

SUNROOF - SERVICE INFORMATION

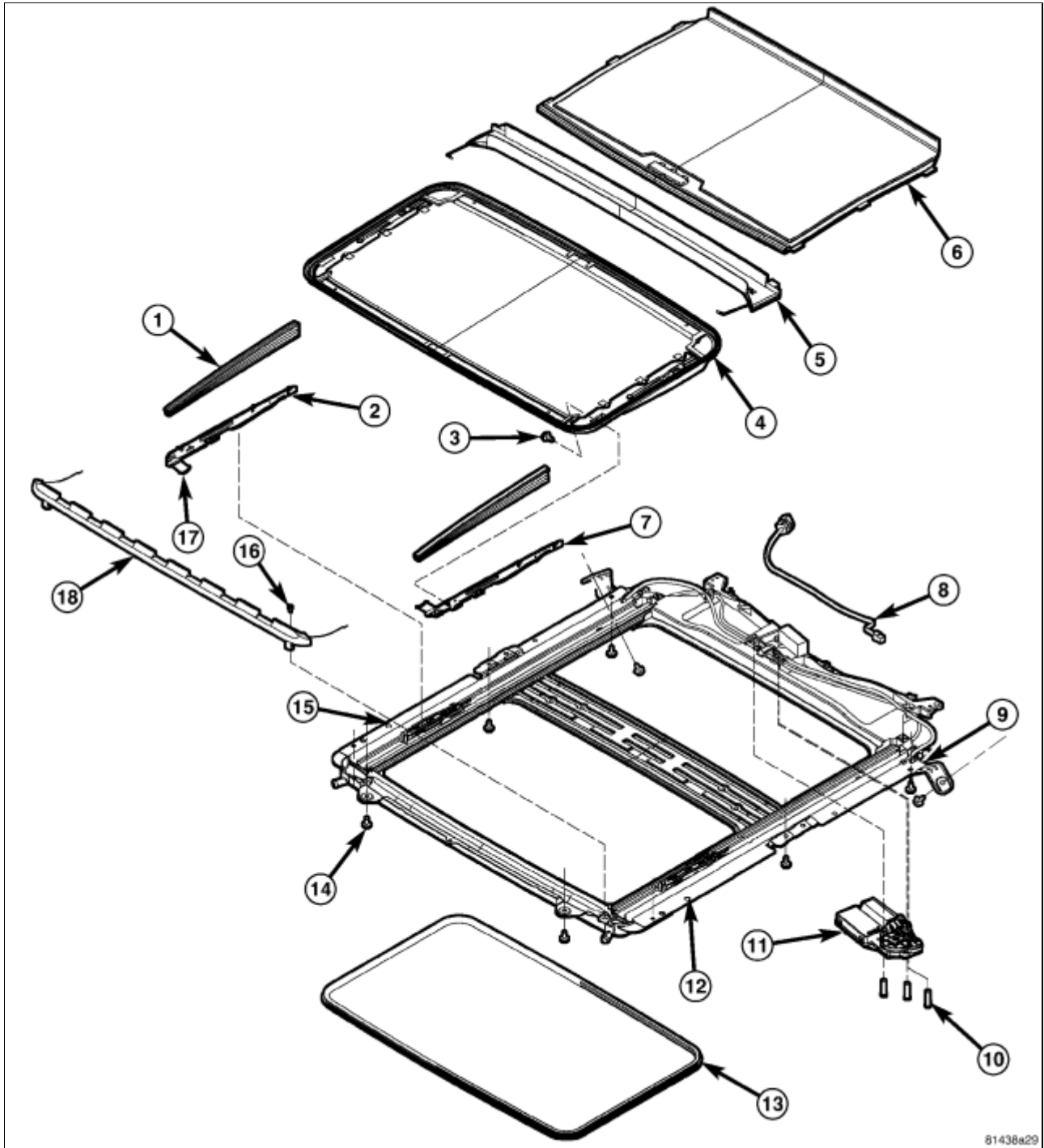
SUNROOF - SERVICE INFORMATION

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DESCRIPTION



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The power sunroof system allows the sunroof to be opened, closed or placed in the vent position electrically by actuating a switch in the overhead console. The sunroof system receives battery feed through a fuse in the Power Distribution Center (PDC). The sunroof will operate normally with the key in any position while the Accessory Delay system is active.

The sunroof glass panel tilts upward at the rear for ventilation and slides rearward under the roof when open. The panel seals flush with the roof in the closed position to eliminate wind noise. The sunroof includes a manual-sliding sunshade to cover the deep-tinted glass panel.

In addition to the standard power sunroof operation, this vehicle offers several additional features. There is an express (one-touch) opening and closing feature as well as Excessive Force Limitation (EFL). The EFL function detects obstacles trapped between the glass and the vehicle roof during a closing motion. Upon sensing an obstacle the EFL function will reverse direction of the glass to allow removal of the obstacle.

The main components of the power sunroof system are:

- The motor/module assembly
- The power sunroof glass and frame assembly

- The power sunroof switch
- The manual-sliding sunshade

OPERATION

This vehicle has a vent, tilt and slide power sunroof system with express (one-touch) open and closing feature. The sunroof system receives constant battery feed through a fuse in the Power Distribution Center (PDC). The sunroof will operate normally with the key in any position while the Accessory Delay system is active. If the sunroof is moving when the key is turned to the START position (crank engine), all motions stop until the key is released, then the previously requested sunroof motion will resume. The sunroof will also complete a requested motion if the Accessory Delay system goes inactive while the motion is in progress.

A combination push-button and rocker switch module mounted in the overhead console controls sunroof operation. The sunroof switch is a rocker design with a push button in the center of the two halves of the rocker. Pressing the rocker towards the front of the car commands the sunroof closed. Pressing the rocker towards the rear of the car commands the sunroof open. Pressing the center push button commands the sunroof up into the vent position (Rear of sunroof glass raises above the vehicle roof with glass still covering the sunroof opening). All switch commands operate with the glass starting in any position. ([Refer to 8 - ELECTRICAL/POWER TOP/SWITCH - OPERATION](#)) for additional information.

An electronic control system, integral to the motor/module assembly, provides the express open and close functions. Pressing the "open" or "close" end of the rocker switch moves the sunroof glass panel to the full open or full closed position, respectively. During express closing, anytime an obstacle is detected in the way of the glass, the motor will stop and reverse travel to avoid pinching an occupant's finger, ice in the track, etc. This function is called Excessive Force Limitation (EFL). There are two methods of overriding the EFL function.

1. When three EFL events occur without the glass being allowed to fully close, the next close attempt will only move while the close switch is continuously actuated. This allows the sunroof to be forced closed if multiple close attempts fail.
2. If the sunroof close switch is continuously actuated during an EFL event, through the reversal, and during a two second wait time, then continuing to hold the close switch will cause the roof to move towards close with the EFL protection disabled. This allows the sunroof to be forced closed if it is known that a reversal will occur.

While in EFL override, the closing motion will cease if the sunroof switch is released at any time.

The motor/module is programmed to learn the speed required to drive the panel based on position and recalibrates itself as needed. If the sunroof becomes uncalibrated, it will only respond to the vent switch. If the vent switch is pressed, the glass will move toward vent; if the switch is released, all motion stops. In the event that the sunroof system becomes uncalibrated perform the sunroof position calibration procedure, ([Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE -SUNROOF POSITION CALIBRATION](#)).

POWER TOP - SUNROOF

Any diagnosis of the power sunroof system should begin with the use of a scan tool and the proper Diagnostic Procedures Information. The scan tool can provide confirmation that the Controller Area Network (CAN) Data Bus is functional, that all of the electronic modules are sending and receiving the proper messages on the CAN Data Bus, and that the power sunroof motor is being sent the proper hard wired output by the sunroof switch.

For complete circuit diagrams, refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds.

Refer to the appropriate diagnostic information.

SUNROOF

Refer to [SUNROOF DIAGNOSIS CHART](#) for possible causes. Before beginning sunroof diagnostics verify that all other power accessories are in proper operating condition. If not, a common electrical problem may exist. Refer to Wiring Diagrams, in this publication for circuit, splice and component descriptions. Check the condition of the circuit protection (20 amp circuit breaker in the Junction Block). Inspect all wiring connector pins for proper engagement and continuity. Check for battery voltage at the power sunroof controller, refer to Wiring Diagrams, for circuit information. If battery voltage of more than 10 volts is detected at the controller, proceed with the following tests (the controller will not operate at less than 10 volts).

Before beginning diagnosis for wind noise or water leaks, verify that the problem was not caused by releasing the control switch before the sunroof was fully closed. The sunroof module has a water-management system. If however, the sunroof glass is in a partial closed position, high pressure water may be forced beyond the water management system boundaries and onto the headlining.

Every time the sunroof module loses power it must be initialized. This is done by connecting power to the sunroof and moving the sunroof toward the closed position. When initialization occurs a slight “kick” in the sunroof module will be seen and heard. This is the indication that the sunroof module is initialized

SUNROOF DIAGNOSIS CHART

SYMPTOM	POSSIBLE CAUSE
Sunroof motor inoperative.	Faulty control switch.
	Faulty circuit ground between sunroof module, control switch, and body harness.
	Faulty power circuit between sunroof module, control switch, and body harness.
	Faulty sunroof drive motor.
	Faulty sunroof module.
Audible whine when switch is depressed, sunroof does not operate.	Faulty sunroof drive motor.
	Binding cable.

Audible clicking or ratcheting when switch is pressed, sunroof does not operate.	Broken or worn drive cable.
	Worn drive motor gear.
	Mechanisms not synchronized.
Sunroof vents and opens, but does not close.	Broken or disengaged trough guide
	Binding cable.
	Faulty circuit.
	Faulty control switch.
	Faulty sunroof module.
	Faulty drive motor.
Sunroof vents, but does not open.	Binding cable or mechanism.
	Faulty circuit.
	Faulty switch.
	Faulty sunroof module.
Sunroof does not vent	Binding cable or mechanism.
	Faulty circuit.
	Faulty control switch.
	Faulty sunroof module.
Sunroof water leak.	Drain tubes clogged or kinked or disconnected from the sunroof.
	Glass panel improperly adjusted.
	Faulty glass panel seal.
Gurgling sound from sunroof	Low spot in drain hose routing, allowing water to stand.

Wind noise from sunroof.	Glass panel compression to the roof opening not consistent.
	Wind deflector not deploying properly.
	Glass not installed or adjusted properly.
	Faulty glass panel seal.
Buzz, Squeak, Rattles from sunroof	Loose or broken attaching hardware.
	No lubrication in track.
	Worn or broken mechanism.
	Cables bunched or kinked.
Sunshade will not function or does not operate smoothly	Sunshade feet are broken.
	Sunshade feet are in the wrong track.
	Track obstructions or interference.
	Trim lace incorrectly installed in track.
Glass movement not consistent or glass does not operate smoothly	Glass and Track timing.
	Glass and Track alignment.
	Cables and Guide alignment.
Broken or jammed guide mechanism	Mechanism cover was not installed correctly.

WATER DRAINAGE AND WIND NOISE DIAGNOSIS

The sliding glass panel is designed to seal water entry with a snug fit between the roof and the seal. The fit can be checked by inserting a business card or equivalent, between the roof and the seal. The piece of paper should have some resistance when pulled out

when the glass panel is in the closed position. The sunroof housing will drain off a minimum amount of water. Excessive wind noise could result if the gap clearances are exceeded. The sunroof glass panel may need to be adjusted. ([Refer to 23 - BODY/SUNROOF/GLASS PANEL - ADJUSTMENTS](#))

Adequate drainage is provided by a drain trough in the sunroof housing which encircles the sliding glass panel and leads to drain hoses. If a wet headliner or other water leak complaints are encountered, before performing any adjustments, first ensure that the drainage system is not plugged or disconnected. Use a pint container to pour water into the sunroof housing drain trough. If water flow is restricted, use compressed air to blow out any material plugging the drain system. Retest system again.

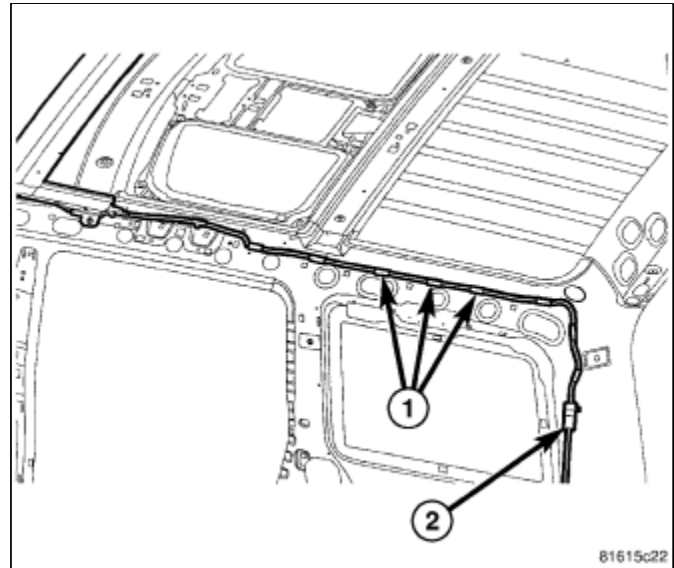
To further check for a disconnected drain hose:

NOTE: Care must be taken not to fold or kink the headliner upon removal.

