

Owner's Manual

210 Popular



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Introduction

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 forward facing 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 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.
	ENGINE BATTERY	The Chevrolet engine battery will be drawn down by the GM electronics to a no-start condition if left unattended for extended periods. Plug the vehicle in, drive the vehicle for at least three hours every two weeks to keep the engine and auxiliary batteries charged, or disconnect the engine battery to keep it in good condition. Battery maintenance is the vehicle owner's responsibility.

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 tanks and fill them 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 tanks for more than a week or so, and don't let ANY water sit in your tanks 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 tanks, fill both of them using the gravity fills in the driver's doorframe and rear passenger side doorframe, make sure the tank isolator valve is open, and open the fresh water tank drain under the rear of the driver's doorstep. It may take an hour or so for all the water from the rear (internal) tank to drain out through the front tank - you can speed the process by putting the tank selector valve on the internal tank, turning on the water pump, and opening the outside shower faucet.



Front (exterior) tank gravity fill



Rear (internal) tank gravity fill



Tank selector valve in interior tank position



Tank isolator valve in open position

- 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, either on your monitor panel with the standard inverter, or just to the left of it on the separate inverter switch if you have a big inverter



Battery disconnect switch



Standard inverter switch



Inverter switch for 2500 watt inverter

If you turn everything off and you have solar panels, the panels will keep your coach batteries topped up while your Roadtrek is parked outside. If you don't have solar panels, it would be prudent to check your coach battery state of charge every month or so and charge them if necessary. If you don't turn everything off, even with solar panels, you will probably come back to dead batteries.

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

Interior Living Space

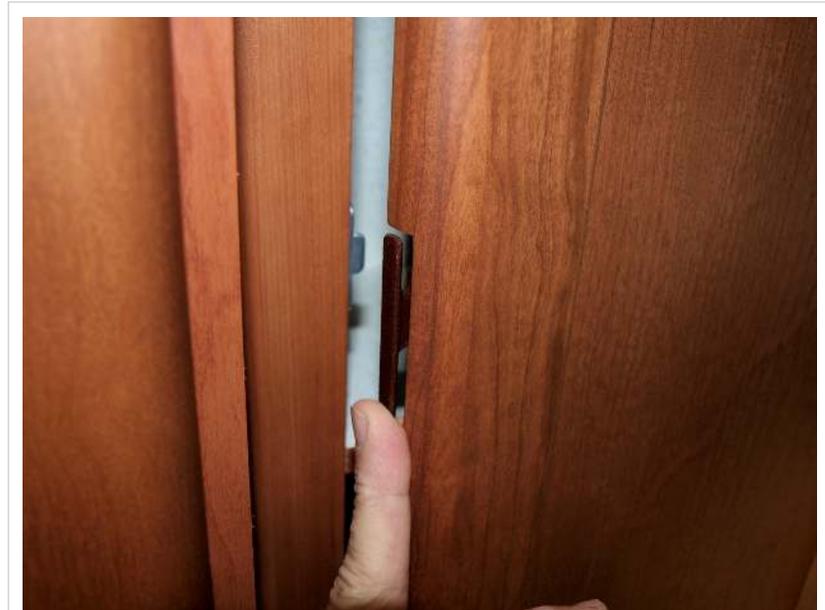
Cabinets

Cabinet latches in your Roadtrek are different from the ones in your home and more like those on boats - they have to stay closed when the vehicle is in motion. The cabinet doors are secured with latches located along the edge of the cabinet door. Run your fingers along the edge and you will find the latch. Press the latch in and open the door.

To close a cabinet door, shut it gently until you hear the latch click shut. You may need to press on the latch to get it to latch closed.

 Do not slam the cabinet door in order to latch it - this will damage the latch.

 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.



Hidden latch along edge of cabinet door

Galley cabinets

Immediately beneath the galley countertop there is a drawer with a pull knob to the right of the food preparation surface to hold silverware and small cooking utensils. The left panel is fixed, and is not a drawer.

The two cabinets below this panel on the left provide storage space for food and larger cooking utensils. The water heater is at the bottom of the left cabinet, but there are shelves above this, and more shelves in the right cabinet for the entire height of the cabinet. There are three more drawers on the right below the top drawer and the pull-out table, with hidden latches on the right side, by the driver's seat.



Galley cabinets

Lights



Fluorescent light



LED tap light

All cabin lights use 12 volts and are powered by the coach batteries, so the battery disconnect switch must be on for any of these lights to work.

The fluorescent lights turn on and off with the integrated switch at one end of the light fixture. There are three fluorescent lights down the center aisle, and one more over the galley.

The four oval and round LED ceiling lights in the back and the two more oval lights over the driver and passenger seats up front are all individually controlled, and are tap lights - to turn them off or on, press on the lens area. These LED lights use very little energy, and a good way to conserve battery power is to use them, rather than the fluorescent lights, whenever possible.

Tables



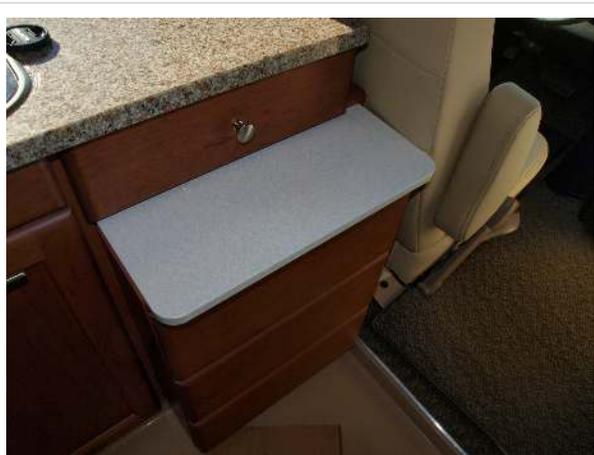
Rear dining area



Front lounge area

There are front and rear tables to use either the front or rear lounge areas for dining, playing cards, or computer use.

Front Table



Front table in cabinet



Front table in place

The front table top slides out from the galley cabinet. It does not have a table leg.
To stow the front table, slide it back into the cabinet.

Rear Table



Table leg stowed



Rear table T-Nut



Rear table set up for use

The rear tabletop is stored under the driver's side rear bench seat, and its leg is stored within the wardrobe.

The dining table for the rear seating area is located under the driver's side rear bench cushion, directly across from the TV. Lift the cushion and remove the table top. The table leg is stored in the narrow ledge above the passenger side door. Unscrew the T-nut on the end of the leg fully. Insert the T-nut into the slot in the table leg base. Rotate the leg clockwise until you feel it tighten. Pull on it to check that it is secured. If not, extend the T-nut fully by unscrewing it, and try again. Place table top on the table leg so that the top of the leg fits into the socket underneath the table.

Store the table top under the cushion with the socket seated in the hole in the side bench base, and return the table leg to the proper location and clip into place for proper storage.

Front Captain's Seats

The two captain's seats in the front of your 210P are adjustable fore and aft by pulling up on the bar under the front of the seat, and will swivel when the swivel tab - the black metal bar on the side of the chair base - 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.

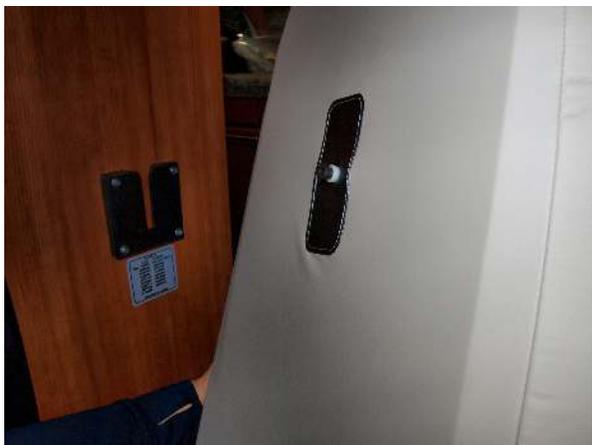
To create a front lounge area, loosen the recline adjustment and move the backs of the seats to a vertical position. Do not attempt to pivot a reclined seat. Use the fore-and-aft adjustment while swiveling the seats to allow the sides of the chairs to clear the armrests on the vehicle doors, the engine 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 facilitate clearance of the door armrests.



Front seat swivel tab, just below lumbar support control

Second Row Seat

If you have the standard bathroom, you have a third seat just inside the side door. Enclosed bathroom models do not have this seat. The second row seat has an adjustment to the seat back and bottom cushion to change the seat back angle for more comfortable seating. The back lifts up and is held by a pin in a slot (see photo below). The seat bottom cushion can be lifted and moved forward approximately three inches (8 cm) to its alternate position because of the way it is mounted to the seat base. Moving the bottom cushion forward and flipping the small panel at the base of the seat back out will configure the second row seat in a more reclined position.



Second row seat back pin and slot



Back seat configured in reclined position

Ventilation

Your Roadtrek is equipped with a ceiling mounted ventilation fan.

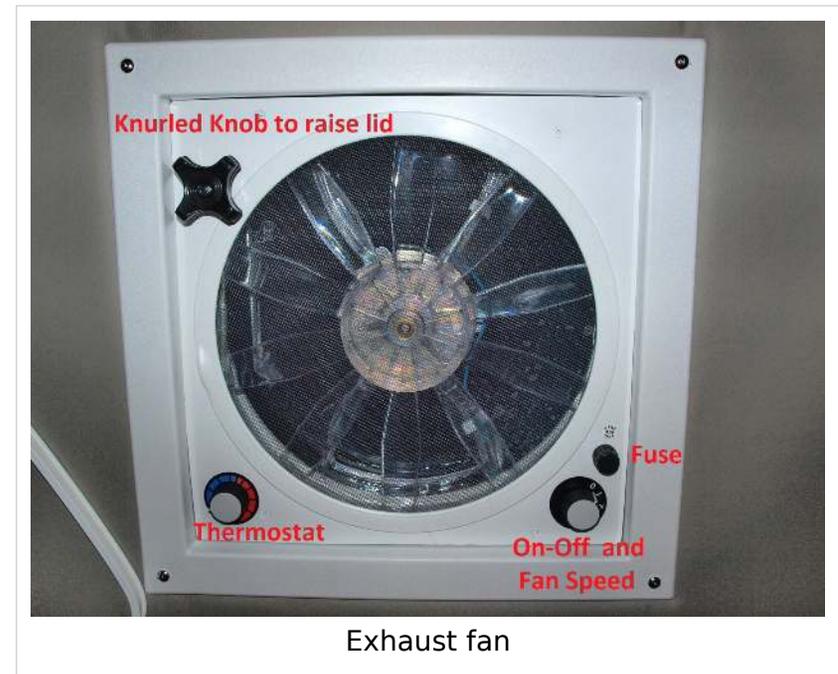
The fan has a cover that must be raised by turning the large knurled knob before the fan will operate. Raise the cover, then turn the switch to the desired speed.

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.

 When using the aisle shower, leave the fan off, or the shower curtain will be sucked in and stick to you.



Window Treatments



Skylight covers



Skylight cover storage



Curtains



Curtain rails and clips

The skylight windows in your Roadtrek can be covered using the covers stored above the side door. Place the cover against the glass and use the locking tabs to hold it in place. The smooth side faces the interior of the cabin; the side with the smaller panel attached goes toward the glass.

The window curtains for the regular windows slide on tracks. It's best to use two hands, one at each track, to pull curtains closed and open.

The curtains have snaps and clips at the end of the track to hold them in place. The front curtain meets in the middle and is secured with hook and loop fasteners along this edge.

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



Power sofa switch



Power sofa

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

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.



