
NORCOLD[®]

USER MANUAL

NV1090, 3.2 CUBIC FOOT, 12 VOLT
DC REFRIGERATOR

Disclaimer

Thetford/Norcold LLC recommends and strongly advises users to engage the services of a qualified and licensed professional for the installation, maintenance, repair, or any other servicing needs associated with the product. The user understands and assumes full responsibility for hiring a professional with the requisite skills, knowledge, and qualifications to service your product. This includes, but is not limited to, tasks such as installation, repairs, modifications, or any other service required. Thetford/Norcold LLC disclaims any and all liability for any damages, losses, injuries, or other adverse consequences that may result from the user's failure to hire a qualified professional for the servicing of your product. The user acknowledges the importance of ensuring that the hired professional adheres to industry standards, guidelines, and local regulations applicable to the servicing of your product. Thetford/Norcold LLC is not responsible for the actions, omissions, or negligence of the hired professional. The user agrees to indemnify and hold harmless Thetford/Norcold LLC from any claims, liabilities, damages, costs, or expenses, including legal fees, arising from the user's decision to hire, or not hire, a professional for the servicing of the product. By using your product, the user affirms that they have read, understood, and voluntarily agreed to this disclaimer.

Warranty

For defined warranty terms, please see the warranty statement online at www.thetford.com/us.

Certification and Code Requirements

This refrigerator is certified by CSA International as meeting the latest edition of ANSI Z21.19 / CSA 1.4 standards for installation in mobile homes or recreational vehicles.

The refrigerator must be installed in accordance with this "User Manual" in order for the Norcold limited warranty to be in effect.



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Safety Awareness

Read this manual carefully and understand the contents before you install the refrigerator.

Be aware of possible safety hazards when you see the safety alert symbol on the refrigerator and in this manual. A signal word follows the safety alert symbol and identifies the danger of the hazard. Carefully read the descriptions of these signal words to fully know their meanings. They are for your safety.



This signal word means a hazard, which if ignored, can cause serious personal injury, death, or extensive property damage.



This signal word means a hazard, which if ignored, can cause small personal injury or much property damage.

Safety Instructions



Incorrect installation, adjustment, alteration, or maintenance of this refrigerator can cause personal injury and/or property damage.

Obey the instructions in the “Ventilation” section of this manual.

Do not bypass or change the refrigerator’s electrical components or features.

Protect all wiring from physical damage, vibration, and excessive heat.

Do not spray liquids near electrical outlets, connections, or the refrigerator components, as many are electrically conductive and can cause a shock hazard, electrical shorts, and/or fires.

This appliance is intended to be used in households and similar applications such as recreational vehicles, boats, and semi trucks.

To avoid a hazard due to instability of the appliance, it must be fixed in accordance with the instructions.

A means for disconnection from the supply mains must be incorporated in the fixed wiring in accordance with the wiring rules.

It is necessary to allow disconnection of the appliance from the supply after installation. This disconnection may be achieved by having the plug accessible or by incorporating a switch in the fixed wiring in accordance with the wiring rules.

The storage of flammable materials behind or around the refrigerator creates a fire hazard. Do not use the area behind the refrigerator to store anything, especially flammable materials.

Do not store any explosive substance in this refrigerator.

A circuit overload can result in an electrical fire if the wires and for fuses are not the correct size. Use only the wire and fuse sizes as written in this manual.

Incorrect installation, adjustment, change to, or maintenance of this refrigerator can cause personal injury and/or property damage. All service and maintenance work on this refrigerator must be done by a qualified service technician.

Do not bypass or change the refrigerator’s electrical components or features.

When you discard an appliance, remove all doors to prevent accidental entrapment and suffocation.



Risk of thermal event with refrigerant R600a.



The rear of the refrigerator has sharp edges and corners. To prevent cuts or abrasions when working on the refrigerator, be careful and wear cut resistant gloves.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience or knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Refrigerator Details

Usage

This refrigerator is made for use within a recreational vehicle. As such, it is suitable for camping, but do not expose the refrigerator to rain.

