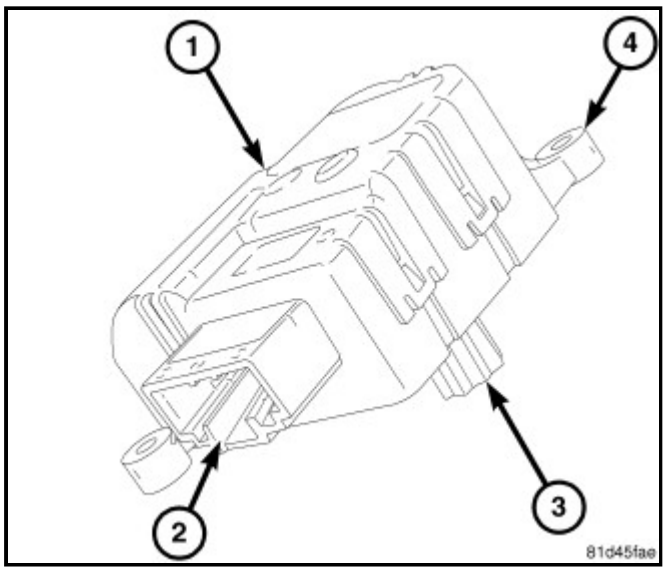
DESCRIPTION

The blend door actuator (1) for the rear heating-A/C system is a reversible, 12 volt direct current (DC), servo motor. The rear blend door actuator is located on the outboard side of the rear heater-A/C housing.

The rear blend door actuator is contained within a black molded plastic housing with an integral wire connector receptacle (2), an output shaft with splines (3) connect it to the rear blend-air door and three integral mounting tabs (4) allow the actuator to be secured to the rear heater-A/C housing. The blend door actuator does not require mechanical indexing to the blend door linkage, as it is electronically calibrated by the A/C-heater control.

The A/C-heater control must be recalibrated each time an actuator motor is replaced (Refer to 28 - DTC-Based Diagnostics/HVAC - Diagnosis and Testing) .

The rear blend door actuator is interchangeable with the actuator for the rear mode-air door.



OPERATION

The rear blend door actuator is connected to the A/C-heater control through the vehicle electrical system by a dedicated two-wire lead and connector of the rear heater-A/C wire harness. The rear blend door actuator can move the rear blend-air door in two directions. When the A/C-heater control pulls the voltage on one side of the motor connection high and the other connection low, the rear blend-air door will move in one direction. When the A/C-heater control reverses the polarity of the voltage to the motor, the rear blend-air door moves in the opposite direction. When the front A/C-heater control makes the voltage to both connections high or both connections low, the rear blend-air door stops and will not move.

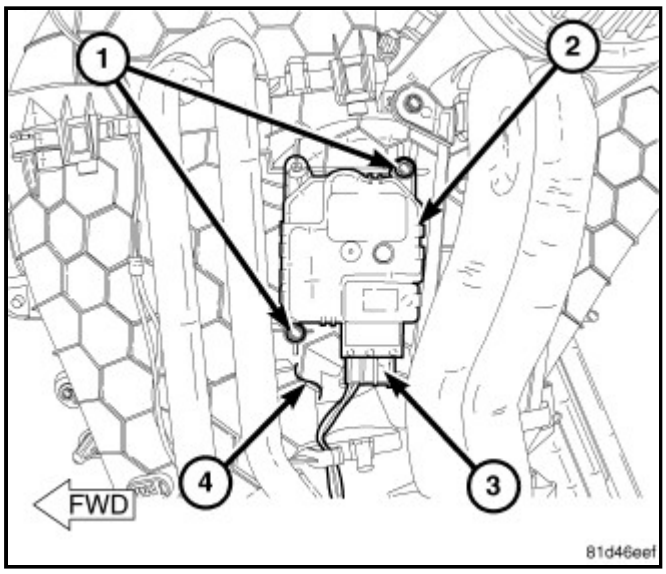
The front A/C-heater control uses a pulse-count positioning system to monitor the operation and relative position of the rear blend door actuator and the rear blend-air door. The front A/C-heater control learns the rear blend-air door stop positions during the calibration procedure and will store a diagnostic trouble code (DTC) for any problems it detects in the rear blend door actuator circuits.

The rear blend door actuator is diagnosed using a scan tool (Refer to 28 - DTC-Based Diagnostics/HVAC - Diagnosis and Testing) .

The rear blend door actuator cannot be adjusted or repaired and must be replaced if inoperative or damaged.

