Onan 2800 Micro Lite Generator Model KV Spec K

I would like to share the saga of my Onan Generator with the Road Trek Community. I have owned a 2005 210 Popular since September 2004. The motor home is constructed on the Chevy 3500 Express Van Chassis. I currently have 133,000 miles on motor home and 503 hours on the generator.

The Onan Generator ran reasonably well until March 2011. At that point it would not function. I took it to Camping World in Ft Myers, Fl. The tech put the RT on a lift, reset the circuit breaker behind the access panel on the generator. $85.80 later I was on my way. A simple fix, until the circuit breaker popped again which occurred on my trip back to New York. A bit of investigation led me to the Voltage Regulator. I located Flight Systems in Pennsylvania. https://www.flightsystems.com/ They would test the voltage regulator for $25.00. If a new one was needed and it was purchased from them, they would credit the test charge to the purchase. I removed the generator from the motor home. It tested as faulty. A new Voltage Regulator was priced at $200.00 (In order to remove the generator I purchased a low profile ATV Motorcycle Jack from Harbor Freight and ramps from Advance Auto. With some effort I was able to remove the 5 studs holding the generator in place and lower it enough to disconnect the 120Volt cable, remote start cable, the fuel line and the positive cable to the starter on the generator. There was very little room to accomplish the disconnect especially on your back on the ground looking up. It would behoove the manufactures to think ahead to the day when someone will be making repairs, especially the DIY people. I have since modified the fuel line, 120V cable and the starter cable for easier removal and installation. ***

I would like to digress for a moment. My experience is you cannot change the starter, the fuel pump, the starter solenoid, the voltage regulator, the carburetor, ignition coil, low oil switch or capacitor without removing the generator from the motor home. You may be able to change the fuel filter and the remote start stop switch if you are lucky.

June 2011 Installed new Voltage Regulator. Generator ran reasonable well for some time.

June 2013 Generator acting up again. Dropped it out of motor home and called Flight Systems. They indicated it sounded like the Voltage regulator might be malfunctioning. Test showed it was bad. There was a one year warranty. I had purchased two years prior. They worked with me and sold it for $150.50 since it should last much longer. I felt that was fair. I tried following the instructions in the Onan service repair to test for a problem in the rotor or stator. Testing was leading me in the direction of a short. This being new territory, I took the generator, along with the service manual I printed off line, to a generator sales and service company locally. They confirmed the rotor was bad and had to be changed. I stated I would order one and provide to the service company. (The service company deals in large commercial generators. http://www.haschreck.com/ In reality they were making an exception to fit me in their work flow so I wanted to be as easy to work with as possible).
I ordered the following: Onan Rotor 201-3606-03 from ASAP RV Parts for $341.79 on 8/21/13.
http://www.partsfortechs.com/asapcart/onan%C2%AE-m-8.html

Illustration 1: Onan Rotor 201-3606-03

On August 21, 2013 I picked up the generator and paid $380.00 cash for their repair services. I brought it back home and fired it up working off my outdoor bench. It ran beautifully… Until I put a heavy load on it (the roof air). It died immediately. I started it again and tested other items, electric drill, coffee maker etc. It worked. Thinking the roof air on the RT might be bad, I hooked up a window air conditioner to it. It died. I called the service company. They advised it should work properly since all systems tested as functioning. In essence they said they had seen enough of me.

I set the generator aside and used the RT relying on the inverter to provided 120 Volts for minor appliances.

Fast forward 3 years. I decided to revisit the generator issue. June 2016 I figured I would throw in the towel and purchase a replacement unit. The original 2800 Onan Micro lite KV model was no longer in production. I called several Onan internet sources and was advised the model below is the replacement.

Illustration 2: Onan Generator Replacing 2800 Micro Lite. Per Home & Park. It will not fit in the RT

The specs on line indicated the bolt pattern is different and would not properly line up with the existing bracket under the motor home. I called Road Trek service department and was advised the new version would not fit. I asked if there were replacement brackets available. I was told no. Considering Road Treks have a long useful life with a loyal user base an answer of no seemed a bit short sited. I was advised to check with the Cyberrally resources to see what I could locate. Another issue... is the quick connect cable that controls the generator remote control the same on the newer version as the old?