Key Refrigerator Dimensions

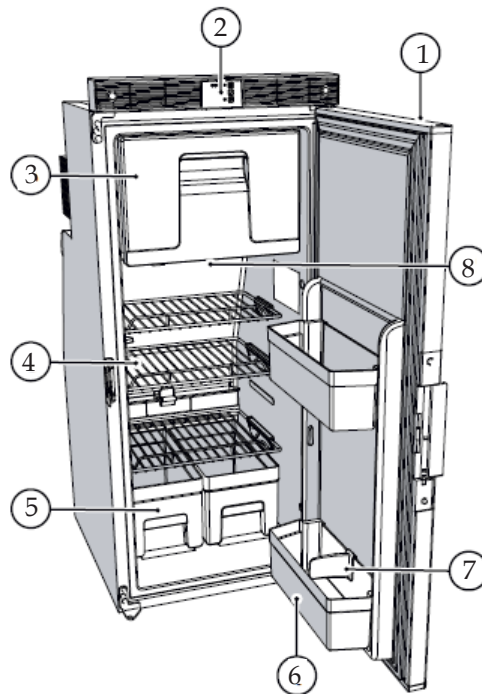
Height (in.)	Width (in.)	Depth (in.)	Total Volume (cu. ft.)	Freezer Volume (cu. ft.)	Net Weight (lb.)
38.66	16.54	19.92	3.2	0.21	53

Food Compartment

Start up the refrigerator and let it cool for three hours before loading with food. If the refrigerator does not start to cool down within this timeframe, contact your dealer or an authorized service center.

For the best cooling performance:

- Let air move freely inside the entire food compartment
- Do not cover the shelves with plastic, paper, etc.
- Cover all liquids and moist foods
- Let all hot foods cool before putting them in the refrigerator
- Do not open the door any longer than necessary



1. Refrigerator Door
2. Control Panel
3. Frozen Food Compartment
4. Wire Storage Shelves
5. Crisper Bins
6. Door Bins
7. Door Bin Retainer
8. Interior Light

Freezer Compartment

The freezer compartment is made to keep pre-frozen food frozen and not to quick freeze food. Keep pre-frozen foods in the freezer compartment.

Door Handle

During travel, the door latch prevents the door from opening. To open the door, push the handle to the left and pull away from the enclosure. When closing the door, push toward the enclosure until you hear a two "click" sounds.

Interior Light

The interior light [8] is at the top of the fresh food compartment. The light shuts off when the door is closed. To replace the interior light:

1. Shut down refrigerator
2. Remove LED light cover
3. Unplug wire harness connector

To install new light, follow the steps above in reverse order.

Crisper/Door Bins

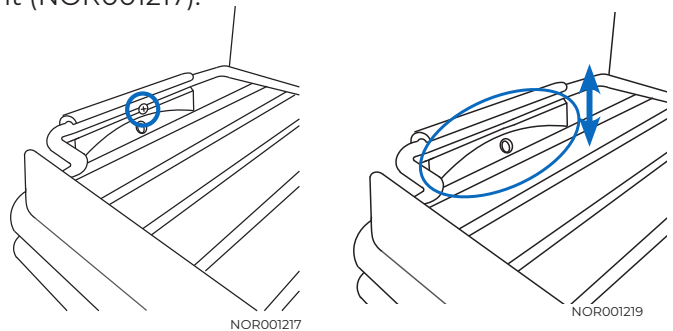
This refrigerator comes equipped with 2 crisper bins [5], 2 doors bins [6], and one door bin retainer [7]. To remove the door bins, lift up on each side of the bin with force. Push down with force until secure to put the door bin back into place.

Shelves

This refrigerator come equipped with 3 wire shelves. To replace the shelf [4], unscrew the single screw on the left side and slide it out of the compartment (NOR001217).