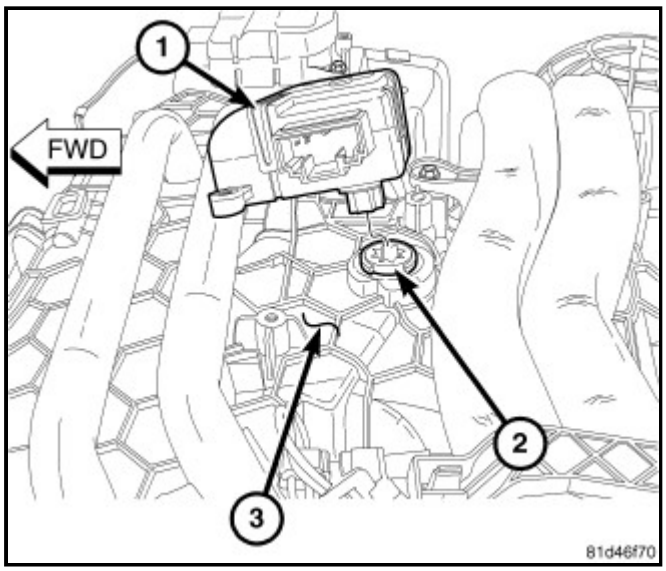
REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove rear heater-A/C housing (4) and place it on a workbench (Refer to 24 - Heating and Air Conditioning/Distribution/HOUSING, HVAC - Removal) .
3. Disconnect the wire harness connector (3) from the rear blend door actuator (2) located on the outboard side of the rear heater-A/C housing.
4. Remove the two screws (1) that secure the rear blend door actuator to the rear heater-A/C housing and remove the actuator.

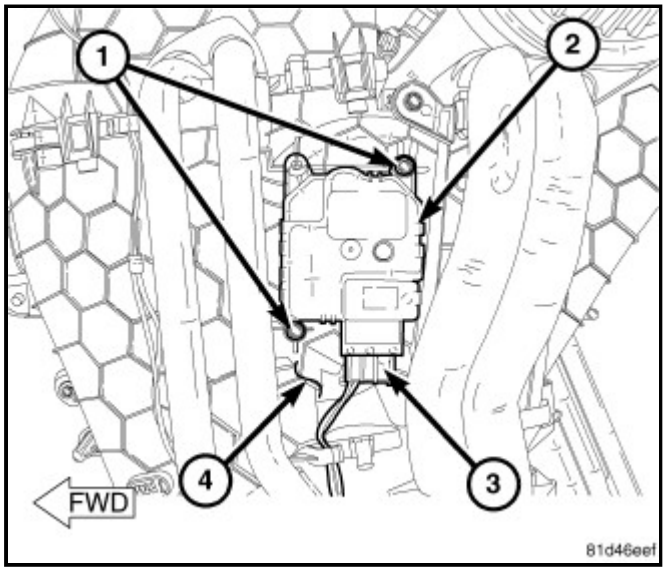


INSTALLATION

1. Position the rear blend door actuator (1) onto the rear heater-A/C housing (3). If necessary, rotate the actuator slightly to align the splines on the actuator output shaft with those on the rear blend-air door pivot shaft (2).



2. Install the two screws (1) that secure the rear blend door actuator (2) to the rear heater-A/C housing (4). Tighten the screws to 1.2 N·m (10 in. lbs.).
3. Connect the wire harness connector (3) to the rear blend door actuator.
4. Install the rear heater-A/C housing (Refer to 24 - Heating and Air Conditioning/Distribution/HOUSING, A/C and Heater - Installation) .
5. Initiate the Actuator Calibrationfunction using a scan tool (Refer to 28 - DTC-Based Diagnostics/HVAC - Standard Procedure) .



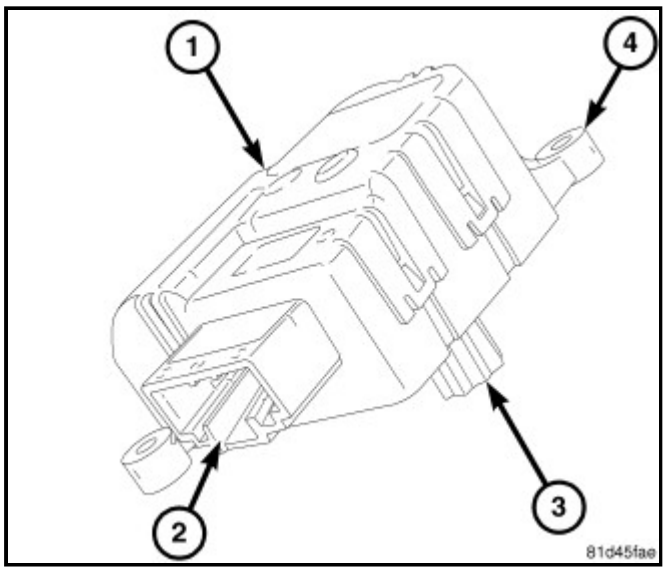
DESCRIPTION

The mode door actuator (1) for the rear heater-A/C system is a reversible, 12 volt direct current (DC), servo motor. The rear mode door actuator is located on the outboard side of the rear heater-A/C housing.

