CHARGING SYSTEM

TABLE OF CONTENTS

page

DESCRIPTION AND OPERATION
CHARGING SYSTEM DESCRIPTION – DIESEL 1
GENERATOR – DIESEL 1

page

REMOVAL AND INSTALLATION
GENERATOR 1
SPECIFICATIONS
TORQUE SPECIFICATIONS 3

DESCRIPTION AND OPERATION

CHARGING SYSTEM DESCRIPTION – DIESEL

The charging system used on diesel engines consists of:

- Bosch Generator / field internally controlled
- Ignition switch (Refer to Group 8D, Ignition System for information)
- Battery (Refer to Group 8A, Battery for information)
- Wiring harness and connections (Refer to Group 8W, Wiring for information)

The charging system is turned on and off with the ignition switch. The generator is driven by the engine through a serpentine belt and pulley arrangement.

All vehicles are equipped with On-Board Diagnostics (OBD). Each monitored circuit is assigned a Diagnostic Trouble Code (DTC). The PCM will store a DTC in electronic memory for any failure it detects. See the Powertrain Diagnostic Manual for more information.

GENERATOR – DIESEL

The generator is belt-driven by the engine. It is serviced only as a complete assembly. If the generator fails for any reason, the entire assembly must be replaced.

As the energized rotor begins to rotate within the generator, the spinning magnetic field induces a current into the windings of the stator coil. Once the generator begins producing sufficient current, it also provides the current needed to energize the rotor.

The Y type stator winding connections deliver the induced AC current to 3 positive and 3 negative diodes for rectification. From the diodes, rectified DC current is delivered to the vehicles electrical system through the generator, battery, and ground terminals.

Noise emitting from the generator may be caused by:

- Worn, loose or defective bearings
- Loose or defective drive pulley
- Incorrect, worn or damaged drive belt
- Loose mounting bolts
- Misaligned drive pulley
- Defective stator or diode
- Damaged internal fins

REMOVAL AND INSTALLATION

GENERATOR

REMOVAL

WARNING: DISCONNECT THE NEGATIVE BATTERY CABLE BEFORE REMOVING THE GENERATOR OUTPUT WIRE FROM THE GENERATOR. FAILURE TO DO SO CAN RESULT IN PERSONAL INJURY OR DAMAGE TO THE VEHICLE ELECTRICAL SYSTEM.

(1) Open the hood and disconnect the negative battery cable.

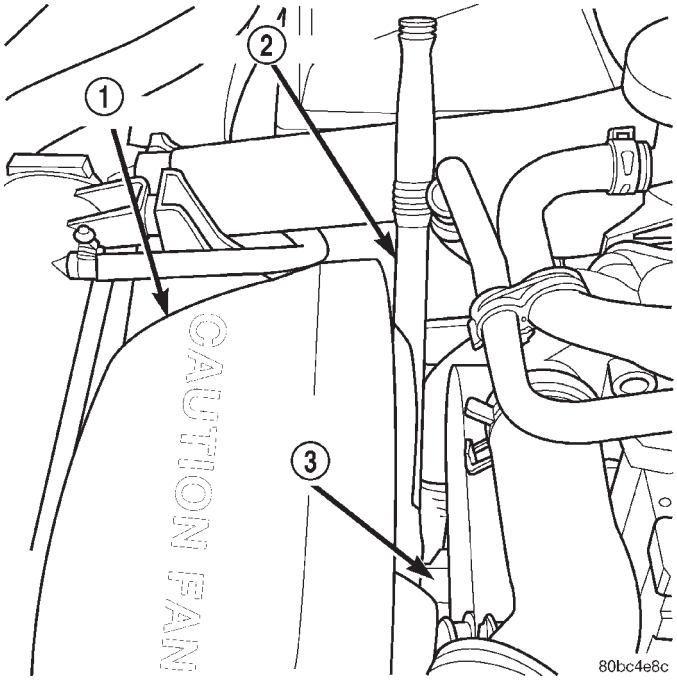


Fig. 1 Removing The Accessory Drive Belt

1 – FAN SHROUD
2 – 1/2 DRIVE BAR
3 – AUTOMATIC BELT TENSIONER

REMOVAL AND INSTALLATION (Continued)

(2) Remove the accessory drive belt from the generator pulley (Fig. 1). Refer to Group 7, Cooling System for the procedure.

(3) Remove the B+ generator output wire cap and remove the wire from the terminal (Fig. 2).