Twin beds



King bed

 Make sure that there are no obstructions in the travel path both above and below the sofa.

 Do not ride the sofa while it is moving.

Twin Beds

You create two twin beds by lowering the sofa. The sofa makes a continuous sleeping surface with the two bench seats, leaving the center aisle to make it easy to get in and out of bed.

King Bed



Making the king bed



Bed board in place

To make a full size bed, slide the panel under the passenger side bench seat out into the open space between the two bench seats, and secure it into the notches on the two inner surfaces of the bench seat bases. Move the bottom cushion for the bench seats together over this panel, and place the vertical cushions for the bench seats between these and the outer walls of your Roadtrek.

Optional Folding Mattress for Front Bed



Front captain's seat in position for folding mattress



Folding mattress in position



View from rearview mirror area

To set up a front bed with the optional folding mattress, turn the front passenger side captain's seat so that it is facing outward toward the front door, remove the second row seat back by lifting it up, and place the folding mattress on the front and second row seat bottom cushions. When the front seat is in position facing the door, slide it as far back (toward the center aisle) as possible to accommodate the folding mattress.

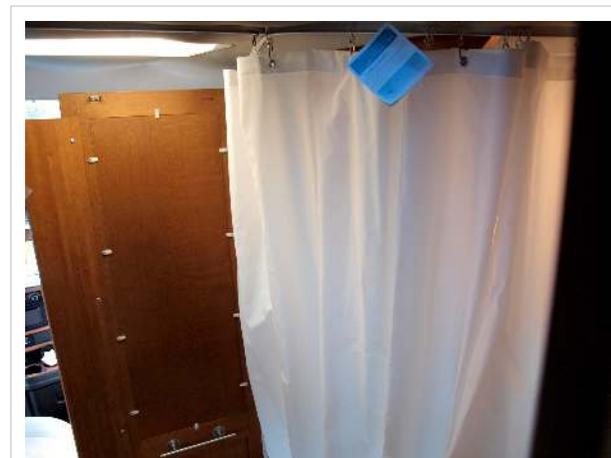
This configuration is only possible with the standard bathroom - enclosed bathroom models do not have the second row seat.

Bathroom Facilities

Enclosed Bath



Toilet



Shower curtain



Toilet pedal



Bathroom door pin

Door

The bathroom doors are secured by a pin in each door. To secure the doors for driving, close the left door first, then the right door, and then push the pins down so that they engage behind the lip at the front of the bathroom floor. This will prevent the doors from swinging open when the vehicle is in motion.

Toilet

The enclosed bathroom in your Roadtrek 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 track

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. Attach the shower hose to the water outlet just behind the bathroom sink faucet handles, and pull up on the knob on the faucet spout. Adjust the water to the correct temperature. There is a water cutoff on the shower head to help you conserve water while showering.

You can shower in the enclosed bathroom by pulling the shower curtain across the shower curtain track near the bathroom doors, or you can shower in the aisle by extending the shower curtain around the longer loop of shower curtain track which goes around the ventilation fan in the roof, and opening the drain in the aisle by removing the flat cover plate and unscrewing the drain stopper.



Shower curtain
deployed for enclosed
bathroom shower



Shower curtain deployed for aisle
shower



Aisle shower drain

When finished, either air or towel 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.



Exhaust fan



Outside shower connection

Exhaust fan

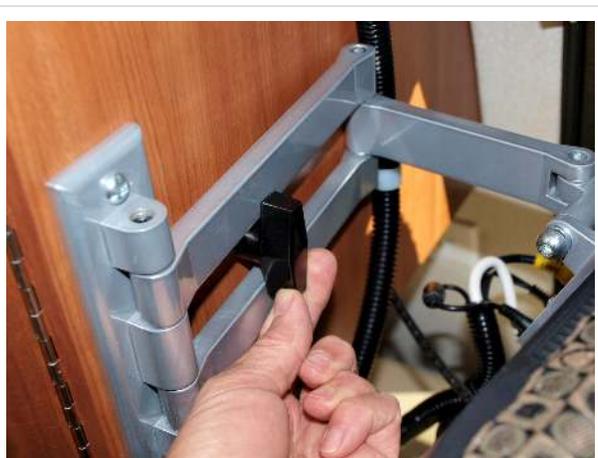
The 210 has an exhaust fan in the bathroom. Turn the white handle to open and close the vent, and turn on the fan by pushing the power button.

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



TV Bracket release



DVD player

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

Both the television and the DVD player use 120 volt current, so the inverter, generator, or shore power must be used. They are supplied with remote controls.

See the HOWTO: Cable and TV Reception for antenna connections and configuration details.

Antenna and Cable 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



Rear speaker control switch

Controlling the Rear Speakers

The surround sound system offered in your Roadtrek allows you to control the rear speaker sound in your vehicle. Locate the speaker switch which can be found in the cabinet above the home theater system.

- Surround Setting: Allows back speakers to function as part of the TV/home theater system
- Off Setting: Turns the rear speakers off
- Automotive Setting: Connects the rear speakers to the front dash radio

 If you are experiencing problems with your TV reception while using the over-the-air antenna, check to ensure the connection to the antenna signal booster located in the cabinet above the home theater system is plugged in.

 To ensure power is getting to the antenna, check to see if the blue indicator light on the antenna is illuminated, and that the indicator light on the power injector in the cabinet above the TV is illuminated.

Hot Water

The 210 Popular is equipped with a 6 gallon water heater. The heater requires both 12VDC and propane for proper operation.

See Monitor Panel for location and operation of the switch for the heater.

Refer to the Owner's Manual for maintenance.

Refrigerator

The refrigerator is a 3-way electric and propane model which that runs on DC (battery) power, AC (shore / generator) power, or propane. Propane operation allows you to operate your refrigerator for weeks on one tank of propane while boondocking, but cannot be used while the vehicle is in motion. While driving, operate the refrigerator on DC 12 volt power - the vehicle alternator generates more than enough power to run the refrigerator and keep your batteries charged while driving. You can use AC when plugged into shore power when you don't want to use propane unnecessarily.

 Never run your refrigerator on propane while at a gas station. Shut the refrigerator off while at a gas station, and turn it back on 12 volt DC after pulling away from the pumps. To ensure that neither your hot water heater nor your refrigerator generate dangerous open flames while handling fuel, always turn the battery disconnect switch OFF when refueling.

Refer to the Owner's Manual for details of operation.

Oven

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

You must 120V AC power available to use the microwave. See Electrical System for details.

Stove

The propane stove needs fresh air for its safe operation. Make sure to open a window and open turn on the overhead fan for proper ventilation.

Refer to the Owner's Manual for details of operation.



Galley stove

Outside your Roadtrek

Awning



Awning power switch



Awning attachment



Stowed awning

Your Roadtrek has an electric roll up awning. The control for the awning is located above the passenger door on the inside.

To open the awning push the rocker switch and the awning will extend. Lower the supports on each side and secure them 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. Electrical awnings have the switch inside the passenger door above the side window.

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.



The awning is only powered when the ignition switch is off. To use the awning, turn off the ignition.

Exterior Access Doors

Battery Access Door

The door just in front of the rear tire on the passenger side is for the batteries. These are maintenance free AGM batteries. There is no user maintenance possible on these batteries except keeping them charged - you never have to add water to them.

Driver's Side Doors



Driver's side access doors



Driver's side front access door showing tank dump valves



Driver's side center access door houses power cord and waste hose

On the driver's side, there are 3 doors that house items that you will use.

The small access door directly behind the driver's door has the dump valves for the gray and black tanks.

The center door has a storage area for the macerator hose and power cord. The smaller door just in front of the rear tire has the outside shower.

The rear access door has the shower and cable TV connection.

Directly above the center access door and below the galley window you will see two vent hatches. The rectangular one is for the refrigerator and the square one is for the water heater. The water heater will vent hot gasses when the water heater is running.

 Do not block either of these two vents. Dangerous fumes can enter the vehicle if you do.

 Since all these sources of open flame are near the fuel fill door on the driver's side, please ensure that all propane appliances are off when refueling your Roadtrek. In addition to making sure your main propane tank valve is shut whenever the vehicle is stored or in motion, turn the battery disconnect switch off when refueling - this will disable the water heater igniter, the refrigerator igniter, and the furnace.

Propane Access Panel

The propane access cover is located in the rear, at the center of the bumper. Flip the side latches to expose the tank valve and filler.



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.

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.



Start the zipper on the left side



Installed 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.

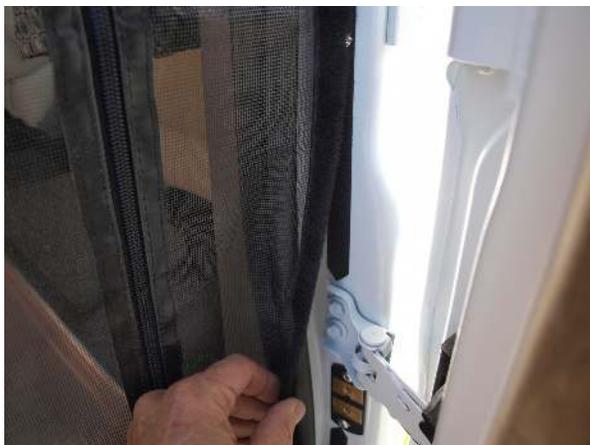
To remove and stow the screen, unzip it from the top down. Unzipping it from the bottom will not allow you to remove it from the doorframe surround.

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. There is a zipper in the screen so you can enter and exit without removing the screen.



You can access the underbed storage area without removing the screen



Hook and loop fastener for the side door screen



Installed screen

Locate the screen in the white box that comes with your new Roadtrek, and shake it out. To orient the screen correctly, look for the zipper in the screen - hold the screen so that the zipper goes across near the top and then down the right side. Start the hook and loop fastener at a convenient corner and work your way around the perimeter until the screen is secured.

To enter or exit the vehicle through the side door while the screen is installed, unzip the opening and step through. There is a zipper tab on either side so you can fasten it behind you once through.

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.



Access through the screen

Utilities

Just like your house, your 210 Popular has fresh water, electricity, waste water disposal, heating, and cooling systems. In the 210 Popular, these systems are self contained and travel with you.

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

Fresh Water

Standard Edition

Fresh water is contained in two tanks, called the exterior and interior tanks. The exterior tank is underneath the driver's seat outside the passenger compartment and thus exposed to the elements, so it is susceptible to freezing. The interior tank is inside the Roadtrek underneath the passenger side bench, and will allow you to carry and use water in mildly sub-freezing conditions.



Tank isolator valve, shown in open position (black plastic handle pointed along the water line)



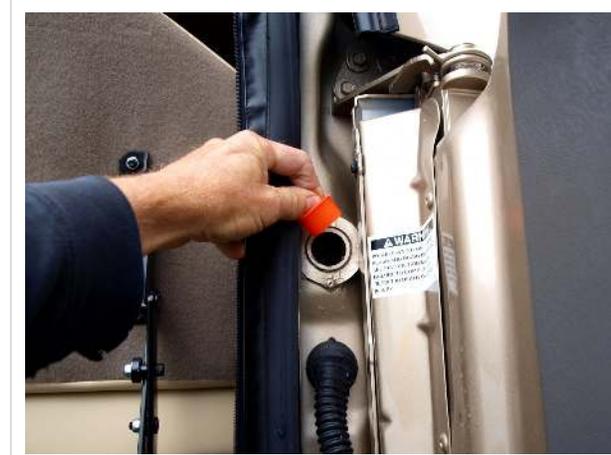
City water connection

The two tanks are connected by the tank isolator valve located in the compartment under the driver side bench, to the left of the refrigerator.

