

# INSTALLATION AND OPERATING INSTRUCTIONS

<b>442</b>	<b>443</b>	<b>452</b>	<b>453</b>
<b>482</b>	<b>483</b>	<b>462</b>	<b>463</b>

**WARNING**

**Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult 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. Do not touch any electrical switches**
- 3. Extinguish any open flame**
- 4. Immediately call your gas supplier**

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These refrigerators are designed to operate on the following energy sources:

LP GAS OPERATION - 11.0 inches Propane & 12 volt DC control voltage (15.4 volts max., 10.5 volts min.).

AC OPERATION - 120 volts AC (132 volts max., 108 volts min.) and 12 volt DC control voltage.

DC OPERATION - [3-WAY MODELS] 12 volts DC (15.4 volts max., 11.5 volts min.).

Operation where these specifications are exceeded will void the refrigerator warranty.

MODEL NO. \_\_\_\_\_ SERIAL NO. \_\_\_\_\_

The refrigerator's model number and serial number are on the serial plate located in the refrigerator.

## Safety Precautions

Read this manual and become thoroughly acquainted with it before installing or starting the refrigerator. The following safety precautions and recommendations contained herein are for your protection.

Improper installation, adjustment, or operation can cause injury or property damage.

The safety symbols used in this manual contain Safety Alert information. Understand their meanings and be safety conscious.



**DANGER**

A SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.



**WARNING**

A SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.



**CAUTION**

A SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY.

### General

- Keep the unit and surrounding area clean. Never use the area behind refrigerator for storage; in particular, storing flammable materials (oily rags, paper, aerosol cans, and chemicals.). Stored materials not only present a safety hazard but could block the ventilation to the system.
- Provide appropriate fire extinguishers installed in convenient locations. Consult your local fire department for the correct type to use. Do not use foam on electrical fires. Use extinguisher rated by NFPA.
- Make sure all fasteners, supports, seals, electrical covers are secure.

### LP Gas System

- LP gas is highly flammable. Gas connections must be leak tight. Do not smoke, create sparks or use an open flame when checking gas connections. Do not ignore the "rotten egg" smell of gas fumes.
- Protect all gas lines from physical damage, vibration, or excessive heat.
- Insure that the supply gas pressure is within the tolerance specified on the front cover of this manual. The gas controls are designed for safety. Never tamper with the adjustment or function of the controls other than as directed by the Lighting and Shutdown Instructions. All repairs must be done by a qualified service person.

### Exhaust Gases

- Proper ventilation to remove exhaust gases is extremely important. These gases, generated in the GAS mode at the rear of the refrigerator, replace the oxygen in the air and in extreme cases can produce dangerous levels of carbon monoxide. This manual contains installation instructions to safely remove the exhaust gases and seal the zone from the living area. The installation instructions are certified by American Gas Association and Canadian Gas Association and must be followed.
- Check the burner for proper flame characteristics at the initial start-up and at least once every year. The information for this check is located in this manual and must be performed by a qualified service person.

## **Safety Precautions - continued**

### **Electrical Circuits - AC and DC**

- The 120 volt AC circuit must be properly grounded. Never cut or remove the round grounding prong from the refrigerator's AC cord. Do not use a two-prong adapter. Do not use an extension cord to connect to the approved AC receptacle.
- Protect all wiring from physical damage, vibration, or excessive heat.
- Always disconnect both AC and DC sources of power when working on either circuit (only a qualified service person).
- Insure all terminating connections are clean and tight to prevent arcing or overheating.
- Never allow Leak Detecting fluids or any other liquids to spill on electrical connections. Many liquids are electrically conductive and could cause serious arcing damage and, in some case, fires.

### **Refrigerant System**

- Never physically bend, drop, drill, weld, or hammer the refrigerant system. Doing so could cause the system to rupture and release dangerous chemicals which can cause severe burns to the eyes or skin. If ignited, these chemicals will burn with intense flame. A leaking system can release certain chromium components which, if inhaled, can cause cancer.
- Never apply direct heat in excess of 240° F to the refrigerant system. Because the refrigerant is hermetically sealed under pressure, a temperature sensitive safety device opens to protect the system from erupting under excessive pressure. However, the expelled refrigerant could ignite and burn if an ignition source were near.
- Never attempt to repair or recharge the refrigerant system. If defective, it must be replaced.

### **Child Entrapment**

- Never install door locks or other restraints which could entrap small children within the refrigerator. The Travel Latch system must not be modified.

### **Handling the Refrigerator**

- Never lift the refrigerator without assistance. Protect yourself from body strain.
- Avoid hot surfaces at the rear of the refrigerator when operating. The absorption type refrigerator produces several hot areas at the rear of the unit. This is true whether in GAS or ELECTRIC mode.
- Take care to avoid brushing against the irregular shapes and sheet metal parts at the rear of the refrigerator. Cuts or abrasions could result.



**E.S.P.**

## EXTENDED COOLING UNIT SERVICE PROTECTION PLAN

An additional four year Service Contract is now available to original purchasers of Norcold refrigerators. For only \$40.00 you get:

- \* Four extra years protection against cooling unit failure.
- \* Automatic replacement of defective cooling unit.
- \* Pre-paid freight from your dealer to Norcold and return.
- \* Labor free of charge.

The E.S.P. (Extended Service Protection) plan can be obtained by mailing your check for \$40.00\*, U.S. funds to:

**NORCOLD  
P O BOX 4248  
SIDNEY OH 45365-4248**

If mailing in Canada:

GREG LUND PRODUCTS LTD  
P O BOX 760  
OAKVILLE ONTARIO CANADA L6J 5C4  
E.S.P. is a service contract between Norcold and

the original purchaser. The contract provides replacement of a defective **cooling unit only** for this refrigerator (freight, parts, and labor) for an additional period of four years after expiration of the original Limited Warranty. The refrigerator must be delivered to Norcold Service Center together with the Norcold E.S.P. card showing E.S.P. coverage. An E.S.P. card will be mailed to the original purchaser upon receipt of a completed Service Contract Application form and a check covering the E.S.P. charge. **E.S.P. coverage is non-transferable and non-refundable.**

To register your refrigerator, fill out the warranty Service Contract Application - i.e.: Tear Sheet Form in yellow envelope or include the following information (Please Print Clearly):

1. Owner's name and address.
2. Refrigerator model number.
3. Refrigerator serial number.
4. Date of purchase.
5. Refrigerator proof of purchase
6. Check for \$40.00\* (payable to Norcold).

Applications will be accepted only if they are mailed within ninety (90) days after date of purchase.

\*Ohio residents, add \$2.60 sales tax.

### General Instructions - All Models

The refrigerators described in this manual are designed for built-in installations and require cut out dimensions as indicated on page .

The refrigerators must be placed on a solid and level floor away from heat generating sources. The floor must be strong enough to support the combined weight of the refrigerator and its food load.

Never install the refrigerator directly on carpeting. To protect carpeting, the refrigerator must be placed on a metal or wood panel extending at least the full width and depth of the refrigerator.

Keep the refrigerator and the surrounding area clear and free of combustible materials, gasoline, and other flammable materials.

Note: These appliances are not approved for use as a Free-Standing refrigerator. The refrigerator must be used in the manner for which it was designed. Refer to this manual for installation, operating procedures, and the refrigerator intended use. This appliance is equipped for LP gas and cannot be converted to any other fuels (Natural Gas, Butane, etc.).

## VENTILATION REQUIREMENTS

**⚠ WARNING: Carbon Monoxide can cause nausea, fainting, or death. Inadequate ventilation or partial blockage of the refrigerator's flue can result in increased carbon monoxide emissions when operating in the gas mode. To prevent the emission of levels of carbon monoxide, installation must assure complete isolation of the living space of the R.V. from the refrigerator's combustion system. Follow Norcold's Ventilation and Installation recommendations explicitly.**

Venting is required in an R.V. refrigerator installation to remove the products of combustion, to isolate the living space of the vehicle from the combustion system of the refrigerator, to remove the excess heat from the generator area of the refrigerator's cooling system, and to remove the heat that is extracted from the refrigerator cabinet.

Certified installation requires that one intake (lower) and one exhaust (upper) be used. For the models 6052, 6053, 652, and 653, the installer has the option of exhausting through the roof or through an upper side wall vent. Whether roof or side wall exhaust venting, the specified vent kit must be installed as directed by this manual. To insure adequate refrigerator performance, a continuous air flow is required across the refrigerator's cooling system.

The air passage from the intake vent to the refrigerator coils and from the refrigerator coils through the exhaust vent **must be unobstructed**.

The vents for these refrigerators are certified by A.G.A. and CGA and must be installed as directed by this manual **without modification**. **Any deviation or substitution:**

- \* Can result in carbon monoxide levels in the living space of the vehicle.
- \* Will void the agencies' certification.
- \* Will void the refrigerator warranty.
- \* Will effect refrigerator performance.

The intake vent (lower) also serves as a access (service entrance) door. The bottom of the intake vent opening must be flush with the surface on which the refrigerator is mounted. This configuration allows any leaking propane to ventilate to the outside.

A.G.A. And CGA certification permits installing the refrigerator with zero (0) inches minimum clearance between the refrigerator and any adjacent walls. This certification does not specify any maximum clearance. However, to insure adequate air flow across the cooling system, the clearance must be minimized. The combination of the two vents and the minimum clearances provide the necessary air flow through the creation of a natural draft, or "chimney effect" across the cooling system.