1. Lower headliner as necessary to gain access to sunroof housing drain tubes. ([Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL](#))
2. Repair as necessary.

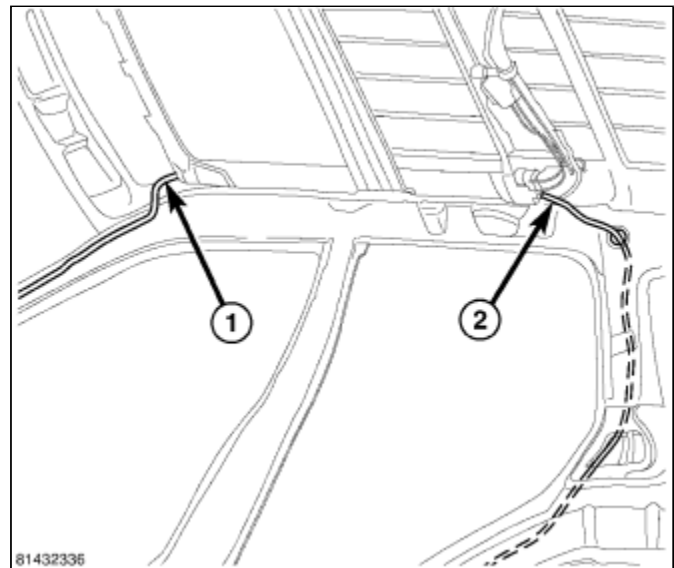
REMOVAL

WARNING: The Excessive Force Limitation (EFL) feature must be calibrated any time a sunroof motor/module is replaced with a new component. Failure to perform this procedure could result in vehicle damage and/or personal injury. ([Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE - EXCESSIVE FORCE LIMITATION \(EFL\) CALIBRATION](#)) for the appropriate procedure.



1. Move glass panel to the fully closed position.
2. Disconnect and isolate the battery negative cable.
3. Remove headliner ([Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL](#)).
4. Disconnect the sunroof wire harness electrical connector (2) and separate the harness support clips (1) from the body.

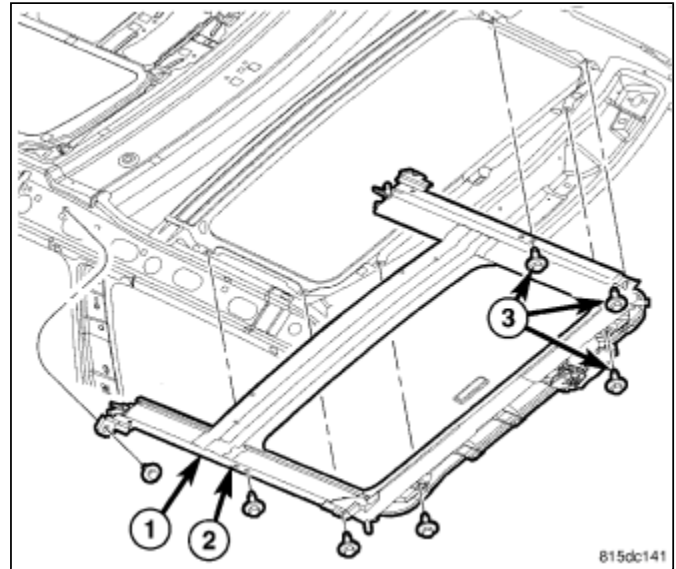
5. Disconnect the front (1) and rear (2) drain tubes from sunroof housing.



6. Remove the fasteners (1) and (2) and remove the DVD support bracket, if equipped.

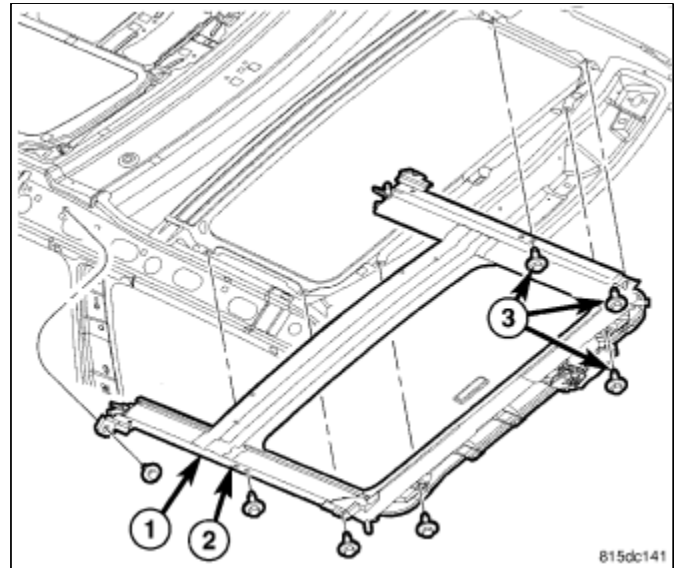


7. Remove the front (2) and rear (4) fasteners.
8. With the aid of a helper, support the sunroof and remove the fasteners (3) attaching sunroof assembly to roof panel.
9. Remove the sunroof from vehicle.



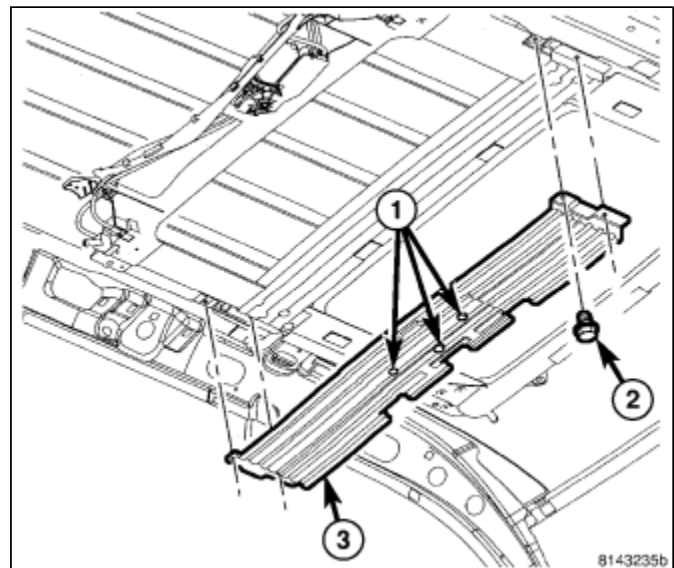
INSTALLATION

WARNING: The Excessive Force Limitation (EFL) feature must be calibrated any time a sunroof motor/module is replaced with a new component. Failure to perform this procedure could result in vehicle damage and/or personal injury. [\(Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE - EXCESSIVE FORCE LIMITATION \(EFL\) CALIBRATION\)](#) for the appropriate procedure.

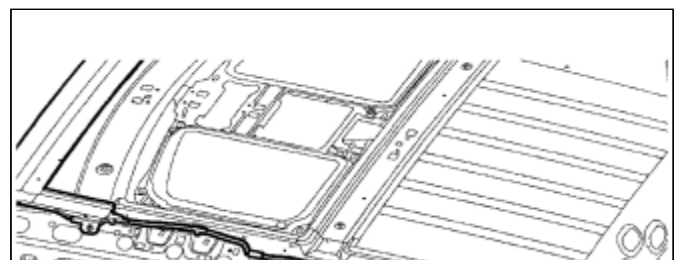


1. Verify that glass panel is loose and slightly retracted.
2. Raise sunroof module assembly and guide it carefully into position.
3. Hand start the eight screws (3).
4. Line up the locating holes and tighten the attaching screws (3) to 9 N·m (80 in. lbs.).

5. Install the DVD support bracket (3), if equipped.
6. Install the bolts (2) and tighten to 9 N·m (80 in. lbs.).
7. Install the bolts (1) and tighten to 10 N·m (85 in. lbs.).



8. Connect the electrical connector (2) and seat the three support clips (1) fully.



9. Connect the front (1) and rear (2) drain tubes to the sunroof .

10. Adjust the sunroof glass. ([Refer to 23 - BODY/SUNROOF/GLASS PANEL - ADJUSTMENTS](#))

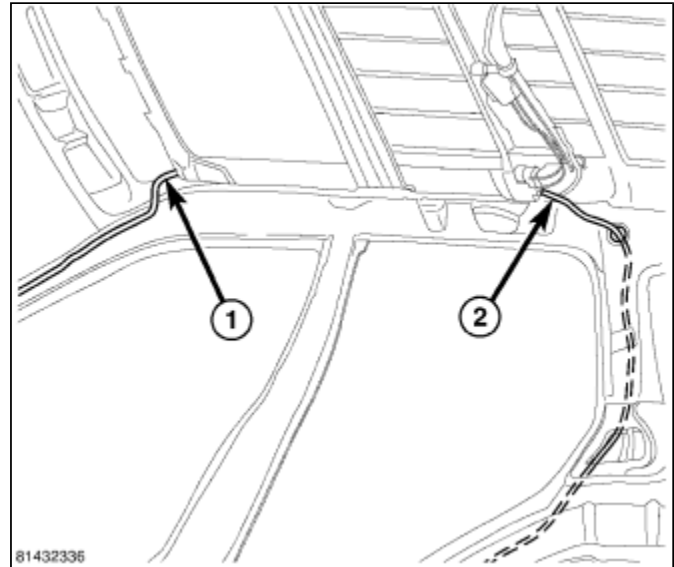
11. Connect battery negative cable.

12. Install the vehicle headliner, ([Refer to 23 - BODY/INTERIOR/HEADLINER - INSTALLATION](#)).

13. Perform the sunroof position calibration, ([Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE - SUNROOF POSITION CALIBRATION](#)).

14. Perform the Excessive Force Limitation (EFL) calibration, ([Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE - EXCESSIVE FORCE LIMITATION \(EFL\) CALIBRATION](#)).

15. Verify proper operation of the power sunroof system.

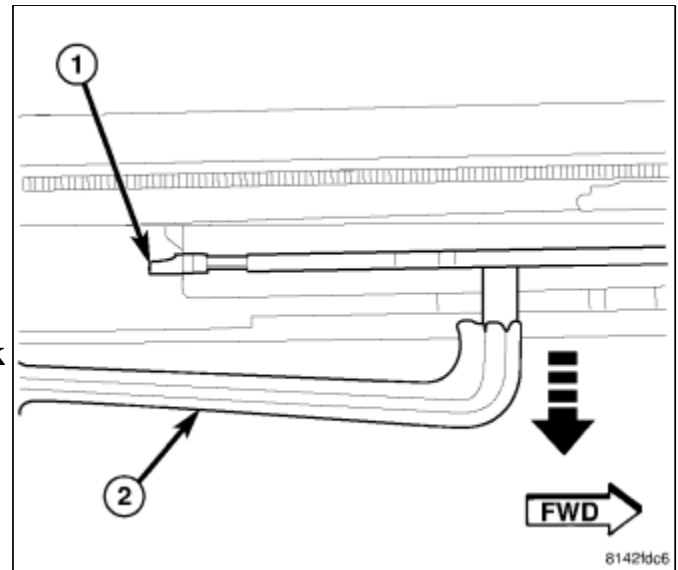


REMOVAL

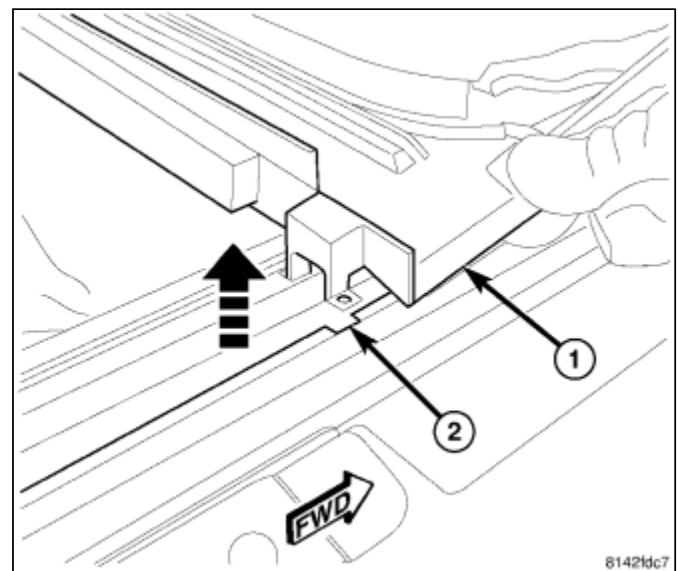
1. Remove glass panel. ([Refer to 23 - BODY/SUNROOF/GLASS PANEL - REMOVAL](#))

2. Separate the drain channel arms (2) from the guide mechanisms (1) one at a time.

CAUTION: Do not pry the channel arms apart at the same time or you could break the drain channel.

