



## Operators Manual

## DISCLAIMER AND COPYRIGHT

Any information, specifications and illustrations contained in this guide are based on the latest product information available at the time of printing. If and when new materials and production techniques are developed, that can improve the quality of the product, or material substitutions are necessary due to availability, SylvanSport reserves the right to make such changes.

This manual is NOT intended to be inclusive of every operational aspect of your RV, but to work in conjunction with the manuals of the components in your RV, supplied by the different component manufacturers.

## VAST SPECIFIC WARNINGS

### **WARNING**

1. Forward storage box must be fully latched (but not locked) before transport.
2. Forward storage box lid may be locked, but the sliding mechanism shielding the gas bottles and spare tire may not have any type of locking mechanism connected to it. The latch mechanism of the forward sliding storage box must be unobstructed and access to the propane tanks accomplished, in a minimum amount of time and require no use of key or combination locks.
3. Equipment with an internal combustion engine may not be stored or transported within the trailer.
4. Liquid fuels may not be transported within the trailer.
5. Only the same type of LP gas bottles, as supplied with the Vast, are permitted to be used with the trailer and they may only be transported or stored externally, in their intended location and properly secured in their proper orientation and securing means installed.
6. Step should be fully retracted before transport.
7. Rear door should be fully latched before transport.
8. Moving kitchen should be fully latched and locked with safety bolt before transport of trailer.
9. Kitchen access door should be fully latched prior to transport of the trailer.
10. Main entry door should be fully latched prior to transport of the trailer.
11. Toilet access door should be fully latched prior to transport of the trailer.
12. For maximum longevity of the window and skylight screens; screens should be completely stowed prior to vehicle transport.
13. When upper bed is to be used for sleeping with open windows; security nets must be securely deployed and installed.

## GENERAL RVIA WARNINGS

### **WARNING**

Do not place propane cylinders inside the vehicle.

Propane cylinders are equipped with safety devices that relieve excessive pressure by discharging propane to the atmosphere.

Propane gas is highly flammable.

Can lead to a fire or explosion and result in death or serious injury.

### **DANGER**

Do not use cooking appliances for comfort heating.

Can lead to carbon monoxide poisoning, which can lead to death or serious injury

### **WARNING**

Gas cooking appliances need fresh air for safe operation.

Before operating:

Open vents or windows slightly or turn on exhaust fan prior to using cooking appliances.

Gas flames consume oxygen, which should be replaced to ensure proper combustion.

Improper use can result in death or serious injury.

### **WARNING**

Do not fill propane container(s) to more than 80 percent of capacity.

A properly filled container contains approximately 80 percent of its volume as liquid propane.

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

### **DANGER**

#### IF YOU SMELL PROPANE

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

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

### **WARNING**

When using this outdoor cooking area, the vehicle must be level and stabilized.

Do not violate manufacturers' instructions on required clearances for cooking appliances during use.

Do not store cooking appliances until cool to the touch

Can lead to a fire and explosion and result in death or serious injury

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## INTRODUCTION

Welcome to your new Vast travel trailer. Whether you are an experienced RVer or new to the fun, if you know anything about SylvanSport and our products, you know that we do and see things a little differently. Consequently, we strongly recommend that you read and understand all of the details of your new Vast, that we have presented in this manual. The Vast is a somewhat simple, but highly complex technical product.

There are certain features that are somewhat common in the RV industry, but are utilized in somewhat unique ways. Following the instructions, suggestions, and recommendations within this manual will help you to get the maximum utility and longevity out of your Vast, as well as provide the most enjoyable experience. Our customer service personnel are always an available resource that you can be reached at 828.348.5585, or email: [info@sylvansport.com](mailto:info@sylvansport.com). We hope that you enjoy your Vast for many years to come.

## SAFETY

### Tires and wheels

Before traveling in your Vast, inspect all the tires for proper inflation, uneven wear on the tread, cracks, foreign objects, or other signs of wear or damage. Check the wheels for any damage and make sure wheel lugs are tightened properly. In the event of excessive or irregular tread wear, under-inflation or tire damage, or if you are experiencing pressure loss, the tire should be dismounted and inspected by a trained technician.

- Regular inspection and replacement of your tires helps to prevent tire failure. Tires will deteriorate over time, if they are not used or driven on. An unexpected blowout can cause an extremely dangerous driving condition and changing a flat, along a road or highway can be extremely dangerous.
- Tread wear limits - Tire guides by Goodyear and Michelin agree that tires should be replaced when the tread is worn down to 1/16".
- Under inflation and over inflation- RV trailer tires should normally be set to the pressure indicated on the sidewall, unless it causes a severe over inflation situation (20psi over recommended inflation pressure to carry the load).
- Leveling - Improper leveling may be the second greatest cause for tire damage. Tires should be supported uniformly while the coach is parked. If any of the tread is unsupported, it can cause internal damage that might not be obvious at the time.
- Inspection - Damage is always a possibility, and tires should be closely inspected at frequent intervals for bulges, cuts, nails or screws lodged in the tread and other irregularities.
- Weathering, cracking and crazing - tend to appear in tire sidewalls after several years, and they may become a concern. They can be a spider web of small cracks, or a line of more significant cracks around the circumference of the tire. How much is too much? Michelin as well as Goodyear recommend replacement if the cracks are more than 1/16" deep, especially if tire cord is showing.
- Age - Age may eventually become an issue with tires, even if they are not worn out or cracked. Service-related issues such as tread wear may prompt replacement as tires age, but that they should be replaced regardless of such issues if they're older than 10 years. The generally accepted time-out factor for tires is seven years. How to determine age? Check the DOT number on the tire sidewall; the last three or four numbers in the series will be the week and year of production, i.e., 1011 translates to the 10th month of 2011.
- The spare tire should only be used for short distances (less than 250 miles). The damaged road wheel and tire should be repaired or replaced as soon as possible.
- If trailer is to be stored outside, in sunlight, for an extended period of time, it is suggested that the tires be covered for protection.
- Curb damage - If at any time the trailer is drawn against or over a curb or pothole, the tires and wheels should be examined.

### Smoke alarm

The alarm is mounted on the ceiling, far enough from a ceiling vent that could carry the smoke away from being detected. The alarm is powered by a 9-volt, internal battery. Be sure batteries are properly functioning. Read the manufacturers manual.

### CO and propane gas detector

Located within the Utilities Equipment Cabinet, the Vast gas detector alerts users to hazardous levels of carbon monoxide and

propane gas. It uses the latest in advanced electrochemical CO sensors to detect carbon monoxide. Alarm activates with a beep pattern and a flashing red LED for CO gas, or a continuous beeping with a solid red LED for Propane gas. If both gases are present, the alarm will indicate propane as it requires more immediate action.

## Fire safety

- Never leave cooking unattended.
- Never leave appliances that are plugged in and on unattended.
- Turn off overhead exhaust fans when you leave the RV.
- Don't leave 12-volt lights on.
- Keep clothing and other flammable things away from flames/stove.
- If the flame on your stove goes out while in use, unless you have run out of fuel, the gas will continue to flow and could result in an explosion. Turn off the stove and air out the RV before trying to relight.
- Keep all combustibles—from paper towels to curtains—far enough away from your stove that they cannot catch fire.
- Gasoline and propane can pose an immediate, explosive danger. Deal at once with any leaks or spills, and use all fuels in adequately vented areas. Neither gasoline or propane should be stored or transported inside the Vast.
- Keep your campsite fire sources, such as fire rings, tiki torches, and lanterns, away from all vehicles. Be especially aware of clearance between the awning and fire sources.
- Sometimes RVers use power strips to plug in more things. Don't overload the electrical outlets! Circuit breakers don't always prevent overloads from starting fires!
- It's best never to use an extension cord in an RV. If you must, make sure you use a HEAVY DUTY extension cord, and make sure the load you put on it is well within its safe load capacity. DON'T run any electrical cord under a carpet or floor mat or near the cooking surface.



## Fire extinguisher

Vast is equipped with a fire extinguisher which is located by the main entry door, to the side of the entertainment cabinet. The basic instructions are Pull pin. Hold unit upright. Aim at base of fire. Stand back 6 feet. Depress and squeeze lever. Sweep side to side.

## Emergency egress windows

Vast has 4 points of emergency egress. The main entry door, the large side and rear windows and the skylight. The main entry door and large windows are all clearly marked with exit labels.

## Battery charge level and Inverter/charger

One of the most important things to know about the Vast, is to turn the Inverter on, at the control panel touch screen and set it to "Inverter" or "Power Saver". If connected to shore power, this will insure that your batteries are being charged and will not dip below acceptable battery levels.

Vast has a battery charge level indicator, located on the control panel touch screen. If you see that your battery level has dipped to 11.25V or below, check to be sure the inverter is turned on and trailer is connected to live shore power, using the control panel touch screen. This should bring your battery levels back up to acceptable level. If you have the solar panel option, and your inverter is on, your batteries should not dip to low levels.



**ALWAYS TURN ON INVERTER/CHARGER AT THE CONTROL PANEL TOUCH SCREEN.  
FAILURE TO TURN ON INVERTER/CHARGER WILL RESULT IN BATTERY DRAIN.**

## Safe water test kit

It is always a good idea to have a safe water test kit to assure that the water coming in to your RV is suitable for drinking. The on-board No Dirty Water system is designed to filter out impurities and provide you with safe, drinkable water. However, if the filter is in need of changing, or there is a malfunction... a water test kit will remove any doubt as to the suitability of the water.

## QUICK START GUIDE

### Basics

1. Before travel: Read manual thoroughly and understand systems, danger, warnings, cautions.
2. Before travel: Read and follow "Towing: Pre-departure checklist".
3. Upon arrival: Read and follow "Setting up: Arrival on-site check list".
4. Connect facilities hook-ups.
5. Turn on batteries, inverter, water pump \*Note: Only turn on water pump when no city water connection is available.

#### CAMPSITE WITH FACILITIES:

1. Connect to Shore Power
2. Connect to City Water
3. Red Button - Turn on Battery
4. Touch Screen - Turn on Inverter

#### OFF-GRID CAMPING:

1. Red Button - Turn on Power
2. Touch Screen - Turn on Inverter
3. Touch Screen - Turn on Water Pump

## GENERAL INFORMATION

### Limited warranty policy

1. Warranty is valid for the original purchaser only. Warranty may not be transferred or deferred in any way. Once sold, or otherwise disposed of by the original purchaser to any third party, SylvanSport accepts no liability for a claim logged by anyone other than the original owner.
2. Warranties are not valid on items purchased for the purpose of rental, loan or commercial use.
3. No warranty is offered on products sold at auction or as a demonstrator, factory seconds or used products.
4. Warranty does not cover the product in the event of abuse, misuse, accidental damage or collision, modification of design, fair wear and tear (wheel bearings, wheels, tires, paint, travel cover and mesh) neglect, incorrect or inadequate maintenance. Suspension, wheel nuts and bearings must be checked before every trip. Wheel bearings must be serviced by an authorized motor mechanic in 12 month (or 12,000 mile) intervals. Note for extreme use the travel trailer will require more frequent wheel bearing service.
5. Vast travel trailer body and it's workmanship are normally guaranteed for a period of 12 months from original date of purchase.
6. All warranty work is to be carried out by SylvanSport authorized service representatives.
7. Any transport, accommodation, towing or recovery costs arising from a warranty claim are the responsibility of the purchaser, unless otherwise stated in writing by SylvanSport.
8. Your SylvanSport Vast travel trailer comes with guarantees that cannot be excluded under the California Consumer Law. The benefits within our warranty are in addition to other rights and remedies under the California Consumer Law in relation to our Vast travel trailers.
9. Warranty is valid to SylvanSport Vast travel trailers that have been maintained in accordance with Vast travel trailer Care and Maintenance Guide. Note if warranty claim is lodged, service documentation may be required to support your claim.
10. All servicing must be conducted by a licensed mechanic and in accordance with SylvanSport Vast recommended service/ maintenance schedule, SylvanSport requests that all servicing invoices and documents be kept accessible in the event that they need to be presented at a later date.

## SERVICE

Please ensure regular maintenance and greasing. This will depend on distance and terrain traveled. Please note that we recommend periodic inspection (for damage) and replacement of wheel bearing lubricant to obtain maximum bearing life. Check wheel lug nuts for proper torque before leaving. Refer to the manufacturers manual for more detail.

## REPORTING SAFETY DEFECTS

For any safety or warranty issues, contact our customer service department at (828) 348-5585 or email [info@sylvansport.com](mailto:info@sylvansport.com)

## FLOOR PLAN AND SPECIFICATIONS

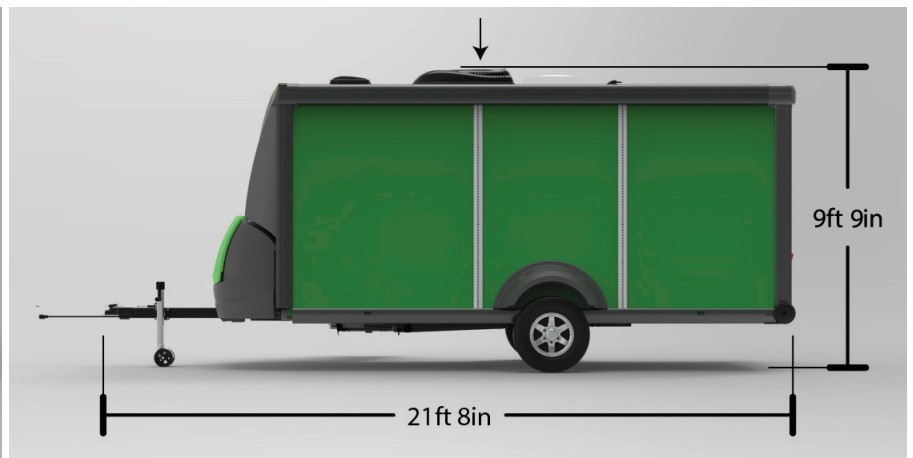


Vast floor plan

- EXTERNAL BODY LENGTH: 21' 8"
- INTERIOR BOX LENGTH: 15'
- EXTERNAL WIDTH: 7' 9"
- INTERIOR BOX WIDTH: 5' 10"
- EXTERNAL HEIGHT: **9' 9" with Air Conditioner**
- UNIT WEIGHT: 4,250 lbs.\*
- MAXIMUM TRAILER CAPACITY: 5,000 lbs.  
\*Weight subject to change.
- WHEEL LUG TORQUE SETTING: 90 - 100 ft. lbs
- SIDE-CARRY MOUNTING SYSTEM CAPACITY: 250 lbs per rack pair



Front view - overall dimensions



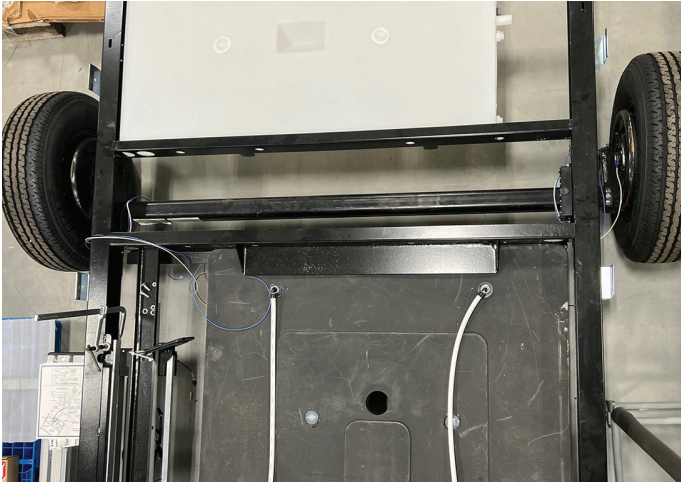
Side view - overall dimensions



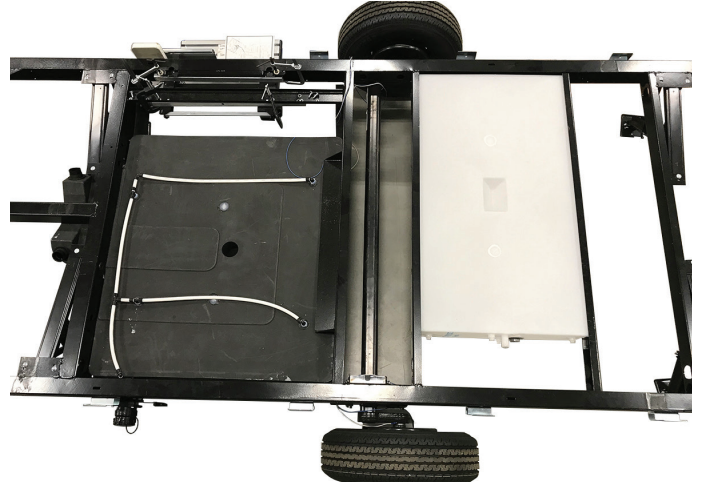
## EXTERIOR CHASSIS

The Vast Chassis is a welded steel frame, e-coated and powder-coated to minimize corrosion. Custom designed for the Vast, the chassis is built by the leading trailer frame manufacturer. The Vast chassis supports all the Vast systems including everything under the floor: Fresh water tank, gray water tank, retractable step, plumbing and piping, electrical cable, axle, wheels and tires. The welded steel chassis is an integral element to the overall construction.

For maintenance and cleaning instructions, please see the maintenance and cleaning section.



Dexter torsion axle, wheels and tires



Chassis with Fresh Water and Gray Water Tanks

## SUSPENSION SYSTEM

Vast uses a Dexter Torsion Axle, rated at 5000 lbs. Torsion arm suspension is completely self-contained within the axle tube and attaches directly to the trailer chassis using brackets, which are an integral part of the axle assembly. Torsion axles provide improved suspension characteristics through the unique arrangement of a steel torsion bar surrounded by four rubber cords, encased in the main structural member of the axle beam. Except for periodic inspection of the fasteners used to attach the torsion axle to the Vast chassis, no other suspension maintenance is required.

For more information on the Dexter Torsion Axle, please refer to manufacturer manual, included in this binder.



Dexter torsion axle



Axle to wheel/tire location

The road tires on the Vast are ST225/75R15 E PLY Class E radial tires. Be sure to follow manufacturers guidelines for care and maintenance.

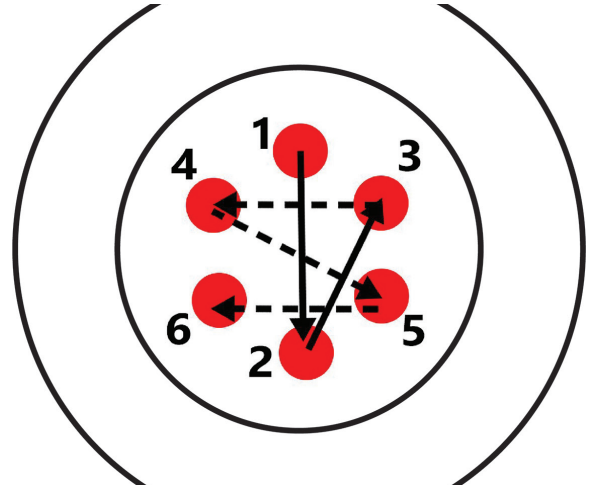
The spare tire is a bias ply tire and is for emergency use only. When towing trailer with spare mounted to axle, limit speeds to 60 mph or less, and less than 250 miles.

The Vast uses 15X6 bolt aluminum alloy wheels, with (6) 1/2 - 20 threaded lugs. The proper torque setting for the lugs is 90 - 100 ft. lbs. Be sure to tighten to proper torque, do not guess. The lug nuts are 13/16" (21mm) hex. The tightening pattern is shown in diagram below.

Vast uses a plastic molded fender with integrated amber and red LED lights and mud flaps, to help prevent debris from hitting the sides of the travel trailer and vehicles traveling behind.