There are two fill locations.



Exterior tank fill location (driver door pillar)



Interior tank fill location (rear door, right side)

- The fill for the exterior tank is in the door post of the front driver door, near the door handle. Look for the orange plug in the fill port. With the tank isolator valve CLOSED (handle across the line), running water into the fill port will fill the exterior tank only - approximately 20 gallons.
- The tank selector valve determines which tank the water pump draws water from. It is a long handle with a plastic cover, usually red or yellow in color, located in the compartment under the driver's side bench, to the left of the refrigerator. See photos below for how to position the valve to draw from the exterior or interior tank. In summer mode, this handle is in the exterior tank position, and the tank isolator valve is open.



Tank selector valve in exterior tank position



Tank selector valve in interior tank position

- To fill the interior tank only, close the tank isolator valve and set the tank selector valve to the interior position. The interior fill is located in the rear door on the right side. With the tank isolator valve closed, running water into this fill port will fill the interior tank only - approximately 10 gallons.
- To fill both interior and exterior tanks, open the tank connection valve and set the tank selector valve to the exterior position. Fill exterior tank first, then interior tank.

 Roadtrek recommends that you use a dedicated single purpose potable-water hose. These are usually white in color. Buy a new one and use it only for filling your tanks and connecting to city water. View any hose lying around a campground with extreme skepticism, especially if there's a wastewater dump nearby. Large RVs use hoses to flush their wastewater system. Always flush faucet and hose thoroughly before use.

City Water

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 in the driver's side rearmost compartment. Unscrew the white plastic protective cap and connect your clean hose to the water faucet and a water pressure regulator attached to this connection point. Turn the faucet on and check for leaks, tightening the connections as necessary.

For more details, please refer to the HOWTO: Potable Water Use section.

Summer and Winter modes

The water system in your Roadtrek has an exterior and interior water tank. In summer mode (above freezing) both tanks can be used. In mildly sub-freezing conditions, the exterior tank must be drained and the system set to winter mode. See the HOWTO: Summer and Winter Mode for a concise description of how to operate your system in either mode. In temperatures lower than mildly sub-freezing, or any freezing temperatures when the Roadtrek is not constantly heated, you must winterize.

Summer Use

In summer mode, both the interior and exterior tank are used to store fresh water. The tank isolator valve in the water line connecting the two tanks is open, and water is drawn from the exterior tank by setting the tank selector valve to the exterior tank position. As water is used from this exterior tank, the interior tank, which is positioned higher in the vehicle, drains into the exterior tank by gravity, thus providing you with full use of the combined capacity of the two tanks. The valves to the outside shower are open, allowing use of that facility as well.

Winter Use

In winter mode, only the interior tank is used to store fresh water. The tank isolator valve in the water line connecting the two tanks is closed, and the exterior tank is drained. The interior water tank has a capacity of approximately ten gallons, and this water is protected in moderate sub-freezing conditions by the tank's position inside the heated vehicle. The valves in the water lines to the outside shower are closed, so it cannot be used, and neither can the city water connection.

Again, please refer to the HOWTO: Summer and Winter Mode section for instructions on how to configure your water system in these modes.

Water Pump

To use the water in the tank, you need to turn on the water pump. See Monitor Panel 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 materials you can 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.



Close both the black and grey water gate valves 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.

Propane System



Propane tank cover



Propane tank main shutoff - fill valve capped with yellow cap

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.

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.

The propane main tank valve must be open to operate gas fueled appliances. The propane tank valve has arrows on the handle to indicate which direction is open and which is closed.

The propane tank is located across the rear of the vehicle. To access the tank for filling and to turn the main tank shutoff valve off and on, turn the two retaining tabs on either side of the access cover, located in the center of the rear bumper, and remove the access cover.

✘ 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 the refrigerator on propane while the vehicle is in motion.

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.

There is a BBQ quick-connect pigtail secured behind the access cover. This will allow you to connect a high-pressure grill or burner to the propane supply of your Roadtrek.

If you close the main tank valve it is possible for the distribution lines to fill with air. It may take a while for propane to fill the lines again. The fridge and water heater handle this automatically; for the stove you can hear the difference between propane and air.

We recommend that you use only propane from certified LPG retailers. Please note that the tank can only be filled to 80% capacity.

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.

The relief valve is underneath the tank with a circular blue plastic cover, and 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. If this valve should open, it is best to remove all sources of ignition and expeditiously leave the area. Venting unburned propane is a slightly more advantageous situation than a tank explosion, which is what this valve is designed to prevent.

✘ Propane tanks shall 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.



High pressure BBQ pigtail

-  To reduce the danger of fire or explosion do not store gasoline or other flammable liquids inside your vehicle.
-  Ensure you purchase propane from a reputable propane facility. Contaminated propane is a common cause of system failure.
-  The auxiliary BBQ outlet is regulated to 15 P.S.I. If you are using an external grill with this hookup, ensure that the appliance is rated for that pressure or has its own regulator for lower pressure.
-  The auxiliary BBQ male connector is Cast Products part # 829000 or 829120. The hose assembly in varying lengths is available as MB Sturgis part no. 100476. These parts are available through your Roadtrek dealer.

Heating and Cooling

Thermostat

The thermostat is located above the rear bed. It controls the heating and cooling in the vehicle. This single thermostat controls both the electric heat pump and the propane furnace.

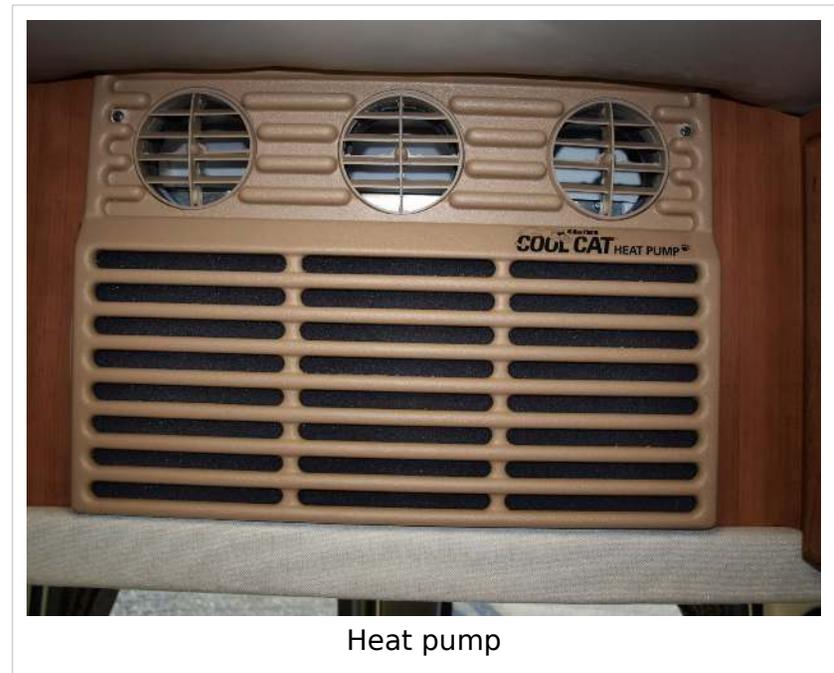
Heat Pump

The heat pump can provide both heating and cooling for your Roadtrek using electric shore power or generator power. The heat pump gives you the advantage of heating your unit with electricity if you would prefer to use electricity rather than the propane the furnace uses.

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

If you are running the heat pump 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 parked as close to level as possible 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.



Heat pump

You can use the heat pump to warm the motorhome on cool nights. For colder temperatures, below 40°F (4°C), you should use the propane furnace.

Heating

Standard Propane Furnace

The furnace is controlled by the combination thermostat located above the rear bed. The furnace requires propane and 12V power. The furnace uses minimal electricity compared to the heat pump, and 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 (absorbed glass mat) batteries. Do not attempt to open them. There is no user maintenance possible on these batteries except keeping them charged.

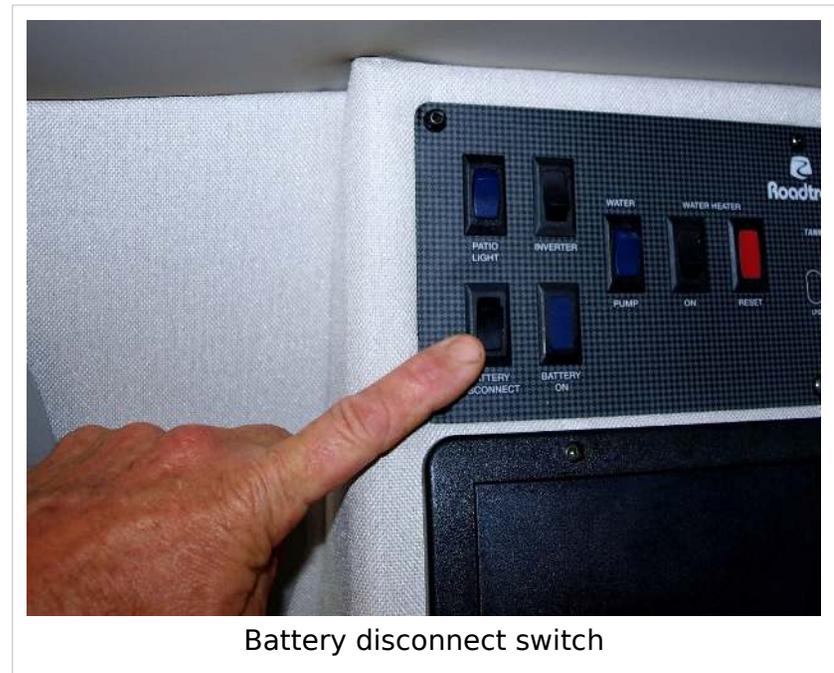
Battery Disconnect Switch

The battery disconnect switch provides power to all 12 volt appliances, such as the water pump, the refrigerator, and so forth. Even the propane cooktop uses 12 volt power to run the burner igniters. 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 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 12VDC 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

Standard Alternator Charger and Battery Isolator

While driving, your Roadtrek will also charge the coach batteries from the vehicle alternator through a separator. The separator 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 separator.

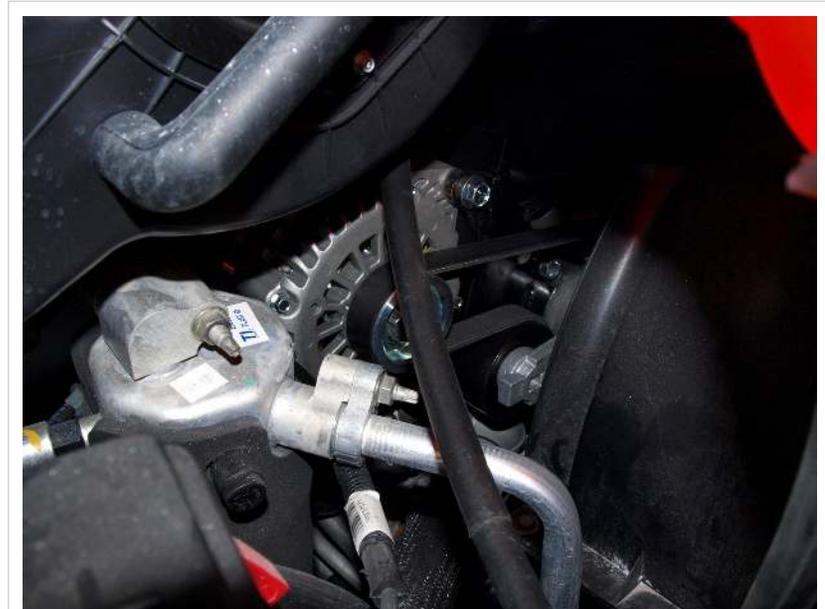
Optional Engine Generator

Your vehicle may be equipped with an engine generator. The engine generator is mounted on the vehicle engine and is operated by idling the vehicle engine. If your coach batteries are low, start the vehicle engine and let it idle until the batteries are sufficiently charged. Usually 30 minutes of idling are enough to restore moderately depleted coach batteries to a useful level of charge.

