



ICE CAVE AND BIVY MODELS



OWNER'S MANUAL

Thank you, and congratulations on purchasing your new Snowy Mountain recreational vehicle. Our two main goals are to provide you with the perfect vehicle for your enjoyment and to make a product that will last as long as possible.

Of course, you're safety is our greatest concern. Please read and understand the content of this manual, and heed all warnings and precautions listed to assure your travels are filled with fond memories. Understand your new RV's capacities and capabilities.

You should also familiarize yourself with the capacities and capabilities of your tow vehicle. That may mean consulting your tow vehicle owner's manual, specifically for their towing procedures.

Take a little time to get the feel of towing your new vehicle before you head off on that long trip. The difference between a leisurely trip and days of white knuckle driving could be as simple as a different drop in your ball mount. The time to find that out is prior to your vacation departure. Most importantly, if you have any questions regarding the use or care of this Snowy Mountain product, please contact us directly and we will do our best to advise you.

This recreational vehicle may contain equipment acquired from a third-party manufacturer. If there was an owner's manual or warranty included with that product, this information can be found in the packet which contained this manual. Your Snowy Mountain Camper warranty does not cover components manufactured by a third party, so please familiarize yourself with those products by reading and following the instructions provided by that manufacturer. Also, fill out any registration cards provided for each component and return them to their respective manufacturer.

If properly maintained, this vehicle should last much longer than an RV utilizing standard construction. This manual covers routine maintenance and offers tips on sealing, cleaning, and getting the most out of your new Snowy Mountain recreational vehicle.



WARNING: Read all instructions in this manual and all other documents supplied in your owner's packet along with instructions supplied by component manufacturers before using your RV.

Your vehicle has been manufactured in accordance with all Federal Motor Vehicle Safety Standards and all State Regulations at the time of its manufacture.

One Year Limited Warranty

We pride ourselves in building the best products we possibly can. Each product is hand crafted by individuals who really care about their work and your enjoyment after the purchase. All of our products undergo numerous inspections and safety checks. We offer you a one year limited warranty on defective materials and labor.

We will repair or replace, at our discretion, any defect in materials and workmanship for the period of one full year from the date of purchase. Sorry, this does not include abuse, normal wear and tear, or neglect.

We would also like to know how our products perform, so if anything, ever, goes bad, we would appreciate your comments and we may, at our discretion, be able to help with that also.

Please enjoy the product we built for you, and thank you for your patronage.



1102 Crowley Ave., Lewistown, MT 59457

Glen Pegg 406-366-9007 * Darren Morgan 406-366-5672

Esther Pegg 406-350-1428 * peggpen@yahoo.com

Please fill out the form below and mail it to us within 30 days of your purchase.

