



Installation Manual

for the 2117X series of RV Refrigerators

The letter “X”, in the model numbers above, stands for a letter or numeral which means a refrigerator option.



WARNING: Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information, contact a qualified installer, service agency, or the gas supplier.

FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and liquid in the vicinity of this or any other appliance.

FOR YOUR SAFETY

If you smell gas:

1. Open windows.
2. Don't touch electrical switches.
3. Extinguish any open flame.
4. Immediately call your gas supplier.



WARNING: DO NOT install this refrigerator in below deck marine applications. Do not install this refrigerator in a fixed indoor cabin or other dwelling applications. This refrigerator must use only NORCOLD designed and approved outside air intake and exhaust ventilation for correct and safe operation. Any other ventilation could cause lethal combustion exhaust fumes and/or explosive propane gas fumes to be in the living area and/or to be below deck.

English


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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.

 **WARNING:** This signal word means a hazard, which if ignored, can cause dangerous personal injury, death, or much property damage.

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

Safety Instructions



WARNING:

- This refrigerator is not approved for use as a free standing refrigerator. It is equipped for the use of propane gas only and can not be changed to use any other fuels (natural gas, butane, etc.).
- Incorrect installation, adjustment, alteration, or maintenance of this refrigerator can cause personal injury, property damage, or both.
- Obey the instructions in this manual to install intake and exhaust vents.
- Do not install the refrigerator directly on carpet. Put the refrigerator on a metal or wood panel that extends the full width and depth of the refrigerator.
- Do not allow anything to touch the refrigerator cooling system.
- Propane gas can ignite and cause an explosion that can result in property damage, personal injury, or death. Do not smoke or create sparks. Do not use an open flame to examine the propane gas supply line for leaks. Always use two wrenches to tighten or loosen the propane gas supply line connections.
- Make sure the electrical installation obeys all applicable codes. See “Certification and Code Requirements” section.
- Do not bypass or change the refrigerator’s electrical components or features.
- Do not spray liquids near electrical outlets, connections, or the refrigerator components. Many liquids are electrically conductive and can cause a shock hazard, electrical shorts, and in some cases fire.
- The refrigerator cooling system is under pressure. Do not try to repair or to recharge a defective cooling system.
- The cooling system contains sodium chromate. The breathing of certain chromium compounds can cause cancer. The cooling system contents can cause severe skin and eye burns, and can ignite and burn with an intense flame. Do not bend, drop, weld, move, drill, puncture, or hit the cooling system.



CAUTION:

- The rear of the refrigerator has sharp edges and corners. To prevent cuts or abrasions when working on the refrigerator, use caution and wear cut resistant gloves.
- Make sure that the refrigerator is stored in a location so that it is not exposed to the elements of the weather.

Certification and Code Requirements

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

The installation must obey these standards and this “Installation Manual” for the NORCOLD limited warranty to be in effect. Installation must conform with the following as applicable:



Art01290



In the United States and Canada:

- Local codes, or in the absence of local codes, the National Fuel Gas Code, ANSI Z223.1/NFPA 54, the Natural Gas and Propane installation Code, CSA B149.1, ANSI A119.2 Recreational Vehicles Code, and CSA Z240 RV Series, Recreational Vehicles.
- A manufactured home (mobile home) installation must conform with the Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 3280 [formerly the Federal Standard for Mobile Home Construction and Safety, Title 24 (part 280), and the current CSA Z240.4, Gas-equipped Recreational Vehicles and Mobile Housing.
- If an external power source is utilized, the appliance, when installed, must be electrically grounded in accordance with local codes or, in the absence of local codes, the National Electrical code, and ANSI/NFPA 70, or the Canadian Electrical Code, CSA C22.2. Parts 1 and 2.

All propane gas supply piping and fittings must obey local, state, and national codes about type and size. These components must also obey the current NFPA 501C section 2-4, and in Canada with the current CAN 1-6.10 Standard.

Ventilation Requirements



WARNING: The completed installation must:

- Make sure there is sufficient intake of fresh air for combustion.
- Make sure the living space is completely isolated from the combustion system of the refrigerator.
- Make sure there is complete and unrestricted ventilation of the flue exhaust which, in gas mode, can produce carbon monoxide. The breathing of carbon monoxide fumes can cause dizziness, nausea, or in extreme cases, death.
- Make sure the refrigerator is completely isolated from its heat generating components through the correct use of baffles and panel construction.

Certified installation needs one lower intake vent and one upper exhaust vent. Install the vents exactly as written in this manual. Any other installation method voids both the certification and the factory warranty of the refrigerator.

The bottom of the opening for the lower intake vent, which is also the service access door, must be even with or immediately below the floor level. This allows any leaking propane gas to escape to the outside and not to collect at floor level.

CSA International certification allows the refrigerator to have zero (0) inch minimum clearance at the sides, rear, top, and bottom. While there are no maximum clearances specified for certification, the following maximum clearances are necessary for correct refrigerator performance:

Bottom	0 inch min.	0 inch max.
Each Side	0 inch min.	1/2 inch max.
Top	0 inch min.	1/4 inch max.
Rear	0 inch min.	1 inch max.

These clearances plus the lower and upper vents allow the natural air draft that is necessary for good refrigeration. Cooler air comes in through the lower vent, goes up around the refrigerator coils where it removes the excess heat from the refrigerator components, and goes out through the upper vent.

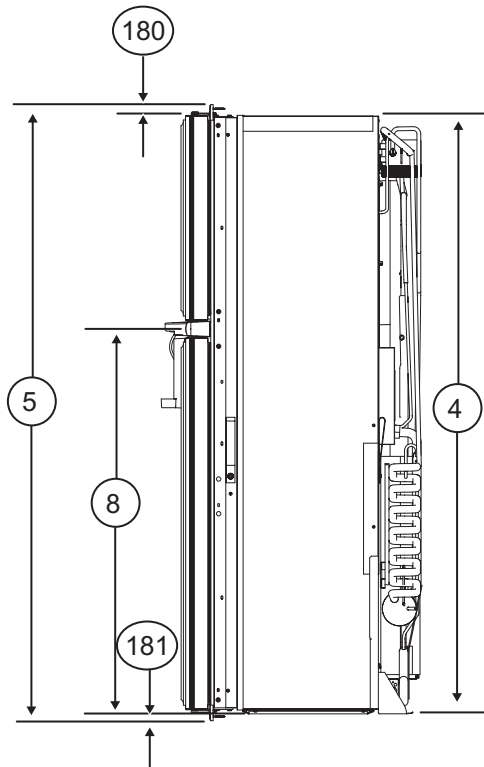
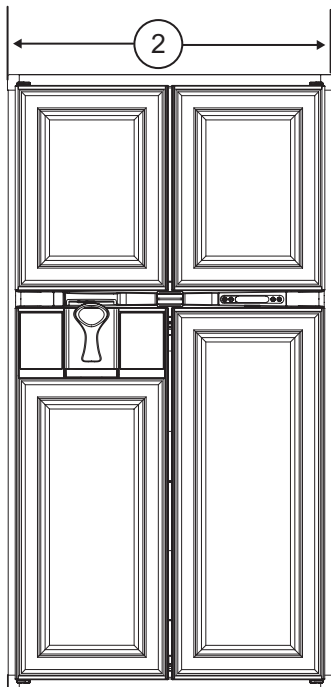
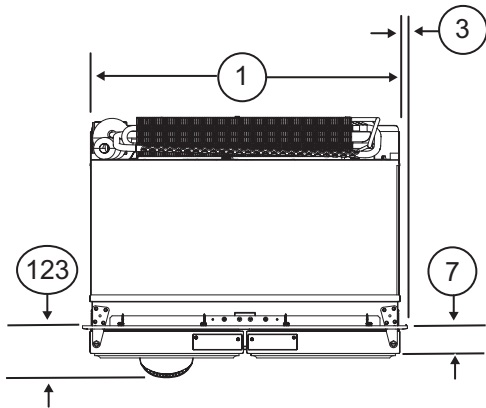
The refrigerator also has two thermostat controlled fans to move air across the cooling system. These fans turn on when the condenser fin temperature at the thermostat is about 130° F or higher and only when the refrigerator controls are on. These fans turn off when the condenser fin temperature at the thermostat is about 115° F or less. Even with these fans, if the air flow is blocked or decreased, the refrigerator will not cool correctly.

