

USER GUIDE & SERVICE MANUAL



U-LINE

Model: U-1224RFINT-00A

USER GUIDE & SERVICE MANUAL

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WELCOME TO U-LINE

Congratulations on your U-Line purchase. Your product comes from a company with over five decades of premium modular ice making, refrigeration, and wine preservation experience. U-Line creates products focused on functionality, style, and inspired innovations — paying close attention to even the smallest details. Applications include residential, outdoor, ADA height compliant, marine, and commercial. Complete product categories include Beverage Centers, Wine Refrigerators, Ice Machines, Refrigerators, Freezers, and Dispensers.

Our advanced refrigeration systems, large and flexible capacities, and Built-In to Stand Out® clean integrated look allow you to preserve the right product, in the right place, at the right temperature. Since 2014, U-Line has been part of the Middleby family of brands. All products are designed, engineered, and assembled in Milwaukee, Wisconsin, USA, and select products are available worldwide. U-Line - RIGHT PRODUCT. RIGHT PLACE. RIGHT TEMPERATURE®.

PRODUCT INFORMATION

Looking for additional information on your product? User Guides, Spec Sheets, CAD Drawings, Compliance Documentation, and Product Warranty information are all available for reference and download at u-line.com.

PROPERTY DAMAGE / INJURY CONCERNS

In the unlikely event property damage or personal injury is suspected related to a U-Line product, please take the following steps:

1. U-Line Customer Care must be contacted immediately at +1.414.354.0300.
2. Service or repairs performed on the unit without prior written approval from U-Line is not permitted. If the unit has been altered or repaired in the field without prior written approval from U-Line, claims will not be eligible.

GENERAL INQUIRIES

U-Line Corporation
8900 N. 55th Street
Milwaukee, Wisconsin 53223 USA
Monday - Friday 8:00 am to 4:30 pm CST
T: +1.414.354.0300
Email: sales@u-line.com
u-line.com

SERVICE & PARTS ASSISTANCE

Monday - Friday 8:00 am to 4:30 pm CST
T: +1.800.779.2547
Service Email: onlineservice@u-line.com
Parts Email: onlineparts@u-line.com

CONNECT WITH US



Designed, engineered and assembled in WI, USA

Safety and Warning

NOTICE

Please read all instructions before installing, operating, or servicing the appliance.

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

SAFETY ALERT DEFINITIONS

Throughout this guide are safety items labeled with a Danger, Warning or Caution based on the risk type:



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



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



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

Disposal and Recycling



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

If the unit is being removed from service for disposal, check and obey all federal, state and local regulations regarding the disposal and recycling of refrigeration appliances, and follow these steps completely:

1. Remove all consumable contents from the unit.
2. Unplug the electrical cord from its socket.
3. Remove the door(s)/drawer(s).

Environmental Requirements

This model is intended for indoor/interior applications only and is not to be used in installations that are open/exposed to natural elements.

This unit is designed to operate between 50°F (10°C) and 100°F (38°C). Higher ambient temperatures may reduce the unit's ability to reach low temperatures and/or reduce ice production on applicable models.

For best performance, keep the unit out of direct sunlight and away from heat generating equipment.

In climates where high humidity and dew points are present, condensation may appear on outside surfaces. This is considered normal. The condensation will evaporate when the humidity drops.



Damages caused by ambient temperatures of 40°F (4°C) or below are not covered by the warranty.

Electrical



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 or removing power cord, removing power plug, or direct wiring can cause serious injury, fire, 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.

NOTICE

Electrical installation must observe all state and local codes. This unit requires connection to a grounded (three-prong), polarized receptacle that has been placed by a qualified electrician.

The unit requires a grounded and polarized 115 VAC, 60 Hz, 15A power supply (normal household current). An individual, properly grounded branch circuit or circuit breaker is recommended. A GFCI (ground fault circuit interrupter) is usually not required for fixed location appliances and is not recommended for your unit because it could be prone to nuisance tripping. However, be sure to consult your local codes.

See CUTOUT DIMENSIONS for recommended receptacle location.

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Cutout Dimensions

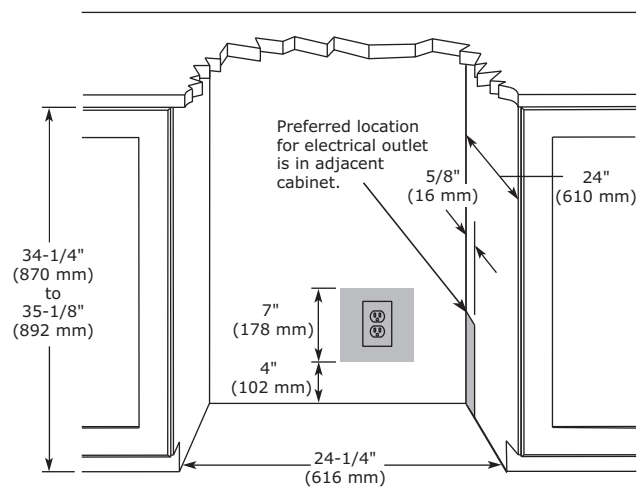
PREPARE SITE

Your U-Line product has been designed for either free-standing or built-in installation. When built-in, your unit does not require additional air space for top, sides, or rear. However, the front grille must NOT be obstructed, and clearance is required for an electrical connection in the rear.

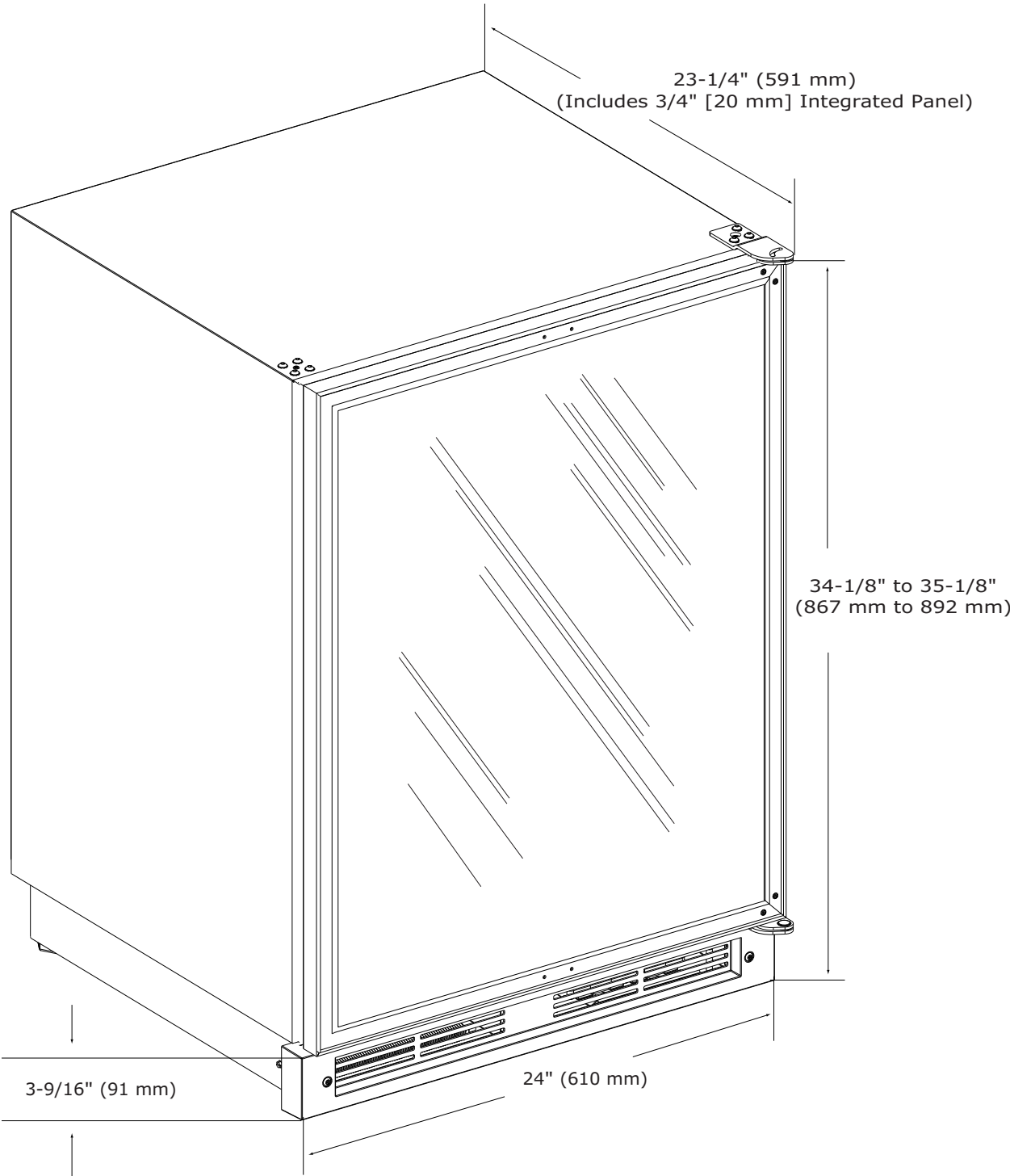


Unit can NOT be installed behind a closed cabinet door.

CUTOUT DIMENSIONS



Product Dimensions



Side-by-Side Installation

Two units may be installed side-by-side.

Cutout width for a side-by-side installation is the cutout dimension of a single unit times two.

No trim kit is required. However, 1/4" (6 mm) of space needs to be maintained between the units to ensure unobstructed door swing.

Units must operate from separate, properly grounded electrical receptacles placed according to each unit's electrical specifications requirements.

Side-by-Side Installation with Bracket

1. Slide both units out so screws on top of units are easily accessible.
2. Remove screws as shown below.

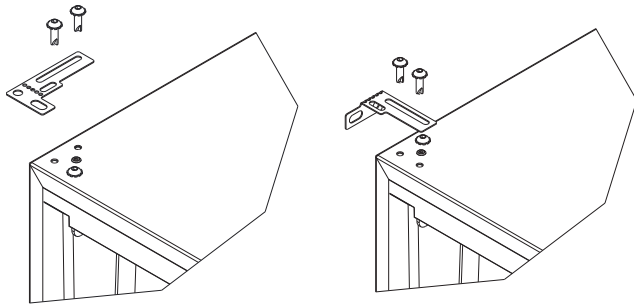


3. Place bracket over holes and attach to unit with two screws removed in step 2 using a T-25 Torx driver. Tighten screws fully.
4. Gently push units into position. Be careful not to entangle the electrical cord or water line, if applicable.
5. Re-check the leveling, from front to back and side to side. Make any necessary adjustments. The unit's top surface should be approximately 1/8" (3 mm) below the countertop.

