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.

Shore Power

50 amp, 30 amp, and 15 amp power connections

BASIC OPERATION

⚠ DANGER

CONNECTING THE SHORE CORD TO A NON-GROUNDED OR IMPROPERLY GROUNDED POWER SOURCE CAN RESULT IN DANGEROUS AND POSSIBLY FATAL ELECTRIC SHOCK.

Due to the potential danger in failing to heed this warning, the motorhome manufacturer cannot be responsible should damage, injury, or death result from failure to connect the power cord to a properly grounded power source.

⚠ WARNING

The campsite 120/220 volt power receptacle(s) should always be tested for proper functionality prior to connecting your motorhome's shoreline power cord to it. Do not hook up the shoreline power cord to any receptacle until you have verified proper polarity and grounding.

DO NOT plug the shoreline power cord into a campsite receptacle:

- **That has reverse polarity;**
- **With non-functioning ground circuits;**
- **That shows outward signs of heat or other damage.**

Doing so may result in property or equipment damage, severe injury or death. Damage or injury resulting from a connection to a malfunctioning or improperly wired power source is not covered by warranty.

⚠ WARNING

- **Make sure the circuit breakers at the electrical power source are in the OFF position before connecting or disconnecting your shoreline power cord.**
- **The shoreline power cord must be fully extended when in use, and not left coiled in the electrical compartment or on the ground.**
- **Do not use cheater plugs, adapters, or extension cords to reconfigure incoming alternating current (AC) power or break the continuity of the circuit connected to the grounding pin.**

Typical shore line power port. Some power ports include a LED indicator that illuminates when power is ON to the motorhome.

Some motorhome models have shore line power cord connections installed within a storage bay or compartment. All shore power connections are located on the driver side of TMC motorhomes.

⚠ WARNING

- **Do not connect the shoreline power cord into an outlet that is not grounded or adapt the power cord plug to connect it to a receptacle for which it is not designed.**
- **Do not remove the grounding pin to connect to a non-grounded receptacle. Removal of the ground pin disables an important safety feature designed to prevent shock and electrocution hazards.**
- **Do not lengthen the shoreline power cord with an improper extension cord. Use of an improper extension cord will cause overheating of the cord as well as potentially causing premature failure of on-board electrical equipment.**
- **Damaged shore power cords are an electrical shock hazard. Inspect cords for damaged or missing contact pins, cut or damaged insulation, and frayed wires. Replace damaged shore power cords immediately.**

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⚠ CAUTION

- **It is strongly advisable to test the wiring of any external power source BEFORE connecting your motorhome. Along with a proper ground, the 120/220 volt AC source must have properly wired neutral and hot terminals.**
- **Testing for correct power source wiring can be easily accomplished with a portable polarity tester, obtained from a RV parts supplier or dealer. Follow the instructions provided by the manufacturer when operating the tester.**
- **If a problem with the external power source is found, CONTACT THE CAMPSITE MANAGER for repairs. Do not attempt repairs to the site power source and do not connect your motorhome to the site power source until it is determined safe to do so.**

Depending on the electrical service wiring of your motorhome, a 30 amp or 50 amp shore line power cord is provided to connect the motorhome to a grounded AC external power source. The shore line power cord will either be permanently affixed to the motorhome's exterior compartment or detachable. Power cords rated for 30 amps are identified by 3-prongs, while 50 amp shore cords have 4-prong connectors.

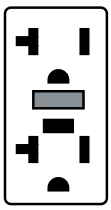
Select motorhomes are equipped with a shore power cord attached to an electrically-powered reel, which makes handling and storing the rather heavy 50 amp cord more convenient.

Most campgrounds and RV parks provide external 30 and 50 amp AC power for your use. In addition, the park's electrical service usually includes a 15-20 amp, 110-120 volt AC outlet. Do not attempt to power your motorhome with this outlet; it is not designed to supply the amount of electrical energy your motorhome requires for normal operation.

However, if the park only provides lesser-amperage service than what is required by your motorhome, shore power cord adapters are available that allow connecting your motorhome to the available power source. Whenever connecting to a power source that does not match your motorhome's power system, be mindful that your motorhome's full power requirements **WILL NOT** be met. You must limit power consumption (avoid using some powered devices).

220 volt AC
50 Amp

120 volt AC
30 Amp



120 volt AC
15-20 Amp

NOTE: The three shore power source outlets illustrated are most commonly used throughout the United States and Canada.

