

POWER DISTRIBUTION SYSTEMS

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DESCRIPTION AND OPERATION

POWER DISTRIBUTION SYSTEM

DESCRIPTION

This group covers the various standard and optional power distribution components used on this model. Refer to Group 8W - Wiring Diagrams for complete circuit diagrams of the various power distribution components.

The power distribution system for this vehicle is designed to provide safe, reliable, and centralized distribution of the electrical current required to operate all of the many standard and optional factory-installed electrical and electronic powertrain, chassis, safety, comfort and convenience systems. At the same time, these systems were designed to provide convenient to access centralized locations for conducting diagnosis of faulty circuits, and for sourcing the additional current requirements of many aftermarket vehicle accessory and convenience items.

These power distribution systems also incorporate various types of circuit control and protection features, including:

- Fuses
- Maxi fuse-type fusible links
- Relays.

The power distribution system for this vehicle consists of the following components:

- Power Distribution Center (PDC)
- Junction Block (JB).

Following are general descriptions of the major components in the power distribution system. Refer to the owner's manual in the vehicle glove box for more information on the features, use and operation of all of the power distribution system components.

NOTE: This group covers both Left-Hand Drive (LHD) and Right-Hand Drive (RHD) versions of this model. Whenever required and feasible, the RHD versions of affected vehicle components have been constructed as mirror-image of the LHD versions. While most of the illustrations used in this group

represent only the LHD version, the diagnostic and service procedures outlined can generally be applied to either version. Exceptions to this rule have been clearly identified as LHD or RHD, if a special illustration or procedure is required.

POWER DISTRIBUTION CENTER

DESCRIPTION

All of the electrical current distributed throughout this vehicle is directed through the standard equipment Power Distribution Center (PDC) (Fig. 1). The molded plastic PDC housing is located on the right side of the engine compartment, just behind the battery. The PDC housing has a molded plastic cover that includes two integral pivot hooks on the inboard side, and an integral latch on the outboard side. The PDC cover is easily removed for service access and has a convenient fuse and relay layout map integral to the inside surface of the cover to ensure proper component identification.

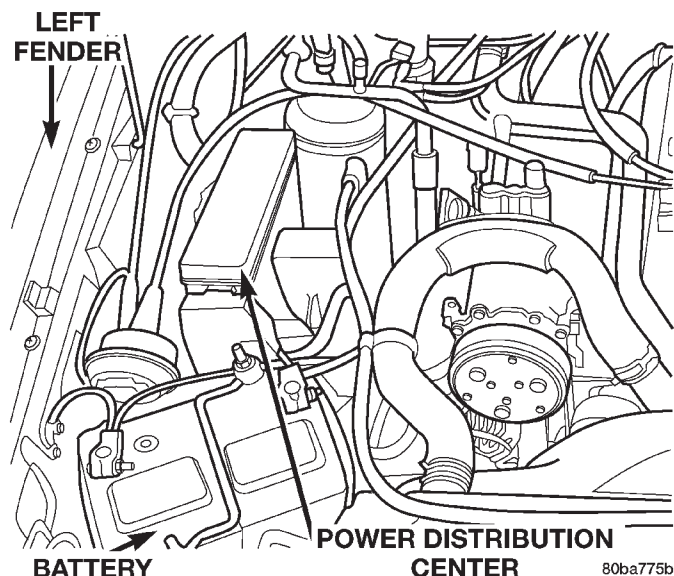


Fig. 1 Power Distribution Center

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DESCRIPTION AND OPERATION (Continued)

The PDC housing is secured to a stamped sheet metal bracket in the engine compartment by mounting slots and tabs that are integral to the PDC housing. The PDC mounting bracket is secured with two screws to the right front inner fender shield above the right front wheel house. A separate cover that is secured by integral tabs and a latch to the front of the PDC housing is unlatched and removed to access the battery/generator cable connection stud. The PDC is integral to the headlamp and dash wire harness, which exits from the rearward end of the PDC housing.

The PDC houses up to fourteen blade-type maxi fuses, which replace all in-line fusible links. The PDC also houses up to twelve blade-type mini fuses, and up to eight International Standards Organization (ISO) relays (four standard-type and four micro-type). Internal connection of all of the PDC circuits is accomplished by an intricate combination of hard wiring and bus bars. Refer to **Power Distribution** in the Contents of Group 8W - Wiring Diagrams for complete circuit diagrams.

