
Magnum Mobile Light Generator Training

MLG 8-15-20-25

SECTION IV

TROUBLESHOOTING - MLG 8-15-20

- **Engine will not crank when the engine start switch is rotated to the start position.**
 - **Step 1.** Check the control panel to see if the “TURN MAIN BREAKER OFF” light is illuminated. If light is illuminated, turn the main breaker “OFF”. If light is off, proceed to step 2.
 - **Step 2.** Make sure the engine start battery is connected. If the battery is disconnected, connect the battery cables to the engine starting battery, RED to POSITVE and BLACK to NEGATIVE. If the battery is connected, proceed to step 3.
 - **Step 3.** Ensure that the battery connections are tight and clean. Inspect the connections to the engine start battery. Tighten and/or clean the connections. If the battery connections are clean and tight, proceed to step 4.
 - **Step 4.** Check for sufficient engine starting battery voltage. Battery voltage must be at or above 12.6 volts DC for proper starting. If battery voltage is below 12.6 volts DC, charge or replace the starting battery. If battery voltage is at or above 12.6 volt DC, proceed to step 5.
 - **Step 5.** Check for sufficient battery voltage at the green wire on the engine starter solenoid, to ground, with the engine start switch in the start position. If sufficient battery voltage is present, replace the starter assembly. If battery voltage is insufficient, proceed to step 6.
 - **Step 6.** Check for sufficient battery voltage at the “B” terminal on the back of the engine start switch. If sufficient battery voltage is present, proceed to step 7. If battery voltage is insufficient, check condition of the red wire between the starter solenoid and the engine start switch. Repair or replace as needed.
 - **Step 7.** Check for sufficient battery voltage at the “S” terminal on the back of the engine starter solenoid. If sufficient battery voltage is present, check the condition of the green wires between the starter solenoid and the engine start switch. Repair or replace as needed. If battery voltage is sufficient, replace the engine start switch.

- **Engine cranks but will not start.**
 - **Step 1.** Check to see that the emergency stop switch is not activated or broken. Button must be pulled out for the unit to operate.
 - **Step 2.** Check for sufficient engine starting voltage. Battery voltage must be at or above 12.6 volts DC for proper starting. If battery voltage is below 12.6



- volts DC, charge or replace the engine battery. If battery voltage is at or above 12.6 volts, proceed to step 3.
- **Step 3.** Check the fuel level in the fuel tank. If fuel is empty, fill fuel tank. If fuel tank is full, proceed to step 4.
 - **Step 4.** Check for proper fuel pump operation. Turn the key to the “RUN” position. If fuel pump is not functioning (no audible hum), replace the fuel pump. If fuel pump is functioning properly (audible hum, approximately 15 seconds.), proceed to step 5.
 - **Step 5.** Check for DC voltage at the fuel pump. If battery voltage is present, proceed to step 6. If battery voltage is not present, reset the 10 amp circuit breaker (if tripped) located on the side of the control box. Also check to be sure all connections are tight and check the continuity on all of the wires, to make sure they are not broken or grounding.
 - **Step 6.** Check for leaks or air in the fuel system. Inspect and repair or replace any loose or broken fuel lines. Install a clear hose in place of the fuel line to look for possible air bubbles. Bleed any air from the fuel system. If no leaks can be found and the fuel system is bled of any air, proceed to step 7.
 - **Step 7.** Check for DC voltage on the red wire from the fuel solenoid (pull circuit) to ground. If voltage is present, proceed to step 8. If voltage is not present, check the condition of the brown wire between the connection to the fuel solenoid and the “C” terminal on the back of the engine start switch and the connection of the fuel solenoid plug. Repair and replace as needed.
 - **Step 8.** Check the fuel injection rack to see if it is “frozen” (locked up). If fuel rack is frozen, free the fuel rack using a torch. If fuel rack is free, replace the fuel solenoid.
- **Engine starts but shuts down when the switch is placed in the run position.**
 - **Step 1.** Check the 10 amp circuit breaker on the side of the control box. If breaker is tripped, push to reset. If breaker is not tripped, proceed to step 2.
 - **Step 2.** Check for DC voltage on the white wire from the fuel solenoid (hold circuit) when the engine start switch is placed in the RUN position. Note: engine time delay relay will only allow power for 15 seconds. If DC voltage is present, replace fuel solenoid. If DC voltage is not present, go to step 3.
 - **Step 3.** Check operation of fuel pump when engine start switch is placed in the RUN position. Note: engine time delay relay will only allow power for 15 seconds. If fuel pump is running (listen for audible hum) go to step 4. If fuel pump is not running (no audible hum) go to step 5.
 - **Step 4.** Check for DC voltage at the “I” terminal on the rear of the engine start switch when the switch is in the “RUN” position. If DC voltage is not present, replace the engine start switch. If DC voltage is present, go to step 5.



