

Owner's Manual

2016 Zion



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Introduction to your Zion

Congratulations on the purchase of your Roadtrek and welcome to the Roadtreking family. The information included in this manual is meant to help and guide you through the use of your vehicle so that you know how to properly use the many functions your Roadtrek has to offer.

Please keep this manual in your vehicle as a reference for when you are travelling. If you have any questions or comments on information found in this document please contact us at manuals@roadtrek.com^[1] or 1-888-ROADTREK.

References

[1] <mailto:manuals@roadtrek.com>

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References

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Do's and Don'ts

Symbol Legend



For your information. May be useful information to know.



Warning. Not following this can lead to bad results.



Caution. You really should follow this to avoid bad results.



Don't do it. Doing this can result in injury, severe damage, or death.

Information, cautions, and warnings

Level	Item	Comment
	SEAT BELTS	Use only seats equipped with factory installed seat belts while the vehicle is in motion. All passengers must be seated in these seats only, with the seat belts fastened while the vehicle is in motion.
	TV	Turn the TV off and stow it while the vehicle is in motion.
	TV	The flat screen TV should not be stored inside the Roadtrek in cold temperatures. Remove it to reduce the chance of damage from the cold. Check the Owner's Manual for the TV for storage and operating temperatures.

	TV	To remove the TV, remove the four mounting bolts on the back of the TV mounting bracket and remove the RCA cables, power supply cable and antenna cable.
	PROPANE	Do not store propane tanks inside your vehicle. Propane tanks are equipped with safety devices which relieve excessive pressure by discharging gas to the atmosphere.
	PROPANE	Do not refuel the propane tank to more than 80% of its capacity.
	PROPANE	The propane tank valve must be closed and ALL PILOT LIGHTS, APPLIANCES, AND THEIR IGNITERS, MUST BE TURNED OFF during refueling of the motor fuel tank and/or the propane fuel tank. Only qualified personnel should refuel your propane tank.
	PROPANE	Purchase propane from a reputable propane facility. Contaminated propane is a common cause of system failure and is not covered under any warranty.
	PROPANE	The BBQ quick disconnect is regulated to 10 P.S.I. Please ensure that all devices connected to this are either rated for "high pressure" or have their own regulator. Many grills sold in the United States are "low pressure" (1/2 P.S.I.) and will require an additional regulator to step the pressure down to a useable level. If hooked directly to the BBQ quick disconnect they will be a severe fire hazard.
	PROPANE LEAK DETECTOR	Do not block the air circulation in the area where the Propane Leak Detector is located.
	PROPANE LEAK DETECTOR	Battery disconnect switch must be in the "ON" position for the propane detector to function.

	FLAMMABLE LIQUIDS AND GASSES	Do not store gasoline or other flammable liquids inside your vehicle.
	HEATING	Never use cooking appliances or unvented propane heaters for space heating purposes. They need fresh air for safe operation.
	HEATING	The heating furnace provides its own outside combustion air and exhausts to the outside.
	HEATING	Portable fuel burning equipment, including wood, charcoal, and liquid fuel grills and stoves, should not be used inside your vehicle. Use of this type of equipment inside your vehicle may cause a fire or asphyxiation.
	CARBON MONOXIDE LEAK DETECTOR	Do not block the air circulation in the area where the Carbon Monoxide Leak Detector is located
	CARBON MONOXIDE LEAK DETECTOR	Battery disconnect switch must be in the "ON" position for the Carbon Monoxide Leak Detector to function.
	110 VOLT ELECTRICAL SERVICING	Prior to servicing the 110 volt Galley GFCI & Audio/Video cabinet interior receptacles, unplug the output lead from the power inverter.
	EXTERIOR ACCESS DOORS	Ensure the shore power cord and city water supply lines are disconnected and in their stored positions before the vehicle is put in motion.

	AWNINGS	Close the sliding side door prior to opening or closing the awning.
	CLOVERLEAF DINING TABLE	The cloverleaf dining table is heavy. Use proper lifting techniques.
	EXTRA COUNTER SPACE	Make sure the stove is off and has cooled prior to lowering the stove cover.
	BATTERY	Battery acid can burn your skin and damage clothing. Protective eye wear and gloves should be worn while handling batteries. Effective June 2010 all Roadtrek installed batteries are sealed AGM batteries that do no require the addition of water.
	BATTERY	Disconnect the inverter/charger prior to disconnecting the auxiliary battery.
	GENERATOR	Never submerge the generator. Use a spotter when launching a boat or crossing streams.
	GENERATOR	When using the generator as the main power source to run the appliances, refer to the generator owner's manual for proper use and maintenance.
	GENERATOR	The generator cannot run all the appliances at the same time.

	WASTE WATER STORAGE AND DUMPING SYSTEM	Close both the black and gray water gate valves before using the waste water system.
	FREEZING	Under moderate subfreezing conditions, antifreeze is required in the exterior fresh water tank, black and gray waste water tanks. Use RV antifreeze in accordance with the manufacturer's instructions.
	ELECTRICAL SERVICING	This unit has 12 volt, 110 volt and potentially 36 volt or higher solar system. These systems need to be disconnected before working on them.
	GENERATOR	The generator is not compatible with E-85 fuel. If the vehicle is equipped with a generator, avoid the use of E-85 fuel.

Before you head out

Your new Roadtrek is ready to go with just a little bit of preparation.

To prepare for your first trip, you should:

- Read this manual.
- Contact your dealer with any questions.
- Plan your trip.

Then use this quick checklist.

- The day before your trip:
 - charge your batteries by plugging in overnight
 - cool your refrigerator by turning it on
 - chill any beverages in your home refrigerator
 - fill your fresh water tank with clean tap water
- The day of the trip:
 - Load the refrigerator with cold food (from your home refrigerator)

Coming Home

When you come home, there are a few maintenance tasks you should do to get your Roadtrek ready to go for next time.

Refer to other sections in this manual for the procedures listed here.

- On your way home, dump the gray and black tanks at a convenient facility. See the HOWTO: Waste Water Dumping section for a concise description of the procedure to do this. Some RV parks and gas stations will let you dump for a fee, some city wastewater plants will let you dump for free, but there is no real pattern, so local knowledge is vital in locating dump stations. The website <http://www.sanidumps.com> is a good resource. The maps for each state and province are especially helpful: <http://www.sanidumps.com/maps/help.php>
- At home, flush the water tank and fill it with fresh chlorinated water if you will be using it in the next few days. Otherwise, drain the tank. Don't let water you are planning to use sit in your tank for more than a week or so, and don't let ANY water sit in your tank for more than two weeks, whether you plan on using it or not. Over time, the chlorine goes away, and the microbes come out to play.
- To flush the tank, fill it using the gravity fill in the driver's doorframe, and open the fresh water tank drain under the rear of the driver's doorstep.



Gravity fill in driver's
doorframe



Fresh water tank drain, under driver's
doorstep

- Plug in overnight to fully charge batteries.
- Turn off and clean out the refrigerator and prop the door open to let it air out
- Turn off two important switches to keep from draining your batteries
 - the battery disconnect switch on your monitor panel
 - the inverter switch on your monitor panel

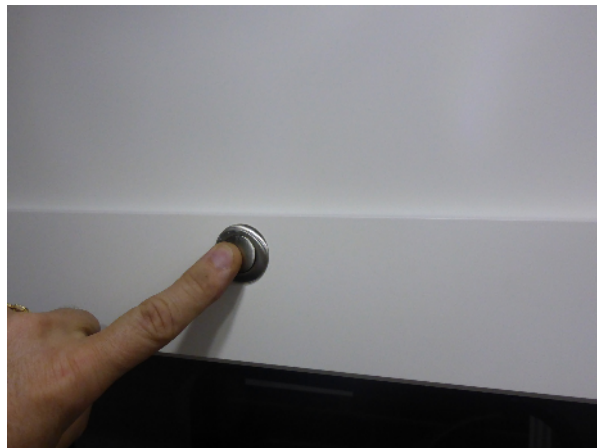


While storing the vehicle for long periods, it would be prudent to check the coach battery state of charge every month or so and charge them if necessary. If you don't turn everything off, you will probably come back to dead batteries.

That's it! You're ready for the next trip.

Interior Living Space

Cabinets



Pushbutton Latch closed



Pushbutton latch open

Your Roadtrek is equipped with cabinet latches which prevent the contents from falling out while the vehicle is in motion. The pushbuttons on the cabinet latches toggle from latched (button in) to openable (button out) by pressing the button.

To open a cabinet, press the button to pop the latch, pull gently on the latch, and the cabinet door will open.

To close a cabinet, make sure the latch is still open (button out), then close the door. Once the cabinet door is closed, press the latch button in to lock the cabinet.



Do not attempt to close the cabinet doors while the latch button is pressed in. This will break the latch. Always make sure the button is out before attempting to close a cabinet door.



Do not keep large, round, and/or heavy objects in a cabinet unsecured - they will roll around and apply excessive pressure to the inside of the cabinet doors as you drive. Even if the force of such objects doesn't break the latch, they can shift position with vehicle motion and be leaning against the inside of the cabinet door, waiting to fall when you open

the cabinet. For this reason, Roadtrek recommends that you not store anything in the overhead cabinets that you wouldn't want to get hit over the head with.

If you load a large amount of weight into a cabinet, experience large swings in temperature or humidity, drive on bumpy roads at high speeds frequently, or sometimes as part of normal wear and tear, the cabinet hinges may go out of adjustment. You will know the cabinet is out of adjustment when it will not open with the button out, or not latch with the button in.



Apply moderate upward pressure and GENTLE outward pressure with both thumbs on the bottom corners of the door to open a stuck cabinet



Turn screw clockwise to lower cabinet face (if it won't latch), counterclockwise to raise it (if it won't open)

To open a cabinet stuck shut with the button out, apply pressure UPWARD with your thumbs on both bottom corners of the cabinet door while simultaneously applying gentle pressure to open it, as shown above left.



DO NOT FORCE THE DOOR OPEN BY PULLING OR PRYING ON IT - you will break the latch.

The screw in the top part of the hinge nearest the pivot point adjusts the vertical location of the door, as shown above right. Screw out to raise the door and fix stuck doors; screw in to lower the door and fix doors that won't stay shut when latched.

Galley cabinets

Immediately beneath the galley countertop there are drawers to the left and right of the food preparation surface to hold silverware and small cooking utensils. The center panel in front of the sink is fixed, and is not a drawer.



