

GENERATOR & REGULATOR**1998 ELECTRICAL General Motors Corp. - Generators & Regulators****DESCRIPTION**

The Bosch generator, rated at 120 amps, includes a stator, rectifier bridge, and rotor with slip rings and brushes. Generator operates with 2 wire connections and a ground path through the mounting bracket. The first wire connection is the C1 (output) terminal. This terminal must be connected to the battery during operation. The second wire connection is at terminal C2 of the generator. A built-in regulator incorporates fault detection circuitry, supplying ground at terminal C2 through circuit PM1 and connector C102 to indicator light when high or low voltage is detected. Normal range is 9.5 to 15 volts.

ADJUSTMENTS

NOTE: No adjustment or maintenance is required on generator assembly. Regulator voltage is preset and no adjustment is possible.

TROUBLE SHOOTING

NOTE: For information not covered in this article, see the TROUBLE SHOOTING - BASIC PROCEDURES article in the GENERAL INFORMATION section.

ON-VEHICLE TESTING

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in GENERAL INFORMATION section before disconnecting battery.

NOTE: Generator is serviced by replacement only.

NOTE: Before making electrical checks, visually inspect all terminals for clean, tight connections. Ensure all charging system related fuses are okay. Check generator mounting bolts and drive belt tension. Ensure battery is in good condition prior to testing charging system.

BATTERY UNDERCHARGED OR OVERCHARGED

1. Ensure starter is okay. See STARTER article.
2. Disconnect generator connector C2 (Blue/White wire). Turn ignition on. Check voltage at harness connector C2. If battery voltage exists, go to step 4). If battery voltage does not exist, go to next step.
3. Locate and repair poor connection or open in circuit PM1 between instrument panel 26-pin connector terminal No. 18 and generator harness connector C2 terminal (Blue/White wire). Go to step 9).
4. Disconnect generator connector C1 (Red wire). Check voltage at harness connector C1. If battery voltage exists, go to step 6). If battery voltage does not exist, go to next step.
5. Locate and repair poor connection or open in circuit A100 or A400 (Red wire) between the battery, starter switch and generator. Go to step 9).
6. Reconnect generator connector. Start engine and run at fast idle. Turn off accessories. Check voltage at battery terminals. If voltage is 12.5-14.5 volts, go to step 8). If voltage is not 12.5-14.5 volts, go to next step.
7. Replace generator. Go to step 9).

8. Load test generator. Replace generator as needed. If generator is okay, replace battery. Go to next step.
9. Reconnect all connectors and recheck system. If system is not operating properly, go to step 1).

CHARGE INDICATOR LIGHT ALWAYS ON

NOTE: Connector C102 (Brown), in circuit between instrument panel and generator, is located in left front of engine compartment, behind battery.

1. Ensure starter is okay. See STARTERS article.
2. Disconnect generator connector C2 (Blue/White wire). Turn ignition on. If indicator light illuminates, go to step 4). If indicator light does not illuminate, go to next step.
3. Replace generator. Go to step 7).
4. Disconnect connector C102. If indicator light is still illuminated, go to step 6). If indicator light goes out, go to next step.
5. Locate and repair short in circuit between generator connector C2 and connector C102 terminal No. 3. Go to step 7).
6. Locate and repair short in circuit between instrument panel connector terminal No. 18 and connector C102 terminal No. 3. If no short exists, replace instrument panel. Go to step 7).
7. Reconnect all connectors and recheck indicator light. If light is not operating properly, go to step 1).

CHARGE INDICATOR LIGHT NEVER ON

NOTE: Connector C102 (Brown), in circuit between instrument panel and generator, is located in left front of engine compartment, behind battery.

1. Ensure starter is okay. See STARTER article.
2. Disconnect generator connector C2 (Blue/White wire). Using a fused jumper wire, connect harness connector C2 to ground. Turn ignition on. If indicator light illuminates, go to next step. If indicator light does not illuminate, go to step 4).
3. Replace generator. Go to step 7).
4. Disconnect connector C102. Using a fused jumper wire, connect harness connector C102 terminal No. 3 to ground. If indicator light illuminates, go to next step. If indicator light does not illuminate, go to step 6).
5. Locate and repair poor contact or open in circuit between generator connector C2 and connector C102 terminal No. 3 (Blue/White wire). Go to step 7).
6. Locate and repair poor contact or open in circuit between instrument panel connector terminal No. 18 and connector C102 terminal No. 3. If no poor contact or open exists, replace instrument panel. Go to step 7).
7. Reconnect all connectors and recheck indicator light. If light is not operating properly, go to step 1).