As with a conventional generator, always close the rear windows of the vehicle and turn off the roof ventilation fan when the engine generator is charging the batteries to avoid exhaust entering the vehicle's interior.

The engine generator is charging the coach batteries whenever the vehicle's engine is in operation, which means you are also charging them as you drive. You will arrive at your camping destination with fully charged coach batteries.

There is no required maintenance for the engine generator. Note, however, that your vehicle's serpentine belt (the belt which drives the vehicle's alternator, water pump, power steering, etc.) will be different than the one for similar vehicles without the engine generator, so carrying a spare belt may be prudent in case you have a serpentine belt failure while traveling.



Engine generator

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. The charge controller usually displays either system voltage or amperes generated by the panels.



On board 120 Volt AC power

Standard 750 Watt Inverter

The standard configuration includes a 750 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 is not powerful enough to operate the air conditioner or the microwave.

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.

Optional 2500 Watt Inverter

If your vehicle has the engine generator option, you also have a 2500 watt inverter. This is sufficient to run all your appliances. However, running large, high-energy appliances such as microwave ovens, air conditioning, toasters, etc. drains your batteries very quickly. If you operate these appliances, do so for a limited time unless you also have additional sources of power.



Inverter switch with standard 750 watt inverter

Instead of the regular inverter switch on the monitor panel, your inverter switch will be on its own smaller panel to the left of the main monitor panel. The switch has three positions: off in the middle position, power save auto in the top position, and power save off in the bottom position.

In the power save auto setting, when you're not using anything with 120 volt power, the inverter will put itself to sleep. In this mode, it still uses a small amount of power. If you turn on a 120 volt appliance, it senses a load and will come back on in about 20 seconds. If you select power save auto you'll reduce the electricity it takes to keep the inverter powered, and your batteries will require less recharging.

 Many appliances use a small amount of power even when off. It is possible for some of these appliances to use just enough power to get the inverter to turn on and off continuously when in power save mode. If this happens, either unplug the appliance or turn the inverter off or on.



Pressing the bottom of the switch selects power save off. When this setting is selected, the inverter will be on continuously. There is a shore power indicator light to the right of the switch to tell you the system is receiving shore power. There is also a battery charging indicator light to tell you when the batteries are being charged by shore power. Your refrigerator will run on either 12 volt battery power or 120 volt inverter power.

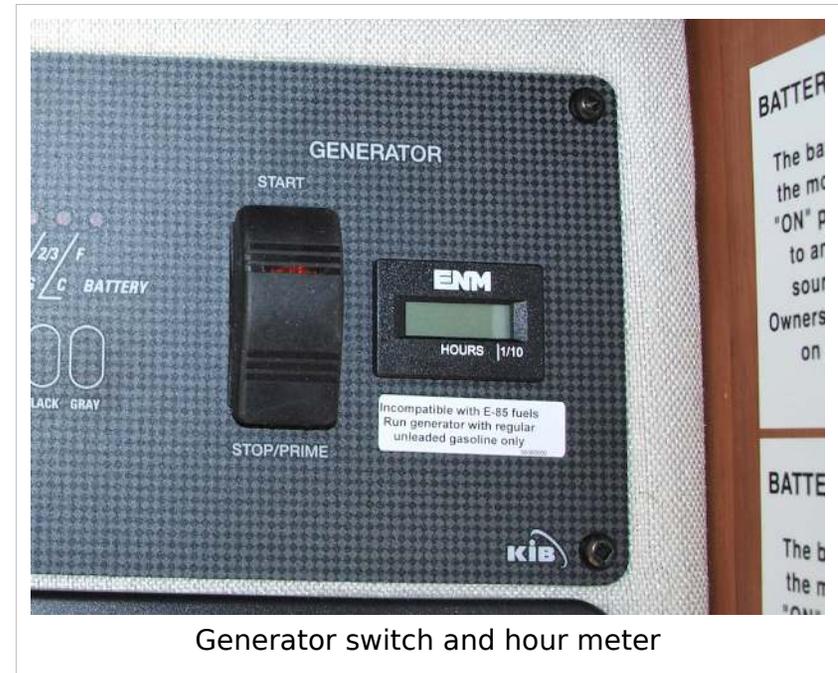
Optional Gasoline Generator

The gasoline powered generator provides up to 2800 watts of power, enough to run all your appliances. Please refer to the Onan Generator manual for operation and maintenance.

Always close the rear windows of the vehicle and turn off the roof ventilation fan to avoid exhaust entering the vehicle's interior.

There is an hour meter to the right of the switch which displays hours of generator use. Maintenance on the generator is scheduled according to hours of use. There is a break-in oil change scheduled fairly early in your generator's use, so check your Onan manual for particulars.

 Please be sure to operate the generator at half load or more (at least 1200 watts, either the heat pump or an electric heater) for one hour every month. Failure to do this can lead to internal corrosion, gumming up of the float bowl, and eventual failure.



Generator switch and hour meter

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 standard 750 watt inverter.

The electrical outlets above the galley and under the passenger side rear captain's seat 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. If you are not getting power from an outlet, check and reset this button if needed. The outlet under the passenger side chair powers the TV and DVD player, so check it if your TV is not receiving power.



GFCI outlet under rear passenger side seat

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 with standard 750 watt inverter and optional gasoline generator



Battery Disconnect



Inverter switch for standard 750 watt inverter



Inverter switch for optional 2500 watt inverter

Inverter

The inverter provides 120 volt AC (household current) to the 120 volt appliances and wall outlets. If you have the optional engine generator and 2500 watt inverter, your inverter switch is back by the thermostat on the passenger side of the rear lounge area. See the Optional Engine Generator and 2500 Watt Inverter portion of the Electrical System section for further information.

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

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.



Patio light switch



Water pump switch

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

The water heater switch is to the right of the water pump switch. As with all the other switches on the monitor panel, the battery disconnect switch must be on for the water heater to work. Even though the water heater uses propane to heat the water, all the igniters and controls are electrical.



Water heater switch



Tank status lights

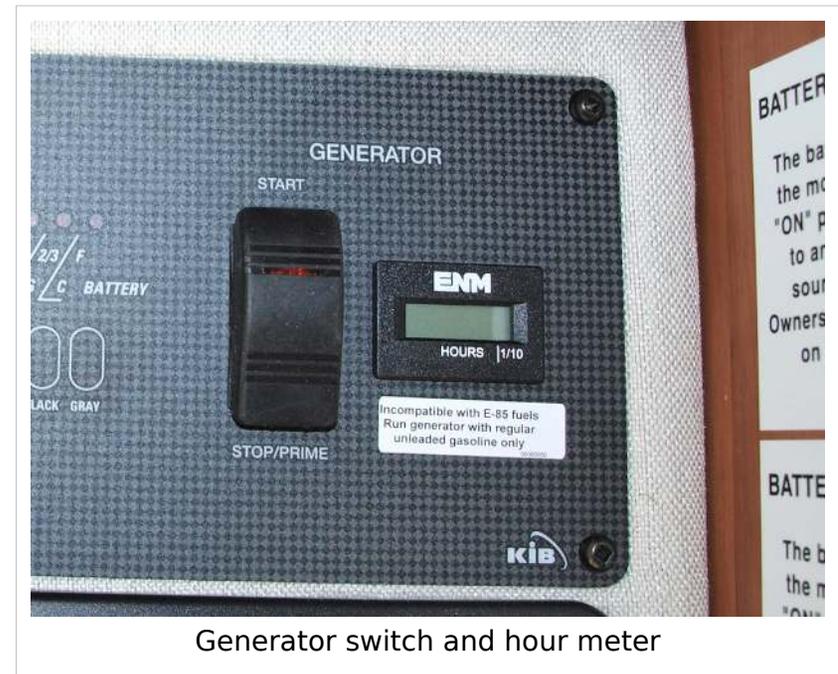
Tank and charge indicators

To the right of the monitor panel are the indicator lights for the battery charge level, the fresh water tank levels for each tank, 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.

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.



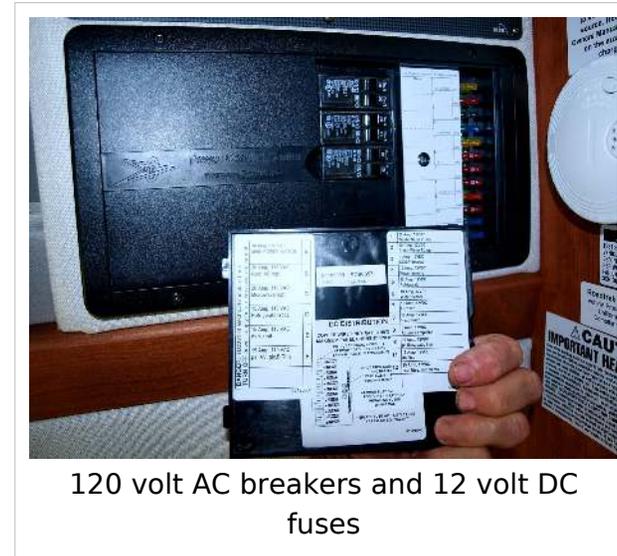
Generator switch and hour meter

Distribution Panel

The distribution panel is located above the side door, just below the monitor panel. The 120 volt AC breakers and the 12 volt DC fuses are behind a black plastic panel.



Distribution panel



120 volt AC breakers and 12 volt DC fuses

AC Breaker Panel

The 120 volt breakers are located below the monitor panel behind a black plastic cover. Flip the cover to the right and note the labels under the cover with the identifying information on each breaker. When storing the Roadtrek for the winter, turn off the battery disconnect switch and all circuit breakers in this panel.

12 Volt Fuse Panel

The 12 volt fuses are located to the right of the 120 volt AC breakers. The label on the cover has identifying information for each fuse.

Alarms and Warnings



Propane and CO alarm



Smoke alarm

Propane and CO 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 directly behind the rear bathroom door on the passenger side of the vehicle.

Be sure the detector is operating while using your vehicle, especially when you are asleep inside it.

When storing things on the floor, do not block air circulation to the propane leak detector. You should be able to see it at all times from the front of the vehicle.

The detector runs on 12 volt power, and is operational whenever the battery disconnect switch is on. There is no separate switch for the detector. There is an indicator light on the detector so that you can tell whether it's working or not. 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 if the coach batteries are running low.

The Carbon Monoxide and Propane Leak detector is located on the passenger side, near the floor under the TV. These detectors have a service life, beyond which point they need to be replaced. The detector requires no maintenance other than periodic replacement. See User Manual supplied with the unit for replacement intervals.

Smoke Alarm

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

Fire Extinguisher

The fire extinguisher is located just rear of the front passenger seat. It is 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

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 Chevrolet Express 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 tanks. To flush the tanks, fill them completely using the gravity fills, open the tank isolator valve, and drain using the freshwater tank drain underneath the right side of the driver's doorsill. It will sometimes take an hour or more for the internal tank to drain through the external tank. You can speed the process up by selecting the internal tank with the tank selector lever and running the water pump and the outside shower faucet. Remember to put it back to the exterior tank after you're done. Sanitize by adding 1/2 cup chlorine bleach to each tank, fill with water, let sit for at least two hours, and drain. 1/2 cup vinegar added to the next tankfulls, which will also be drained before filling with fresh water for use, will help dissipate the chlorine smell. Information on the location of these valves is in the HOWTO: Potable Water Use section.