Customer Name: _____

Street Address: _____

City: _____

State _____

Zip Code: _____

Model: _____

VIN: _____

Dealer Name: _____

Dealer Address _____

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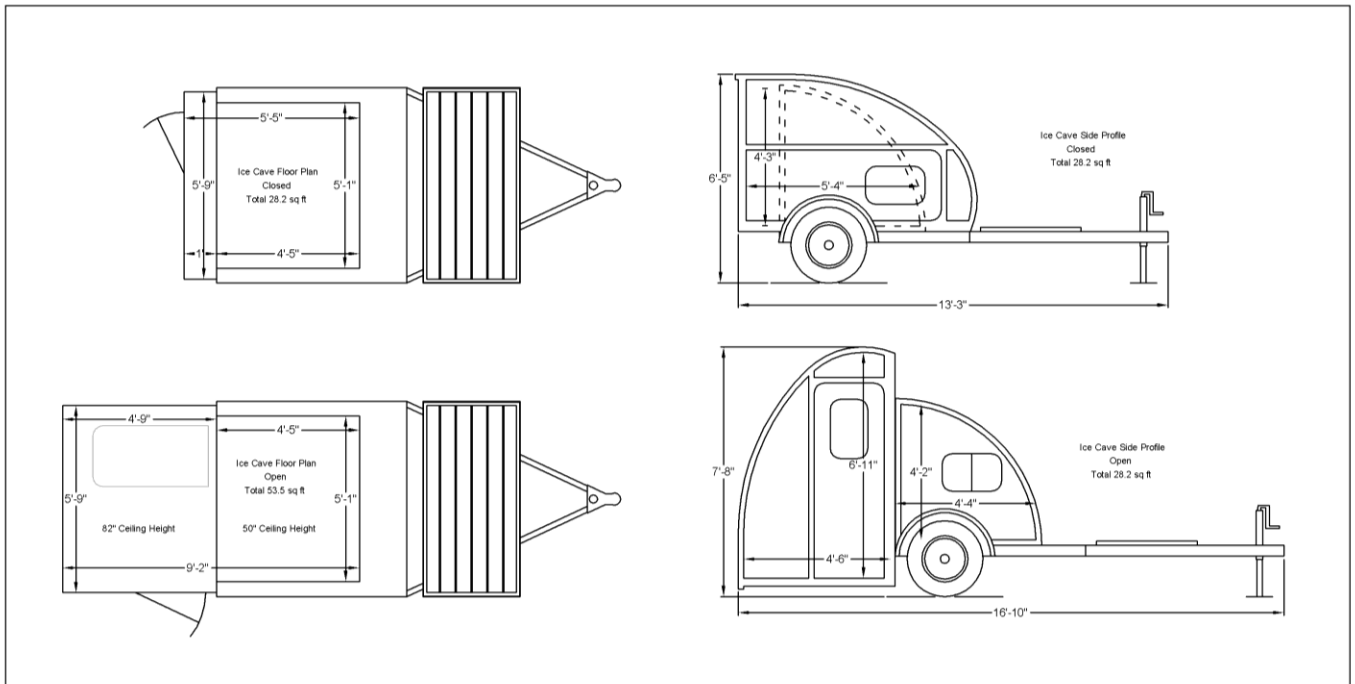


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SECTION 1. DIMENSIONS, WEIGHTS, AND CAPACITIES



Ice Cave and Bivy floor plan.

The VIN Label for your trailer is located on the front left hand side of the trailer body. It lists the vehicle weights, tire, and axle ratings. The GVWR gives you the Gross Vehicle Weight Rating. If you subtract the vehicles weight empty, as listed later in this section, from the GVWR, this will determine the amount of cargo you are permitted to carry.

MANUFACTURED BY: SNOWY MOUNTAIN CAMPERS

DATE: XX/XXXX

GVWR 1587 **KG(** 3500 **LB)**

GAWR ALL 1587 **KG(** 3500 **LB) PER AXLE WITH ST205/75/15 TIRE** 15X6 **RIM**

AT 350 **KPA(** 50 **PSI) COLD SINGLE**

THIS VEHICLE CONFORMS TO ALL APPLICABLE US FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: 4S9XXXXXXX464XXX

TYPE: TRAILER

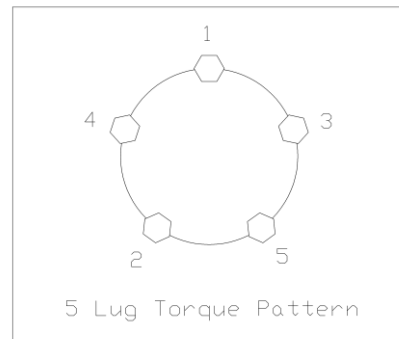
MODEL: 72W BIVY

FD-304 REV A

Example VIN label with weights and capacities.

OTHER SPECIFICATIONS

Overall Length - Closed	13' 3"
Overall Length - Open	16' 10"
Total Height - Closed	6' 5"
Total Height - Open	7' 8"
Body Width	6' 0"
Overall Width	7' 8"
Ground Clearance at Axle	12"
Weight empty	1150 lbs.
Battery Type	12V 35ah Deep Cycle AGM/SLA



Hinge Detail-Torque from center out

5 Lug Torqueing Sequence

TORQUE TABLE

Wheel Lugs	90-120 lbs.
Axle U Bolts	30-50 lbs.
Body Nut Inserts	145 in. lbs.
Hinge Nut Inserts	110 in. lbs.