Back to my existing generator. It sat neglected for three years. I attempted to start it. It did fire up but would not continue to run. I figured the carburetor was the problem. I purchased a can of Sea Foam fuel treatment and added it to the gas container. The generator ran long enough to draw new fuel with the Sea Foam into the carburetor. I let it sit overnight and restarted using starting fluid to encourage it to run a few minutes. I repeated the process for 3 days.

Illustration 3: Sea Foam

I was making progress but decided to remove the carburetor to clean it. The generator still would not run

Illustration 4: Magneto in aqua. Yellow wire severed.

smoothly. I invested $170 in a new carburetor purchased through Tim's Mobile Truck repair: http://www.timsmobiletruckrepair.com/

Installed it and WOW, the generator started virtually instantly and ran smoothly. I let it run a few minutes, shut it down, restarted it. I ran the power cord to the RT and turned on the A/C. It ran perfectly. I left the generator running and went off to lunch. I figured I would treat myself (I hope I am not boring you to death) to a nap in a nice air conditioned motor home after lunch with the lovely hum of the generator in the background. Arriving home the generator was silent and pretty well cooled down. There went the nap out the window. I tried starting it. Nothing. I checked for a spark. None. I was hoping the low oil level sensor was defective causing a shut down. I disconnected it. Still no spark. Tracking back it appeared to be a magneto problem.

The magneto is under the fan housing that is bolted to the rotor. In order to get to it much of the generator has to be disassembled. I pulled the fan from the rotor shaft using a harmonic balance puller. (There is a very small woodruff key at the end of the shaft. It is labeled as "alignment key" in illustration 6) Do not lose it). The yellow wire from the magneto to the coil was severed. Apparently when the generator was reassembled 3 years ago 2 wires were routed incorrectly. The fan wore through the wire cutting off current from the magneto to the coil. I stripped the wire back, soldered it together and put shrink wrap over it routed it correctly and

reassembled it. It immediately started. It has run successfully for about 10 hours in pretty extreme heat here on the east coast.

