

Service and Parts Manual



U-LINE

BUILDING ON THREE GENERATIONS OF INNOVATION



Ice Makers • Refrigerators • Wine Captain® Models • Beverage Centers • Combo® Models

U-Line Corporation • 8900 N. 55th St. • PO Box 245040 • Milwaukee, WI 53224-9540

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INTRODUCTION

Three generations of pride and quality manufacturing and design improvements are built into all U-Line products. The result: U-Line leads the market with innovative technology and superior craftsmanship.

This manual contains specific instructions for servicing the U-Line Product families.

Product Families

- Refrigerators**
- Wine Captains**
- Beverage Centers**
- Combination Ice Makers**
- Clear Ice Makers**
- Manual Defrost Ice Makers**
- ADA Units**
- Outdoor Units**
- Freezers**

POTENTIAL PROBLEMS WITH HFC-134A

This service manual has been written to cover products manufactured with HFC-134A. HFC-134A compressors receive a synthetic based ester oil charge. The hygroscopic (water attraction) property of ester oil is many times greater than the mineral oils previously used with CFC-12. High system moisture causes the formation of acids and alcohol which can damage the compressor. Systems should not be left open for more than fifteen (15) minutes at any time as humidity from the air will enter the system. To ensure system dehydration, the system should be pulled down to 100 microns and vacuum pump oil (mineral oil) must not be allowed to enter the system.

Cleanliness of the system is extremely important. The presence of residues (chlorinated or greasy residues, mineral oil, or impurities) can lead to capillary tube restrictions, oil return problems and compressor damage. Do not use flux on brazed joints.



IMPORTANT

Check for the latest service related information at U-LineService.com. The Technical Knowledge base is continuously updated and can be accessed anytime. Each U-Line product has a unique method of installation, but it is consistent with U-Line's methods and requirement. Follow the installation guidelines for the U-Line product you are installing.

SAFETY PRECAUTIONS

 **IMPORTANT**

PLEASE READ all instructions completely before attempting to service the unit.

• Proper installation procedures must be followed if this unit is being initially installed, or is moved to a new location after being in service. An INSTALLATION GUIDE for your unit, providing complete installation information is available from U-Line Corporation directly, and must be consulted before any installation is begun. U-Line contact information appears on the rear cover of this guide.

• This unit requires connection to a grounded (three-prong), polarized receptacle that has been placed by a qualified electrician in accordance with applicable electrical codes.

Safety Alert Definitions

Safety items throughout this guide are labeled with a Danger, Warning or Caution based on the risk type. Warning means that failure to follow this safety statement could result in serious personal injury or death.

 **DANGER**

Danger means that failure to follow this safety statement will result in severe personal injury or death.

 **WARNING**

Warning means that failure to follow this safety statement could result in serious personal injury or death.

 **CAUTION**

Caution means that failure to follow this safety statement may result in minor or moderate personal injury, property or equipment damage.

General Precautions

Use this appliance for its intended purpose only and follow these general precautions along with those listed throughout this guide.

 **DANGER**

RISK OF CHILD ENTRAPMENT. Before you throw away your old refrigerator or freezer, take off the doors and leave shelves in place so that children may not easily climb inside

 **WARNING**

SHOCK HAZARD - Electrical grounding required.

- Never attempt to repair or perform maintenance on the unit until the electricity has been disconnected.
- Never remove the round grounding prong from the plug and never use a two-prong grounding adapter.
- Altering, cutting of power cord, removal of power cord, removal of power plug, or direct wiring can cause serious injury, fire and/or loss of property and/or life and will void the warranty.
- Never use an extension cord to connect power to the unit.
- Always keep your working area dry.

 **WARNING**

Failure to use the Anti-Tip Kit when it is included with the product can cause serious personal injury. The Anti-Tip Kit must be installed before the unit is used.

 **CAUTION**

- Use care when moving and handling the unit. Use gloves to prevent personal injury from sharp edges.
- If your model requires defrosting, **DO NOT** use any type of heater to defrost. Using a heater to speed up defrosting can cause personal injury and damage to the inner lining.

 **IMPORTANT**

- Do not lift unit by door handle.
- Never install or operate the unit behind closed doors. Be sure front grille is free of obstruction. Obstructing free air flow can cause the unit to malfunction and may void the warranty.
- Failure to clean the condenser every three months can cause the unit to malfunction. This could void the warranty.
- Allow unit temperature to stabilize for 24 hours before use.
- If you model requires defrosting, never use an ice pick or other sharp instrument to help speed up defrosting. These instruments can puncture the inner lining or damage cooling unit.
- Use only genuine U-Line replacement parts. Imitation parts can damage the unit, affect its operation or performance and may void the warranty.

U-LINE CORPORATION LIMITED WARRANTY

1.U-Line Corporation ("U-Line") warrants each U-Line product to be free from defects in materials and workmanship for a period of one year from the date of purchase. U-Line further warrants the sealed system (consisting of the compressor, the condenser, the evaporator, the hot gas bypass valve, the dryer and the connecting tube) in each U-Line product to be free from defects in materials and workmanship for a period of five years from the date of purchase.

2.During the initial one year warranty period for all U-Line products U-Line shall: (1) repair any product or replace any part of a product; and (2) for all Marine, RV and Domestic U-Line products sold and serviced in the United States (including Alaska and Hawaii) and Canada, U-Line shall be responsible for the labor costs performed by a U-Line authorized service company, incurred in connection with the replacement of any defective part. During years two through five of the warranty period for the sealed system, U-Line shall: (1) at U-line's option repair or replace any part of the sealed system; and (2) for all Marine, RV and Domestic U-Line products sold and serviced in the United States (including Alaska and Hawaii) and Canada, U-Line shall be responsible for the labor costs incurred in connection with the replacement of any defective part of the sealed system. All other charges, including transportation charges for replacements under this warranty and labor costs not specifically covered by this warranty, shall be the responsibility of the purchaser. This warranty extends only to the original purchaser of the U-Line product. The registration Card included with the product should be promptly completed by you and mailed back to U-Line or you can register on-line at www.u-lineservice.com.

3.The following conditions are excluded from this limited warranty: damage caused by outdoor use; use of cleaners other than the recommended stainless steel cleaners and U-Line Clear Ice Maker cleaner; installation charges; damages caused by disasters or acts of God, such as fire, floods, wind and lightning; damages incurred or resulting from shipping, improper installation, unauthorized modification, or misuse/abuse of the product; customer education calls; food loss and spoilage; door and water level adjustments (except during the first 30 days from the date of installation); defrosting the product; adjusting the controls; door reversal; and cleaning the condenser.

4.U-Lines' Outdoor Limited Warranty, set forth in this Paragraph 4, shall apply to U-Line models deemed suitable for outdoor use by Underwriters Laboratory ("UL") as noted in the U-Line Product Catalog, U-Line's website and/or on the serial tag located inside the product. Exposure to temperatures below freezing may cause damage to the product. Damage resulting to the product (and/or the surroundings) caused by this exposure is not covered under this warranty. Such models shall continue to be covered by the warranty terms set forth in Paragraphs 1 and 2 above, to the extent such models:

A. Are subjected to temperatures between 50 and 100 degrees Fahrenheit. Although these products will function in ambient temperatures below 50 degrees and above 100 degrees Fahrenheit, performance may decline. Performance degradation due to operating above or below the designated ambient temperature range is not a manufacturing defect and any issues resulting from exposure to higher temperatures, such as spoiled food or low ice production, are not covered under this warranty policy; and/or

B. Come into contact with rain by virtue of outdoor use. Exposure to other sources of water shall also cause this warranty to be void, including flooding of the area in proximity of the unit greater than 1/8" deep in water, hurricanes, splashing of pool water, or directing a spray from a hose or similar device into and around the unit.

5.If a product defect is discovered during the applicable warranty period, you must promptly notify either U-Line at P.O. Box 245040, Milwaukee, Wisconsin 53224 or at 800-779-2547 or the dealer from whom you purchased the product. In no event shall such notification be received later than 30 days after the expiration of the applicable warranty period. U-line may require that defective parts be returned, at your expense, to U-Line's factory in Milwaukee, Wisconsin, for inspection. Any action by you for breach of warranty must be commenced within one year after the applicable warranty period.

6.THIS LIMITED WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE DISCLAIMED. U-Line's sole liability and your exclusive remedy under this warranty is set forth in the paragraphs above. U-Line shall have no liability whatsoever for any incidental, consequential or special damages arising from the sale, use or installation of the product or from any other cause whatsoever, whether based on warranty (express or implied) or otherwise based on contract, tort or any other theory of liability.

7.Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

PRODUCT LIABILITY POLICY

Field service technicians are authorized to make an initial assessment. If in the servicer's judgment the damage is the result of a product defect, the product would be removed and returned to U-Line in an unaltered condition. The dealer would then be authorized to permanently replace the end-user's product at no cost to the end-user. Please call U-Line immediately at 800-779-2547 to initiate the RA and product exchange process.

If in the servicer's judgment the damage is the result of installation issues (water connection/drain, etc.), the consumer would be so notified and the correction would be made by the servicer or installer without requiring removal of the product. Any claim for damages should be directed to the original installer.

Any U-Line unit involved in an alleged property damage claim must remain **unaltered and unrepaired**, for evaluation. No service or repairs should be performed on any unit suspected to be involved in a property damage situation. If a unit has been altered or repaired in the field prior to U-Line's evaluation, any claim for damage may be declined.

If the unit in question is a U-Line CLR or CLRCO **with a drain pump**, both the unit **and** the drain pump (regardless of the manufacturer) must be returned to U-Line Corporation.

To complete the damage claim process for the customer, please obtain the following and forward to U-Line at onlineservice@U-Line.com, fax to 414-354-5696 or mail to the address below.

Pictures of the unit, installation and any alleged property damage.

Inquire when the problem first appeared, any prior problems with the product and provide a brief description of the alleged damages.

To expedite the claim process, U-Line will need two damage repair estimates.

Reference the RA number and customer name when providing this information.

If a unit is returned to U-Line, this evaluation will take approximately ten business days. **No field service company is authorized to perform this evaluation.** When a Return Authorization Number is issued, and the unit has been boxed in a U-Line carton, U-Line should be contacted and then will make arrangements for shipping, or designate a truck line to have the unit shipped freight collect.

If U-Line's evaluation finds the unit, (or U-Line P60 pump) to be defective, causing the property damage, the damage claim will be reviewed by the U-Line Customer Assurance Department.

If U-Line's evaluation finds the unit not to be defective, does not repeat a failure or does not leak any water from the U-Line unit or U-Line P60 pump, all claims for damage will be declined.

When a product evaluation is needed, it is the customer's responsibility to assure that the unit is returned for evaluation. If the customer fails to do so, or has the unit repaired in the field prior to U-Line's evaluation, any claim for damage will be declined.

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Leaders In Quality Undercounter Refrigeration

 **IMPORTANT**

Warranty claims must be filed within 60 days after the completion of the service call

Warranty Claims Procedure

When submitting claims for warranty payment, please follow these guidelines.

You can use any form you would normally use to bill your customer (your own computer generated form, Narda, USA, etc.). Claims can also be filed on-line at www.u-lineservice.com.

The model and serial number **MUST** be on the claims. Claims will not be paid without a model and serial number.

If you used a part in your repair, you **MUST** put the part number, the invoice number and where the part came from. Claims will be returned without this information.

If you work on more than one unit per service call please submit a separate claim for each unit.

We track all defects through warranty claims, so please be specific on what the repair was. If it is a system leak, please specify where the leak was.

Please be sure the claim is legible. If the claim form cannot be read, it will be returned, unpaid.

Remember: Door and water level adjustments are 30 day warranties only.

If you are changing out a unit please supply the model and serial number of both units (the unit being replaced and the new unit) and the R.A. number.

Occasionally the customer does not return their warranty cards. In this case we use the date the unit was shipped to our distributor for a beginning warranty date. This may cause the claim to be rejected for a proof of purchase. If you want to check on a purchase date, you may contact the U-Line Corporation Customer Assurance Department at 1-800-779-2547. This will allow you to get a proof of purchase, if needed, before you submit the claim.

At U-Line, parts and labor claims are paid separately. Included in labor are freon and recovery charges, all other parts are handled by the parts department. We require that some parts be returned to us, so we may return them to our vendor. It will be noted on your packing list if we require you to return the part. If a part is to be returned please include a copy of the packing list and a copy of your claim. If the part was purchased at one of our part distributors, you must handle the part warranty with that company. For labor payment please send a readable copy of your claim to U-Line Corporation, P.O. Box 245040, Milwaukee WI, 53224-9540, or fax it to 414-354-5696. Claims can also be filed on-line at www.u-lineservice.com.

Proof of Purchase

Proof of Purchase and/or Proof of Install is an important part of the warranty claim process. Sometimes it is difficult to obtain a proper Proof of Purchase/Proof of Install for a number of different reasons:

- The customer does not have a copy (only the original).
- The customer has only their copy of the final Walk Through or sign-off of new construction.
- Other valid reasons that prevent your technician from leaving the job site with a suitable Proof of Purchase/ Proof of Install.

We understand the problem and have modified our Proof of Purchase policy to help you in these situations.

Effective immediately, if a copy of the Proof of Purchase/Proof of Install is not available at the site, the technician should record the following information on the Labor Invoice:

- The name of the selling Dealer
- The date of purchase/installation
- The Order or Invoice number (if available)
- The type of document they saw, i.e. Store Receipt, Closing Papers, Sign-Off of Building Permit, Final Walk Through, etc.

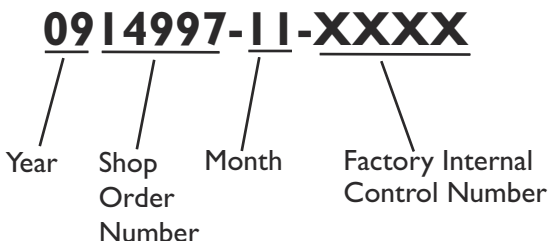
If we have this information on the Labor Invoice, and we have the other information that is needed (**correct Serial Number, type of repair, time spent on repairs, parts used in the repair, invoice number for the part, etc.**), we will be able to process the invoice for you in a timely manner.

