Owner's Manual

TMC Part Number 0441434
Rev. 03.01.2019

⚠ WARNING

Operating, servicing and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle.

For more information go to: www.P65Warnings.ca.gov/passenger-vehicle

THOR MOTOR COACH

Made to fit.

Congratulations on purchasing your new motorhome, built by Thor Motor Coach!

We sincerely thank you for choosing the Thor Motor Coach brand. Your motorhome is designed to provide you with carefree, comfortable travel and vacationing for now and for many years to come. Our mission is to produce quality motorized recreational vehicles and we are confident that you will find your new motorhome is 'Made to fit' your recreational aspirations.

Your motorhome was built following the high standards set by Thor Motor Coach (TMC), the Recreational Vehicle Industry Association (RVIA), and (if applicable) the Canadian Standards Association (CSA) as well as complying with the requirements of all applicable state and federal agencies at the time of manufacture.

Our customers are extremely important to us, and we assure you that TMC will always strive to do everything possible to earn your trust and goodwill.

Welcome to the wonderful world of RV'ing and to the Thor Motor Coach family of recreational vehicles.

Happy Travels!

PO Box 1486 • Elkhart, Indiana 46515-1486 • (Toll Free) 877.855.2867
thormotorcoach.com

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Thor Motor Coach (TMC) reserves the right to make changes in vehicles built and/or sold at any time without incurring any obligations to make the same or similar changes on vehicles previously built and/or sold by TMC. Information in this owner's manual is subject to change without notice and represents information relevant at the time this version was printed. Nothing in this owner's manual creates any warranty, either expressed or implied. The only warranties offered are those set forth in the Thor Motor Coach Limited Warranty and in the Thor Motor Coach Structural Limited Warranty, as applicable to the motorhome.

TMC Part Number 0412440; Revision 03/01/2019

Introduction

About This Owner's Manual

Thank you for choosing Thor Motor Coach (TMC). This Owner's Manual is intended to help you better understand the basic features of your new motorhome. Please read and keep it, along with your TMC Warranty Guide, your Owner's Packet, and your Chassis Packet, in your motorhome for future reference.

This Owner's Manual is not intended for use as a service manual, nor does it provide complete operational instructions. It is a guide to help you become familiar with the safe operation and use of your motorhome. It is not model specific and is of a general nature, so the illustrations and descriptions provided may differ from the components installed in your motorhome.

Information regarding the specific systems and components of your motorhome is provided in other publications, media, and services. These resources include: TMC System Guides, component manufacturers instructional booklets, TMC-produced how-to videos, and TMC's Customer Care.

TMC Warranty Guide

The Thor Motor Coach Limited Warranty and the Thor Motor Coach Structural Limited Warranty are printed in your TMC Warranty Guide. The TMC Warranty Guide also contains your TMC Product Warranty Registration Form and a list of component suppliers.

The TMC Product Warranty Registration Form must be completed by you and your selling dealer, and returned to TMC within fifteen (15) days of delivery of your new motorhome to you.

Owner's Packet

For complete instructions regarding warranty, safety, operation, and maintenance of the components installed in your motorhome, please read and follow the information provided by the various component manufacturers located in your Owner's Packet. If you are missing component information, please contact the component manufacturer (using the supplier contact list provided in your TMC Warranty Guide), your selling dealer, or TMC Customer Care at:

(877) 855-2867

TMC Owner's Packet

Chassis Packet and Chassis Warranty

The Chassis Packet contains important warranty, safety, operation, and maintenance information supplied by the manufacturer of your motorhome's chassis regarding the engine, transmission, tires, etc. Instructions for registering your applicable warranty using the chassis manufacturer's Delayed Warranty Start Form are printed in the TMC Warranty Guide.

Contact TMC Customer Care

If you are unclear or unfamiliar with any procedure described in this Owner's Manual, your TMC Warranty Guide, Owner's Packet, Chassis Packet, the operation of a component or system of your motorhome, or require service or warranty repairs, please contact your selling dealer or TMC Customer Care at:

(877) 855-2867 for assistance.

TMC Customer Care representatives are available 24 hours a day, 7 days a week. You can also email your inquiries to TMC Customer Care by filling out and sending the form located on the TMC website:

https://www.thormotorcoach.com/customer-care/

Response times from TMC Customer Care are within 1 to 2 business days. You must include your name and a valid email address. Include your contact information, Vehicle's Identification Number (VIN) and a brief description of your inquiry.

Online Customer Support

A good working knowledge of your motorhome and how to care for it will help you enjoy many miles and years of motorhome ownership. Specific operational and maintenance instructions for the systems and factory-installed components of your motorhome are not included in this manual, however, specific information associated to your motorhome is available on-line through the TMC Owner's Resource website:

https://www.thormotorcoach.com/owners/

From the web-page listed above, click on the icons that will direct you to resources such as TMC Customer Care, authorized TMC service center locator, TMC factory parts, TMC owner's manuals, and other useful and informative services.

TMC Owner's Resource

Clicking on the Owner's Resource icon will direct you to the TMC Owner's Resource document service. This service is complementary to owners of TMC motorhomes. Create a user account by entering your contact information and your motorhome's 17-digit Vehicle Identification Number (VIN). The site will return to you a list of instructional manuals and quick-start guides associated to the factory-installed components of your individual motorhome. Documents are provided in a viewable and download-able .pdf format. Visit your TMC Owner's Resource account often, for updates and new features are continually being introduced.

TMC Instructional Videos

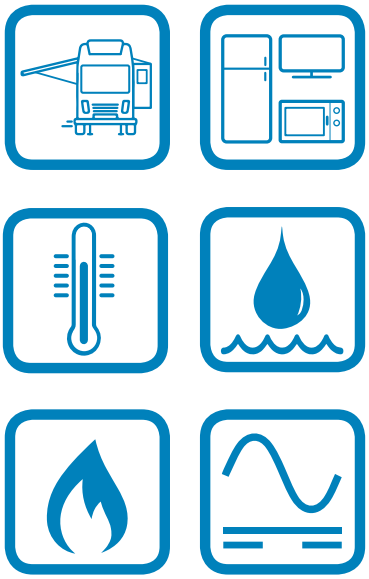
As an added bonus, TMC provides informational 'how-to' videos on the Thor Motor Coach YouTube channel. This video library is constantly being added to and includes helpful information regarding the operation and maintenance of the systems and components installed on your motorhome:

https://www.youtube.com/user/ThorMotorCoach

For your convenience, instructional videos are also listed and linked from your TMC Owner's Resource account.

TMC System Guides

Operational and maintenance information pertaining to TMC motorhomes is also available through TMC's System Guides. System guides are intended to introduce and inform TMC motorhome owners about the systems and components installed on their motorhome. System Guides are continuously updated as new features and components are added to the TMC model line-up.



System guides are available as download-able .pdf's from the TMC website through your TMC Owner's Resource account. Appropriate guides for your motorhome are listed with other instructional manuals and how-to-videos. To date, guides are available covering these topics:

- Awnings, Leveling and Slideouts
- Appliances and Entertainment
- Electrical
- HVAC (heating and air conditioning)
- Multiplex
- Propane
- Water
- Care and Maintenance

Thor Diesel Club

If you are an owner of a Class A diesel motorhome manufactured by Thor Motor Coach, you are eligible for membership to the Thor Diesel Club. Members discover a whole new level of camaraderie, while increasing their knowledge of their TMC motorhome and the RV lifestyle.

The Thor Diesel Club is an independently owned and operated entity that uses the Thor name under a license agreement. The Thor Diesel Club is not a principal or agent of Thor Motor Coach, Inc.

For more information regarding how you can become a club member, please contact:

Thor Diesel Club
5715 Hwy 85N #557
Crestview, Florida 32536

Website: **www.thordieselclub.org**

Email: **thordieselclub@gmail.com**

NOTE: If you have purchased a new, previously untitled Class A diesel motorhome, Thor Motor Coach will pay for your first year of membership to the Thor Diesel Club. Simply visit the website listed below, fill out the form, and submit your request.

https://www.thormotorcoach.com/owners/thor-diesel-club/

If you have a used TMC Class A diesel motorhome, you may still join by visiting the Thor Diesel Club website.

www.thordieselclub.org

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Consumer Information

Dealer's Responsibilities

Your selling dealer is responsible for inspecting both factory and dealer installed components for proper operation. This is referred to as a pre-delivery inspection (PDI).

Your selling dealer is required to provide a thorough and complete walk through demonstration and perform a test drive with you. The demonstration should provide you with a good understanding regarding your new motorhome limited warranties, safety information, operation, and maintenance.

Your selling dealer should discuss this Owner's Manual, the Owner's Packet, the Chassis Packet, and the various individual component supplier documents with you at the time of sale. Their presentation should include assisting you with completing all warranty cards and registrations, and reviewing all individual component supplier information, including warranty, safety, operation, and maintenance information relating to your new motorhome.

NOTE: Your applicable Thor Motor Coach Limited Warranty and Thor Motor Coach Structural Limited Warranty are activated immediately after your fully completed TMC Product Warranty Registration Form is received by TMC, from your selling dealer.

Your selling dealer is required to complete and return the TMC Product Warranty Registration Form (located in the TMC Warranty Guide) to Thor Motor Coach within fifteen (15) days of delivery of your motorhome to you. Doing so activates your Thor Motor Coach Limited Warranty, and your Thor Motor Coach Structural Limited Warranty coverage.

Customer's Responsibilities

You, as the owner/operator of the motorhome, are responsible for providing proper maintenance as outlined in this Owner's Manual, the TMC Warranty Guide, the Owner's Packet, TMC's On-line Customer Support, the Chassis Packet, and all individual component suppliers' information. Periodic maintenance is not covered by the Thor Motor Coach Limited Warranty and/or the Thor Motor Coach Structural Limited Warranty.

NOTE: Failure to properly maintain your motorhome could result in loss of warranty coverage.

Read the Thor Motor Coach Limited Warranty and the Thor Motor Coach Limited Structural Warranty before you purchase your motorhome. If you have questions regarding coverage, contact TMC Customer Care at:

(877) 855-2867

Inspect the entire motorhome during the test drive and PDI, and note any issues in writing on the TMC Product Warranty Registration Form. Ask any questions you may have before leaving the selling dealership.

1. Complete and return all applicable warranty cards and registrations at the time of sale.
2. Perform regular and proper maintenance (see Maintenance, Section 13). Be sure to have service performed in a timely manner to help avoid situations arising from neglect or abuse that are not covered under warranty.
3. Familiarize yourself with your new motorhome; its systems, features, and safe operational procedures. Follow all TMC, chassis manufacturer, and all individual component suppliers' instructions regarding the safety, operation, and maintenance of their respective products.

NOTE: Your motorhome is not designed, nor intended, for permanent housing. Use of your motorhome for long term or permanent occupancy may lead to premature deterioration of its structure, interior finishes, fabrics, carpeting, and/or window treatments, etc. Damage and/or deterioration due to long term occupancy is not considered normal, and may under the terms of the warranty constitute misuse, abuse, or neglect, and therefore void certain warranty protections.

Vehicle Identification Decals and Plates

The TMC serial number is listed on a label affixed to the inside wall of a Class A motorhome, or on the inside of the passenger's door of a Class C motorhome. Please refer to the chassis manufacturer's owner's manual for the location of your 17-digit chassis VIN.

Change of Address or Ownership

The 'National Traffic and Motor Vehicle Safety Act of 1966' in the United States, and Transport Canada require manufacturers to be able to contact vehicle owners when a correction of a safety-related defect or noncompliance issue becomes necessary.

To enable TMC to contact you, the current owner, with important vehicle product and safety updates, including vehicles with expired warranty coverage, please update your vehicle-related or ownership information by contacting TMC in writing; by faxing **(574) 294-3816** (attention: Registrations), or by emailing:

registrations@tmcrv.com

INCLUDE THE FOLLOWING:

- Your legal name
- Your current mailing address (include your prior mailing address for change of address notifications)
- Your telephone number (home and/or cell)
- Your email address
- Your vehicle's 17-digit vehicle identification number (VIN)
- Your vehicle's TMC serial number
- Legal proof of purchase (e.g., a legible copy of your bill of sale or insurance card)
- Current motorhome odometer reading

How to Obtain Assistance

Should a question or concern arise regarding your motorhome, the first step is to contact your selling dealer. Their sales, service, and parts professionals will be glad to assist you.

You can also contact a TMC Customer Care representative by calling **(877) 855-2867.** Representatives are available 24 hours a day, 7 days a week.

Inquiries can also be directed to TMC Customer Care via email. Fill out and send the form located on the TMC website:

https://www.thormotorcoach.com/customer-care/

Response times from TMC Customer Care are within 1 to 2 business days. You must include your name and a valid email address. Also include your VIN and briefly describe the purpose of your inquiry. You will receive a reply by email, or if you choose, a TMC Customer Care representative will return a phone call as soon as possible.

Your selling dealer and/or your TMC Customer Care representative should be able to solve any question or concern regarding your motorhome. However, if their combined efforts are not satisfactory, please send a letter describing the circumstances to:

Thor Motor Coach
Attn: Customer Care
PO Box 1486
Elkhart IN 46515-1486

INCLUDE THE FOLLOWING:

- Your selling dealer's name, address, and phone number
- Your dealer contact's name
- Your legal name, current mailing address, phone number, and email address
- Your vehicle's 17-digit vehicle identification number (VIN)
- Your vehicle's TMC serial number
- Current motorhome odometer reading
- If applicable, include the individual component supplier's name, part description, model number, and serial number

Suggestions for Obtaining Service

The following suggestions will help ensure your selling dealer provides the level of service you expect.

CONTACT YOUR DEALER AT ONCE

Service appointments are made based on each dealer's service schedule, so contact your dealer as soon as possible to have service or repairs performed.

PREPARE FOR THE APPOINTMENT

If warranty-covered work is being performed, have the following documentation available:

- TMC Warranty Guide
- Applicable component warranties
- Component serial numbers
- Vehicle identification number (VIN)
- Vehicle serial number

All work to be performed may not be covered by the TMC Limited Warranty or component manufacturer's warranties. Discuss warranties and possible service charges with the dealer's service professionals before authorizing service work.

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PREPARE A LIST

Provide your dealer with a written list of specific repairs needed. It is important that you provide the vehicle's repair history to the dealer's service professionals. Keep a maintenance and service log for your vehicle and make it available for your dealer to review.

BE REASONABLE WITH YOUR REQUESTS

If you need your motorhome returned by a specific date and time, discuss the situation with the dealer's service professionals and list your repair items in order of priority. This may include making a second appointment for work not completed or a list of parts that the dealer may need to obtain prior to performing service work.

DON'T EXPECT TO LOOK OVER THE TECHNICIAN'S SHOULDER

Please don't be offended if you are not allowed in the service area while the service work is being performed. Some insurance requirements forbid admission of customers to the service area.

INSPECT THE WORK PERFORMED

Along with the service manager or representative, inspect the service or repair work when you pick up your motorhome. Notify the dealer's service professionals immediately of any dissatisfaction with the performed service work. If you cannot return the vehicle immediately for repairs or corrections, make an appointment as soon as possible.

Please be aware that all service shops require notification of any issues with their repairs within a specified time limit. Make sure you are familiar with he repair facilities policies.

Emergency Weekend or After Business Hours Warranty Repair Assistance

In an emergency, if an authorized TMC dealer is not located nearby, please contact your selling dealer for assistance. If your selling dealer is closed, contact TMC Customer Care at (877) 855-2867 (available 24/7) for warranty pre-repair authorization, and for emergency weekend or after-business-hours repair assistance (see How To Obtain Assistance, in this section).

NOTE: Please refer to your TMC Factory Service Appointment Form for additional important information.

Obtaining Service Repair at Thor Motor Coach

If your motorhome is in need of service repair, and your dealer recommends that the repairs be made at the TMC Factory Service Center, your motorhome may be returned to TMC with the following guidelines:

- You, the current motorhome owner, or your referring dealer must make a confirmed appointment prior to dropping off your motorhome.
- You are responsible for all transportation costs and hotel accommodations; please be prepared accordingly.
- Unless prior approval has been obtained from the TMC Factory Service Center, all personal items must be removed from the area where you are requesting service repair and the refrigerator emptied. TMC is not responsible for any lost or stolen property, valuables, or loss of food items.
- Your motorhome holding tanks must be emptied and rinsed. TMC has a dumping station available for customer use.
- The propane system and all electrical systems must be shut down and turned OFF. TMC is not responsible for discharged batteries or loss of propane.

- During the appropriate season, please ensure your motorhome is winterized.
- You must retake possession of your motorhome within seven (7) business days of TMC notifying you that the repairs have been completed; otherwise, unless a longer storage time has been previously agreed to, in writing by TMC, you may be liable for additional daily storage fees payable to TMC.

Replacement Parts

TMC does not sell retail parts directly to consumers. Please contact your selling dealer for assistance in obtaining replacement parts and/or accessories. If the original part is no longer available, TMC will make every effort to suggest or provide an appropriate substitute.

Website Usage Disclaimers

Thor Motor Coach (TMC) hereby disclaims and sets forth as follows:

WEBSITE DISCLAIMER OF WARRANTY

The services, information and materials on websites listed in this manual are provided 'AS IS,' and TMC shall have absolutely no liability whatsoever in connection with these website services, information, external links or third party links on these websites. Your use of these websites are at your own risk. TMC shall have no liability whatsoever for any errors, omissions or inaccuracies in the information regardless of how caused or for delays or interruptions in delivery of the information: or any decision made or action taken or not taken in reliance upon the information furnished.

TMC accepts no responsibility or liability whatsoever with regard to information on these websites as the information is meant to be of a general nature only and is not intended to address the specific circumstances of any particular individual or entity.

The information provided is not necessarily comprehensive, complete, accurate or up to date; the information is sometimes linked to external sites over which TMC has no control and for which TMC assumes no responsibility: TMC shall have no liability for any loss or injury caused, in whole or in part, by its actions, omissions or negligence, or for any contingencies beyond its control in procuring, compiling or delivering any information. The information is not professional nor does it comprise legal advice (if you need specific advice, you should always consult a suitably qualified professional).

DISCLAIMER OF ENDORSEMENT

Any reference within external or third party links to any specific commercial products, process or service by trade name, trademark, manufacturer or otherwise, does not constitute or imply it's endorsement, recommendation or favoring by TMC. The appearance of external or third party links does not constitute endorsement by TMC of the linked web sites or the information, products or services contained therein. TMC does not exercise any editorial control over the information you may find at these locations. External or third party links may be provided for the convenience of the users of that website. TMC is not responsible for the availability or content of these external or third party sites and does not endorse, warrant or guarantee any products, services, information, centers, or schools described or offered at these links.

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Reporting Safety Defects

In the United States

If you believe that your recreation vehicle has an alleged defect that could cause a crash or cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) and Thor Motor Coach.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your selling dealer, or Thor Motor Coach.

For additional information, go to the NHTSA website at: **www.safercar.gov**.

TO CONTACT NHTSA BY PHONE:

Call the Vehicle Safety Hotline at: **1-888-327-4236** and a NHTSA representative will record your complaint information.
(TTY: **1-800-424-9153** or **1-202-484-5238**)

TO CONTACT NHTSA BY MAIL:

Office of Defects Investigations/CRD
NVS-216
1200 New Jersey Ave. SE
Washington, DC 20590

TO CONTACT TMC BY PHONE:

Contact TMC Customer Care at: **1-877-825-2867**

TO CONTACT TMC BY MAIL:

Thor Motor Coach
Attn: Customer Care
PO Box 1486
Elkhart, IN 46515-1486

In Canada

If you believe your recreation vehicle has an alleged safety defect, you should contact Transport Canada and Thor Motor Coach. Transport Canada prefers to be called instead of receiving posted mail or email, as it enables their investigators to confirm that your information is correct and to answer your questions accurately.

For additional information, go to the Transport Canada website at: **www.tc.gc.ca**.

TO CONTACT TRANSPORT CANADA BY PHONE:

Call **1-800-333-0510** or **1-613-993-9851** if you are calling from the Ottawa region, and ask to speak to a defect investigator.

TO CONTACT TRANSPORT CANADA BY MAIL:

Road Safety and Motor Vehicle
Regulation Directorate
Transport Canada
Tower C, Place de Ville
330 Sparks Street
Ottawa, Ontario K1A 0N5

TO CONTACT TMC BY PHONE:

Contact TMC Customer Care at: **1-877-825-2867**

TO CONTACT TMC BY MAIL:

Thor Motor Coach
Attn: Customer Care
PO Box 1486
Elkhart, IN 46515-1486

Vehicle Safety

Safety Alerts

Thor Motor Coach uses the following signal words to warn you of possible safety concerns and to provide information to help prevent personal injury and/or damage to the motorhome:

NOTE: **Provides helpful information.**

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death. This symbol may be used in conjunction with the following signal words and with a color that corresponds with the associated safety label.

⚠DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This alert information is limited to the most extreme situations.

⚠WARNING

Indicates a potentially hazardous situation that, if not avoided, may result in death or serious injury.

⚠CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE

Indicates a potential situation that, if not avoided, may result in property damage or damage to your motorhome.

Safety Decals and Information Labels

There are safety decals and vehicle information labels affixed throughout your motorhome. Read and follow the instructions listed on all decals, labels, or data plates before and during operation and storage of your motorhome.

NOTE: If any decal, label, or data plate has been removed, damaged, or painted over, please contact your selling dealer's Parts Department for a replacement.

Fire Safety

⚠ DANGER

Vehicles and equipment powered by internal combustion engines and placed in recreation vehicles may cause carbon monoxide poisoning or asphyxiation, which could result in death or serious injury.

The flammable liquids used to power these items can cause a fire or explosion, which can result in death or serious injury.

TO REDUCE RISK:

1. **Do not ride in the vehicle storage area when vehicles are present.**
2. **Do not sleep in the vehicle storage area when vehicles are present**
3. **Close doors and windows in walls of separation (if installed) when any vehicle is present.**
4. **Run fuel out of engines or stored vehicles after shutting off fuel at the tank.**
5. **Do not store, transport, or dispense fuel inside this vehicle.**
6. **Open the windows, openings, or air ventilation systems provided for venting the transportation area when vehicles are present.**
7. **Do not operate propane appliances, pilot lights, or electrical equipment when motorized vehicles are present.**

⚠ DANGER

NO SMOKING

Before dispensing fuel, turn off all engines, fuel-burning appliances, and their igniters (see operating instructions).

Do not dispense fuel within 20 feet (6.1 meters) of an ignition source.

Can cause ignition of flammable vapors, which can lead to a fire or explosion and result in death or serious injury.

⚠ WARNING

DO NOT attempt to use water to put out an electrical fire. Water can spread some types of fire, and electrocution is possible with an electrical fire.

Awareness and adherence to fire safety procedures is an important part of being a responsible motorhome owner/operator. Make sure that everyone traveling in the motorhome is familiar with the location of exits, including emergency exit egress windows. By following these basic rules of fire prevention, the possibility of a fire can be significantly reduced:

- Never store flammable liquids within the motorhome
- Keep cooking surfaces clean
- Never use a flammable liquid or substance as a cleaning agent or solvent

- Never leave cooking food unattended
- Keep flammable materials away from open flames
- Never smoke in bed; and when smoking, always use an ashtray
- Never allow children to play with propane or electrical equipment
- Never use an open flame as a source of illumination
- Promptly repair faulty or damaged wiring and electrical components
- Never overload electrical circuits
- Locate and repair propane gas leaks immediately
- Do not allow rubbish to accumulate
- Spray fabrics annually with a flame retardant

Basic Rules of Fire Safety

1. Evacuate everyone (including pets) from the motorhome immediately!
2. After everyone is clear, check the fire to determine if it can be easily put out. **If the fire is too large, or the fire is fuel fed, stay clear of the motorhome and have the fire department manage the emergency.**
3. **If it can be safely done, without risking bodily harm or injury:**
   - Turn OFF the main propane gas valve at the propane tank
   - Switch the 120 volts AC main circuit breaker to the OFF position
   - Disconnect the negative battery cable(s) at the auxiliary battery and chassis battery
   - Disconnect the shore line power cord from the shore power receptacle
   - Turn OFF the generator (if equipped)
4. DO NOT attempt to use water to put out the fire. Water can spread some types of fire (grease or oil), and electrocution is possible with an electrical fire.
5. Always have faulty or damaged wiring, electrical components, propane tanks, valves, pipes, gas, and electrical appliances inspected by a certified RV repair technician, and repaired immediately.