Each NORCOLD model is certified by CSA International for correct ventilation. Install only the certified vents that are listed in this manual.

Key Refrigerator Dimensions

These key refrigerator dimensions are for your reference as necessary (See Art01801).

Refrigerator cabinet width w/o trim - 35.6 in.	1
Refrigerator width overall w/ trim - 37.3 in.	2
Refrigerator cabinet to side trim - .90 in.	3
Refrigerator cabinet height w/o trim - 68.6 in.	4
Refrigerator height overall w/ trim - 70.6 in.	5
Refrigerator cabinet to top trim - 1.20 in.	180
Refrigerator bottom rail to bottom trim - 0.80 in.	181
Enclosure wall to door fronts - 3.2 in.	7
Refrigerator bottom rail to center of handles - 44.1 in.	8
Enclosure wall to door (w/dispenser) - 6.0 in.	123

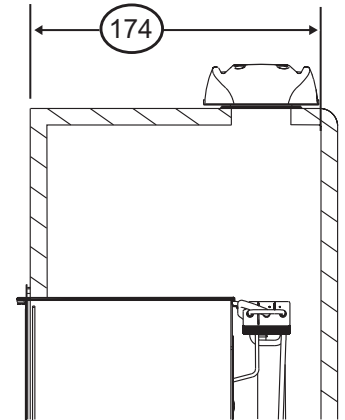


Art01801

Assemble the Enclosure for the Refrigerator

1. Make sure the enclosure shelf is solid and level. The enclosure shelf must be:
 - a metal or a wood panel and extend the full width and depth of the enclosure.
 - able to support the weight of the refrigerator and its contents.
 - level to maintain door alignment.
2. Make sure there are no adjacent heat sources such as a furnace vent, a hot water heater vent, etc.
3. Make sure the enclosure is 68.94 - 69.06 inches high x 35.94 - 36.04 inches wide x 24.00 - 24.13 inches deep.

NOTE: Measure the enclosure depth [174] from the interior face of the enclosure to the inside of the rear wall (See art01763).



Art01763

4. If there is more than 1/2 inch between either side of the refrigerator and the inside of the enclosure:
 - Fill the space with fiberglass (batt-type) insulation or add a baffle to eliminate the clearance.
 - The rear of the batt-type insulation must be between 18 -19 inches from the face of the enclosure.
 - Securely attach the batt-type insulation to the enclosure, so that it remains in this position during refrigerator installation, if it becomes wet, and in windy conditions.
5. The enclosure face must be perpendicular to the enclosure shelf to provide a combustion seal.
6. The cutout opening must be square and perpendicular to the enclosure shelf to maintain door alignment.
7. Using the following chart, decide which vents and rough opening (RO) sizes to use:

Certified Vent	P/N	RO Height	RO Width
Upper Roof Exhaust Cap	622293	N/A	N/A
	625240	N/A	N/A
Upper Roof Exhaust Vent	616319	24 in.	5 1/4 in.
	625161	24 in.	5 1/4 in.
Upper Plastic Exhaust & Lower Intake	628073	13 3/4 in.	29 5/16 in.

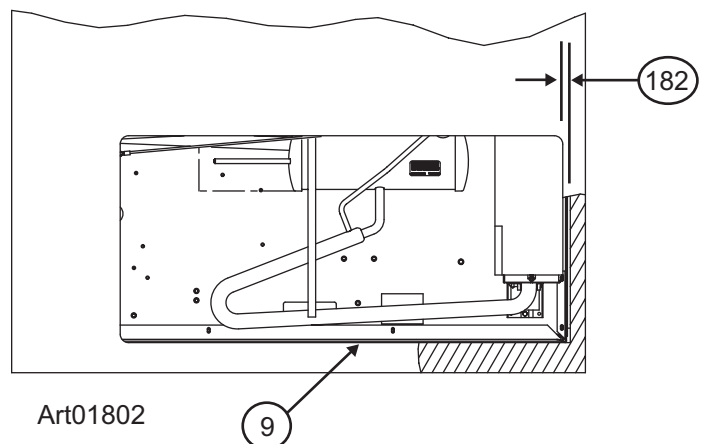
Install the Lower Intake Vent

Install the lower intake vent (See Art01802):

NOTE: The lower intake vent is also the service access opening for the components on the rear of the refrigerator.

WARNING: Make sure the bottom of the opening of the lower intake vent is even with or immediately below the floor level. This allows any leaking propane gas to escape to the outside and not to collect at floor level.

- Make sure the bottom of the opening of the lower intake vent [9] is even with or immediately below the floor level.
- Make sure that the opening for the lower intake vent is between 1/2 inch and 1 inch [182] from the burner side of the refrigerator enclosure.



Art01802

Install an Upper Roof Exhaust Vent

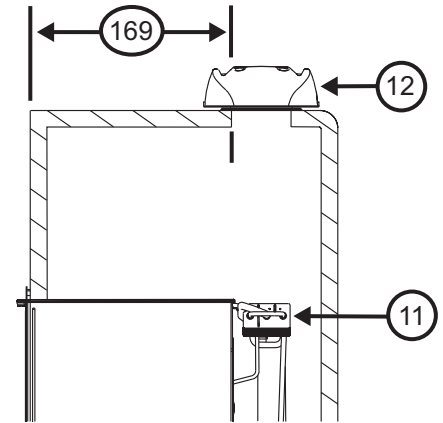
1. Install the upper roof exhaust vent.

CAUTION: Make sure that no sawdust, insulation, or other construction debris is on the refrigerator or in the enclosure. Debris can cause a combustion hazard and prevent the refrigerator from operating correctly.

NOTE: Tighten the screws of the upper roof exhaust cap to 10 inch-pounds max. Also make sure that the air flow around the upper roof exhaust cap is not blocked or decreased by other roof mounted features such as a luggage carrier, an air conditioner, a solar panel, etc.

2. Align the upper roof exhaust vent above the lower intake exhaust vent:

3. Determine the type of enclosure in a vehicle using an upper roof exhaust vent (See Art01756):



Art01756

- If the distance from the face of the enclosure to the inboard edge of the roof exhaust vent opening [169] is more than 17 1/2 inches, install the roof exhaust vent [12] directly above the condenser [11] of the refrigerator as a vertical enclosure.

- If the distance from the face of the enclosure to the inboard edge of the roof exhaust vent opening [169] is 17 1/2 inches or less, install the roof exhaust vent [12] inboard from the condenser [11] of the refrigerator as an offset vertical enclosure.

