Acclaim Mobile RV
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Service Intervals for your RV

DC Volt (12 volt)

All Batteries- All batteries will tend to get dirty, and many will develop corrosion. This corrosion and dirt will cause resistance which will cause a degradation in performance of the battery and over time will destroy the battery.

Clean your terminals (2 times a year) or when you see corrosion.

Gloves
Baking soda (1 tablespoon)
Water (1 cup)
Old toothbrush (or the neighbor's)
Rag (disposable)
Petroleum jelly

1. Disconnect the battery disconnect.
2. Disconnect the negative terminal first, then positive.
3. Take mixture of baking soda and water in a cup and use a toothbrush for the cleaning process.
4. Rinse off residue and dry with rag.
5. Help prevent future corrosion by adding petroleum jelly to the terminals.
6. Connect the positive terminal first, and then finally the negative terminal.

Lead Acid Batteries- (Deep Cycle) If there are service caps, then the fluid levels will need to be checked at least every couple of months if you are always plugged into shore power and monthly if you use your batteries without shore power.

Distilled/De-ionized water should be used, as it has no minerals in the water. Minerals do not evaporate and build-up of excess minerals in the battery would cause a decrease in water performance.

1. Clean terminals.
2. Make sure the battery disconnect is turned off. Or disconnect the negative battery post.
3. Add distilled or de-ionized water to the top of battery plates.
4. When you add water, you will lower the charge of the battery so let it charge completely.
5. Once charging is complete, check water levels again.

"Maintenance-free batteries"- Gel, AGM, Lithium. While you do not need to service them, you still need to make sure you have clean, tight connections on all batteries and battery types.

Converter- While the converter is under constant use when your RV is plugged into shore power there is little maintenance needed, if at all.

12 Volt connections- The connections can work themselves loose over time. Once a year, you will need to hand-tighten the contacts you can access with the proper tool. Clean connection if corroded.

Fuses/connections- corrosion will set in over time, especially if your RV is in a high humidity climate. Yearly, check your fuses by taking them out and inspecting them. Inspect, clean, and tighten any 12-volt connection you can clearly get to.

120-Volt

Power cable- The power cable is the most often used 120-volt apparatus on the RV. It is also exposed to sunlight, rain and even lawnmowers. The power cable should be visually looked at BEFORE you plug it into shore power, EVERY TIME.

1. Inspect cable from end to end.
2. Use contact cleaner and old rag to clean off any buildup.
3. If contacts are still brown, use an emery cloth to remove deep buildup of corrosion.

Outlets- For the most part, outlets do not need to be serviced, however, they need to be inspected and tested.

1. Inspect each outlet periodically, making sure there are no signs of burning or cracking.

Breaker Panel Box- Surprisingly this needs to be tightened. Many are not tightened to spec from the beginning, or they become loose as you bounce down the road. Loose connections cause failure in circuits and will burn your wire and destroy your connected appliances.

Care and caution must be paramount when servicing this unit yearly.

1. Assure your power is disconnected. Lock-out-tag-out can be achieved by taking your power cable and placing it in proper storage.
2. Turn off power to the inverter by disconnecting the 12volts, disconnecting the negative cable from the negative post and turning your battery disconnect in the off position.
3. Take off the face plate of the breaker panel box.
4. Test for voltage using multimeter-Set multimeter to VAC and perform three voltage tests. Test between the master breaker(s) and neutral. Then test between master breaker and ground. Finally, test between neutral and ground. All three tests should result in zero volts.
5. Once you have verified the zero-volt tests, use a #2 square head, and tighten up the neutral lugs on the neutral busbar. Tighten up the breakers at the lug. Finally, if possible, tighten up the ground lugs on the ground busbar. Tighten them to ~36 lb.-in. or 4N-m if you have a torque screwdriver…or hand-tight.

Propane Systems

Propane is combustible gas, so we want to make sure all of our connections and appliances are in good working order to assure a safe and reliable system. The propane itself will not corrode nor fade over time. You can keep propane in a working cylinder or tank for years and it will still perform for you just as it would have the day you filled your cylinder or tank.

Cylinder/Tank- DOT cylinders (portable propane bottles 10,20,30,40lbs) need to be certified every 10 years from the born date on the collar. The recertification will look at the condition of the cylinder. Take care of your cylinder and/or tank. Make sure there are no large areas without paint. Paint on the cylinder or tank will prevent oxidation and rust. Make sure to not bump the cylinders or tank against other hard objects. Large dents can cause a weakening of the wall which could lead to leaks. Do not use any tool other than your hand to open and close the service valve.