- **Step 5.** Check for DC voltage on the red wire going from the time delay relay to the 10 amp circuit breaker with the engine start switch placed in the run position. Note: engine time delay relay will only allow power for 15 seconds. If DC voltage is not present, replace the time delay relay. If DC voltage is present, proceed to step 6.
- **Step 6.** Check for DC voltage on both terminals of the 10 amp circuit breaker with the engine start switch is placed in the run position. Note: engine time delay relay will only allow power for 15 seconds. If DC voltage is present on one terminal and not the other, replace the 10 amp circuit breaker. If DC voltage is present at both terminals on the circuit breaker, inspect all wiring and connections on components checked in the previous steps. Repair or replace as necessary.
- **Engine Starts but shuts down after 10 – 15 seconds of operation.**
 - **Step 1.** Check for low engine oil level. Check engine oil level with oil dipstick. Oil level should be between FULL and ADD markings. If oil level is low, add engine oil. If oil is level is correct, proceed to step 2.
 - **Step 2.** Check the fuel level in the fuel tank. If fuel tank is empty, fill fuel tank. If the fuel is full, proceed to step 3.
 - **Step 3.** Test the resistance (ohms) of the coolant temperature switch by disconnecting the purple overheat temperature switch wire from the time delay relay switch and checking continuity to ground. If continuity exists to ground, replace the coolant temperature switch. If continuity is open to ground, replace low oil pressure switch.

Note: If condition persists, high coolant temperature or low oil pressure may be signs of pending engine failure. Notify a Field Service Representative.

- **No power at the service outlets**
 - **Step 1.** Make sure that the GFI's are not tripped, if so, reset.
 - **Step 2.** Check that the 20 amp circuit breaker is not tripped, reset if necessary. Check for AC voltage on each side to the circuit breaker to verify if the breaker is good or not. If we do not get power through the circuit breaker, and the breaker is reset, replace the circuit breaker.
 - **Step 3.** Check the twist lock for AC volts. We should have 120 AC volts from each side to ground and 240 AC volts between the two lines. Check on top of the circuit breaker for AC voltage. Replace the circuit breaker if it is set, and we have the proper AC voltage before the circuit breaker and none after.
 - **Step 4.** Check our #10 position on the terminal block 1 (red wire) for 120 AC volts to ground. Also check the #8 position on the terminal block 1 (black wire) for 120 AC volts to ground, we should have 240 AC volts between the two lines. If not, check right at the top of the main circuit breaker. If we



have power coming in and no power going out, and the breaker is one, replace the circuit breaker.

- **Step 5.** Make sure that all of the wires are in good condition and that all of the connections are tight. Replace any cut, bare or chaffed wires. Be sure that the ground is tight and secure.
- **Step 6.** Check for AC voltage right out of the generator, if we do not have the proper voltage, check the capacitor on the generator. Test the capacitor with a volt meter that reads microfarads. If it does not match, replace the capacitor. If it does match, see a Marathon Electric dealer for assistance. Repair or replace as needed.