Fire Extinguisher

Fire extinguishers are classified and rated by fire type, A, B, and C. These classifications identify the kinds of fires or burning materials they are designed to extinguish:

Class A - Solid materials such as wood, paper, cloth, rubber, and some plastics.

Class B - Liquids such as grease, cooking oils, gasoline, kerosene or other flammable liquids.

Class C - Electrical such as electrical wires or other live electrical equipment.

A dry-chemical fire extinguisher has been installed by the entrance door. It is suitable for extinguishing small fires of the Class B or C type only.

Typical Class B-C fire extinguisher

Operation

For information on how to use your fire extinguisher, refer to the fire extinguisher manufacturer's owner's manual or the label affixed to the side of the fire extinguisher.

NOTE: Know the location of the fire extinguisher installed in your motorhome and become familiar with its operation.

Inspection

Inspect the extinguisher at least once a week (more frequently if it is exposed to weather or possible tampering). This should also be done before beginning a vacation or during an extended trip.

Replacement

The fire extinguisher must be replaced following the fire extinguisher manufacturer's owner's manual instructions, and/or expiration date listed on the label affixed to the side of the fire extinguisher.

Smoke Alarm

⚠WARNING

This smoke alarm will not alert hearing impaired residents. Special alarms with flashing strobe lights are recommended for the hearing impaired.

Typical RV smoke alarm

The smoke alarm installed in your motorhome is listed for use in recreation vehicles. They only work as intended if they are maintained in operational condition. Smoke alarms have a limited life and over time, will cease to function. Immediately replace the smoke alarm if it is not working properly, if it displays any type of problem, or as recommended by the smoke alarm manufacturer. Be sure to read, understand, and follow the information provided by the smoke alarm manufacturer, including information on the limited life of smoke alarms.

Be aware the smoke alarm is not fool proof and cannot detect fires if smoke does not reach it. Anything preventing smoke from reaching the alarm may delay or prevent an alarm.

Though the alarm horn in this detector meets or exceeds current UL standards, it may not be heard for reasons that include (but not limited to): a closed or partially closed door, distracting noises from electronics, appliances, loud outside noises, etc.

Operation

The smoke alarm is operational once the battery is correctly installed. It will not function if the battery is missing, disconnected, dead, the wrong type, or not installed correctly. It requires one standard 9 volt battery. Refer to the smoke alarm manufacturer's owner's manual for correct battery and installation information.

The LED light indicates if the battery is functioning properly. When the production of combustion is sensed, the smoke alarm sounds a loud alarm that continues until the air is cleared of smoke. The LED light also gives a visual indication of a sounding alarm.

When the battery becomes weak, the alarm will 'beep' about once a minute indicating a low battery. This warning should last for 30 days. To assure continued protection, you MUST replace the battery once the smoke alarm's low battery warning (beeping) is detected.

Test

⚠WARNING

Test smoke alarm operation after vehicle has been in storage, before each trip, and at least once per week during use.

Failure to do so can result in death or serious injury.

To test the smoke alarm, stand at arm's length from the smoke alarm, as the alarm horn is loud and may be harmful to your hearing. Actuate the test button, which will activate the alarm. Pressing the test button will accurately test all functions. Never use an open flame to test the smoke alarm.

Maintenance

Vacuum off any dust on the cover of the smoke alarm using a soft brush attachment. Test the smoke alarm once you have vacuumed. Never use water, cleaners or solvents to clean the smoke alarm as they may damage the alarm. Do not paint the smoke alarm. Refer to the manufacturer's owner's manual for detailed maintenance information.

Replacement

Smoke alarms have a limited life and must be replaced following the smoke alarm manufacturer's instructions, and/or the expiration date listed on the device.

Carbon Monoxide (CO)

⚠ DANGER

Do not use gas cooking appliances for comfort heating. Can lead to carbon monoxide poisoning, which can cause death or serious injury.

⚠WARNING

The following symptoms are related to carbon monoxide poisoning and should be discussed with all members of the household:

- **Mild Exposure - Slight headache, nausea, vomiting, fatigue; often described as "flu-like" symptoms**
- **Medium Exposure - Severe throbbing headaches, drowsiness, confusion, fast heart rate**
- **Extreme Exposure - Unconsciousness, convulsions, cardio-respiratory failure, death**

⚠WARNING

CARBON MONOXIDE OR SUFFOCATION DANGER EXISTS

This is a storage area only and not intended for human or animal occupancy. Failure to follow these instructions could lead to injury or death.

Do not allow children to enter or to play in or around this storage area.

This area is not heated or cooled. Do not store perishables or items in this cargo area that may be damaged by heat or by exposure to cold temperatures.

Carbon monoxide (CO) is a poisonous gas that is colorless, orderless and tasteless. Many cases of reported carbon monoxide poisoning indicate, that while victims are aware they are not feeling well, they become so disoriented they are unable to save themselves by either exiting the vehicle or calling for assistance. Due to their physical size, young children and household pets may be the first to show symptoms of carbon monoxide poisoning.

The risk of carbon monoxide poisoning or suffocation exists in any confined space. Do not allow children or pets to play or become entrapped within the storage compartments of your motorhome.

NOTE: Know the symptoms of carbon monoxide poisoning. If you or your passengers experience symptoms of carbon monoxide poisoning, seek immediate medical attention:

- Dizziness
- Vomiting
- Nausea
- Muscular twitching
- Intense headache
- Throbbing in the temples
- Weakness and sleepiness
- Inability to think coherently

Safety Regulations and Propane Gas

⚠DANGER

IF YOU SMELL PROPANE GAS

1. **Extinguish any open flames and all smoking materials.**
2. **Shut off the propane supply at the container valve(s) or propane supply connection.**
3. **Do not touch or operate electrical switches.**
4. **Open doors and other ventilating openings.**
5. **Leave the area until the odor clears.**
6. **Have the propane system checked and leakage source corrected before using again.**

Ignition of flammable vapors could lead to a fire or explosion and result in death or serious injury.

⚠DANGER

Do not use gas cooking appliances for comfort heating. Can lead to carbon monoxide poisoning, which can cause death or serious injury.

⚠DANGER

All pilot lights, appliances, and their igniters (see operating instructions) shall be turned off before refueling of motor fuel tanks and/or propane containers.

Can cause ignition of flammable vapors, which can lead to a fire or explosion and result in death or serious injury.

⚠WARNING

THIS PROPANE PIPING SYSTEM IS DESIGNED FOR USE WITH PROPANE ONLY:

- **Do not connect natural gas to this system.**
- **Securely cap inlet when not connected for use.**
- **After turning on propane, except after normal cylinder replacement, test propane piping and connections to appliances for leakage with soapy water or bubble solution.**
- **Do not use products that contain ammonia or chlorine to test for leaks. These substances may weaken piping components and cause gas leaks, leading to fire or explosion, which could result in death or serious injury.**

⚠WARNING

Gas cooking appliances need fresh air for safe operation. Before operating:

- **Open vents or windows slightly or turn on exhaust fan prior to using cooking appliance.**
- **Gas flames consume oxygen, which should be replaced to ensure proper combustion.**
- **Improper use can result in death or serious injury.**

⚠WARNING

Do not fill propane container(s) to more than 80 percent of capacity. A properly filled container contains approximately 80 percent of its volume as liquid propane.

Overfilling the propane container(s) can result in uncontrolled propane flow, which could lead to a fire or explosion and result in death or serious injury.

Warning labels are affixed throughout your motorhome to provide required information on propane safety. Read and follow the instructions listed, and exercise proper precautions when using propane and propane appliances.

Warning labels are located in the cooking area to remind you to provide an adequate supply of fresh air for combustion. Unlike a residential home, the oxygen supply in an RV is limited due to the size of the RV, and proper ventilation must be provided when using gas cooking appliances to help avoid the dangers of asphyxiation.

Combination Carbon Monoxide/Propane Alarm

⚠WARNING

The carbon monoxide (CO) alarm installed is intended for use in ordinary indoor locations of recreation vehicles.

Do not disconnect the combination carbon monoxide/propane alarm, or its battery.

Individuals with medical problems may consider using warning devices that provide audible and visual signals for carbon monoxide concentrations under 30 PPM.

This alarm will only indicate the presence of carbon monoxide gas at the sensor. Carbon monoxide gas may be present in other areas.

⚠WARNING

THE PROPANE DETECTOR OPERATES ON 12 VOLT HOUSE POWER. IT WILL BE DISABLED WHEN HOUSE BATTERIES ARE DISCONNECTED AND SHORE POWER IS REMOVED!

⚠WARNING

Actuation of this alarm indicates the presence of carbon monoxide, which is a toxic gas that is colorless and odorless.

Typical combination carbon monoxide/propane alarm

Your motorhome is equipped with a combination carbon monoxide/propane alarm that is listed for use in recreation vehicles. The combination carbon monoxide/propane alarm will only provide its intended protection if it is maintained in operational condition.

The combination carbon monoxide/propane alarm is wired directly to the motorhome's 12 volt DC electrical system, with continuous power being supplied by the auxiliary battery. There is not a 9 volt battery power supply in the combination carbon monoxide/propane alarm. If the auxiliary battery cable is disconnected at the battery terminals, the combination carbon monoxide/propane alarm will not be powered, and therefore, will not function.

This alarm is designed to detect the toxic carbon monoxide gas that results from incomplete combustion, such as those emitted from

appliances, furnaces, fireplaces, and auto exhaust, along with propane gas that may be present. A carbon monoxide/propane alarm is NOT A SUBSTITUTE for other combustible gas, fire or smoke detection alarms.

Please note that there are hazards against which carbon monoxide detection may not be effective, such as detection of natural gas and other harmful substances.

Although this alarm is designed to sense the presence of carbon monoxide/propane gas, there are other combustible fumes or vapors that may be detected by the sensor including, but not limited to: acetone, alcohol, butane, and gasoline.

These chemicals can be found in commonly used items such as deodorants, colognes, perfumes, adhesives, lacquer, kerosene, glues, wine, liquor, most cleaning agents, and the propellants of aerosol cans. Be sure to read, understand, and follow the owner's information from the manufacturer of the combination carbon monoxide/propane alarm. This includes information regarding the limited service life of the alarm.

What to do if the Alarm Sounds

1. Operate the RESET/SILENCE button
2. Call emergency services (911 in the United States or a local fire department)
3. Immediately move to fresh air (outdoors, or by an open door or window)
4. Do not re-enter the motorhome or move away from the open door or window until the emergency service responders have arrived, the motorhome has been aired out, and the alarm remains in its normal (OFF) condition

If the alarm reactivates within a 24-hour period, repeat steps 1-4 and call a qualified appliance technician to investigate for sources of carbon monoxide and inspect for proper operation of this equipment. Make sure that motor vehicle(s) are not, and have not been, operating in an attached garage or adjacent to the motorhome.

Have all identified problems corrected immediately. Note equipment not inspected by the technician and consult the manufacturer's instructions or contact the manufacturer directly for more information about carbon monoxide safety and this alarm.

Test

⚠WARNING

Test the combination carbon monoxide/propane alarm after the motorhome has been in storage, before each trip, and at least once per week during motorhome use.

The TEST switch is located on the front of the alarm. Pressing the switch should activate the alarm horn. If the alarm fails to sound, refer to your Owner's Packet for more information from the combination carbon monoxide/propane alarm manufacturer.

Maintenance

Vacuum the alarm cover at least once a year. Clean the cover by hand using a cloth dampened in clean water. Dry with a soft cloth. Do not spray the front panel of the alarm with cleaning agents or waxes. This action may damage the sensor causing an alarm or cause the alarm to malfunction. Do not paint the face of the alarm.

Replacement

The combination carbon monoxide/propane alarm has a limited service life and must be replaced following the alarm manufacturer's instructions and/or the expiration date listed on the device.

Exhaust Fumes and Gases

⚠WARNING

Avoid inhaling exhaust gases as they contain carbon monoxide, which is a toxic gas that is colorless and odorless.

⚠WARNING

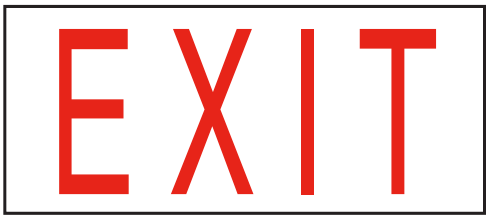
If you are in a parked motorhome with either the engine running or the generator running there is a potential for exhaust fumes to filter back into the motorhome.

TO AVOID BREATHING EXHAUST GASES, FOLLOW THESE PRECAUTIONS:

- Do not run the engine in confined areas, such as a closed garage, any longer than needed to move your motorhome in or out of the area.
- The windows should be closed while driving or running the generator (if equipped) to avoid drawing dangerous exhaust gases into the motorhome.
- If you suspect that exhaust fumes are entering the passenger compartment, have the cause determined and corrected as soon as possible.
- If you must drive under these circumstances, close all the windows and adjust the heating or cooling system to draw outside air into the motorhome (set the blower on high speed).
- Ensure the motorhome's ventilation system and the carbon monoxide alarm are properly maintained. Keep the ventilation inlet grill(s) clear of snow, leaves or other obstructions at all times.
- Ensure the motorhome's engine exhaust and the generator's exhaust systems are properly maintained and functional. Repair any damaged exhaust system components immediately.

Emergency Egress Window

The emergency egress window ('exit window') is designed to allow for a quick exit if the main entry door is not available. All exit windows have red operational handles or levers. An exit window may be a large sectional pane of an exit window or an entire exit window. It is important you know how to open and operate the exit window(s) in your motorhome before an emergency occurs.



Typical emergency egress window exit label

1. Before traveling in your motorhome, review the locations and instruct all occupants on how to operate the exit window(s).
2. When pulling into your campsite, make sure the ground below each exit window is solid and there is a clear escape path directly outside the exit window(s) clear of trees or other obstacles.
3. Plan fire escape routes:
   - Decide who will exit through the exit window(s) first, and in what order
   - Place a blanket or heavy coat over the exit window frame to cushion the exit
   - If there is a fire or other emergency, the last person designated to exit the motorhome should be prepared to assist everyone exiting through the window
   - Designate a meeting place safely away from the motorhome

Operation

1. Pull the red colored handles as directed by the exit window label instructions to release the latch. Some exit windows have more than one release latch.
2. After releasing the latch as directed, push the exit window pane out.

1. Push red handle and lift from latch.

2. Rotate red handle towards you.

3. Push red handle out, through the bracket, while opening window.

Maintenance

Open the exit windows at least twice a year and lubricate the seals keep the seals pliable and prevent sticking.

Additional Egress Window Information

- When an exit window does not have a screen, it is only intended for use as an exit window and is not intended to be used for ventilation purposes. However, some models may be equipped with a window screen. For your safety, it is important that you do not add a window screen to an exit window if one did not come factory-installed by TMC.
- A top hinged exit window having a window screen can be used for ventilation purposes when the motorhome is parked. DO NOT open the exit window more than a 45 degree angle, as it is designed to break away from the RV if opened at an angle greater than 45 degrees to allow for emergency egress (exit).
- To avoid window damage, the exit window must be closed tight and locked when the motorhome is traveling.
- Release latch mechanisms will vary, depending on the exit window design. The exit window may be hinged at the top or side, a breakaway, or a slider window pane.

Seat Belts

⚠WARNING

All occupants in this vehicle must be seated at a designated seating position and must wear seat belts at all times while this vehicle is in motion.

Failure to do so can result in serious injury.

⚠WARNING

The sleeping accommodations in this vehicle are designed for occupancy only while vehicle is NOT in motion. All occupants in this vehicle must be seated at a designated seating position and must wear seat belts at all times while this vehicle is in motion.

Failure to do so can result in serious injury.

⚠WARNING

Do not occupy beds or any other seats that are not equipped with seat belts while the motorhome is in motion.

Seat belts are designed for single occupancy. Do not use a seat belt on more than one person.

⚠CAUTION

Seat belts and seats can become hot in a vehicle that has been closed up in sunny weather; they could burn the bare skin of a child. Check that seat covers and seat belt buckles are safe to the touch before seating children.

All occupants must be furnished with and use seat belts while the motorhome is in motion. However, it is not intended for all seats to be simultaneously occupied while the vehicle is in motion without regard to the total loaded weight of your motorhome. The sleeping accommodations in your motorhome are designed for occupancy only while the vehicle is parked.

Typical seat belt located in dinette seating area

Operation

Driver and front passenger seats must be locked in a forward facing position with seat belts fastened while the motorhome is in motion. Avoid seat rotation while in transit.

USING SEAT BELTS

- Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.
- Adjust the belt to the proper position; snug and as low as possible around the hips, not around the waist.
- To unfasten, push the release button and remove the tongue from the buckle.

Inspection and Replacement

⚠WARNING

Failure to inspect and if necessary, replace damaged seat belts could result in severe personal injuries in the event of a collision.

Inspect the seat belts in your motorhome periodically to make sure they work properly and are not damaged; make sure there are no nicks, tears, or cuts in the belt material. Replace the motorhome seat belts as necessary. A qualified service technician should inspect all seat belt assemblies after a collision. TMC recommends that all seat belt assemblies used in vehicles involved in a collision be replaced.

Child Safety Restraint System

⚠DANGER

Never let a passenger hold a child on his or her lap while the motorhome is moving. You are required by law to use safety restraints for children in the United States and Canada.

If small children (generally children who are four years old or younger, and weigh 40 lbs. (18 kg.) or less) ride in your motorhome you must put them in safety seats made especially for children.

⚠DANGER

Rear-facing child seats or infant carriers should never be placed in the front seats of the motorhome.

If your child requires a child safety restraint system (seat), TMC recommends installing the child safety seat in the forward facing booth dinette position. If your motorhome is not equipped with a forward facing booth dinette seat equipped with seat belts, small children that require a child seat should not be transported in your motorhome. For rear-facing child seats and infant carriers, the dinette table can be placed in the DOWN position to allow adequate room for the rear-facing child seat.

NOTE: Check with your local and state or provincial laws for specific requirements regarding the safe transport of children in your motorhome.

Child Safety Seat Anchor

Always follow the instructions and warnings that come with any infant or child safety restraint system you might use:

- If the child is the proper size, restrain the child in a safety seat. Children who are too large for child safety seats (as specified by your child safety seat manufacturer) should always wear seat belts.
- If the shoulder belt portion of a combination lap and shoulder belt can be positioned so it does not cross or rest in front of the child's face or neck, the child should wear the lap and shoulder belt.
- Never use pillows, books, or other objects to boost a child, passenger, or pet.

Mirrors and Vision Systems

For safe driving and maneuvering, both on and off the highway, it is imperative that the motorhome driver/operator becomes proficient with using mirrors and vision systems. Vision aids for motorhomes vary, due in part to the variety of motorhome classes and sizes. Optional equipment and driver preferences are also factors that determine the type of vision aids equipped on motorhomes.

Mirrors are a vital component of safe motorhome operation

Mirrors

The mirrors on your motorhome should always be kept in adjustment and good working order. Although some mirrors have motorized adjustments, most mirrors have provisions for manual adjustments as well (see illustration below).

Mirror Options

The mirrors installed on your motorhome may include some or all of these optional features:

- **Side View Camera**: If your mirrors are equipped with side-view cameras, the left-side or right-side camera will automatically turn on with the application of the left or right turn signals. View the camera in the dash monitor (radio screen) to help aid with maneuvering the motorhome around the turn. When the turn signals cancel, the dash monitor will revert to the previous screen.

Illustration of mirror with blind-spot indicator (actual indicators and symbols may vary from this illustration)

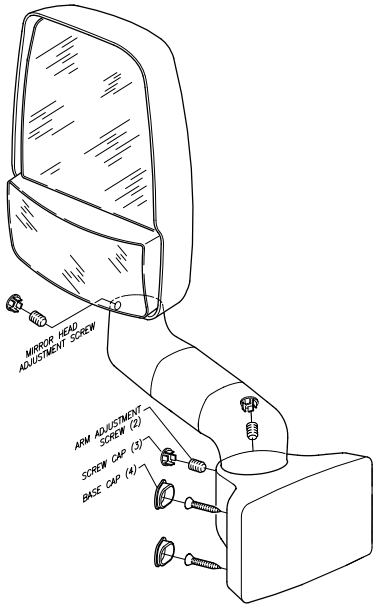
- **Blind-spot Indicator**: Your motorhome mirrors may be equipped with blind-spot indicators. If so, an symbol in the mirror surface will appear whenever a vehicle or object is along the side of the motorhome, out of the normal view of the mirrors. The indicator will turn off when the vehicle or object has moved out of the blind-spot zone.
- **Heated Mirrors**: Your motorhome mirrors may have built-in heating elements that will keep your mirrors free of ice and snow. Mirror heaters are controlled by a switch located on the dash.

Mirror Adjustments

It is usually best to enlist the help of someone stationed outside the motorhome to aid with mirror positioning.

1. Locate the adjustment screws on the mirror head and arm and obtain the correct size wrench or screwdriver for the adjustment screws.
2. Loosen the adjustment screws to where the mirror will move with slight force, but not so loose that the mirror will not hold position.
3. Sit in the driver's seat and adjust the seat for your normal driving position.
4. Look out the side windows at both the left and right mirrors and ask your helper to adjust the mirrors so that you can slightly see the side of the motorhome, while maintaining a good rearward view without needing to move your upper body.
5. Tighten the setscrews and check the mirrors again to ensure the mirrors held their position.

The convex portion of the mirror should allow a good side view of the motorhome and is used to detect cars or obstacles along the side of the motorhome. Note that the convex mirror affects visual perspective.



Typical mirror adjustments

Vision Systems

Your TMC motorhome may be equipped with a rear and/or side vision system. If equipped, the installation includes a rear-view camera mounted along the top of the motorhome's rear valance and an in-dash camera monitor (usually the dash radio screen). Some installations will also include side-view cameras. Camera signals are fed to the dash radio/camera monitor and appear when the gear selector is placed in reverse, or for side-view cameras, actuated by the turn signals. Some Class C installations include a camera monitor in the cab rear-view mirror.

Typical dash radio with camera monitor

TO OPERATE

1. For the camera monitor to function, the dash radio must be ON. It is powered by the house battery(ies), therefore, the house battery switch must also be ON. It is normal to keep the house battery switch in the ON position while traveling. Doing so also allows the vehicle's charging system to charge the house battery(ies) while the engine is running.
2. When the gear selector is placed in REVERSE, the radio display automatically changes to the rear-view camera monitor, allowing for a rearward view via the camera and monitor system.

Typical rear vision camera

3. When the gear selector is moved out of REVERSE, the camera will automatically turn off and the radio display will revert to the previous screen.

Vision System Prep Only

Please contact your selling dealership for assistance in locating the vision system installation wires placed in your motorhome.

Clearance and Side Marker Lights

For vehicle safety and visibility on the highway, clearance and side marker lights are installed on your motorhome. The location and color of marker lights are regulated by Federal law and must comply with all applicable requirements prescribed for it by FMVSS/CMVSS 108. Please maintain your motorhome's clearance and side marker lights as described in this reference:

https://one.nhtsa.gov/cars/rules/standards/conspicuity/TBMpstr.html

Laws of the Road

It is advisable to contact the Department of Motor Vehicles in each respective state for up-to-date information regarding operation and licensing requirements for your motorhome and its drivers/operators.

The State of California requires operators of motorhomes over 40 feet in length to obtain a non-commercial class B license. California has also enacted legislation limiting use of motorhomes in excess of 40 feet, to approved roadways. Other states or provinces may have driver/operator restrictions and/or regulations pertaining to motorhome operation.

You may contact Caltrans at **www.dot.ca.gov** or by calling **(916) 654-5741** for current information regarding California statues.