SECTION 2. COUPLING YOUR TOW VEHICLE AND RV



CAUTION: If your tow vehicle was not equipped with a trailer hitch, we suggest you have one installed by an automotive repair specialist. Many popular automotive models have receiver hitch mounting kits available that will aid in installation.

Our towed vehicles utilize a standard 2" ball unless equipped otherwise. In those instances, information will be included in your owner's pamphlet for special instructions.

When loading your trailer, NEVER exceed the weight limits of your RV OR your tow vehicle. The weight which you are permitted to carry in your RV is determined by the lowest weight allowable on either your tow vehicle or your RV. Information on your tow vehicle's limits can be found in your tow vehicle's owner's manual and on certain placards on your vehicle. Information on your RV's limits can be found in this manual and on the RV Vehicle Identification Number tag on the left front side of your RV.

In general, one should have approximately 1/10th of the total loaded trailer weight on the hitch. The heaviest loads should be loaded as low as possible, directly over the axle.

With all your gear loaded and the proper weight distributed at the hitch, select a ball mount that levels the trailer frame from front to rear. This should give you the best towing properties.



Hitch Latch Opened



Hitch Latch Closed And Locked.

Always be sure to latch the trailer tongue hitch. It is best to get into the habit of locking the hitch latch. Your trailer has a light tongue weight. It would be easy for someone to walk away with your trailer for personal gain or as a personal joke! Locking it may keep it from walking away.



Hitch Coupler Secured on Ball.



Correct Safety Chain Installation.

Safety chains that are SAE compliant to your trailer's gross trailer weight are included on your trailer. The proper method for installation is to cross the left trailer tongue chain and attach it to the right slot on the tow vehicle hitch. Attach the right trailer tongue chain to the left slot on the tow vehicle hitch. Be sure to leave enough slack in the chains that they will not bind during tight cornering or crossing dips or bumps. Do not allow the safety chains to drag on the ground.

Check for information about products mentioned in this section on the web or from a professional before purchasing and read and follow the instructions supplied by the manufacturer before use.

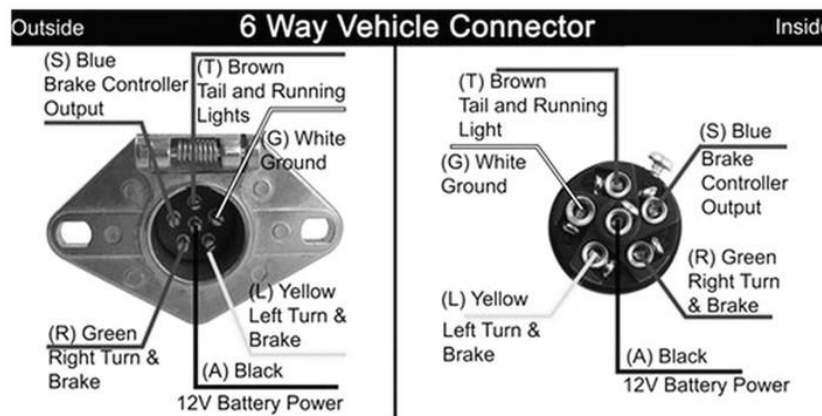
SECTION 3. WIRING YOUR TOW VEHICLE TO YOUR RV



CAUTION: Wiring your tow vehicle to your RV must be done by an automotive wiring professional. We at SMC assume no liability to any damage to our product or the tow vehicle if the vehicle wiring is not installed properly. Neither do we assume any liability to damage to our product or the tow vehicle if the RV wiring has been altered from original.

Our products come standard with a six way round pin electrical connector. Your RV vehicle pigtail is wired consistent to industry standards pin placement as illustrated below. Due to availability of wire color combinations, the wire colors may vary; however, the plugs pin functions will not vary. There are many aftermarket products being offered to adapt this standard connector to other standard connectors if your vehicle is already wired.

If your vehicle is not wired, we suggest you have this job professionally done. There are some popular automotive models that have “plug and play” wiring kits available that will aid in installation.