Tire and wheel combination



Be sure to follow proper Lug tightening sequence

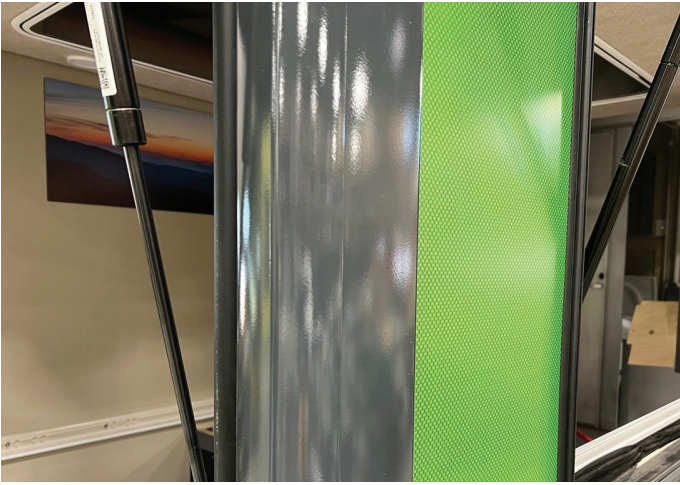
## BODY AND FLOOR

The composite body panels of the Vast are constructed using a fiberglass pultrusion and an aluminum extrusion frame system, with foam and custom fiberglass panels. With extraordinary insulation properties, and a robust aluminum extrusion joining system using fasteners and adhesives, the Vast body is extremely rigid, waterproof and impervious to the elements.

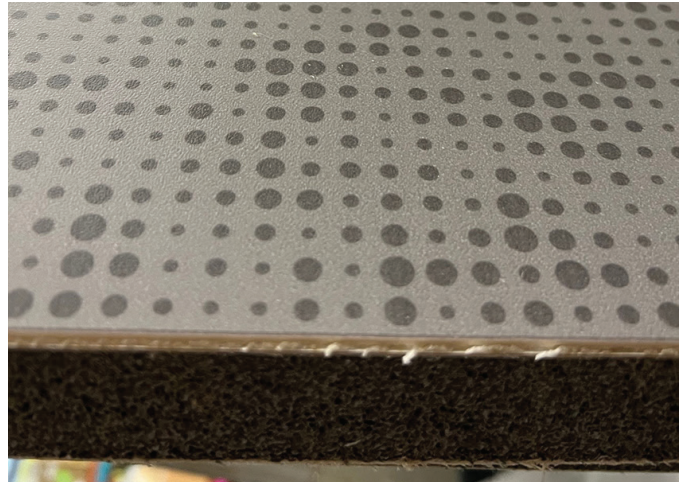
The floor panel is constructed using a one-piece, rigid composite panel with a 3.4mm thick vinyl flooring cover. A true composite structure, the floor panel combines fully recyclable, repurposable and environmentally friendly natural components and utilizes no bonding, all virtually waterproof, components are thermally fused. This unique combination of materials ensures a low cost, long lasting flooring solution that is sustainable while emitting no harmful gases. Commercially tested and proven to have greater strength, durability, and insulative properties than other traditional materials such as plywood, honeycomb, pressboard, FRP panels and Styrofoam or other plastic cores.

The vinyl floor covering material is Forbo Saron Acoustic Code Zero Medium Gray 19dB 433219 and is super hard wearing. It offers an impact sound reduction of 19dB and has an R9 slip resistance rating. It is easy to maintain and keep clean and has a PUR surface coating which makes it suitable for demanding commercial locations.

For maintenance and cleaning instructions please see the maintenance and cleaning section.



Custom composite exterior wall panel and interior wall panel



One-piece, composite floor panel, with vinyl floor covering

## MAIN ENTRY DOOR

The Main entry door is located near the front of the curbside wall. The main entry door features a fixed, tinted window with black-out shade, insulated, thermoformed inside wall, with two storage pockets and an integrated sliding screen door.

With the key lock entry system, it is easy to access from the exterior. To lock the door from the inside, simply slide the locking lever downward - into the red indicator. To open, slide up into the green area. Note that the door is hinged on the left and latched on the right. This orientation is necessary for access to the indoor/outdoor kitchen, when it is in the outside position.

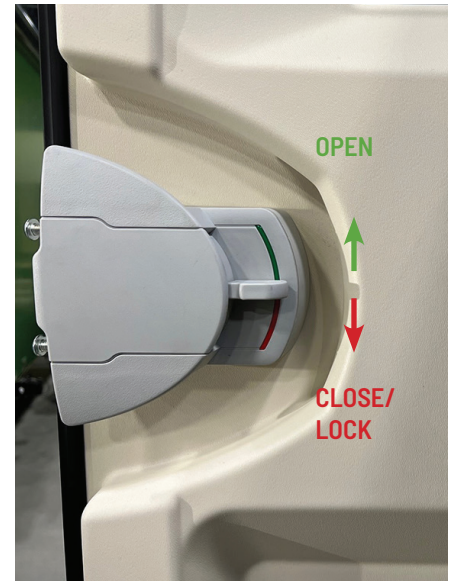
The main entry door also features a manually retractable step and a lighted grab handle, for easier access in and out of the Vast.



Main entry door location



Main entry door, opened. Integrated screen door



Main entry door, entry handle

## WARNING

IT IS IMPERATIVE THAT THE MAIN ENTRY DOOR IS PROPERLY SECURED AND LOCKED BEFORE TRAVEL.

## HITCH COUPLER, 7-WIRE ELECTRICAL PLUG AND SAFETY CABLES

The Vast features a positive latch, steel coupler that fits a standard 2" ball. The coupler is welded integral to the frame, powder coated black and is lockable.

The standard 7-wire electrical plug powers the Vast travel trailer road lights and e-brake system. The 7-wire electrical plug and cable lead to a junction box, located on the Vast chassis and distributes to the right turn/brake lights, left turn/brake lights, tail/running lights, ground wire, brake controller output and battery hot lead.

The Vast has two heavy-duty safety cables, bolted to the tongue. When securely fastened under the trailer tongue, towing safety cables keep your load from crashing to the ground in the event of a coupler failure. By crossing the chains or towing cables under the trailer coupler and attaching them to the tow vehicle with the S-hooks, the safety cables act like a safety net in an emergency, catching the dislodged tongue.

Electric brake - breakaway cable. The breakaway cable attaches to the brake system on the Vast and attaches to the back of your tow vehicle. If the trailer ever becomes detached from your vehicle while towing, this cable pulls out the pin attached to the trailer brake emergency switch, causing the brakes to engage and safely stop your trailer.



Hitch and safety cables, breakaway cable connected to tow vehicle



Breakaway switch, seven pin connector



7-wire electrical plug and junction box



Safety cables

## SWIVEL TONGUE JACK

The Vast swivel tongue jack is an aluminum, Fulton F2 Sidewind tongue jack. The Fulton swivel tongue jack is extremely light, yet durable and comes with a limited lifetime warranty. The swivel tongue jack mounts to the front of the trailer tongue and travels in retracted (horizontal) position. To deploy, pull up on the release handle and rotate the swivel tongue jack, until wheels are firmly on the ground and device clicks into a positive, vertical, locked position. The jack includes a crank that turns internal gears, which then extends out of a metal shaft. The shaft raises the trailer off the ground, so that it can be properly hitched onto the tow vehicle. There is also a crank handle lock, to safely stow the crank when the Vast is traveling.

For more information on the Fulton F2 Sidewind tongue jack, please refer to manufacturer manual, included in this binder.



Swivel tongue jack lowered



Swivel tongue jack raised for travel

## TOWING

### Before You drive off: Pre-departure check list:

- Make sure that all 4 corner jacks are raised.
- Connect the breakaway brake safety cable to your vehicle.  
Note: Your Vast should not be towed without fully functioning electric brakes.
- Make sure that the hitch/coupler is connected properly. You must use a standard 2" ball with 10,000 lb min. tow capacity.
- Make sure the swivel tongue jack is raised into horizontal, travel position and is locked.
- Check safety chains and make sure that they are positively latched to your vehicle draw bar and cross underneath draw bar.
- Connect the 7-wire electrical plug to your car's 7-wire connector port.
- Check all lights for proper operation.
- Make sure there is enough slack in the safety cables, electrical harness and emergency brake cable that full turns can be made, both left and right.
- Make certain that the safety cables, electrical harness and emergency brake cable are not able to drag on the ground.

## SETTING UP

### Arrival on-site, full set-up check list:

- Park the Vast on level ground.
- Be sure trailer wheels are securely chocked.
- Disconnect tow vehicle, mechanically and electrically.
- Extend trailer stabilizer jacks and level in both side-to-side and front-to-back directions.
- Determine availability of shore utility connections – fresh water, electric, and sewer.
- If available – connect fresh water hose at faucet and to city water connection on trailer.
- If available – connect 110VAC – 30Amp power cord to power post and shore power connection.
- If available – connect 3" waste water hose from waste water dump valve to shore sewer connection.

- Extend front storage box, to access LP gas bottles. Open valve of one gas bottle, and make certain regulator is drawing from that bottle. Latch front storage box in closed position, if desired.
- Open main entry door and turn on battery(s) using the red switch on the panel to the left of the door (if not already turned on). If trailer is used frequently, battery main can be left on. This is a latching relay and can be heard to click on when energized.
- Manually extend the main entry door step.
- Step into trailer and touch the control panel touch screen. This should illuminate the home screen.
- Take note of the reported house battery voltage – under normal circumstances it should be above 12V.
- Regardless of the reported house battery voltage; touch one of the two icons to turn on the inverter to either normal or power saver mode. When the icon is illuminated, it is normal to hear the inverter fan come on (especially if the reported house battery voltage is under 12V and normal inverter on is selected) the house battery voltage should increase (usually above 13V).
- While on this screen, if desired, choose the icon to extend the awning. Be certain that there is adequate clearance to extend the awning before touching the icon to start the extension. The awning extension can be stopped at any point, by touching the icon a second time, while the awning is running.
- Extension of the indoor/outdoor kitchen is manual and can be accomplished by fully opening the kitchen access door. There are two releases that need to be activated before extending the kitchen. The slide bolt latch must be released first by lifting and rotating the locking pin and retracting inward to the stowed position. Once the bolt is released, pull the ring on the snap latch to the right, to release the kitchen. Depending on the load of the kitchen, the kitchen may immediately begin to extend outwards. If the kitchen is lightly loaded it may be necessary to gently pull outwards, once the latch is released.
- The extension leaf of the kitchen can be raised by lifting it to rotate upward into its latched position.
- Windows, skylight, and vents can be set to desired open position at this time.
- If shore power is available, the roof air conditioner can be turned on. This is done by accessing the air conditioning control screen on the control panel touch screen. Set the target temperature using the up/down buttons.

## MANUAL LEVELING SYSTEM

BAL “C” Jacks combine the strength of a leveling jack and the steadiness you get from a stabilizing jack. Designed for use with travel trailers and fifth wheel trailers, there’s no comparable product like the “C” Jack. BAL “C” type stabilizers are mounted to the trailer frame, where the cross-member meets the main frame member.

There are many websites and videos on how to level your single axle RV. The basic steps to follow are:

- Level side to side.
- Set tire chocks.
- Unhitch and level front to back using tongue jack.
- Then set stabilizers.

To access the jacks, remove the jack crank handle, stored in the lid of the front storage box. Access to the crank mechanism on the leveling jacks is through the slots on the bottom extrusions - on the sides of the Vast. Optionally, you can use a (cordless) power drill to raise and lower the stabilizer jacks. See the Suggested Tool Kit section on page 34 for more information.

Using the jack crank handle, push through the slot until positive engagement is made with the leveling jack. Turning the jack crank handle counter-clockwise will lower the leveling jacks. Lower leveling jacks until leveling jack pads make positive contact with the ground. An 18V cordless power drill and a 3/4” socket can make raising and lowering the jack system quicker and easier. Use caution, a low setting and be careful to not overtighten jacks when retracting.

To return leveling jacks to stowed position, simply reverse the process, until jacks are raised and secure. Store jack crank handle back in the front storage box lid.

For information on “Trailer leveling, the easy way”, see the addendum section.



All four leveling jacks have access slots for crank handle



Rotate crank handle to raise and lower leveling jacks

## FACILITIES CONNECTIONS

*Fresh water tank fill:* To fill the 28 gallon fresh water tank, a standard garden hose can be inserted into the port. By watching the fill operation you will see it fill up (it is okay to have slight overflow). Turn off water source and replace cap.

*Grey water release and flush:* Located street side wall, closer to the front. Unscrew cap, attach hose and pull release lever.

*Truma heater vent:* The vent is both the combustion air inlet and the exhaust outlet, so caution should be taken not to stand or place anything near this vent. It must remain unblocked and freely flowing for both the water heater function and the furnace function.

*Battery vent:* This vent assures proper airflow over the batteries. Nothing needs to be done with this vent, but it must remain uncovered and free flowing. Check both vents periodically and remove any debris, insects or dirt.

*Shore power connection:* Input connection for campground power. Additional details can be found in the shore power section in the manual. It is for 110 vac connection with 30 Amp capacity.

*City water connection:* This port is for water connection to campground water source. Thread hose on to connector and turn on. Vast pressure and back flow technology will control flow into the plumbing system. Remember to reinstall the cap before traveling with the Vast.

*Cable TV Connection:* Plug in cable or satellite to this port. Connection runs to the TV mounted on the entertainment center.



Facilities ports and vents



Gray water flush port

## KITCHEN ACCESS DOOR

The Kitchen access door is a very important element of the indoor/outdoor kitchen assembly. The kitchen access door has two locking latches to secure it while in transit, as well as to provide security from unwanted entry. To open the kitchen access door, use the same key as the main entry door, unlock both cylinders and rotate to free the latch pawls from the frame. Swing the door out of the way and deploy the indoor/outdoor kitchen (see indoor/outdoor kitchen section for details).

When the indoor/outdoor kitchen is deployed in the outside position, the kitchen access door can be secured to the side panel to keep it secure, by using the hinged hook on the panel.

To re-lock the kitchen access door, close the door, make sure the orientation of the key slot is as shown in the photo and push in, until you hear a positive click and can see that it is closed and secure.

When the kitchen is still inside, the kitchen access door can be opened and the stainless topped kitchen extension leaf can be raised for use as a pass-through to the outside. It should be noted, however, that the opening is not screened and bugs can get inside.

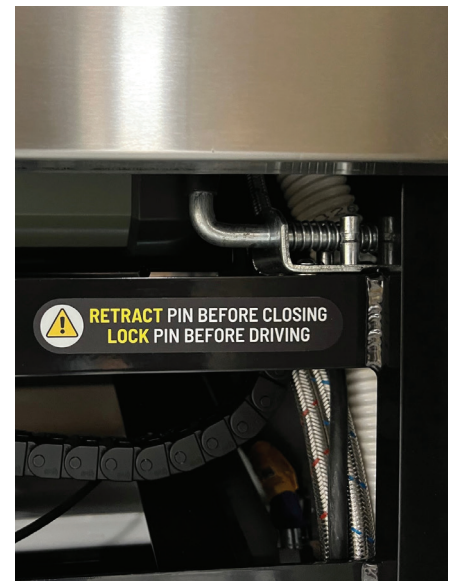


Kitchen access panel - closed and locked



Door opened

Kitchen release, pull toward front of trailer to release



Safety latch - must be engaged before traveling



## WARNING

**IT IS IMPERATIVE THAT THE SAFETY LATCH BE RETRACTED BEFORE CLOSING THE KITCHEN  
ONCE CLOSED, THE SAFETY LATCH PIN MUST BE EXTENDED/LOCKED BEFORE DRIVING**

## INDOOR/OUTDOOR KITCHEN

Once the kitchen access door has been opened, push against the kitchen assembly slightly, disengage the safety latch, pull the kitchen release latch toward the front of the trailer, (located at the bottom), then gently guide the kitchen assembly, until it is fully lowered. Always be sure there are no obstructions as you lower or return the kitchen between inside and outside. For deploy and pack-up steps, see below.

Operation details for the dual zone cooler (refrigerator) can be found in the Interior: dual zone cooler (refrigerator) section. Operation details for the propane stove can be found in the Interiors: propane stove section.



## DEPLOYING AND PACKING UP THE INDOOR/OUTDOOR KITCHEN

### DEPLOYMENT CHECK LIST

- Using your key, unlock both of the kitchen access door latches, then turn to release the latches.
- Check to make sure everything arrived intact, after transit.
- While pushing lightly against kitchen assembly, release the safety latch from the bottom front right corner.
- While still pushing against the kitchen assembly, pull ring on latch and guide the kitchen out.
- When the Kitchen reaches the bottom (reaches full travel of the drawer guides), you should have sufficient clearance of drawers and electrical connections from the Vast wall. The inner wall should be sealed against the inside of the door frame.
- Check to be sure all systems are functioning: electrical (refrigerator, lights, microwave), water and gas (stove).

## WARNING

**BE AWARE OF ANY ODOR OF PROPANE AND IMMEDIATELY CLOSE VALVE AT GAS BOTTLE IF ANY LEAK IS SUSPECTED.**

### PACKING-UP CHECK LIST

- Check to be sure safety latch pin is retracted (is NOT sticking out).
- Check to be sure the shower curtain and wand and any other obstacles are out of the path of the kitchen assembly travel.
- Be sure faucets are turned to off position and are secure.
- Check to make sure drawers are closed, stove lid is down and refrigerator is locked in retracted position.
- Make sure kitchen access door is fully opened.
- Push the kitchen assembly back into the Vast fully, you should hear the click of a positive latch.
- Rotate the safety latch so the spring loaded pin engages with the mount bracket and the kitchen is secure.
- Close the kitchen access door and lock both kitchen access door latches.



Kitchen components



Kitchen with cooler extended



Kitchen stove with glass lid raised



Kitchen power receptacles



Cooler slide release button



Stove controls

## OUTDOOR LIGHTING

There are several outdoor locations for lighting, all are controlled by the touch panel control screen or either a remote switch or they have a direct switch built-in. The front storage box has a battery powered tap light. The spare tire and propane tank storage area (service area), located under the front cap, has two LED lights, the side-carry mounting area (rack lights) is lit by an LED light, the awning has built-in lights and the rear door has two overhead LED lights, to illuminate the rear loading area. Much of this lighting is dimmable and controlled by the control panel touch screen.



Front and side marker lamps



Amber front side marker lamp (rear/red not shown)



Rear stop/tail/turn lights and center high mount



Lift gate lights



Fender LEDs, red (rear) and amber (front, shown)



Grab handle entrance light

## AWNING

The 177" (full length), automatic awning is visually integrated into the Vast body panels and extrusions. Fully controllable from the Firefly touch screen, the awning is waterproof, creates shade, has a built-in wind sensor and LED lighting. Be aware that if the wind sensor determines that winds are of sufficient force, the awning will automatically retract. If left unattended, be certain that there are no obstructions to prevent its closure or damage may occur.

For more information on the Vast awning, please refer to manufacturer manual, included in this binder.



Awning extended, window and shades opened



Awning extended with lights

## FRONT STORAGE BOX

The Vast front storage box is very large, waterproof, lockable and can slide forward and aft, (by pulling up on the release handle), to reveal access to the spare tire and propane tank storage area. The front storage box lid contains a prop rod, leveling jack crank handle, tap light and wireless switch for the service bay and rack lights. Use the prop rod to keep the lid raised, when in use.

For information on cleaning and maintaining the front storage box, please refer to the Exterior: cleaning and maintenance section



Front storage box slides fore and aft.



Lockable front storage box lid contains prop rod, jack handle, tap light and wireless light switch

## ! WARNING

**IT IS IMPERATIVE THAT THE FRONT STORAGE BOX LATCH IS POSITIVELY ENGAGED BEFORE TRAVELING**

## SPARE TIRE AND PROPANE TANK STORAGE

Located behind the front storage box, on the curb side is the full-sized, tubeless, steel-belted radial (load range E) spare tire, mounted to the front wall with a steel bracket. A lug wrench is needed to remove the lug nuts holding the tire. Located on the street side, are one (or two) propane tanks. Also included in this area is the optional hose spigot and shelving, to carry a hose or other miscellaneous items. Be certain that anything being transported on the shelf is positively secured before traveling.