15-20 Amp, 120 Volt Power Source

⚠ WARNING

DO NOT USE A STANDARD HOUSEHOLD EXTENSION CORD TO CONNECT YOUR MOTORHOME TO ELECTRICAL SERVICE. IF SHORE POWER SERVICE IS LIMITED TO 15 OR 20 AMPS, USE OF LIGHT DUTY EXTENSION CORDS AND ELECTRICAL ADAPTERS WILL CREATE A VOLTAGE LOSS THROUGH THE CORD AND AT EACH ELECTRICAL CONNECTION.

If connection to a 15-20 Amp AC source is necessary, use a 3-prong 15-20 Amp power cord adapter on your shore power cord AND strictly limit the power use of your motorhome. Severe electrical overloads are possible.

The 15-20 amp park service should only be used to power an external appliance, such as a portable compressor, electric power tools, electric leaf blower, or electric power washer. Only use a 3-pronged GROUNDED extension cord when connected to this power source. Use a power cord that has at the minimum, 14 gauge wire and suitable for outdoor use (not included with your motorhome). If the outlet is a GFCI type, test the outlet before using. Also test for proper outlet wiring with a portable polarity tester, available from most RV dealers.

Be sure to regularly inspect your extension cords and shore line power cords for cracks in the insulation, loose or missing prongs, loose or missing ground pins, or other damage. **DO NOT USE DAMAGED ELECTRICAL CORDS.**

With care and judicious use of power cord adapters, a 120 volt AC, 15-20 amp electrical source can be used to power a few internal lights and an appliance, such as the refrigerator. A 15-20 amp source can also be used to trickle-charge the auxiliary battery(ies), especially when the motorhome is in storage.

Typical Campground electrical service stand. This illustration shows 50 amp, 30 amp, and 15-20 amp outlets, along with corresponding circuit breakers.

30 Amp, 120 Volt Shore Line Power Cord

⚠ WARNING

MOTORHOMES THAT ARE FACTORY-EQUIPPED WITH A 30 AMP ELECTRICAL SERVICE SHOULD NEVER BE CONNECTED TO A POWER SOURCE THAT WILL PROVIDE MORE THAN 120 VOLTS AC.

Although 30 amp RV connectors look similar to 240 volt AC connectors found in residential homes (electrical dryers, stoves, etc.), the 30 amp RV power service is designed for 120 volt AC only.

Failure to follow this power requirement will result in serious damage to appliances and electrical devices.

If your motorhome is designed for 30 amp electrical service, a 30 amp shore line power cord is provided to attach the motorhome to a grounded 110-125 volt AC, 30 amp external power source. Always turn OFF the main power switch or circuit breaker of the shore power electrical outlet before connecting or disconnecting the shore line power cord. This will eliminate arcing of electrical contacts and reduce the potential of electrical shock. Please strictly follow all electrical-related safety labels affixed to your motorhome.

NOTE: The motorhome end of shore line power cords may be affixed to the to the motorhome, while other shore line power cords may have connectors on both ends. Connect the pronged (or male) end to the shore power cord to the external electrical service, and the socket (or female) end to the motorhome's electrical connection port.

⚠ WARNING

THIS CONNECTION IS FOR 110-125-VOLT AC, 60 HZ, 30 AMPERE SUPPLY.
DO NOT EXCEED CIRCUIT RATING.
EXCEEDING THE CIRCUIT RATING MAY CAUSE A FIRE AND RESULT IN DEATH OR SERIOUS INJURY.

A Warning Label, similar to the one shown here, is affixed on your motorhome, near the 30 amp shore line cord inlet.

4-prong, 50 amp shore power cord (left) and 3-prong, 30 amp shore power cord (right)

50 Amp, 240 Volt Shore Line Power Cord

⚠ WARNING

MOTORHOMES THAT ARE FACTORY-EQUIPPED WITH A 50 AMP ELECTRICAL SERVICE ARE DESIGNED TO BE CONNECTED TO A 50 AMP EXTERNAL POWER SOURCE, WHICH PROVIDES A COMBINED TOTAL OF 240 VOLTS AC.

The 240 Volts comes from two 120 Volt power legs (measured to neutral or ground and 180 degrees out of phase). This power service provides 100 amps total to the motorhome. The motorhome should never be connected to a power source that supplies voltages that are more than 120 Volts on either incoming power leg.

Failure to follow this power requirement will result in serious damage to appliances and electrical devices.

NOTICE

50 amp shore power must be capable of supplying 220-240 volts AC, measured across both legs of the service, and supply 50 amps on each leg of the service (100 amps total).