### Certified Vent Kits

Kit Number	Certified Lower Vent Door	Certified Roof Jack	Models
2 & 3	615998 616009 616010 617778	615791	All Models
Kit Number	Certified Lower Vent Door	Certified Upper Side Exhaust	Models
4	615998 616009 616010 617778	617485	442, 443 452, 453 <b>ONLY</b>

TABLE 1  
DIMENSIONS (INCHES) for Vent Kits 2, 3, and 4

Cut - Out Dimension (inches)							
Part No.	Type	Roof Jack		Lower Intake Vent			Approved Models
		Length	Width	Height	Width	Radius	
617778	Plastic	--	--	13 3/4	21 1/2	--	All Models
616010	Sq. Corner	--	--	13 3/4	21 3/4	--	All Models
616009	Rad. corner	--	--	13 3/4	21 7/8	3 1/4	All Models
615998	Rad. Corner	--	--	13 3/4	21 7/8	3 1/4	All Models
	Upper Side vent	--	--	7 1/4	18	--	6052, 6053 652, 653
615791	Roof Jack	24	5 1/4	--	--	--	All Models

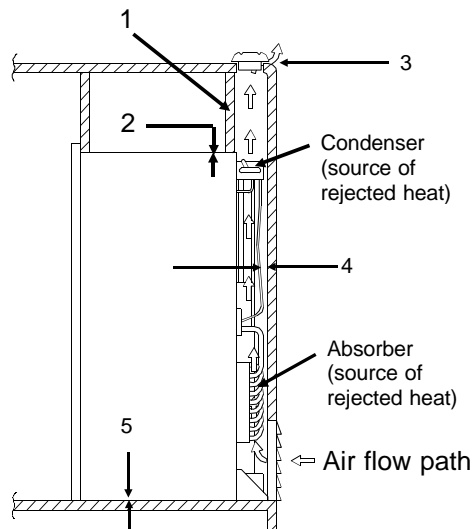


Figure 1

### Optimum Installation - Figure 1

The optimum installation is illustrated in Figure 1.

1. Area above refrigerator blocked (baffled) off to prevent trapping of hot air above the refrigerator.
2. 0 - 1/4 inch clearance at the top of the refrigerator.
3. Exhaust vent centered directly over refrigerator's condenser.
4. 0 - 1 inch at rear of the refrigerator.
5. 0 inch clearance at bottom of refrigerator.

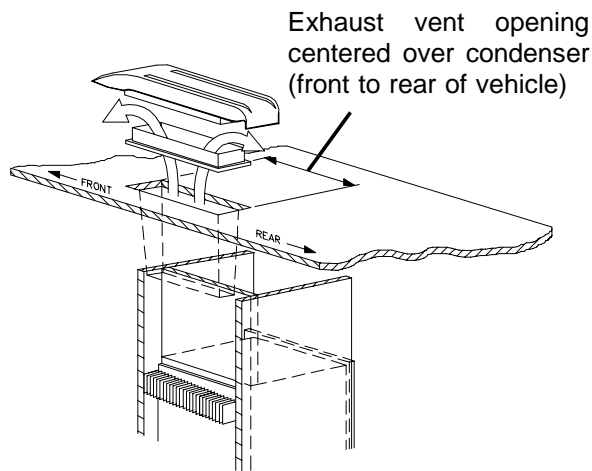


Figure 2

### Exhaust Vent Centered - Figure 2

Figure 2 further illustrates the requirement to center the exhaust vent opening over the condenser of the refrigerator.

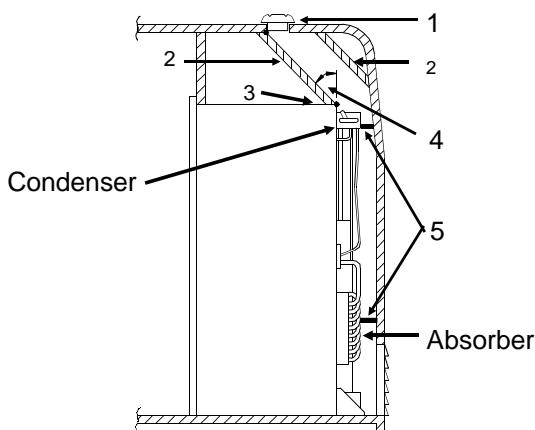


Figure 3

### Alternate Construction Requirements Figure 3

1. Exhaust vent opening is inboard in relation to the rear of the refrigerator.
2. Baffles added to the top of the refrigerator to assist in directing air flow out the exhaust vent.
3. 0-1/4 inch clearance at the top of the refrigerator.
4. Angle between baffles and rear top edge of the refrigerator not to exceed 45 degrees.
5. Deflectors added at rear in strategic locations adjacent to the cooling units condenser and absorber coils to reduce clearance to 0 to 1 inch.

### Side Wall Clearance - Figure 4

1. Figure 4 illustrates the requirement to minimize the clearance at the sides of the refrigerator. The clearance is not to exceed 1/2 inch. Side clearances in excess of 1/2 inch must be either filled with Fiberglass batting or blocked with paneling, etc.

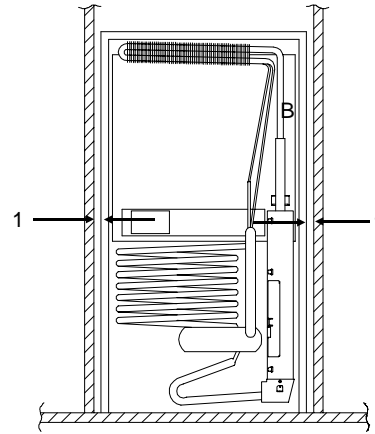


Figure 4

### Upper Side Wall Exhaust Vent For Models 452, 453, 442, and 443 ONLY Figure 5

1. Area above refrigerator blocked (baffled) off to prevent trapping of hot air above the refrigerator.
2. 0 - 1/4 inch clearance at the top of the refrigerator.
3. Upper Side vent Location. Floor level to top of opening. 38 1/8" for models 442 & 443. 50 1/2" for models 452 & 453. See Table 1 for vent dimensions,
4. 0 - 1 inch clearance at the rear of the refrigerator. (See Figure 3 when clearance exceeds 1 inch).
5. Intake (lower) vent installed flush with the surface on which the refrigerator is mounted.
6. 0 inch clearance at bottom of refrigerator.

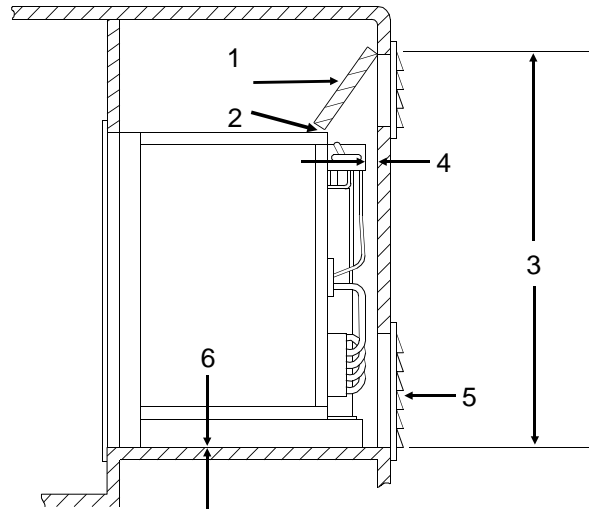


Figure 5

### Top and Side Wall Clearance-All Models Figure 6

1. Top baffle fills the total area above the refrigerator and is properly aligned with the side wall construction.
2. 0 - 1/2 inch at the sides of the refrigerator.

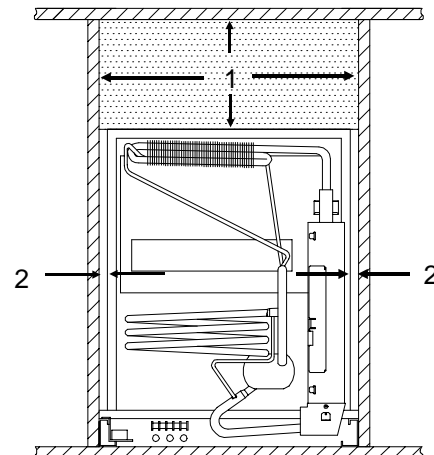


Figure 6

# INSTALLATION INSTRUCTIONS

## Certification and Code Requirements

The refrigerators described herein are certified under the latest edition of ANSI Z21.19 Standards by the American Gas Association (A.G.A.) for installation in mobile home or recreational vehicle and approval by the Canadian Gas Association (CGA).

Installation must be made in accordance with these standards and with the installation instructions provided in this manual for the Norcold factory warranty to be in effect.

Installation must conform with local codes, or in the absence of local codes, with the following standards as applicable:

In the United States:

- a. National Fuel Gas Code, ANSI Z223.1.
- b. Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 23-80.
- c. Standard for Recreational Vehicles, ANSI A119.2, latest edition.

When an external electrical energy is utilized, the refrigerator must be electrically grounded in accordance with local codes, or in the absence of local codes, the National electrical Code, ANSI/NFPA 70.

In Canada:

- a. Current CGA B149.1 and B149.2 installation code for Propane Appliances and Equipment..
- b. Current CSA Z240.4.2 installation code for Propane Appliances and Equipment in Recreational Vehicles.
- c. Current CSA Z240.6.2/C22.2 No. 148 Electrical Requirement for Recreational Vehicles.

When installed, the appliance must be electrically grounded in accordance with the current Canadian Electrical Code C22.2 Parts 1 and 2.

## Cut-Out Dimensions

The refrigerators certified for built installation and requires cut-out dimensions as indicated in Table 2 below.

TABLE 2  
REFRIGERATOR CUT-OUT OPENINGS (INCHES)

Model	Height	Width	Depth
462, 463	52 7/8	23 1/2	24
482, 483	59 7/8	23 1/2	24
452,453	43 1/4	23 1/2	24
442,443	30 7/8	23 1/2	24

## Combustion Seals

Combustion seals (foam strips) are attached to the back surface of the refrigerator's mounting flanges. These seals isolate the products of combustion from the vehicle's living space. **The seals must be continuous between the wall and the mounting flanges to assure a complete combustion seal.** When installing or removing the refrigerator, insure that the seals are not missing or damaged.

