BASIC OPERATION GUIDE

This guide provides basic operational instructions pertaining to the components, devices, or equipment that may be installed on your motorhome. Please refer to the component manufacturer owner's manual for safety, troubleshooting, maintenance, and more detailed operating information.

THOR MOTOR COACH

Made to fit.

Refrigerators

Gas/Electric, 120 volt AC, and 12 volt DC Models

BASIC OPERATION

⚠ WARNING

Read and follow all appliance manufacturers warnings, safe operating instructions and safety labels installed on your motorhome; provided in your Owners Packet, available through the TMC Owners Resource document service, or available directly from the appliance manufacturer.

Your TMC motorhome is factory-equipped with one or more of the following types of refrigerators:

- Residential, 120 volt AC (compressor type)
- RV Gas/electric (absorption type), or
- Electric, 12 volt DC (compressor type)

Compressor type refrigerators are like those found in most residential homes, therefore, they may be referred to as a 'residential-type' refrigerator. These refrigerators use an electric motor, which drives a compressor. Cooling is accomplished as the refrigerant cycles through phases of condensing and evaporating.

Absorption-type RV refrigerators use a heating element, a heat-transfer device, and a mixture of water and ammonia as a means of cooling the interior of the refrigerator. The heat source is supplied by a LP burner or an electric heating element, which is powered by 120 volts AC. Cooling is accomplished as a cycling process of the ammonia evaporating from the water, and then being re-absorbed when it condenses. There are no moving parts in an absorption refrigerator.

The 12 volt DC refrigerator has a compressor-type refrigeration unit, but the motor operates on 12 volts DC. Both the absorption -type and the electric 12 volt DC refrigerators require 12 volts DC for control circuitry.

There is a forth type of common RV refrigerator, referred to as a 3-way, that is not typically installed in TMC motorhomes. A 3-way refrigerator typically uses absorption as its refrigeration method and utilizes heating sources from either 120 volts AC, 12 volts DC, or LP gas.

Typical gas/electric refrigerator

Residential refrigerator

NOTE: Stored food items may shift during travel. Use caution when opening the refrigerator door during and after travel.

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Most TMC motorhomes are equipped with a gas/electric RV refrigerator and may vary in size (cubic feet) depending on floor plan and available cabinet space. Select TMC motorhomes are equipped with residential-type refrigerators, meaning they operate on 120 volt AC only. Motorhomes with residential refrigerators are usually Class A diesel-powered and have on-board electrical systems designed for residential appliances. Beginning with model year 2021, some Class A gas and Class C, and all Class B motorhomes are factory-equipped with Electric 12 volt DC compressor-type refrigerators.

Residential Refrigerator Operation

Residential refrigerators operate just as the those found in your home, and no special operating instructions are required beyond power requirements and power source options. The refrigerator will need 120 volts AC to operate. Use a power source that is most appropriate for the conditions.

NOTICE

Powering a refrigerator with an inverter can draw a significant amount of energy from the house battery(ies) and should only be used for short periods of time.

When the motorhome is in motion:

- Simply ensure your motorhome's generator is operating or,
- Ensure the on-board inverter is ON, which will supply 120 volts AC by converting power from the auxiliary batteries.

When the motorhome is parked:

- 120 volts AC can be supplied by the generator or shore power

NOTE: When using inverted power, and the vehicle's engine is running, auxiliary battery energy is being restored by the chassis alternator. However, if the 120 volt electrical demand is too high, the battery/inverter combination may not be able to keep up with the electrical demand. Ensure the Automatic Generator Start (AGS) is operational. This device will automatically start and run the generator, ensuring there is adequate 120 volts AC to meet demands of the on-board appliances.

Gas/Electric (Absorption) Refrigerator Operation

Described here is the basic operation for the gas/electric, absorption-type RV refrigerator. Since this type of refrigerator is a gas appliance, please follow all propane (LP) gas safety-related warnings described in other TMC publications, labels affixed to your motorhome, and provided by the appliance manufacturer, Operating manuals should be included in your TMC Owner's Packet.

⚠ DANGER

DO NOT operate the gas/electric type refrigerator on LP while the vehicle is in motion or refueling.

- **Turn off the LP gas supply at the tank before and during travel.**
- **Be sure the igniter of the refrigerator remains disabled while the motorhome is traveling or refueling.**

TO DISABLE THE IGNITER, FOLLOW EITHER OF THESE METHODS:

- **Turn the front panel selector switch to OFF. Doing so will turn off the entire refrigerator.**
- **Turn the selector switch to AUTO. With the LP gas supply valve closed at the tank, the refrigerator will operate on 120 volts AC. Ensure there is 120 volts AC available, either from the on-board generator or an on-board inverter (main battery switch must be ON).**

⚠ WARNING

The refrigerator cooling system is under pressure. Do not try to repair or to recharge a defective cooling system. Repairs must be done by a qualified RV service technician only.

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 materials or blockages.

