

Owner's Manual

2016 CS Adventurous



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HOWTO: Monitor Panel



Monitor Panel with 1250 watt inverter and optional propane generator



Monitor Panel for CS with optional 2500 watt inverter and engine generator

The monitor panel is located inside the side door, above the passenger side rear captain's seat. Depending on the options you have, there may be an inverter switch to the left of the main control panel and there may be a propane generator starter switch and hour run meter to the right.

The monitor panel monitors your battery and tank status, and provides controls for all of the on-board utilities.

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, 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 when the switch is on.

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. Take steps to charge your batteries, such as starting the vehicle engine, and try again after building the batteries up to a charge level where they will power the relay.



Battery disconnect switch on

Inverter Switch with 1250 Watt Inverter

Just as the battery disconnect switch powers the lights, fan, and other 12 volt electrical loads, the inverter powers some of the 120 volt alternating current loads. This is the regular electricity you have in your house.

The inverter takes 12 volt power from your coach batteries and changes it into 120 volt electricity. It powers the television and home theatre system, plus some other outlet or outlets, depending on model. With this inverter, you can watch television or play a DVD while you are camping, without the need to plug into shore power or run your generator.

The inverter is rated for 1250 watts maximum output, larger loads such as the air conditioner are too big to run on the power produced by the inverter, and will not operate unless you plug in 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 shut off if the battery voltage falls below a certain level. This is to protect your batteries, wiring, and the inverter itself from damage. Battery voltage drops under load, so it is possible to have the inverter cut off under high load and then the battery voltage will come back up to normal with no load.



1250 watt inverter switch



2500 watt inverter switch

Inverter Switch with 2500 Watt Inverter

If your Roadtrek has the engine generator and 2500 watt inverter option, 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.

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, but will use less electricity if the inverter switch is off because of the conversion loss. If all you're running is your refrigerator, turn the inverter off.

Patio Light

On the control 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 with standard inverter



Water pump switch with 2500 watt inverter

Water Pump Switch

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

Water Heater Switch

There is no water heater switch on the monitor panel. Most CS Adventurous models come with Alde hydronic propane-powered water heating systems. These have their own control panel mounted in the rear lounge area behind the driver's side bulkhead to the left of the galley. Some CS Adventurous models have the optional Webasto diesel-fueled heating and hot water system. The control for this unit is behind the television on the passenger side of the rear lounge area. Follow the instructions in the Alde and Webasto manuals.

Tank Level and Battery Charge Indicators

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

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

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

The propane indicators will show full when the tank is at its maximum capacity. Because of the safety-related need for a vapor space at the top of the propane tank, the maximum fill capacity is 80% of the volume of the tank. Your 60 liter/16 gallon propane tank is full when it holds 48 liters/12.8 gallons of propane. There is another gauge directly on the tank that you can see behind the front utility bay door at the bottom of the driver's side. This gauge has finer gradations and will give you more information about your propane level than the indicator light display will.



Tank level and battery charge indicators



Generator switch and hour meter

Optional Propane Generator Switch and Hour Meter

To start the generator, push START until the engine catches, then release. 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 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.

HOWTO: Setting Up Your Campsite

What Do You Need To Hook Up?

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

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

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



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

Connected Fresh Water vs. Using your Tanks

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

Sewer Hookup vs. Dumping

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

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



Filling your tanks

Simplify, Simplify

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

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



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

Leveling your Roadtrek

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

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



Leveling blocks

HOWTO: Shore Power

Connecting To Shore Power

Your Roadrek has a shore power cord; depending on the model it may be removable or permanently attached. Refer to the Electrical Section in this manual for details.

The power cord is designed to fit into a standard 30A RV outlet.

