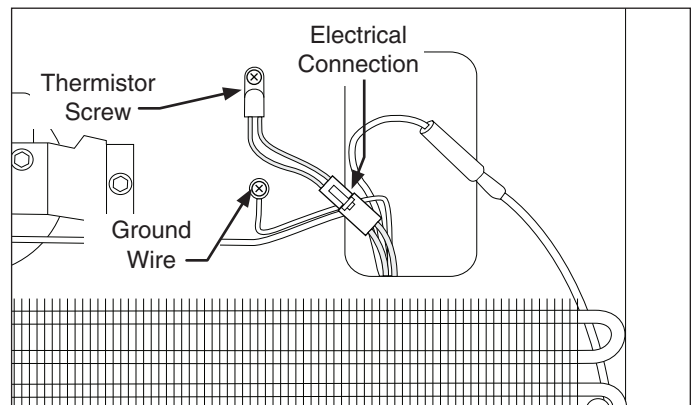


Figure 6-52. Thermistor Removal

NOTE: The lighting wire harness is not shown for clarity.

Component Teardown

Evaporator Fan Assembly Removal

The evaporator fan assembly consists of the fan motor mount bracket, fan motor and fan blade. Two screws secure the fan motor to the fan motor mount bracket. The evaporator fan assembly is then secured with two screws to the back wall of the freezer compartment. (See Figure 6-53)

To remove the evaporator fan assembly:

1. Disconnect power from unit.
2. Remove the adjustable shelves.
3. Remove the freezer drawers and supports.
4. Remove the evaporator cover.
5. Remove wires from retaining clips mounted on the fan motor mounting bracket. Disconnect the electrical leads of fan motor at quick disconnect.
6. Using a 5/16" socket or nut driver, extract the two hex head screws securing the fan motor mounting bracket to the back wall of the unit.
7. Separate the fan motor from the mounting bracket by extracting the two hex head screws securing the fan motor to mounting bracket.
8. Pull fan blade from fan motor shaft.

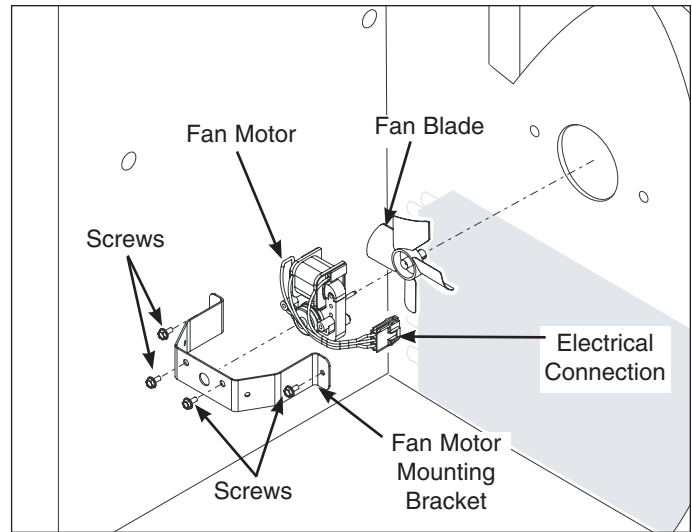


Figure 6-53. Evaporator Fan Assembly Removal

Defrost Thermostat Removal

The defrost thermostat is secured with a retaining clip to the upper left corner of the evaporator assembly. The defrost thermostat and wire harness connections may be accessed without completely removing the evaporator cover. The top of the evaporator cover may be pulled away from the rear of the cabinet interior enough to remove the defrost terminator and disconnect the wire harness connections. (See Figure 6-54)

To remove the defrost thermostat:

1. Disconnect power from unit.
2. Remove the adjustable shelves.
3. Remove the freezer drawers and supports.
4. Remove the evaporator cover.
5. Disconnect the defrost thermostat wire leads from the wire harness. (See Figure 5-48)
6. Pull the defrost thermostat off of the evaporator outlet tubing.

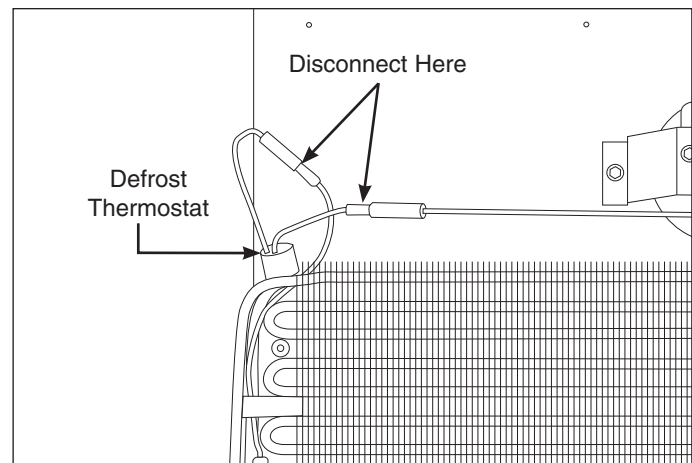


Figure 6-54. Defrost Thermostat Removal

NOTE

Freezer defrost thermostats must be installed on the evaporator outlet tubing.

Defrost Heater Removal

The defrost heater is secured with two aluminum straps to the bottom tube of the evaporator assembly. (See Figure 6-55)

To remove the defrost heater:

1. Disconnect power from unit.
2. Remove the adjustable shelves.
3. Remove the freezer drawers and supports.
4. Remove the evaporator cover.
5. Disconnect the defrost heater wire leads from the wire harness. (See Figure 5-49)
6. Release the aluminum straps securing the defrost heater to the bottom of the evaporator assembly.
7. Remove the styrofoam insulators from both sides of the evaporator.
8. Pull defrost heater from evaporator assembly.

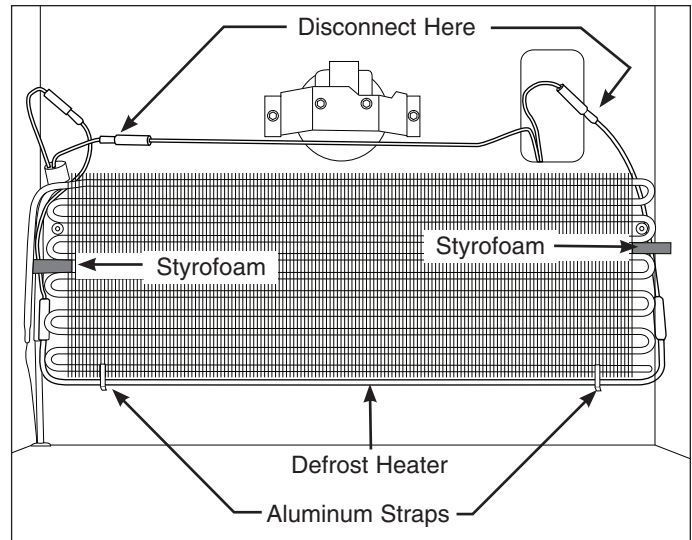


Figure 6-55. Defrost Heater Removal

Evaporator Removal

The evaporator sets upon the two screw standoffs mounted to the back wall of the freezer compartment. Two pieces of styrofoam are pressed between the evaporator assembly and the sidewalls of the unit, securing the assembly in position. (See Figure 6-56)

To remove the evaporator:

1. Remove the cantilever shelves.
2. Remove the glass shelf and side rails.
3. Remove wire baskets and slides.
4. Remove the evaporator cover.
5. Remove the styrofoam insulators from both sides of the evaporator.
6. Remove the defrost thermostat and defrost heater.
7. Recover refrigerant by using EPA approved recovery system.