The maxi fuses, mini fuses and relays are available for service replacement. The PDC unit cannot be repaired and is only serviced as a unit with the headlamp and dash wire harness. If any of the internal circuits or if the PDC housing are faulty or damaged, the PDC and the headlamp and dash wire harness unit must be replaced.

JUNCTION BLOCK

DESCRIPTION

An electrical Junction Block (JB) is concealed behind the right cowl side inner trim panel in the passenger compartment of the vehicle. The molded plastic JB housing has integral mounting brackets that are secured with three nuts to studs on the right cowl side inner panel below the instrument panel. The right cowl side inner trim panel is secured to a stud on the junction block with a push nut, and a snap-fit fuse access panel that can be removed for service of the junction block fuses conceals the push nut (Fig. 2). A finger recess is molded into the front of the fuse access panel for easy removal, and a fuse puller and spare fuse holders are located on the back of the fuse access panel.

The JB combines the functions previously provided by a separate fuseblock module and relay center, serves to simplify and centralize numerous electrical components, as well as to distribute electrical current to many of the accessory systems in the vehicle. It also eliminates the need for numerous splice connections and serves in place of a bulkhead connector between many of the engine compartment, instrument panel, and body wire harnesses.

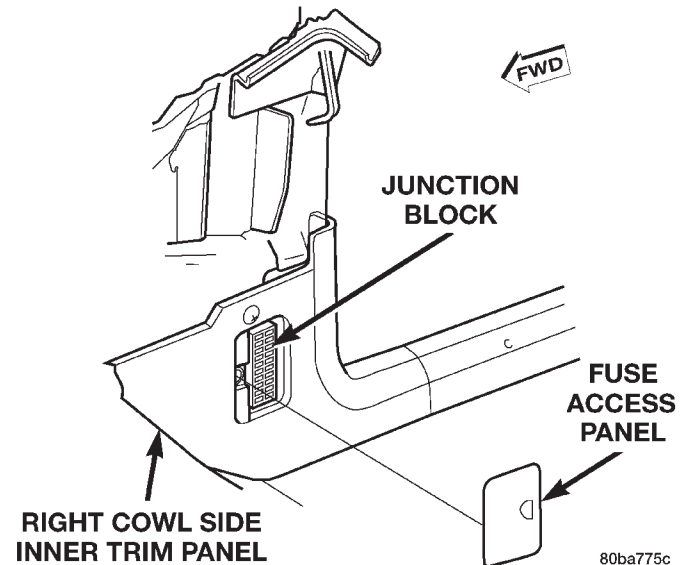


Fig. 2 Junction Block

All of the circuits entering and leaving the JB do so through up to ten wire harness connectors, which are connected to the JB through integral connector receptacles molded into the JB housing. The JB houses up to twenty-seven blade-type fuses (three standard-type and twenty-four mini-type), up to three blade-type automatic resetting circuit breakers, and four International Standards Organization (ISO) relays (three standard-type and one micro-type). Internal connection of all of the JB circuits is accomplished by an intricate combination of hard wiring and bus bars. Refer to **Junction Block** in the Contents of Group 8W - Wiring Diagrams for complete circuit diagrams.

The fuses, circuit breakers, and relays are available for service replacement. The JB unit cannot be repaired and is only serviced as a unit. If any internal circuit or if the JB housing is faulty or damaged, the entire JB unit must be replaced.

REMOVAL AND INSTALLATION

POWER DISTRIBUTION CENTER

The Power Distribution Center (PDC) is serviced as a unit with the headlamp and dash wire harness. If any internal circuit of the PDC or if the PDC housing is faulty or damaged, the entire PDC and the headlamp and dash wire harness unit must be replaced.

REMOVAL

- (1) Disconnect and isolate the battery negative cable.
- (2) Disconnect each of the headlamp and dash wire harness connectors. Refer to **Connector Locations**

REMOVAL AND INSTALLATION (Continued)

in the Contents of Group 8W - Wiring Diagrams for more information on the locations of the affected connectors.

(3) Remove all of the fasteners that secure each of the headlamp and dash wire harness ground eyelets to the vehicle body and chassis components. Refer to **Connector Locations** in the Contents of Group 8W - Wiring Diagrams for more information on the ground eyelet locations.