Exterior tank fill location (driver door pillar)



Interior tank fill location (rear door, right side)



Exterior tank drain, under driver's doorstep



Tank isolator valve, shown in open position



Tank selector valve in interior tank position

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 hose 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.

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. To wash the solar panel, use a garden hose to rinse dirt off the panel. Do not scrub it with a brush or apply any abrasive material. Rinsing the panel a couple times a year to remove excess dirt is all you need to do to keep the panel operating at full output.

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. The wheels are coated aluminum, not bare aluminum, therefore do not use aluminum polish on any surface of your Roadtrek. The wheel center caps are chrome.

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.

Spare Tire Storage

Rear Door Spare Tire



Spare tire retaining pin



Spare tire lift latch

! Supplied with your new Roadtrek are two types of small keys. One is for the storage compartments, and the other is to unlock the chrome surround on your spare tire. Find both keys, put one of each on your key ring, and carry them with you whenever you drive your Roadtrek. If you ever need to change a tire, you will need this key.

! If your new Roadtrek still has the blue coating on the chrome spare tire cover, remove it as soon as you can. If left on for an extended period of time, particularly in the hot sun, it will become very difficult to remove.

In order to open the driver's side rear door you must lower the spare tire.

To lower the continental kit spare tire and gain access to the driver's side rear door of the Roadtrek, unlatch the retaining spring and pull the pin out while supporting the top of the tire with your other hand. It helps to wiggle the tire back and forth to allow the pin to slide out. Place the pin where you won't lose it, and grasp the top of the tire with both hands. Lower it into a horizontal position to allow the driver's side rear door to open freely. The tire will latch when horizontal.



While the tire is spring loaded it is still fairly heavy. Use proper lifting technique or get help.

To raise the spare tire back into position, lift the guard over the cable mechanism enough for the catch to clear and allow the tire to be raised. Raise the tire back up into position, and insert the pin. Flip the retaining spring over the end of the pin to secure it.

To use the spare tire, lower the tire, unlock the chrome surround with the key supplied with your Roadtrek, unbolt the tire from the carrier with your lug wrench, and lift the tire off the carrier. Follow the Chevrolet manual for instructions on the use of the jack and other tire change procedures. Install the flat tire on the spare tire carrier and reattach the chrome surround.

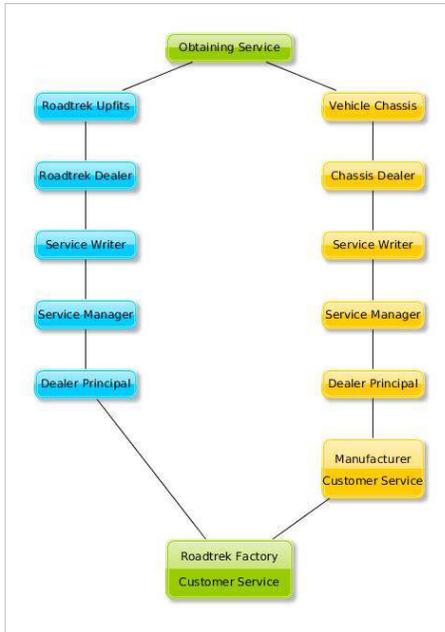


Do not attempt to raise an empty tire carrier - if you change the tire, put the flat on the carrier before attempting to raise it. NEVER release the latch on a tire carrier without a tire on it. The spring will move the arm of the carrier upward with great force and speed.

Obtaining Service

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

For Roadtrek upfits, contact your Roadtrek dealer.



For chassis-related issues, contact GM service. Advise the service writer that you have a G-30 1 ton van, rather than a "motorhome". Some GM dealerships do not want to work on motorhomes, but most can service a 1 ton van.

Specifications

For general chassis specifications, please refer to the GM 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



Sticker on driver side B pillar with passenger capacity, chassis weight and tire specs; your sticker will be different

Total fresh water capacity (includes water heater)	36 gallons/ 136 liters	
Fresh water tank capacity	30 gallons/ 114 liters	
Gray water tank capacity	23 gallons/ 85 liters	
Black water tank capacity	10 gallons/ 38 liters	
Battery type	AGM, maintenance free	
Battery Capacity	190 amp hours (standard)	440 amp hours (optional)
Propane tank size	10 gallons/ 38 liters	
Propane tank capacity at 80%	8 gallons/ 30 liters	
Water heater capacity	6 gallons/ 28.5 liters	
Furnace	16,000 BTUs/hour	
Refrigerator	3-way (propane, 12VDC, 120VAC)	
Air Conditioner	10,200 BTUs/hour	

Warranty

Chassis Manufacturer's Warranty

The automotive Chassis is warranted by General Motors. Please refer to the Chevrolet Warranty Information booklet for details.

All automotive service, maintenance and repairs are to be performed by any Chevrolet dealer. See the Chevrolet Warranty Information booklet 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 such a vehicle and Roadtrek will not pay for the removal and reinstallation of motorhome components necessary to perform automotive service or maintenance.

Roadtrek Motorhomes 5 Year Upfit Warranty

Roadtrek Motorhomes warrants to the Purchaser that the Vehicle is free from defects in material and workmanship on the portion manufactured by Roadtrek Motorhomes, under normal use and service, for five (5) years, from date of purchase by the first Purchaser or the date the Vehicle 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 Vehicle was manufactured. (This is not an engineer upgrade warranty.)

5. Incidental damages connected with the failure of the Vehicle such as lost time, inconvenience, loss of use of the Vehicle, 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. Vehicle that has been declared a total loss by an insurance company (demolished) or a Vehicle whose title indicates that it is designated as "salvage", "junk", or "rebuilt" or words of similar impact.
8. Exterior side storage compartments may not be moisture free. It is advised that you store items accordingly. Roadtrek Motorhomes is not responsible for goods damaged while stored in exterior storage compartments.
9. There will be no allowance for emergency road repair, towing, labor, meals accommodations, etc. Such will not be accepted if claimed under warranty.
10. Aluminum wheels are not warranted against corrosion that is a result of road salt, sea salt, cleaning chemicals or harsh driving conditions.

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.
2. For one (1) year from the date of original purchase sewage hose, curtain fabric, seating fabric, carpet, cup holders, exterior stripping and decals, running board trim, propane regulators and black and grey water tank valves. After one year, these items are considered part of normal wear and tear, and maintenance.

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

1. Warranty Card on Vehicle 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 vehicle 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 Vehicle manufactured by it.

Appliance Warranty

The following are not 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, in-dash radio, etc.)
- furnace or other heating system
- hydronic heating system
- microwave oven
- refrigerator
- stove
- toilet
- water pump
- macerator
- water heater.

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.

Propane or Gasoline Generator

The generator is covered by the manufacturer's warranty.

1. The generator warranty may be voided if the manufacturer's maintenance and run requirements are not met.

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.

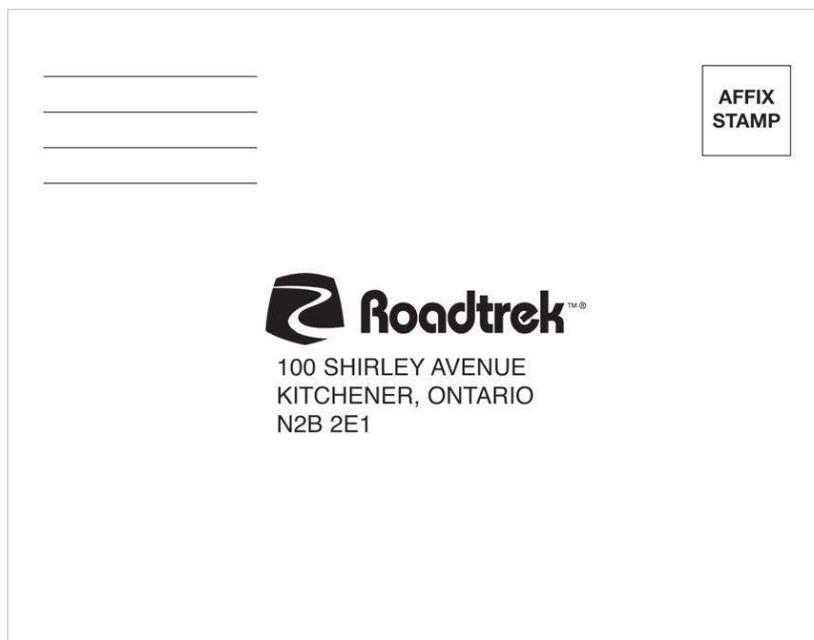
Warranty Intent

The intent of this extended warranty is to assure the new owner of a Roadtrek that it is worry free from manufacturer caused defects for the first five (5) years of use. The first owners of this unit can feel comfortable that Roadtrek is behind them for five (5) years.

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 <input type="checkbox"/> RR/ <input type="checkbox"/> HCR (check one)		<input type="checkbox"/> RR/ <input type="checkbox"/> HCR Box No.	
City			State		ZIP Code		ZIP + 4		
Area Code			Phone No.		Prov.		Postal Code		
Current Date		Month	Day	Year	Email Address				
									
<small>Form 2, February 1999 M196204</small>									



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 control board, even the igniters for the propane cooktop 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 standard inverter and optional gasoline generator



Battery disconnect switch



Standard 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 750 watts maximum output. Larger loads such as the air conditioner or microwave 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 750 watt limit.

Inverter Switch With Optional Engine Generator and 2500 Watt Inverter

Instead of the regular inverter switch on the monitor panel, your inverter switch will be back in the rear lounge area on the passenger side, just to the right of the thermostat. The switch has three positions: off in the middle position, power save auto in the top position, and power save off in the bottom position.

In the power save auto setting, when you're not using anything with 120 volt power, the inverter will put itself to sleep. In this mode, it still uses a small amount of power. If you turn on a 120 volt appliance, it senses a load and will come back on in about 20 seconds. If you select power save auto you'll reduce the electricity it takes to keep the inverter powered, and your batteries will require less recharging.



The inverter checks for a load by turning on the power briefly and checking if appliances are connected. This can cause some appliances, such as the microwave to turn on and off. If this happens, either unplug the appliance or turn the inverter off or on.



2500 watt inverter switch

Pressing the bottom of the switch selects power save off. When this setting is selected, the inverter will be on continuously. There is a shore power indicator light to the right of the switch to tell you the system is receiving shore power. There is also a battery charging indicator light to tell you when the batteries are being charged by shore power.

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 on (blue indicator light lit)

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

The water heater switch is to the right of the water pump switch. As with all the other switches on the monitor panel, the battery disconnect switch must be on for the water heater to work. Even though the water heater uses propane to heat the water, all the igniters and controls are electrical. Be sure that the water heater is full of water before turning it on - if water comes out of the hot water faucets when they are opened, the water heater has water in it. After turning it on, the red light to the right of the switch will come on for a few seconds, then go off as the burner ignites. If the light keeps going off and on, your burner is not lighting. Make sure that you have propane in your propane tank and that the main valve is open. If the stove burners light, your propane supply is good.



Water heater switch and red indicator light



Tank level indicators

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 for each of the two tanks, 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 back bumper. This gauge has finer gradations and will give you more information about your propane level than the indicator light display will.



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.



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 if you have extra batteries and solar or generator capability, or are just careful about your electricity use.