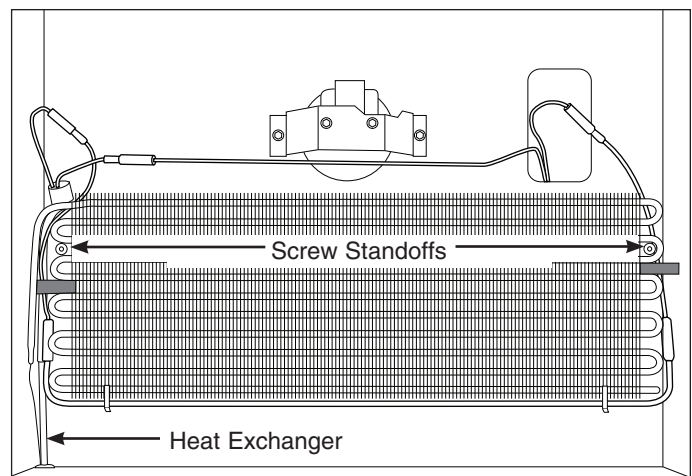


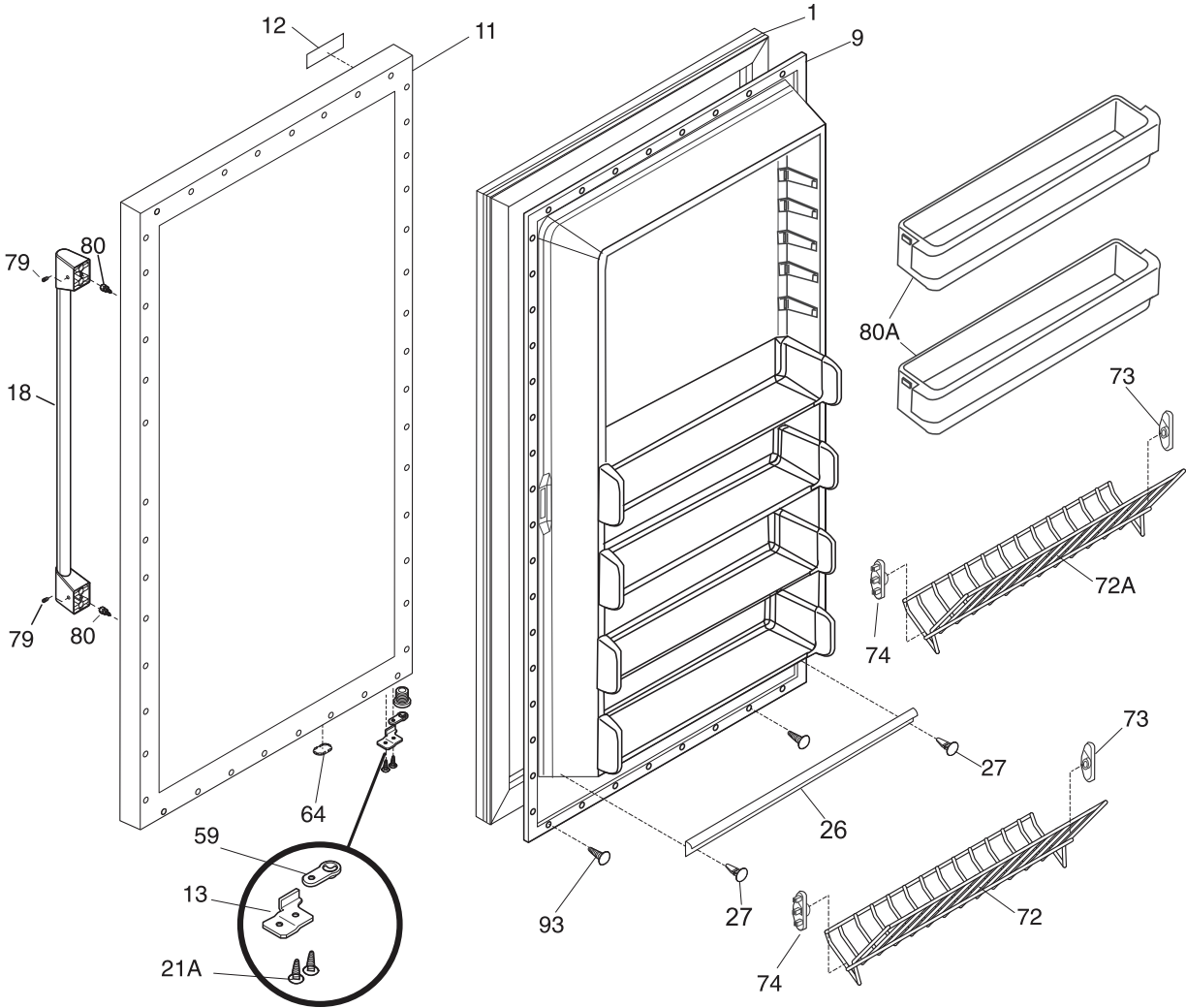
Figure 6-56. Evaporator Removal

NOTE

Whenever the sealed system is opened the filter-drier must be replaced.

8. Remove the filter-drier.
9. Cut suction line about 1" from compressor.
10. Straighten the tubing, remove the foam sleeve, and carefully feed the heat exchanger through the cabinet while pulling up on the evaporator.

