

Section 4.0

Introduction to Body Systems

2002 VUE New Product Participant Guide

Section Structure

Exterior Body Panels

- Thermal Growth Pattern
- Front bumper, fascia, impact beam
- Front door exterior panels
- Front and rear door alignment

Body Hardware

- Door Insulators
- Window regulators
- Lock Rods
- Headlamps
- Foglamps
- Taillamps
- 3rd brake light
- Front Wiper System
- Rear wiper system

Interior Trim

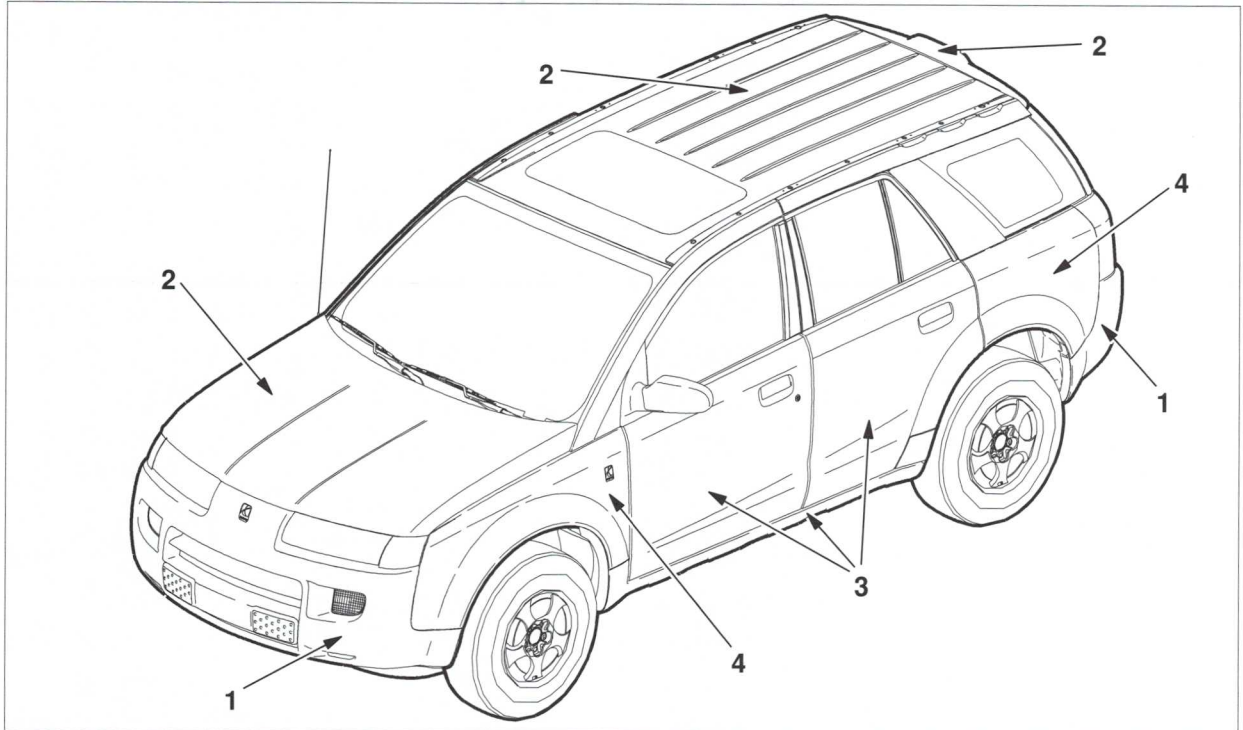
- Headliner
- Sunroof
- Front seats
- Rear seats
- Rear load floor

Section 4.1

Exterior Body Panels

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Saturn VUE



CALLOUT

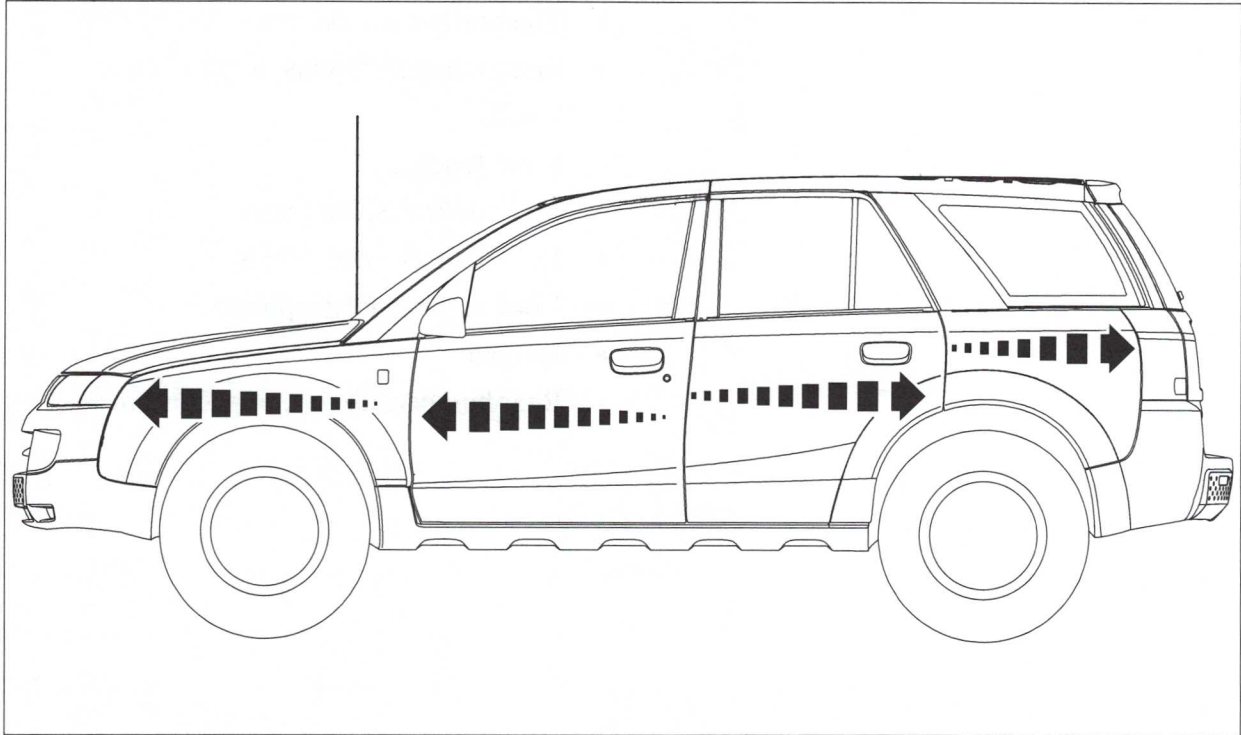
- (1) Plastic (TPO)
- (2) Steel
- (3) Plastic (ABS+PC)
- (4) Plastic (GTX)

Exterior Panels

This section covers:

- Thermal growth pattern
- Front bumper, fascias, impact beams
- Hood
- Front fenders
- Front door exterior panels
- Rear door exterior panels
- Roof outer panels/appliques
- Liftgate
- Rear bumper, fascias, impact beams