Emergency Stopping

If an emergency requires you to be stopped along the highway, follow these guidelines:

1. Pull off the road as far as possible.
2. Put the motorhome's transmission in the PARK position (neutral for diesel pushers) and apply the PARKING BRAKE.
3. Turn ON the hazard warning flashers.
4. Use three red warning indicators such as flares, reflectors, or lanterns as required by the Uniform Vehicle Code and Model Traffic Ordinance as follows:
   a. Place the first warning indicator on the traffic side of the motorhome, directed toward traffic approaching the rear of the motorhome, approximately 10 feet from the rear bumper.
   b. Place the second warning indicator 100 feet behind the motorhome, in the center of the lane or shoulder occupied by the motorhome, and directed toward traffic approaching the rear of the motorhome.

NOTE: Curves and/or hills may affect the safe placement of warning indicators, such as safety reflectors, cones, flares, etc. Extinguish flares before leaving the emergency parking site.

Reference: Emergency signals, stopped commercial motor vehicles; Code of Federal Regulations: Title 49, Subtitle B, Chapter III, Subchapter B, Part 392, Subpart C, §392.22.

c. Place the third warning indicator 100 feet in front of the motorhome, in the center of the lane or shoulder occupied by the motorhome, and directed towards the traffic approaching the front of the motorhome.

d. If stopped within 500 feet of a curve, crest of a hill, or other obstruction to view, place a warning indicator in the direction of the obstruction (front and/or back of the motorhome), at a distance of 100 feet to 500 feet from the stopped motorhome so as to afford ample warning to traffic approaching the motorhome.

5. Always stand off the road, out and away from of the lanes of traffic.

NOTE: Along with other emergency equipment (reflectors, first-aid kit, etc.), it is good safety practice to carry a reflective safety vest and wear it anytime you are stopped or parked along a road or highway.

Chemical Sensitivity

⚠ WARNING

THIS VEHICLE LIKE OTHER VEHICLES MAY CONTAIN SMALL AMOUNTS OF ONE OR MORE SUBSTANCES THAT ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

⚠ WARNING

This product, including its component parts, may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Examples of chemical sensitivity safety labels (USA), California and Vermont (below)

This vehicle may include mercury-containing devices installed by the manufacturer:

Remove devices before vehicle disposal. Upon removal of devices, please reuse, recycle, or dispose as hazardous waste.

- ☐ **High Intensity Discharge Headlamps**
- ☐ **Backlit Instruments**
- ☐ **Automatic Leveling Jacks**
- ☐ **T.V. Antenna Switch**
- ☐ **Fluorescent Lamps in Appliances and Fixtures**
- ☐ **Flame sensors in gas appliances such as hot water heaters & ovens**
- ☐ **Smoke alarms**

Other

- ☐ _____
- ☐ _____
- ☐ _____

When your new motorhome, and for some time afterward, has been closed up for an extended time period, you may notice a strong odor associated with chemical off-gassing (or out-gassing). This is not a defect in your motorhome. There are many materials and products used in the construction of recreational vehicles, such as carpet, linoleum, plywood, insulation, paint, and upholstery, that when new or when exposed to elevated temperatures and/or humidity, may off-gas chemicals, including formaldehyde. Off-gassing, may cause irritation of the eyes, nose, and throat and sometimes headache, nausea, and a variety of asthma-like symptoms. Elderly people and young children, as well as anyone with a history of asthma, allergies, or lung problems, may be more susceptible to the effects of off-gassing.

NOTE: Chemical off-gassing is not a defect in your motorhome and is not covered by the Thor Motor Coach Limited Warranty or the Thor Motor Coach Structural Limited Warranty.

Formaldehyde

Most of the attention regarding chemical off-gassing surrounds formaldehyde. Formaldehyde is a naturally occurring substance and is also a key industrial chemical used in the manufacture of the numerous materials and products used in the construction of recreational vehicles. Trace levels of formaldehyde are also released from smoking, cooking, use of soaps and detergents, such as carpet shampoos, cosmetics, and many other household items. Some people are very sensitive to formaldehyde, while others may not have a reaction to the same level of chemical exposure. For the materials used n the construction of your motorhome, amounts of off-gassed formaldehyde decrease over time.

Ventilation

To reduce exposure to chemicals from off-gassing, it is of utmost importance that you ventilate your motorhome. Chemical off-gassing is accelerated by heat and humidity, therefore, ventilation should occur frequently after purchase and at times when the temperatures and humidity are elevated. Keeping the motorhome tightly closed has the potential of increasing the formaldehyde level of the indoor air. Ventilate the motorhome by opening windows, exhaust vents, and doors. Operating ceiling fans and vents, air conditioners, and the furnace will help dry the air. Also follow the recommendations regarding how to avoid condensation problems contained in Section 13. Many of the recommendations listed there will assist in avoiding exposure to off-gassed chemicals.

Smoking and Medical Advice

TMC recommends that you do not smoke inside your motorhome. In addition to causing damage to your motorhome, tobacco smoke releases formaldehyde and other toxic chemicals.

If you have any questions regarding chemical sensitivity, consult with your physician or local health services provider.

Mold

What are molds?

Molds are microscopic organisms that naturally occur in virtually every environment, both indoors and out. Outdoors, mold growth is important in the decomposition of plants. Indoors, mold growth is unfavorable. Left unchecked, molds break down natural materials, such as wood products and fabrics. According to the Center for Disease Control, exposure to damp and moldy environments may cause a variety of health issues. Some people are sensitive to molds. For these people, molds can cause nasal stuffiness, throat irritation, coughing or wheezing, eye irritation, or skin irritation. People with mold allergies may have more severe reactions. Immune-compromised people and those with chronic lung illnesses may develop serious infections in their lungs when they are exposed to molds.

NOTE: If using a dehumidifier, please read and follow all manufacturer instructions and recommendations to the use and cleaning of the dehumidifier.

What factors contribute to mold growth?

For mold growth to occur, temperatures must be between 40 degrees and 100 degrees Fahrenheit and there must also be a source of moisture, such as humidity in the air, standing water, damp materials, etc. Indoors, the most rapid mold growth occurs when warm and humid conditions exist.

How can mold growth be inhibited?

By controlling relative humidity, the growth of mold and mildew can be inhibited. In warm climates, use of the air conditioner will reduce the relative humidity. Opening vents that are located in the bathing and cooking areas is advised during food preparation and bathing, even during cool or cold weather. Additionally, opening a window during these activities will assist in ventilation. In extremely humid conditions, the use of a dehumidifier (customer supplied) can be helpful.

Frequent cleaning of your motorhome is an important preventive measure. Spills should be wiped up quickly and dried as soon as possible. Avoid leaving damp items lying about. On surfaces, use mold or mildew killing cleaning products (test cleaning product to ensure it will not damage surfaces). Check window, door, and joint seals regularly and repair or reseal when necessary to avoid water intrusion. Proper regular and preventive maintenance to the motorhome and its accessories will help prevent the formation of molds.

NOTE: For more information about controlling moisture in your motorhome, refer to Section 13, Condensation.

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Tires and Wheels

Tire Safety

⚠ DANGER

Failure to follow proper inflation guidelines may result in tire failure, which under certain circumstances, can cause loss of vehicle control or accidents that may result in property damage, bodily injury, and/or death.

⚠ WARNING

Check tire pressure at the beginning of each trip and frequently throughout the trip to obtain the maximum performance and life from the tires. Follow the instructions listed on the Federal Certification label, located inside your motorhome, to determine the correct tire pressures.

Read and follow the safety instructions listed below before traveling in your motorhome:

- Proper care and maintenance of your motorhome's tires is essential to the safe operation of your motorhome.
- You must follow the manufacturer's tire inflation guidelines for maximum load capacity.
- Under-inflation of tires is just as dangerous as over-inflation.
- To insure your motorhome tires are operating at their peak performance and safety, regular inspection of your tires and checking tire pressures is absolutely mandatory.
- Examine your motorhome tires frequently for unusual wear. Wheel alignment, tire balance and bearing wear will affect tire wear. Inspect tires for cracking, bulging, uneven tread wear, etc.

When traveling in your motorhome, check the inflation pressure of each tire at least weekly to insure maximum tire performance, and travel wear. Tire pressure should only be checked when the tires are cold. During travel, your tires heat up and the air pressure inside the tire increases.

Always pay close attention to the condition of your motorhome's tires

NOTE: NHTSA's tire rating listings are located on-line at: https://www.safercar.gov/Vehicle-Shoppers/Tires-Rating

NHTSA also has more tire information located on-line at: https://www.safercar.gov/tires/index.html

Common Tire Wear Patterns

IF YOUR FRONT TIRES LOOK LIKE THIS						
TIRE PATTERN	TOE	CAMBER	CENTER	EDGE	CUPPING	PATCHY
COMMON CAUSE	VEHICLE WHEEL ALIGNMENT	VEHICLE WHEEL ALIGNMENT	TIRE OVER INFLATION	TIRE UNDER INFLATION	VEHICLE WORN SUSPENSION	TIRE OUT OF BALANCE

NOTE: The use of tire traction devices (snow chains) may either be prohibited or required in certain travel regions and/or weather conditions. Always check with the state's Department of Transportation for vehicle operating guidelines and regulations.

Tire Inflation

Your tires and wheels support the entire weight of your motorhome and its contents. The tires are also the only contact your motorhome has with the road surface. Determining and maintaining proper inflation is the most important factor in maximizing the life of your tires.

Driving on a tire that does not have the correct inflation pressure for the vehicle load is dangerous and may cause premature wear, tire damage, tread delamination and/or loss of control of your motorhome. Avoid premature tire damage by keeping tires properly inflated.

Tire pressure under and/or over inflation can cause serious tire failure

FIND YOUR PSI:

PSI is the pounds per square inch of air pressure that is correct for your tires. The PSI listing for your tires is located on your motorhome's Federal Weight Label, not on the sidewall of your tires.

NOTE: Check and adjust tire pressure when tires are cold.

CHECK IT MONTHLY:

At least once a month, check all tire pressures (including the spare tire) using an accurate pressure gauge. You cannot determine if your tires are over-inflated or under-inflated by visual inspection only.

NOTE: You cannot determine over or under tire inflation by visual inspection alone. Check pressures with an accurate tire pressure gauge.

Lug Nut Torque

Ensuring wheel mounting nuts (lug nuts) on the wheels are tight and properly torqued is an vitally important responsibility for safe motorhome travel. Inadequate and/or inappropriate wheel nut torque (tightness) is a major reason that lug nuts loosen or fail in service. Loose lug nuts can rapidly lead to a wheel separation with potentially serious safety consequences.

Refer to the chassis manufacturer's information for proper lug-nut torque and tightening sequence.

Tire Replacement

⚠WARNING

Failure to replace damaged tires with tires of the same size, type, traction, and load rating than the originally equipped tires can significantly affect the weight carrying capacity, handling, and safety of your motorhome.

⚠WARNING

Ensure the spare tire is the same size and specifications listed on your motorhomes Federal Weight Label.

Replacement and spare tires should be replaced with the same size, type, load rating, traction, and temperature rating (or better) than the original equipped tires. Tire specifications are listed on the motorhome's Federal Weight Label or found within the chassis manufacturer's owner's manual.

The load index per tire configured as dual wheel is less than a single tire to provide a margin of safety for the load-carrying capacity of the tire in the event that one of the dual tires is punctured or otherwise fails.

NOTE: The tires supplied on your Class C and some Class A motorhomes carry a "Light Truck" rating.

Changing a Damaged Tire

⚠WARNING

Do not use the leveling jack system to support the motorhome while under the vehicle or changing tires. The leveling system is not designed to support the entire weight of the motorhome. Do not use the leveling jack system as a jack or in conjunction with a jack. If a tire change is required, it is highly recommended the work be performed by a knowledgeable trained professional. Attempts to change a tire while supporting the motorhome with the leveling jack system could result in damage to the motorhome and risk causing serious injury or death.

⚠WARNING

The motorhome is a very heavy vehicle. Raising the motorhome to replace the spare tire should only be done with extreme caution by a qualified technician and with the proper tools. The vehicle could slip, causing personal injury or death. DO NOT ATTEMPT TO DO THIS YOURSELF. ALWAYS CALL FOR ROADSIDE ASSISTANCE TO JACK YOUR MOTORHOME AND TO CHANGE DAMAGED TIRES.

If you experience a flat tire while driving your motorhome:

- Gradually decrease your vehicle speed; braking lightly if possible.
- Hold the steering wheel firmly, direct the motorhome to a safe place along the side of the road.
- Once safely parked, place warning markers as described on page 35.
- Contact a road service provider, a qualified RV service repair center, or call 911 (in the U.S.) for assistance.
- To avoid personal injury, do not attempt to change a spare tire or jack the motorhome yourself. This is why a jack handle has not been included with your motorhome.

Make sure the road service technician reads and is familiar with the Chassis Packet tire changing information. Make sure the wheel nuts have been tightened to the proper torque as outlined in your Chassis Packet.

Wheel Alignment

NOTICE

The front suspension and steering system of this motorhome was factory aligned prior to it being dispatched to the dealership. The alignment is however, greatly affected by the way the unit is loaded prior to travel. This loading includes how much cargo, water, and LP are carried as well as the distribution of said cargo. Thor Motor Coach advises to have the alignment checked in the fully loaded condition (the way you would normally load the unit to travel). Not having the alignment checked and reset can result in abnormal tire wear.

It is very important to maintain proper wheel alignment for your motorhome. Improper wheel alignment not only contributes to premature tire wear, but severely affects vehicle handling. Please follow the recommendations listed in the notice below and on the corresponding label affixed to your motorhome.

Toe-in and toe-out (only) are inspected by TMC prior to shipment to your selling dealer.

NOTE: Front wheel alignment also affects vehicle handling and safe drivability. Keeping your motorhome's front wheels in alignment is part of a normal maintenance routine.

Tire Identification Information

To maintain the load capacity of your motorhome, it is vitally important to only replace worn or damaged tires with tires with ratings equal to or higher than what was originally equipped on your vehicle. The illustration below describes important tire information that is embossed on every tire by the manufacturer.

The Load Index may be indicated with two numbers separated with a forward slash. The first number is the load index of the tire configured as a single tire on a single wheel. The second number indicates the load index of the tire as a dual-wheel configuration. Multiplying the second number by 2 will give you the total Load Index for the dual wheel configuration.

NOTE: The load index per tire configured as dual wheel is less than a single tire to provide a margin of safety for the load-carrying capacity of the tire in the event that one of the dual tires is punctured or otherwise fails.

R: The "R" stands for radial. Radial tires have been the industry standard for the past 20 years.

P or LT: The "P" indicates the tire is for passenger vehicles. "LT" indicates the tire is for light trucks.

NOMINAL WIDTH: This three-digit number gives the width of the tire in millimeters from sidewall edge to sidewall edge. The larger the number, the wider the tire.

MAXIMUM LOAD RATING: This number indicates the maximum load the tire can carry.

MAXIMUM PERMISSIBLE INFLATION PRESSURE: This number is the greatest amount of air pressure that should ever be put in the tire. This is NOT the same as the vehicle manufacturer's recommended tire pressure.

TEMPERATURE: The temperature rating indicates how well the tire resists heat.

ASPECT RATIO: This two-digit number gives the tire's ratio of height to width. A number of 50 or lower indicates a short sidewall for improved steering response and better overall handling.

TRACTION: The traction rating indicates the tire's ability to allow a car to stop on wet pavement in a shorter distance.

TREADWEAR: The treadwear rating indicates how long the tire should last. The higher the number, the longer it should take for the tires to wear down.

RIM DIAMETER CODE: This two-digit number is the wheel or rim diameter in inches.

LOAD INDEX: This two- or three-digit number is the tire's load index. It is an indicator of how much weight each tire can support. Note: You may not find this information on all tires because it is not required by law.

SPEED RATING: The speed rating tells you the maximum speed capability of a tire. The speed ratings include speeds from 99 mph to above 186 mph. Note: You may not find this information on all tires because it is not required by law.

M+S: This indicates that the tire has some mud and snow capability.

U.S. DOT TIRE IDENTIFICATION NUMBER: This number begins with the letters "DOT" and indicates that the tire meets all Federal standards. The next two or three numbers or letters are the plant code where the tire was manufactured. The last four numbers represent the week and year the tire was built. For example, the numbers 3107 means the 31st week of 2007. The other numbers are marketing codes used at the manufacturer's discretion. This information is for contacting consumers if a tire defect requires a recall.

Illustration courtesy of NHTSA, www.safercar.gov

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Weighing, Loading, and Towing

Proper loading is one of the most important considerations when traveling in a motorhome. Your motorhome is built to withstand a set maximum load (GVWR). Read and follow the information listed on your motorhome's Federal Certification Label (located in the driver's area) to determine safe load limits. For safe operation, NEVER OVERLOAD YOUR MOTORHOME.

Federal Weight Label

⚠WARNING

Do not exceed any applicable motorhome weight ratings. Doing so could damage your motorhome or affect handling and braking characteristics.

Your motorhome's braking system is designed and rated for operation at the gross vehicle weight rating (GVWR) listed on the unit's weight labels, not the gross combined weight rating (GCWR).

The TMC Motorhome Weight Specifications label concisely states the occupant and cargo carrying capacity of your motorhome and meets the requirements of 49 CFR part 571.120 as issued by the National Highway Traffic Safety Administration (NHTSA).

MANUFACTURED BY: THOR MOTOR COACH, INC.
GVWR: XXXX KG (XXXXX LB)
INC. VEH. MFG. BY: <Insert Chassis Manufacturer>

OFFLINE: MM/YY
SERIAL: XXXXXXXXXXXXX
MODEL: XXXX

	GAWR KG(LB)	TIRES	RIMS	COLD INFLATION PRESSURE	SINGLE	DUAL
FRONT:	XXXX (XXXX)	LT215/85R16	5.5 J X 16	XXX KPA(XX PSI)	☐	☐
REAR:	XXXX (XXXX)	LT215/85R16	5.5 J X 16	XXX KPA(XX PSI)	☐	☐
TAG:					☐	☐

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT IN MM/DD/YYYY

V.I.N.:XXXXXXXXXXXXXXXXX

TYPE: MULTIPURPOSE PASSENGER VEHICLE

Typical Federal Weight Label, including GVWR, GAWR, and tire pressure information

Motorhome Occupant and Cargo Carrying Capacity Weight Label

MOTORHOME OCCUPANT AND CARGO CARRYING CAPACITY
VIN# 1XXXXXXXXXXXXXXXX
THE COMBINED WEIGHT OF OCCUPANTS AND CARGO SHOULD NEVER EXCEED:
XXX kg or XXX lbs
Safety belt equipped seating capacity: X
CAUTION:
A full load of water equals XXX kg or XXX lbs of cargo @ 1kg/L (8.3 lb/gal) and the tongue weight of a towed trailer counts as cargo
(Serial #: XXXXXXXXXXXXXX)

Typical Motorhome Occupant and Cargo Carrying Capacity Label

The Motorhome Occupant and Cargo Carrying Capacity weight label is affixed to the interior side of the forward-most door of your motorhome, on the passenger side, directly below the window screen for Class A motorhomes, or on the front door jamb for Class C motorhomes. This label indicates how much weight you can safely carry within the motorhome. The total weight of passengers, cargo, trailer tongue weight, and water (fresh and waste) should never exceed the value shown on this label.

NOTE: If a boat, trailer, or other vehicle is being towed, it should be weighed and combined with the motorhome's weight to ensure the total weight does not exceed the gross combined weight rating (GCWR).

Weight Terminology

GROSS VEHICLE WEIGHT RATING (GVWR)
The maximum permissible weight of this motorhome.

UNLOADED VEHICLE WEIGHT (UVW)
The weight of this motorhome as manufactured at the factory with full fuel, engine oil, and coolants.

OCCUPANT AND CARGO CARRYING CAPACITY (OCCC)
Equal to the GVWR minus UVW and LP. Occupant and cargo carrying capacity (OCCC) is how much weight in occupants, cargo, water, and trailer tongue weight that can be added to the motorhome without exceeding the GVWR.

GROSS COMBINED WEIGHT RATING (GCWR)
The maximum allowable loaded weight of this recreation vehicle with its towed trailer or towed vehicle.

GROSS AXLE WEIGHT RATING (GAWR)
The value specified as the load carrying capacity of a single axle system, as measured at the tire ground interfaces.

Weighing Your Motorhome

When loading your cargo, be sure weight is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as possible. Too many items stored on one side of your motorhome may overload tires and cause handling issues.

Periodically weigh your motorhome at a public vehicle scale to determine axle loads. You can find certified public or commercial vehicle scales at moving and storage lots, farm suppliers with grain elevators, gravel pits, recycling companies, and large commercial truck stops.

To weigh your motorhome correctly, measure the fully loaded vehicle axle by axle and wheel position by wheel position. Allow adequate time, since the entire weighing process can take around 30 minutes. There may be a small fee for each weight reading taken, but the expense is a worthwhile investment toward the safe operation of your motorhome.

Your motorhome must be weighed fully loaded, which includes passengers, food, clothing, fuel, water, propane, supplies, etc. Any towed vehicle (car/pickup, boat, or trailer) or items loaded on brackets on the back of the motorhome should also be included in the weighing process.

The following procedure is suggested when using a long platform scale, although any method recommended by the scale operator which correctly determines weight value is acceptable. During all measurements, it is important to keep the vehicle as level as possible.

1. Pull onto the scale so that only the front axle is on the platform with the end of the scale midway between the front and rear axles and record the weight **(Reading A).**
2. Pull forward until the full unit is on the scale and record the weight **(Reading B).**
3. Pull forward so that only the rear axle is on the scale and record the weight **(Reading C).**
4. To determine the weight of individual wheel positions, repeat the previous three steps, but this time, use only one side of the motorhome on the scale. Record the weight readings.

   To calculate the wheel position weight for the opposite side of the motorhome, subtract these weight readings from weight readings A, B, and C recorded in steps 1, 2, and 3.

Reading A: Front

Reading B: Total Coach

Reading C: Back

OTHER FACTORS TO CONSIDER:

- Your motorhome must remain as level as possible on the scale, even though an axle or side is not physically on the scale. To obtain the side-to-side weights, there must be enough space on either side of the scale to allow the motorhome to be partially off the scale.
- For improved accuracy, Thor Motor Coach recommends using a segmented 4-pad scale, when possible, to determine individual wheel weights. The corner weights should not exceed half of the respective Gross Axle Weight Rating (GAWR) or the maximum load rating for the tire or set of dual tires at the rear, whichever is less.
- Individual wheel position weights must not exceed the maximum tire load capacity. The maximum load rating for the tire can be found embossed on the tire's sidewall.
- If any of the corner weights exceed half of the listed GAWR or tire ratings, redistribute or remove a portion of the cargo until the weight is within the proper limits for all four corners of the vehicle.
- Periodically check and adjust your motorhome's cargo weight to obtain optimum mileage from your tires and to optimize vehicle handling. Tires should always be inflated as recommended in the chassis manufacturer's instructions or on the tire sidewall (refer to your Chassis Packet).

NOTE: Thick Black Lines in the illustrations above represent a vehicle weighing scale.

NOTE: At approximately 8 pounds per gallon, water can add a considerable amount of weight to your motorhome. Additional cargo carrying capacity for other items can be obtained by reducing the amount of fresh and waste water carried while traveling.

However, it is recommended to always keep a few gallons of water in the black tank to help prevent the build-up of sludge, which can lead to blockages.

Weight Distribution

Improper weight distribution, or too much weight on your motorhome's suspension system, can cause failure or damage to:

- Springs and suspension components
- Shock absorbers
- Brakes
- Tires
- Steering components

An overloaded motorhome is hard to drive and hard to stop. In cases of serious overloading, brakes can fail completely, particularly on steep hills. Proper weight distribution also affects tire performance. The load a tire will safely carry is a combination of its size, its construction, its load range, and corresponding inflation pressure.

Loading and Travel Tips

When preparing for any trip, always consider vehicle weight when loading the motorhome. Not overloading the motorhome and keeping the weight balanced side-to-side and as close to the axles as possible will help improve the drivability and safe handling of the vehicle.