SERIAL NUMBER FORMAT

IMPORTANT

Starting October 2009, U-Line Corporation went to a 13 digit serial number. Anything before that date will have 12 digits.

The serial number is divided into four segments. A typical serial number is 0914997-11-0005. (**Figure 1**)



The first two digits of the first segment, 09, represents the year the unit was made.

The next four/five digits of the first segment, 14997, represent the shop order number. Order number 14997 is assigned for the Model CLRCO2175B-40 units.

The next two digit segment, 11, represents the month the unit was made.

The last four digit segment, XXXX, is a factory internal control number used at U-Line Corporation.

MODEL NUMBER FORMAT

U - **2275** **DWRW** **OL** - **00**
U-LINE PRODUCT SERIES FAMILY COLOR SPECIAL ORDER

U - **CO** **1175** **S** - **01**
U-LINE FAMILY PRODUCT SERIES COLOR SPECIAL ORDER

ULN - **BI** **2115** **S** - **00**
U-LINE FAMILY PRODUCT SERIES COLOR SPECIAL ORDER

U - **2175** **RC** **GOL** - **00**
U-LINE PRODUCT SERIES FAMILY COLOR SPECIAL ORDER

U - **CLRCO** **2175** **S** - **41**
U-LINE FAMILY PRODUCT SERIES COLOR SPECIAL ORDER

A typical model number would be, U-2175RCGOL-00. The model number is broken into 5 segments. (**Figure 2**)

- **U- or ULN-** This signifies a U-Line Product.
- **Family** The family is the type of unit. Currently there are nine families. Refrigerators, Wine Captains, Beverage Centers, Combo Ice Makers, Clear Ice Makers, Manual Defrost Ice Makers, ADA Units, Outdoor Units and Freezers.
- **Product Series** Each family can include different product series. U-Lines current product series includes 95, 98, SP18, 1095, 29, 10xx, 11xx, 21xx and 22xx.
- **Color** The color segment includes color along with information that is important to the unit and the way it is used. As an example, the model U-2175RCGOL-00, is part of the family of refrigerators, product series 2175. The “C” following the “R” tells us this is a convection cool unit with an evaporator fan motor. The “GOL” tells us the unit is black with a glass door requiring an overlay panel. (all glass door overlay units are black)
- **Special Order** These numbers tells us if the unit is a SS door with a left hand hinge, (01) a CLR with a pump, (40) or a marine or RV product. (03)

REPLACEMENT PARTS

How to Order Replacement Parts

1. Refer to Service Parts and locate the illustration(s) for the model you are servicing.
2. Locate the desired part to be serviced and note the item number assigned to it.
3. Locate the item number within the parts list. Note the full description and the corresponding part number. If this is for a warranty unit, indicate and record the model and serial numbers.
4. When ordering parts, it will be necessary to supply Model Number, Serial Number, Part Number, Part Description and in some cases Color or Voltage.

All warranty parts will be shipped at no charge as long as warranty status has been confirmed. If we require that a part be returned to U-line, you will be informed at the time the order is placed. It will be noted on your packing list if we require you to return a part or if you may field scrap it. If U-Line requires a defective part to be returned, a prepaid shipping label will be included with your new replacement part. When returning parts enclose a copy of your packing list and a copy of your labor claim, showing the model and serial number, and tag or label the part with the nature of the defect.

Our warranty records may not match the customer's information. In this case, a proof of purchase will be required. If you do not have the proof of purchase at the time the order is placed, the part will be sent net 15 days, charged to a Visa or Master Card or COD if you don't have an open account with U-Line Corporation. When the proof of purchase is provided, we will credit your account (a check will be sent if the part was sent COD).

5. Parts may be ordered on-line, by FAX or phone:

www.U-LineService.com

onlineparts@u-line.com

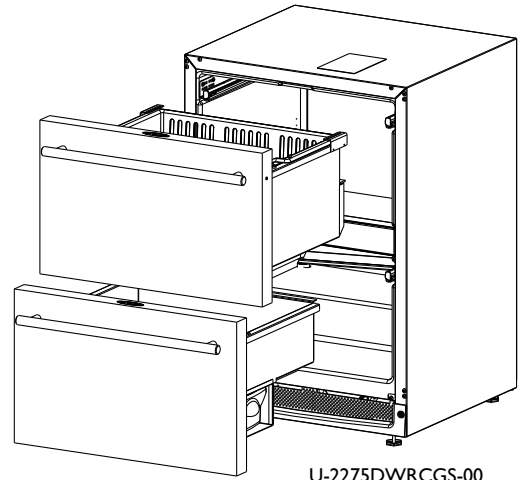
FAX Number (414) 354-7905

Phone Number (414) 354-0300 or (800) 779-2547;

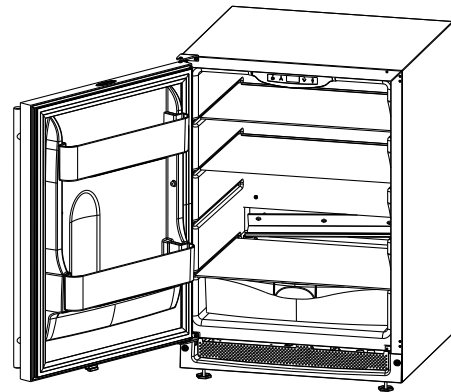
REPLACEMENT PARTS: Use only genuine U-Line replacement parts. The use of non-U-Line parts can reduce ice rate, cause water to overflow from ice maker mold, damage the unit, and can void the warranty.

This section includes the following models:

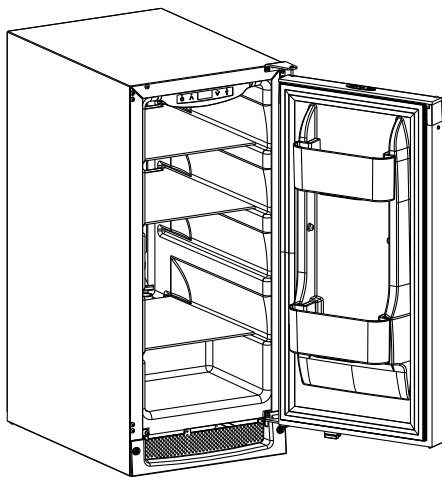
- U-2275DWRCOL-00
- U-2275DWRCS-00
- U-2175RCB-00
- U-2175RCGOL-00
- U-2175RCGS-00
- U-2175RCGS-01
- U-2175RCS-00
- U-2175RCS-01
- U-2175RCW-00
- U-2115RB-00
- U-2115RS-00
- U-2115RS-01
- U-2115RW-00
- U-1175RB-00
- U-1175RS-00
- U-1175RS-01
- U-1175RW-00
- U-1115RB-00
- U-1115RS-00
- U-1115RS-01



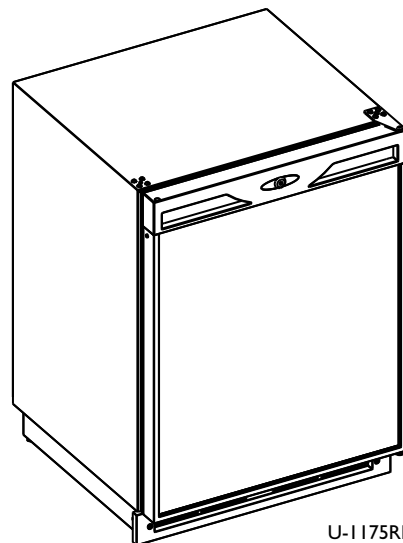
U-2275DWRCS-00



U-2175RCS-01



U-2115RB-00



U-1175RB-00

TROUBLESHOOTING

CUSTOMER CALL GUIDE

The following guide has been developed to help answer frequently asked questions. It can be used by persons scheduling service calls. These are things the customer should consider before scheduling a service call.

Concern	Response
<p>The unit is not cold enough.</p>	<ul style="list-style-type: none"> • Are you familiar with the factory temperature specifications for your unit? Many factors can cause these temperatures to vary; ambient temperature, application, amount of use (number of times and length of time the door or drawers are opened and closed), etc • Is the door or drawers sealing properly? If the door or drawer is not sealed properly, it allows heat into the unit. U-Line's warranty is 90 days for door or drawer adjustments. • Has the door or drawers been left open? The 21 and 22 series have an audible tone if the door/drawer has been left open for longer than 5 minutes. • Is the condenser clean? U-Line's warranty does not cover cleaning the condenser. • Is the unit behind closed doors or the grille restricted? The front grille must be free of obstruction. • Is the unit in an application of heavy usage? Heavy usage or high ambient temperatures will cause a unit to frost up. • Did you try adjusting the temperature to a colder level? Adjust to a colder level. Be sure to allow 24 hours between temperature control adjustments.
<p>Temperature is too cold.</p>	<ul style="list-style-type: none"> • Check actual temperature versus set-point. • Did you try adjusting the temperature to a warmer level? Adjust to a warmer level and allow 24 hours between temperature control adjustments.
<p>Product is freezing.</p>	<ul style="list-style-type: none"> • What is the temperature set at? • Do not allow products to lean against the evaporator at the back wall.
<p>The unit is frosting up.</p>	<ul style="list-style-type: none"> • Are you familiar with the defrost technology of your unit? • Is the door or drawers sealing properly? If the door or drawer is not sealing properly, it allows heat/humidity into the unit. U-Line's warranty is 90 days for door/drawer adjustments. • Has the door/drawers been left open? • Is the unit in an application of heavy usage? Heavy usage or high ambient temperatures will cause a unit to frost up.

TROUBLESHOOTING



Never attempt to repair or perform maintenance on the unit until the main electrical power has been disconnected from the unit.

Cause	Remedy
Compressor overheating <ol style="list-style-type: none"> 1. Condenser air flow restricted. 2. Condenser fan blade obstructed. 3. Condenser fan motor stalled. 4. Compressor inoperable. 	<ol style="list-style-type: none"> 1. Remove restriction (clean condenser and grille). 2. Remove blade restriction 3. Replace fan motor 4. Replace compressor
Compressor will not stop operating. <ol style="list-style-type: none"> 1. Temperature set too cold. 2. Control inoperable. 3. Control sensing bulb not sensing temperature. 4. Evaporator fan stalled. 	<ol style="list-style-type: none"> 1. Adjust temperature warmer. 2. Replace control. 3. Check bulb/thermistor for location and ohms. 4. Remove obstruction or replace motor.
Excessive frost buildup. <ol style="list-style-type: none"> 1. Door gasket not sealing properly. 2. Door out of alignment 3. Light stays on when door is closed. 4. Warm air leaking into cabinet from back. 	<ol style="list-style-type: none"> 1. Adjust door or replace door gasket. 2. Adjust door hinges/pivot plates. 3. Repair or adjust light bracket/magnet. 4. Seal holes in the foam to prevent warm air entering the unit.
Noisy. <ol style="list-style-type: none"> 1. Copper refrigeration tube touching cabinet. 2. Evaporator fan blade touching cover. 3. Condenser fan obstruction (wiring, foam insulation, packaging material). 	<ol style="list-style-type: none"> 1. Carefully adjust tubing. 2. Adjust fan mounting or shroud. 3. Remove obstruction.
Ice Buildup in drain trough or drain problem <ol style="list-style-type: none"> 1. Obstructed drain cup or tube. 2. Kinked drain tube. 3. Drain trough spout and drain cup not aligned 	<ol style="list-style-type: none"> 1. Check and clear drain tube. 2. Reroute drain tube. 3. Align drain trough and drain cup.

COMPRESSOR INFORMATION

COOLING PROCESS

Refrigerant is pumped from the compressor to the condenser as a high pressure, high temperature vapor.

As the refrigerant cools in the high pressure condenser, the vapor condenses to liquid. During this phase change, a great amount of heat is rejected with the help of the condenser fan.

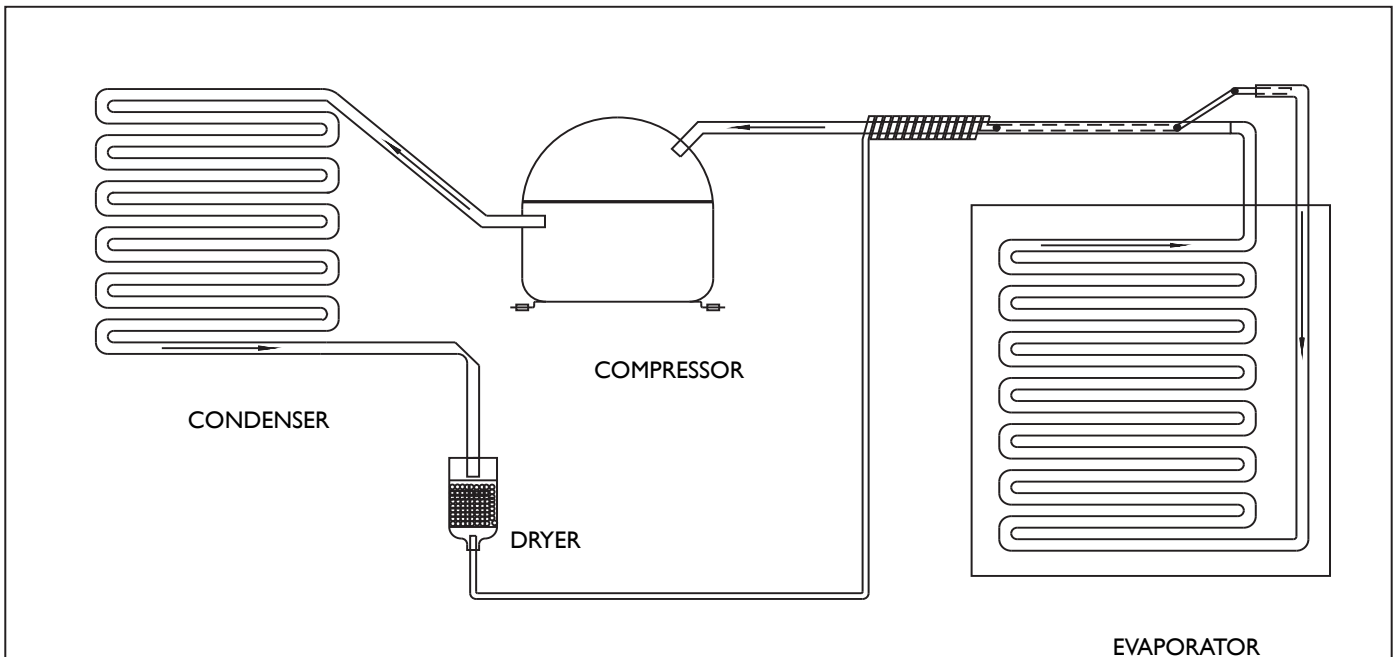
The liquid then flows to the dryer where it is strained and filtered.

