



Antero Adventure Motors

Quick Start/Quick Fix Guide

2021/2022 Longs Peak 4x4/ 2021/2022 Pikes Peak AWD

Congratulations on your Summit/Antero Adventure Van purchase! You are poised to start or continue your adventurous lifestyle with the best vehicle on the planet to explore.

These cards are designed to be a quick, easy read references to help you to understand what the important elements of your van are and help troubleshoot and fix issues you may have with your systems in the field.

The topics on these cards are just a starting point. There is more in depth information on every element of your van in the Owner's Manual that is provided on a thumb drive.



Managing Your Antero O.G. “Off-Grid” power system

Elements of the Off-Grid Power system:

- 1 AGM chassis battery (starts the engine)
- 2 Lithium Ion batteries (provides power for all of your other stuff)
- A battery manager that separates or merges the two battery banks depending on conditions and load.
- 180 watts of Solar panels (fills the LI batteries with power whenever it can)
- 2000 watt power inverter/converter (automatically manages power needs to both 12v and 110v)
- 1 ALL-OFF switch
- Dedicated on/off switches for each system.
- Breaker box (allows separate control of power to systems and protects equipment from surges)
- Fuse box (protects equipment from surges)
- YOU and your sensible use of stored battery power

Normal use

First things first. If you have the Rooftop AC option it will ONLY run when plugged into 30 amp shore power or a sufficiently sized generator. It is not connected to the batteries. We know it might be hot in there. No, you cannot hotwire them to use the AC just a little. We’re sorry. Open the windows, get a cross breeze. Gain altitude. Drive north. ;) OR run the engine and crank the AC in the cab. This is not ideal but it will lower the temperature a little bit in the coach to help cool you off. Incidentally, we have found that in any temp less than 73 degrees, the vent fan and the open flair space windows keep it plenty cool for sleeping.

Unplugged

The standard O.G. or “off-grid” Power System built-in to your Antero is really good. You can park and use all of your equipment (with reasonable moderation) without needing to think much about it. That said, excessive use of systems or auxiliary items will certainly test the power capacity of your lithium Ion batteries. 180 watts of solar is SOMETIMES not enough power to keep your margarita mixer running for hours.



General rule: if the switch is ON, it's drawing some power. It's recommended that if you are not using something, you should turn it off. Keep an eye on your battery power levels. Levels in the mid 14's are great. They will normally hover between 13.2 and 13.6 at normal loads. 12.5 and up is fine. When you see levels in the 11's or lower, stop what you are doing and re-assess your power usage.

Plugged in

Yeah baby....Air conditioning! Popcorn! Ice cream maker! Use it all. And the great thing is, when plugged in, your Lithium Ion batteries will fill up. WIN WIN!

Batteries

Your Summit/Antero has 2 banks of batteries:

- 1 - AGM 12 volt battery that supports electronics and the starter for the engine.**
- 2 - 12 volt Lithium Ion batteries that support all of the powered equipment in the coach.**

Lithium Ion batteries are dead

In the event that the Lithium Ion batteries drop below 10.2 volts, they automatically switch off to protect themselves. Don't worry too much, we got you. This can happen if there is too much power use, or if there was an accidental draw on power while your vehicle was parked or stored. If this happens, there are 3 ways to restore the batteries to operational levels:

First, There are power reset buttons on the top of your LI batteries. These buttons can also be used any time to check the percentage of charge the batteries are currently at. The LED's on the battery next to the power button indicate 20% to 100% in 20% increments. Press those buttons and check the Xantrex panel for a voltage reading. No lights means you've killed the batteries. **If your batteries are indicating some level of storage (at least 1 led light on) but none of the equipment is working, press the button, then press and hold the button again for more than 6 seconds. Repeat the same on the other batteries. This RESETS your Smart batteries. Note, if there is no regenerative power coming from the 3 possible sources (shore, solar or Chassis) they may not stay on if they are truly depleted.** It's possible doing just this reset will kick start the system and start charging. If it comes alive, and then dies again within a minute or two, you need to do one of the following restorative processes:



1. If you don't want to use fuel, park your van in a place where it has direct sunlight. Make sure your ALL-OFF switch is in the OFF position. This ensures there are no power draws on the Lithium Ion batteries. Your solar system will recharge your batteries to operational levels in a few hours, or as long as a day, depending on how low they are and the weather.