- Store and secure all loose items inside the motorhome before traveling. Overlooked items such as canned goods, or small appliances on the countertop, cooking pans on the range or free-standing furniture items can become dangerous projectiles during a sudden stop.
- Before traveling, ensure all appliances are in good working order (if equipped): stove, oven, microwave, refrigerator, water heater, water pump, furnace, etc.
- Distribute cargo side-to-side so the weight on each tire does not exceed one-half of the GAWR for either axle. For traveling safety, it is important to make sure any tie down straps (if equipped) on appliances or furniture are secured.
- Pay careful attention to where and what type of flammable materials you store and transport. Certain storage areas are clearly labeled DO NOT STORE COMBUSTIBLE MATERIALS. Examples of potential spark producing areas are: base kitchen cabinets, front dinette base, exterior refrigerator service compartment, as well as refrigerator cabinet. Be sure all canisters are secure and leak free.
- When traveling, keep the quantity of fresh and gray water within the storage tanks to a minimum. This reduces the total weight of the motorhome, therefore increasing available carrying weight for other items (refer to Occupant Cargo Carrying Capacity (OCCC) of the motorhome on page 46).
- In winter or colder climates, make sure that the fresh water system is winterized.
- Check that you have up-to-date and correct paperwork such as an owner's registration card, vehicle registration, proof of insurance, valid driver's license, etc.

Towing With Your Motorhome

⚠WARNING

- **An auxiliary braking system may be required for control of a towed vehicle behind the motorhome. Do not assume the braking capabilities of the motorhome can also adequately stop the combined weight of the motorhome and towed vehicle.**
- **The designated hitch rating may exceed the GCWR or other towing capacity limits of the motorhome. It is your responsibility to properly load the motorhome, while staying within the tow ratings, GCWR, GVWR, and GAWRs of the motorhome.**
- **Do not tow loads that cause the motorhome to exceed the Gross Combined Vehicle Weight Rating (GCWR).**
- **Do not exceed the vertical hitch load rating (tongue weight) as listed on the hitch label.**
- **Consult your owner's manual for additional information regarding towing guidelines for this motorhome.**
- **Failure to comply can result in loss of vehicle control resulting in death or serious injury.**

⚠WARNING

A SEPARATE FUNCTIONING BRAKE SYSTEM IS REQUIRED FOR ANY TOWED VEHICLES OR TRAILERS WEIGHING MORE THAN 1000 LBS WHEN FULLY LOADED. NEVER EXCEED THE GVWR, OR THE GAWR SPECIFIED ON THE MOTORHOME'S CERTIFICATION LABEL.

Never exceed the weight ratings of the trailer hitch installed on the motorhome. Failure to heed any part of this warning could result in loss of control of the motorhome and towed vehicle or trailer and may cause an accident and serious injury. For specific towed vehicle braking requirements, consult your chassis owner's manual.

⚠WARNING

THE Motorhome FULLY LOADED AND THE TRAILER, OR TOWED VEHICLE, MUST NOT EXCEED THE Motorhome CHASSIS' GROSS COMBINED WEIGHT RATING (GCWR). Consult with your selling dealer to determine the GCWR of the motorhome.

Do not exceed the motorhome gross combined weight rating (GCWR) or the hitch rating. The tongue weight, the weight pushing down on the hitch, must not exceed 10% of the hitch capacity.

⚠WARNING

DO NOT TOW LOADS THAT EXCEED THE GROSS COMBINED VEHICLE WEIGHT RATING OR OTHER TOW RATINGS OF THIS MOTORHOME.

THE DESIGNATED HITCH RATING MAY EXCEED THE GCWR OR OTHER TOWING CAPACITY LIMITS OF THE MOTORHOME. It is your responsibility to properly load the motorhome, while staying within the tow ratings, gross combined and gross vehicle weight ratings.

Safe Towing Tips:

- Always use safety chains between your motorhome and the towed trailer or vehicle. Cross the chains under the trailer tongue and allow slack for turning corners. Connect the safety chains to the trailer or vehicle frame or hook retainers. Never attach safety chains to the bumper of a vehicle.
- Tow bars or car dollies generally are made to travel in a forward direction only. Most towing equipment of this type is not designed for backing. Never attempt short back up distances with a tow bar or tow dolly; damage to the motorhome, towed vehicle or towing device could result.
- Always check brake lights, running lights, emergency flashers, and turn signals of the towed vehicle at the start of the trip and often during the trip.

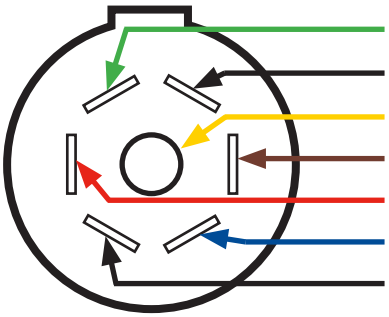
NOTE: Thor Motor Coach accepts no responsibility for damage to the chassis and other components resulting from towing loads greater than its designated class specifications.

Always consider the gross combined weight rating (GCWR) of the motorhome and towed vehicle.

Electrical Connections to a Towed Vehicle

A 4-way or 7-way trailer plug, supplied by the chassis manufacturer, is pre-wired to the chassis electrical system. This plug provides electrical power for running lights, turn signals, stop lights, and electric trailer brakes. Before connecting your motorhome to any towed vehicle, verify that the wiring of the towed vehicle plug conforms to your motorhome connector wiring. Refer to your Chassis Packet for additional information regarding vehicle towing.

7-WAY CONNECTOR WIRING



Signal	Wire Color
Tail & Running Lights	Green
12V Power	Black
Reverse Lights	Yellow
Right Turn & Stop	Brown
Left Turn & Stop	Red
Brake Controller Output	Blue
Ground	White

4-WAY CONNECTOR WIRING

Signal	Wire Color
Right Turn and Brake	Green
Left Turn and Brake	Yellow
Running Lights	Brown
Ground	White

Chassis

For information regarding proper maintenance and other important chassis details, refer to the Chassis Packet information. You, as the owner, are responsible for taking proper precautions when attempting any repair or maintenance for your motorhome. If you are not sure what action to take, or are uncomfortable with performing a maintenance or repair function, contact your selling dealer, or a designated chassis manufacturer servicing dealer for assistance. Contact your chassis manufacturer for information on locating a service center near you.

NOTE: All issues regarding the chassis warranty, parts and service should be directed to the chassis manufacturer.

Follow the recommendations outlined in the chassis manufacturers information packet to ensure proper engine performance and fuel economy.

Class A Motorhome Engine Access

⚠WARNING

IF THE ENGINE COVER IS NOT SEATED CORRECTLY, EXHAUST GASES MAY LEAK INTO THE MOTORHOME, CREATING A DANGEROUS AND POTENTIALLY LETHAL CONDITION.

A Class A motorhome's engine can be accessed for service from inside the motorhome. If you cannot locate the engine cover, please contact your selling dealer or TMC Customer Care for assistance. When reinstalling the engine cover, make sure that it is seated and sealed correctly without obstruction from carpet, floor mats, etc.

Chassis Alternator

The 12 volts DC chassis alternator supplies power to both the automotive systems as well as the auxiliary battery, if equipped, while the motorhome's engine is running. The alternator compensates for electrical usage in the vehicle, the power drawn by lights, fans, and other 12 volt powered items, as well as charging of the automotive and auxiliary batteries.

If the alternator is not keeping pace with the draw on your motorhome's electrical system while driving down the road, it means it is working in a negative mode: more power is being used than the alternator is capable of supplying. This means that you are taking power out of the batteries. If you draw too much power from your batteries there may not be enough power left to start the motorhome or run any of the 12 volts DC appliances when you stop for a break or for the night.

The alternator will charge at a higher rate right after the motorhome has been started, replacing the power used to start the vehicle, but the charging should quickly go back to "normal" and hold its own even when you turn on lights or appliances.

If the alternator shows a discharge while the motor is running, turn OFF appliances and lights to see if a charge comes on or if the alternator indicates "neutral". Then apply a drain on the system to see if a discharge returns. If a discharge persists, contact your dealer.

When stopped at a campsite that allows you use of the shoreline, the 120 volts AC electrical system will recharge your auxiliary battery. Under heavy usage in warm weather, check the fluid level of those batteries that require attention to fluids quite often. Low battery fluid level is very harmful to the battery's longevity.

Battery Isolation Manager

⚠CAUTION

Unless you intend to run the vehicle engine, keep the ignition switch in the OFF position. Doing so will:

1. **Reduce the risk of unnecessary chassis battery drain.**
2. **Allow the Battery Isolation Manager to connect the chassis battery to the house battery charging system.**

Typical battery isolation manager. This device is usually located in the battery compartment of the motorhome.

NOTE: Do not hold the ignition key in the start position for more than 30 seconds. Be careful not to run down the auxiliary battery as this could leave you without 12 volts DC power.

When the motorhome engine is not running, the chassis and house battery(ies) are electrically isolated by the use of a battery isolation manager. This controller prevents house power consumption from discharging the chassis battery while the motorhome is parked.

ADDITIONAL CHARACTERISTICS OF THE BATTERY ISOLATION MANAGER:

1. The isolator electrically delays connecting the house batteries to the vehicle charging system for approximately 15 seconds; this allows the alternator time to reach full charging ability.
2. After this initial time delay, the isolator senses the voltage of the vehicle charging system. The isolator connects the house battery to the vehicle's charging system only when the chassis charging system reaches the correct voltage.
3. If the vehicle's charging voltage drops below 13.2 volts for a period of 4 seconds, due to low idle speed and/or excessive load, the isolator will disconnect the house batteries until the vehicle's charging voltage returns to a level of 13.2 volts or above. For this feature, there is a built-in delay period of approximately 10 seconds.
4. The isolator allows the chassis battery to be charged by the house charging device (usually the converter or inverter) when 120 VAC is in use (shore power or generator power).
5. The isolator allows vehicle starting from the house battery(ies) via the Emergency (Auxiliary) Start Switch.

Emergency (Auxiliary) Start Switch (if equipped)

Your motorhome may be equipped with an Emergency (auxiliary or AUX) start switch. Located in the vehicle's cockpit, near the drivers seating area, this switch connects the house battery to the vehicle's starting circuit. This feature is used for situations when the chassis battery is too depleted to start the vehicle on its own. Connecting the house battery to the chassis battery may provide the needed energy to start the motorhome's engine.

TO OPERATE:

Depress the 'EMER START' switch, located on the front driver's dash, and hold. Next, use the ignition key to start chassis engine. Release the 'EMER START' switch after the engine has started.

It is strongly advised to turn off all 12 volt DC devices before using the emergency start feature. This will help ensure that all available energy stored in the house battery can be used for vehicle starting.

Typical emergency start switch

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Fuel Systems

Fuel System Safety

⚠ DANGER

Potentially explosive fuel vapor may be present at fuel filling stations and during refueling of equipment with the fuel transfer system. Never enter a fuel filling station or refuel equipment if your furnace or water heater is operating or if your refrigerator is operating on propane. Both the flame and the igniters in the burners of these appliances are sources of ignition, and could cause an explosion. These appliances must be turned OFF before entering a fuel filling station or refueling equipment. Turning OFF the propane main tank valve only is not sufficient. The appliances must be OFF at their electrical operating switches.

⚠ DANGER

NO SMOKING

Before dispensing fuel, turn off all engines, fuel-burning appliances, and their igniters (see operating instructions).

Do not dispense fuel within 20 feet (6.1 meters) of an ignition source.

Can cause ignition of flammable vapors, which can lead to a fire or explosion and result in death or serious injury.

⚠ DANGER

All pilot lights, appliances, and their igniters (see operating instructions) shall be turned off before refueling of motor fuel tanks and/or propane containers.

Can cause ignition of flammable vapors, which can lead to a fire or explosion and result in death or serious injury.

⚠ WARNING

Flammable clean up materials should be temporarily stored in a nonflammable, vapor-tight container until proper disposal facilities are available. Do not store flammable clean up rags or materials inside the motorhome, inside any other vehicle or near any source of flame or ignition.

Be extremely careful when fueling your motorhome. Always shut OFF the engine, do not smoke, do not use cellular phones, and shut OFF all pilot lights before adding fuel. Fuel spills represent a serious fire hazard, and should be cleaned up immediately. Never restart the engine or relight pilot lights while fuel vapor is present.

In cold weather conditions or when your motorhome has not been used for a while, a fuel additive (customer supplied) may be needed. Refer to the chassis manufacturers recommendations for fuel additives.

Fuel Transfer System (if equipped)

⚠ DANGER

Any motorized equipment powered with flammable liquid can cause fire and explosion or asphyxiation if stored or transported inside the garage. To reduce the risk of fire, explosion, or asphyxiation:

1. **Do not allow passengers to ride inside the storage area at any time.**
2. **Prior to storing vehicles in the garage, run fuel out of the engine after shutting OFF fuel at the vehicle fuel tank.**
3. **Do not store or transport any motor fuel inside the garage.**
4. **Ventilate the interior of the garage to reduce the risk of fire, explosion or asphyxiation. Open the ventilation panels on either side of the cargo area.**
5. **Do not operate propane appliances, pilot lights, or electrical equipment when motorized vehicles or motorized equipment are inside the garage. Set the cargo electrical disconnect switch to OFF.**

⚠ DANGER

Vehicles and equipment powered by internal combustion engines and placed in recreation vehicles may cause carbon monoxide poisoning or asphyxiation, which could result in death or serious injury.

The flammable liquids used to power these items can cause a fire or explosion, which can result in death or serious injury.

TO REDUCE RISK:

1. **Do not ride in the vehicle storage area when vehicles are present.**
2. **Do not sleep in the vehicle storage area when vehicles are present.**
3. **Close doors and windows in walls of separation (if installed) when any vehicle is present.**
4. **Run fuel out of engines or stored vehicles after shutting off fuel at the tank.**
5. **Do not store, transport, or dispense fuel inside this vehicle.**
6. **Open the windows, openings, or air ventilation systems provided for venting the transportation area when vehicles are present.**
7. **Do not operate propane appliances, pilot lights, or electrical equipment when motorized vehicles are present.**

Included on TMC Class A Outlaw models, a fuel transfer system allows you to transport a supply of gasoline for use in motorcycles, snowmobiles, ATVs, or other vehicles and equipment. This system consists of a fuel tank (separate from the motorhome's fuel tank), fuel tank filler, fuel gauge, fuel transfer pump, fuel transfer valve, and hose with fill nozzle. A master pump switch is located on the inside control panel and an emergency shut-off switch is located on the frame rail near the fuel transfer pump. A grounding wire with a metal clip is supplied and should always be used to reduce the possibility of static electricity discharge between the fuel station and the equipment being fueled.

To fill the fuel transfer system tank, remove the fuel filler cap and fill the tank with the grade of gasoline required by your equipment. When replacing the fuel fill cap, be sure it seats squarely and turn it firmly to lock it on the fill pipe neck.

Fuel Transfer System Safety

⚠WARNING

Always use the grounding wire when fueling vehicles and equipment form the on-board fuel transfer system.

Using the metal clip, attach the grounding wire to the metal chassis or frame of the vehicle or equipment BEFORE fueling. Doing so will reduce the possibility of a spark which can be caused by static electricity between the motorhome and the vehicle or equipment being fueled.

Static electricity-related incidents when refueling are possible. They can happen most often during cool or cold and dry climate conditions. Static related incidents have resulted in a brief flash fire occurring at the fill point, when the nozzle contacts the fuel tank being filled. A build-up of static electricity can also be caused by re-entering a vehicle during fueling. If you return to the fuel fill pump during refueling, the static may discharge at the fill point, causing a flash fire or sustained fire with fuel vapors.

You can minimize these and other potential fueling hazards by following safe refueling procedures:

- Turn OFF vehicle engine. Disable or turn OFF any auxiliary sources of ignition: the furnace, water heater, stove, oven, and any pilot lights, etc. Turn OFF the main propane valve.
- Do not smoke, light matches or lighters while operating the refueling system, or when near fuel tanks or containers.
- Before dispensing fuel, always connect the grounding wire between the motorhome and the vehicle or equipment being fueled.
- Never jam or otherwise try to lock open the refueling latch on the fuel fill nozzle.
- Do not re-enter your motorhome during refueling. If you cannot avoid re-entering your vehicle, discharge any static build-up BEFORE reaching for the nozzle, by touching something metal with a bare hand, such as the vehicle body or frame that is located away from the fuel nozzle.
- In the event a static-caused fire occurs when refueling, leave the nozzle in the fill pipe and back away from the vehicle. Turn OFF the fuel pump master switch immediately.
- To avoid fuel spillage, do not over-fill or top-off your vehicle tank.
- Avoid prolonged breathing of gasoline vapors. Never refuel in an enclosed space or building.
- Keep your face away from the fuel nozzle and fuel container opening.
- Never siphon fuel by mouth. Never put fuel in your mouth for any reason. Fuel can be harmful or fatal if swallowed. If someone swallows fuel, do not induce vomiting. Contact an emergency medical service provider immediately.
- Avoid fuel contact with your eyes and skin.
- Remove fuel-soaked clothing immediately.
- Never use gasoline or diesel fuel as a cleaning solvent.

Fuel Cap

If you should lose your fuel cap it should be replaced as soon as possible with a cap of the same size and type. Always remove the fuel cap slowly and pay close attention to the fuel recommendations outlined in the Chassis Packet.

Fuel Pump Collision Shut-Off Switch (if equipped)

If your motorhome is involved in a collision, an inertia switch in the fuel pump circuit may open, shutting down the flow of fuel to the engine. This is a safety feature designed to reduce fuel spillage as a result of an accident or collision. When this inertia switch has been activated, it is necessary to manually reset it before the motorhome can be restarted and moved. Review your Chassis Packet information for the location of the switch and instructions for resetting.

Exterior

Powered Entry Steps

⚠WARNING

WITH THE POWER SWITCH IN THE 'ON' POSITION, AND THE ENTRY DOOR 'OPEN', IT IS POSSIBLE TO DRIVE OFF WITH THE STEPS EXTENDED. SERIOUS PERSONAL INJURY AND/OR DAMAGE TO THE STEPS AND MOTORHOME MAY OCCUR.

ALWAYS ENSURE THAT THE ENTRY DOOR IS FULLY CLOSED AND THE STEPS ARE RETRACTED BEFORE MOVING AND/OR DRIVING THE MOTORHOME.

⚠CAUTION

- **Steps must always be operated with a fully charged battery (12 volt electrical supply).**
- **Electric steps are designed to detect obstacles in the way of operation by sensing excessive amperage. Without a fully-charged battery, the steps may malfunction, which could cause serious personal bodily injury.**

⚠CAUTION

Prior to exiting the motorhome, always look downward to confirm that the entry steps are deployed (extended). It is possible to lock the steps in the retracted position or the steps have malfunctioned. Injuries caused by slips or falls are possible.

Always use the handrails when entering and exiting the motorhome. Serious bodily injury could occur from a slip or fall.

Typical powered entry step. Depending upon motorhome model, steps may have one or more treads.

Your TMC motorhome may be equipped with powered entry steps. Depending on the size of the motorhome, powered steps will consist of one, two, or more treads. Powered entry steps makes entry and exit of your motorhome both safe and convenient (as compared to manually deployed steps). When enabled, the steps automatically deploy, or lower, when the entry door is opened and automatically retract, or raise, when the entry door is closed.

Operating Powered Entry Steps

Powered steps are equipped with an ENABLE/DISABLE switch conveniently located near the entrance door, so that when you are parked and there is increased foot traffic in-and-out of the entry door, the steps can remain in the extended or down position. This eliminates unnecessary step deployment and retraction. When you are ready to move the motorhome, this switch should always be placed in the ON or ENABLED position, so that the steps will retract when the entry door is closed for departure.

Typical powered entry step switch (center). Configuration may vary, however, all will be located near the entry door of the motorhome.

NORMAL OPERATING MODE: POWER SWITCH ON

1. Open the motorhome entry door; steps will automatically extend and lock when in the fully extended position.
2. Close the motorhome entry door; steps will automatically retract to the stowed position.

SECURING THE ENTRY STEPS IN THE EXTENDED POSITION: POWER SWITCH OFF

1. Open the entry door; the steps should automatically extend. Look down and confirm that the steps have deployed and it is safe to exit the motorhome.
2. Exit the motorhome, while keeping the entry door open.
3. Locate the step power switch and press or turn it to the OFF position.
4. Close the entry door; the steps should remain deployed.

RETURNING THE STEPS TO NORMAL OPERATING MODE

1. Open the entry door and locate the Step Power Switch.
2. Turn the switch to the ON position.
3. While standing outside the motorhome, close the entry door; the steps should retract, confirming that the steps are in Normal Operating Mode.
4. Open the entry door; the steps should extend, confirming that the steps are in Normal Operating Mode.
5. Always confirm that the steps have retracted before driving the motorhome.

NOTE: If the powered entry steps are secured in the extended position, they are designed to retract when the motorhome's engine is started.

7

Maintenance

Steps are equipped with self-lubricating bushings on the drive assembly and all step joints. No lubrication is necessary, yet if in extreme conditions lubrication seems necessary, a silicon-based grease or spray can be used; it will not harm the bushings.

BASIC TROUBLESHOOTING:

1. Check the fuse panel for a 'blown' fuse for the 12 volt circuit that powers the steps. If necessary, change the fuse.
2. The house battery may not be sufficiently charged to operate the steps. Charge the battery(ies).
3. There may be a faulty ground. Locate the ground lug(s); clean the connections and/or re-attach ground wires.
4. Check for bent or broken step joints or arms. The step mechanism may be binding when attempting to extend or retract.
5. The step motor or motor module may be faulty. Repairs will need to be made at an RV service center.

NOTE: If there is an electrical failure to the steps, they may be manually retracted by removing the two bolts that hold the step arm collars to the drive shaft. With these bolts removed, manually push the steps closed. The steps may need to be tied to the framework in the retracted position to keep them in-place while traveling to a repair center.

Be cautious whenever the steps are inoperable; physical injury could occur due to falls or missteps. Always use the handrails when entering and exiting the motorhome.

Awnings

Patio Awnings

Awnings can create a pleasant outdoor space that provides shade from the sun and semi-protection from certain weather conditions. Most patio awnings operate from the motorhome's 12 volt DC electrical supply. However, the awnings installed on some Class A diesel motorhomes operate from the 110 volt AC system. For DC operated awnings, the house battery switch, generator, or shore power will need to be ON prior to operating the awning. For AC operated awnings, the generator or shore power will need to be ON prior to operating the awning(s).

Awnings provide shade, weather protection, and can enhance outdoor enjoyment.

⚠CAUTION

- **IF THREATENING WEATHER APPROACHES, RETRACT ALL AWNINGS.**
- **If the awnings are rolled up wet, open them back up as soon as possible to allow them to dry.**
- **Do not drive during periods of high winds. Doing so may cause damage to the awning; they could possibly unfurl from their stowed position.**
- **Any damage to the awning caused by driving under such conditions will not be covered under warranty.**

⚠CAUTION

In the event of power loss or awning motor failure the automatic patio awning can be manually retracted (refer to the component manufacturer's owner's manual).

If you cannot perform this procedure, contact the nearest authorized service center for assistance. Do not drive the motorhome with the awning in the extended position.

⚠CAUTION

Keep hands away from awning mechanisms while in operation. Some mechanisms present pinch points that can cause severe injury.

TO EXTEND THE AWNING

1. Before extending the awning, ensure there are no obstacles in the path of operation.
2. Provide power to the awning by turning ON the main battery switch, or operate the generator, or connect to shore power (see reference to 12 volt DC and 110 volt AC above).
3. Press and hold the EXTEND switch, located near the entrance door, or on the multiplex touch-screen panel, or remote (see note), until the awning is opened to the desired setting.

NOTE: Some awnings feature ONE TOUCH operation. If equipped, a single press of the extend or retract button will operate the awning.