Regulator- Your RV regulator reduces the pressure coming from the propane tank/cylinder to 11" of water column. There are rubber diaphragms inside the regulator that will wear out. Make sure to change your regulator if it is 5-7 years old. Since our regulators are outside, we want to prevent moisture from forming on the regulator, especially around the vent. There should always be a shroud around the regulator to prevent moisture from forming on the regulator itself.

Hoses- Hoses should be free from cracks and they should not have a hard bend as that would reduce the flow of propane inside. Little maintenance is needed but keep an eye on the condition of the hose and replace it when you see cracks forming.

Burner Assembly- The burner assembly is located on the appliance. It is where the flow of propane mixes with air just before the flame. Because this is open to the outside elements and typically located on the outside of the RV, it is susceptible to insects blocking up the assembly, orifice, and burner tube.

Electrode- This device is located on the appliance. It is what creates the arc for the propane to ignite. The more you use your igniter, the greater potential there to be carbon buildup. The black carbon will interfere with the arc and could cause the appliance not to work. Check in the spring and fall and have an emery cloth handy. Do not use any solvents or gas to clean. A simple emery cloth or fine sandpaper will remove the carbon.

Cracks in the porcelain will cause problems with ignition. When cleaning the electrode, make sure there are no cracks.

Gap for Electrode- Dometic and Suburban water heaters= 1/8"

Water systems

Water pump- The water pump is integral to the water system, however most RVers do not use it if they have a city water connection. If the water does not move through the diaphragms of the water pump, over time algae and grime will build up which will make the pump fail. Exercise your water pump frequently. My preference is to use the holding tank and water pump over the city water connection. When you use your pump, you do not have to worry about the pressure coming from the city. Disconnect your water hose after filling up the holding tank. When you use the water frequently, there will be less opportunity for algae to grow.

Clean the strainer screen twice a year.

Holding tank(s)- The holding tanks are simple in concept, but because we cannot get to them there is a mystery to them. They are greatly affected by what we put in them. Even the freshwater tank can get a lot of buildup, because as we move from one location to another, we are introducing different minerals into the tanks.

Struvite can form when magnesium, ammonia, phosphate, and other organic matter come together. Ammonia comes from our urine when mixed with hard water.

Keep tanks as clean as possible by keeping bacteria in the black and gray tanks. Do not add chemicals to remove clogs as this will kill the bacteria.

Fresh water tank and water lines use bleach mixture to remove growths in water and kill unwanted bacteria and slime. ¼ cup for every 15 gallons of water or 1 cup for every 50 gallons. DO NOT PUT BLEACH WATER IN WATER HEATERS (bypass the water heater and use vinegar on the water heater).

Gate Valves- Because these are exposed to outside weather, dust and grit can get in the cabling system and create a problem in moving your gate valve. Clean with a mild cleaner, dry, then spray with a Teflon or dry silicone.

Air Conditioner

An air conditioner's performance depends on two things: proper electricity and good airflow. Air flow across the coils and through the ductwork needs to have scheduled maintenance. Coils should be cleaned twice a year (spring and fall). Here are the following steps to maintain your air conditioner.

Cleaning coils

1. Turn power off to the air conditioner at the breaker. You can leave on power to the rest of the rig if you choose, just make sure you turn off all the air conditioner breakers.
2. Take your cleaning supplies (coil cleaner, water, and a towel) plus your multimeter and a screwdriver with you when you go to your AC.
3. Remove outer shroud to AC then locate the evaporator upper plenum (inner shroud located at the front of the air conditioner) and remove it. It is best to place a towel in front of the evaporator coils where it opens to the RV. This will help prevent any overspray of coil cleaner from entering the RV.
4. Use soft bristle brush to remove excess dirt and grime from the coils. Do not press hard as you might damage and move the fins.
5. Once the large dirt is removed, spray coil cleaner liberally on the evaporator coils. Depending on the brand of coil cleaner used, you may not have to rinse.
6. Perform the same operation to the condenser coils (typically the coils on the back of the AC).
7. The condenser coils can be rinsed with water. Keep care not to spray or pour too much water as there are electric components around the coils.
8. As the coils are drying, this is a good time to check the capacitor and the compressor with your multimeter. You will check the capacitance of your capacitor by finding the microfarads (nanofarads) symbol -) |-
   When checking your compressor at the three terminals (C, R, S), use OHMs setting.