Thermal Growth Pattern



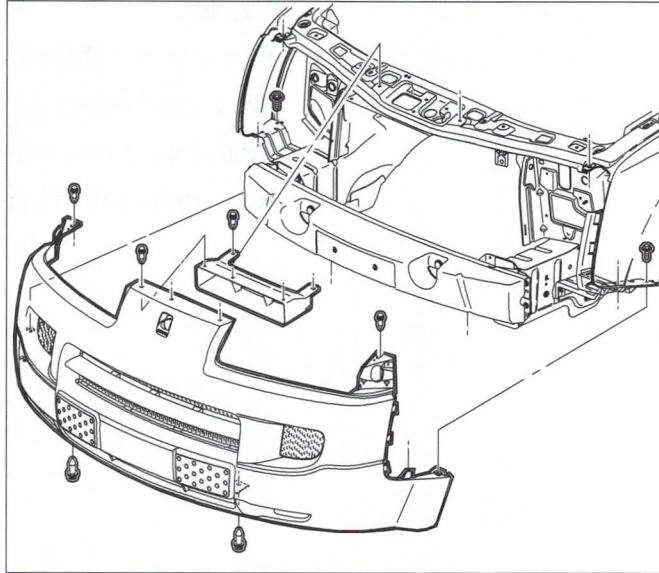
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Thermal Growth Pattern

VUE follows the same thermal growth pattern as S-Series:

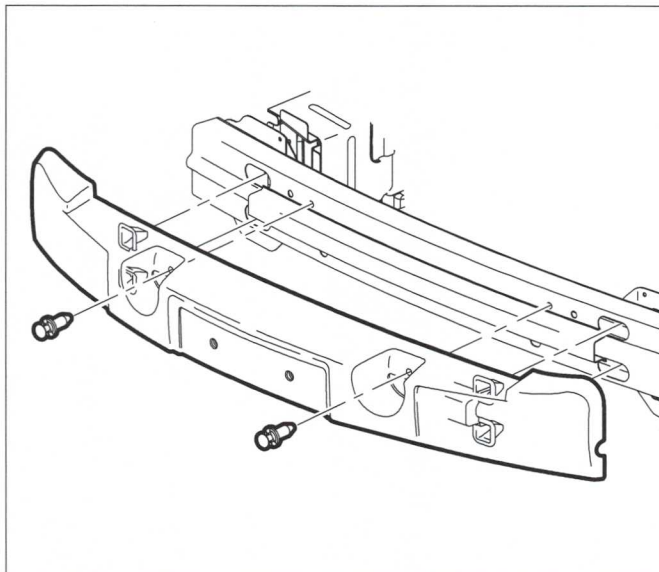
- Fender grows forward
- Front door grows forward
- Rear door grows rearward
- Rear quarter panel grows rearward

Front Bumper System



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Front Bumper Impact Absorber



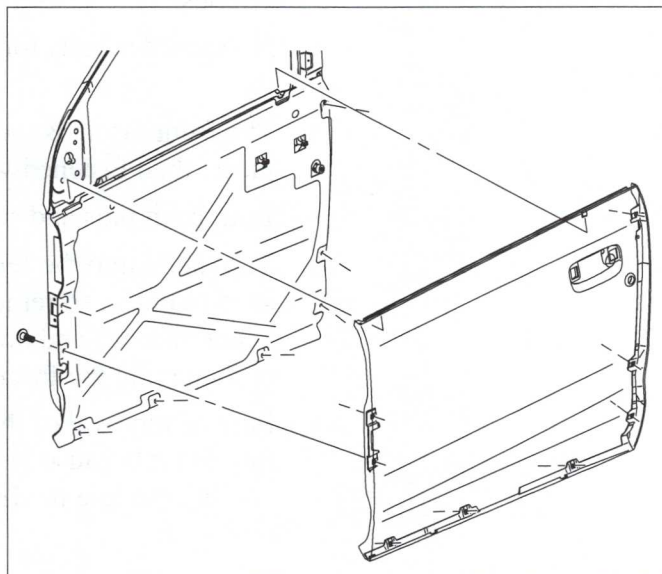
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Front Bumper System

Bumper fascia attachment is different from S or L-Series

- No shoulder bolts for the fascia to slide on to.
- The front fascia is mounted directly in place, then fastened with fewer fasteners.
- Both push pins and screws are used.
- Tabs slide into the fenders. The tabs do not snap in place, so removal of the front fascia is not difficult and does not risk breaking or damaging the fascia.
- Ease of removal of the front fascia is important because in order to service the cooling module the front fascia has to be removed.
- The upper fascia bracket is plastic, and is the same shape used on past S -Series.
- The air inlet grille snaps in from rear. In order to service this grille, the fascia must be removed.
- As with past non-painted Saturn fascias, the gray area of the VUE fascia cannot be repaired. Since the fascia is painted halfway, the service part will be supplied primed in the area that is painted on production vehicles.
- As with all other body panels, there is no distinction between trim levels.
- Under the front fascia, the impact beam is bolted to the front frame rails, similar to both S and L-Series.

Front Door Exterior Panels



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Front Exterior Door Panels

- Same pin/slide attachment for outer handle.
- Stronger T tabs to hold the panel to the door during vehicle assembly.
- There is one tab covered by the belt molding as with current S-Series.
- The tab toward the rear of the front door is hidden.
- Pull up to remove the panel.
- Screw in the end of the belt molding is different than S or L-Series.
- Door appliques are screwed in place rather than riveted in place like the current S-Series coupe.
- Belt molding can stay attached to outer panel during removal.

Section 4.2

Body Hardware

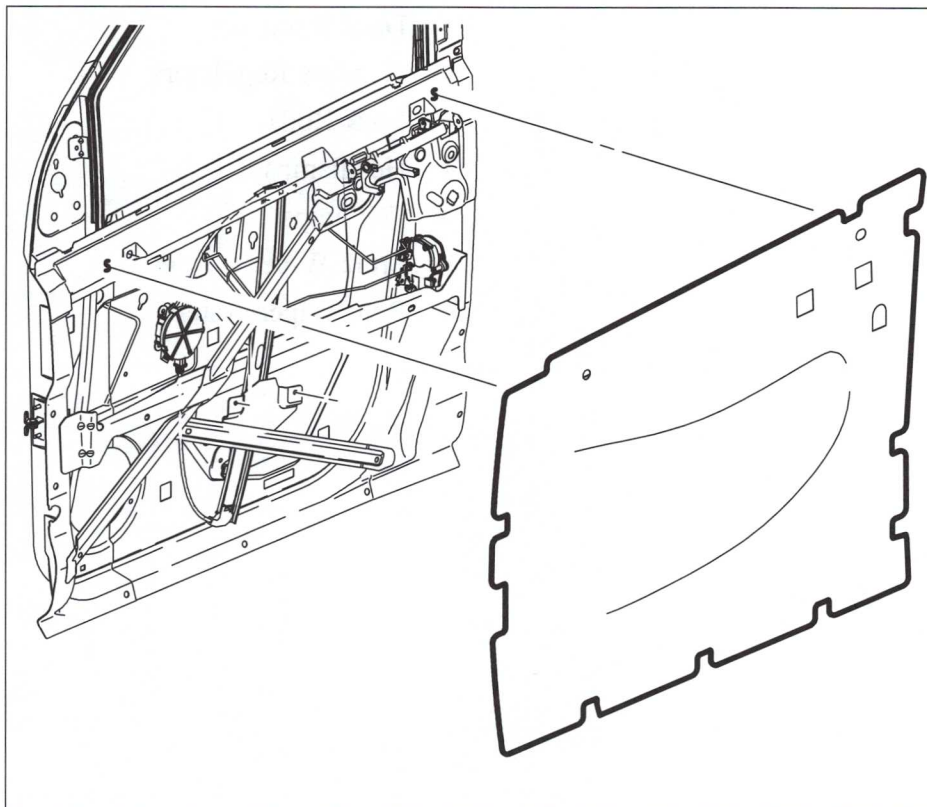
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Introduction to Body Hardware

