STARTING SYSTEMS

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REMOVAL AND INSTALLATION

STARTER MOTOR (LHD DIESEL)

REMOVAL

WARNING: DISCONNECT THE NEGATIVE BATTERY CABLE BEFORE REMOVING THE B+ SUPPLY WIRE FROM THE STARTER SOLENOID. 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.
(2) Raise the vehicle on a hoist.
(3) Disconnect the starter motor electrical.

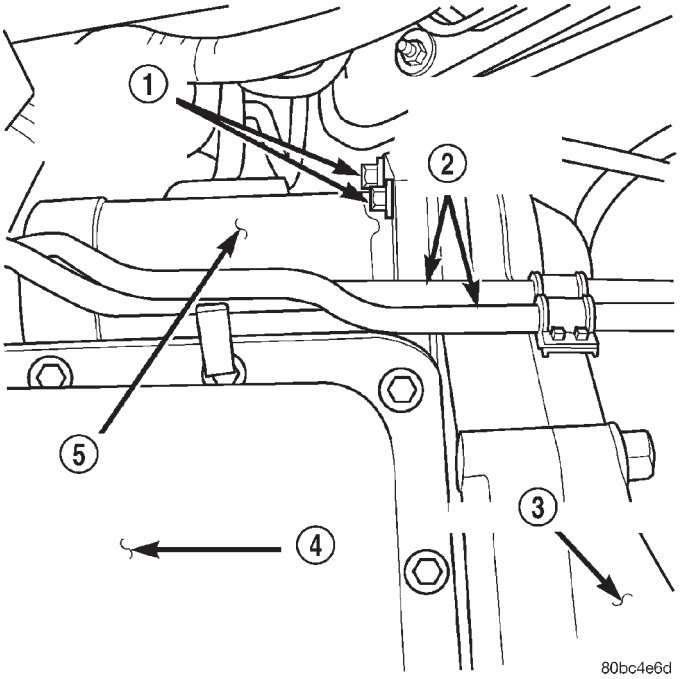


Fig. 1 Starter Motor Position & Orientation
1 – STARTER MOTOR RETAINING BOLTS (2 OF 3)
2 – TRANSMISSION FLUID COOLER LINES
3 – TRANSMISSION
4 – ENGINE OIL PAN
5 – STARTER MOTOR

(4) Remove the (3) starter motor retaining bolts (Fig. 1) and remove the starter from the vehicle

INSTALLATION

(1) Position the starter motor on the engine and install the (3) starter motor retaining bolts. Torque the bolts to 27 N·m (20 ft. lbs.) (Fig. 2).

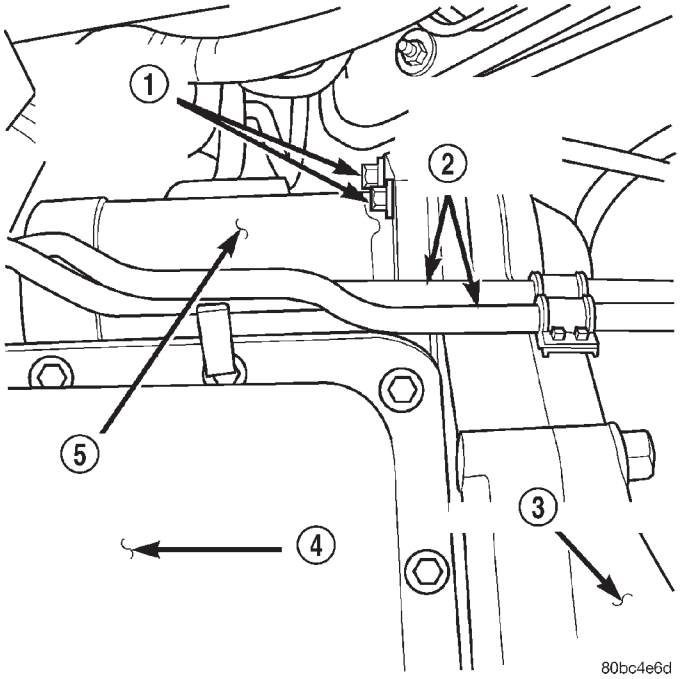


Fig. 2 Starter Motor Position & Orientation
1 – STARTER MOTOR RETAINING BOLTS (2 OF 3)
2 – TRANSMISSION FLUID COOLER LINES
3 – TRANSMISSION
4 – ENGINE OIL PAN
5 – STARTER MOTOR

(2) Connect the starter motor electrical connectors. Torque B+ terminal nut to 27 N·m (20 ft. lbs.).
(3) Lower the vehicle on a hoist.
(4) Connect the negative battery cable.

REMOVAL AND INSTALLATION (Continued)

STARTER RELAY

(1) Disconnect and isolate the battery negative cable.
(2) Remove the cover from the Power Distribution Center (PDC).
(3) Refer to the label on the PDC for starter relay identification and location.
(4) Unplug the starter relay from the PDC.
(5) Install the starter relay by aligning the relay terminals with the cavities in the PDC and pushing the relay firmly into place.
(6) Install the PDC cover.
(7) Connect the battery negative cable.
(8) Test the relay operation.

SPECIFICATIONS

STARTING SYSTEM

Starter and Solenoid	
Engine Application	3.1L Diesel
Power Rating	2.2 Kilowatt
Voltage	12 Volts
Number of Fields	4
Number of Poles	4
Number of Brushes	4
Drive Type	Planetary Gear Reduction
Free Running Test Voltage	11.5 Volts
Free Running Test Maximum Amperage Draw	160 Amperes
Free Running Test Minimum Speed	5500 rpm
Solenoid Closing Maximum Voltage	7.8 Volts
*Cranking Amperage Draw test	350 Amperes
*Test at operating temperature. Cold engine, tight (new) engine, or heavy oil will increase starter amperage draw.	

TORQUE SPECIFICATIONS

DESCRIPTION	TORQUE
Stater Motor (B+) Terminal	27 N·m (20 ft. lbs.)
Starter Motor Retaining Bolts	27 N·m (20 ft. lbs.)