From the dryer, the refrigerant flows through the capillary tube which meters the liquid refrigerant to the evaporator.

The pressure of the refrigerant is reduced to the evaporating or low side pressure.

The reduction of pressure on the liquid refrigerant causes it to boil or vaporize until it reaches saturation temperature. As the low temperature refrigerant passes through the evaporator coil, it continues to absorb a lot of heat, causing the boiling action to continue until the refrigerant is completely vaporized. It is during this phase that the most heat is absorbed (the cooling takes place) in the refrigerator.

The refrigerant vapor leaving the evaporator travels through the suction line to the compressor inlet. The compressor takes the low pressure vapor and compresses it, increasing both pressure and temperature. The hot high pressure gas is pumped out the discharge line and into the condenser. The cycle continues



THERMISTORS

1100 MODELS

One thermistor is employed. A type 2 thermistor is used to measure the refrigerator temperatures.

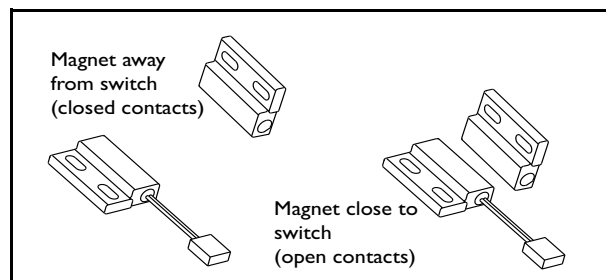
2100/2200 MODELS

Two thermistors are employed. Type 2 thermistors are used to measure the refrigerator and evaporator temperatures.

White thermistor - 5000 Ohms - 70° Ambient

REED SWITCH

A reed switch is mounted to the underside of the cabinet and a magnet is mounted to the door. When the door is closed the magnet trips the switch which turns the light and display off. If the door or drawers are left open for longer than 5 minutes, the switch will trigger an error code (E3 - 1100 models) and sets an audible warning (2100/2200 models). The drawer model has a set in each drawer.



COMPRESSORS

⚠ DANGER

Electrocution can cause death or serious injury. Burns from hot or cold surfaces can cause serious injury. Take precautions when servicing this unit.

- Disconnect the power source.
- Do not stand in standing water when working around electrical appliances.
- Make sure the surfaces you touch are not hot or frozen.
- Do not touch a bare circuit board unless you are wearing an anti-static wriststrap that is grounded to an electrical ground or grounded water pipe.
- Handle circuit boards carefully and avoid touching components

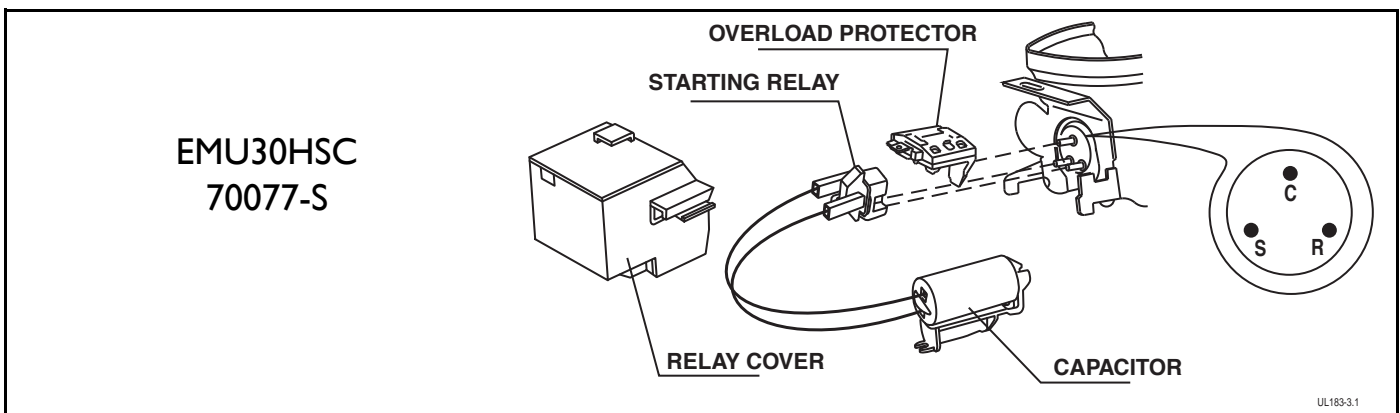
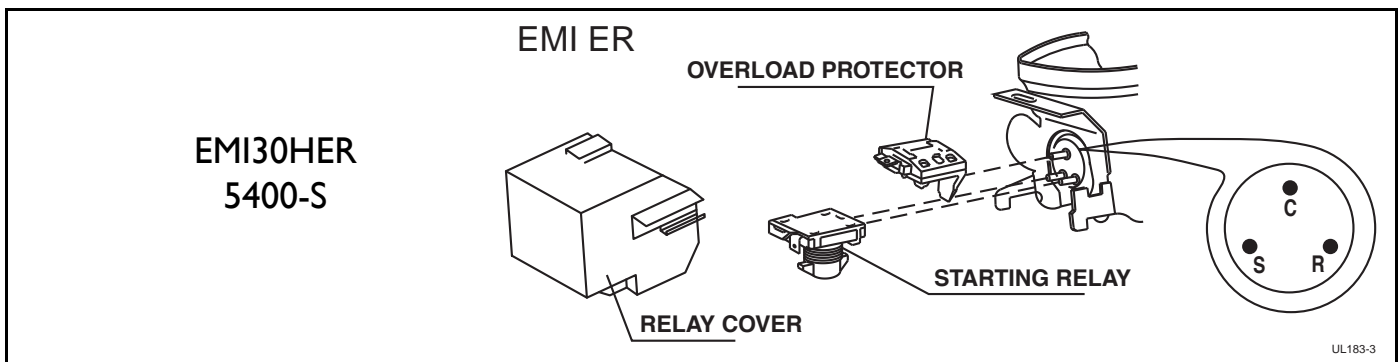
To measure the start winding resistance, measure across the C and S pins.

To measure the run winding resistance, measure across the C and R pins.

Also check S to R and you should get the sum of the run and start windings.

To ensure the windings are not shorted, check the S and R to ground.

	5400-S	70077-S
	EMI30HER	EMU30HSC
Voltage	115	115
Frequency	60	60
LRA	9.8	5.5
FLA	1.2	1.0
Start Winding	21.20	7.0
Run Winding	7.9	8.4
Overload	5411	71009
Relay	5412	71010
Capacitor	N/A	71013



REFRIGERATION SYSTEM DIAGNOSIS GUIDE

System Condition	Suction Pressure	Suction Line	Compressor Discharge	Condenser	Capillary Tube	Evaporator	Wattage
Normal	Normal	Slightly below room temperature	Very hot	Very hot	Warm	Cold	Normal
Overcharge	Higher than normal	Very cold - may frost heavily	Slightly warm to hot	Hot to warm	Cool	Cold	Higher than normal
Undercharge	Lower than normal	Warm - near room temperature	Hot	Warm	Warm	Extremely cold near inlet - outlet below room temperature	Lower than normal
Partial Restriction	Somewhat lower than normal - in vacuum	Warm - near room temperature	Very hot	Top passes warm - lower passes cool (near room temperature due to liquid)	Room temperature (cool) or colder	Extremely cold near inlet - outlet below room temperature backing up	Lower than normal
Complete Restriction	In deep vacuum	Room temperature (cool)	Room temperature (cool)	Room temperature (cool)	Room temperature (cool)	No refrigeration	Lower than normal
No Gas	0 PSIG to 25"	Room temperature (cool)	Cool to hot	Room temperature (cool)	Room temperature (cool)	No refrigeration	Lower than normal

2275, 2175, & 2115 MODELS

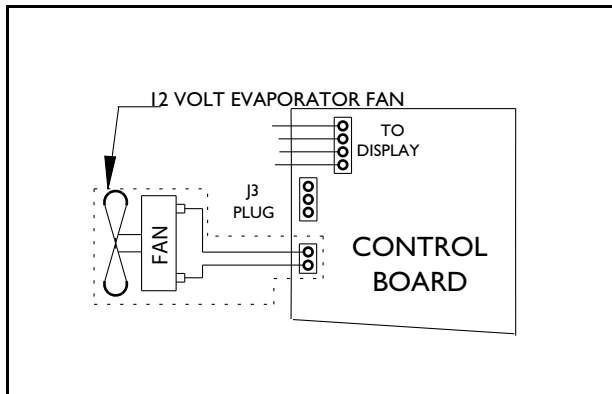
CONVECTION COOLING

Some models have an interior 12 Volt fan motor to help stabilize temperatures and pull down quicker. The evaporator cover is easily removed.

Please Note

Convection Cool units are available with solid or glass doors

The evaporator fan motor is plugged directly onto the main board and is powered by the logic of the board and not by a relay.



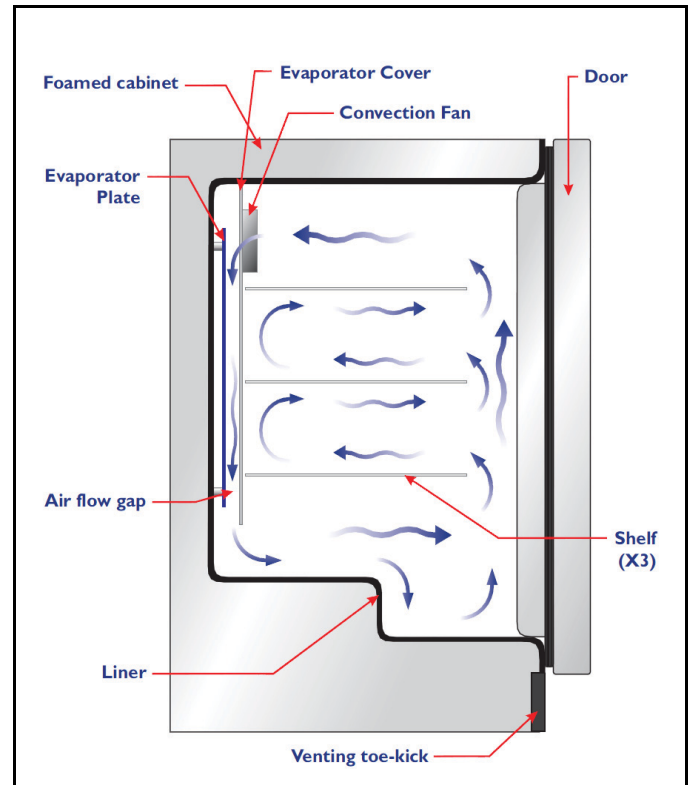
The evaporator fan is delayed for 1 minute after compressor starts to prevent warm air circulation.

Fan will run 1 minute longer than compressor to use extra cooling capacity remaining.

Fan will turn off when the door is opened.

When door is closed fan will always run for 1 minute to recirculate air and aid clearing any fogging of door.

Multiple door openings can cancel these modes. To reset these modes, allow the unit to stand unopened for approximately 30 minutes.

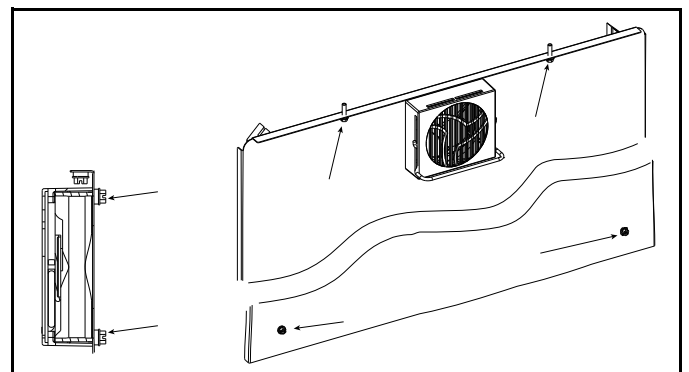


REPLACING THE EVAPORATOR FAN

- Remove the back panel.
- Unplug the evaporator fan motor.
- Remove the shelves.
- Remove 2 screws at the top of the evaporator cover.
- Remove 2 screws at the bottom of the evaporator cover.
- Carefully remove the cover with fan, being careful not to pull wire out of fan.
- Remove 4 screws from inside of cover.
- Remove evaporator fan and replace.
- To assemble replace parts in reverse order

⚠ IMPORTANT

Do not plug fan in until evaporator cover is in place. The wire could be pulled off of the fan motor.



2275, 2175, & 2115 MODELS

IMPORTANT

All relay and thermistor information can be found on the Electronic Control Quick Guide.

THERMISTORS

There are 3 thermistors on the 2275 refrigerator models and 2 thermistors on the 2175 & 2115 refrigerator models.