Illustration 5: Fan Hub Assembly with Harmonic Balance Puller attached

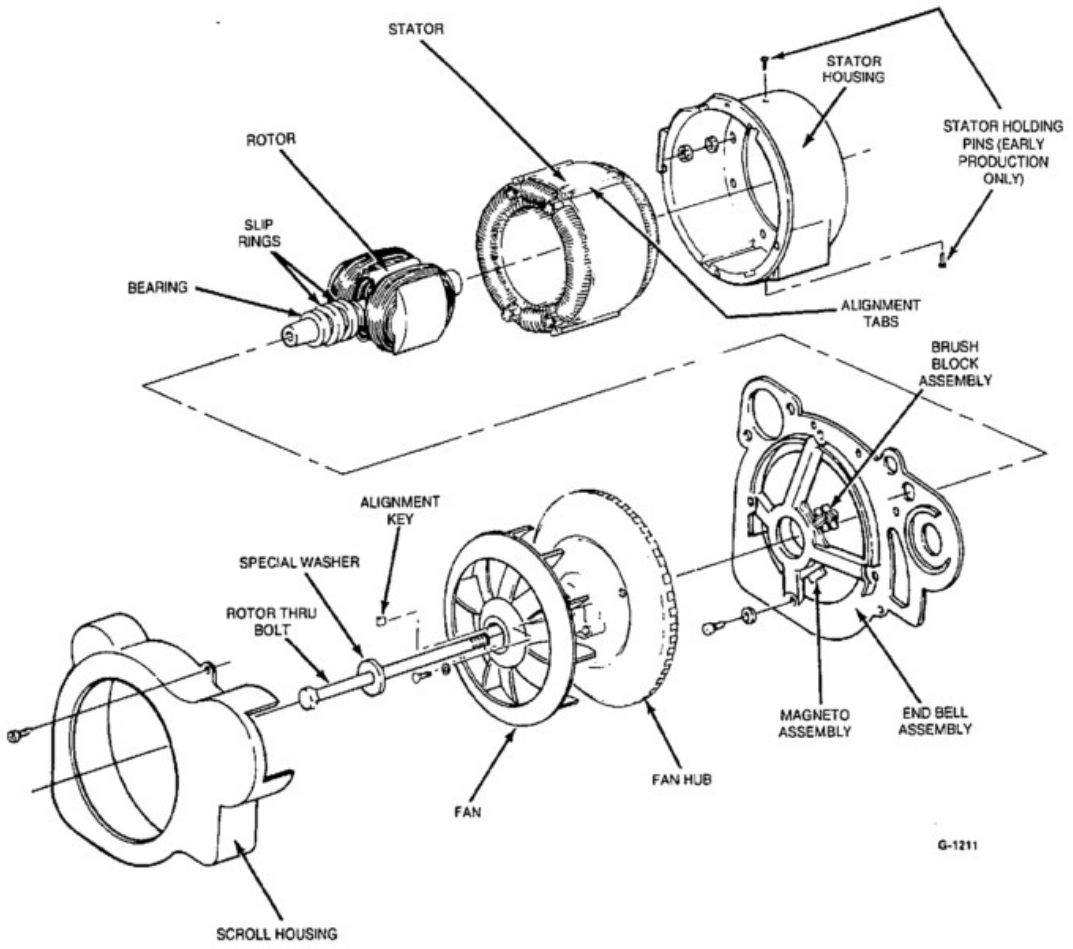

Illustration 6: Schematic from Service Manual showing Fan, Rotor, Stator, Magneto etc assembly

***<u>**Extending the wires and fuel line**</u>

The extension of the wires and fuel line was pretty basic. The 120 Volt wire coming from the motor home to the generator was a wire whip. The whip had little excess length to allow for disconnection. I found it necessary to cut the wires.

The fuel line was a simple disconnect. You have to pinch it off then remove it from the steel fuel line coming out of the vehicle gas tank. The wire running from the starter to the motor home positive wire was also very short. It is two cables bolted together. One cable from the generator and the other from the positive side of the vehicle battery. They are above the generator and covered with insulation. I had to cut the insulation to unbolt it. The remote control cable from the inside the motor home is a quick disconnect that you have to fish around to find then disconnect. I removed the wire whip from the generator and purchased 10 feet of 12/3 orange extension cord. I wired the cord to the generator where the wire whip had been wired. I put a female heavy duty extension cord end on the extension cord coming from the generator. I attached a male heavy duty extension cord end to the wires that had been attached to the whip coming from the motor home. I now have a quick connect extension cord system with 10 feet of cord (a bit of an over kill but it might be useful if I need to use the generator as auxiliary power for something. I can just uncoil the cord from under the MH and use it outside the MH). I replaced the fuel line with 3' of 1/4" line . The fuel line is clamped to a steel line on the fuel pump and clamped to the line exiting the gas tank. I replaced the cable from the starter to the positive of the motor home with 51" 4 gauge battery cable. I bolted the two wires together as they had been before then wrapped with electrical tape. The generator can easily be removed without fighting with the short wires and fuel lines. The only one I did not touch is the quick connect. It is not that hard to fish out.

Comments:

This is a narrative of my Onan experience. I am not a professional. I have experienced my share of work done by others that has been too expensive or defective. I will attempt to fix or replace nearly anything if it is not too hazardous or I feel I am in over my head. There may very well be better or more professional ways to accomplish the repairs I have done. I try to work with what I have to get the job done. I seek the advice of others. You tube and forums such as Cyberrally are invaluable to the DIY community. Thank you to all who contribute. I utilize the services of "Just Answer" for assistance. The results are usually very helpful and time saving.

Observations of the generator problems.