Galley cabinets, with propane cooktop



Tap light

Lights

The oval ceiling lights are all individually controlled, and are tap lights - to turn them off or on, press on the lens area. The battery disconnect switch must be on for any of these lights to work. These are LED lights, and consume very little electricity.

Tables



Table leg storage in wardrobe to right of galley



Table leg T-Nut attachment

The table can be set up to use either the front or rear lounge areas for dining, playing cards, or computer use. The table leg is stored in the closet to the left of the galley, next to the water heater. The leg keys into a T-Nut fitting in the floor plate. To install the table leg in the floor plate, unscrew the T-nut all the way on the end of the table leg and insert the T-Nut into the key in the floor plate. Rotate the table leg clockwise and it will tighten into place within a couple of turns. If it does not, unscrew the T-nut all the way and try again.



Do not force the t-nut. If it's set up right, it will lock in place with very little effort.

The table top is stored in the rear door.

Front Table Setup



Front lounge table



To rotate the front seats, lift up on the front inside corner trim

Rear Table Setup



Rear dining table



Table top storage in back door

Captain's Seats

The two captain's seats in the front of your Zion are adjustable fore and aft by pulling up on the bar under the front of the seat, and will swivel when the inside corner is pulled up. Always return the seats to the forward-facing position when driving. They will lock into this position, and stay locked until the swivel tab is raised again.

To create a front lounge area, first ensure that the seats are fully upright by loosening the recline adjustment and bringing the backs of the seats forward. Do not attempt to pivot a reclined seat. Use the fore-and-aft adjustment while pivoting the seats to allow the sides of the chairs to clear the armrests on the vehicle doors, the engine cover, and other obstructions. Do not force the seats around. Swiveling the driver's seat may require you to loosen the tilt steering wheel adjustment and move the steering wheel as far forward and up as possible. Opening the front doors slightly will allow you to clear the door armrests easily.

Ventilation

Your Roadtrek is equipped with a ceiling mounted ventilation fan.

The fan has a cover that must be raised by turning the large knurled knob before the fan will operate. Raise the cover, then turn the switch to the desired speed.

The fan also has a thermostat, which will allow you to set the temperature at which the fan comes on. If you want the fan to operate at all temperatures, turn the thermostat all the way toward the blue section of the dial.

There is also a fuse in the body of the fan, in addition to the fuse in the distribution panel. Check both this fuse and the one on the 12 volt fuse panel if your fan stops working.

For more details, please refer to the Fantastic Fan manual.

 Turn the fan off and close the cover completely before driving. The cover will rattle and might be damaged by wind pressure if you drive with it open.

 Open the windows and open the nightshade slightly to allow for airflow.



Window Treatments



The side window
screens - nightshade
side



Bugscreen side



The nightshade curtain blocks airflow. If you leave the window open, close the nightshade, and close all other windows, and then close the side door, it is possible for the curtain to get blown out of the track. Always close the window prior to closing the nightshade.

The window curtains slide to the right and left. The plastic clip is not a pull tab; it is a locking tab. Always pull on the aluminum bar. The curtains are configured so that the nightshade side covers the window opening for additional privacy.



The side door curtain



Rear door curtain



Rear door track

The curtains on the sliding door and the rear door slide on tracks. It is best to use both hands, one near each track, to move the curtains.

Sleeping Facilities

Your Roadtrek has beds that can be configured as a king bed or twin bed. Experiment with different configurations to find what works best for you.

Power Sofa



Ranger power sofa switch



Full bed

The switch to lower the sofa into the bed position is located on the passenger side in the rear next to the thermostat.

The seatbelts for the power sofa are attached to the floor behind the power sofa. In order to use the power sofa as a seating position while driving, these seat belts must be threaded up through the gap between the seat back and bottom and used together with the shoulder belts to secure passengers in these seating positions.

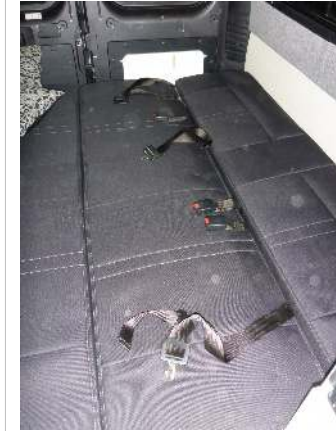
To make the bed, start by pulling out the passenger side bed slide. Pull the cushion forward and allow the rear bolster to slip behind it. Now lower the power sofa. Push the seatbelts down through the sofa after you lower sofa.



Passenger side bed slide pull holes
under cushion



Passenger side bed in place



Sofa lowered in place

To make the sofa, remember to pull the seatbelts up through the sofa before raising it to a sitting position.

Bathroom Facilities

Door



Bathroom door pin

The bathroom doors are secured by a pin which is attached to the right door. To secure the doors for driving, close the left door first, then the right door, and then push the pin down so that it engages behind the lip at the front of the bathroom floor. Push gently on the top to secure the latch along the upper enclosure lip. This will prevent the doors from swinging open when the vehicle is in motion.



Always engage this pin before moving the vehicle, even for a short distance.

Toilet



Toilet pedal

The enclosed bathroom in the Ranger contains a marine toilet. To flush the toilet, press the foot pedal located at the bottom of the front of the toilet bowl.

Shower



Shower connection
and knob



Shower curtain and light



Shower drain

To take a shower, unscrew the drain stopper in the center of the bathroom floor. Release the hook and loop fastener straps retaining the shower curtain, and slide the shower curtain along its track to enclose the shower space. Pull the knob on the spout up. Adjust the water temperature as desired. There is a water cutoff on the shower nozzle to conserve water. When finished, either towel off or air dry the curtain before storing it, refasten the drain stopper to prevent the contents of the gray water tanks from sloshing up into the shower area while driving, and remove the shower hose from the sink connection. Push the knob back down to change the sink back into normal mode.

Outside Shower

The outside shower is located on the driver's side, towards the rear wheel. See Outside your Roadtrek for more details on location.

Appliances

TV and DVD player

The TV and DVD player are located in the rear lounge area on the passenger side.

Both the television and the DVD player use 120 volt current, so the inverter, generator, or shore power must be on and available for them to work. They are supplied with remote controls.

Antenna Connections

There are two antenna connections in the cabinet above the DVD player. One is labeled for the antenna, the other for cable TV. Connect the cable to the appropriate jack.



TV Antenna and Cable connections.

Hot Water



Tankless water heater inside cabinet - all valves are in normal operating position



Water heater thermostat, filter and drain valves

The Zion is equipped with a propane fired tankless water heater. The heater has no tank and operates on demand. At low flows water may be hot, while at high flows water may be cooler. This is normal. When you turn on the water heater you will not hear it fire up. It only ignites when it senses a water demand. The large dial at the bottom of the cabinet is the thermostat. Adjusting it all the way to the left will result in generally cool to warm water. Adjusting it all the way to the right will result in hot water, especially at very low flows.

 The three valves in bypass configuration are for assembly testing and maintenance purposes. They should not be operated in normal use, even during winterizing.

 Refer to the Girard water heater manual for specific instructions on operating this heater. It operates differently from a typical 6 gal. water heater.

Refrigerator

The refrigerator is an electric compressor model that runs on 12V DC power. When shore power is available, the inverter charger provides enough power to run the fridge without discharging the batteries.

The refrigerator temperature control is inside the unit, on the right side of the freezer compartment. Please see the appliance manual for operation details.



Push on the latch to open fridge door



Thermostat is located inside on the rear wall



Do not block the vents at the top and bottom of the fridge. These vents must be unobstructed for the refrigerator to work properly.

Oven

The oven is a standard microwave oven. It operates much the same as the microwave at your house. It is probably lower powered, so cooking may take a bit longer.

The microwave will operate from the batteries through the inverter for reheating purposes or other brief use. However, for extended microwave use, you must be connected to shore power or have the optional generator running.

Propane Cooktop

The propane cooktop needs fresh air for its safe operation. Make sure to open a window and open turn on the overhead fan for proper ventilation. The igniters are powered by 12 volt coach battery power, so turn the battery disconnect switch on before using the propane cooktop. For detailed information on this appliance consult the cooktop owners manual.



Propane cooktop

Outside your Roadtrek

Awning



Power awning



The awning power switch



Awning support

Your Roadtrek has a roll up awning. The awning is extended with a power switch located on the control panel. The awning has two support struts that must be used to support the awning. These are secured to the two attachment points on the side of the Roadtrek. Refer to the awning manual for the proper way of securing the awning supports to the attachments. To stow the awning, detach the supports, stow them in the awning housing, and retract the awning.

 Awnings are susceptible to damage from wind, and for this reason should never be left extended when you are away from the vehicle. If a thunderstorm or other windy weather is imminent, stow your awning until the wind calms down.

Driver's Side Compartments



Dump cover



Dump hose storage compartment



Rear compartment with outside shower faucet

On the driver's side, there are three doors that house items that you will use.

With the cover removed, the manual dump and valve handles are visible. The small compartment aft has the macerator hose. See the HOWTO: Waste Water Dumping section to learn how these work.

The smaller rear compartment has the outside shower faucets.

Exterior Shower

The outside shower hose attaches to the faucet inside the rearmost driver's side storage compartment, behind the rear wheel. This faucet provides hot and cold running water from the same sources as your inside faucets. When finished, disconnect and store the shower hose and nozzle.

Side door step



Step switch



Step extended

Your Roadtrek is equipped with a step that automatically extends when the side door is opened for easy entry and exit out of your vehicle. With the step switch on, the step will extend once when the door is open and remain extended even if the door is closed. With the switch off, the step will extend and retract every time the door is opened and closed.



For safety reasons, the step will automatically retract when the ignition is turned on, even if the step switch is on. This is to prevent damage caused by driving with the step extended.



The driver's side and passenger's side door steps are not affected by this switch and will extend and retract every time the doors are opened.

Optional Rear Door Screen

Roadtreks have an optional rear screen which allows you to open the rear doors and get fresh air and a better view, without bugs coming in or (attended) pets going out. If you ordered this option, look for this screen in the white box that comes with your new Roadtrek. The screen attaches to the rear door frame and cargo area floor with a zipper and hook-and-loop fasteners.