Anti-Tip Bracket

1. Slide unit out so screws on top of unit are easily accessible.
2. Remove the two screws from the opposite side of the hinge assembly using a T-25 Torx driver (see below).

NOTE: 1224 models shown with four screw. 1215 models only have three screws, but same screws are used in both applications.



3. Place bracket (part #14154) over holes and attach to unit with two screws removed in step 2 using a T-25 Torx driver. Tighten screws fully.
4. Gently push unit into position. Be careful not to entangle the electrical cord or water line, if applicable.
5. Check to be sure the unit is level from front to back and side to side. Make any necessary adjustments. The unit's top surface should be approximately 1/8" (3 mm) below the countertop.
6. Secure bracket into adjoining surface.

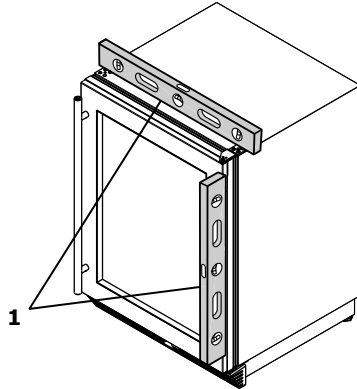
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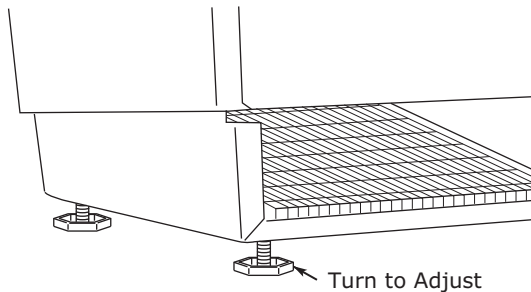
General Installation

LEVELING INFORMATION

1. Use a level to confirm the unit is level. Level should be placed along top edge and side edge as shown.



2. If the unit is not level, adjust the legs on the corners of the unit as necessary.



3. Confirm the unit is level after each adjustment and repeat the previous steps until the unit is level.

INSTALLATION TIP

If the room floor is higher than the floor in the cutout opening, adjust the rear legs to achieve a total unit rear height of 1/8" (3 mm) less than the opening's rear height. Shorten the unit height in the front by adjusting the front legs. This allows the unit to be gently tipped into the opening. Readjust the front legs to level the unit after it is correctly positioned in the opening.

INSTALLATION

1. Plug in the power/electrical cord.
2. Gently push the unit into position. Be careful not to entangle the cord.
3. Re-check the leveling, from front to back and side to side. Make any necessary adjustments. The unit's top surface should be approximately 1/8" (3 mm) below the countertop.
4. Remove the interior packing material and wipe out the inside of the unit with a clean, water-dampened cloth.

Integrated Panel Dimensions

INTEGRATED PANEL

NOTICE

Due to differences in surrounding cabinetry the panel may not perfectly align with door. The procedure below is designed to provide a finished integrated panel that seamlessly integrates with surrounding cabinetry.

The door panel must not weigh more than 20 lbs (10 kg).

It is important to ensure that all drilled holes are drilled to the correct depth in order to avoid splits in the wood when hardware is installed.

When applying an integrated panel to a unit, ensure that both sides are finished in order to prevent warping. In some panel installations, the panel may be visible through the glass while the door is open.

A full integrated door panel completely covers the door frame and provides a built-in appearance.

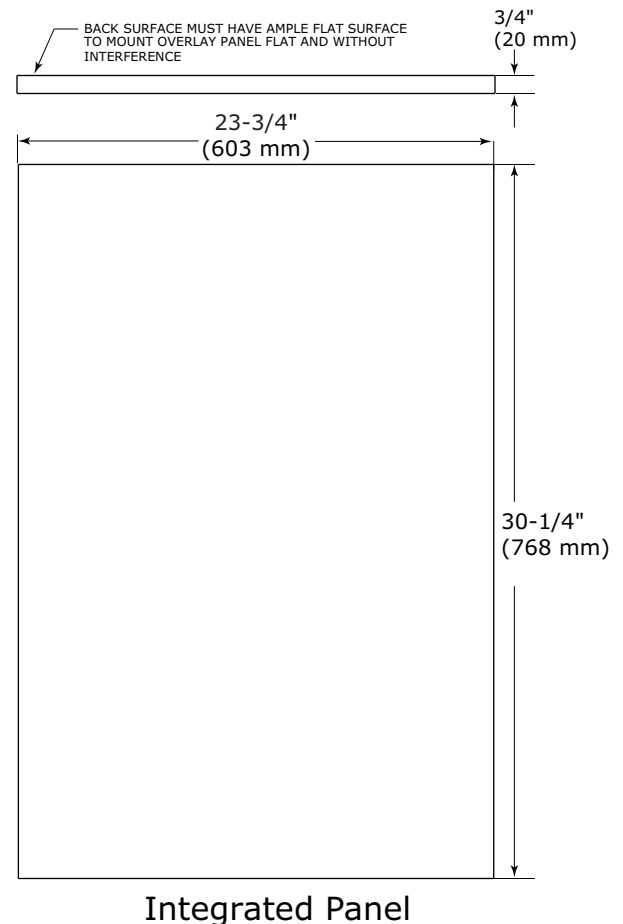
Integrated Panel Preparation

1. Cut the panels to the dimensions listed in the diagram below.

2. Optional: Stain or Finish panel to desired stain or color. Be sure to closely follow the instructions provided by the manufacturer.

3. Optional: Install handles and hardware.

Integrated Panel Dimensions



Integrated Panel Installation

1. Fully open door/drawer.

2. Starting at corner, pull gasket away from door/drawer.

3. Continue to pull gasket free from gasket channel.

4. Upon removal, lay gasket down on a flat surface.

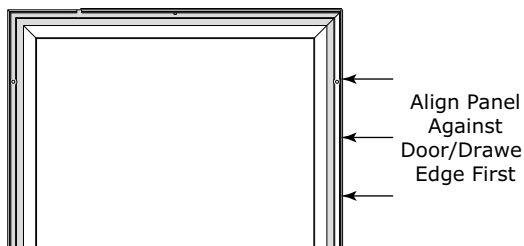
5. Partially loosen the 3 screws, securing the top hinge to the cabinet.

6. Align the panel with the outside edge (opposite the hinge) and high enough to align with the highest point in the door/drawer.

7. Insert panel underneath top hinge and apply upward pressure while bringing the lower portion of the panel flush to the door inside the lower hinge. The panel will fit snugly.

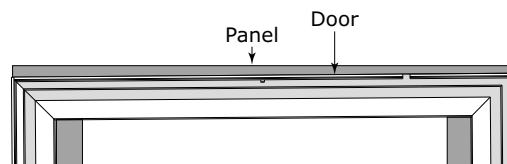
8. Align door with cabinet. Tighten the top 3 screws, securing the top hinge to the cabinet.

Align Top Of Panel With Highest Point Of Door/Drawer

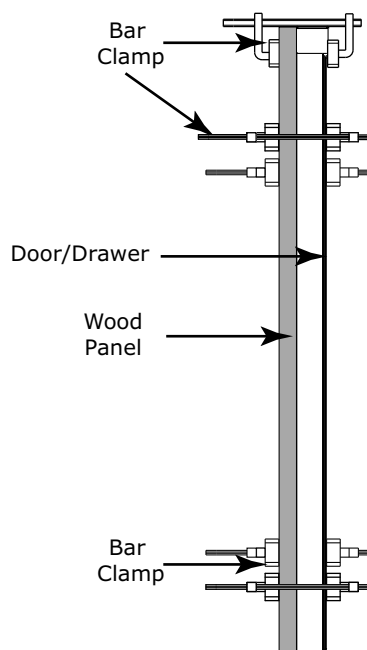


NOTICE

Due to differences in floor construction or surrounding cabinetry, the panel may not sit flush with the top of the door/drawer.



9. Secure integrated panel to door/drawer using clamps. A robust tape may also be used. U-Line recommends the use of bar clamps to secure the panel to the door/drawer. If using tape, be certain the tape will not damage panel finish upon removal.



10. Using a 7/64" (3 mm) drill bit, drill 6 pilot holes into the wood panel 1/2" (12 mm) deep using the holes in the door/drawer frame as a guide.

NOTICE

It is important to ensure that all drilled holes are drilled to the correct depth in order to avoid splits in the wood when hardwood is installed.

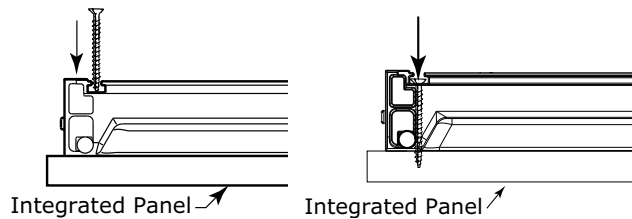
11. Locate 6 of the #6x 1-1/4" (32 mm) screws provided with your unit.

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12. Using a Phillips screwdriver, place one screw into each of the 6 pilot holes and screw down. Do not overtighten screws.

13. Be sure the screws force their way past the opening on the gasket channel and sit flush against the bottom of the channel.



14. Remove clamps from door/drawer.

NOTICE

If panel requires additional adjustment after removing clamps, slightly loosen each screw and adjust panel as necessary. Tighten screws upon completion.

15. Starting at the corners, re-install the gasket into the gasket channel in the frame. Make sure the gasket is fully seated. This may take some force.

Grille - Plinth Installation

REMOVING AND INSTALLING GRILLE



Disconnect electric power to the unit before removing the grille.

When using the unit, the grille (plinth strip/base fascia) must be installed.



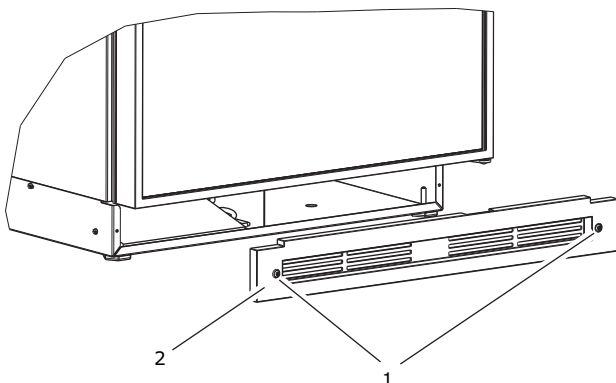
DO NOT touch the condenser fins. The condenser fins are SHARP and can be easily damaged.