Campsite Power Connections

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



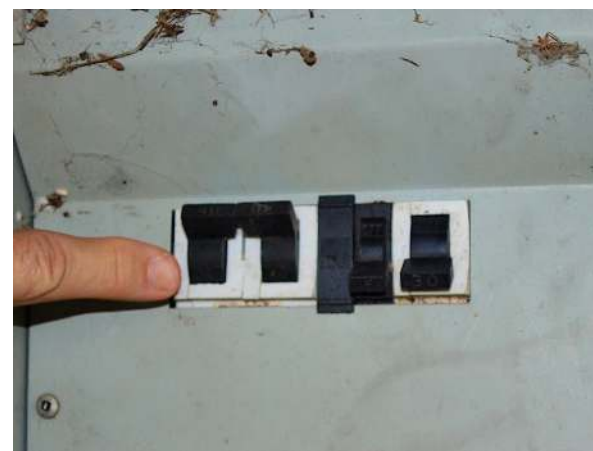
50A outlet



30A outlet



15A outlet



Breakers

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

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

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



15A to 30A adapter



50A to 30A adapter

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

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

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

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

HOWTO: Potable Water Use

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

The city water connection is in the driver's side front access bay, to the left of the propane tank. Unscrew the white plastic protective cap and connect your clean hose to the water faucet and to a water pressure regulator attached to 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 (Owner supplied)



City water fill location



Built-in pressure regulator

! If you have the words "Pressure Regulator" stamped on your city water connection, you do not need an external pressure regulator. If in doubt, use an external 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.

The city water inlet connection is located in the front driver's side compartment, to the left of the propane 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.



Access to the city water valve, side door



Screws holding plastic radiator cover on



City water valve in closed, across-the-line position

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

- Turn the water pump off.
- Close the city tank fill valve. To do this, bend the plastic radiator cover slightly so that the notches held by screws slip loose. Remove the plastic cover and the city valve is inside the exposed opening on the left side of the side door step. Turn the handle vertically to the across-the-line position (see photos above).
- 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 your 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. Leave your water pump turned off when connected to city water.



Attaching pressure
regulator to city water
fill location



Hose connected

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 galley sink is a convenient place to do this.
- Make sure the city tank fill valve is closed (handle across the line).
- 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 inside your vehicle. Connecting the ends is a handy way to prevent dirt or other contaminants from entering the hose while stored, and residual water from leaking out.



If you hear your pump running constantly, 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 perpendicular to (across) the water line when your water system is in self-contained mode.

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 disposal 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 will 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 goeey slurry after a few minutes it's safe for your tank. If it stays together, swells up, or clumps into a solid mass, it's not safe and should be disposed of in the trash and not down the toilet.

- ❗ If possible, you want to dump the tanks after driving as the movement of the vehicle will have sloshed the water in the tanks, loosening any solids.
- ❗ Make sure the tanks are as full as possible before dumping - you may wish to use a hose or bucket to add water to the black water tank through the toilet if it is less than 1/2 full.
- ❗ 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



Sprinter side compartments



210 Popular side compartment

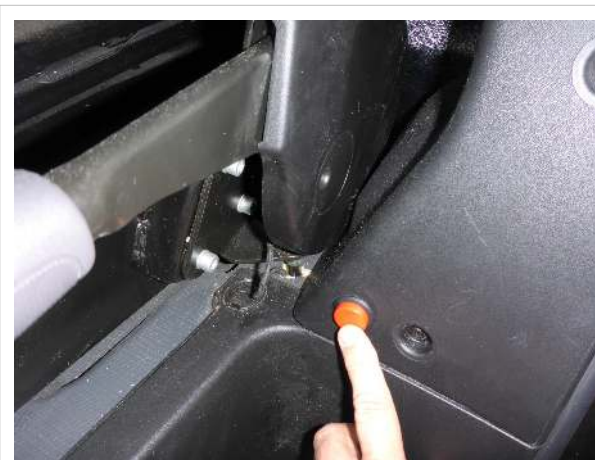
- Open the compartment doors or drawer behind the driver. This will expose the green waste water discharge hose and controls.

⚠ Depending on your model, your hose and dump valve location may look a bit different. Take the time to identify all of the components before you start.

- Open the driver's door and locate the waste water pump switch. It is a red pushbutton located on the driver's seat base or on the B pillar.



Macerator button on base of driver's seat



Macerator button on the B pillar behind driver

- Remove the waste water discharge hose from storage by pulling it straight out far enough to reach the dump.
- Insert the waste water discharge hose outlet into the dump station waste receptacle.
- Open the valve on the end of the sewage discharge hose by turning the black plastic handle to align with the hose.



Extending the hose



Open the dump hose valve

- 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



Rock used as weight to hold the hose

- Push the jogger handle in and turn it to loosen any materials in the macerator. Pull the jogger handle out.
- Open the black water tank gate valve by pulling the black handle out. It will come out approximately three inches (8 cm) and stop.
- Press and hold the waste water 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 pump red button until the grey waste tank is empty.
- Close the gray tank valve by pushing it back in to the original position.