Surround with zipper



Hook and loop fastener for bottom edge of screen

Open the screen and locate the edge with hook and loop material along it. This edge is the bottom, so use the hook-and-loop strips on the screen to attach it across the bottom of the door opening. It is important to note that the screen is NOT a cargo net, and can be damaged if left installed while driving if objects are stored in the rear of the vehicle.



Start the zipper on the left side



Installed screen



You can access the underbed storage area without removing the screen

Start the zipper at each bottom corner by pushing the bottom stop (the metal end) of the zipper into the two back-to-back zipper sliders, and zipping the top slider upward.

At the top, close the flap with the hook-and-loop fastener strip where the zippers meet.

Use the double slider to unzip the bottom of the screen to allow access to the underbed storage area in the back of the Roadtrek without disturbing the top section.

To remove and stow the screen, unzip it from the top down. Unzipping it from the bottom will not allow you to remove it from the doorframe surround.

Optional Side Door Screen

In addition to the rear door screen, there is also an optional side door screen which will allow you to keep the side door open for ventilation without admitting insects. The side screen slides on upper and lower tracks.



The side screen must be open when you close the door. The screen could be damaged if you shut the door while the screen is in place.



While sturdy enough to keep insects out, neither this screen nor the rear screen are designed to resist repeated and persistent attempts by pets to get out of the vehicle. Do not leave your pets unattended with the screen in place and the door open. They may take themselves for a walk.

Utilities

Just like your house, your Zion has fresh water, electricity, waste water disposal, heating, and cooling systems. These systems are self contained and travel with you.

Your vehicle should be reasonably level to allow normal operation of the system.

Fresh Water

Fresh water is contained in a tank that is filled via gravity fill located in the driver's side door pillar. You can fill the fresh water tanks from a convenient water spigot.

To fill the tanks with fresh water, open the driver's side front door and remove the orange plug in the fresh water fill port. Fill until water comes out the hole.

City Water



Fresh water tank fill location



Water pump switch location on monitor panel



City water connection

The city water connection is in the rear, underneath the rear bumper on the passenger's side. Unscrew the white plastic protective cap and connect your clean hose to the water faucet and this connection point. Turn the faucet on and check for leaks, tightening the connections as necessary.

There is a pressure regulator in the connection. See HOWTO: Potable Water Use for instructions on how to hook up to city water.

Water Pump

To use the water in the tank, you need to turn on the water pump. See photo above for switch location.

Waste Water

Gray Tank

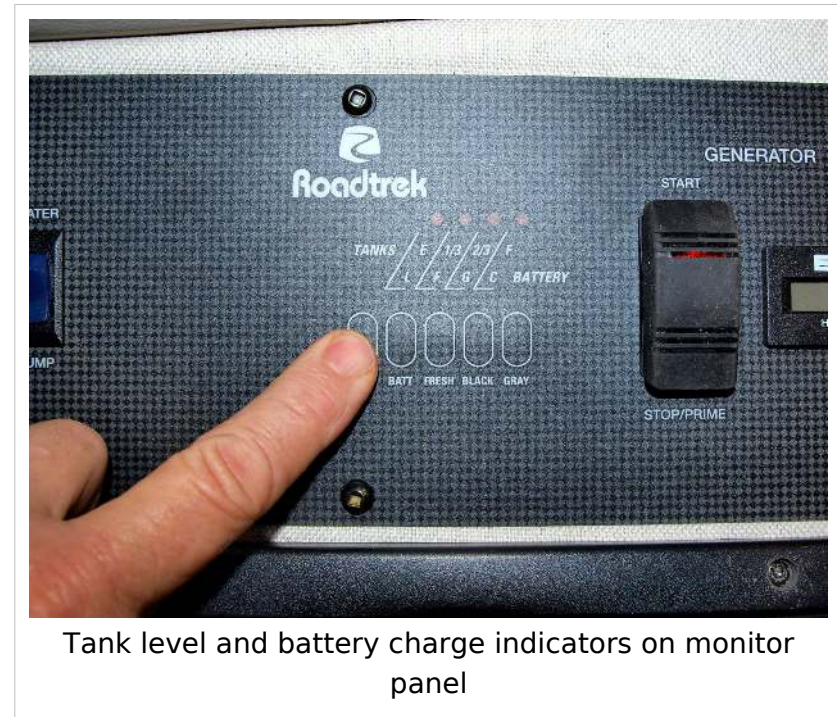
Galley sink, bathroom sink and shower drain water drains into the gray water tank. The shower and sink have traps to prevent tank odors from entering the living space. Be sure to replace the screw-in plug in the shower floor after use to prevent gray water from sloshing up into the shower pan from the gray water tank while driving.

Black Tank

The black water tanks contains toilet waste. Please refer to the HOWTO: Waste Water Dumping section for an explanation of which materials you can and can't flush down the toilet.

Indicators

The gray and black water tank level indicators on the control panel will give you an approximate indicator of your tank levels. When the gray water tanks is full to capacity, water will no longer drain down the shower and sink drains, and you need to dump the tanks before running any more water. If you see fluid below the toilet valve in the bowl of the toilet, your black water tank is full and also needs to be emptied before further use.



See Monitor Panel for more information.

 Ensure that both the black and grey water gate valves are closed before using the waste water system. It is possible for the valves to open slightly especially after extensive driving. Black and grey water dump valves are accessed through the driver side storage door.

Heating and Cooling

Thermostat



Thermostat



Roof-mount air
conditioner



Propane furnace

The thermostat controls the furnace and the air conditioner. Set the thermostat on "heat" or "cool" and set the desired temperature.

The third setting, "fan", recirculates cabin air using the fan inside the air conditioning unit.

Air Conditioning

The air conditioner provides cooling for your Roadtrek using electric shore power or generator power.

The AC can be operated normally when you are plugged in to shore power.

If you are running the AC using the generator, please follow the following steps.

- Set the battery disconnect switch on the monitor panel to the “ON” position.
- Start the generator and run for several minutes until warm.
- Set thermostat setting above ambient temperature.
- Turn thermostat control to the “low cool” position.
- Turn fan to the ON position.
- Adjust the thermostat on the unit for the desired temperature. The compressor should start automatically.
- Your vehicle should be reasonably level to maximize the air conditioner’s efficiency. If you are parked very much off-level, it is possible for condensate to leak into the living space. If this happens park in a more level location.

Propane Furnace

The furnace is controlled by the combination thermostat located above the rear bed. The furnace requires propane and 12V power. The furnace can be used without shore power or generator use.

Keep the aisle in front of the furnace clear of any obstructions when using the furnace to allow air circulation.

The furnace can operate when outside temperatures are below freezing.

Electrical System

Coach Batteries

The coach batteries in your Roadtrek are sealed AGM batteries. Do not attempt to open them. There is no user maintenance possible on these batteries.

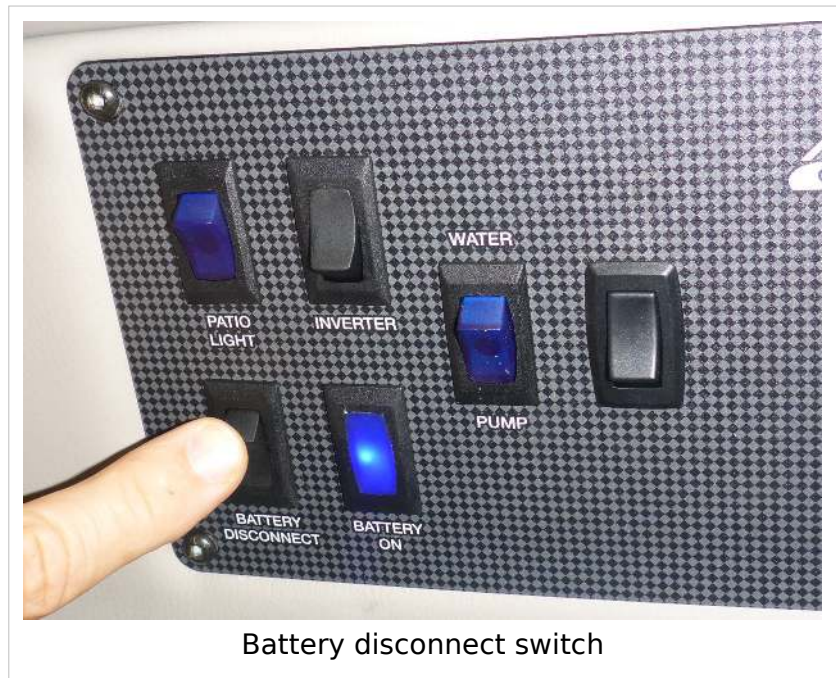
Battery Disconnect Switch

The battery disconnect switch provides power to all 12 volt appliances, such as the water pump, the refrigerator, and so forth. This switch should be off when you are not using your Roadtrek, and on whenever you are driving or camping. The "Battery On" light next to it will indicate the position of the switch.

Charging your batteries

Inverter-Charger

Your Roadtrek is equipped with a 2000 watt inverter-charger which converts 120 volt AC (household current) to 12 volts DC when you are connected to shore power or running the optional gasoline generator. This 120 volt power is used to power your 12 volt DC appliances as well as charge your batteries. Whenever you are receiving either source of 120 volt power, you are charging your batteries.



Battery disconnect switch

Alternator Charger and Battery Isolator

While driving, your Roadtrek will also charge the coach batteries from the vehicle alternator through an isolator. The isolator allows extra vehicle alternator-produced electricity to charge your coach batteries in addition to keeping your engine (chassis) battery charged. When the vehicle engine is not running, it breaks the electrical connection between your coach batteries and your engine battery, so your engine battery remains charged to start your engine even though you are using coach battery power while camped. This is all automatic - there are no user adjustments possible to the isolator.

Optional Solar Panels

The optional solar panels will charge your batteries when sufficient sunlight is available. The solar charge controller is installed at the factory for the type of panels and batteries installed on your vehicle, and Roadtrek strongly recommends that you make no adjustments or changes to the charge controller or its programming. If equipped with a display, the charge controller usually displays either system voltage or amperes generated by the panels.



Solar charge controller

On board 120 Volt AC power

Standard 2000W Inverter

The standard configuration includes a 2000 watt inverter. This inverter provides 120 volt AC (household current) for a few of the outlets in your Roadtrek; primarily the ones running the TV and the DVD player. It will run the microwave and the air conditioner.