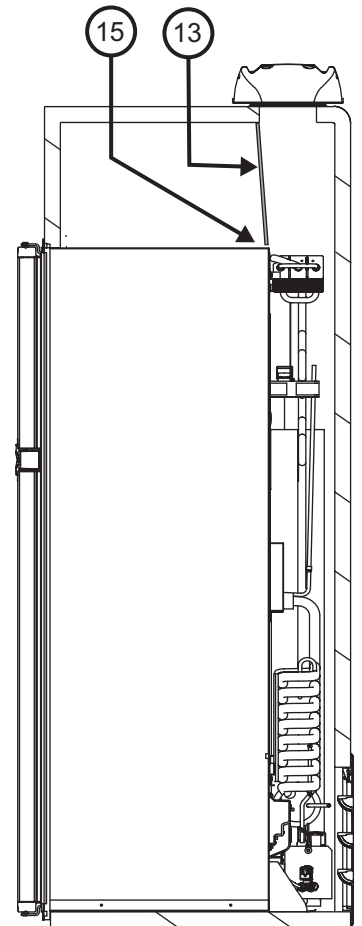
Install the Baffles for an Upper Roof Exhaust Vent

CAUTION: Make sure that all horizontal baffles are the full width of the inside of the enclosure and are in the correct location. If the baffles are not the full width of the enclosure or incorrectly located, poor cooling performance can result.

Vertical enclosures:

If the enclosure depth is 24 inches or more and less than 25 inches (See Art01780):

- Install a top baffle [13].
 - Make sure there is less than 1/4 inch clearance [15] between the baffle and the top of the refrigerator.



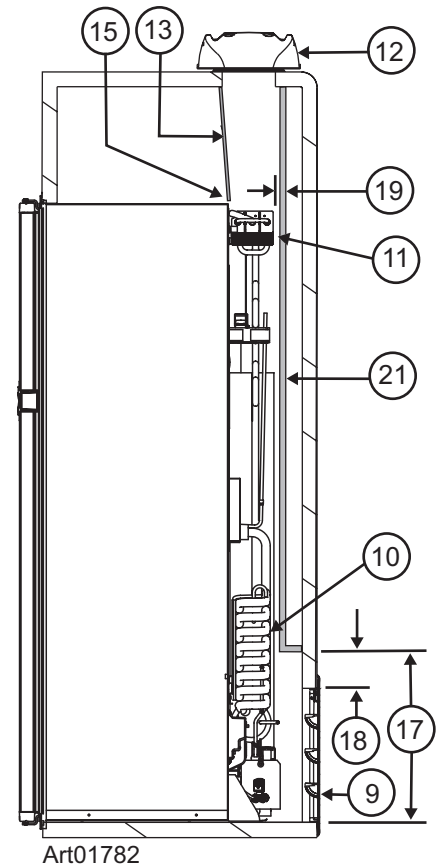
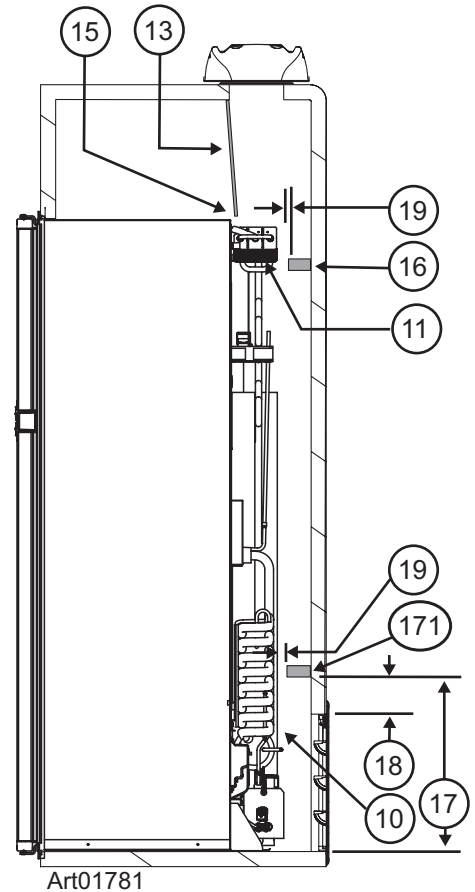
Art01780

If the enclosure depth is 25 inches or more and less than 26 inches (See Art01781):

- Install a top baffle [13].
 - Make sure that the top baffle is less than 1/4 inch [15] from the top of the refrigerator.
- Install a condenser baffle [16] at the lowest edge of the condenser of the refrigerator.
 - Make sure that the condenser baffle is 1 inch or less [19] from the condenser.
- Install an absorber baffle [171] 18 inches to 18 1/2 inches above the bottom of the enclosure [17] (4 1/4 inches to 4 3/4 inches above the top of the lower intake vent opening) [18] .
 - Make sure that the absorber baffle is 1 inch or less [19] from the absorber.

If the enclosure depth is 26 inches or more (See Art01782):

- Install a top baffle [13].
 - Make sure that the top baffle is less than 1/4 inch [15] from the top of the refrigerator.
- Install a wood or an aluminum or galvanized sheet solid box baffle [21] in the rear of the enclosure.
 - Make sure that the bottom of the solid box baffle is 18 inches to 18 1/2 inches above the bottom of the enclosure [17] (4 1/4 inches to 4 3/4 inches above the top of the lower intake vent opening) [18] .
 - Make sure that the back of the solid box baffle is perpendicular to the bottom of the enclosure.
 - Make sure that the back of the solid box baffle is against the top of the enclosure.
 - Make sure that the solid box baffle is one inch or less [19] from the coils [10] and condenser [11] of the refrigerator.
 - Make sure that the solid box baffle is the full width of the inside of the enclosure.



Offset vertical enclosures:

If the enclosure depth is 24 inches or more and less than 25 inches (See Art01783):

- Install an angled top baffle [172] between the top rear edge of the refrigerator and the inside edge of the upper exhaust vent opening.
- Make sure that the angled top baffle is less than 1/4 inch [15] from the top of the refrigerator.
- Make sure that the angled top baffle is no more than 45° from vertical [20].
- Install an inside corner baffle [173] between the outside edge of the upper exhaust vent opening and the side wall of the vehicle.
- Make sure that the inside corner baffle is approximately parallel to the angled top baffle.

If the enclosure depth is 25 inches or more and less than 26 inches (See Art01784):

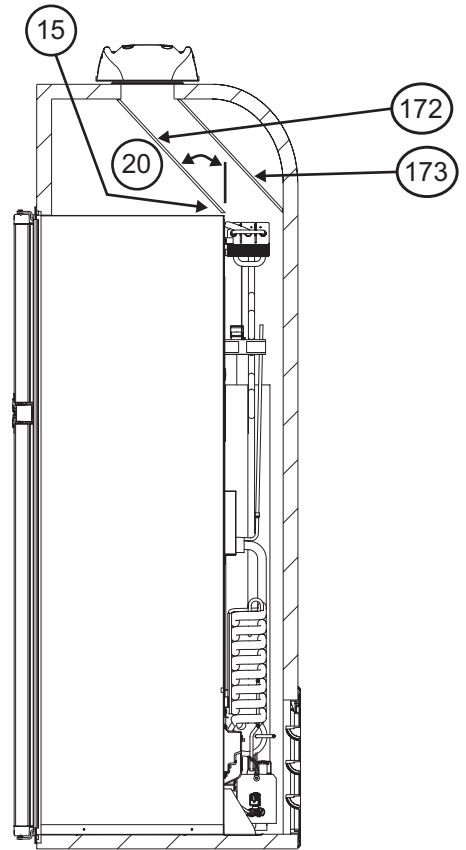
- Install an angled top baffle [172] between the top rear edge of the refrigerator and the inside edge of the upper exhaust vent opening.
- Make sure that the angled top baffle is less than 1/4 inch [15] from the top of the refrigerator.
- Make sure that the angled top baffle is no more than 45° from vertical [20].
- Install an inside corner baffle [173] between the outside edge of the upper exhaust vent opening and the side wall of the vehicle.
- Make sure that the inside corner baffle is approximately parallel to the angled top baffle.

- Install a condenser baffle [16] at the lowest edge of the condenser of the refrigerator.