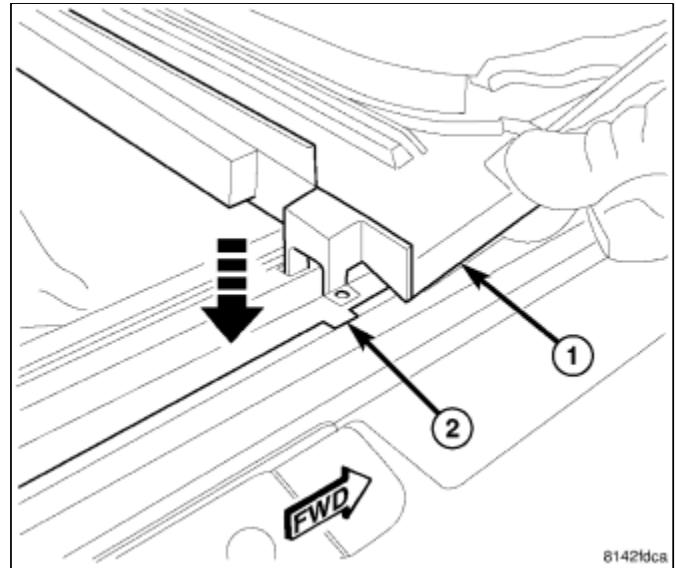


3. Carefully slide the drain channel (1) forward to the notches (2) in the frame and remove from the vehicle.



INSTALLATION

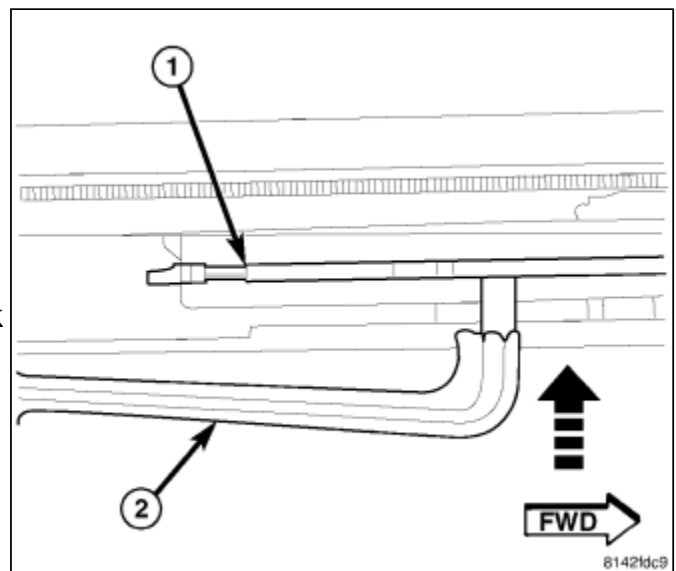
1. Carefully position the drain channel (1) into the notches (2) in the frame and slide rearward.



2. Install the drain channel arms (2) into the mechanism (1) holes one at a time with the reinforcements on the inside of mechanism arms.

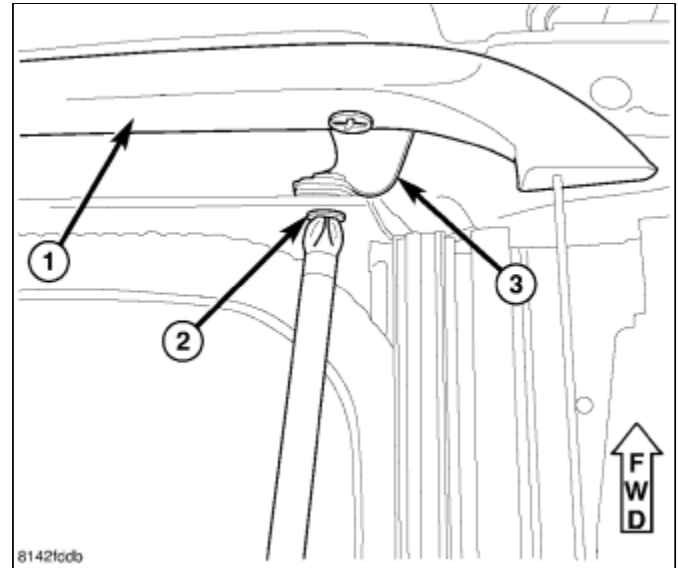
CAUTION: Do not pry the channel arms apart at the same time or you could break the drain channel.

3. Install the sunroof glass. ([Refer to 23 - BODY/SUNROOF/GLASS PANEL - INSTALLATION](#))

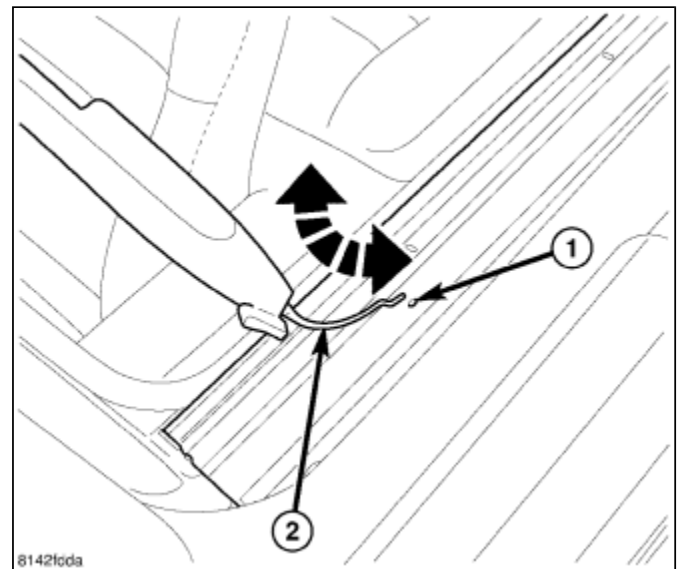


REMOVAL

1. Open the sunroof fully.
2. Remove the strap screws (2) from the beam area release the strap (3).

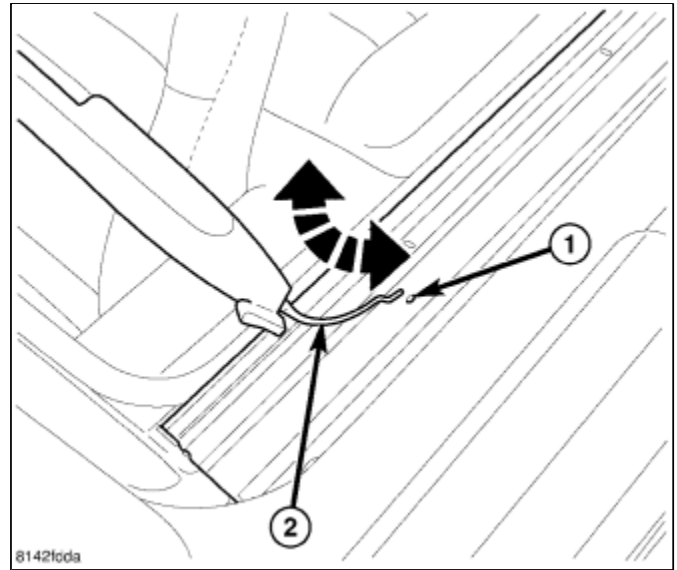


3. Rotate the deflector up and remove springs (2) from the holes in the frame (1).

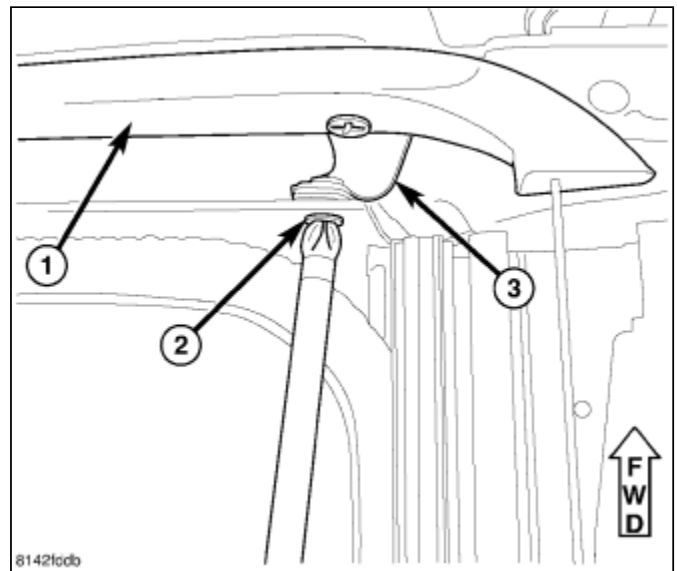


INSTALLATION

1. Position the deflector spring arms (2) into the holes of the frame (1).

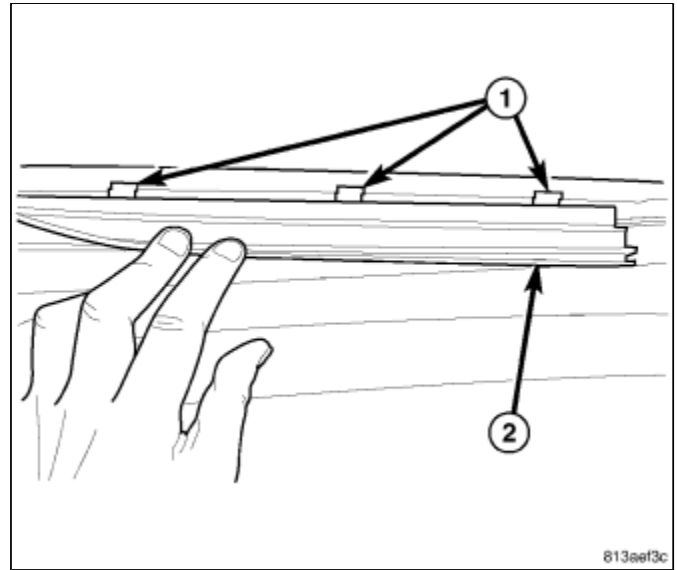


2. Rotate the deflector down, attach the straps (3) and install the strap screws (2) into the front beam.
3. Verify sunroof operation and alignment.

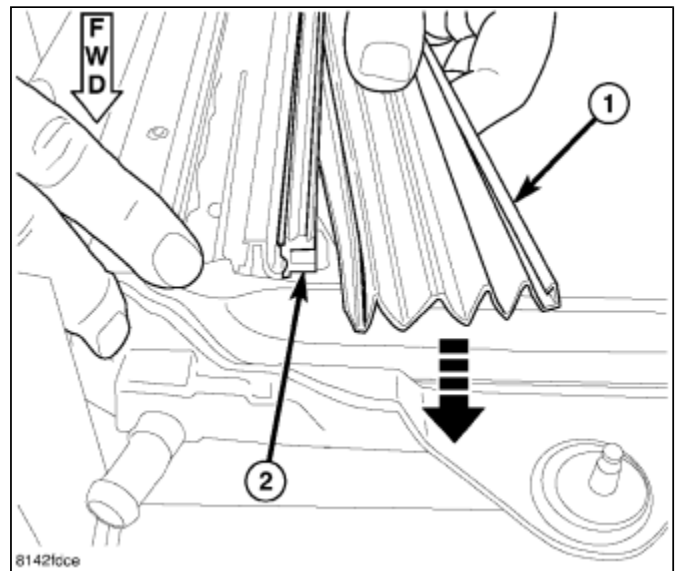


REMOVAL

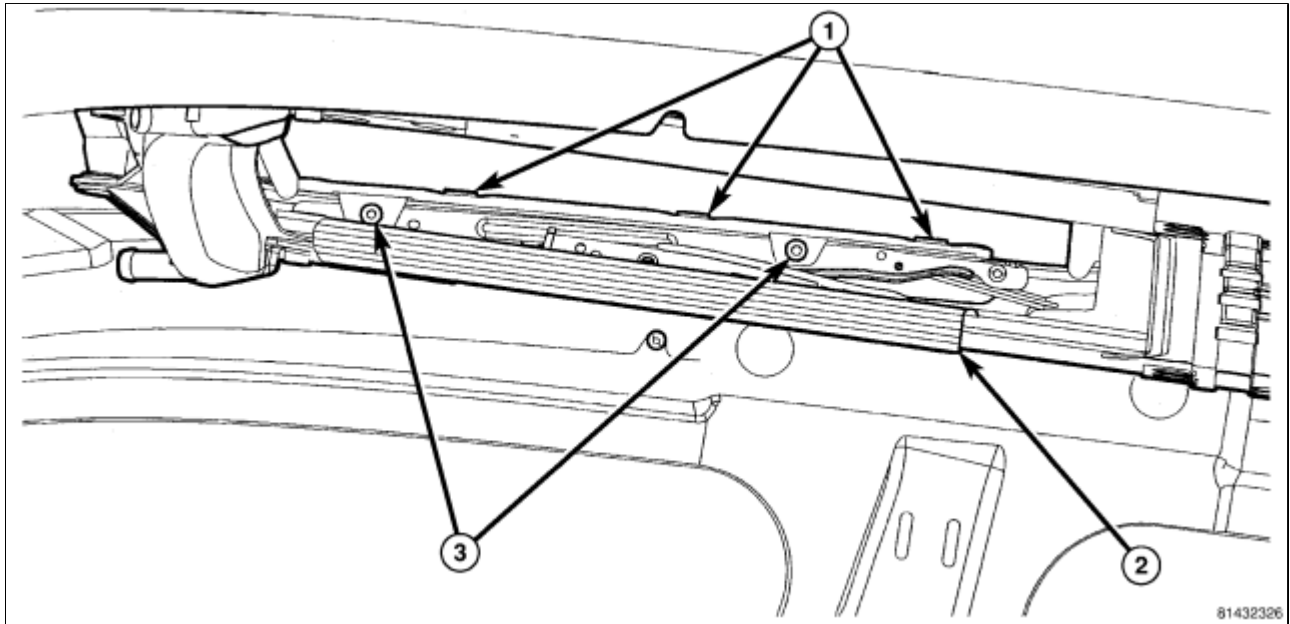
1. Move the glass panel to the full closed position.
2. Slide sunshade rearward to the open position.
3. Separate the mechanism covers (2) from the tabs (1) on the glass panel.



