



Owner's Manual

For model N400 - a 4.5 cu. ft., 2-way or 3-way, refrigerator.
For model N500 - a 5.5 cu. ft., 2-way or 3-way, refrigerator.
For model N510 - a 5.5 cu. ft., 2-way or 3-way, refrigerator.

The model numbers of 3-way refrigerators include “.3”. The model numbers of 2-way models do not.



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.

English

French

NORCOLD, Inc.
P.O. Box 4248
Sidney, OH 45365-4248

Norcold Customer Support Dept.
Telephone: 800-543-1219
Fax: 937-497-3183
Web Site: www.norcold.com

Table of Contents

Gas Absorption 3 Year Limited Warranty Policy	2
Gas Absorption Warranty Information	3
Gas Absorption Warranty Questions	3
Safety Awareness	4
Safety Instructions	4
About Your Refrigerator	4
Storage volume	4
Leveling	4
Food compartment	4
Flip-up shelf	4
Door bins	5
Freezer compartment	5
Operation during travel	5
Door latch for travel and storage	5
Temperature control system (N510 models)	5
Operating the Refrigerator Controls (N400 models)	5
Control Panel	5
Ignition - propane gas operation	6
Do a test of the gas safety valve	6
Start up - AC operation	6
Start up - DC operation (N400.3 models)	6
Shut down	6
Operating the Refrigerator Controls (N500 models)	6
Control Panel	6
Ignition - propane gas operation	7
Do a test of the gas safety valve	7
Start up - AC operation	7
Start up - DC operation (N500.3 models)	7
Shut down	7
Operating the Refrigerator Controls (N510 models)	7
Control Panel	7
Automatic mode operation	8
Removing the air from the propane gas supply lines	8
Set the controls to automatic mode operation	8
Set the controls to manual mode operation	9
Backup operating system	9
DC Operation Precautions (N400.3, N500.3, and N510.3 models)	10
DC Operation Guidelines (N400.3, N500.3, and N510.3 models)	10
Effects of High Altitude on Propane Gas Operation	10
Refrigerator Care Checklist	10
Defrosting	10
N510 Models only	11
Cleaning	11
Door Sealing	11
Refrigerator Maintenance Checklist	11
Refrigerator Storage	12
Refrigerator Maintenance	12
Gas flame appearance	12
Remove and clean the burner orifice	12
Remove the Refrigerator	13
Reinstall the Refrigerator	13
Replacement Parts	13
Wiring Pictorial (N400 models)	14
Wiring Diagram (N400 models)	14
Wiring Pictorial (N500 models)	14
Wiring Diagram (N500 models)	14
Wiring Pictorial (N510 models)	14
Wiring Diagram (N510 models)	14
Fault Codes (N510 models)	15

NORCOLD - Gas Absorption 3 Year Limited Warranty Policy

Norcold • P.O. Box 4248 • Sidney, OH • USA • 45365-4248

Provided it is properly installed, properly maintained and placed under normal service and use, Norcold, Inc. warrants its refrigeration equipment to be free from defects in material and workmanship for three years with respect to the equipment's component parts, and for two years with respect to the labor to repair or replace such parts, commencing from the original date of purchase.

Limitations of warranty

1. This Warranty applies only to Norcold gas absorption refrigerator operating equipment. This Warranty does not extend to glassware, electric light bulbs, and replaceable fuses.
2. This warranty does not apply to parts and assemblies that have been subjected to misuse, improper installation, improper or abnormal service, transit damage, recharging of the cooling system, accident, fire, improper repair, tampering or abuse.
3. Irrespective of the nature of the warranty protection offered or claimed, the period of warranty shall in no case extend beyond three years for component parts and two years for the labor to repair or replace such parts, commencing from the original date of purchase of the new equipment.
4. In order to obtain the remedy of repair and replacement, the refrigerator must be brought to any Norcold Service Center for warranty service. The end consumer is responsible for all expenses resulting from any remote service call if the refrigerator cannot be brought into the Norcold service center.
5. It is the responsibility of the end consumer to have maintenance performed upon the warranted equipment one time during the second year or before the beginning of the third year after original purchase. Such maintenance is required to maintain this warranty in effect and failure to perform such maintenance will void the remainder of the warranty. Required maintenance during the second year or before the third year after purchase is cleaning and checking of the following: Burner, Flue, Spiral Baffle, Roof Cap Screen, and Control Board Sequence.

LIMITATION OF REMEDY

1. **THE RESPONSIBILITY OF NORCOLD UNDER THIS OR ANY WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT (AT NORCOLD'S OPTION) OF THE DEFECTIVE PART OR ASSEMBLY.**

2. IN NO EVENT AND UNDER NO CIRCUMSTANCES SHALL NORCOLD BE RESPONSIBLE UNDER THIS LIMITED WARRANTY FOR ANY OTHER CHARGE WHATSOEVER, INCLUDING BUT NOT LIMITED TO CHARGES OR CLAIMS FOR LABOR, LOST BUSINESS, LOST TIME, LOST PROFITS, LOSS OF USE, OR ANY KIND OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, HOWEVER DENOMINATED OR DESCRIBED. THE REMEDY UNDER THIS WARRANTY IS LIMITED TO REPLACEMENT OR REPAIR.

3. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

DISCLAIMER OF OTHER WARRANTIES

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED. ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED.

Legal rights

This warranty gives you specific legal rights, and you may have other legal rights, which vary from state to state.

Gas Absorption Warranty Information

Your refrigerator is made to provide the ultimate in cooling satisfaction and will serve you reliably in the years to come. Norcold refrigerators are the only RV refrigerators made in the United States and offer a standard limited three-year warranty. Norcold also offers an additional warranty coverage plan which extends the standard limited three-year warranty. To activate your three-year limited warranty and to receive an invitation to participate in the extended warranty plan, complete and mail the warranty registration supplied.

Help us to help you.

Write the model number and serial number below for future reference. These numbers are on the serial plate in the refrigerator. The serial plate is located in the fresh food compartment on the top right hand side. Use these numbers when receiving service or in any correspondence concerning your refrigerator.

Model number _____ Serial number _____

If a problem occurs with your refrigerator, contact any of the service centers throughout the United States and Canada. To find an authorized Norcold Service Center near you, please telephone the Norcold Customer Support Dept. at 800-543-1219 (option-1) or visit our web site at www.norcold.com.

Norcold is committed to providing products that are in harmony with the environment. Your Norcold refrigerator meets all environmental safety standards.

Gas Absorption Warranty Questions

This warranty is the only warranty for your Norcold refrigerator. There are no other express warranties. The only uses for this product are described in this manual. Part or model specifications are subject to change without notice.

What does this warranty cover?

This warranty covers labor and U.P.S. ground transportation costs incurred in removing and reinstalling the refrigerator when necessary to replace a defective part and any parts replaced under warranty (including cooling units).

What is not covered by this warranty?

- Travel expenses for bringing the refrigerator to an authorized Norcold Service Center for warranty coverage.
- Additional costs caused by the inability to bring the refrigerator to an authorized Norcold Service Center.
- Defects which are caused by transit damage, misuse, neglect, or accident.
- Manufacturing defects found at the time of purchase, parts replaced under warranty, and associated labor, which the original consumer-purchaser do not communicate to Norcold within 30 days.
- Labor, performed without need for parts replacements, which the original consumer-purchaser does not communicate to Norcold within 30 days.
- Defects in glassware, electric light bulbs, or replacement fuses.
- Defects caused by improper installation, maintenance, or adjustment.
- Normal maintenance of this refrigerator as described in this manual.
- Defects caused by the improper use of parts or parts not manufactured or supplied by Norcold for repairs or replacements to the refrigerator.