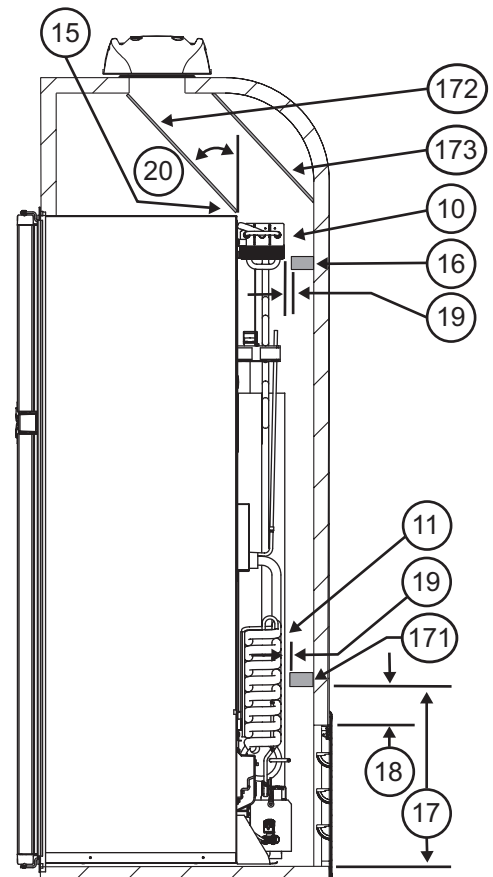
- Make sure that the condenser baffle is 1 inch or less [19] from the condenser.

- Install an absorber baffle [171] 18 inches to 18 1/2 inches above the bottom of the enclosure [17] (4 1/4 inches to 4 3/4 inches above the top of the lower intake vent opening) [18] .

- Make sure that the absorber baffle is 1 inch or less [19] from the absorber.



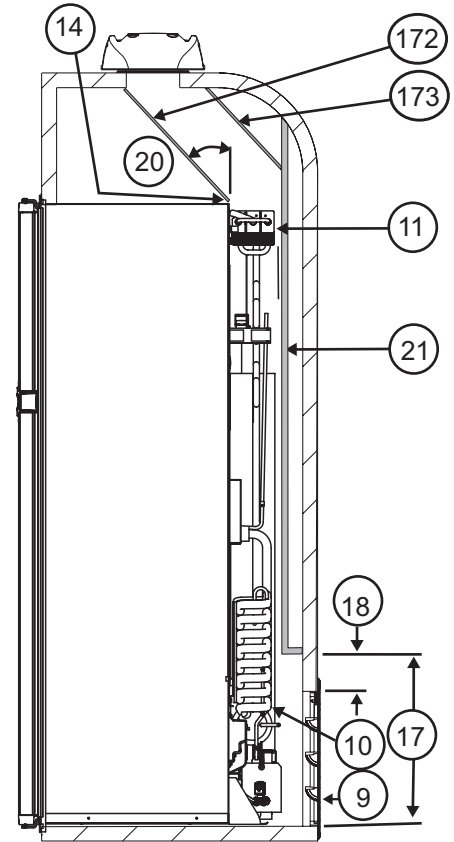
Art01783



Art01784

If the enclosure depth is 26 inches or more (See Art01785):

- Install an angled top baffle [172] between the top rear edge of the refrigerator and the inside edge of the upper exhaust vent opening.
 - Make sure that the angled top baffle is less than 1/4 inch from the top of the refrigerator.
 - Make sure that the angled top baffle is no more than 45° from vertical [20].
- Install an inside corner baffle [173] between the outside edge of the upper exhaust vent opening and the solid box baffle.
 - Make sure that the inside corner baffle is approximately parallel to the angled top baffle.
- Install a wood or an aluminum or galvanized sheet solid box baffle [21] in the rear of the enclosure.
 - Make sure that the bottom of the solid box baffle is 18 inches to 18 1/2 inches above the bottom of the enclosure [17] (4 1/4 inches to 4 3/4 inches above the top of the lower intake vent opening) [18].
 - Make sure that the back of the solid box baffle is perpendicular to the bottom of the enclosure.
 - Make sure that the back of the solid box baffle is either against the top of the enclosure or against the inside corner baffle [173] (depending on the vehicle design).
 - Make sure that the solid box baffle is one inch or less from the coils [10] and condenser [11] of the refrigerator.
 - Make sure that the solid box baffle is the full width of the inside of the enclosure.

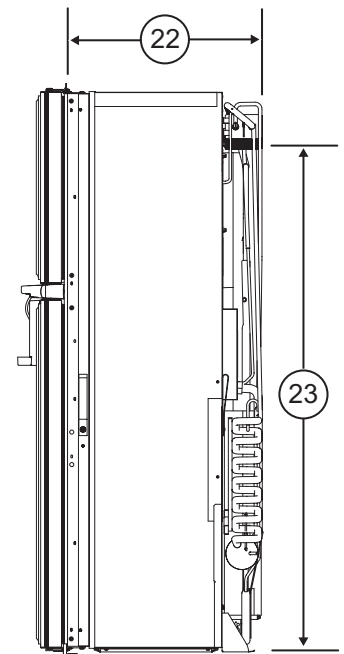


Art01785

Install an Upper Side-Wall Exhaust Vent

If the design of the vehicle does not allow you to install a roof exhaust vent, install an upper side-wall exhaust vent:

- NOTE: The refrigerator is 23.75 in. min. to 24.05 in. max. from the rear of the breaker to the rear of the condenser [22] and is 61.35 in. min. to 61.65 in. max. from the bottom of the refrigerator to the bottom of the refrigerator condenser [23] (See Art01803).
- Install the upper side-wall exhaust vent [24] so that the distance [25] from the bottom of the enclosure to the top of the rough opening for the upper exhaust vent is at least 71.0 inches (See Art01803 and Art01806).
 - Align the upper exhaust vent horizontally above the lower intake vent [9].



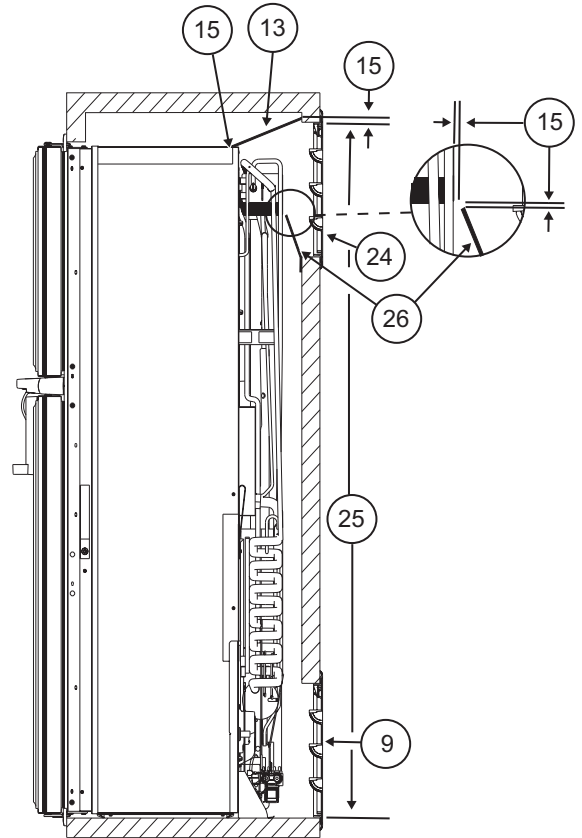
Art01803

Install the Baffles for an Upper Side-Wall Exhaust Vent

CAUTION: Make sure that all horizontal baffles are the full width of the inside of the enclosure and are in the correct location. If the baffles are not the full width of the enclosure or incorrectly located, poor cooling performance can result.