(4) Disengage each of the retainers that secure the headlamp and dash wire harness to the vehicle body and chassis components. Refer to **Connector Locations** in the Contents of Group 8W - Wiring Diagrams for more information on the retainer locations.

(5) Unlatch and remove the terminal stud cover from the front end of the PDC (Fig. 3).

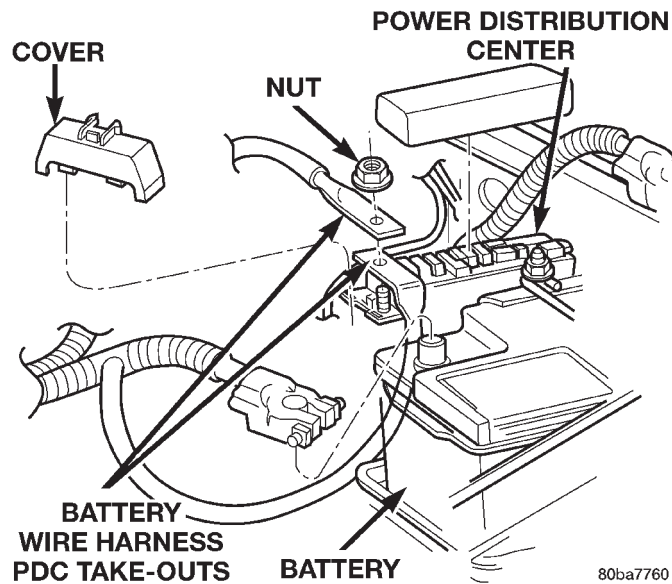


Fig. 3 Power Distribution Center Connections

(6) Remove the nut that secures the eyelets of the battery wire harness PDC take outs to the stud on the PDC.

(7) Remove the battery wire harness PDC take out eyelets from the PDC stud.

(8) Disengage the latches on the PDC mounting bracket from the tabs on the PDC housing, and pull the PDC housing upward to disengage the mounting slots from the stanchions of the mounting bracket (Fig. 4).

(9) Remove the PDC and the headlamp and dash wire harness from the engine compartment as a unit.

(10) Remove the two screws that secure the PDC mounting bracket to the right front inner fender (Fig. 5).

(11) Remove the PDC mounting bracket from the right front inner fender.