9. Once everything is cleaned and checked, reinstall the evaporator plenum and the ac shroud.

Filters- If the filters are replaceable, opt for replacing the filters vs cleaning them. The replacement is cheap and can be obtained at any big box store that sells air conditioner filters. Do not install larger/thicker filters.

Aqua Hot

For best freeze protection, boil-over protection, anti-corrosion, and rust protection, use a mixture of 50/50 ethylene glycol antifreeze and distilled water.

Monthly Maintenance
Check the Aqua-Hot's antifreeze and distilled water heating solution to ensure that it is at the proper level. This can be accomplished by visually checking the coolant level in the Aqua-Hot's expansion bottle. This is checked when the system is at 100% operating temp.

Run the gas burner at least 20 minutes every month.

Forced air furnace

Preventative maintenance is key.

The air intake around the furnace is not filtered and is extremely susceptible to debris clogging up the sail switch and the fan. Keep in mind that the furnace is typically difficult to get to if you need to clean or replace the sail switch. Keeping the area clean around the furnace is paramount. Every fall, clean/vacuum around the furnace.

Sail switch is located right in front of the circulation fan. If there is debris keeping the sail switch open, remove the cover/shroud to the circulation fan and clean the switch.

Exhaust and inlet- This is where bugs and animals love to nest. Before each season, vacuum both the exhaust and inlet side.

Tankless Water Heaters

Servicing Tankless water heaters:

Bugs LOVE the smell of propane. Bugs build nests and die inside the burner assembly. In the springtime and in the fall, inspect and clean out around any point of entry for a bug. Vacuum COULD work should they be in the burn chamber.

Igniters- Points of failure: they get dirty with soot and can lose their ability to create an arc. Clean with emory cloth should the igniter be covered in soot.

Pressure and Temp valve- At least once a year exercise the P and T valve. Turn off voltage to the water heater and open the valve to allow water to run through. This will help release any calcification that might be trapped in the spring mechanism of the valve.

Proper operation needs: strong 12volt signal and ample flow of propane. Remember the colder the temps, the less potential flow we have with our propane. Keep the tanks warm.

SUBURBAN : IW60

BTU: 15,000 to 60,000 BTU
TEMP: 108, 120, 125, 130 *F (dip switch or control panel model)
FLOW: .5 GPM

COLD TEMP : If temps fall below 40 degrees, then the water will be warmed to 50 degrees (gas and 12v mut be turned on). Water will drip out of the drain.

DESCALING: Once a year you will need to descale. Suburban recommends only using their kit. Number 521163

Girard: GSWH-2

BTU: 42,000 BTU
TEMP: 140 *F max temp less than 3 seconds. Operating temp 95*F to 124*F (control panel model)
WATER FLOW .9 GPM

COLD TEMP: Thermostat built-in that will turn on and warm the water if it senses 38-degree temps and turn off around 58 degrees.

Call out: Valve on back allows you to reduce flow of water in the event you are in cold climate (~45 degrees). The result is less flow, but that allows the water heater time to heat up the cold water.

Truma: AquaGo

BTU: 20,000-60,000 BTU
TEMP: 120*F (adjustable if control panel model)
WATER FLOW .4 GPM (.35 in a separate section of their manual)

COLD TEMP: AQUAGO BASIC MODEL- Never operate in freezing conditions (~39 degrees). Put in winterization mode.

COMFORT MODEL- The unit will keep the water at ~102 in the unit. ECO mode ~41 degrees. There is an additional kit to purchase that is electric https://shop.truma.net/products/aquago-electric-antifreeze-kit

Winterization- using winterizing fluid is only possible with a winterization kit.

Winterizing AquaGo Basic / AquaGo Comfort
1. Close valves A and B.
2. Open valve C.
3. Drain the appliance ("Draining the water and cleaning the water inlet filter" on page 15).
4. Flush the RV's water system with a suitable winterizing fluid according to the supplier's or RV manufacturer's guidelines.

Winterizing AquaGo Comfort Plus
1. Close valves A, B and E.
2. Make sure that valve D remains in the closed position.
3. Open valve C.
4. Drain the appliance ("Draining the water and cleaning the water inlet filter" on page 15).
5. Flush the RV's water system with a suitable winterizing fluid according to the supplier's or RV manufacturer's guidelines.
6. Close all faucets (if open).
7. Open valve D.
8. Wait until winterizing fluid has drained. Collect escaping fluid in a suitable vessel.
9. Close Valve D.