-OR-

2. If you don't mind using fuel or making a little noise, start your engine. When the engine is running, the system is designed to charge the coach batteries through the alternator. It's best to have the ALL-OFF switch in the off position while doing this as well, to increase the charging speed. It can take as long as 1 HOUR for the battery manager to allow the alternator to start charging the Lithium Ion batteries. ***REPEAT* the batteries MAY not start to charge from a 0% condition for an hour or so after the chassis is started. Patience is required!** . Once the batteries come back ON you can use the equipment in your van right away, presuming you are still running your engine and actively charging.

-OR-

3. Plug in. Yes, if all else fails, find a power outlet, plug your shore cord in, and your Lithium Ion batteries will restore in a few hours. This can be done by tapping into grid power, or if you have one, a generator.

Chassis battery is dead

That's not good.....but we've thought of this too! You are not the first person to leave the radio or the fan on by accident. If the engine does not turn over because of a dead chassis battery, there is a way to recover, assuming the battery is still able to charge, and no other failed parts in the ignition system.

***A note on the Mercedes push button start ignition system:**

Without the engine running, the radio and the fans will work in the cab. This will eventually drain your chassis battery. Many hours or days of this will result in dead chassis batteries. The best test: if your radio or blower fan for the ac/heater is on, then ignition is on. Press the button again, the fans should go off, your radio will not right away. It will time out eventually, as will the overhead cab light. You can manually turn the cab light off with the button in the center of that cluster. You want to be SURE you do not have the ignition engaged while camping or parked for long periods of time.



Using the Lithium Ion system to 'jump' start the engine

If for some reason the chassis battery drains and will not start the vehicle, you can use the BATTERY MERGE feature to borrow power from the Lithium Ion system to start the engine. Hold the MERGE button in for a few seconds, and turn the ignition key. Keep in mind The Lithium Ion system would need to have ample power remaining to support the starter on the engine. If it does not, see, "My Lithium Ion batteries are dead". It might take time, but there is still hope. :)

Battery Manager

Your van has an in-vehicle Dual Battery Charger. It's a 12 volt, 40A in-vehicle DC-DC battery charger designed to charge your secondary battery banks to 100% state of charge while stationary or on the move from Solar inputs and/or your alternator. Specifically selected to work with the Lion Energy LI batteries, It charges using a specialized charge profile to optimize charge speed. Since this is wired inline into the system, there are no switches ,and no serviceability to it in the field. The LED lights on the front indicate the charge profile (profile A is pre-selected by us and recommended by both Red Arc and Lion Energy for the components in the system), the solar input activity and the chassis input activity.

Shore Power Cord

With your Antero Van you received a 25' power cord to use as a power source when you have access to one. This is a 30 AMP RV/marine specific plug type. Some say it looks like a 30 amp dryer plug. It does, but IT'S NOT. don't plug it in behind your dryer (unless you like fried vans). Your Dryer is 220 volt power, your van is 110 volt.

RV sites with power will either have a 30 amp plug or a 50 amp plug , service with 110 volt power. You can use your 30 amp cord with an adapter with the 50 amp capacity. That WILL NOT fry your van. You can also adapt your cord to a 15 or 20 amp 110 volt service like every outlet in your house. This will also not fry your van, and will charge your batteries and run everything EXCEPT the rooftop AC. Please do not try to run your AC on a capacity of less than 30 amps. More on the AC in the User Guide. There is nothing special to do when preparing to plug in. When you do, your Xantrex control screen will say "bul", which means its using shore power.

Solar System

Overview

The 2 panels on your roof can generate up to 90 watts each in perfect conditions. The more sun it absorbs, the better everything will work. Shade and road grime will reduce that. Darkness



will eliminate that. The beauty of the way this system integrates with your power system is, it supports your power use and the Lithium Ion batteries at all times. It pushes charge power when you are using power, pushes to recharge when the batteries are not at peak storage, and it trickles charge power when they are unused, constantly and safely filling them with clean energy.

Maybe it seems a little bit dead?

Great news! Assuming it is daytime and the vehicle is outside, your solar panels are trickle charging your LI system. If for some reason solar is not providing some charge, even in sub-optimal solar conditions, check your plug connections on the roof of the vehicle. It's possible the plugs have been disconnected by trees or debris during your drive. As mentioned before, your passive solar charging efforts may not be enough to keep up with your power use. Keep an eye on your Lithium Ion voltage on the Xantrex control screen. If it gets down to 10 volts, the batteries will shut off. See page the 'Lithium Ion Batteries are Dead' section to start restoring power if this happens. If there is a problem with the Solar system, Chassis charging or Shore power may be your fallback until you can get your van in for troubleshooting. Also, try the 6 second battery reset detailed earlier in the Batteries section. The smart batteries sometimes need to be reminded to stop sleeping on the job.