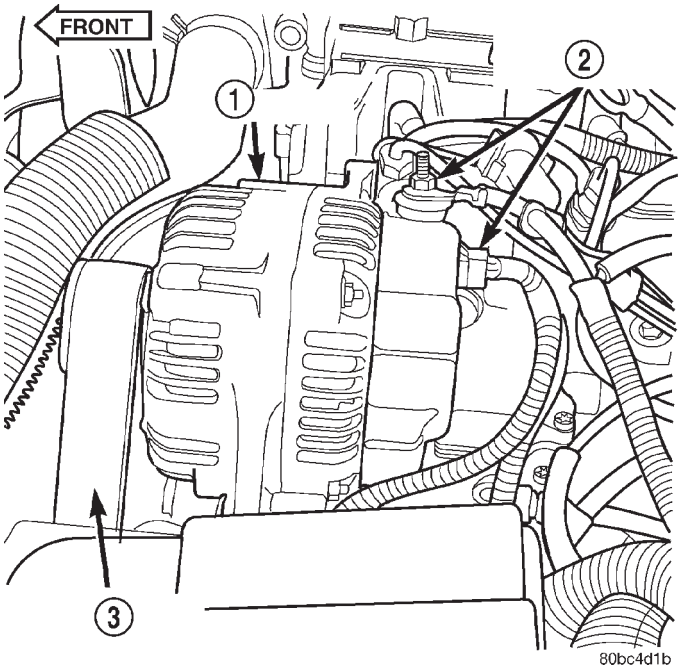


Fig. 2 Generator Electrical

1 – GENERATOR
2 – GENERATOR ELECTRICAL CONNECTOR
3 – ACCESSORY DRIVE BELT

(4) Disconnect the generator field wire connector from the rear of the generator (Fig. 2).

(5) Remove the generator retaining bolts (Fig. 3) and remove the generator from the vehicle.

INSTALLATION

(1) Position the generator and install the retaining bolts (Fig. 4). Torque the bolts to 40 N·m (30 ft. lbs.).

(2) Connect the generator field wire connector on the rear of the generator (Fig. 5).

(3) Install the B+ generator output wire and torque to 8.5 N·m (75 in. lbs.) (Fig. 5). Install the terminal cap.

(4) Install the accessory drive belt (Fig. 6). Refer to Group 7, Cooling System for the procedure.

(5) Connect the negative battery cable.