- Thermistor 1 (T1) is on the right hand wall and is used to maintain temperature in the refrigerator. Set point is between 34° and 45°.
- Thermistor 2 (T2) is attached to the back side of the evaporator plate and is used during defrost. Normal defrosting is based on a time and temperature scale. Defrost ends if the evaporator thermistor reaches stop point (42°) or maximum time, (90 minutes) whichever comes first.
- On the 2275DWR the 3rd thermistor (T3) monitors the ambient temperatures. The mullion heater is energized whenever the T3 temperature falls below 90°

VIEWING ACTUAL TEMPERATURE

There are two modes to view temperature. In viewing temperature in these modes, any offsets are taken into account. This means that if you place a thermistor in a known temperature, let's say ice water, it may not read the 32°F that you would assume. If the control offset was preset at -3°F while you placed the thermistor in an ice bath, the actual thermistor reading when viewing actual temperature would read 35°F. In the unit this would cause the cabinet to push itself 3° cooler. To view pure thermistor readings, you must go into the service menu and choose the correct option.

To view T1 (normally refrigerator temperature) hold the WARMER icon for approximately five seconds until the "F" flashes. Release and the display will show the corrected refrigerator temperature. Checking a completely unloaded cabinet may result in inaccurate temperatures.

To view T2-T4, hold both the WARMER and COLDER icons for approximately five seconds until the number two appears. Release the icons and the display will cycle through thermistors 2-4 and their accompanying readings. If a thermistor is not used on that particular model, it will show "0" and if the thermistor is not working, it will show an error code.

THERMISTOR OUTAGE

If the refrigerator thermistor (T1) fails, the unit will continue to operate based on a preset time interval of 10 minutes on and 30 minutes off. The display will show "ER."

If the evaporator thermistor (T2) fails, the unit will operate except it will defrost solely on time and ignore the temperature reading. The display will show "ER."

If the ambient thermistor (T3) fails, the unit will always have the mullion heater energized. The display will show "ER."

ELECTRONIC CONTROL

DANGER

Electrocution can cause death or serious injury. Take precautions when touching a bare circuit board. Wear an anti-static wrist strap and ground it to an electrical ground or grounded water pipe. Handle circuit boards carefully and avoid touching components.

NOTE: When touching icon combinations in which you hold one icon and press another icon three times, it is important to carefully follow this procedure.

1. Hold the desired icon ensuring the light above the icon is lit.
2. Immediately press the other icon three times, ensuring it lights up each time.
3. Release the held icon only after releasing the pressed icon for the third time.

Except as noted, these functions are available on all models.

ON/OFF

The ON/OFF mode allows the unit to be turned on and off via the iconpad. To do this, hold the icon for approximately 15 seconds until the "F" begins to flash. Release and the unit will switch modes. In the OFF position the cabinet light will remain operational. This mode does not disconnect power from the circuit board so it is still "live."

ADJUSTING THE SET-POINT

To adjust the set-point press and release either the WARMER or COLDER icon. This will start the set-point flashing. While in this mode you can adjust the set-point warmer or colder until the desired temperature is reached. The factory recommended set-point is 38°F for refrigerators. When adjustment is complete, stop touching the display and the set-point will be saved in approximately five seconds.

CHANGING FROM FAHRENHEIT TO CELSIUS

To change the displayed temperature from °F to °C, hold the LIGHT icon and press the down arrow three times. This will change all values to °C. When the icon combination is accepted the control will beep once and change values.

SHOWROOM MODE

This mode is designed to show units in a display environment. When in this mode the only functions will be the control and cabinet lights. The compressor, fans, etc. will not operate. To enter this mode hold the down arrow and press the LIGHT button three times. When entered, the unit will beep once and the degree symbol will begin to flash. When the degree symbol is flashing the unit will allow the use of the control for demonstrations.

On early models, after not touching the unit for one minute the display will begin to “snake” around. This is meant to alert you the unit is in showroom mode.

On later models, the degree (°) flashes.

The unit can be left in this mode indefinitely. If you again want to demo the control, touch any icon and the degree symbol will begin to flash. To exit this mode: If using software version 2.8, this mode will exit automatically when the unit is unplugged. If using software version 2.9, this mode needs to be exited by the same icon combination as used to enter the mode.

SERVICE MODE

This mode has 27 different options available for service diagnostics. To enter the mode hold the WARMER button and press the LIGHT button three times. The display will show “0” and the board will beep once. When in this mode the WARMER and COLDER buttons will act as up and down arrows to select the desired option. The LIGHT button is the ENTER button and will enter a function. If changing a function, you must press the LIGHT button again to retain the changed setting. To exit the service mode, scroll to option 99 and press the LIGHT button. After five minutes of not touching any buttons the mode will also exit automatically.

BLACKOUT MODE

Hold the LIGHT button for 10 seconds until the °F starts flashing. When released, the unit will beep once and the display and cabinet light will shut off. The unit will continue to maintain temperature in the cabinet. To cancel this mode, hold the LIGHT button again for about 10-12 seconds.

FORCED DEFROST

This will allow the unit to defrost quickly. For R and WC units, this is just an off cycle. For units with hot gas defrost the unit will enter a hot gas defrost per the specification. Hold the LIGHT button and press ON/OFF three times. The unit will beep once when entering this mode. To exit this mode either do the same button combination or turn the unit off via the display.

RELAY STATUS

To check to see which relays are currently operating, hold the COLDER button and press the ON/OFF button three times. When entering the sequence, keep the COLDER button pressed until you completely release the ON/OFF button for the third time. The display will cycle through a series of numbers to tell which relays are energized. For example, if the unit was cooling the bottom drawer the display would show 11 20 31 40 50 61 70. The first number is the relay number. In the second number, 1 means ON and 0 means OFF. The relay information can be found in the Electronic Control Quick Guide.

SERVICE MODE

Enter the service menu by holding up arrow and pressing LIGHT three times. Select option 1 to 27 with the up and down arrows. To enter the option, press the LIGHT button. You must press the LIGHT button to retain the changed setting before going to the next option.

When entering service mode all other modes are cancelled and the unit will stop operating. When exiting service mode the unit will begin to operate normally, however the four-minute compressor off cycle still applies.

1. Light all LED segments.

This will illuminate all the LEDs on the board to ensure they work properly.

2. Thermistor 1 status—Temperature, E1, or E2.

This will show the pure thermistor reading with no offsets taken into account. When placed in ice water this thermistor should read 32°F in this menu option.

3. Error Log

A list of the errors in the order they occurred will scroll once on the display. Repeat if desired. Once viewed perform option 12 to clear the errors from memory.

4. Defrost information

Displays the number of defrosts that have occurred in the past 24 hours.

5. Compressor runtime based on last cycle

This will show the number of minutes the compressor has run in the prior cycle (or current cycle if the compressor was running when service mode was entered).

6. Defrost length adjustment—up to 99 minutes

The length of the defrost can be adjusted up to 99 minutes long. The other defrost parameters still apply. Lengthening a defrost may cause higher than normal temperatures in the refrigerator section.

7. Light switch 1 status—0 or 1

This will tell if the light should turn off with the door switch or not. At the “0” reading the light should be off with the door closed and on with the door open. At the “1” reading the light stays on always.

8. Display toggle status—0 or 1

This will tell if the display should turn off with the door switch or not. At the “0” reading the display should be off with the door closed and on with the door open. At the “1” reading the display stays on always.

9. Restore factory defaults

This will restore the default set-point, defrost and offset values.

10. Adjust thermistor 1 offset—10 to +10F

This allows calibration of the sensor to cabinet for abnormal operations. By adjusting this number colder you can change the average cabinet temperature to a colder value.

11. Data download

Along with the separate ESPY software you can download the rolling data file.

12. Clear error log

Perform this operation after checking the errors.

13. Clear download memory

Clears the rolling data file if desired.

14. Model number displayed

Displays the two-digit model number of the specific unit.

15. Adjust thermistor 1 differential

This number should not be adjusted.

16. Adjust thermistor 2 offset

This allows calibration of the sensor to cabinet for abnormal operations. By adjusting this number colder you can change the average cabinet temperature to a colder value.

17. Adjust thermistor 3 offset

This allows calibration of the sensor to cabinet for abnormal operations. By adjusting this number colder you can change the average cabinet temperature to a colder value. **Not available on Rs, WCs or CLR2160.**

18. Adjust thermistor 4 offset

This allows calibration of the sensor to cabinet for abnormal operations. By adjusting this number colder you can change the average cabinet temperature to a colder value. **Not available on Rs or WCs.**

19. Thermistor 2 status

This will show the pure thermistor reading with no offsets taken into account. When placed in ice water this thermistor should read 32°F in this menu option.

20. Thermistor 3 status

This will show the pure thermistor reading with no offsets taken into account. When placed in ice water this thermistor should read 32°F in this menu option.

21. Thermistor 4 status

This will show the pure thermistor reading with no offsets taken into account. When placed in ice water this thermistor should read 32°F in this menu option.

22. Automatic toggle through relays switch on and off

Each relay can be turned on and off individually to determine whether or not the board and component are operating. If a component is suspected of not operating correctly, you can run through this sequence to ensure each component is turning on and off through the board correctly. This will cycle every relay on and off showing 10 (on) 11 (off), 20 (on) 21 (off)through all the relays. If a component fails to turn on when the relay does, you can verify if there is voltage present by using a voltmeter to check the board output. The relay information can be found on the **Electronic Control Quick Guide**.

IMPORTANT

The evaporator fan motor is plugged directly onto the main board and is powered by the logic of the board and not by a relay.

23. Defrost interval adjust. 3 to 24 hours

This will adjust the interval between defrosts from 3 to 24 hours. Adjusting from the factory settings may cause undesired temperature in the refrigerator section. Adjust thermistor 2 set-point. Only available on CO2175F, CO2175DWR, CLR2160 and CLRCO2175.

24. Adjust thermistor 3 set-point. Only available on 2275DWRWS.

25. Adjust thermistor 4 set-point. Only available on 2275DWRWS.

26. Show software revision

This will toggle between main and display board software revision. The main board number will be accompanied by the degree symbol.

ERROR CODES

IMPORTANT

All errors or combinations show up as ER alternating with SP. P1 will alternate with SP or ICE for models 67/68. E3 and E10 both have audible alarms. P1 does not have an audible alarm.

E1 Thermistor 1 is open. **Not available on CLR2160.**

E2 Thermistor 1 is shorted. **Not available on CLR2160.**

E3 Main door or bottom drawer is open longer than 20 minutes.

E4 Compressor had 100% runtime between two defrost cycles. **Does not show on display—only in error log.**

E5 Thermistor 1 out of range + 10°F for more than 12 hours. **Not available on CLR2160.**

E6 Thermistor 1 out of range -10°F for more than 12 hours. **Not available on CLR2160.**

E7 Thermistor 2 open or shorted. **Not available on 2175RF.**

E8 Thermistor 3 open or shorted. **Not available on Rs, WCs or CLR2160.**

E9 Thermistor 4 open or shorted. **Not available on Rs, WCs.**

E10 Top drawer is open longer than 20 minutes. **Only available on drawer models.**

P1 Pump circuit open. **Only available on CLR2160 or CLRCO2175 models with P60 pump.**

E11 EE Memory error.

THERMISTOR LOCATIONS

Model	Thermistor 1	Thermistor 2	Thermistor 3	Thermistor 4	Door Switch 1	Door Switch 2
2175R	REF	EVAP	N/A	N/A	Yes	N/A
2115R	REF	EVAP	N/A	N/A	Yes	N/A
2175/2275 DWRR	REF	EVAP	Ambient	N/A	Bottom Drawer	Top Drawer

RELAY INFORMATION

Model	Relay 1	Relay 2	Relay 3	Relay 4	Relay 5	Relay 6	Relay 7
	2175R		Light	Compressor/ Fan			
2115R		Light	Compressor/ Fan				
2175DWRR 2275DWRR		Light 1	Compressor/ Fan		Pan Heat	Mull Heat	

DEFROST INFORMATION

Model	Hours Between Defrost Time (Runtime) (Adjustable)	Length/min	Stop Point
2175R	6	90	42°
2115R	6	90	42°
2175/2275DWRR	6	90	42°

2100 & 2200 Series Quick Reference Card 1 of 2

Task	Touch	Touch	Touch	Display	Comments
1 On/Off	Hold 10 Seconds	Release when unit beeps	or	The CLR2160 will show ICE	
2 Toggle Lights	Glass door/drawer models only			Light normally goes on/off with door opening. Pressing light button will turn interior light on for 4 hours, then it will turn off.	
3 Adjust Refrigerator Set-point	or	or	Flashing	Touch once to get into set mode, then touch to adjust.	
4 2275DWRWC adjust lower drawer set-point	or	or	Bottom line of E flashes	Touch up/down once to get into set mode, touch light, for bottom drawer then touch up/down to adjust	
5 Adjust zone set-points 2275ZWC	or	Touch to set temp		Use warmer/colder to adjust temperature while small LED is flashing	
6 View actual temperature (T1)	Hold for 5 seconds		Flashing	WC's will scroll top/middle/bottom temperatures	
7 View actual temperature (T2 - T4)	Hold for 5 seconds		Scrolls through T2-T4 Flashing		
8 Toggle F-C	Hold		or		
9 Toggle Showroom Mode	Hold		Degree symbol flashes	Repeat to exit mode	
10 Service Mode	Hold			See back of card for details to exit, arrow up to 99 & touch light	
11 Display Toggle Glass door/drawer models only	Hold			Turns display on/off with door closed	
12 Blackout Mode	Hold for 10 seconds		Display (and cabinet light) not operable in blackout mode	Hold light icon for 10 seconds to exit	
13 Clean Cycle	Hold				
14 Icemaker Off Mode	Hold			Repeat to exit	
15 Forced Harvest	Hold			Audible alert when entering this mode	
16 Forced Refrigerator Defrost	Hold			Audible alert when entering this mode	
17 Ice Thickness Adjustment	Hold			Use warmer/colder to adjust. Touch light icon to exit.	
18 Temporary Shutdown (Office Mode)	Hold			Icemaker will automatically turn back on in three hours	
19 Relay Status	Hold		21 30	Relay number with 1 or 0 to indicate on/off. In this example relay 2 is on, relay 3 is off.	
20 Change Mode Number (with jumper)	Hold			Follow the instructions on the back of this card.	