Removing the grille

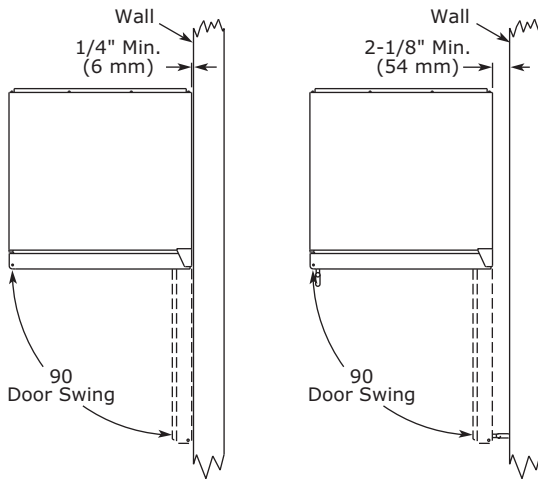
1. Disconnect power to the unit.
2. Loosen the two screws (1).
3. Remove grille (2) from unit.

Installing the grille

1. Align cabinet and grille holes and secure, but do not over tighten grille screws (1).
2. Reconnect power to the unit.



Door Swing



Units have a zero clearance for the door to open 90°, when installed adjacent to cabinets.

Stainless Steel and black and white models require 2-1/8" (54 mm) door clearance to accommodate the handle if installed next to a wall.

Integrated models require 1/4" (6 mm) clearance if installed next to a wall. Allow for additional space for any knobs or pulls installed on the integrated panel/frame.

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Door Stop

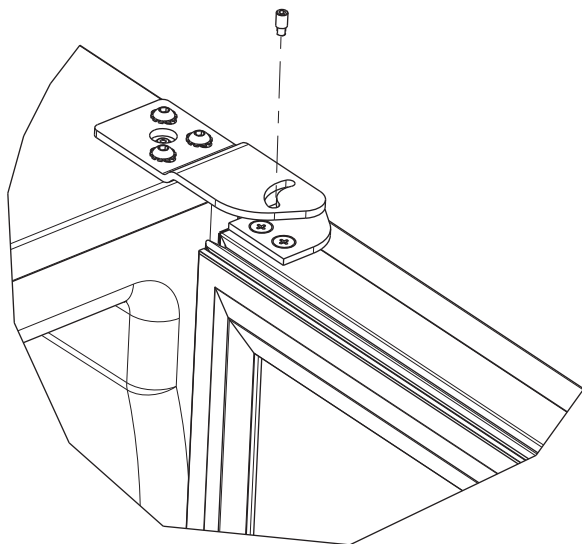
Your U-Line unit was shipped to you with the optional 90° pin(s). (Models that are 15" wide include 1 pin. Models that are 24" wide include 2 pins.) The unit's door will open freely without a fixed opening angle limitation. If you would like the door stop at 90° follow these instructions.

NOTICE

The pin is designed to stop the door at 90° under normal operating conditions. It is not designed for excessive force. Do not use the door to move the unit in/out of the cutout during installation.

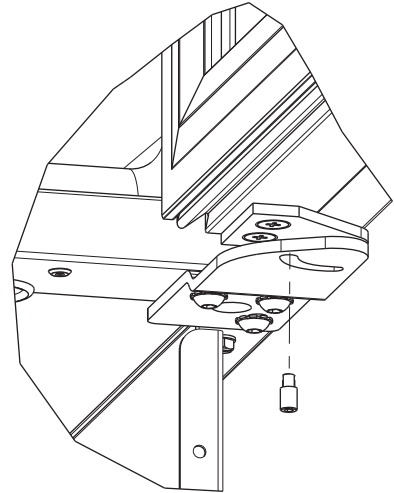
If your unit is already undercounter, it might need to be moved out/forward to access the hinge.

1. Locate the threaded pin.
2. With the door between 0° (closed) and 90° and using a 3/32" hex driver, install the threaded pin through the hinge.



3. On 24" models, a second pin is included for the bottom hinge. Repeat steps above for second hinge.

NOTE: Threaded pin will be inserted from the bottom.



4. Carefully slide your unit back in place.

NOTICE

The pin can be removed to return the door swing back to its original state by unscrewing the threaded pin.

Door Adjustments

DOOR ALIGNMENT AND ADJUSTMENT

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.

NOTICE

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 ensure 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.

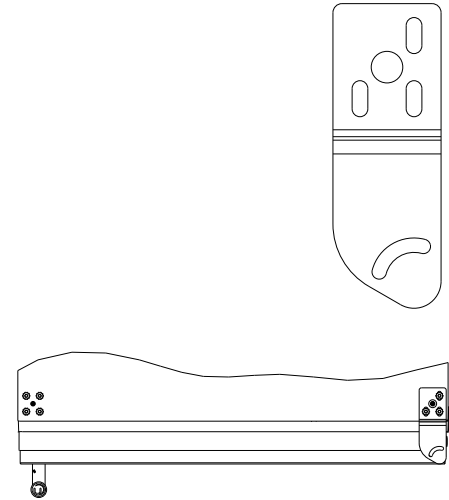
To align and adjust the door:

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

REVERSING THE DOOR

Location of the unit may make it desirable to mount the door on the opposite side of the cabinet.

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



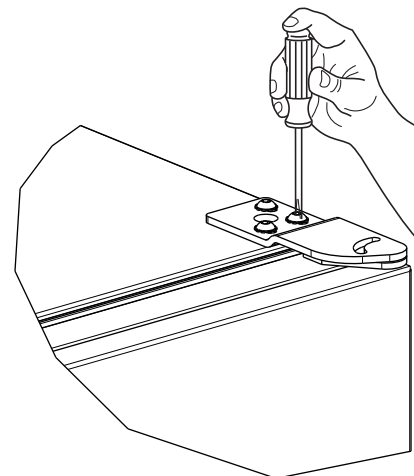
TO REVERSE THE DOOR

Remove grille:

Remove the grille (see the GRILLE-PLINTH INSTALLATION section of this guide).

Remove door:

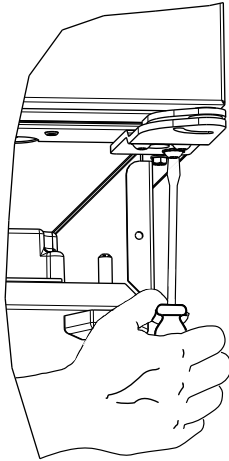
1. Hold door to keep it from falling.
2. Remove top hinge from cabinet by removing three screws.



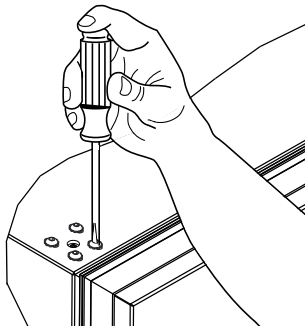
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3. Remove bottom hinge from cabinet by removing three screws. Support the door and hinge assembly and remove it from the cabinet.



4. Remove four screws from hinge holes on the opposite side. Reinstall into holes where the hinge was removed. Take care not to scratch cabinet.

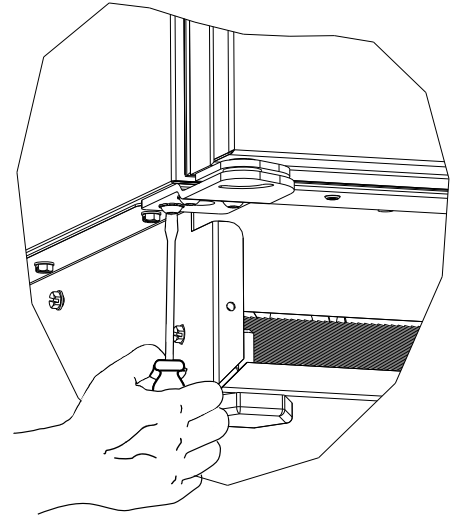


5. Remove it from the cabinet. Repeat for cabinet base.

Prepare door for reinstallation:

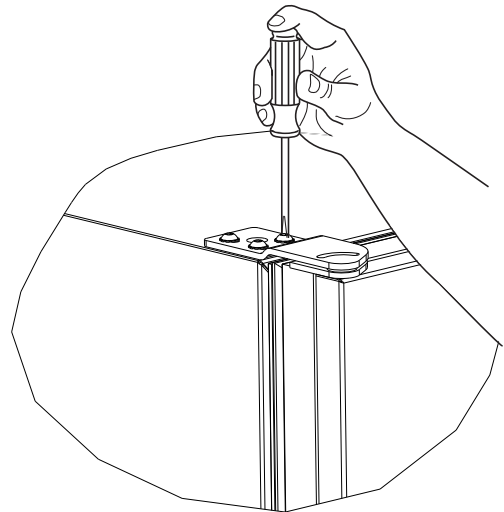
1. Rotate door 180° to reverse.
2. Align the flat edge of the hinge with the outer edge of the cabinet.
3. Hold door to keep from falling.

4. Tighten three screws.



5. Align flat edge of the hinge with the outer edge of the unit.

6. Tighten three screws.



Align and adjust the door:

Align and adjust the door (see DOOR ALIGNMENT AND ADJUSTMENT).

Install grille:

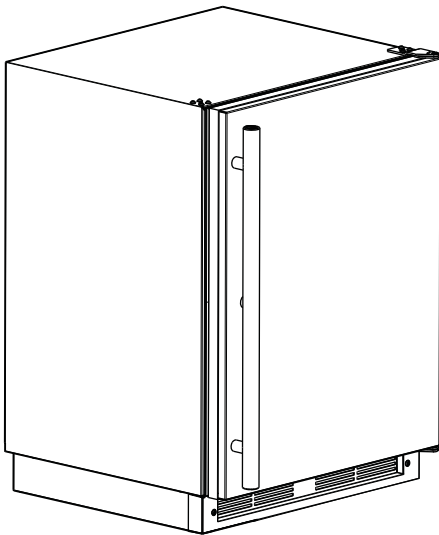
Install the grille.