All Freezer Pro Door Exploded View Model E32AF75FPS

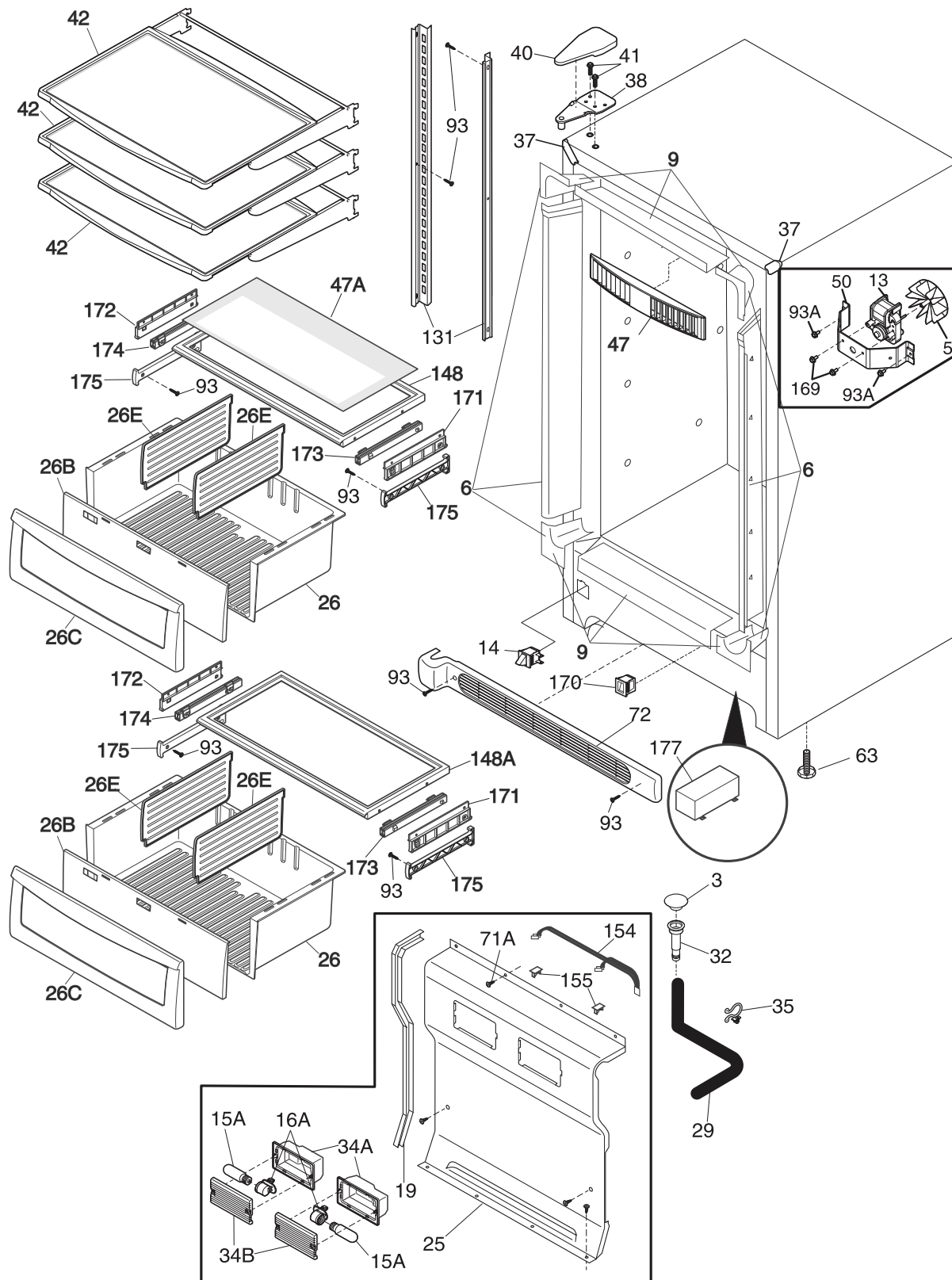


Ref #	Part #	Description
1	216522309	Gasket-door, white
9	216527902	Panel-inner door, frzr
11	297316549	Panel-outer door, stainless, LH
12	241603101	Label, nameplate, elux/icon
13	216974400	Door Stop
18	241637912	Handle Assembly, stainless, w/endcaps
18*	241601001	Wrench, allen
21A	5304460608	Screw, flat head, #1/4-20, door stop/hng
26	216524201	Gasket, secondary
27	5304472186	Clip, panel mtg
27*	5304406520	Clip, panel mtg kit, (40)
59	216974500	Bearing, door closer
64	216403700	Plug-button, hole filler, door base
72	297118100	Shelf, tilt out, wire
72A	297118200	Shelf, tiltout, short, wire
73	216513900	End Cap, shelf, LH, tilt-out
74	216514000	End Cap, shelf, RH, tilt-out
79	218755401	Screw-set, 10-32 x 0.375
80	218755504	Screw-shoulder, #10 AB, handle mounting
80A	216514300	Bin-door, adjustable, (2)
93	5304460605	Screw, ph truss head, 8-18AB x 0.500

Functional Parts
* Non-Illustrated Parts

Parts List

All Freezer Pro Cabinet Exploded View Model E32AF75FPS



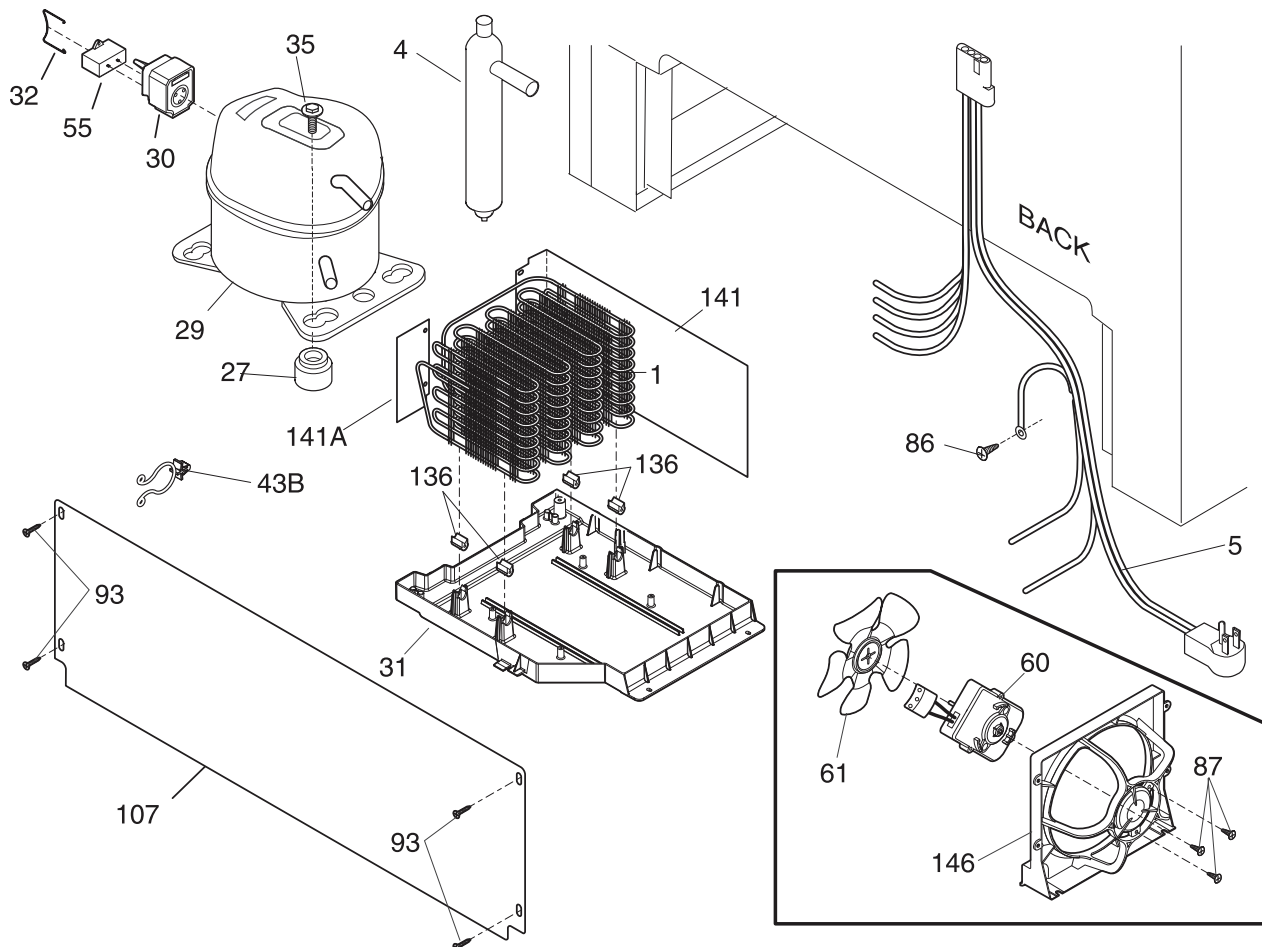
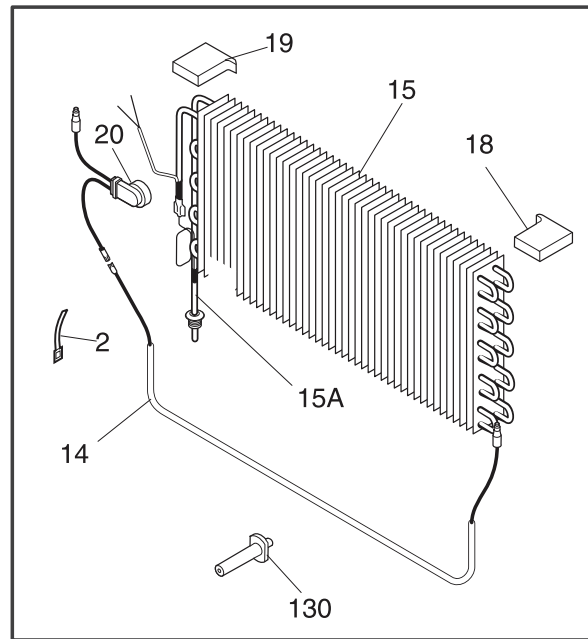
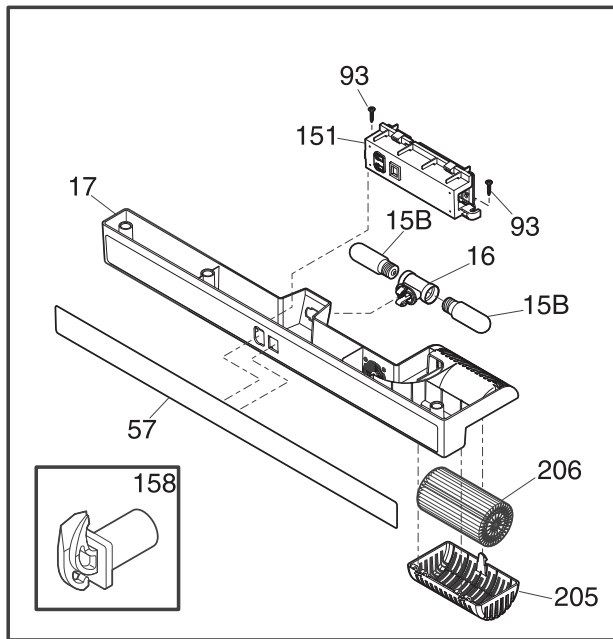
Ref #	Part #	Description
3	216503100	Screen-drain
5	297259600	Fan Blade, evaporator
6	297200600	Breaker Kit w/corners, no lock slot
9	297200100	Breaker Kit w/corners, 32", top and bottom
13 #	297250000	Motor, fan, 115 V
14	216822900	Switch, light/lamp, ramp
15A	297048600	Light Bulb/Lamp, short
16A	297139501	Socket, light/lamp, 25 W
19	216204902	Gasket-evap cover
25	297099254	Cover-evaporator
26	297091600	Case-crisper, shallow
26*	297142600	Screw, blunt, 8-32 x 5/8
26B	297091801	Panel, crisper window
26C	297091704	Panel, crisper front
26E	297099400	Divider-crisper, shallow
29	216313501	Hose-drain
32	5308005500	Drain
34A	297053102	Shield-light
34B	297053200	Lens, light
35	216273000	Clip, drain hose
37	297273900	Trim-cabinet corner, white, (2)
38	297283800	Hinge-upper
40	297164402	Cover-hinge, silver
41	240578902	Screw, hex head, 1/4-20 x 5/8
42	297108901	Shelf-sliding
47	297133000	Baffle-plate
47A	297102700	Insert-pan cover, glass
50	08013207	Bracket-fan motor
63	216396900	Screw, leveling foot, plastic, adjustable
63*	297164650	Bracket, LH leg levelor
63*	297164651	Bracket, RH leg levelor
71A	297146800	Screw, 8-18AB x 0.470
72	297036900	Grille/Kickplate, 32", white
93	5304460605	Screw, ph truss head, 8-18AB x 0.500
93A	297174300	Screw, #8, 18x.63, self pierce
*	216327800	Clip, wire
131	297108300	Channel-shelf mtg, side, (2)
148	297271700	Frame-crisper cover, upper
148A	297271701	Frame-crisper cover, lower
154	297053000	Wire, jumper
155	5303313703	Clip, (2)
169	216912401	Screw, hex washer head, 8-32 x 0.500, bracket fan mtr, (2)
170	297280400	Valve, breather
171	297092700	Bracket, crisper cover, RH
172	297092701	Bracket, crisper cover, LH
173	297107602	Slide, crisper, RH
174	297107603	Slide, crisper, LH
175	297099500	Support-crisper
177	297116000	Electronics, theater lgt
*	216910405	Energy Guide
*	297001704	Insulation, 24", drain tube
*	297114600	Instructions, installation, icemaker