The inverter is configured at the factory for the batteries and power sources in your Roadtrek. Please do not change any settings without consulting the factory.

Your refrigerator will run on either 12 volt battery power or 120 volt inverter power.

Optional Underhood Generator

Your Zion can be ordered with the underhood generator. This generator operates transparently to you. There is no special maintenance or usage instructions to operate this generator; it runs whenever your vehicle engine is on. It provides sufficient power to power the inverter at full power and charge your batteries.



Inverter switch

Optional Gasoline Generator



Priming or stopping the generator



Starting the generator

Your Zion can be ordered with the optional Onan generator. Prime the generator by pressing on the bottom of the rocker switch. Start the generator by pressing on the top of the switch. Shut the generator off by pressing on the bottom of the switch.

Refer to the Onan manual for specific maintenance instructions.



Follow the exercise schedule in the owner's manual. Failure to exercise the generator can lead to failure.

Close the rear windows of the vehicle and turn off the roof ventilation fan while the generator is running to avoid exhaust entering the vehicle's interior.

Shore Power

The shore power connection is through the shore power cord, stored in the driver's side large compartment. See Outside your Roadtrek for location. The switchover from shore power to inverter is automatic.

To connect to external (shore) power, open the side compartment and remove the power cord. Plug the power cord into the campsite 30 amp power source. See HOWTO: Shore Power for a concise guide on how to connect and disconnect to shore power.

Outlets

The outlets are operated from the inverter, generator, or shore power. Further, the outlets are protected by GFCI. Only some of the outlets are powered by the inverter.

Several outlets have ground fault circuitry (GFCI) - the button in the middle of the outlet pops out when they sense an anomaly or sometimes when the circuit undergoes transitional conditions. These outlets also protect other outlets in the Zion. If you are not getting power from an outlet, check and reset this button if needed. The outlet at the side door powers the TV and DVD player, so check it if your TV is not receiving power.



Outlet at side door

Monitor Panel

The monitor panel is located inside the side door, above the doorframe, to the left of the bathroom.

Power Sources

The monitor panel controls 2 separate power sources; the 12 volt DC power and the 120 volt AC power via the inverter, shore power, or optional generator.

12 Volt DC Power

The power to the 12 volt DC outlets and appliances is controlled by the battery disconnect switch to the lower left.

On the bottom left is the battery disconnect switch, which supplies 12 volt battery power to the 12 volt light and other cabin appliances. This switch must be on for any of the 12 volt electrical devices to work. Remember to turn off two switches - the inverter switch and the battery disconnect switch when your Roadtrek is not being used to avoid discharging the batteries.

The battery disconnect switch has a blue indicator light to the right of it to show you when the battery power is on.



Monitor Panel



Inverter

The inverter provides 120 volt AC (household current) to the 120 volt appliances and wall outlets.

Shore Power

Shore power is the name for power supplied by a utility company that you plug into to provide power to your Roadtrek. See HOWTO: Shore Power for a concise guide to plugging in and unplugging from shore power.

Other Switches



Patio light switch



Zion awning switch

Patio Light

On the monitor panel, the top left switch is the patio lights switch. Press the top of the button to turn the lights on, and the bottom to turn them off. These are LED lights and use very little power.

Awning Switch

The awning switch is located to the right of the main panel. Press the top to extend the awning and the bottom to retract the awning.



Always check out the area and make sure that the awning will not extend into trees, bushes, or other obstructions.



Step switch



Water pump switch

Step switch

The step switch locks the step in its extended position. The step will always retract when the transmission is shifted into Drive.

Water Pump Switch

The centered switch to the right of the leftmost four switches is the water pump switch. It should be on only when you have water in the fresh water tanks and wish to use the sinks, showers, or toilet. The pump should not be run without water. As with the patio light switch, pressing the top of the button turns the pump on, and pressing the bottom turns it off.

Water Heater Switch

There is no water heater switch on the Zion. The water heater is "instant on", so it only turns on when there is a demand for hot water.

Tank and charge indicators

To the right of the switches are the indicator lights for the the battery charge level, the fresh water tank level, and the black and gray water tank levels. The battery disconnect switch has to be on for this display to work. Press the button for each to see the display. These will give you an approximate reading, to the nearest third, of how much is in each tank. The four indicator lights for the battery are low, fair, good, and charging.



Tank indicators



Generator switch and hour meter

Optional Generator Switch and Hour Meter

If you have the optional 2800 watt gasoline generator, the switch is to the right of the tank and charge indicators. Press the bottom of the switch for about five seconds to prime the generator, then the top to start. Press the bottom again to turn it off. The hour meter to the right of the switch keeps track of how many hours your generator has been running. There is a break-in oil change after 20 to 50 hours of operation, and other required maintenance at other intervals later on - see the generator manual for details.

Distribution Panel

The distribution panel is located in the headliner above the driver's seat. The 120 volt AC breakers and the 12 volt DC fuses are behind a black plastic cover on the right side.

AC Breaker Panel

Flip the cover to the right and note the sticker under the cover with the identifying information on each breaker. When storing the Zion for the winter, turn off the battery disconnect switch, the inverter, and all circuit breakers in this panel.

12 Volt Fuse Panel

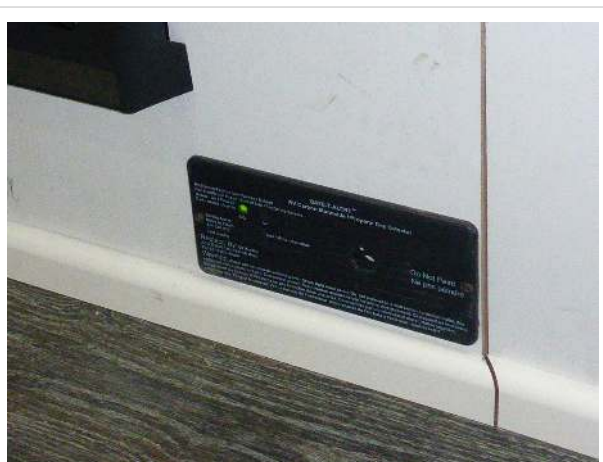
The 12 volt fuses are on the right side of the distribution panel. Again, the label on the inside of the cover lists what each fuse supplies power to.



Breaker and fuse access

Alarms and Warnings

Propane and CO alarm



Propane and CO alarm



Smoke alarm

Your vehicle has been equipped with a combination propane leak and carbon monoxide detection device for your protection. It is located slightly above floor level next to the furnace and below the fridge.

Be sure the detector is operating while using your vehicle. Do not block air circulation in the area where the propane leak detector is located. The detector runs on 12 volt power, and is operational whenever the battery disconnect switch is on. For this reason, whenever the vehicle is occupied the battery disconnect switch should be on the "on" position.



Coach power on the Monitor Panel must be on for detector operation. Make sure your battery disconnect switch is on.



Do not disable, unplug, or otherwise hinder the operation of this detector.



The detector has a useful service life, beyond which it needs to be replaced. See Manufacturer's Owner's Manual for other operating instructions, or look for the sticker which is sometimes placed on the detector to see the replacement date.



The detector may chirp every 15 seconds or so if the coach batteries are running low.

Smoke Alarm

The smoke alarm is located to the left of the side door. It requires a 9V battery and periodic replacement. Please refer to the Owner's Manual for the unit in your vehicle.



Smoke alarm is shipped with battery reversed. Check battery installation if the smoke alarm does not work.

Fire Extinguisher

Your Roadtrek comes equipped with a dry chemical fire extinguisher suitable for all fires. Before every trip, check to see that the needle on the dial is in the green range. If not, replace the fire extinguisher. DO NOT test your fire extinguisher by discharging it - total discharge time is 8 to 12 seconds, so it will become rapidly depleted if you test it this way. Service life on fire extinguishers currently supplied is 12 years; replace the fire extinguisher if it is more than 12 years past the year of manufacture stamped on the base of the cylinder.



Fire extinguisher located at front passenger seat
doorstep

Maintenance

Tires

See the automotive chassis manufacturer's owner's manual and documents for tire warranty information. Inflation pressure information is on the sticker inside the galley cabinet door. The current Dodge ProMaster manual recommends checking tire pressures regularly - at least every month, and definitely before a long trip. Tire rotation intervals depend on wear and other factors, but the current Chevrolet Express manual recommends tires should be rotated at least every maintenance interval - every 12,000 km/7500 miles. Follow the tire rotation pattern in your owner's manual.

Cargo Carrying Capacity

See the information labels attached to the driver door post, and the inside of the lower galley cabinet door.

Owner Maintenance Checks

Listed below are vehicle maintenance checks and inspections that should be performed by the owner or qualified service technician at the indicated intervals. Any adverse conditions should be brought to the attention of your dealer or qualified service technician for expert service advice as soon as possible. The owner maintenance checks are generally not covered by warranties and you may be charged for labor, parts and supplies used.

When You Stop for Fuel, or Weekly

Check engine oil level.

Look for low or underinflated tires.

At Least Monthly

Check tire pressure, including your spare.

Check coolant level in the coolant recovery reservoir.

Check windshield washer fluid, brake fluid and power steering fluid levels.

Check operation of all exterior lamps, including brake lamps, turn signals and hazard warning flashers.

At Least Every Three Months

Flush black water holding tank. Use a hose or bucket to fill the tank through the toilet, and dump.

Flush grey water holding tank. Use a hose or bucket to fill the tank through the galley sink, and dump.

Flush and sanitize fresh water tank. To flush the tank, fill it completely using the gravity fill, and drain using the freshwater tank drain underneath the right side of the driver's doorsill. Sanitize by adding 1/2 cup chlorine bleach to the tank, fill with water, let sit for at least two hours, and drain. 1/2 cup vinegar added to the next tankfull, which will also be drained before filling with fresh water for use, will help dissipate the chlorine smell.



Gravity fill on driver's doorpost



Tank drain, under driver's doorstep

At Least Twice A Year

Check windshield wiper operation. Clean wiper blades with clean cloth dampened with washer fluid. Wiper blades should be replaced at least once a year.

Check radiator, heater and air-conditioning hoses for leaks or damage.

Check for worn tires and loose wheel lug nuts.

Check parking brake system - put the brake on and see if it will hold on a moderate hill. If not, get it repaired.

Check head lamp alignment - shine your low beam headlights on a wall. The light patterns should be the same height. Measure headlight height at the vehicle with a yardstick - the light patterns should be the almost same height or slightly less with your vehicle level. If not, get the headlights aligned.