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 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? Refrigerators that run on propane require a fairly level setting to operate properly, since the refrigerant relies on gravity to circulate. Your unit has such a refrigerator. Check the manual for the specific leveling requirements for your unit, but in general, if it's level enough to be comfortable for you, it's probably good enough for your refrigerator. Front-to-back leveling is more important than side-to-side leveling. If you have a choice, it's better to have the front of the Roadtrek very slightly higher than the back both for shower drainage and heat pump condensate drainage.



Leveling blocks

HOWTO: Shore Power

Connecting To Shore Power

Your Roadtrek has a shore power cord, which is permanently attached inside the rear driver's side compartment, behind the rear wheel. Open this compartment and pull the cord out to attach to the campsite or house electrical outlet. There is a notch in the lower right edge of the compartment floor to allow you to feed the cord through and close the storage compartment door.



Driver's side rear compartment



Cord fed through
"mousehole"

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.



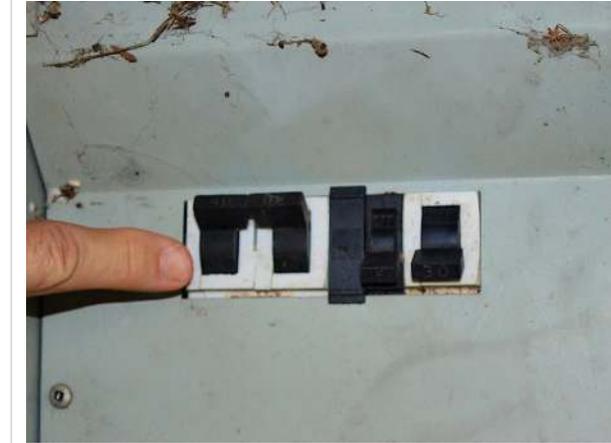
50A outlet



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.

Connecting to a Water Supply

The city water connection is in the driver's side rearmost compartment. 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

 If you have any doubts about a water supply pressure situation, you can always fill your tanks from the water source using the gravity fill, and use the water pump to supply water from the tanks.

You can connect to a city water connection when your Roadtrek is configured in the summer operation mode. The city water inlet connection is located in the small compartment just behind the driver's side rear tire.

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



City water fill location



City water valve in closed (handle vertical) position



Attaching pressure regulator to city water fill location

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

- Turn the water pump off.
- Close the city water 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 outside shower faucet next to the city water connection is a convenient place to do this.
- Make sure the the city water 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.



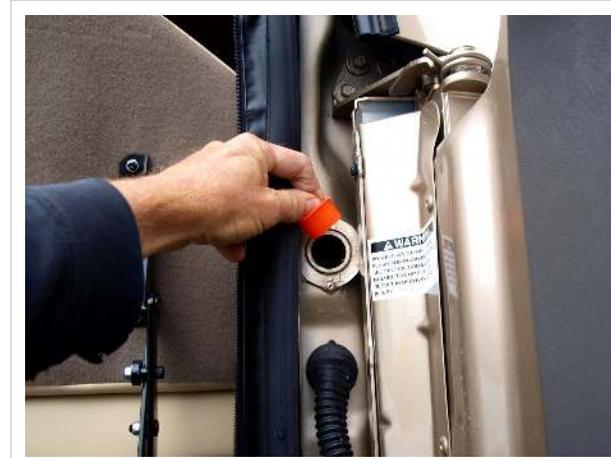
 If you hear your pump running and water pressure is low inside the vehicle after disconnecting from an external water source, it is because you have not properly positioned the city water valve. Make sure the black plastic handle is vertical, and perpendicular to the water line when your water system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

Two-Tank System in Self-Contained Mode

There are two fresh water tanks in your Roadtrek, the internal tank under the passenger side bench, and the external tank under the driver's seat. Each has its own gravity fill on the rear door passenger side door frame and driver's door frame, respectively.



Front (exterior) tank gravity fill



Rear (internal) tank gravity fill

There is a manual valve to select which tank your water pump draws water from. There is also a water line connecting the two tanks with a manual valve on it, so when this line is open water drains from the higher internal tank to the lower external tank. In non-freezing weather, the easiest way to use the system is to leave the valve on the line connecting the tanks open, and set the tank selector valve to draw water from the lower external tank. As you use water from this tank, water from the internal tank replenishes it by gravity, so you can use all of the water from both tanks simply by filling them up and turning on the water pump.

To access the tank selector valve and the tank isolator valve, open the door on the side of the driver's side bench facing the aisle, just to the left of the refrigerator. The tank selector valve has a long plastic covered handle, usually either yellow or red. When this handle is vertical, the tank selector valve is drawing water from the internal tank. You want it to be horizontal and pointing toward the driver's side of the vehicle - that's the position where it's drawing water from the external tank.



Tank selector valve in exterior tank position



Tank isolator valve in open position

The tank isolator valve is just a couple of inches to the rear of the vehicle from the tank selector valve (to your left as you look into this cabinet) and is a smaller black plastic handle on a white water line. You want this handle to be pointed along the water line (open), not across it (closed). Leave the other two black-handled valves on the left side of this enclosure alone - those are the outside shower cutoff valves. Set the tank selector and isolator valves in these positions for warm weather operation, and simply fill up your tanks when they run out. You don't have to change a thing until you need to operate in winter mode, or winterize the system. To see how to do that, check out the HOWTO: Summer and Winter Mode and the HOWTO: Water System Winterizing sections.

If you are driving for extended distances and don't want to carry extra water you don't need (36 gallons of water weighs 300 pounds, and it takes fuel to lug that much weight cross country), just put water in the front (exterior) tank at the driver's door gravity fill, and leave the back (interior) tank empty. You will still have 20 gallons or so of water for use, and will travel lighter with a better weight distribution since your rear axle will be about 85 pounds lighter. Every little bit helps. Of course, once you get to the area where you're going to camp, fill up both tanks before you head out boondocking so you can stay out for a longer time without running out of water.

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.

Waste Water Discharge Pump

Your Roadtrek is equipped with a waste water discharge pump to make dumping your tanks easier and cleaner. The macerator in this pump grinds up any solids in the system and pumps the resulting wastewater out to the dump station.

 Do not throw any paper towels, personal wipes, rags, baby wipes, tampons, hairballs, etc. into the toilet. The macerator is not capable of handling these types of solids and may jam or be damaged. Use toilet paper 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 gooey 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 and the macerator. You should dump both tanks in sequence if possible.

Dumping the tanks



Compartment with hose and valves



Compartment with dump hose

- Open the big access door of the storage drawer the driver`s side. This will expose the waste water discharge hose and black and gray tank valves in the front of this compartment.



Waste water discharge pump switch on base of driver's seat



Extending the hose

- Open the driver's door and locate the waste water pump switch. It is a red pushbutton located on the driver's seat base.
- Remove the waste water discharge hose from storage. There is a strap holding the lid on - pull the hook and loop strap to open the lid.



Open the dump hose valve



Weigh the hose down to prevent accidents

- Open the valve on the end of the sewage discharge hose.
- Insert the waste water discharge hose outlet into the dump station waste receptacle.
- There are two ways to secure the hose in the dump station waste receptacle four inch pipe. In the white box that came with your Roadtrek there is a rubber doughnut, which goes over the discharge nozzle and can be wedged into the waste receptacle to hold the waste water discharge hose in place. Some RV parks require you to use a doughnut. If you trust gravity more than friction, or don't want to store the doughnut between uses, use a rock to weight the hose down. Either way, make sure the hose doesn't get loose when you turn the pump on.

 The discharge stream is forceful and will knock the hose out of the drain if you do not weight it down or secure it in the drain with the doughnut. It is much easier and more sanitary to secure it before turning the pump on than it is to chase it around afterwards.



Rubber doughnut installed on nozzle



Open the black valve



Open the gray valve

- Open the black water tank gate valve by pulling the black handle out. It will come out approximately 3 inches (8 cm) and stop.
- Press and hold the waste water discharge pump button until the 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. It will come out approximately 1 1/2 inches (4 cm) and stop.
- Press and hold the waste water discharge pump red button until the grey waste 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.

- Close the valve on the end of the waste water discharge hose.
- Rinse off the dump area and the waste water discharge hose.
- Return the waste water discharge hose to its storage compartment. Close its lid with the hook and loop fastener strap.
- Add about 1/2 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 macerator. Tear open the packet and pour the contents into the black tank, 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.

⚠ The waste water discharge pump can be damaged if allowed to operate dry for any length of time. Turn off the pump as soon as the tanks are empty. Turn off the pump as soon as the solid stream of liquid begins to sputter, and the pump's sound changes.

Jammed Waste Water Discharge Pump

If the wastewater discharge pump stops while you are pushing the button, it's jammed. Something has gotten caught up in the blades. Release the button to stop the pump.

- Locate the manual macerator crank knob underneath the vehicle. You can see it behind the black and gray handles.
- Push in on the knob and turn clockwise; you will feel the knob engage the waste water discharge pump shaft.
- Turn the knob first in one direction and then the other to loosen the obstruction.
- Once loose, continue dumping.



Macerator manual crank knob

HOWTO: Cable and TV Reception

Your Roadtrek comes with a home theatre system. This consists of a TV, a DVD player, the speaker system and the radio in the dash, along with a rooftop TV antenna and a cable TV connection.

The TV and home theatre system are located in the rear on the passenger side. The Cable TV/Antenna switch and power injector for the built-in antenna are in the cabinet just above the DVD player.

The TV and the home theatre system must be on to use the system. Both the television and the DVD player use 120 volt current, so the inverter, generator, or shore power must be used. Refer to the Electrical System for instructions on 120 volt AC power.

The TV and DVD are supplied with remote controls.

The home theatre system has inputs for media devices. Read the Owner's manual for full details.



TV Bracket release



DVD player

The TV is stowed against the wall on a hinged bracket. The bracket is secured with a large thumbscrew. Turn the thumbscrew horizontally to release the bracket and vertically to secure the bracket to the wall.

Once released, you can swing the TV to a comfortable viewing position.

 Always stow the TV with the bracket secured to the wall for travel.



TV antenna switch and power injector



Rear speaker switch

Over-the-air TV

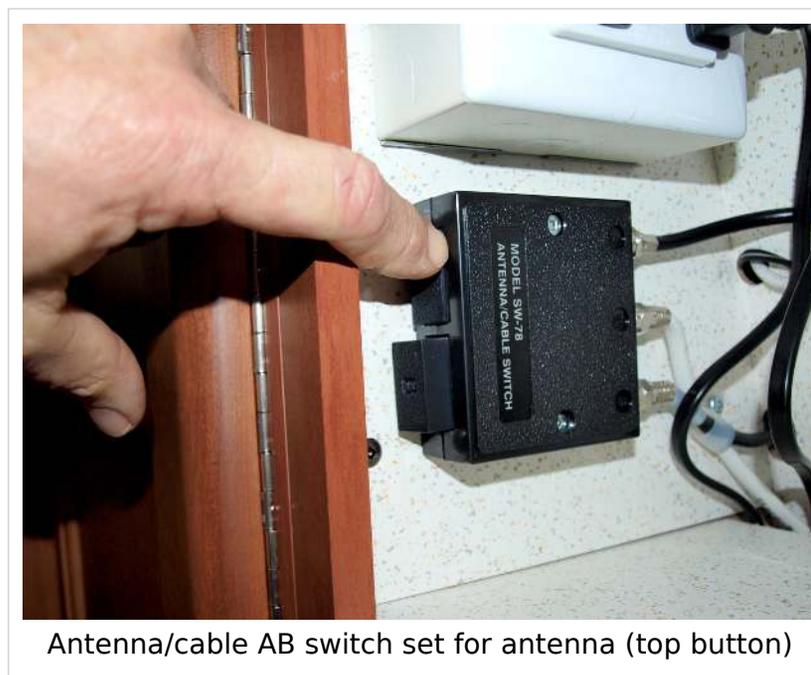
To watch TV using the Roadtrek rooftop antenna:

- Have 120 volt AC power available (inverter on OR shore power plugged in OR generator running)
- Turn on TV and home theatre system
- Make sure the power injector is on (the barrel connector is plugged into the top of the injector)
- Set the speaker selector to "SURROUND"
- Set the antenna/cable TV switch to Antenna

DVD

To watch a DVD:

- Have 120 volt AC power available (inverter on OR shore power plugged in OR generator running)
- Turn on TV and home theatre system
- Set the speaker selector to "SURROUND"



Antenna/cable AB switch set for antenna (top button)

Cable TV

To connect your Roadtrek to cable TV at a campsite or even in your driveway, first locate the Roadtrek's cable TV connection inside the rearmost driver's side compartment, behind the rear wheel. It has a square gray plastic cover about 3 cm on each side which is hinged at the top, and opens to expose the barrel connector the cable hooks to.