Open the black valve



Open the gray valve

 Always dump the black tank first and the gray tank second. The graywater will help flush any remaining solids from the dump hose. If you wish to rinse the system, pour water down the toilet and sink, and dump again.

- Close the discharge valve on the end of the waste water hose.
- Rinse off the dump area and the dump hose.
- Return the waste water hose to its storage compartment by pushing the green hose back onto the reel.
- Add about ½ gallon of fresh water to the black tank. While you're doing this, add a packet of black holding tank chemicals to the tank.

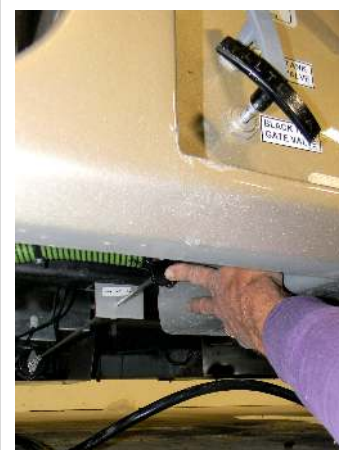
 Do not toss the packet into the toilet, even if it claims to be `dissolvable`. It may not be dissolvable enough for the macerator. Tear open the packet and pour the contents into the black tank, and dispose of the packet in the trash. The contents of the powder packets can be irritating to your eyes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

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

Jammed waste water pump



Sprinter macerator manual crank knob



Chevy macerator manual crank knob

If the waste water 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 waste water pump knob.
- Push in on the knob and turn clockwise; you will feel the knob engage the pump shaft.
- Turn the knob first in one direction and then the other to loosen the obstruction.
- Once the obstruction is loose, continue dumping.

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 shutoff valve closed. This valve must be closed whenever the vehicle is in motion in any case, not just in certain areas. Other bridges/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 behind the front utility access door along the bottom driver's side of the vehicle. To access the tank for filling and to turn the manual tank shutoff valve off and on, pull the door up and secure it with the rotating tab.

Main Shutoff valve



Propane tank



Support for side compartment cover



Main valve

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

The propane shutoff valve has arrows on it to tell you which way to turn it - clockwise is closed and counterclockwise is open. 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, in stowed position in front of passenger rear tire



Propane pigtail, removed from retaining enclosure



With yellow dustcap removed and valve in open position

The propane system has a high-pressure auxiliary BBQ takeoff. Locate the hose by reaching under the edge of the Roadtrek about halfway between the rear passenger tire opening and the side door. Pull the hose toward the back of the Roadtrek to release it from the channel it is stowed in. The hose has a yellow dustcap, and an integral cutoff valve which is closed when the brass handle is across the line, and open when the handle is parallel to the line. This takeoff provides 15PSI regulated propane to appliances that have their own regulators or are built to use high-pressure propane. Many grills in the US are low pressure (.5 PSI) and cannot use this connection without an additional regulator. 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.

 Always store the hose back in the channel it was in when you removed it - do not let it dangle loose beneath the Roadtrek while driving.

 The hose is available from your Roadtrek dealer. Roadtrek strongly cautions against home-made hoses due to risk of failure.

Propane Tank Filling

✗ 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.

