Troubleshooting Guide for Stamford Generators

Bulletin Number: TB056
Type of Bulletin: Trouble Shooting
Products Affected: TracStar 630/900
Dates Manufactured: All
Date of Notification: July 2009

Description of Bulletin
This is a troubleshooting guide for Stamford generators (MMI P/N: MDC00025; Stamford P/N: BC184E) installed on the machines listed above.

Reason for Bulletin
To make a preliminary evaluation in order to determine if the unit is providing adequate power.

Tools Required
- True RMS Digital Multimeter with capacitance measuring capability (ex. Fluke 87V)
- Cross tip screwdriver (Phillips™)
- Needle-nose Pliers
- 8mm or 5/16” Socket
- 1 amp diode (1N4007 or equivalent)

Procedure

Check Generator Output
1. Unplug the heater power cable.
2. Open the engine hood. Remove the front fiberglass cowling.
3. Remove the fuse box cover (yellow arrow in Figure 1) to access fuses.
4. Pull fuse covers off of fuses.

Figure 1
5. Start the engine and set it to high speed.
6. Locate the input side (LINE) of the fuses. They are connected to the wires in the flexible conduit (RED arrow in Figure 1).
7. Check the AC voltage at the input side of the fuses. Measure from U to V, then from U to W, then from V to W, (see Figure 2). Each measurement should be 220 to 240 volts AC.
   - If voltage is low or high, go to “Adjust Generator Output”.
   - If voltage is very small, or zero, shut off engine and go to “Check Residual Voltage”.
   - If voltage is OK, proceed to Step 8.
8. Locate the output side (LOAD) of the fuses. They are connected to the cable wires.
9. Check the AC voltage at the LOAD side (output) of the fuses. Measure from U to V, then from U to W, then from V to W. Each measurement should be the same as measured on the input side in Step 7.
10. If the output voltage from the fuses is different than the input voltage to the fuses, turn off the engine and measure the resistance of the fuses to determine which fuse(s) are faulty. Replace any faulty fuse.

Figure 2
(U = White Wire, V = Black Wire, W = Red Wire)
**Adjust Generator Output**

1. With engine turned OFF, remove the 8mm (5/16”) bolts securing the top and side covers of the generator wiring enclosure. Set the covers aside, (see Figure 3).
2. Inspect all connections. Make sure crimps are good and the terminals on top of the generator are tight. Repair any bad connections.
3. Inspect wires for worn places or signs of shorting against generator enclosure. Repair any damaged wires.
4. Start engine and set to high speed.
5. Set meter to frequency scale (Hz) and measure at fuses from V to W (see Figure 2).
6. Adjust throttle linkage until meter reads 59 to 61 Hertz.
7. Tighten the jam nuts behind the throttle rod eye.
8. Set meter to AC volts and measure from V to W.
9. Locate voltage potentiometer. It is directly below wire F2 at the left side (yellow arrow in Figure 4).
10. Adjust voltage potentiometer until voltmeter reads 240 +/- 3 volts.
11. Re-install all the covers.
12. Re-connect the heater power cable.

*Figure 3*
Check Residual Voltage
1. With engine turned OFF, remove the 8mm (5/16") bolts securing the top and side covers of the generator wiring enclosure. Set the covers aside, (see Figure 3).
2. Inspect all connections. Make sure crimps are good and the terminals on top of the generator are tight. If a bad connection is found, repair it and go back to "Check Generator Output".
3. Inspect wires for worn places of signs of shorting against generator enclosure. If wire damage is found, repair it and go back to "Check Generator Output".
4. Disconnect wires F1 & F2 from AVR (Automatic Voltage Regulator) shown in Figure 4. NOTE: Wires should be marked with factory installed ID tags.
5. Secure wires F1 and F2 so that the terminals do not touch anything.
6. Start the engine and set to high speed.
7. Measure the AC voltage from terminal 7 to terminal 8. It should be at least 5 volts. If less than 5 volts, turn the engine OFF and go to “Field Flashing” procedure.

Field Flashing
1. Reconnect leads F1 & F2 to their respective terminals.
2. Connect a wire from the battery negative (-) terminal to terminal F2.
3. Acquire a 1 amp diode (1N4007 or equivalent).
4. Connect a wire from the cathode of the diode (end with stripe) to terminal F1 as shown in Figure 5.
5. Connect a wire from the battery positive (+) terminal to the anode.
WARNING! A diode MUST be used to ensure the AVR is not damaged.

6. Restart the engine
7. Measure the AC voltage from terminals 7 to terminal 8. It should be about 230 volts.
8. Turn the engine off
9. Remove the wires and diode added in previous steps.
10. Re-install generator covers and fuse box lid.

If no problem is found in the previous steps and the unit is still not adequately producing power, check the machine's In Service date on the McElroy website (www.mcelroy.com). If it is less than one year from that date, contact McElroy Manufacturing, Inc. for possible warranty evaluation. If after that period, contact Cummins Generator Technologies (Newage) at: 1-800-367-2764 for further troubleshooting.
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