Free Standing Kit

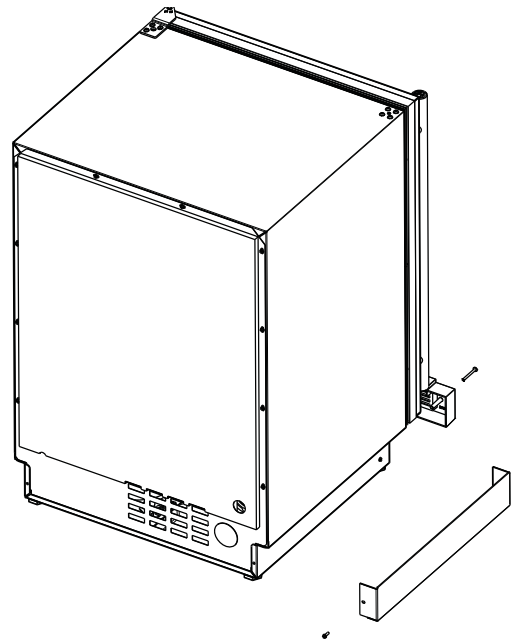
The free standing kit is an optional accessory (ULAFREESTANDS). It is only used when unit is not installed in surrounding cabinetry. Available at u-line.com

To install the kit:

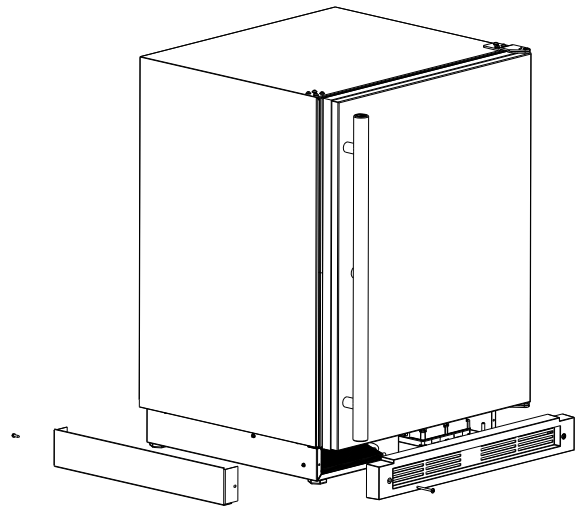
1. Remove grille (see GRILLE-PLINTH INSTALLATION section).



2. Place shell accessory over front and back of cabinet base, aligning holes of shell accessory with the holes on the base. Insert sheet metal screw in back of base.



3. Align front hole with hole in shell accessory, hole in base, and hole in grille. Tighten screw.





First Use

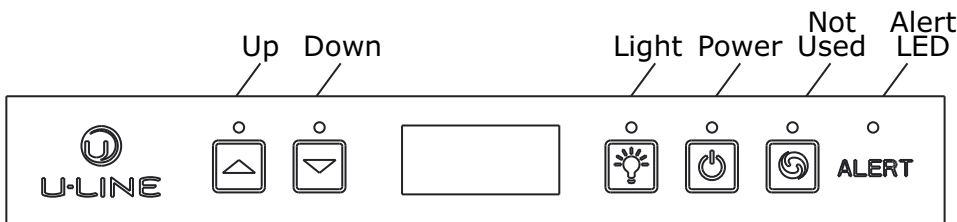
All U-Line controls are preset at the factory. Initial startup requires no adjustments.

NOTICE











U-Line recommends allowing the unit to run overnight before loading with product.

When plugged in, the unit will begin operating under the factory default settings. If the unit was turned off during installation, simply press  and the unit will immediately switch on. To turn the unit off, press .

Control Operation



CONTROL FUNCTION GUIDE

FUNCTION	COMMAND	DISPLAY/OPTIONS
ON/OFF	Press  and release	Unit will immediately turn ON or OFF.
Toggle lights	Press  and release to leave interior light on for 3 hours	Glass door wine and beverage centers only.
Adjust refrigerator set point	Press  or  and release	When the "F" or "C" in the display is flashing, press  or  to adjust the set point temperature.
View temperature in unit	Press  and  together and release	The display will flash and then toggle from set point to temperature in unit.
Toggle between F/C	Hold  and  for five seconds	The display will change units.

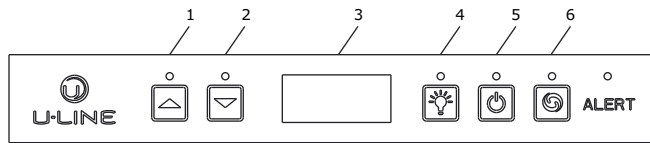
DOOR ALERT NOTIFICATION

When the door is left open for more than 5 minutes:

- An audible tone will sound for several seconds every minute.
- The Alert LED will blink.


Close door to silence alert and reset.


Sabbath Mode



This unit is Star-K certified and offers a Sabbath mode. Sabbath mode disables system responses to user initiated activities and all external functions, including lighting, display and audible alarms. The unit will still maintain internal temperatures and set points. View a full list of Star-K certified U-Line units at www.star-k.org.

To enable Sabbath Mode:

1. Press  (4) and hold for ten seconds and release (the °F/°C symbol will flash briefly at the end of the ten second period).
2. The interior light and control display (3) will go dark until user resets mode.
3. NOTE: Although the display will not be visible, the temperature controls in the unit remain active and preserve the interior temperature.

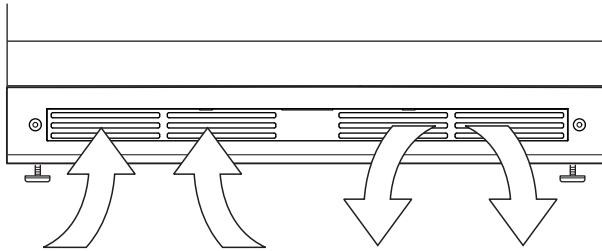
Sabbath Mode remains active until  (4) is quickly pressed and released.

Airflow and Product Loading

NOTICE

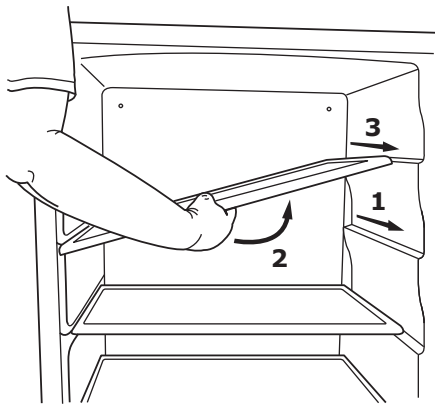
The unit requires proper airflow to perform at its highest efficiency. Do not block the front grille, or the unit will not perform as expected. Do not install the unit behind a door. When loading your unit, leave space between the evaporator and product loaded. Anything in direct contact with the evaporator is subject to freezing.

When properly loaded, your U-Line unit will store up to 114 (12 oz. [330 ml]) cans or 61 (12 oz. [330 ml]) bottles.



Interior Shelves

REMOVING AND INSTALLING INTERIOR SHELVES



For models equipped with glass shelves having recessed shelf supports, remove the shelves as follows:

1. Pull shelf out about 6" (1), until back of shelf clears the "hump" on the right-hand side.
2. Tilt up right-hand edge of shelf (2).
3. Remove shelf from unit by pulling out (3).

Insert the shelves as follows:

1. To move to a different position in the unit, insert shelf at an angle, approximately 15-20°, over the rib in the side of the unit where you want to place the shelf. Place the shelf into the unit at an angle to clear the door.
2. Continue to slide the shelf into the unit at an angle until it clears the door.

Lower the shelf and push it in completely. Ensure the raised edge strip is toward the rear of the unit.

NOTICE

Make sure the shelves are inserted fully into the unit.

The edge strip toward the rear prevents cans and bottles from freezing against the cold evaporator.

Cleaning

EXTERIOR CLEANING

Vinyl Clad (Black or White)

Clean surfaces with a mild detergent and warm water solution. Do not use solvent-based or abrasive cleaners. Use a soft sponge and rinse with clean water. Wipe with a soft, clean towel to prevent water spotting.

Clean any glass surfaces with a non-chlorine glass cleaner.

Stainless Models

Stainless door panels, handles and frames can discolor when exposed to chlorine gas, pool chemicals, saltwater or cleaners with bleach.

Keep your stainless unit looking new by cleaning with a good quality all-in-one stainless steel cleaner and polish monthly. For best results use Claire® Stainless Steel Polish and Cleaner. Comparable products are acceptable. Frequent cleaning will remove surface contamination that could lead to rust. Some installations may require cleaning weekly.

Do not clean with steel wool pads.

Do not use stainless steel cleaners polishes on any glass surfaces.

Clean any glass surfaces with a non-chlorine glass cleaner.

Do not use cleaners not specifically intended for stainless steel on stainless surfaces (this includes glass, tile and counter cleaners).

If any surface discoloring or rusting appears, clean it quickly with Bon-Ami® or Barkeepers Friend Cleanser® and a nonabrasive cloth. Always clean with the grain. Always finish with Claire® Stainless Steel Polish and Cleaner or comparable product to prevent further problems.

Using abrasive pads such as Scotchbrite™ will cause the graining in the stainless steel to become blurred.

Rust not cleaned up promptly can penetrate the surface of the stainless steel and complete removal of the rust may not be possible.

Integrated Models

To clean integrated panels, use household cleaner per the cabinet manufacturer's recommendation.

INTERIOR CLEANING

Disconnect power to the unit.

Clean the interior and all removed components using a mild nonabrasive detergent and warm water solution applied with a soft sponge or non-abrasive cloth.

Rinse the interior using a soft sponge and clean water.

Do not use any solvent-based or abrasive cleaners. These types of cleaners may transfer taste to the interior products and damage or discolor the interior.

DEFROSTING

Under normal conditions this unit does not require manual defrosting. Minor frost on the rear wall or visible through the evaporator plate vents is normal and will melt during each off cycle.

If there is excessive build-up of 1/4" (6 mm) or more, manually defrost the unit.

Ensure the door is closing and sealing properly.

High ambient temperature and excessive humidity can also produce frost.



DO NOT use an ice pick or other sharp instrument to help speed up defrosting. These instruments can puncture the inner lining or damage the cooling unit. 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.

NOTICE

The drain pan was not designed to capture the water created when manually defrosting. To prevent water from overflowing the drain pan, place towels or other absorbent materials over the interior drain trough (under the evaporator) before defrosting.

To defrost:

1. Disconnect power to the unit.
2. Remove all products from the interior.
3. Prop the door in an open position (2 in. [50 mm] minimum).
4. Allow the frost to melt naturally.
5. After the frost melts completely clean the interior and all removed components. (See INTERIOR CLEANING).
6. When the interior is dry, reconnect power and turn unit on.

Cleaning Condenser

INTERVAL - EVERY SIX MONTHS

To maintain operational efficiency, keep the front grille free of dust and lint, and clean the condenser when necessary. Depending on environmental conditions, more or less frequent cleaning may be necessary.



Disconnect electric power to the unit before cleaning the condenser.