If the enclosure depth is 24 inches or more and less than 26 inches (See Art01806):

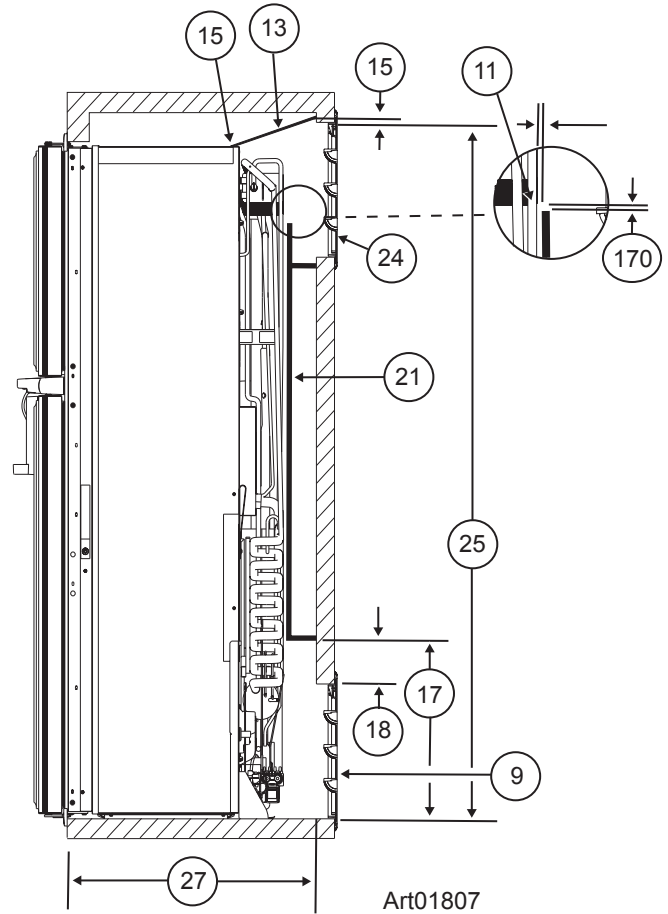
- Install a wood, aluminum or galvanized steel top baffle [13] between the top of the refrigerator and the top of the upper exhaust vent [24].
 - Make sure that the top baffle is less than 1/4 inch [15] from the top of the refrigerator and baffle overlaps the refrigerator 1 inch or less.
 - Make sure that the baffle is against the wall of the vehicle at the top of the upper exhaust vent and less than 1/4 inch above the opening for the upper exhaust vent.
- Install an aluminum or galvanized steel bent-sheet condenser baffle [26].
 - Make sure that the bend of the condenser baffle is the full width of the inside of the enclosure.
 - Make sure that the bend of the condenser baffle is flush with the bottom edge of the door frame of the upper side-wall exhaust vent.
 - Make sure that the top edge of the condenser baffle is 1/4 inch or less [15] from the lower rear corner of the condenser.



Art01806

If the enclosure depth is 26 inches or more (See Art01807):

- Install a wood, aluminum or galvanized steel top baffle [13] between the top of the refrigerator and the top of the upper exhaust vent [24].
 - Make sure that the top baffle is less than 1/4 inch [15] from the top of the refrigerator and that the baffle overlaps the refrigerator 1 inch or less.
 - Make sure that the baffle is against the wall of the vehicle at the top of the upper exhaust vent and less than 1/4 inch [15] above the opening for the upper exhaust vent.
- Install a solid box baffle [21] between the lower intake vent and the upper exhaust vent.
 - Make the solid box baffle either from wood or from an aluminum or galvanized-steel sheet.
 - Make sure that the bottom of the solid box baffle is 18 inches to 18 1/2 inches above the bottom of the enclosure [17] (4 1/4 inches to 4 3/4 inches above the top of the lower intake vent opening REF) [18].
 - Make sure that the back of the solid box baffle is perpendicular to the bottom of the enclosure.
 - Make sure that the horizontal top of the solid box baffle is even with the bottom edge of the upper exhaust vent [24].
 - Make sure that the vertical top edge of the solid box baffle is 1/2 inch or less [170] below and 1/4 inch or less behind [15] the lower rear corner of the condenser [11].



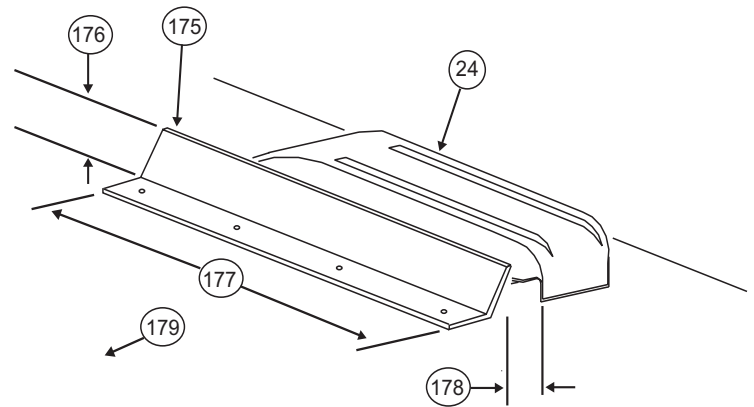
Install an Air Deflector (optional)

If the floor plan has the refrigerator on the rear wall of the vehicle, obey all of the vent installation as written in the "Install the Lower and Upper Vents" section of this manual. Install the roof exhaust vent so that:

- The sloped end of the roof exhaust vent is toward either side of the vehicle.
- The roof exhaust vent is perpendicular to the air flow over the vehicle.

Install an air deflector on the roof of the vehicle between the roof exhaust vent and the front of the vehicle (See Art01767).

- Make sure that the air deflector [175] is between the roof exhaust vent [24] and the front of the vehicle [179].
- Make sure that the air deflector is at least 3 1/2 inches high [176].
- Make sure that the overall width [177] of the air deflector is 32 7/8
- Make sure that the distance between the air deflector and the roof exhaust vent is between 2 and 3 inches [178].

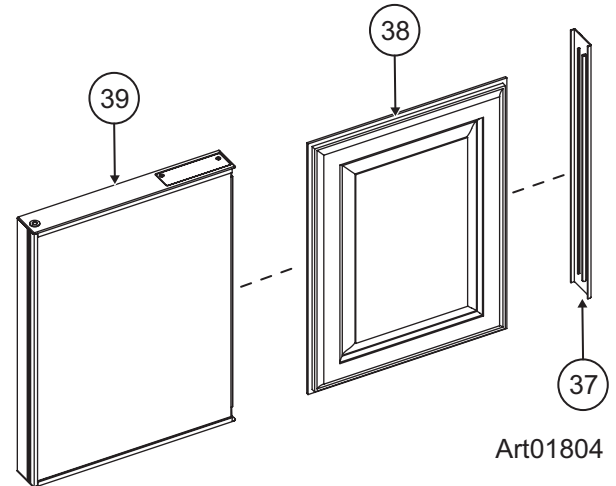


Install Decorative Door Panels (non-metal door models)

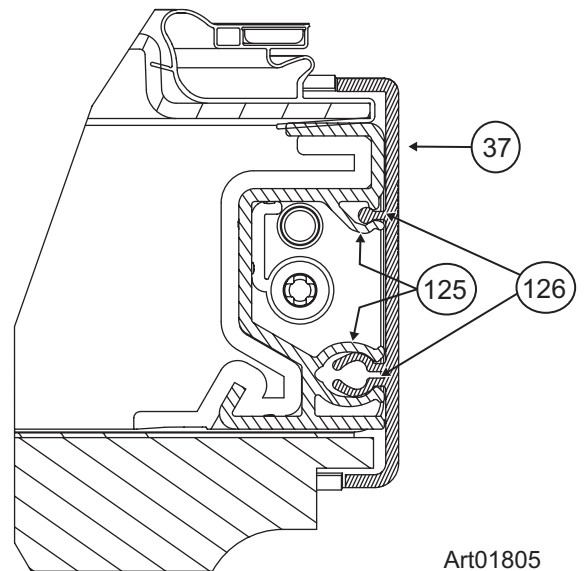
NOTE: The doors are made to accept decorative panels. The decorative panels must be 3/16 inch or less in thickness. Install the decorative door panels in the refrigerator doors before installing the refrigerator in the vehicle.