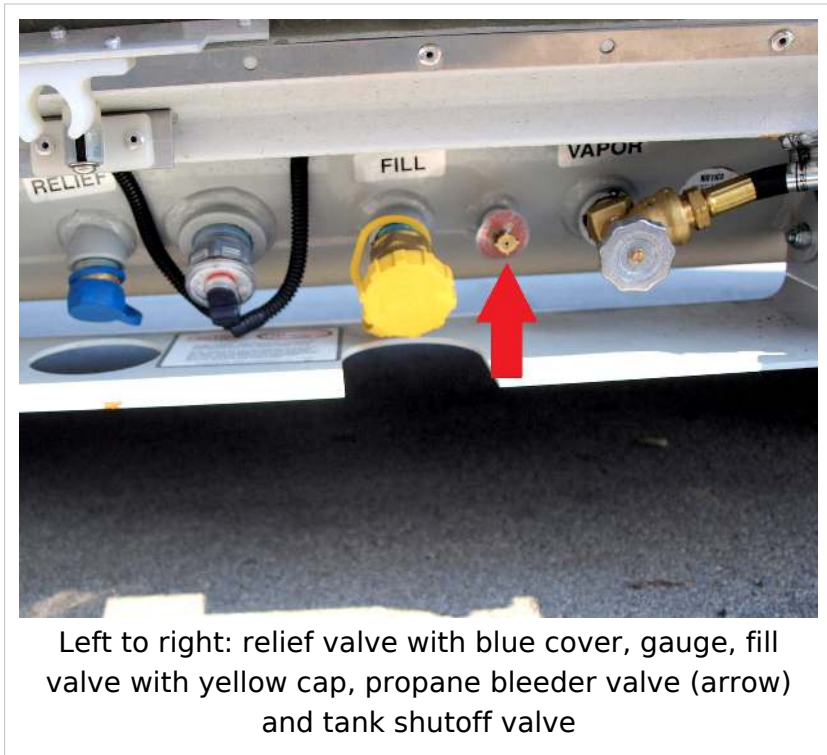
To fill the tank, first turn off all propane appliances, then turn off the tank shutoff valve.

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.

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 as the tank reaches the 80% fill level. Stop filling immediately and close the bleeder 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.

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



Left to right: relief valve with blue cover, gauge, fill valve with yellow cap, propane bleeder valve (arrow) and tank shutoff valve

Propane Level Gauge Sender

The propane tank has a level indicator with a remote sender to the Monitor Panel. The black wire you see of this gauge connects to the monitor panel, and allows you to check your propane level while inside the Roadtrek.

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 16 gallon tank in your Roadtrek will hold 12.8 gallons / 48 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: 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



Antenna/cable switch (small white button on cover)

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
- Set the speaker selector to "SURROUND"
- Set the antenna/cable TV switch to Antenna by pressing the button

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"
- Use the DVD remote control to start the movie

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. It is behind the middle utility bay door on the bottom of the driver's side of the vehicle, just to the right of the waste water hose and handles, and has a square gray plastic cover about 3 cm on each side which is hinged at the side, which opens to expose the barrel connector the cable hooks to.



Cable TV connection location



Coaxial TV connecting wire with screw-on end

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.

Screw the cable onto the barrel connectors at each end.



TV cable connected

Push the white button on the panel in the cabinet above the TV to switch between cable and 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: 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

This procedure can be done in less an hour with no specialized tools. You will need a funnel and your Robertson head screwdriver that came with your Roadtrek.

- Get 2-3 gallons of RV antifreeze.



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

- Drain the fresh water tank by opening the fresh water tank drain valve, located under the passenger front door step. It may take as long as 30 minutes to drain the tank. Close the drain for the exterior tank.
- Run the galley faucet until it sputters to empty as much water as possible.
- Turn off the water pump.
- Dump and rinse the gray and black tanks.
- Open your single lever galley faucet, putting it in the middle halfway between the hot and cold settings.



Typical non-toxic RV
antifreeze



Freshwater tank drain valve

❗ If you have the standard Alde hydronic hot water/heating system, continue on through these steps. If you have the optional Webasto diesel-fueled hot water system, skip steps the dealing with the Alde system water heater and its bypass valves, go to the bottom of this article and perform the steps pertinent to your unit.

Alde bypass instructions

- Lift the cushions and stowed rear table off the driver's side bench behind the wardrobe and loosen the screw securing the hinged cover.
- Lift the cover up to expose the three bypass valves on the water lines, and the Alde frost protection valve.



Bypass valves in normal position - all black handles horizontal



Valves turned to bypass position - all black handles vertical

- Turn the three black plastic handled valves so that they are all pointing toward the side of the Roadtrek. See photo above.