4. Hold both mechanism covers down and open the sunroof fully.
5. Slide the mechanism covers (1) out the front of the guide in the frame (2).



INSTALLATION



1. Position glass panel on to mechanism lift arms.

CAUTION: Verify that the retaining tabs are located on the **INSIDE** of the guide mechanism arms.

2. Start the attaching screws (3).

3. Connect a 12v power supply and verify that the sunroof is in the closed position.

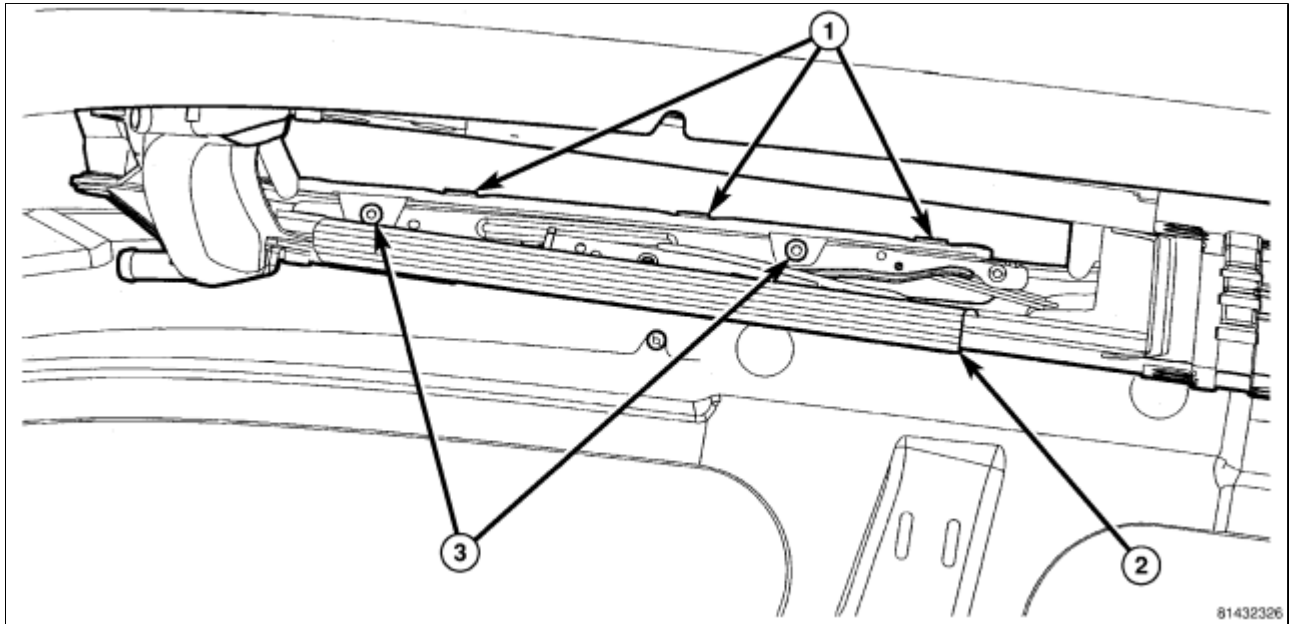
4. Adjust sunroof glass to fit flush with roof line ([Refer to 23 - BODY/SUNROOF/GLASS PANEL - ADJUSTMENTS](#)).

5. Tighten the screws (3) to 3.5 N·m (30 in. lbs.).

6. Position the mechanism covers (2) over the glass tabs (1) between the locating features and seat fully.

7. Verify sunroof operation and alignment.

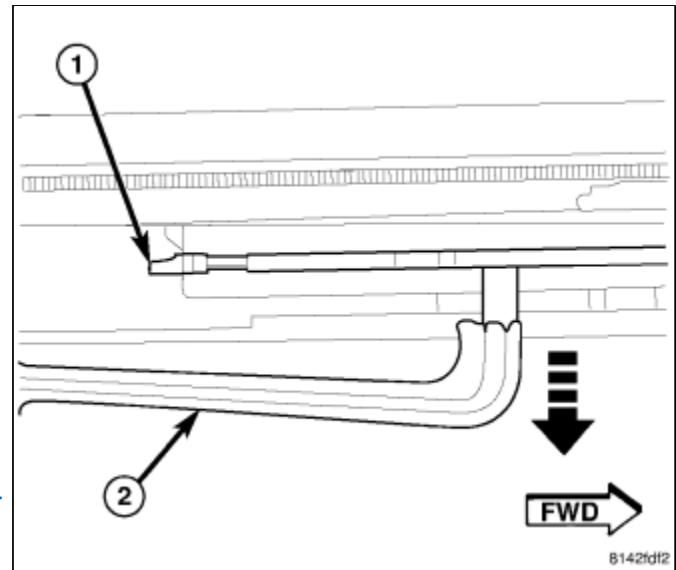
INSTALLATION



1. With the sunroof in the open position, snap the mechanism cover (2) into the lower guide channel.
2. Hold down each cover and close the sunroof.
3. Snap the upper portion of the cover into the retaining clips (1) on the glass panel between the locating features.

REMOVAL

1. Place the sunroof in the vent position.
2. Remove the sunroof assembly. ([Refer to 23 - BODY/SUNROOF/ASSEMBLY-MODULE - REMOVAL](#))
3. Remove the motor. ([Refer to 8 - ELECTRICAL/POWER TOP - SUNROOF SERVICE INFO/MOTOR/MODULE-SUNROOF - REMOVAL](#))
4. Remove the glass. ([Refer to 23 - BODY/SUNROOF/GLASS - REMOVAL](#))
5. Remove the wind deflector. ([Refer to 23 - BODY/SUNROOF/DEFLECTOR-WIND - REMOVAL](#))

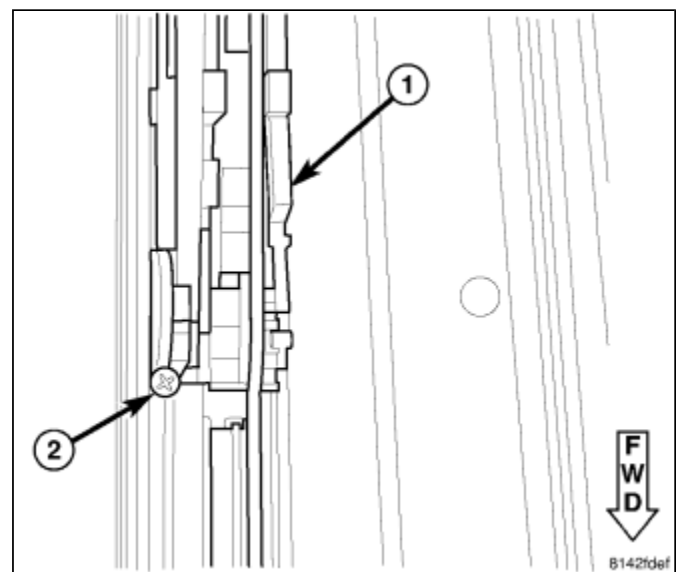


6. Separate the drain channel arms (2) from the guide mechanisms (1) one at a time.

CAUTION: Do not pry the channel arms apart at the same time or you could break the drain channel.

7. Slide the drain channel rearward out of the way.

8. Remove the hard stop screw from the frame.

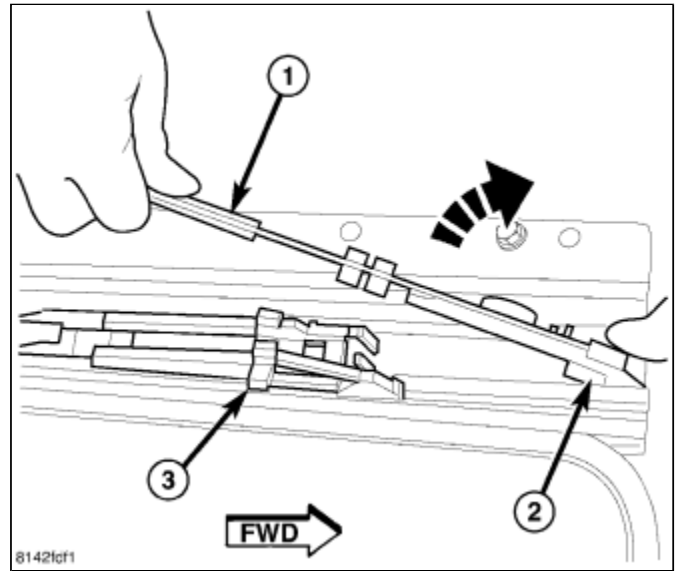


9. Push the drive cable and guide plate forward past the hard stop screw location



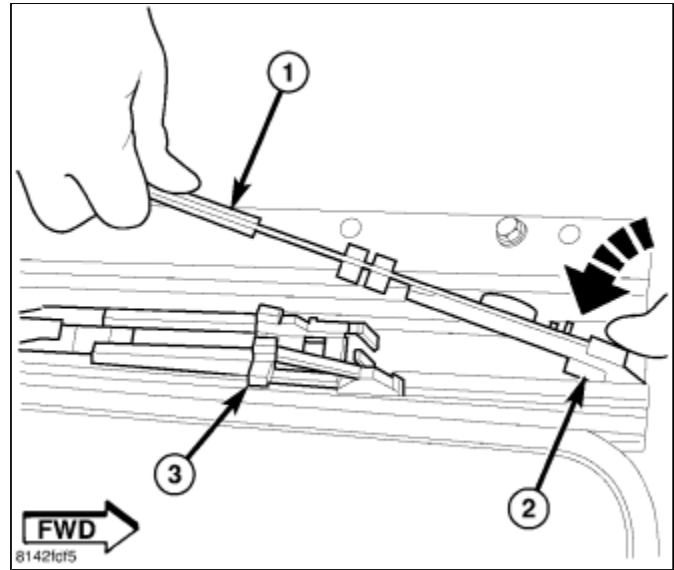
until the glass guide comes loose.

10. Rotate the guide (1) up and out of the front beam (3) and release the front foot (2) from the channel guide.

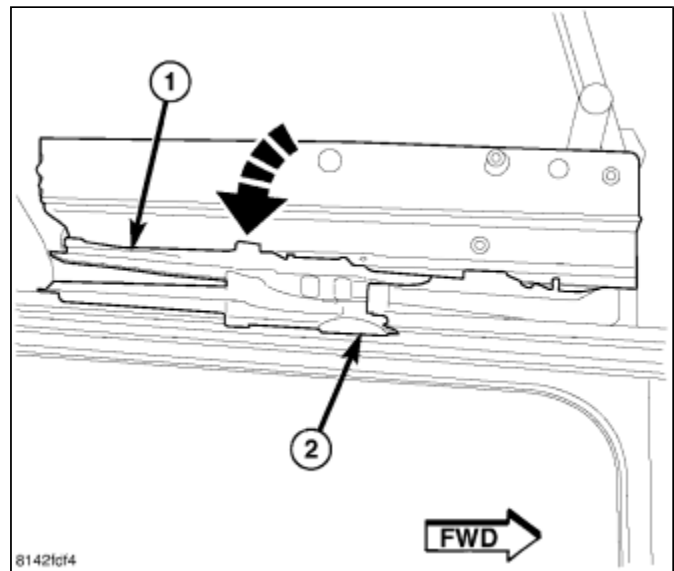


INSTALLATION

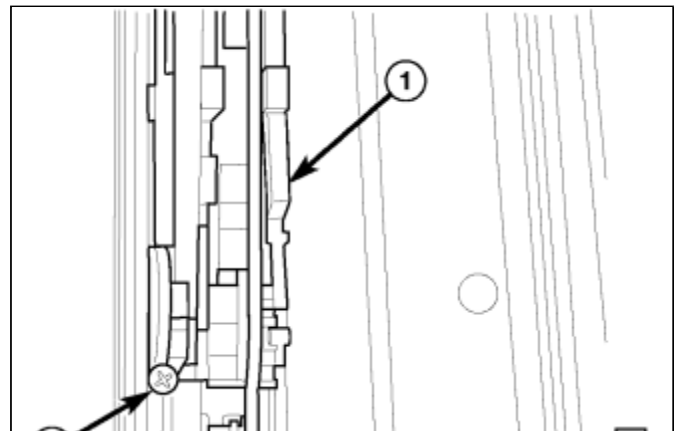
1. With the drive cable plate aligned insert the front foot (2) into the guide channel and engage the feet with the front beam (3).