Typical Six Pole Round Pin Wiring

You can find information about your vehicle's wiring and products made for easy installation on the web or from a professional. Please read and follow the instructions supplied by the manufacturer for use.

SECTION 4. TOWING YOUR RV



CAUTION: Be absolutely sure of your RV's weight capacities and the towing capacity of your vehicle. DO NOT EXCEED THESE LIMITS!

Before you pull out, and every time you use your trailer, you should inspect it using the following check list.

- Check and tighten the wheel lug nuts if necessary.
- Check and tighten the axle u-bolts if necessary.
- Check for correct tire pressure or excessive tire wear.
- Securely latch the coupler hitch.
- Make sure that the safety chains are secured.
- Check that the front jack is fully retracted.
- Connect the electrical cord and check all lights.
- Make sure the outer living structure is properly secured.
- Be sure all cargo is adequately secured.
- Check that all doors, windows and vents are fully closed.
- Check for objects on, under, or leaning against the unit.
- Make sure your auto's mirrors are adjusted.

Towing your RV should be a combination of not feeling like you are towing anything, while still being constantly aware that you ARE towing something. In some cases your vehicle is now twice as long as it was! Acceleration, cornering, backing up, and braking are all going to be affected.

Take a little time to get the feel of towing your new vehicle before you head off on that long trip. If you are unfamiliar with towing a trailer, practice maneuvering in a remote area free from obstructions, and onlookers. Try the acceleration and braking, take some light curves and a slow speed wobble.

Slowly stop in the tightest turning radius of your vehicle. Note your trailers location and the angle of the trailer compared to the tow vehicle. Also note where the trailer fenders are located. This is now the turning radius with your trailer. You MUST make sure you leave at least this amount of room on any inside corner or you could damage your trailer. This is also the point where, when backing a trailer, the trailer begins to "jackknife", meaning you cannot get the trailer to come back straight. Do this in both directions to familiarize yourself with your towing combination.

When you are sure no one is watching, you can attempt backing up. Really, a spotter is helpful. Don't be intimidated. Some people pick it up right away, others may take some practice. It is simply turning opposite of the way one would normally turn without a trailer. Some people suggest that to back up with a trailer you can use the same

turning motions with your hand on the bottom of the steering wheel rather than the top. However you decide is best for you, take your turns lighter than you would without a trailer, and be aware when you find yourself about to jackknife. To right yourself from this condition, all you must do is pull straight forward until you have enough room to correct the problem.

Next, take a short trip where you can slowly get your combination up to highway speed. Check for wobbles, bouncing, or swaying. If you feel any undesirable effects, check with your auto repair specialist or in our troubleshooting section.

The difference between a leisurely trip and days of white knuckle driving could be as simple as a different drop in your ball mount. The time to find that out is prior to your vacation departure. If you have any questions regarding the performance of your tow vehicle and this Snowy Mountain product, please contact us directly and we will do our best to advise you.



CAUTION: DO NOT TOW ANYTHING BEHIND YOUR TRAILER. If your trailer is equipped with a receiver mount, it is for 100 pounds of cargo only.



SECTION 5. LOADING YOUR RV



CAUTION: Always chock your tires when loading your RV.



CAUTION: Always block the rear of your RV or maintain tongue weight as you load the rear of the trailer.

When loading your trailer, NEVER exceed the weight limits of your RV or your tow vehicle. The weight distribution of your RV will be determined by the weight limits of your tow vehicle and RV.

Information on your tow vehicle's limits can be found in your tow vehicle's owners manual and on certain placards on your vehicle.

Information on your RV's limits can be found in this manual and on the RV Vehicle Identification Number tag on the left front side of your RV.

Always check the tire pressure and check for tire wear before loading.

In general, one should have approximately 1/10th of the total loaded trailer weight on the hitch (100 pound tongue weight per every 1000 pounds total trailer weight). NEVER EXCEED THE WEIGHT LIMITS OF YOUR TOW VEHICLE OR HITCH.

The heaviest loads should be loaded as low as possible, directly over the axle. Always maintain even weight distribution from side to side. SECURE YOUR LOAD to keep it from shifting, possibly damaging your trailer or its contents.