The propane tanks used are 20 lb, standard propane. The connection is done via the split gas regulator, located on the front wall. It is advised that you do a routine check to be sure propane tanks are securely mounted and the connections to the gas lines are also tightly secured. Also be sure gas tank valves are closed tightly when not in use.

To operate the propane gas dual regulator and bottles:

- Slide the front storage box forward, providing access to the propane bottles and dual gas regulator.
- Rotate the black knob on the top of the dual regulator, to select which gas bottle you will draw from.
- **SLOWLY** open the valve on top of the gas bottle that you have selected.
- Check to make sure the gas bottle you are NOT using is turned off.
- You should now have a free flow of gas to your system.



Note: If all of your appliances appear to be malfunctioning, it is likely that it is a regulator problem. Start by resetting the regulator. To do this, turn the tank off then disconnect the hose from the gas bottle and let it sit for 10 seconds. Reconnect hose, slowly turn gas bottle back on. If that doesn't work, your regulator likely needs replacing. If this still doesn't solve the problem, you may have a blockage or issue somewhere else in the system. If only one appliance isn't working correctly, it is likely an issue with the appliance itself.



Two propane tanks, secured and connected



Mounted spare tire and optional spigot



Service bay lights

### SIDE-MOUNT CARRYING SYSTEM

The Vast travel trailer incorporates a unique and proprietary vertical mounting system for boats of all kinds. With a custom vertical aluminum extrusion, designed to accommodate standard airline or D-track fittings, you can position your boats to conveniently mount along the side of the Vast. Within easy reach, no ladders are needed, boats are kept within reach and out of danger from low obstacles like drive-thrus or gas stations. The unique breakaway mounts are designed to minimize damage to the Vast while in transit, if an obstacle should be struck. Maximum capacity, per pair of racks is 250 lbs.

Items mounted to the side mount carrying system racks must not protrude more than 20 inches from the Vast vertical extrusions and all items must be secured to the racks before traveling.

For more information on how to secure boats to the side-mount carrying system, see the addendum section.



Side-mount carrying system with tracks and breakaway arms.



Retracted position:  
Lift up where indicated,  
to allow arm to rotate out



Extended position:  
Swing out to the left until engaged

## **!** WARNING

**MAXIMUM LOAD IS 250 LBS. PER PAIR OF RACKS**  
**BEST PRACTICE IS TO FOLD RACKS FLAT AGAINST THE TRAILER, WHEN NOT IN USE**

## REAR ACCESS DOOR

The rear access door is designed to open and close smoothly, is lockable, waterproof and has two built in LED lights for overhead illumination. The low entry height combined with the obstruction-free opening (62" wide x 69" high) give you wide open access to load/unload bikes and cargo.

There is one latch release and two latches - one per side. With a specially designed lift system, the rear door is designed for easy opening and closing. Insert key and turn to unlock. Lift up on handle and guide door to its fully open position. There is a strap conveniently mounted to the bottom inside of the rear door, to assist with closing the rear door.

The rear door houses the stop/tail/turn and license tag lights. Access to the wiring and mounting of these lights can be achieved by carefully removing the three cover panels, from the inside. Only use hand tool to remove fasteners.

Items stored in the Vast while traveling should be secured to prevent damage.



Lockable rear door, with lift assist



Store and access bikes, coolers, gear and more

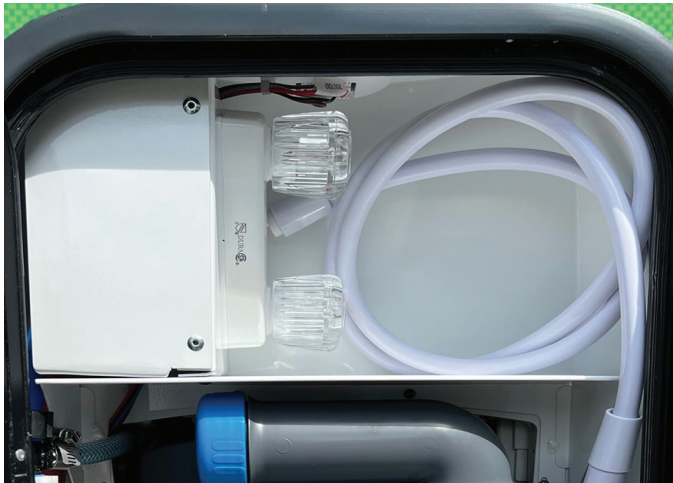


Integrated grab strap, to help close rear door

## WARNING

**IT IS IMPERATIVE THAT THE REAR ACCESS DOOR LATCH IS POSITIVELY ENGAGED BEFORE TRAVELING**

The exterior shower is located behind the toilet access door, on the street side front side wall, (on the top shelf). Controls, hose and shower wand are all contained within this box. To operate, simply use the hot and cold water knobs and set to desired temperature and intensity. There is a shut-off (or “pause”) slide valve on the shower wand, to conserve energy.



Shower controls location



Lockable Shower and Cassette storage

## WARNING

**IT IS VERY IMPORTANT TO MAKE SURE WATER KNOBS/VALVES ARE COMPLETELY SHUT WHEN NOT IN OPERATION, TO PREVENT LEAKAGE OR FLOODING**

### FRESH WATER TANK

The Vast travel trailer has a 28 gallon fresh water tank and is mounted underneath the chassis. The fill port for the fresh water tank is on the street side rear and is labeled. The drain valve for the fresh water tank is also located on the street side, closer to the front and is clearly labeled. The tank can be filled using a standard garden hose. Tank level monitoring can be done via the Firefly touch panel screen. **Before travel, it is advised to empty the tank if you know you will have access to fresh water at your destination. A full tank adds 224 lbs, which can adversely effect gas mileage.**

### GRAY WATER TANK

The Vast travel trailer has a 32 gallon gray water tank and is mounted underneath the chassis. The gray water tank collects the used water for your Vast, but no solids (those are contained within the toilet cassette). It is important to be aware of the fluid level in the gray water tank on a regular basis. The drain valve for the gray water tank is located underneath the street side walls and is labeled. **Before travel, it is advised to empty the tank, a full tank adds 256 lbs, which can adversely effect gas mileage.**

On the Firefly control panel there is an icon that reports an approximate quantity of the fluid in tank. When it indicates that the tank is full, it is likely time to empty the tank. We also recommend that at the conclusion of every outing the tank be emptied.

To empty the tank - there must be an appropriate draining facility available. These can usually be found at campgrounds. This link is helpful for locating dump stations in every state: <https://rvshare.com/dumpstations>

It is suggested that gloves be worn when completing this task. Waterproof gloves like rubber dish washing gloves work well. The gray water flush port is a standard three inch connection located on the street side of the trailer in front of the wheel. The cap is retained by a bayonet lock which requires a 1/4 turn, counter clockwise to remove. Once removed a standard bayonet lock coupler on a flexible 3 inch sewer hose can be connected. The open end of the hose is inserted into the waste receptacle at the dump station.

Once both ends of the 3 inch hose are secure, open the slide gate valve to begin the emptying process. Try to be certain that there is a good slope to the hose with no kinks or bends so that the entire contents is evacuated. If a hose connection and hose with fresh water is available at the dump station, this can be connected to the threaded female hose connection, next to the 3

inch dump valve. This hose fitting is connected to shower heads mounted within the gray water tank and will facilitate flushing all waste out of the nooks and crannies within the tank. It is not imperative that the fresh water flush system be used at every dump, but it is a good practice to use the flush connection at the end of the season so that the tanks are not inadvertently stored with waste in them.

When draining and flushing is complete, close the slide gate valve on the 3 inch valve. Disconnect the hose with a ¼ turn counter clockwise and use the fresh water hose (if available) to rinse out the hose and wash off any undesirable residue. Remove the open end of the hose from the waste receptacle. Coil the hose and store it in an appropriate location. A bucket or plastic storage bin works quite well, to store this hose and any other gray water tank flushing and emptying tools and equipment. The shelf behind the forward storage box on the curb side, next to the outdoor spigot would be an appropriate location to store the hose for travel (be certain to secure the hose and its storage container).

In the event that the trailer is being used in one location for an extended period of time, it is permissible to drain the contents of the gray water tank into a mobile tank and take the mobile tank to the dump station. It is also permissible to connect the gray water tank to a site specific sewer connection. In the event of connection to a site sewer connection, connect the hose as you would at the dump station (see above). It is recommended that the slide gate valve be kept in the closed position as a precaution to prevent unwanted odors from entering the coach from the septic system. When it is observed that the tank is full or the trailer is to be moved, open the slide gate valve and allow the contents to drain. Using the tank clean-out fresh water connection and a hose is also helpful. DO NOT USE the same hose for flushing the gray water holding tank as is used to connect the fresh water tank to the city water connection.



Fresh water tank, view from underneath



Gray water tank and flush port (circled), view from underneath

## CASSETTE TOILET

The Vast travel trailer has an electric flush cassette type toilet. To remove the cassette, for disposing waste, first go inside the bathroom and slide the gray cassette release lever forward. This will allow you to remove the cassette from the outside.

To access the cassette from the outside, open the toilet access door, located at the front of the street side wall. Reach in and pull up on the blue release handle to free up cassette. Using the cassette handle, pull cassette toward you and out to remove. Cassette has a fold-out handle and wheels for easy transportability.

For more detailed information on the cassette toilet, see the Interior: Cassette toilet section and refer to manufacturer manual, included in this binder.

For information on maintenance and cleaning of the cassette toilet, see the care and maintenance section.



Cassette toilet release latch



Pull outward to remove

## SOLAR KIT

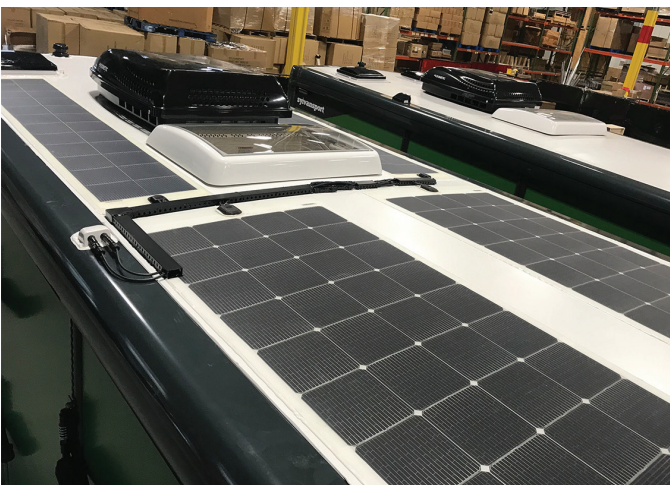
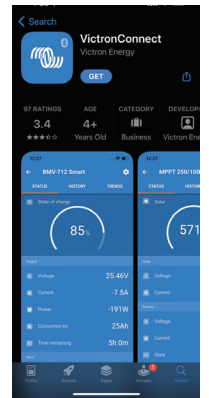
If selected as an option, the solar charging system has roof mounted charging panels and an integrated charge controller that is used to assist in maintaining battery power levels.

The roof panels are Merlin TBS series panels. These are frameless, flexible panels that conform to the curved shape of the Vast roof. They are 80% lighter than glass panels with 50X more durable internal connections and 2.5X the power density as thin film technology. The panels are adhered to the roof with high-tack adhesive that has been tested to 200 MPH. There are no mechanical fasteners or perforation of the roof surface. The 600W capacity installation uses four panels – 2X 180W and 2X 120W which are linked by environmentally resistant, heavy insulated 14 AWG wires and environmentally sealed connectors.

The Merlin supplied roof gland mounted to the street side, upper roof extrusion assures a weatherproof electrical connection for transferring power from the roof to the charge controller, mounted in the service box under the lounge.

The system uses a high-efficiency, Victron Energy MPPT charge controller, that is set to supply adequate charge to the 12VDC batteries. The controller is also capable of connecting with Bluetooth or cell phone with the VictronConnect app, available for iOS and Android devices.

See the included Victron manual for details.



Solar panels mounted to roof



Solar panel connections and cable routing



## ELECTRICAL GROUND ("HOT SKIN") / PROPANE GROUND

If, at any time you feel a slightest tingle or shock upon entering your RV and it feels completely different than a static shock you may commonly feel, immediately disconnect the AC power from the power pedestal and report it to the campground manager.

If it is determined the campground power is properly grounded, then the RV's AC electrical system needs to be evaluated by a professional electrician.

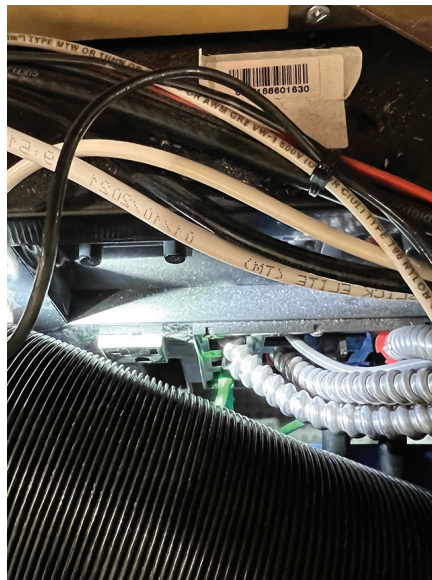
The technician should be aware that there are two power ground connections on the Vast, both using an easy to identify green cable. You should check to be sure that both are securely connected. The first connection is the ground to chassis connection. This is located underneath the Vast, on the curb side, behind the axle. With a flashlight, look under the chassis and assure it is securely connected.

The second connection is at the back side of the circuit breaker panel. To access the back of the circuit breaker panel, slide the lounge all the way to the rear. Remove the top panel of the utilities equipment cabinet and look inside. If you have to move some wires or hoses for better access, that is okay, just do so gently to assure you do not accidentally disconnect anything else.

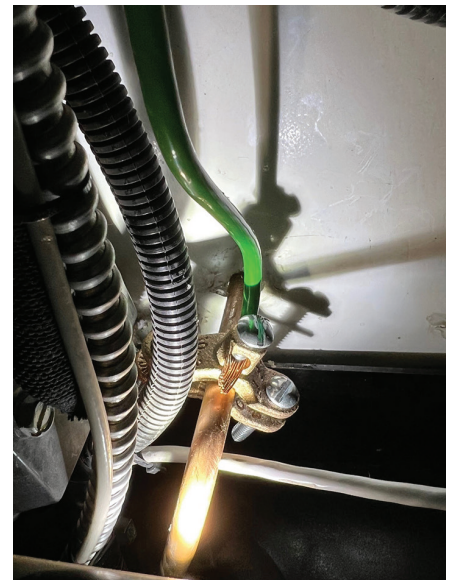
Propane is carried throughout the Vast with a copper tubing network. In order to properly ground the propane system, a ground wire connects the propane tubing to the chassis, via a green ground wire, located above the axle on the curb side. Check to be sure it is securely attached.



Ground to chassis location



Ground to fuse box location



Ground to propane line location

## VAST WATER SYSTEMS WINTERIZATION INSTRUCTIONS

### Introduction:

All plumbing of the Vast is either PEX or plasticized PVC. This means that the plumbing is more resistant to cracking due to freezing water expansion. Also, the plastic nature of the plumbing means that it will not conduct heat away as readily as do metal pipes which promotes the freezing of the water in that type of plumbing.

Here is a link to information provided by Truma with respect to winterizing their Truma Combi water heater/furnace which is installed in the Vast: [https://www.truma.net/advice-blog/winterizing-your-truma-aquago-or-truma-combi?mc\\_cid=d065a-ca0a8&mc\\_eid=b7b792528b](https://www.truma.net/advice-blog/winterizing-your-truma-aquago-or-truma-combi?mc_cid=d065a-ca0a8&mc_eid=b7b792528b) It is provided so that the consumer has a better understanding of the Truma system and precautions that the manufacturer recommends. Of primary importance are being certain that the water is drained out of the tank of the water heater and that NO RV anti-freeze is allowed to enter the water heater.

Instead of introducing RV antifreeze into the fresh water system, we suggest that the majority of the water be evacuated from the system by using compressed air. These procedures are written with that plan in mind. Getting an adapter like the one shown in the image below is helpful to the process, provided its disconnect coupling style is compatible with the air compressor and air hose being used:

This adapter from Amazon is shown as an example; but they are available through many online outlets and retail stores. This adapter will be used to connect a compressor air hose to the garden hose inlet connections of the Vast.



Air hose adapter



RV/Marine anti-freeze

We recommend using RV antifreeze in the septic system of the Vast. It is especially important to know that the drain traps of the Vast are filled with RV antifreeze to protect them from freezing. Two gallons of RV anti-freeze (the pink stuff) rated to  $-50^{\circ}\text{F}$  are needed to complete the winterization task.

It is important to follow the sequence of operations listed in the following instructions. Following them in the order listed provides the best assurance that the majority of the water will be evacuated from the fresh water system and an appropriate amount of RV antifreeze is introduced in all the proper places in the septic system.

## Fresh water system winterization:

1. Completely drain the fresh water tank by opening the drain valve under the side rail of the trailer and open the fill cap to allow the tank to vent more rapidly. Once the tank is completely empty, close the fill cap and close the drain valve.



Fresh water tank drain valve circled in red



Fresh city water connection circled in red

2. Connect the adapter (shown) to the fresh city water connection and connect the air hose to the adapter. Limit the air pressure to not more than 40 psi and apply it to the adapter.

3. With the kitchen in the outdoor position, open the kitchen sink valve in both the hot and cold positions until no water flows out. Close the kitchen faucet when only air is being expelled.

4. Open the outside spigot on the front of the trailer, behind the front storage box. Leave open until no water comes out and then close the spigot.

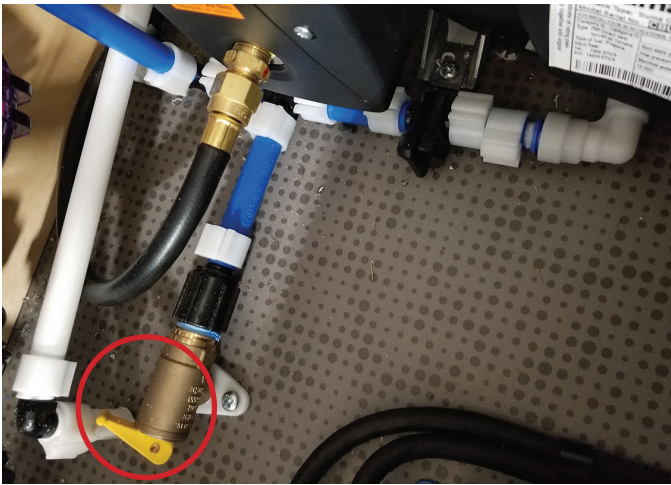
5. Open the hot and cold water valves on the inside shower and let run until no water comes out. It is good to have the shower head lower than the faucet during this operation to assure that water is not trapped in the hose. When no water comes out, close the valves and return the shower head to its stowed position.