1. Make two upper door panels that are 17 1/4 inches wide x 23 1/8 inches high:
 - Raised panels must be centered on each door and no larger than 16 1/2 inches wide x 22 3/8 inches high.
2. Make two lower door panels that are 17 1/4 inches wide x 42 5/16 inches high:
 - Raised panels must be centered on each door and no larger than 16 1/2 inches wide x 41 9/16 inches high.

3. Install the decorative door panels:
 - Pull the panel retainer [37] off of each door [39] (See Art01804).
 - Push a decorative door panel [38] into the slots of each door.
 - Make sure that each panel retainer is correctly positioned and push the curved snaps [125] of the panel retainer [37] inside of the curved snaps [126] of the door (See Art01805).



Art01804



Art01805

Install the Refrigerator

When manually (by hand) or mechanically (by hoist , lift truck, etc.) handling a refrigerator that is not installed in an enclosure, the best method is while the refrigerator is in its original packaging.

If the refrigerator is not in its original packaging, use the handling straps [183] of the refrigerator cabinet as the primary load carrying points (See Art01808). There are two (2) handling straps on both the right and left side of the refrigerator cabinet.

These handling straps may be used to lift, move, and tilt the refrigerator. Norcold recommends that all lifting, moving, and tilting of the refrigerator is always done by at least 2 persons.

CAUTION: Use only the handling straps to lift, move, and tilt the refrigerator. Using any part of the refrigerator other than the handling straps, to lift, move, or tilt it can result in damage to the refrigerator.

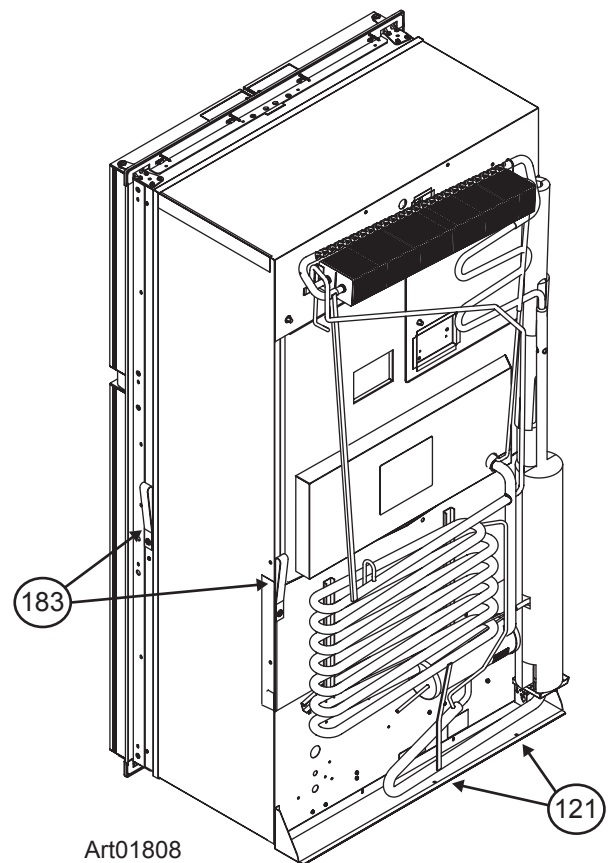
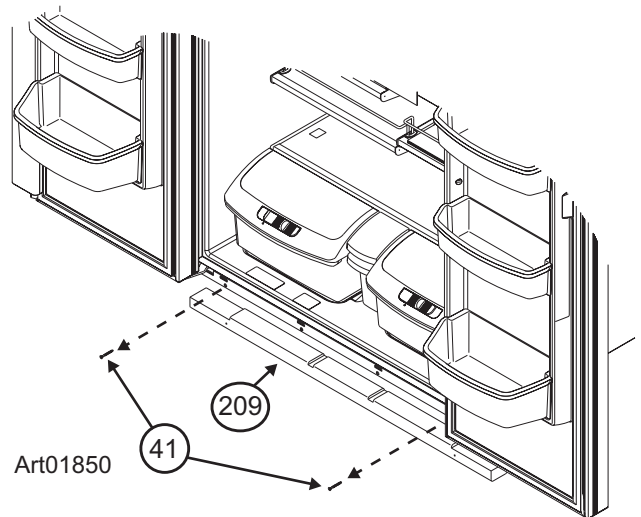
1. Remove the packaging support block (See Art01850):

- Open both lower doors of the refrigerator.
- Remove and discard the two screws [41] from the front of the lower mounting flange of the refrigerator.
- Tilt the refrigerator back just enough to remove the wooden packaging support block [209] from behind the lower mounting flange.
- Close the doors.

2. Put the refrigerator completely into the enclosure:

- Push below the center of the refrigerator.
- Pull using a wire-form tool hooked into mounting holes [121] of the refrigerator frame (See Art01808).

WARNING: Make sure the foam combustion seal is not broken, is completely around the refrigerator mounting flanges, and is between the mounting flanges and the wall of the enclosure. If the seal is not complete, exhaust fumes can be present in the living area of the vehicle. The breathing of exhaust fumes can cause dizziness, nausea, or in extreme cases, death.



3. Put the refrigerator in position:



WARNING: Make sure the combustion seal is not broken, is completely around the refrigerator mounting flanges, and is between the mounting flanges and the wall of the enclosure. If the seal is not complete, exhaust fumes can be present in the living area of the vehicle. The breathing of exhaust fumes can cause dizziness, nausea, or in extreme cases, death.

NOTE: Be careful when you put the refrigerator into position. The refrigerator has vacuum insulating panels on the top and sides. If punctured, these panels lose insulation value which decreases the cooling performance of the refrigerator. It is not necessary to remove the protective packaging from the doors of metal door models to install or operate the refrigerator.

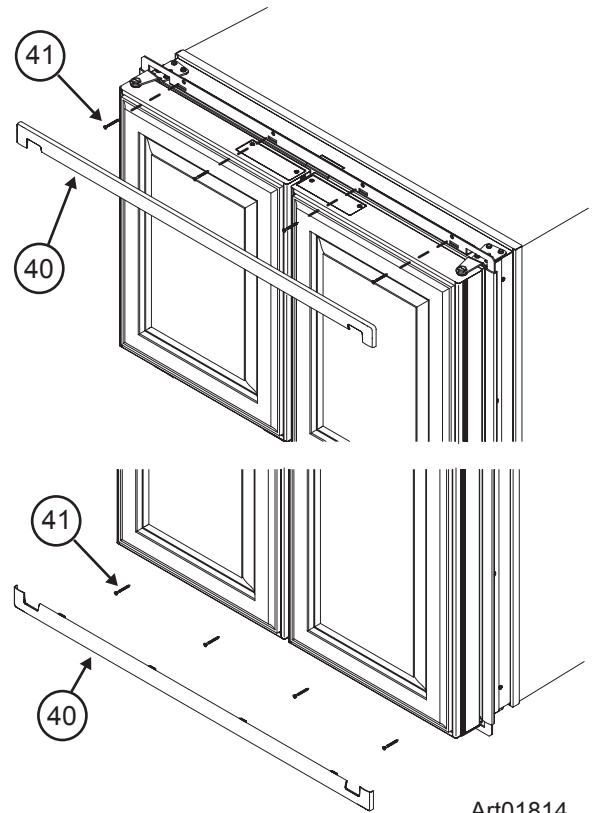
- Make sure that the flue cap is not pushed down against the top of the flue tube.
- Push the refrigerator completely into the enclosure.