2275ZWC use the left to enter or exit modes

2100 & 2200 Series Quick Reference Card 2 of 2

- Service Menu Options (hold up arrow & touch light 3 times to access service menu)
- Use warmer/cooler to scroll through options
- Touch light bulb to enter and before exiting an option

#	Description
1	Light all LED segments
2	Thermistor #1 status (temp, E1 or E2)
3	Error Log
4	Defrost info
5	Compressor runtime (based on last cycle)
6	Defrost length (adjustable - up to 99 minutes)
7	Light switch status (0 or 1)
8	Display toggle status (0 or 1)
9	Restore factory defaults
10	Adjust thermistor #1 offset (-10° to +10°)
11	Data download
12	Clear error log
13	Clear download memory
14	Model number display
15	Adjust thermistor #1 differential
16	Adjust thermistor #2 offset
17	Adjust thermistor #3 offset
18	Adjust thermistor #4 offset
19	View thermistor #2 status (temp or E7)
20	View thermistor #3 status (temp or E8)
21	View thermistor #4 status (temp or E9)
22	Automatic toggle through relays (switch on and off)
23	Defrost interval adjustment (3 to 24 hours)
24	Adjust thermistor #2 setpoint
25	Adjust thermistor #3 setpoint
26	Adjust thermistor #4 setpoint
27	Display software version
99	Exit

Model	Thermistor 1	Thermistor 2	Thermistor 3	Thermistor 4	Door Switch 1	Door Switch 2
2175R	Ref	Evap	N/A	N/A	Yes	N/A
2115R	Ref	Evap	N/A	N/A	Yes	N/A
2115WC	Ref	Evap	N/A	N/A	Yes	N/A
2175WC	Ref	Evap	N/A	N/A	Yes	N/A
2175/2275 DWRR	Ref	Evap	Ambient	N/A	Bottom Drawer	Top Drawer
CO2175F	Ref	IM	Freezer	Drain Pan	Yes	N/A
2175RF	Ref	N/A	Freezer	Drain Pan	Yes	N/A
CO2175 CO2275 DWR	Ref	IM	Freezer	Drain Pan	Bottom Drawer	Top Drawer
CLR2160	N/A	Ice Bin	N/A	Condenser	N/A	P60
CLR2175	Ref	Ice Bin	Ref/Evap	Condenser	Yes	P60
2175 BEV	Ref	Evap	N/A	N/A	Yes	N/A
2275DWRWS	Top Ref	Bottom Ref	Top Evap	Bottom Evap	Bottom Drawer	Top Drawer
2275ZWC	Top Ref	Bottom Ref	Top Evap	Bottom Evap	Yes	N/A

Model	Part Number	PIN 7 C_FAN Relay 1	PIN 6 LIGHTS Relay 2	PIN 5 Relay 3	PIN 4 H_H2O Relay 4	PIN 3 C_PUMP Relay 5	PIN 2 R_VALVE Relay 6	PIN 7 BP_VALVE Relay 7
2175R	61/75		Light	Compressor/Fan				
2115R	71/73		Light	Compressor/Fan				
2115WC	72/74		Light	Compressor/Fan				
2175DWR	70		Light 1	Compressor/Fan		Pan Heat	Mull Heat	
CO2175F	64/78	Cond Fan E FAN	Light	Compressor	Hot Gas Valve	DRAIN HEAT	IM 1	IM2
2175RF	65/79	Cond Fan E FAN	Light	Compressor	Hot Gas Valve	DRAIN HEAT	IM 1	
CO2175DWR	66/80	Cond Fan E FAN	Light	Compressor	Hot Gas Valve	MULL HEAT	IM 1	IM 2
CLR2160	67/81	Cond Fan	Light	Compressor	Hot Gas Valve/Water Valve	Circulation Pump		
CLR2175	68/82	Cond Fan	Light	Compressor	Hot Gas Valve/Water Valve	Circulation Pump	Ref Valve	Ref Bypass Valve
2175BEV	63/77		Light	Compressor/Fan				
2275DWRWS	85/86	Cond Fan	Bottom Light	Compressor	Top Light		Bottom Valve	Top Valve
2275ZWC	87/88	Cond Fan	Bottom Light	Compressor	Top Light		Bottom Valve	Top Valve

Model Selection

- How to program a new board**
 1. Unplug unit and install new board
 2. Plug unit in
 3. The display may show a SP or --, either is OK
 4. Install a jumper on J3
 5. Hold down warmer, cooler and light button until display shows model number and main board beeps
 6. Use warmer/cooler to select new model number

Model	120 Volts	220 Volts	Board Part #
2175R	61	75	68072
2175WC	62	76	68072
2175BEV	63	77	68072
CO2175F	64	78	68072
2175RF	65	79	68072
CO2175DWR / CO2275DWR	66	80	68072
CLR2160	67	81	68072
CLR2175	68	82	68072
2175DWR / 2275DWR	70	84	68072
2115R	71	73	68072
2115WC	72	74	68072
2275DWRWS	85	86	68084
2275ZWC	87	88	68084

7. Press and release light key
8. Wait for display to stop flashing
9. Remove jumper from board
10. Unplug unit and wait 5 seconds
11. Plug unit back in

Wait for the display to show the set point

Error Code	Description (alternates with setpoint display)
E1	Thermistor #1 open
E2	Thermistor #1 shorted
E3	Door or bottom drawer open longer than 20 minutes
E5	Thermistor #1 out of range (+10° for more than 12 hours)
E6	Thermistor #1 out of range (-10° for more than 12 hours)
E7	Thermistor #2 open or shorted
E8	Thermistor #3 open or shorted
E9	Thermistor #4 open or shorted
E10	Top drawer open longer than 20 minutes
E11	EE Memory Error
P1	Pump circuit open due to high water level in ice bin

1175, & 1115 MODELS

IMPORTANT

All relay and thermistor information can be found on the Electronic Control Quick Guide.

THERMISTORS

There is 1 thermistor on the 1100 series refrigerator models.

- Thermistor 1 (T1) is on the right hand wall and is used to maintain temperature in the refrigerator. Set point is between 34° and 45°.

VIEWING ACTUAL TEMPERATURE

To view T1 (refrigerator temperature) hold the WARMER button for approximately five seconds until the “F” flashes. Release and the display will show the corrected refrigerator temperature. In viewing temperature in this mode, any offsets are taken into account. This means that if you place a thermistor in a known temperature, let’s say ice water, it may not read the 32°F that you would assume. If the control offset was preset at -3°F while you placed the thermistor in an ice bath, the actual thermistor reading when viewing actual temperature would read 35°F. In the unit this would cause the cabinet to push itself 3° cooler. To view pure thermistor readings, you must go into the service menu and choose the correct option. Checking a completely unloaded cabinet may result in inaccurate temperatures.

DEFROST INFORMATION

All 1100 series refrigerators are cycle defrost based on time only. The 1115R series cycle off for 60 minutes every 4 hours compressor run time. The 1175 series cycle off for 45 minutes every 6 hours compressor run time. The length of defrost is adjustable, the time between defrost is not adjustable.

THERMISTOR OUTAGE

If the refrigerator thermistor (T1) fails, the unit will continue to operate based on a preset time interval of 10 minutes on and 30 minutes off. The display will show “E1.”

NOTE: When touching button combinations in which you hold one button and press another button three times, it is important to carefully follow this procedure.

1. Hold the desired button.
2. Immediately press the other button three times.

Release the held button only after releasing the pressed button for the third time.

ELECTRONIC CONTROL

DANGER

Electrocution can cause death or serious injury. Take precautions when touching a bare circuit board. Wear an anti-static wrist strap and ground it to an electrical ground or grounded water pipe. Handle circuit boards carefully and avoid touching components.

Except as noted, these functions are available on all models.

ON/OFF

The ON/OFF mode allows the unit to be turned on and off via the display pad. To do this, hold the ON/OFF button for approximately 15 seconds until the “F” begins to flash. Release and the unit will switch modes. In the OFF position the cabinet light will remain operational. This mode does not disconnect power from the circuit board so it is still “live.”

ADJUSTING THE SET-POINT

To adjust the set-point press and release either the WARMER or COLDER button. This will start the set-point flashing. While in this mode you can adjust the set-point warmer or colder until the desired temperature is reached. The factory recommended set-point is 38°F for refrigerators. When adjustment is complete, stop touching the display and the set-point will be saved in approximately five seconds.

CHANGING FROM FAHRENHEIT TO CELSIUS

To change the displayed temperature from °F to °C, hold the LIGHT button and press the COLDER button three times. This will change all values to °C. When the button combination is accepted the control will change values.

SHOWROOM MODE

This mode is designed to show units in a display environment. When in this mode the only functions will be the control and cabinet lights. The compressor, fans, etc. will not operate. To enter this mode hold the COLDER button and press the LIGHT button three times. Once entered, the degree symbol will begin to flash. When the degree symbol is flashing the unit will allow the use of the control for demonstrations. After not touching the unit for one minute the display will begin to “snake” around. This is meant to alert you the unit is in showroom mode. The unit can be left in this mode indefinitely. If you again want to demo the control, touch any button and the degree symbol will begin to flash. To exit this mode use the same button combination as used to enter the mode.

SERVICE MODE

This mode has 16 different options available for service diagnostics. To enter the mode hold the WARMER button and press the LIGHT button three times. The display will show "0". When in this mode the WARMER and COLDER buttons will act as up and down arrows to select the desired option. The LIGHT button is the ENTER button and will enter a function. If changing a function, you must press the LIGHT button again to retain the changed setting. To exit the service mode, scroll to option 99 and press the LIGHT button. After five minutes of not touching any buttons the mode will also exit automatically.

BLACKOUT MODE

Hold the LIGHT button for 10 seconds until the °F starts flashing. When released, the unit will beep once and the display and cabinet light will shut off. The unit will continue to maintain temperature in the cabinet. To cancel this mode, hold the LIGHT button again for about 10-12 seconds.

SERVICE MODE

Enter the service menu by holding up arrow and pressing LIGHT three times. Select option 1 to 16 with the up and down arrows. To enter the option, press the LIGHT button. You must press the LIGHT button to retain the changed setting before going to the next option.

When entering service mode all other modes are cancelled and the unit will stop operating. When exiting service mode the unit will begin to operate normally, however the four-minute compressor off cycle still applies.

1. **Light all LED segments.**
This will illuminate all the LEDs on the board to ensure they work properly.
2. **Thermistor 1 status—Temperature, E1, or E2.**
This will show the pure thermistor reading with no offsets taken into account. When placed in ice water this thermistor should read 32°F in this menu option.
3. **Error Log**
A list of the errors in the order they occurred will scroll once on the display. Repeat if desired. Once viewed perform option 12 to clear the errors from memory.
4. **Defrost information**
Displays the number of defrosts that have occurred in the past 24 hours.
5. **Compressor runtime based on last cycle**
This will show the number of minutes the compressor has run in the prior cycle (or current cycle if the compressor was running when service mode was entered).
6. **Defrost length adjustment—up to 99 minutes**
The length of the defrost can be adjusted up to 99 minutes long. The other defrost parameters still apply. Lengthening a defrost may cause higher than normal temperatures in the refrigerator section.

7. Light switch 1 status—0 or 1

This will tell if the light should turn off with the door switch or not. At the "0" reading the light should be off with the door closed and on with the door open. At the "1" reading the light stays on always.

8. Display toggle status—0 or 1

This will tell if the display should turn off with the door switch or not. At the "0" reading the display should be off with the door closed and on with the door open. At the "1" reading the display stays on always.

9. Restore factory defaults

This will restore the default set-point, defrost and offset values.

10. Adjust thermistor 1 offset -10 to +10F

This allows calibration of the sensor to cabinet for abnormal operations. By adjusting this number colder you can change the average cabinet temperature to a colder value.

11. Data download

Along with the separate ESPY software you can download the rolling data file.

12. Clear error log

Perform this operation after checking the errors.

13. Clear download memory

Clears the rolling data file if desired.

14. Model number displayed

Displays the two-digit model number of the specific unit.

15. Adjust thermistor 1 differential

This number should not be adjusted.

16. Show software revision

This will show the board software revision.

ERROR CODES

- E1 Thermistor 1 is open.
- E2 Thermistor 1 is shorted.
- E3 Main door open longer than 20 minutes.
- E4 Number of defrost intervals with 100% run time.
- E5 Thermistor 1 out of range + 10°F for more than 12 hours.
- E6 Thermistor 1 out of range -10°F for more than 12 hours.

All errors show up on display alternating between SP and the actual code.

I100 Series Quick Reference Card I of I

Origins Electronic Control Quick Guide

Task	Touch	Touch	Touch	Display	Comment
Adjust Setpoint			or	38°F	Touch once to get into set mode, then touch to adjust
View Actual Temp		Hold 5 seconds		F	WC will scroll Top/Mid/Bot temperatures.
1 Change F/C		Hold	or	37°F or 38°F	
2 Service Mode		Hold		0	Times out after 5 minutes. Use warmer or colder to scroll, light button to view.
3 Show Room Mode Toggle		Hold		--88°F	Degree symbol flashes at first, then display snakes all LEDs after one minute of inactivity. Same key combination to remove.
4 Display Toggle		Hold			Display control LEDs while door is closed. (Glass Door Models Only)
5 Blackout Mode		Hold 10 seconds			Stays off 36 hours or use light button to restore lights and display
6 Change Model		Hold while plugging in		50	
7 Turn ON/OFF		Hold 10 seconds		OFF or 38°F	Light normally goes on/off with door opening. Pressing light button will turn interior light on for 4 hours then it will turn off.
8 Cabinet Light		Touch & Release			

Service Mode Listing

- 01 Light all LED Segments
- 02 Thermistor Status
- 03 Error Log
- 04 Defrost Info (# in past 24 hours)
- 05 Comp. on Time Since Last Cycle
- 06 Defrost Length
- 07 Light Switch Status (0=toggle w/door, 1=on always)
- 08 Display Status (0=toggle w/door, 1=on always)
- 09 Restore Defaults (includes logs)
- 10 Adjust Offset
- 11 Data Download
- 12 Clear Error Log
- 13 Clear Download Memory
- 14 Display Model Number
- 15 Adjust Differential (do not adjust)
- 16 Display Software Version
- 99 Exit Service Mode

Use warmer/colder to scroll through options
Touch light bulb to enter/exit an option

Origins Model Selection

1. Start with unit unplugged.
2. Hold down on/off key and plug in unit.
3. Release on/off key.
4. Press and release light key.
5. Use warmer/colder to select the model number desired from the list below.
 - a. 49-1175R/ADA24R 120V
 - b. 50-1175WC 120V
 - c. 51-1175BEV 120V
 - d. 52-1175R 220V
 - e. 53-1175WC 220V
 - f. 54-1175BEV 220V
 - g. 56-1115R 120V
 - h. 57-1115R 220V
 - i. 77-1115WC 120V
 - j. 78-1115WC 220V
6. Press and release light key.
7. Wait for flashing to stop.
8. Unplug unit, wait 5 seconds, plug unit back in.