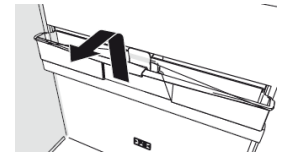
To move the shelf (NOR001219):

1. Turn the plastic clamp upwards
2. Move the shelf to the desired location
3. Place the right side of the shelf into the indent in the refrigerator wall
4. Move the left side down by the indent on that side wall
5. Secure the clamp into place by pushing down towards the wall



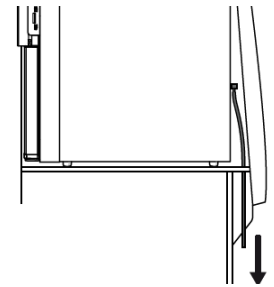
Drip Tray

If a drainage tube is not used, the condensation will collect in the drip tray on the interior of the refrigerator. To empty the drip tray, pull the tray out from the mounting hook.



Drainage Tube

Condensation water can be directly drained from this refrigerator by adding an extended tube to the existing drain tube on the back of the refrigerator. Remove the drip tray, remove the drain plug, and guide the extended tube directly outside of the vehicle.



Refrigerator Care and Maintenance

Cleaning

A good time to clean the refrigerator is just after you defrost it. Clean the inside of the refrigerator as often as necessary to avoid food odors.

- Remove all food from the refrigerator

NOTICE

Do not use abrasive cleaners, chemicals, or scouring pads because they can damage the interior of the refrigerator.

- Wash the interior with a mild cleaner or a solution of liquid dish detergent and warm water
- Rinse with a solution of baking soda and clean water
- Dry with clean cloth
- Put all food in the refrigerator

Defrosting

The humidity inside the refrigerator increases:

- With higher outside temperature and humidity
- With the storage of non-sealed fresh foods or warm foods
- With the amount of time that the door(s) are open
- With any air leakage into the refrigerator

It is normal for frost to collect inside the freezer. Excess frost decreases the cooling performance of the refrigerator. Failure to do so may damage the cooling system.

To defrost the refrigerator and freezer:

- Remove all food from the refrigerator
- Turn the refrigerator OFF

NOTICE

Defrosting the refrigerator may cause excess water inside the refrigerator.

- Put dry towels (etc.) inside the refrigerator and freezer to absorb melted frost

CAUTION

High temperatures can cause the inside surfaces of the refrigerator to warp or melt. Do NOT use pans of HOT water, a hair dryer, or any other high temperature devices to defrost the refrigerator. Do not use any hard or sharp objects to remove frost. Damage to the interior of the refrigerator can occur.

- To increase the speed of defrosting, put pans of WARM water in the refrigerator and freezer
- Remove the wet towels (etc.) and dry the interior
- Remove the large container from the enclosure
- Start up the refrigerator
- Allow the refrigerator to cool down
- Return all food to the refrigerator

Replacement Parts

You may purchase replacement parts through your local RV dealer or authorized Service Center.

Leveling

CAUTION

The refrigerator is made to operate within 10° off level side-to-side and 10° off level front-to-back (looking at the front of the refrigerator). Operating it at more than these limits can cause damage to the cooling system and create a risk of personal injury or property damage. Make sure the vehicle is level before you operate the refrigerator.

Refrigerator Storage

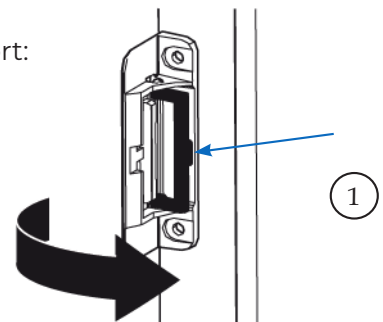
Before the refrigerator is stored for an extended period of time, empty, defrost, and clean the interior of the refrigerator.

Keep the refrigerator door open using the door latch winter lock support:

1. Open the refrigerator door
2. Rotate the lock support [1] forward
3. Close the door until you hear the first click. This will leave the door cracked 1/4 inch.

NOTICE

It is recommended to leave the door slightly open for ventilation and to prevent odors or mold growth inside.