Depending on the model, your motorhome may be supplied with a 50 amp electrical service and have a 50 amp shore line power cord, which is used to attach the motorhome to a grounded 50 amp external power source. Similar to the incoming power service to your house, the incoming voltage of a 50 amp service is 240 volts AC, consisting of two 120 volts AC power legs. At the circuit breaker panel of the Power Load Center, the 2 power legs are split, each feeding 120 volts AC power to separate sections of the fuse panel.

Always turn OFF the main power switch or circuit breaker of the external power source when connecting or disconnecting the shore line power cord. This will eliminate arcing of electrical contacts and reduce the potential of electrical shock.

NOTE: A 50 amp shore power source supplies 240 VAC incoming power; 120 VAC on each of the two power legs. The Power Load Center is wired to split the incoming 240 VAC into two 120 VAC branches for the motorhome's electrical circuits.

⚠ WARNING

THIS CONNECTION IS FOR 208Y/120-VOLT or 120/240-VOLT AC, 3-POLE, 4-WIRE, 60 HZ, 50 AMPERE SUPPLY.
DO NOT EXCEED CIRCUIT RATING.
EXCEEDING THE CIRCUIT RATING MAY CAUSE A FIRE AND RESULT IN DEATH OR SERIOUS INJURY.

A Warning Label, similar to the one shown here, is affixed on your motorhome, near the 50 amp shore line power cord inlet.

Powered Shore Line Cord Reel

Select TMC motorhomes are equipped with a powered shoreline cord reel. 50 amp shore power cords have large diameter wires and, due to their size and weight, can be difficult to handle. A powered cord reel facilitates retracting the shoreline cord when not in use.

The motor of the powered cord reel operates on 12 volts DC from the auxiliary (house) batteries. Therefore, the master battery disconnect switch must be ON in order to operate the powered cord reel.

50 amp shore power cord attached to an electrical-powered reel.

Connecting to an External Power Source

Inquire with the campsite owner or manager if they provide the electrical service your motorhome requires. It is always advisable to ensure the external electrical source is properly wired and grounded before connecting your motorhome. If the external electrical source is confirmed to be appropriate for your motorhome's electrical system, follow this electrical hook-up procedure:

1. Locate the load center inside your motorhome and turn OFF the main AC circuit breakers. Some panels will have two main circuit breakers.

2. Carefully extend the entire length of the shoreline power cord (approximately 35 feet) from the electric cable port on the motorhome to the external power source.

The shore power cord is usually stored in an external storage bay. Some shore power cords are wired directly to the motorhome, while other styles require connection to both the motorhome and the external power source.

3. Ensure the circuit breaker(s) at the external power source are OFF.

4. Connect the shore power cord to the receptacle on the motorhome. If the connector has a locking ring, carefully engage the threads until snug. Some connector designs may require a slight twist after insertion, while some power cords are wired directly to the motorhome, making this step unnecessary.

5. Plug the shoreline power cord into either the 30 amp or 50 amp external power receptacle, matching the power requirements and power cord connector of your motorhome. Be sure all the connector prongs are properly and completely inserted into the power source receptacle.

6. Turn ON the circuit breaker at the external power source.

7. Turn ON the main circuit breaker(s) at the motorhome's load center.

Attach the shore power cord to the motorhome by slipping the connector over the pins of the connection port. Give the connector a slight twist to the right, then spin-on the locking ring to secure the power cord to the motorhome.

Turn OFF shore power service circuit breakers before connecting shore power cords. Also, turn OFF circuit breakers before disconnecting shore power cords.

When you are ready to leave the campsite, reverse the shoreline power cord connection process. Use care to prevent damaging the electrical connection pins when connecting or disconnecting the shoreline power cord. Grasp the plug to remove the shoreline power cord from the outlet; do not unplug it by pulling on the cord.