- **After a period of storage, it is especially important to check these areas blockages made by insects or animals.**

⚠ CAUTION

The refrigerator is made to operate within 3° off level side-to-side and 6° off level front-to-back. Operating the refrigerator at more than these limits can cause damage to the cooling system and create a risk of personal injury or property damage.

When parked, make sure the vehicle is level before operating the refrigerator. Off-level during travel usually does not effect refrigerator performance.

NOTICE

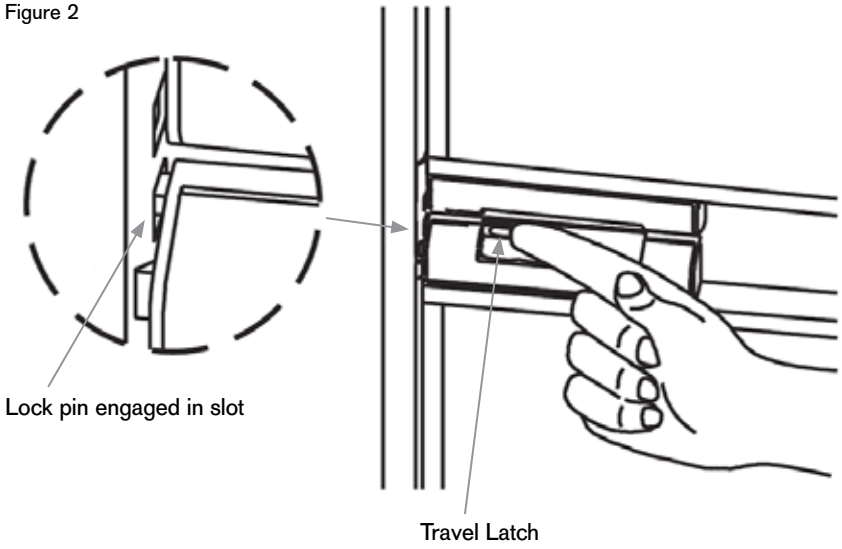
The control circuits of the absorption-type refrigerator require 12 volts DC for operation. The house battery main disconnect switch must be ON in order for the refrigerator to operate; independent of the energy mode selected.

Located on the front of the refrigerator is a control panel similar to the illustration (Fig 1). The INDICATOR LIGHTS show when the refrigerator is ON and if gas is present for use. The SELECTOR SWITCH allows you to choose from AUTO, OFF, or GAS operation. The TEMPERATURE SELECTOR allows you to choose the temperature setting for the refrigerator and freezer section in increments of 1-5, where 5 is the coldest setting. The temperature selection is independent of the energy source of the refrigerator (gas or electric).

NOTE: When traveling, engage the travel lock on the refrigerator door. Travel locks vary in style and operation. Some have a sliding mechanism, while others simply engage by depressing the door handle.

- Shut both the freezer and refrigerator doors.
- Slide the travel latch into the slot on the door frame.
- Unlatch travel latch before attempting to open refrigerator door.

Figure 2



Operating in Automatic Mode

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 will automatically change energy sources.

The energy source priority is this order:

1. If 120 volts AC is available (shore power or generator), the refrigerator operates on electricity.
2. If 120 volts AC is not available, the refrigerator operates on LP gas (if available).
3. If 120 volts AC and LP gas is not available, the refrigerator is inoperable.

NOTE: Regardless of the energy source, the main battery disconnect switch must be ON in order to operate the refrigerator.

When in AUTO mode and 120 volts AC is available, the ON indicator light illuminates. This indicates that the refrigerator is operating on 120 volts AC.

When in AUTO mode and 120 volts AC is NOT available, both the ON and GAS indicator lights illuminate, indicating that the refrigerator is operating on propane gas.

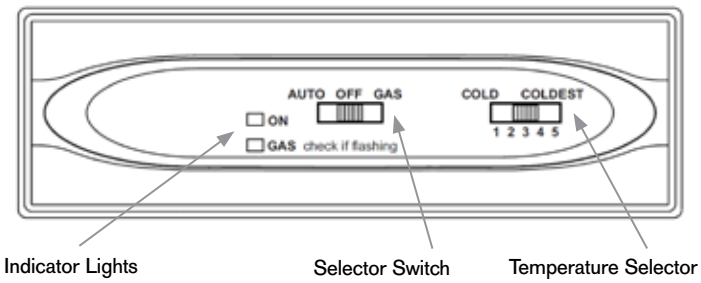


Figure 1: Typical Gas/electric refrigerator control panel. Controls on your refrigerator may differ, but operate similar.

NOTE: When in electric mode, an absorption-type refrigerator will typically consume more electric power than a similarly sized compressor-type refrigerator. If your on-board supply of LP is not a concern, it is usually more energy efficient to operate the refrigerator on LP gas than electricity.

If the energy source is interrupted, the indicator lights will blink, indicating a fault code. Refer to the manufacturer's owner's manual for FAULT CODE interpretations.