6. Open the hot and cold water valves on the lavatory sink and let run until no water comes out. Then close the valves.

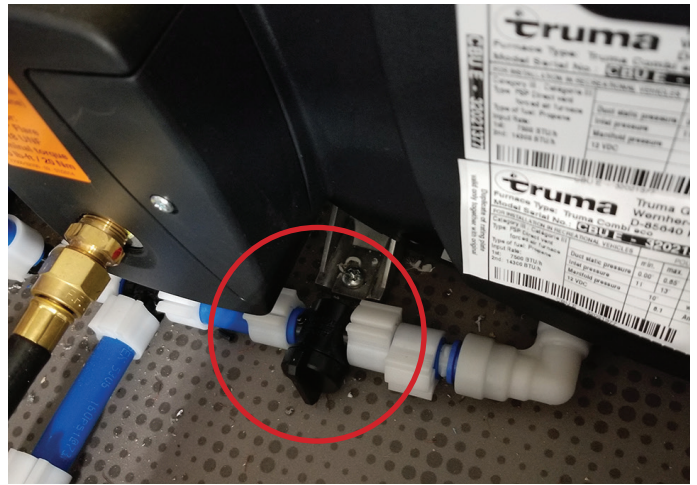
7. Open the hot and cold water valves on the outside shower and let run until no water comes out. Make sure the shower hose is uncoiled and the shower head is lower than the faucet to be sure that all the water is flushed out. Then close the valves and stow the shower and hose appropriately.

8. Flush the toilet as many times as needed to assure that the water has been completely flushed and only air remains.

9. Open the drain valve for the Truma water heater. This is a yellow toggle handled valve within the Utilities equipment cabinet that is plumbed to drain through the floor. Allow it to remain open until water stops flowing out of the Truma tank. Truma suggests leaving this valve open during winter storage.



Truma tank drain valve, circled in red



Fresh tank bypass valve, circled in red

10. Remove the air pressure. Disconnect the air hose. Remove the adapter and cap the city water hose connection.

11. Remove the filter canister, discard the filter. Clean the canister and reinstall with a new filter.

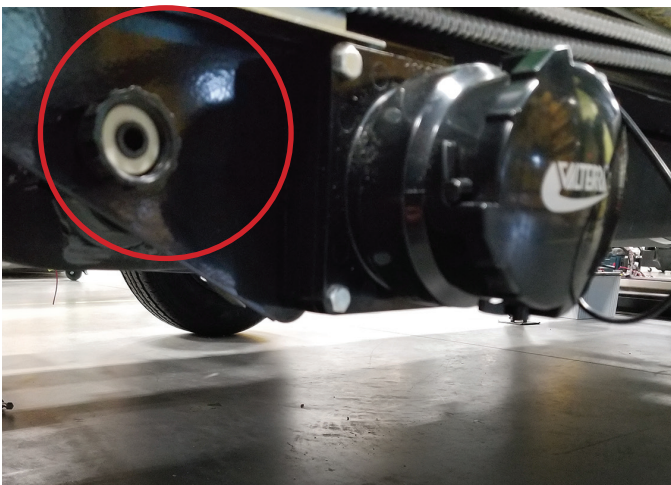
Following the above procedure in this sequence should assure that there is insufficient water anywhere within the fresh water system to cause enough expansion to damage any of the plumbing or fixtures. As a result, it is not required to put RV antifreeze in the fresh water system.

**Once the fresh water system has been completely drained and blown out proceed to the septic side of things.**

#### Septic water system winterization:

1. Remove the cassette from the toilet and drain it completely. The cassette can be stored indoors separate from the trailer, but reinserting it in the toilet will assure that it is where it is wanted come spring. If the tank is going to be stored in location in the trailer; pour about a cup of RV antifreeze in this tank.

2. The gray water tank should be flushed using a garden hose connected to the wash-down connection next to the tank drain valve. This connects to shower heads inside the tank to make certain that the corners and crevices within the tank are flushed with clean water.



Gray tank flush head connection, circled in red

3. Once completely flushed with fresh water, with the drain valve open, connect the air hose adapter above to the same tank shower head hose connection and blow out the tank shower head lines with air not to exceed 40 psi. Once no water is coming out of the tank drain valve, turn off the air and remove the adapter. Close the tank drain valve as well.

4. Pour two cups of RV antifreeze into the shower curtain drain pan and allow it to drain. Make sure shower curtain is clear of pan or it may become stained.
5. Pour one half gallon of RV antifreeze down the shower drain.
6. Pour the remainder of this first gallon of RV antifreeze into the lavatory sink. (Lavatory sink may be stored in either the up or down position.)
7. Move the kitchen, using all precautions, into the trailer and secure it closed. Slowly pour the second gallon of RV antifreeze down the kitchen sink drain.

**Following these precautions should assure that all of the traps in the septic system are completely filled with antifreeze and that there is an adequate amount of antifreeze in the gray water tank to prevent damage to the drain valve and associated plumbing should any moisture collect in the tank.**

### De-winterization process:

#### Introduction:

At the conclusion of the season where temperatures might remain below freezing. The Vast can be dewinterized and prepared for normal use by following these instructions.

#### Fresh water system de-winterization:

1. Make certain that the drain valve on the fresh water tank is fully closed. If an outing is planned in the near future where city water connection is not available, the tank may be filled with fresh water. It is NOT recommended that the Vast be stored with full water tanks as the water has a tendency to become stale and of poor taste.
2. Connect a drinking water hose to the fresh city water connection so that water is available within the trailer to flush the antifreeze solution out of the waste water system.



Fresh water tank drain valve circled in red

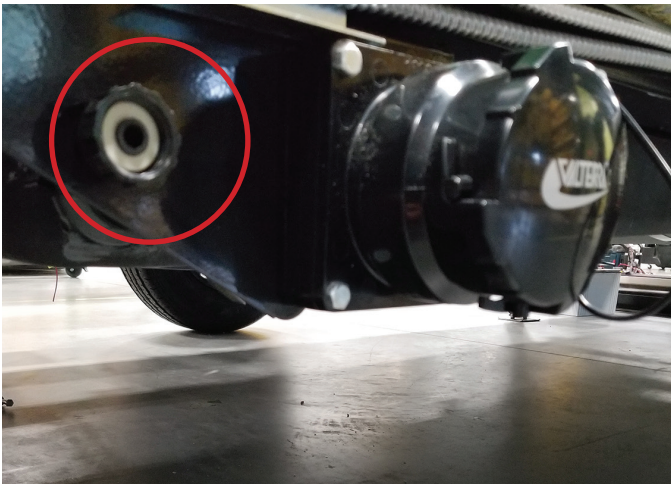


Fresh city water connection circled in red

#### Septic water system de-winterization:

1. Make certain that the drain valve on the gray water tank is fully closed.
2. Begin with the kitchen sink, plug the drain, open the faucet and allow two inches of water to collect in the sink. Wipe down the walls of the sink to assure that any remaining antifreeze solution is off the sink surfaces, then pull the plug and allow the sink to drain completely. After the sink has drained, take a soft towel and wipe down the sink.

3. Move to the shower, allow the shower head to run for a minimum of 3 minutes. It is a good idea to use the shower spray to rinse down the entire shower drain pan to eliminate any residual antifreeze solution remaining on any of the surfaces. If caution is used, this can be done without extending the shower curtain. Wipe down the shower pan surfaces with a soft towel after the drain has been flushed with fresh water for the 3 minutes.
4. Pull shower curtain out of drain pan and flush drain pan using the shower head. Wipe down the drain pan with a soft towel, when done and restore the shower curtain.
5. The lavatory sink uses a similar procedure as the kitchen sink. Fill the lavatory sink bowl with about an inch of water. Wipe down all the sink surfaces and then pull the plug on the drain and allow the sink to drain. After the sink has drained, wipe down the sink surfaces with a soft towel.
6. Depending upon where the toilet cassette was stored during the winter, it is suggested that the toilet be operated several times to assure that it is functioning correctly and that there are no leaks. Begin by assuring that the cassette is fully installed in the toilet and that the flush valve is open locking the cassette in place. Then operate the toilet flush normally for two to three cycles. Remove the cassette and discard the contents in a standard toilet. Then reinstall the empty cassette.



Gray tank flush head connection, circled in red

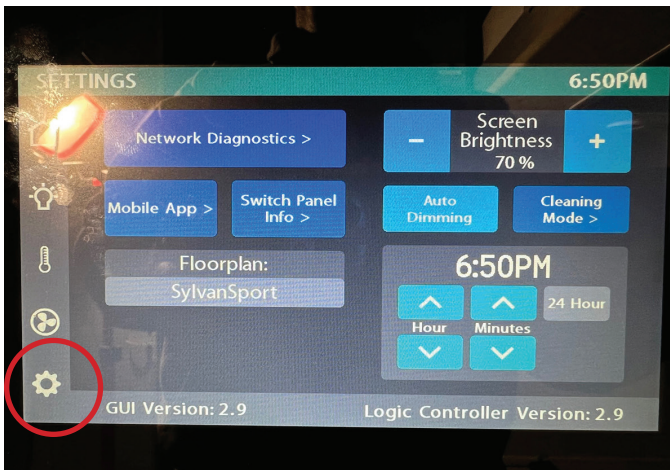
7. At this point all of the antifreeze solution should be flushed from the septic system and the fixtures should all be clean and ready for use. However, the gray water tank should be flushed using a garden hose connected to the wash-down connection next to the tank drain valve. This connects to shower heads inside the tank to make certain that the corners and crevices within the tank are flushed with clean water.
8. Once completely flushed with fresh water, the hose can be disconnected from the flush connection and the plug reinstalled
9. Disconnect the fresh water supply at the city water connection.
10. Take the trailer to a suitable dump facility and open the gray water dump valve and drain the gray water tank of all water and diluted antifreeze solution. The diluted anti-freeze solution can remain in the tank without harm and the trip to the dump station postponed until after the first outing.

## CLEANING, CARE AND MAINTENANCE

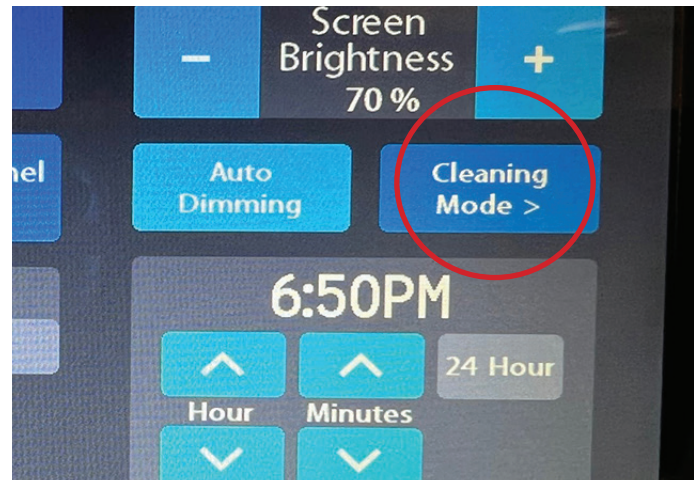
### Interior cleaning:

The Vast travel trailer has a variety of materials and surfaces that will need to be maintained and cleaned. We have listed the major components and surfaces in the Vast interior below. Also, please reference manufacturers manuals for cleaning specific components. For additional information or questions, please contact our customer service department at (828) 348-5585 or email [info@sylvansport.com](mailto:info@sylvansport.com)

- Fiberglass (FRP) wall panels: Any RV cleaner or marine cleaner will work – the panels all have marine grade thermoset gelcoat. For tree sap, you can use a brand like “Goof Off”, or even acetone/alcohol – just be sure to wipe it dry and to not let the solvent sit on the surface. Do not use bleach or acidic solutions. Dishwashing soap (like “Dawn”) is helpful for removing road grime and oil.
- Vinyl flooring: Vacuum or dry mop the floor to remove dust, hair and dirt. Then, wet mop using a cleaning solution. Commercial vinyl floor cleaners are available, or you can make a simple, effective cleaner by mixing cider vinegar with water, (mix one cup of cider vinegar with a gallon of hot water). Use a damp mop to apply to the floor, rinsing the mop frequently with clean, hot water from another bucket or your sink.
- Cabinetry: A water-based all-purpose cleaner is generally safe to use on laminate cabinets. You can also use liquid hand soap or dish detergent to clean the surfaces. After cleaning the laminate with any cleanser, go over it with a clean cloth to remove any residue. Do not use bleach or any product containing bleach.
- Electronics: Lightly dampen a microfiber cleaning cloth and wipe down all the surfaces. For the Firefly touch screen, go to the settings screen and select cleaning mode. This will allow you time to wipe the screen without changing any settings. Use water or eyeglass cleaner applied to a microfiber cloth.



Fresh water tank drain valve circled in red



Fresh city water connection circled in red

- Microwave and refrigerator: Using hot soapy water (or spray cleaner) on the microwave and refrigerator, as you would with your home appliances, is the most common approach to cleaning. Wipe the inside of the empty refrigerator or microwave with the hot, soapy water (or spray cleaner), then wipe with clean water to rinse off soap. Dry with a clean towel.
- Windows: It is recommended to use a cleaner specifically formulated to clean acrylic, such as “Prist” or “Plexus”, if possible. Always use a new soft cloth or a clean cloth. Never use a cloth previously used to clean other household items, as old cloths can retain dirt, grit, and chemical residues that may scratch or harm the acrylic. Always dampen the cloth when cleaning acrylic surfaces, as it is relatively easy to scratch acrylic. Never use a rotary power polisher, a power polisher can overheat the acrylic and distort the surface. Never use any scouring compounds, scouring compounds can scratch the surface and cause scratches that can be difficult to remove. On acrylic, never use a solvent to remove tree sap, adhesive labels or other gummy substances.
- Shower: Hardware & sink or shower fixtures: Use a mild dish soap and water to clean these fixtures. Avoid harsh chemicals or sprays. For hard water spots, a mild solution of vinegar and water works well. To remove mold and mildew from shower

curtain and drain pan, mix one part bleach with four parts water in a spray bottle and shake. Let the solution work against the mildew/mold for about an hour, which should kill it. Wipe, then wash with a household cleaning soap in water and rinse.

- Stainless counter tops and sink: The first step is to secure a high-quality stainless steel cleaner, that includes easy spray-on application. Although a lot of "home remedy" fixes recommend a mild amount of dish soap with water, it's much easier to simply have dedicated stainless steel cleaner handy in a spray-on bottle.
- Lounge/upholstery: The best thing to do with lounge cushion covers is to remove and machine wash them. Meanwhile, you can use a fabric or upholstery cleaner to take care of spots. You may even need to use an odor eliminator, depending on the condition of the fabric.
- Stove: Remove the knobs and soak them in a bowl filled with warm soapy water. Remove the grates and wash them with soapy water, spray with a degreaser if needed. Follow the instructions for stainless steel (above) for the rest.
- Utilities equipment cabinet: The majority of the Utilities equipment cabinet is a plastic laminate and the same steps for cleaning the cabinetry should be followed. More importantly, the Utilities equipment cabinet contains sophisticated electronics and should therefore be kept as dust-free as possible. Occasional vacuuming to reduce or remove dust and dirt should be performed regularly. To access and clean, remove the two removable lids and carefully vacuum the interior. Be careful not to damage any parts. Also, be sure to retrieve and remove any items that may be on the vent screen on top of the Utilities equipment cabinet. Allowing them to remain on the screen during travel may result in damage to the screen. Vacuum the screen from time to time to be certain that airflow is not impeded.
- Window screens and shades: The window screens and shades on the windows, as well as the skylight, should be handled with care. When not in use, they should always remain stowed to help preserve the pleats. To clean the window screens and shades, it is recommended that you use a vacuum cleaner (handy vac) with brush attachment. Gently vacuum any dust or debris as necessary.
- Under bed and headliner fabric: Very little cleaning and maintenance should be necessary for the headliner fabrics. A carpet spot cleaner may be used if a localized stain occurs. It is a good idea to test your cleaner on a small patch, that is in a low visibility area, before cleaning a larger area.
- Cassette and toilet bowl - There are several components to the cassette toilet, including the toilet housing, the toilet bowl and the cassette. The first step to cleaning the cassette is to slide the release lever on the bowl, which will release the cassette for removal. From the outside, remove the cassette, using the blue release lever. Clean and dry the toilet housing, so no standing water remains. For daily use and for a deep clean of the cassette, follow the steps outlined in the manufacturer's manual. For cleaning of the bowl and housing, a standard household spray cleaner can be used.
- Bathroom sink: The bathroom sink has the ability to drop-down and fold up, allowing for more space in the bathroom. Be sure to empty the basin before folding back to vertical/stowed position. To clean, simply use a household spray cleaner, being careful to reach areas that may build up mildew and crud.
- Gray water and fresh water tank: Both of the tanks can be flushed with either chlorine bleach, a baking soda solution, or vinegar. Care should be taken to be sure that the treated water is not admitted into the Truma water heater.

For cleaning the fresh water tank using bleach, add a gallon of bleach to the tank using the fresh water fill port. Fill the tank completely with water using the fresh water fill port. Let stand for about an hour and then drain the contents into a safe disposal system (sanitary sewer system). The alternative and less toxic method of tank cleaning requires the mixing of baking soda and water in a mixture of one cup of baking soda per gallon of water. The baking soda must be fully dissolved in the water before putting the entire gallon mixture into the fresh water tank. Fill and flush the tank(s) as instructed above.

A third alternative is to use a gallon of vinegar instead of a gallon of chlorine bleach and follow the same instructions listed above. Instead of just draining the fresh water tank, you can turn on the water pump and open kitchen sink faucet in the fully cold position (**NOT HOT**, because you do not want to draw this mixture through the Truma water heater) Run the fresh water tank dry, filling the gray water tank via the sink drain. Be certain that the gray water tank is empty BEFORE running



the cleaning procedure this way. It is suggested that the kitchen be inside the coach to get better sink drain slope and more rapid drainage. Let the mixture stand in the gray water tank for an hour or so and then drain it completely into a safe disposal system (sanitary sewer system).

After cleaning, both tanks should be flushed with fresh water. The gray water tank has two to four gallon greater capacity than the fresh water tank. So if the fresh water tank rinse is kept to less than three gallons, it should also be able to be drained into the gray water tank without spillage.

The gray water tank also has internal "shower heads" that can be connected to a garden hose for more efficient flushing and cleaning of that tank. The female hose connection for the gray water tank "shower heads" is directly in front of the gray water dump valve on the outside/street side of the trailer. The gray water from the dump valve should always be drained completely into a safe disposal system (sanitary sewer system). Following the above steps should "sweeten" the tanks and improve water taste.

- No Dirty Water (NDW) system: Please refer to the Interior: No Dirty Water - water filtration system section for details on servicing the filter and cleaning the canister.