Norcold will not be liable for any incidental or consequential loss or damage, due directly or indirectly to the use of this product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you.

How long does this warranty last?

This warranty is effective for a period of two years from date of purchase or for a period of three years from date of purchase if the required maintenance is done.

What will Norcold do?

Norcold will provide free service and replacement of defective parts, at no charge, at all authorized Norcold Service Centers. Norcold has the option of replacing the defective parts or the entire refrigerator. If the refrigerator is replaced, Norcold is not responsible for replacing dealer installed options.

How do you get service?

Bring the refrigerator to any authorized Norcold Service Center and:

- Show proof that the defective item is within warranty coverage.
- Show proof that required maintenance has been performed if applicable. Required maintenance during the second year or before the third year after purchase is cleaning and checking of the Burner, Flue, Spiral Baffle, Roof Cap Screen, and Control Board Sequence.

If you are unable to bring the refrigerator to an authorized Norcold Service Center:

- Send a written notice of the defect to Norcold.
- Norcold will promptly advise you how to obtain warranty service.


What rights do you have?


This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

Safety Awareness

Read this manual carefully and understand the contents before you use 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:**

- The storage of flammable materials behind or around the refrigerator creates a fire hazard. Do not use the area behind the refrigerator to store anything, especially flammable materials (gasoline, cleaning supplies, etc.)
- Do not remove the round ground prong from the refrigerator AC power cord. Do not use a two prong adapter or extension cord on the AC power cord.
- A circuit overload can result in an electrical fire if the wires and/or fuses are not the correct size. Either use the wire and fuse sizes as written in the "Installation Manual" or refer to your local codes or the applicable RVIA Standards for the correct wire and fuse sizes.
- Incorrect installation, adjustment, change to, or maintenance of this refrigerator can cause personal injury, property damage, or both. Have service and maintenance work done by your dealer or by an Norcold authorized service center.
- Disconnect both the AC and DC power sources before doing any maintenance work on the refrigerator. All service work on this refrigerator must be done by a qualified service technician.
- Do not bypass or change the refrigerator's electrical components or features.
- When you discard an appliance, remove all doors to prevent accidental entrapment and suffocation.
- 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.

- At regular intervals, make sure that the refrigerator flue the burner, the vent areas, and the ventilation air pathway between the vents are completely free from any flammable material or blockage. After a period of storage, it is especially important to check these areas for any flammable material or blockage caused by animals.

 **CAUTION:**

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


About Your Refrigerator

Storage Volume:

This refrigerator is made to store fresh and frozen foods and for making ice.

	N400	N500 and N510
Total capacity	4.50 cubic feet	5.50 cubic feet
Freezer capacity	.81 cubic feet	.81 cubic feet
Food compartment capacity	3.69 cubic feet	4.69 cubic feet

Leveling:

 **CAUTION:** The refrigerator is made to operate within 3° off level side-to-side and 6° off level front-to-back (as looking at the front of the refrigerator). Operating it at more than these limits can cause damage to the cooling system and create a risk of personal injury or property damage. Make sure the vehicle is level before you operate the refrigerator.

Operation during travel:

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

Food compartment:

Ignite or start up the refrigerator and let it cool for eight hours before loading with food. If the refrigerator does not start to cool down after about two hours, contact your dealer or an authorized Norcold Service Center.

For the best cooling performance:

- Let air move freely inside the entire food compartment.
- Do not cover the shelves with plastic, paper, etc.

To decrease the amount of ice that collects on the cooling fins:

- Cover all liquids and moist foods.
- Let all hot foods cool before putting them in the refrigerator.
- Do not open the door any longer than necessary.

Flip-up shelf:

The flip-up shelf supplies a space to store tall bottles. To use the flip-up shelf, lift the center of the shelf and fold it up against the inside wall of the refrigerator.

Door Bins:

You may put the door bins [1] of the fresh food compartment in a location that best meets your need (See Art01114). To remove the bins, lift them over the locator and pull them forward. To install the bins, push them onto the locator.

NOTE: Do not wash the door bins in a dishwasher. The door bins are not dishwasher safe.

Freezer compartment:

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

NOTE: Do not put other items on the ice tray while the water is freezing. The water freezes more rapidly if the thermostat is at the coldest temperature setting.

Door latch for travel and storage:

During travel, the door latch prevents the door from opening. There are no chains, slides, or any devices that you must engage.

During storage, the door latch prevents the door from completely closing. Use it to prevent odors when the refrigerator is shut down for a long period of time.

To use the door latch for storage (See Art00979):

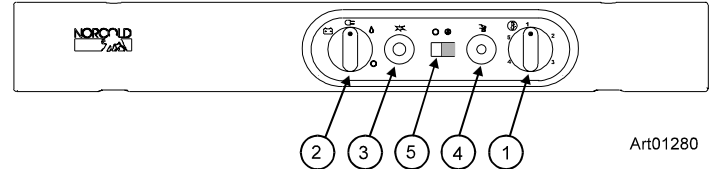
- Open the door just so the door latch [1] is between the ribs [2] of the latch plate [3].

Temperature control system (N510 models):

Although the refrigerator is not frost-free, it is made to limit frost on the cooling fins. At regular intervals, the temperature control system automatically melts most of the frost from the cooling fins. The water from the cooling fins drains into a collection cup that is attached to the back of the refrigerator. The heat of the cooling system evaporates the water from the collection cup.

Operating the Refrigerator Controls (N400 models)

Control panel:



- | | |
|------------------------|---|
| Thermostat | 1 |
| Selector switch | 2 |
| Piezo lighter | 3 |
| Gas safety valve | 4 |
| Flame meter | 5 |

The thermostat [1] (See Art01280) changes the amount of propane gas that goes to the burner. This acts as the temperature control of the refrigerator. Number 5 is the coldest temperature setting.

When the outside air temperature is below 50° F, the refrigerator may have a tendency to freeze food at the colder temperature settings. To reduce the tendency to freeze food:

- Turn the thermostat to a warmer temperature setting.
- Keep the refrigerator full.
- Put foods that are more likely to freeze on the lower shelf.

The selector switch [2] changes the energy source of the refrigerator between propane gas (🔥), AC electric (⚡), DC electric (🔌), and OFF (⏻).

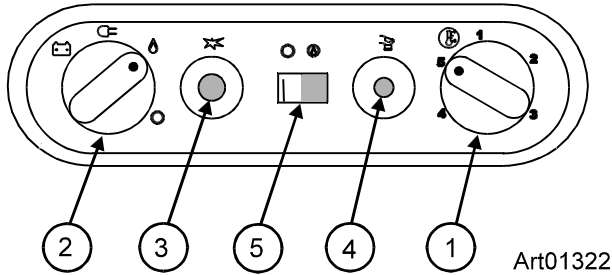
The gas safety valve [3] is built into the control panel. As long as a flame is present, the valve is open and allows propane gas to flow into the burner. Any loss of flame (empty propane gas tank, blow out, etc.) closes the safety valve and stops the flow of propane gas.