TO RETRACT THE AWNING

1. Before retracting the awning, ensure there are no obstacles in the path of operation.
2. Provide power to the awning by turning ON the main battery switch, or operate the generator, or connect to shore power.
3. Press and hold the RETRACT switch, located near the entrance door, or on the multiplex touch-screen panel, or remote (see note), until the awning is fully retracted.

NOTE: For convenient operation, some awnings are equipped with a remote control. In addition, many multiplex systems offer remote control of awnings and other electrical systems via a smartphone or tablet app.

Entry Door Awnings

Select Class A diesel motorhomes are equipped with an entry door awning. Generally, if the patio awning operates on 110 volts AC, then the entry door awning also operates on 110 volts AC. Follow the operating procedures listed above.

NOTE: The generator must be operational or shore power must be used in order operate 110 volt AC awnings.

Observe the same awning operational cautions when extending and retracting an entry door awning as when operating a patio awning.

Awning Lights

Your patio awning may be equipped with LED strip lighting or other lighting types. These lights are controlled by a switch located near the Awning EXTEND/RETRACT switch, on your multiplex touch-screen panel, or remote control.

Storage Compartments

⚠WARNING

CARBON MONOXIDE OR SUFFOCATION DANGER EXISTS

- **This is a storage area only and not intended for human or animal occupancy. Failure to follow these instructions could lead to injury or death.**
- **Do not allow children to enter or to play in or around this storage area.**
- **This area is not heated or cooled. Do not store perishables or items in this cargo area that may be damaged by heat or by exposure to cold temperatures.**

⚠WARNING

Storage compartments have load limits. Do not exceed load limits posted on warning labels. Distribute the weight evenly and do not overload.

⚠WARNING

When closing the compartment storage doors, make sure that hands and fingers are clear of pinch points. Make sure all compartment doors are completely closed and latched, and all contents are properly secured prior to moving the motorhome.

Exterior storage compartments provide a convenient and secure location to stow travel items and equipment. Most exterior storage bays are equipped with lockable latches. Some are equipped with struts or other convenient features.

When storing items in the compartment bays, do not overload them with heavy packed items. Remember that any carry-on items or equipment placed in storage compartments affects the overall weight of the vehicle. Ensure that the side-to-side loading is balanced, and the load distributed evenly. Please refer to Section 4, Weighing, Loading, and Towing.

NOTE: Items placed in exterior storage compartments may shift during travel.

Exterior Ladder

⚠WARNING

LADDER CAPACITY IS 250 lbs. MAXIMUM

- **Exceeding the maximum capacity can lead to ladder collapse and possible personal injury**
- **Always face ladder and use both hands to climb slowly**
- **Always wear shoes that provide good traction. Failure to comply can result in a fall hazard and result in a personal injury**

If equipped, the exterior rear ladder provides access to the roof for inspection and maintenance of the roof and roof mounted items.

- When ascending and descending the ladder, ensure the ladder is clear of debris, such as water, ice, and other slippery substances.
- Always use both hands when ascending and descending the ladder.
- Always face the motorhome when ascending and descending the ladder.
- Always wear shoes that provide good traction, and do not wear sandals or other types of slip-on footwear when ascending or descending the ladder.
- Take into consideration the additional length the ladder adds to the motorhome when backing up or parking your motorhome.

Typical roof ladder

Roof

⚠WARNING

DO NOT CLIMB ON OR WALK ON THE ROOF WHILE WET, ICY, OR SNOW COVERED. THE ROOF COULD BE VERY SLIPPERY CAUSING YOU TO FALL, WHICH CAN RESULT IN SERIOUS INJURY OR DEATH. DO NOT USE THE ROOF AS AN OBSERVATION PLATFORM OR STORAGE AREA, AS IT IS NOT DESIGNED FOR THESE PURPOSES.

TMC motorhomes have plywood reinforced roofs which are strong enough to walk on. Use the exterior ladder to climb up on the roof to inspect and maintain the roof, roofing seals, and roof-mounted components.

Ramp Door (if equipped)

⚠WARNING

Make sure there are no obstructions when raising, lowering or using the ramp door. Keep all people and pets clear of the motorhome while operating the ramp door. Always visually confirm the ramp door is shut and locked in the travel position before moving the motorhome. Moving the motorhome while the ramp door is lowered to the ground or in the patio position could cause damage to the ramp door and the motorhome.

There are several ramp door configurations, depending on your motorhome model year, make, and model. Each ramp door has a load limit weight rating label, set and affixed by the ramp door manufacturer. If you have questions regarding the operation or maintenance of your motorhome ramp door, please contact your selling dealer or TMC Customer Care at (877) 855-2867.

Leveling Jacks and Slideouts

Leveling Jacks Safety

⚠ DANGER

FAILURE TO ACT IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

READ THE ENTIRE OPERATORS MANUAL AND ALL PRECAUTIONS PRIOR TO OPERATING THIS EQUIPMENT.

⚠ DANGER

Do not attempt to operate the system while the motorhome is in motion. If the 'JACKS DOWN' alarm sounds while driving the motorhome, immediately find a safe place to pull over and stop. Set the parking brake and when it is safe, inspect the leveling system.

⚠ WARNING

DO NOT OPERATE ANY SYSTEM FUNCTIONS WHILE ANYONE IS UNDER THE MOTORHOME. IF WORK UNDERNEATH YOUR MOTORHOME IS REQUIRED, SUPPORT BOTH FRONT AND REAR AXLES WITH JACK STANDS. DO NOT RELY ON THE SUPPORT OF THE LEVELING SYSTEM! FAILURE TO DO SO MAY RESULT IN PERSONAL INJURY OR DEATH.

⚠ WARNING

DO NOT USE THE LEVELING JACKS TO CHANGE TIRES. THE SYSTEM IS DESIGNED FOR LEVELING AND STABILIZING, AND IS NOT MEANT TO LIFT ALL THE WHEELS OFF THE GROUND! LIFTING THE WHEELS OFF THE GROUND MAY RESULT IN AN UNSTABLE VEHICLE CONDITION, WHICH MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

⚠ WARNING

MAKE SURE THERE ARE NO OBSTRUCTIONS IN THE “EXTEND” OR “RETRACT” PATHS OF THE LEVELING JACKS. KEEP ALL PEOPLE AND PETS CLEAR OF THE MOTORHOME WHILE OPERATING THE LEVELING SYSTEM. ALWAYS VISUALLY CONFIRM THE JACKS HAVE FULLY RETRACTED BEFORE MOVING THE MOTORHOME. MOVING THE MOTORHOME WHILE THE JACKS ARE EXTENDED COULD CAUSE DAMAGE TO THE JACK SYSTEM AND THE MOTORHOME.

⚠ WARNING

NEVER EXPOSE HANDS OR OTHER PARTS OF THE BODY NEAR HYDRAULIC LEAKS. HIGH-PRESSURE OIL LEAKS MAY CUT AND/OR PENETRATE THE SKIN CAUSING SERIOUS INJURY.

NOTICE

When the automatic leveling system is in operation, do not allow people to walk around inside the motorhome. Shifting weight inside the motorhome can disrupt the leveling system's sensing mechanism.

Hydraulic Leveling Jacks (if equipped)

Operate the hydraulic leveling system ONLY under the following conditions:

- Be sure all persons, pets, and property are clear of your motorhome while operating the leveling system.
- If you are operating an automatic system with occupants inside the motorhome, they must stay seated during the leveling process.

NOTE: When parked on soft surfaces, the use of jack pads is recommended. Jack pads can be easily made from 3/4 inch plywood, cut into 12-16 inch squares.

TO EXTEND:

1. Park the motorhome on a reasonably level surface.
2. Start the motorhome and place the motorhome's transmission in the:
   a. NEUTRAL position for rear mount diesel engine vehicles.
   b. PARK position for all front mount gasoline or diesel engine vehicles.

   Keep the motorhome's engine running while operating the hydraulic leveling jack system.
3. Engage the motorhome's PARKING BRAKE.
4. On the Leveling Jacks Control Panel, press the ON, then AUTO or AUTO LEVEL buttons. The leveling system will automatically deploy front and rear jacks to the needed extension in order to level the motorhome.
5. When automatic leveling is accomplished, the system will indicate that the leveling process is complete and successful by an indicator located on the Leveling Jacks Control Panel.
6. Press the OFF button on the controller. Turn off the motorhome's engine, leaving the parking brake engaged.

NOTE: As the system is leveling the motorhome, you may experience a certain amount of motorhome movement; up and down, and side-to-side. This is normal as the system automatically adjusts each of the four hydraulic jack rams.

TO RETRACT:

1. Ensure that all slideout rooms are fully retracted (refer to Slideout Section).
2. Ensure all people and pets remain clear of the jacks. Remove any equipment or items that may have been stored underneath the motorhome.
3. Start the engine and ensure the vehicle's transmission is in park (for front engine) or neutral (for diesel pushers).
4. Ensure the vehicle's parking brake is engaged.

5. Press the ON button on the Leveling Jacks Control Panel.
6. Press the RETRACT ALL button. The panel will indicate when all jacks have retracted.
7. Before moving the motorhome, ensure all jacks have retracted by physically looking under the motorhome and confirming that all jacks are in their fully retracted position.

Manual Leveling with the Hydraulic Jacks

You may encounter some circumstances where automatic leveling of the motorhome can not be obtained. If possible, retract the jacks and re-position the motorhome to a more level parking place. If that is not possible or feasible, you may attempt to manually +level the motorhome by deploying the jack rams in pairs.

1. Follow all leveling precautions listed previously.
2. Start the motorhome's engine, ensuring the parking brake is engaged and the transmission is in:
   a. Neutral for Class A Diesel Pushers
   b. Park for Class A and Class C front engine gas or diesel motorhomes.
3. Press the ON button on the Leveling Jacks Control Panel.
4. Press either the FRONT or REAR button on the Control Panel. Depending on which switch is pushed, either the front or rear pair of jack rams will deploy. Release the switch when the jacks contact the ground (you should feel the motorhome rise slightly).
5. Press the opposite switch and hold until the motorhome rises slightly. Watch the control panel for an indication that the motorhome is level Front-to-back.
6. Press either the LEFT or RIGHT button on the Control Panel (this will move the left or right-side pair of jack rams). Watch the control panel to determine if the controller can sense that the motorhome is level Left-to-Right.
7. If needed, press the opposite side switch while watching the control panel for an indication that the motorhome is level Left-to-Right.
8. Repeat this process, FRONT-to-BACK and LEFT-to-RIGHT until the controller indicates the motorhome is level.
9. Turn OFF the Leveling Jack Control Panel; turn off the motorhome's engine, while keeping the parking brake engaged.

Stabilizing Jacks (if equipped)

⚠CAUTION

Stabilizing jacks are not designed or intended to be used to level the motorhome. They are designed to reduce vehicle motion due to movement inside the motorhome only and not designed to carry the weight of the motorhome.

If your motorhome is equipped with power rear stabilizing jacks, the operating button is located inside the motorhome by the entry steps. Be sure the rear power stabilizing jacks are retracted in the up (travel) position before driving the motorhome.

TO EXTEND:

1. Park the motorhome on a reasonably flat area.
2. Press and hold either the left or right jack switch in the down position until the jack pad contacts the ground.
3. Press and hold the opposite jack switch in the down position until the jack pad contacts the ground.
4. If either jack does not contact the ground while being fully extended, blocks of wood or concrete may need to be placed under the jack pads.

TO RETRACT:

1. Press and hold the jack switches in the up position until the motors stop.
2. Visually check that the rear power stabilizing jacks are retracted in the up (travel) position before moving or driving the motorhome.

Slideouts

⚠ DANGER

DO NOT MOVE OR DRIVE YOUR MOTORHOME WITH SLIDEOUT(S) EXTENDED.

⚠ CAUTION

The motorhome must be level with the leveling jacks in the down position before operating slideouts.

⚠ CAUTION

BEFORE OPERATING SLIDEOUT ROOMS:

- **Remove travel bars or slide-locks if equipped**
- **Engage emergency (parking) brake**
- **Place driver and front passenger seats in the most forward position and place the seat-backs in the upright position, otherwise slideout may contact and damage these seats**

TMC motorhomes are equipped with slideouts that operate hydraulically, electrically, or a combination both. Please refer to the slide mechanism manufacturer's owner's manual and follow their safety, operation, and maintenance instructions. If you are missing this information, please contact your selling dealership, TMC's web-based Customer Resources (see note), or the slide mechanism manufacturer for assistance. For your convenience, many of TMC's suppliers make their manuals available for download from their respective websites.

NOTE: Manufacturers owner's and operational guides for most of the components installed on TMC motorhomes can be located at www.thormotorcoach.com/owners/owners-resources.

Before extending the slideout, check around and above the exterior of the motorhome to be sure the slideout will not come in contact with anything outside when it is fully extended; also check the interior of your motorhome to be sure that slideout travel is free from obstructions before operation.

Extending the Slideout

⚠CAUTION

Ensure that children and pets are kept well away from moving slideouts. Always inspect the area outside the slideout prior to extending to safeguard that the slideout will not contact nearby trees, vehicles, utility poles or other obstacles.

After completing the exterior and interior inspections prior to slideout operation:

1. Level the motorhome with leveling jacks or stabilize with stabilizing jacks.
2. **DIESEL CLASS A MOTORHOMES: Place motorhome's transmission in NEUTRAL and apply PARKING BRAKE. Engine must be RUNNING for hydraulic-actuated slideouts.**

   GAS CLASS A MOTORHOMES: Place motorhome's transmission in PARK and apply PARKING BRAKE. Engine must be RUNNING.

   CLASS C MOTORHOMES: Place motorhome's transmission in PARK and apply PARKING BRAKE. Engine must be OFF and keys removed from ignition.
3. Turn the battery disconnect switch ON.
4. Locate the slideout operating switch (located on the Multiplex Control Panel or Monitor Panel) and:

   Hydraulic slideout: Press and hold the slideout operating switch until the slideout room is fully extended. Then release switch.

   Electric slideout: Press and hold the **IN/Retract** button for 3-5 seconds, then Press and hold the **OUT/Extend** button until the slideout is fully extended AND hold the switch for an additional 3-5 seconds, then release the switch (this procedure helps to keep the slideout motors in-sync).

NOTE: Many slideout problems can be avoided by keeping the slide motors in sync. Follow the instructions listed to the left (Step 4) every time the slides are extended.

To retract the slide, follow this procedure in reverse.

NOTE: There is a 30 second delay feature on the tilt a bed rear bed slideout (if equipped), to allow time to raise the head of the bed.

NOTICE

When extending and retracting slideouts, it is good operating practice to maintain pressure on the control button continuously while the slide is in motion. Avoid stopping and starting the motors during slideout travel.

If the slideout motors are not in-sync, the slideout will likely bind while extending or retracting. If binding occurs, CEASE OPERATING THE MOTORS; the motors or gear tracks could be damaged. The slideout will have to be manually retracted. Refer to the manufacturer's instructions or the TMC Awnings, Leveling, and Slideout System Guide for manual retraction.

Retracting the Slideout

⚠CAUTION

Ensure that children and pets are kept well away from moving slideouts. Gear tracks present a serious pinch hazard; keep hands away from moving slideouts. Ensure that the interior floor and space is clear of any obstacles that could impede the slideout travel or become entrapped under the slideout.

NOTE: Always perform an interior and exterior visual inspection to ensure slideout is fully retracted and prepped for travel.

NOTE: Before retracting a slideout, always visually inspect the roof and awning of the slideout for any debris or damage. Check the gear tracks for debris or damage.

NOTE: To insure sufficient power to operate the slideout motors, it is advised to connect to shore power *OR* operate the generator while extending or retracting slideouts. Regardless, the main battery switch must always be ON to operate electric slideouts.

Doing so will boost any deficiencies of 12 volt power that may be due to low house battery(ies).

NOTE: For additional slideout operational information, refer to the TMC Awning, Leveling, and Slideout Systems Guide, available through the Owner's Resources section of the TMC website.

Use the same safety precautions as previously stated for slideout operation, and:

1. Be sure there are no obstructions on the floor of the coach or in the path of the slideout.
2. Ensure there is no visible dirt or debris in the track of the slideout or under it. Trapped dirt or debris could cause damage to your carpet or flooring and slideout gear tracks.
3. **DIESEL CLASS A MOTORHOMES: Place motorhome's transmission in NEUTRAL and apply PARKING BRAKE. Engine must be RUNNING for hydraulic-actuated slideouts.**

   GAS CLASS A MOTORHOMES: Place motorhome's transmission in PARK and apply PARKING BRAKE. Engine must be RUNNING.

   CLASS C MOTORHOMES: Place motorhome's transmission in PARK and apply PARKING BRAKE. Engine must be OFF and keys removed from ignition.
4. Turn the battery disconnect switch ON.
5. Locate the slideout operating switch and:

   Hydraulic slideout: Press and hold the IN/Retract switch until the room is completely retracted, then immediately release the switch.

   Electric slideout: Press and hold the OUT/Extend button for 3-5 seconds, then press and hold the IN/Retract button until the slideout is fully retracted. Continue to hold the IN/Retract button for an additional 3-5 seconds, then release the button (this action will help keep the slideout motors in-sync).
6. Install the slideout locking devices (if equipped).

Interior

Appliances

⚠ DANGER

Do not use gas cooking appliances for comfort heating. Can lead to carbon monoxide poisoning, which can cause death or serious injury.

⚠WARNING

GAS COOKING APPLIANCES NEED FRESH AIR FOR SAFE OPERATION. BEFORE OPERATING:

- **Open vents or windows slightly or turn on exhaust fan prior to using cooking appliance**
- **Gas flames consume oxygen, which should be replaced to ensure proper combustion**
- **Range covers must be open when the surface burners are in operation**
- **Improper use can result in death or serious injury**

⚠WARNING

WHEN USING THE OUTDOOR COOKING AREA:

- **The vehicle must be level and stabilized**
- **Do not violate manufacturers' instructions on required clearances for cooking appliances during use**
- **Do not store cooking appliances until cool to the touch**
- **Can lead to a fire and explosion and result in death or serious injury**

Due to the wide variety of appliances installed in TMC motorhomes, appliance operational instructions are not included in this manual. Individual component operational manuals are included with your TMC Owner's Packet. Component manuals are also available from the TMC website, owner's resources:

https://www.thormotorcoach.com/owner-resource/

Please refer to the specific appliance component manufacturer's owner's manuals for safety, operation and maintenance instructions. If the information is missing from your Owner's Packet, please have the brand, model, and serial number of your specific appliance available before contacting your selling dealership for assistance in obtaining a replacement. For your convenience, many appliance manufacturers have their owner's manuals available for download from their respective websites.

Each appliance in your motorhome is warranted by its manufacturer. It is very important that you review ALL the literature provided in your

Typical range and microwave

TMC Owner's Packet. Fill out and mail any warranty registration cards as required by the appliance manufacturers. Please contact your selling dealer, TMC Customer Care, or the appliance manufacturer if you have any questions regarding the operation, maintenance, or safety of the appliances in your motorhome.

If you are installing an optional dryer (motorhome models that accept washer/driers), it is important to follow the directions listed on the label affixed to the motorhome:

WHEN INSTALLING CLOTHES DRYER IN THIS CLOSET

REFER TO APPLIANCE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR:

a) DRYER TO BE LISTED BY THE APPLIANCE MANUFACTURER AS "SUITABLE FOR INSTALLATION" IN CLOSET LOCATIONS.

b) VENTILATION OPENINGS (FRESH AIR) TO BE SIZED PER INSTALLATION INSTRUCTIONS.

c) EXHAUST DUCT TO BE INSTALLED AND SIZED PER INSTALLATION INSTRUCTIONS.

NOTE: DUE TO VARIATIONS OF DRYER MANUFACTURERS, NO DRYER VENT FRAMING HAS BEEN INSTALLED. REMOVE THIS PANEL TO COMPLETE THE DRYER VENT INSTALLATION.

DA2182

Typical dryer label (if equipped)

Typical stacked washer/dryer

NOTE: Always turn OFF the air conditioner, furnace, and all electrical appliances before disconnecting the shore line power cord from the 120 volts AC power source or shutting OFF the generator.

Heating/Cooling

Your motorhome's HVAC system consists of equipment sourced from a variety of manufacturers, yet the individual components are designed to function as an integrated system. Components may have manufacturer's warranties and registrations. Your dealer can assist you with component registrations.

Due to the wide variety of Thor Motor Coach models and floorplans, HVAC information that is uniquely specific to your particular motorhome is not covered in this manual. Please review and retain all manufacturer's owner's manuals and documentation that is included with your TMC Owner's Packet. The manufacturer's of the HVAC equipment installed in your motorhome are the best source for information regarding component features, operation, and maintenance.

Always refer to the manufacturer's documentation if you have questions regarding your HVAC system. TMC Customer Care representatives are also available to answer any question you may have; call, toll free at:

877-855-2867

Refer to pages 2 and 6 for contact information.

Sleeping Areas

⚠WARNING

The sleeping accommodations in this vehicle are designed for occupancy only while the vehicle is NOT in motion. All occupants in this vehicle must be seated at a designated seating position and must wear seat belts at all times while this vehicle is in motion. Failure to do so can result in serious injury.

Regardless of class or size, TMC motorhomes are well designed for a variety of sleeping accommodations. Many floorplans feature permanent queen and king size beds, while others feature bunks, Murphy beds, and over-cab bunks (permanent and lowering), convertible sofas and dinettes.

Your dealer is best equipped to instruct you in the operation of beds, convertible furniture, and bunks.

Front Cab Power Drop Down Overhead Bunks (if equipped)

⚠CAUTION

BEFORE OPERATING ELECTRIC BED:

- **Remove travel locks and recline driver and front passenger seat backs**
- **Lower bed completely before use**
- **The bunk has a weight limit; never overload the power drop-down bunk**
- **Use travel locks (pins) whenever bed is in the raised position**

TO LOWER THE FRONT OVERHEAD BUNK:

1. Turn the chassis engine OFF.
2. Engage the PARKING BRAKE.
3. Turn ON the master battery disconnect switch.
4. Remove the travel locks (or pins).
5. Fully recline the driver's and passenger's seat backs.
6. Some systems (if equipped), require a secondary master power key be turned ON prior to operation.
7. Engage the operating switch to raise or lower the overhead bunk.

Typical keyed bed lift safety switch and safety lock pin

TO RAISE THE FRONT OVERHEAD BUNK:

1. Raise overhead bunk until it stops, then press and hold the control switch for 3 additional seconds.
2. Install the travel locks (or pins).
3. Lower the overhead bunk down onto travel locks (or pins), and press and hold the control switch for another 3 seconds.

The overhead bunk must be completely raised and secured in the travel position before driving the motorhome. Always travel with the driver and passenger seats in the fully upright (non-reclining) position.

NOTE: If your motorhome is equipped with a multiplex wiring system, controls for the power drop-down over-cab bunk are incorporated into the main touch-screen panel; usually on the Slideout menu screen.

Bed Lofts (if equipped)

Select TMC motorhome models are equipped with bed lofts, typically installed over the garage area and accessed by a stairway. If there is a weight restriction in the loft, it will be noted on a prominent label near the loft or its access stairway.

Electric Bed Lift Systems

⚠CAUTION

XXX LBS. MAX LOAD CAPACITY FOR THIS TWO PERSON BED

- **Failure to comply with the load capacity could cause bed failure which can result in injury.**
- **Elevated beds can present a fall hazard which may result in injury.**
- **Do not allow adults, children, or pets on drop-down beds or bunks while the lift mechanism is in operation.**
- **Beds are not to be occupied during travel.**

⚠CAUTION

Ensure there is no fuel or fuel containers in the garage area if it is to be used as a sleeping area. Breathing fumes from fuel is harmful and fuel fumes present a fire hazard.

The rear garage elevated bed(s) must be stowed and properly secured in the up position during travel.

Select TMC motorhome models are equipped with standard and optional sleeping arrangements, such as electric drop-down beds and/or dual sofas that convert to a single queen-size bed. All drop-down beds have a maximum weight rating. Do not exceed weight ratings for drop-down beds or bunks.