Location of Alde frost valve



Alde frost protection normal position - blue handle is pointing parallel to the water line, blue button at base (see arrow) is in



Frost protection valves turned to dump position - blue handle pointing toward water line, blue button at base is out

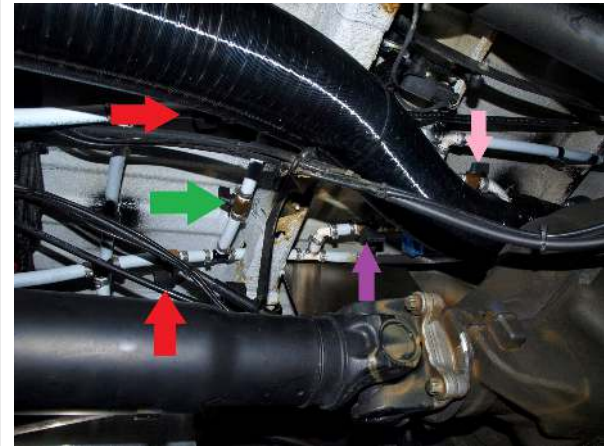
- Turn the frost protection valve on the Alde unit so that the handle is across the line. The system will drain the water in the unit to ground, which might take 15 minutes or more. Go back to the middle of the winterization procedure and complete steps 10 through 19.

Webasto bypass Instructions

- Locate the Webasto unit control on the cabinet face behind the television. Turn the left knob to the dump position (all the way counterclockwise). Open the galley sink hot water faucet to allow air into the hot water system. It will take approximately 10 to 15 minutes for the unit to drain completely. The Webasto unit will reset after 90 minutes to close the dump valve.



Webasto control

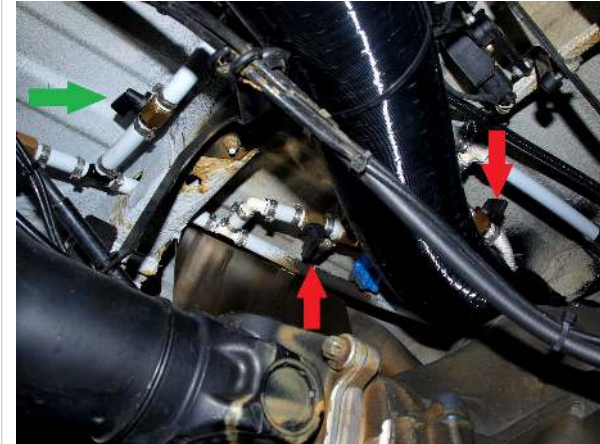


Valves at red arrows should be left alone (always open). Green arrow points to shunt valve; pink and purple arrows point to hot and cold supply lines for Webasto

- Locate the diesel-fueled hot water unit underneath the vehicle. It is immediately behind the center of the rear axle (the differential). There are two air ducts on the front side of the unit, near the top. There are also two white water lines coming back from the front of the Roadtrek, one on each side of the chassis centerline. Just before these lines get to the Webasto unit, there is a transverse white hose connecting them, with a valve on it. This is the shunt valve. To winterize, you open the shunt valve, and close the two valves on the hot and cold lines going into the Webasto BETWEEN THE SHUNT (TRANSVERSE) LINE AND THE UNIT. There may be other valves on the hot and cold lines forward of the transverse white hose connecting the two water lines - DO NOT TURN THESE VALVES. (see photos above and below). If your outside shower quits working, you turned the wrong valves.



Shunt and Webasto supply line valves in normal position (shunt closed, supply valves open)



Shunt and Webasto supply line valves in bypass position (shunt open, supply valves closed))

- From the passenger side of the differential you will see two valves. The one on the transverse line is the shunt valve, and the one on the line between the transverse line and the Webasto unit leading to the blue overpressure relief valve is the cold side supply valve. Turn each 90 degrees so the shunt valve is parallel to the water line (open) and the cold side supply valve is across the line (closed).
- Now go around to the other side (driver's side) of the differential, and look for the hot water line. It will be white and may have a piece of red tape on it. Look on this line for a valve BETWEEN THE SHUNT (TRANSVERSE) LINE AND THE WEBASTO UNIT which is open in normal operating mode. Turn it so that the black plastic handle is across the line (closed). There may be other valves on the hot water line forward of the transverse (shunt) line - DO NOT TURN THESE VALVES. If your outside shower quits working, you turned the wrong valves.