Operating on LP Gas

1. Ensure the main battery disconnect switch is ON.
2. OPEN the main gas valve on the LP tank.
3. Slide the SELECTOR SWITCH to the GAS position. The internal electronic igniter will attempt to ignite the gas burner.
4. When both the ON and GAS indicator lights stay illuminated, the refrigerator is operating on propane gas.

   If the energy source is interrupted, the indicator lights will flash an error code.

For safety purposes, the gas-fired burner is made to ignite the propane gas within a specific amount of time. When starting the refrigerator for the first time, after storage, or after replacing the LP tank, the gas supply lines can have air in them, causing the burner to fail to ignite within the specified amount of time. If gas ignition does not start immediately:

- Ensure the main battery disconnect switch is ON.
- Make sure that the main propane gas valve is OPEN at the tank.
- Move the selector switch to the GAS position 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.
- During the 30 second trial for ignition, both the ON and the GAS light illuminate.

When the ON light and the GAS light stay illuminated after 30 seconds, it indicates the gas supply lines are free of air and that the refrigerator is operating on propane gas. If you choose, you may leave the SELECTOR SWITCH on GAS, or move it to AUTO.

Repeat the gas ignition attempt:

If the first 30 second gas ignition attempt fails, the refrigerator control circuits will close the gas safety valve and the igniter stops sparking. Both the ON and GAS indicator lights will flash about once every second.

1. Slide the SELECTOR SWITCH to the OFF position, and then to the GAS position. This will initiate another 30 second gas ignition attempt. Depending on how much air is in the gas supply line, you may need to repeat the 30 second ignition attempt sequence two or three times.
2. If the burner does not ignite on propane after three attempts, stop and ensure there is LP in the tank and that the main gas valve is OPEN. If so, and the refrigerator still fails to ignite, consult your TMC dealer, TMC Customer Care, or an authorized RV refrigerator service center.

Food Compartment and Initial Start-up

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, there is likely a fault with the refrigerator or energy source. Contact a qualified service center for troubleshooting tips or repairs.

For the best cooling performance:

- Let air move freely inside the entire food compartment
- Do not cover the shelving grate with plastic, paper or other materials

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

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.

Absorption-type Refrigerator Operating Tips

- Since electric heating elements require a moderate-to-high amount of electric energy, operating an absorption refrigerator from an inverter can quickly deplete the house battery(ies). Therefore, it is recommended to operate an absorption-type refrigerator with LP gas or shore-power 120 volts AC, while using inverted 12 volts AC occasionally or during travel.
- Since it takes more energy to cool down refrigerated contents than to maintain coolness, operate the refrigerator on 120 volts AC or LP when stocking the refrigerator.
- When operating on an inverter (converting 12 volts DC to 120 volts AC), minimize opening the refrigerator door.
- An empty refrigerator is not as energy efficient as one that is fully stocked. Keep your RV refrigerator well stocked with items such as bottled water or other dense food items.

Effects of High Altitude and Freezing Temperatures on Propane Gas Operation

- When operating the refrigerator on propane gas at altitudes higher than 5,500 feet above sea level, you may experience reduced cooling performance of the refrigerator. You may also experience burner outages. To avoid these possible problems, the refrigerator manufacturer recommends that you operate the refrigerator on 120 volts AC when at altitudes higher than 5,500 feet above sea level.
- A gas absorption refrigerator is not designed to operate in freezing temperatures. If the refrigerator is not equipped for low temperature operation, and if the cooling system of 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.
- If your refrigerator is equipped for low temperature operation, the refrigerator will operate in temperatures down to 0° F. Check with your TMC dealer to determine if your refrigerator has been equipped for low temperature operation.

NOTE: While operating the refrigerator or other appliances on inverted power and the vehicle is in motion, monitor the charging voltage of the chassis electrical system. This is usually done by reading the voltage gauge on the dash display.

- If the voltage is lower than normal, it usually means that the chassis charging system can not keep up with the electrical demand from the batteries.
- You may need to turn off some electrical appliances so that battery charging voltage remains at a normal level.

12 Volt Refrigerator (Compressor-type)

⚠ CAUTION

The refrigerator is made to operate within 10° (degrees) off level in all directions. Operating it at more than these limits can cause damage to the cooling system, increased noise and poor cooling performance. Make sure the vehicle is level before you operate the refrigerator.

⚠ CAUTION

The refrigerator has a built-in vent at the top and clearance at the bottom. Make sure that the flow of air through these vents is not blocked in any way. Blockages of air through these vents can cause:

- **Shortened life of the refrigerator cooling unit**
- **Poor cooling performance of the refrigerator**
- **Continuous operation of the refrigerator**
- **Fast battery discharge**
- **Void of the refrigerator warranty**

⚠ CAUTION

Make sure the area behind the refrigerator is clear of obstructions. Do not use the area behind the refrigerator for storage of any material, especially flammable solids, liquids, or vapors.

⚠ CAUTION

Disconnect the positive (+) DC battery cable from the positive (+) battery terminal before attempting a 'Fast Charge" of the auxiliary battery(ies). Failure to disconnect the positive (+) cable from the positive (+) battery terminal can cause damage to the refrigerator or other electrical appliances.

