

NORCOLD N180.3X THREE-WAY (AC, DC and PROPANE) REFRIGERATOR OPERATION

IMPORTANT INFORMATION

The following summary of how to operate the refrigerator is not intended to replace the manufacturer's instructions. Therefore, you should review the Norcold owner's manual for a complete understanding of how your refrigerator operates and to troubleshoot problems should they occur. If you do not have a paper copy of the owner's manual, it can be downloaded from the Norcold website <https://norcold.com/> (click on the "Support" tab to find the product manuals.) Additionally, you should read these *supplemental* instructions in their entirety before using the steps described for operating the refrigerator.

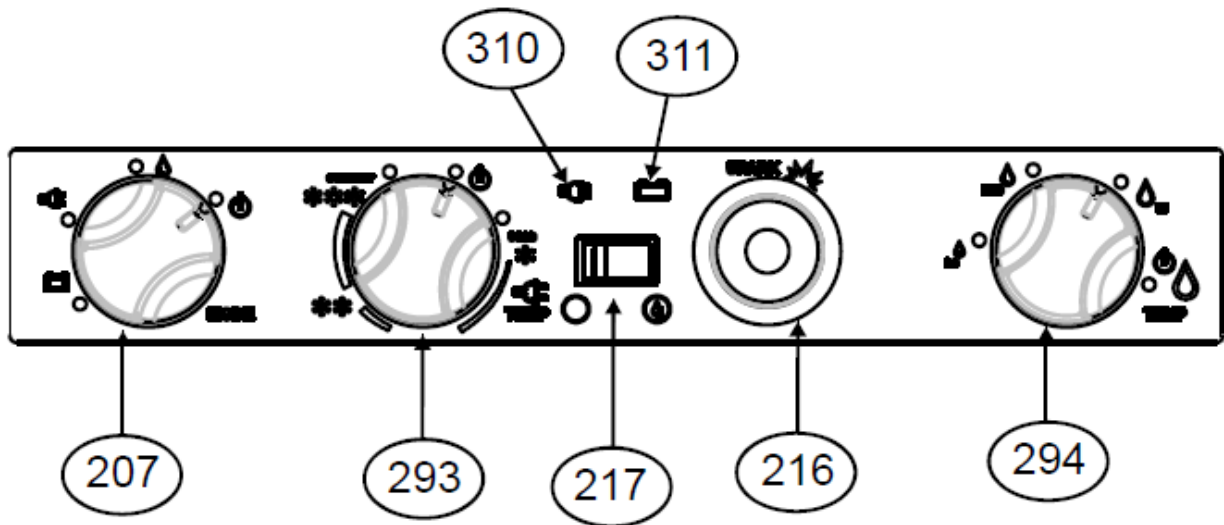
The Norcold owner's manual provides essential information regarding how to properly load the refrigerator food compartment for good air circulation and best cooling performance. Additionally, it provides the following cautionary statement: ***"The refrigerator is designed to operate within 3° off level front-to-back and 6° off level side-to-side (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."***

Per Norcold, before using the refrigerator, it is recommended that you first ignite (using propane gas) or start up (using AC power) the refrigerator and allow it to get cold for a minimum of eight hours (e.g., overnight) before loading it with food or drinks. If you have access to AC power, that is the most efficient way to initially cool the refrigerator. **The DC operation is not intended for the initial start-up and cooling of the refrigerator. Therefore, DO NOT USE DC (12-Volt battery) POWER for this purpose.** The refrigerator is designed to operate using DC power only while you are towing your camper (i.e., in transit) and AC power or propane are not available.

The refrigerator should be operated on DC power only when the vehicle engine is running and your camper battery is in a fully charged condition. Assuming your tow vehicle battery is in good condition and the engine alternator is adequately sized, plus your seven-way power cord between the tow vehicle and camper is properly wired with a 12-volt charge line to the camper, the tow vehicle will keep the camper battery sufficiently charged to ***maintain*** the temperature of the refrigerator and its contents when they are already cool.

WARNING: Operating the refrigerator using only the camper battery (i.e., without being connected to a tow vehicle with the engine running) will rapidly discharge the battery.

CONTROL PANEL CONFIGURATION



- 207 – Selector Switch (battery, electric, or propane.)
- 293 – Electric (AC) Thermostat.
- 217 – Flame Meter.
- 216 – Piezo Lighter.
- 294 – Propane Gas Control.
- 310 – Electric (AC) Power Indicator (green light - plug icon.)
- 311 – 12-Volt (DC) Power Indicator (green light – battery icon.)

OVERVIEW OF THE REFRIGERATOR CONTROLS

The Selector Switch (207) is used to select the power source: **Propane Gas** (flame symbol), **AC** (electric plug symbol), **12-Volt DC** (battery symbol), or **“OFF”** (power off symbol.)

The Electric AC Thermostat (293) controls the temperature setting when using electricity. The Electric AC Power Indicator (310) will display a green-lighted plug symbol when AC power has been selected.

The 12-Volt DC Power Indicator (311) will display a green-lighted battery symbol when DC power has been selected.

When the Selector Switch (207) is set for propane gas, a (non-electric) Piezo Lighter (216) is used to create a spark, which ignites the flame in the refrigerator burner. The Flame Meter (217) shows if a flame is present in the burner. The Propane Gas Control (294) sets the temperature setting of the refrigerator when operating in the propane gas mode.