## Exterior:

The Vast travel trailer has a variety of materials and surfaces that will need to be maintained and cleaned. We have listed the major components and surfaces in the Vast exterior, below. For additional information or questions, please contact our customer service department at (828) 348-5585 or email [info@sylvansport.com](mailto:info@sylvansport.com)

- **Fiberglass wall panels:** Any RV cleaner or marine cleaner will work – the panels all have marine grade thermoset gelcoat. For tree sap, you can use goof off, or even acetone/alcohol – just make sure to wipe it dry and to not let the solvent sit on the surface. Do not use bleach or acidic solutions.
- **Powder coated surfaces:** It's important to choose a non-corrosive cleaning product that won't degrade the rubber, plastic and silicone parts of your RV exterior. Cleaning products such as "Simple Green Wash & Wax" is gentle enough for delicate RV surfaces, yet tough enough to cut through dirt, grime and bug residue for a clean, protective shine.
- **Windows:** It is recommended to use a cleaner specifically formulated to clean acrylic, such as "Prist" or "Plexus", if possible. Always use a new soft cloth or a clean cloth. Never use a cloth previously used to clean other household items, as old cloths can retain dirt, grit, and chemical residues that may scratch or harm the acrylic. Always dampen the cloth when cleaning acrylic surfaces, as it is relatively easy to scratch acrylic. Never use a rotary power polisher, a power polisher can overheat the acrylic and distort the surface. Never use any scouring compounds, scouring compounds can scratch the surface and cause scratches that can be difficult to remove. On acrylic, never use a solvent to remove tree sap, adhesive labels or other gummy substances.
- **Molded plastic parts and aluminum trim:** For lights, light surrounds, rear access door and aluminum trim parts, it's important to choose a non-corrosive cleaning product that won't degrade the rubber, plastic and silicone parts of your RV exterior. Cleaning products such as "Simple Green Wash & Wax" is gentle enough for delicate RV surfaces, yet tough enough to cut through dirt, grime and bug residue for a clean, protective shine. Be sure to use NO abrasives when cleaning these parts.
- **Front storage box and fenders:** The front storage box, lid and fenders are molded polyethylene and are easy to clean. Wash down the parts with a hose, to remove any clinging debris. Get a bucket of water and toss in a couple of cap fulls of your soap. Scrub down the parts with your soap and sponge. Rinse the parts and let dry.
- **Fiberglass front cap:** Wash the fiberglass with a sponge using a solution of 1 cup of liquid laundry detergent and 1 gallon of warm water. Rinse the soap off by spraying the RV with a garden hose. Allow the surface to dry naturally. Use a product called MEK (Methyl Ethyl Ketone - which can be purchased at a large home improvement store, RV supply store or any paint store that carries solvents) and wipe down the fiberglass with it to remove grease and oils.
- **Tires and aluminum wheels:** **Wheels** - to clean your aluminum wheels, use a hose and spray nozzle to rinse the wheels. Use an aluminum wheel cleaner to spray the wheels, the cleaner should be non-acidic. A non-acidic cleaner will clean the wheel effectively without spotting. If necessary, use a wheel brush with soft bristles to clean the wheel, (don't use a brush with hard bristles). The soft bristles of a brush will loosen the dirt and grime without leaving scratches on the wheel finish. Rinse and dry the wheels. **Tires:** -Aside from dirty tires not being aesthetically-pleasing, cleaning your tires is also a great way to limit corrosion or similar damage. To start your tire-washing process, you'll need a bucket, dish soap or tire cleaner, drying towel, a hose and spray nozzle, and a soft-bristled brush. First, rinse off all the loose dirt using your spray nozzle. With your bristled brush, scrub the tire with warm water and dish soap. Once complete, rinse and fully dry both the tire and the wheel with a clean, microfiber towel.
- **Tongue jack and leveling jacks:** When preparing to travel, inspect the jacks for any damage and test operation. If jack is difficult to operate, clean and oil lightly (Manual). If jacks are still difficult to operate or one of them freezes, it should be serviced or replaced by a qualified RV technician. Please refer to the manufacturer instructions supplied with the RV for care and operation

## SUGGESTED TOOL KIT

Traveling with your Vast should be fun and easy, however it is always best to be prepared. Here is a suggested “starter” tool kit to take with you every time you take a trip!

- Level
- Tire-changing kit (13/16”/21mm lug wrench, jacks)
- Hammer/rubber mallet combo
- 30 Amp “Y” to household adapter
- 3” sewer drain hose
- Wheel chocks
- Leveling blocks
- Coupler lock
- Socket set - (3/8” square drive)
- Cordless drill\*
- Drill bits
- 3/8” driver bit
- Pliers
- Screwdriver (multi-bit)
- Tire pressure gauge
- Spare fuses - 5 Amp, 25 Amp and 50 Amp
- Heavy-duty work gloves
- Flashlight
- Multimeter
- Tire inflator
- Set of allen wrenches (metric)
- Spare battery/power source
- Safe water test kit
- Swiss Army knife or multi-tool
- Lubricant - (WD-40)
- Caulk gun and caulk
- Telescoping ladder
- Voltage checker
- Duct tape
- Wire cutters/ strippers
- Utility knife
- Folded-blade saw
- Bucket
- Rags, towel, sponge, cleaners
- Water bandit
- Thread tape
- EternaBond tape
- Handy vac
- Grease gun and grease
- Fresh water hose
- Winterizing adapter
- Zip ties

\* You can assemble an extender, to raise and lower your stabilizer jacks with a cordless drill, drill bit to 3/8” socket, 6” long socket extender and 19mm socket (deep socket).



## MAINTENANCE SCHEDULE

The intervals outlined below are based on typical recreational travel and family camping in moderate climates and weather conditions. To keep track of maintenance and service, please use the maintenance log at the end of the manual.

SAFETY	PRE-TRIP	AFTER EACH USE	MONTHLY	EVERY 3 MONTHS	EVERY 6 MONTHS	YEARLY
Brakes	Test			Adjust		
CO detector test	Test					
Electrical (120V)						"Hot skin" test
Cords/receptacles	Inspect					
LP detector	Test					
Coupler and Breakaway Switch	Inspect					
Propane system						Leak test
Safety cables	Inspect					
Smoke alarm	Test					
SERVICE	PRE-TRIP	AFTER EACH USE	MONTHLY	EVERY 3 MONTHS	EVERY 6 MONTHS	YEARLY
Axles	Inspect			Inspect	Inspect/lube	Inspect
Battery cables/connections	Inspect					Inspect
Exterior moldings					Inspect/reseal	
Entry steps				Inspect		
Fiberglass/gel coat				Clean	Wax	
Frame/Chassis					Touch up	
Fresh water system		Drain				Sanitize
Fresh Water Filter		Remove/replace				
Front storage box				Inspect		
Furnace/water heater		Drain				Clean
Firefly control system					Update Software	
Gray water system		Flush				
Leveling jacks				Clean/lube		
Latches, locks	Inspect		Lube			
Rear door	Inspect					
Refrigerator						Clean
Roof seams/joints				Inspect/reseal		
Roof vents				Inspect/reseal		
Tires/wheels	Inspect		Inspect			Inspect
Windows/seals					Inspect/reseal	
Kitchen Slides	Inspect					

### Notes:

- Axles: See the axle manufacturers manual or take to certified RV mechanic, for lube service and maintenance
- Seals and joints: Order recommended sealants from SylvanSport or take to certified RV mechanic for service
- Fresh water filter: Remove after each trip. Monitor condition to assure no mold accumulates.
- Tires and wheels: Inspect wheels for damage, inspect tires for wear and air pressure

## INTERIOR

### ENTERTAINMENT/CONTROL CABINET

The Vast travel trailer has a unique, centrally located entertainment/control cabinet, which houses the Firefly touch screen, TV and mount, bluetooth speaker, Truma control panel, drop-down bed control panel, connection ports for TV/satellite/cable, Qi and USB chargers, storage drawers and hidden access to the control electronics.



Entertainment cabinet, located to the right of main entry door



Entertainment cabinet control panel



Positive latch knobs on all drawers

### FIREFLY CONTROL SYSTEM

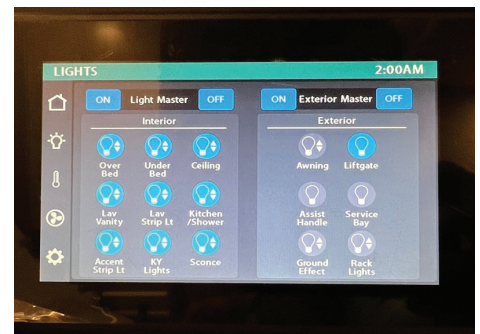
Vast comes equipped with an advanced Firefly - the Firefly G12 controller, which uses a 7" touch screen mounted on the entertainment cabinet as well as an app, available for download. On-screen graphics give you control over lighting zones with dimming, tank monitoring, hot water and heater, air conditioner, awning, power level monitoring and more. The Vast travel trailer also has a series of wireless switch plates, allowing for easy access to turn on and off lights, throughout the interior and exterior.



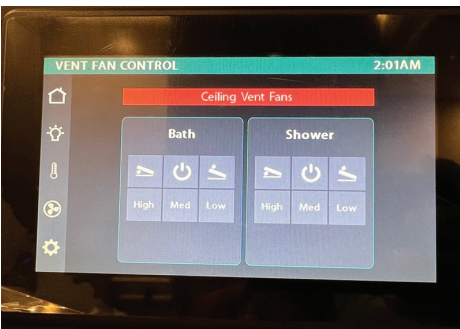
Control system location



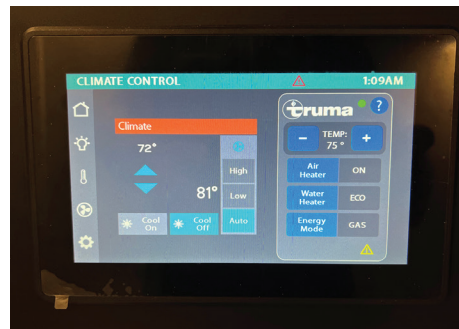
Home screen



Lighting screen



Vent/fan control screen



Climate control screen

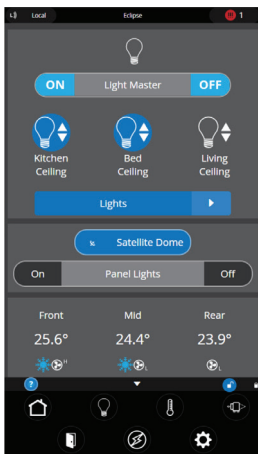


Settings screen

## ECLIPSE APP FOR FIREFLY

The Vegatouch Eclipse app is designed to securely connect to Firefly's Vegatouch Eclipse module (the Vast control panel) using a user specific personal identification number (pin). Once the app is connected and authenticated the user has access to a multitude of controls including but not limited to lights, HVAC and power readings. Once the module is configured through the app and connected to the internet the user can connect to the module from anywhere. When the app is connected to the module remotely through the internet the user can control any function that does not present a safety risk. Cell phone service is required for the app to work.

**When the app is connected it detects what trailer the module is in, allowing the app to be customized to match the system and other screens in the coach.**



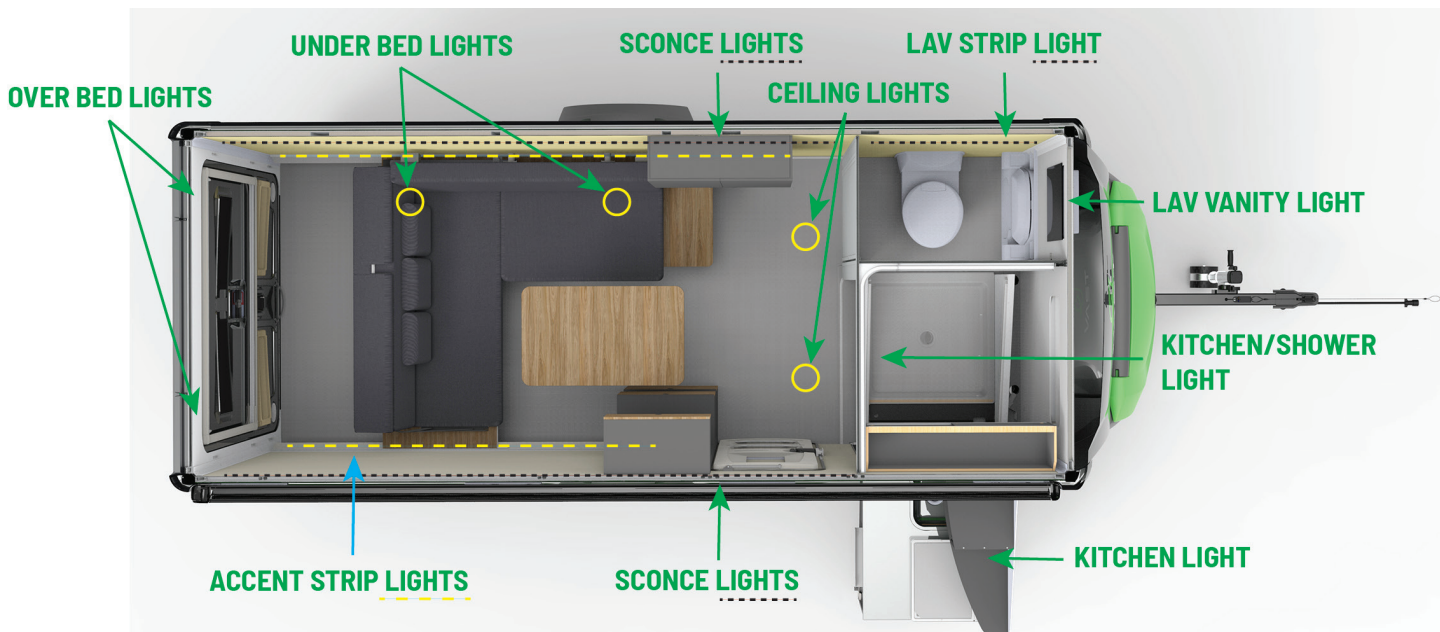
Eclipse app sample screen



Download Vegatouch Eclipse app from the Apple App Store or Google Play

## INTERIOR LIGHTING

The Vast travel trailer has a variety of lighting types and locations. Almost all of the interior lights are controllable from the Firefly touch panel, with most being dimmable as well. A selection of lights and devices are also controllable by simple wireless switch panels, conveniently located throughout the interior. The kitchen and over bed lights have a push button on/off switch built into the lens. The diagram below shows the location of the lights, which correspond to the names on the control panel. The following photos show the some of the lights as well as the wireless switch panels.



Interior lighting diagram



Scence lights and over bed lights



Lav strip light and vanity light



Kitchen light, push lens to turn on/off



Wireless switch panel, located on entertainment cabinet, at main entrance



Wireless switch panel, located in bathroom



Smaller, 2 button wireless switch panels are located in several locations

## KY-LIGHT LOUNGE LIGHTING SYSTEM

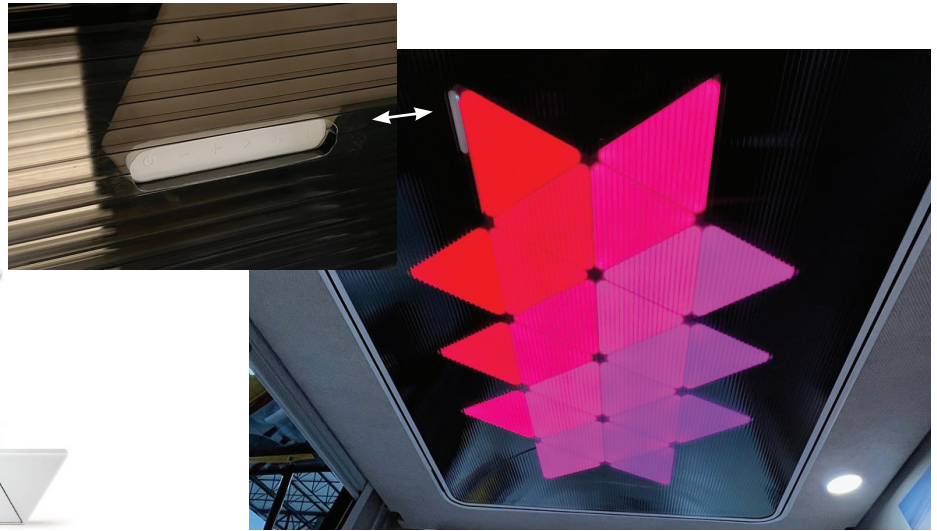
The Ky-Light lounge lighting system (Ky-Lights) is built using the innovative NanoLeaf Shapes lighting system. The Ky-Lights are suspended under the drop-down bed and above the lounge. What's so special about Nanoleaf?

Nanoleaf light panels are an interesting way to add light to your room over and above the standard lighting. They're a great way to create your own designs and provide a talking point or just a new light source in the main living space in your Vast.

Immediate access to the NanoLeaf controller is through the access slot in the polycarbonate panel. The main control panel on the entertainment cabinet can turn them on and off and there is also a NanoLeaf app available for iOS and Android. Set-up and use of the NanoLeaf lights require a WiFi signal to operate. For more information and details on the NanoLeaf system, see their website or contact SylvanSport customer service department at (828) 348-5585 or email [info@sylvansport.com](mailto:info@sylvansport.com).



Built from the NanoLeaf Shapes lighting system



Mounting system suspends the Ky-Lights over the lounge area

## DROP-DOWN QUEEN BED

Located above the lounge is a full, residential queen sized bed (80" x 60"), which drops down from the ceiling. Using the simple control panel located on the entertainment center, unlock with the child-safety key and use the up and down buttons to drop or raise the bed to desired location. The key is removable, in the off position, to prevent operation of bed by children. Be sure there are no obstructions under the bed, to assure bed remains level and does not hit anything as it raises or lowers. The drop-down bed has a limiter, so it will not drop-down too far and will not raise up too high.

The drop-down bed comes equipped with two safety nets, one for each window. These are secured in position to prevent any inadvertent roll-out of a person toward the large windows. It is strongly advised that small children are not allowed to be on the drop-down bed, without adult supervision.

It is very important that nobody be on the drop-down bed while raising and lowering is taking place.

The drop-down bed also includes a ladder, providing safe and secure access to the drop-down bed when lowered. Note, if bed is lowered too far, ladder hooks will not secure into brackets.

For more information on the drop-down bed, please refer to manufacturer manual, included in this binder.

## CAUTION

**IT IS IMPERATIVE THAT NO PERSON IS ON THE DROP-DOWN BED WHILE RAISING AND/OR LOWERING OPERATION IS TAKING PLACE**





Bed lowers from ceiling and has ladder for access



Key lockable, child safety bed control panel



Safety nets for side and rear windows



Foldable ladder attached to hooks on bed



Foldable ladder stowed by the bathroom door

## TV AND MOUNT

A ruggedized 24" Furrion LCD TV is included in the Vast travel trailer, along with a multi-position, lockable mount, both are specially designed for RV use. The TV and mount are standard 100mm x 200mm VESA. To release the mounting system and provide adjustability of the TV and mount, pull the release strap located at the base of the mount. It is best to move the TV by grasping the sides of the monitor, with two hands and moving with smooth movements.

## BLUETOOTH SPEAKER

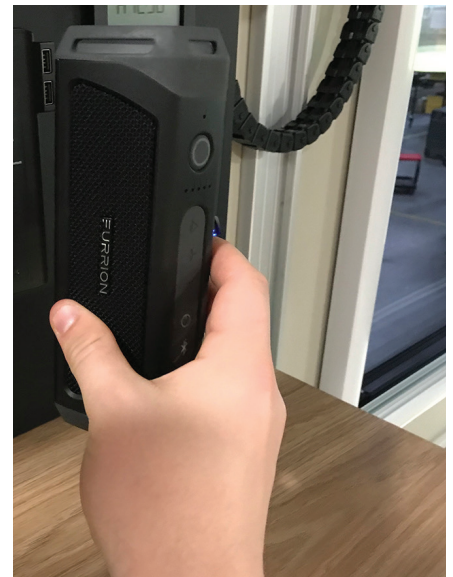
A waterproof Furrion LIT bluetooth speaker and mounting base are included. Measuring 7.6" x 2.9" x 2.1", a fully charged speaker provides up to 15 hours of playtime and can be recharged in 3 hours. In addition the Furrion LIT speaker has a built in flashlight (and siren) and can sync with a second Furrion LIT speaker. There are also two standard USB charging ports on the mounting base. To remove speaker/light from base, slide the unit vertically upwards on the charging base. Re-mounting is the opposite of dismounting.



TV and mount location



Pull release strap to adjust mount



Bluetooth speaker and mount

## POWER/ELECTRICAL SYSTEM

Your Vast actually has three separate electrical systems. It has a 12-volt DC automotive system, a 12-volt DC coach system, and a 120 volt AC coach system.

We are primarily concerned with the 12-volt DC coach system and 120 volt AC coach system. The majority of campgrounds you go to will provide you with an external 120 volt electric source to plug into, (your Vast has a heavy-duty power cord). Vast has a 30 Amp system, when you plug into the proper campground electrical source it will supply power throughout your RV, **but you must be sure to turn on the inverter.** You must have a 120 Volt AC power source if you are going to use the roof air conditioner. The AC outlets, including the microwave and TV can be powered without shore power. **Be aware however, that use of the microwave will rapidly deplete your batteries.**

For the most part everything else in the camper works off of 12-volt DC power. When you are plugged in at the campground, a portion of the 120 volt AC current is converted to 12-volt DC current for the items in the RV use 12 volts.