4. Install the mounting screws and trim (See Art01814):

- Put the four screws [41] through both the upper and the lower mounting flanges on the front of the refrigerator and into the enclosure wall.
- Push the trim pieces [40] onto the front of the refrigerator.
- Put screws through the mounting flange on the rear of the refrigerator and into the floor.

5. On metal door models only, you may wish to remove the protective packaging from the doors.

NOTE: Be careful to not scratch or dent the metal doors. Do not use any abrasive cleaners, chemicals, or scouring pads because they can damage the finish of the doors.



Art01814

Connect the Electrical Components

This refrigerator operates on these electrical sources. Operation out of these limits may damage the refrigerator's electrical circuit parts and will void the warranty.

AC Operation	120 volts AC voltage	(132 volts max. - 108 volts min.)
	12 volts DC control voltage	(15.4 volts max. - 10.5 volts min.)

WARNING: The rear of the refrigerator cooling system has hot surfaces and sharp surfaces that can damage electrical wiring. Make sure that there is a good clearance between all electrical wiring and the cooling system of the refrigerator. Position any electrical wiring within the refrigerator enclosure opposite the burner side of the refrigerator. Do not put any electrical wiring through the roof exhaust vent. Failure to correctly position electrical wiring can result in electrical shock or fire.

Connect the 120 volts AC supply:

WARNING: Connect the AC power cord(s) only to a grounded three-prong receptacle. Do not remove the round ground prong from the AC power cord of the refrigerator or the ice maker (optional). Do not use a two prong adapter or an extension cord with either AC power cord. Operation of the refrigerator without correct ground can cause dangerous electrical shock or death if you are touching the metal parts of the refrigerator.

Put the AC power cord(s) into a grounded three-prong receptacle:

- Make sure the receptacle is positioned within easy reach of the lower intake vent.
- Make sure the power cord(s) does not touch the burner cover, the flue pipe, or any hot component that could damage the insulation of the power cord.

Connect the 12 volts DC supply:

The refrigerator controls operate on 12 VDC power. As the distance from the vehicle battery to the refrigerator increases, the correct AWG wire size and fuse size also increases. If the wire size is too small for the distance, a voltage drop occurs.

WARNING: If you use an incorrect wire size and/or fuse size, electrical fire can result.

1. To determine the correct wire and fuse size, measure the distance between the vehicle battery to the refrigerator:

- If the distance is 0-20 feet, use a minimum of 10 AWG wire and a maximum 30 Amp fuse.
- If the distance is over 20 feet, use a minimum of 8 AWG wire and a maximum 40 Amp fuse.
- If the wire size is larger than the min. size, use the correct fuse per RVIA A119.2 standard or local codes.

2. Install a fuse in DC power supply wires between the battery and the refrigerator:

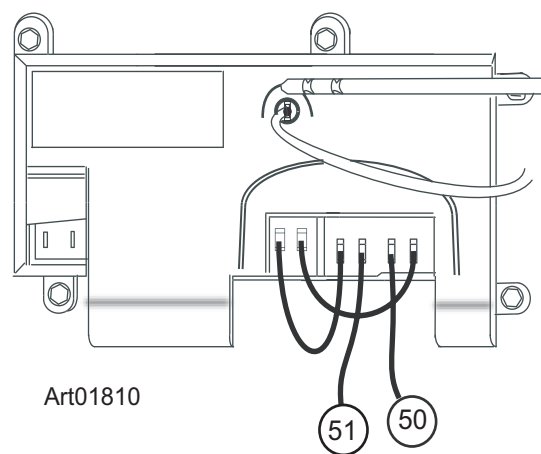
- Put fuse as close to the battery as possible.

3. Connect the DC power supply wires (See Art01810):

- Attach a 1/4 inch Quick Connect terminal to each DC power supply wire.

NOTE: Do not use the chassis of the refrigerator or the vehicle frame as one of the conductors.

- Connect the positive DC power wire [50] to the terminal on the power board [49] that is marked 12VDC.
- Push the DC ground wire [51] onto the terminal of the power board [49] that is marked GND.
- Make sure each DC power supply wire is on the correct polarity terminal.



Connect the Propane Gas Components

This refrigerator operates on propane gas at a pressure of 11 inches Water Column Propane.

The controls operate on 12 volts DC (10.5 volts min. - 15.4 volts max.). Operation out of these limits can damage the refrigerator electrical circuit parts and will void the warranty.

Connect the propane gas supply system:



WARNING: Be very careful when working on or near the propane gas system.

- Do not smoke, or use an open flame near the propane gas system.
- Do not use an open flame to examine for leaks.
- Do not connect the refrigerator to the propane gas tank without a pressure regulator between them.
- To avoid a propane gas leak, always use two wrenches to tighten or loosen the propane gas supply line connections.
- Leaking propane gas can ignite or explode and result in dangerous personal injury or death.

Connect the gas supply line to the refrigerator:

- Make sure that all tubing and fittings obey all local, state, and national codes about size and type.
- Make sure that all flexible metal connectors obey the current CAN1-6.10 Standard.
- Make sure that the materials used for the gas supply line obey both the current ANSI A 119.2 (NFPA 1192) and CSA Z240 Standards on Recreational Vehicles. Norcold recommends the use of 3/8 inch copper tubing as the gas supply line and requires a 3/8 inch SAE (UNF 5/8-18) male flare fitting as the connection to the refrigerator.
- Put the propane gas supply line up through the floor of the enclosure.
- Make sure the hole through the floor is large enough allow clearance for the gas supply line.
- Put a weather resistant seal (grommet, sealant, etc.) around the gas supply line where it goes through the floor to prevent vibration and abrasion.
- To prevent vibration and abrasion, make sure that the gas supply line is not against anything in the enclosure.
- Attach the gas supply line to the bulkhead fitting of the refrigerator.

Examine the propane gas supply line for leaks:



WARNING: Do not allow the leak detecting solution to touch the electrical components. Many liquids are electrically conductive and can cause electrical shorts and in some cases, fire.

Use a leak detecting solution to examine the gas supply line and all propane gas connections for leaks.

If you use compressed air for the test:

- The pressure of the compressed air at the manual shut off valve of the refrigerator must not be more than 1/2 psig (14 inches Water Column).
- If the pressure of the compressed air is more than 1/2 psig (14 inches Water Column), remove the gas supply line from the bulkhead fitting of the refrigerator before the test.
- If the pressure of the compressed air is equal to or less than 1/2 psig (14 inches Water Column), close the manual shut off valve of the refrigerator before the test.

Connect the Ice Maker

The ice maker is assembled to the refrigerators at the factory.

The refrigerator installer must connect a cold water supply line to the solenoid valve at the rear of the refrigerator. The following are necessary to connect the icemaker:

- 1/4 in. OD copper tubing for the water supply line.

OR

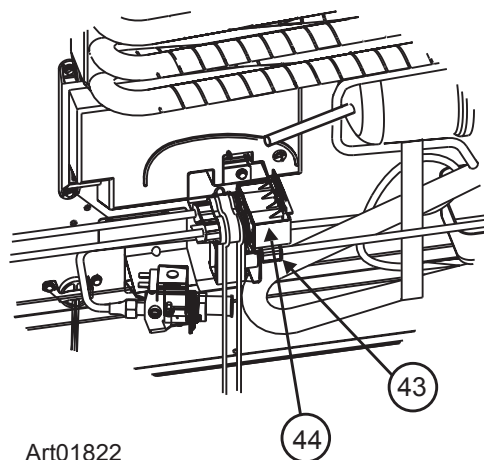
- 1/4 in. OD plastic tubing for the water supply line.
- 1/4 in. shut off valve in the water supply line. This should be easily accessible through the lower intake vent.