You need a length of coaxial TV cable to reach from the cable TV outlet to your Roadtrek's connection point. These are sold in electronic supply and camping supply stores and come in lengths of 25, 50, and 100 feet. The cable is typically sold as RG-59U or RG-6 with F-type connectors. The RG-6 is preferable but either will work.



TV cable connected

AB switch selected for
cable (bottom button)

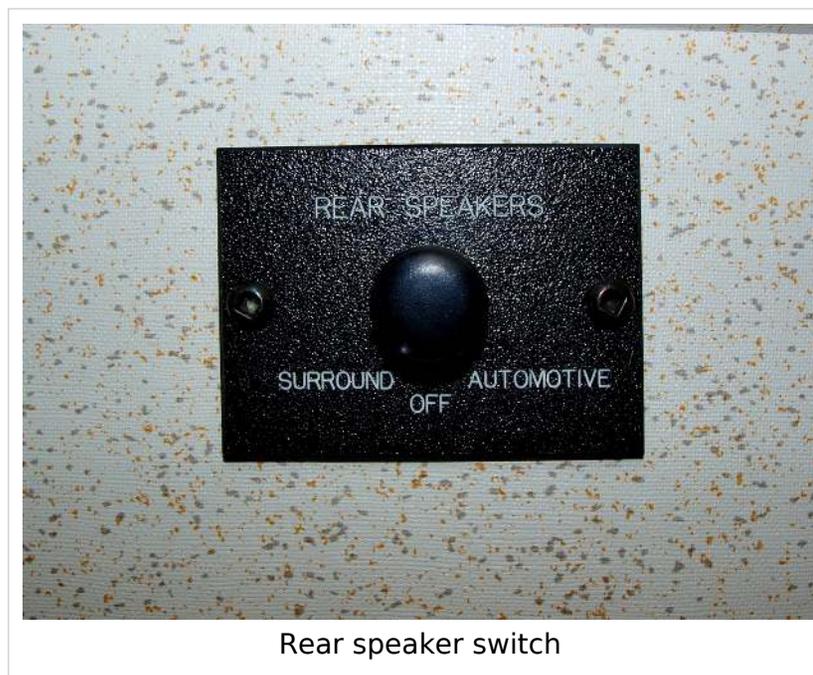
Screw the cable onto the barrel connectors at each end. If you route it through the "mousehole" in the bottom right side of the compartment floor, you can close the compartment door without crimping the wire.

Push the bottom button on the A-B switch in the cabinet above the TV. The bottom button connects your TV to the cable connection, and the top button connects it to the over-the-air signals from your rooftop antenna.

Speaker Switch

The speaker switch is located in the same cabinet as the Cable/Antenna switch. You can select Surround, Off, or Automotive.

In the Surround position, the rear speakers (the speakers above the bed) will work with the TV/home theatre system. In the Off position the speakers are off. In the Automotive position, the speakers are connected to the dash radio.



Rear speaker switch

HOWTO: Propane System

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.

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 across the rear of the vehicle. To access the tank for filling and to turn the manual tank shutoff valve off and on, turn the two retaining tabs on either side of the access cover, located in the center of the rear bumper, and remove the access cover.

Main Shutoff valve



Propane tank cover



Propane tank main shutoff

✘ 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.

The propane tank valve operates reverse from the convention; right (clockwise) is open and left (counterclockwise) is closed. 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. The fridge and water heater handle this automatically; for the stove you can hear the difference between propane and air.

BBQ pigtail



High pressure BBQ pigtail, shown with yellow dustcap and valve in closed position

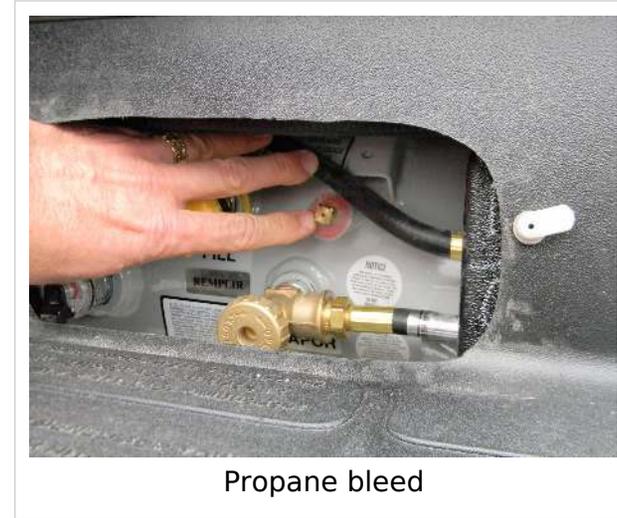


Propane pigtail with dustcap removed and valve in open position

The propane system has a high-pressure auxiliary BBQ takeoff. Locate the hose behind the access panel. The hose has a yellow dustcap, and an integral cutoff valve. This provides 15PSI regulated propane to appliances that have their own regulators or are built to use high-pressure propane. The auxiliary BBQ male connector is Cast Products part # 829000. The hose assembly in varying lengths is available as MB Sturgis part no. 100476.

The hose is available from your Roadtrek dealer.

Propane Tank Filling



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



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 ten gallon tank in your Roadtrek will hold eight gallons / 30.4 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. If you detect no propane flow, and you have checked that you have propane in the tank, shut off all appliances, shut off the main valve, and wait 10 minutes.

Slowly turn on the propane, turning the main valve 1/4 turn a minute until the valve is open. Check for propane smell as you turn on the valve.

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.

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.

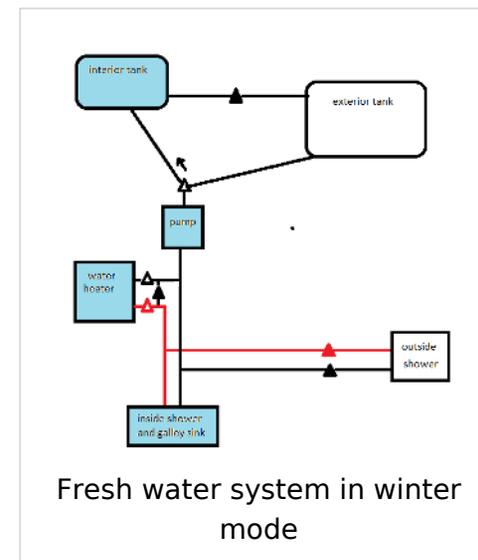
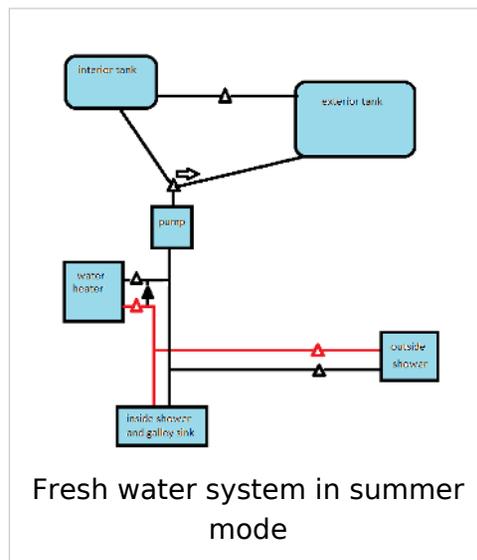
 Purchase propane from a reputable propane facility. Contaminated propane is a common cause of system failure.

 The auxiliary BBQ outlet is regulated to 15 P.S.I. If you are using an external grill with this hookup, ensure that the appliance is rated for that pressure or has its own regulator for lower pressure.

HOWTO: Summer and Winter Mode

Summer and Winter Mode

The 190 and 210 Popular models have the capability to operate in mildly sub-freezing conditions, provided the water system is properly configured. To better understand this it is best to know how the plumbing is configured. The diagrams below show how water is supplied in each mode. Solid triangles are closed valves; hollow triangles are open valves.



In summer mode, both fresh water tanks are in use. The interior tank is inside the vehicle and is filled via the gravity fill in the back door frame, and the exterior tank is below the vehicle, and filled via the gravity fill in the driver's door post. The water line between the two is open, so water flows from the higher interior tank to the lower exterior tank as the water pump draws water from the exterior tank.

In winter mode, the line between the two tanks is closed, and the exterior tank is drained to prevent it from freezing. The outside shower water lines are closed and drained to prevent them from freezing, and the water pump draws water from the interior tank, which is protected from freezing by cabin heat. The hot water heater will also not freeze if left running. In this way, hot and cold running water continues to be supplied to the galley sink, toilet, and shower.

 "Winter mode" and "winterized" are two different things. Winter mode protects the water in the system from mildly sub-freezing conditions as long as the Roadtrek is adequately heated and in use. If you plan extended stays in sub-freezing conditions or if you store your vehicle in freezing conditions, you must winterize to avoid damage to the water system. To prepare your vehicle for really cold weather, see HOWTO: Water System Winterizing

Switching from Summer to Winter Mode

To change from summer to winter mode, you perform the following steps:

- Open the enclosure under the driver's side bench just to the left of the refrigerator, and close the tank isolator valve connecting the two fresh water tanks by turning the black plastic handle so that the handle is across (perpendicular to) the water line, pointing toward the rear of the vehicle.
- Drain the exterior tank by opening the valve under the driver's door step. The valve is open when the black plastic handle is aligned with the water line. It may take several minutes for the water to drain out.



Tank isolator valve in closed position (black plastic handle pointed toward the back of the vehicle). This valve is located inside the enclosure, under the driver's side bench.



Exterior tank drain, located under the driver's door step. To open the valve and drain the tank, turn the handle so that it points along the water line.

- Run the water pump briefly to drain water from the water line to the exterior tank, then switch the tank selector valve from the exterior to the interior tank.



Tank selector valve in exterior tank position (colored plastic handle pointed toward driver's side of Roadtrek). This valve is located inside the enclosure under the side bench, just in front of the tank isolator valve.



Tank selector valve in interior tank position, with the colored plastic handle pointed up.

- Open the lid on the side bench enclosure by removing the side bench's cushion and table to expose the hinged lid. Undo the Robertson head screw to raise the lid. Once you know where these valves are you can just open the access door on the front, but it's best to unscrew the top to give you a full view if you're not familiar with these controls.



Screw to open water valve enclosure



Lid raised to expose valves and water pump

- Close the two shutoff valves going to the outside shower faucet. These valves are visible through an access hole in the enclosure floor just to the rear of the other valves. To shut these valves, turn them so that the black plastic handles are across the water line.