Error Codes

- E1 - Thermistor open
- E2 - Thermistor shorted
- E3 - Door open longer than 20 minutes
- E4 - # of defrost intervals with 100% run time more than 12 hours
- E5 - Actual temp 10 degrees over setpoint for more than 12 hours

ADJUSTMENTS

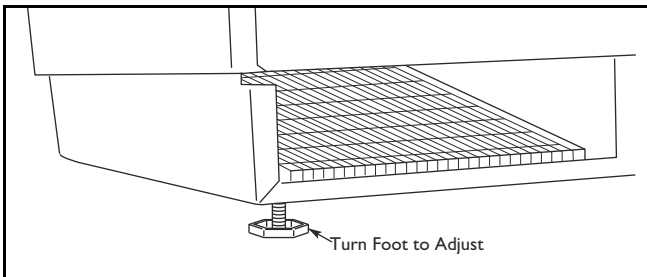
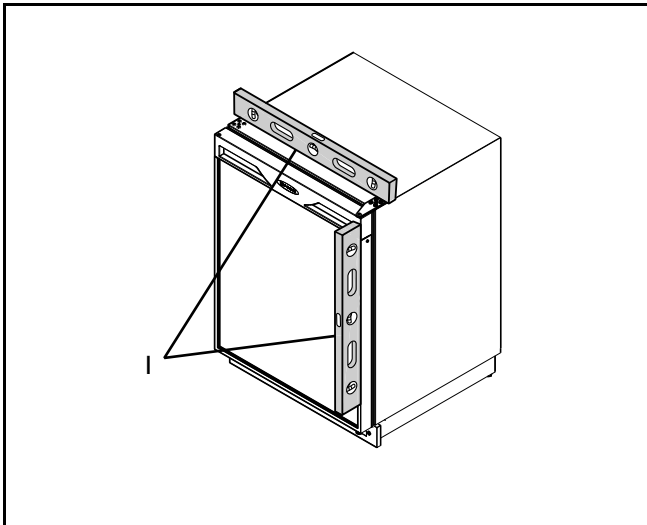
LEVELING

 **IMPORTANT**

It is extremely important that the unit is level for maximum production.

1. Use a level to check the unit from front to back and from side to side.
2. If the unit is not level, adjust the feet on the corners as necessary. Rotating the feet clockwise raises the unit.

Check after each adjustment and repeat the previous steps as necessary until the unit is level.

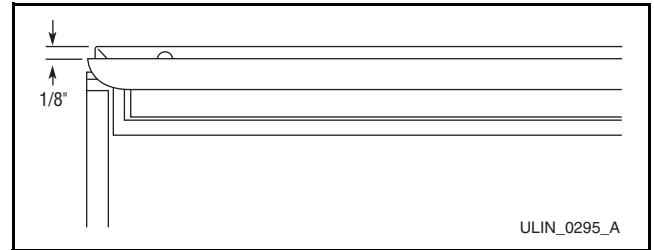


DOOR ALIGNMENT - 2100/2200 SERIES

The unit's door is aligned at the factory before shipment. However, its alignment could have been disturbed during shipment or during door panel installation.

 **IMPORTANT**

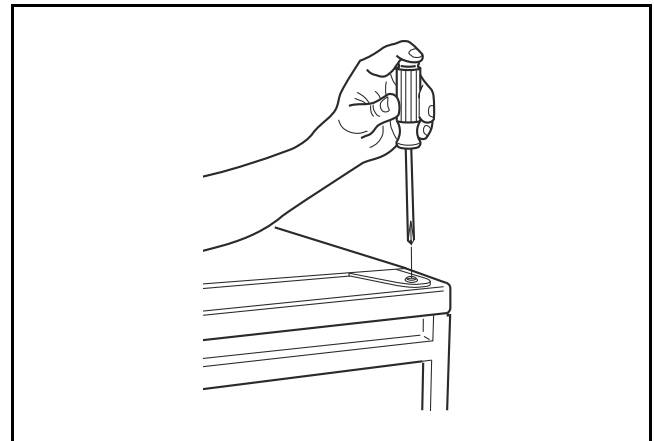
Properly aligned, the door should be 1/8" below the top of the unit's cabinet, **NOT** flush with the top.



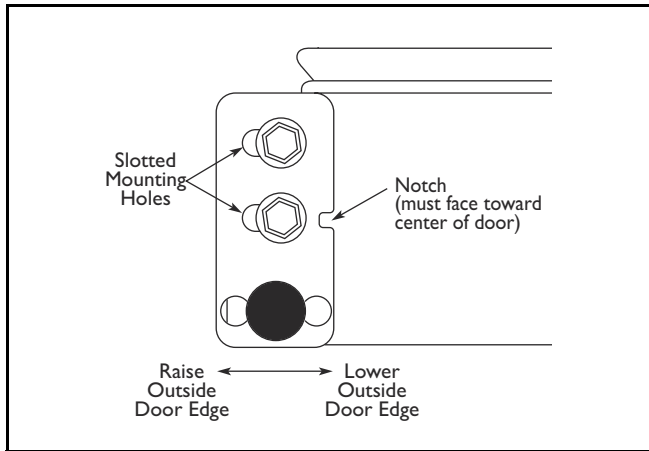
1. Compare the top edge of the door to the top edge of the cabinet.
2. If the door edge is 1/8" below and parallel to the top of the cabinet, it is adjusted correctly. If it is not, note whether the side opposite the hinge needs to be moved UP or DOWN, and use the following procedure.

ADJUSTING DOOR ALIGNMENT

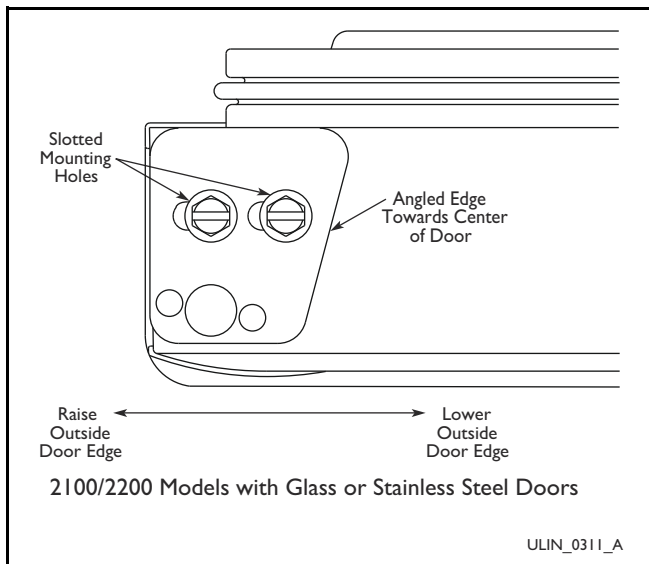
1. Remove top hinge screw pin using a Phillips screwdriver. Remove door by tilting forward and lifting off bottom hinge pin.



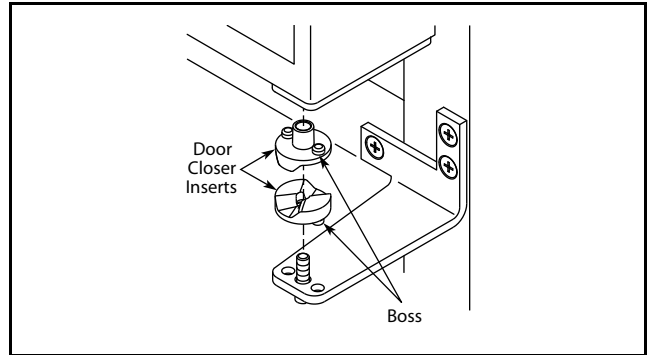
2. With door upside-down, loosen but do not remove the two screws on the door's bottom hinge plate.



3. If the top far edge of the door needs to move UP, move the hinge plate toward the outside of the door and retighten screws. If the top far edge of the door needs to move DOWN, move the hinge plate toward the inside of the door and retighten screws.



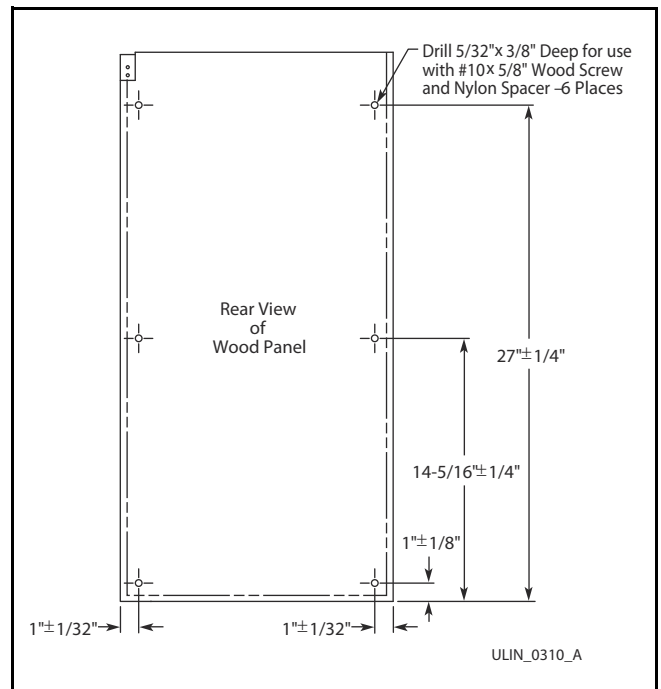
4. Mount the door to recheck alignment and repeat steps 2 and 3 if further adjustment is necessary.
5. When top edge of door is parallel to top edge of cabinet, remove the door and ensure the two screws are secure.
6. Remove the door closers from the bottom hinge, clean thoroughly and lubricate the mating surfaces with petroleum jelly.



7. Reinstall the closers, lining up the bosses with holes in hinge and hinge plate.
8. Mount the door, install top hinge pivot pin.

FULL OVERLAY 2100/2200 MODELS

NOTE: If door is adjusted correctly, but panel is not square with the adjacent cabinets, slight adjustments can be made by drilling the holes in the vinyl-coated steel panel slightly oversized.

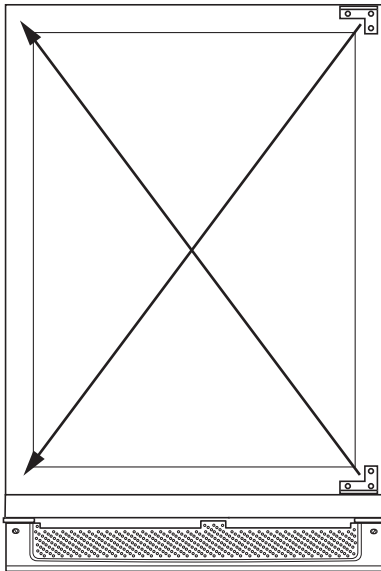


REVERSING DOORS - 2100/2200 SERIES

⚠ IMPORTANT

Stainless Steel units must be ordered right or left hand hinge. They are NOT field reversible.

All U-Line black or white units may have the hinge mounted on the left or right side of the cabinet. Stainless steel unit doors cannot be reversed. The doors are easily reversed by moving the hinge hardware to the opposite side. The top right hinge will be used on the bottom left and the bottom right hinge will be used on the top left.



ULIN_0015_A

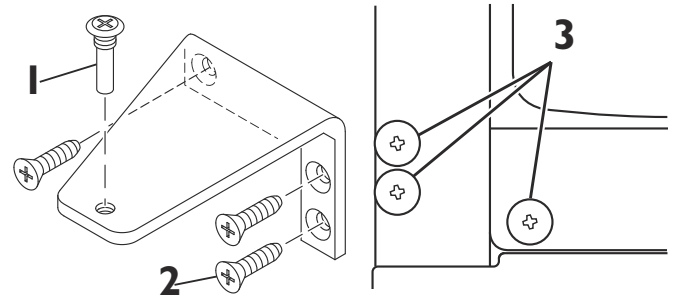
The hinge hardware will be removed and reinstalled on the opposite side of the cabinet.

The top hinge hardware will be reinstalled on the bottom of the opposite side of the cabinet.

The bottom hinge hardware will be reinstalled on the top of the opposite side of the cabinet.

To reverse the door:

Remove door:



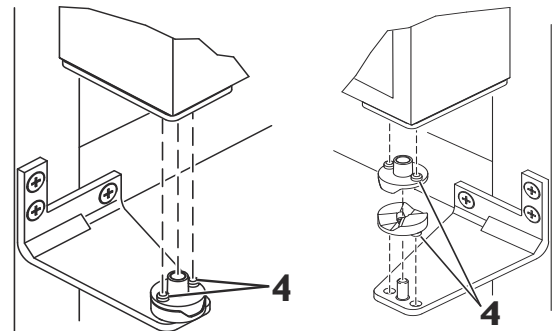
1. Hold door to keep it from falling.
2. Remove hinge screw pin (1) from top hinge using a phillips screwdriver.
3. Remove door by tilting forward and lifting door off bottom hinge closer inserts.
4. Reinstall hinge screw pin (1) into top hinge using a phillips

Remove hole plugs.