Check lap and shoulder belts for wear and function. Replace any belts with frayed spots or that do not smoothly retract into their holders.

Inspect appliance vents to ensure they are free from dirt, insects, spider webs and/or nests.

Inspect black water tank vent and remove any debris or other obstructions. The black water tank vent is on the roof, passenger side, in the bathroom area.

Clean air conditioner filter. See air conditioner manual for details.

Thoroughly clean and wax the roof of the van.

At Least Once a Year

Lubricate all door hinges, locks and latches, especially the exposed hinges on exterior doors. These will freeze up and cause damage to the doors if neglected.

Have appliances tested and cleaned.

Wax & polish and protect exterior surfaces.

To prevent water from entering your vehicle, avoid spraying water directly into exterior vents or grills. Do not use a power washer to clean your Roadtrek - damage to the paint, removal of decals, and water leaks will result. Hand washing or commercial car washes accommodating large vehicles are the best way to keep your Roadtrek clean and shiny.

Spare Tire Storage

Rear Door Spare Tire



The spare tire is located behind the propane tank



The lowering mechanism is behind the passenger side rear wheel



The spare is held in with a positive engagement spring.

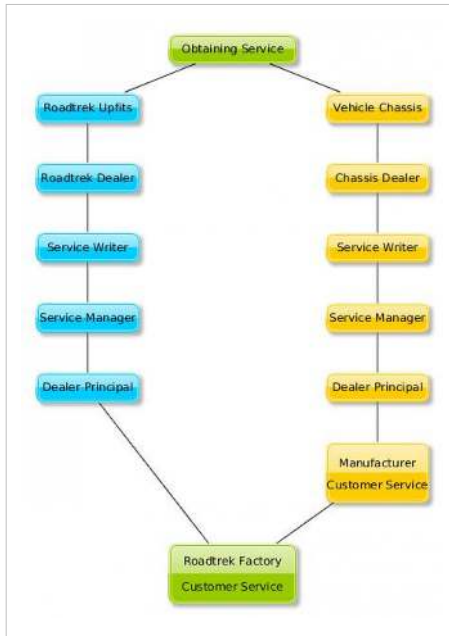
 The Zion uses a spring loaded positive locking mechanism to hold the spare tire in place. This can be quite difficult to engage on the side of the road. Roadtrek recommends that you have roadside service or that you place the flat inside the vehicle and stop at a nearby tire shop as soon as practical.

Refer to the ProMaster Owner's manual for proper spare tire replacement technique.

Obtaining Service

When your Roadtrek needs service, determine if the issue is with the Roadtrek upfits or the Dodge ProMaster Chassis.

For Roadtrek upfits, contact your Roadtrek dealer.



For chassis-related issues, contact Dodge service. Advise the service writer that you have ProMaster 1 ton van, rather than a "motorhome". Some Dodge dealerships do not want to work on motorhomes, but most can service a 1 ton commercial van.

Specifications

For general chassis specifications, please refer to the Dodge ProMaster manual. For specifications relating to your vehicle, including occupancy, weight rating, tire size, inflation, and so on refer to the sticker on the driver's side B pillar (right side of the door frame, near the latch). This specification refers to the Roadtrek upfits.

Roadtrek upfits only

Total fresh water capacity	37 gallons/ 140 liters
Gray water tank capacity	23 gallons/ 85 liters
Black water tank capacity	9.5 gallons/ 37 liters
Battery type	AGM, maintenance free
Battery Capacity	185 amp hours
Optional propane tank size	7 gallons/ 26 liters
Propane tank capacity at 80%	5.6 gallons/ 21 liters
Water heater capacity	tankless
Furnace	16,000 BTUs/hour
Refrigerator	12VDC compressor
Air Conditioner	11,000 BTUs/hour

Warranty

Chassis Manufacturer's Warranty

The automotive Chassis is warranted by the Chrysler Group. Please refer to the Warranty Information DVD for details.

All automotive service, maintenance and repairs are to be performed by any Dodge or Chrysler dealer. See the Warranty Information DVD for details. Such items are not warranted by Roadtrek. Roadtrek will pay for the removal and reinstallation of motorhome components necessary to perform automotive recalls and warranty for the duration of the original manufacturer's warranty. After this period such costs are considered to be inherent in the ownership of a motorhome and Roadtrek will not pay for the removal and reinstallation of motorhome components necessary to perform automotive service or maintenance.

Roadtrek Motorhomes Six Year *Peace of Mind* Warranty

Roadtrek Motorhomes warrants to the Purchaser that the Motorhome is free from defects in material and workmanship on the portion manufactured by Roadtrek Motorhomes, under normal use and service, for six (6) years, from date of purchase by the first Purchaser or the date the Motorhome was first put into service (for example, as a demo or rental), whichever is earlier.

This warranty shall be fulfilled at a Roadtrek Motorhomes Dealer or authorized Roadtrek repair facility. For in transit emergency repairs, you may choose to deal with a non-authorized RV service facility. However all warranty repairs at non-authorized RV service facilities must be preauthorized by Roadtrek Motorhomes. Roadtrek Motorhomes will, at its option, replace or repair free of charge (including related labor) any defective part, about which the Purchaser shall notify their Roadtrek Dealer within the warranty period. The obligation of Roadtrek Motorhomes under this warranty is expressly limited to such replacement or repair.

The provisions of this limited warranty shall not apply to the following:

1. Accident.
2. Unauthorized repairs or alterations.
3. Normal maintenance.
4. Changes made to other units manufactured after this Motorhome was manufactured. (This is not an engineer upgrade warranty.)
5. Incidental damages connected with the failure of the Motorhome such as lost time, inconvenience, loss of use of the Motorhome, cost of rental cars, gasoline, telephone, travel or lodging.

6. Damages caused by environmental factors including, but not limited to, hailstorms, tornadoes, sandstorms, stone chips, lightning, floods, earthquakes, airborne fallout, chemicals, tree sap, ocean spray, road hazards.
7. Motorhome that has been declared a total loss by an insurance company (demolished) or a Motorhome whose title indicates that it is designated as "salvage", "junk", or "rebuilt" or words of similar impact.
8. There will be no allowance for emergency road repair, towing, labor, meals accommodations, etc. Such will not be accepted if claimed under warranty.
9. Aluminum wheels are not warranted against corrosion that is a result of road salt, sea salt, cleaning chemicals or harsh driving conditions.
10. Warranty is voided if the EcoTrek batteries are tampered with, opened, or modified in any way, including attempts to change the Battery Management System programming or setpoints.
11. Warranty is voided if the EcoTrek batteries are allowed to remain in a discharged condition for extensive periods.

The provisions of this limited warranty shall not apply to deterioration due to wear and exposure beyond the following limitations:

1. For ninety (90) days after the "QualityCare" Pre-Delivery Report is completed by the dealer for appliance adjustments, door latch adjustments, light bulbs, fuses, battery in the smoke detector and window screens. After 90 days these items are considered part of normal maintenance.

Roadtrek Motorhomes Limited Motorhome Warranty is void unless the following conditions are adhered to:

1. Warranty Card on Motorhome must be completed by the Dealer and faxed to Roadtrek Motorhomes within 48 hours of date of retail delivery. When warranty applications are made and Warranty Card is not on file at Roadtrek Motorhomes, reimbursement of claim will be delayed until proof of original purchase is submitted to Roadtrek Motorhomes.
2. Warranty claims and authorization requests should be submitted using the Electronic Warranty Management system found on the Dealer Website. Including the last 8 digits of the Vehicle Identification Number (V.I.N.) and odometer reading. All claims must be submitted within 30 days of the date of repair.
3. Warranty work that will exceed \$200 must first be authorized by Roadtrek Motorhomes before proceeding with such work. The authorization number issued by Roadtrek Motorhomes must be noted on the warranty claim. See item #2 above.
4. Roadtrek Motorhomes reserves the right to inspect defective parts that have been replaced under warranty. Dealer is expected to hold selected parts for a period of not to exceed 60 days. (See below).
5. Only parts and accessories and other material, available through Roadtrek Motorhomes are to be used in the performance of warranty service. Express shipping costs are not covered by this warranty policy.
6. Warranty repairs performed a second time by a Dealer (due to incorrect or inadequate diagnosis, improper assembly or repair, or lack of proper testing when the original warranty repair was performed) are considered as shop comebacks and

are not reimbursable. Costs of such repairs must be adsorbed by the Dealer.

7. Purchasers are responsible for presenting their motorhome to a Roadtrek Dealer as soon as problem exists. The warranty repairs should be completed in a reasonable amount of time from date of authorization.

This limited warranty is expressly in lieu of any other expressed or implied warranty, including any implied warranty of merchantability or fitness for a particular purpose and of any other obligations or liabilities on Roadtrek Motorhomes which neither assumes nor authorizes any other person to assume for it any other liability in connection with motorhome manufactured by it.

Appliance Warranty

The following are not initially warranted by Roadtrek Motorhomes, but are covered by individual warranties offered by their respective manufacturers to which terms both Purchaser and Dealer must comply:

- air conditioner
- electrical inverter/charger
- electronic equipment (TV, DVD player, etc.)
- furnace or other heating system
- microwave oven
- refrigerator
- stove
- toilet
- water pump
- macerator
- water heater.

The 6 year Roadtrek warranty coverage will take over the warranty once the original manufacturer warranties expire for the remainder of the 6 year period from the date of original purchase.

While still within the terms of the appliance warranty Purchaser and/or Dealer are required to deal directly with the nearest service center for such manufactured components and abide by the warranty policy as allowed by such component manufacturers.

AGM Battery Warranty

Batteries are warranted by the battery manufacturer for one year from the "In Service Date" of the Roadtrek.

1. Warranty is voided if AGM batteries are tampered with, topped off with distilled water or allowed to sulfate or freeze due to lack of charge.

Diesel Particle Filter Warranty

For diesel vehicles equipped with the underhood generator (GU Option) Roadtrek will warranty the performance of the Diesel Particle Filter for 6 years. Contact Roadtrek directly for servicing instructions.

Warranty Intent

The intent of this extended warranty is to ensure the new owner of a Roadtrek that it is worry free from manufacturer caused defects (excluding the chassis) for the first six (6) years of use. Roadtrek owners can feel comfortable that Roadtrek is fully behind them for six (6) years, including the EcoTrek Batteries!!!