2. Rotate the guide plate (1) inboard until the feet of the guide are engaged into the front beam (2).



3. Push the guide assembly (1) and drive cable rearward past the hard stop location.
 4. Install the hard stop screw (2) and push the drive cable and guide assembly (1) up against the hard stop screw (2).
 5. Verify that the opposite guide assembly is also positioned up against the hard stop screw.
 6. Install the wind deflector as necessary.



[\(Refer to 23 - BODY/SUNROOF/DEFLECTOR-WIND - INSTALLATION\)](#)

7. Install the motor as necessary. [\(Refer to 8 - ELECTRICAL/POWER TOP - SUNROOF SERVICE INFO/MOTOR/MODULE-SUNROOF - INSTALLATION\)](#)

8. Install the drain channel arms (2) into the mechanism (1) holes one at a time with the reinforcements on the inside of mechanism arms.

CAUTION: Do not pry the channel arms apart at the same time or you could break the drain channel.

9. Install the sunroof assembly into the vehicle. [\(Refer to 23 - BODY/SUNROOF/ASSEMBLY-MODULE - INSTALLATION\)](#)

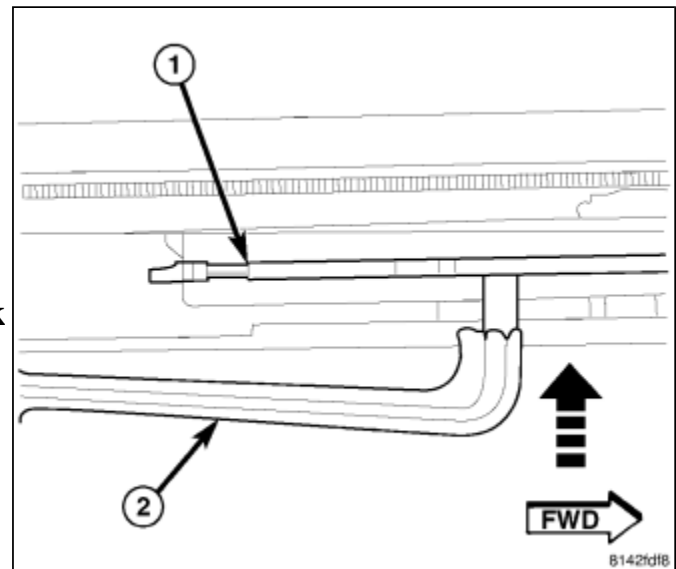
10. Perform the sunroof position calibration, [\(Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE - SUNROOF POSITION CALIBRATION\)](#).

11. Perform the Excessive Force Limitation (EFL) calibration, [\(Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE - EXCESSIVE FORCE LIMITATION \(EFL\) CALIBRATION\)](#).

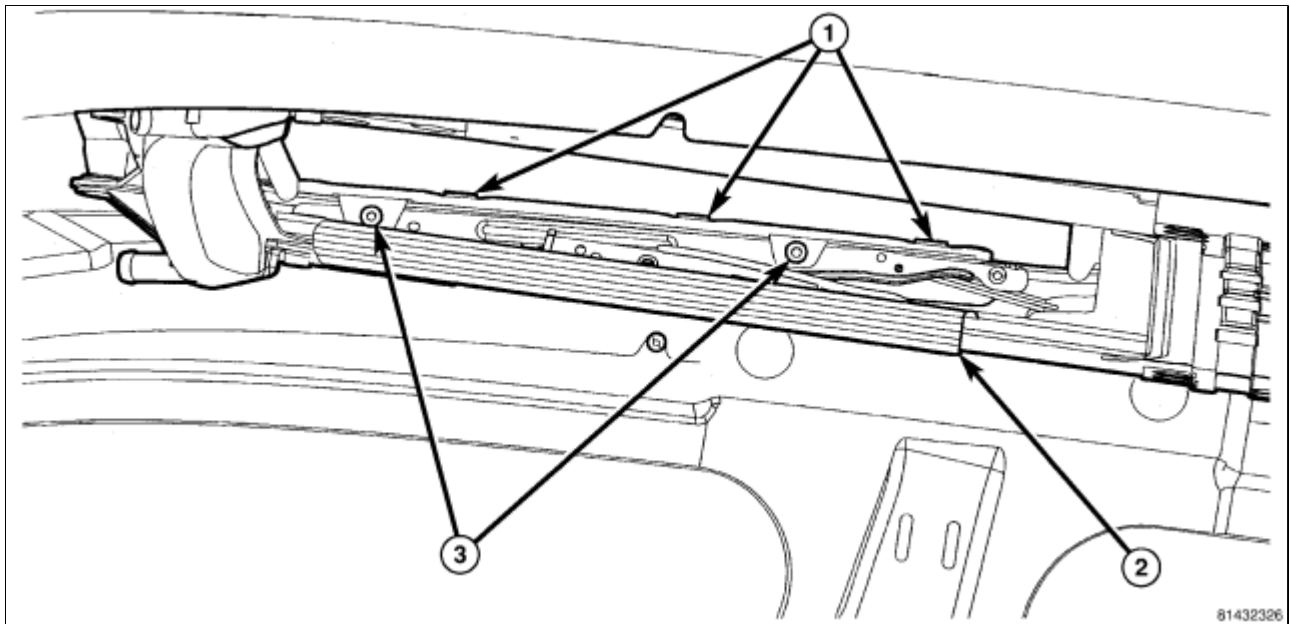
12. Install the glass as necessary. [\(Refer to 23 - BODY/SUNROOF/GLASS - INSTALLATION\)](#)

13. Adjust sunroof glass to fit flush with roof line [\(Refer to 23 - BODY/SUNROOF/GLASS PANEL - ADJUSTMENTS\)](#).

14. Verify proper operation of the power sunroof system.



ADJUSTMENT

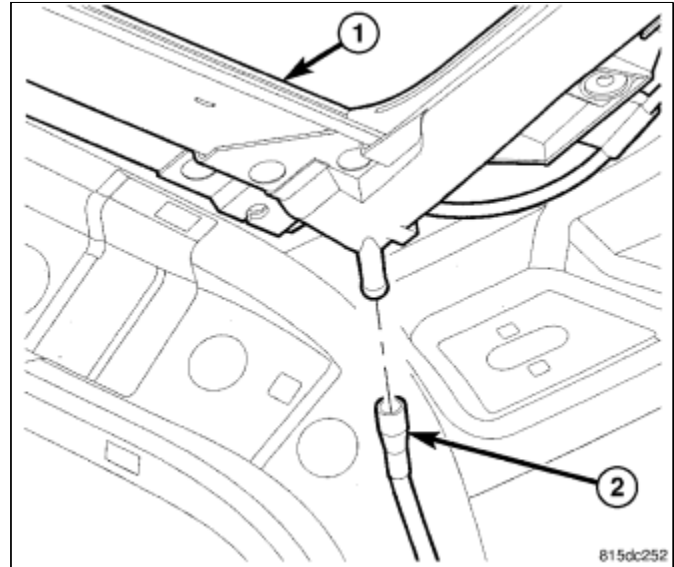


1. Move the sunshade rearward to the open position.
2. Separate the mechanism covers (2) from the tabs (1) on the glass panel.
3. Verify the sunroof glass panel is in the fully closed position.
4. Loosen the forward attaching screws (3) on each side enough to permit the front of the glass to adjust up or down.
5. Adjust the front surface of the sunroof glass panel 0.00 mm to 2 mm (0.00 in. to 0.08 in.) **below** the top surface of the roof.
6. Tighten the front glass panel attaching screws to 3.5 N·m (30 in. lbs.).
7. Loosen the rear screws (3) on each side enough to make the rear adjustment.
8. Adjust the rear surface of the sunroof glass panel 0.00 mm to 2 mm (0.03 in. to 0.08 in.) **above** the top surface of the roof.
9. Tighten the rear glass panel attaching screws to 3.5 N·m (30 in. lbs.).
10. Check for proper fit. If not OK, repeat glass panel adjustment.
11. Position the mechanism covers (2) over the glass tabs (1) between the locating features and seat fully.
12. Verify sunroof operation and alignment.

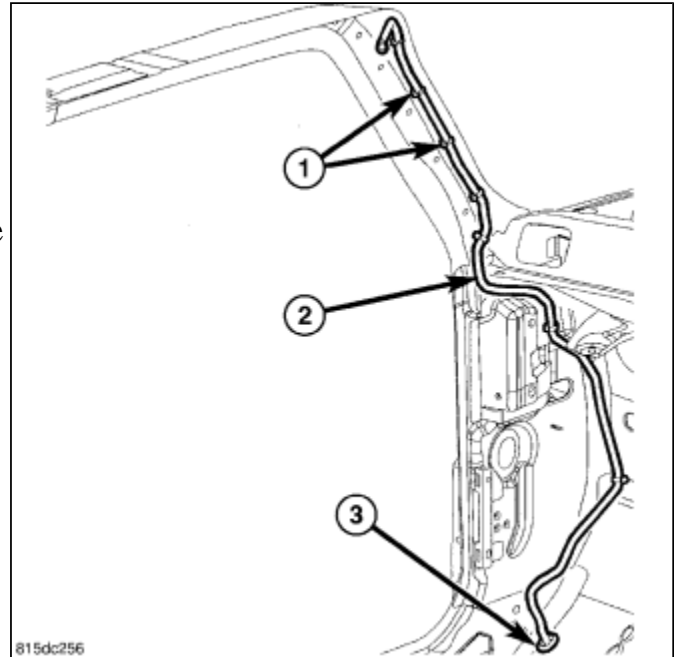
REMOVAL

FRONT HOSES

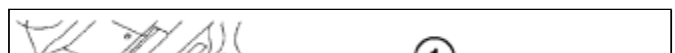
1. Remove headliner ([Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL](#)).
2. Disconnect the drain hose (2) from the sunroof housing (1).



3. Separate the lower tube from the grommet in the body (3).
4. Drain any liquid from hose connection, if necessary.
5. Release all of the clips (1) and remove the tube (2).

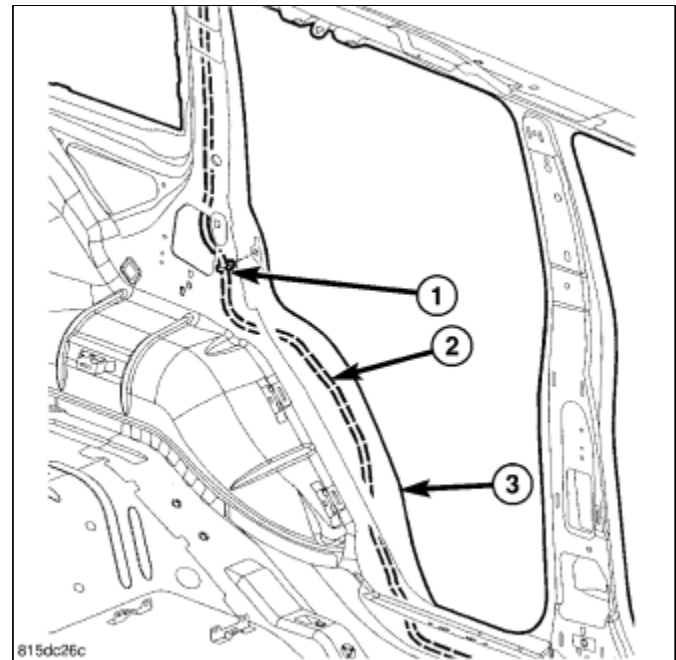


REAR HOUSING HOSE



1. Remove headliner ([Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL](#)).
2. Disconnect the drain hose (1) from the sunroof housing (2).

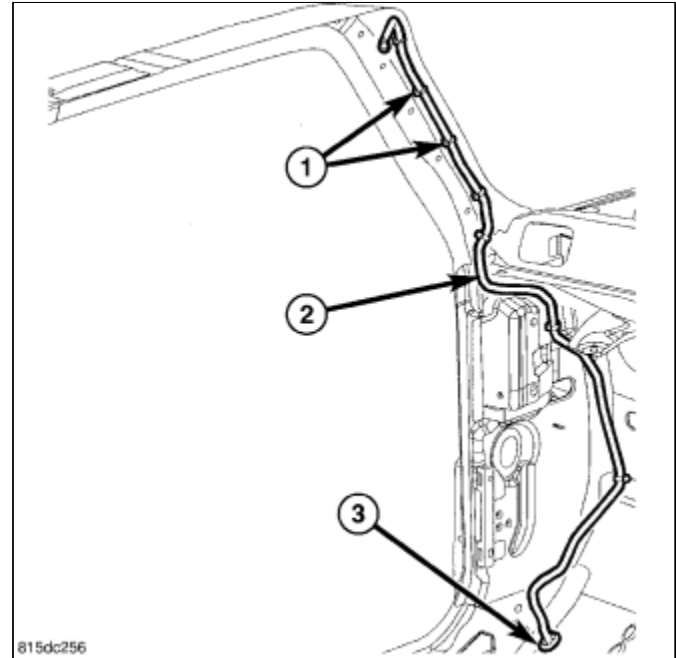
3. Drain any liquid from hose connection, if necessary.
4. Release the push pin fasteners (1) and remove the tube (2) from the body c-pillar cavity (3).