DECALCIFICATION- Basic model you have to contact a Truma service partner. COMFORT model has an integrated consumption meter (1585 gallons / 6kL).

Call out: Max water pressure to unit should not exceed 65psi. Any more flow will cause damage to internal components.

Fogatti- all models

BTU: 42,000 to 55,000 BTU
TEMP: 95*F to 123*F
WATER FLOW .5 GPM

COLD TEMP: At 43*F the display will provide an FD code and begin to heat the water to ~90*F, then turn off and start the cycle again after 3 minutes. This will continually happen if temps are at ~43.

DESCALING: No special instructions from the manufacturer on descaling. Just states to use a detergent….Use vinegar.

Absorption Refrigerator

The refrigerator has evaporator coils INSIDE the compartment of the fridge over a drip tray which is connected to a drip tube located outside and on the backside of the refrigerator. There is a cap on the end regardless of brand. Make sure that stays in place. If you lose the tip, try creating a P-trap with the line.

Rear access compartment (lower)- Twice a year, open the access compartment and vacuum out any debris, dirt, nest that will form.

Rear access compartment (upper)- If the refrigerator is in a slide-out, then there is an upper access compartment. For proper operation this area must be kept clear and there should be no air allowed to flow above the refrigerator condenser fins (flashing or fireproof insulation should be installed if it's not present).

Burner assembly- Covered under the propane section. Keep the burner tube clean and clear of debris. Inspect electrode and if covered with soot, clean with Emory cloth.

12-volt Refrigerator

The biggest problem right now with the new 12-volt refrigerators is getting the correct voltage from the batteries. The problem with lead-acid batteries is their linear discharge. The volts lower from 12.7v max to BELOW 12volts at 50% discharge. It will pull about 180 watts max when cooling (less than 15 amps) which is what you need to factor when calculating how long you can run it on the battery with no additional 12v source.

Low voltage is causing problems to the compressor, and if the compressor goes out, then a whole new unit will need to replace it. Here is the information for proper installation.

Wire length based on distance from battery
13 AWG2 8.0 ft (2.4 m) 8 AWG 33.0 ft (10.0 m)
12 AWG 13.0 ft (4.0 m) 6 AWG 50.0 ft (15.2 m)
10 AWG 20.0 ft (6.1 m)

Suspension

Bearings- The most often overlooked item in most RVers' minds. The bearings use a heavy grease (90 weight) to relieve the friction between the spindle and the wheel (where all the friction of motion occurs on the RV). This creates a lot of heat, and the grease keeps it from overheating. The result is the grease loses its viscosity and needs to be replaced every 12k miles or 12 months.

Check the heat of the wheel hub each time you travel. It should be roughly 10-50 degrees lower than the temp of the pavement. What you are looking for is that all hubs are around the same temp. If one is more than 50 degrees hotter than the rest, then you know you have a bearing that has lost its lube. If this happens, you will need to either add lube if you have a zerk fitting, or service and repack the bearing before traveling any more.

Instructions on how to repack your bearings is in the hands-on lab.

Hydraulics

If your RV comes with hydraulic anything, then there are things we need to do to maintain our systems. First is to check the reservoir. When checking the reservoir, you check it with all hydraulics (slide rooms, landing gear) in the retracted position. Never fill to the line when the hydraulics are extended.

The hydraulic motor runs off 12volts. If any hydraulic item does not work, the first item to check is 12volts at the motor or at the switch.

Landing gear- When the gear is extended, each time, a simple wipe down of the shaft with a clean rag will help prevent dirt from being introduced into the seal. Each month or after each rain, spray the extended shaft with dry lube, preferred is dry lube with PTFE, but dry silicone will work.

Slide outs- Keep the track (teeth) clean and free from debris. A soft brush like a toothbrush will be best to clean off large dirt deposits after each rain. Observe the track each month and assess if it needs to be cleaned.

Electric stabilizer or landing gear and slide out tracks.

Keeping the screw-drive clean and free from debris will extend the performance of the gear. Care will be much like the hydraulic gear. Keep it clean and free from debris. To remove unwanted grime, use a penetrating degreaser on the screw drive, wipe clean with a clean rag, then apply dry lube.

Exterior seals

UV protection is key. To keep all your rubber type seals performing, keep a nice coat of dry lube PTFE on them. Simply spray a clean rag with the dry lube, then rub the rag across the seals both front and back.