Converter/Inverter

This magical unit converts Lithium Ion battery power or 110v shore power into whatever power your equipment needs, and adjusts automatically so you don't really need to know what you are doing. If you give it power from batteries or a cord, it will do the rest. Of course, the power button needs to be depressed in the ON position for it to work. ;) This unit will also occasionally "time out" depending on conditions. If you know there is power available from the LI batteries, the chassis or the shore power cord you can toggle the button on the control panel off, then on again after a few seconds delay, and it will kick back on. If you are using your high power-consuming equipment and you hear beeping coming from the inverter, it is telling you the load is too high and will shut itself down if the power consumption is sustained.

ALL-OFF Switch

Taking a very direct "say what you mean, mean what you say" approach. This switch turns it off. All of it. (except the engine) This is here so that when you walk away, you can ensure you don't have a drain on the batteries and seamlessly launch your next adventure when the time comes.



Dedicated Switches

As it says, these switches control the thing they are connected to. Or said another way, they have one job, to turn equipment ON and OFF (ok that's 2 jobs) Your job in this case is to make a choice. On or off. Keep in mind that ON means you will be using potentially precious power, depending on weather conditions or the time of day.

Breaker box

Just like the breaker box in your apartment or house, this box serves to distribute power to all of the equipment, and serves to protect that equipment from power surges. If you are trying to use something in the van and it is not working, but everything else is, check that the breaker for that item has not tripped and is ON first. If you are working on something on your van that uses power, this is also the place to ensure the power is OFF to it so that you don't get electrocuted.

12 volt Fuse Box

Similar to the breaker box, these colorful little gems protect and provide low voltage power to some of the smaller items in the van. Again, if something is not working but should be, check the fuse for it first! We'd suggest getting a few fuses of each size and keeping them in the van. Like the saying goes, if you have them you'll probably never need them. :)

Winterizing

Avoiding damage

We've learned this the hard way so that you don't have to. We know that winterizing your water systems with RV antifreeze in your van if you are using it every few days can be a real drag. We got lazy ourselves, and did some damage we did not expect. Don't be like us.

Remember, you can set the coach heater to keep an above freezing temperature while your van is locked and secure, while only using 1 gallon of diesel fuel every 2 hours. We'd recommend this for cold weather camping, or resort commuting and parking if you have water on board.



Steps to winterize:

For parked and stored periods in known or potential freezing temperatures, we recommend a traditional winterizing procedure. This Process only takes 5 minutes once you do it a few times.

1. Access the plumbing through the bottom quick-access panel on the drivers side nearest to the pantry, under the bed.
2. Empty your fresh water tank completely by opening the drain for the tank. The tube goes out through the floor. Run your galley sink and rear hose until most if not all of the water is out.
3. Empty your grey water tank completely.
4. Get a gallon or more of RV antifreeze.(you'll use about 1/4 gallon per treatment)
5. There is a tube attached to the plumbing system underneath the fresh tank.
6. Feed the open end of the winterizing tube into the Rv Antifreeze jug.
7. Open the valve attached to the winterizing tube so that the RV antifreeze can be pulled from the container into the system.
8. Turn your water pump on.
9. Run the faucet until you have pink fluid coming out, allowing some to go down the drain. Close the faucet.
10. Use your rear spray port as well until you have Pink fluid flowing through it as well.
11. Turn off your pump.
12. Close the winterizing tube valve. Close and stow your remaining fluid.
13. Refit your Quick panels in place.

You are now ready to safely store your van in cold temperatures knowing it will not get damage from freezing water.

When you return to use your van, fill the fresh tank with freshwater and run both the galley faucet and the rear spray port until the water runs clear again.

***If winterizing an older van without the winterizer pick-up tube, you will be pouring non-toxic winterizer into your empty fresh tank, and then following the same instructions to winterize the plumbing. More fresh water flushing will be needed to clear the tank and system of winterizer when preparing for use again.**



Awning

When it works

Your CAREFREE awning is a fantastic provider of shade in the hot sun, and protection from moisture in the rain. Your power, light and extend/retract switch are located just inside your side sliding door. **Note:** your van has a safety measure installed that keeps the awning from extending while the ignition is engaged. This is to avoid catastrophe if little jelly-covered fingers play with the buttons while driving.