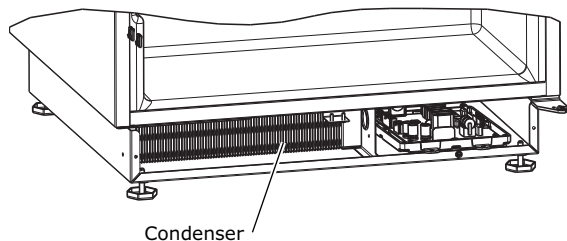


DO NOT touch the condenser fins. The condenser fins are SHARP and can be easily damaged.

NOTICE

DO NOT use any type of cleaner on the condenser unit.

1. Remove the grille. (See GRILLE-PLINTH INSTALLATION).
2. Clean the condenser coil using a using a soft brush with a “combing” action or vacuum cleaner. Do not touch the condenser coil.
3. Install the grille.



Extended Non-Use

VACATION/HOLIDAY, PROLONGED SHUTDOWN

The following steps are recommended for periods of extended non-use:

1. Remove all consumable content from the unit.
2. Disconnect the power cord from its outlet/socket and leave it disconnected until the unit is returned to service.
3. If ice is on the evaporator, allow ice to thaw naturally.
4. Clean and dry the interior of the unit. Ensure all water has been removed from the unit.
5. The door must remain open to prevent formation of mold and mildew. Open door a minimum of 2" (50 mm) to provide the necessary ventilation.

WINTERIZATION

If the unit will be exposed to temperatures of 40°F (5°C) or less, the steps above must be followed.

For questions regarding winterization, please call U-Line at 414.354.0300.



Damage caused by freezing temperatures is not covered by the warranty.

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Troubleshooting

BEFORE CALLING FOR SERVICE

If you think your U-Line product is malfunctioning, read the CONTROL OPERATION section to clearly understand the function of the control.

If the problem persists, read the NORMAL OPERATING SOUNDS and TROUBLESHOOTING GUIDE sections below to help you quickly identify common problems and possible causes and remedies. Most often, this will resolve the problem without the need to call for service.

IF SERVICE IS REQUIRED

If you do not understand a troubleshooting remedy, or your product needs service, contact U-Line Corporation directly at +1.414.354.0300.

When you call, you will need your product Model and Serial Numbers. This information appears on the Model and Serial number plate located on the upper right or rear wall of the interior of your product.

NORMAL OPERATING SOUNDS

All models incorporate rigid foam insulated cabinets to provide high thermal efficiency and maximum sound reduction for its internal working components. Despite this technology, your model may make sounds that are unfamiliar.

Normal operating sounds may be more noticeable because of the unit's environment. Hard surfaces such as cabinets, wood, vinyl or tiled floors and paneled walls have a tendency to reflect normal appliance operating noises.

Listed below are common refrigeration components with a brief description of the normal operating sounds they make. NOTE: Your product may not contain all the components listed.

- Compressor: The compressor makes a hum or pulsing sound that may be heard when it operates.

- Evaporator: Refrigerant flowing through an evaporator may sound like boiling liquid.
- Condenser Fan: Air moving through a condenser may be heard.
- Automatic Defrost Drain Pan: Water may be heard dripping or running into the drain pan when the unit is in the defrost cycle.

TROUBLESHOOTING GUIDE



ELECTROCUTION HAZARD. Never attempt to repair or perform maintenance on the unit before disconnecting the main electrical power.

Troubleshooting - What to check when problems occur:

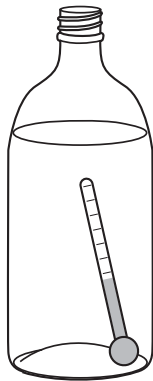
Problem	Possible Cause and Remedy
Digital Display and Light Do Not Work.	Ensure power is connected to the unit. If the unit is cooling, it may be in Sabbath mode
Interior Light Does Not Illuminate.	If the unit is cooling, it may be in Sabbath mode.
Light Remains on When Door Is Closed.	For glass door models, press the light icon and close the door. Check reed switch.
Unit Develops Frost on Internal Surfaces.	Frost on the rear wall is normal and will melt during each off cycle. If there is excessive build-up of 1/4" or more, manually defrost the unit. Ensure the door is closing and sealing properly. High ambient temperature and excessive humidity can also produce frost.
Unit Develops Condensation on External Surfaces.	The unit is exposed to excessive humidity. Moisture will dissipate as humidity levels decrease.
Digital Display Functions, But Unit Does Not Cool.	Ensure the unit is not in "Showroom Mode." Momentarily unplug or interrupt power supply to the unit.
Digital Display Shows ER or E Followed by a Number.	E3 indicates the door may be opened too long. Ensure the door is closing properly. For other error codes contact U-Line Customer Service.

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Problem	Possible Cause and Remedy
Digital Display Shows 1-16 or 99	A factory test mode may be enabled. Adjust the temperature to 99 and press the light icon.
Product Is Freezing.	Because product in contact with the rear wall may freeze, ensure no product is touching the rear wall. Adjust the temperature to a warmer set point.
Product Is Not Cold Enough.	Air temperature does not indicate product temperature. See CHECKING PRODUCT TEMPERATURE below. Adjust the temperature to a cooler set point. Ensure unit is not located in excessive ambient temperatures or in direct sunlight. Ensure the door is closing and sealing properly. Ensure the interior light has not remained on too long. Ensure nothing is blocking the front grille, found at the bottom of the unit. Ensure the condenser coil is clean and free of any dirt or lint build-up.

CHECKING PRODUCT TEMPERATURE



To check the actual product temperature in the unit:

1. Partially fill a plastic (nonbreakable) bottle with water.
2. Insert an accurate thermometer.
3. Tighten the bottle cap securely.
4. Place the bottle in the desired area for 24 hours.
5. Avoid opening the unit during the testing period.

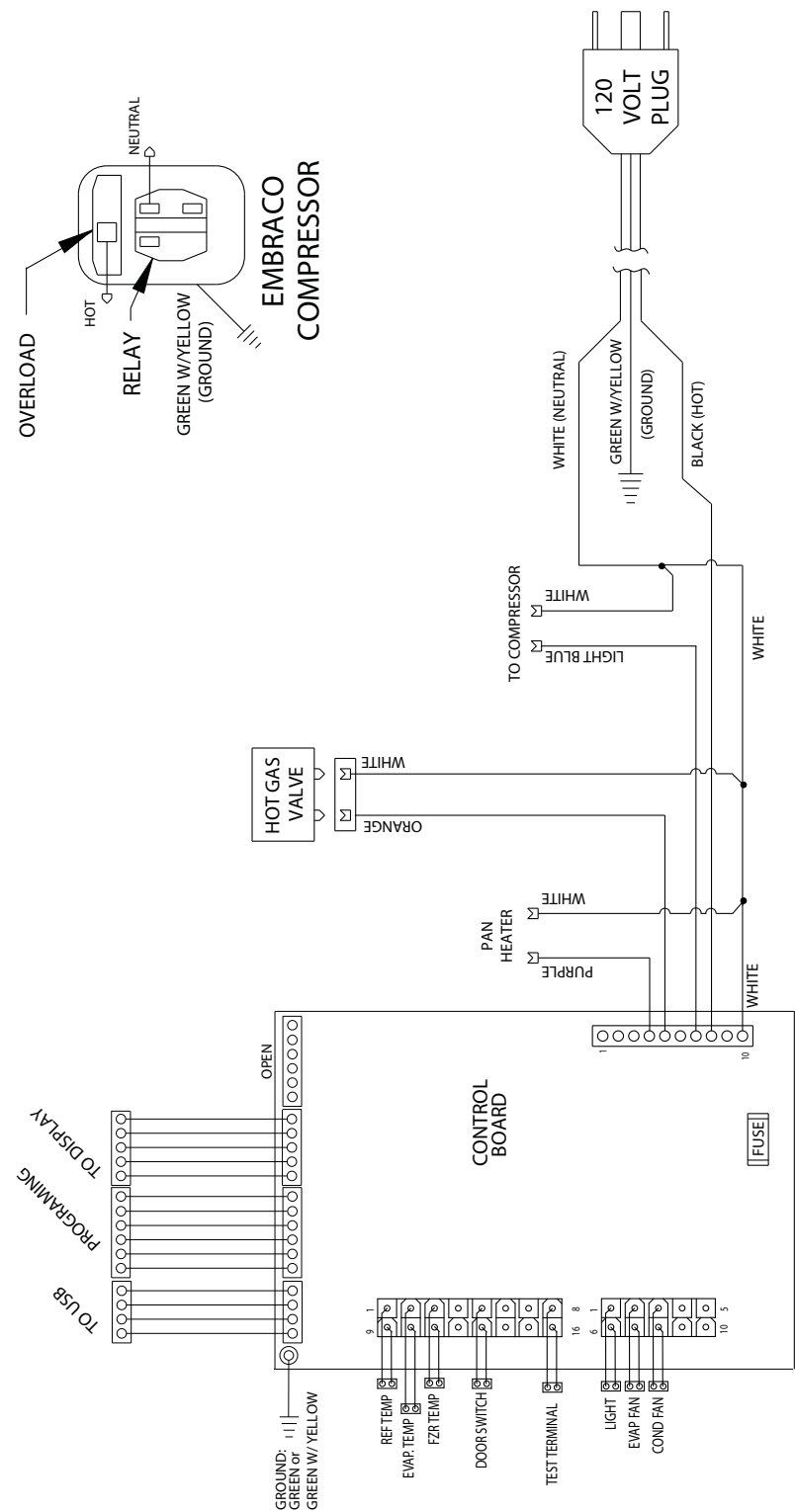
6. After 24 hours, check the temperature of the water. If required, adjust the temperature control in a small increment (see CONTROL OPERATION).

Causes which affect the internal temperatures of the cabinet include:

- Temperature setting.
- Ambient temperature where installed.
- Installation in direct sunlight or near a heat source.
- The number of door openings and the time the door is open.
- The time the internal light is illuminated. (This mainly affects product on the top rack or shelf.)
- Obstruction of front grille or condenser.

Wire Diagram

42311_B WIRING DIAGRAM



Product Liability

Field service technicians are authorized to make an initial assessment in the event of reported damages. If there are any questions about the process involved, the technician should call U-Line for further explanation.

While inspecting for defects or installation issues, photos should be taken to document any damages or issues found.

During the assessment, if the service technician is able to find the source of the damage and it can be resolved by replacement of a part, the servicer is authorized to replace the part in question. The part that caused the damage must be returned to U-Line in its entirety. The part must be clearly labeled with the serial number of the unit it was removed from, the date, and the servicer who removed the part.