This section covers:

- Door Insulators
- Window Regulators
- Lock Rods
- Headlamps
- Foglamps
- Front Wiper system
- Rear Wiper system

Door Insulators

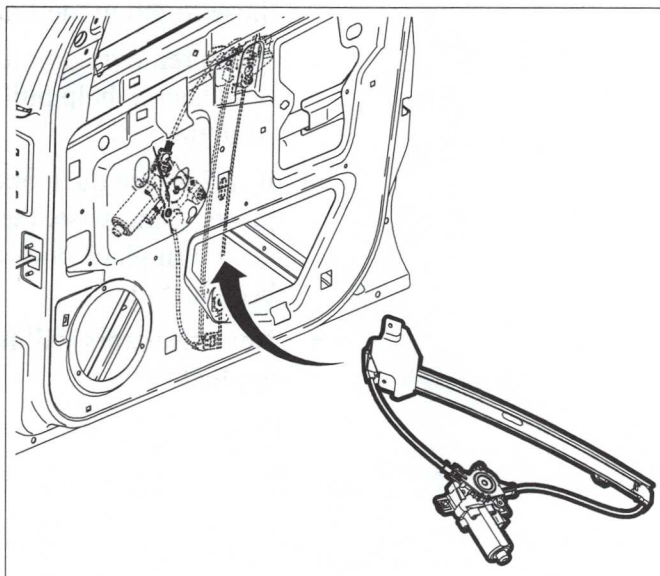


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Door Insulators

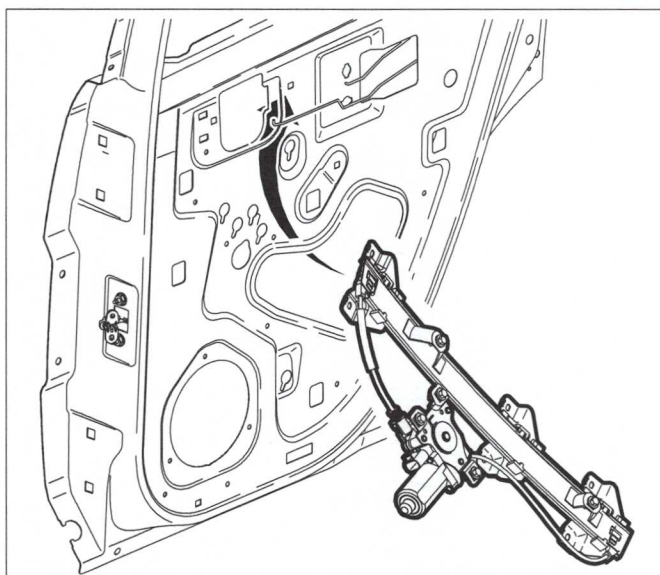
- The door insulators function the same as those found in the L and S-Series vehicles.
- When removing, pull very gently, use a little heat to help pull the glue off the door structure.
- If it rips, use duct tape to put it back in place. Otherwise, the outer panel should keep it in place once the outer panel has been installed.
- New insulators will have glue already applied to them.

Front Door Window Regulators



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Rear Door Window Regulators



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Window Regulators

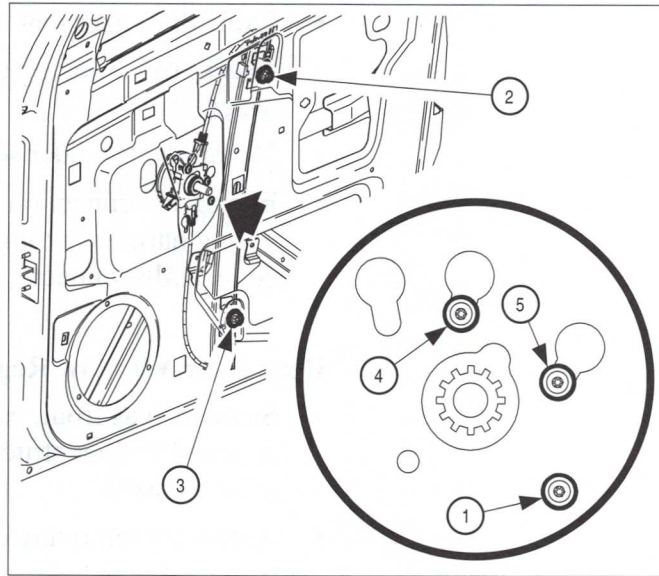
Front Door Window Regulators

- Cable drive like rear door on L-Series.
- Access by removing door interior trim panel.
- Motor, cable, slider serviced all as one unit.
- Electrical connection to motor from door wiring harness is tough to connect/disconnect.

Rear Door Window Regulators

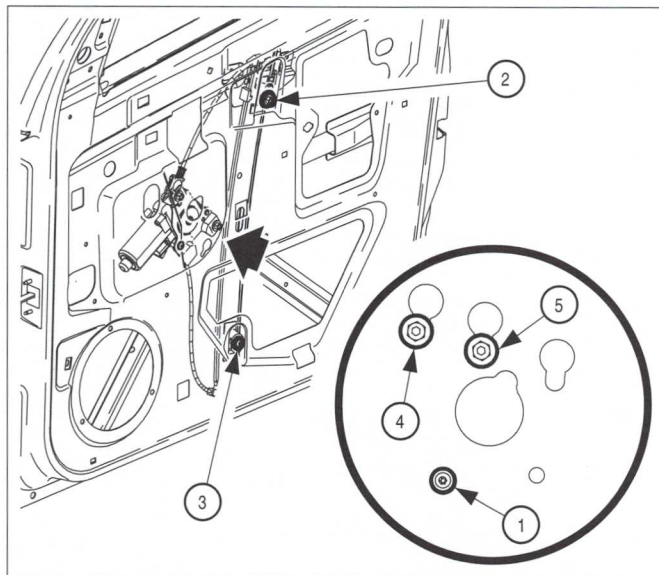
- Same idea as front, cable type motor attached to door structure, not tape drive or scissors drive.
- Access by removing door interior trim panel.
- Rear windows roll down all the way.