The rear mode door actuator is contained within a black molded plastic housing with an integral wire connector receptacle (2), an output shaft with splines (3) connect it to the rear mode-air door and three integral mounting tabs (4) allow the actuator to be secured to the rear heater-A/C housing. The mode door actuator does not require mechanical indexing to the mode door linkage, as it is electronically calibrated by the A/C-heater control.

The A/C-heater control must be recalibrated each time an actuator motor is replaced (Refer to 28 - DTC-Based Diagnostics/HVAC - Standard Procedure) .

The rear mode door actuator is interchangeable with the actuator for the rear blend-air door.



OPERATION

The rear mode door actuator is connected to the A/C-heater control through the vehicle electrical system by a dedicated two-wire lead and connector of the rear heater-A/C wire harness. The rear mode door actuator can move the rear mode-air door in two directions. When the A/C-heater control pulls the voltage on one side of the motor connection high and the other connection low, the rear mode-air door will move in one direction. When the A/C-heater control reverses the polarity of the voltage to the motor, the rear mode-air door moves in the opposite direction. When the front A/C-heater control makes the voltage to both connections high or both connections low, the rear mode-air door stops and will not move.

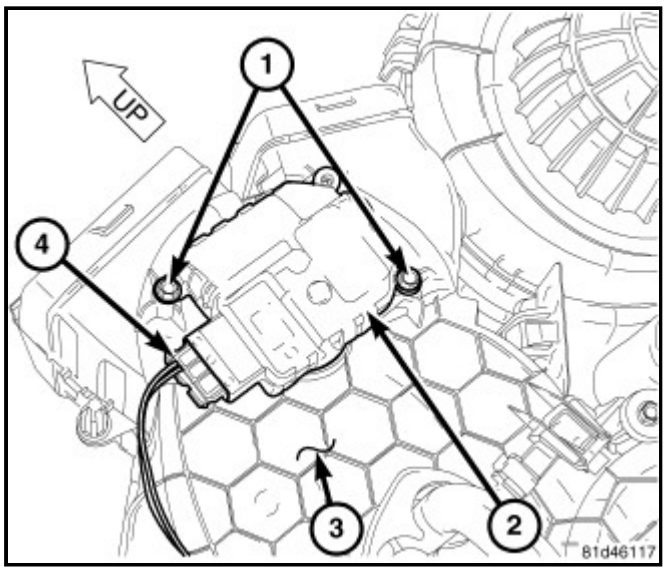
The front A/C-heater control uses a pulse-count positioning system to monitor the operation and relative position of the rear mode door actuator and the rear mode-air door. The front A/C-heater control learns the rear mode-air door stop positions during the calibration procedure and will store a diagnostic trouble code (DTC) for any problems it detects in the rear mode door actuator circuits.

The rear mode door actuator is diagnosed using a scan tool (Refer to 28 - DTC-Based Diagnostics/HVAC - Diagnosis and Testing) .

The rear mode door actuator cannot be adjusted or repaired and must be replaced if inoperative or damaged.

REMOVAL

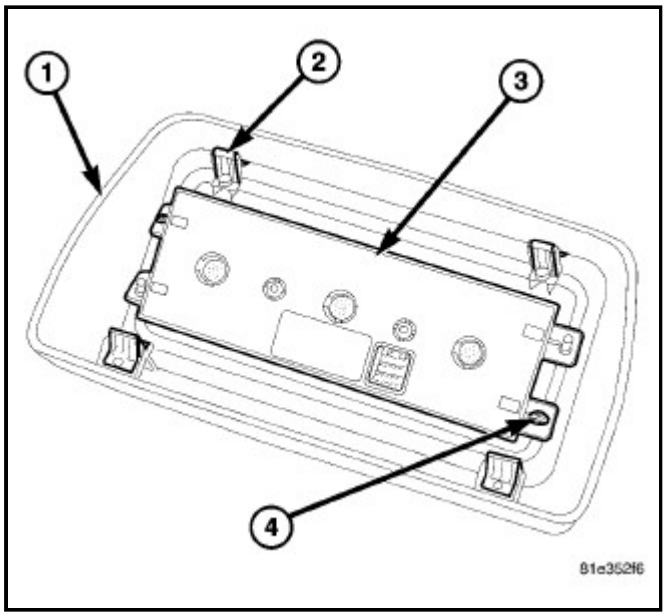
1. Disconnect and isolate the negative battery cable.
2. Remove rear heater-A/C housing (3) and place it on a workbench (Refer to 24 - Heating and Air Conditioning/Distribution/HOUSING, HVAC - Removal) .
3. Disconnect the wire harness connector (4) from the rear mode door actuator (2) located on the outboard side of the rear heater-A/C housing.
4. Remove the two screws (1) that secure the rear mode door actuator to rear heater-A/C housing and remove the actuator.