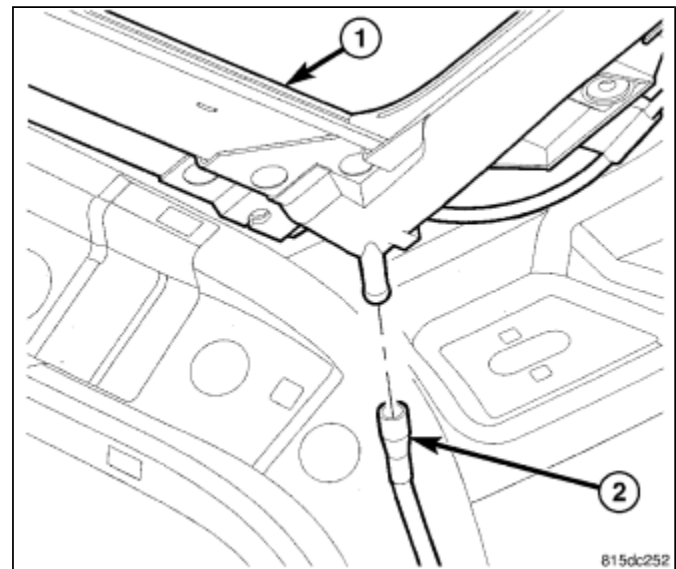
INSTALLATION

FRONT HOSES

1. Position the lower portion through the grommet in the body (3).
2. Position the hose (2) into all of the support clips (1).



3. Connect the new drain hose (2) to the sunroof housing (1) and test drainage.
4. Install headliner ([Refer to 23 - BODY/INTERIOR/HEADLINER - INSTALLATION](#)).

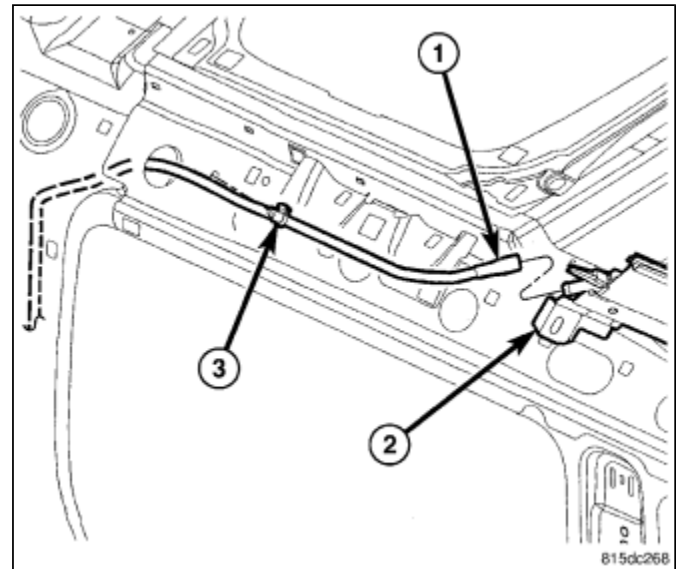


REAR HOUSING HOSE



1. Install the rear hose (2) into the body c-pillar (3) and seat the push pin fasteners (1) fully.
2. Position the lower portion through the grommet in the body.

3. Connect the new drain hose (1) to the sunroof housing (2) and test drainage.
4. Install headliner ([Refer to 23 - BODY/INTERIOR/HEADLINER - INSTALLATION](#)).



MOTOR/MODULE - SUNROOF

Any diagnosis of the power sunroof system should begin with the use of a scan tool and the proper Diagnostic Procedures Information. The scan tool can provide confirmation that the Controller Area Network (CAN) Data Bus is functional, that all of the electronic modules are sending and receiving the proper messages on the CAN Data Bus, and that the power sunroof motor is being sent the proper hard wired output by the sunroof switch.

Refer to the appropriate diagnostic information.

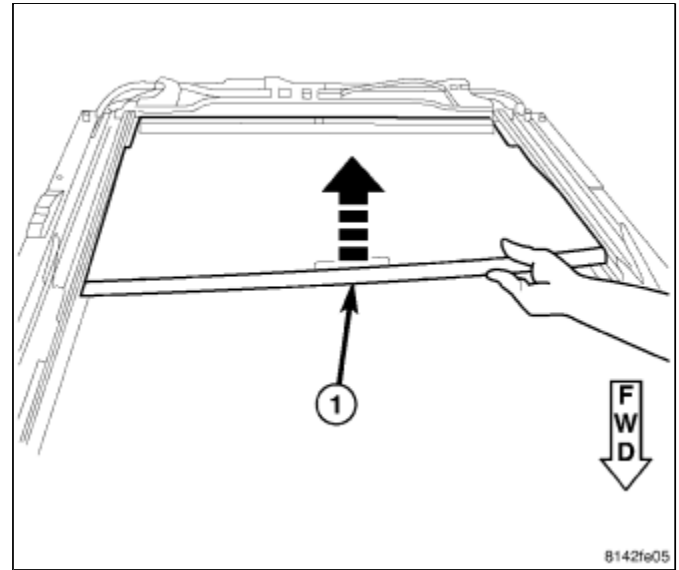
NOTE: If there is no sunroof movement when the “OPEN” or “CLOSED” button are pushed but the sunroof operates when the “VENT” button is pushed and held the sunroof motor/module is out of calibration. Complete the sunroof position calibration procedure prior to performing any sunroof diagnostics, ([Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE - SUNROOF POSITION CALIBRATION](#)).

The wire harness connectors for the sunroof motor/module are located above the vehicle headliner. Removal of the headliner may be necessary for access to the connector and proper diagnosis of the motor/module, ([Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL](#)). **For complete circuit diagrams, refer to the appropriate wiring information.** The wiring information includes wiring diagrams, proper wire and connector repair procedures, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds.

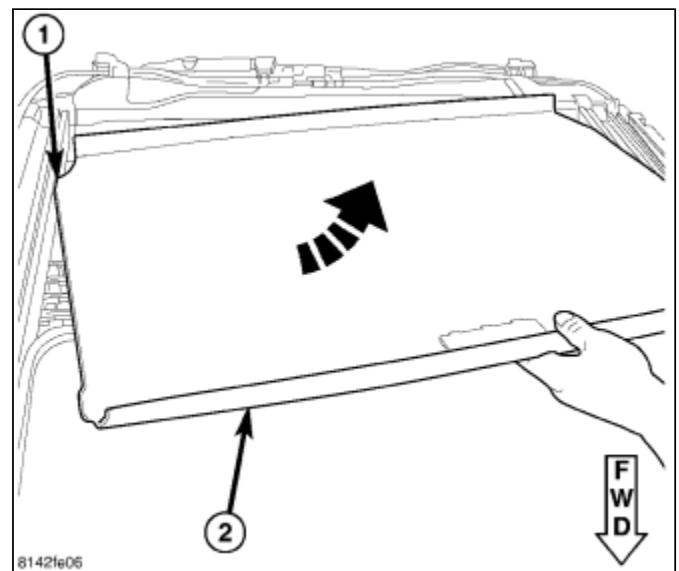
1. Verify that all other power accessories are in proper operating condition. If not, a common electrical problem may exist.
2. Disconnect the sunroof motor/module connector directly at the motor/module (not at the headliner in-line connector). Connect a test light between the harness connector pin 6 and a known good B+ circuit. The test light should illuminate brightly. If OK, go to [STEP 3](#). If not OK repair the ground circuit as necessary.
3. Connect a test light between the harness connector pin 8 and a known good ground. The test light should illuminate brightly. If OK, go to [STEP 4](#). If not OK repair the B+ circuit as necessary.
4. Using an ohmmeter check the sunroof switch feed circuit for continuity between the sunroof motor/module and sunroof switch. Continuity should be present. If OK replace the inoperative motor/module, ([Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - REMOVAL](#)). If not OK repair the sunroof switch feed circuit as necessary.

REMOVAL

1. Remove the drain channel. ([Refer to 23 - BODY/SUNROOF/CHANNEL-DRAIN - REMOVAL](#))
2. Push up the front center of the sunshade (1) to pop out the front two feet.

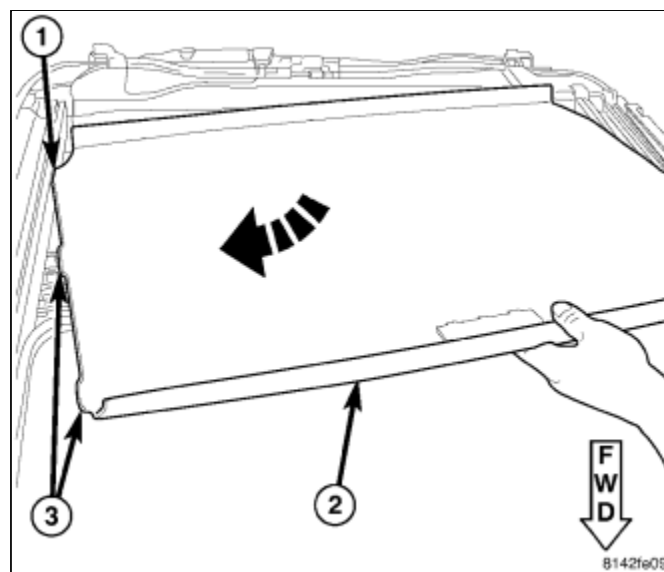


3. Rotate the sunshade (2) so that the other feet (1) are removed from the guide track.

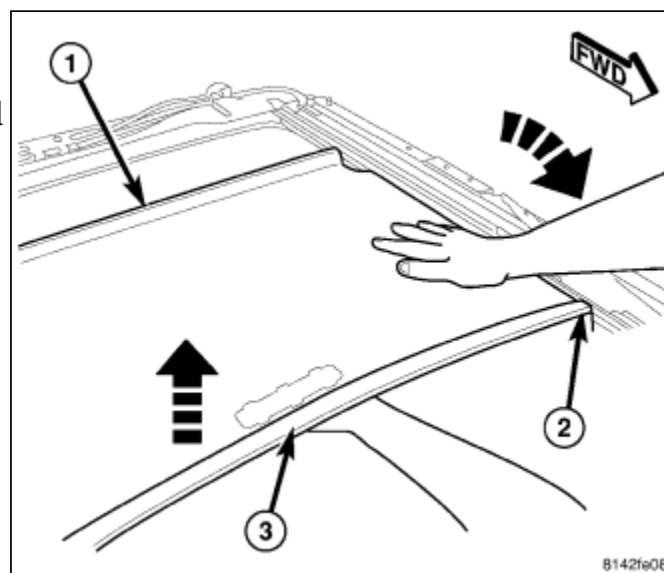


INSTALLATION

1. Verify the sunshade track is free of obstructions like the trim lace/ring.
2. Start with sunshade (2) at an angle with one foot (1) in the track.
3. Rotate the sunshade so the other rear foot is in the track as well as the 2 other feet (3) on the same side as the first foot.

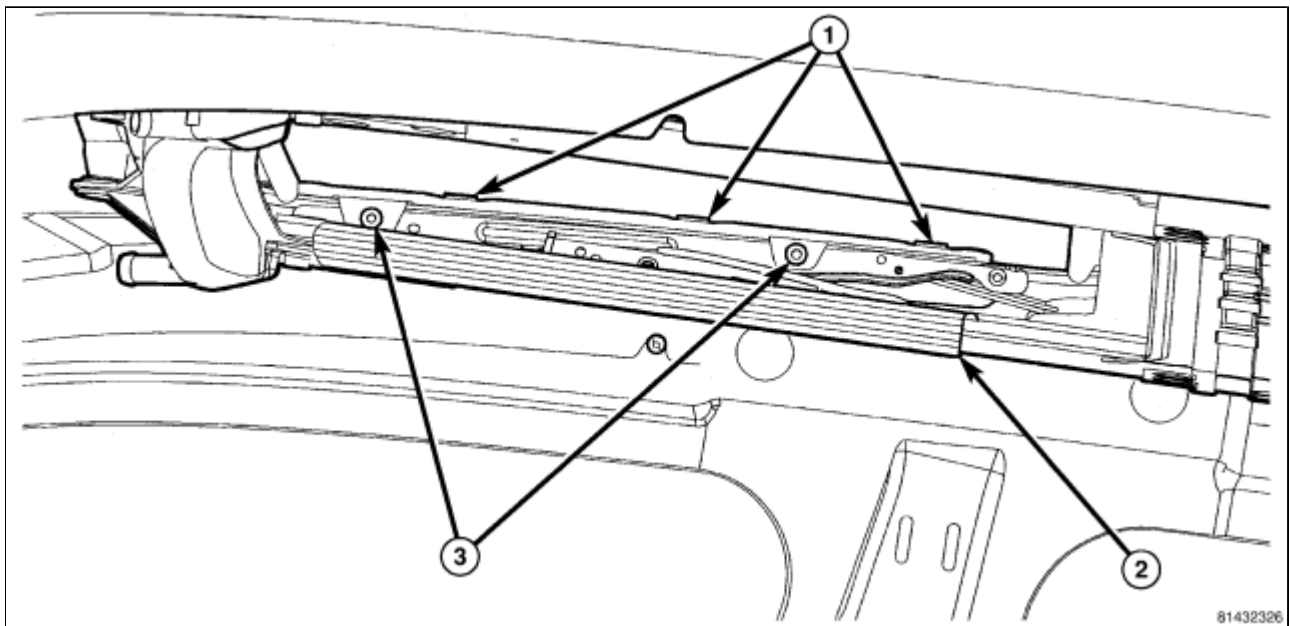
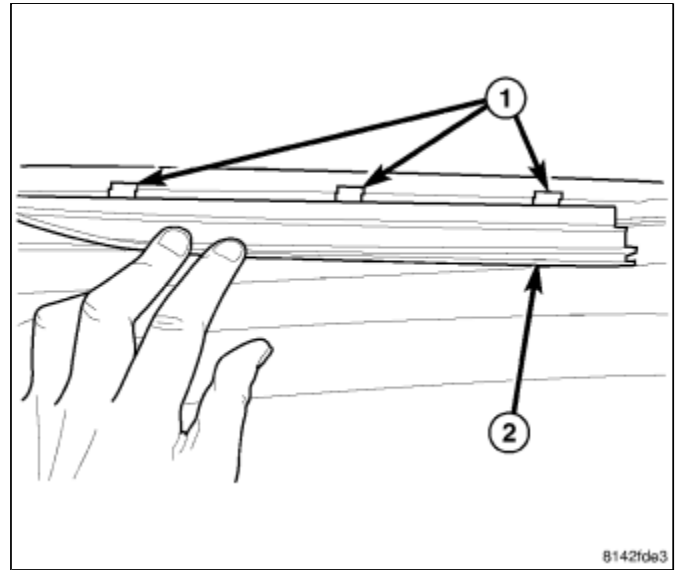