Outside shower valves, shown closed



Outside shower valves, shown open

- Open the outside shower faucets to drain the water from the lines. There will be no water pressure; just let the small amount of water remaining in the lines dribble out. Leave these faucets open.

In winter mode, remember that you need to keep the interior temperature at least 60 degrees F (15 C) by running the propane furnace or heat pump, and keep the water heater running. Also remember that the waste water tanks are not protected from freezing. If you use them, mix pink RV antifreeze with whatever you put down the drain 50/50. If you do not use them, drain and winterize the waste water system.

Switching from Winter to Summer Mode

- Check to be sure the exterior tank drain valve under the driver's door step is closed, and fill the exterior tank using the gravity fill on the driver's door post.
- Open the lid on the side bench enclosure by removing the side bench's cushion and table to expose the hinged lid. Undo the Robertson head screw to raise the lid. Once you know where these valves are you can just open the access door on the front, but it's best to unscrew the top to give you a full view if you're not familiar with these controls.



Water controls enclosure, under side bench



Screw to remove in order to lift lid

- Open the tank isolator valve to connect the two tanks. In winter mode the handle is across the line - turn it so that the handle points along the line.



Tank isolator valve in open position (black plastic handle pointed along line). This valve is located inside the water control enclosure under the driver's side bench to the left of the refrigerator.



Exterior tank drain, located under the driver's door step. To open the valve and drain the tank, turn the handle so that it points along the water line.

- Switch the tank selector valve from the interior to the exterior tank by moving it from the vertical position to a horizontal one pointing toward the driver's side of the vehicle.



Tank selector valve in interior tank position, with the colored plastic handle pointed up. This valve is located inside the water control enclosure, just in front of the tank isolator valve.



Tank selector valve in exterior tank position (colored plastic handle pointed to the driver's side of the Roadtrek).

- Open the two shutoff valves going to the outside shower by placing the handles parallel to the water lines, and close the outside shower faucet after running water through them briefly to flush air and any contaminants.



Outside shower valves, shown closed



Outside shower valves, shown open

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



Typical non-toxic RV antifreeze



Water valves enclosure

This procedure can be done in less an hour with only one specialized tool, a 1-1/16 inch (27 mm) socket and a ratchet or breaker bar.

- Get 2-3 gallons of RV antifreeze.

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

- Dump and rinse the gray and black tanks if they are not already empty.
- Turn off the water pump and open your single lever galley faucet, putting it in the middle halfway between the hot and cold settings.



Location of the tank isolator valve shown in the open (i.e. tanks connected) position



Freshwater tank drain valve, shown closed

- Drain the fresh water tanks by opening the black tank isolator valve on the water line connecting the two fresh water tanks (in the water valve enclosure under the driver's side bench, on the floor), and opening the drain for the exterior tank under the driver's door. Let this drain for at least 30 minutes. Close the valve between the tanks and the drain for the exterior tank.



Tank selector lever in the interior position



Tank selector lever in the exterior position

- Switch the plastic covered tank selector lever to the interior tank position (handle pointed straight up), and turn the water pump back on. Put the galley faucet in the cold position, and open it. If the interior tank is empty, the open galley sink faucet should sputter. If it emits a steady stream of water, the tank is not empty. You will need to run the water until it is empty, either catching it in a container and throwing it outside, or running it down the sink and re-dumping the gray water tank. Do so if necessary, and then turn the water pump off. Return the galley sink lever to its open position halfway between hot and cold.

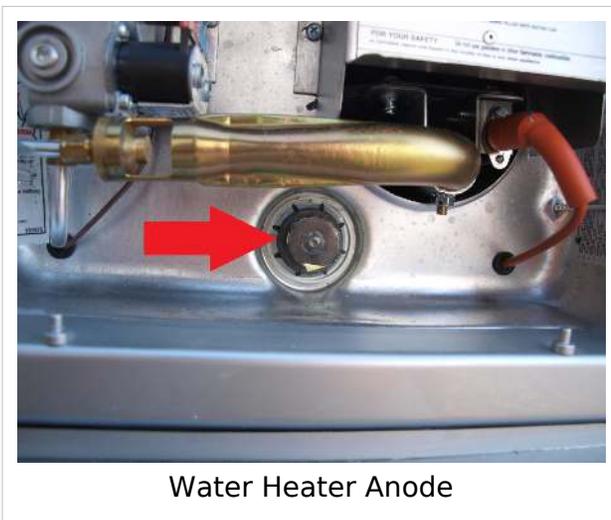


Water heater cover removal (turn tab vertically to remove cover)

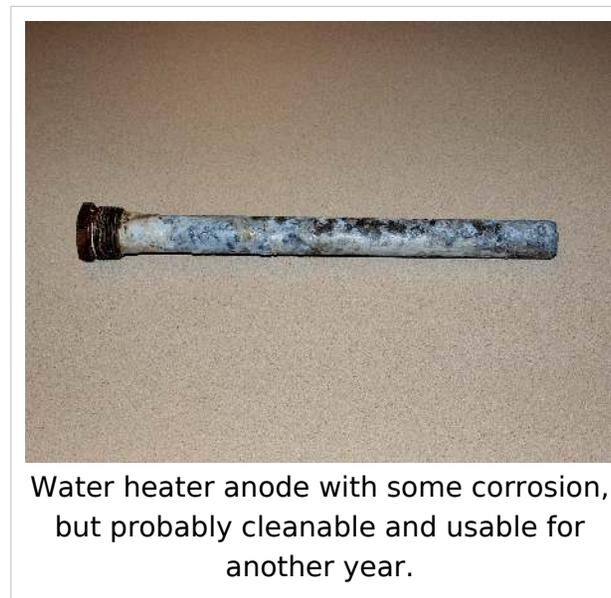


Water heater pressure relief valve

- Make sure the water heater is turned off on the monitor panel switch. Go outside and take the cover off the water heater. Pop open the pressure relief valve at the top of the water heater. A small amount of water might flow out.
 - ✘ If water is gushing out continuously, STOP! Go back to the beginning of this guide. DO NOT remove the anode rod until you figure out what's going on. You either left the water pump on, or you are hooked up to city water.



Water Heater Anode



Water heater anode with some corrosion, but probably cleanable and usable for another year.

- Drain the water heater by removing the anode rod. You will need a 1-1/16" socket and a ratchet or breaker bar.

 This is a good time to rinse out the water heater and inspect the anode rod. If the anode rod looks spongy or all that is left is a rusty iron rod, throw it away and buy and install a new anode rod. Use teflon tape on the threads to reinstall the anode rod. Do not overtighten.



Water heater bypass valves in the unwinterized, normal position



Water heater bypass valves in the bypass position

- The water heater bypass valves are in the cabinet under the sink, on the left wall. Set the valves to the by-pass position (see photo). The “middle valve” (the one on the horizontal water line connecting the two vertical lines) should be turned in line with the tubing. All handles should have been pointing vertically in the normal, summer use position. Turn each handle 90 degrees to a horizontal position to achieve the bypass position.
- Check to be sure that the fresh water drain on the exterior tank and the black and gray tank valves are all closed. Move the single lever galley faucet all the way to the cold side, and leave it open.
- Add 1 1/2 gallons of non-toxic RV approved antifreeze to the interior tank, and 1/2 gallon to the exterior tank through the gravity fill. Use a funnel and wash any spillage off the paint. Put the tank selector switch in the exterior tank position (handle horizontal, pointed toward driver's side of vehicle).
- Turn the water pump on and allow to prime. Close cold galley sink faucet once you see pink antifreeze coming out. Switch the plastic covered tank selector handle to the interior tank position.
- Move the single lever galley faucet to the hot side, and run until you see pink antifreeze come out. Open both hot and cold faucets in the bathroom sink. Open the toilet valve. Open the hot and cold faucets on the outside shower. Leave the outside shower valves open, or open them if you were in winter mode. Observe the antifreeze flow through all fixtures, then close each fixture. Ensure antifreeze flows into all P-traps (galley sink, washroom sink, and shower). You may also consider adding antifreeze from the extra gallon in the container jug to the shower floor-pan trap.



Valves for outside shower lines, shown
open



Valves for outside shower lines, shown
closed

- If the water pump loses its prime in this process, add more antifreeze to the interior fresh water tank.
- Open the grey and black waste tank valves, and operate the waste water discharge pump for about 10 seconds. You should see pink antifreeze coming out of the waste water discharge hose.



City water connection valve, shown closed



Water pump filter, inside water heater enclosure

- Turn the city water connection valve on. The water pump will operate. Allow it to run about 20 seconds. Turn city water connection valve off.
- Turn the water pump off and open a galley sink faucet to release back pressure.
- Open the valve on the water line connecting the two fresh water tanks (in the water heater compartment on the floor, left side, at the base of the large speaker) to allow the remaining antifreeze in the interior tank to drain into the exterior tank.
- Open the fresh tank drain line briefly until antifreeze flows out.
- Remove water pump filter if so equipped. Replace water pump filter lid.

Winterizing using compressed air

Roadtrek recommends against using compressed air for winterizing.

Other methods of winterizing

Roadtrek only recommends the winterizing method outlined above using RV antifreeze.

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 4 gallons of water and 2 cups of fresh bleach. (Bleach loses its potency over time; always start with bleach that is less than 6 months old.)

1. Close the connecting valve between interior and exterior tanks. This valve is located under the drivers side bench seat inside the water valve enclosure.



Valve connecting the interior and exterior tank, shown closed



Exterior tank drain, under driver's door step

1. Mix up two gallons of water and one cup of chlorine bleach. Add to the interior tank fresh water fill on the right rear door doorpost.
2. Mix up two gallons of water and one cup of chlorine bleach. Add to the exterior fresh water fill, the one on the driver's doorpost. You now have a chlorine mixture in both water tanks.

3. 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.
4. Open the connecting valve to the exterior tank and let mixture drain into that tank.
5. Open the exterior tank drain valve and drain both tanks. This can take an hour or so. You can speed up the process by putting the tank selector valve on the interior tank, turning the water pump on, and opening the outside shower faucet until no more water comes out. Close the faucet and turn the water pump off.

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

Second step

You will need a good supply of fresh water and a cup of chlorine bleach.

- Close the connecting valve.
- Fill the exterior fresh water tank approximately 1/2 full, adding a cup of chlorine bleach halfway through the filling process.



Filling the exterior tank



Tank selection valve in exterior tank position



City water valve in closed position

- Put the plastic covered tank selector handle in the exterior tank position (pointed toward the driver's side of the vehicle). Turn on the water pump, and circulate the dilute bleach solution through the entire system. The water heater is still winterized. Run water out of all three faucets (galley, washroom, and outside shower), hot and cold, until you smell

chlorine. With the water pump on, open the city water valve and let the pump push water through the fill line for a minute or so. Close the city water valve.

- Pull the anode rod out of the water heater and flush out the water heater tank with a hose. Install the new anode rod using Teflon tape on the threads, and close the pressure relief valve. Take the system out of water heater bypass mode by turning the three valves on the lines in front of the water heater so that the handles all point vertically.



Anode rod location



Water heater bypass valves in normal position - all handles vertical

- Open the galley sink, move the handle in the hot water direction, and run the water pump until water flows from hot water tap at sink and you smell chlorine. The water heater holds six gallons, so it will take a while for it to fill up.
- Allow the system to sit overnight.
- Drain both tanks completely, fill both fresh water tanks with clean water, and run all faucets for 2-3 minutes each. To help get rid of the residual chlorine smell, pour a half cup of vinegar into each tank, fill, let sit for a few hours, drain, and refill with fresh water.