Functional Parts

* Non-Illustrated Parts

Parts List

All Freezer Pro System Exploded View Model E32AF75FPS



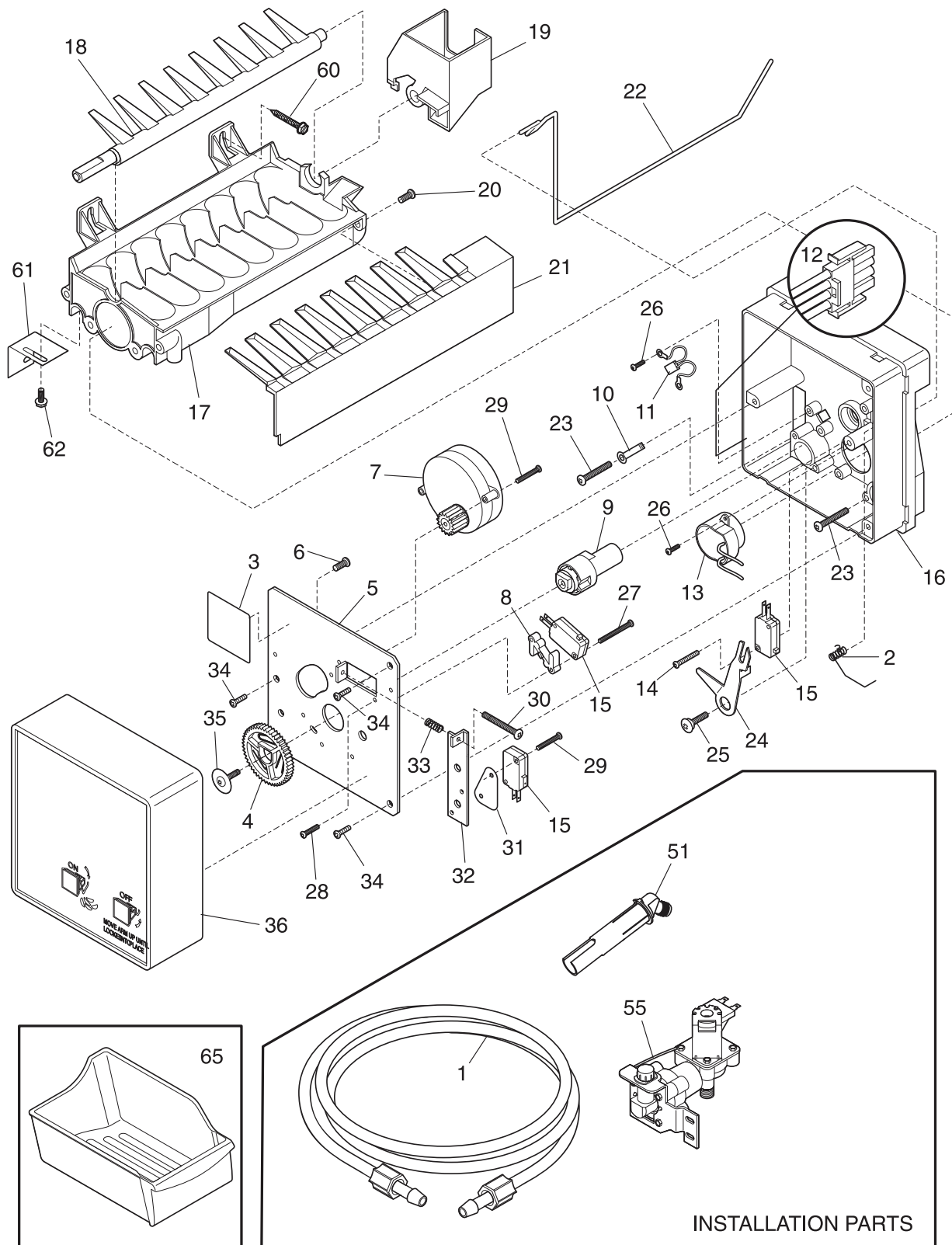
Ref #	Part #	Description
1 #	297152200	Condenser, dynamic
2	5308000110	Strap-evap/heater, aluminum, (2)
4	216987500	Drier-filter
5 #	297171400	Harness-main
14 #	216730700	Heater-defrost
15 #	216997300	Evaporator
15A	297217900	Heat Exchanger, suct/cap tube
15B	297114000	Light Bulb, short, blue tint, 40W
16	241507803	Socket-light
17	297110300	Box-control, front
18	297078701	Insulator-evap, styrofoam, RH
19	297078801	Insulator-evap, styrofoam, LH
20	297216600	Thermostat, defrost
27	297293300	Grommet, compressor
29 #	297270420	Compressor, w/o electricals
30	216954224	Controller, compressor
31	297165800	Pan-drain
32	216649200	Clip, controller
35	297177200	Bolt, compressor
43B	297315800	Clip, wire
55 #	218909912	Capacitor, run, 220 VAC, 12 microfarad
57	297110801	Overlay-control box
60	241584301	Motor-condenser fan
61	241639501	Blade-condenser fan
86	216036601	Screw, RWHD, 8-32A x 0.500, GX-CA
87	5304463290	Screw, hi-lo blunt, #8-18X1/2
93	5304460605	Screw, ph truss head, 8-18AB x 0.500
107	297165400	Shield, compressor, Compartment
130	297244700	Support, evaporator mtg
136	240405201	Grommet, rubber, black, cond tube/wire
141	297164200	Divider, air flow
141A	297194700	Divider, small, air flow
146	297164000	Shroud-fan orifice
146*	216337701	Screw, HWH, 10-24 x 0.500, Swage
151#	297334100	Electronic control, assy
158	297111000	Standoff
205	297108500	Cap-air filter
206	241504902	Filter-air
*	216502500	Sleeve, suction line
*	240555002	Screw-#8-32 X 3/8
*	297014500	Plug-suction line
*	297108000	Jumper-wire, electronic w/lt
*	297110400	Thermistor
*	297174300	Screw, #8, 18x.63, self pierce
* #	297169900	Cord-power, flat