If the service technician determines the damage is the result of installation issues (water connection/drain, etc.), the consumer would be notified and the issues shall be resolved at the direction of the consumer.

If damage is evident and the service technician is unable to find the source, U-Line must be contacted at 1-800-799-2547 for further direction

8900 N. 55th Street • Milwaukee, WI 53223
T: +1.414.354.0300 • F: +1.414.354.354.5696
Website: www.u-line.com

**Right product. Right place.
Right temperature Since 1962.**

Warranty Claims

The following information defines the parameters for filing a warranty claim:

- Valid serial number needed
- Valid model number needed
- Narda (or equivalent) form or submitted online at www.u-line.com
- 60 day submittal deadline from date of completed service
- Only one repair or unit per warranty claim
- Refrigerant should be labeled and included on the labor submittal
- Door and water level adjustments are covered 30 days from install date.

Serial Number Requirements:

14 30911 12 XXXX

Year Month

A typical serial number is shown above. The first two digits of the first segment, 14, represents the production year. The number between the dashes, 12, represents the production month. In most cases, warranty status can be verified by the production date information within the serial number.

- Alternatively, a Proof of Purchase (or equivalent) may submitted with the warranty claim to document

warranty status. We also accept the following information to verify warranty status:

- New Construction Occupancy Documents
- Closing Paperwork
- Final Billing – Remodel

Noting all of the following on the warranty claim will be considered proof of purchase, hard copy will not be required:

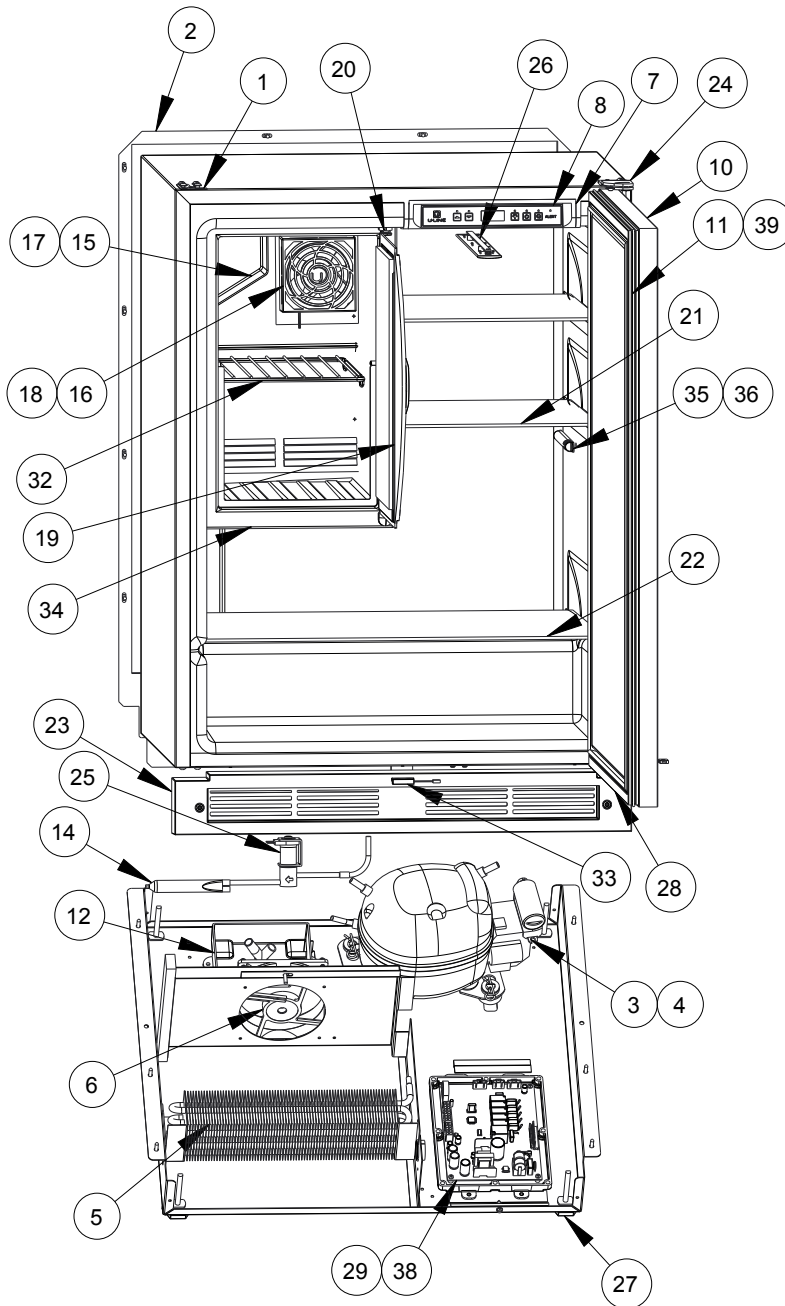
- Name of the selling Dealer
- Date of purchase/installation
- Order or Invoice number (if available)
- Description of document reviewed (i.e. store receipt, closing paperwork, etc)

Parts and labor claims are paid separately. Indicate part numbers and description for parts used in the warranty repair. Include the purchase invoice and name of the parts supplier used to procure the parts.

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Parts



U-1224RFINT-00A		
Item	Description	U-Line P/N
1	Anti tip bracket w/screws	80-54239-00
2	Back panel	80-54204-00
3	Compressor electricals only	80-54300-00
4	Compressor w/electricals	80-54299-00
5	Condenser assembly	80-54301-00
6	Condenser fan w/screws	80-54014-00
7	Control Housing	80-54259-00
8	Display module	80-54510-00
9	Drain pan, evap	80-54361-00
10	Door assembly w/hinges	80-54316-00
11	Gasket, door	80-54525-00
12	Drain pan w/double sided tape	80-54217-00
13	Drain pan heater	80-54313-00
14	Drier	80-54055-00
15	Evaporator assembly	80-54306-00
16	Evaporator fan cover w/screws	80-54311-00
17	Evaporator cover w/screws	80-54312-00
18	Evaporator fan	80-54310-00
19	Freezer door assembly	80-54308-00
20	Freezer hinge assembly	80-54307-00
21	Glass shelf (1) top	80-54304-00
22	Glass shelf (1) btm	80-54274-00
23	Grille w/screws	80-54267-00
24	Hinges (2) w/screws	80-54506-00
25	Hot gas valve and coil	80-54169-00
26	LED light strip and cover assy	80-54000-00
27	Leg Levelers (4)	80-54019-00
28	ADA mounting bracket	80-54133-00
29	Main board w/inst sheet	80-54297-00
30	Packaging	80-54209-00
31	Power cord	80-54302-00
32	Rack, freezer	80-54305-00
33	Reed switch assembly	80-54284-00
34	Replacement housing kit	80-54309-00
35	Thermistor (1 pc)	80-54006-00
36	Thermistor cover and pin	80-54237-00
37	Wire harness, board	80-54303-00
38	Enclosure ASM, Board	80-54532-00
39	Gasket, for injection molded	80-54213-00

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System Diagnosis Guide

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 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

Compressor Specifications



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 wrist strap that is grounded to an electrical ground or grounded water pipe.

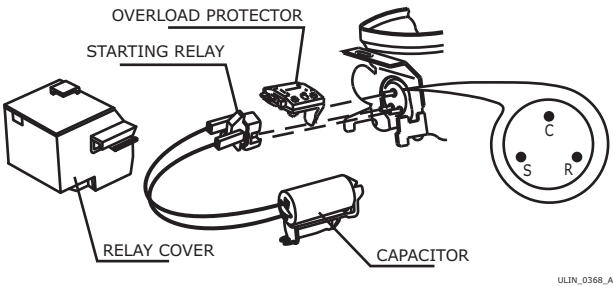
Handle circuit boards carefully and avoid touching components.

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.



	EMU45HSC
Refrigerant	R134a
Voltage	115 VAC
Frequency	60 Hz
Run Cap	12µF/160 VAC
Start Winding	56 Ohm at 77°F
Run Winding	6.7 Ohm at 77°F
LRA	6.5 A
FLA	1.5 A
Starting Device	8EA3B3
Overload	4TM283NFBYY-53

* All resistance readings are ±10%

Troubleshooting - Extended

SPECIFIC ERRORS AND ISSUES

The technically advanced diagnostic capabilities of the electronic controls utilized on the 1200 and 2200 series units allows for easy and thorough troubleshooting.

Navigation of the control is the key and is explained in the CONTROL OPERATION section of the manual, along with control button layout, control function descriptions, a service mode menu and service menu selection explanations.

Verification of temperature and thermistor performance can be identified by directly viewing thermistor readings in the service mode.

Component failure issues can be identified through service mode menu #19, "Component Testing." Individual components can be switched on and off to check for both proper function of a specific component and also delivery of supply voltage to the components through the relays and DC outputs located on the relay/power board.

Included in this section are some diagnostic tips and of course, if additional help is required please contact the U-Line Corp, "Customer Care Facility" at +1.800.779.2547 for assistance.





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

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TROUBLESHOOTING GUIDE

Concern	Potential Causes	Suggested Remedy
Not Cooling	Compressor overheating	Verify proper air flow through condenser. Is condenser clean?
		Confirm condenser fan operation.
		Confirm proper compressor operating voltage. Use #19, Component Testing in Service Mode.
	Compressor not operating	Confirm proper compressor operating voltage. Use #19, Component Testing in Service Mode.
		Test overload and relay, replace as needed.
	Compressor operating - no cooling	Refer to Refrigeration System Diagnosis Guide.
Frozen Product	Evaporator fan not operating	Use #19, Component Testing in Service Mode.
	Control set too cold	Adjust Set Point Temp accordingly.
	Review logged error codes	Refer to #14, Error Log in Service Mode.
Frost Buildup Inside Unit	Thermistor failure	Check Error Log in Service Mode, OHM thermistor.
	Door Ajar or Restricted from Closing	Check door clearance to adjoining cabinetry. Check distribution of product in unit.
	Evaporator fan not operating	Use #19, Component Testing in Service Mode.
Display Not Working	Thermistor failure	Check Error Log.
	Unit placed in Sabbath mode?	Push  and hold for 5 seconds to check.
	Display unplugged	Verify that both ends of the display wiring are firmly connected.
Internal Lights Not Working	Display wiring broken or damaged	Perform continuity test of wiring and replace as needed.
	Control Setting	Unit set to Sabbath Mode. Push  and hold for 5 seconds to check.
Noisy	Door switch misaligned or defective	Check the function of reed switch and door magnet adjustment.
	Refrigeration tubing touching cabinet	Carefully reposition tubing.
Noisy	Fan blade obstruction (wiring, foam insulation, packaging material)	Remove obstruction.