The piezo igniter [4] makes a spark which ignites the flame in the burner.

The flame meter [5] shows if a flame is present in the burner.

Ignition - propane gas operation:

1. Open the valve at the propane gas storage tank.



2. Turn the thermostat [1] to the 5 position.
3. Turn the selector switch [2] to the propane gas position ().
4. Push and hold in the safety valve [4] and push in the igniter [3] several times in rapid succession, for about five seconds:

WARNING: Do not hold in the safety valve for more than 30 seconds. If there is no flame in this time, wait at least five minutes before you try ignition again. If you continue to hold in the safety valve, gas will collect in the burner area. This could cause a fire or explosion and result in dangerous personal injury or death.

- When a flame is present and the flame meter [5] moves into the green area, wait about five seconds and release the safety valve.
 - If the flame meter does not move into the green area, do this step again.
5. Turn the thermostat to the temperature setting that you wish.

Do a test of the gas safety valve:


With an established flame in GAS mode:

1. Close the manual gas shutoff valve [2] of the refrigerator (See Art00975).
2. After the flame is extinguished, you should hear a sharp “click” sound within three minutes.


NOTE: The gas safety valve should close with a sharp “click” sound.

3. Open the manual gas shutoff valve of the refrigerator.
4. Without pushing in the gas control, push the igniter several times rapidly in succession. The burner flame should not ignite. This means that the gas safety valve is working correctly.


Start up - AC operation:

- Make sure that 120 volts AC is available.
- Turn the selector switch to the AC position ().
- Turn the thermostat to the temperature setting that you wish.

Start up - DC operation (3-way model N400.3):

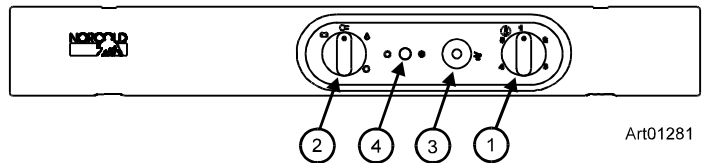
- Make sure that 12 volts DC is available.
- Turn the selector switch to the DC position ().

Shut down:

- Turn the selector switch to the OFF position ().

Operating the Refrigerator Controls (N500 models)

Control panel:







Thermostat.....	1
Selector switch.....	2
Gas safety valve.....	3
Flame indicator.....	4

The thermostat [1] (See Art01281) changes the amount of propane gas that goes to the burner. This acts as the temperature control of the refrigerator. Number 5 is the coldest temperature setting.

When the outside air temperature is below 50° F, the refrigerator may have a tendency to freeze food at the colder temperature settings. To reduce the tendency to freeze food:

- Turn the thermostat to a warmer temperature setting.
- Keep the refrigerator full.
- Put foods that are more likely to freeze on the lower shelf.

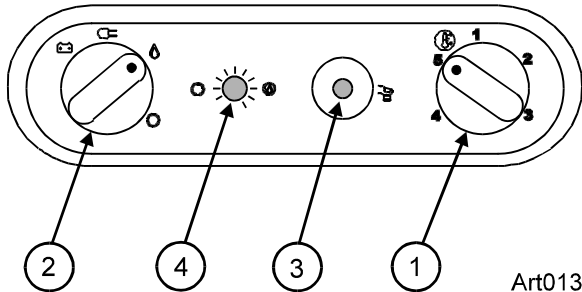
The selector switch [2] changes the energy source of the refrigerator between propane gas (), AC electric (), DC electric (), and OFF ().

The gas safety valve [3] is built into the control panel. As long as a flame is present, the valve is open and allows propane gas to flow into the burner. Any loss of flame (empty propane gas tank, blow out, etc.) closes the safety valve and stops the flow of propane gas.

The flame indicator [4] shows if a flame is present in the burner.

Ignition - propane gas operation:

1. Open the valve at the propane gas storage tank.



Art01323

2. Turn the thermostat [1] to the 5 position.
3. Turn the selector switch [2] to the propane gas position (🔥).
4. Push and hold in the safety valve [3] for about five seconds:
 - The refrigerator automatically ignites the gas at the burner.

WARNING: Do not hold in the safety valve for more than 30 seconds. If there is no flame in this time, wait at least five minutes before you try ignition again. If you continue to hold in the safety valve, gas will collect in the burner area. This could cause a fire or explosion and result in dangerous personal injury or death.

- When a flame is present and the flame indicator [4] illuminates, release the safety valve.
 - If the flame indicator does not illuminate, do this step again.
5. Turn the thermostat to the temperature setting that you wish.

Do a test of the gas safety valve:

With an established flame in GAS mode:

1. Close the manual gas shutoff valve [2] of the refrigerator (See Art00975).
2. After the flame is extinguished, you should hear a sharp “click” sound within three minutes.

NOTE: The gas safety valve should close with a sharp “click” sound.

3. Open the manual gas shutoff valve of the refrigerator.

4. Without pushing in the gas control, push the igniter several times rapidly in succession. The burner flame should not ignite. This means that the gas safety valve is working correctly.

Start up - AC operation:

- Make sure that 120 volts AC is available.
- Turn the selector switch to the AC position (⏻).
- Turn the thermostat to the temperature setting that you wish.

Start up - DC operation (3-way model N500.3):

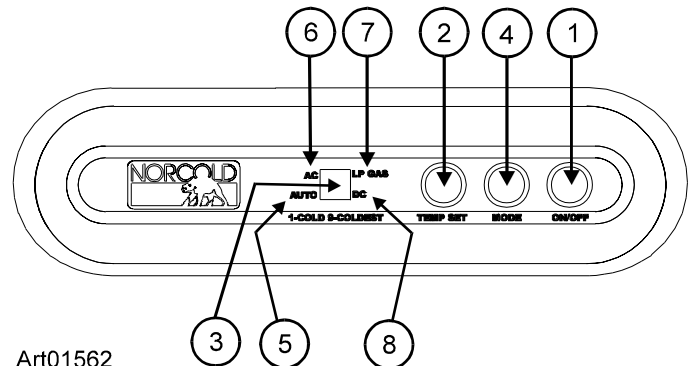
- Make sure that 12 volts DC is available.
- Turn the selector switch to the DC position (🔌).

Shut down:

- Turn the selector switch to the OFF position (⏻).

Operating the Refrigerator Controls (N510 models)

Control panel:



Art01562

The refrigerator control panel (see Art10562) is above the refrigerator door. A 12 volt DC power supply is necessary for the control functions of the refrigerator to operate. The refrigerator receives DC power from the 12 volt system of the vehicle; either an auxiliary battery, a converter, or the vehicle engine battery.

The ON / OFF button [1] starts and shuts down the refrigerator:

- To turn on the refrigerator, push and release the ON / OFF button.
- To turn off the refrigerator, push the ON / OFF button for two seconds and then release.

The TEMP SET button [2] controls the temperature adjustment of the freezer and the fresh food compartment. The temperature adjustment that you select does not change if the mode of operation of the refrigerator changes.

- Push the TEMP SET button and the temperature setting "1-9" appears in the center display [3].
- Push and hold the TEMP SET button and the temperature setting changes.
 - When the desired temperature setting shows, release the TEMP SET button.
 - The temperature setting shows for ten seconds and then the current operation mode of the refrigerator shows.
 - The number "9" is the coldest temperature setting.