Functional Parts

* Non-Illustrated Parts

Parts List

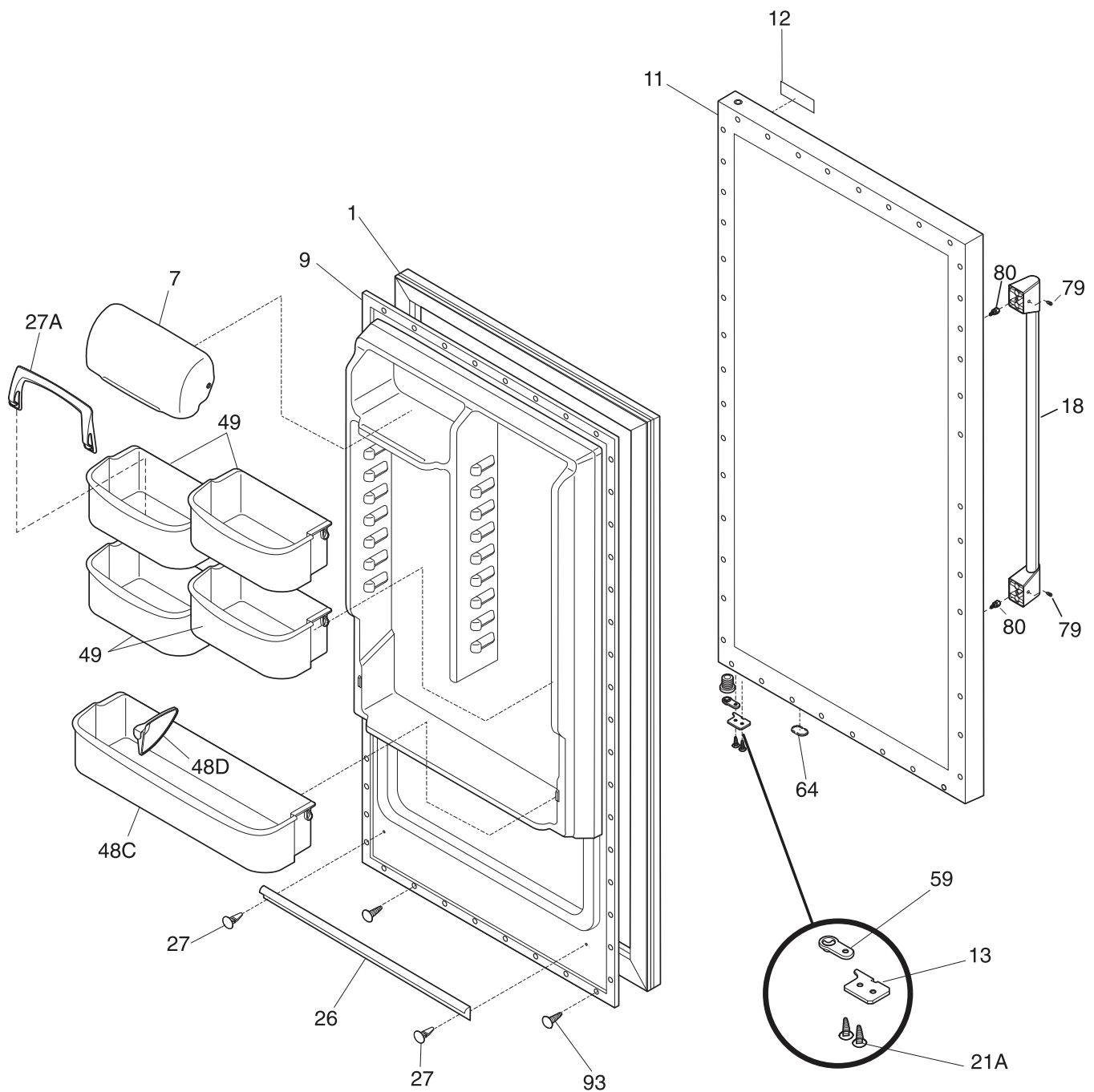
Ice Maker Exploded View Model E32AF75FPS



Ref #	Part #	Description	
1	297044902	Tube-water inlet, inlet valve, to ice maker	
1*	240561701	Seal-water inlet, inlet valve, to ice maker	
2	5304456650	Spring-shutoff arm, ice maker	
3	5304456657	Nameplate	# Functional Parts
4	5304456658	Gear	* Non-Illustrated Parts
5	5304456659	Plate-mounting	
6	5304456691	Screw, M 3x20 #3, valve plate	
7 #	5304445222	Motor-ice maker Svo	
7*	5304445223	Spring Beam	
8	5304456661	Spacer-hold switch	
9	5304456662	Cam	
10	5304456689	Washer, nylon	
11 #	5304456663	Thermal Cutoff, ice maker, complete assy	
12	5304456664	Harness-wiring	
13	5304456665	Thermostat, ice maker	
14	5304455676	Screw, plask, 4x14x3/4	
15 #	5304456667	Switch-micro, (3)	
16	5304456668	Support	
17	5304456669	Mold-ice maker, w/therm cut off	
18	5304456670	Ejector-ice	
18*	240352602	Wiring Harness, internal, wiring harness	
19	5304456671	Bearing & Inlet, fill cup	
20	5304455677	Screw, 8-32 x 3/8	
21	5304456672	Ice Stripper	
22	5304456673	Shut-off Arm	
23	5304456674	Screw, M 4x25 #2, mold-to-support, (2)	
24	5304456675	Lever Arm	
25	5304456676	Screw, M 4x12.8 #2, lever arm/sprt	
26	5304455680	Screw, plask, 4-14 x 3/8	
27	5304456677	Screw, M 3x25 #3, hold switch mtg, (2)	
28	5304456660	Screw, M 4x6 #2	
29	5304456678	Screw, M 3x12 #3, (2)	
30	5304456679	Screw-timing adj, M 4x25 #3	
31	5304456680	Insulator	
32	5304456681	Plate-valve switch	
33	5304456682	Spring, timing adjust	
34	5304456683	Screw, M 4x12 #2, (3)	
35	5304456684	Screw	
36	5304456685	Cover-ice maker	
36*	5304456690	Label, ID plate	
51	216887500	Tube, water, ice maker	
55 #	241803701	Valve-water, single solenoid, 60 Hz, 105/120 V	
60	218362501	Screw, hex washer head, 8-18AB x 1.250, spacer, (2)	
61	5304456686	Bracket-leveling, ice maker	
62	5304456687	Screw-IM brkt mtg, pan hd phillips, 8-32T x 0.375	
65	240385201	Container, ice bin	
*	241642503	Ice Maker, radius cube, 115 V, Svce	
*	241642601	Harness-wiring Svo	
*	241806601	Connector-water, straight	
*	297114101	Adapter-water supply, nut & sleeve, compression ftg	
*	5304456666	Screw, M 3x20 #2, (6)	
*	5304456688	Terminal	
*	5304456692	Washer	
*	5304456693	Nut, M 3.5	
*	5304456737	Washer	
*	IM501	Ice Maker Kit	

Parts List

All Refrigerator Pro Door Exploded View Model E32AR75FPS



Ref #	Part #	Description
1	216522309	Gasket-door, white
7	240338313	Door, dairy, clear
9	216953601	Panel-inner door, refr
11	297316548	Panel-outer door, stainless, RH
12	241603101	Label, nameplate, elux/icon
13	5303271076	Door Stop
18	241637912	Handle Assembly, stainless, w/endcaps
18*	241601001	Wrench, allen
21A	5304460608	Screw, flat head, #1/4-20, door stop/hng
26	216524201	Gasket, secondary
27	5304472186	Clip, panel mtg
27*	5304406520	Clip, panel mtg kit, (40)
27A	240396102	Retainer, tall bottle
48C	297108200	Bin-door, gallon
48D	240396302	Snugger, paddle type
49	297107801	Bin-door, 2-liter
59	216974500	Bearing, door closer
64	216403700	Plug-button, hole filler, door base
79	218755401	Screw-set, 10-32 x 0.375
80	218755504	Screw-shoulder, #10 AB, handle mounting
93	5304460605	Screw, ph truss head, 8-18AB x 0.500