REMOVAL

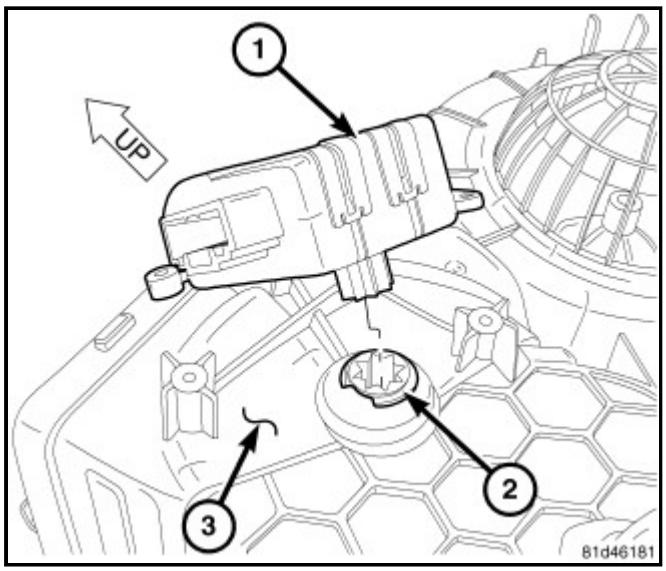
NOTE: Take the proper precautions to protect the face of the rear A/C-heater control bezel from cosmetic damage during this service procedure.

1. Disconnect and isolate the negative battery cable.
2. Remove the rear A/C-heater control (3) and bezel (1) as an assembly from the headliner by releasing the four metal retaining tabs (2) using Trim Stick C-4755 or equivalent.
3. Disconnect the wire harness connector from the back of the rear A/C-heater control and place the control and bezel assembly on a workbench.
4. Remove the two screws (4) that secure the rear A/C-heater control to the rear control bezel and remove the control from the bezel.

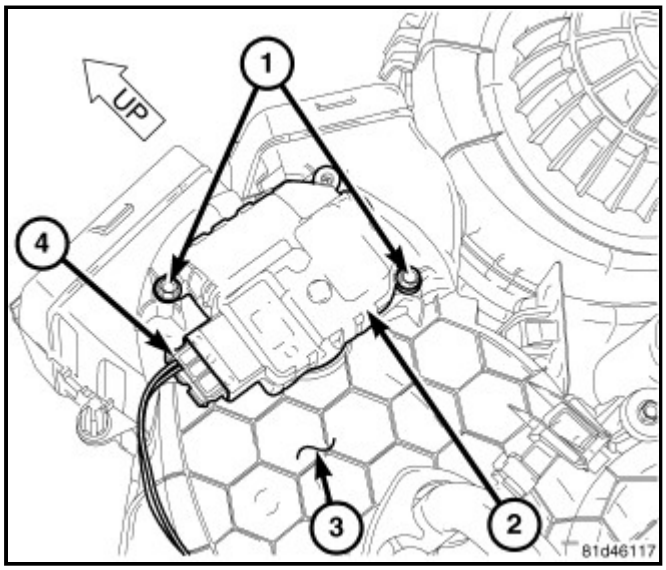


INSTALLATION

1. Position the rear mode door actuator (1) onto the rear heater-A/C housing (3). If necessary, rotate the actuator slightly to align the splines on the actuator output shaft with those on the rear mode-air door pivot shaft (2).



2. Install the two screws (1) that secure the rear mode door actuator (2) to the rear heater-A/C housing (3). Tighten the screws to 1.2 N·m (10 in. lbs.).
3. Connect the wire harness connector (4) to the rear mode door actuator.
4. Install the rear heater-A/C housing (Refer to 24 - Heating and Air Conditioning/Distribution/HOUSING, A/C and Heater - Installation) .
5. Initiate the Actuator Calibration function using a scan tool (Refer to 28 - DTC-Based Diagnostics/HVAC - Standard Procedure) .



