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# **OVERLAND EXPLORER**

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Expedition Vehicles  [www.overlandex.com](http://www.overlandex.com)

HBE

Operators Manual

# Overland Explorer Expedition Vehicles

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## 1: FEATURES

Your HBE Camper is constructed with materials and methods exceeding anything that is available on the current market. There are 3 types of composites used in the construction of your new camper, all selected for optimum performance in their respective applications. All of our composites are proprietary, manufactured in USA and Canada to our specifications, and assembled by Canadian craftsmen with years of experience. Truly a North American product.

The floor panel is laid up wet, gel coat, fiberglass, polyester resin, with a polypropylene honeycomb core. This product has been designed and utilized for its brute strength, the exterior of this panel is fiberglass with a poly coating for abrasion resistance, the interior has enough fiberglass on it to support a lifetime of foot traffic and the abuse a floor can take. The interior side of the floor has an automotive gel coat to seal the panel itself, it is then covered with one-piece Lonseal marine flooring, a very tough, wear resistant flooring designed for harsh environments. There is no wood in the floor, nothing to rot, nothing to fail.

The wall panels are another proprietary wet laid up product manufactured to our specs with a unique skin design, and a foam core manufactured to our specification for a very good balance between strength and insulation. Both sides of the wall panels are finished with an automotive gel coat, maintenance for the walls is the same as any fiberglass product, minor scratches can be polished out easily.

The roof panel is more of a conventional composite, a foam core with a bonded FRP skin. Our skins are produced by Crane or Lamilux, with UV stability and thickness to our specification. This roof is manufactured this way to keep the weight as low as possible, while retaining structural integrity, and insulation value to match the rest of the unit. Care must be taken if getting on the roof of the camper, minor denting of the roof surface can occur from knees and other point loading, it is purely a cosmetic condition that can occur with no effect on structural integrity.

This whole package is wrapped in proprietary aluminum extrusions designed to minimize weight and maximize strength. By design the shell is watertight, the extrusions supply a second complete seal for the shell, along with increased structural integrity, and damage resistance. The roof extrusion set, upper and lower, is the workhorse of the roof and allows excellent sealing when closed, supports the soft wall, anchors the hinges, supports and hides the lift assist cylinders, and looks good doing it. All exterior extrusions are media blasted and powder coated with an automotive/industrial quality polyester powder coat for corrosion resistance, and durability.

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## 1: FEATURES CONTINUED

The interior cabinets are all CNC cut and formed 5052 marine grade aluminum for durability. All hinges are marine grade stainless; all cabinet doors are polymer sheet material, an FDA and USDA approved material. The cabinets are media blasted and powder coated with a textured polyester powder coat for durability, appearance, and ease of maintenance. All latches are compression latches to keep everything tight, this is especially critical on rough roads, and in rough environments. Keeping everything tight prevents noise, wear, and premature failure. Our tables and countertops are produced from fir plywood, with a textured laminate on top and a sealing membrane on the bottom, this minimizes any environmental impact to the only wood product in your camper. The toilet cabinet slides out on ball bearing slides rated at 500 pounds, not necessarily for the weight capacity, but for stability and durability. This all translates to a camper that is exceptionally easy to clean, and maintain to a standard equal of its construction.

The quality and properties of the shell demanded a soft wall solution to match. The soft walls are made with a North American sourced marine coated fabric exterior, a microfiber loft insulation, and a breathable treated canvas interior fabric. Our soft walls are highly insulating, extremely durable, and much quieter than a single fabric side wall. This is standard equipment on the Camp X which helps to provide a comfortable environment whether it is cold, or hot outside. Insulation works both ways! Our windows and screens are all on heavy duty zippers, our window blind is integral, and constructed the same as the rest of the soft wall, fully insulated.

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## 2: RAISING AND LOWERING THE ROOF

The roof on your HBE is designed to be easy to raise and lower, and be very structural when opened fully, and closed.

1. Remove safety pins and release all 4 heavy duty roof latches



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2. From the inside, lift up on the roof near the rear, close to the rear hinge. The hinge is designed to provide lift assistance for the initial raising of the roof, and the assist struts are designed to pick up the second stage of lift, so relatively low force is required to raise the roof. The door must be open to allow air displacement.