Front Window Regulator Tightening Sequence



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Rear Window Regulator Tightening Sequence

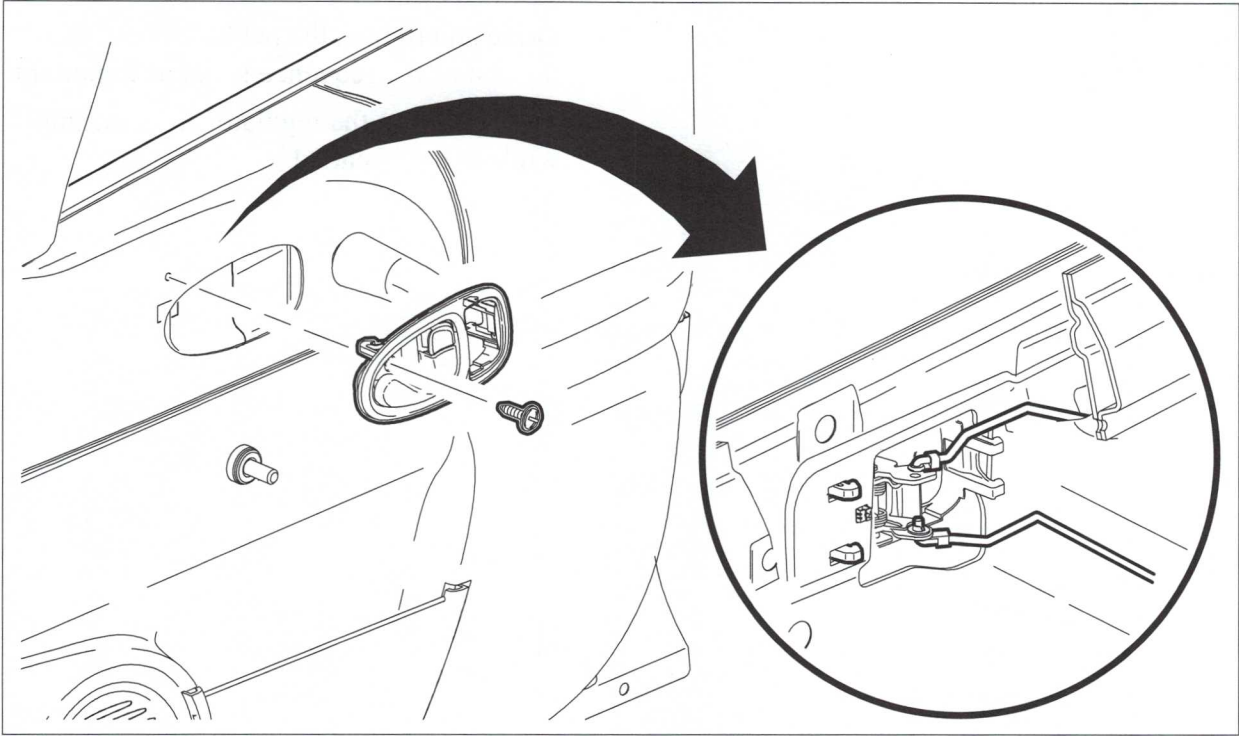


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Window Regulator Tightening Sequence

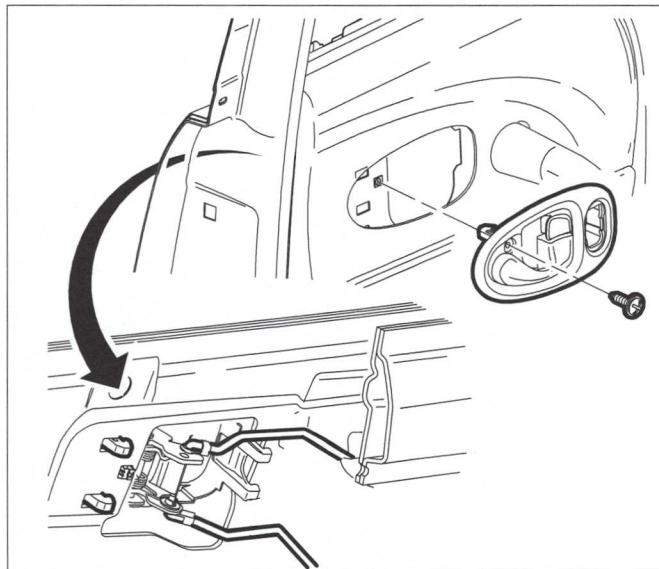
- The service manual will direct you to tighten the bolts in a certain order.
- Drive and tighten the net holes first, then the rest of the sequence is not as important.
- This will keep the regulator from turning while being installed.

Lock Rods/Actuators (Front Door)



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Lock Rods/Actuator (Rear Door)



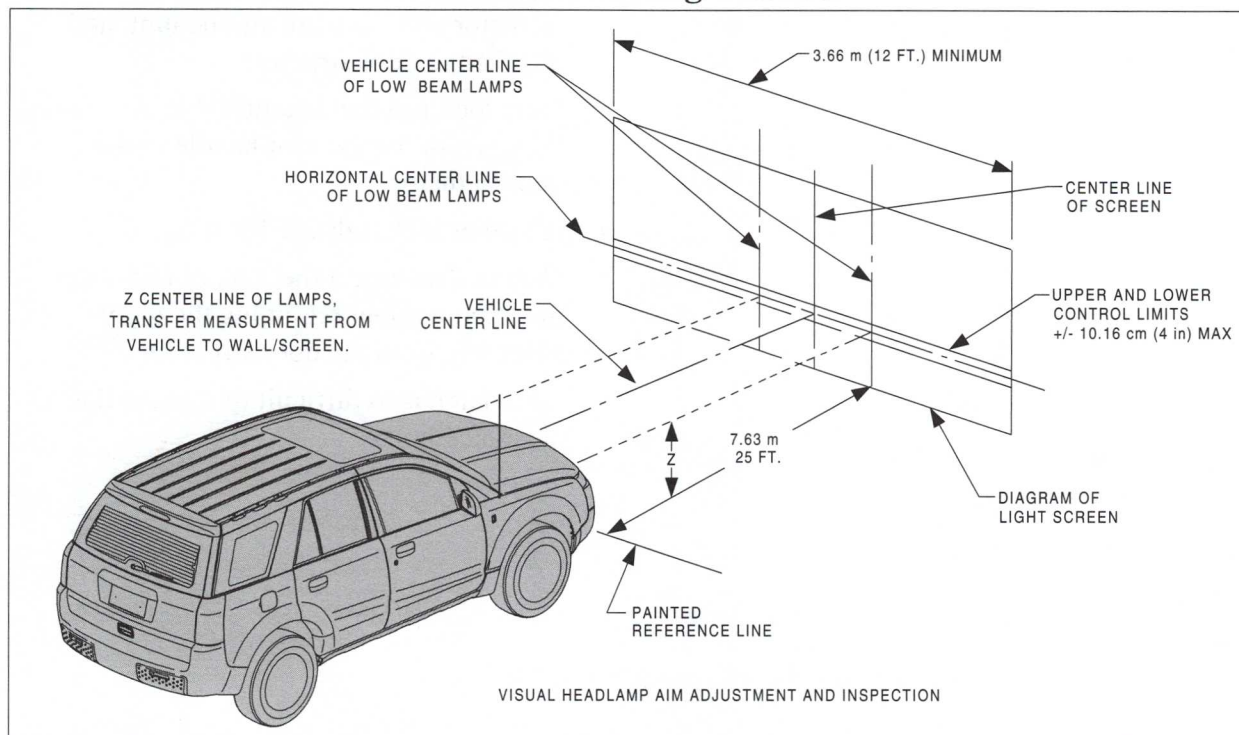
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Lock Rods/Actuators

Front & Rear Door Lock Rods/Actuators

- Actuator and latch are all one unit, and attached to door structure.
- Only lock rod that is adjustable is the one going from the exterior handle to the latch/actuator.
- All other lock rods are fixed length.
- Cannot disconnect the 2 inner rods from the latch without removing the whole assembly from the door structure.
- Door latch also difficult to remove due to clearance holes.