When camping "off-grid" you will be relying upon your batteries, your solar kit (if you have one) and your inverter/charger. When camping off-grid, you will not be able to use your air conditioner. The two other items that will draw significant battery power are your microwave oven and your Truma cooler. For more information on off-grid camping, see the Exterior: Off-grid camping section.

## WARNING

**NEVER WORK AROUND BATTERIES WITH AN OPEN FLAME. VAPORS FROM THE BATTERIES CAN IGNITE, CAUSING SERIOUS DAMAGE. TURN OFF ANY 12 VOLT POWER SOURCES AND DISCONNECT NEGATIVE BATTERY CABLES, BEFORE DOING ANY WORK AROUND BATTERIES.**

## SHORE POWER

Shore power is the term used to describe shoreside power or grid and land based electrical power, for when your Vast travel trailer is idle. You would use shore power when you are at a campsite serviced with grid electricity. A 30 Amp exterior connection is included, along with a 25' shore power cord. The power cord has a weatherproof twist and lock connection and is stored in the front storage box. Your Vast also comes with a 125V adapter, which lets you connect your RV's 30-Amp male power plug to a 15-Amp receptacle. When this adapter is being used, do not use air conditioner. Operation of air conditioner with low Amperage can cause damage to air conditioner.



Shore power connection



To Vast 25' cable

To campsite 15V outlet

125V adapter

## UTILITIES EQUIPMENT EQUIPMENT CABINET

The Vast Utilities equipment equipment cabinet houses many of the important comfort systems for the Vast, including the batterie(s), Inverter, NDW system, the Truma Combi furnace and hot water heater, MPPT solar controller and the circuit breaker panel. Primary access is from the top, with two removable top panels. Battery access is through the battery access door at the rear of the cabinet. The covered circuit breaker panel is located above the floor on the interior long wall of the Utilities equipment cabinet.

Further details on the various systems within the Utilities equipment cabinet are detailed in the following sections.



Utilities equipment cabinet, fore



Utilities equipment cabinet, aft

## BATTERIES

Your Vast has been equipped with one (standard) or two (option) Group Size 31, AGM 12 volt 105 ah dual purpose marine batteries. Batteries are located in the rear of the Utilities equipment equipment cabinet. Batteries are secured on a locking access tray, behind a sealed door. Batteries feature dual terminal universal design, black polypropylene case, handle and weigh approximately 67 lbs each.

Inspect all battery cable and terminal connections. Keep all connections clean and tight. Do not over tighten. When battery terminals are clean and tight on the battery post spray the terminals with a battery terminal protector to prevent corrosion.

**Do not let batteries drain below 11V. At this point you will start having problems and an immediate recharge needs to take place. To easily monitor your battery level, simply refer to the icon on the touch panel control screen.**



If you are connected to shore power and your battery level is dropping, simply turn the inverter on to one of its two settings, to re-charge them to full capacity. If you are camping off-grid and have no shore power, your options to maintain battery capacity are:

- Generator: You can plug the Vast power cable in to the generator, using the 125V adapter, make sure inverter is on and let generator run. If the generator has 12VDC output, the batteries can be accessed and charging cables can be connected to the batteries.
- Tow vehicle: Plug the Vast 7-pin connector (located on the tongue) back into the tow vehicle 7-pin receiver plug and run the tow vehicle engine. Do not leave connected to tow vehicle, unless vehicle is running, otherwise tow vehicle battery can be drained.
- Solar option: On your Vast, the energy being harnessed from the panels will bring the power back up, as long as sources draining the batteries are minimized and there is sufficient sunlight. Solar panel performance can be monitored with the Victron Connect app, available for iOS and Android.
- If you have an additional battery in your toolkit, use this to “jump” the battery and bring back to acceptable level. However, unless shore power or alternate source is available, the jumper battery will be depleted.

For more information on the Vast batteries, please refer to the manufacturer manual, included in this binder.

## WARNING

**IF YOU DON'T HAVE EXPERIENCE WITH, AND AN UNDERSTANDING OF, ELECTRICAL SYSTEMS, DO NOT DO ANY MAINTENANCE OR REPAIRS ON YOUR OWN. IT IS WORTH YOUR SAFETY TO PAY SOMEONE TO DO THIS.**



Battery slide-out drawers, locked. Two batteries shown



Battery door, closed

## INVERTER CHARGER

Vast is equipped with a powerful inverter/charger (AIMS Power 3000 Watt Pure Sine Low Frequency). An inverter simply converts DC (battery) power into AC power and then passes it along to connected equipment. An inverter/charger does the same thing, except when it is connected to an AC power source, it will continuously charge the attached batteries and supply 12VDC to the DC bus and all DC accessories.

The **most important thing to know** about the inverter charger is - when you plug your Vast into shore power, **make sure the inverter is turned on at the touch screen panel, on the “home” screen**, in order to prevent batteries from draining. Even though you are plugged in to shore power, the batteries do run the risk of being drained. A beeping will sound, indicating low battery level. If you hear beeping, check the touch screen and be sure inverter is turned on (inverter icon will turn to blue), you may also push “Inverter Power Save Mode”, (see pictures below).

If you are off grid and are not intending to use any of the 110 VAC receptacles or accessories (TV, microwave) it is most efficient to leave the inverter turned off, at the control panel - the switch on the actual inverter should be left in the "on" position. If you are off grid and intend to use 110VAC receptacles and accessories; the inverter must be turned on, with preference for power saver mode. \*Note: if you do not have solar, it is not advisable to use 110 power for prolonged period or it will drain the batteries.

For more information on the Vast inverter charger, please refer to the manufacturer manual, included in this binder.



AIMS Power inverter charger



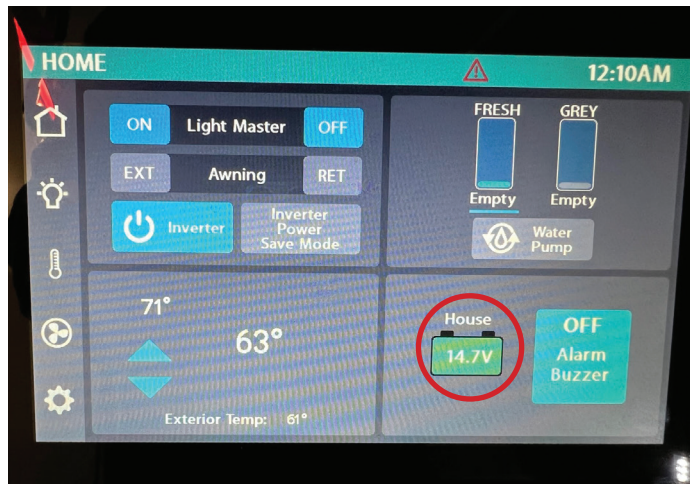
Correct DIP Switch Positions



AIMS Power inverter charger



Turn inverter on at touch panel screen, check battery voltage level



Voltage level at or above 13V is optimal

## CAUTION

**TURN THE INVERTER CHARGER ON**  
**WHEN YOU PLUG YOUR Vast INTO SHORE POWER, MAKE SURE THE INVERTER IS TURNED ON AT THE TOUCH SCREEN PANEL, BY PUSHING EITHER "INVERTER" OR "INVERTER POWER SAVE MODE"**

### CIRCUIT BREAKER PANEL

RV circuit breakers help keep your electrical system safe and operational. When too much electricity flows through your RV's electrical system, it is the job of the circuit breaker to stop the flow of that electricity. This may seem frustrating when it happens, but it saves you from melted wires, fire damage, and more.

The power in your camper is protected by an electrical distribution panel. The unit has breakers for the AC power and fuses (like you find in a car) for your DC power. There are multiple AC circuits to protect the wiring within the camper. However, all of the camper circuits combined are limited by the breaker on the shore power pedestal you plug into.

The Vast circuit breaker panel is located on the side of the utilities cabinet. 12 volt DC systems can be easily overloaded by adding additional items to the circuits. If you do not have experience with 12 volt DC circuits, do not add any new devices to the system without checking with a qualified person. If a fuse blows on a 12 volt circuit, do not replace it until you have found the problem. NEVER put the next size up fuse in. Using the incorrect fuse size can create a fire hazard.

The Vast fuse sizes are 5 Amp and plug in at the top right of the fuse panel. Spare fuses are stored in the fuse panel, lower right, in the unused slots. If a fuse is blown, simply replace with one of the spares, stored in the lower right of the fuse panel. Always remember to replace the spare fuses with ones of the same Amp capacity, so they are readily available when needed.

The AC circuit breakers control two separate busses. At the left side of the panel is the main 30 Amp breaker for shore power connection. Next to it are 20 Amp circuit breakers for air conditioner and AC converter source power. At the right side of the panel is the main 20 Amp breaker for inverter power connection.

To the right of that are (4) 15 Amp breakers: From left to right, the 15 Amp breakers control the following:

1. Receptacles on front and back of utilities equipment cabinet.
2. Lavatory receptacle.
3. Kitchen front receptacle and microwave receptacle.
4. Outside receptacle and entertainment center receptacle.

Each of these four circuits is further protected by a GCFI on the face of one of the receptacles in the circuit.

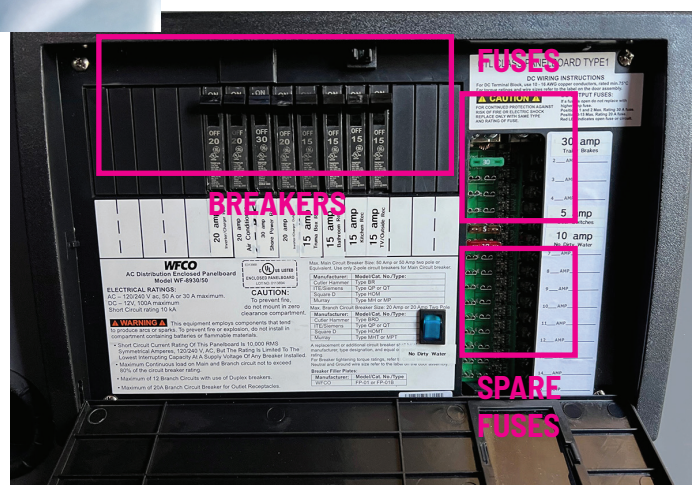
Note: In addition to the 12VDC circuit protection provided by the fuses in the fuse panel, all DC circuits controlled by the Firefly control system are individually protected by self-resetting circuit breakers. The main power feed to the Firefly controller is protected by a single 50 Amp inline fuse located in a separate covered holder, inside the utilities equipment cabinet, next to the battery box.



50 Amp in-line fuse, inside utilities equipment cabinet



Circuit panel with cover plate closed



Circuit panel with cover opened

**⚠ WARNING**

**IF A FUSE BLOWS ON A 12 VOLT CIRCUIT, DO NOT REPLACE IT UNTIL YOU HAVE FOUND THE PROBLEM. NEVER PUT THE NEXT LARGER SIZE UP FUSE. USING THE INCORRECT FUSE SIZE CAN CREATE A FIRE HAZARD.**

## TRUMA COMBI - HEATER AND HOT WATER

The Vast travel trailer comes equipped with a Truma Combi unit, providing hot air as well as instant hot water, in one appliance. This saves space and weight in your Vast. A 2.64 gal. (10L) water tank is integrated into the combination unit. The furnace and water heater functions are controlled independently and can be used as needed. The warm air flows into the vehicle's interior through four air outlets, where it is distributed optimally to ensure a pleasant indoor climate. The Truma Combi heater is almost silent and extremely economical to run.

The Truma CP plus control panel (located on the entertainment cabinet panel) is used to control the settings on your Truma Combi, (refer to the CP plus manual for additional instructions). To wake up the CP Plus screen, press the round toggle switch and you will see it begin to initialize. There are icons at the top of the screen that indicate room temperature, water temperature, fan speed and positive gas connection.

Power input - The Truma combi uses propane gas to provide heat. The flame icon on the screen indicates that is powered on and the source is propane (not electric). This icon is not selectable and should always be on.



Propane gas connection - The propane gas connection icon indicates that your Truma Combi unit and your propane gas supply tank(s) have a successful pressure connection. This icon is not selectable and should always be on, when there is a pressure connection to the propane tanks. If you do not see this icon, verify that gas bottle valve is open and that there is gas in the bottle. If this icon is still not illuminated, check physical connections.



Hot water temperature set - To set your hot water temperature set point, use the round knob to scroll over to water heater icon and push to select, it should be flashing when it is selected. You now have the option to select "off", "eco" (104°F), "hot" (140°F) or "boost" (144°F shower), simply by rotating the knob and pushing to select the desired temp.



Furnace temperature set - To set your furnace temperature set point, using the rotary knob, toggle to the furnace icon and push select. You have the ability to set it to "off" or you can set the temperature at anywhere from 40°F to 86°F, by scrolling through the numbers and pushing to select the desired temperature.



When the furnace is on, a circulation fan operates to move the heated air into the coach. When the furnace is on (furnace icon illuminated), the fan speed can be selected to be one of three speeds: ECO, HIGH, BOOST. To make the speed selection, rotate the knob to the fan icon and select it by pressing the knob. Rotate the knob to the desired speed and push knob to select that speed. The fan is automatically controlled to operate in conjunction with the furnace thermostat and will turn on and off to the selected speed in concert with the furnace.



Recirculation fan - The fan can also be operated with the furnace off. In this mode the fan circulates air through the ductwork to ventilate the coach. To use this function with the furnace off (furnace icon not illuminated), rotate the knob to the fan icon and push to select. The recirculation icon will illuminate at the top of the screen and numbers will appear in the main display. Rotate the knob to select the desired speed (1 - 10) and push the knob to select your speed. The fan will remain on at that speed in recirculation mode until it is turned off by rotating the knob to highlight the fan icon and the knob pressed to turn it off.

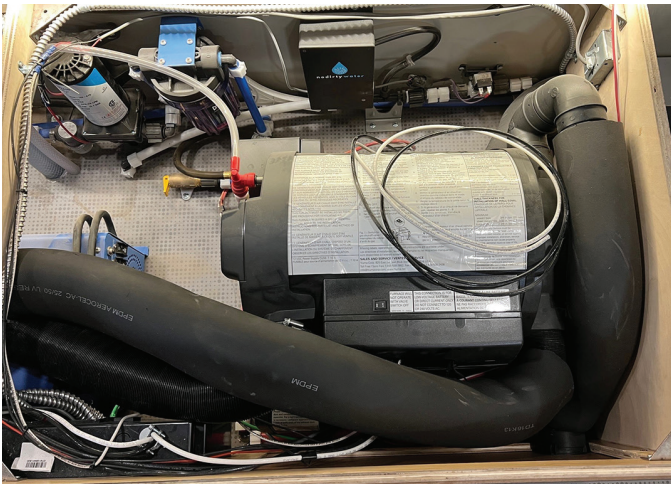


### Notes:

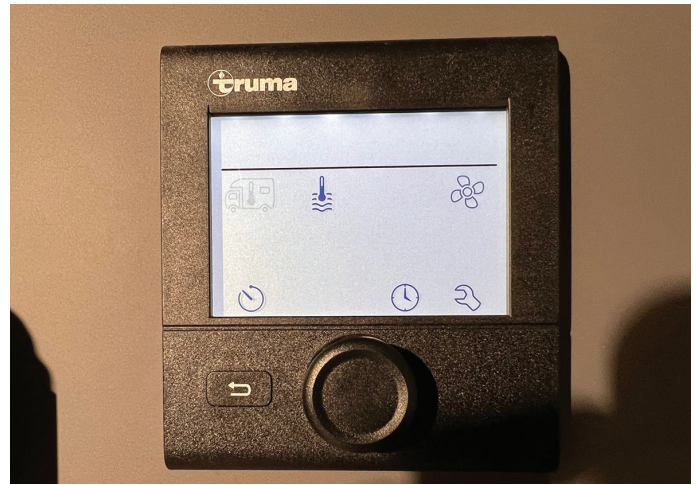
- You can use the "back arrow" icon to return to the home screen
- All Combi furnaces run on LP gas (propane).
- No Combi furnace operates in any mode without a 12 VDC power supply
- Only a 120 V sine-wave-generator (the inverter charger in the Vast) may be used to avoid damage to the Combi.

For more information on the Heater (furnace)/hot water, please refer to manufacturer manual, included in this binder.

**Truma can also be reached by phone at 855-558-7862 to speak to a technician.**



Truma Combi heater/hot water, located in the utilities equipment cabinet



Truma Combi CP Plus control unit, located on entertainment cabinet

## WATER FILTRATION SYSTEM AND NO DIRTY WATER (NDW) SYSTEM

The Vast travel trailer incorporates the No Dirty Water (NDW) - Water Filtration System, a modern water filtration system that includes a high capacity filter and an electronic ozonization system.

Operation of the filter system is automatic and the canister filter is installed in-line in the water system. The canister filter will filter both city water, when it is connected and available, and will filter all water pumped from the fresh water storage tank.

In addition, if the water within the fresh water storage tank has come from a dubious source, the ozonization system may be employed to further clean the water within the tank. This is accomplished by the recirculation of water through a venturi where ozone is injected into the water stream and the ozone laden water is returned back to the tank so that it can cleanse and eliminate bacteria.

Under normal use, when the trailer has connected to or filled with water from known clean sources, it is suggested that the filter be replaced once per season. **If water from a dubious source has been introduced to the fresh water tank, it is suggested that the filter be replaced at the conclusion of each camping excursion.** If the camping trip is planned to extend longer than a week and the water for the duration is from a dubious source, it is recommended that the filter should be changed at weekly intervals. Filters are NOT reusable and should be appropriately discarded when replaced. See below for further details on filter replacement.

When water from a dubious source has been introduced into the fresh water storage tank, in addition to the filter, it is desirable to activate the ozonization system. To do this, begin by using the main screen of the Firefly control panel, to turn on the water pump. Next, locate the blue rocker switch in the circuit breaker panel that is labeled NDW System. Turn on this switch to activate the NDW system.

This will turn on the NDW controller which will open a solenoid valve for the recirculation ozone injection cleaning system (when the valve is opened, it is likely you will hear the pump running, this is normal). Allow the NDW system to operate for a minimum of 5 minutes (a few minutes longer if the water seems particularly contaminated) to assure that adequate ozone has been injected into the fresh water storage tank, to adequately clean the entire contents. **At the conclusion of 5 minutes, turn off the NDW system and the water pump.** Running the water pump for longer than 5 minutes increases the risk of burning out the motor. The water in the tank is now suitable for use, but it is a good idea to verify the results with water test strips.

It is important to understand that the water filter can become an incubator for all the nasty stuff that it has trapped. Unlike a filter in a refrigerated location, the filter canister and housing for the Vast are located in the main service cabinet where temperatures can vary significantly and be quite conducive to bacterial growth. Consequently, **it is recommended to remove the filter after each trip and dry it out, and it is recommended to change the filter, at intervals recommended above.** To change the filter, a filter wrench has been supplied to assist with the removal of the canister. The wrench is stored in the utilities equipment cabinet, in a location near the filter canister itself.

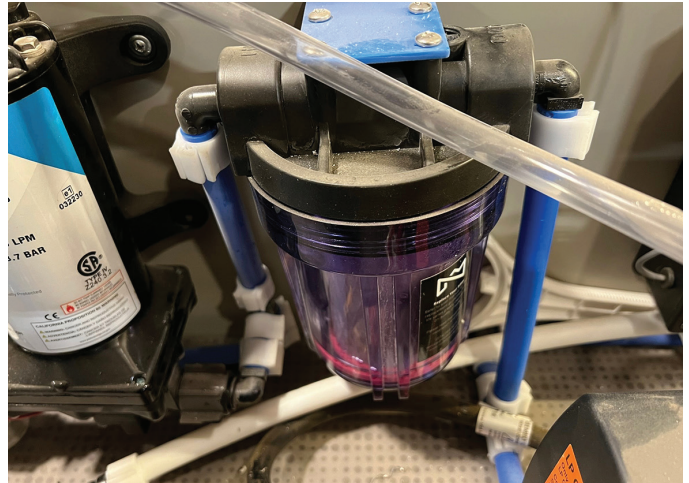


To replace the filter, make certain that city water is disconnected or turned off. Make certain that the water pump is turned off. Place sponge or towel under the filter canister to catch any spills. Carefully place the filter wrench around the canister and apply force to the handle to unscrew the filter housing. Once the seal is broken loose, it should be relatively easy to spin the housing off.