⚠ CAUTION

Do not operate the refrigerator when the ambient temperature is higher than 140° F. Operation above the recommended ambient temperature can cause permanent damage to the compressor. Operation when the ambient temperature is higher than 110° F can result in poor cooling performance.

NOTICE

Operation during travel:

While the refrigerator should be level when the vehicle is parked, cooling performance during travel is not usually affected by un-level vehicle positions.

Operating Tips

Fresh food compartment:

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 authorized appliance service center.

- For the best cooling performance: Let air move freely inside the entire food and freezer compartments.
- To decrease the amount of ice that collects on the rear wall of the refrigerator freezer and fresh food compartments:
  - 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

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.
- When making ice, put the ice cube tray directly on the bottom of the freezer. Do not put other items on top of the ice cube tray while the water is freezing. The water freezes more rapidly if the power switch/thermostat is at the coldest temperature setting.

Door latch for travel:

During travel, the door latch prevents the door(s) from opening. When closing each door, push the door toward the refrigerator until you hear a 'click' sound. To open each door, pull the handle away from the refrigerator.

Operating Instructions

Turning the refrigerator ON:

1. Ensure the main battery disconnect switch is ON.
2. Touch and release the ON/OFF button (1) to turn the refrigerator ON (Figure 3).
   - The indicator light, located below the ON/OFF button, glows solid blue when the refrigerator is operating correctly.

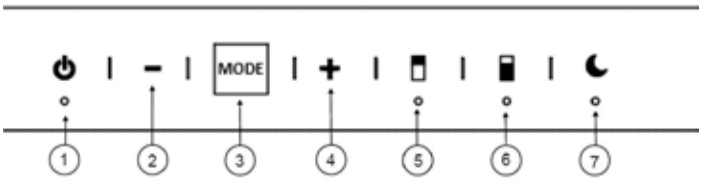


Figure 3: Illustration of 12 volt compressor-type refrigerator control panel

Temperature setting:

NOTE: The refrigerator and freezer compartments operate independently of each other and both must be adjusted to their desired temperature settings.

1. Touch the 'Refrigerator' (5) or 'Freezer' (6) compartment button.
2. Using the '+' (4) or '-' (2) buttons, adjust the desired temperature of the compartment. The temperature range is 0 through 5, indicated in the MODE display panel; where 0 represents OFF, 1 represents the warmest setting, and 5 represents the coldest setting.
3. Repeat for the other compartment.
4. Press any button to return the control panel to 'Activate' mode. Doing so locks the temperature settings for the compartment(s). The MODE display (3) will illuminate. The display will return to standby mode after 5 seconds.

Night mode:

This 8-hour setting reduces compressor and fan speeds to reduce operating noise and conserve battery energy.

1. Touch the NIGHT MODE (7) button to set the refrigerator to night mode. The blue indicator will illuminate.
2. Night Mode will turn OFF automatically after eight hours, or if you push the night mode button again, which cancels Night Mode; indicated by the blue light turning OFF.

Night mode timer setting:

The duration of Night Mode can be adjusted by pressing the Night Mode Button and holding for 3 seconds. After 3 seconds, the default '8' (hours) will be shown in the display. To change this setting, press the '+' or '-' button to select a new Night Mode hour setting. Then, press the Night Mode button to save the new setting. The new Night Mode hour setting is saved to memory until a new setting is entered.

Shut down:

To shut down the refrigerator, touch and hold the ON/OFF (1) button for 5 seconds and release.

NOTE: Once the refrigerator is turned OFF, there is a 5-minute wait cycle before the refrigerator can be turned back ON.

Operating voltage:

This appliance will operate correctly with DC voltages between 10.4 volts (minimum) and 15.4 volts (maximum). Make no changes to any of the electrical wiring supplied with the refrigerator. Any changes made to the electrical wiring will void the manufacturers warranty and possibly affect your TMC limited warranty.

Automatic Generator Start (AGS)

⚠ DANGER

- **SEVERE PERSONAL INJURY, DEATH, AND EQUIPMENT DAMAGE CAN RESULT FROM OPERATING THE GENERATOR IN A GARAGE, BUILDING, OR A CONFINED SPACE. THE GENERATOR PRODUCES DANGEROUS FUMES WHEN IT IS RUNNING. IF A GENERATOR IS INSTALLED IN AN RV, DISABLE THE AGS SYSTEM TO PREVENT THE GENERATOR FROM STARTING WHEN THE RV IS IN A CONFINED SPACE.**
- **Test the CO/LP detector installed in your motorhome frequently to ensure protection from carbon monoxide and/or LP gas leaks. If an alarm sounds, immediately shut off the generator and all gas and electric appliances and evacuate the motorhome. Turn off the main battery disconnect switch and main gas valve at the LP tank. Seek medical assistance if necessary. Have all necessary repairs to equipment made by a qualified technician before continuing use.**
- **Disable the AGS system when sleeping in the motorhome. The potential of carbon monoxide poisoning is present when the generator is operating and the alarm may not awake you to the hazard.**
- **When parked, be sure that the generator's exhaust is clear of any obstructions, such as underbrush, rocks, and snow. Follow all generator safety guidelines provided by TMC in your owner's manual and the instruction manual provided by the generator's manufacturer.**

Motorhomes equipped with the 12 volt DC refrigerator (compressor-type) have an automatic generator start (AGS) system installed. When enabled, this device will automatically turn ON the on-board generator when the voltage of the 12 volt system drops to a programmed setting. The generator will remain ON for either a timed duration or until the auxiliary battery(ies) are re-charged to a programmed setting.