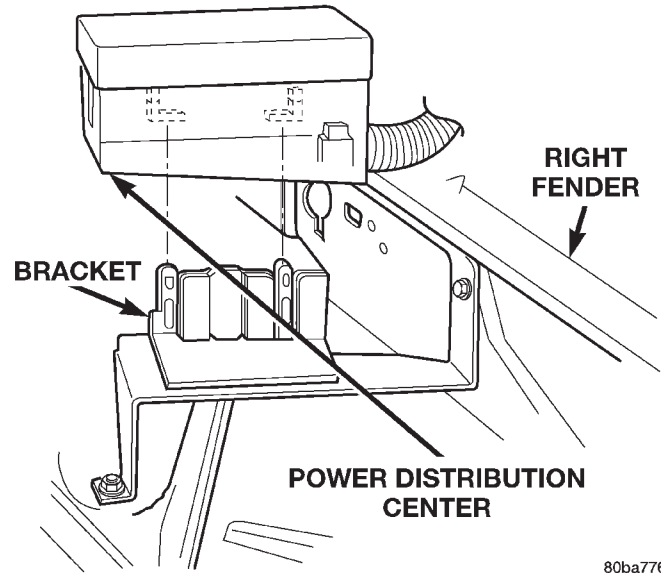


Fig. 4 Power Distribution Center Remove/Install

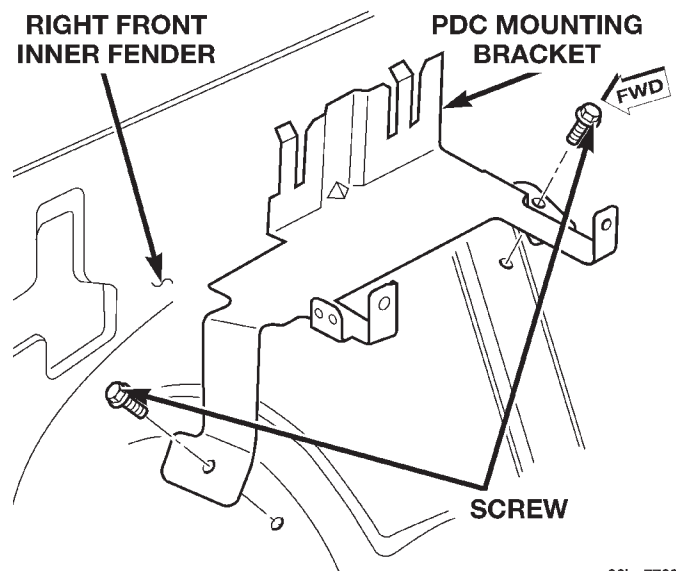


Fig. 5 PDC Mounting Bracket Remove/Install INSTALLATION

NOTE: If the PDC is being replaced with a new unit, be certain to transfer each of the fuses and relays from the old PDC to the proper cavities of the new PDC. Refer to Power Distribution in the Contents of Group 8W - Wiring Diagrams for the proper PDC cavity assignments.

(1) Position the PDC mounting bracket onto the right front inner fender.

(2) Install and tighten the two screws that secure the PDC mounting bracket to the right front inner fender. Tighten the screws to 8.1 N·m (72 in. lbs.).

(3) Position the PDC and the headlamp and dash wire harness unit in the engine compartment.

REMOVAL AND INSTALLATION (Continued)

(4) Engage the mounting slots on the PDC housing with the stanchions of the PDC mounting bracket and push the unit downward until the mounting bracket latches engage the mounting tabs on the PDC housing.

(5) Install the eyelets of the battery wire harness PDC take outs onto the PDC stud.

(6) Install and tighten the nut that secures the eyelet of the battery wire harness PDC take outs onto the PDC stud. Tighten the nut to 7.9 N·m (70 in. lbs.).

(7) Engage the tabs on the lower edge of the terminal stud cover in the slots on the front of the PDC housing, then engage the latch on the top of the cover with the latch tabs on the PDC housing.

(8) Engage each of the retainers that secure the headlamp and dash wire harness to the vehicle body and chassis components. Refer to **Connector Locations** in the Contents of Group 8W - Wiring Diagrams for more information on the retainer locations.

(9) Install all of the fasteners that secure each of the headlamp and dash wire harness ground eyelets to the vehicle body and chassis components. Refer to **Connector Locations** in the Contents of Group 8W - Wiring Diagrams for more information on the ground eyelet locations.

(10) Reconnect each of the headlamp and dash wire harness connectors. Refer to **Connector Locations** in the Contents of Group 8W - Wiring Diagrams for more information on the locations of the affected connectors.

(11) Reconnect the battery negative cable.

JUNCTION BLOCK

WARNING: ON VEHICLES EQUIPPED WITH AIR-BAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIR-BAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

REMOVAL

(1) Disconnect and isolate the battery negative cable.

(2) Remove the fuse access panel by unsnapping it from the right cowl side inner trim panel (Fig. 6).

(3) Remove the push nut that secures the right cowl side inner trim panel to the junction block stud.

(4) Remove the screw located above the fuse access opening that secures the trim panel to the right cowl side inner panel.