Complete the winterization

- Check to be sure that the drain on the fresh water tank and the black and gray waste water tank valves are all closed. Move the single lever galley faucet all the way to the cold side, and leave it open.
- Add 2 gallons of non-toxic RV approved antifreeze to the fresh water tank gravity fill using a spout or funnel, and wash any spillage off the paint.
- Turn the water pump on and allow to prime. Close cold galley sink faucet once you see pink antifreeze coming out.
- Run antifreeze from all fixtures.
 - 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
 - Flush the toilet.
 - Open the hot and cold faucets on the outside shower
 - Press and hold the cold handle on the instant hot water dispenser until undiluted pink RV antifreeze emerges from the faucet. Then do the same thing with the hot handle. You will be filling the hot water reservoir with antifreeze, which takes approximately a gallon, so this may take some time.
 - In the cabinet under the convection oven there is a water filter for the instant hot water dispenser. After running antifreeze through the system, twist and remove this filter, pour the antifreeze in the filter down the galley sink, and reinstall the old filter. Buy a new filter to have on hand for dewinterizing in the spring, but do NOT install the new filter until you have purged all the antifreeze from the system. This filter should be replaced annually, so it's most convenient to replace it at the time of dewinterizing.
- Ensure antifreeze flows into all P-traps (galley sink, washroom sink, and shower drain). Add any extra antifreeze to the galley, bathroom sink, and shower drains.
- If the water pump loses its prime in this process, add more antifreeze to the 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.



Access to the city water valve, side door



Screws holding plastic radiator cover on



City water valve in open, along-the-line position

- Open the city water valve. To do this, loosen the Robertson head screws holding the plastic radiator cover on the side door step. Remove the plastic cover, and the city valve is inside the exposed opening on the left side of the side door step. Turn the handle horizontally to the parallel-to-the-line position (see photos above). The water pump will operate. Allow it to run about 20 seconds. Turn city water valve off (black plastic handle will be vertical).



Water pump access inside passenger side bench enclosure



Water pump filter

- Turn the water pump off and open a galley sink faucet to release back pressure.
- Open the fresh water tank drain line under the passenger front door briefly until antifreeze flows out.
- Remove and clean the water pump filter if so equipped. To access the water pump filter, loosen the screw on the lid of the passenger side bench just behind the bathroom, and lift the lid. Replace water pump filter.



Only dump at approved dump stations or collect the macerator discharge into a bucket and dump into a toilet. Do not dump into storm sewers.

- Run the macerator until you see pink antifreeze.

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



Fresh water tank drain, under passenger front door step



Gravity fill on front passenger door post

1. Check to be sure the fresh water tank drain valve is closed, then add the water/bleach mixture to the fresh water tank through the gravity fill.
2. This is a good time to get some stuff for spring cleaning of your Roadtrek, so drive around for an hour. Let it sit for a couple more hours.
3. Open the fresh water tank drain valve and let the bleach/water mixture drain to ground. This can take 10 minutes or more. 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

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



Access to the city water valve, side door



Screws holding plastic radiator cover on



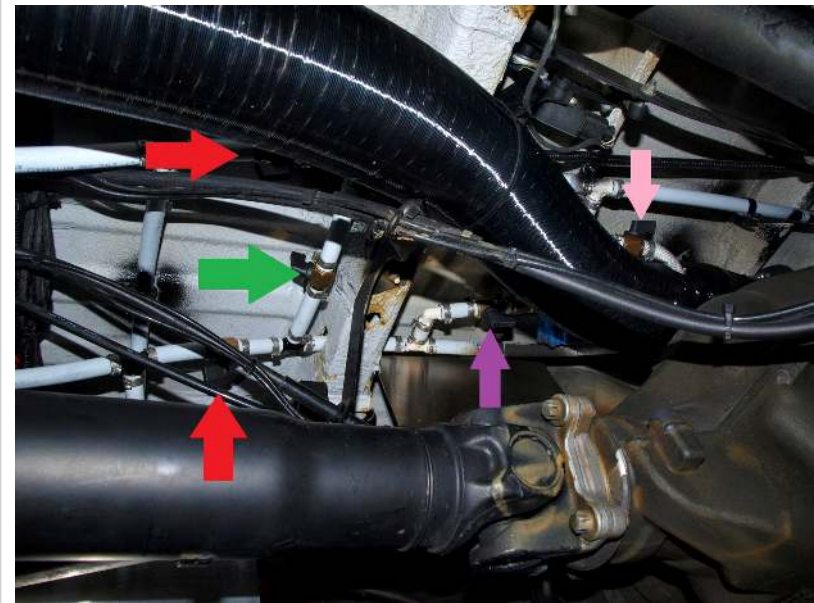
City water valve in open, along-the-line position

- To open the valve, loosen the Robertson head screws holding the plastic radiator cover on the side door step. Remove the plastic cover, and the city valve is inside the exposed opening on the left side of the side door step. Turn the handle horizontally to the parallel-to-the-line position (see photos above). The water pump will operate. Allow it to run about 20 seconds. Turn city water valve off (black plastic handle will be vertical).