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No Gas	0 PSIG to 25"	Room temperature (cool)	Cool to hot	Room temperature (cool)	Room temperature (cool)	No refrigeration	Lower than normal

ERRORS

*All errors are logged in memory.

*Only door error is displayed on the display and has an audible signal.

*For clear ice models, pump error is displayed via alert light with no audible alerts.

E1: Thermistor 1 open. Refrigerator Zone.

E2: Thermistor 2 open. Freezer Zone.

E3: Thermistor 3 open. Evaporator.

E4: Thermistor 4 open (Does not apply to this model).

E5: Thermistor 1 shorted. Refrigerator Zone.

E6: Thermistor 2 shorted. Freezer Zone.

E7: Thermistor 3 shorted. Evaporator.

E8: Thermistor 4 shorted (Does not apply to this model).

E9: Drawer open error.

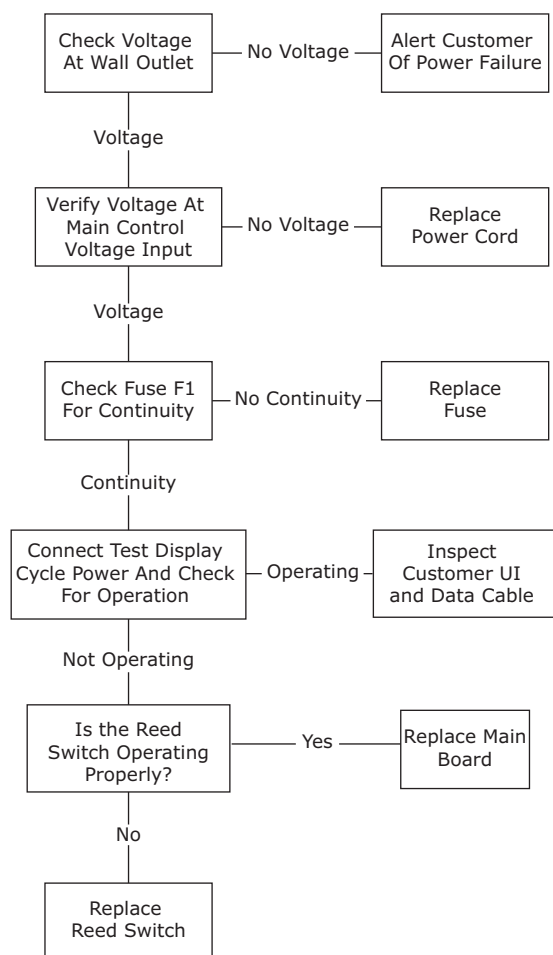
Pi: Pump Circuit open (Does not apply to this model).

MAIN CONTROL

The main control board is very robust and is rarely the cause of system issues. It is important to fully diagnose the board for any suspected failures before attempting to remove the board for replacement or service. Follow the guidelines below to fully test and diagnose the main control.

Power Fault

If the unit does not (or seems to not) power on, follow the flow chart below to help diagnose the issue. Before beginning it is important to first verify the unit is not simply set to sabbath mode.



Testing The Main Control

If the main control is suspected of being faulty, the following procedure should be performed to verify main control for functionality.

Relay & DC Outputs

One of the primary functions of the main control is to operate the multiple relay and DC outputs during each cycle. Verify proper operation of these relays using the following procedure.

1. Enter "Relay Toggle" through the service menu.

NOTICE

Frequently toggling the compressor relay could force the compressor into overload. The compressor will automatically deactivate during an overload and will remain deactivated until the overload switch cools. This could take some time. It is important to allow the compressor at least 5 minutes off time between relay cycles.

2. Toggle the relay. Its related component should activate / deactivate with the switching of the relay. If it does not, test component.

Other Suspected Main Control Faults

If other components have been ruled out as being faulty but the unit continues to have operating issues, it is most likely due to a configuration error. Configuration errors can be cleared by restoring the unit to its factory default setting. Factory defaults may be restored through the service menu.



Precautions must be taken while working with live electrical equipment. Be sure to follow proper safety procedures while performing tests on live systems.

THERMISTORS

Thermistors are used for various temperature readings. Thermistors provide reliable temperature readings using a resistance which varies based on surrounding temperatures. If a faulty thermistor is suspected it may be tested using an accurate ohmmeter. In an ice water bath (32°F) resistance should measure 16.1 kilohms.

**5K OHMS @ 77°
16.1K OHMS - 32°F ambient**

THERMISTOR FAILURE

Zone Thermistor

If the zone thermistor fails, the unit will continue to operate in a timed limp mode for 10 minutes on and 45 minutes off. The unit will otherwise operate normally. The error will be displayed in the error log.

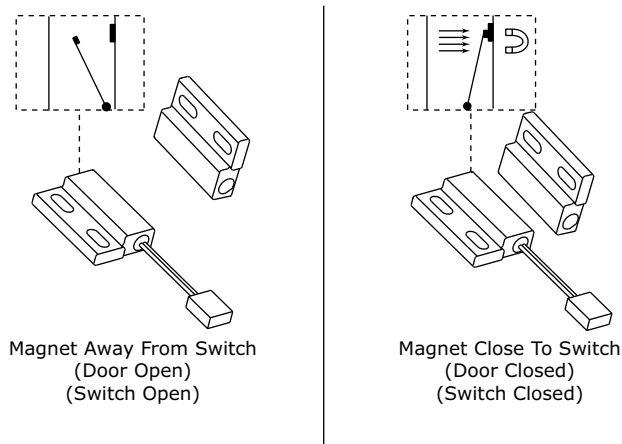
Evaporator Thermistor

If the evaporator thermistor fails, the unit will rely on a preset defrost time during defrost cycles. The unit will otherwise operate normally. Evaporator thermistor errors will be displayed in the error log.

Always assure that all thermistor connections are clean and dry. Whenever opening a thermistor connection be sure to apply a fresh dab of die electric grease.

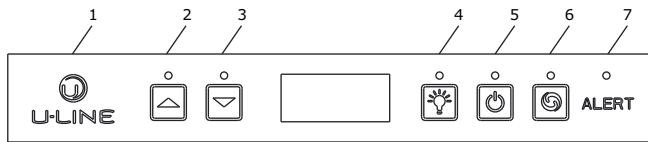
REED SWITCH

A reed switch is used to monitor door state. When the door is closed magnetic force pulls the reed to its contact and closes the circuit which turns the light and display off. When the door is open the reed pulls away from the contact and opens the circuit. If the door is left open for longer than 5 minutes, the switch will trigger an error code and set an audible warning.



Control Operation - Service

UI BUTTON LAYOUT



1. **Hidden Button**

- Accesses Service Menu
- No LED

2. **Up Button**

- Increases temperature
- Navigates through service menu

3. **Down Button**

- Decreases temperature
- Navigates through service menu
- LED activated with button activation

4. **Light Button**

- Activates light for 3 hours on select models
- Used to select items in service menu
- LED activated with button activation

5. **Power Button**

- Turns unit off/on
- LED activated with button activation (only turning unit off)

6. **Clean Button**

- Activates Clean Cycle on CLR models
- LED activated with button activation















7. **Alert LED**

- No button
- Illuminates with Hidden Button
- Illuminates with required displayed alerts

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CONTROL FUNCTION GUIDE

FUNCTION	COMMAND	DISPLAY/OPTIONS
ON/OFF	Press  and release	Unit will immediately turn ON or OFF
Toggle lights	Press  and release to leave interior light on for 3 hours	Glass door wine captains and beverage centers only.
Adjust refrigerator temperature	Push  or  and release	When the "F" or "C" in the display is flashing, push  or  to adjust the set point temperature.
View temperature in unit	Push  and  and release together	The display will flash and then toggle from set point to temperature in unit.
Toggle between F/C	Hold  and  for five seconds	The display will change units.
Toggle showroom mode	Push  and  and hold for five seconds to enter the showroom mode. Unplug the unit to deactivate showroom mode.	
Service mode	Push and hold the hidden icon for 10 seconds to enter. Then push  and  to scroll through the service mode menu.	The display will change units.

ELECTRONIC CONTROL DESCRIPTIONS QUICK GUIDE

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

1. ON/OFF

The ON/OFF mode allows the unit to be turned on and off via the keypad. Push/release power key to toggle ON/OFF. Internal lights will go off with power.

2. TOGGLE LIGHT

On units with glass doors, touching the LIGHT key will turn on the cabinet light for 3 hours at a time.

Touching the key again will turn the light off. Using the cabinet light for more than 3 hours may be detrimental to the cabinet temperature and product. Only available on BEV, WC models.

3. ADJUSTING THE SET POINT

To adjust the set point press and release either the WARMER or COLDER key. 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. When adjustment is complete stop touching the display and the set point will be saved in approximately five seconds.

NOTICE

This does not apply to ADA24R glass door units. The light and display are always off when the glass door is closed.

4. **VIEWING ACTUAL 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 icebath, 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 the thermistor temperature, push and release the up and down keys. The display will show the corrected refrigerator temperature.

5. **CHANGING FROM FAHRENHEIT TO CELSIUS**

To change the displayed temperature from °F to °C, push and hold the up and down arrows for 5 seconds. Repeat to change back.

6. **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 light key and the power key for 5 seconds. The display will flash once and beep 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. The unit can be left in this mode indefinitely. To exit this mode, interrupt power to the unit.

7. **SABBATH MODE**

The U-line Series of models offer a Sabbath mode for users who require this functionality during Sabbaths. Sabbath mode disables system responses to user initiated activities and all external functions; including lighting, display and audible alarms. The unit will still maintain internal temperatures and set points.

8. **SERVICE MODE**

This mode has 28 different options available for service diagnostics. To enter the mode hold the hidden key for 10 seconds. The display will show "0." When in this mode use the up and down arrows to select the desired option. The LIGHT key is the ENTER key and will enter a function. If changing a setting, you must press the LIGHT key again to retain the changed setting. To exit the service mode scroll to option "0" and press the LIGHT key. After five minutes of not touching any keys the mode will also exit automatically.