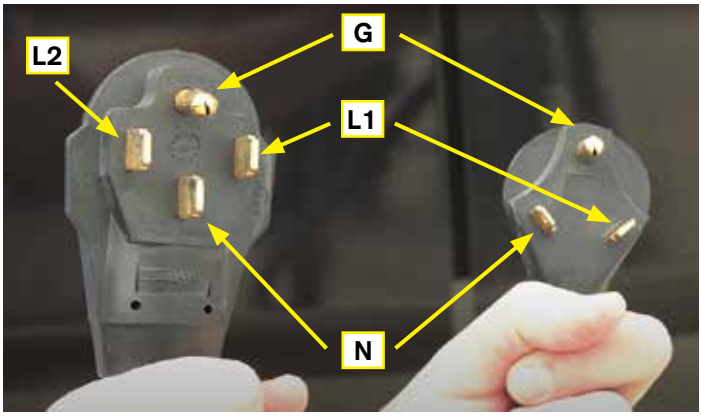
Shore Power Wiring Configuration

For safe electrical power for your motorhome's electrical system, it is important that the external power source is correctly wired. If the shore power source is incorrectly wired, it is possible that the chassis frame and metal objects could become energized. It is also extremely important that the shore power source is properly grounded, thus protecting from the physical hazards of electrical shock.

Below are illustrations of the proper wiring for the 50 amp and 30 amp shore power cords and their corresponding power receptacles. Please talk to the campground's maintenance personnel if you have any questions or concerns regarding the wiring of the campground's electrical hook-ups.

TRANSFER SWITCH PROTECTION

Beginning with model year 2022, all TMC motorhomes will be equipped with transfer switches that provide reverse polarity and open neutral protection. If there is a fault with the shore power source, a fault warning message will be displayed either on the multiplex main panel screen or an indicator on the monitor panel and power will not be passed through the transfer switch to the motorhome.

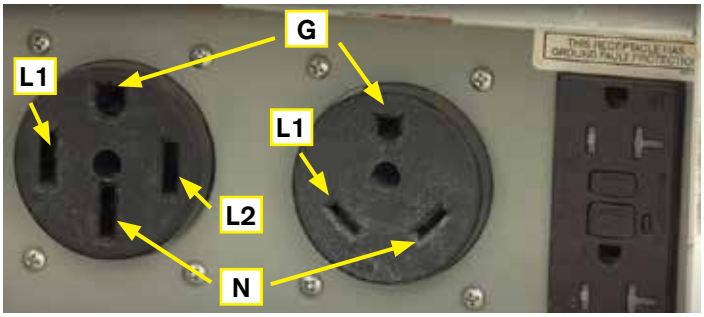


G = Ground

L1 = Leg 1 (120 VAC measured to neutral or ground)

N = Neutral

L2 = Leg 2 (120 VAC measured to neutral or ground. L1 and L2 are 180 degrees out of phase)



Shoreline Cord Plug Adapters

⚠ WARNING

USE EXTREME CAUTION WHENEVER ADAPTING SHORE POWER CORDS TO A UN-MATCHED ELECTRICAL SERVICE.

- **50 AMP SHORE POWER CORD TO A 30 AMP SERVICE.**
- **50 OR 30 AMP SHORE POWER CORD TO A 15-20 AMP SERVICE.**

THE SIGNIFICANTLY REDUCED AMOUNT OF AVAILABLE INCOMING POWER COULD DAMAGE ELECTRICAL MOTORS, COMPRESSORS, AND OTHER DEVICES.

⚠ WARNING

NEVER ADAPT A 30 AMP SHORE POWER CORD TO A 50 AMP EXTERNAL POWER SERVICE.

SEVERE ELECTRICAL OVERLOAD TO THE SHORE POWER CORD AND/OR THE MOTORHOME'S ELECTRICAL SYSTEM COMPONENTS COULD CAUSE ELECTRICAL FIRES OR OTHER DAMAGE.

⚠ CAUTION

REDUCE POWER LOADS WHENEVER ADAPTING A LARGER AMPERAGE SHORE POWER CORD TO A SMALLER SHORE POWER SOURCE.

DO NOT USE POWER-CONSUMING ITEMS, SUCH AS AIR CONDITIONERS, MICROWAVE OVENS, ETC.

NOTICE

If you are adapting from a 50 amp electrical system to a 30 amp power source, your motorhome will NOT be supplied with the total electrical power required to operate all on-board devices simultaneously. A 30 amp, 120 volt service can only supply up to 3,600 watts of power (watts = amps x volts), where a 50 amp, 240 volt service can supply up to 12,000 watts of power, or 3 times the power compared to a 30 amp service.

Only do so as a TEMPORARY means of supplying limited electrical power to your motorhome. Do not use high-demand electrical devices, such as air conditioners and kitchen appliances. Electrical overloads can easily happen and could cause damage to the electrical devices of your motorhome.

Plug adapters are available to allow connecting your 4-prong, 50 amp shoreline power cord to a 3-prong, 30 amp shore power service, and a 3-prong, 30 amp shore power cord to a standard, 3-prong household electrical plug.