Functional Parts

* Non-Illustrated Parts

Parts List

Ref #	Part #	Description	
3	216503100	Screen-drain	
5	297259600	Fan Blade, evaporator	# Functional Parts
6	297200600	Breaker Kit w/corners, no lock slot	* Non-Illustrated Parts
9	297200100	Breaker Kit w/corners, 32", top and bottom	
13 #	297250000	Motor, fan, 115 V	
14	216822900	Switch, light/lamp, ramp	
15A	297048600	Light Bulb/Lamp, short	
16A	297139501	Socket, light/lamp, 25 W	
19	216204902	Gasket-evap cover	
25	297099254	Cover-evaporator	
26	297091600	Case-crisper, shallow	
26A	297091601	Case-crisper, deep	
26B	297091800	Panel, crisper window	
26C	297091703	Panel, crisper front	
26E	297099400	Divider-crisper, shallow	
26F	297099401	Divider-crisper, deep	
26G	297123700	Case-deli	
27A	240362201	Control-humidity	
28	297179300	Hinge, bottom/RH	
29	216313501	Hose-drain	
32	5308005500	Drain	
34A	297053102	Shield-light	
34B	297053200	Lens, light	
35	216273000	Clip, drain hose	
37	297273900	Trim-cabinet corner, white, (2)	
38	297283800	Hinge-upper	
40	297164402	Cover-hinge, silver	
41	240578902	Screw, hex head, 1/4-20 x 5/8	
42	297108901	Shelf-sliding	
47	297133000	Baffle-plate	
47A	297102700	Insert-pan cover, glass	
47B	297102701	Insert-pan cover, glass, lower	
50	08013207	Bracket-fan motor	
62	297142600	Screw, blunt, 8-32 x 5/8	
63	216396900	Screw, leveling foot, plastic, adjustable	
63*	297164650	Bracket, LH leg levelor	
63*	297164651	Bracket, RH leg levelor	
71A	297146800	Screw, 8-18AB x 0.470	
72	297036900	Grille/Kickplate, 32", white	
93	5304460605	Screw, ph truss head, 8-18AB x 0.500	
93A	297174300	Screw, #8, 18x.63, self pierce	
*	216327800	Clip, wire	
131	297130200	Channel-shelf mtg, side, (2)	
148	297271700	Frame-crisper cover	
148A	297271702	Frame-crisper cover, lower	
152	216974600	Bearing, hinge closer	
154	297053000	Wire, jumper	
155	5303313703	Clip, (2)	
169	216912401	Screw, hex washer head, 8-32 x 0.500, bracket fan mtr, (2)	
170	297280400	Valve, breather	
171	297092700	Bracket, crisper cover, RH	
172	297092701	Bracket, crisper cover, LH	
173	297107602	Slide, crisper, RH	
174	297107603	Slide, crisper, LH	
175	297099500	Support-crisper	
177	297116000	Electronics, theater lgt	
*	297001704	Insulation, 24", drain tube	
*	5303305324	Paint, touch-up, white	
*	297226504	Energy Guide	

Ref #	Part #	Description	
1	297152200	Condenser, dynamic	
2	5308000110	Strap-evap/heater, aluminum, (2)	# Functional Parts
4 #	216938600	Drier-filter	* Non-Illustrated Parts
5 #	297171500	Harness-main	
14 #	216730700	Heater-defrost	
15 #	216997300	Evaporator	
15A	297319400	Heat Exchanger	
15B	297114000	Light Bulb, short, blue tint, 40W	
16	241507803	Socket-light	
*	297108000	Jumper-wire, electronic w/lt	
17	297110301	Box-control, front	
17*	5304455649	Screw, pan hd, 6-20 x 0.438	
18	297078701	Insulator-evap, styrofoam, RH	
19	297078801	Insulator-evap, styrofoam, LH	
20	216731001	Thermostat, defrost	
27	297293300	Grommet, compressor	
29 #	297270400	Compressor, w/o electricals	
30	216954229	Controller, compressor	
31	297165800	Pan-drain	
32	216649200	Clip, controller	
35	297177200	Bolt, compressor	
43B	297315800	Clip, wire	
55 #	218909912	Capacitor, run, 220 VAC, 12 microfarad	
57	297110901	Overlay-control box	
60	241584301	Motor-condenser fan	
61	241639501	Blade-condenser fan	
86	216036601	Screw, RWHD, 8-32A x 0.500, GX-CA	
87	5304463290	Screw, hi-lo blunt, #8-18X1/2	
93	5304460605	Screw, ph truss head, 8-18AB x 0.500	
107	297165400	Shield, compressor, Compartment	
130	216486800	Support, evaporator mtg	
136	240405201	Grommet, rubber, black, cond tube/wire	
137#	242007905	Filter, water, carbon cassette, front, with o'rings	
138	240397301	Button-filter release	
139	240396002	Base-water filter	
141	297164200	Divider, air flow	
141A	297194700	Divider, small, air flow	
146	297164000	Shroud-fan orifice	
146*	216337701	Screw, HWH, 10-24 x 0.500, Swage	
151#	297334200	Electronic control, assy	
153	297110200	Hose-junction attachment	
154	297112901	Hose, water inlet	
154*	297130900	Cap, hose attachment	
155	241518001	Nut, 1/2-20, nylon, water hose, (2)	
156	297110100	Retainer, hose junction	
157	297110500	Raceway, water filter	
158	297111000	Standoff	
198	240397401	Retainer	
199	240397501	Rod	
199*	240398401	Spring-filter release rod	
205	297108500	Cap-air filter	
206	241504902	Filter-air	
*	216502500	Sleeve, suction line	
*	240555002	Screw-#8-32 X 3/8	
*	297110400	Thermistor	
*	297174300	Screw, #8, 18x.63, self pierce	
* #	297169901	Cord-power, flat	

Troubleshooting

Problem	Cause	Correction
Freezer/refrigerator compressor does not run.	Unit is plugged into a circuit that has a ground fault interrupt.	Use another circuit. Check circuit for proper voltage.
	Temperature control is in the "OFF" position.	Set control to a temperature setting. Instruct customer.
	Unit may not be plugged in, or plug may be loose.	Ensure plug is tightly pushed into outlet.
	House fuse blown or tripped circuit breaker.	Check/replace fuse with a 15 amp time delay fuse. Reset circuit breaker.
	Power outage.	Check house lights. Call local Electric Company.
Freezer/refrigerator runs too much or too long.	Room or outside weather is hot.	It's normal for the freezer/refrigerator to work harder under these conditions.
	Unit has recently been disconnected for a period of time.	It takes 4 hours for the unit to cool down completely.
	Large amount of warm or hot food have been stored recently.	Warm food will cause unit to run more until the desired temperature is reached.
	Door is opened too frequently or kept open too long.	Warm air entering the unit causes it to run more. Open the door less often.
	Unit door may be slightly open.	See Problem section "Door will not close".
	Temperature control is set too low.	Set control to a warmer setting. Allow several hours for the temperature to stabilize.
	Freezer/refrigerator gaskets are dirty, worn, cracked or poorly fitted.	Clean or change gasket. Leaks in the door seal will cause unit to run longer in order to maintain desired temperature.
Interior freezer/refrigerator temperature is too cold.	Temperature control is set too low.	Set control to a warmer setting. Allow several hours for the temperature to stabilize.
Interior freezer/refrigerator temperature is too warm.	Temperature control is set too warm.	Set control to a colder setting. Allow several hours for the temperature to stabilize.
	Door is opened too frequently or kept open too long.	Warm air entering the unit causes it to run more. Open the door less often.
	Unit door may be slightly open.	See Problem section "Door will not close".
	Large amount of warm or hot food have been stored recently.	Wait until the unit has had a chance to reach its selected temperature.
	Unit has recently been disconnected for a period of time.	Unit requires 24 hours to cool down completely.
Freezer/refrigerator external surface temperature is warm.	The external freezer/refrigerator walls can be as much as 30°F warmer than room temperature.	This is normal while the compressor works to transfer heat from inside the unit cabinet.