REMOVAL & INSTALLATION

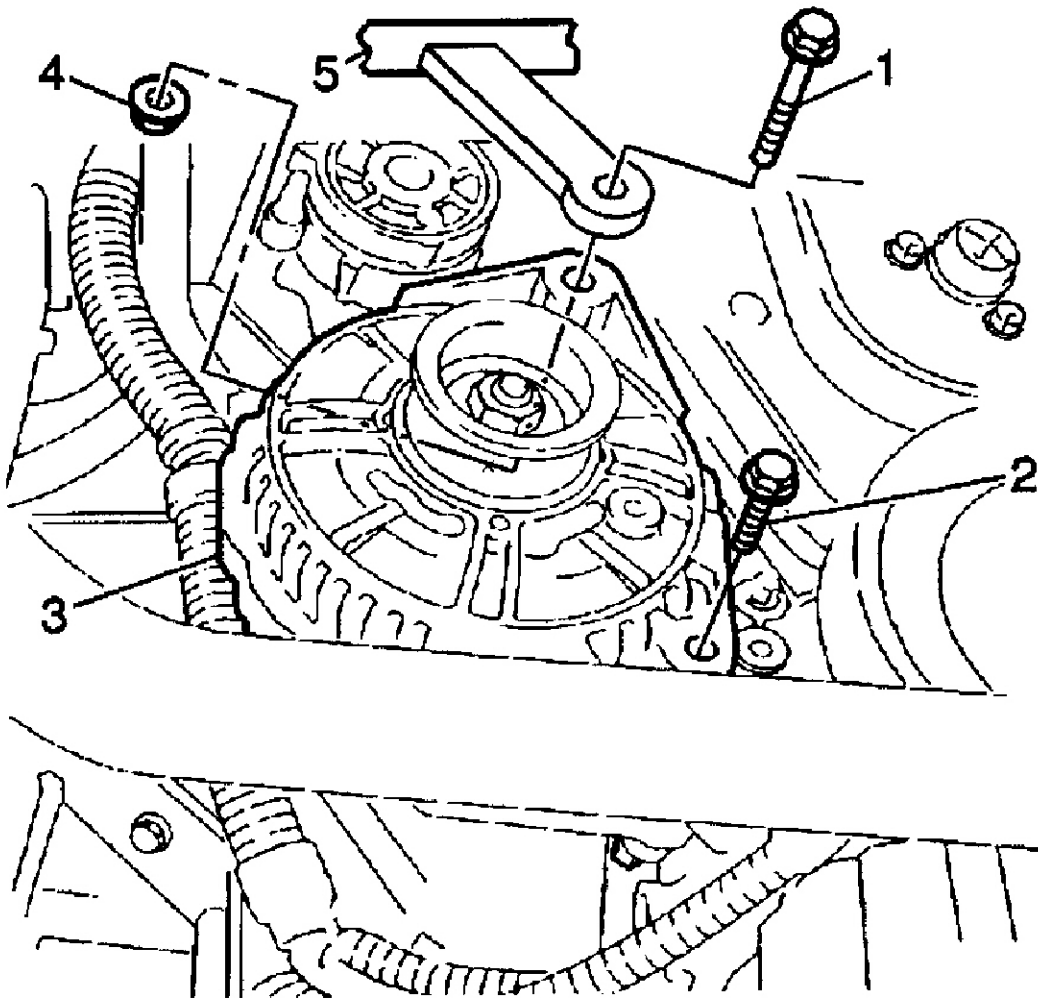
CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in the GENERAL INFORMATION section before disconnecting battery.

REMOVAL

NOTE: Before servicing any electrical component, the ignition key must be in the OFF or LOCK position and all electrical loads must be OFF, unless instructed otherwise in these procedures. If a tool or equipment could easily come in contact with a live

exposed electrical terminal, also disconnect the negative battery cable. Failure to follow these precautions may cause personal injury and/or damage to the vehicle or its components.

1. Disconnect the battery negative cable.
2. Remove the intake air resonator.
3. Remove the drive belt.
4. Remove the coolant heater, if equipped.
5. Raise and suitably support the vehicle.
6. Remove the generator cooling duct
7. Remove the field coil terminal nut and lead (1). See **Fig. 1** .
8. Remove the battery terminal nut and lead (2).
9. Remove the upper mounting nut (4), lower mounting nut and lower mounting bolt (2).
10. Push out the upper mounting bolt through the generator and the bracket.
11. Lower the vehicle.
12. Remove the generator (3).