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3. Once the roof has raised, using the handle on the hinge, push the handle towards the soft wall until it over centers and the top half and bottom half of the hinge are in contact. This will lock the hinge; it is generally very obvious as it basically “snaps” into the locked position. KEEP HANDS AND FINGERS ON THE HANDLE ONLY, THE HINGE CAN BE A PINCH POINT.
4. Repeat the process for the front hinge, generally lifting the roof near the center will get the roof up quite easily.



5. Remove all of the bungee cords connecting the side walls.

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Roof in raised position

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Roof in raised position, you can see that battery box vents in this picture.

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6. To lower the roof, connect the bungee cords between the side walls. This is to help fold the soft walls in. The soft walls only require a small amount of force at the initial part of the drop to help fold the top inwards. By design, the soft wall will fold in very nicely right after it starts to fold, and the bungee cords will become slack. Slack bungees are normal with the top closed, and there is no wear caused by tension on the cords in transit.



Bungee cords installed; they start the folding process for the soft wall.

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7. Unlock the front hinge by pulling the handle away from the soft wall, and continue pulling until the front of the top is lowered. The hinge can be moved vertically with the handle to assist in aligning the top as it comes down.



Front hinge down, bungees slack, top folded in.

8. Unlock the rear hinge by pulling the handle away from the soft wall, again, vertical movement of the hinge handle will assist in the alignment of the top while it is coming down.
9. From the outside, ensure all of the soft wall has folded into the camper, and nothing is in the mating area of the top to the cabin. The soft walls generally fold in very nicely due to the materials and construction.
10. Latch all 4 corners with the heavy-duty latches, and install the lock pins, you are ready to go.

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## 3: COMPONENT LOCATIONS EXTERIOR

### 1. Propane system.

The propane cabinet is at the front left-hand corner of the camper, accessed through a non locking door. 2 10-pound cylinders fit the mounting bracket and are secured with a strap. The strap does not require immense pressure to retain the cylinders, but requires 2-3 wraps around the ratchet to retain tension. The regulator and connecting hose are also located in the cabinet. Connect the propane connector to the cylinder and tighten firmly by hand.



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Propane cylinder retainer strap keeps one or two cylinders retained, excessive tension is not required

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### 2. Connecting and turning on the propane cylinder.

Opening Propane Tank: Before opening the valve on the propane tank, first make sure ALL propane appliances inside the camper are turned OFF. Once you are sure all propane appliances are turned off, then you can safely open the valve on the propane tank. Proceed to open the propane tank valve slowly. By opening the propane valve slowly, it will allow the check valve to open properly and allow the correct amount of propane gas to enter the system. Wait a few minutes before turning on any propane appliances inside or outside the camper. This will allow the pressure to build up inside the propane hose and also ensure that the safety check valve will open up. Your camper should now receive the full propane flow it needs to run the appliances.

If you haven't used the camper in a while, and you open the propane tank valve too quickly, you might have restricted flow. It is best to open the propane tank valve very slowly, wait a few minutes, and then start using the propane appliances.

Prior to operating the furnace or hot water heater, you should purge air from the propane supply lines. The easiest & quickest way to purge air from the propane lines is to first raise the camper roof. Next, light the stove and operate each burner for approx. 30 seconds. Lighting the stove usually removes most any trapped air in the propane lines and will then allow faster and easier lighting of other appliances.

Propane has a distinct smell added to warn the user of a possible leak. If you smell propane inside the camper, make sure the stove knobs are in the "OFF" position, exit the unit immediately, close the propane tank valve that is located on top of the propane tank, and allow ventilation through the door and windows to exhaust the vapors. Wait until the scent of the propane is no longer present. Check for valves that might have been left open. A spray bottle with water with a small amount of dish soap added can be used to spray the fittings and propane lines to inspect for potential leaks. The soap will bubble if a leak is present. Immediately have your camper checked out by an authorized RV service center to find the possible propane leak before using your camper again.

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### 3. Utility connections.

The utility connections are all located in one location on the passenger side of the camper right behind the propane access door. In this location you will find the 30-amp shore power inlet, fresh water fill, sink (grey water) drain connection, 12-volt solar connection, and outside shower port.