Remove plastic screw plugs (three each, top and bottom) (3) from new hinge location. Save for reinstallation later.

Remove existing top hinge.

Remove existing top hinge (three screws) (2).



Reinstall hinge to bottom opposite.

1. Install the hinge just removed from the top to the **BOTTOM** opposite side of the cabinet (three screws) (2).
2. Remove the two door closer inserts (4) from the existing bottom hinge.
3. Install door closer insertys as shown on the new bottom hinge

Remove existing bottom hinge.

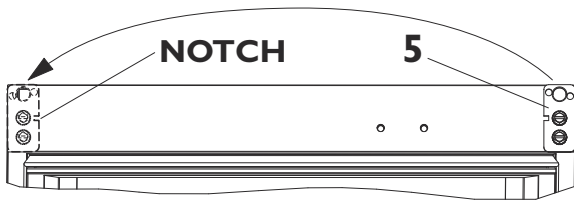
Remove the existing bottom hinge (three screws) (2).

Reinstall hinge to top opposite.

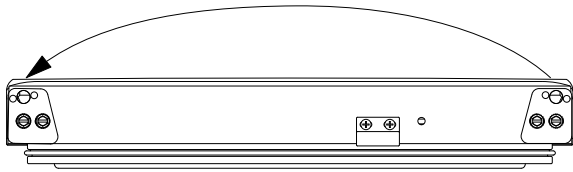
Install the hinge just removed from the bottom to the TOP opposite side of the cabinet (three screws) (2).

Reinstall hole plugs.

Install plastic screw plugs (three each, top and bottom) (3) into holes where hinge hardware was removed.



Black or White Doors



Glass or Stainless Steel Doors

Prepare door for reinstallation.

1. Remove plastic hole plug from top of door handle and reinstall on opposite side.
2. With bottom of door facing up remove pivot plate (5) (two screws).
3. Flip over and install pivot plate on opposite side of door. Ensure notch in plate faces center.

Install Door.

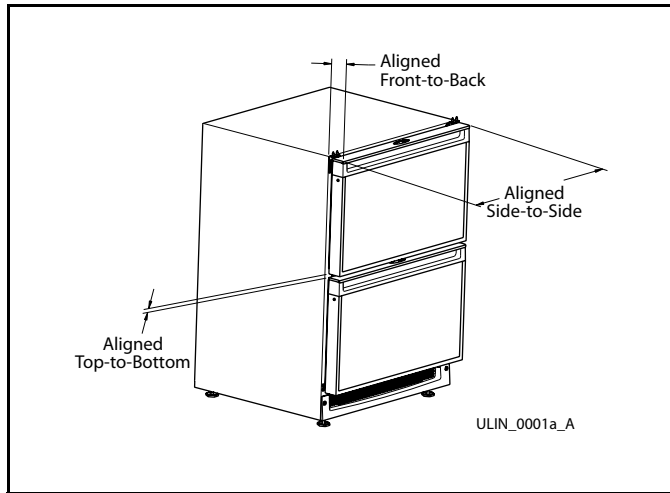
1. Hold door upright and tilted toward you.
2. Lift door on to bottom hinge closer inserts.
3. Move door toward the unit into position.
4. Hold door to keep it from falling.
5. Reinstall hinge screw pin (1) into top hinge using a phillips screwdriver.

Align and adjust the door as needed.

Drawer Alignment

CHECKING DRAWER ALIGNMENT

The unit's drawers are aligned at the factory before shipment. However, their alignment could have been disturbed during shipment or during overlay panel installation.



Check each drawer to confirm that it is aligned:

- **Side-to-Side** - When viewed from the top, the drawer front should be square with the sides of the cabinet.
- **Front to Back** - When viewed from the side, the drawer front should be straight with the cabinet's sides, not cocked forward or back.
- **Top-to-Bottom** - When viewed from the front, the drawer should be level horizontally.

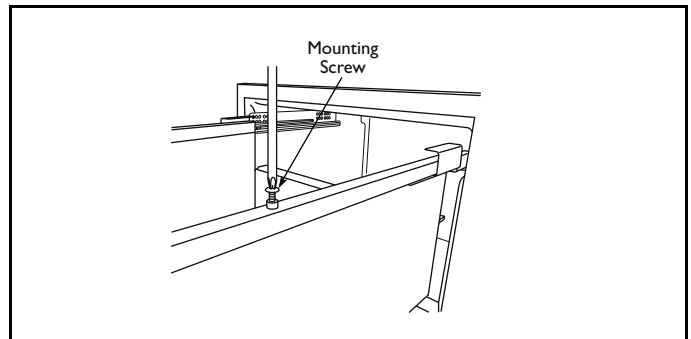
ADJUSTING DRAWER ALIGNMENT

WARNING

SHOCK HAZARD - The unit must be unplugged from the wall outlet during drawer removal, adjustment and re-installation

DRAWER REMOVAL

1. Confirm that the unit is unplugged from wall outlet.
2. Unplug the drawer's connection wiring (top drawer only).
3. Remove the mounting screws.



4. Pull the drawer completely out of the unit.

CAUTION

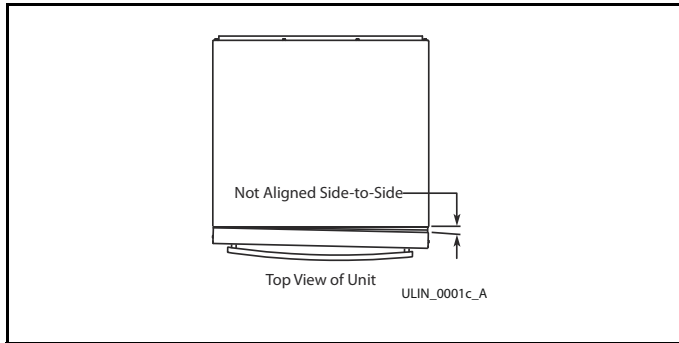
Use care when handling the drawer. Drawer edges, drawer rail and the unit's slide may be sharp.

IMPORTANT

Drawer adjustments are made by moving the slide that carries the drawer's rail. Minor adjustments may be made by loosening one of the slide's mounting screws, adjusting the slide and retightening the screw. Severe adjustments may be made by removing the slides' mounting screws, drilling new mounting holes and remounting the slide.

SIDE-TO-SIDE ADJUSTMENT

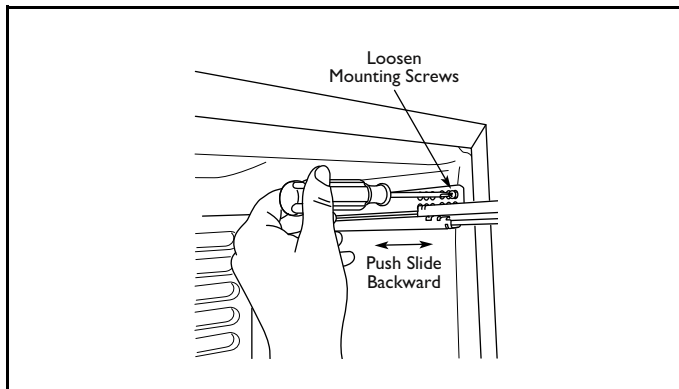
The drawer will need a side-to-side adjustment if, when viewed from the top, the drawer front is not square with the sides of the cabinet. This is caused by one of the slides being mounted too far forward on the unit's liner.



MINOR ADJUSTMENT

NOTE: The mounting holes on the slide are slightly larger than the screws' diameter.

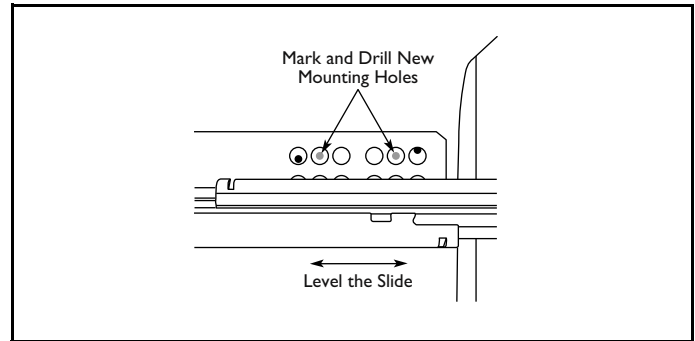
1. Loosen the slide's mounting screws.
2. Push the slide backward.
3. Retighten the screws.



SEVERE ADJUSTMENT

Note: The slides have extra mounting holes that may be used.

1. Remove the slide's mounting screws.
2. Reposition the slide so it is the same distance from the front of the liner as the other slide. Measure to confirm.
3. Mark new drilling holes using different sets of mounting holes on the slide.

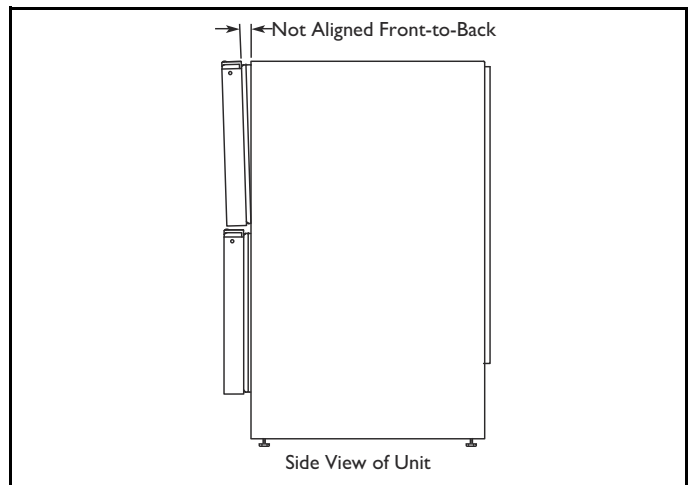


NOTE: Front location holes are shown. Corresponding rear holes will also need to be marked.

4. Drill all the new holes with a #30 drill bit.
5. Remount the slide.

FRONT-TO-BACK ADJUSTMENT

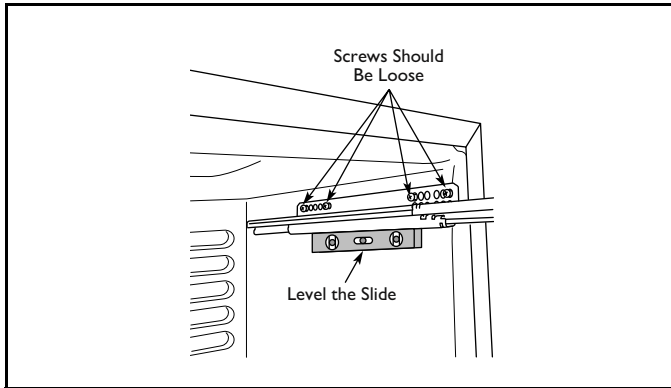
The drawer will need a front-to-back adjustment if, when viewed from the side, the drawer front is cocked forward or back. This is caused by the slide mountings not being level front to back.



MINOR ADJUSTMENT

NOTE: The mounting holes on the slide are slightly larger than the screws' diameter.

1. Loosen one slide's mounting screws.
2. Level the slide.
3. Retighten the screws.

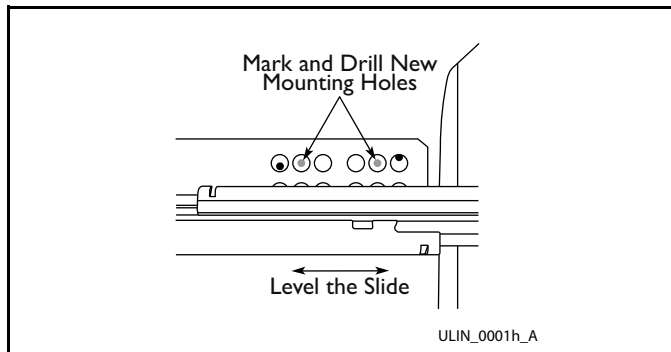


4. Repeat the procedure for the other slide.

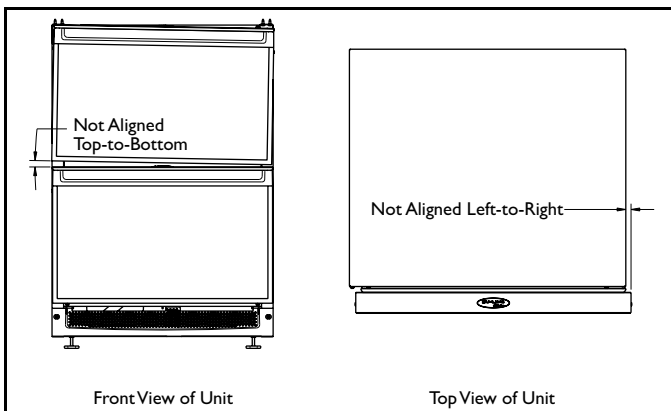
SEVERE ADJUSTMENT

NOTE: The slides have extra mounting holes that may be used.

1. Loosen one slide's rear mounting screws.
2. Remove the slide's front mounting screws.
3. Reposition the slide so it is level.
4. Mark new front drilling holes using a different set of mounting holes on the slide.