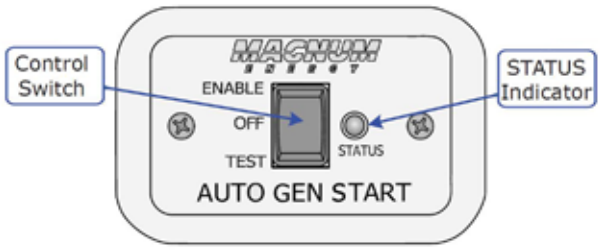
NOTE: Motorhomes equipped with a Multiplex Wiring System will have built-in AGS controls. Use the multiplex main panel to control, monitor, and adjust AGS parameters.

AGS system operation

When the AGS is enabled and has determined that a low battery and/or a high temperature condition exists, it attempts an automatic generator start. This is done by closing its internal relays (based on the GEN TYPE selection) to control the starter much like a person does when manually starting the generator. The starter is turned on for short periods of time and then turned off. If the AGS determines that the engine has started while cranking (indicated by a solid green STATUS indicator), the starter is turned off after a short delay. If the engine does not start, another attempt to turn on the starter is made after a long delay period. This is repeated until either the generator starts or the maximum number of start attempts is reached, which causes the AGS to go into a fault condition (indicated by a solid red STATUS indicator).

Remote panel operation

The AGS remote panel provides information and enables you to operate the AGS system. The remote panel receives its power from the controller through the communications cable, and comes on automatically when power is applied to the AGS controller. The remote switch provides an ENABLE position to activate the AGS system, an OFF position to turn the AGS system off, and a momentary TEST position that allows the AGS system to be tested remotely. A STATUS indicator is also included to remotely view system status.



Auto Gen Start (AGS) remote panel

Switch Positions

- **OFF** – When the AGS switch is placed in the OFF position, the STATUS indicator will be off and all AGS generator start functions are disabled.
- **ENABLE (normal operating position)** – When the AGS switch is placed in the ENABLE position, the AGS system is activated/enabled and monitors battery voltage and/or temperature to determine when to automatically start the generator.
- **TEST** – When the AGS switch is pushed to the momentary TEST position, the AGS initiates an automatic generator start/stop sequence. This test attempts to turn on the generator and allow it to run for at least 30 seconds before turning the generator off. This start/stop test is used to confirm that all wiring from the generator to the AGS is correct and that the AGS is correctly configured for your generator type.

NOTE: Pushing and releasing the momentary TEST position enables the same test as pressing and releasing the red TEST pushbutton switch on the AGS controller.

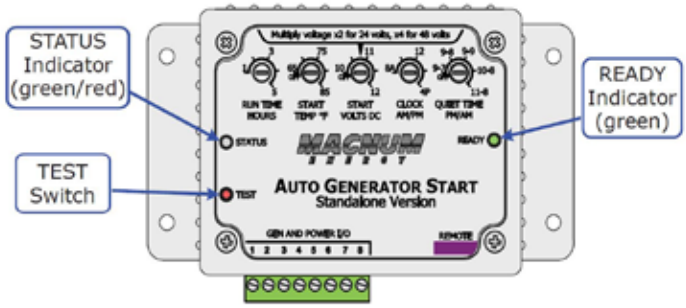
STATUS LED Indicator

- **Flashing Green** – Indicates that the AGS system is initiating a generator start sequence. This can happen based on two conditions, either: 1) The TEST switch (on the controller or remote switch) has been pressed and released; or, 2) The remote switch has been set to the ENABLE position and the START TEMP °F setting and/or the START VOLTS DC setting has been reached.
- **Solid Green** – Indicates the generator has started successfully and is providing the required run sense voltage to Terminals 2 (+) and 4 (–) of the AGS.
- **Solid Red** – This is a fault condition to indicate that the generator has not provided a correct run sense voltage to Terminals 2 (+) and 4 (–) of the AGS controller after four start attempts.

AGS controller

The AGS controller provides a pushbutton to test system operation, and two LED indicators for viewing system operation.

NOTE: For ease-of-access, the AGS Controller is usually located in a storage bay near the generator.



Auto Gen Start (AGS) Controller

TEST Switch

When pressed and released, the TEST switch attempts to turn on the connected generator and allows it to run for at least 30 seconds before turning it off. This start/stop test is used to confirm that all wiring from the generator to the AGS is correct and that the GEN TYPE setting is correctly configured for your generator type.