Bed Rails (owner supplied)

Bed rails are not provided by TMC. You, the motorhome owner, should determine if a bed rail system is necessary, based on your intended uses, the age of the occupants, and their comfort level. There are numerous bed rail styles and designs available, which can be purchased at various retail or on-line locations. Talk with your dealer about suitable bed rail systems and options.

When installing a bed rail make sure you follow the manufacturer's installation instructions carefully, and take in to account the size and height of the mattress (either originally installed by TMC or later replaced by you) so that the rails are the appropriate height above the top of the mattress. This is important because residential mattresses differ in size from RV mattresses. Make sure the bed rail you select allows for adequate room to get in and out of the elevated bed after installation, especially in the event of an emergency.

TIPS FOR SAFE USAGE:

- Please use sound judgment when allowing children to sleep in any style of elevated bed. Generally, it is not suitable for children under the age of 6 to sleep in an elevated bed or bed loft area.
- Discuss proper usage of any elevated bed/electric bed lift system with your children and make sure they are supervised if playing in the bedroom/sleeping area of the motorhome with elevated beds. Do not allow horseplay on or under the elevated beds and no items such as hooks, belts, jump ropes, or towels should hang from any part of the elevated bed.
- Place a night light in the bedroom/sleeping area so occupants can see at night when getting in and out of the beds.
- No more than one person should be in an elevated bed at once and make sure you follow the weight restrictions posted on the warning label near the beds.
- Do not allow children to operate the rear cargo area electric bed lift systems (if equipped). Lowering and raising of electric beds should only be done by an adult.
- No person or pet should be on electric beds when being lowered or raised.

If you have any questions about elevated beds, Toy Hauler electric bed lift systems, or bed rails please contact TMC Customer Care at:

(877) 855-2867 for assistance.

Entertainment Systems

TMC motorhomes are factory-equipped with many different entertainment arrangements, depending on motorhome model, floorplan, and options selected.

For more detailed information regarding a specific component installed in your motorhome please refer to the respective component manufacturer's owner's manuals included your TMC Owner's Packet or download from the Owners Resources section of the TMC website. For your convenience, many component manufacturers make their literature available for download from their respective websites.

NOTICE

If installed, exterior speakers are waterproof, however, exterior televisions are NOT waterproof or water resistant. Care must be exercised to keep exterior televisions from water and wet weather conditions.

Living area entertainment system (above), bunk TV/DVD combo units (center), and exterior entertainment system (right)

NOTE: If equipped, turn your TV antenna booster ON while watching local television stations; shut the TV antenna booster OFF when watching cable or satellite.

Electrical System

Shore Line Power Cord

⚠WARNING

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

DO NOT plug the shore line 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 damage or serious injury. Damage or injury resulting from a connection to a malfunctioning or improperly wired power source is not covered by warranty.

It is the responsibility of the owner of the electrical receptacle to ensure that the receptacle is properly wired and grounded. Reverse polarity and/or improper grounding of your motorhome can cause equipment damage, personal injury or death.

⚠WARNING

Do not use any 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.

- **Do not connect the shore line 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 connect the shore line power cord to an extension cord. Use of an improper extension cord will cause overheating of the cord as well as potentially causing premature failure of the AC equipment.**

⚠WARNING

Make sure the circuit breakers at the electrical power source are in the OFF position before connecting or disconnecting your shore line power cord.

The shore line power cord must be fully extended when in use, and not left coiled in the electrical compartment or on the ground.

⚠ 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.

Typical 50 amp electrical service warning label

⚠ 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.

Typical 30 amp electrical service warning label

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 mounted to a motorhome interior 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 electrically-powered reel, which makes handling and storing the rather heavy 50 amp cord more convenient.

Typical shore line power cord connection port

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 shore line power cord (approximately 35 feet) from the electric cable hatch on the motorhome to the external power source.
3. Ensure the circuit breaker(s) at the external power source is 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 shore line power cord into either the 30 amp or 50 amp external power receptacle, matching the power requirements of

NOTE: The shore line power cord should be unplugged when the motorhome is left unattended.

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.

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.

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

NOTE: To ensure maximum power is available for the electrical system of your motorhome, avoid using adapter plugs or other devices that limit the power service to your motorhome, i.e., adapting a 50 amp motorhome system to a 30 amp external power source.

Shore Power Cord Maintenance

Inspect the shore line power cord for damaged contact pins, cuts, cracks, and worn insulation; replace damaged shore power cords immediately.

Monitor Panel

Monitor panels provide a convenient and centrally-located place for electrical controls and monitoring of motorhome systems. Items that may typically be found on the monitor panel include (inclusion and location will vary by model year, brand and model):

- Holding tank level indicators and switch(es)
- Battery condition indicator (L=Low, F=Fair, G=Good, C=Full Charge)
- Water heater switches (electric & propane gas)
- Water pump switch
- Generator start / stop switch
- Fuel tank gauge and hour meter with switches for fuel pump and fuel levels
- Tank heater switches
- Light switches for some interior and exterior lights
- Cargo bed master control switch
- Slideout control switches (press and hold to extend or retract)
- Awning control switches (press and hold to extend or retract)

Typical Monitor Panel

NOTE: Monitor panel design, features, and functions vary depending on model year, make, and model. Motorhomes equipped with multiplex systems have other features integrated into the controller.

For further assistance, contact your selling dealer or TMC Customer Care at (877) 855-2867.

Multiplex Control Systems

Select TMC motorhomes are equipped with multiplex wiring systems. A multiplex system uses low-voltage, digital signals to control the electrical and electro-mechanical devices within your motorhome via an intuitive, user-friendly touch-pad. Control functions vary from motorhome to motorhome, depending upon the standard and optional equipment available. However, in its typical configuration, a multiplex system will allow the user to monitor and operate these features from the main touch screen panel:

Typical multiplex main control panel. Features vary depending upon model and floorplan

- Lighting and fan controls
- Climate (HVAC) controls
- Holding tank level monitoring
- Water heater and water pump on/off
- Electrical system monitoring; both AC and DC
- Battery monitoring and charging; both house and chassis batteries
- Inverter settings and controls
- Generator on/off
- AGS (Automatic Generator Start) settings and controls
- PCS (Power Control System) settings and controls
- Slideout and awning control

Basic Multiplex Operation

Depending on the model and floorplan of your motorhome, it may be supplied with a multiplex control system from a variety of manufacturers. However, every multiplex system is designed to be intuitive to operate. Basic operation involves these steps:

Typical multiplex wall switch panel

1. Ensure power is ON, either from 12 volts DC or 120 volts AC (shore or generator power). With a power source ON, locate the main system panel. Some system panels will automatically 'turn on' when power is present, while other panels will require the user to press a button on the panel, or touch the display.
2. Select the feature or feature menu you want to control. Some panels will have feature icons along one edge of the panel, while other panels will have feature icons displayed on the panel's touch-screen.
3. With the feature menu selected, operate the control. For example, turn on or off the lights, raise or lower the temperature, turn on or turn off the generator, operate slideouts, or awnings.
4. Return to the main menu by either pressing the 'Home' icon, located along the bottom edge of the panel, on the touch screen, or on some panels, press a return arrow on the display.

Most multiplex systems include individual wall switch panels located in the bedroom and bathroom for control of lights, fans, etc.

Multiplex systems details are described in the manufacturers owner's manuals included with your TMC Owner's Packet. Multiplex system how-to videos are also available on TMC's YouTube site:

https://www.youtube.com/user/ThorMotorCoach

Auxiliary Battery(ies)

⚠WARNING

- **Keep sparks, cigarettes and flames away from the batteries as the hydrogen gas they create may explode.**
- **Do not connect a booster battery or other power source that outputs more than 14.2 volts DC to the motorhome batteries.**
- **Use adequate ventilation when charging or using batteries in an enclosed space.**
- **Remove metal jewelry and always wear eye protection when working around batteries.**

⚠WARNING

- **Do not allow battery electrolyte (acid) to come into contact with skin, eyes, fabric or painted surfaces. Electrolyte is a sulfuric acid solution that could cause serious personal injury or property damage.**
- **If your hands, eyes, clothes or the painted surface of your motorhome are exposed to electrolyte, flush the exposed area thoroughly with water.**
- **If electrolyte gets in your eyes, immediately flush them thoroughly with water and get prompt medical attention.**

Whether factory installed or customer purchased, your auxiliary (house) batteries are typically located in a separately vented compartment or storage box. Be sure you know the location of your batteries before leaving your selling dealership. It is important to keep your motorhome batteries fully charged at all times. Turn OFF lights and other 12 volts DC components when they are not being used. To prevent draining your motorhome batteries, connect the motorhome to a 120 volts AC power source whenever possible.

Typical Class A motorhome auxiliary battery compartment

Storing the Batteries

To prevent auxiliary battery discharge when your motorhome is not connected to an external power source for an extended period of time, it is recommended you turn OFF the 12 volt battery DISCONNECT SWITCH, or MAIN POWER SWITCH and disconnect each battery at the negative battery cable.

Typical Class C motorhome auxiliary battery location (under entrance step)

During storage, it is important to check battery voltage at least every two weeks and to recharge them as needed. Use a storage charging method recommended by the battery manufacturer (trickle charger or other device). If you remove the batteries from your motorhome, protect them from accidental shorting and keep them in a cool, dry, well ventilated area.

Battery Charging

It is important to keep the house battery(ies) in a condition of full or near-full charge. Doing so will ensure you will have enough stored 12 volt DC energy when needed. Battery charging is accomplished by:

- Automatic charging through the converter or inverter (shore power or generator)
- With the vehicle engine running, house battery(ies) are charged via the chassis alternator (when main battery switch is ON)
- Auxiliary battery charging via solar charging system (equipped as standard, optional, or customer installed)

Take time to turn OFF all lights or other 12 volt accessories when not in use. Connect the motorhome to a 120 volt AC external source or run the generator whenever possible. Doing so will keep the house battery charged.

When connected to a 120 volt AC power source (shore power or generator power), battery charging is accomplished by the converter (in some motorhomes, the inverter). If the battery condition is below its full charge, the charger will begin recharging the house battery at a rate that reflects the level of discharge. When the battery is fully charged, the charger drops its charging level back to a maintenance or trickle level to keep the battery fully charged.

The house batteries are a deep-cycle type and are capable of being deeply discharged and rebound to full capacity when recharged. Due to their large energy storage capacity, the house battery(ies) may take up to 24 hours to completely recharge.

If for any reason you recharge a house battery with a charger or power source other than what was supplied as part of the motorhome's original electrical system, make sure to follow all battery maintenance and safety instructions from the battery and battery charger manufacturers.

NOTE: Use the monitor panel to check both house battery and chassis battery voltage. A fully charged lead-acid battery will read 12.7 volts DC and 1.265 specific gravity at 80°F (32°C). A lead-acid battery is considered discharged at 11.8 volts DC by electrical standards.

When voltage drops below these levels, permanent damage may occur. Due to their large energy storage capacity and depending on the rate of depletion, it may take up to 24 hours for a lead-acid battery to fully recharge.

When connected to a 120 VAC power source, the converter (or the inverter) will trickle charge the house, and in some installations, the chassis battery.

NOTE: If you replace the originally equipped house battery(ies) with a different type, and you have a multiplex system, you will need to enter the battery type on the 'Inverter/Charge Settings' menu. Refer to your multiplex systems manual.

Master Battery Disconnect Switch

NOTICE

When traveling, the master battery disconnect switch must be turned ON to operate the dash radio and backup camera system (if equipped).

The 12 volts DC master battery disconnect switch is used to disconnect the motorhome's 12 volt DC electrical system from auxiliary or house battery. It is generally a good practice to turn the master battery disconnect switch ON when entering the motorhome and keep it on during travel. This will allow all 12 volt electrical systems to remain operational and allows the chassis alternator to charge the house battery(ies). Doing so also provides power to the dash radio and vision system.

Turn the battery disconnect switch OFF when leaving the motorhome for periods of more than 1 hour, if not connected to shore power or generator power. This will prevent excessive battery drain.

When connected to shore power or generator power, the switch seems to be is ineffective, however, it is not because the 12 volt electrical supply is being supplied by the converter or inverter.

Typical master battery disconnect switches

Automatic Transfer Switch

The Automatic Transfer Switch is an electronically controlled relay that senses the presence of 120 VAC incoming power; either from shore power or from the on-board generator, and connects the incoming AC power source to the Power Load Center.

THE AUTOMATIC TRANSFER SWITCH OPERATES UNDER THESE CONDITIONS:

- When shore power is sensed, it connects the external AC power source to the Power Load Center.
- If there is a shore power outage and the generator is started, either manually or by the Automatic Generator Start System (see page 100), incoming power is switched from the shore power source to the generator after a 20-45 second delay.
- If shore power returns while the generator power is present, the system remains on generated power until the generator is turned off. With the generator off, electrical power for the motorhome is switched to the shore power source.
- The generator overrides shore power.

NOTE: The transfer switch supplied with your motorhome is rated for either 30 amp or 50 amp service, depending on the electrical system configuration of your motorhome.

Converter

The power converter turns 120 volts AC power to usable 12 volts DC power when the shore line power cord is connected to an external power source. The converter has a built-in protective thermal breaker that will shut it down should overheating occur. Overheating can be caused by operating the converter above its maximum power output for an extended period of time, or by an obstruction to its ventilation air flow.

Typical converter: model, features, and installation location varies, depending on motorhome model and floorplan.

Inspection and Maintenance

If the power converter is not working check the fuse(s) located on the outer case. There are no customer serviceable parts inside the converter case and the manufacturer's warranty will be voided if the case has been opened. If you have further concerns please contact your selling dealer.

Inverter

⚠WARNING

The factory-installed inverter is not intended for use with medical device(s).

Your motorhome may be equipped with a factory installed inverter that converts 12 volts DC to usable 120 volts AC. It supplies continuous AC power to appliances connected to its output (generally a residential-type refrigerator and select circuits). Inverters also supply charging voltage to auxiliary batteries. Inverter settings are entered on the front panel, remote inverter panel, or through the settings menu of the multiplex main panel (if equipped). The inverter should be turned OFF when the motorhome is in storage.

Typical inverter: model, features, and installation location varies, depending on motorhome model and floorplan.

Inspection and Maintenance

If the inverter is not functioning check both the circuit breaker protecting the inverter input, and the fuse located on the inverter. There are no customer serviceable parts inside the inverter case and the manufacturer's warranty will be void if the case has been opened. The inverter's cooling fins and the cooling fan should be kept clear of any obstructions. If you have further concerns contact your dealer.

Circuit Breakers

⚠WARNING

Replacement circuit breakers must be of the same voltage, amperage rating, and type. Never use a higher rated replacement circuit breaker; doing so may cause a fire by overheating the motorhome's wiring.

Circuit breakers protect the 120 volt wiring and components in your motorhome from circuit overloads and shorted circuits. Should a circuit overload or short circuit occur, the circuit breaker protecting the affected circuit will 'trip,' preventing the flow of electricity through that circuit.

If a circuit breaker trips, turn OFF and unplug the electrical appliance(s) or devices on that circuit and allow the circuit breaker to cool down. After the cool down period, reset the circuit breaker by moving the switch to the OFF position and then back to the ON position, then plug-in the electrical devices and try operating them. If the circuit breaker re-trips or frequently trips, unplug the appliances(s) on the circuit and contact your selling dealer's service department to have the electrical problem diagnosed and repaired. It is possible that the appliance is faulty, not the circuit.

A circuit breaker identification label is permanently attached to the inside surface of the 120 volt AC Load Center. The circuit breakers will not offer complete protection of the motorhome electrical system in the event of a power surge or spike.

NOTE: Circuit breakers and fuses are a vital in keeping the electrical system of your motorhome in a safe operational condition.

Never bypass or defeat circuit breakers or circuit fuses.

Maintenance

Before using your motorhome, inspect the circuit breakers and replace them as needed. Test each circuit breaker by moving the individual switches to the OFF position, and then back to the ON position. Circuit breakers may degrade over time and, as part of your motorhome's maintenance, must be replaced as needed.

Fuses

⚠WARNING

Replacement fuses must be of the same voltage, amperage rating, and type. Never use a higher rated replacement fuse as it may cause a fire by overheating your motorhome's wiring.

The 12 volts DC fuse panel label indicates fuse sizes, positions, and the electrical components powered through the 12 volt circuits. At the beginning of camping season, inspect all the 12 volt fuses and replace them as needed. Before replacing a fuse always shut OFF the engine, generator, and all motorhome electrical systems completely, including making sure the electrical components listed on the fuse label are in the OFF position:

Typical ATC blade-type fuse

1. Shut OFF the chassis engine.
2. Disconnect the shore line power cord.
3. Shut the generator OFF (if equipped).
4. Turn the inverter OFF (if equipped).
5. Turn OFF the main battery disconnect switch and disconnect the auxiliary battery main negative battery cable.

NOTE: Refer to the Chassis Packet for information regarding the chassis fuses and circuit breakers.

6. Remove the fuse panel cover.
7. Make sure the electrical component located on the fuse label is turned OFF.
8. Pull the fuse straight out of the fuse block. If inspection of the fuse confirms that it is not blown, some other electrical problem may exist.
9. Insert a new fuse of the same specified voltage, amperage rating, and type in the original location. Never use a higher rated replacement fuse.

The fuse panel label should be kept permanently affixed to your motorhome. The fuses will not offer complete protection of the motorhome electrical system in the event of a power surge or spike. Fuses are maintenance components and must be replaced as needed. Please contact your selling dealer's Service Department for further repair assistance.

Ground Fault Circuit Interrupter (GFCI)

⚠WARNING

For the safety of you and your passengers, all ground faults must be repaired before using your motorhome.

Typical GFCI receptacle

The ground fault circuit interrupter (GFCI) receptacle is designed to reduce possible injury caused by electric shock. The GFCI receptacle(s) will not protect against short circuits or circuit overloads.

Inspection

Test all GFCI receptacles monthly:

1. Make sure the circuit breaker is in the ON position (it must be connected to 120 volt power to reset the GFCI, as needed).
2. Push in the GFCI TEST button. The GFCI RESET button should pop out indicating the GFCI receptacle has been 'tripped' and the 120 volts AC power is interrupted.
3. Confirm that 120 volt AC is not present at the receptacle by measuring voltage with a test meter or plugging in a 120 volt device to determine if the receptacle is OFF.
4. Then push in the GFCI RESET button to restore 120 volts AC power.

Contact your selling dealer's service department for repair assistance if the GFCI RESET button does not restore 120 volt power when it pops back out.

NOTE: It is normal RV wiring practice to tie one or more electrical receptacles to the GFCI circuit. If another outlet in the motorhome is 'dead' check the GFCI in the bathroom; it may be tripped.

Generator

⚠ DANGER

Operating the generator creates exhaust gases that contain carbon monoxide. CARBON MONOXIDE IS POISONOUS AND CAN CAUSE UNCONSCIOUSNESS AND DEATH.

Never operate the generator in an enclosed building or structure where carbon monoxide gas could accumulate. Always keep the exhaust system of the generator clear from obstructions.

Safe Generator Operation

The on-board generator allows your motorhome to be electrically self-contained. It provides 120 volts AC when there is no shore power available. Review and follow all operational and safety precautions provided by the generator's manufacturer, written on warning labels and provided in the manufacturers owner's manual, which is included in your Owner's Packet.

1. DO NOT operate the generator while sleeping. You would not be aware of exhaust gases entering the motorhome, or be alert to symptoms of carbon monoxide poisoning.
2. Never store anything in generator compartment. Always keep compartment clean and dry.
3. DO NOT operate the generator in an enclosed building or in a partly enclosed area such as a garage or storage unit.
4. DO NOT operate the generator when the motorhome is parked in high grass or brush. Heat from the exhaust could ignite dry vegetation.
5. DO NOT operate the generator longer than necessary when the vehicle is parked. This will help to reduce exhaust gases near the motorhome.
6. DO NOT simultaneously operate generator and a ventilator fan, which could result in the entry of exhaust gas. When ventilator fans are used, open a window on the opposite side of the motorhome and 'upwind' of generator's exhaust pipe, to provide cross ventilation.
7. When parked, orient the vehicle so that the prevailing winds will carry the exhaust away from the motorhome. DO NOT open nearby windows, ventilators, or doors into the passenger compartment, particularly those which can be 'down wind,' even or short periods of time.
8. DO NOT operate the generator when parked in close proximity to vegetation, snow, buildings, vehicles, or any other object could deflect the exhaust under or into the vehicle.
9. DO NOT touch the generator when running, or immediately after shutting OFF. Heat from the generator can cause burns. Allow the generator to cool before attempting maintenance or service.

Typical motorhome generator

NOTE: Diesel-fueled generators require 12 volt DC power to start, and draw diesel fuel to operate from the motorhome's fuel tank. If the fuel level of the motorhome's fuel tank drops to or below ¼ full, the generator will automatically shut OFF and cannot be restarted until the motorhome's fuel tank is filled to above ¼ full.

Propane-fueled generators also require 12 volt DC power to start, but draw operating fuel from the LP tank. There is no fuel-limiting provision, therefore, monitor LP usage to ensure an adequate supply of LP remains available for other LP appliances (furnace, refrigerator, stove, water heater).

NOTE: Control switches for operating the generator are located on the monitor panel or, if equipped, on the multiplex touch-screen panel.

NOTE: Your motorhome's generator may be equipped with features that prevent operation if certain maintenance parameters are not met, i.e., low engine oil level, clogged air and fuel filters, etc.

If your generator fails to start or remain running, and there is an adequate fuel supply and 12 volts DC present, it may need maintenance attention. Refer to the manufacturer's owner's manual for troubleshooting and maintenance procedures.

NOTE: If your motorhome is supplied with an AGS system, refer to your motorhome's Owner's Packet for details regarding its features, set-up programming, and operation.

NOTE: If your motorhome has a multiplex wiring system, settings for the automatic generator start system are incorporated in the Settings Menu of the multiplex system.

10. NEVER sleep in the motorhome with the generator running! Before using the generator, inspect the exhaust system. Do not use it if the exhaust system is damaged. Test the carbon monoxide alarm every time you use the motorhome. If the CO alarm sounds, immediately move everyone to fresh air and ventilate the motorhome. Shut the generator OFF, and do not operate it until it has been inspected and repaired by a qualified technician.

IMPORTANT: MAKE SURE TO READ AND UNDERSTAND THE GENERATOR OWNER'S MANUAL BEFORE OPERATING THE GENERATOR. Observe all operating instructions and warnings as well as all recommended maintenance schedules and procedures.

Automatic Generator Start (AGS)

Your motorhome may be equipped with an Automatic Generator Start (AGS) system. An AGS can be a stand-alone system, part of the generator's control circuitry, or part of the inverter's control system. The purpose of an AGS system is to automatically start (and run) the on-board generator when certain programmed parameters are encountered:

- When the house battery(ies) voltage drops to a predetermined level, the AGS circuitry will sense the low voltage condition and start the generator, which, in turn, supplies charging voltage to the batteries through the inverter/charger. Once the system batteries have regained a sufficient amount of charge, the AGS will automatically turn off the generator.
- When there is a power demand from air conditioners, some models may feature a thermostat interface, where if the temperature of the coach rises to a programmed level, the generator will start, allowing the air conditioner to operate. The AGS will automatically turn off the generator after the air conditioner turns off.
- Some units are time-programmable, enabling the user to determine when the generator will operate. This feature is useful if the campground has restrictions regarding running generators during certain time periods of the night.
- Some units may also have 'shore power sense', so that when shore power is connected, the AGS system will place the generator in a stand-by mode, only allowing the generator to operate if electrical demand cannot be fulfilled by shore power.

Propane System

Propane or liquefied petroleum (LP) gas is a clean and efficient source of energy. The propane system in your motorhome furnishes fuel for cooking and heating, providing hot water, and generating electricity (by a propane-fueled generator, if equipped). Propane is also used as an alternative energy source for refrigeration. There are propane-related safety labels affixed to your motorhome that pertain to propane safety. Always observe and follow proper handling and safety precautions when using propane gas and propane appliances.