When it doesn't work

It can, however, become a nuisance if you cannot retract it with power. (good luck driving home with what amounts to a sail unfurled). As you would hope, there is a way to retract your awning manually in an emergency awning failure or a lack of power.

On the front end of the awning toward the windshield, there is a small plastic cap. If you remove that cap there is access to a $\frac{3}{8}$ " square drive slot. This is the same as a $\frac{3}{8}$ " ratchet drive. Your tool requires an extension to reach the $\frac{3}{8}$ " drive slot. You can turn that with your ratchet in the clockwise direction to retract your awning to a fully closed position, where it is safe to drive. We have thoughtfully provided this tool in the small canvas bag you found these cards in!

The Day-Dreamer Bed system

We're sure you've already figured out all of the great ways to use this space....naps, breakfast, remote conference calls. We want to call your attention to the retention systems we've included in the bed system:

-The first retention type in the UP position is the latch located in the front panel of both the passenger and drivers side cabinet faces. The bed will NOT automatically connect to this latch, and sometimes needs a firm push toward the wall to get the bed to latch. This is even more likely if you are stowing thick bedding on the bed.

-The second retention system is a strap located near the rear of the bed. This is intended as a redundant solution in the case of a latch failure. Neither of these retention systems are intended to retain the bed in the up position independently. Care should be taken to ensure both systems are used in order to avoid injury to persons, or damage to the vehicle.

With the bed in the down position, there is no need for retention systems, however you may get some bounce causing noise depending on road conditions. We have provided an allen wrench



for you in the case that any of the screws loosen over time. It is recommended that you occasionally check them for tightness.

Coach Heater

One of the most effective pieces of equipment, and usually the most appreciated on cold mornings, is the coach heater. This heater is mounted underneath the passenger seat in the Longs Peak, and in the cabinetry in the Pikes Peak. The thermostatic controller is on the panel above the pantry. Use of the thermostat is intuitive, much like a home thermostat. Power should be on, and you can set your desired temperature to maintain. This unit will ask you occasionally to run a cleaning cycle, and is as simple as pushing a button to start. This should be done with ample ventilation in the cabin. Your fuel source is the vans main fuel tank that also supplies the engine. This unit will NOT work if you have less than $\frac{1}{4}$ tank of fuel on board. If it is not responding to controls, you are likely sitting at less than $\frac{1}{4}$ tank of fuel. If you are at more than $\frac{1}{4}$ tank, you'll probably need to get it looked at by a service center.

Bluetooth Audio unit

This system operates separately from the vans cab stereo system as a stand alone sound system.

A cool little round button next to the Xantrex Screen on your control panel is your power and pairing button. The speakers it feeds are in the rear doors. A slow blinking light ring on the button means it's powered on. A fast blinking light ring means it's available for pairing. A solid ring means it is paired to a device for audio. We have found pairing and remaining paired is best if your device stays in the vehicle. We have also found that on occasion, resetting is needed by toggling the All-off switch to OFF briefly and ON again.

Cooktop

The single burner cooktop is an INDUCTION device. This means it creates heat through magnetic fields. Some say this eliminates the potential for fire. WRONG! You still need to be cautious of flammable materials, and the cooktop does retain some heat after you are done cooking. Please be sure you research INDUCTION compatible pots, pans and kettles. It is dangerous, and mostly ineffective, to use pans not designed for induction systems.



Also, please be aware, next to the microwave, this cooktop is one of the highest power draws in your van. Excessive use will drain your batteries quickly. Fry a few eggs, sausage or veggies and turn it off. Watch your battery levels the first few times you use it to get a sense of what you can and cannot do. When plugged in to shore power, you may boil and braise to your heart's delight.

A clean, dry pan and cooktop interface are essential for best cooking results. This is a 110V only unit, so it will not power on without your Xantrex inverter ON.

Air Compressor

Your tankless ARB air compressor is located in the rear panel behind the bed on the drivers side. There's a good chance the 25' hose is inside the access panel adjacent to it. Bike tires, river tubes, even your vans tires can be aired up using this pump. The Power switch is directly above the blue air connection port in the wall. Quick connect fittings make it simple to attach and detach the hose.

***If you do air down to tackle off-road obstacles or deep sand on a beach, you MUST re-inflate your tires to recommended operating pressures before you get back on the road. Check the manufacturers' (Ford or Mercedes) owners manual for recommended pressures.**



HOT WATER

We'll explain here how to use it, and what to expect when it comes to hot water availability and power consumption for this luxury.