The MODE button [4] controls the operation mode of the refrigerator.

- Push and hold the MODE button and a light bar shows in the center display beside each of the four operating modes of the refrigerator, one at a time.
 - There is one automatic mode of operation and two manual modes of operation.

NOTE: On model N510.3, there are three manual modes of operation.

- When the light bar shows beside the mode of operation that you choose, release the MODE button to operate the refrigerator in that mode.

Automatic mode operation:

When the refrigerator is in AUTO mode, it automatically uses the most efficient energy source that is available for operation. During operation, if a more efficient energy source becomes available, the refrigerator controls change from the current energy source to the more efficient energy source as follows:

- The first choice is AC operation if 120 volts AC is available to the refrigerator.
- The second choice is propane gas operation if 120 volts AC is not available to the refrigerator.
- The third choice is DC operation (on model N510.3 only) if neither 120 volts AC nor propane gas is available to the refrigerator.

Removing air from the propane gas supply lines:

For safety reasons, the burner is made to ignite on propane gas within a specified amount of time. When starting the refrigerator for the first time, after storage, or after replacing propane gas tank, the propane gas supply lines can have air in them. Due to the air in the gas supply lines, the burner may not ignite on propane gas within the specified amount of time.

To remove the air from the propane gas supply lines:

- Make sure that all of the gas valves are open.
- Push the ON / OFF button to turn the refrigerator on.
- Push and hold the MODE button until the light bar beside LP GAS shows.
 - This means that the refrigerator is operating on propane gas.
 - If the air in the propane gas supply lines prevents the burner from ignition on propane gas, the fault code "F" will appear in the center display.
 - Push the MODE button and the refrigerator will start a 30 second trial for ignition.
 - During the 30 second trial for ignition, the refrigerator controls open the gas safety valve and the igniter sparks.
 - After 30 seconds, the refrigerator controls closes the gas safety valve and the igniter stops sparking.
- When the light bar beside the LP GAS [6] shows and no fault code remains, this means that the refrigerator is operating on propane gas.
 - At this time, all of the air is removed from the propane gas supply lines and you may select AUTO mode of operation if you wish.
- Depending on how much air may be in the propane gas supply lines, you may need to repeat the 30 second trial for ignition two or three times.
- If the burner does not ignite on propane gas after two or three attempts, stop and consult your local dealer or an authorized Norcold Service Center.

Set the controls to automatic mode operation:

- Push the ON / OFF button to turn the refrigerator on.
- Push and hold the MODE button until the light bar shows beside AUTO [3] and then release.

- If 120 volts AC is available to the refrigerator:
 - The light bar beside AC [4] also shows in the center display.
 - After ten seconds, the light bar beside AC goes off and only the light bar beside AUTO remains.
 - This means that the refrigerator is operating on AC electric.
- If 120 volts AC is not available to the refrigerator:
 - The light bar beside AC [4] also shows in the center display.
 - After a few seconds, the light bar beside AC goes off and the light bar beside LP GAS [6] shows.
 - After 10 seconds, the light bar beside LP GAS goes off and only the light bar beside AUTO remains.
 - This means that the refrigerator is operating on propane gas.
- On model N510 only, if neither 120 volts AC nor propane gas is available to the refrigerator:
 - The fault code "F" shows in the center display.
- On model N510.3 only, if neither 120 volts AC nor propane gas is available to the refrigerator:
 - The refrigerator control will automatically change to DC electric operation.

NOTE: DC electric operation is less efficient than AC electric and propane gas. Use DC electric operation only to maintain the refrigerator temperature while in transit and if the other energy sources are not available. Do not use DC electric to initially decrease the temperature of the refrigerator.

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

- A fault code shows in the center display.
- The refrigerator controls try to change to a less efficient energy source.
- If a less efficient energy source is not available:
 - 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 the light bar shows beside AC [4] and then release.
 - This means that the refrigerator is operating on AC electric.
- Push and hold the MODE button until the light bar shows beside LP GAS [6] and then release.
 - This means that the refrigerator is operating on propane gas.
- Push and hold the MODE button until the light bar shows beside DC [8] and then release.
 - This means that the refrigerator is operating on AC electric.

If the energy source is interrupted:

- A fault code shows in the center display.
- Refer to the "Fault Codes" section of this manual.

Backup operating system:

This refrigerator has a backup operating system. The backup operating system allows the refrigerator to continue to cool if the temperature sensor of the refrigerator should fail.

If this failure occurs:

- The refrigerator automatically changes to the backup operating system.
 - When you push the TEMP SET button, the temperature setting flashes in the center display for ten seconds.
 - After the temperature setting flashes, the mode of operation appears in the center display.
- The backup operating system can overfreeze or thaw the contents of the freezer and the fresh food compartment.
 - Make sure the temperatures of the freezer and the fresh food compartment are satisfactory.

NOTE: If you open the door(s) too often, the temperatures inside the freezer and fresh food compartment do not become stable. Allow the refrigerator to operate for about one hour after each adjustment change before you examine the contents. The number "9" is the coldest temperature setting.

- If the temperature is too warm, push and hold the TEMP SET button to raise the temperature setting by one number.
- If the temperature is too cold, push and hold the TEMP SET button to lower the temperature setting by one number.
- Have the refrigerator serviced by your dealer or an Norcold authorized Service Center as soon as possible.

DC Operation Precautions (N400.3, N500.3, and N510.3 models)

This refrigerator is made to operate on DC power while your vehicle is "in transit" and AC power or propane gas sources are not available. Operate the refrigerator on DC power only when the vehicle engine is running.

For the refrigerator to operate correctly on DC power, the battery must be maintained in a fully charged condition.

For the battery to be fully charged at all times during refrigerator operation on DC, the vehicle engine must be running and the battery charging system must be in good operating condition.

Keep in mind the following electrical precautions for DC operation of the refrigerator:

- Good battery condition is necessary for correct DC operation.
- The capacity of the battery charging system must be more than what is necessary for the refrigerator and other DC appliances.
- While the vehicle engine is running, make sure the voltage of the DC power supply leads at the refrigerator is more than 11.5 VDC.

DC Operation Guidelines (N400.3, N500.3, and N510.3 models)

DC operation is intended only to maintain the temperature of the refrigerator and its contents when they are already cool.

The DC operation is not intended for the initial start up and cooling of the refrigerator. Always use either the AC operation or propane gas operation to initially start up and cool the refrigerator. The refrigerator must be cooled and the temperature must be steady before you operate the refrigerator on DC.

Keep in mind the following guidelines for DC operation of the refrigerator:

- Use DC operation of the refrigerator while the vehicle is in transit.
- Do not use DC operation until the refrigerator and its contents are completely cooled.
- Only use DC operation if the vehicle battery and battery charging system are in good operating condition.

Effects of High Altitude on Propane Gas Operation

When you operate the refrigerator on propane gas at altitudes higher than 5500 feet above sea level:

- You may experience reduced cooling performance of the refrigerator.
- You may experience burner outages.

To avoid these possible problems, Norcold recommends that you operate the refrigerator on AC when at altitudes higher than 5500 feet above sea level.