IGNITION – PROPANE GAS OPERATION

Under normal operating conditions, with a properly maintained refrigerator, if you follow the below instructions, your refrigerator should be easy to ignite when using propane gas:

1. Slowly open the valve at the propane gas storage tank. Opening the valve *slowly* will reduce the chance of tripping the safety shutoff in the propane regulator, which will turn off or limit the flow of propane.
2. Turn the Selector Switch (207) to the propane gas position (flame symbol.)

TIP: It is often helpful *before* lighting the refrigerator burner if you first light one or both of the stove top burners. It may take a few attempts to light those burners, but doing that will help draw propane into the gas lines and expel any air in those lines, which in turn will make it much easier to light the refrigerator burner.

3. Turn the Propane Gas Control to the HI position (***third*** flame symbol displayed behind the control knob), **which is located at approximately the 1:00 o'clock position of the control knob** (just as the setting for the control knob (294) is depicted in the above diagram.)
4. **Push and hold in** the Propane Gas Control (294.) This will start the gas flowing to the igniter.
5. **Push in the Piezo Lighter (216) several times in rapid succession** for about five seconds to ignite the propane gas flame. (NOTE: Per the Norcold owner's manual, "*Do not hold in the gas control 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 gas control, LP gas will collect in the burner area. This could cause a fire or explosion and result in dangerous personal injury or death.*")
6. When properly ignited, a flame will be present at the refrigerator burner and the flame meter (217) will slowly move to the right and into the green area of the meter. Once that occurs, wait about five seconds before releasing the Propane Gas Control. IF the flame meter does not move into the green area, repeat the above process (starting with Step 4) after waiting a sufficient period for any lingering gas to dissipate from the burner area.
7. Use the Propane Gas Control (294) to set the desired temperature setting. **Push and then turn the control knob** to either the LO, MED, or HI setting. HI is the coldest temperature setting. These temperature settings are represented by a series of three flame symbols of progressively increasing size, displayed from left to right (i.e., clockwise) around the

Propane Gas Control: “LO” is the smallest flame symbol; “MED” is a medium-sized flame; “HI” is a larger-sized flame. There is a fourth, even larger flame displayed adjacent to a power off symbol at the furthest clockwise point around the control knob. This is the setting for turning the propane function “OFF” and is where the knob should be set when not operating the refrigerator on propane gas.

With a full, or nearly full refrigerator, you may find that the MED setting is a good setting to start with. Over time, you will determine the best temperature control setting for proper cooling. That setting will likely be impacted by the outside air temperature. Norcold clarifies in the owner’s manual that, *“This is not an automatic gas control. It does not change the flame from high fire to low fire as with other RV refrigerators. If the cooling load changes, you must manually change the gas control to maintain the same temperature inside the refrigerator.”* You may find it helpful to purchase a small refrigerator thermometer for monitoring the refrigerator compartment temperature.

START UP – AC (ELECTRICAL) OPERATION

When 120 volts AC power is available:

1. Turn the Selector Switch (207) to the AC position (plug symbol.) The AC Power Indicator (310) will display a green-lighted plug symbol when AC power has been selected.
2. Turn the Electric AC Thermostat (293) to the desired temperature setting. The temperature settings are represented by snowflakes (HI – three snowflakes; MED – two snowflakes; and LO – one snowflake.) With a full, or nearly full refrigerator, you may find that the MED setting (two snowflakes) is a good setting to start with. Over time, you will determine the best temperature setting for proper cooling. That setting will likely be impacted by the outside air temperature. You may find it helpful to purchase a small refrigerator thermometer for monitoring the refrigerator compartment temperature.

START-UP – DC (12-VOLT BATTERY) OPERATION

The sole purpose of operating the refrigerator with a battery is to *maintain* the refrigerator compartment temperature when AC or propane gas energy are not available (i.e., while in transit and towing your camper.) **Therefore, the refrigerator should be**

operated on DC power only when the vehicle engine is running and your camper battery has been maintained in a fully charged condition.

CAUTION: There are varying opinions as to whether it is appropriate and/or safe to operate an RV refrigerator on propane while towing a camper/trailer. Some feel it is perfectly safe. However, keep in mind that in the event of a traffic or other collision, should a gas line break and be exposed to a spark or fire, a propane gas explosion is very likely to occur. Further, you should never operate a propane gas refrigerator with an open flame present while re-fueling your tow vehicle at a gas station. Also, it is illegal in most (if not all) states to operate an RV refrigerator on propane gas while travelling through a tunnel. For safety reasons, when not using propane gas, it is advisable to turn off the propane storage tank valve. Finally, some RV owners find that they have no problem keeping their refrigerator contents adequately cool while towing without the necessity of using propane or battery power. As long as the refrigerator has been properly cooled before towing the RV, if you keep the refrigerator door closed as much as possible and the refrigerator properly packed (including possibly adding frozen foods or a small ice pack), the temperature should be adequately maintained while enroute to your next destination.

FINAL COMMENTS

A gas absorption refrigerator is not designed to operate in freezing temperatures. If not equipped for low temperature operation, and the refrigerator is exposed to temperatures of 32° F, or lower for an extended period of time, the refrigerator operation may be disrupted. The refrigerator operation will resume when the cooling system of the refrigerator warms sufficiently. Also, whenever 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, you can (a) turn the Propane Gas Control knob (294) to the “LO” position, (b) keep the refrigerator full of previously cooled items, and (c) place foods that are more likely to freeze on the lower shelf.

When you operate the refrigerator on propane gas at altitudes higher than 5000 feet above sea level, you *may* experience reduced cooling performance AND 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. Obviously, this is not always possible, but it is helpful to be aware of why you may experience a decrease in refrigerator operation or temperature at higher elevations.

(by @Bayliss 07-26-2019)