Everything you attach to the outer structure will add weight and will result in a heavier lift to get from the closed position to opened and back. We do not suggest a roof rack or cargo carrier of any sort be placed on this structure.

DO NOT CARRY CARGO OR ATTACH A CARGO RACK DIRECTLY ON THE ROOF.

DO NOT OPEN OR CLOSE THE OUTER STRUCTURE WITH CARGO ATTACHED.

SECTION 6. EXPANDING YOUR RV



CAUTION: ONLY OPEN ON FIRM, FLAT SURFACES. Opening on uneven surfaces could result in injury or property damage.



CAUTION: PINCH POINTS. Keep hands, feet, and other body parts away from pinch points or from under the folding portion, when opening or closing this structure.



CAUTION: DO NOT OPEN OR CLOSE THIS STRUCTURE WHILE UNCOUPLED FROM THE TOW VEHICLE. Always lower the tongue jack until contacting firm ground or blocking. Always block tires from rolling. Failure to do so could result in injury or property damage.



The advantage you have with your new Ice Cave or Bivy recreational vehicle is its ease of towing, while being big enough to stand in when it's parked and opened. Being an expandable, hard sided unit, it is also permitted where tent models are prohibited. We purpose built this model so you could access places that a standard RV will not go and do things that a standard RV could not do. Your RV has been built to withstand much more than a standard RV and it should last much longer

than a conventionally built RV. There are, however, things that you must do to prevent damage to the structure and to keep you and others safe when opening and closing the unit.

Park your tow vehicle and RV on firm, level ground, at a site where you have adequate room behind you to tip the outer structure on its back. It is always best to position your caravan so you can pull your tow vehicle out if it is needed. Clear the area of all obstructions that could damage the outer structure or create a pinch problem. Be sure to set the park brake on your towing vehicle to block from movement. Lower the tongue jack until contacting firm ground or blocking. Chock both sides of the trailer tires to prevent rolling.

Make sure all individuals not instructed on the opening and closing hazards are cleared from the immediate area.



Outer Structure Latching Clamp.

With both outfits now blocked and all obstructions cleared, unlatch the hold-down clamps on both sides of the trailer. With TWO people, slowly raise the front of the outer structure using the handles on either side. When tipped to a near balanced state, one person should move to the handles provided near the upper-rear side of the outer structure. After the first person has a steady grasp and is balancing the structure, the second person will also move to the rear. With both persons in position, lower the outer structure until the seal plates make contact. DO NOT ALLOW YOUR FINGERS TO BE PINCHED BETWEEN THESE PLATES.

Closing the unit is simply done by reversing the opening sequence. Be sure to lift with your legs and DO NOT ALLOW YOUR FINGERS TO BE PINCHED as you lower the outer structure on to the seal surface. Once

the outer structure is completely lowered, you should then latch the unit down utilizing the latching clamps.

The latching clamps are adjustable and as the rubber seal relaxes these latches will likely need to be tightened. Be careful not to over tighten the latches or they could be damaged.

Units may come equipped with optional assisted opening devices such as cables, springs, hydraulics, or linear actuators. If your unit is equipped with any of these devices, additional instructions will be included in your owner's packet.



Door Cover off.



Door Cover in Place.

DO NOT WALK ON THE REAR DOOR. Cover the door from the inside with the door cover immediately after opening. Be sure to return the door cover to the travel mode and secure before closing outer structure.

If your RV is equipped with the Ice Cave Package, your rear door will fold flat to the back wall and can be latched prior to opening. The door cover can be left off so you can access the ice for fishing.

SECTION 7. YOUR RV'S FEATURES AND OPTIONS



CAUTION: Do not tamper with your unit's wiring.

Your vehicle may come with any of the following optional equipment acquired from a third party manufacturer. If there was an owner's manual or warranty included with that product, this information can be found in the packet which contained this manual. You're Snowy Mountain Campers warranty does not cover components manufactured by a third party, so please familiarize yourself with those products by reading and following the instructions provided by that manufacturer. Also, fill out any registration cards provided for each component, and return them to their respective manufacturer.