Try to keep the housing level if possible, to avoid spilling water in the housing. Remove the filter and discard it in an appropriate facility. Discard the water in the housing. Clean the inside and outside of the housing using warm soapy water (dish washing soap or a dish washer is good for this purpose) or wash the container with liquid chlorine bleach solution. Make certain that the sealing O-ring is in good shape and securely in place. Once the housing is clean, insert a new filter into the housing, and screw the filter housing onto the cap bracket. Be certain the housing is securely sealed. Apply water pressure from either the water pump, or city water supply, check for any leakage and remedy any leaks as appropriate. The system is now ready for normal use.



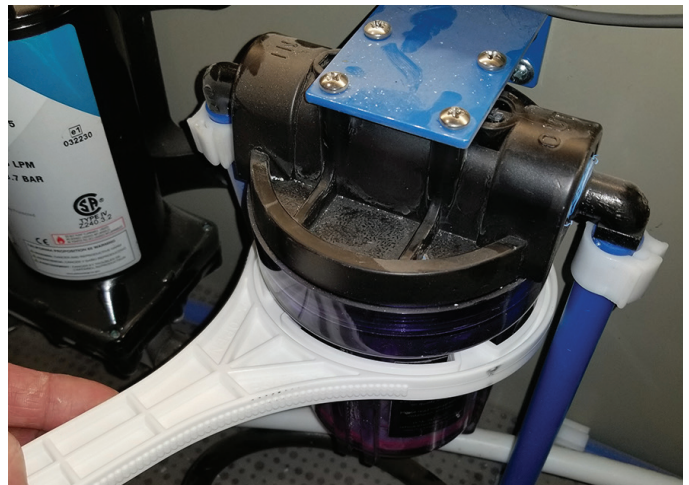
NO Dirty Water (NDW) water filtration



Access to change filter is through top of utilities equipment cabinet



Use filter wrench, slide up from underneath

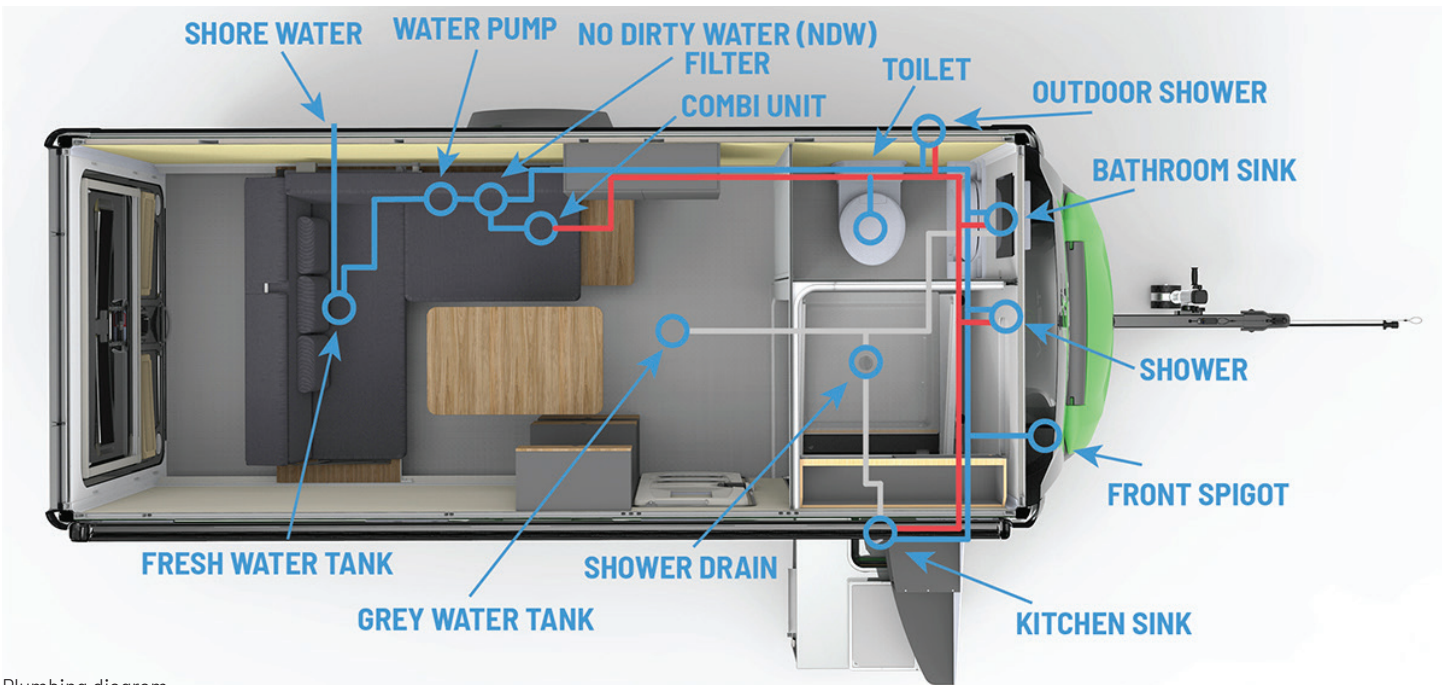


Using filter wrench, apply force to break loose from seal

## PLUMBING SYSTEM

The plumbing system in the Vast is a sophisticated network of devices designed to give you clean water, heated where required, monitored, pressurized and filtered for years of safe and efficient use. All plumbing of the Vast is either PEX or plasticized PVC.

Water enters the Vast through a shore connection on the curb side wall, or through the 28 gallon fresh water tank. The system has a built-in pressure regulator as well as a backflow valve. Water flows through the No Dirty Water (NDW) system, which filters out impurities. The system has an on-demand pump that needs to be turned on using the control panel. Water flows through the water heater and is heated only when required. Water is routed to the toilet, bathroom sink, outside shower, inside shower and kitchen sink. Return drainage collected through plumbing with adequate traps and collected in the 32 gallon gray water tank. The following diagram further illustrates the plumbing system. The kitchen water connection remains connected and operates inside or outside with no adjustments needed.



Plumbing diagram



The kitchen features a stainless steel sink



The outside shower located on curbside wall, front in lockable compartment



Outside hose spigot located behind front storage box, street side

## CASSETTE TOILET

The Vast travel trailer uses a Thetford C223-CS cassette toilet. The space saving toilet bowl revolves 180 degrees on the base and locks into place by simply pressing down on the seat. The toilet has a 4.75 gal. (18L) waste tank capacity, waste tank level indicator, integrated no-splash pour spout, electric flush, the waste tank includes handle and wheels for easy dumping and a direct connection to the RV fresh water tank.

The cassette toilet is installed as a freestanding unit against the curbside wall of the vehicle, with access to the cassette performed from the outside, using the lockable toilet access door. For detailed information on removal and use of the cassette, see the Exterior: Cassette toilet section.

For more information on the Thetford C223-CS cassette toilet, please refer to manufacturer manual, included in this binder.



Toilet, with bowl oriented correctly



Slide lever to release cassette

## SHOWER

When the kitchen is in its outside position, a full sized shower becomes available for use. By closing the gray tambour door, the front of the Shower area is covered, allowing access to the shower from the bathroom. The shower controls are located on the front wall. The shower curtain is bundled and secured to the front wall, with the shower curtain bottom stored in the shower curtain drain pan when stowed.

To operate, release the velcro straps and pull the curtain along the track until fully enclosing the inner walls of the drain pan area. Assure that the bottom of the curtain is within the shower pan when shower is in use. Shower water can be VERY hot, verify heater settings before use, for more details on settings and operation of the Truma Combi, please refer to manufacturer manual, included in this binder. Turn on the water, careful not to step into water that is too hot. Use of the ventilation fan over the kitchen/shower can be helpful to reduce steam. The shower wand has a "pause" button, allowing for maximum efficiency of water usage. The shower wand holder can rotate about the pole for desired direction.

It is good to allow the shower curtain to dry, prior to stowing. When finished, gather the curtain and place bottom in the drain pan against the wall. Using the velcro straps, gather the curtain and be sure it is out of the path of the kitchen, when it is time to return it to the inside position. Rotate the shower wand back against the front wall and be sure there are no obstructions before closing... see cleaning and maintenance section for shower curtain cleaning and maintenance.

Note: when traveling, it is best practice to slide the gray tambour door to its closed position, so it covers the front of the indoor/outdoor kitchen.



Shower and bathroom area



Shower wand, curtain, cabinet



With the kitchen lowered to its outside position, the full sized shower is revealed



Slide the tambour door across the front for total privacy



Access to the shower is from within the bathroom entrance

## **WARNING**

**BE SURE TO SET THE DESIRED WATER TEMPERATURE ON THE TRUMA COMBI CONTROL PANEL. DO NOT STEP INTO SHOWER UNTIL TESTING WATER TEMPERATURE, IN ORDER TO PREVENT ACCIDENTAL SCALDING. BE SURE ALL OBSTACLES ARE OUT OF THE PATH OF TRAVEL, WHEN RETURNING KITCHEN TO INSIDE POSITION.**

### **KITCHEN SINK AND BATHROOM SINK**

The Vast travel trailer kitchen has a high quality, stainless steel sink. With standard plumbing of hot and cold water to and from the sink/faucet, repairs and maintenance should be serviceable by any RV technician.

The Vast bathroom has an integrated fold-down sink, with hot and cold water faucet. The ability to fold the sink provides additional open space in the bathroom. Care should be taken when folding sink, to avoid any spilling of excess water.

For cleaning information, see the Cleaning, care and maintenance section.



Stainless steel sink in kitchen



Fold-down sink in stowed position



Fold down lower section of sink and faucet to operate

## ELECTRICAL OUTLETS

AC receptacles - The Vast travel trailer has 6 GFCI protected 110VAC standard receptacles, inside the cabin and one covered, waterproof receptacle outside on the curbside wall. Receptacles are located on the front and rear of the utilities equipment cabinet, next to the lavatory sink, front panel and under microwave on indoor/outdoor kitchen and upper wall of entertainment center (behind TV).

The receptacles are ground fault circuit interruption (GFCI), protected in pairs with the test and reset buttons on the face of one of the receptacles of the pair. The exception is the lavatory receptacle, which is wired and protected separately. If you find a GFCI outlet not working, push the test and reset buttons. If that fails to restore power, check the circuit breaker panel for a tripped breaker and reset it to restore power.

There is also a single 12VDC barrel receptacle (cigarette lighter style) on the front of the kitchen that can be used for 12VDC travel appliances.

DC outlets - There are 5 dual USB charging ports located in the Vast. There are a pair behind the bathroom door (to be used for SylvanSport Waylight charging). A pair in the front panel of the kitchen. A pair on the Furrion bluetooth speaker base, a pair on the entertainment cabinet and a pair next to the drop-down bed.

There are two Qi surface charging pads; 1 on the shelf of the entertainment center and one on the shelf next to the drop-down bed.



AC outlet on utilities equipment cabinet



Bathroom AC outlet



Waterproof, exterior AC outlet



AC and USB connections on indoor/outdoor kitchen front panel



Qi charging pad



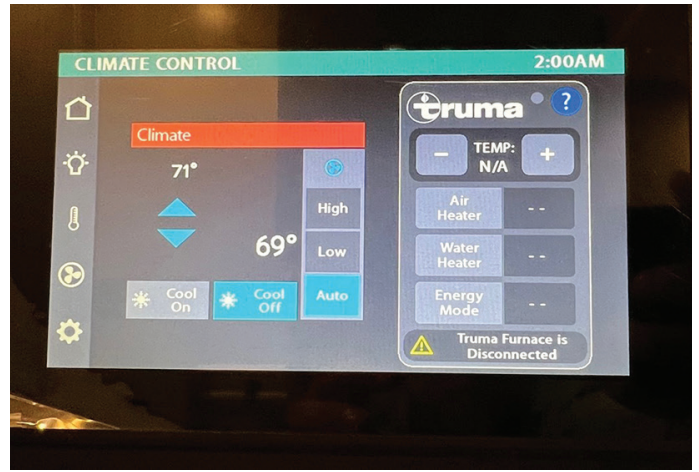
USB outlets

The Vast travel trailer comes equipped with a Dometic Penguin II air conditioner unit. Sleek, contemporary rooftop shroud is only 9 3/4" H, to reduce drag. Ribbed base pan is engineered for improved strength and durability while reducing vibration. Integrated dampening components for quiet operation. Washable HEPA-style filter. The Penguin II is connected to the Firefly and can be controlled from the touch screen panel on the entertainment cabinet.

It is most important to note that the air conditioner can only be operated when the Vast is plugged into shore power. It should be noted that the air conditioner has a shutdown cycle that can take up to three minutes to complete after the command has been given at the Firefly touch screen. Do not be alarmed when the touch panel "cool off" has been illuminated and the unit seems to continue to run.



Interior air conditioner bezel



Climate control on control panel touch screen

## MOVABLE LOUNGE/QUEEN BED

The Vast travel trailer comes with a unique movable lounge that transforms into a queen-sized bed. This feature enables you to enjoy a full sized, "L" shaped lounge or convert it into a residential queen-sized bed. In addition, the lounge and bed are mounted to two fixed tracks which enable you to slide forward and aft, for multiple positions. This configuration provides ample storage in the rear of the Vast while allowing unimpeded living space in the front.

For normal day to day living, enjoy the movable lounge/queen bed in "Lounge Mode". With a two position dining table, adjustable positions and super comfy cushions, the lounge provides comfort, space and a view through the giant windows. Ready to turn in for the night? Quickly convert it into "Bed Mode" and enjoy the rest of a true, residential queen sized bed.

Be certain that the lounge is securely locked to the tracks before travel. There are multiple lounge lock locations and any position is acceptable for travel.



Shown in "Lounge Mode", the whole assembly slides easily fore and aft on tracks for infinite position options



Shown in Queen Sized Bed configuration, the assembly quickly converts from the lounge to "Bed Mode".

### Dining table

The dining table is a lightweight, multi-position table, ideal for eating meals, playing games and relaxing around the lounge. With two floor cleats mounted in the floor, the dining table can be used, when the lounge is located in either the rear position or the forward. Simply secure the table support pole into the cleat, then secure the table mount into the top of the support pole.

The dining table stores on a shelf underneath the rollover cushion of the lounge. Rotate the dangling retainer out of the way and slide table onto the shelf, (top surface up, mounting plate hanging down). Push all the way in, retainer will drop and secure the table for travel.

The support pole stores below the lounge track on the street side, in the two rubber clamps. Simply pull and latch to secure. It is strongly suggested that the table parts be properly stowed prior to travel to avoid damage from vehicle shifting.



Dining table assembled and shown in rear location



Shown in Queen Sized Bed configuration, the assembly quickly converts from the lounge to "Bed Mode".



Dining table located on storage shelf underneath movable lounge. Release tab shown circled



Dining table support arm, stored underneath lounge tracks

#### *Converting from lounge to bed:*

1. Decide if you would like the bed to be all the way to the rear or if you would like to move it forward, in order to maintain storage space.
2. Once decided, release the spring loaded latch pins from the track holes. Slide the lounge into desired location and lock it back in, to prevent any further movement.
3. Remove the large, seatback cushion from the lounge and set aside.
4. Remove the large bottom cushion from the lounge and set aside.
5. Remove the two flat panels from storage shelf and slide slots together into an "X" configuration and place on the floor as shown.
6. Pull the smaller "rollover" seatback cushion bundle toward the front and allow it to roll over. As it nears completion swing the bottom cushion out so both cushions are laying flat.
7. Place the large seatback cushion in front of the rollover cushions. Make sure the felt covered blocks are sitting properly on the entertainment cabinet shelf and the utilities equipment cabinet top.
8. A fitted, queen size sheet will help keep the cushions securely together.

To return to lounge mode, reverse the order and make sure spring loaded latch pins are securely engaged.

For more information, please contact our customer service department at (828) 348-5585 or email [info@sylvansport.com](mailto:info@sylvansport.com).



Spring loaded Latch



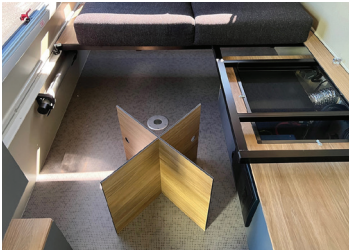
Remove large seatback cushion



Remove large bottom cushion



Remove two flat bed support panels



Assemble and locate panels as shown



Pull rollover seatback cushions forward



Continue to pull rollover seatback cushions forward and lay flat



Place large seatback cushion at end cushions forward and lay flat

## INDOOR/OUTDOOR KITCHEN

A unique feature to the Vast travel trailer is the indoor/outdoor kitchen. The kitchen is built as one assembly, that is mounted on angled slides, giving you the freedom to use the kitchen both inside and outside. When the kitchen is outside, a full-size residential shower is revealed. When lowered to it's outside position, the kitchen remains at the correct height for easy operation. When it's time to return the kitchen to it's inside position, simply push it back in and lock it down.

The kitchen is fully featured and contains a stainless steel counter top and sink, faucet, dual zone electric cooler, propane stove, microwave oven, storage drawers (3), storage shelves, extendable counter top, electrical connection panel, lighting and fan wireless switch plate and slat wall storage panels. Further details are shown in the Exterior: Indoor/outdoor kitchen section.

## WARNING

**TO AVOID DAMAGE, BE SURE TO READ AND UNDERSTAND ALL INSTRUCTIONS ON DEPLOYING AND STOWING THE INDOOR/OUTDOOR KITCHEN. FOR INSTRUCTIONS ON DEPLOYING AND STOWING THE INDOOR/OUTDOOR KITCHEN, PLEASE REFER TO EXTERIOR: INDOOR/OUTDOOR KITCHEN**



Kitchen in inside position



Kitchen in outside position



## DUAL ZONE COOLER (REFRIGERATOR)

The Vast travel trailer comes equipped with a Truma 69 litre, dual zone, portable refrigerator/freezer. The generous interior volume measures 36"x21"x20" (LxWxH). The cooler is removable, transportable for use on the beach, in your car or anywhere you want to take it. When in use, in the Vast, the cooler is located on a slide-out tray, providing easy access and tucking away nicely when not in use. The C69 cooler is powered by a 12/24V DC compressor. From the USB charging port to the tucked-in, space-saving handles and built-in bottle openers, you'll find the Truma C69 Dual Zone Cooler is full of thoughtful integrations that enhance your outdoor experience.

The Truma cooler has a "battery protect voltage setting", to prevent the cooler from drawing the Vast battery down too far. To access these settings: on the cooler control panel, to enter "battery protect voltage setting", press "Switch compartments/mode" setting one more time after "change °F or °C". There are three possible settings:

The "HI" setting preserves the highest amount of battery voltage so that a vehicle could be easily restarted if the only battery available is the single car battery.

At the "MED" setting, there is probably enough battery voltage to start a car, provided it is in good tune-up condition.

In the "LO" setting, it is unlikely that a car could be started at 10.1 volts, but it is high enough that a supplemental charger would see the battery as a discharged 12 volt battery and would be rechargeable.

Notes:

- **When extending cooler, use caution....**
- Verify cooler tray is fully latched (closed), prior to extending or retracting the kitchen.
- Be certain cooler tray is latched, prior to travel.
- Before removing cooler from slide-out tray, unplug power cable from back

For more information on the cooler, please refer to manufacturers manual, included in this binder.