Registration

Please send this form in or email the information to sales@roadtrek.com ^[1] when you purchase your Roadtrek.

CHANGE OF OWNER NAME OR ADDRESS FORM

IMPORTANT - To owner with New Address or Used-Vehicle Buyer -
complete and mail for accuracy of recall mailing records.

PLEASE TYPE OR PRINT LEGIBLY:

1. VEHICLE IDENTIFICATION NUMBER (17 character number found on top left of instrument panel)

2. PRINT Last Name (including Jr., Sr., etc.)

3. PRINT First Name (or Initial) and Middle Name (or Initial)

4. PRINT NEW mailing Address: House/Building Number and Street Name (including St., Ave., Rd., Ct., etc.)

Apt./Suite No.

or

P.O. Box No.

or ☐RR/☐HCR (check one)

☐RR/☐HCR Box No.

City

State

ZIP Code

ZIP + 4

Area Code

Phone No.

Prov.

Postal Code

Month

Day

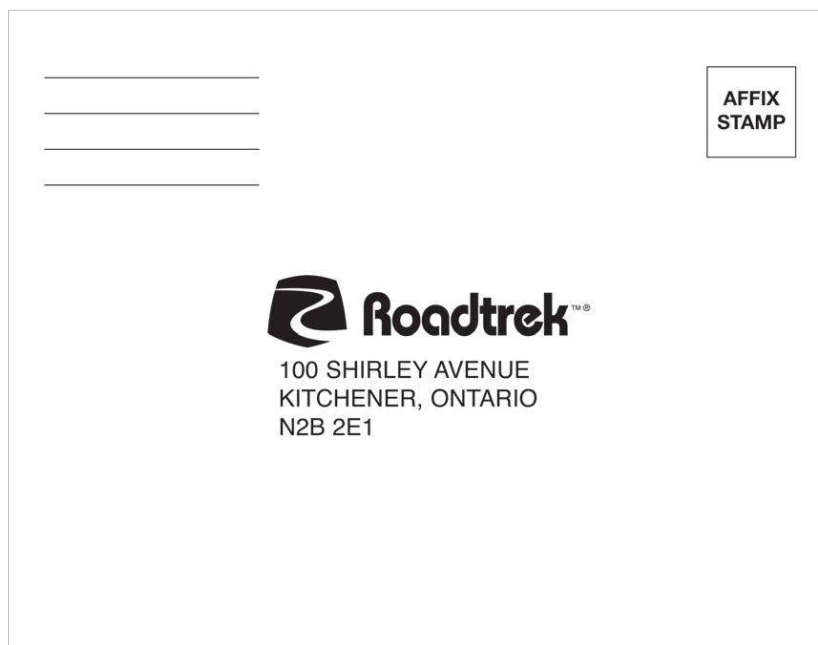
Year

Current Date

Email Address



Form 2, February 1999
M196204



References

[1] <mailto:sales@roadtrek.com>

Regulatory Notices

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration, (NHTSA) in addition to notifying Roadtrek Motorhomes.

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 dealer, and/or Roadtrek Motor Homes.

To contact NHTSA, you may call the Auto Safety Hotline toll-free at 1-888-327-4236, (or 366-0123 in Washington, DC area) or write to:

NHTSA
U.S. Department of Transportation
Washington, DC 20590

You can also obtain other information about motor vehicle safety from the Hotline.

HOWTO: Monitor Panel

The monitor panel is located inside the side door, above the doorframe. Depending on the options you have, there may be a gasoline generator starter switch and hour run meter to the right.

Battery Disconnect Switch

The battery disconnect switch turns the coach battery power off and on. When off, it prevents your coach batteries from being drained while the Roadtrek is not in use. The lights, the water pump, the fan, the refrigerator, all need 12 volt power from the batteries. If something electrical in your Roadtrek doesn't work, the first thing to check is to make sure the battery disconnect switch is on.

The battery disconnect switch is on the bottom left corner of the monitor panel. To its immediate right is a blue indicator light which illuminates to show you when the switch is on.



Monitor Panel with optional gasoline generator



Battery disconnect switch



Inverter switch

You will hear a "clunk" as the battery disconnect switch is pressed - this is a big relay connecting the coach batteries to the electrical loads.

If you hear a clunk-clunk, or nothing at all, it's possible that your batteries are depleted to the point where they cannot drive the relay. The best way to charge your batteries in this situation is to start your vehicle engine and try again after it has charged for a while. Once the relay is working, you can continue to charge with the generator or shore power.

Inverter Switch

Just as the battery disconnect switch powers the lights, fan, and other 12 volt electrical loads, the standard inverter takes 12 volt power from your coach batteries and changes it into 120 volt electricity. It powers some of the smaller 120 volt alternating current loads, such as the TV and DVD player. This is the regular electricity you have in your house. With this inverter, you can watch television or play a DVD while you are camping, without the need to plug into shore power or run your generator.

The inverter is rated for 1250 watts maximum output. Larger loads such as the air conditioner are too big to run on the power produced by the inverter, and will not operate unless you plug in to shore power or start your generator. The inverter will shut off if you try to draw too much power through it.

The inverter switch is on the left side of the monitor panel, above and to the right of the battery disconnect switch. It has an indicator light inside it that comes on to let you it's on. If you are not using any 120 volt electricity, turn the inverter off to conserve battery power, since it uses a small amount of electricity even when it's not powering any appliances.

The inverter will also shut off if the battery voltage falls below a certain level. This is to protect your batteries, wiring, and the inverter itself from damage. Your battery voltage drops under load, so it is possible to have the inverter cut off under high load when the battery voltage is normal with no load. If this happens, try turning off any power-hungry appliances and trying again. Things like electric toasters, electric curlers and hair dryers, or anything else that produces heat are usually energy hogs. Most appliances have the wattage indicated on a label somewhere on the appliance. With practice, you will learn what you can and can't run within the 1250 watt limit.

Patio Light

On the monitor panel, the top left switch is the patio light switch. Press the top of the button to turn the lights on, and the bottom to turn them off. These are LED lights and use very little power.



Patio light switch



Water pump switch

Water Pump Switch

The button to the right of the four leftmost switches is the water pump switch. It should be on only when you have water in the fresh water tanks and wish to use the sinks, showers, or toilet. The pump should not be run without water. As with the patio light switch, pressing the top of the button turns the pump on, and pressing the bottom turns it off.

Water Heater Switch

Your water heater switch is not on the monitor panel; it is on the water heater, in the cabinet to the left of the galley. This is an electric water heater that runs off 120 volt household current, so you need to be plugged in or running the optional generator to use it.

Never run the water heater without water in the tank. Fill your fresh water tank and turn the water pump on, then open a hot water faucet in the galley, bathroom, or outside shower. Once water is flowing out of the hot water faucet, you know there is water in the water heater.

Tank Levels and Battery Charge Indicator

To the right of the monitor panel switches are the indicator lights for the battery charge level, the propane tank level, the fresh water tank level, and the black and gray water tank levels. Press the button for each to see the display. These will give you an approximate reading, to the nearest third, of how much is in each tank.

Roadtrek recommends that you keep a small amount of water in your gray and black tanks at all times. This will reduce the likelihood of material sticking to the inside of the tank.

The four indicator lights for the battery are low, fair, good, and charging. Battery voltage dips under load; the greater the load the greater the voltage dip. A battery under heavy load will show much lower state than one at rest.

The propane indicators will show full when the tank is at its maximum capacity. Because of the safety-related need for a vapor space at the top of the propane tank, the maximum fill capacity is 80% of the volume of the tank. Your 38 liter/10 gallon propane tank is full when it holds 30.4 liters/8 gallons of propane. There is another gauge directly on the tank that you can see behind the propane fill door on the side of the van. This gauge has finer gradations and will give you more information about your propane level than the indicator light display will.



Tank level indicators



Generator switch, prime/off position



Generator hour meter

Optional Gasoline Generator Switch and Hour Meter

To start the generator, first push the bottom of the rocker switch for 5 seconds to PRIME, then push the top of the switch to START. Allow the generator to run for a couple of minutes before turning on heavy loads such as the air conditioner.

To stop the generator, first shut down all heavy loads, let the generator run for a few minutes to cool down, then press the STOP (bottom) side of the rocker switch.

The hour meter keeps track of how many hours your generator has been running. This is important for servicing intervals such as oil changes, etc. See your Cummings/Onan generator service manual for details. There is a break-in oil change after the first 20 to 50 hours of use. You also need to exercise your generator every month by running it for an hour under moderate load.

HOWTO: Setting Up Your Campsite

What Do You Need To Hook Up?

In a Roadtrek, the answer to this question is - a lot less than you think. Rather than slog through the setup ordeal that Class As and fifth wheels and other trailers go through, Class Bs are much more nimble. We travel light and can set up and pack up in minutes. Let's look at the differences in these different types of units and see why.

Most big rigs and trailers don't really have a self-contained philosophy - they're basically like sticks and bricks homes on wheels, which require what campgrounds call "full hookups" (electricity, water, and sewer connections at each campsite) to function. Roadtreks have big fresh water and holding tanks that the other types of RVs lack, so it's usually easier just to plug into the electricity, and not bother with the water and sewer hookups. This makes your hookup procedure a five minute process - park in a level spot and plug in. Maybe hook up the cable TV, too, if they have it at the campsite, but that's about it.

It's a different philosophy because most large RVs plunk down and don't move once they get to a campsite. They have a towed vehicle - or the truck they haul their trailer with - to take short trips around the area. Since you don't have a tow vehicle like the big rigs, you need to be able to head out to the store or go sightseeing in your Roadtrek, so the less elaborate the set-up and pack-up procedures, the better.



Full hookups - electric, water, and sewer - plus lots of company

Connected Fresh Water vs. Using your Tanks

There's no real advantage to leaving the water hooked up all the time - it's easier just to get your hose out and fill your tanks, and then put the hose away. No leaks, no hose to trip over, no need to disassemble and store all that stuff when it's time to hit the road again. In a campground with shower facilities, your water supply will last for days, and when it runs out you just get the hose back out, fill it up again, and you're ready for another few days.

Sewer Hookup vs. Dumping

The advantage of using your tanks for fresh water over a more permanent water hookup is that you're automatically reminded of when your waste water tanks are full. When you're close to running out of fresh water, that means it's time to dump your wastewater tanks. With a more permanent hookup, the reminder may be waste water backing up in your sink or toilet, which is not nearly as pleasant. The tank level indicators only tell you to the nearest third what your tank levels are.