Your new hot water system consists of the following components:

- Existing cold water plumbing PEX tubing
- New hot water plumbing PEX tubing (red)
- A 2.5 gallon Bosch Mini tank water heater
- An new rear shower fixture
- Straps to secure the tank in place.
- A new drain tube tapped into the fresh water drain for the expansion valve on top of the tank.
- An additional timed power switch to heat water
- A green LED indicator light
- Some magical electrical breakers and voltage sensors to seamlessly integrate this to your van.

Hot water expectations:

-heated to MAX temp, you will have in the range of 4 to 4.5 gallons of hot water above 105 degrees to use. At that point the cold supply to the tank starts to dilute the temperature to below 100 degrees. **As a reference, any self respecting Rv'er can shower in 1.5 to 2 gallons of water....if you can't then get your junk together! ;)**

OR- heated to MAX temp, you will be able to use short bursts of hot water to wash your hands every 2 hours for over 24 hours before the effect of hot/warm water dilutes, without ever re-heating the tank.

Pro tip: while plugged into 110 at home (preparing for your trip) heat the tank to MAX. You can use that water for the next 24 hours if used sparingly, before ever dipping into your battery. MAYbe longer if you don't use any for the first day. The tank is very well insulated. The same applies while you are driving to your camp. Your chassis will easily replace your power consumption while driving for 2 or more hours.

Important

Each heat cycle of the hot water tank can consume **20%** of your stored battery power! Please be smart about your timing of using this power:

- Be planning to drive away from camp after your shower
- Be planning to go to sleep and not use power after your shower
- Be planning to drive away the next morning before using power consumptive equipment (hot water, cooktop, microwave)

The point is, **think ahead**, the last thing you want is to deal with dead coach batteries.



How to get hot water:

Set you desired water temp:

- Your hot water tank lives behind the drawers under your gallet sink. If you pull both of those drawers all the way out, (without removing) you'll see a dial on the front of your heater. We recommend setting it to IDEAL (medium) for warm months, and MAX (high) for cold months.
- You can now close the drawers.
- Ensure your master power switch is ON.
- Ensure you have clean water in your system (fresh tank)
- And make sure the hot water tank is full (run some water, calling for hot to ensure you have your hot water heater tank has water, especially if you've drained and winterized)
- Press and hold the Hot Water switch on your control panel. Hold until the green indicator light lights up. You are now heating water in the tank.
- Depending on outside and ambient temperature, you will have hot water in your tank in about 15 minutes. (Min 12 minutes- Max 20 minutes)
- The green indicator light will turn off after 30 minutes. That indicates the power is now OFF to the Hot water tank. This is purposeful to ensure that the hot water is created ,but then not perpetually maintained. (heating 1 tank of water to MAX consumes about 20% of your battery power. More on that later) This timed switch ensures that you do not walk away from your van for any extended length of time with the hot water heater on.
- You may now access your hot water through both the sink and the rear shower fixture. If you need more (remember you only have 18 gallons total of fresh water to use per fill) you can press and hold the button again for another tank of hot water.

***before you press that button again, this is the moment when you check your battery levels using the LEDs on the batteries! If you are 40% (2 LED's) or less, reconsider your NEED for hot water, and think about the power you'll need for other equipment until you drive away or plug in again. A cold shower may be in order. ;)**

Winterizing with the hot water system:

Follow the same instructions as you surely read already in your quick start guide. ;) but instead of ¼ gallon of pink fluid needed, it will take neary 3 gallons of fluid before you see pink coming out of both the sink and the shower fixture. Be sure to be calling for hot water while winterizing to ensure the tank gets fluid in it as well.

Alternatively, you can close the cold supply valve to the hot water tank (under the sink), unhook the 3 lines on the top of the tank, slide it out (after removing drawers from tracks) and empty the tank out by pouring it out. You can then winterize just the cold system effectively with ¼ gallon of Rv fluid.

To flush when ready to use again, run AT LEAST a full fresh tank of water (18 gallons) through it to be sure the hot water tank is fully flushed of pink fluid.



If you opted to remove the Hot water tank and drain it for the winter, remember to reinstall it and open the water supply valve before you press the power button for heating water!

This booklet should have given you a good idea of how the OG Power System and other essential equipment works. Hopefully we sprinkled in enough hints to keep you aware of the part you play in ensuring that the equipment has power to run things when you REALLY need it.

If any part of your system is not working and none of the recovery solutions have worked, you can call us for troubleshooting support:

Main office number: 303-301-7550

Or email us: support@goantero.com