Is My Generator OK?

Tips for testing your generator

Certain generator failure modes can quickly cause a mechanical regulator to rapidly fail. If you are not completely confident that your generator is wired correctly and functioning properly perform these tests in order as presented below.

1. GENERATOR FIELD RESISTANCE TEST

You will need a good quality ohmmeter to perform this test. Disconnect both leads from the generator. Set the meter to a low ohm scale and short the two test leads together. Record the resistance displayed. Place one meter test lead on the field (smaller) terminal on the generator and the other lead on the generator body. Read the displayed resistance on the meter. Subtract the previously recorded value to get the actual field coil resistance.

OHMMETER READING:

Reading	Result	Next Action
A. Approximately 6.2 ohms.	Good.	Go to Voltage Tests.
B. Approximately 3 ohms.	Partially shorted field coil or a 6 volt generator.	Have generator repaired or replaced.
C. 0 ohms.	Shorted field winding or shorted terminal.	Have generator repaired.
D. Infinite ohms.	Open field winding or open terminal.	Have generator repaired.

2. GENERATOR VOLTAGE TESTS

You will need a good quality voltmeter (analog preferred) to get accurate readings. Set the meter to a range that can display up to 20 volts. Meter connections depend upon whether the generator is polarized to positive or negative ground. If the generator is negative ground place the negative or black lead on chassis ground. If it's positive ground place the positive or red lead on chassis ground.

Test 1

VOLTMETER CONNECTION: Disconnect both leads from the generator. Connect one lead of the voltmeter to the D (larger) terminal and the other to a good ground. Start engine and gradually raise speed to approximately 2500 to 3000 RPM.

VOLTMETER READING:

Reading	Result	Next Action
A. 2-4 volts at 2500-3000 RPM.	Good.	Go to Test 2.
B. 0 volts.	Field grounded, armature or brush problem.	Have generator repaired.
C. Rising voltage with speed.	Internal short between D & F terminal.	Have generator repaired.

Test 2
VOLTMETER CONNECTION: Connect meter as in test 1. Link the two terminals D & F at generator. Start engine and gradually raise speed to approximately 2500 to 3000 RPM.

VOLTMETER READING:

Reading	Result	Next Action
A. Rising voltage with rising engine speed.	Good.	Go to Test 3.
B. 2-4 volts.	Open field circuit.	Have generator repaired.
C. 0 volts.	Grounded field circuit.	Have generator repaired.

Test 3
VOLTMETER CONNECTION: Reconnect the wiring harness wires at generator. Remove all wires from the D & F terminals at the regulator. Connect meter to larger/heavier D terminal wire and a good ground. Start engine and gradually raise speed to approximately 2500 to 3000 RPM.

VOLTMETER READING:

Reading	Result	Next Action
A. 2-4 volts.	Good.	Go to Test 4.
B. 0 volts.	Open circuit on D wire.	Check D wire & connections.
C. Rising voltage with speed.	Short between D & F.	Locate short between D & F wires in the wiring harness.

Test 4
VOLTMETER CONNECTION: Leave meter connected as in Test 3. Link larger/heavier D wire & F wire together. Start engine and gradually raise speed to approximately 2500 to 3000 RPM.

VOLTMETER READING:

Reading	Result	Next Action
A. Rising voltage with rising engine speed.	Good.	Test completed.
B. 0 volts.	Grounded F wire.	Check F connections in the wiring harness.
C. 2-4 volts.	Open circuit on F wire.	Check F connections in the wiring harness.