4. To insert the remaining two feet (2) apply force to the middle front of sunshade (3) and guide them into the track.
5. Check that all the feet are in the right track and verify sunshade operation.
6. Install the drain channel. ([Refer to 23 - BODY/SUNROOF/CHANNEL-DRAIN - INSTALLATION](#))



REMOVAL

1. Move the glass panel to the full closed position.
2. Slide sunshade rearward to the open position.
3. Separate the mechanism covers (2) from the tabs (1) on the glass panel.



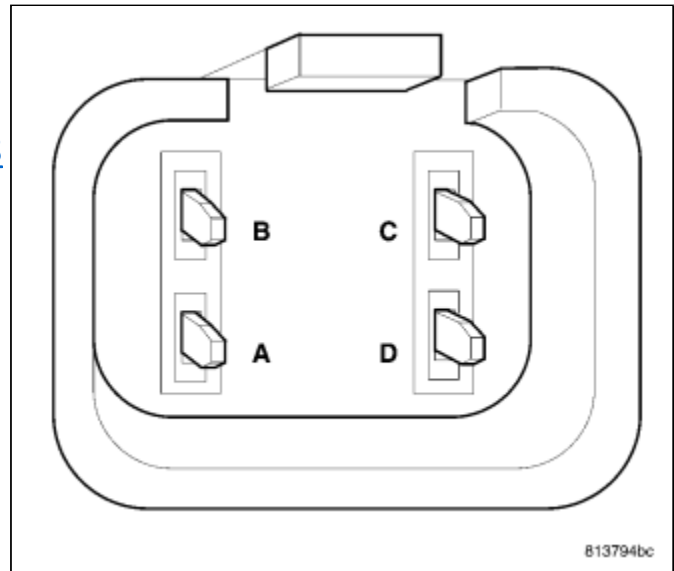
4. Remove the glass panel screws (3).
5. Lift off glass panel and remove from vehicle.

SWITCH - POWER SUNROOF

Any diagnosis of the power sunroof system should begin with the use of a scan tool and the proper Diagnostic Procedures Information. The scan tool can provide confirmation that the Controller Area Network (CAN) Data Bus circuit is functional, that all of the electronic modules are sending and receiving the proper messages on the CAN Data Bus, and that the power sunroof motor/module assembly is being sent the proper hard wired output by the sunroof switch.

For complete circuit diagrams, refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds. If completing the appropriate diagnostic information results in the sunroof switch being inoperative, perform the following test prior to switch replacement.

1. Disconnect and isolate the battery negative cable.
2. Remove the overhead console, ([Refer to 8 - ELECTRICAL/OVERHEAD CONSOLE - REMOVAL](#)).
3. Disconnect the power sunroof switch wire harness connector.
4. Using an ohmmeter, test the continuity of the power sunroof switch in each switch position. Refer to the [POWER SUNROOF SWITCH CONTINUITY TABLE](#). If OK, inspect the wiring harness and connectors for damage. Use a scan tool and the proper Diagnostic Procedures Information to complete diagnosis of the power sunroof system. If not OK, replace the overhead console.



POWER SUNROOF SWITCH CONTINUITY TABLE

SWITCH POSITION	CONTINUITY BETWEEN PINS
OFF	NO CONTINUITY
SUNROOF OPEN	B & D

SUNROOF CLOSED	B & C
SUNROOF VENT	B & A

REMOVAL

1. Using a trim stick C-4755 or equivalent, separate the 12 retaining clips around the trim ring and remove.

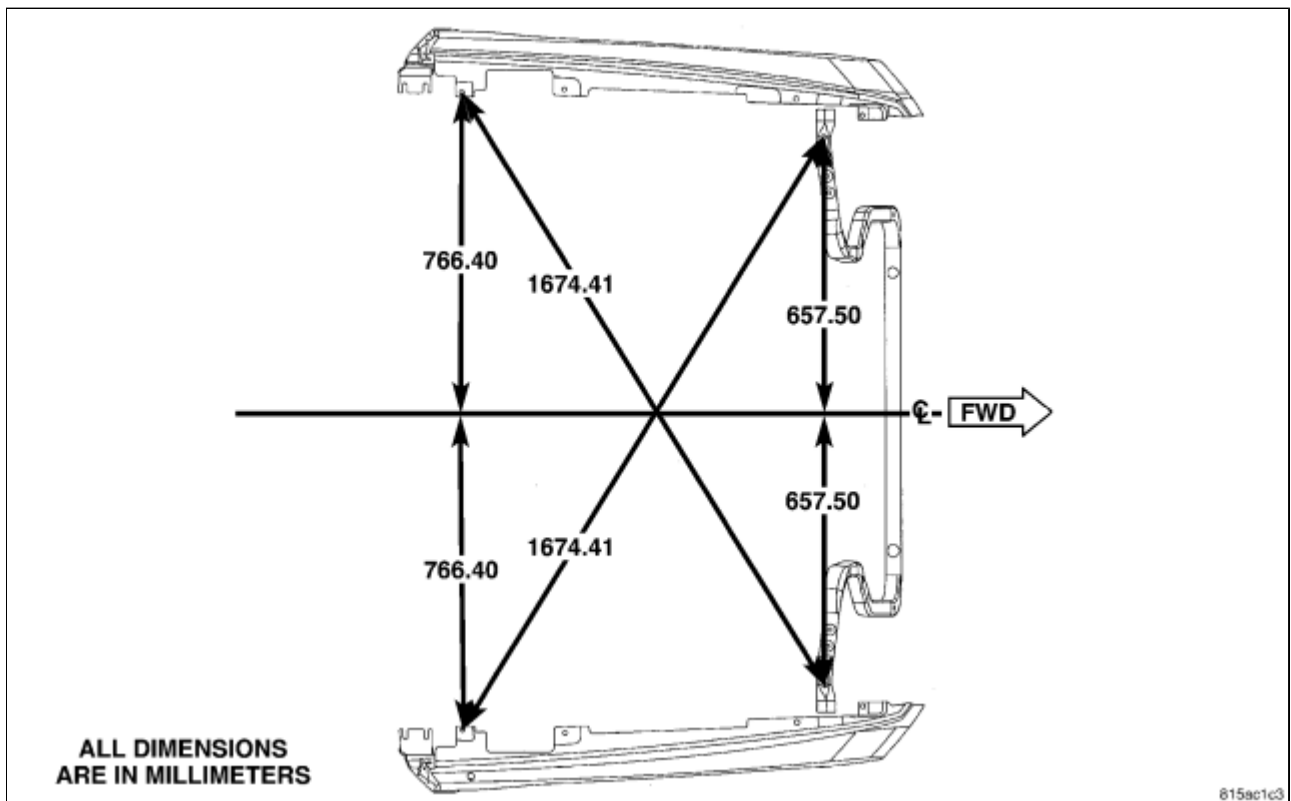
INSTALLATION

1. Position the trim ring into place and seat the clips fully using the following sequence.
 - a. Seat the passenger side front clip fully.
 - b. Seat the driver side front clip fully.
 - c. Seat the remaining front clips fully.
 - d. Seat the side clips fully.
 - e. Seat the rear clips fully.