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Fig. 1: Removing & Installing Generator
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1. Position the generator (3) in the mounting position. See **Fig. 1** .
2. Raise the vehicle on a suitable support.
3. Insert the upper mounting bolt (1) into the generator.
4. Install the lower mounting bolt (2).
5. Install the lower mounting nut. Tighten the lower mounting bolt and nut to 35 N.m (26 lb ft).
6. Install the upper mounting nut (4). Tighten the upper mounting bolt and nut to 40 N.m (30 lb ft).
7. Install the generator cooling duct.
8. Install the field coil terminal lead and nut (1). Tighten the nut to 3.5 N.m (31 lb in).
9. Install the battery terminal lead and nut (2). Tighten the nut to 8 N.m (71 lb in).
10. Lower the vehicle.
11. Install the coolant heater, if equipped.
12. Install the drive belt.
13. Install the intake air resonator.
14. Connect the negative battery cable. Tighten the negative battery cable nut to 13 N.m (115 lb in).
15. Reprogram all applicable accessories as required.

OVERHAUL

NOTE: Generator is serviced by replacement only.

TORQUE SPECIFICATIONS

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Application	Ft. Lbs. (N.m)
Mounting Bolt	30 (40)
Pulley Nut	48 (65)

WIRING DIAGRAMS

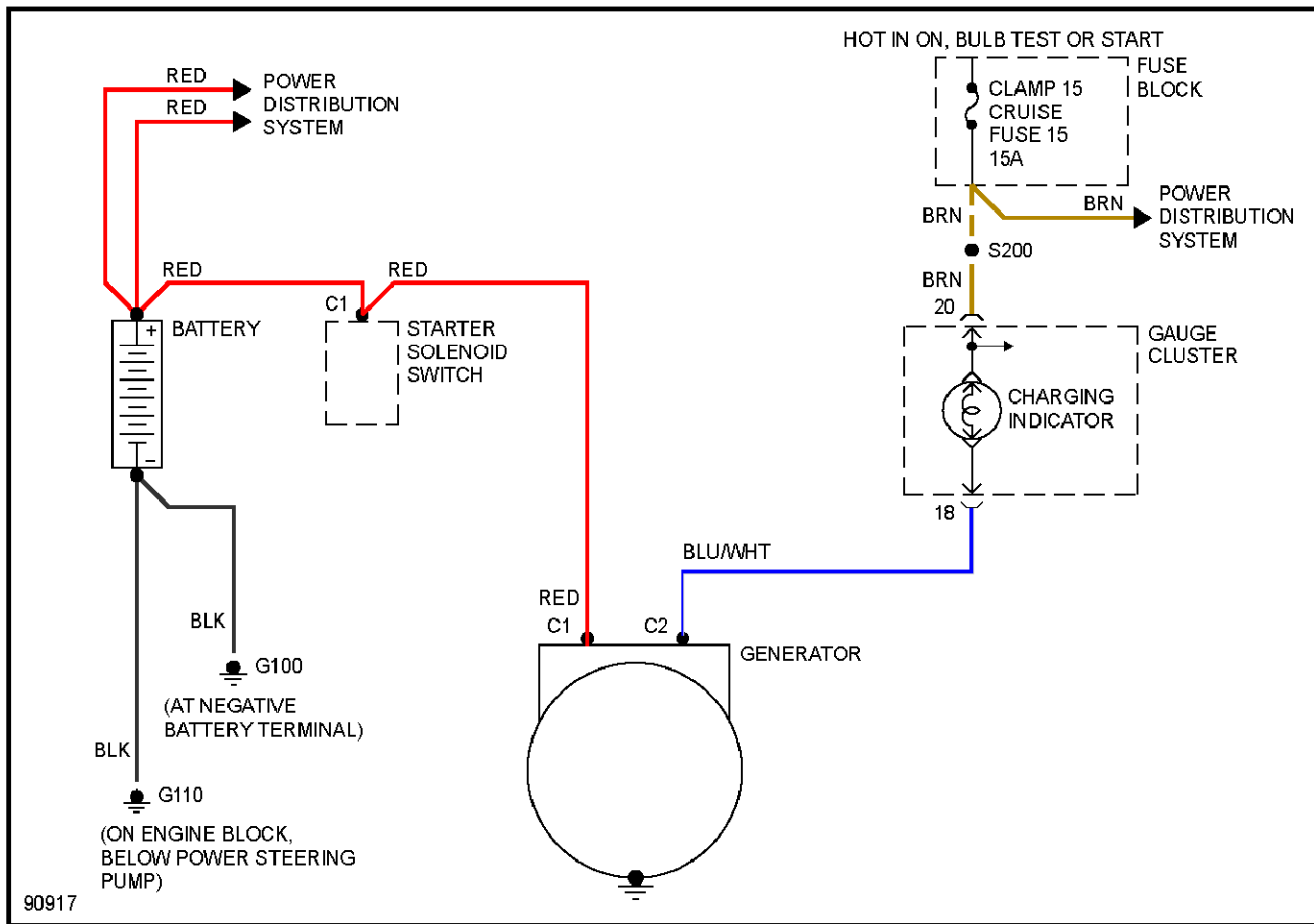


Fig. 2: Charging System Wiring Diagram

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