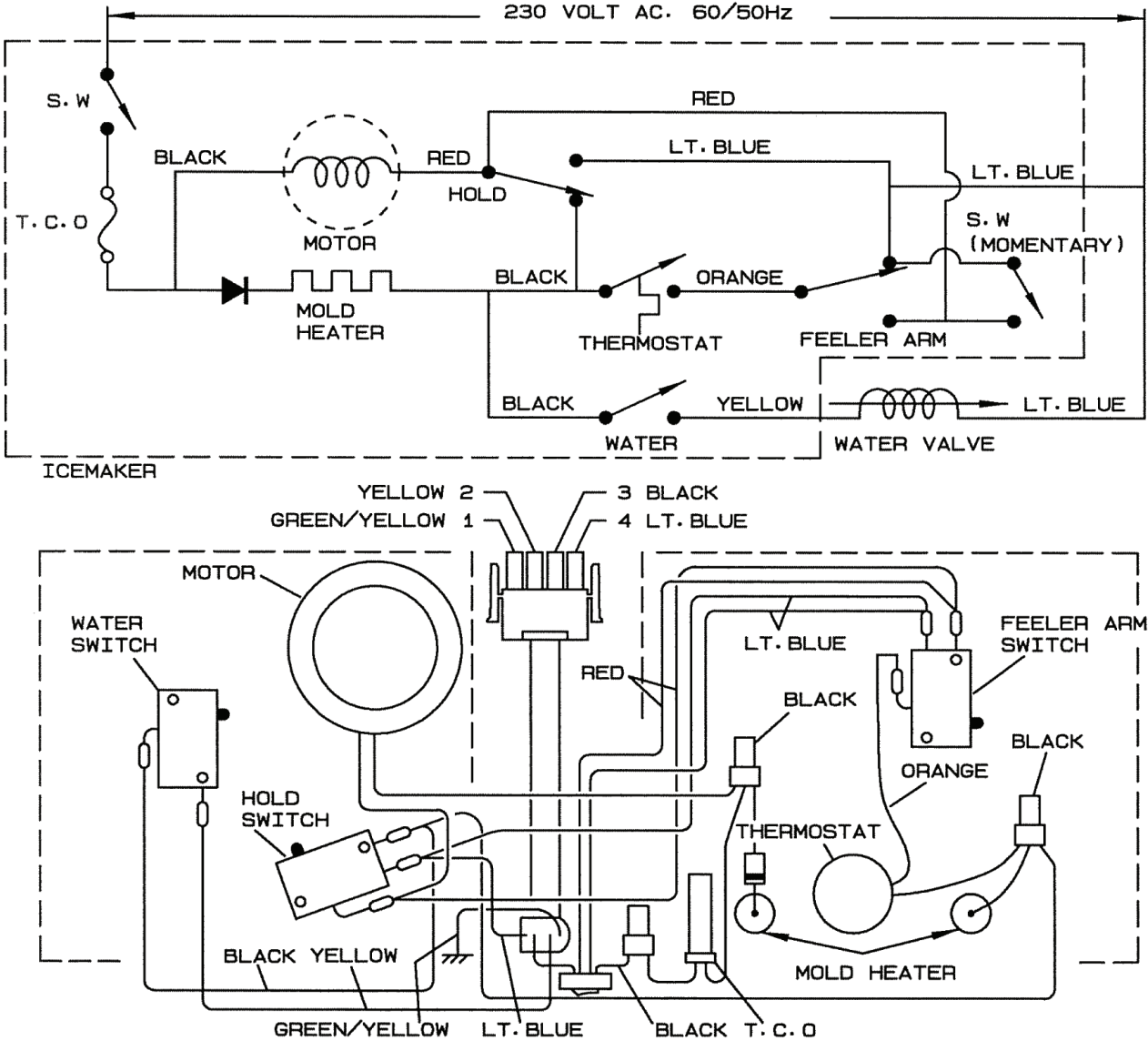
Troubleshooting

Problem	Cause	Correction
Louder sound levels whenever Freezer/refrigerator is on.	Modern Freezers have increased storage capacity and more stable temperatures. They require heavy duty compressors.	This is normal. When the surrounding noise level is low, you might hear the compressor running while it cools the interior.
Louder sound levels when compressor comes on.	Freezer/refrigerator operates at higher pressures during the start of the ON cycle.	This is normal. Sound will level off or disappear as freezer/refrigerator continues to run.
Popping or cracking sound when compressor comes on.	Metal parts undergo expansion and contraction, as in hot water pipes.	This is normal. Sound will level off or disappear as freezer/refrigerator continues to run.
Bubbling or gurgling sound.	Refrigerant used to cool the unit is circulating throughout system.	This is normal.
Vibrating or rattling noise.	Freezer/refrigerator is not level. It rocks on the floor when it is moved slightly.	Level the freezer/refrigerator.
	Floor is uneven or weak.	Ensure floor can adequately support unit. Level the unit by putting wood or metal shims under part of the unit
	Freezer/refrigerator is touching the wall.	Re-level freezer/refrigerator or move slightly.
Moisture forms on inside Freezer/refrigerator walls.	Weather is hot and humid, which increases internal rate of frost build-up.	This is normal.
	Door is slightly open.	See Problem section "Door will not close".
	Door is opened too frequently or kept open too long.	Open the door less often.
Odors in Freezer/refrigerator.	Interior needs to be cleaned.	Clean interior with sponge, warm water, and baking soda. Replace air filter.
	Foods with strong odors are in the Freezer.	Cover the food tightly.
Door will not close.	Freezer/refrigerator is not level. It rocks on the floor when it is moved slightly.	This condition can force the cabinet out of square and misalign the door. Level unit.
	Floor is uneven or weak.	Ensure floor can adequately support unit. Level the unit by putting wood or metal shims under part of the unit.
Light bulb is not on.	The fluorescent lamp or light bulb is burned out.	Replace lamp or light bulb.
Automatic ice maker not working. (Some freezer models)	No electric current is reaching the freezer/refrigerator. Ice maker is not working	See Problem section "Freezer/refrigerator compressor does not run" on previous page. <ol style="list-style-type: none"> 1. Ensure the wire signal arm is not in the UP position. 2. Water supply is turned off. 3. Water pressure is too low. 4. The freezer is not cold enough.

The following table relates to troubleshooting the thermostat, electronic components and compressor with its associated components.

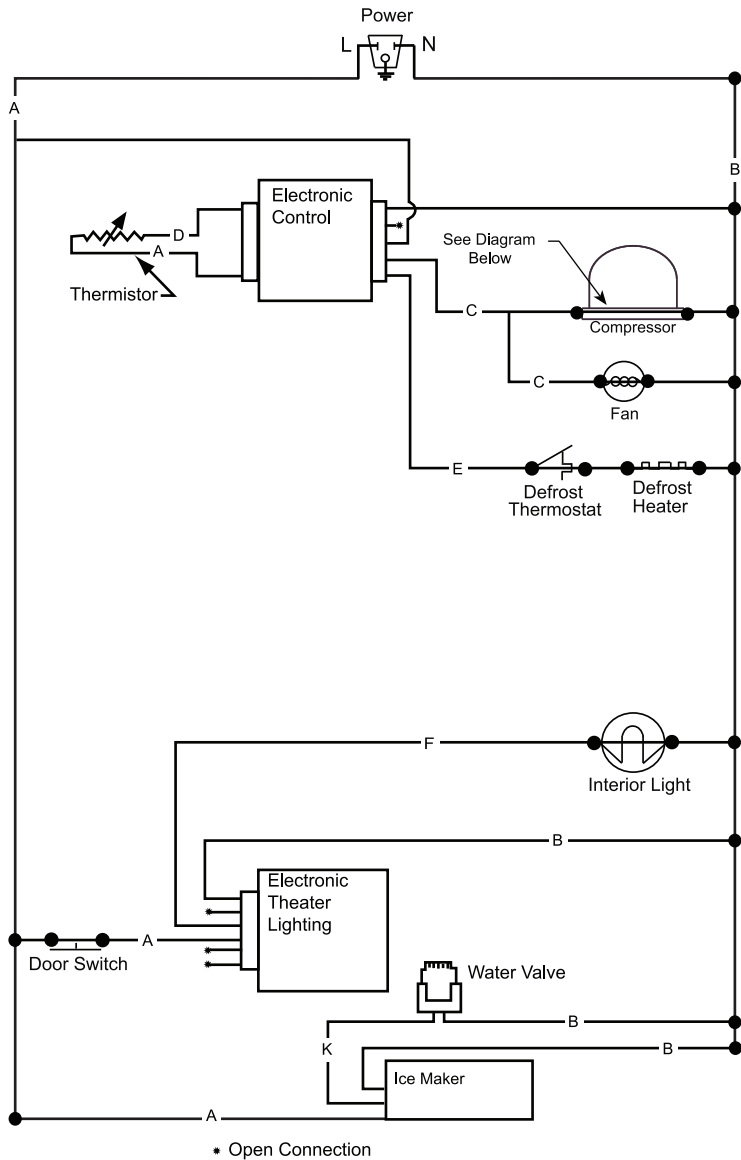
Problem	Cause	Correction
Compressor and evaporator fan motor does not run.	<ol style="list-style-type: none"> 1. Is the temperature control set to off? 2. Measure the input voltage to the electronic control. Is line to neutral voltage being applied? 3. Disconnect the wiring harness from the compressor controller and measure the voltage drop between the two wires in the harness. Does the meter read line to neutral voltage? 	<p>Yes. Set control from 1 to 7 No. Go to step 3.</p> <p>Yes. Replace defective electronic control. No. Defective wire harness.</p> <p>Yes. Replace defective compressor controller or compressor and evaporator fan motor. No. Replace defective electronic control.</p>
Compressor does not run, but the evaporator fan motor does.	<ol style="list-style-type: none"> 1. Check voltage at compressor. 2. Defective compressor or compressor controller. 	<p>1a. No voltage. Defective wire harness. 1b. Voltage. Replace compressor controller. 2. Replace compressor controller. If problem is not corrected replace compressor.</p>
Evaporator fan motor does not run, but the compressor operates.	<ol style="list-style-type: none"> 1. Is there something blocking the fan blade? 	<p>Yes. Remove restriction from fan blade. No. Replace defective fan motor.</p>
Interior light does not glow when door is opened.	<ol style="list-style-type: none"> 1. Check the light bulb with an ohmmeter. Is the bulb good? 	<p>Yes. Replace defective door switch. No. Replace light bulb.</p>
Compressor runs continuously, but freezer is not cold.	<ol style="list-style-type: none"> 1. Connect a low side gauge to the processing tube on the compressor. Is the pressure in a vacuum or lower than normal? 	<p>Yes. System low on refrigerant, check for leak in system before adding refrigerant. No. Replace defective compressor.</p>
Compressor runs continuously and the freezer/refrigerator is too cold.	<ol style="list-style-type: none"> 1. Check error code. 	<p>See Section 3 Electronic Control</p>
Freezer/refrigerator does not automatically defrost.	<ol style="list-style-type: none"> 1. Defective timer. 	<p>Yes. Check/replace defrost thermostat. Yes. Check/replace defrost heater. No. Replace defrost timer.</p>