Refrigerator Care Checklist

Your refrigerator will give you years of trouble free service if you do these simple checks every three to six months:

- Keep the food compartment and the freezer clean. See "Cleaning".
- Defrost the refrigerator as necessary. See "Defrosting".
- Make sure the door seals correctly. See "Door Sealing".
- Be aware of any cooling changes that are not because of weather, loading, or gas control changes. If changes occur, contact your dealer or an authorized Norcold Service Center.
- Make sure the gas supply is propane gas only and not butane or a butane mixture.

Defrosting

The cooling fins of the refrigerator operate at below freezing temperature and will naturally form frost from humidity, which is always present in the air. The humidity inside the refrigerator increases:

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

It is normal for frost to collect inside the freezer. Excess frost decreases the cooling performance of the refrigerator. Defrost the refrigerator when frost starts to close the spaces between the cooling fins:

- Remove all food from the refrigerator.
- Shut off the refrigerator.

NOTE: Defrosting the refrigerator makes excess water inside the refrigerator.

- Put dry towels (etc.) inside the refrigerator to absorb the water.
- Put trays of hot water in the freezer until the frost is melted.
- Empty the drip tray.
- Remove the wet towels (etc.) and dry the interior.
- Put the drip tray and all food in the refrigerator.
- Start up the refrigerator.

N510 Models only:

Although the refrigerator is not frost -free, it is made to limit frost on the cooling fins. At regular intervals, the temperature control system automatically melts most of the frost from the cooling fins. The water from the cooling fins drains into a collection cup that is attached to the back of the refrigerator. The heat of the cooling system evaporates the water from the collection cup.

Cleaning

A good time to clean the refrigerator is just after you defrost it.

Clean the inside of the refrigerator as often as necessary to avoid food odors:

- Remove all food from the refrigerator.

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

- Wash the interior with a solution of liquid dish detergent and warm water.

Door Sealing

If the door does not seal correctly, excess frost will collect inside the refrigerator. Make sure the door seals correctly:

- Close the door on a piece of paper that is about the size and thickness of a dollar bill (See Art00980).
- Gently pull the paper.
 - You should feel a slight drag between the gasket and the cabinet.
 - Do this on all four sides of the door.
- If you do not feel a slight drag on the paper, the door is not sealing correctly:
 - Make sure the screws of the hinges are tight.
 - Make sure the door gasket does not touch the door latch:
 - If the door gasket touches the door latch, loosen the screws of the door latch.
 - Raise the door latch just so it does not touch and tighten the screws of the door latch.
 - Make sure the door latch holds the door closed

Refrigerator Maintenance Checklist

Read and understand the following maintenance sections of this manual.

NOTE: Norcold is not responsible for installation, adjustment, alteration, service, or maintenance performed by anyone other than a qualified RV dealer or an authorized Norcold Service center.

Have a qualified RV dealer or an authorized Norcold Service Center do these annual safety and maintenance checks:

- Examine the gas supply lines for leaks.
 - Replace or repair if necessary.
- Make sure the propane gas pressure is 11 inches of water column.
 - Adjust if necessary.
- Make sure the combustion seal is complete and intact.
 - Replace or repair it if necessary.

- Make sure the burner and the burner orifice are clean (See Art00956).
 - Clean if necessary.
- Make sure the electrode spark gap [3] is 1/8 - 3/16 inch (See Art00955).
 - Adjust if necessary.
- Make sure the AC voltage is 108 - 132 volts and the DC voltage is 10.5 - 15.4 volts.
- Make sure the thermocouple tip is clean and secure.
- Make sure the area at the rear of the refrigerator is free of any combustible materials, gasoline, and other flammable vapors and liquids.

- The flame should be:
 - a darker blue color on the inside of the flame and a lighter blue color on the outside of the flame.
 - a constant shape without flickering.
- Contact your dealer or Norcold authorized service center if the flame is:
 - yellow
 - flickering or changing shape.
- Make sure the flame does not touch the inside of the flue tube [2].
- If the flame touches the inside of the flue tube, contact your dealer or an authorized Norcold Service Center.
- Close the burner box door.

Refrigerator Storage

Before the refrigerator is stored for an extended (seasonal) period of time:

- Defrost and clean the interior of the refrigerator.
- Close the doors with the storage latch.

If the refrigerator is stored for an extended period of time, before start up:


- Make sure there are no obstructions in the vents, the ventilation air pathway, the burner, the orifice, or the flue area.

Refrigerator Maintenance

Gas flame appearance:

While in propane gas operation, examine the appearance of the gas flame:

- On N400 and N500 models, turn the thermostat to the 5 position.
- On N510 models, push and hold temperature setting button until the "9" shows and then release.
- Open the lower intake vent.

 **CAUTION:** The burner box cover can be hot. Wear gloves to avoid burns.


- Open the burner box door [3] and look at the gas flame [1] (See Art00955 and Art00975).

Remove and clean the burner orifice:


NOTE: Your dealer or an authorized Norcold Service Center must do this procedure.

To remove and clean the burner orifice:

- Close the valve at the propane gas tank(s).
- Close the manual shut off valve of the refrigerator.
- Shut down the refrigerator..
- Open the lower intake vent.


 **CAUTION:** The burner box cover can be hot. Wear gloves to avoid burns.

- Remove the burner box cover by removing one screw.

 **WARNING:** To avoid possible propane gas leaks, always use two wrenches to loosen and tighten the gas supply line at the refrigerator's manual shut off valve.

- Remove the flare nut from the orifice assembly [1] (See Art00956).


- Remove the orifice assembly from the burner [2].

 **WARNING:** Do not try to remove the orifice [3] from the orifice adapter [4] when cleaning. Removal will damage the orifice and seal of the orifice and can cause a propane gas leak. Leaking propane gas can ignite or explode which can result in dangerous personal injury or death. Do not clean the orifice with a pin or other objects.


- Clean the orifice assembly with air pressure and alcohol only.
- Using a wrench, assemble the orifice assembly to the burner.
 - Assemble the flare nut to the orifice assembly.
 - Tighten the flare nut by hand.
 - Hold the orifice assembly securely and, using a wrench, tighten the flare nut 1/4 revolution only.
- Examine all of the connections for gas leaks.

Remove the Refrigerator

NOTE: Your dealer or an authorized Norcold Service Center must do this procedure.

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


1. Close the valve at the propane gas tank(s).

 **WARNING:** To avoid possible propane gas leaks, always use two wrenches to loosen and tighten the gas supply line at the refrigerator's manual shut off valve.


2. Open the lower intake vent and remove the gas supply line from the manual shut off valve of the refrigerator.
3. Remove the AC power cord from the receptacle.
4. Remove the DC wiring from the refrigerator:
 - Remove the DC wiring from the battery or the converter of the vehicle.
 - Put a mark on the DC wires so you can put them back in the correct location.
 - Remove the DC wires from the refrigerator.
5. Remove the screws which fasten the refrigerator to the floor.
6. Remove the door from the refrigerator.
7. Remove the screws which fasten the refrigerator to the wall.
8. Remove the refrigerator from the opening.
9. Attach the door to the refrigerator.

Reinstall the Refrigerator


NOTE: Your dealer or an authorized Norcold Service Center must do this procedure.

 **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 combustion 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, and in extreme cases, death.


1. Push the refrigerator completely into the enclosure.
2. Remove the door from the refrigerator.
3. Put the screws through the mounting flanges and into the wall.
4. Attach the door to the refrigerator

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

5. Open the lower intake vent and put the screws through refrigerator and into the floor.

 **WARNING:** To avoid possible propane gas leaks, always use two wrenches to loosen and tighten the gas supply line at the refrigerator's manual shut off valve.