Wallchart Aiming Method

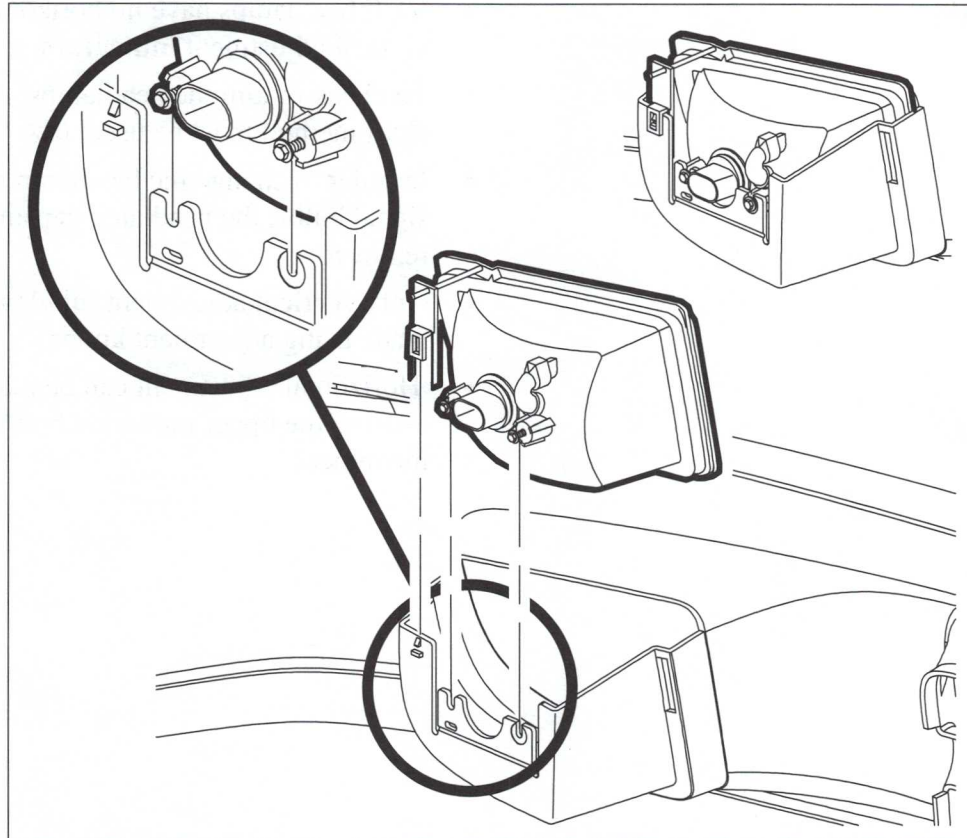


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Headlamps

- VUE headlamps have no horizontal or vertical adjustment **indicators**.
- To check or aim the headlamps, a wall chart method must be used. (SA 9076 NE)
- In order to change the headlamp and turn signal bulbs, the headlamp capsule must be removed.
- Only **vertical** adjustment (up/down) can be made using adjustment knobs.
- Horizontal adjustment can be made by altering the upper mounting holes to allow movement.

Fog Lamps

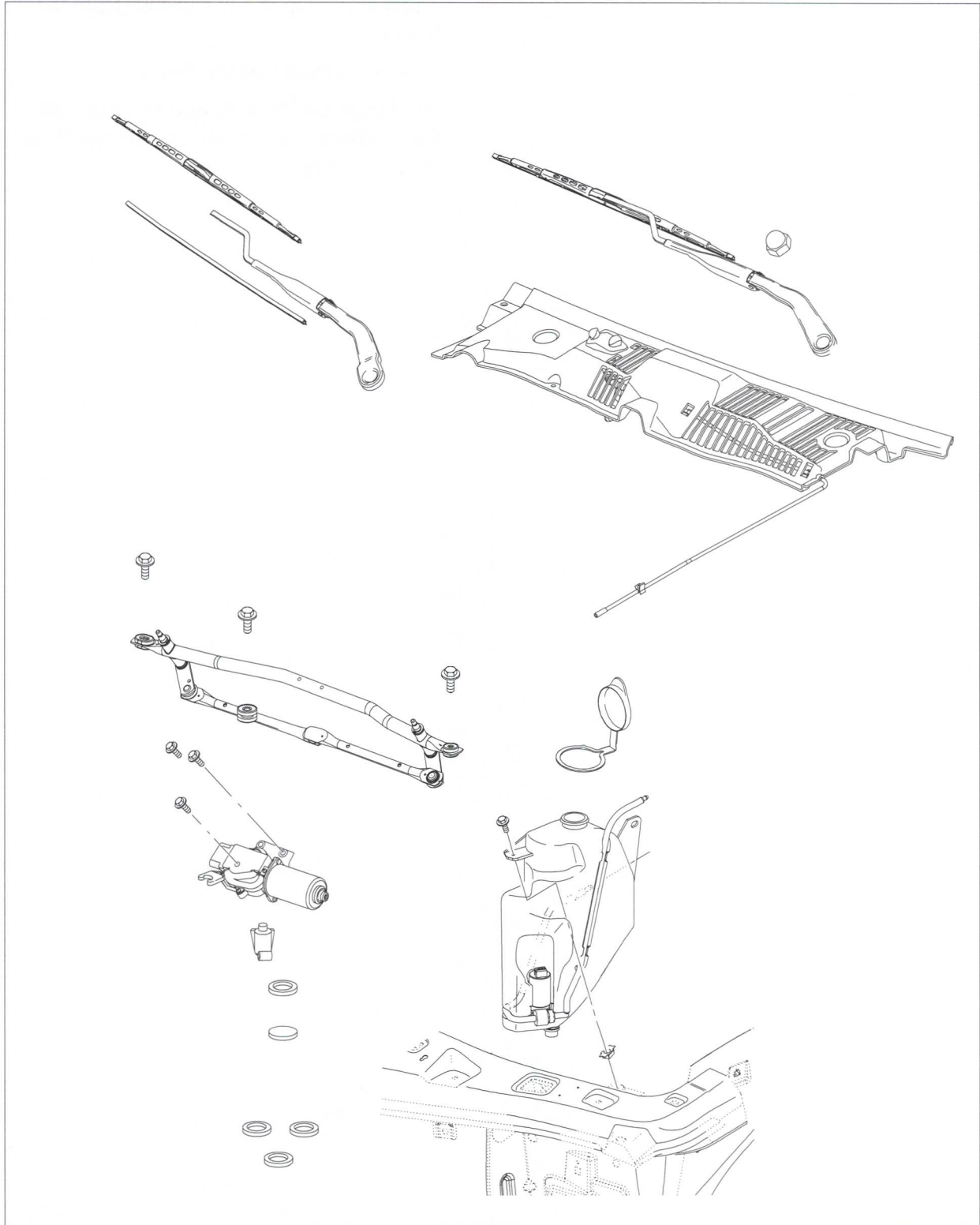


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Fog Lamps

- Fog lamps can be aimed using the aiming screw at the top of the capsule (from the front).
- Attached directly to the fascia.
- Fog lamps can be accessed by removing the headlamps and reaching down behind the front fascia.