After seasonal storage, ensure there are no obstructions in the vents, the ventilation air pathway, the burner, the orifice, or the flue area before turning on the refrigerator.

Disposal

When your refrigerator has reached its end of life, dispose the product according to your local laws or guidelines. Do not dispose of the refrigerator with normal household waste.



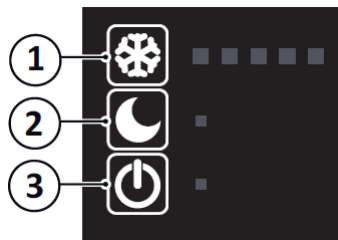
Discarded electric appliances are recyclable and should not be discarded in the domestic waste. Please actively support us in conserving resources and protecting the environment by returning this appliance to the collection centers (if available).

Operation

Controls



Control boards are extremely sensitive. Evidence of tampering or removal will VOID any warranty.



- 1. Temperature Setting Button
- 2. Night Mode Button
- 3. On/Off Button

To turn the refrigerator on, push the ON/OFF button [3] until the indicator lights up. After a few seconds, the control panel will change to stand-by and locked mode. The blue on/off indicator light stays lit, indicating the refrigerator is still in function.

To unlock the control panel, press any one of the buttons. The control panel automatically unlocks when opening the door.

To turn the refrigerator on, push the ON/OFF button [3] until the indicator lights up. After a few seconds, the control panel will change to stand-by and locked mode. The blue on/off indicator light stays lit, indicating the refrigerator is still in function.

It may take up to 5 minutes for the refrigerator to start up when resetting the ON/OFF status.

To unlock the control panel, press any one of the buttons. The control panel automatically unlocks when opening the door.

To set the temperature in the refrigerator, press the temperature button [1] until you reach the desired level. The levels available are 1-5, 1 being the lowest setting and 5 being the highest setting. The freezer has one non-adjustable temperature setting.

To activate night mode, press the button [2] until the indicator light turns on. Night mode automatically turns off after 12 hours.



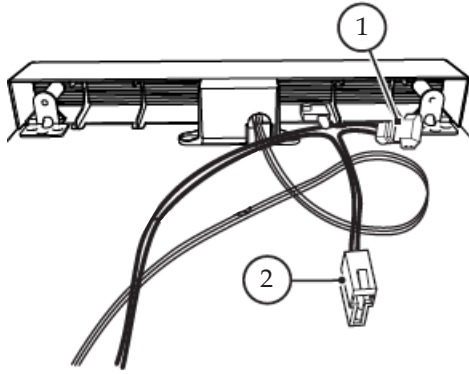
Only use night mode when vehicle temperature is below 86° F

To turn the refrigerator off, push the ON/OFF button [3] and hold for two seconds, then release.

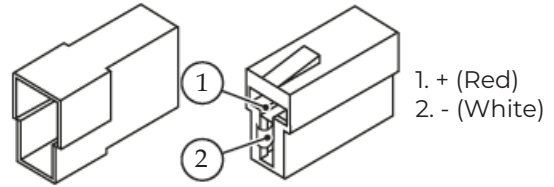
Electrical Specifications

Input Voltage	12V DC Standard, 10.4 - 16.0V DC (at the refrigerator)
Fuse	15A
Battery Capacity	2 x 95Ah (Recommended)
Rated Current	4.5A Day Mode, 3.0A Night Mode
Cable Thickness vs Cable Length	14 AWG = < 8 Feet 12 AWG = < 13 Feet 10 AWG = < 20 Feet

DC Power Connectors:



- 1. Fuse Holder
- 2. 12V Power Connector



- 1. + (Red)
- 2. - (White)

Operation During Travel

While the refrigerator should be level when the vehicle is stopped, performance during travel is not usually effected.

