



GET YOUR PHIL Friday RV'ing tips n tricks

Tip #39

Understanding your three way fridge

The basic cycle (very basic, this does not include all the details):

- Heat applied to the ammonia/water solution contained in the generator. At boiled it goes through the separator creating ammonia gas.
- The ammonia gas travels up through the tubes to the condenser. At the condenser the ammonia gas dissipates the heat, turning into a form of liquid ammonia.
- The liquid ammonia mixes with hydrogen in the evaporator creating a hydrogen/ammonia gas solution which removes the heat from inside the refrigerator.
- The hydrogen/ammonia mix flows into the absorber. In the absorber the water is reintroduced into the gas solution separating the hydrogen which returns to the evaporator creating the ammonia/water solution that returns to the generator.
- As long as heat is applied the cycle will continue. The fridge will continue to cool.
- A level fridge will cool the most efficiently. All the gases and fluid will flow as designed.

Heat Sources:

Your fridge is equipped with three heat sources:

- AC (110 volt) heating element.
- DC (12 volt) heating element.
- Propane or LP gas.

These heat sources work independently from one another.

In all cases you need DC power to the fridge. The DC power controls switching and the temperature control of the fridge.

Trouble shooting the fridge:

Fridge not coming on DC power:

1. Ensure the battery disconnect switch is in the on position.
2. Ensure the manual reset breaker for the fridge is not tripped. Reset button on the copper post end, it is a small black tab.
3. In some cases the fridge will also have a 30 amp fuse in the lower fridge vent area.



Fridge not coming on AC power:

1. Ensure the DC power is on.
2. Ensure you are connected to a 110 power source or the generator on.
3. Check the GFCI in the bathroom or kitchen area.



Fridge not coming on in propane /LP

1. Ensure you have DC power.
2. Ensure the propane switch or valve is open.
3. Ensure the burner tube in the lower fridge vent is clean and clear.
[Next week - Cleaning the fridge burner tube.]

For Best results:

- Ensure the fridge vents are kept clean and clear.
- Keep the fridge as level as possible.
- If possible keep the fridge vents in the shade.
- For Storage always ensure the fridge door is left in a slightly open position.
- Always cool your fridge before stocking it with items.
- Fridge cooling rate is between 3 - 6 degrees per hour when cooling begins. This will depend on outside temperature, air flow and level of the fridge.