### 4. Truck electrical connector.

Your HBE has a 4 pin Anderson connector that has 2 6-gauge conductors that supply the 12-volt connection between the truck and camper. There are 2 14-gauge conductors that provide power and ground circuits for the clearance lights, these tie in to the trucks lighting circuit. The truck chassis battery should be tied in with #6 conductors, and the ground should run right back to the battery as well. Avoid grounding to the truck frame. With the advent of smart alternators and batteries it is imperative to avoid voltage drop due to inadequate cable size over length. Even conventional batteries will not receive a full charge if the charge conductor is too small. The conductor sizes selected with the connectors selected for the HBE eliminate a low voltage supply into the camper's system. This connector is located at the front left-hand side of the camper.

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4 Pin Anderson connector, with 6-gauge charge conductors, and 14-gauge clearance light conductors. Drivers side front tie down access port is visible behind.

### 4: INTERIOR COMPONENTS AND OPERATION

#### 1. Battery.

Your HBE is equipped with a 12-volt 100-amp hour AGM battery, the battery is located in a sealed and vented enclosure located below the front dinette seat in front of the water tank. We only use, and recommend fully sealed AGM batteries as a minimum battery specification. Conventional batteries vent explosive hydrogen when charging, and corrosion can cause electrical issues. Your battery box is vented to meet standards.

#### 2. Main DC Breaker.

The main DC breaker is located above the battery enclosure. It is a resettable 90-amp breaker that can be manually closed or open.

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### 3. Converter.

Your HBE is equipped with a Redarc Manager 30 battery management system as standard equipment. The Redarc is located under the front dinette seat. It converts AC shore power to DC, charges the battery from shore power, charges and manages vehicle charging (critical in newer vehicles with smart alternators) and solar control. The control panel for the battery management system is located in the main control panel at the rear drivers' side of the main cabinet. Please refer to the supplied factory Redarc manual for set up and operation, or alternatively download the manual directly from this link:

<https://www.redarc.com.au/Content/Images/uploaded/Manuals/BMS1230S2%20Instruction%20Manual.pdf>



Battery box, water tank, water pump, tank drain, strainer, DC main resettable breaker, located under front dinette seat

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## 4. Main control panel.

The main control panel for the camper is at the rear of the drivers' side cabinet. You will find the following components here:

- Exterior light switch
- Interior light switch
- Water pump switch
- Battery management control panel and monitor
- Truma heater and hot water heater control panel with thermostat function
- 12-volt accessory outlet
- 12-volt USB outlet



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### 5. Fuse panel.

The fuse panel is located in the utility cabinet on the back of the control panel, to access the fuses simply open the latches at the top of the control panel and it will swing down. All circuits are marked for capacity, all 12-volt circuits are distributed from this point, use only fuse sizes specified. Altering fuse sizes may result in a fire, and loss of warranty.

**Do not store anything in the utility cabinet as it may block airflow, short electrical components, or damage heating or plumbing components.**



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### 6. Water pump.

The water pump is located under the dinette seat cushion. There is a strainer on the inlet of the pump that may require cleaning and servicing that is dependant on water supply. Inspect and clean the strainer as required or annually, it simply screws off and back on, use caution to make sure the sealing O ring is correctly reinstalled when reassembling. The switch for the water pump is on the control panel.

### 7. Water tank.

The water tank is located under the dinette seat cushion. The level is visible by looking through the level indicating slots in the front access panel. The water tank is filled at the utility connection point on the drivers' side of the camper. A locking cap for the filler is standard equipment for your security. The drain for the water tank is located between the tank and the pump, and the drain point could be on the left- or right-hand side at the front of the camper. There is a winterizing valve also located between the tank and the pump.



Top view shows fresh water drain, and strainer, and winterizing valve.

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Fresh water level can be measured visually through provided sight slots

### 8. Winterizing.

To winterize your HBE, open the tank drain valve located under the dinette seat and leave open. It is best to set the camper at a slight angle to maximize the amount of water that drains from the tank. Open the exterior service door on the Truma hot water heater and drain the water heater according to instructions located inside the door, and in the supplied Truma manual. On the back of the heater inside the utility compartment there is a valve that isolates the hot water heater from the rest of the plumbing system, it is brass and it is located between the hot (red) water line, and the cold (blue) water line. Put this valve in the bypass position. Between the fresh water tank and the water pump, there is a winterizing valve, put this valve into the correct position, insert the clear vinyl tube into a jug of RV plumbing anti freeze, and turn the water pump on. Open the faucet on the cold tap, then the hot tap until antifreeze is running through, operate the outside shower on both cold and hot settings until antifreeze is running through. Remove the antifreeze, and run the water pump with the taps open until the system pumps out the remaining antifreeze. It is recommended to leave all taps open for the winter.