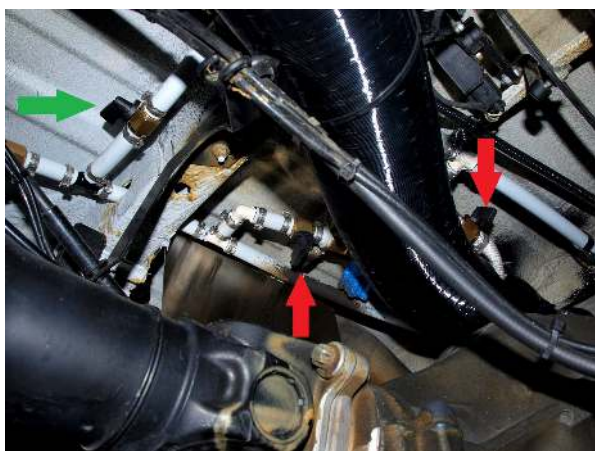


If your CS Adventurous has the Webasto diesel-powered hot water system instead of the standard Alde water heater, perform this step and skip the following step beginning "Open the galley sink...". If your CS Adventurous has the Alde system, skip to the next step beginning "Lift the cushions...".

- Locate the Webasto diesel-fueled hot water unit underneath the vehicle. It is immediately behind the center of the rear axle (the differential). There are two air ducts on the front side of the unit, near the top. There are also two white water lines coming rearward from the front of the Roadtrek, one on each side of the centerline. Just before these lines get to the Webasto unit, there is a transverse white hose connecting them, with a valve on it. This is the shunt valve. To de-winterize, you close the shunt valve, and open the two valves on the hot and cold lines going into the Webasto **BETWEEN THE SHUNT (TRANSVERSE) LINE AND THE WEBASTO UNIT**. There may be other valves on the hot and cold lines forward of the transverse white hose connecting the two water lines - **DO NOT TURN THESE VALVES**. (see photos right and below). The valve on the line between the transverse line and the Webasto unit leading to the blue overpressure relief valve is the cold side bypass valve. Turn all three valves 90 degrees so the shunt valve handle is across the water line (closed) and the cold and hot line valve handles are along the line (open).



Wide view of the valves on the water lines forward of the Webasto unit. The two valves (red arrows) forward (left) of the shunt valve (green arrow) are to be left open whether the system is winterized or not. The hot (pink arrow) and cold (purple arrow) valves between the transverse shunt line and the Webasto unit are open normally, closed when winterized.



Webasto line valves in bypass position. Green arrow means valve is open, red closed. Front of vehicle is to the upper left.



Webasto line valves in normal operating position. Green arrow means valve is open, red closed.

- Lift the cushions and stowed rear table off the driver's side bench behind the wardrobe and loosen the screw securing the hinged cover. Lift the cover up to expose the three bypass valves on the water lines, and the Alde frost protection valve. Turn the three black plastic valves so that they all face forward (see photo below). Push the blue button at the base of the Alde frost protection valve in, and turn the blue handle on top 90 degrees so that it is parallel to the water line - pointing forward (see photo below).



Alde bypass valves in normal operating position



Frost protection valve in normal operating position

- 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 several gallons, so it will take a while for it to fill up.
- Allow the system to sit overnight.
- Drain the fresh water tank completely, fill with clean water, and run all faucets (galley sink, bathroom, and outside shower) for 2-3 minutes each.
- Hold the instant hot water dispenser taps, both hot and cold, open for several minutes until the water runs clear and smells like chlorine. The hot water reservoir has a capacity of about a gallon, so this will take some time. After all the antifreeze is out of the system, remove the old water filter cartridge in the cabinet under the microwave, and replace with a fresh filter cartridge.
- To help get rid of the residual chlorine smell, pour a cup of vinegar into the fresh water tank, fill, let sit for a few hours, run the faucets for a minute or so apiece, drain the tank to ground, and refill with fresh water.