DESCRIPTION

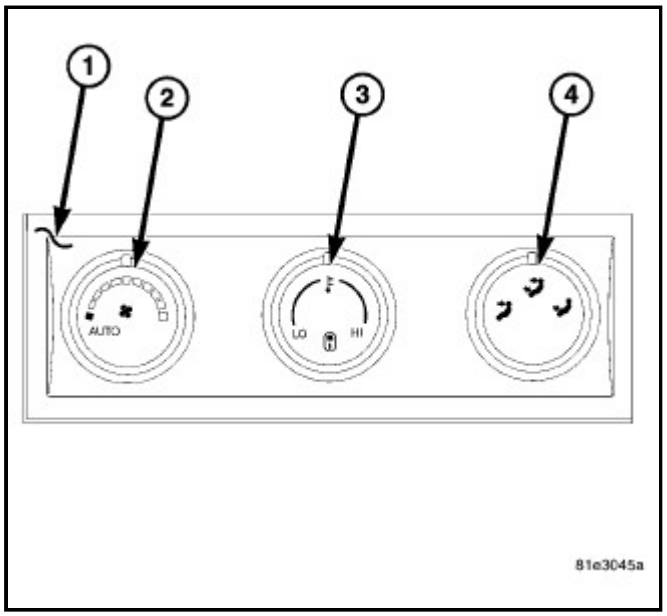
The A/C-heater controls allows the driver and front seat passenger and the intermediate seat passengers the ability to regulate air temperature as well as fan speed for the rear heating-A/C system and provides a floor outlet near the right rear door and upper air outlets at the ceiling. All controls are identified by ISO graphic symbols.

The primary controls for the rear heating-A/C system are located in the instrument panel (Refer to 24 - Heating and Air Conditioning/Controls/CONTROL, A/C and Heater - Description) .

The rear A/C-heater control is located in the headliner and allows intermediate seat passengers to adjust rear air distribution, temperature and blower motor speed when the rear heating-A/C system primary on/off control in the instrument panel is set to the on position and the rear heater-A/C controls are NOT locked out by the driver and front seat passenger.

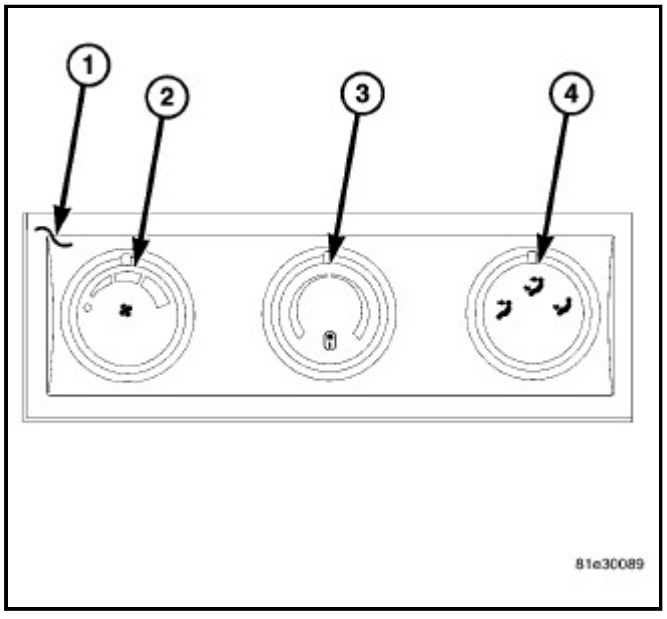
The rear automatic temperature control (ATC) A/C-heater control (1) contains:

- a rotary control knob for fan speed selection and turning the rear heating-A/C system off or to Auto mode (2).
- a rotary control knob for temperature control of the rear discharged air (3). An indicator lamp illuminates in the control when the rear heater-A/C controls are locked out by the driver or front seat passenger.
- a rotary control knob for mode control of the rear discharged air (4).



The rear manual temperature control (MTC) A/C-heater control (1) contains:

- a rotary control knob for fan speed selection and turning the rear heating-A/C system on and off (2).
- a rotary control knob for temperature control of the rear discharged air (3). An indicator lamp illuminates in the control when the rear heater-A/C controls are locked out by the driver or front seat passenger.
- a rotary control knob for mode control of the rear discharged air (4).



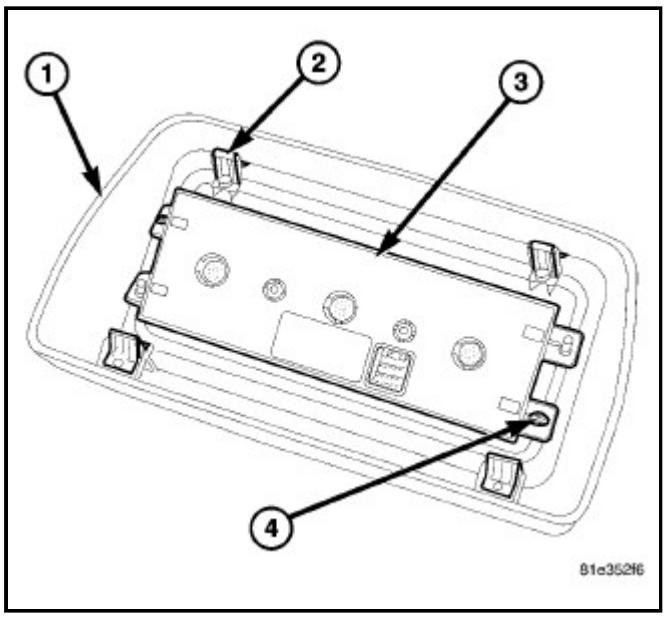
The rear A/C-heater control is a slave potentiometer to the front A/C-heater control and is diagnosed using a scan tool (refer to 24 - HVAC Electrical Diagnostics for more information).