Front Wiper System



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Front Wiper System

- Serviceable components
 - Full assembly
 - Motor
 - Blades
 - Arms
 - Grommets
- Stamped steel arms
- Self cutting splines in arms
- All speed stall protection
- Acorn nuts cover arms and hold them down. No caps
- Bottle & pump can be serviced separately.
- Pump and lines have a check valve, so they are always primed.
- No arm puller necessary, similar to S-Series.
- Limited angle of blades in service position.
- Motor is serviceable separate from linkage.
- Whole cowl cover assembly is plastic, so it all comes off to remove the wiper module assembly, two pieces.
- Washer nozzles are separate and come off to be serviced.
- All controller functions performed by BCM, no separate controller.
- Alignment marks are on lower windshield for wiper arm alignment.

Section 4.3

Interior Trim

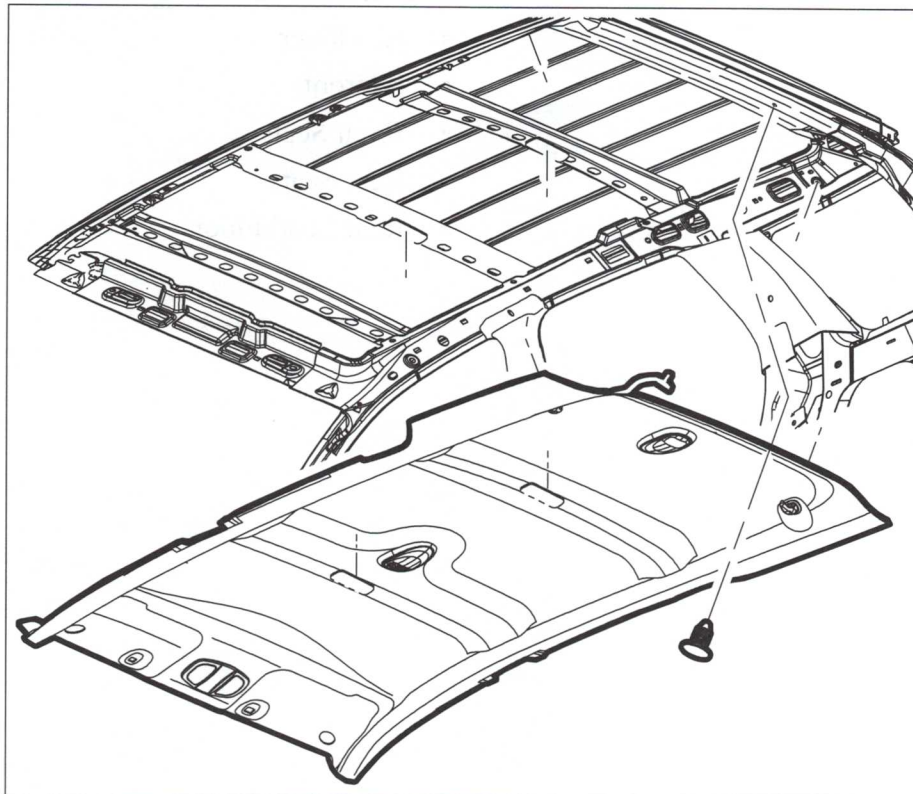
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Interior Trim

This section covers:

- Headliner
- Sunroof
- Front Seats
- Rear Seats
- Rear Load Floor

Headliner

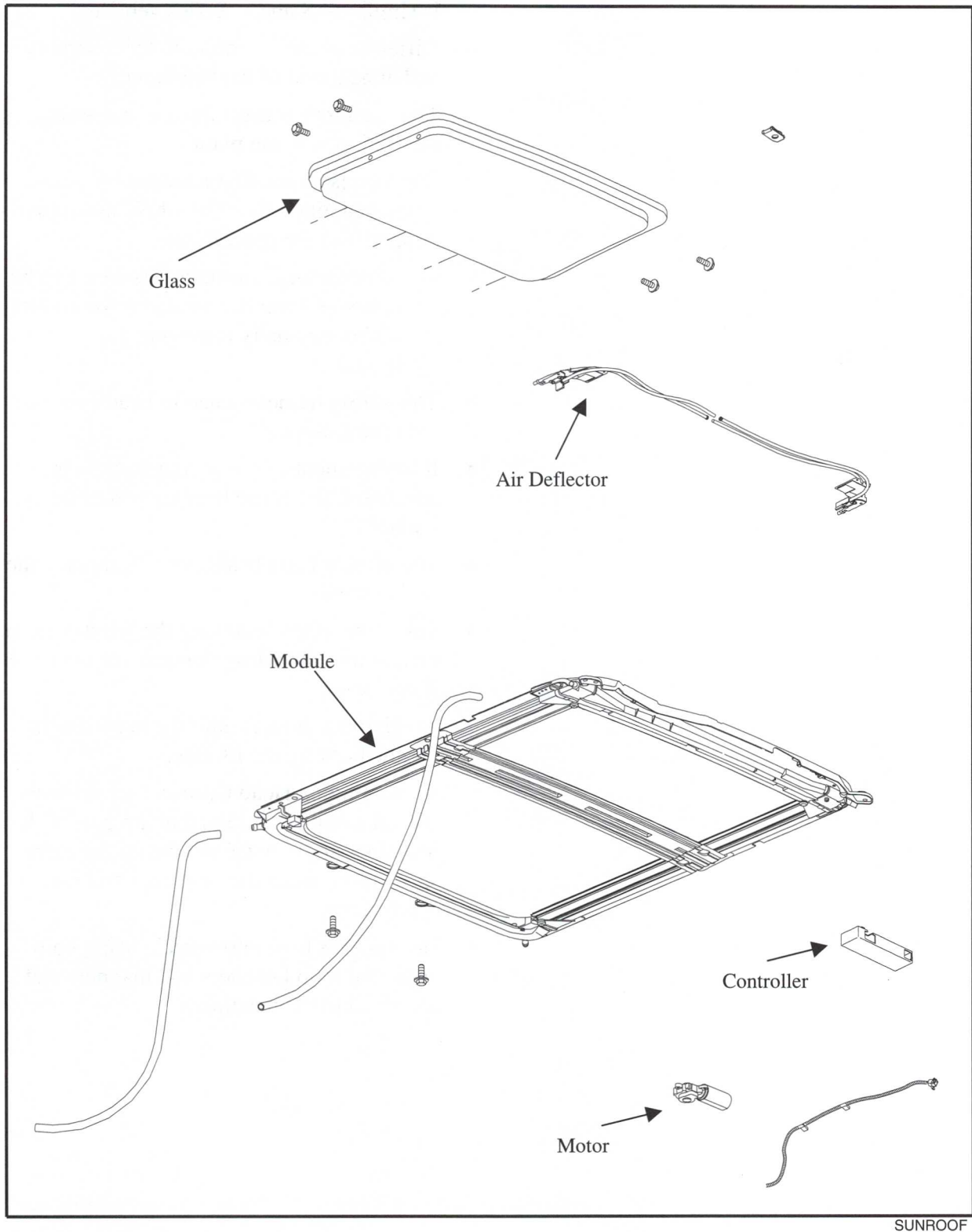


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Headliner

- The construction of the fiberglass headliner is similar to S and L-Series vehicles.
- Differences can be found in the assembly and attachment of the headliner.
- The headliner is assembled as a system, then shipped to the plant.
- The sunvisors are first attached by screws to the headliner, then the whole assembly is clipped into the spaceframe.
 - If necessary, the sunvisors can then be removed from the headliner for service, without actually removing the headliner.
- The wiring harness glued to headliner as with the L-Series.
- If replacement of the wiring harness is necessary, the entire headliner must be replaced.
- The service parts headliner will include the wiring harness.
- Take care when removing the windshield to not cut into the wiring harness for OnStar® if equipped.
 - Harness crosses onto the headliner in the back by the liftgate.
- If the optional Head Curtain Side Airbags are not installed, inserts that are part of the headliner are in place to take up the extra space in-between the headliner and the spaceframe.
- Headliner is held into vehicle using both hook and loop fasteners and magnets that are glued to the headliner.

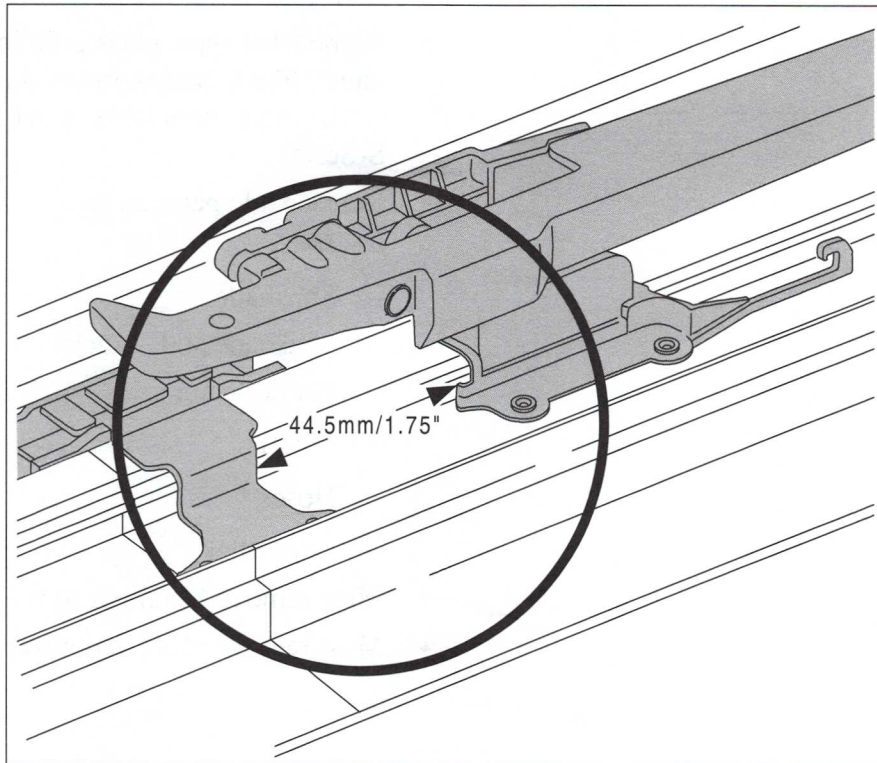
Power Sunroof System



Power Sunroof System

- The sunroof system is a design that was first used in the 1998 Cadillac Seville.
- Retractable type, glass goes inside roof panel, like L-Series, rather than spoiler type, where glass stays above roof, like on S-Series
- Replaceable parts include:
 - Glass
 - Sunshade
 - Sunshade slide blocks
 - Air deflector
 - Motor
 - Hoses
 - Controller
- Must remove headliner to replace module.
- Must remove glass to remove sunshade.

Sunroof Motor Installation Measurement



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Power Sunroof System (Cont'd)

- Motor can be out of time in relation to position of sunroof module. This would cause roof to react improperly if using the switch.
 - Won't stop at vent.
- Check timing of motor every time a new one is installed.
 - This is done differently than in the past.
 - Use measurement found in service manual to place the sunroof track in the right spot to time with new motor.
- Drain hoses are plastic, not held on with clamps. This could be a source of waterleaks.
- Adjustment of glass in all 4 directions, up/down, forward/rearward, is achieved at glass attachment screws, like L-Series. Module does not adjust once attached to roof outer panel.
- Open glass completely when removing module from vehicle.

Front Seats



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Front Seats

- Armrests attached to front seats
- Serviceable parts include:
 - Covers
 - Cushions
 - Frame
 - Cables
 - Recliner handle
 - Headrest Bezel
 - Adjuster Kit
 - Headrest
 - Passenger side recliner
 - Armrest

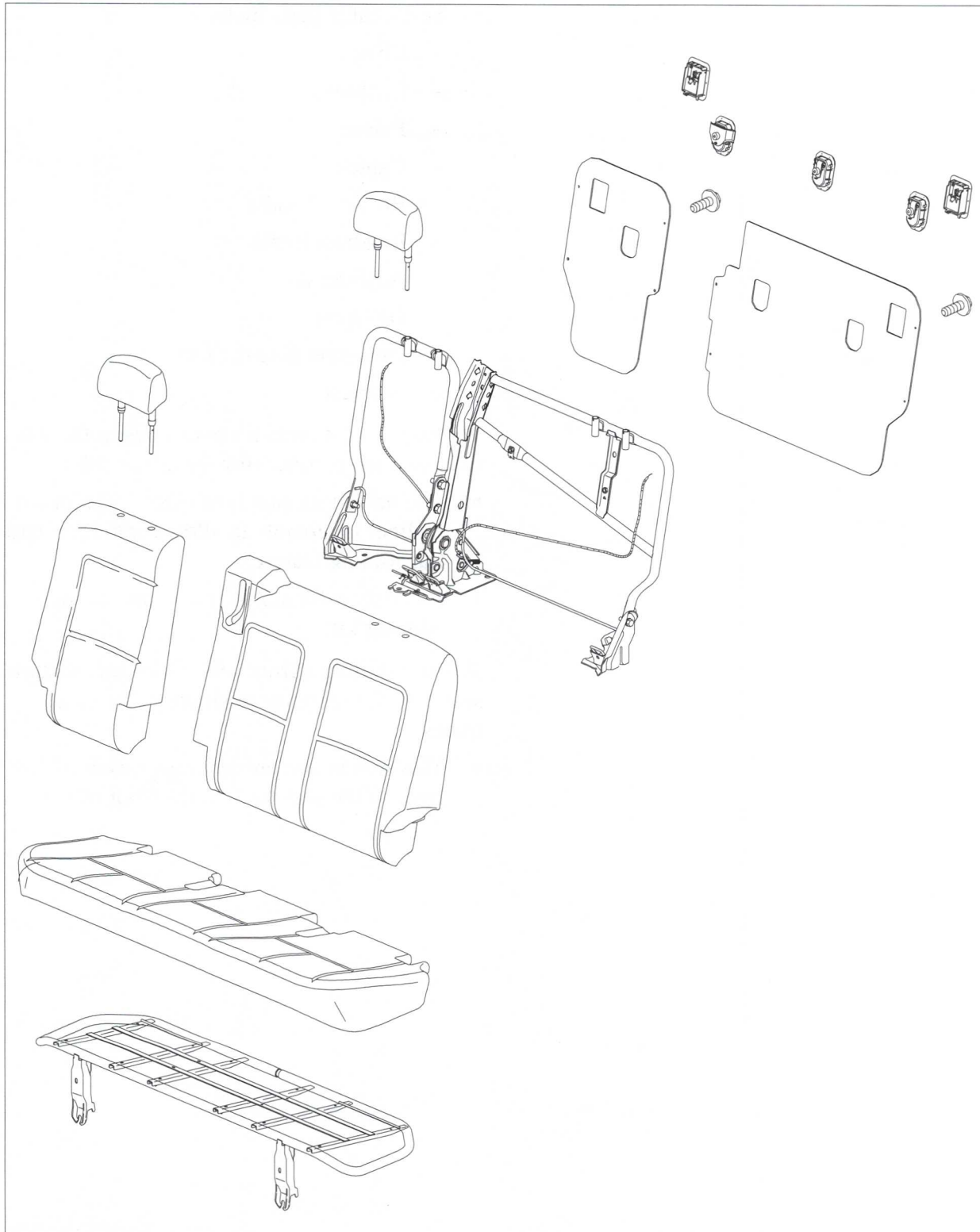
The adjuster kit includes both sides of the seat track and the recliner (for the driver side).