Using a 120 Volt, 15-20 amp power adapter:

Use 120 volt, 15-10 amp adapters only for extremely limited use, such as powering a few internal lights, powering a refrigerator, or providing charging energy for your auxiliary batteries when the motorhome is in storage.

Power cord adapters are available in several styles and configurations. Only use adapters when absolutely necessary and on a temporary basis. Always be aware that the use of adapters usually restricts the available power to the motorhome.

NOTE: When encountering limited shore power availability and when possible, use the motorhome's generator to supply electrical power. It is has been specified to supply the electrical needs of the motorhome's power requirements.

Trickle Charging Batteries During Storage

The shore power cord and the motorhome's converter can be used to keep the auxiliary batteries charged during storage.

1. Use a plug adapter to convert the shore power plug to a standard, 3-prong household outlet.
2. At the motorhome's circuit breaker panel, turn ON the Main Circuit breaker(s) and the Converter circuit breaker. Turn OFF all other circuit breakers.
3. Plug in the shore power cord to the household outlet.
4. Turn ON the master battery disconnect switch.
5. Ensure all interior lights and 12 volt devices are OFF or disconnected from the power source.

NOTE: Batteries in Class A Diesel Pushers with inverter/chargers can be charged without the master battery disconnect switch ON.

Electrical Fault Protection

TMC motorhomes are equipped with transfer switches that provide reverse polarity and open ground protection. If there is an electrical fault with the shore power source or generator power, a fault warning message will be displayed either on the multiplex main panel screen or an indicator on the monitor panel and power will not be passed through the transfer switch to the motorhome.

If a ground or reverse polarity fault is detected, the shore power source or generator must be repaired by a qualified technician or electrician.

NOTE: The shore line power cord should be unplugged when the motorhome is left unattended for long periods of time.

If a fault should occur with the shore power system, your motorhome will be isolated from the power source, therefore preventing potential damage to your motorhome's electrical system.

Shore Power Cord Maintenance

Inspect the shoreline power cord for damaged or missing contact pins, cuts, cracks, and worn insulation. Damaged shore power cords are an electrical shock hazard. **DO NOT USE A DAMAGED POWER CORD**. For your own safety and to maintain the integrity of the electrical system, replace damaged shore power cords immediately.

NOTE: Travel with a circuit tester or a digital multimeter in your tool bag. This will allow testing shore power service and help diagnose power-related issues.

Tips and Troubleshooting

⚠ CAUTION

Always have electrical repairs performed by a qualified electrician or technician. Electrical issues left un-repaired or improper electrical repairs can lead to severe injury or death.

NO POWER TO THE MOTORHOME:

- Make sure the motorhome's shore power cord is plugged in correctly and completely.
- Check campground's shore power service for a tripped circuit breaker. Turn the circuit breaker OFF, then back ON. **NEVER** force a circuit breaker to stay ON if it does not latch in the ON position.
- Check Main circuit breaker(s) located in the motorhome's Power Load Center (circuit breaker panel). Turn the circuit breaker OFF, then back ON. **NEVER** force a circuit breaker to stay ON if it does not latch in the ON position.
- Check the circuit breaker(s) on the generator's control panel (located on the generator. Turn the circuit breaker OFF, then back ON. **NEVER** force a circuit breaker to stay ON if it does not latch in the ON position.
- If using a surge protector, try bypassing the surge protector to determine if power can be restored.

NO ELECTRICITY IN COACH:

- Make sure the master battery disconnect switch is ON.
- Check the circuit breaker for the converter (located in the Power Load Center (circuit breaker panel). Turn the circuit breaker OFF, then back ON. **NEVER** force a circuit breaker to stay ON if it does not latch in the ON position.
- A power source fault may have been detected by the transfer switch. Verify by viewing the fault indicator located on the monitor panel or multiplex control panel.
- Try operating the generator to determine if power can be supplied by the generator.
    - ▹ If the motorhome can be powered by the generator, but not shore power, then something is likely wrong with the shore power service.
    - ▹ If the motorhome cannot be powered by either shore power service or the generator, then something may be wrong with the transfer switch or electrical supply wiring.

Power and Electrical Accessories

Your dealer is the best source for advice and recommendations for shore power accessories, such as power plug adapters, extensions, circuit testers, surge protectors and other useful devices pertaining to shore power and the electrical system of your motorhome.

Always respect electrical energy and never use an electrical device that is faulty or damaged. Only use an electrical device or accessory for its designed purpose.