## Lower Flange Installation

The lower mounting flange and mounting screws are located in a clear plastic bag positioned in the coils at the rear of the refrigerator. After removing the plastic bag, slide the refrigerator partially into the enclosure and attach the lower mounting flange. Install the lower mounting flange by maneuvering it under the bottom control cover and secure with the screws provided. Refer to Figure 7. **Do not omit installation of the lower mounting flange. This flange is part of the combustion seal.**

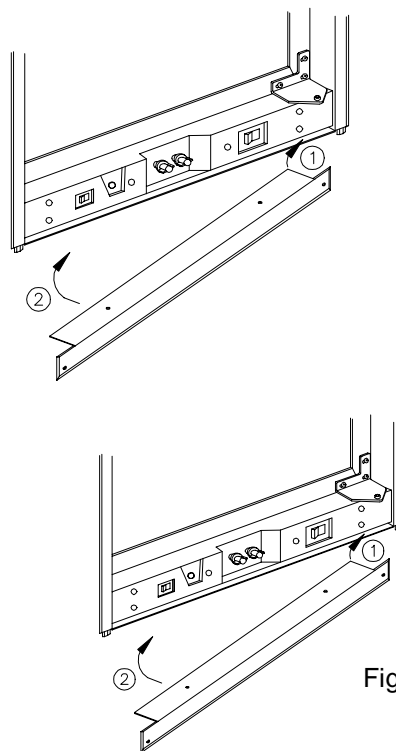


Figure 7

## Securing the Refrigerator

Secure the refrigerator with screws through the mounting flange holes at the front of the refrigerator and the holes at floor level at the rear of the refrigerator. Screw covers are provided to cover the front mounting flange holes.



## Gas Connection

The refrigerators are designed to operate on propane gas at a supply pressure of 11 inches water column. A pressure regulator is required between the refrigerator and the main gas tank. Do not connect the refrigerator directly to the main propane tank without a pressure regulator.

Use supply piping and fittings that comply with local, state, and national codes governing type and size. These components should also comply with NFPA 501C. Flexible metal connectors must comply with the current CAN 1-6.10 Standard. To prevent gas pressure loss to the refrigerator, the propane should be supplied by a 3/8 inch diameter copper piping. The gas supply piping is connected to the refrigerator by means of 3/8 inch SAE (UNF 5/8 - 18) male flare fitting.

Route the gas supply piping to limit vibration and abrasion. The gas supply piping should enter the refrigerator enclosure near the gas connection at the rear of the refrigerator. The hole through which the gas piping enters should be of sufficient size (approximately 1/2 inch diameter) to provide adequate clearance for the piping. Once the gas piping is in place, apply a sealant around the piping at its point of entry to minimize abrasion and vibration, and to serve as a barrier to external moisture.

**CAUTION:** Use two wrenches when manipulating the gas inlet fitting. Failure to use two wrenches can over stress the piping and create gas leaks.

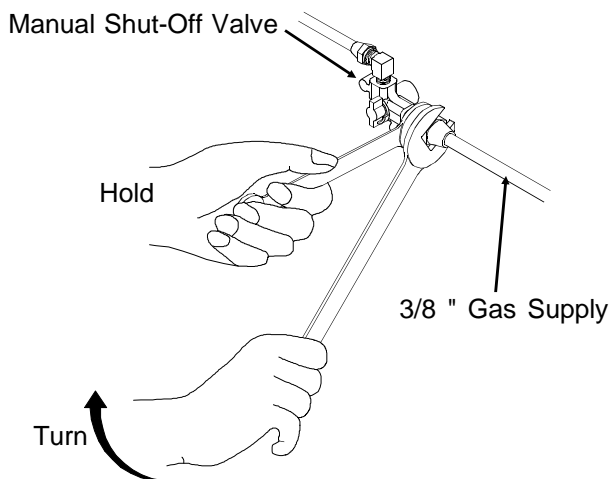


Figure 8

The gas supply is connected to the refrigerator at the inlet to the manual gas valve located at the bottom rear of the refrigerator. Access to this area is obtained through the vehicle's lower vent door. Care must be taken when connecting the gas piping to the refrigerator to insure the fittings are secure.

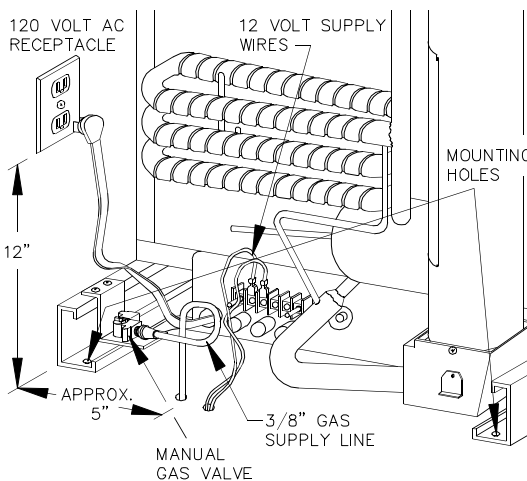


Figure 9 Rear View

## 120 Volt AC Connection

**WARNING:** The refrigerators are designed to operate on a 120 volt, 60 Hertz grounded AC circuit. The refrigerator's AC power cord is equipped with a three-prong grounding plug which must mate with a three-prong grounded receptacle to protect against possible electrical shock hazards. Operating the refrigerator without proper ground can cause property damage, severe personal injury, or death. It is the installer's responsibility and obligation to provide a properly grounded electrical circuit to the refrigerator accordance with local codes, or in the absence of local codes, the National Electrical Code, ANSI/NFPA 70. Do not cut or remove the round grounding prong from the refrigerator's AC power cord. Do not use a two prong adapter or an extension cord.

The free length of the refrigerator's AC power cord is 24 inches. It is recommended that the three-prong grounded receptacle be located to the left side of the refrigerator (viewed from rear) and approximately 12 inches from the floor (see Figure 9 above). The AC power cord must be routed so as not to contact the refrigerator's burner, flue pipe, or any other component which could damage the cord insulation.

## 12 Volt DC Connection

A 12 volt DC supply is required to maintain the flame ignition circuit in the gas mode and for 3-Way models, to provide power for the DC heater. The DC

supply connects to the terminal block at the rear of the refrigerator (See Figure 9 on page 8). The 12 volt DC should enter the refrigerator's enclosure near the refrigerator's terminal block. The 12 volt DC connects at (2) one quarter inch quick connects. The positive DC input lead connects to terminal marked (+), and the DC ground input lead connects to terminal marked (-).

**CAUTION:** Correct polarity must be observed when connecting the DC supply. Do not use the chassis of the refrigerator or the vehicle frame as one of the conductors. Connect DC supply wires at the battery and route to the refrigerator.

The distance the current travels from the battery to the refrigerator dictates the wire size. Undersized wire can result in a voltage drop, which will affect the wattage output of the DC heater and result in reduced refrigerator performance. Norcold recommends the installation of a fuse in the supply wiring between the battery and the refrigerator. For optimum protection, install the fuse as close to the battery as possible.

**WARNING:** A circuit overload can result in an electrical fire when undersized wires or improperly sized fuses are used. To prevent a possible electrical fire, follow R.V.I.A. A119.2 Standards, Norcold's wire size and fuse specifications, or applicable state and local codes.

TABLE 3  
12 VOLT SUPPLY WIRING AND FUSE SIZE

	482, 462 452, 442		483, 463		453, 443	
	min. wire size	max. fuse size	min. wire size	max. fuse size	Min. wire size	max. fuse size
0 - 20'	18 AWG	6 Amp	10 AWG	30 Amp	12 AWG	20 Amp
over 20'	18 AWG	6 Amp	8 AWG	40 Amp	10 AWG	30 Amp

If a wire size is installed which is larger than the minimum size indicated the table above, it must be fused in accordance with the R.V.I.A. A119.2 standard or local governing codes.

### Chassis Bonding Connection

A No. 8 AWG copper conductor is commonly used to meet the chassis bonding requirements of the Na-

tional Electric Code (ANSI/NFPA No. 70, Art. 551). When this conductor is used to bond the non-current carrying metal parts of the refrigerator, a No. 10-32 bonding terminal is provided to make the connection. (See Figure 10 ).

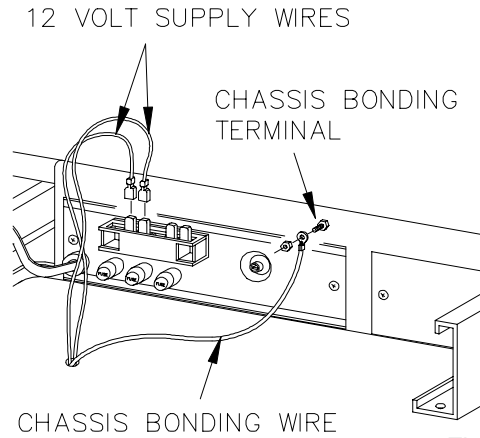


Figure 10

### Hypot Test

A Dielectric Strength test (hypot) has been conducted at the factory; this refrigerator does not require an additional test. If hypot tests are conducted on the vehicle's 12 volt circuit, the 12 volts **must** be disconnected from the refrigerator to protect the flame ignition circuit.

### Testing the Vehicle's Gas Supply Piping

When installation of the refrigerator is complete, the propane gas supply piping must be inspected and tested for leaks from the refrigerator to the main gas supply tank. Use a leak detection solution. **Do not test for leaks with an open flame.**

If compressed air is used for leak testing, the gauge pressure must not exceed 1/2 pound per square inch (14 inches water column).

The appliance and its individual shut-off valve (Figure 11 on page 10) must be disconnected from the gas supply system during any pressure testing of that system at test pressures greater than 1/2 psig (14 inches water column).

The appliance must be isolated from the gas supply system by closing its individual manual shut-off valve (Figure 11 on page 10) during any pressure testing of that system at test pressure equal to or less than 1/2 psig (14 inches water column).

Check the gas pressure to the refrigerator without other gas appliances operating. The pressure should not exceed 11 inches water column. With other appliances operating the pressure should not be less than 10.5 inches water column.

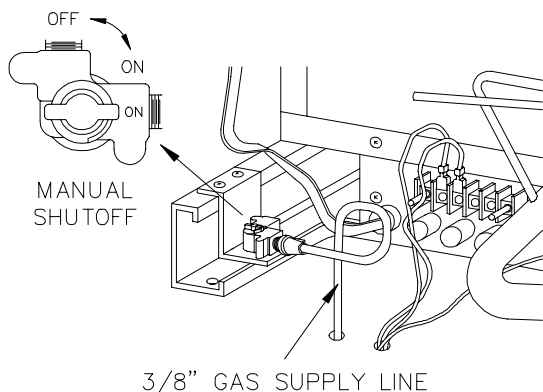


Figure 11

### Check Out - Flame Failure Safety Device

Before placing the refrigerator into operation, the gas safety device must be tested (see Operating Instructions on page 13). The purpose of the gas safety device is to prevent the escape of unburned gas from the burner if the burner flame is extinguished. Once a flame is established, close the manual shut-off valve of the refrigerator. The flame will extinguish and ignition spark will continue. Wait a minimum of four (4) minutes and re-open the manual shut-off valve. The burner flame will not re-establish, indicating the gas safety control is functional.