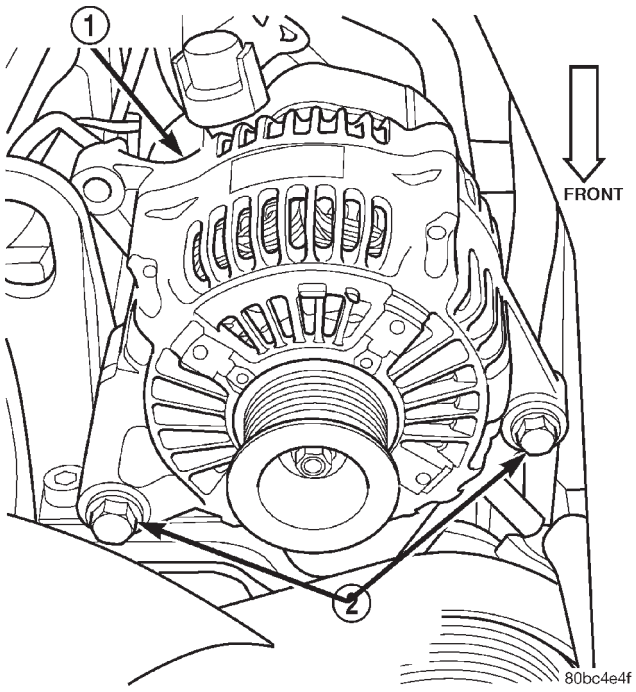


Fig. 3 Generator Retaining Bolts

1 – GENERATOR
2 – GENERATOR RETAINING BOLTS

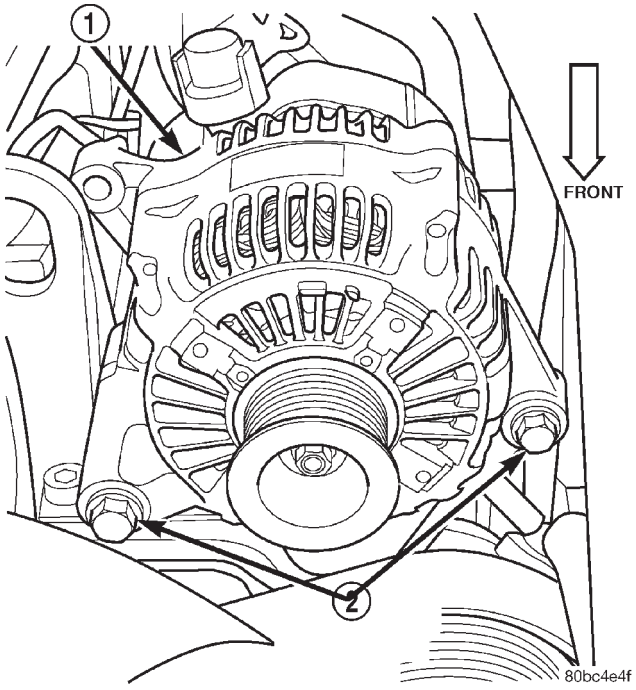


Fig. 4 Generator Retaining Bolts

1 – GENERATOR
2 – GENERATOR RETAINING BOLTS

(Continued)

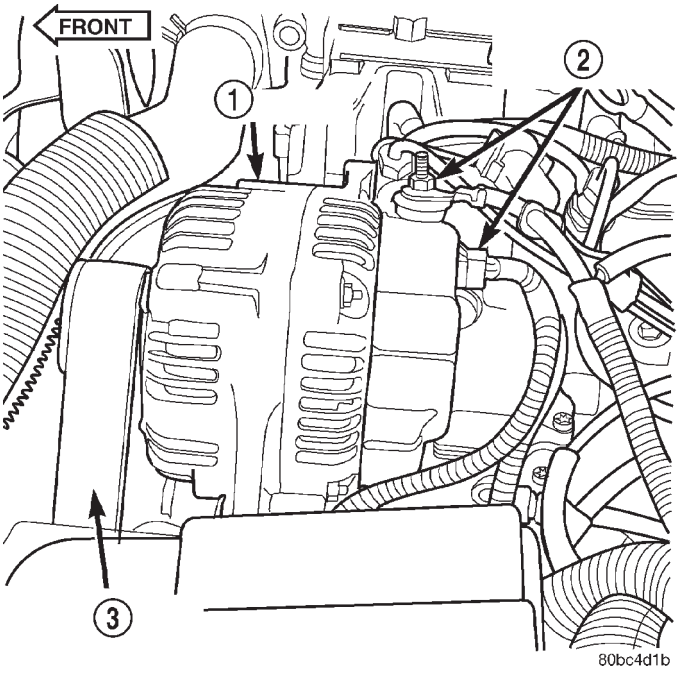


Fig. 5 Generator Electrical

1 – GENERATOR
2 – GENERATOR ELECTRICAL CONNECTOR
3 – ACCESSORY DRIVE BELT

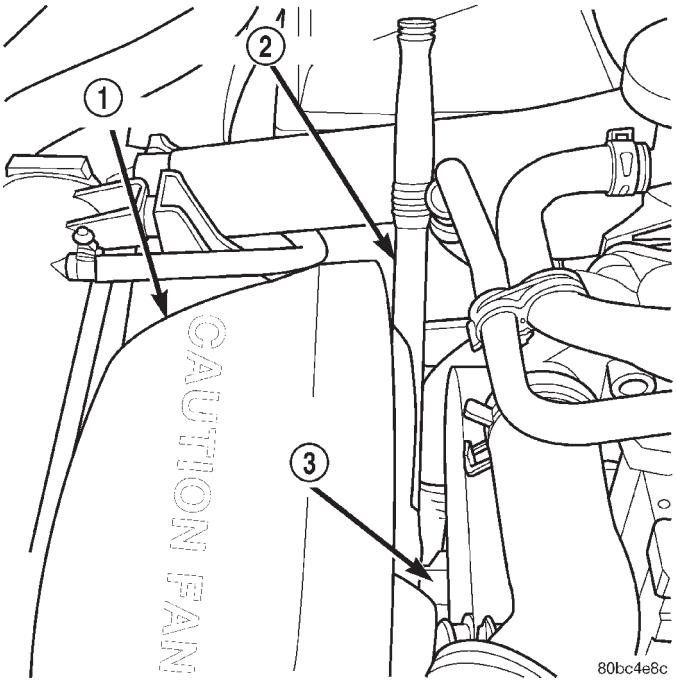


Fig. 6 Installing The Accessory Drive Belt

1 – FAN SHROUD
2 – 1/2 DRIVE BAR
3 – AUTOMATIC BELT TENSIONER

SPECIFICATIONS

TORQUE SPECIFICATIONS

DESCRIPTION	TORQUE
Generator-to-Mounting Bracket	
Bolts (2)	40 N·m (30 ft. lbs.)
B+ Generator Output Wire	
Nut (1)	8.5 N·m (75 in. lbs.)