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SERVICE MODE QUICK GUIDE

Number	Service Mode Menu Item	To Navigate/Access
1	View thermistor #1 cabinet temp no offsets	Use up/down to access and light bulb key to view
2	View thermistor #2 evaporator no offsets	Use up/down to access and light bulb key to view
3	View thermistor #3 freezer no offsets	Use up/down to access and light bulb key to view
4	View thermistor #4 ice maker no offsets	Does not apply to this model
5	Adjust thermistor #1 offset	Call tech line for assistance 800 779 2547
6	Adjust thermistor #2 offset	Call tech line for assistance 800 779 2547
7	Adjust thermistor #3 offset	Call tech line for assistance 800 779 2547
8	Adjust thermistor #4 offset	Does not apply to this model
9	View thermistor #2 set point no offsets	Use up/down to access and light bulb key to view
10	View thermistor #3 set point no offsets	Use up/down to access and light bulb key to view
11	View thermistor #4 set point no offsets	Does not apply to this model
12	Adjust defrost interval 3 to 12 hours	Up/down to select, light icon to enter and save change
13	Adjust defrost duration 0 to 99 minutes	Up/down to select, light icon to enter and save change
14	Display error log	Use up/down to access and light bulb key to view
15	Clear error log	Use up/down to access and light bulb key to clear
16	View thermistor #1 differential	Do not make any changes to this
17	Fan on delay (start of cooling cycle)	Up/down to select, light icon to enter and save change
18	Fan off delay (after cooling cycle stops)	Up/down to select, light icon to enter and save change
19	Component testing (see service mode)	Use up/down to access, light bulb icon to toggle on/off
20	Display programmed model number	Use up/down to access, light bulb icon to display
21	Light all LED segments of display (test)	Use up/down to access and light bulb key to view
22	Display defrost cycles in last 24 hours	Use up/down to access and light bulb key to view
23	Displays last/current compressor run time	Use up/down to access and light bulb key to view
24	Activate harvest cycle	Use up/down to access and light bulb key to start
25	Restore factory defaults	Use up/down to access and light bulb key to restore
26	Display control board software version	Use up/down to access and light bulb key to view
27	Display user interface software version	Use up/down to access and light bulb key to view
28	Monitor unit function through laptop/PC	Call tech line for assistance 800 779 2547
0	To exit service mode	Use up/down to scroll and light bulb icon to exit

SERVICE MODE QUICK GUIDE

1. THERMISTOR 1 — TEMPERATURE

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.

2. THERMISTOR 2

View thermistor #2 temperature minus the offset.

3. THERMISTOR 3

View thermistor #3 temperature.

4. Does not apply to this model..

5. ADJUST THERMISTOR 1 OFFSET

This calibration is only to be used if actual temperature at thermistor #1 is off from set point.

By adjusting the offset higher we can force the unit to drive the temperature down below the set point.

(example: adjusting from 0 to +2 will drop the unit temperature 2 degrees)

DO NOT MAKE AN ADJUSTMENT TO THIS WITHOUT CONTACTING TECH LINE.

6. **ADJUST THERMISTOR 2 OFFSET**

Call tech line before adjusting.

7. **ADJUST THERMISTOR 3 OFFSET**

Call tech line before adjusting.

8. Does not apply to this model.

9. **VIEW THERMISTOR 2 SET POINT MINUS OFFSET**

10. View thermistor 3 set point minus offset.

11. Does not apply to this model.

12. **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.

13. **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.

14. **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 15, to clear the errors from memory.

15. **CLEAR ERROR LOG**

Perform this operation after checking the errors.

16. **ADJUST THERMISTOR 1 DIFFERENTIAL**

This number should not be adjusted.

17. **FAN DELAY ON=**

"Fan Delay On" is the amount of time in minutes the fan will be delayed from starting from the beginning of a cooling cycle.

18. **FAN DELAY OFF=**

"Fan Delay Off" is the amount of time in minutes the fan will continue to run at the end of a cooling cycle.

19. **INDIVIDUAL COMPONENT TOGGLE**

Relay #2...

Relay #3. Will start the ice maker module and forward it through a full harvest cycle

Relay #4. Will send voltage to the water valve.

Relay #5. Will send voltage to the hot gas valve, where applicable.

Relay #6. Will send voltage to the 120 volt condenser fan (clr ice only).

Relay #7. Will send voltage to the compressor.

DC OUTPUT #1. Will energize the light circuit.

DC OUTPUT #2. Will energize the evaporator fan circuit, where applicable.

DC OUTPUT #3. Will energize the condenser fan circuit (all but CLR ice).

DC OUTPUT #4. Secondary cabinet light, where applicable.

20. **MODEL NUMBER DISPLAYED**

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

21. **LIGHT ALL LED SEGMENTS**

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

22. **DEFROST INFORMATION**

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

23. **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).

24. **ACTIVATE DEFROST**

Turns on the hot gas bypass valve allowing hot gas to circulate through the evaporator causing frost to melt.

25. **RESTORE FACTORY DEFAULTS**

Will restore all adjustable functions to their factory settings.

26. **MAIN SOFTWARE**

Displays software version of the main control board.

27. **USER INTERFACE SOFTWARE**

Displays the software version of the user interface.

28. **LIVE LOG PERIOD**

Can be utilized with a laptop or PC to display control functions while unit is running.

ERRORS

*All errors are logged in memory.

*Only door error is displayed on the display and has an audible signal.

*For 68118 models, pump error is displayed via alert light with no audible alerts.

E1: Thermistor 1 open.

E2: Thermistor 2 open.

E3: Thermistor 3 open.

E4: Thermistor 4 open (Does not apply to this model).

E5: Thermistor 1 shorted.

E6: Thermistor 2 shorted.

E7: Thermistor 3 shorted.

E8: Thermistor 4 shorted (Does not apply to this model).

E9: Door open error.

P1: Pump Circuit open (Does not apply to this model).

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MODEL LIST

1000	MODEL #	2000 (120V)	MODEL #	2000 (230V)	MODEL #
1215R	07	2218R	05	2245R	55
1215WC	12	2218RG	04	2245DC	54
1224BEV	13	2218WC	06	2245WC	56
1224DWR	08	2224BEV	00	2260DC	50
1224R	14	2224FZR	11	2260FZR	57
1224RF	09	2224R	02	2260R	52
1224RSOD	10	2224RG	01	2260RDC	51
1224WC	15	2224WC	03	2260WC	53
CLR1215	18*	2224ZWC	59	2260ZWC	58
CO1224F	19	ADA24R	17		

* UNITS 2020 AND NEWER USE #11

Programming the unit to correct model number

- Unplug unit and install new board
- Push and hold the hidden icon
- Plug the unit in
- Release the hidden icon
- Use the up/down arrows to scroll to correct model number from chart
- Push and release the light icon
- Unit flashes OFF/ON then locks in model.

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Control Defaults

Default	Value	
	°F	°C
Fahrenheit/Celsius*	°F	°C
Defrost Duration Minutes	18	
Next Defrost Hours	12	
Thermistor Four OFFSET**	0	—
Thermistor Three OFFSET**	-5	—
Thermistor Two OFFSET**	0	—
Thermistor One OFFSET**	0	—
Thermistor One Differential Up**	5	—
Thermistor One Differential Down**	5	—
Thermistor Four Set Point	0	-18
Thermistor Three Set Point	0	-18
Thermistor Two Set Point	15	-9
Refrigeration Set Point	38	3
Light Key	0	
Has Ice	0	
Maximum Ice Set Point	0	-18
Minimum Ice Set Point	0	-18
Maximum Set Point	45	7
Minimum Set Point	34	1

* 115V models default to Fahrenheit.
220-240V models default to Celsius.

** Offset and Differential always expressed in °F.

Thermistors

Thermistors are used for various temperature readings. Thermistors provide reliable temperature readings using a resistance which varies based on surrounding temperatures. If a faulty thermistor is suspected it may be tested using an accurate ohmmeter.

THERMISTOR FAILURE

Zone Thermistors

If a zone thermistor in the unit fails the unit will continue to cool in a back up mode to preserve the integrity of the contents. The unit will cycle on for ten minutes, then shut down for forty five minutes. The process will repeat until the problem is corrected. All other functions of the unit will continue to operate normally.

Evaporator Thermistors

If an evaporator thermistor fails the unit will rely on a preset defrost timer during defrost cycles. The unit will otherwise operate normally. Evaporator thermistor errors are recorded in service mode "Error Log" section.

This unit has three thermistors. Thermistor one is located along the right hand side wall. It is used to maintain the operating temperature within the refrigerator compartment.

Thermistor two is located on the back of the evaporator and is used for defrost purposes.

Thermistor three is located in the freezer compartment and maintains operating temperature.

All three of the thermistors in the unit are identical. If a thermistor is suspected of being defective it can be OHMed out. In an ice water bath the thermistor should OHM out at 16.1k OHMS +/-5%.

Thermistor connections must be kept clean. A thermistor connection that has become corroded can cause resistance values from the thermistor to change as they pass through a dirty connection to the board.

It is for that reason that we apply die electric grease to all of our thermistor connections. Die electric grease will help to keep thermistor connections clean and dry.

If you change a thermistor in the unit please re-apply die electric grease to the connection. If you encounter a dirty thermistor connection, you should replace the thermistor and the thermistor harness.

Thermistor Resistance Data

Temp (F)	Temp (C)	Nominal Resistance (OHMS)*
-40	-40	169157
-31	-35	121795
-22	-30	88766
-13	-25	65333
-4	-20	48614
5	-15	36503
14	-10	27681
23	-5	21166
32	0	16330
41	5	12696
50	10	9951
59	15	7855
68	20	6246
77	25	5000
86	30	4029
95	35	3266
104	40	2665
113	45	2186
122	50	1803
131	55	1495
140	60	1247
149	65	1044
158	70	879
167	75	743
176	80	631

* (=/-5%)

Defrost

These units are frost free technology

Model	Hrs Between Defrost Time	Length/ Minutes	Stop Point
2218R/WC	12	45	42
2224BEV/R/WC	12	45	42
3018R/WC	12	45	40
1224DWR	12	45	42
1224WC	12	45	45
3024DWR/FZR/BEV/R	12	42	40
3036BVWC/RR/WCWC	12	42	40
C01224F	12	18	42
C029F	12	18	--
1224RF	12	18	42

Remove Fan and Cover

PARTS REPLACEMENT

Note: These models do not require removal of the ice maker or freezer housing to access the fan motor, drain or evaporator.

REPLACING EVAPORATOR FAN MOTOR

1. Disconnect unit from power source.
2. Remove two screws from fan cover.
3. Remove two screws holding fan bracket to liner.
4. Unplug fan connection.
5. Remove two nuts holding the fan to the fan bracket.
6. Replace with new fan making sure air flows in at bottom and out at top.
7. Plug in the fan connection.
8. Reinstall fan bracket to liner, making sure the fan wires are tucked behind the fan bracket.
9. Reinstall unit and test.