Since you have a waste water discharge pump, the big rig's semi-permanent giant sewer hose on an inclined pathway to the dump won't work for you - you have to run the pump anyway, so why not just dispense with all that unsightly and potentially hazardous plumbing? Full hookup sites have a handy sewer dump right at your campsite. When your fresh water runs low, refill your fresh water tanks, dump your waste water holding tanks, and you're good to go, plus you can drive off anytime merely by stowing your electrical cord.



Filling your tanks

Simplify, Simplify

Campgrounds capitalize on the helplessness of non-self-contained RVs by charging a premium for full hookup sites. You aren't helpless. With an electric-only hookup, you drive a short distance to the campground's fresh water source and waste water dump every few days. Do it on the way to the store or other trip that you're going to take anyway, and it's no bother. In addition to saving money, you'll also have a choice of more campsites, since not all of them have full hookups, or the even better choice of no campsite at all to take advantage of the E-Trek's extended boondocking capability. You can stay out there until you run out of groceries if you want.

Freedom from hookups also opens up a whole range of national and provincial forest campgrounds with limited or no hookups to you. There is also dispersed camping in national forests and crown lands and other boondocking options, where you find your own campsite. There are rules for where you can and can't boondock, so check the forest websites or drop in at the ranger station for information. Once you're out there, don't look around for those big rigs who are dependent on hookups - they're all back in town. It's just you and nature, with the occasional backpacker.



Why drive all the way back to town just to smell someone else's woodsmoke? Camp where you are.

Leveling your Roadtrek

Roadtreks don't have or need the built-in leveling jacks and stands large RVs have - it's usually easy enough to move back and forth in your campsite until you're reasonably level. However, many Roadtrek owners buy and carry leveling blocks for those places where finding a level spot is difficult. These are available in most camping supply stores or can be ordered online. They go under your tires, and can be stacked in various combinations to lift the low corner or end of your vehicle enough to get comfortable. Many Roadtrek owners install a small bubble level in an inconspicuous place visible from the driver's seat to assist with the leveling process.

How level is level? In general, if it's level enough to be comfortable for you, it's probably good enough for your plumbing. If you have a choice, it's better to have the front of the Roadtrek very slightly higher than the back for air conditioner condensate drainage. If you're not running your air conditioner, it doesn't matter.



Leveling blocks

HOWTO: Shore Power

Connecting To Shore Power

Your Roadtrek has a shore power cord, which is permanently attached inside the driver's side storage compartment. Open this compartment and pull the cord out to attach to the campsite or house electrical outlet. There is a "mousehole" in the rear of the storage compartment to thread the cable through if you wish to close the compartment while plugged in.



Cord in driver's side storage compartment



"Mousehole" with small opening for cord opened. The larger hinged plastic door opens to allow the plug through.

Campsite Connections

Most RV parks and campgrounds have AC power of various voltages and amperages available at each site. The power will typically be in a pedestal with a cover that flips up. If you cannot find your power pedestal or you're not sure how to open it, ask the campground personnel.



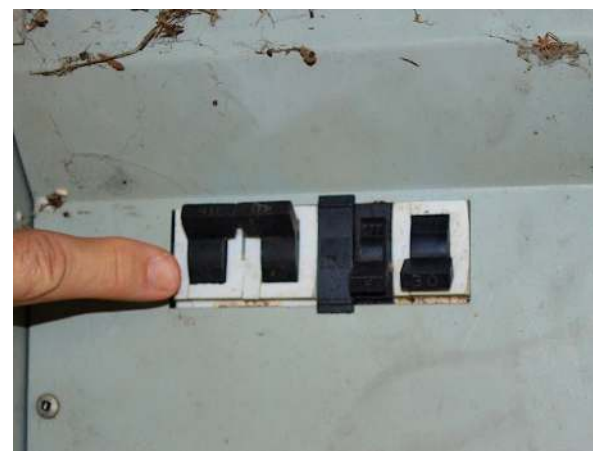
50A outlet



30A outlet



15A outlet



Breakers

A typical campsite's power pedestal will have three types of plug-in receptacles: 15 amp, 30 amp and 50 amp. The 15A receptacle is typically the same as you would find in your home. The 30A and 50A receptacles are specific to the RV industry. Other receptacles look similar but may not be wired the same. If in doubt, check with campground personnel.

The pedestal will also typically have individual breakers for the 15A, 30A, and 50A services. Many campgrounds turn off unused breakers so check that the breaker for the plug you will be using is turned on.

Your Roadtrek is equipped with a 30 Amp cord. Most power pedestals have a 30 amp receptacle.



15A to 30A adapter



50A to 30A adapter

It is possible that a campground (or perhaps a friend's driveway) will not have a 30A receptacle available for your use. You can purchase a 15A to 30A adapter and connect to an ordinary 15A household outlet.

Be aware that in those situations, you will have limited power compared to a 30A circuit. You will be able to run a single large appliance at a time; you may need to turn off your air conditioner if you want to use the microwave, for example.

If you exceed the current capacity of the receptacle you may pop the breakers in the pedestal. If this happens, turn off some appliances and reset the breaker.

It is also possible that you will find a 50A receptacle. Again, you can purchase a 50A to 30A adapter. In this case your power should not be limited as you will have the full 30 amps available. Although you are connected to a 50A service, you can only draw 30A; there is no advantage to connecting to a 50A service if a 30A service is available.

HOWTO: Potable Water Use

Your Roadtrek can operate in either fully self-contained mode, or can be connected to a water supply such as a campsite's faucet.

The city water connection is under the rear bumper on the passenger side. Unscrew the white plastic protective cap and connect your clean hose to the water faucet and this connection point. Turn the faucet on and check for leaks, tightening the connections as necessary.

 Campgrounds and municipalities vary greatly in supplied water pressure. Before connecting to external water supplies, purchase and install a pressure regulator inline with the water connection.

In a typical campground you may see the faucet with a backflow preventer attached. These look similar to a pressure regulator but do not affect the pressure. The backflow preventer is there to protect the campground. You need the pressure regulator to protect yourself from excess pressure.



Backflow preventer



Typical water pressure regulator)

 You can fill your tanks using the gravity fills.

You can connect to a city water connection whenever your Roadtrek is not winterized. The city water inlet connection is located in the small compartment just in front of the driver's side rear tire.

⚠ Roadtrek recommends that you use a potable-water hose. These are usually white in color.



City water fill is on the passenger side,
under the rear bumper



City water valve
located in the B pillar
on the driver's side
(just behind the
driver's seat)

To connect the Roadtrek's water system to an outside source:

- Turn the water pump off.
- Close the city tank fill valve by turning the handle to the vertical position.
- Close all interior faucets.
- Flush old water and any contaminants out of the water supply faucet.
- Connect your fresh water hose to the faucet.
- Attach your pressure regulator to the Roadtrek's city water connection.
- Attach a fresh water hose to the the pressure regulator.
- Slowly open the faucet of the city water source.

- The city water connection by-passes the water pump and fresh water tank. Therefore, the use of these items is not necessary when connected directly to an external water source.

To disconnect the city water connection:

- Turn off the external water source.
- Open a faucet to relieve the pressure in the system. Failure to do so will not damage your vehicle, but may result in an unexpected shower when you disconnect the hose. The rear drain just behind the city water connection is a good place for this.
- Make sure the the city tank fill valve is closed (handle vertical).
- Remove the hose from the city water connection, and replace the cap on the fill connection.
- Disconnect the hose from the supply faucet and stow it in your storage compartment. Connecting the ends is a handy way to prevent dirt or other contaminants from entering the hose while stored.



If you hear your pump running and water pressure is low inside the vehicle after disconnecting from an external water source, it is because you have not properly positioned the city water valve. Make sure the black plastic handle is vertical, and perpendicular to the water line when your water system is in self-contained mode.



Rear drain behind the city water connection

HOWTO: Waste Water Dumping

Wastewater storage and dumping

Your house is permanently connected to your septic system or a municipal sewer; you don't have to worry about the wastewater you generate because gravity takes it away. Your Roadtrek doesn't have that connection, and has to hold any wastewater until you have the opportunity to dump it at an approved dump station.



Most municipalities have severe penalties for improper disposal of human waste, especially into a watershed - fines can be several thousand dollars, and it's often a felony. Even if it's "just gray water", it will still flunk a coliform bacteria test because of the common discharge hose, which is difficult to explain to a judge. Never dispose of wastewater unless you're sure you are at an approved dump station.

Tanks

Your vehicle is equipped with a gray holding tank and a black holding tank. The gray tank holds the sink and shower water. The black tank holds the toilet waste. As a result, the black tank is a lot nastier than the gray tank.



Do not throw any paper towels, personal wipes, rags, baby wipes, tampons, hairballs, etc. into the toilet. The wastewater system is not capable of handling these types of solids and may clog up. Only use toilet paper that is intended for RVs or septic systems.



If in doubt, take a tissue, and leave it in a glass of water. Stir with a spoon a couple of times. If it falls apart into a goeey slurry after a few minutes it's safe for your tank. If it stays together, swells up, or clumps into a solid mass, it's not safe and should be disposed of in the trash and not down the toilet.



If possible, you want to dump the tanks after driving as the movement of the vehicle will have sloshed the water in the tanks, loosening any solids.



You should dump the black tank first, then the gray tank. The water in the gray tank is considerably cleaner, and will rinse any remaining solids from the hose. You should dump both tanks in sequence if possible.

Dumping the tanks



Remove the cover
thumb screws



Waste water hose in stowed position

- Remove the access door on the driver's side, just in front of the rear wheel. Two thumb screws and a lock secure this door. This will expose the black and gray water valves. Set the door aside where it won't get wet.



Macerator switch on driver's side
doorstep



Waste water hose storage

- Remove the dump hose from its compartment and extend it to the drain.



Open the valve on the end and insert
into the drain



Use a convenient rock or other weight
to hold hose down



Alternately use the rubber donut to
snug fit the hose

- Open the black water tank gate valve by pulling the black handle out.

- Push and hold the macerator button until tank is empty.
- After the black water tank is empty, close the black water tank valve by pushing in on the handle.
- Open the grey water tank gate valve by pulling the grey handle out.
- Again, push and hold the macerator button until the tank is empty.
- After the grey water tank is empty, close the gray tank valve by pushing it back in to the original position.