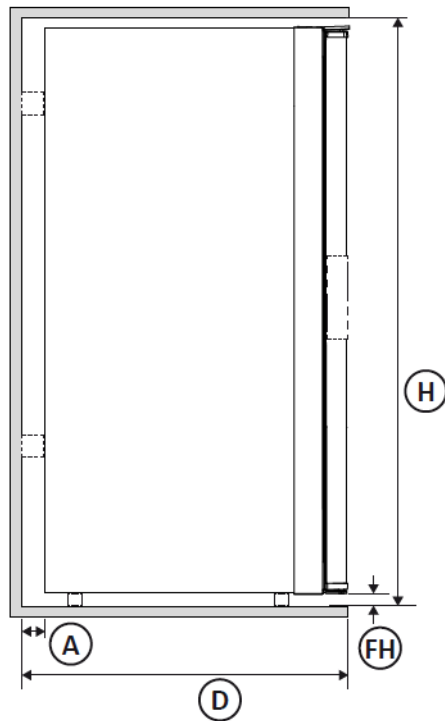
Ensure no products in the refrigerator can move while driving. Secure bottles and large products in the drawer with drawer dividers and raise the shelf food retainer to hold the products on the shelves.

Ensure the door latch is secured to avoid the door from opening while traveling.

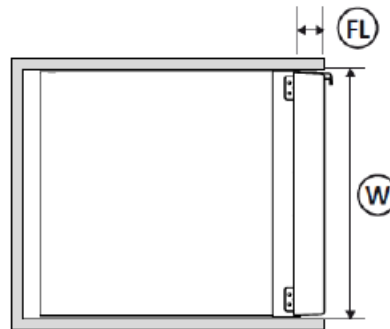
Assembly and Installation

Assemble the Refrigerator Enclosure

1. Make sure the enclosure follows the dimension guide
2. Make sure the floor is solid and level
 - The floor must be metal or a wood panel and extend the full width and depth of the enclosure
 - The floor must be able to support the weight of the refrigerator and its contents
3. Make sure there are no adjacent heat sources (such as a furnace vent, a hot water heater vent, etc.)