Prior to replacing an A/C-heater control, check for any diagnostic trouble codes (DTCs) related to the heating-A/C systems and run the calibration procedure to verify that the concern is not a system issue, (Refer to 28 - DTC-Based Diagnostics/HVAC - Standard Procedure) .

The rear A/C-heater control cannot be repaired must be replaced if inoperative or damaged. The illumination lamps are available for service replacement.

INSTALLATION

1. Position the rear A/C-heater control (3) to the rear control bezel (1) and align the control to the two plastic guide posts on the back of the bezel.
2. Install the two screws (4) that secure the rear A/C-heater control to the rear control bezel. Tighten the screws to 1.2 N·m (10 in. lbs.).
3. Connect the wire harness connector to the back of the rear A/C-heater control and install the bezel and control as an assembly to the headliner. Make sure the four metal retaining tabs (2) are fully engaged.
4. Reconnect the negative battery cable.
5. Initiate the Actuator Calibration function using a scan tool (Refer to 28 - DTC-Based Diagnostics/HVAC - Standard Procedure) .

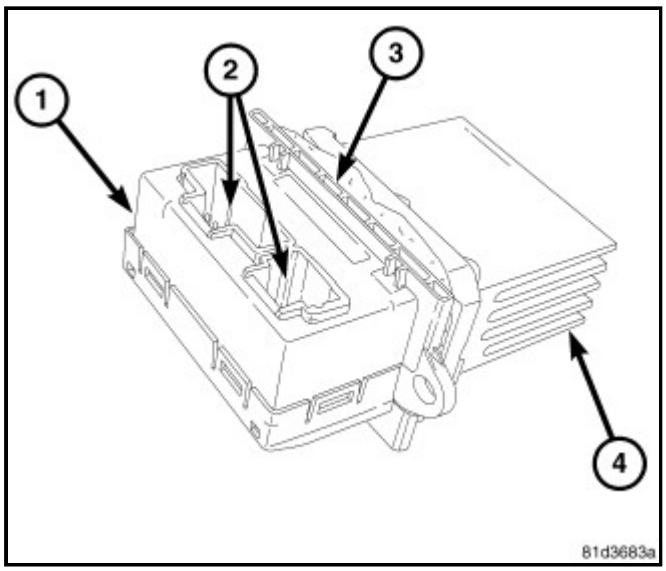


DESCRIPTION

A blower motor power module is used on this model when equipped with the automatic temperature control (ATC) rear heating-A/C system. Models equipped with the manual temperature control (MTC) rear heating-A/C system use a blower motor resistor, instead of the blower motor power module (Refer to 24 - Heating and Air Conditioning/Controls/RESISTOR, Blower Motor - Description) .

The rear blower motor power module (1) is mounted to the inboard side of the rear heating-A/C housing, located on the right side of the vehicle. The rear blower motor power module consists of a molded plastic housing with two integral wire connector receptacles (2) for the power module electronic circuitry, a mounting plate (3) with a gasket and a finned aluminum heat sink (4).

The rear blower motor power module can be accessed for service without removing the rear heater-A/C housing.



OPERATION

The rear blower motor power module is connected to the vehicle electrical system through a dedicated lead and connector of the rear body wire harness. A second lead and connector of the wire harness is connected to the rear blower motor. The rear blower motor power module allows the microprocessor-based automatic temperature contro (ATC) A/C-heater control to calculate and provide infinitely variable blower motor speeds based upon either manual blower switch input or the ATC programming using a pulse width modulated (PWM) circuit strategy.