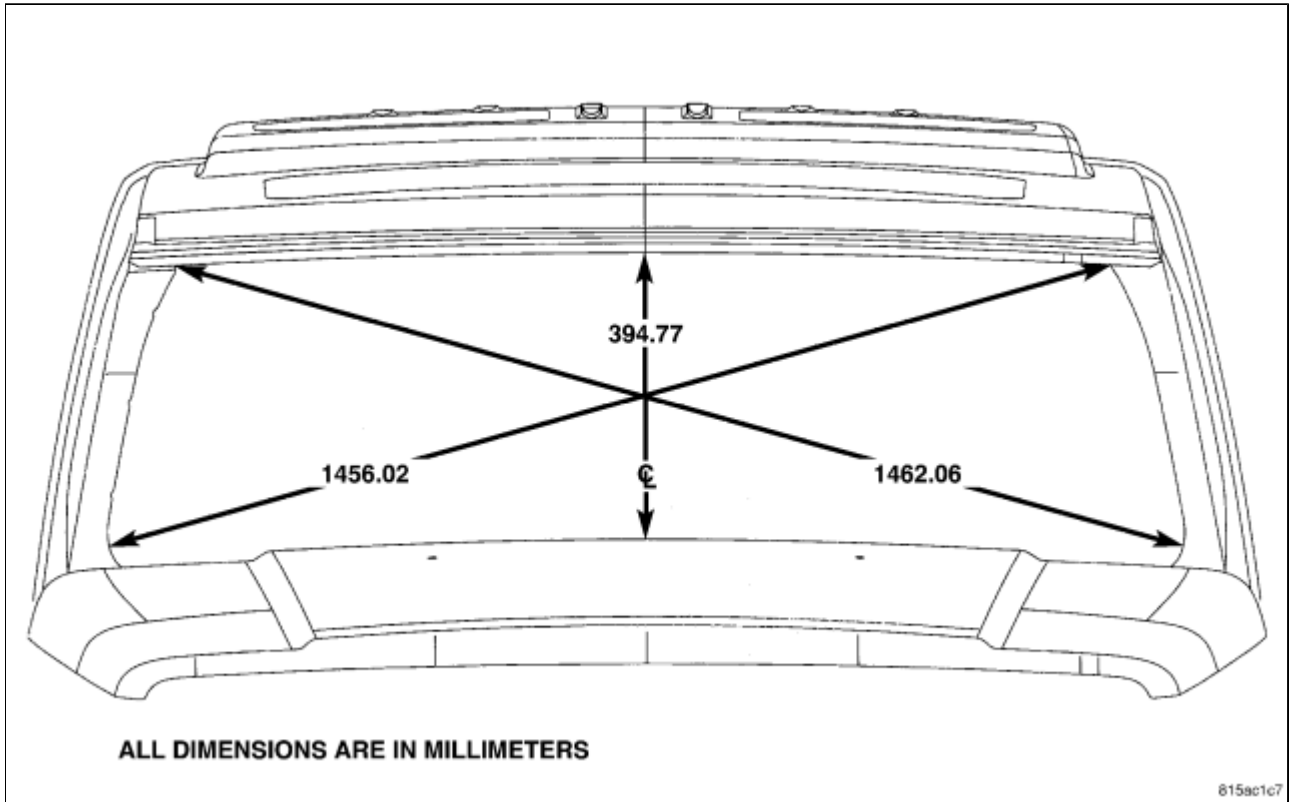
OPENING DIMENSIONS

Index

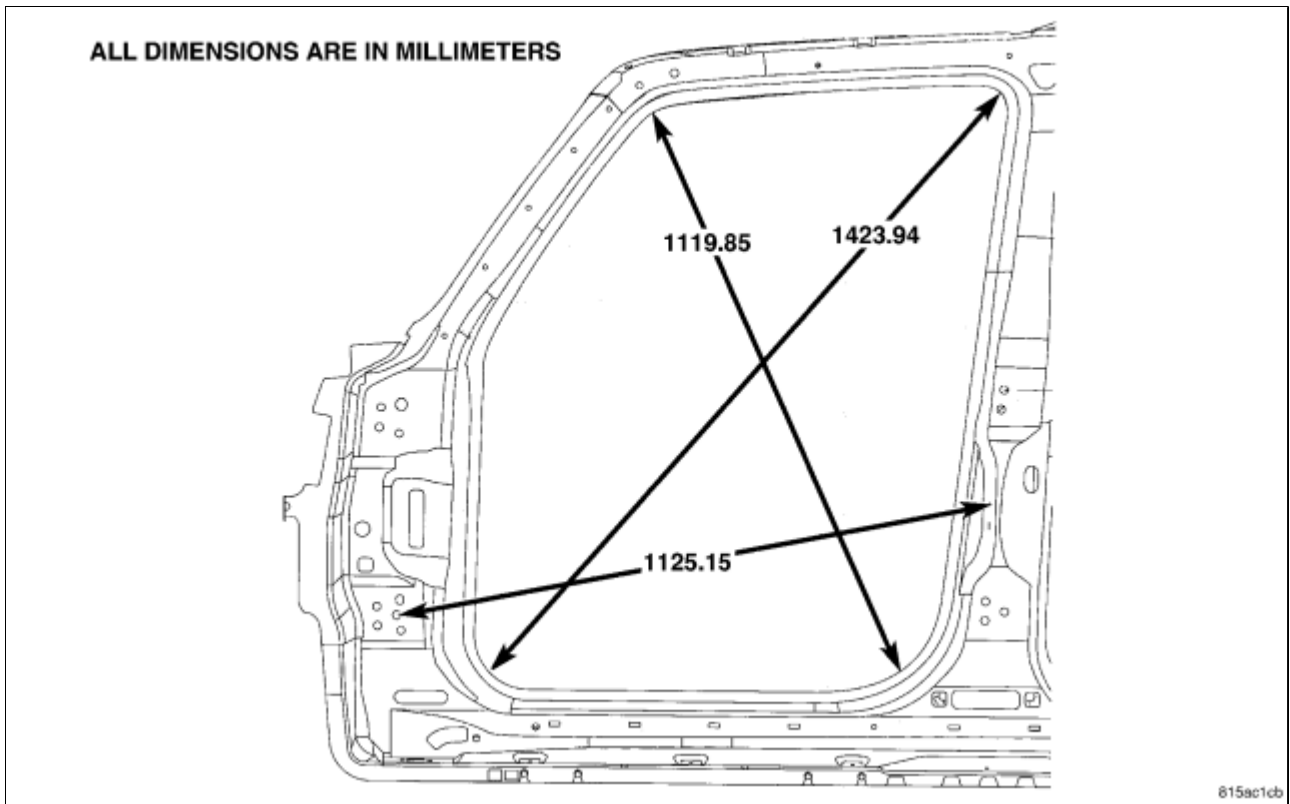
DESCRIPTION	FIGURE
ENGINE COMPARTMENT	ENGINE COMPARTMENT
WINDSHIELD OPENING	WINDSHIELD OPENING
FRONT DOOR OPENING	FRONT DOOR OPENING
REAR DOOR OPENING	REAR DOOR OPENING
QUARTER WINDOW OPENING	QUARTER WINDOW OPENING
LIFTGATE OPENING	LIFTGATE OPENING



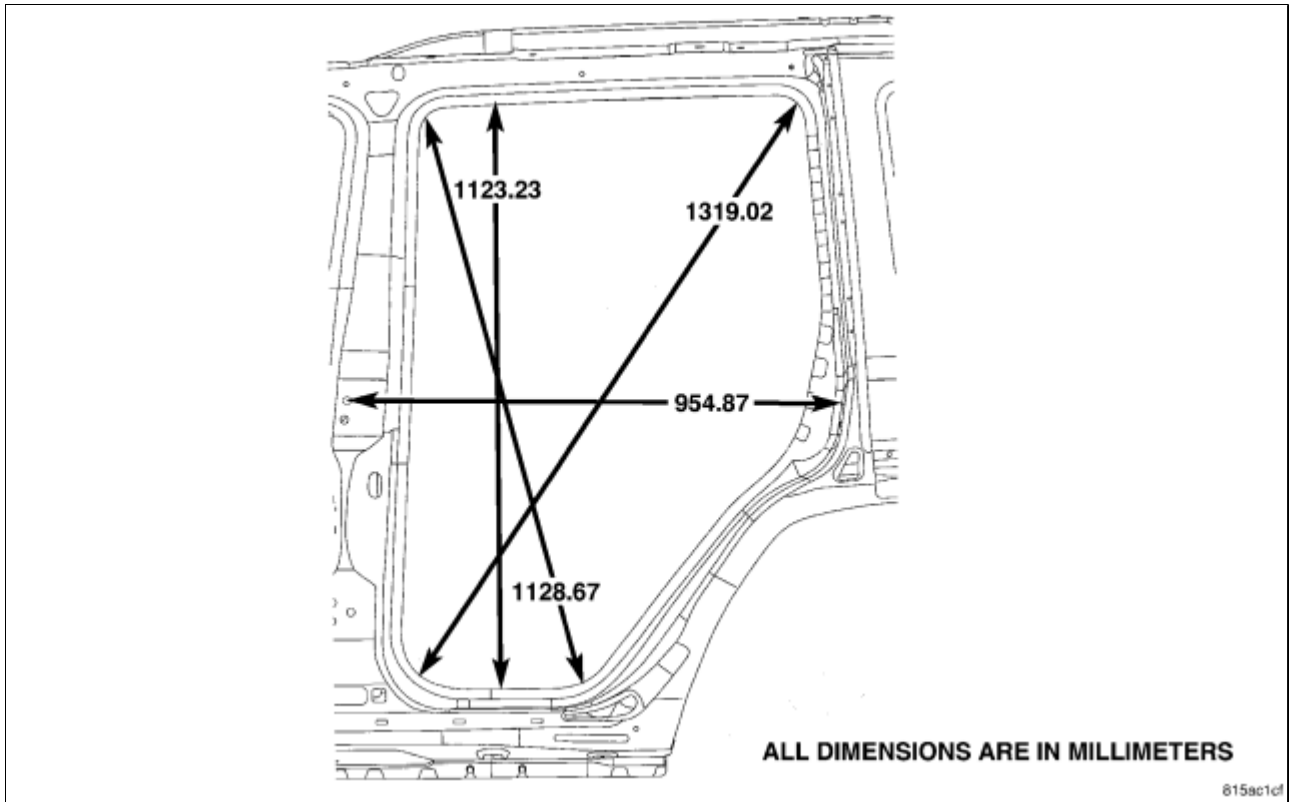
ENGINE COMPARTMENT



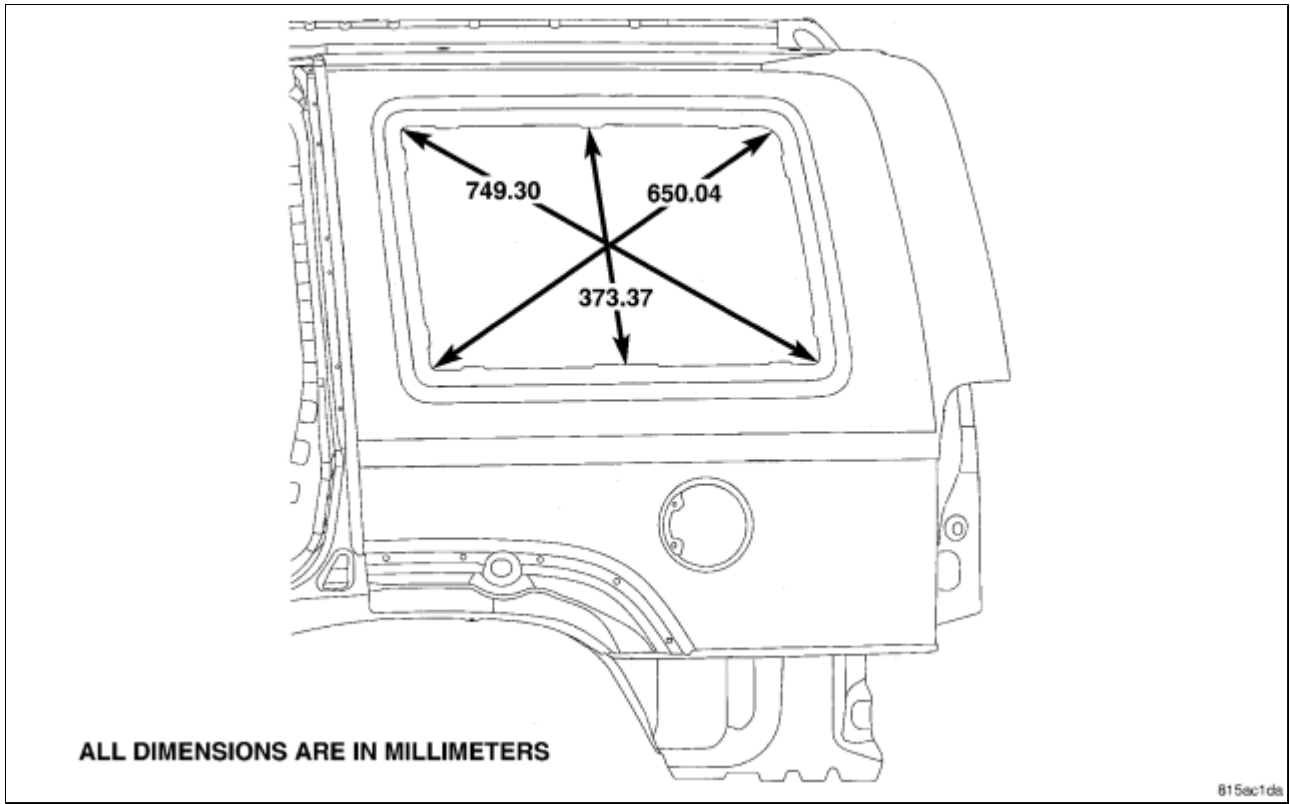
WINDSHIELD OPENING



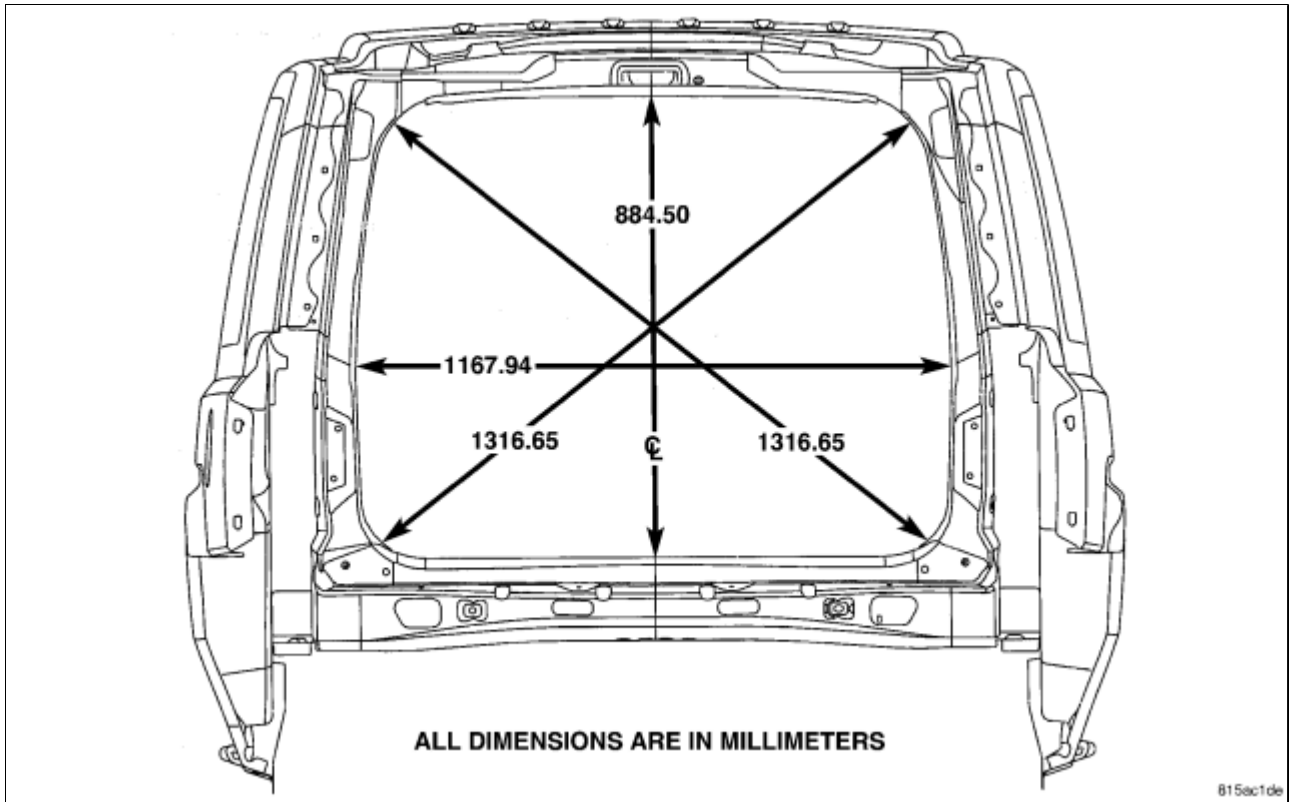
FRONT DOOR OPENING



REAR DOOR OPENING



QUARTER WINDOW OPENING



LIFTGATE OPENING