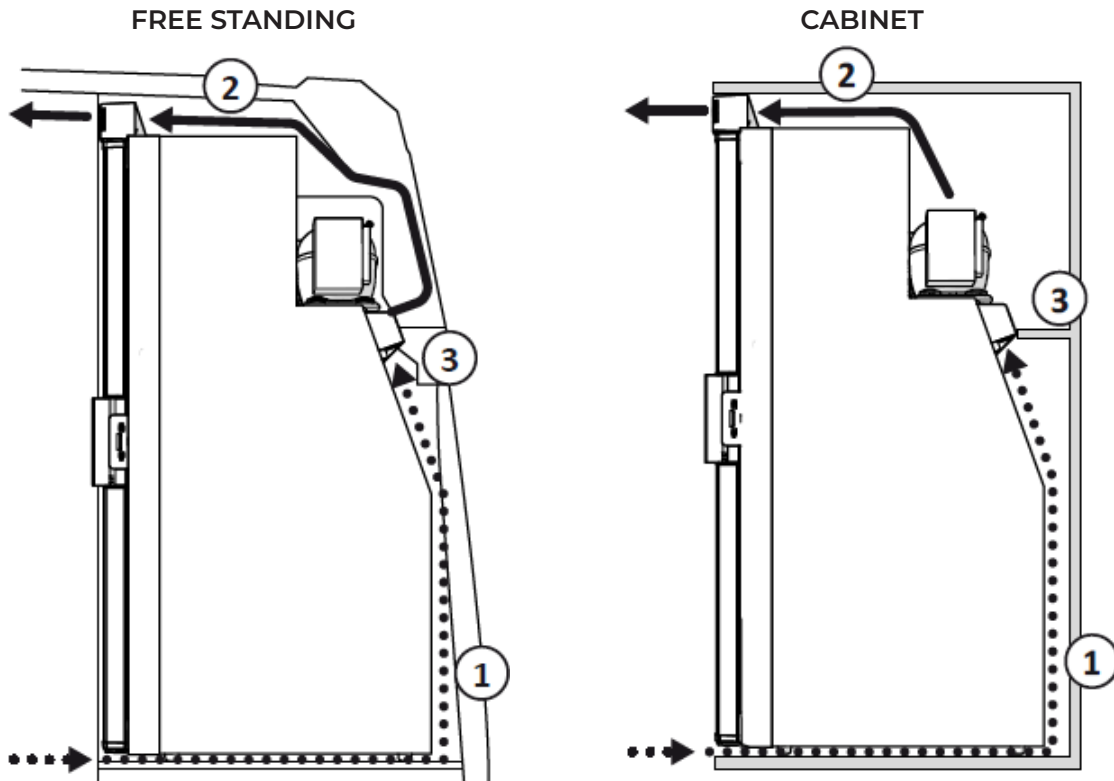


H (in.)	W (in.)	D (in.)	FL (in.)	FH (in.)	A (in.)
38.7	16.5	19.9	1.7	.8	.8



Ventilation

The refrigerator performance depends on the ventilation quality. Ventilation takes place through the front vent opening of the refrigerator. Ambient air enters through the bottom and is forced through the cooling system, then pushed out through the top vent.



1. The minimal distance between the refrigerator, the bottom, and the back must be at least .75 inch.
2. The minimal distance between the refrigerator, the back, and the top must be at least 1.5-2 inches.
3. Ensure the sealing material closes the gap between the air funnel and the chassis beam (cabinet mounted only).

Power Supply Guidelines

Connect the appliance to a dedicated 12V battery in the vehicle meant solely for powering on-board devices. It is not recommended to connect it to the engine battery.

NOTICE

Mount the enclosure before connecting the power supply.

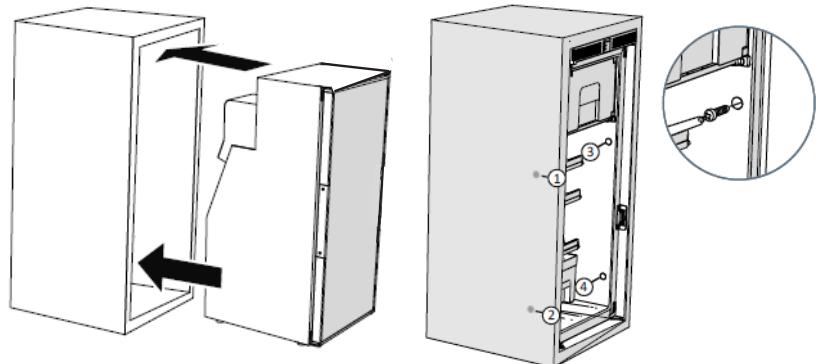
Install the Refrigerator

Slide the refrigerator to the back of the enclosure.

Fix the refrigerator in place with the screws provided.

The refrigerator has mounting points on both the left and right side.

Use the white caps provided to complete the finishing touches.



CAUTION

Ensure the enclosure can handle the screw without damage. Do not screw into the refrigerator cabinet.

After Installation

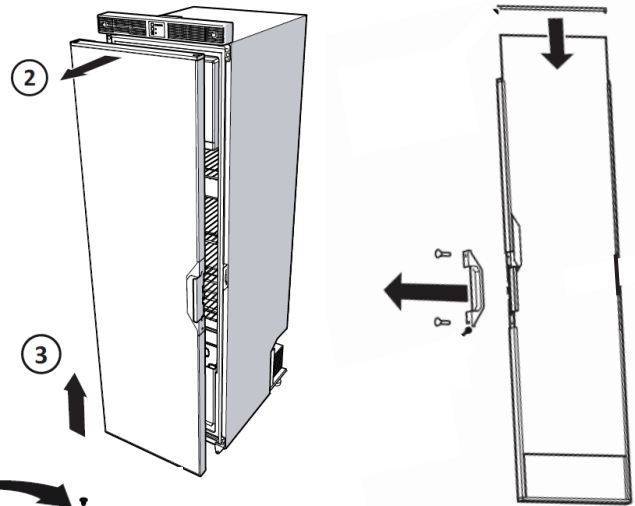
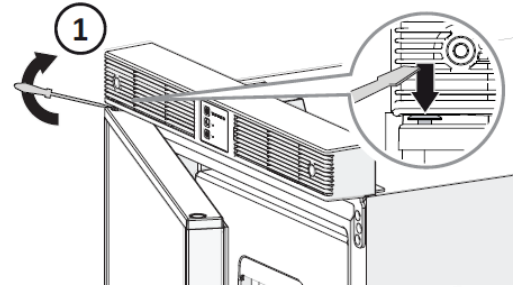
Perform the following visual checks to ensure proper installation:

- All packaging materials have been removed
- Drain hose is not pinched or blocked
- Ventilation openings are not blocked
- Electrical cables are not pinched or damaged
- Electrical cables are not routed close to heat sources or ignition sources
- Electrical connectors are seated correctly
- On/Off switch is functioning properly
- Interior light is working
- Crisper bins and door bins can be removed from the refrigerator
- Door can be closed correctly

Replace the Decorative Door Panel

To replace the decorative door panel:

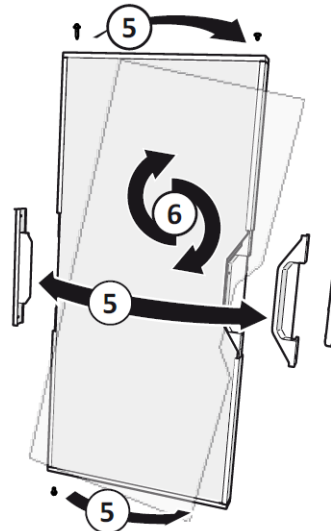
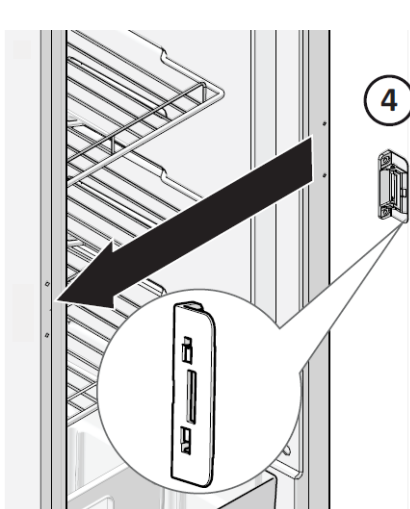
1. Remove the door
 - Open the door slightly and push the hinge pin down using a screwdriver [1]
 - Pull the hinge corner to the front [2]
 - Lift the door [3] out of the hinges
2. Remove the door handle cover by removing the 2 screws
3. Remove the panel retainer
4. Slide the old panel out of the door frame
5. Slide the new panel into the door frame
6. Click the panel retainer into place
7. Re-install the door handle with the 2 screws



Door Conversion

To convert the door swing, follow these steps:

1. Open the door slightly and push the hinge pin down using a screwdriver [1]
2. Pull the hinge corner to the front [2]
3. Lift the door [3] out of the hinges