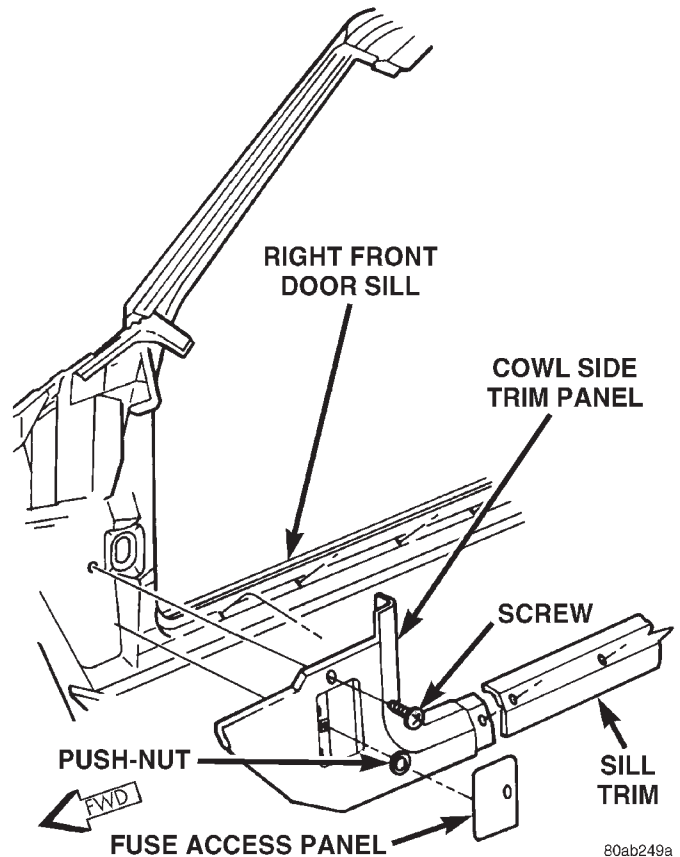


Fig. 6 Right Cowl Side Inner Trim Remove/Install

(5) Remove the screw that secures the right cowl side inner trim panel and right front door sill trim to the door opening sill.

(6) Remove the trim from the right cowl side inner panel.

(7) Remove the screw that secures the lower instrument panel wire harness connector to the junction block.

(8) Disconnect all of the wire harness connectors from the connector receptacles on the junction block.

(9) Remove the three nuts that secure the junction block to the studs on the right cowl side inner panel (Fig. 7).

(10) Remove the junction block from the right cowl side inner panel.

INSTALLATION

NOTE: If the Junction Block (JB) is being replaced with a new unit, be certain to transfer each of the fuses, circuit breakers and relays from the old JB to the proper cavities of the new JB. Refer to Junction Block in the Contents of Group 8W - Wiring Diagrams for the proper JB cavity assignments.

(1) Position the junction block onto the right cowl side inner panel.

REMOVAL AND INSTALLATION (Continued)

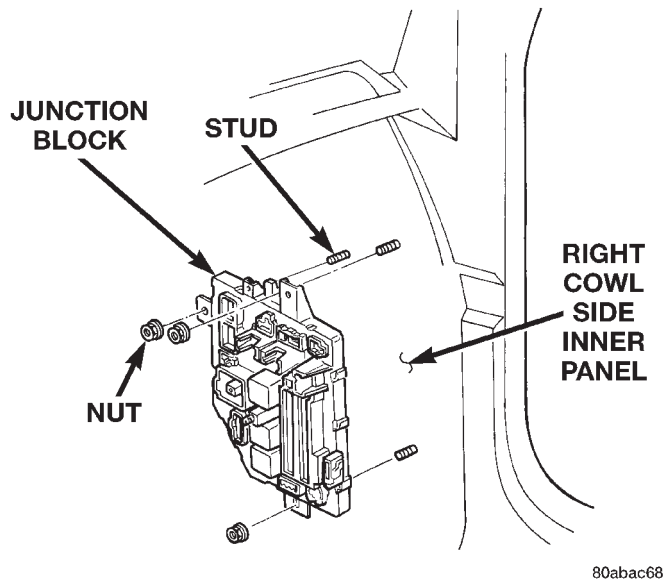


Fig. 7 Junction Block Remove/Install

(2) Install and tighten the three nuts that secure the junction block to the studs on the right cowl side inner panel. Tighten the nuts to 2.7 N·m (24 in. lbs.).

(3) Reconnect all of the wire harness connectors to the connector receptacles on the junction block.

(4) Install and tighten the screw that secures the lower instrument panel wire harness connector to the junction block. Tighten the screw to 3.5 N·m (31 in. lbs.).

(5) Position the trim onto the right cowl side inner panel.

(6) Install and tighten the screw that secures the right cowl side inner trim panel and right front door sill trim to the door opening sill. Tighten the screw to 2.2 N·m (20 in. lbs.).

(7) Install and tighten the screw located above the fuse access opening that secures the trim panel to the right cowl side inner panel. Tighten the screw to 2.2 N·m (20 in. lbs.).

(8) Install the push nut that secures the right cowl side inner trim panel onto the junction block stud.

(9) Install the fuse access panel by snapping it onto the right cowl side inner trim panel.

(10) Reconnect the battery negative cable.