A word on "ghost loads". Ghost loads is a term used for energy being drawn from your battery that you are not aware of. Many electric devices constantly draw loads for lighting or memory, and as a result will drain a battery when it seems nothing is on. We strive to use only products that do not have these features; however, they have become almost unavoidable.

We urge you to disconnect the battery, or to use a battery maintainer, while your vehicle is stored to prolong the life of your battery.

12 VOLT POWER PORT: Your vehicle is equipped with two 12 volt charging ports and two 12 USB ports. This is a heavy duty 15 amp capacity unit with two 12 volt cigarette lighter ports. These can be used with many standard 12 volt accessories such as lighting and small 110 volt power inverters. DO NOT USE THIS POWER SUPPLY FOR A CIGARETTE LIGHTER. This item contains two small LED lights which are on all of the time and will drain your battery. Manufacturer's instructions are included in your owner's packet. This item has been altered by us, for use in your RV. Our 1 year warranty will cover replacement if it is faulty.

115 VOLT POWER PORT: This 115 volt power port is rated for 13 amps maximum. This is a convenient, water proof pass-through for your 110-115 volt power needs. Manufacturer's instructions are included in your owner's packet.

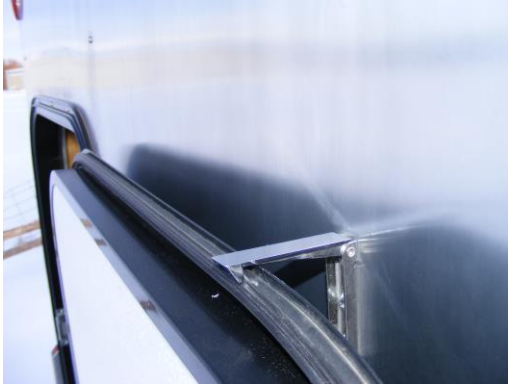
12 VOLT POWER VENT FAN: Manufacturer's instructions are included in your owner's packet.

12 VOLT, 35ah BATTERY: Your RV comes with a 12 volt 35ah AGM/SLA power scooter style battery. They are a no-mess, trouble-free battery that will supply sufficient power for your basic needs. You will find a 20 amp inline fuse for over-current protection inside the battery box. We suggest you pull the fuse when your vehicle is stored to keep from draining your battery.

SECTION 8. GETTING THE MOST OUT OF YOUR RV



You will like your new Ice Cave or Bivy recreational vehicle because of its ease of towing, while being big enough to stand in when it's parked and opened. We know of dozens of uses for this expandable hard sided trailer. They can be used as hunting and fishing camps. Because it opens near flat on the ground, it can be used as an ice fishing hut and allows easy wheelchair access. With optional rear door configurations, it can be used as a portable work shelter, vending booth, or mess hall. You may be instructed on its use as a telecommunications or utilities maintenance structure. Because it is an expandable, hard sided unit, it is also permitted where tent models are prohibited. Our weight limits are such that it can be loaded for moving if need be. However you choose to use your new RV, BE SAFE AND STAY WITHIN POSTED CAPACITIES.



Latch Door in the Open Position. Open the Structure as Usual.



CAUTION: Know your weight and be absolutely sure of ice conditions before using this vehicle on ice.

Snowy Mountain Campers maintains no liability, expressed or implied, about use of its shelters on ice. You should always be cautious and be certain of ice conditions.

Be mindful of the terrain you are traveling, but take your traveling home where you want to go!

Let others share the same enjoyment.

Take only Memories,
Leave only Footprints.

SECTION 9. MAINTAINING AND STORING YOUR RV

CONDENSATION:

Condensation is natural and can occur whenever the humidity is high. Breathing, cooking, or burning certain fuels can add to high levels of humidity that will condense on the windows and framing. This condensation should be kept at a minimum with proper ventilation or a small dehumidifier available from many RV or marine dealers.

INTERIOR CLEANING AND CARE:

Heat and rot are the two biggest concerns for the interior and paneling. Checking the interior on a regular basis is a must. Try to keep ventilated when extremely warm. Make sure you keep moisture out.