NOTE: Pushing and releasing the AGS red TEST pushbutton switch enables the same test as pressing and releasing the momentary TEST position on the AGS remote switch.

STATUS LED Indicator

- **Flashing Green** – Indicates that the AGS system is initiating a generator start sequence. This can happen based on two conditions, either: a) The TEST switch (on the controller or remote switch) has been pressed and released; or, b) The remote switch has been set to the ENABLE position and the START TEMP °F setting and/or the START VOLTS DC setting has been reached.
- **Solid Green** – Indicates the generator successfully started and is providing the run sense voltage to Terminals 2 (+) and 4 (–) of the AGS controller.
- **Solid Red** – This is a fault condition to indicate that the generator has not provided a correct run sense voltage to Terminals 2 (+) and 4 (–) of the AGS controller after four start attempts.

READY LED Indicator

- **Solid Green (normal AGS system indication)** – Indicates the AGS controller has power and the remote switch is plugged in correctly.
- **Flashing Green** – Indicates that the AGS controller has power, but the remote switch is not sensed. This means the remote switch is either not connected, incorrectly connected, is defective, or has an incorrect or defective cable.

AGS operational notes

- The main battery disconnect switch must be ON in order to operate any and all 12 volt devices and systems, including the AGS and control circuits for the generator.
- The AGS control switch must be manually set to ENABLE to use the AGS system.
- The AGS system has a 5-amp in-line fuse located near the auxiliary battery(ies). Check this fuse if the AGS system is not working. If necessary, only replace with a fuse of the same type and rating.
- To manually stop the generator during the run time cycle, simply press the control switch to the OFF position.
- If a fault condition occurs, press the AGS control switch to OFF and then back to the ENABLE or TEST position. If the problem persists, refer to the Troubleshooting section in the manufacturer's instruction manual.
- When the AGS control switch is placed in the OFF position, all AGS generator start functions are disabled. The STATUS indicator is also off when the switch is in this position.

  HOWEVER, the generator can always be manually operated by using the generator control switch located on the Monitor Panel or Multiplex Panel (if equipped).
- Once the generator has completed the RUN TIME HOURS, the AGS immediately begins to monitor the START TEMP °F and START VOLTS DC settings for the next autostart cycle.
- It is recommended that the AGS control switch be set to the OFF position if the connected generator is placed into storage or left unattended for extended lengths of time.
- If using the temperature start feature in an RV coach, set the air conditioner thermostat to match the START TEMP °F setting. If using two air conditioners, it is suggested that the second air conditioner thermostat be set 2°-5° higher than the first air conditioner. This staggered setting allows the first air conditioner to start and run in an effort to keep the coach cool. If the temperature continues to rise inside the coach, the second air conditioner turns on to further cool the coach.
- When the generator starts successfully, the STATUS indicator turns solid green. The generator runs until the RUN TIME HOURS setting is reached, at which time a stop signal is sent to the generator.
- If the generator is running when either switch is placed in the TEST position, the generator stops and then starts again. The generator then runs for approximately 30 seconds before shutting off.
- There is a two minute delay before the AGS attempts to start the generator if the voltage to the AGS controller falls to the START VOLTS DC setting. There is no delay if the AGS attempts to start the generator when the temperature around the remote switch rises to the START TEMP °F setting.

NOTES:

- The AGS is factory-set to keep the auxiliary battery(ies) in the proper voltage range for the 12 volt refrigerator and other 12 volt devices. If you change the low-voltage turn-on setting, ensure it is kept within the proper operating range for the refrigerator, or compressor damage could occur.
- There may be other programmable parameters available with your AGS system, such as generator run-time, temperature-controlled start (for automatic A/C operation), quiet-time settings, etc. Consult the manufacturer's instruction manual for complete AGS system operations.

Solar Charging:

Your motorhome may be equipped with a solar charging controller, which uses energy produced from a roof-mounted solar panel to provide charging voltage to the auxiliary battery(ies).

Most solar charging controllers have a battery monitor display, which will let you know the voltage condition of the auxiliary battery(ies). If the solar charging system is not maintaining the auxiliary battery(ies) at a voltage level required for the refrigerator or other appliances, enable the AGS system to augment the solar charging system.

Outside Kitchen Refrigerator (optional)

Several TMC motorhome floor plans are designed with an outside kitchenette. This food-preparation area is equipped with an electric-only, 120 volt AC, compressor-type refrigerator of approximately 2-3 cubic feet in size. To operate the refrigerator, it is best to connect to shore power for 120 volts AC electric energy. It is possible to operate on generated power, but you may need to be cautious of overloading the generator's capacity by trying to use too many appliances at the same time.

The appliance manufacturer's information manuals, included with your TMC Owner's Packet, should provide power consumption data. Add the power requirements of all appliances you want to operate, then compare the total power demand of all your appliances to the power capacity of your generator. You may need to turn off some appliances in order to operate others. Refer to the TMC Electrical System Guide for additional information.