Ice Maker Schematic

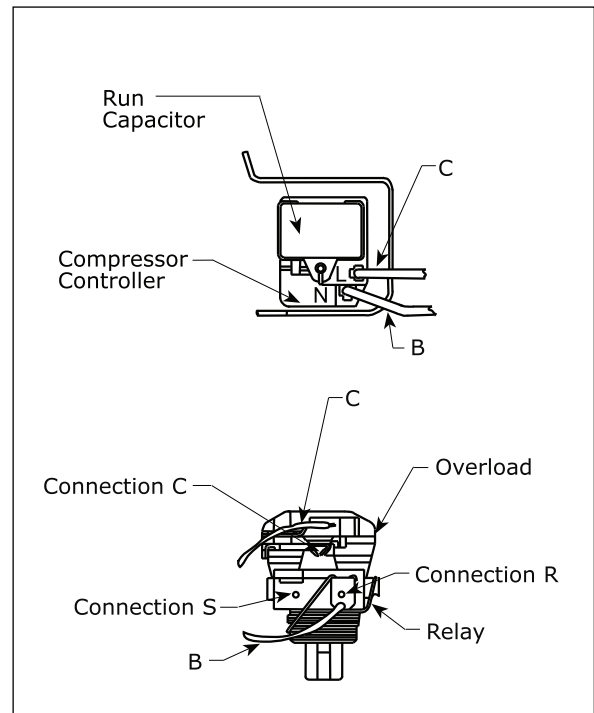


Wiring Schematics

All Freezer Pro Wiring Diagram



- A = Black
- B = White
- C = Yellow
- D = Red
- E = Orange
- F = Brown
- G = Green
- H = Blue
- J = Pink
- K = Purple



Specifications subject to change without notice.
 ** Options shown are not necessarily part of model

IMPORTANT SAFETY NOTICE

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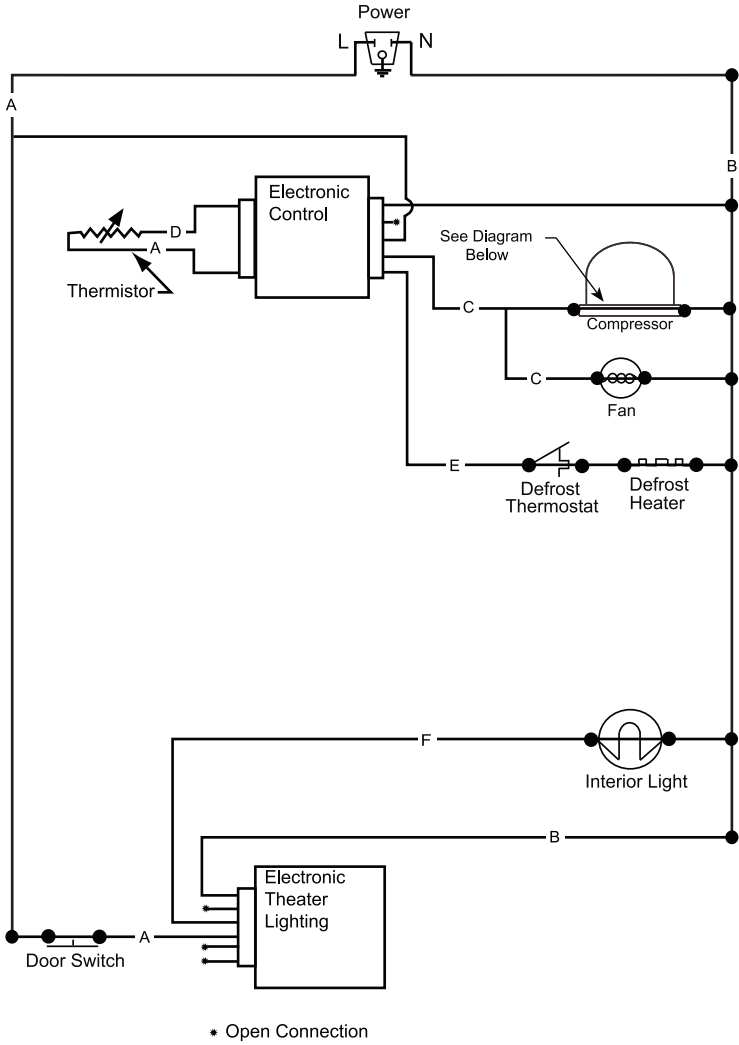
IMPORTANT

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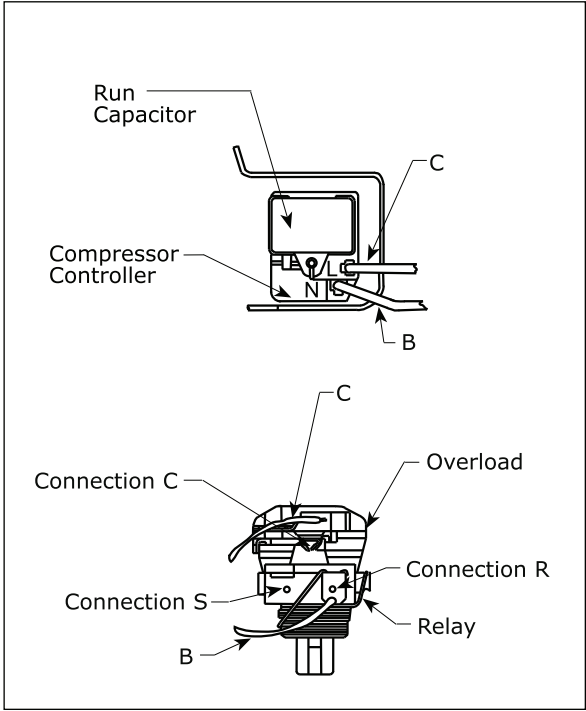
INSTALLATION

This product is designed for "free standing installation only" and three inches of clearance must be provided on all sides of the refrigerator for air circulation. The refrigerator should be positioned on a solid floor, and the front of the cabinet should be raised just enough to provide easy door closure when open half way.

All Refrigerator Pro Wiring Diagram



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