Truma 69 liter cooler on slide-out rails



Truma 69 liter, dual zone cooler interior



Truma 69 liter control panel and connections

Mounted on the kitchen shelves, is a 120VAC, .7 cu ft. capacity microwave oven, measuring 10.2" x 17.3" x 12.8". Operation of the microwave oven is only recommended if your Vast is connected to shore power, as there will be a significant draw on your batteries. Note: if you have the solar power option installed on your Vast, you will be able to use your microwave oven in a limited capacity.

If you notice your microwave becoming loose over time, check to make sure it is secure. If it is no longer securely attached, please contact SylvanSport customer service department at (828) 348-5585 or email [info@sylvansport.com](mailto:info@sylvansport.com).

For more information on the microwave oven, please refer to manufacturer manual, included in this binder.

## PROPANE STOVE

The Vast travel trailer comes with a Dometic 50216G RV Stainless 2-burner propane cook top with glass cover. Measuring 19" X 14 5/8", the Dometic drop-in cooktop has a powerful 7,200 and 5,200 BTU burner, allowing you to conveniently prepare a main dish and side dish simultaneously. The recessed control panel and burner knobs are easy to use and allow you to cook with precision.

Operation is simple. Be sure propane gas valve is open and the stove is level, (if you have your Vast properly levelled, your stove will be as well). Raise the glass cover panel and use the recessed control knobs to turn on burner(s), push the lighter button (indicated with a star or spark icon) to light. If the stove still does not light, check to be certain propane tank valve is open and regulator is drawing from tank containing gas.

For information on accessing and adjusting the gas valve, please contact SylvanSport customer service department at (828) 348-5585 or email [info@sylvansport.com](mailto:info@sylvansport.com).

Before pushing the kitchen in or out and before traveling, be sure the stove is turned off and the glass cover of the stove is returned to its lowered position. Lift up on the glass lid and rotate down to a flat position on top of the stove. **The glass cover is NOT to be used for cooking.** Heating of the glass can result in damage to people and/or the product.

For additional information on operation, cleaning, safety and maintenance of the stove, please refer to manufacturer manual, included in this binder.



Microwave oven



Propane stove

## WARNING

**IT IS ESSENTIAL THAT THE BURNERS ARE TURNED ON ONLY FOR THE DURATION OF COOKING. LEAVING THE FLAME UNATTENDED OR WHILE NOT COOKING MAY LEAD TO ACCIDENTS AND FIRE HAZARDS. IF THE SPARK DOES NOT LIGHT UP AS SOON AS THE BURNER IS TURNED ON, YOU MUST TURN IT OFF AND WAIT FOR A FEW SECONDS.**

## STORAGE

The Vast travel trailer has several types of storage, including cabinetry, drawers and space under and behind the movable lounge. There is also ample storage space in the front storage box, as well as a shelf behind the front storage box for outside items like hoses and drain tube.

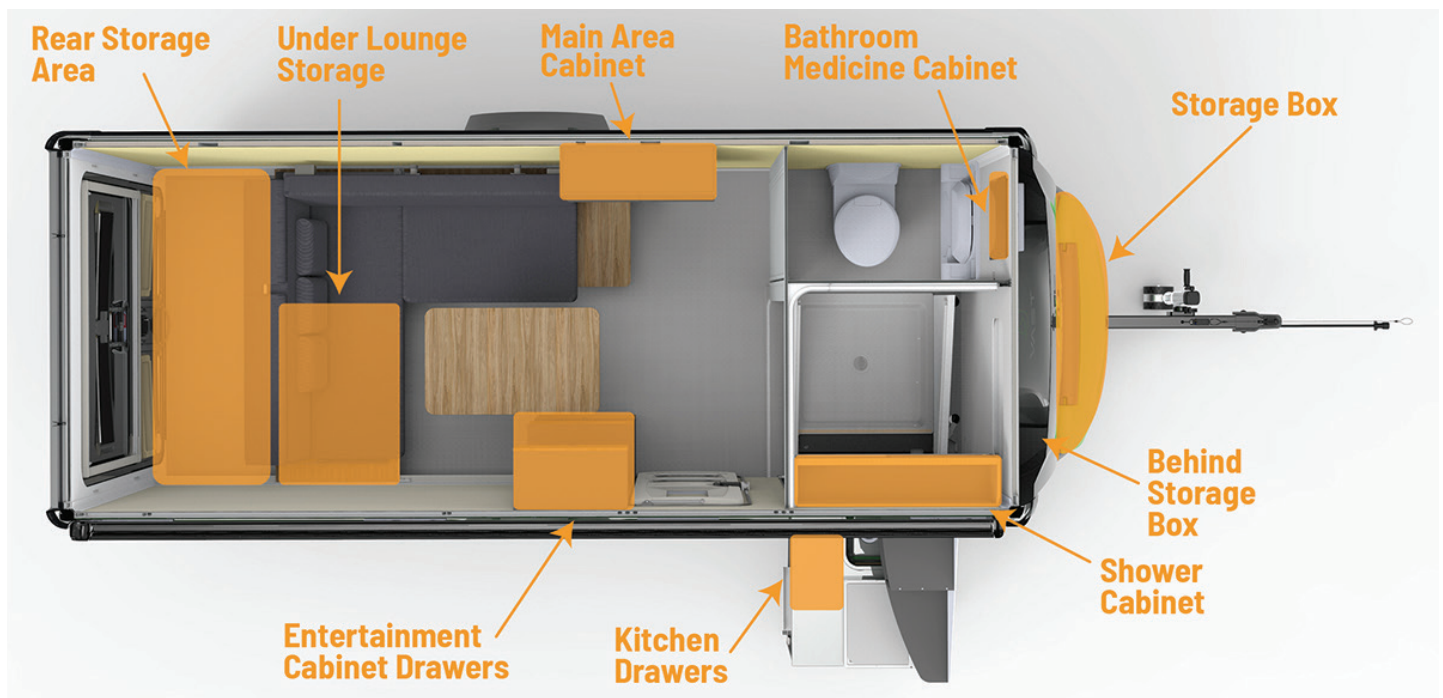
The kitchen/shower area has a millwork cabinet with sliding doors. Items used in the kitchen can be stored in the front, giving easy access while cooking and using the kitchen. Shower items (shampoo, soap, etc.) can be stored on the back side allowing for easy access when using the shower. In addition, the cabinet contains a pull-out clothes line for drying clothes over the shower drain pan.

The main living area has a larger cabinet with large, swing-out doors and multi-position shelves. This, as well as other cabinetry features positive-latch, push button knobs, so items will not fall out while traveling.

The entertainment center has two drawers and an upper cabinet. The drawers slide out on drawer slides and the upper cabinet door is hinged and opens up.

The kitchen has three drawers as well. Each drawer has a push-to-release secure latch for traveling. The kitchen also has a triangular shaped slide-out shelf below the drawers.

The largest available space is both underneath and behind the movable lounge. Large enough for bikes, coolers, bins and more. Slide the lounge forward for even more storage capacity. With the smooth, durable flooring, particularly long items can be transported while slid under the lounge. All items transported inside the trailer and not in drawers or cabinets should be securely lashed in place, so they do not move, shift or cause damage while traveling.



Vast storage diagram



The entertainment center has two drawers for storage and an upper cabinet



The main living area has a large cabinet with two adjustable/removable shelves



The bathroom/kitchen has an overhead shelf with sliding doors



Indoor/outdoor kitchen latching drawers



Cabinets all feature secure pushbutton knobs



Storage behind the lounge for bikes, etc.

## LARGE, SIDE AND REAR WINDOWS

The Vast has two large (56" x 41") windows, one located on the curbside wall and one located in the rear door. Each window includes five securing latches (red), two gas support struts, one window screen, one privacy shade and is tinted for one way privacy inside. In addition, both windows have a safety net, which is deployed when the drop-down bed is lowered.

To open a window, disengage the 5 latches and raise the window from the outside. When the window has reached it's full open angle, the orange ring on the upper housing of the gas strut will rest on the top of the lower housing (of the gas strut). If desired, raise the window screen and/or lower the shade and connect to each other. They can slide up or down for any combination of screen and shade you desire. For minimal ventilation, the windows may be opened and allowed to hang freely, in a nearly closed position. In the event of high winds, it is recommended the windows be closed and latched. Windows should be closed and latched, prior to travel.

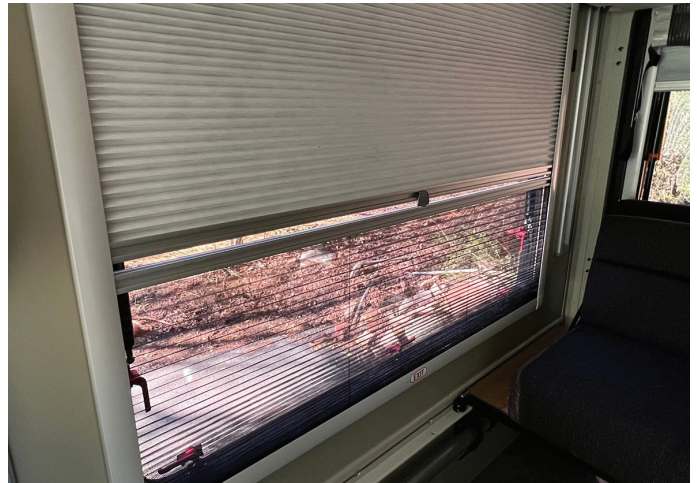
To close the window, lift up on the window (to release the gas strut support) from the outside and gently lower the window to closed position. Re-engage the five securing latches and disengage the screen from the shade (if in use) and lower the screen/

raise the shade to traveling positions. Note that the possibility for finger pinching exists at the gas strut location, when raising and lowering the windows. Please note that both the side window and rear window are also emergency exits.

For cleaning instructions please see the Maintenance and cleaning section.



Locations of five window release/secure latches



Screen and shade connected. Slide up or down to adjust.



Proper position for window latches



Window screen should always be disconnected and lowered when not in use



Gas strut shown in open position



Rear and side window safety nets



Safety net release clips

## **WARNING**

**BE SURE SAFETY NETS ARE SECURED  
SMALL CHILDREN SHOULD NOT BE UNSUPERVISED WHEN ON DROP-DOWN BED**

### **SKYLIGHT**

The Vast skylight is mounted in the roof, just forward of the drop-down bed location. The skylight features a locking, multi-position adjustment bar and has both screen and black-out shade. The easy to operate handle opens the skylight, sets it in any of three positions and also allows egress to the roof, if necessary, for emergency exit. Screen and shade should both be stowed, prior to traveling. Note: connections for optional solar panels can be most easily inspected using access through the skylight.

For cleaning information please refer to the Cleaning and maintenance section.

For more details and specs on the skylight, please refer to manufacturer manual, included in this binder.



Skylight, push button to unlock, move grab bar to set position



Skylight, with shade and blackout curtain

### **OVER THE AIR TV AND FM ANTENNA**

The Vast travel trailer comes with an integrated TV/FM antenna. Located behind the front access panel (near the shower) this antenna is easily accessible and gives you “over the air” TV as well as FM reception, direct to your TV. Because it is stowed within the fiberglass front cap, it is protected from damage during travel.



Access panel to WiFi antenna



WiFi antenna mounted inside front cap, with access door inside

## VENTILATION FANS

The Vast travel trailer comes equipped with two adjustable ventilation fans. Easily controlled using the wireless switch plates or the Firefly touch screen panels.

The Maxxair 4900 fans feature high-powered, 3 speed exhaust, waterproof, with FANMATE vent cover. Manual opening or via controls. Rain sensor closes lid if it rains.

Controls: Vent opening and fan speed controls are independent and can be found in three locations - the touch screen control panel, the wireless switch in the bathroom and the wireless switch in the indoor/outdoor kitchen. For the control panel touch screen, select the fan icon to go to the "Vent Fan Control" screen. From there you can independently open and close the fan lids (vents) and also set the fan speed, choose between low, medium and high. For the wireless switch panels, follow the fan speed and lid control icons to set your desired opening and speed.



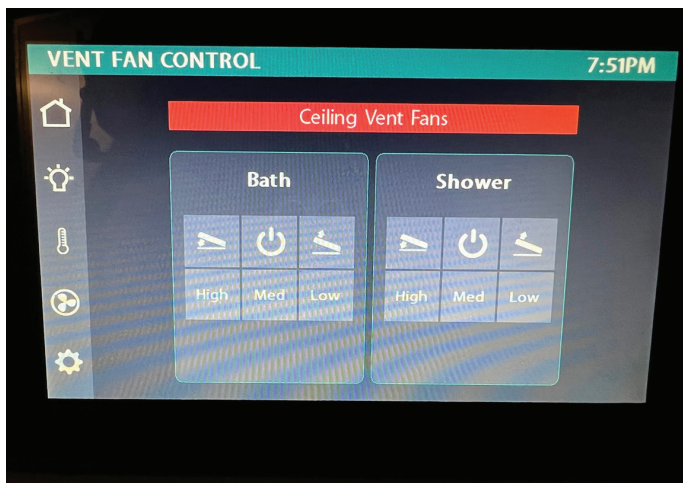
Ventilation fans located over lavatory and kitchen / shower



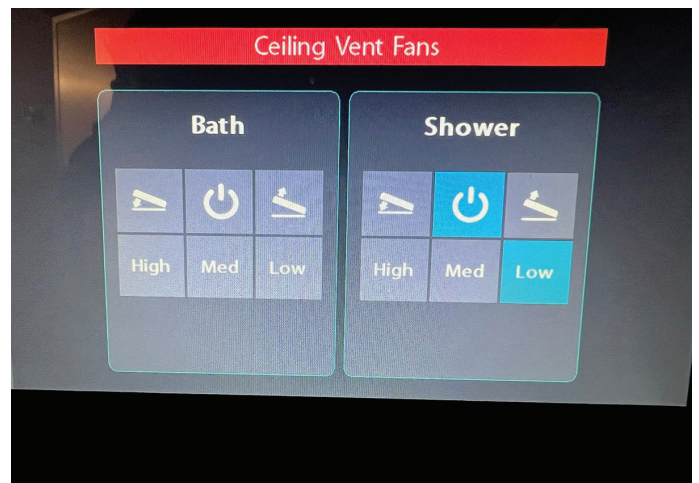
Ventilation fan



Bathroom wireless switch panel



Vent and fan screen



To operate fan, turn on power and select fan speed

## ADDENDUM

### OFF-GRID CAMPING

#### Guidelines

When camping off-grid (no electrical or water connections) there are several main categories

Preparation: Generally speaking, you will have no access to power, water, stores etc. It is best to be sure you have pre-packed everything you will need for your

### TRAILER LEVELING THE EASY WAY

To safely and successfully complete the leveling the Vast the following items will likely be needed:

- Stabilizer jack crank - located in the lid of the forward storage box.
- Wheel chocks
- Level - we suggest a "Torpedo" level. Most torpedo levels are about 9 inches long, compact enough for easy travel stowage but long enough for accuracy. Other alternatives are small levels permanently mounted accurately to the trailer or an electronic angle finder.
- Drive-on leveling blocks or heavy lumber - in the event of significantly unlevel ground conditions these are needed to go under the wheels of the Vast. Sections of 2" X 8" lumber cut to 18" lengths is an alternative.
- Oversized wooden blocks - if the terrain is particularly soft or mushy, we recommend their use under each jack pad and the tongue jack caster. Sections of 2" X 8" lumber work well for this purpose.

We suggest that level measurements be taken on the floor of the trailer about a foot inside the entry door.

There are four stabilizer jacks on the trailer, mounted to the chassis roughly 32 inches from the ends of the trailer box. Jack crank access to the stabilizer jack screw is via obround holes in the lower side rail extrusions of the trailer. Be sure that the crank is fully engaged on the hex, on the end of the jack screw, before exerting torque on the handle. The stabilizer jacks are NOT intended to support the full weight of the trailer, therefore, they should not be used for changing a tire or when some of the weight of the trailer is not supported by the wheel.

Begin by surveying the campsite and determining the most level section on which to locate the Vast. In most campgrounds, a fairly flat, level section is usually provided. Because the Vast is not oversized, the camping "pad" is usually much larger than is required. Verify that the distance to any desired shore power connections are within reach of the trailer, without the use of extension cords or long hoses.

1. Determine the orientation that you want for the Vast, on the site and move it to that location.
2. Open the entry door and place the level on the floor about a foot inside the door with the level measuring across the trailer.
3. If the bubble is centered between the lubber lines (0°) – you are golden. If bubble is not centered between the lubber lines skip to step 8 below.
4. Chock the wheels of the trailer and disconnect from the tow vehicle, electrically and mechanically.
5. Turn the level to measure front to back level. Use the tongue jack to get the bubble centered between the lubber lines.
6. Lower all four jacks until they touch the ground and then give one more full turn.
7. Return the jack crank back to the forward storage box lid, and go celebrate your good fortune.



8. Since the side to side level needs correction, lift the end of the level until the bubble is centered. The end of the level which you lifted to center the bubble (curbside or street side) indicates the side on which you will need a leveling block or greater jack extension to become level. If you can slide your complete finger (approximately 1 inch,) under the lifted side of the 9 inch level to hold the bubble centered ( $5^{\circ}$ ); it is recommended that leveling blocks be used under the tire on the indicated side.
9. If the use of leveling blocks is required, place the blocks securely on the ground and drive the trailer so the tire is centered on the block. A 1 inch disparity in 9 inches ( $5^{\circ}$ ) indicates that approximately 4 inches of block thickness will be required under the tire to bring the trailer level side to side. An alternative to using leveling blocks, may be to position the trailer differently on the campsite.
10. Once the trailer is located on leveling blocks (if needed) and in the position on the site that is desired; chock the wheels of the trailer and disconnect from the tow vehicle, electrically and mechanically.
11. Place the level on the floor of the trailer about 12 " inside the entry door opening and oriented to measure front to back. Use the tongue jack to center the bubble in the level.
12. Now rotate the level to measure level across the trailer. Note the position of the bubble and how much out of level the trailer is side to side.
13. Place the level in the position to measure fore and aft. Using the tongue jack, lower the front of the trailer until the level bubble is in the same position it was when the trailer level was measured side to side (step 12).
14. Lower one rear stabilizer jack on the indicated side until it touches the ground, and give one full crank further.
15. Using the tongue jack, raise the front of the trailer until the level bubble is centered between the lubber lines. At this point, rotating the level to check the side to side level should show that the trailer is nearly level that way as well. If the bubble is not perfectly centered but within the lubber lines, this amount of imbalance can be corrected with as the remaining stabilizer jacks are extended. If the side to side measurement indicates that the level bubble is not centered and the edge of the bubble has passed beyond the lubber lines, determine if the correction by the stabilizer jack was too much or too little by lifting the end of the level to center the bubble. If you lifted the end on the side where you've extended the stabilizer jack, more jack height is needed. If you need to lift the end of the level opposite the side where you extended the stabilizer jack, then too much jack height was used.
16. If correction is needed as indicated by step 15 above; use the tongue jack to lower the front of the trailer to release the pressure on the extended rear stabilizer jack and make adjustments to that jack by extending or retracting that jack as determined was needed in step 15.
17. Repeat step 15. If the trailer is now level front to back and reasonably level sided to side, proceed to step 18, otherwise repeat step 16.
18. When trailer with one stabilizer jack down and the tongue jack raised to front to back level position are resulting in a near level side to side condition, drop the remaining three stabilizer jacks until they touch the ground.
19. If slight lift is still required on the already jacked side, turn the crank for the front stabilizer jack on that side two full turns beyond touching the ground and check side to side level. Now turn the two remaining stabilizer jacks one full turn.
20. If the indication is that the already jacked side is slightly too high, go to the opposite rear stabilizer jack and give it two full turns after touching the ground, then check side to side level.
21. Return the jack crank back to the forward storage box lid, and make a mental note to next time find a more level campsite.

**MAINTENANCE RECORD**

<b>DATE</b>	<b>DESCRIPTION OF SERVICES</b>	<b>SERVICES PERFORMED BY</b>