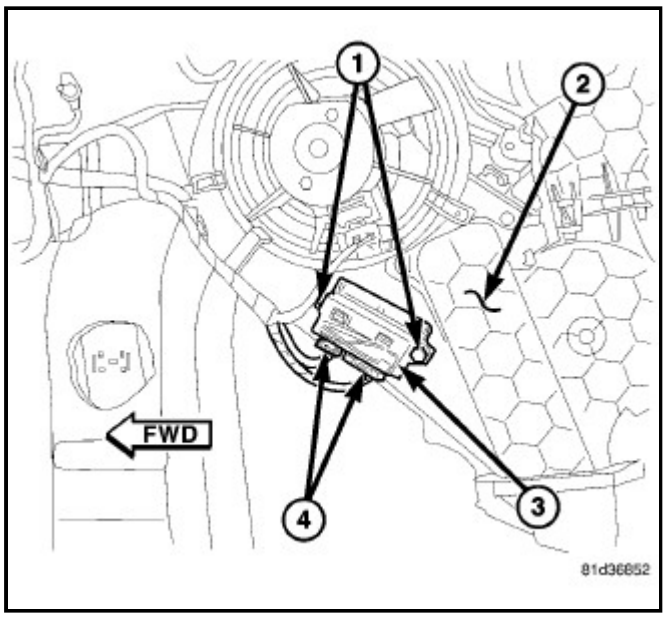
The PWM voltage is applied to a comparator circuit which compares the PWM signal voltage to the rear blower motor feedback voltage. The resulting output drives the power module circuitry, which provides a linear output voltage to change or maintain the desired blower speed.

The rear blower motor power module is diagnosed using a scan tool (Refer to 28 - DTC-Based Diagnostics/HVAC - Diagnosis and Testing) .

The rear blower motor power module cannot be adjusted or repaired must be replaced if inoperative or damaged.

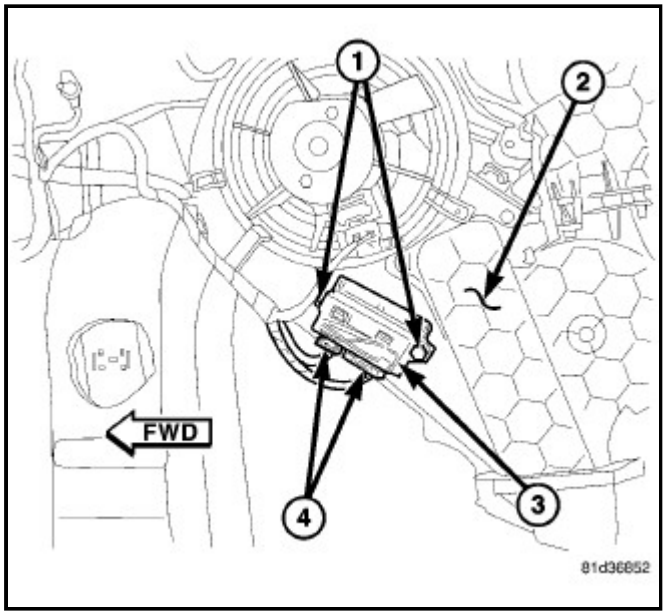
REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove right rear quarter trim panel (Refer to 23 - Body/Interior/PANEL, Quarter Trim - Removal) .
3. Disconnect the two wire harness connectors (4) from the rear blower motor power module (3).
4. Remove the two screws (1) that secure the rear blower motor power module to the rear heater-A/C housing (2) and remove the module.



INSTALLATION

1. Position the rear blower motor power module (3) onto the rear heater-A/C housing (2).
2. Install the two screws (1) that secure the rear blower motor power module to the rear heater-A/C housing. Tighten the screws to 1.2 N·m (10 in. lbs.).
3. Connect the two wire harness connectors (4) to the rear blower motor power module.
4. Install the right rear quarter trim panel (Refer to 23 - Body/Interior/PANEL, Quarter Trim - Installation) .
5. Reconnect the negative battery cable.

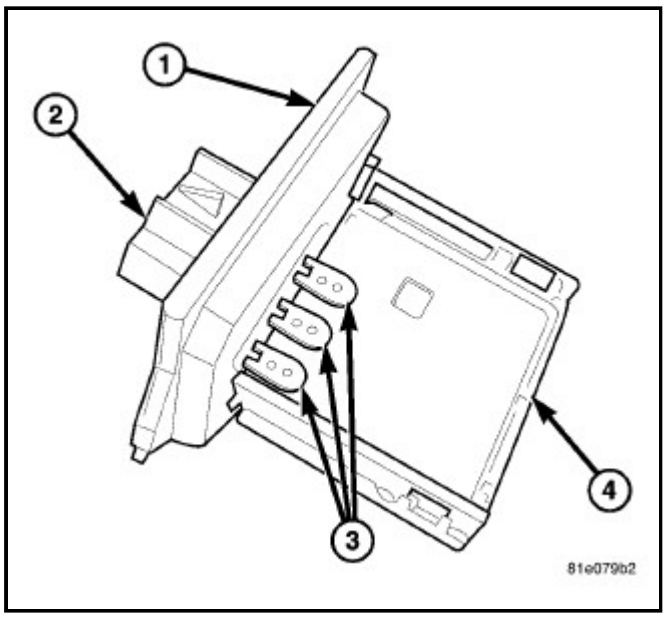


DESCRIPTION

A blower motor resistor is used on this model when equipped with the manual temperature control (MTC) rear heating-A/C system. Models equipped with the automatic temperature control (ATC) rear heating-A/C system use a blower motor power module, instead of the blower motor resistor (Refer to 24 - Heating and Air Conditioning/Controls/MODULE, Power - Description) .