How to operate

Starting your new refrigerator

1. Clean the refrigerator thoroughly. Wipe the outside with a soft dry cloth, the interior with a clean, moist cloth.
2. Insert the power cord into the socket.
3. Turn the thermostat dial to '7' position. Close the door and let the refrigerator operate for 30 minutes.
4. Reduce the thermostat to '4' position on the thermostat control.

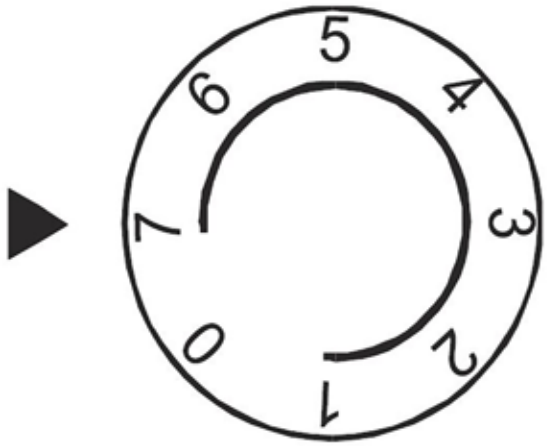
Temperature control:

Your refrigerator has one control for regulating the temperature. The temperature control is located on the top right hand corner of the refrigerator compartment.

The first time you turn the unit on, adjust the temperature control knob to '7' and run for at least 2 hours before putting foods inside. This will ensure the cabinet is thoroughly chilled before food is put into it.

The range of the refrigerator temperature control is from position '1', the warmest to '7', the coldest. Adjust the temperature control to the setting that best suits your needs. The setting of '4' should be appropriate most uses.

To turn off the refrigerator, turn the temperature control knob to '0'. Note that turning the temperature control knob to the '0' position stops the cooling cycle, but does not disconnect the power supply to the refrigerator.



Typical Temperature Control Dial

Quick Operating Overview:

1. Turn the temperature control knob to '7'.
2. Wait for approximately two to five hours.
3. Reset the temperature control knob to the normal recommended setting. ('4').

How to clean:

- **Cleaners:** Never use harsh, abrasive cleaners, heavy-duty cleaners, or solvents on any surface.
- **Exterior:** Wipe with a damp, sudsy cloth, rinse and dry.
- **Magnetic Door Seals:** Clean with warm sudsy water.
- **The Finishing Touch:** Replace all parts that were removed for cleaning and return the thermostat control to the desired setting. **Note: most interior plastic components are not dishwasher safe, and could be damaged by high wash temperatures.**

NOTES:

- The 120 volt AC electrical receptacle located in the exterior kitchenette is usually ground-fault protected (GFCI). If the refrigerator is not working, while the motorhome is either connected to shore power or operating on the generator, check the GCFI circuit breaker, it may need to be re-set.
- The mini refrigerator typically installed in an outside kitchenette does not have a travel latch on the door. The magnetic door seal may not always be strong enough to keep the door closed during travel. Be cautious when opening the refrigerator door after travel. Food and beverage items may have shifted.

12 Volt Refrigerator (Class B Motorhomes)

The 12 volt DC refrigerator installed in TMC Class B motorhomes is designed to run efficiently from AC shore power (transformed to DC by the converter, or the 12 volt battery power. The unit is charged with a CFC free R134A. This refrigerant does not deplete the Ozone Layer.

The refrigerator features an energy-efficient reciprocating compressor. While running, it uses less than 60 watt hrs. / hr. The unit has built-in battery protection that is designed to help protect the auxiliary battery from damage due to accidental deep discharge.

Operation:

One thermostat control is used for either single or two-door models. The thermostat will maintain the desired temperature for both the fresh food and freezer compartments. Turning the control all the way to the right (clockwise) will give you the coldest position, and turning to the left will give you a warmer temperature in the fridge. The control is also an on/off switch when you turn it to the 'O' position (hard left). A good standard setting is position '2.'

Start-up:

1. Turn ON the main battery disconnect switch.

2. Set the thermostat between 3 and 4. You can make further adjustments to suit your personal requirements after the refrigerator has cooled down.

3. Allow the refrigerator to come down to temperature before loading with food items. Setting the thermostat to a higher setting i.e. 7, will not decrease the time required for the unit to cool down to its normal operating temperature.

Operational sequence

When the thermostat is turned on (you should hear a click) the compressor should try to start. It is not uncommon to hear a small squeak when it tries to start. If it does not start on the first attempt it will continue to try every 40 seconds. If, for some reason, the compressor becomes overloaded it will go through this cycle and the fan will continue to run during the 40 seconds. When the thermostat is satisfied (internal temperature setting met), the compressor and fan (optional) shut down.

Defrosting

The frequency of defrosting is dependent on the number of door openings, the ambient temperature and the humidity level. Typically, it is a good practice to defrost when there is ¼ inch of frost buildup on either side of the evaporator (cold plate).