### Door Panel Installation

The Norcold refrigerator doors provide slots for inserting decorative panels. Installation of the panels is accomplished by removing the handle assembly, inserting the decorative panel, and re-inserting the handle assembly. This procedure applies to both doors. (See Figure 12)

The frame slots are designed to accept panel thickness up to 3/16" maximum.

TABLE 4  
PANEL DIMENSIONS

	462, 463	482, 483
Upper Door	19 11/16" x 16"	19 11/16" x 16"
Lower Door	19 11/16" x 32 1/4"	19 11/16" x 39 1/4"

	442, 443	452, 453
Door Panel	19 11/16" x 27 1/4"	19 11/16" x 39 1/4"

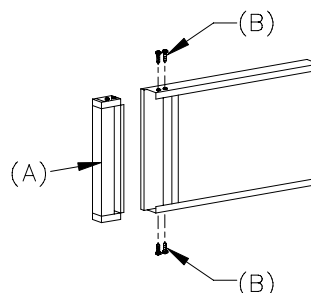


Figure 12

### INSTRUCTIONS

1. Prepare panel by cutting to size indicated in accompanying chart. (See TABLE 4)
2. Remove handle assembly (A) by removing four screws (B). (See Figure 12)
3. Slide panel into frame slots.
4. Replace the handle assembly.

### Instructions for Reversing Door Swing

Your refrigerator is equipped with convertible door hinges. The hinging of the doors can be changed to the opposite side anytime you wish.

### TOOLS REQUIRED

- Phillips Screwdriver - Size #2
- Two Slotted Screwdrivers

### REMOVING THE DOORS

1. Remove all items of food, juices, etc., from the doors. Remove the juice rack and storage bins. Close both doors before removing hinge pins.
2. Remove the top hinge pin using one of the slotted screwdrivers. Remove the center hinge pin (both pieces) using the two slotted screwdrivers; one on each end of the pin. Lastly, remove the bottom hinge pin. Be sure to save the pins for reassembly later. (See Figure 19)

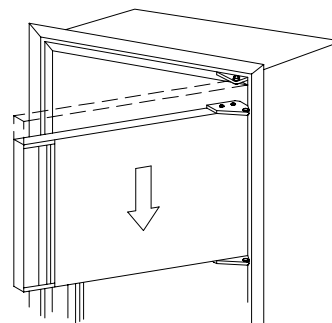


Figure 13

3. Remove the upper door by opening the door slightly and pulling the bottom of the door away from the refrigerator. Allow enough room to slide the door down off of the upper hinge pin shoulder. (See Figure 13)

- 4 Remove the lower door by opening it slightly and pulling the top of the door away from the refrigerator. Allow enough room so the door can be lifted up and off of the bottom hinge pin shoulder (See Figure 18). Be sure to save the hinge plates along with the spacer used in the middle hinge bracket, for reassembly later. (See Figures 19A, 19B, and 19C)

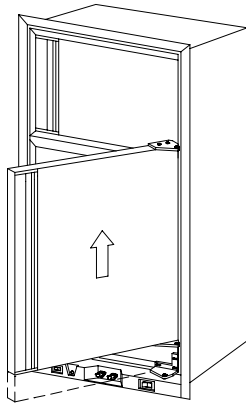


Figure 14

#### REMOVING AND RELOCATING THE HINGE BRACKETS

5. Remove the middle hinge bracket by using the #2 Phillips screwdriver and taking out the three screws holding it in place. Next, remove the three screws on the opposite side corresponding to the center hinge location. Relocate them in the holes just exposed by the removal of the hinge bracket. Attach the hinge bracket to the refrigerator on the opposite side. Do not tighten screws completely. (See Figure 15)

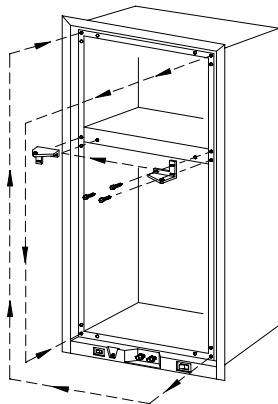


Figure 15

6. Remove the top hinge bracket and reposition it in the opposite bottom corner. Use the same technique as outlined in Step #5.
7. Remove the bottom hinge bracket and reposition it in the opposite top corner. Use the same technique as outlined in Step #5.

#### RELOCATING THE TRAVEL LATCHES

8. Remove both travel latches by taking out the two screws holding each to the refrigerator. Use the #2 Phillips screwdriver. Remove the two screws from each of the corresponding holes on the opposite side of the refrigerator. Relocate them in the two holes just exposed by the removal of the latches. Attach the latch in the new position so the tab points towards the opposite side of the refrigerator. Do not tighten screws completely. (See Figure 16)

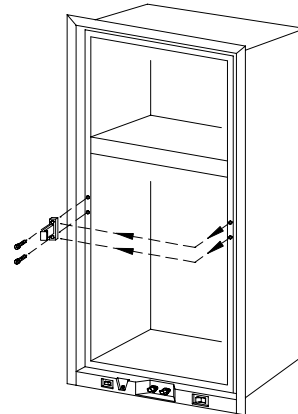


Figure 16

9. Turn the door over so that the end previously at the bottom is now at the top. Relocate the bottom of the door on the bottom hinge pin shoulder. Close door and align holes in top hinge brackets. The magnetic gasket will hold the door in place. Before reinstalling the top door, check to insure that the spacer is in place. (See Figures 17 and 19C)

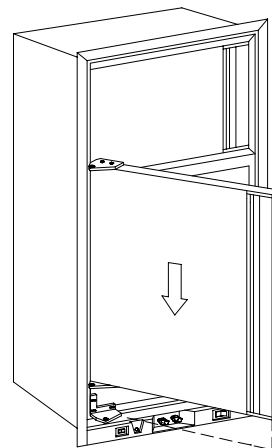


Figure 17

10. Reposition the upper door in a similar manner as described in Step #9, except the top of the door must be engaged into the hinge pin shoulder before setting the door in place. (See Figure 18)
11. Starting at the top, replace the hinge pins using the slotted screwdrivers. Tighten all screws.

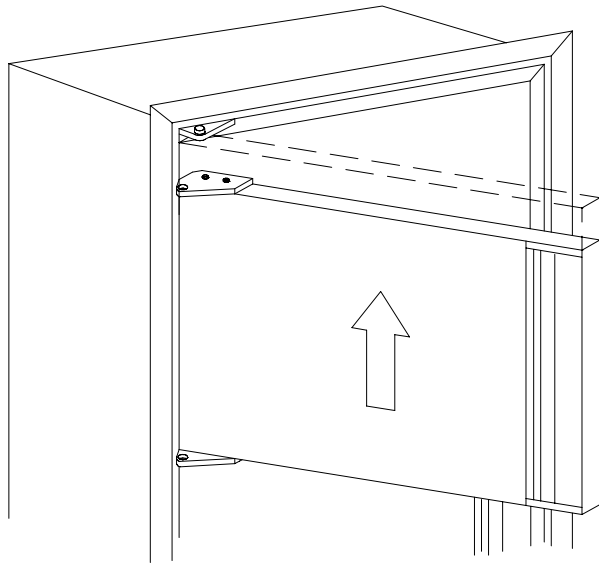


Figure 18

#### ALIGNMENT OF THE DOORS

12. Align the upper door with the lower so that there is a parallel gap between the doors and around the frame. Adjust the doors to the cabinet so the gaskets seal but do not bind. Tighten the screws holding the hinge brackets in place.
13. Door Seal: The door seal can be checked by closing the door on a 1" x 6" strip of paper. A slight drag should be noticed when the paper is pulled out from between the gasket and the cabinet. Repeat the process around all four sides of the door. If the door does not seal properly, readjust the hinge brackets.
14. Position the travel latches so that they secure the doors when closed but does not prevent the doors from closing properly. Tighten the two screws in each travel latch.
15. Replace the juice rack and storage bins into the door. Make sure that the milk bins (wider storage bins) are installed in the lowest door position.

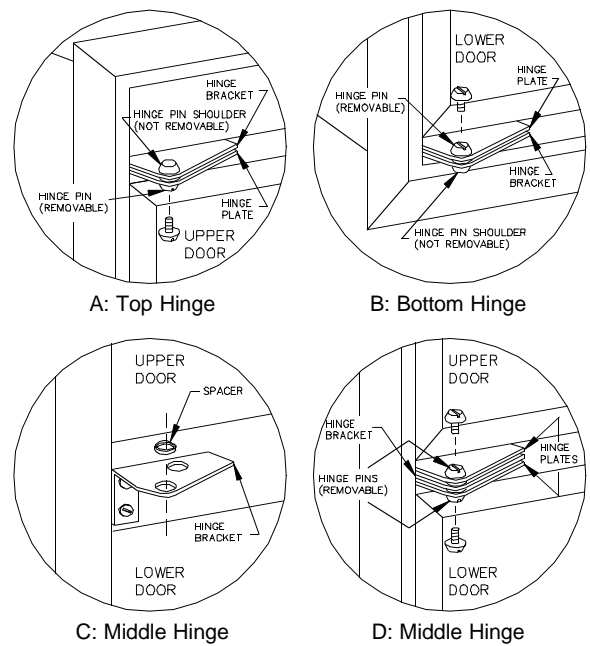


Figure 19

# Lighting and Start Up Procedures



## WARNING:

DO NOT HOLD GAS VALVE (D) IN MORE THAN 30 SECONDS. IF FLAME IS NOT INDICATED WITHIN THIS TIME, TURN GAS TO OFF, WAIT 2 MINUTES AND RETRY. CONTINUING TO HOLD GAS VALVE IN WILL CAUSE GAS BUILD-UP IN THE BURNER AREA AND CAN RESULT IN AN EXPLOSION WHICH CAN CAUSE PERSONAL INJURY OR DEATH.