The rear blower motor resistor is mounted to the inboard side of the rear heating-A/C housing, located on the right side of the vehicle. The rear blower motor resistor consists of a molded plastic mounting plate (1) with an integral wire connector receptacle (2). Concealed behind the mounting plate are resistors (3) located between a two-piece stamped steel heat sink (4).

The rear blower motor resistor can be accessed for service without removing the rear heater-A/C housing.



OPERATION

The blower motor resistor for the rear heating-A/C system is connected to the vehicle electrical system through a dedicated wire lead and connector of the rear heater-A/C wire harness. The rear blower motor resistor has an electrical circuit board with three resistors, each of which will reduce the current flow through the rear blower motor to change the blower motor speed.

The blower motor switch for the MTC rear heater-A/C system directs the ground path for the rear blower motor through the correct resistor to obtain the selected speed. With the rear blower motor control in the lowest speed position, the ground path for the rear blower motor is applied through all of the resistors. Each higher speed selected with the rear blower motor control applies the blower motor ground path through fewer of the resistors, increasing the rear blower motor speed. When the blower motor switch is in the highest speed position, the blower motor resistors are bypassed and the blower motor receives a direct path to ground through the rear blower motor switch.

The rear blower motor resistor cannot be adjusted or repaired and it must be replaced if inoperative or damaged.

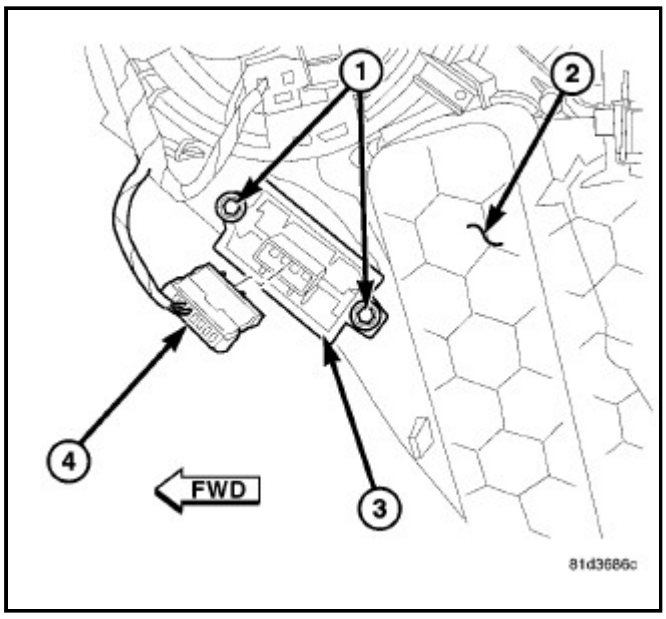
REAR BLOWER MOTOR RESISTOR

NOTE: **See Wiring Information for circuit descriptions and diagrams. Wiring Information includes wiring diagrams, proper wire and connector repair procedures, further details on wire harness routing and retention, as well as pin-out and location views for the various wire harness connectors, splices and grounds.**

1. Disconnect and isolate the negative battery cable.
2. Disconnect the wire harness connector from the blower motor resistor (Refer to 24 - Heating and Air Conditioning/Controls/RESISTOR, Blower Motor - Removal) .
3. Using an ohmmeter, check for continuity between all of the blower motor resistor terminals. In each case there should be continuity. If OK, repair the wire harness circuits between the blower motor switch and the blower motor resistor or the blower motor as required. If not OK, replace the inoperative blower motor resistor.

REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove right rear quarter trim panel (Refer to 23 - Body/Interior/PANEL, Quarter Trim - Removal) .
3. Disconnect the wire harness connector (4) from the rear blower motor resistor (3).
4. Remove the two screws (1) that secure the rear blower motor resistor to the rear heater-A/C housing (2) and remove the resistor.



INSTALLATION

1. Position the rear blower motor resistor (3) onto the rear heater-A/C housing (2).
2. Install the two screws (1) that secure the rear blower motor resistor to the rear heater-A/C housing. Tighten the screws to 1.2 N·m (10 in. lbs.).
3. Connect the wire harness connector (4) to the rear blower motor resistor.
4. Install the right rear quarter trim panel (Refer to 23 - Body/Interior/PANEL, Quarter Trim - Installation) .
5. Reconnect the negative battery cable.