6. Attach the gas supply line to the manual shut off valve of the refrigerator.
7. Open the valve at the propane gas tank(s).

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

8. Examine the gas supply line for leaks.
9. Connect the DC wiring to the refrigerator:
 - Install the DC fuse or connect the DC wiring to the battery or the converter.
 - Connect the DC wires from the refrigerator.
10. Connect the AC power cord to the receptacle.

Replacement Parts

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

Wiring Pictorial (N400 models only)

The parts of the wiring pictorial are (Art01326):

1	120VAC Power cord
2	Terminal block
3	3 Amp fuse
4	Selector switch
5	Thermocouple
6	Thermostat / gas safety valve
7	Thermocouple interrupter
8	Flame meter
9	AC heater
10	-12 VDC Power supply (model N400.3)
11	+12 VDC Power supply (model N400.3)
12	25 Amp fuse (model N400.3)
13	DC heater (model N400.3)

Wiring Diagram (N400 models only)

The parts of the wiring diagram are (See Art01327):

1	120 VAC
3	3 Amp fuse
5	Thermocouple
6	Gas safety valve
7	Thermocouple interrupter
8	Flame meter
9	AC heater
10	-12 VDC Com (model N400.3)
11	+12 VDC (model N400.3)
12	25 Amp fuse (model N400.3)
13	DC heater (model N400.3)
14	Thermostat
15	Spark gap
16	Piezo lighter

Wiring Pictorial (N500 models only)

The parts of the wiring pictorial are (Art01314):

1	120VAC Power cord
2	Terminal block
3	3 Amp fuse
4	Selector switch
5	Thermocouple
6	Thermostat / gas safety valve
7	Thermocouple interrupter
8	Flame indicator
9	AC heater
10	-12 VDC Power supply
11	+12 VDC Power supply
12	25 Amp fuse (model N500.3)
13	Spark electrode
14	Relighter
15	DC heater (model N500.3)
16	1 Amp fuse

Wiring Diagram (N500 models only)

The parts of the wiring diagram are (See Art01315):

1	120 VAC
3	3 Amp fuse
5	Thermocouple
8	Flame indicator
9	AC heater
10	-12 VDC Com
11	+12 VDC
12	25 Amp fuse (model N500.3)
14	Relighter
15	DC heater (model N500.3)
16	1 Amp fuse
17	Thermostat
18	Gas safety valve
19	Thermocouple interrupter
20	Spark gap

Wiring Pictorial (N510 models only)

The parts of the wiring pictorial are (Art01576):

1	120 VAC
2	-12 VDC Power supply
3	+12 VDC Power supply
4	Power board
5	5 Amp fuse
6	30 Amp fuse (model N510.3)
7	AC heater
8	DC heater (model N510.3)
9	Gas safety valve
10	Spark electrode
11	Display board overlay
12	Display board
13	Temperature sensor
14	Fan (optional)
15	Thermostat (optional)

Wiring Diagram (N510 models only)