Installing curtains is something you may want to do or have us install for you. This will help keep the interior cool and offer some relief from fading.

The paneling in your RV has been adequately sealed with a polyurethane finish and can be cleaned with water and mild detergent. A soft pencil eraser or "magic eraser" will often remove discoloring associated with a light scratch.

Do not alter the interior without consulting us or our representatives or you may void the manufacturer's warranty.

Try to stay away from harsh chemicals and solvents if possible. Be cautious of corrosive, polishing, or buffing agents. If you must use any questionable substance for cleaning, try it in an inconspicuous place first.

ALUMINUM CARE AND CLEANING:

Many dust suppressants, salts, and de-icing solutions are corrosive to aluminum. Also, aluminum will naturally tarnish over time. We suggest that you routinely wash the exterior and always wash your RV immediately after your trip. It is good environmental practice to wash your RV and all of your off-road equipment after being off-road to keep noxious weeds from spreading.

Use a chamois immediately after washing to eliminate hard water deposits and water spots. Use light pressure, and be sure to rinse your chamois often to keep it free of debris. If dirt becomes imbedded in your cloth, it can leave light scratches in your aluminum. Shark Hide is a product used to protect aluminum boats and seems to work well on our exoskeletons and panels.

Try to stay away from harsh chemicals and solvents if possible. Be cautious of corrosive, polishing or buffing agents. If you must use any questionable substance for cleaning, try it in an inconspicuous place first.

STORING YOUR RV:

A soft RV cover or custom boat cover works well to protect your investment. Some universal car covers will work, be sure to check the size before ordering.

“Ghost load” is a term used for energy being drawn from your battery that you are not aware of. Many electric devices constantly draw loads for lighting or memory, and as a result will drain a battery when it seems nothing is on. We strive to use only products that do not have these features; however, they have become almost unavoidable. We urge you to disconnect the battery, or to use a battery maintainer, while stored to prolong the life of your battery. You should have your battery checked annually and replace when worn.

You should try to protect your tires from UV rays while stored. Tire covers will help with this. If you are somehow able to wear out a set of tires on your RV before the sidewalls check, you are one probably one happy camper!

CHASSIS:

A chassis inspection should be performed by a qualified automotive or RV professional annually prior to being readied for travel. The coupler, safety chains and attaching components, axle and spring hardware, and axle wheel bearings should all be examined or serviced. The tires should be checked for wear and proper inflation. The body mounting bolts and outer structure hinge bolts should be checked and tightened as necessary.

Check for information about any of these products on the web or from a professional before purchasing, and read and follow the instructions supplied by the manufacturer before use.

SECTION 10. TROUBLESHOOTING

HANDLING

If you find that the combination of tow vehicle and trailer doesn't handle or track well, check some of these things;

Check for proper tire inflation on the trailer and tow vehicle. Tire pressures for the trailer can be found in Section 1 of this manual or on the VIN tag on the right hand side of your RV.

Make sure that your trailer frame sits level from front to rear when coupled, as explained in Section 2. You may try to lower or raise the height of the hitch ball.

Refer to Section 5 for loading techniques. You may try adjusting your load forward or back slightly.

If you have any questions regarding the handling of your Snowy Mountain Campers product, please contact us directly and we will do our best to advise you.

DIFFICULTY OPENING OR CLOSING STRUCTURE

If you find it difficult to open or close your RV try checking these things;

The hinge is stainless steel and therefore should not rust. Make sure the hinge is clean and well lubed. Make sure to wash road grime and dust from the hinge when needed. Any graphite or oil based lubricants will work to lube this hinge.

Make sure the hinge is tightened to the specifications, as found in Section 1 of this manual.

If the outer structure rubs on the inner structure, the hinge may need to be loosened, the outer structure should be re-aligned, and the hinge re-tightened.

Be sure to take all loose objects from the floor of the outer structure when opening.

Check for objects lodged in the hinge or seal plates that may be interfering with movement.

Most importantly, if you have any concerns while opening or closing your RV, please contact us directly at Snowy Mountain Campers and we will do our best to advise you.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slight shadow on the right side, suggesting it's resting on a surface.