1. Prior to defrosting, turn OFF the refrigerator at either the main battery disconnect switch, or by turning the thermostat counterclockwise to the OFF (0) position.

2. Prop the door open. Place a towel in the bottom of the refrigerator to catch excess moisture. NEVER USE A KNIFE OR SCRAPER TO REMOVE FROST OR ICE. Doing so could rupture and damage the refrigerant element.

Cleaning

The best time to clean the refrigerator is after a defrost. Wipe the inside clean using a non abrasive cleaner (diluted) for the hard to clean stains. Baking soda and water is a recommended cleaning solution.

If you notice the refrigerator running longer than normal, cleaning the condenser coils is recommended (usually required every few years). The condenser is located behind the refrigerator and can be cleaned by using a bottle brush and brushing vertically from top to bottom on the face of the condenser. An alternative method is to vacuum the condenser. The refrigerator will need to be pulled away from it's cabinet to perform this cleaning task. Look for attachment screws around the parameter of the door(s).

3-Way RV Refrigerator (if equipped)

Although rarely installed by TMC, your TMC motorhome may be equipped with a 3-way RV refrigerator. This type of refrigerator is only mentioned here for informational purposes. A 3-way refrigerator is typically an absorption-type and has an additional 12 volt DC heating element. Therefore it can operate its cooling cycle on:

- LP gas
- 120 volts AC
- 12 volts DC

In all operating modes, however, the refrigerator requires 12 volts DC for control and ignition circuits.

Having a 12 volt DC heating element in the refrigerator does present the advantage of operating the refrigerator on 12 volts DC while the motorhome is in motion and the LP is off. However, many installations accomplish the same advantage by operating either an absorption or electric refrigerator on 120 volts AC, supplied from an inverter.

If your motorhome is not equipped with an inverter, the contents of the refrigerator should remain safe with the refrigerator off during travel times of 4-6 hours, as long the door of the refrigerator remains closed or access to its contents is limited.

NOTE: Inquire with your dealer to determine if your motorhome is equipped with a 3-way refrigerator. If it is, then refer to the appliance manufacturer's information manual included with your TMC Owner's Packet, or through the manufacturer's web site for all safety and operational information.

Refrigerator Care and Maintenance (all types)

⚠ WARNING

Make sure the area behind the refrigerator is clear of obstructions. Do not use the area behind the refrigerator for storage of any material, especially flammable solids, liquids, or vapors.

NOTICE

The plastic shelving and storage bins installed inside the refrigerator are typically NOT dishwasher safe. They can be damaged by high heat.

Only clean with warm soapy water or mild detergents.

Your refrigerator is designed to 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.
- Defrost the refrigerator as necessary (see manufacturer's instruction manual).
- Most internal plastic components (shelves, trays, storage bins, light covers) are not dishwater-safe. Hot water and washing can damage these items.
- Make sure the door seals are clean and sealing properly.
- An open container of baking soda placed in the refrigerator compartment can help reduce or eliminate food odors.
- Clean-up spills immediately. Some food items can cause stains to interior plastic components.
- Be aware of any cooling changes that are not due to weather conditions, motorhome leveling, or gas control changes. Unexpected cooling changes may indicate service is required.
- Make sure the area behind the refrigerator is clear of obstructions. Do not use the area behind the refrigerator for storage of any material, especially flammable solids, liquids, or vapors.
- Be sure to defrost and completely dry the interior of the refrigerator and freezer compartments before placing the motorhome in storage. Mold can form in moist, enclosed compartments.
- Block refrigerator and freezer doors open during storage. This helps air circulation and decreases the potential of mold formation.
- Make sure the gas supply is propane (LP) ONLY and not butane or a propane/butane mixture.
- Occasionally observe the appearance of the propane flame (see manufacturer's instruction manual). Abnormal flame appearance may indicate service is required. Make sure the air flow in the lower intake vent, which circulates through the refrigerator coils and condenser and out the upper exhaust vent, is not blocked or restricted.

General Troubleshooting Guide

Refrigerator not working or cooling properly:

- Verify the main battery disconnect switch is ON. Absorption -type refrigerators require 12 volt DC for control and ignition circuits. 12 volt DC refrigerators (compressor-type) require that the 12 volt DC system is ON.
- Check the RV's 120 volt AC circuit breakers, 12 volt DC fuses and GFCI circuit breaker/receptacle.
- Verify that refrigerator is plugged into a 120 volt AC receptacle if applicable.
- Check the temperature selector within the refrigerator. Is it set to more than '0'?
- If using 12 volts DC, verify house batteries have adequate charge. If battery voltage is lower than 11 volts DC, run the generator or connect to shore power, if available.
- Is the AGS 'Enabled?'
- Make sure the refrigerator unit is level.
- Allow time for refrigerator to get to appropriate temp before putting pre-cooled food into it.
- If using propane gas, make sure LP tank is not empty and main gas valve is OPEN.

NOTE: For complete safety and operational information of your refrigerator, refer to the manufacturer's instruction manual included with your TMC Owner's Packet.