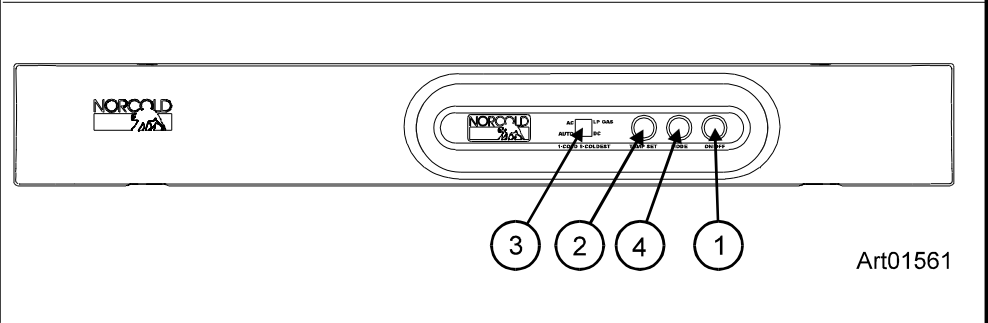
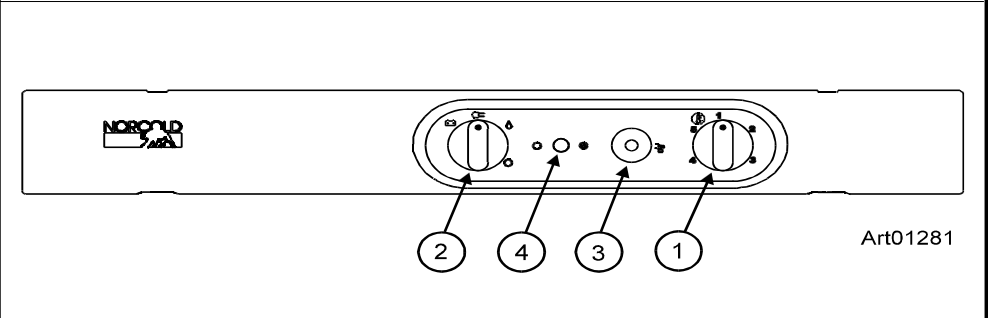
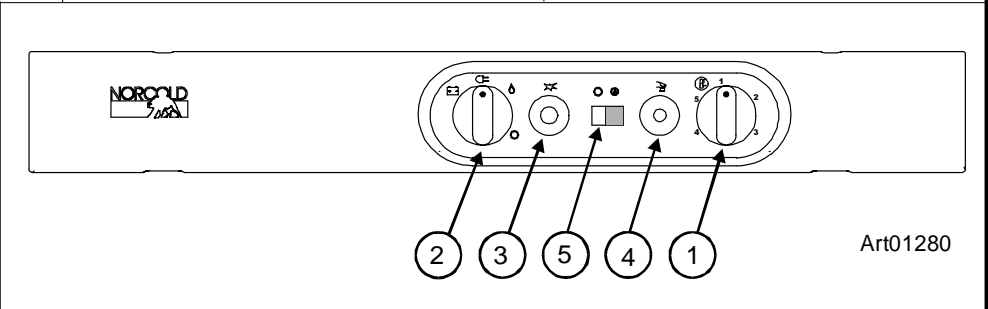
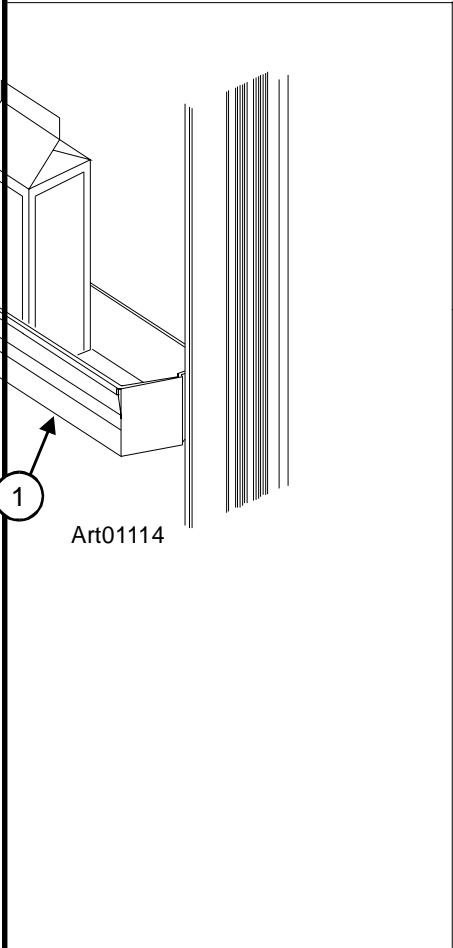
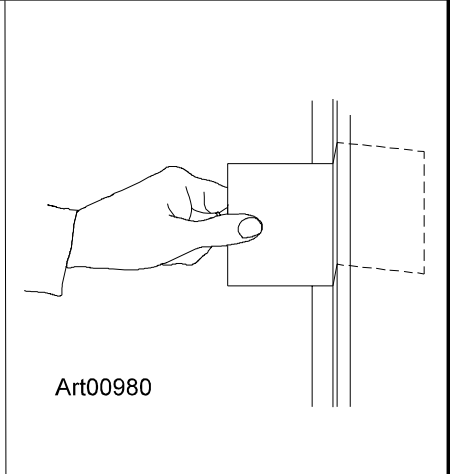
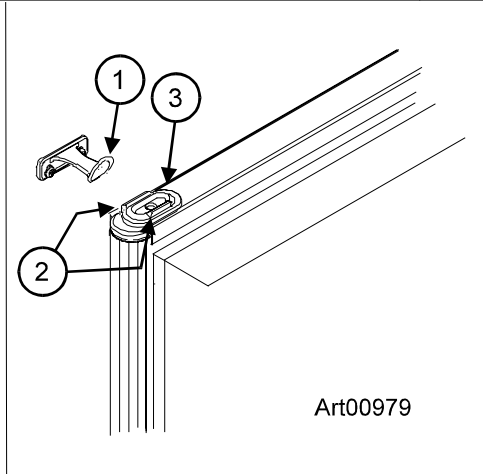
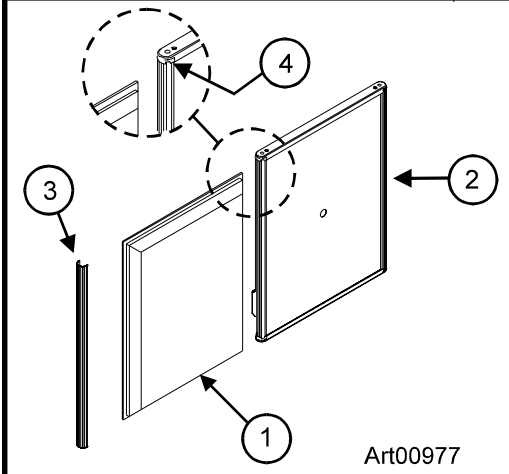
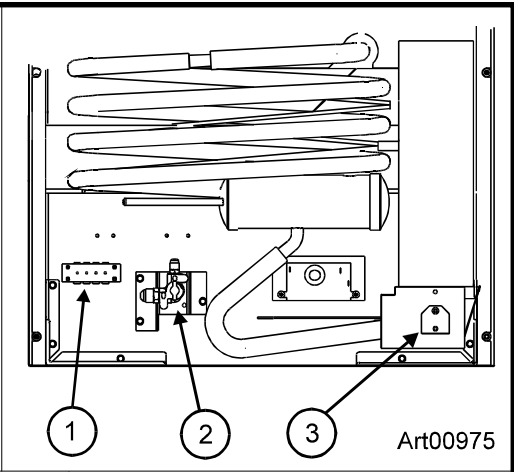
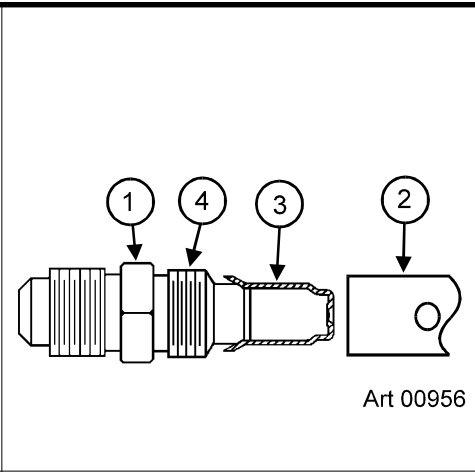
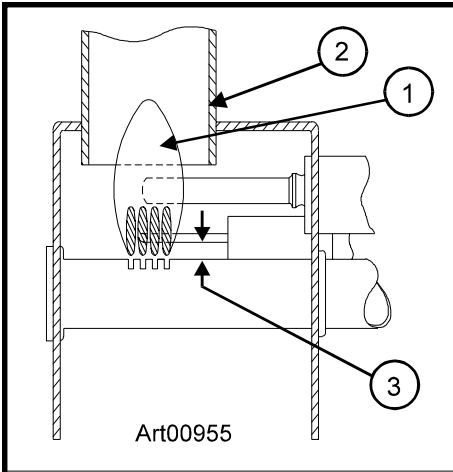
The parts of the wiring diagram are (See Art01575):

1	120 VAC
2	-12 VDC Power supply
3	+12 VDC Power supply
4	Power board
7	AC heater
8	DC heater (model N510.3)
9	Gas safety valve
12	Display board
13	Temperature sensor
14	Fan (optional)
15	Thermostat (optional)
16	Voltage regulator
17	ON / OFF switch
18	MODE switch
19	TEMP SET switch
20	Microprocessor
21	LED

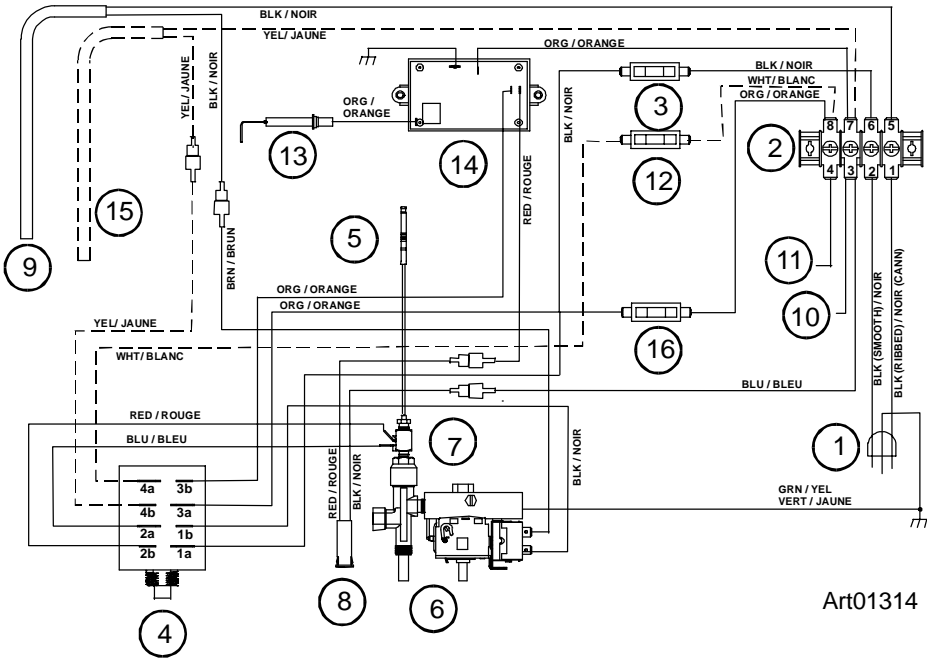
Fault Codes (N510 models)

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.
"F"	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.
"A"	AC voltage is unavailable to the refrigerator control.	Check: <ul style="list-style-type: none"> - That the refrigerator 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.
"C"	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.
Temperature setting flashes for ten seconds and mode appears.	The refrigerator is operating on the "Back Up Operating System".	This is not owner servicable. See your dealer or authorized Norcold Service Center
"H"	This is a fault within the refrigerator controls.	This is not owner servicable. See your dealer or authorized Norcold Service Center
"I"	This is a fault within the refrigerator controls.	This is not owner servicable. See your dealer or authorized Norcold Service Center.
"S"	This is a fault within the refrigerator controls.	This is not owner servicable. See your dealer or authorized Norcold Service Center.