The propane system is comprised of numerous components such as the propane tank, hoses, propane gas regulator, and piping and copper tubing lines to each appliance. Propane is heavier than air; the gas tends to flow to lower areas and will sometimes accumulate in these low areas, such as the floor.

Propane provides clean, dependable energy for a variety of appliances

Propane Gas Safety

⚠ DANGER

IF YOU SMELL PROPANE GAS

1. **Extinguish any open flames and all smoking materials.**
2. **Shut off the propane supply at the container valve(s) or propane supply connection.**
3. **Do not touch electrical switches.**
4. **Open doors and other ventilating openings.**
5. **Leave the area until the odor clears**
6. **Have the propane system checked and leakage source corrected before using again.**

Ignition of flammable vapors could lead to a fire or explosion and result in death or serious injury.

⚠ DANGER

Do not use gas cooking appliances for comfort heating. Can lead to carbon monoxide poisoning, which can lead to death or serious injury.

⚠ DANGER

All pilot lights, appliances, and their igniters (see operating instructions) shall be turned off before refueling of motor fuel tanks and/or propane containers.

Can cause ignition of flammable vapors, which can lead to a fire or explosion and result in death or serious injury.

⚠WARNING

THIS PROPANE PIPING SYSTEM IS DESIGNED FOR USE WITH PROPANE ONLY.

- **Do not connect natural gas to this system.**
- **Securely cap inlet when not connected for use.**
- **After turning on propane, except after normal cylinder replacement, test propane piping and connections to appliances for leakage with soapy water or bubble solution.**
- **Do not use products that contain ammonia or chlorine to test for leaks. These substances may weaken piping components and cause gas leaks, leading to fire or explosion, which could result in death or serious injury.**

Propane is a colorless and odorless gas that, when under pressure, is in a liquefied state. An odorant (usually a sulfur compound) is added as a warning agent. If you smell propane within or around your motorhome, quickly and carefully perform the procedure listed on the safety labels at the beginning of this section and affixed to your motorhome. Strictly adhere to all propane warnings printed on propane appliances and devices. Hand tighten the main propane gas system valves only, do not use a wrench or pliers as over tightening may damage the valve seals and cause them to leak.

As part of your normal maintenance routine (at least once a year), have a qualified propane service technician perform an inspection of your entire propane system, including a system pressure test (appliances, tank, regulator, piping, and fittings).

Propane Tank

⚠DANGER

Always shut OFF the engine while refueling propane tank. Do not smoke. Turn off all appliances with automatic igniters and do not operate other ignition sources while refueling.

⚠WARNING

Do not fill propane container(s) to more than 80 percent of capacity. A properly filled container contains approximately 80 percent of its volume as liquid propane.

Overfilling the propane container(s) can result in uncontrolled propane flow, which could lead to a fire or explosion and result in death or serious injury.

If you suspect your propane container has been overfilled, contact your selling dealer or a qualified propane technician for assistance immediately. Do not attempt to service or correct a propane container overfill yourself.

NOTICE

Propane tanks are to be installed, fueled, and maintained in accordance to country, federal, state, and local codes, rules, regulations, laws, or guidelines.

A permanently mounted A.S.M.E. (American Society of Mechanical Engineers) approved propane container (tank) is located under the floor of your motorhome. Propane expands 1½ percent for every ten degrees Fahrenheit of increase in temperature. It is imperative to leave sufficient space inside the container to allow for natural expansion of gas during warmer weather.

Typical propane gas tank

MONITORING PROPANE LEVELS

The amount of propane remaining in the propane tank can be monitored by pressing the appropriate monitor buttons on the motorhome's monitor panel or main multiplex system panel (if installed). Refer to Electrical System Section.

Filling and Servicing

Given that the propane tank is not removable, the motorhome will need to be driven to a qualified propane facility for filling and servicing. Only an authorized propane service technician(s) should be near the motorhome while the propane tank is being filled. Drivers and passengers should wait at a safe distance away from the motorhome until LP filling and servicing is complete.

NOTE: The capacity or size of a propane tank is expressed in pounds (lbs.) and correlates to the weight of the propane it is capable of containing when filled to 80% capacity, not the total volume capacity of the tank.

New propane containers are filled with an inert gas, which must be carefully purged before filling with propane. The propane tank must NEVER BE OVERFILLED with propane.

Never allow your propane tank to be filled above the maximum safe level as indicated by the fixed liquid level gauge. Overfilling the propane container above the liquid capacity indicated on the gauge could allow liquid propane to enter the system that is designed for vapor only, creating a hazardous condition.

Using the Propane System

⚠WARNING

Gas cooking appliances need fresh air for safe operation. Before operating:

- **Open vents or windows slightly or turn on exhaust fan prior to using cooking appliance.**
- **Gas flames consume oxygen, which should be replaced to ensure proper combustion.**
- **Improper use can result in death or serious injury.**

NOTICE

Some appliances, such as furnaces, water heaters and refrigerators, are equipped with automatic propane igniters, while some stove or oven models may require lighting a pilot light before operating the appliance.

NOTE: Propane tanks installed in TMC motorhomes range from 40-68 pounds capacity for Class C motorhomes, and 40-105 pounds capacity for Class A motorhomes (specifications subject to change).

1. Ensure **ALL** burner valves, controls, and pilot light valves are CLOSED.
2. Open the main valve in the propane tank slowly to avoid a fast rush of propane vapor to the propane pressure regulator, which could cause propane 'freeze-up.' If you experience propane freeze-up, close the main valve and wait 15 minutes before trying again.
3. Listen carefully as propane begins to flow. If a hissing noise is heard for more than one or two seconds, close the main valve and contact your selling dealer's service department to have the propane system tested.
4. Light or turn on the appliance(s) as needed, following the appliance manufacturer's instructions.

Make sure that you read and fully understand ALL safety requirements for handling and operation of the propane system.

Propane Leak Test

Leaks may be found easily with a soapy water solution. Do not use a solution containing ammonia or chlorine when locating leaks. These products are corrosive to copper gas lines and brass fittings, which could result in deterioration of the copper and brass components.

Apply the soapy solution to the outside of the gas piping fittings. If a leak is present, the soapy solution will 'bubble' at the leak point. If a leak is indicated, shut OFF the propane system valve(s) at the propane tank, and immediately contact a your selling dealer's service department or qualified propane service representative to arrange repairs.

Traveling With Propane

Some states prohibit propane appliances to be operated during travel, especially in underground tunnels. Make sure you are familiar with the propane transportation laws for the regions where you travel.

Water System

Fresh Water System

Potable (drinking) water is supplied throughout your motorhome from either the fresh water holding tank or from a connection to an outside water source. When using the fresh water holding tank, water is pressurized and travels through the water lines by means of the water pump. When utilizing an external water source, such as a campsite water spigot, the water pump is not needed (it is bypassed by check valves), as the campsite water source provides pressurized water to the motorhome.

Potable Water Hose

To supply safe potable water to your motorhome, purchase and keep separate a sanitized water hose, whose sole function is for use with your potable water delivery and storage. Use a different water hose for other water-related activities, such as cleaning outdoor furniture, washing the motorhome, maintenance, or sewer system cleanup.

Connecting to an Exterior Water Fill

⚠CAUTION

Some external water sources develop high water pressure, particularly in mountainous regions. These campgrounds or hook-up locations may not have regulated water pressure, which could be considered excessive.

High water pressure is anything over 55 psi. Excessive pressure may cause leaks or damage to your motorhome's water system.

NOTICE

When connected to an external water source, it is strongly recommended that a water pressure regulator is used in-line with the water supply delivery hose. Water pressure regulators are designed to reduce high external water supply pressures to a level that is safe for your motorhome's water system; preventing potential damage. RV water pressure regulators can be obtained at RV suppliers or dealers.

1. Set your water heater bypass valves (if installed) to the correct position listed on your water system label. DO NOT OPERATE THE WATER HEATER IF ITS WATER SUPPLY IS BYPASSED.
2. Remove the cap from the fresh water inlet on the side of the motorhome.
3. Attach one end of your potable (drinking) water hose to the external water source spigot.
4. Connect the other end of the hose to the motorhome's city water inlet.
5. Turn ON the external water source spigot. Gradually open the hot and cold water at the sinks and tub to clear air from the lines. Close the faucets when the water is flowing freely.

Typical city water fill connection

To Disconnect From the Outside Water Source

1. Turn OFF the external water source spigot.
2. Disconnect your potable water hose from the supply valve and the fresh water inlet.
3. Remove the water hose and store it in an appropriate place.
4. Reinstall the cap on the fresh water inlet.

NOTE: The use of in-line water filters and pressure regulators (not supplied by TMC) is recommended whenever potable water is being delivered by an external source. Ask your dealer for details.

Note: If you will be away from your motorhome for a few hours or more, it is a good practice to disconnect or turn off the valve from the city water source. This will prevent or reduce any damage that could be caused by a pressure-induced leak in the motorhome's water system pipes or fittings.

Filling the Fresh Water Tank

NOTICE

Do not leave the motorhome unattended while filling the fresh water tank. Although the fresh water tank has an overfill vent, incoming water volume may exceed the capacity of the overfill vent, creating excessive pressure within the water tank and possible damage to seals and fittings.

Typical fresh water gravity fill

When an outside source of water is unavailable, water can be drawn from the fresh water holding tank in the motorhome.

1. Set your water heater bypass valves to the correct position listed on your water system label. DO NOT OPERATE THE WATER HEATER IF ITS WATER SUPPLY IS BYPASSED.
2. If your fresh water tank overflow valves are shut OFF or capped:
   a. Open the fresh water tank overflow shut-off valves; or
   b. Unscrew and remove the fresh water tank overflow valve caps.
3. Remove the water fill cap.
4. Attach a potable water hose to the gravity fill inlet, while attaching the other end of the hose to a source of safe drinking water. Turn ON the valve at the water source. Only use a water hose designated for potable water purposes.
5. When the tank is full and water is coming out of the fresh water overflow tubes located under your motorhome:
   a. Stop filling the fresh water tank;
   b. Replace the water fill cap;

To use water from the fresh water tank, turn the water pump ON to pressurize the water in the lines and to the water heater. When ready,

gradually open the hot and cold water at the sinks and tub to clear air from the lines. Close the faucets when the water is flowing freely.

When traveling, it is good practice to only carry a quantity of fresh water that will meet your fresh water needs until arriving at your next destination with a safe, potable water source. This will reduce the total weight of your motorhome, allowing for carrying capacity for other items, if needed. Refer to Section 4, Occupant and Cargo Carrying and Capacity (OCCC).

NOTE: While traveling, water can slosh in the fresh water tank and a small amount may escape through the overflow tube. This is a normal occurrence and you should not be alarmed if you arrive at your destination with less fresh water than you expected.

Water Pump

When the motorhome is not connected to city water (e.g., campsite water) and you want to use water from the fresh water holding tank, you will need sufficient 12 volts DC power to operate the water pump. Once turned ON at the monitor or multiplex or panel, the water pump (also known as an on-demand pump) will self-prime, pressurize the water lines, and provide water to the faucets, shower, and toilet. As long as the water pump switch is ON, and there is water in the fresh water holding tank, the pump will turn on and off automatically as water demand requires.

OPERATING THE WATER PUMP

The water pump is designed to operate automatically on an as-needed basis. Using the water pump continuously, such as leaving a faucet open for an excessive time period, or operating the water pump without water in the fresh water holding tank, will shorten its operational life and is not covered by warranty. The water pump has a check valve that prevents water from back-flowing into the fresh water tank.

DO NOT OPERATE THE WATER PUMP IF THE FRESH WATER HOLDING TANK IS DRY OR THE MOTORHOME IS CONNECTED TO AN EXTERNAL WATER SOURCE.

1. Make sure there is adequate supply of water in the fresh water holding tank.
2. Be sure the water heater bypass valves are set correctly according to your water system label. DO NOT OPERATE THE WATER HEATER IF ITS WATER SUPPLY IS BYPASSED.
3. Open all the faucets (first hot, then cold) including your interior and exterior shower faucets.
4. Turn the pump switch ON, and allow the water pump to fill the water lines and hot water heater tank (if installed). After water is flowing in a steady stream from all your faucets, turn the faucets OFF. The water pump should stop operation automatically when all faucets are closed. The pump should now run 'on-demand' when a faucet is opened, and stop when the faucet is closed.
5. The water pump switch must be ON to provide water to the toilet.

The switch for the water pump is usually located on the Monitor Panel or Multiplex Main Panel (if equipped). Refer to Electrical System Section.

Typical water pump installation

NOTICE

- **Do not turn the water pump ON if the fresh water tank is empty. Doing so could cause damage to the water pump.**
- **Do not turn ON the water pump when using water from an external source. Only run the water pump if using potable water stored in your fresh water tank.**
- **The water pump should be turned OFF when the motorhome is left unattended for any amount of time. This may help limit potential damage should something fail within the water system.**

Water pump Strainer

If equipped, periodically check the in-line water pump strainer for accumulated debris. To clean the water pump strainer shut OFF the water pump, unscrew the clear cap, remove the reusable metal cartridge, clear any debris, and reinstall the strainer and cap.

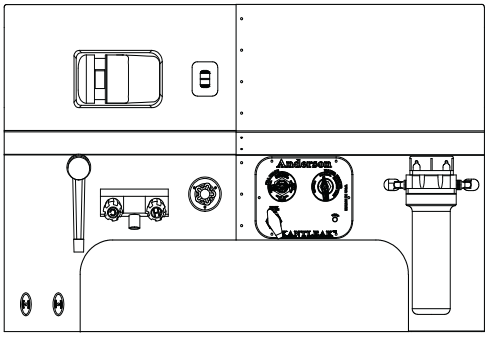
For additional information on the care and operation of the water pump, refer to the water pump manufacturer's information.

Water Panel

Select motorhome models are equipped with a water systems panel, similar to this illustration. However, if your motorhome is not fitted with a water systems panel, it will include most, if not all features depicted, just located in other areas of the motorhome. Water systems may include:

- Valve panel
- Fresh water inlet
- House water filter
- External shower
- Low point drains
- Water pump switch
- Black tank flush
- Compartment light

Your dealer or TMC Customer Care representative can assist you in locating water system features of your motorhome.



Illustrated here is a typical water system panel for a Class A motorhome

Water Heater

Your motorhome will be equipped with one of these three types of water heaters:

- Tank-type (6 and 10 gallon)
- Tank-less (on-demand)
- Hydronic (on-demand)

For complete safety information and operational instructions on the particular water heater installed in your motorhome, please refer to the water heater manufacturer's guide contained in your Owner's Packet or visit the water heater manufacturer's website. For information concerning your particular motorhome's installed equipment, contact TMC Customer Care or refer to the TMC Water System Guide, available from the TMC website.

Sanitizing the Fresh Water System

Sanitize the fresh water system before initial (first time) use, after extended periods of motorhome storage, at least once a year during continuous use, or if the fresh water system, fresh water supply, or fresh water holding tank has been compromised or contaminated.

1. Remove or by-pass the potable (drinking) water filter (if equipped).
2. Disconnect and cap (or by-pass) the refrigerator ice maker inlet water line (if equipped).
3. Disconnect and cap (or by-pass) the dishwasher inlet line (if equipped).
4. Disconnect and cap (or by-pass) the washer inlet line (if equipped).
5. If equipped with a dishwasher, ice maker, or washer, follow the appropriate appliance manufacturer's instructions pertaining to sanitization.
6. Prepare a solution using a gallon of water and ¼ cup of liquid household bleach (5% sodium hypo-chlorinate solution). Use one gallon of solution for each 15 gallons of tank capacity.
7. Open your fresh water tank bypass tube shut off valves, or uncap them.
8. With an empty tank and all faucets and drains closed, pump the solution into the fresh water tank, via the water fill cap using the water pump. Or, carefully pour 1/4 cup of bleach for every 15 gallons of holding tank capacity into your potable (drinking) water hose before connecting it to the water source. The water source pressure will push the chlorine and water into the fresh water tank, making the correct dilution when the fresh water tank is full.
9. Completely fill the fresh water tank with fresh water.
10. Switch ON the water pump. Open all the faucets one at a time until all air is purged, and the water flows freely.
11. Add fresh water to the fresh water tank again, until the water level reaches the fill spout.
12. Allow the solution to stand in the fresh water tank for at least three (3) hours.
13. Drain the fresh water system by opening all faucets and the fresh water tank drain valve while flushing the system with fresh potable (drinking) water.
14. Continue flushing the system, allowing the water to flow for several minutes.
15. Close the fresh water tank drain valve and the faucets. Refill the system with potable (drinking) water.

Waste Water System

The waste water system of your motorhome consists of bathroom fixtures, drainage plumbing, waste water holding tanks, drainage vents, and sewage valves. It is important to familiarize yourself with the motorhome's waste water system, for it does require monitoring, routine and long-term maintenance.

Drain Pipes

Drain pipes have P-traps and/or waterless traps (HEPVOs) installed to help prevent drain odors from escaping into the motorhome. During travel, water within P-traps may displace, which could allow waste water system odors into the motorhome. Drain-related odors come from decomposing materials in the holding tank. If odors are detected, place a few cups of water down each drain and use a RV approved deodorizing agent, which will reduce drain odors and help keep the drain lines and tanks clean and free flowing. Drain chemicals are available at RV supply stores.

NOTICE

Remove the waterless trap before using mechanical drain-rooting devices. Otherwise, the waterless trap can be damaged.

Vents

Vent pipes and vents release air from the gray and black water holding tanks. The exterior vent cap is attached to the roof, and must be kept clear of debris and obstructions to perform as intended. On some brands and models, the vent pipe may be part of the drainage system referred to as a "wet vent" (water flows downward as air flows upward in the same pipe).

Waste Water Holding Tanks

Your motorhome is fitted with separate waste holding tanks designed to separately collect waste water and waste solids. Typically, waste water from kitchen sinks, bathroom sinks and bathroom shower(s) is collected and stored in the Gray Water tank, while solids from bathroom toilet(s) is collected and stored in the Black Water tank. Some floorplans may have two black tanks, while others may drain bathroom sinks and/or the shower into the black tank. Waste water collection tanks have valves that allow for emptying the tanks into an external sewage collection facility, commonly known as a 'dump station.'

NOTE: Monitoring the level of waste water within the holding tanks is provided for on the Monitor Panel or, if equipped, on the main Multiplex touch-screen panel. Typically, tank level is indicated in 1/3 increments.

Termination Valves and Termination Compartment

The termination compartment generally contains the waste water components listed in this section. Please note that due to the variety of TMC motorhome models and floorplans, the items described in this section are general in nature and may or may not pertain to your termination valve configuration.

- Termination valve handles for both gray and black water holding tanks. To open, grab handle, and pull outward. Make sure that the sewer drain hose is connected before opening these valves.
- Termination cap. Remove cap to install the flexible sewer drain hose (not supplied by TMC). Be sure that the termination valves are closed before removing this cap.
- Sewer holding tank flush attachment. Attach the city pressure hose and allow the water to flow for three minutes. Refer to the Black Tank Flush description in this section.
- Hatch cover. Open this and pass your city pressure hose through. Close with hose passing through small opening in the cover.
- Access cap for sewer pipe. Located directly under sewer drain, remove cap and feed flexible sewer hose up through, and attach to the drain outlet.
- Exterior faucet. For mixing the water temperature for the exterior shower head.

Typical termination valve configuration

NOTE: It is typical to have one gray and one black termination valve for the gray and black tanks respectively. However, depending on the quantity and location of bathrooms, some models have two termination valves on a single black tank, and other models have two black tanks with their own individual termination valves.

Emptying Waste Water Holding Tanks

1. Remove the cap from the sewer drain and connect your flexible sewer drain hose.
2. Place the other end of the flexible sewer drain hose into the dump station inlet. Be sure both ends of the flexible sewer drain hose are secured.
3. Drain the black water holding tank first by pulling the termination valve handle away from the valve body. Be sure to allow sufficient time for the black water holding tank to completely drain, then rinse the black water holding tank with several gallons of water by depressing the toilet stool pedal, hand flush handle, or use the black tank flush (if equipped).
4. Drain the gray water holding tank by pulling the termination valve handle away from the valve body. Draining the gray water holding tank after the black tank allows the soapy water in the gray water holding tank to rinse the flexible sewer drain hose.
5. When both the black water and gray water tanks are emptied, close the termination valves by pushing the handles back to the closed positions.
6. Remove the flexible sewer drain hose, and rinse it thoroughly with clean water. Remove the other end from the dump station inlet, and replace it in its storage container.

NOTE: Always wear rubber or vinyl gloves and other protective gear when emptying the holding tanks.

7. Replace the sewer caps on both the motorhome outlet and the dump station inlet.
8. Flush the toilet a few times to add a small amount of water to the black tank. This will help keep any remaining solids from drying to the tank surfaces.

NOTICE

When connected to a campground sewer system, it is best to keep the termination valves CLOSED until the waste water storage tanks need to be emptied. Doing so will prevent campground sewer gases from entering the waste water system.

Black Tank Flush

⚠CAUTION

Do not use the black tank flush system unless the black tank termination valve is in the open position.

The black tank could overfill if the termination valve is not open, which will result in an unsanitary condition, leading to illness or potential personal injury.

Typical black tank flush

If your motorhome has a black tank rinse system (San-T-Flush, or similar rinse port), connect it to the dump station water supply with a garden hose reserved for this task. For sanitary reasons, do not use a fresh water hose for the black tank rinse. Do not turn on the rinse water until the black tank has been emptied.

After black tank dumping, some solids may be left at the bottom of the black water tank as well as on the tank sidewalls. The black tank flush is designed to help rinse and flush the black tank. Turn on the water, let it run for several minutes to help remove solids left in the tank. During the flushing process, be sure the termination valve remains open and the flexible sewer drain hose remains connected between the motorhome's sewer drain outlet and the dump station inlet.

If the motorhome does not have a black tank rinse system, you can use water from the toilet bowl to rinse the black holding tank:

1. Ask your partner to flush the toilet several times to duplicate the action of black tank rinse system. Do this immediately after dumping the black tank and while the flexible sewer hose is still connected to the sewer outlet of the motorhome and to the dump station inlet, and while the black termination valve is open.
2. This rinsing process may need to be done several times. Please be sensitive to others waiting to use the dump station facilities.

Winterizing the Water System

⚠WARNING

Automotive antifreeze (ethylene glycol) and windshield washer antifreeze (methanol) are poisonous. Never use these products in your fresh water system. These products are harmful and may be fatal if swallowed.

Only use biodegradable RV antifreeze to winterize your motorhome's fresh water system.

NOTICE

Antifreeze can be damaging to internal components of the water heater. For proper water heater winterization, drain the water heater tank and bypass the water heater inlet before adding antifreeze to the fresh water system.

Preparing for colder weather or storage is a very important part of routine motorhome maintenance. The motorhome should be winterized at the end of the camping season, or when exposed to temperatures that will fall at or below 32°F (0°C). Repairs due to freezing are not covered by warranty. Add only RV antifreeze to the fresh water system to ensure freeze protection. It may be easier to winterize the motorhome with another person assisting you.

NOTE: Do not operate the water heater or use the motorhome plumbing system after the water system has been winterized.

1. Level the motorhome and drain the fresh water plumbing system by opening all low-point drain valves and draining the water heater.
2. Remove or by-pass the potable (drinking) water filter (if equipped).
3. If you have a dishwasher, ice maker, or washer follow the appropriate appliance manufacturer's instructions pertaining to winterization (and de-winterization):
   - Disconnect and cap (or by-pass) the refrigerator ice maker inlet water line (if equipped)
   - Disconnect and cap (or by-pass) the dishwasher inlet line (if equipped)
   - Disconnect and cap (or by-pass) the clothes washer inlet line (if equipped)
4. Turn OFF the water heater switch on the monitor or multiplex panel.
5. Turn OFF the gas valve at the water heater or turn OFF the tankless water heater switch.
6. Turn the water heater bypass valves (if equipped) to the BYPASS position. A tankless water heater may not have bypass valves.
7. If the water system includes a water valve panel, move the valves to the WINTERIZE position, as shown on your water system label.
8. Close the low point drains.
9. Attach a hose to the city water fill and insert the other end of the

hose into a gallon container of RV antifreeze (this quantity should be enough to winterize the motorhome). To assist the siphoning process, put the container on a surface approximately two feet above ground level and use a short length of garden hose (15 feet or less).