## 2-Way and 3-Way Models

### Lighting Instructions: Gas Operation

1. Make certain that 12 Volts DC is available to the refrigerator and divider switch is in NORMAL position.
2. Turn on gas supply at the tank.
3. Set thermostat control (C) to COLDEST setting.
4. Set ignitor switch (A) to "ON" position. The toggle light (A) located on the switch will illuminate if 12 volts DC is present.
5. Push and rotate the "ELEC-OFF-GAS" control (D) counter-clockwise so that "GAS" is visible on the knob. Push the control knob (D) in and hold until the flame indicator (B) illuminates (continuous glow). Continue to hold approximately 5 seconds, then release. The flame indicator (B) will remain on. If not repeat this step.

NOTE: In normal use the flame should ignite within 10 seconds. On initial refrigerator start-up, it may take longer than 10 seconds to allow air to be purged from the gas line, as indicated by the flame indicator (B) failing to illuminate.

Do not hold gas control valve (D) in more than 30 seconds. See WARNING above.

6. Move thermostat control (C) to desired setting
7. The ignitor switch (A) should be left in the "ON" position during gas operation. If the switch is turned off, the refrigerator will cycle normally. However, in case of flame blowout, the relighter does not function.

### Start-Up Instructions: AC Electric Operation

1. Make certain that 120 Volts AC and 12 Volts DC are available to the refrigerator and divider switch is in NORMAL position.
2. Set thermostat control (C) to desired setting.
3. Set ignitor switch (A) to "OFF" position.
4. Push and rotate the "ELEC-OFF-GAS" control

(D) clockwise so that "ELEC" is visible on the knob. Upon release, note that the knob moves toward you, indicating that the control is locked into electric operation.

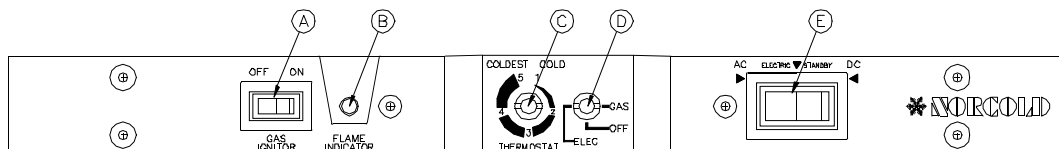
### Start-Up Instructions: DC Electric Operation - 3-Way models

1. Make certain that 12 Volts DC is available to the refrigerator, divider switch is in NORMAL position, and "GAS IGNITOR" switch (A) is "OFF".
2. Set thermostat control (C) to desired setting.
3. Set "AC-STDBY-DC" switch (E) to "DC" position.
4. Set ignitor switch (A) to "OFF" position.
5. Push and rotate the "ELEC-OFF-GAS" control (D) clockwise so that "ELEC" is visible on the knob. Upon release, note that the knob moves toward you, indicating that the control is locked into electric operation.

### Operation Shut-Down: All Modes

1. Set ignitor switch (A) to "OFF" position.
2. Push and turn "ELEC-OFF-GAS" control (D) to "OFF".
3. For longer periods of shut-down, set NORMAL-STORAGE-HUMIDITY switch to STORAGE.

**Operation Note:** Use the "ELEC-OFF-GAS" control (C) to shut off all cooling operation (both Gas and Electric). The "GAS IGNITOR" switch and the "NORMAL-STORAGE-HUMIDITY" switch must be shut off independently. The "STDBY" position of the "AC-STDBY-DC" switch (E) can be used to temporarily shut off AC or DC operation.



# OPERATING AND USER INSTRUCTIONS

THIS APPLIANCE HAS BEEN DESIGNED FOR STORAGE OF FOODS, STORAGE OF FROZEN FOODS, AND MAKING ICE WHEN INSTALLED AS DIRECTED BY THIS MANUAL.

## Location of Controls

Figure 18 illustrates the location of the 400 Series refrigerator's operating controls. All operating controls are conveniently located below the door.

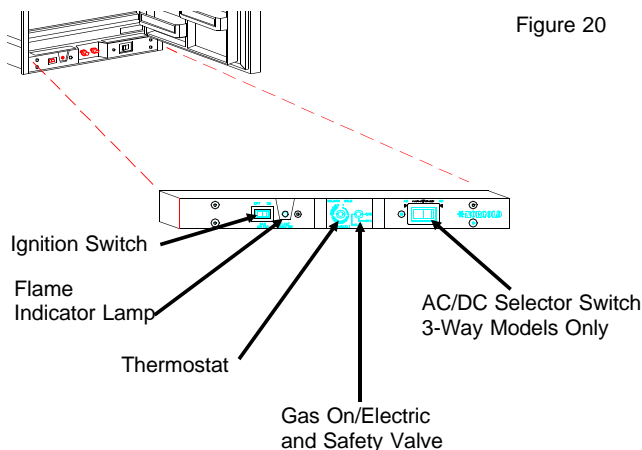


Figure 20

## Operating Controls Function

### Ignition Switch

The ignition switch is used for the Gas operation only. When the ignition switch is turned "ON", the switch will illuminate indicating that 12 volt DC is available and being supplied to the electronic ignition which generates ignition spark to the burner.

### Flame Indicator Lamp

When a flame is established at the burner, the Flame Indicator Lamp will illuminate indicating the refrigerator is operating on gas.

### Thermostat

The thermostat controls all modes of operations, thereby eliminating the necessity of resetting each time a different power source is selected. Rotate the knob clockwise to make the refrigerator cabinet colder.

### Gas ON/Electric and Safety Valve

**Gas ON/ELECTRIC** allows the user to select an operating mode. For gas, push and turn the knob counter-clockwise until the knob is pointing to "GAS".

For AC electric, push and turn clockwise until the knob is pointing to "ELEC". Note, upon release the knob will move towards you, indicating that the operating control is locked into the AC electric mode.

**Safety Valve** - During the gas ignition process, the safety valve knob must be held in until a flame is established at the burner.

The safety valve is designed so that any loss of flame will stop the gas flow to the burner. It is controlled by means of a thermocouple that is positioned in the flame. As long as a flame is detected by the thermocouple, the valve will remain open. Upon flame failure, the valve closes, shutting off the gas flow to the burner.

### AC/DC Selector Switch

This switch is utilized on 3-Way models **only**. The switch selects either 120 volt AC or DC electric modes of operation. The center position of the switch is a "Stand-By" mode which will temporarily turn off the electric positions.

## Gas Operation

The gas burner is designed to operate on propane gas only. The gas control is equipped with an ignition relighter, offering the features of automatic re-ignition in case of flame blowout, positive flame sensing, and easier gas start-up. The ignition relighter is powered by 12 volts DC and is controlled by the ignitor switch located on the control panel. When the switch is in the "OFF" position, no ignition spark is present. When the switch is in the "ON" position, the relighter produces a rapid spark at the gas burner. The spark occurs at a rate of 1 to 2 times per second until a flame is present (Refer to "Lighting Instructions"). The spark continues until a flame is sensed or until the ignitor switch is turned off. When the flame is sensed, the relighter discontinues the spark and the flame indicator illuminates. The flame indicator lamp will cease to illuminate upon loss of burner flame. During gas operation, the current draw for the re-ignition system is very low, approximately 30 milliamps (.030 amps).

### 120 Volt AC Operation

While parked, the coach normally operates from a 120 volt AC source. The refrigerator can be very easily switched to AC operation.

### 12 Volt DC Electric Operation

The refrigerator receives its DC power from the vehicle's 12 volt system; either an auxiliary battery, a converter, or the engine battery. The 12 volt DC sys-

tem not only supplies power to the refrigerator, but to other DC components in the vehicle.

DC electric operation is not as efficient as LP Gas or AC electric operation, and should therefore be used only when the other modes are unavailable (for example; while in transit - 4 to 6 hours). Reminder, before using the DC electric mode, the refrigerator must be cooled using either gas or electric.

### High Humidity - Storage Switch Models 482,3 & 462,3 Only

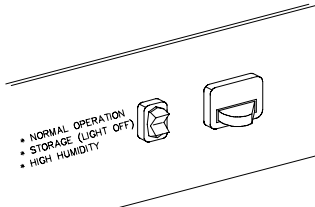


Figure 21

The models 482,3 and 462,3 are equipped with a heater that prevents moisture from forming on the center divider between the freezer and the fresh food compartment doors. The heater is activated by turning the NORMAL OPERATION-STORAGE-HIGH HUMIDITY switch to the HIGH HUMIDITY position. The switch should be left in the NORMAL OPERATION position unless condensation is observed in this area.

When your RV is being stored for the winter, the High Humidity - Storage switch should be placed in the STORAGE (light off) position and ELEC-OFF-GAS control to OFF. This shuts off all DC power to the light and humidity heater and allows the refrigerator door to be left open for airing without chance of battery drain during storage (See "Information Regarding Battery Drain")

### Interior Light-Models 482,3 & 462,3 Only

The interior light is located at the top of the fresh food compartment. The light will turn on when the fresh food compartment door is opened and off when the door is closed. Power to the light is activated when the NORMAL OPERATION-STORAGE-HIGH HUMIDITY switch is set to either NORMAL OPERATION or HIGH HUMIDITY positions.

To replace the light bulb, disconnect the 12 volt DC from the refrigerator from the rear of the refrigerator. Remove the light cover by sliding it towards the front to gain access to the bulb.



**CAUTION: Do not replace with a bulb of higher wattage. Higher wattage bulbs can damage the interior surface of the fresh food compartment.**

Remove the bulb from its bracket. Replace the bulb with a GE #214-2 bulb (Norcold part number 61628922), which can be purchased from most retail automotive centers. Re-install light cover. Reconnect the 12 volt DC.

### Information Regarding Battery Drain

A 12 volt DC source is required for the gas mode and the DC electric mode of operations. For the gas operation, the DC power source supplies voltage for the electronic ignition. The current draw is less than 30 milliamps. For models 482,3 and 462,3, if the HIGH HUMIDITY (MOISTURE REDUCTION HEATER) and the interior light were left on, the total DC current draw would be 900 milliamps (.9 amps). This indicates that the drain on the battery is very low and has little effect on "battery run down" unless the battery is left connected for long periods of time without recharging.

During AC electric operation there is no battery current drain, unless the interior light or moisture reduction heater (HIGH HUMIDITY) is energized (**models 482,3 and 462,3**).