Art01560

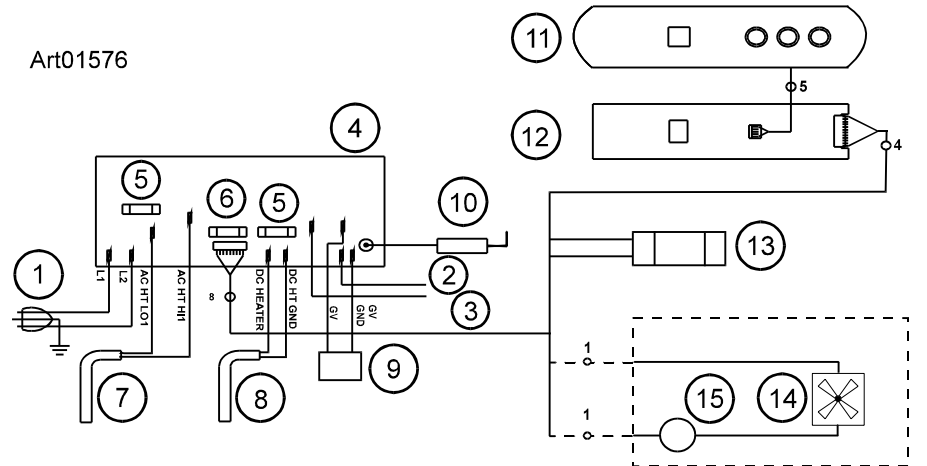


Wiring pictorial
 (N400 models only)
 Schéma de câblage
 (modèles N400 seulement)



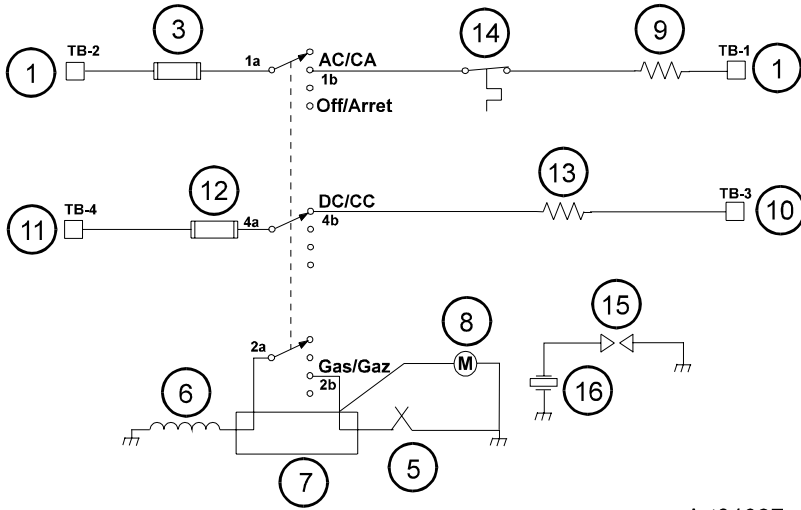
Art01314

Wiring pictorial
 (N500 models only)
 Schéma de câblage
 (modèles N500 seulement)



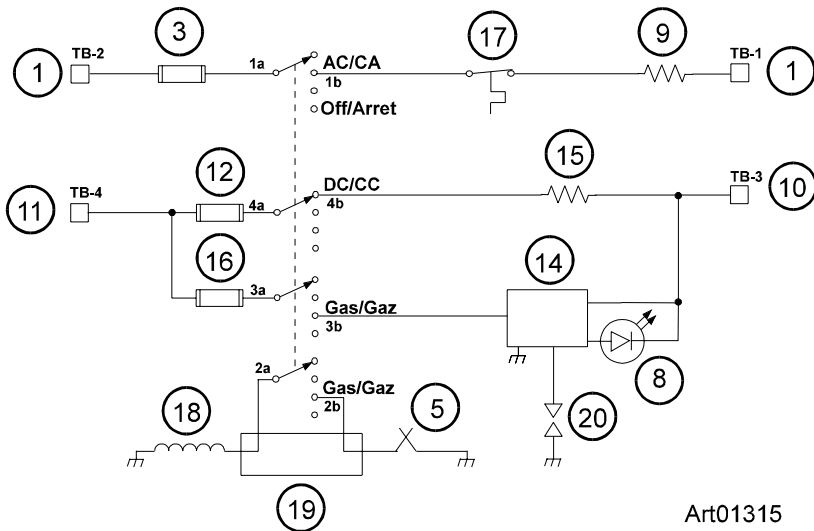
Art01576

Wiring pictorial
 (N510 models only)
 Schéma de câblage
 (modèles N510 seulement)



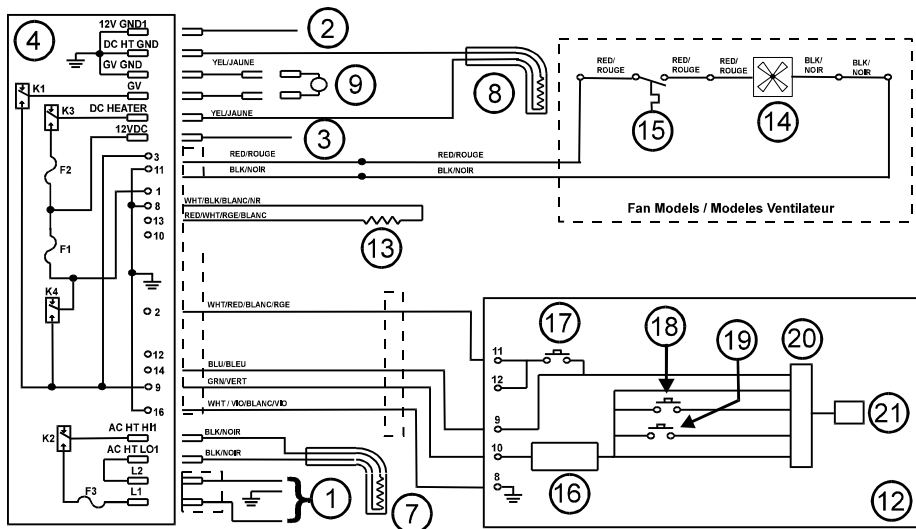
**Wiring diagram
(N400 models only)
Schéma électrique
(modèles N400 seulement)**

Art01327



**Wiring diagram
(N500 models only)
Schéma électrique
(modèles N500 seulement)**

Art01315



**Wiring diagram
(N510 models only)
Schéma électrique
(modèles N510 seulement)**

Art01575