5. Drill the new holes with a #30 drill bit.
6. Remount the slide.
7. Repeat the procedure for the other slide.



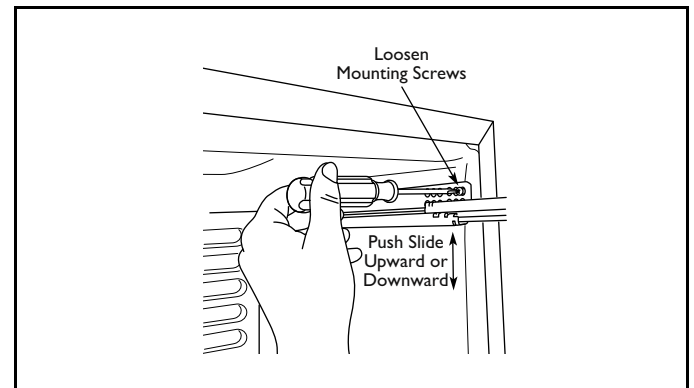
TOP-TO-BOTTOM (AND LEFT-TO-RIGHT) ADJUSTMENT

The drawer will need a top-to-bottom adjustment if, when viewed from the front, the drawer is not level horizontally. Viewed from the top, one side will protrude. This is caused by one of the slides being mounted higher than the other slide on the unit's liner.

MINOR ADJUSTMENT

NOTE: The mounting holes on the slide are slightly larger than the screws' diameter.

1. Loosen one slide's mounting screws.
2. Push the slide upward or downward to match the position of the other slide
3. Retighten the screws.

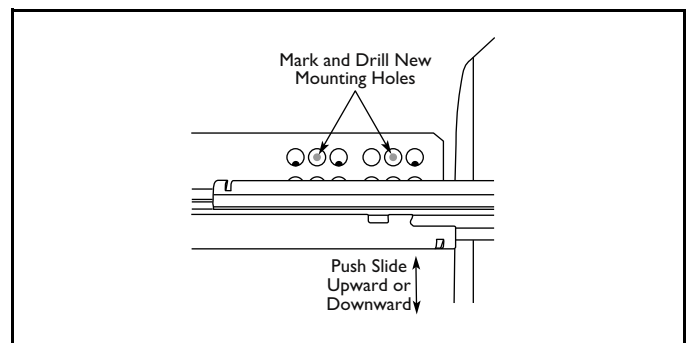


4. Repeat the procedure with the other slide if necessary.

SEVERE ADJUSTMENT

NOTE: The slides have extra mounting holes that may be used.

1. Remove one slide's mounting screws.
2. Reposition the slide so it is the same distance from the bottom of the liner as the other slide. Measure to confirm.
3. Mark new drilling holes using different sets of mounting holes on the slide.



NOTE: Front location holes are shown. Corresponding rear holes will also need to be marked.

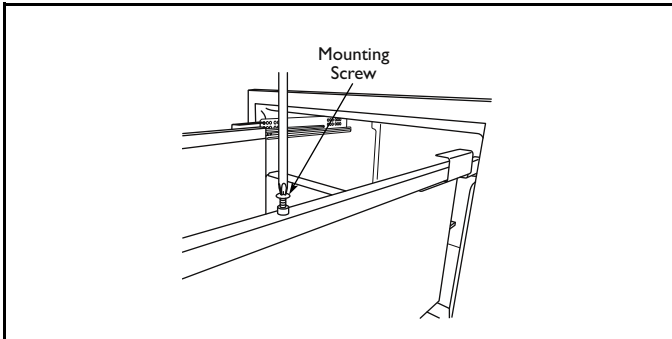
4. Drill all the new holes with a #30 drill bit.
5. Remount the slide.

RE-INSTALLATION OF DRAWER

 **CAUTION**

Use care when handling the drawer. Drawer edges, drawer rail and the unit's slide may be sharp.

1. Set the drawer's rails onto the slides.
2. Re-install the rails' mounting screws



3. Plug in the drawer's connection wiring (top drawer only).

DOOR ALIGNMENT - I100 SERIES

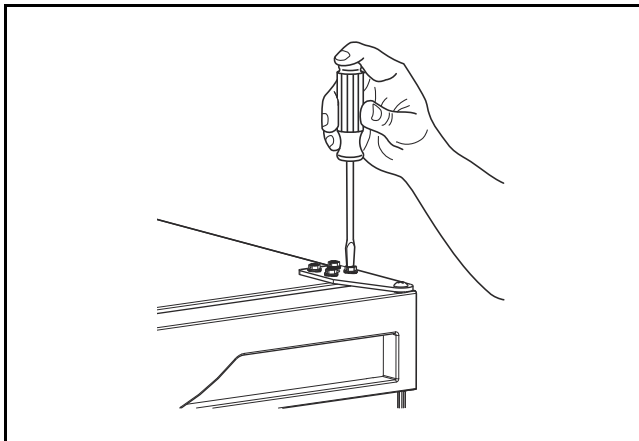
The unit's door is aligned at the factory before shipment. However, its alignment could have been disturbed during shipment or during installation. Align and adjust the door if it is not level, or is not sealing properly. If the door is not sealed the unit may not cool properly, or excessive frost may form in the interior.

IMPORTANT

Properly aligned, the door's gasket should be firmly in contact with the cabinet all the way around the door (no gaps). Carefully examine the door's gasket to assure that it is firmly in contact with the cabinet. Also make sure the door gasket is not pinched on the hinge side of the door.

ADJUSTING DOOR ALIGNMENT

1. Loosen (do not remove) top and bottom hinge screws.
2. Align door squarely with cabinet.
3. Make sure gasket is firmly in contact with cabinet all the way around the door (no gaps).
4. Tighten bottom hinge screws.
5. Tighten top hinge screws.



REVERSING DOORS - I100 SERIES

IMPORTANT

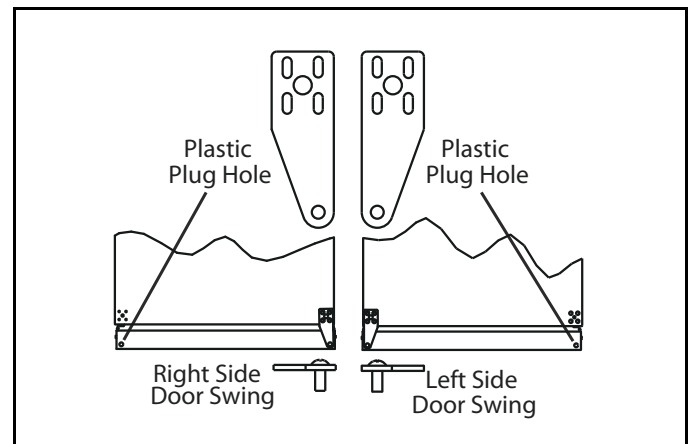
Models with black and white doors are field-reversible.

Stainless steel models with glass doors without locks are field-reversible.

Stainless steel models without glass doors must be ordered right- or left-hand hinged.

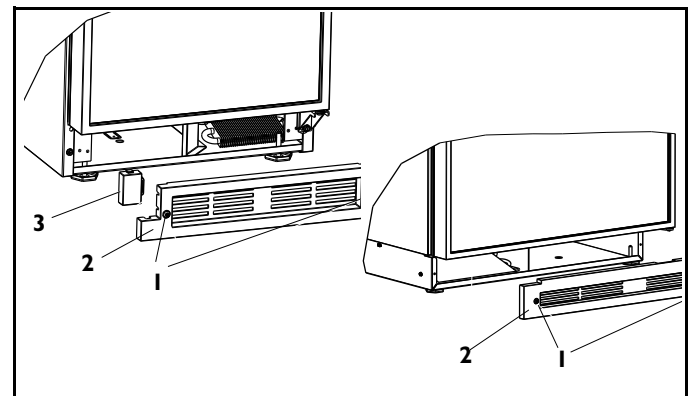
The Hinge hardware will be removed and reinstalled on the opposite side of the cabinet.

The hinge plate is flipped over when it is reinstalled on the opposite side of the cabinet.



Remove the grille

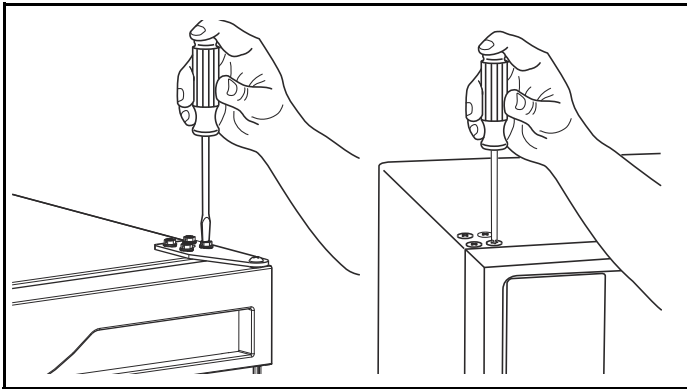
1. Remove control knob if equipped
2. Remove the two screws (1). Some models may have only one screw in the center.
3. Remove grille (2) and grille cap (3) if equipped.



Remove top hinge, and door:

1. Hold door to keep it from falling.
2. Remove top hinge from cabinet by removing three or four screws, depending on model.
3. Remove door by tilting forward and lifting door off bottom hinge.

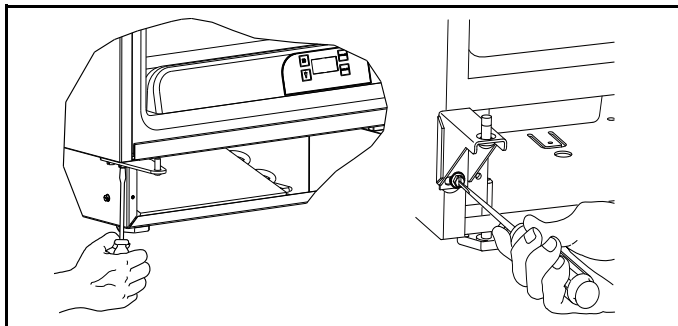
Remove three or four plastic screw plugs from hinge holes on the opposite side. Reinstall into holes where the hinge was removed. Ensure not to scratch cabinet.



Remove bottom hinge

1. Remove bottom hinge from cabinet. Some models will have a gusset with two screws. Other models will have a plate with three screws.

Remove corresponding screws on opposite side of cabinet. On some models there may be a nut behind one or both screws on either side.



Install bottom hinge:

1. If you have a plate hinge, reorient the pivot screw so it protrudes the opposite direction from the hinge. Remove the pivot screw from the hinge. Turn the plate over and reinstall the screw.
2. Align hinge outer edge with cabinet. For models with a plate hinge, the flat edge of the hinge aligns with the outer edge of the cabinet.

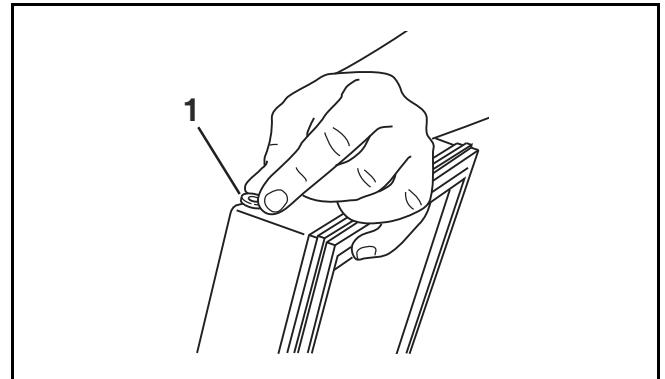
Install two or three screws, depending on model. Replace nuts if used.

PREPARE DOOR FOR REINSTALLATION

For black or white doors:

1. Remove plastic hole plug from top of door handle and reinstall on opposite side.

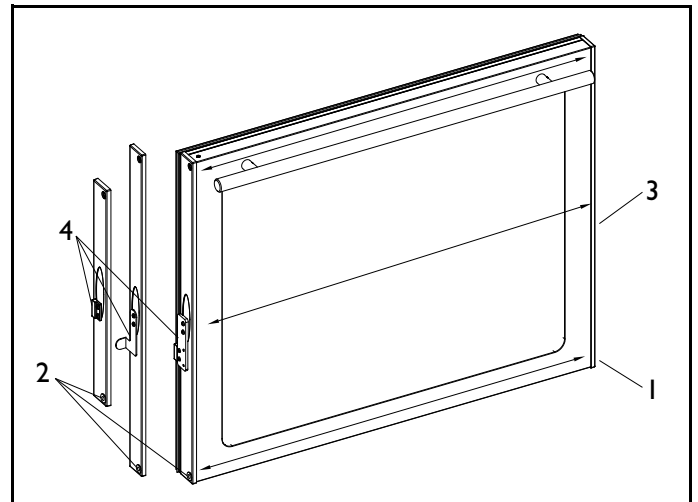
Remove plastic hinge bushing on bottom of door (1) and reinstall on opposite side. Clean out bushing hole in door bottom with a screwdriver if necessary.



For stainless steel models with glass doors:

1. Stainless glass doors are flipped upside down to be reversed.
2. Lay the door on it's side. Remove the plastic hole plug (1) and install in the corner opposite of where it was removed.
3. Remove the plastic hinge bushing (2) and install in the corner opposite of where it was removed.
4. Remove the U-Line nameplate (3) from door. This will reveal mounting holes for the door actuator bracket.
5. Remove door actuator (4) from door. Be sure to only remove the two screws holding the actuator to the door. Reinstall the actuator (4) on the opposite end of the door where the nameplate was removed.
6. Install new nameplate where the actuator assembly was removed.

Install screws into holes on opposite side, where the hinge was removed. Replace nuts if used.



Install top hinge, and door:

1. Reorient the pivot screw so it protrudes the opposite direction from the hinge. Remove the pivot screw from the hinge. Turn the plate over and reingstall the screw.
2. Hold door to keep it from falling.
3. Lift the door on to the bottom hinge.
4. Align flat edge of the hinge with the outer edge of the unit.
5. Install three or four screws, depending on model.

Align and adjust the door:

Align and adjust the door, see **DOOR ALIGNMENT AND ADJUSTMENT** above.

Installing the grille:

1. For 1115 and 29 models make sure grille cap (3) is behind grille in slots (2) provided in grille before attaching grille to unit.
2. For 1175 models place the hook-hinge located on the rear bottom side of the grille (2) onto the front lip of the unit base. Swing the grille up into position.
3. Align cabinet and grille holes and secure, but do not overtighten grille screws (1).
4. Install control knob if equipped.