For the DC electric operation, the DC power source supplies voltage for the cartridge heating element. For models 443 and 453, the DC electric operation draws approximately 9 amps at 12 volt DC. For models 483 and 463, the DC electric operation draws approximately 14 amps at 12 volt DC. If the battery charging means is lost during DC operation, for instance during short stops, the refrigerator could be switched to Gas, AC (if connected) or to the Standby switch position until the charging means is re-established.

The DC voltage should be checked while operating in the DC mode. The voltage at the refrigerator should never drop below 11.5 volts.

During periods when the refrigerator is not used (seasonal storage, etc.) the NORMAL OPERATION-STORAGE-HIGH HUMIDITY switch should be switched to STORAGE and the ELEC-OFF-GAS set at OFF. This shuts off all DC drain. The Ignitor switch must be turned off when not in use.

### Operation in Transit

While the refrigerator should be level when the vehicle is stopped, performance during transit is not normally affected.

### Refrigerator Storage Volume

Models	482,3	462,3
Storage Volume	7.5 cu. ft.	5.9 cu. ft.
Models	442,3	452,3
Storage Volume	3.1 cu.ft.	4.3 cu. ft.



## Leveling

Comfortable vehicle leveling is well within the refrigerator's operating requirements of 3 degrees off level side-to-side and 6 degrees off level front-to-back (looking at the front of the refrigerator). Continued operation outside of these limits can result in irreparable damage to the cooling system.

## Freezer Compartment

This compartment is not designed for the quick freezing of food but designed to retain food in a frozen state. Foods purchased for storage in the freezer compartment should be frozen when purchased to reduce the load on the refrigerator system.

**IMPORTANT:** Ice trays must be placed on the bottom freezer surface when making ice.

Water will freeze more rapidly if the thermostat is at it's coldest setting.

For models 482,3 and 462,3, the freezer shelf can be adjusted or removed to meet your storage needs.

## Fresh Food Compartment

The fresh food compartment stores and cools food.

For best cooling performance, air must be free to circulate within the fresh food compartment. Do not cover the shelves with paper, plastic, etc.

To reduce frost formation on the cooling fins, cover liquids and moist foods, do not place hot foods in the compartment, and do not leave the door open longer than needed.

Allow the refrigerator to cool for 8 hours before loading foods. Loading a warm refrigerator with warm food increases the cool down period.

## Defrosting and Cleaning the Refrigerator Interior

Your refrigerator is not frost free and will require periodic defrosting. To defrost, turn the refrigerator off. Empty the freezer and the fresh food compartments. Placing a pan of hot water in the freezer will reduce the defrosting time. Leave the drip tray under the cooling fins. After frost has melted, empty the drip tray and clean the refrigerator.

Add a small quantity of mild dish detergent to lukewarm water and wash the interior of the refrigerator. **Do not use abrasive cleansers; they can damage the interior surfaces of the refrigerator.** Rinsing both compartments in a solution of baking soda and water (one table spoon of baking soda to one quart of water) will freshen the interiors and neutralize odors. Dry the interior with a soft cloth to remove excess moisture and to prevent water spots. Clean the door gaskets in the same manner as the refrig-

erator interior. This will help to prolong the life of the gaskets.

## Door Latch

The refrigerator's built-in door latch prevents the door from flying open during transit. There are no chains or slides to remember to actuate when the vehicle starts moving (See Figure 25). Always close the door to the sealed position (audible clicks) to prevent cooling loss and heavy frost.

## Important Notice:

***Read and understand this notice before removing this refrigerator, re-installing this refrigerator, or performing any maintenance on this refrigerator. Norcold will not accept responsibility for improper installation, adjustment, alteration, service, or maintenance performed by anyone other than a qualified dealer or a Norcold service center. Costs or related consequential problems resulting from improper installation, adjustments, alteration, service, or maintenance are the refrigerator owner's responsibility.***

## Refrigerator Maintenance

1. Leak test gas supply piping and fittings at least once a year. This procedure should only be performed by your dealer or a Norcold service center. These facilities are familiar with gas refrigerators and propane gas systems.
2. Check the main line gas pressure periodically and adjust if necessary. The correct input gas pressure is 11 inches water column. It is recommended that your dealer or a Norcold service center perform this task.
3. Clean the refrigerator's burner and burner orifice. This procedure is required once a year minimum and should only be performed by your dealer or a Norcold service center. These facilities are familiar with gas refrigerators and propane gas systems.
4. Insure that the LP gas supply is Propane, not another fuel such as Butane or Butane mixtures.
5. Periodically inspect the burner flame appearance during gas operation. See "Burner Flame Inspection on page 17.
6. Inspect the electrode assembly to insure it is secure to the burner bracket.
7. Inspect the flue of the refrigerator's cooling system. This area must be free of foreign materials. Foreign materials observed in the flue indicate the burner requires cleaning.
8. Insure the area directly behind the refrigerator

is not being used for storage. Keep the refrigerator area clear and free from combustible materials, gasoline, and other flammable vapors and liquids.

9. Periodically inspect the ventilation system. The air passage from the bottom intake vent to the refrigerator coils and from the refrigerator coils through the upper exhaust vent must be unobstructed.
10. Inspect combustion seals (visual check without removing the refrigerator). Combustion seals are attached the back surfaces of the refrigerator's mounting flanges and must be continuous between the wall and the mounting flanges to assure a complete combustion seal.
11. Periodically inspect door seals. See "Checking Door Seals" below.

### Checking Door Seals

To insure cooling efficiency and to prevent frost formation, the door gasket must seal completely.

To check for proper door seal, lay a strip of paper between the gasket and the refrigerator. Close the door and withdraw the paper. A frictional drag should be noticed. Repeat all around the door. If the paper does not have a noticeable drag, the gasket is not sealing. Contact your dealer or a Norcold service center for corrective procedures.

### Refrigerator Storage

When the refrigerator will not be in use for an extended (seasonal) period of time, it is recommended that all power to the refrigerator be disconnected. Unplug the refrigerator's AC power cord from the wall receptacle and disconnect the 12 volt DC from the refrigerator's terminal block located at the rear of the refrigerator. Clean the refrigerator interior and leave the door(s) open to keep the interior odor free. After the extended shut-down period, the burner, burner orifice, and flue must be inspected before igniting the burner flame. These areas must be free from dust, spider webs, or other obstructions which might restrict the combustion system.

### Burner Flame Inspection

The efficiency of your refrigerator while operating in the gas mode is independent upon the correct burner flame. The burner flame provides energy to the refrigerator's cooling system.

The burner flame efficiency is a function of correct input gas supply pressure, air input, and burner and burner orifice cleanliness.

A visual check of the burner flame should be made regularly. The flame should be sharp blue with a sta-

ble burning appearance (Figure 22). If there is a constant yellow component observed or if the flame appears erratic or unstable, switch the refrigerator to electric or turn the refrigerator "OFF" and contact

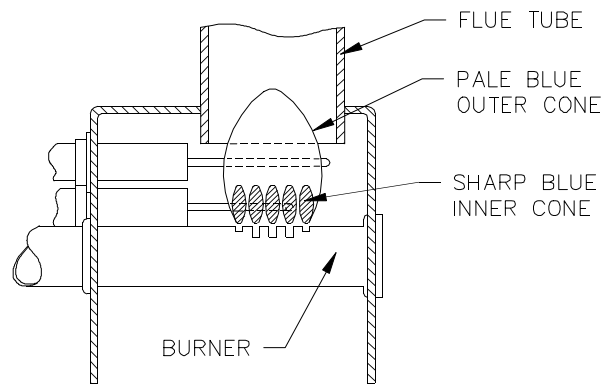


Figure 22

your dealer or a Norcold service center.

### Refrigerator Removal and Replacement

1. Turn off the gas at the main supply tank(s).
2. Turn the refrigerator off.
3. Turn the refrigerator's manual shut-off to off.
4. Disconnect the refrigerator's AC power cord from the wall receptacle.
5. Disconnect the 12 volt DC supply from the refrigerator's terminal block.
6. Disconnect the LP gas supply line from the refrigerator.
7. Remove the mounting screws securing the refrigerator or to the enclosure.
8. Remove refrigerator from the enclosure.

### To Reinstall the Refrigerator:

1. Before reinstalling the refrigerator, inspect the areas behind the mounting flanges for damaged or missing seal strips (combustion seals). These seal strips serve as a combustion seal which isolates the living space of the vehicle from the refrigerator's combustion system.
2. Reinstall the refrigerator by reversing the above procedures.
3. After reinstalling the refrigerator, check the gas fitting connections for leaks. Do not check for leaks with an open flame. Use an approved leak-detection solution.

## Trouble Shooting

### **SYMPTOM**

Refrigerator does not operate in AC Mode

### **Possible Causes**

- \* Mode Selection switch may be set to "OFF" or "GAS".
- \* Temperature Selector set too low.
- \* Refrigerator's power cord may not be securely plugged in.
- \* Circuit breaker or fuse may be tripped or blown (AC power source to refrigerator).
- \* Wall outlet may be inoperative. (This can be checked by trying a different appliance in the same outlet.)
- \* If unit fails to operate after the above items have been checked, unplug refrigerator and contact a service center.

### **SYMPTOM**

Refrigerator does not operate in Gas Mode

### **Possible Causes**

- \* Temperature Selector set too low.
- \* May be using gas other than LP gas. **TURN OFF GAS AND CONTACT SERVICE CENTER.**
- \* Gas not available to refrigerator (clogged gas supply line, empty tanks, etc.). Contact service center.
- \* Burner and orifice need cleaned.
- \* Spark ignitor needs replaced.
- \* If unit fails to operate after the above items have been checked, unplug the unit and contact a service center.

### **SYMPTOM**

Poor Performance,  
Gas and Electric

### **Possible Causes**

- \* Incorrect power supply.
- \* Incorrect installation.
- \* Refrigerator off level.
- \* Unusually high ambient temperatures.
- \* Door opened frequently or for extended periods.
- \* Internal cabinet air circulation (wire shelves) blocked by food items, paper, or plastic.
- \* Hot foods placed in refrigerator.
- \* Refrigerator needs defrosting.
- \* Temperature selector set too low.