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### 9. De-winterizing.

Close drain valve, fill fresh water tank to desired level. It is a good time to sanitize the fresh water tank and that will be covered below. Put the winterizing valve into the summer or in use position, close any open taps, and turn on the water pump. Open each tap including the outside shower until water flows clean and clear, we like to run quite a bit of water through just for personal preference. Once this is complete, you can put the hot water tank back into circulation by putting the bypass valve at the hot water tank into the flow through mode which allows water to flow through the hot water tank. If you wish to sanitize the fresh water tank, follow the instructions next.

### 10. Sanitizing the fresh water holding tank.

Sanitize the fresh water system by flushing the system with a mild bleach solution. Use a dilution ratio recommended by your local health department, or use a commercial sanitizing product following the appropriate directions. Usually no more than a tablespoon or two of bleach will be needed. You will NOT need cups or gallons of bleach. After filling the water tank and adding a small amount of sanitizer, run the sink faucets for 20 – 30 seconds, and shower(s) (if equipped), then allow to stand for at least four hours, or more. Drain the fresh water tank and flush your water system with clean, fresh water after you are finished. If excessive odor or taste from the sanitizing solution is still present in the water system, drain the fresh water tank one more time, flush out the tank and water lines by running the water pump and faucets inside the camper as needed, and fill once again with fresh water. Any excess sanitizer can be removed following instructions from your health authority, or following commercial preparation instructions. It is recommended that the system be sanitized prior to initial use, or after long periods of standing unused.

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## 11. Furnace.

The Truma VarioHeat heater is located inside the utility cabinet which is the entire cabinet that is accessed by opening the control panel door. Please refer to the supplied Truma operator's manual, or download the manual directly from this link:

<https://www.truma.com/web/downloadcenter/files/truma-heating-varioheat-operating-en.pdf>

**Do not store anything in the utility cabinet as it may block airflow, short electrical components, or damage heating or plumbing components.**

The control panel for the VarioHeat heater is on the face of the control panel, this control panel also operates the Truma AquaGo continuous hot water heater.

## 12. Hot water heater.

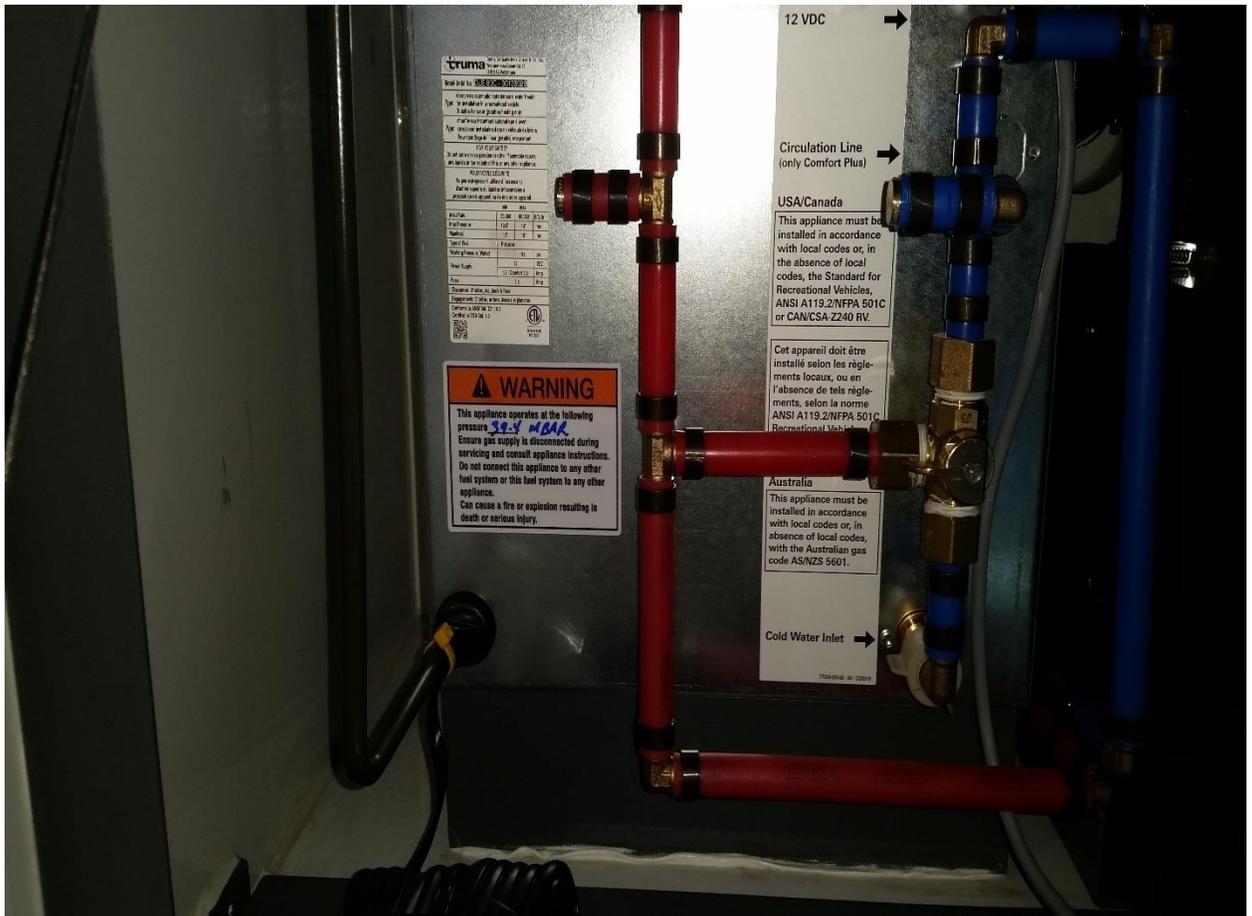
The Truma AquaGo hot water heater is located inside the utility cabinet which is the entire cabinet that is accessed by opening the control panel door. Please refer to the supplied Truma operator's manual, or download the manual directly from this link:

<https://www.truma.com/web/downloadcenter/files/truma-watersystems-aquago-installation-operating-us-en.pdf>

**Do not store anything in the utility cabinet as it may block airflow, short electrical components, or damage heating or plumbing components.**

The control panel for the AquaGo continuous hot water heater is on the face of the control panel, this control panel also operates the Truma VarioHeat heater.

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Utility cabinet contains Truma AquaGo hot water heater and Truma VarioHeat, as well as bypass valve and access to fuse block

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### 13. Refrigerator.

Your HBE camper is equipped with a Dometic CRX 65 DC compressor refrigerator. For operating instructions refer directly to the supplied Dometic operator's manual, or download the manual directly from this link:

<https://www.dometic.com/en-ca/ca/products/food-and-beverage/rv,-boat-and-truck-refrigerators/truck-refrigerators/dometic-coolmatic-crx-65-t-147628#documentation>



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### 14. Cooktop.

Your HBE is equipped with a Dometic SMEV cook top with an integral glass cover. Before use, ensure that any window coverings or screens that may fall in the way of the burner are securely fastened out of harms way, there are straps for that purpose. To light the cooktop simply turn the knob for the desired burner and push the ignitor button until the burner lights. This may take several attempts especially if the system has run out of propane and a cylinder has been changed. Do not use the cooktop as a source of heat, that can result in carbon monoxide poisoning, and death. If the burner does not light, and you smell propane, open doors and windows to ventilate the camper and do not use the cooktop until it is serviced or repaired.



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### 15. Carbon monoxide and propane gas detector.

The Carbon monoxide and propane gas detector is located at the bottom of the control panel, it should be tested before each use of the camper and serviced according to the requirements set forth in the manufacturers supplied manual.



### 16. Smoke detector.

The smoke detector is located on the rear driver's side inside corner of the roof. It should be tested before each use of the camper and serviced according to the requirements set forth in the manufacturers supplied manual.



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### 17. Fire extinguisher.

The fire extinguisher is located below the control panel near the rear entry door.



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### 18. Emergency escape.

The upper side window on the passenger side in the sleeping area is also labelled as an emergency escape.



All soft wall windows are sized to emergency escape dimensions

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### 19. Porta potti.

The dinette cabinet at the rear of the camper near the door has an access door and a sliding tray for a porta potti. The cabinet can also be used for other storage if that function is not required or desired.



Toilet cabinet in closed position

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Toilet cabinet in open position

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