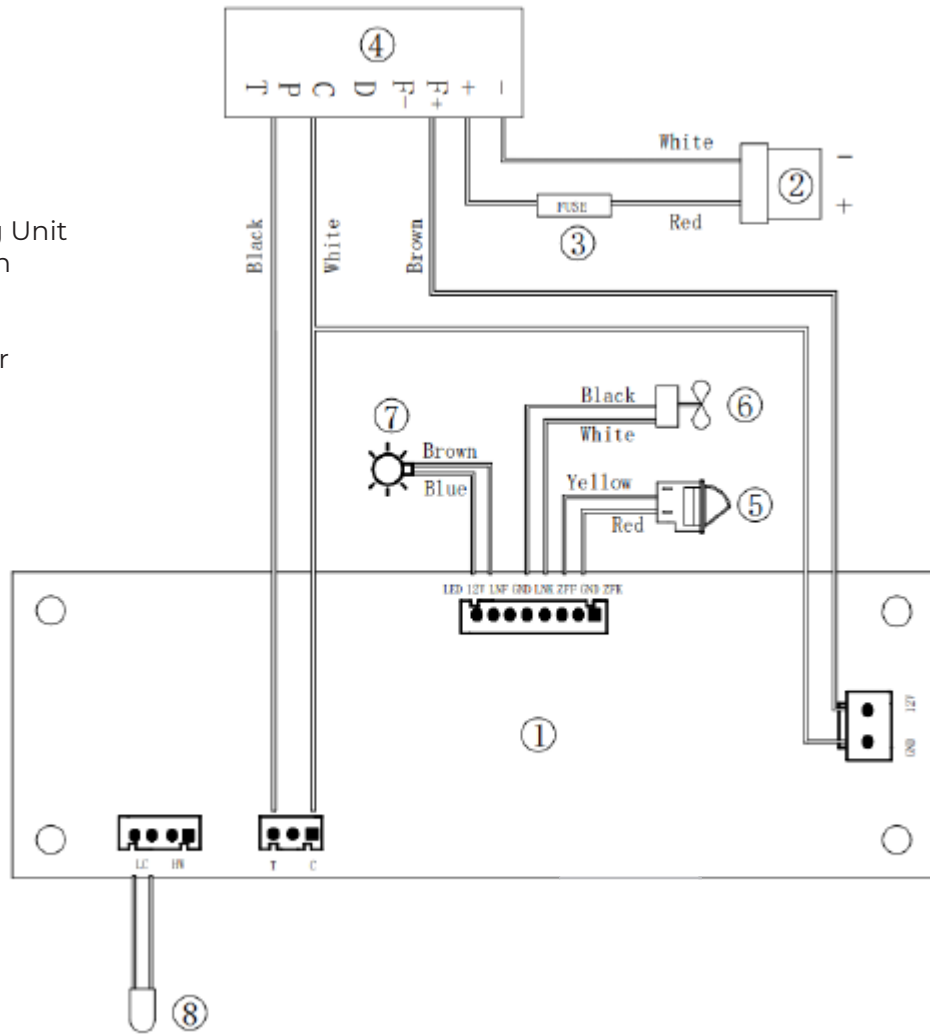


4. Move the lock [4] on the refrigerator from one side to the other
5. Move the hinges, hinge pin, hinge hole plug, and handle [5] from one side to the other
6. Turn the door panel 180 degrees [6]

Wiring Diagram

Key:

- 1. Main Control Panel
- 2. Input Power 12VDC
- 3. Fuse 15 A
- 4. Main PCBA Cooling Unit
- 5. Interior Light Switch
- 6. Fan Cooling Unit
- 7. Interior Light
- 8. Interior Refrigerator Thermistor



Troubleshooting

Problem	Possible Cause	Solution
Refrigerator is not cooling - Compressor does not run	Battery voltage too low	Recharge battery
	Start delay	No issue - may take up to 5 minutes
	Vehicle fuse has blown	Check fuse rating and replace fuse
Refrigerator is overcooling	Temperature setting too high	Lower the temperature setting
Refrigerator is not cooling - Compressor runs	Go to service center	
Refrigerator has insufficient cooling	Ventilation openings are completely or partially blocked	Clean or remove blockages
	Door is not properly closed	Close door/Check door seal
	Too much ice on evaporator	Defrost evaporator/Check door seal
Refrigerator makes more noise than normal	Warm products have been placed inside the refrigerator	Turn on night mode/Wait until the refrigerator has reached the selected temperature setting
	Refrigerator is turned on after it has been off for a long time	
	A low temperature setting is selected	
Refrigerator is not cooling - Compressor runs	Go to service center	
Refrigerator light is not working properly		



Service Information

If service or parts are required, contact the nearest Service Center. To find an authorized Service Center near you, visit our website at www.thetford.com/us.