## FAILURE OF REFRIGERATION

Failure of refrigeration does not necessarily indicate that the cooling system is defective. Other factors governing its operation must be checked.

If the refrigerator is operating on gas and a loss of cooling is noticed, switch the refrigerator to AC electric operation. (See "Operating Instructions on page 13). If the refrigerator has been operating on electric, switch to gas operation. After the refrigerator has been switched from one power source to the other allow several hours to assure the refrigerator is cycling properly. This will help to determine if a component failure in the electric or gas control's is causing the cooling fault. If no cooling is evident after eight hours (or overnight), you must contact your dealer or a Norcold service center to determine the cause of failure.

**Note: Do not attempt to operate the refrigerator on DC when analyzing the cooling unit performance. The DC electric mode of operation is designed for short periods of operation only and will not power the cooling unit to its full capabilities.**

## Replacement Parts

The following is a list of parts which can be replaced by the owner and are obtainable from all Norcold Service Centers.

Description	Model 482,3	Model 462,3
Ice Cube Tray	61630422	61630422
Crisper	61571340	61571340
Juice Rack	61580525	61580525
Storage Bin	61564025	61564025
Milk Bin	61579425	61579425
Freezer Door Gasket	61567830	61567830
Lower Door Gasket	61568030	61567930
Cabinet Lamp	61628922**	61628922**
Burner Orifice	61452222	61452222
Burner Gasket	61475122	61475122
Knob - Thermostat	61642322	61642322
Knob Selector	61641822	61641822
Fuse/DC Heater (3-Way Only)	*61440522 (20 Amp)	*61440522 (20 Amp)
3 Amp Fuse/12 Volt	61654622*	61654622*
5 Amp Fuse/AC	61611622*	61611622*
Owner's Manual	618484	618484

\*\* GE PART NUMBER 214-2: DO NOT SUBSTITUTE.

\* Available at most auto supply companies.

20 Amp. Fuse	Littelfuse SFE-20
15 Amp Fuse	Littlefuse SFE-15
3 Amp. Fuse	Littelfuse 1 AG-3
5 Amp. Fuse	Buss AGC-5

Description	Model 4423	Model 452,3
Milk Bin	61579425	61579425
Dairy Keeper Lid	61580425	61580425
Ice Cube Tray	61630422	61630422
Crisper	-----	61571325
Storage Bin	61564025	61564025
Outer Door Gasket	61640030	61568030
Freezer Door Gasket	61618730	61618730
Burner Orifice	61452122	61452122
Burner Gasket	61475122	61475122
Knob - Thermostat	61642322	61642322
Knob Selector	61641822	61641822
Fuse - DC Heater (3-Way only)	*61446022 (15 Amp)	*61446022 (15 Amp)
Fuse - 12 Volt Control	*61654622 (3 Amp)	*61654622 (3 Amp)
Fuse - AC	*61611622 (5 Amp)	*61611622 (5 Amp)
Owner's Manual	618484	618484

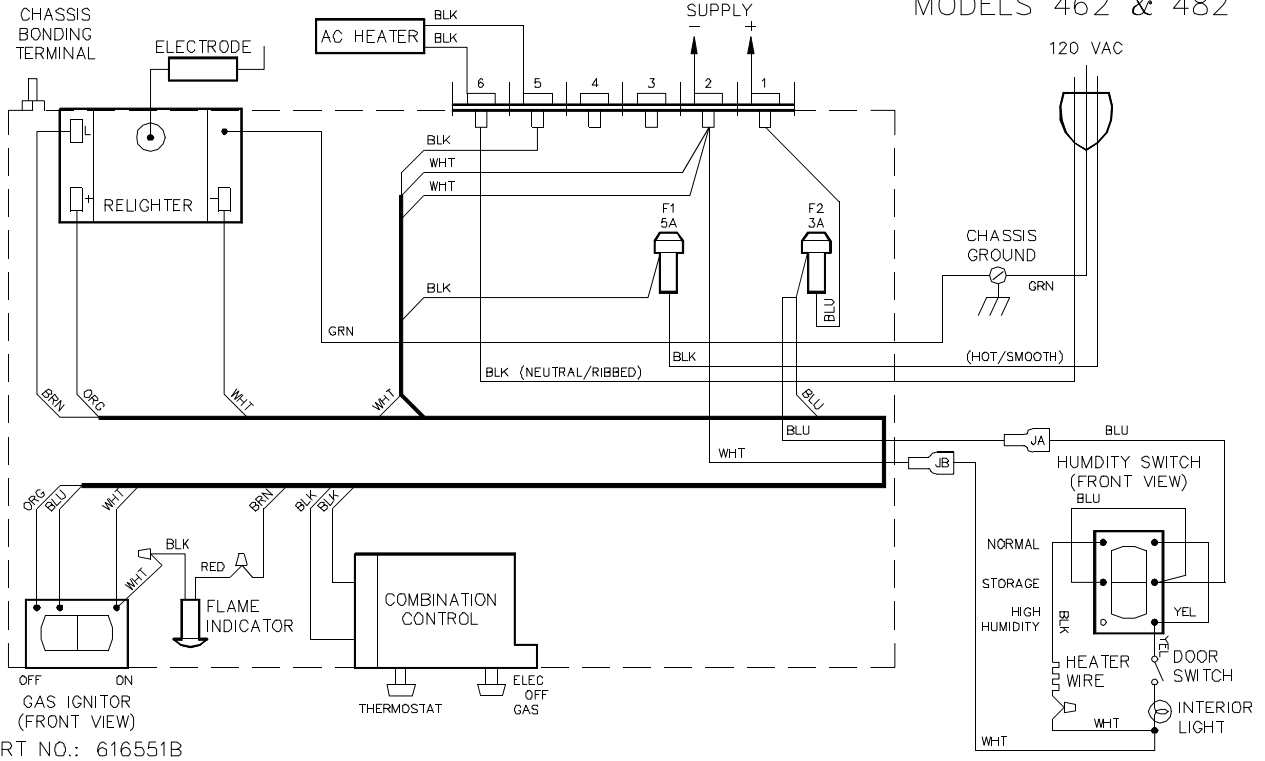
**Le manuel de langue anglaise est disponible sur demande, par l'intermédiaire de votre revendeur.  
N° de pièce: 618506.**

## SERVICE INFORMATION

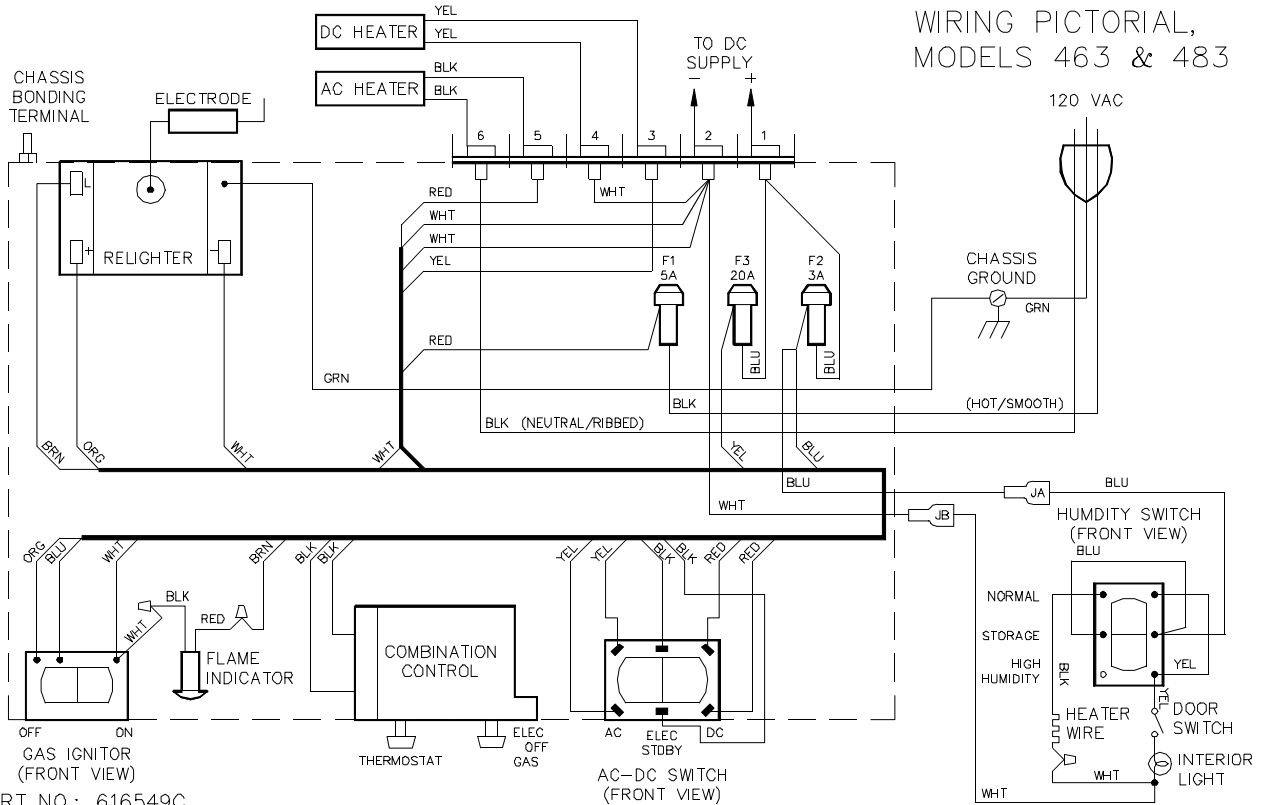
**IF SERVICE OR PARTS ARE REQUIRED,  
CONTACT THE NEAREST NORCOLD  
SERVICE CENTER.**