- The passenger side is the same, except the recliner is separate to allow for the forward flat-folding feature.
- The riser mechanism is also part of the adjuster kit.

When installing a front seat, make sure that the seat is in the rearmost position on the seat tracks.

- This will insure proper engagement of the front of the seat track in the floor of the vehicle.

Rear Seat System

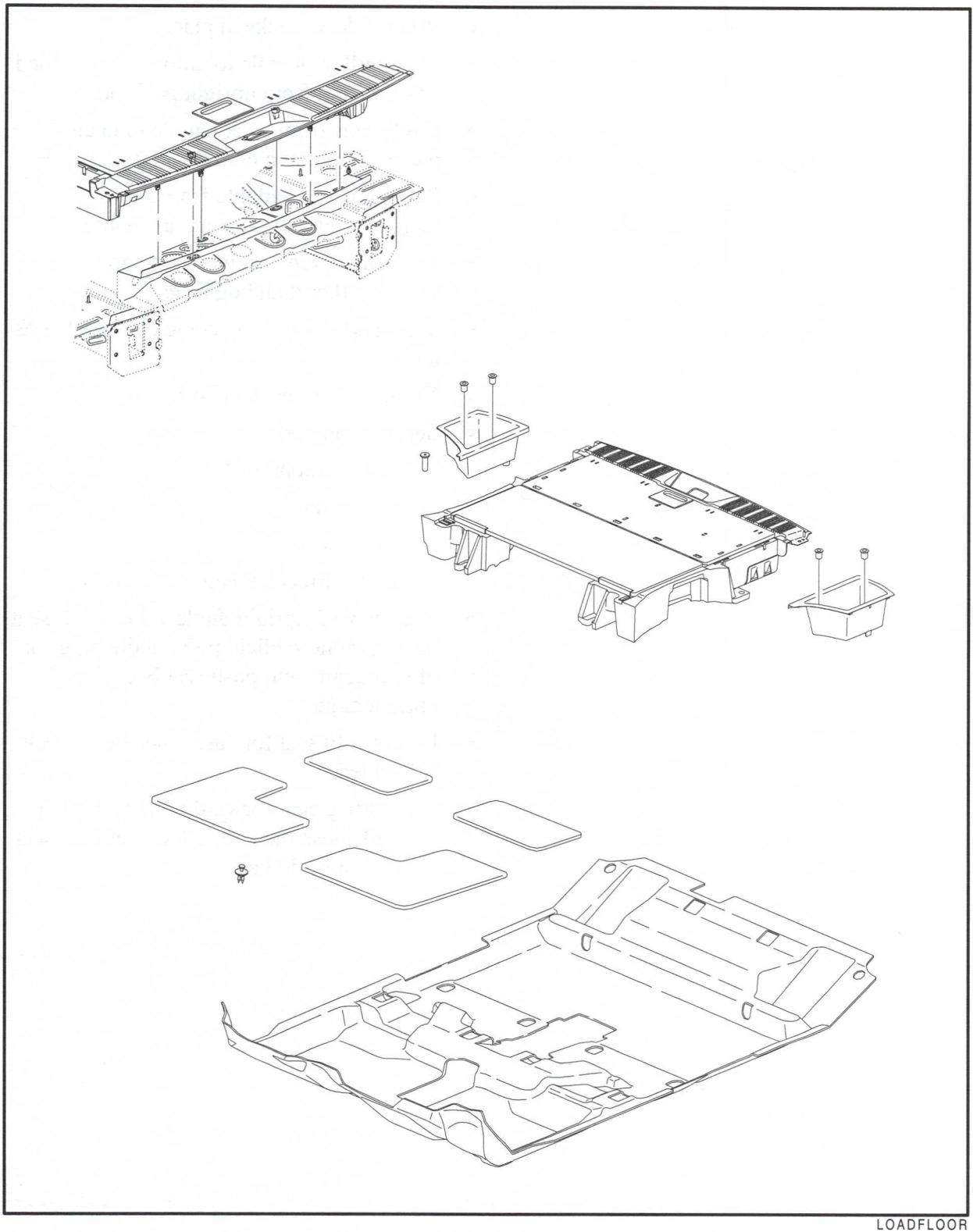


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Rear Seat System

- Both sides fold down
- When folded, locks in place
- Must pull on handle to unlock from folded position and from upright position.
- Cable runs from back handle to latch mechanism down below.
- Seats are not available from SSPO complete, but all parts are available.
- Seat trim is replaceable, using drawing strings rather than hog rings.
- Seats and safety belts come off together as a unit.
- No upper seat back cross beam.
- Serviceable parts are:
 - seat cushions
 - seat covers
 - safety belts
 - adjuster mechanism
- Seats have 2 upright angles. Fold rear seat back upright to click, pull handle on back of seat again, and push seat back for 2nd upright angle.
- Do not fold seat forward when center belt is buckled.
 - Folding seat forward with center belt will cause the belt to lock, and the seat will not fold back.

Rear Load Floor



Rear Load Floor

- Flips open to reveal a tray that can be built up using fold out parts.
- Tray parts will be serviced separately.
- Forward compartment Velcro's in place.
- A piece of carpet lays over gap between load floor and rear seat.

VUE Body Worksheet

Objective: Review body section information.

Reference: Refer to the Saturn Service Manuals and the Body Participant Guide.

Directions: Answer the following questions.

Questions for Review

1. What are the major components that can be serviced on the VUE sunroof?

*glass, sunshade, sunshade guide blocks, air deflector
motor, bases, controller*

2. How is door striker alignment achieved?

*Lox off
adjust tapping with rubber mallet*

3. How would you adjust the headlamp for vertical aim?

adjustment knobs; wall chart

4. What is the difference between the driver and passenger front seat recliners?

passenger folds fully forward



FOR REVIEW