1). The initial failure was probably caused by errors of use on my part. The generator shut down a number of times under a full load. Flight Systems (they are very helpful) stated this can damage the voltage regulator. The damage to the rotor probably resulted from the same improper use.

2). I did not exercise the generator regularly as is suggested. This can take its toll on the carburetor and the internal working parts of the generator.

3). I now warm up the generator a few minutes before using.

4). I take the load off the generator and let it cool down for a few minutes before shutting down.

5). I plan to add Sea Foam to the motor home fuel tank periodically to aid in keeping the carburetor working properly. It should also aid in keeping the fuel injectors and vehicle engine components clean. (I believe Sea Foam or something similar is what is recommended by auto service centers to "clean" your fuel system. They charge about $100.00 for the treatment. A can of Sea Foam is about $10.00. Currently Advance Auto has it on sale buy one and get the 2nd one 50% off).

6). If the generator only runs while holding the rocker switch in the start position, chances are you have a bad voltage regulator.

7). If the generator surges or appears to be hunting (rpms up then down up then down) the carburetor is most likely the cause.

8). If you plan on working on your generator or anything for that matter take many photos during the process of diss-assembly so you have a record of what goes where. My memory is heading south, I find pictures necessary.

9). If you attempt to start your generator multiple times you may be sending gasoline in to your oil pan. Change the oil. Also remove the spark plug and dry out or replace.

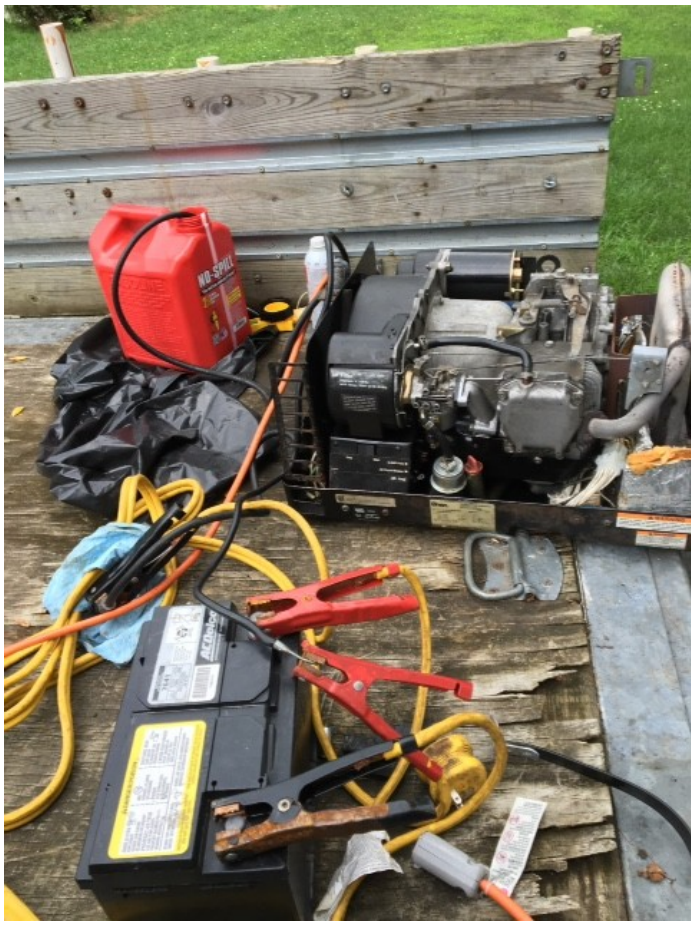

Illustration 7: Generator on "work bench" Orange cord replaced wire whip. Fuel line approximately 3' long. Positive cable (red clamps) is 51" in length. Voltage regulator is to the right under the white bundle of wires only accessible with generator out of MH and cover off. Coil and spark plug wire is in the same area. The on off remote switch is to the left and held in place with 2 torx studs. The fuel filter is to the right of remote start. Not easily serviceable. The oil dip stick and fill is to the right of the filter.