Always dump the black tank first and the gray tank second. The graywater will help flush any remaining solids from the dump hose.

- Use the dumpsite rinse hose to clean the end of the hose.
- Replace the hose in its compartment and close the cover.
- Add about ½ gallon of fresh water to the black tank. While you`re doing this, add a packet of black holding tank chemicals to the tank.



Do not toss the packet into the toilet, even if it claims to be `dissolvable`. It may not be dissolvable enough for the wastewater system. Tear open the packet and pour the contents into the toilet, and dispose of the packet in the trash. The contents of the powder packets can be irritating to your eyes and nose, so hold the packet low to the bowl and try to pour directly into the tank.

HOWTO: Propane System

If you have the propane option, your vehicle is equipped with a propane system which, when properly handled and maintained, will provide trouble and worry free operation of your propane fueled appliances. With the propane option, you get a propane furnace and a propane cooktop.

Regulatory Concerns

Many jurisdictions place restrictions on propane on highways, in tunnels, on ferries, and on bridges. Please follow all local restrictions in all the jurisdictions along your trip. Some bridges/tunnels/ferries require you to have your main tank valve closed. This valve must be closed whenever the vehicle is in motion in any case, not just in certain areas. Other bridge/tunnels/ferries ban vehicles with propane tanks entirely. Plan ahead and take an alternate route if passing through areas where vehicles with propane are prohibited.

Propane Tank Location

The propane tank is located at the rear of the vehicle under the back bumper.

Main Shutoff valve



Propane tank



Propane tank main shutoff valve

✗ You must close the tank shutoff valve when the vehicle is not in daily use. Further, you must close the shutoff valve when the vehicle is traveling. Never operate any propane appliance while the vehicle is in motion.

If you close the main valve for an extended period of time it is possible for the distribution lines to fill with air. It may take a while for propane to fill the lines again. Turn on one of the propane cooktop burners and light it until the air is purged and the burner lights.

Propane Tank Filling



Propane fill valve



Propane bleed

To fill the tank, first turn off all propane appliances, then turn off the tank shutoff valve.

We recommend that you find a qualified LPG technician to fill the tank. The following is an outline of the process to help you understand and not intended to be complete, nor to substitute for formal training or instruction.

✗ Do not attempt to fill the tank unless you have had appropriate training. Reading this manual does not constitute sufficient training to safely fill propane. If you overfill the tank, propane will vent uncontrollably out of the relief valve.

Attach the fill hose to the fill valve, open the bleeder valve slightly, and fill the tank to 80% capacity. The stop-fill valve should automatically stop the filling process. You may also see liquid propane spit out of the bleeder valve. Stop filling immediately and close the bleeder valve.

We recommend that you use only propane from certified LPG retailers.

Propane relief valve

There is a pressure relief valve on the tank. It is not easily visible on the Zion.

Under no circumstances should anyone fill the tank to more than 80% capacity; doing so can cause liquid propane to flow into the regulators. If this happens the regulators will have to be replaced. The relief valve with the blue plastic cover will automatically vent propane if the tank is overfilled or overheats. This is not a user-serviceable item; never attempt to remove the cover, test, or otherwise interfere with the operation of this valve. Sometimes an overfilled tank will not start venting until the temperature rises. If this valve should open, it is best to remove all sources of ignition and expeditiously leave the area until propane odor is no longer detectable. Venting unburned propane is a slightly more advantageous situation than a tank explosion, which is what this valve is designed to prevent.



Propane Sender

The propane tank has a level indicator with a remote sender to the Monitor Panel. Both the three-light system on the monitor panel and the gauge on the tank will give you a rough idea of your propane level; you will get a more accurate indication when you fill up. Note the amount it takes to fill your tank. The seven gallon tank in your Roadtrek will hold 5.6 gallons / 20 liters when completely empty and filled to the correct 80% full level. Subtract the amount you buy from this number, and you'll know how much was in the tank when you filled it. You may find that the gauge will read one light when you still have a considerable reserve, or you may find that empty means empty, and you'd be wise to refill as soon as it goes down to one light. It depends on the characteristics of your individual propane system.

Slam shut valve

The propane system is equipped with a slam-shut valve. If this valve detects a sudden increase in flow (as if from a ruptured line) or a shock (as if from an accident) the valve will shut down the propane system. The slam shut valve can also be triggered by a sudden high demand, for example turning on both burners and the furnace. If you detect weak or no propane flow, and you have checked that you have propane in the tank, shut off all appliances and the main valve.

Turn on one burner on the stove and light it. Let it burn out completely.

Slowly turn on the propane, turning the main valve very slowly, until the valve is open. Check for propane smell as you turn on the valve. You may hear a click as the slam shut valve resets.

Once the valve is open, turn on the stove and try to light it. If air entered the line, it may take a short time to purge the air out of the line.

It may take a few tries to reset the slam shut valve.

If you still have no propane at the stove, and you detect no propane smell, have a qualified technician check the system.

About Propane

Propane fuel is colourless, heavier than air and smells like garlic or rotten eggs. The odor is added by the distributor so propane may smell differently as you travel and purchase propane from various distributors. Being heavier than air it will collect in low spots and along the floor of your vehicle.

If you smell propane or your propane detector sounds, immediately get all occupants out of the vehicle and turn the manual shutoff valve off. Wait for the propane to dissipate. Once the smell is gone, take the vehicle to a qualified repair facility to find and fix the problem before using the propane system again. If closing the manual shutoff valve does not stop the propane leak and you still smell propane, do not attempt to start, drive, occupy or otherwise use the vehicle in the presence of a propane smell.



Propane tanks must not be placed or stored inside your vehicle. Propane tanks are equipped with safety devices which relieve excessive pressure by discharging gas to the atmosphere. The Roadtrek's propane tank is mounted outside the vehicle and will vent propane where it can dissipate; any tank inside the vehicle will vent into the passenger compartment, creating an explosive propane-air mixture inside the enclosed space, which also contains many potential sources of ignition.

 To reduce the danger of fire or explosion do not store gasoline or other flammable liquids inside your vehicle. In a moving vehicle, containers get tipped over or jostled and leak, and flammable vapors will create an explosive air-vapor mixture inside your passenger compartment, which also contains many potential sources of ignition.

 Purchase propane from a reputable propane facility. Contaminated propane is a common cause of system failure.

HOWTO: Water System Winterizing

Do you really need to winterize?



If your Roadtrek is going to remain heated to comfortable temperatures, and the temperatures during the day are well above freezing (above 40 deg. F or above 4 deg. C) and the forecast is for temperatures just below freezing for a few hours at night with calm winds, then you don't need to winterize. The heat in your Roadtrek is enough to keep the lines from freezing.



If the forecast is for extended cold periods, with daytime temperatures at or below freezing, if you're not heating your Roadtrek, or if you expect sustained winds and the roads and ground is already frozen, you need to winterize.



As always, you are final judge and you need to do what is comfortable and makes you feel good. If you are not comfortable with leaving water in your lines when it gets cold, and you will sleep better, go ahead and winterize.

How to winterize using anti-freeze

- Get three gallons of RV antifreeze.

❌ DO NOT use automotive antifreeze. RV antifreeze is non-toxic and safe for potable water lines.



Typical RV anti-freeze



Turn off the water heater



Fresh tank drain under the driver's door



Drain by the fresh water fill in the rear



Tankless water heater drains

- Buy three gallons of pink RV/marine antifreeze.
- Turn off the water heater. The main switch is on the outside, behind the water heater access panel on the driver's side.
- Take your Zion to a dump site and drain the gray and black water tanks.
- Turn off the water pump.
- Look for the drain underneath the driver's door for the fresh water tank drain. Open the valve and allow the tank to drain until empty.
- Open the water heater cabinet under the fridge. Open the two drain valves and let them drain.
- Look for the drain by the rear city water connection. Open the drain valve and let it drain.
- Close all four drain valves.
- Open the driver's door, remove the orange plug in the fresh water tank gravity fill, and pour in 2 1/2 of the three gallons of pink antifreeze, saving a half gallon for the drains. Replace the orange plug.
- Turn the water pump on.
- Open the galley sink faucet, both hot and cold sides, until you see undiluted pink antifreeze come out. Do the same with the bathroom sink. Flush the toilet until you see pink antifreeze coming down into the bowl. Open both outside shower faucets until you see undiluted antifreeze coming out of them.
- Turn on the city water valve for about 30 seconds. The water pump should start running.
- Divide the remaining half gallon of antifreeze between the three drains - shower, bathroom sink, and galley sink - and the toilet.

- Open the three water drain valves for a few seconds each and allow a small amount of antifreeze to leak out.
- Run the macerator until the pink stuff comes out. You may need to add a small amount of antifreeze to the black or gray tanks.



Do not attempt to bypass the water heater. The three valves in bypass configuration are for maintenance and factory testing only. The tankless water must be filled with antifreeze and must not be bypassed.

HOWTO: De-Winterizing

If you winterized only for a short time (less than a week) you can skip to the second step.

First step

You will need 2 gallons of water and 1 cup of fresh bleach. (Bleach loses its potency over time; always start with bleach that is less than 6 months old.)

1. Mix up two gallons of water and one cup of chlorine bleach. Add to the fresh water fill in the driver's door post, using a funnel.
2. This is a good time to get some stuff for spring cleaning of your Roadtrek, so drive around for an hour. Let it sit for a couple more hours.
3. Open the fresh water tank drain valve under the driver's door step, and drain the tank.

This kills any bacteria in the tanks before you distribute them through the entire water system.

Second step

- Fill and drain to ground the fresh water tank. Fill again so that the tank is filled with fresh water, adding a cup of chlorine bleach halfway through the filling process.
- Turn the water pump on.
- Run both hot and cold water through the galley and bathroom sink until all pink antifreeze is out of the lines, and the faucets are running clear. Depress the toilet valve until the water runs clear. Run the outside shower faucets until they are clear.
- Drain the remaining contents of the fresh water tank to ground, and refill with fresh water. You can help get rid of any residual chlorine smell by adding a half cup of vinegar to this tankful, letting it sit a few hours or overnight, and then draining and refilling the tank.
- You do not have to dump the water in your gray and black water tanks after dewinterizing immediately, since it's just water and antifreeze.