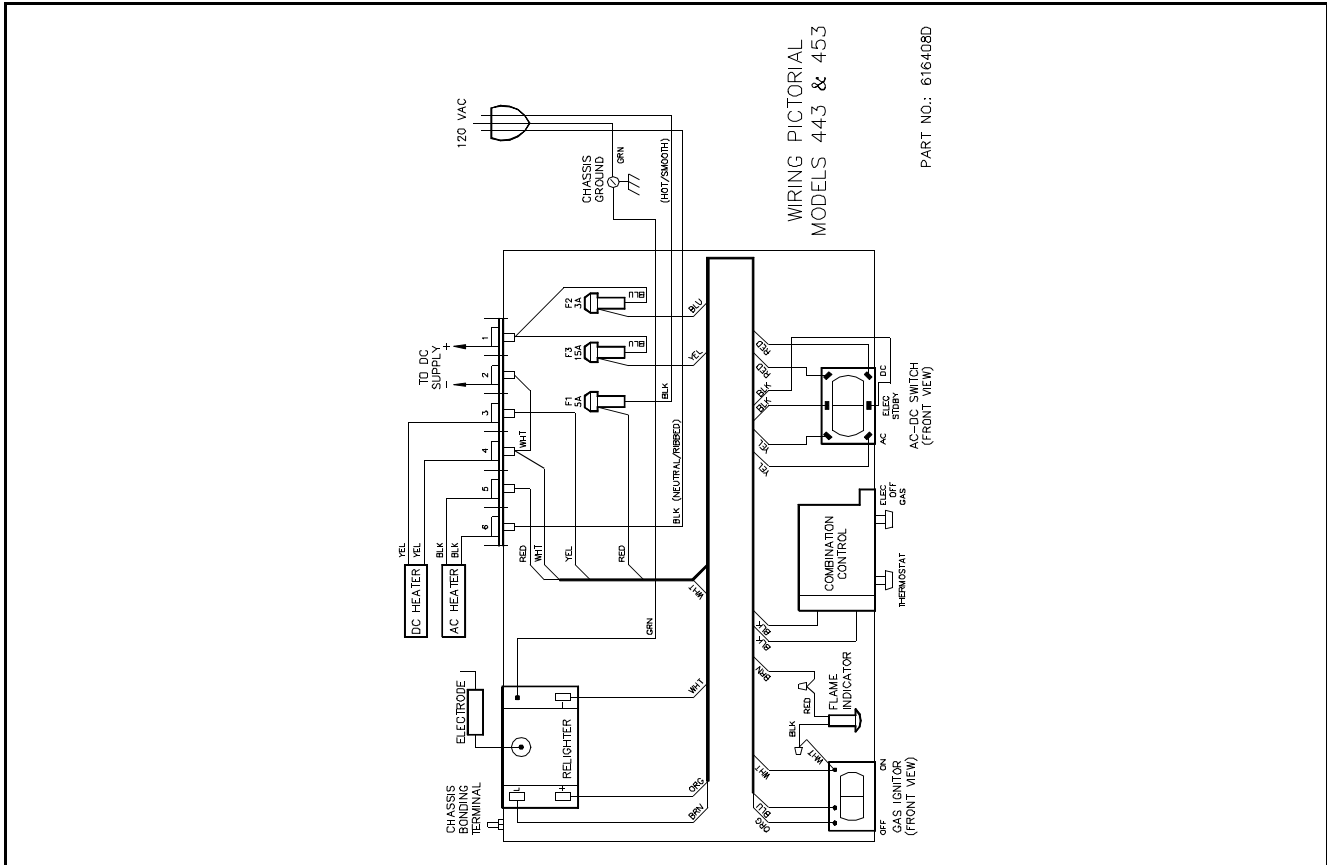
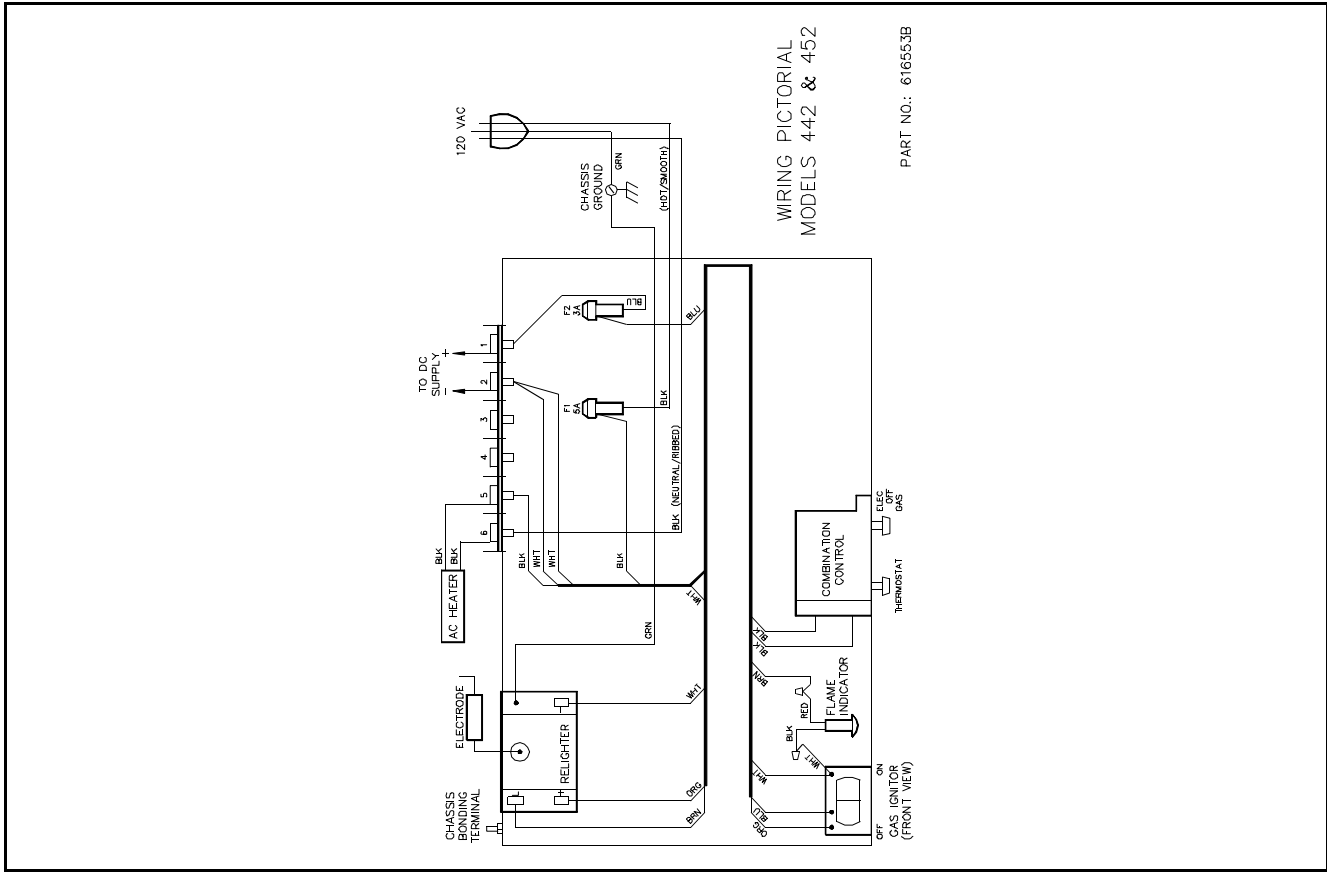
**A NORCOLD SERVICE CENTER BOOK-  
LET HAS BEEN INCLUDED WITH THE RE-  
FRIGERATOR INFORMATION PACKET.**

WIRING PICTORIAL,  
MODELS 462 & 482



WIRING PICTORIAL,  
MODELS 463 & 483





## LIMITED WARRANTY

**NORCOLD SERVICE CENTER  
P O BOX 4248  
SIDNEY OH 45365-4248**

This Limited Warranty is given by NORCOLD ("Company") to the original consumer-purchaser of any new refrigerating equipment ("Equipment") supplied by the Company, excluding glassware and electric light bulbs, and will be effective for a period of one year from date of original purchase. The Company warrants, provided that the Equipment shall at all times have been in possession of and used by the original consumer-purchaser, that:

- A. The Company will provide free service and replacement of defective parts at no charge at all authorized Norcold Service Centers for a period of one year from the date of original purchase. This Limited Warranty covers labor costs incurred in removing and re-installing the refrigerator only when necessary to replace a defective part. The Company will pay inbound and outbound transportation costs of any defective part, for a 1-year period commencing with date of purchase. The original consumer-purchaser must pay all expenses incurred in making the equipment available at one of the Norcold Service Centers.
- B. The following procedure must be followed by an original consumer-purchaser desiring to obtain performance under the terms of this Limited Warranty. The refrigerator must be brought to any of the Norcold Service Centers and the original consumer-purchaser must present evidence (1) to identify the original consumer-purchaser: and (2) that the item claimed to be defective is still within the warranty coverage. If the original consumer-purchaser is unable to accomplish this task, written notice should be immediately directed to Norcold and advice will be promptly given concerning the manner in which warranty service may be obtained. Inability to physically bring the refrigerator to a Norcold Service Center will not void the warranty, but any additional costs thereby incurred are solely the responsibility of the original consumer-purchaser.
- C. The Company will not be liable under this Limited Warranty for any of the following:
  - (1) Defects which arise by reason of transit damage, misuse, neglect or accident.
  - (2) Manufacturing defects found at the time of purchase which are not communicated to the Company within 30 days.
  - (3) Defects in glassware and electric light bulbs.
  - (4) Defects arising from improper installation or adjustment of the Equipment.
  - (5) The need for normal maintenance of this refrigerator, including the cleaning of the flue dilution assembly and orifice, and the adjustment of the gas pressure regulator in the case of gas-electric models.
  - (6) Defects arising from the improper use of parts or parts not manufactured or supplied by the Company in the course of repairs or replacements to the Equipment.
- D. Employees and agents of the Company, and its authorized service representatives, have no authority to vary the terms of the Limited Warranty, which applies only to Equipment purchased and installed in the United States of America and the Dominion of Canada. The Company reserves the right to make any improvements or changes in parts or models without notice to any original consumer-purchaser.
- E. The Company shall not be liable or in any way responsible for any loss or damage to person or property, or lost profits or other similar loss or damage that may result or be claimed to have resulted from a defect in any parts of the Equipment covered by this Limited Warranty. Some states do not allow the exclusion or limitations of any incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- F. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE:
  - (1) APPLICABLE TO A PART OR PARTS OF THE REFRIGERATOR IS LIMITED TO A PERIOD OF ONE YEAR FROM DATE OF PURCHASE.
  - (2) SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS. THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.
- G. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.