Connect the water supply line:

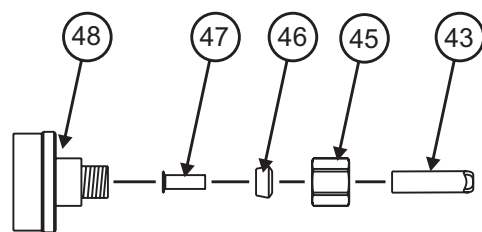
Install a 1/4 in. OD water supply line [43] from the water shut off valve [44] of the vehicle to the solenoid water valve [44] at the rear of the refrigerator (See Art01822):

NOTE: A brass compression nut [45], a brass sleeve, a plastic sleeve [46], and a brass insert [47] are supplied and attached to the rear of the refrigerator (See Art01604).

- Put the compression nut and then the sleeve onto the water supply line [43].
 - For copper tubing, use the brass sleeve.
 - For plastic tubing, use the plastic sleeve [46].
 - For plastic tubing with .040 in. wall thickness, also use the brass insert [47].
 - Flush the water supply line until the water is clear.
- Put the tubing into the adapter [48] until it is against the stop of the adapter.
- Tighten the compression nut by hand (hard finger tight).
- Using two wrenches, tighten the compression nut 1 1/2 to 2 turns.
- Open the water shut off valve of the vehicle.
- Examine the connections for leaks.



Art01822



Art01604

Ignition and Start Up

Before ignition or start up of the refrigerator:

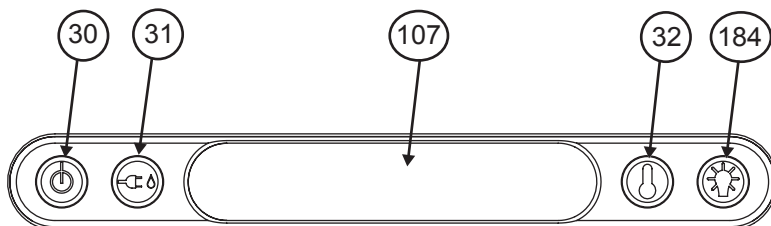
- Make sure the air flow in the lower intake vent, through the refrigerator coils and condenser, and out the upper exhaust vent is not blocked or decreased.
- Make sure there are no combustible materials in or around the refrigerator.

NOTE: If the gas does not ignite in 30 seconds, the gas safety valve of the refrigerator automatically closes. The controls either select a different energy source or “no” “FL” appears in the center display and you will hear an alarm sound. This means that the gas did not ignite.

If the gas does not ignite after several attempts, refer to the “Fault Codes” section of this manual.

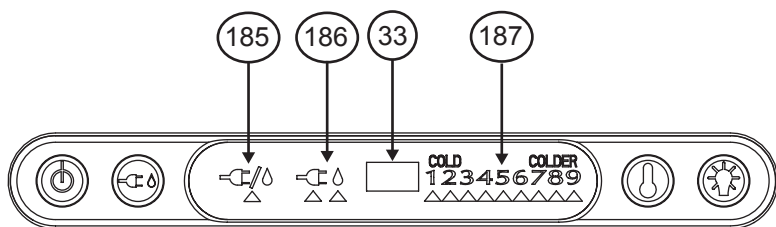
Set the controls to automatic mode operation:

- Push the ON / OFF button [30] to turn the refrigerator on (See Art01809 and Art01811).
- Push and hold the MODE button [31] until a red triangle shows under the mode symbol and then release.



Art01809

- If 120 volts AC is available to the refrigerator:
 - A second red triangle shows under the electric plug part of the mode indicator [186].
 - This means that the refrigerator is operating on AC electric.
- If 120 volts AC is not available to the refrigerator:
 - A second red triangle shows under the gas flame part of the mode indicator [186].
 - This means that the refrigerator is operating on propane gas.



Art01811

- If neither 120 volts AC nor propane gas is available to the refrigerator:
 - The fault codes “no” “AC” and then “no” “FL” show in the center display [33] of the LCD and an audible alarm sounds.

If an energy source is available to the refrigerator, but is not operating correctly:

- A fault code shows in the center display [33].
- The refrigerator controls try to change to a less efficient energy source.
- If a less efficient energy source is not available:
 - An audible alarm starts.
 - A fault code shows in the center display.
 - Refer to the “Fault Codes” section of this manual.

Set the controls to manual mode operation:

- Push the ON / OFF button to turn the refrigerator on.
- Push and hold the MODE button until NO red triangle shows under the mode symbol and a red triangle shows under the electric plug part of the mode indicator and then release.
 - This means that the refrigerator is operating on AC electric.
- Push and hold the MODE button until NO red triangle shows under the mode symbol and a red triangle shows under the gas flame part of the mode indicator and then release.
 - This means that the refrigerator is operating on propane gas..

Do a test of the gas safety valve:

1. Start up the refrigerator so that it is in the manual mode and is operating on propane gas.
 - Push and hold the MODE button until NO red triangle shows under the mode symbol and a red triangle shows under the gas flame part of the mode indicator and then release.
2. Open the lower intake vent.
3. Remove one wire from the solenoid of the gas safety valve at the rear of the refrigerator.
4. Within 30 seconds, the flame should extinguish. This means that the gas safety valve is operating correctly.
5. Put the wire back on the solenoid of the gas safety valve.
6. Close the lower intake vent.

Shut down - all models:

To shut down the refrigerator, push and hold the ON/OFF button for one second.

Fault Codes

Fault Codes	Fault Code Meaning	Corrective Actions
No display.	DC voltage is unavailable to the refrigerator control panel or the refrigerator is OFF.	Check: <ul style="list-style-type: none"> - That the refrigerator is ON. - That the battery charging equipment of the vehicle is operational. - That the AC/DC converter is operational (if applicable). - See your dealer or authorized Norcold Service Center.
" dr " Audible alarm also.	The door was open for more than 2minutes.	Close the door.
" no " " FL " Audible alarm also.	The burner did not ignite or re-ignite.	Check: <ul style="list-style-type: none"> - That the valve of the propane gas tank(s) is open. - That the propane gas is at the correct pressure. - That the manual shut off valve of the refrigerator is open. - That there is no air in the propane gas supply line. See "Removing air from the propane gas supply lines" section of this manual. - See your dealer or authorized Norcold Service Center.
" no " " AC " Audible alarm also.	AC voltage is unavailable to the refrigerator control.	Check: <ul style="list-style-type: none"> - That the refrigerator is plugged into a serviceable outlet. - That the fuse or circuit breaker of the vehicle is intact. - That the vehicle generator is operational (if applicable). - See your dealer or authorized Norcold Service Center.
" dc " " LO "	DC voltage to the refrigerator control panel is too low.	Check: <ul style="list-style-type: none"> - That the battery charging equipment of the vehicle is operational. - That the AC/DC converter is operational (if applicable). - See your dealer or authorized Norcold Service Center.
" FL " " - - "	A flame is sensed present when it should not be.	Shut off the propane gas supply to the refrigerator. This is not owner serviceable. See your dealer or authorized Norcold Service Center.
" LI " " oP "	The high temperature limit switch is open.	This is not owner serviceable. See your dealer or authorized Norcold Service Center.
" AC " " rE " Audible alarm also.	This is a fault within the refrigerator controls.	This is not owner serviceable. See your dealer or authorized Norcold Service Center.
" AC " " HE " Audible alarm also.	This is a fault within the refrigerator controls.	This is not owner serviceable. See your dealer or authorized Norcold Service Center.
" Sr " Audible alarm also.	This is a fault within the refrigerator controls.	This is not owner serviceable. See your dealer or authorized Norcold Service Center.

Art01812