10. Turn the water pump ON. If the water pump fails to self-prime, temporarily open the low point drains. Close the low point drains as soon as the water pump primes (RV antifreeze will begin draining out), and before continuing to the next step.
11. Open the hot water side on all faucets (kitchen, lavatory, shower, and exterior shower) until RV antifreeze begins to flow continuously.
12. Close the faucet hot water lines and repeat with the cold water lines on all the faucets.
13. Flush the toilet a couple of times until you see antifreeze in the bowl.

NOTE: Although most RV antifreeze solutions are biodegradable, high concentrations may be damaging to plant and animal life. Check with local ordinances regarding the proper disposal of RV antifreeze.

WHEN YOU ARE DONE ADDING RV ANTIFREEZE:

14. Remove the water hose from the container of RV antifreeze.
15. To prevent staining, wipe the RV antifreeze out of the sinks, shower (or tub) and toilet using a soft, dry cloth.

De-winterizing Your Motorhome

1. Drain the holding tanks (fresh water, waste water, and sewage).
2. Attach a garden hose to the fresh water fill, and fill the fresh water tank.
3. Turn ON the water pump switch and open the cold water side of all faucets and shower fixtures. Shut OFF the faucet and shower fixtures after the water runs clear (no pink residue), and repeat for the hot water side.
4. Flush the toilet until clear water runs into bowl.
5. Dump the holding tanks again.
6. Sanitize the water system (refer to Sanitizing the Fresh Water System).
7. If a potable (drinking) water filter has been installed: drain the water lines, remove the assembly, clean and reinstall using a new potable (drinking) water filter.
8. When ready to use the water heater, open the bypass valve allow water to enter and fill the water heater tank (remember to shut OFF the water heater bypass mixer valve, if equipped).

NOTE: For information concerning your particular motorhome's water system and installed equipment, contact TMC Customer Care or refer to the TMC Water System Guide, available from the TMC website.

Maintenance

General Information

Periodic maintenance and cleaning of your motorhome is necessary to retain the dependability, safety, and appearance that will provide you with many miles of trouble free operation, as well as protecting your investment.

NOTE: Performing periodic maintenance service is not covered under the Thor Motor Coach's Limited Warranty.

Make sure you read and follow all the maintenance tips and schedules that appear not only in this manual, but also in the manuals provided by the chassis manufacturer and various component manufacturers. Keep good records of maintenance functions performed, and make sure you perform all owner obligations as may be required to keep your warranties in force.

It is also important to note that operating conditions will affect service timetables. Driving in extreme conditions such as heavy dust, continuous short trips, or start and stop heavy traffic means that service durations will be shortened. Discuss service timetables with both your dealer and chassis service representative. Preventative maintenance will pay for itself many times over by catching or preventing problems before they occur. Often, repair costs are greatly increased due to a small problem left unattended, can begin to affect other parts and systems of the motorhome.

If there are cleaning or maintenance or procedures for which you are unsure of performing, please contact your dealer or chassis service representative for recommended instructions.

Condensation

Excess moisture trapped within your motorhome can cause severe long-term damage to laminates, surfaces, fixtures and other components of your motorhome. Therefore, it is important to follow moisture-reducing procedures as a normal routine of motorhome ownership and maintenance.

Tips for Controlling Condensation

To avoid condensation-related problems, follow these tips to help reduce excess moisture:

- Allow excess moisture to escape to the outside when bathing, washing dishes, hair drying, laundering, and using appliances and non-vented gas burners by opening ceiling vents.
- Always use the vent hood when cooking.
- Keep the bathroom door closed and the vent or window open when bathing and for a period of time after bathing.
- Do not hang wet clothes in the motorhome to dry.
- In hot weather, start the air conditioner early in the day as it removes excess humidity from the air while lowering the temperature.
- Keep the temperature as reasonably cool during cold weather as possible. The warmer the motorhome, the more cold exterior temperatures and warm interior temperatures will collide on wall surfaces, thus creating condensation.
- Use a fan to keep air circulating inside the motorhome so condensation and mildew cannot form in dead air spaces. Allow air to circulate inside closets and cabinets (leave doors partially open). Please keep in mind that a closed cabinet full of stored goods prevents circulation and allows the exterior temperature to cause condensation.

- A natural tendency would be to close the motorhome tightly during cold weather. This may actually increase inside humidity. The warm inside air may be more humid than the cool outside air. Allowing some cool outside air into the motorhome may help reduce relative humidity inside the motorhome.

Seals and Sealants

The exterior shell of the motorhome is the primary weather and moisture barrier. Over the life of the motorhome, the shell will require regular care and maintenance. The shell includes the roof, sidewalls, windows, doors, and under carriage of the motorhome. Regular inspections and maintenance is required to ensure the exterior shell provides a barrier against water intrusion.

NOTE: Damage caused buy lack of sealant maintenance is not covered under the Thor Motor Coach Limited Warranty.

The shell should be inspected periodically for cracks, tears, gaps, and condition of sealants. Check corner and joint moldings for sealant damage. Areas that require maintenance should be resealed utilizing a high quality sealant that has the same or similar characteristics as the original sealant.

Particular attention should be devoted to ensure slideouts are sealed properly. Regularly inspect slideout seals for chips, cracks, or other damage. Repair or replace damaged slideout seals as soon as possible.

Check door, window, and vent seals for cracks, chips or other damage and replace damaged seals as soon as possible.

Cold Weather Usage

When using your motorhome in freezing or below freezing temperatures, these precautions should be taken:

Note: Damage caused by use of your motorhome in freezing temperatures is not covered by the Thor Motor Coach Limited Warranty or the Thor Motor Coach Structural Limited Warranty.

- Make proper preparations to avoid freeze damage of the fresh water and drainage systems.
- Propane regulator freeze-ups can occur in any weather if there is moisture in the tank or if the tank has been over-filled. Always use moisture-free propane fuel and make sure the tank is not filled beyond 80% of capacity.
- During cool weather usage, ventilation or the use of a dehumidifier (customer supplied) may be required to reduce condensation.
- To avoid damage due to cold weather, check the exterior extrusions for frozen moisture before operating or using the motorhome compartment doors, locks, slideouts, windows, vents, etc.

Extended Stay Usage

NOTICE

Your motorhome is not designed, nor intended, for permanent housing. Use of your motorhome for long term or permanent occupancy may lead to premature deterioration of its structure, interior finishes, fabrics, carpeting, and/or window treatments, etc.

Damage and/or deterioration due to long term occupancy is not considered normal, and may under the terms of the warranty constitute misuse, abuse, or neglect, and therefore void certain warranty protections.

Your motorhome was designed primarily for recreational use and short-term occupancy. If you expect to occupy the motorhome for an extended period of time, be prepared to actively address condensation and the humid conditions that may be encountered.

The relatively small volume and tight compact construction of modern RVs mean that the normal living activities of even a few occupants will lead to rapid moisture saturation of the air contained in the motorhome. During cold weather, when relative humidity of the interior air is high, moisture condensation on surfaces can be higher compared to other dwellings because the insulated walls of a recreation vehicle are much thinner. Estimates indicate that a family of four can vaporize up to three gallons of water daily through breathing, cooking, bathing, and washing.

Unless water vapor is carried outside by ventilation, or reduced by a dehumidifier (customer supplied), it will condense on the inside of the windows and walls of the motorhome. It may also condense out of sight within the walls or the ceiling where it will manifest itself as warped or stained panels. Appearance of these conditions may indicate a serious condensation problem. When using your motorhome, always take necessary action to minimize the effects of excessive moisture and condensation.

Storage of the Motorhome

During periods when your motorhome is not in use, care must be taken to ensure sources of moisture are addressed. The ideal storage location of your motorhome would be in an enclosed, climate controlled environment. If this is not possible, the following steps should be taken to help ensure moisture control:

- Turn OFF and disconnect from all water sources
- Turn OFF all combustion appliances
- Drain all holding tanks
- Drain the water heater tank and fresh water lines
- Winterize your motorhome
- Open all closets, cabinet doors, and drawers
- Close all windows and interior entrance doors
- Open a roof vent enough to allow for some limited ventilation air flow, but not so far as to allow snow or rain to enter the motorhome

When storing the motorhome in climates of high relative humidity (greater than 60% year round) control humidity inside the motorhome by operating a dehumidifier (customer supplied), drained to the exterior.

Maintenance Schedule

ITEM	EVERY TRIP	EVERY MONTH	EVERY 3 MONTHS	EVERY 6 MONTHS	EVERY YEAR	PRIOR TO STORAGE	AS REQUIRED	PROCEDURE TO BE PERFORMED: Maintenance schedules are minimum requirements. Heavy use, unusual temperatures or humidity, or other extreme conditions may require more frequent maintenance.
Engine/Chassis	x			x			x	Check engine oil and top off with type recommended by chassis manufacturer. Change oil and filter at recommended mileage intervals.
	x						x	Check fluid levels including: brake, steering, coolant, transmission, washer, etc. Top off reservoirs as needed with fluids recommended by chassis manufacturer.
	x						x	Inspect underneath engine and transmission for leaks. Repair as necessary.
				x			x	Inspect air and fuel filters and replace at interval recommended by chassis manufacturer.
					x		x	Inspect chassis battery, terminals and cables. Repair and replace as necessary.
					x		x	Inspect suspension, steering components, exhaust systems etc. Repair and replace as necessary.
	x						x	Generator exhaust: inspect for cracks, blockages, damage. Replace immediately if any faults are discovered.
Brakes	x		x			x	x	Check fluid levels. Top off reservoir as needed with fluid specified by chassis manufacturer and only from an unopened container.
				x			x	Inspect pads and rotors. Replace as necessary.
	x				x		x	Inspect parking brake for proper function. Repair and replace as necessary.
	x						x	Inspect brake lights and turn signals for proper function. Repair and replace components as needed.
Weight Distribution	x						x	Check for proper weight distribution of equipment and components. Place heavy items as near and over axles as possible.
							x	Weigh loaded motorhome with vehicle scales to determine loading. Do not overload vehicle per GAWR and GVWR ratings (see manufacturers specifications).
Tires	x						x	Inspect for proper inflation (PSI). Inflate to proper cold pressure (PSI). Inspect for wear. Repair or replace ONLY with tire(s) of proper size and load rating. Unusual wear patterns indicate problems that should be addressed by qualified technicians.
	x						x	Check all wheel lug nuts and tighten using a properly calibrated torque wrench. Torque per chassis manufacturers specifications.
	x						x	Inspect spare tire for proper inflation (PSI). Inspect for cracking, aging. Replace as necessary.
Wheel Alignment							x	Inspect tires for uneven wear, dents in the wheel rims, and if vehicle steering seems unusual. All are indications that front wheels need re-aligned. Align as needed with a fully loaded vehicle and only by qualified technicians.

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Exterior: mirrors, vision systems	x						x	Inspect rear-view mirrors and adjust when needed. Replaced broken mirrors and components promptly. Inspect rear and side-view vision systems for proper operation. Repair and replace components promptly.
Safety Equipment		x			x			Test smoke alarm. Replace battery annually.
		x			x			Test combination LP/Carbon Monoxide alarm. Replace promptly if found to be inoperable.
				x			x	Inspect fire extinguisher for proper pressure. Replace if low or after any use.
Seat Belts			x				x	Inspect driver and front passenger lap and shoulder belts for wear or defective latches. Replace worn or defective components promptly.
			x				x	Inspect all passenger seat belts and latches and replace worn or defective components promptly.
								Inspect child safety harness brackets and tighten bolts if loose. Replace faulty components promptly.
Exterior: windows, doors, seals	x						x	Inspect windshield for cracks, chips, and damaged seals. Repair and replace as needed.
					x		x	Check vinyl seals around slideouts when washing exterior. Repair and replace as needed.
			x				x	Check door and window seals for damage. Repair as needed.
							x	Lubricate power step components with spray or lithium grease.
					x			Lubricate hinges, locks, & strike pockets of entrance, storage, and maintenance access doors.
		x					x	Operate emergency egress window latches and open window(s) frequently to ensure easy operation. Lubricate seals and latches with light coating of silicone grease.
							x	Inspect external corner and edge molding for damage; repair and reseal as needed.
					x		x	Inspect and replace wiper blades and windshield washer system components as needed.
Exterior: fiberglass			x					Wash surface with warm water and mild detergent. Do not use solvents or abrasive cleaners.
					x			Wax with liquid or paste non-abrasive automotive wax.
Exterior: roof					x		x	Inspect and reseal roof and component attachments; vents, antennas, ladders, HVAC, etc.
				x				Clean roof surface with warm water and mild detergent.
					x		x	Lubricate fan and power vent mechanisms with light oil. Clean surfaces as needed.
					x		x	Inspect air conditioner(s) housing, mounting, condensation drains, etc. Repair and replace as needed.

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Exterior: roof, *continued*					x		x	Inspect ladders for broken rungs, loose mounting components and bent rails. Replace as needed.
Exterior: lights	x						x	Inspect running, clearance, side-marker lights and repair or replace as needed.
Awnings: patio, door, & window	x						x	Operate awnings to ensure proper functioning.
			x				x	Clean awning fabric with warm water and mild detergent. Allow fabric to dry before retracting. Lubricate hinges and joints with silicone grease.
Awnings: slideout topper			x				x	Inspect for proper operation, wear, or damage. Repair and replace as needed.
Slideouts: electric	x						x	Inspect and test for proper operation. Inspect gear tracks for unusual wear. Lubricate per manufacturers recommendations.
Slideouts: hydraulic	x						x	Inspect and test for proper operation. Inspect rams and hydraulic fittings and hoses for leaking fluids. Top off reservoir with fluid recommended by manufacturer.
Leveling Jacks: hydraulic	x						x	Inspect system for proper function. Ensure jack rams extend properly and fully retract and stay retracted. Ensure jacks deploy only when vehicle's transmission is in park and the parking brake is engaged. Inspect hydraulic lines for leaks. Inspect hydraulic fluid reservoir, top off as needed with manufacturers recommended fluid.
Stabilizers: electric	x						x	Ensure stabilizers deploy properly and fully retract. Clean deployment mechanism with mild detergent and rinse with water. Lightly lubricate as needed. Inspect jack pads for damage. Replace worn or damaged components as needed.
Cab/Cockpit	x						x	Vehicle horn: test for proper function, repair if defective.
	x						x	Gauges and switches: ensure all vehicle control functions and driver aids are in proper working order before every trip. Repair and replace as needed.
							x	Cockpit seating: lubricate mechanisms, repair or replace damaged seats or seating components.
							x	Engine cover gasket: Inspect for proper fit and seal. Replace if damaged.
							x	Inspect heater and air conditioner for proper function. Repair as necessary.
Electrical System: 12 volt			x				x	Check and service auxiliary and chassis battery(ies). Add ONLY distilled water as needed or replace batteries that fail to hold a charge. Do not attempt to open maintenance-free batteries. Keep batteries on trickle charge when stored for an extended period of time.
					x		x	Check battery charging system: chassis alternator, inverter/converter, solar controller. Ensure proper charging voltage via multimeter reading (battery manufacturers charging recommendations).

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Electrical System: 12 Volts, *continued*	x						x	Multiplex system (if installed): check using 'Hot Skin Test'; with a multimeter set to 12 volts, place one probe on main panel and one probe to a known ground. There should be no voltage. If voltage is present, have multiplex system inspected by a qualified technician.
	x						x	Interior 12 volt lighting: repair and replace as needed.
							x	Check 12 volt power plugs, USB ports and electronic device charging stations. Repair or replace as needed.
					x		x	Inspect automatic transfer switch (ATC), inverter, and converter for proper function. Replace fuses or faulty circuit breakers.
	x						x	Inspect radio, navigation, and camera monitoring system. Repair as needed.
					x		x	Inspect towing electrical plug (4-way or 7-way). Apply electrical contact spray or electrical contact grease to contact surfaces.
				x				Solar panels (if installed): clean solar panels with water spray and soft cloth (do not use detergents or abrasive cleaners).
Electrical System: 120 volt	x						x	Inspect shore cords, receptacles, extension cords for damage. Repair or replace as necessary.
							x	Inspect fuses and circuit breakers at the fuse box or circuit breaker panel. Replace blown fuses ONLY with type and rating indicated on the panel. Have a qualified electrician inspect circuits associated with blown fuses or circuit breakers to determine if additional repairs are required.
		x					x	Generator: perform maintenance procedures per manufacturers recommendations. Check generator engine oil level regularly and top off as needed with oil type recommended by manufacturer. Check air filter and spark plug, replace as needed.
		x						Test ground fault circuit interruption (GFCI) receptacle(s) to ensure their proper function.
							x	Inspect 120 volt electrical receptacles. Repair and replace as necessary.
Propane System				x				LP tank, pipes, fittings: check for leaks and damage by using a mild soapy solution to detect leaks. Tighten fittings and/or repair as necessary.
					x			LP line pressure: inspect and check tank and gas line pressures by a qualified LP technician.
							x	LP tank purge (new tanks): purge tank of inert gas and fill with propane at certified propane dealer and/or supplier.
Water System			x				x	Water hoses, pipes, and fittings: inspect for leaks or damage. Repair or replace as necessary.

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Water System, *continued*	x						x	Bathroom and kitchen fixtures: inspect toilet(s), sinks, shower, and faucets for leaks and damage. Repair as necessary.
	x						x	Water pump: ensure proper operation. Repair as necessary.
	x						x	Waste water system: inspect drains and holding tanks. Repair clogs. Inspect termination valves and caps. Repair leaks and replace damaged components as necessary.
			x				x	Water heater: inspect for leaks. Inspect gas line for leaks. Inspect inlet and exhaust for insect nests or other restrictions. Repair and replace damaged components. DO NOT SANITIZE.
			x				x	Inspect water supply hose, water filter(s), water pressure regulator, water service hose, and sewer hose for damage. Repair and replace as necessary.
				x		x	x	Sanitize and flush fresh water system.
						x	x	Winterize fresh and waste water systems.
Heating System	x				x		x	LP (gas) furnace: inspect for function. Inspect exhaust ports for restrictions. Have qualified service technician inspect furnace annually. Repair and/or replace faulty components immediately.
	x				x		x	Hydronic heating system: inspect for proper function. Inspect fuel filter. Inspect hydronic fluid reservoir and top off with fluid recommended by manufacturer. Inspect burners and ignitors and replace at recommended intervals. Have system inspected by qualified technician annually.
Air Conditioner(s), Heat Pump(s)	x				x		x	Inspect for proper function. Inspect and clean filters. Repair or replace faulty components as necessary.
Appliances: LP (gas)	x						x	Check ranges, ovens, refrigerators for proper functioning. Repair gas leaks immediately.
Appliances: electric	x						x	Check microwave, refrigerator, fans and vents. Repair or replace as necessary.
Entertainment Systems			x				x	Inspect TV's, radios, DVD player, sound systems, WIFI extender, lifts, and mounting brackets. Repair and replace as necessary.
Beds, Bunks	x						x	Inspect bed/bunk lifts for proper function. Repair damaged lift mechanisms immediately.
					x		x	Bed conversions: inspect for broken or damaged brackets. Lightly oil hinges and joints. Repair and/or replace damaged components.
Furniture							x	Inspect sofas, dinettes, tables, etc. Repair or replace damaged components.
Fabrics and Upholstery							x	Clean with mild household detergents and upholstery cleaners.

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Countertops							x	Clean with mild, non-abrasive household cleaners and soft cloths.
Bath Fixtures, Sinks							x	Clean with mild, non-abrasive household cleaners and soft cloths.
Carpets, Flooring							x	Vacuum and mop and shampoo as necessary. Use water sparingly and wipe-up immediately.

Maintenance Log

Date	Service Performed	Mileage

Maintenance Log

Date	Service Performed	Mileage

Fuel and Oil Log

Date	Mileage	Fuel (Gallon)	Oil (Quarts)	MPG

Fuel and Oil Log

Date	Mileage	Fuel (Gallon)	Oil (Quarts)	MPG

Fuel and Oil Log

Date	Mileage	Fuel (Gallon)	Oil (Quarts)	MPG

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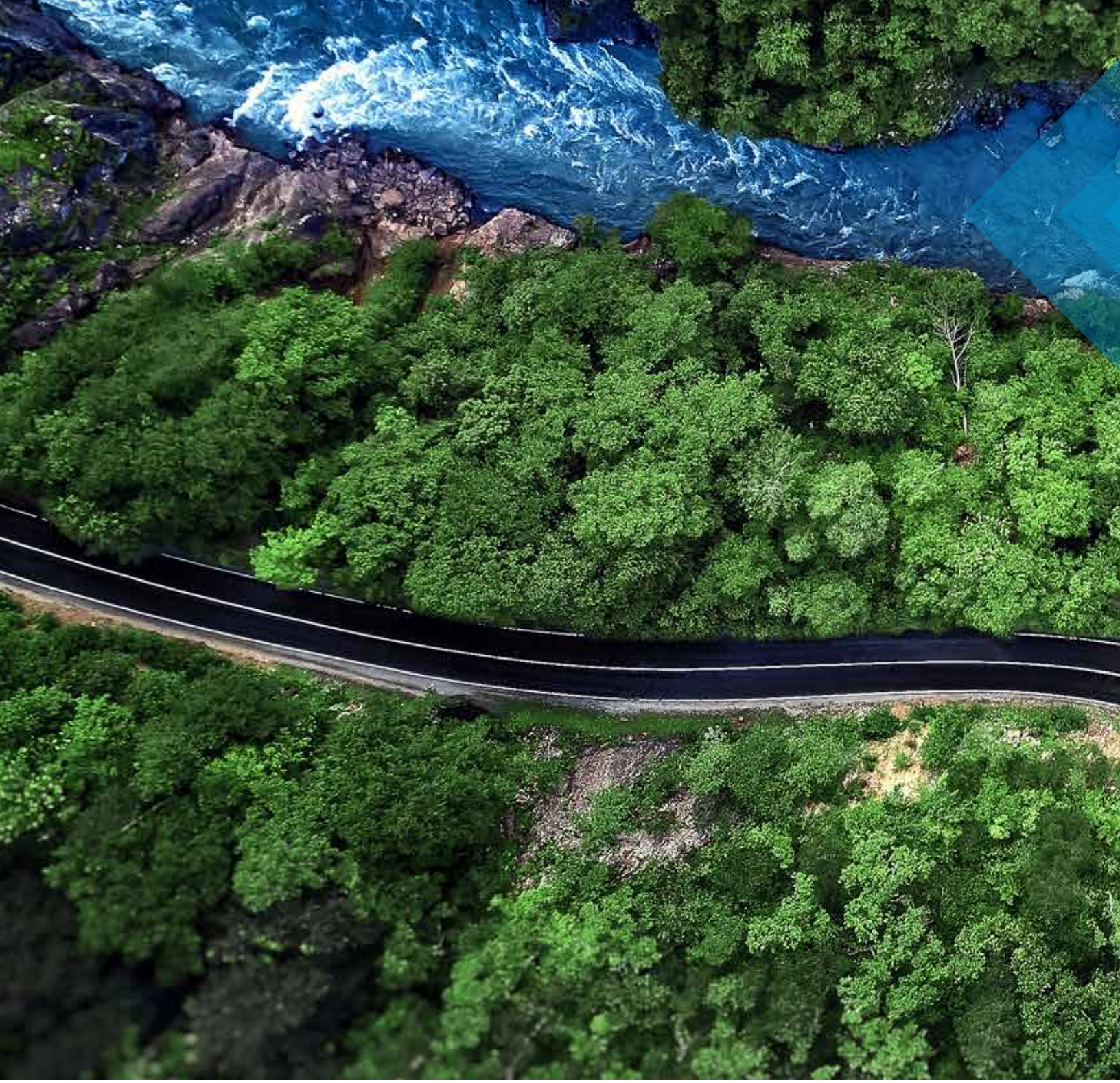

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